



**PURCHASING ITEM
FOR
COUNCIL AGENDA**

MEMO NO. ST15-017

1. Agenda Item Number:

11

2. Council Meeting Date:
March 12, 2015

TO: MAYOR & COUNCIL

THROUGH: CITY MANAGER

3. Date Prepared: February 9, 2015

4. Requesting Department:
Transportation & Development

5. SUBJECT: Agreement for Slurry Seal Materials and Installation

6. RECOMMENDATION: Staff recommends City Council approve Agreement No. ST5-745-3500 for slurry seal materials and installation with Southwest Slurry Seal, Inc., in an amount not to exceed \$1,900,000, for one year, with options to renew for up to four (4) additional one-year periods.

7. BACKGROUND/DISCUSSION: Slurry seal materials are sealants that are applied to City streets to preserve and lengthen the life of the asphalt. Due to the large investment that the City has in the transportation system, pavement sealants are used to protect this investment. The contractor applies this polymer-modified asphalt product which contains small aggregates. It adds this protective coating to the surface of the pavement that will provide added years to the pavement life. These sealants are used throughout the valley. The Contractor is responsible for all traffic control. Informational door hangers will be used to notify citizens and businesses when work is scheduled. City streets will not be closed as only half a street will be sealed at a time.

This contract was bid on a per-unit price basis with estimated quantities that can vary, as needed or as budgeted, by the City. The estimate for the contract was \$1,900,000 for 905,800 square yards of work. Since the per-unit bid came in substantially under the estimated per-unit bid, the Streets Division recommends the addition of an additional 394,200 square yards of work to the contract allowing this contract to complete 1,300,000 square yards. This additional work can be completed within the existing budget.

8. EVALUATION PROCESS: On January 8, 2015, Staff issued a bid for slurry seal materials and installation. All registered vendors were notified. Four (4) responses were received, evaluated and are listed as follows:

| | | | |
|-----------------------------|----------------|----------------------|-------------|
| Southwest Slurry Seal, Inc. | \$1,273,424.20 | Intermountain Slurry | \$1,654,026 |
| Viasun Corporation | \$1,643,179 | VSS International | \$1,689,000 |

Staff recommends award to Southwest Slurry Seal, Inc., as the lowest responsive, responsible bidder. The term of this Agreement will be March 13, 2015 – March 12, 2016, with options to renew for up to four (4) additional one-year periods.

9. FINANCIAL IMPLICATIONS:

Cost: \$1,900,000
Savings: N/A
Long Term Costs: N/A

| | | | | |
|--------------------|--------------|----------------------|--------------------|---------------|
| <u>Acct. No.:</u> | <u>Fund:</u> | <u>Program Name:</u> | <u>CIP Funded:</u> | <u>Funds:</u> |
| 101.3300.6513.0000 | General | Asphaltic Pavement | No | \$1,900,000 |

10. PROPOSED MOTION: Move City Council approve Agreement No. ST5-745-3500 for slurry seal materials and installation with Southwest Slurry Seal, Inc., in an amount not to exceed \$1,900,000, for one year, with options to renew for up to four (4) additional one-year periods.

ATTACHMENTS: Agreement, Map

APPROVALS

11. Requesting Department



Daniel W. Cook, City Engineer

12. Department Head



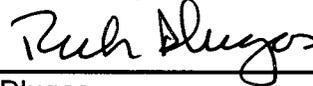
R.J. Zeder, Transportation & Development Director

13. Procurement Officer



Raquel McMahon, CPPB

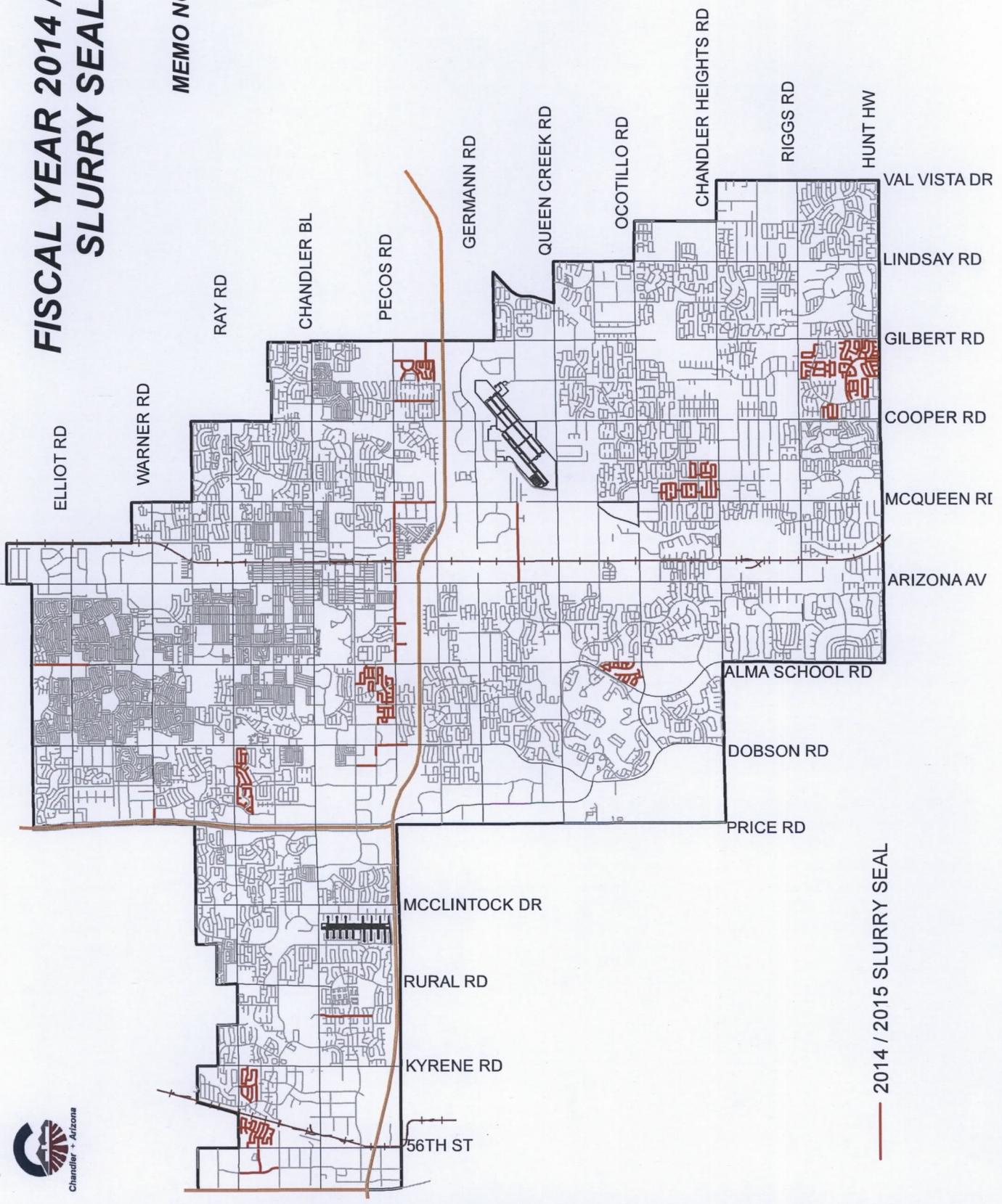
14. City Manager



Rich Dlugas

FISCAL YEAR 2014 / 2015 SLURRY SEAL

MEMO NO. ST15-017



— 2014 / 2015 SLURRY SEAL



**CITY OF CHANDLER SERVICES AGREEMENT
SLURRY SEAL MATERIALS & INSTALLATION
AGREEMENT NO.: ST5-745-3500**

THIS AGREEMENT is made and entered into this ____ day of _____, 2015, by and between the City of Chandler, a Municipal Corporation of the State of Arizona, hereinafter referred to as "CITY", and **SOUTHWEST SLURRY SEAL, INC.**, a corporation of the State of Arizona, 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. CONTRACT ADMINISTRATOR:

- 1.1. **Contract Administrator.** CONTRACTOR shall act under the authority and approval of the Streets Superintendent/designee (Contract Administrator), to provide the services required by this Agreement.
- 1.2. **Key Staff.** This Contract 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 Contract without prior written approval by CITY.
- 1.3. **Subcontractors.** During the performance of the Agreement, CONTRACTOR may engage such additional SUBCONTRACTORS 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 Contract for the performance of this Contract without the advance written approval of CITY. The subcontract shall incorporate by reference the terms and conditions of this Contract.
2. **SCOPE OF WORK:** CONTRACTOR shall perform slurry seal materials and installation work all as more specifically set forth in the Scope of Work, labeled Exhibit B, pricing, labeled Exhibit C, Bonds, labeled Exhibit D and maps, labeled Exhibit E attached hereto and made a part hereof by reference and as set forth in the Specifications and details included therein.
 - 2.1. **Non-Discrimination.** The CONTRACTOR shall comply with State Executive Order No. 99-4 and all other 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 contract.
 - 2.3. **Advertising, Publishing and Promotion of Contract.** The CONTRACTOR shall not use, advertise or promote information for benefit concerning this Contract 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 Pursuant to the provisions of A.R.S. § 41-4401, 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 set forth in A.R.S. §23-214(A) (hereinafter "Contractor Immigration Warranty").

- 2.4.2 A breach of the Contractor Immigration Warranty (Exhibit A) shall constitute a material breach of this Contract that is subject to penalties up to and including termination of the contract.
- 2.4.3 The City retains the legal right to inspect the papers of any Contractor or Subcontractor employee who works on this Contract 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 verifications.
- 2.4.5 The provisions of this Article must be included in any contract the Contractor enters into with any and all of its subcontractors who provide services under this Contract 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 Contract.
3. **ACCEPTANCE AND DOCUMENTATION:** Each task shall be reviewed and approved by the Contract 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 Contract for a period of five years after the completion of the Contract.
- 3.2. **Audit.** At any time during the term of this Contract 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 Contract 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 Contract 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 Contract 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:** CITY shall pay to CONTRACTOR the sum of **ONE MILLION NINE HUNDRED THOUSAND DOLLARS (\$1,900,000)** per year for the work and services described herein, which sum shall include all costs or expenses incurred by CONTRACTOR, payable as set forth in Exhibit C, attached hereto and made a part hereof by reference.
- 4.1. **Taxes.** CONTRACTOR shall be solely legally responsible for any and all tax obligations, which may result out of CONTRACTOR'S performance of this Contract. 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.
- 4.2. CONTRACTOR shall be solely responsible for any and all tax obligations, which may result out of the CONTRACTOR'S performance of this Agreement. The CITY shall have no obligation to pay any amounts for taxes, of any type, incurred by the CONTRACTOR.

- 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.
- 4.4. Estimated Quantities.** The quantities shown on Exhibit C (the Price List) 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.
- 4.5. 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.
- 4.6. Price Adjustment (Annual—CPI).** All prices offered herein shall be firm against any increase for one (1) year from the effective date of the Contract. Prior to commencement of subsequent renewal terms, CITY will entertain a request for price adjustments in accordance with the current Consumer Price Index. CONTRACTOR must request all price adjustments in writing at least sixty (60) days prior to the renewal date.
- 4.7. Acceptance by City.** CITY reserves the right to accept or reject the request for a price increase. 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 a written Contract Amendment must be approved and executed by the Parties.
- 4.8. 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 Contract is **ONE (1) year**, commencing on **MARCH 13, 2015** and terminating on **MARCH 12, 2016** unless sooner terminated in accordance with the provisions herein. Subject to mutual acceptance by the City and contractor, the contract may be extended for up to **FOUR (4)** additional terms of one year each. Additionally, the contract may be extended unilaterally for a period of thirty-one days or a portion thereof.
- 6. USE OF THIS CONTRACT:** The Contract 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 Contract.** In addition to the City of Chandler and with approval of the CONTRACTOR, this Contract 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 district in accordance with A.R.S. 15-512 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, sub-CONTRACTORS 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.

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 Contract, the Contract 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 Contract in addition to any other rights and remedies provided by law or this Contract.
- 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 Contract 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 Contract Administrator shall make an equitable adjustment in the delivery schedule or Contract price, or both, and the Contract shall be amended in writing accordingly.
- 7.4. Non-exclusive Remedies.** The rights and the remedies of the City under this Contract are not exclusive.
- 7.5. Nonconforming Tender.** Services and materials supplied under this Contract shall fully comply with Contract requirements and specifications. Services or materials that do not fully comply constitute a breach of contract.
- 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 Contract, including expenses to complete the work and other costs and damages incurred by CITY.

8. TERMINATION:

- 8.1. 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 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.
- 8.2. 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;
- 7) 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 Contract after Contract execution without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting or creating the Contract on behalf of the City is or becomes at any time while this Contract or an extension of this Contract is in effect, an employee of or a consultant to any other party to this Contract. 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 Contract, 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 Contract, an amendment to this Contract, or favorable treatment concerning this Contract, including the making of any determination or decision about contract 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 Contract 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 a contract 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 Contract, 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 Contract 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; provided, however, that no award of attorney's fees shall exceed ten percent (10%) of the damages awarded the prevailing party unless the non-prevailing party has been determined to have acted in bad faith or in a frivolous manner during the adjudication.

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.

11. 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, subconsultants or sublicensees 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, sublicensees or subconsultants 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 agreement 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 Insurance (Course of Construction).* The CONTRACTOR bears all responsibility for loss to all Work being performed and to buildings under construction. Unless waived in writing by the City of Chandler, the CONTRACTOR will purchase and maintain in force Builders' Risk-Installation 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 GMP and all subsequent modifications. The CONTRACTOR's Builders' Risk-Installation insurance must be primary and not contributory.
1. Builders' Risk-Installation insurance must name the City of Chandler, the CONTRACTOR and all tiers of Sub Contractors as Additional Insured's and must contain a provision that this 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 Builders' Risk-Installation coverage.
2. Builders' Risk-Installation 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 insurance must provide coverage from the time any covered property comes under the CONTRACTOR'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.

3. The CONTRACTOR must also purchase and maintain Boiler and Machinery insurance with the same requirements as Builders' Risk-Installation 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 Agreement. The CONTRACTOR will be responsible for any and all deductibles under these policies and the CONTRACTOR waives all rights of recovery and subrogation against the City under the CONTRACTOR-provided Builders' Risk-Installation insurance described above.
4. Builders' Risk 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 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. This insurance must include as named insureds, the City, the CONTRACTOR, SubContractors, Subconsultants and others with an insurable interest in the Work who will be named as additional insureds unless they are able to provide some level of coverage with the City and CONTRACTOR 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 coverage.
 - c. This insurance must be written using the Special Causes of Loss policy form, replacement cost basis.
 - d. All rights of subrogation are, by this Agreement, waived against the City of Chandler, its officers, officials, agents and employees.
 - e. The CONTRACTOR is responsible for payment of all deductibles under the Builders' Risk 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.
12. **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

Contract Administrator: Sr. Streets Maint. Coord.
 Contact: Alberto Fausto
 Mailing Address: _____
 Physical Address: 975 E. Armstrong Way
 City, State, Zip Chandler, AZ 85225
 Phone: 480-782-3505
 FAX: 480-782-3495
Alberto.fausto@chandleraz.gov

In the case of the CONTRACTOR

Firm Name: Southwest Slurry Seal, Inc.
 Contact: Richard Francis
 Address: 22855 N. 21st Ave.
 City, State, Zip Phoenix, AZ 85027-2034
 Phone: 623-582-1919
 FAX: 623-434-8805
richardf@southwestslurryseal.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.

13. CONFLICT OF INTEREST:

13.1. **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.

- 13.2. Kickback Termination.** CITY may cancel any contract or 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).
- 13.3. 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.

14. GENERAL TERMS:

- 14.1 Ownership.** All deliverables and/or other products of the Contract (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 Contract) 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.

14.2 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.

- 14.3 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.
- 14.4 Arizona Law.** This Agreement shall be governed and interpreted according to the laws of the State of Arizona.
- 14.5 Assignment:** Services covered by this Agreement shall not be assigned in whole or in part without the prior written consent of the CITY.
- 14.6 Amendments.** The Contract may be modified only through a written Contract Amendment executed by authorized persons for both parties. Changes to the Contract, 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 Contract. Any such changes, including unauthorized written Contract Amendments shall be void and without effect, and the CONTRACTOR shall not be entitled to any claim under this Contract based on such changes.

- 14.7 **Independent CONTRACTOR.** The CONTRACTOR under this Contract is an independent CONTRACTOR. Neither party to this Contract shall be deemed to be the employee or agent of the other party to the Contract.
- 14.8 **No Parole Evidence.** This Contract 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.
- 14.9 **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 _____, 2015.

FOR THE CITY OF CHANDLER

Mayor

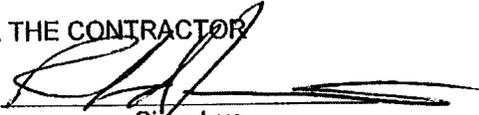
ATTEST:

City Clerk

Approved as to form:

City Attorney *CH*

FOR THE CONTRACTOR

By: 
Signature

ATTEST: If Corporation

SEAL

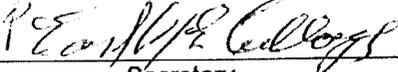

Secretary

EXHIBIT A

Contractor Immigration Warranty
To Be Completed by Contractor Prior to Execution of Contract

A.R.S. § 41-4401 requires as a condition of your contract verification of compliance by the contractor and subcontractors with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of its employees.

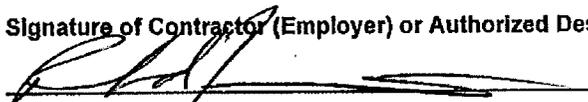
By completing and signing this form the contractor shall attest that it and all subcontractors performing work under the cited contract meet all conditions contained herein.

| | | |
|--|------------------|-----------------------------|
| Contract Number: ST5-745-3500 | | |
| Name (as listed in the contract): Southwest Slurry Seal, Inc. | | |
| Street Name and Number: 22855 N. 21st Ave. | | |
| City: Phoenix | State: AZ | Zip Code: 85027-2034 |

I hereby attest that:

1. The contractor complies with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of those employees performing work under this contract;
2. All subcontractors performing work under this contract comply with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of their employees.

Signature of Contractor (Employer) or Authorized Designee:



Printed Name: Richard Francis

Title: President

Date (month/day/year): February 27, 2015

**EXHIBIT B
TECHNICAL SPECIFICATIONS**

GENERAL INFORMATION

Contractor shall provide Slurry Seal Materials and Installation services on an as needed basis.

Maps for proposed work are attached (Exhibit E); the contract administrator reserves the right to make additions/deletions as needed.

GENERAL VENDOR QUALIFICATIONS

The Contractor shall be in compliance with all applicable Federal, State, Local, ANSI and OSHA laws, rules and regulations and all other applicable regulations for the term of this contract.

The Contractor, without additional expense to the City, shall be responsible for obtaining and maintaining any necessary licenses and permits required in connection with the completion of the required services herein.

The Bidder must hold a valid license issued by the State of Arizona Registrar of Contractors prior to submission of a bid and must maintain same throughout the duration of the contract term and any subsequent contract extensions. Failure to maintain said license may be grounds for default of the contract and subsequent termination.

The Contractor may not subcontract any segment or services covered herein, without prior approval of the Contract Administrator. All subcontractors used under the scope of this contract shall meet all requirements, terms and conditions set forth herein. All subcontracted services shall be warranted by and be the responsibility of the Contractor.

EXHIBIT B

1. **DESCRIPTION.** This specification covers the materials, equipment and construction procedures for rut filling and/or resurfacing of existing paved surfaces. The arterial slurry surface shall be a mixture of cationic polymer modified asphalt emulsion, mineral aggregates, 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.

CONTRACTOR shall provide CITY with the application of a Bituminous Residential Slurry Seal and Arterial Slurry Seal, Type II and Type III for the streets specified in each Project Agreement or group Project Agreement. CONTRACTOR shall provide a weekly schedule to the Contract Administrator/designee no later than the Wednesday prior to the work being performed the following week.

CONTRACTOR shall schedule and furnish all labor and equipment necessary to apply Arterial Slurry Seal and Residential Slurry Seal Type II on streets designated by CITY. CONTRACTOR shall roll with pneumatic roller all sealed streets to establish a secure bond between aggregates and emulsions and reduce traffic tire scarring.

- 1.1 **TRAFFIC CONTROL.** CONTRACTOR shall provide any and all Traffic Control needed for all work under this Agreement in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and CITY Traffic Barricade standards. CONTRACTOR shall submit all traffic control plans to the City of Chandler Transportation and Development Department for approval before any work may progress. Traffic control shall include City of Chandler uniformed police officer as required. Uniformed police officer rate shall be billed and paid at the actual cost incurred by CONTRACTOR. CONTRACTOR shall place "Bump" signs on both sides of speed humps with a lit vertical panel on the center of the speed hump until they are permanently striped.

CONTRACTOR shall utilize temporary chip seal tabs where striping is affected by application of Residential or Arterial Slurry Seal. CONTRACTOR shall remove temporary chip seal tabs only after permanent striping is complete. CONTRACTOR shall use a razor blade or similar tool to cut tabs off the temporary chip seal markers ensuring not to damage newly placed Slurry Seal.

- 1.2 **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.

- 1.3 **NOTIFICATION TO PUBLIC.** CONTRACTOR shall notify each residence and business when their street is to be surfaced at least 48-hours in advance of the work being done. This will provide adequate lead-time for residents to move vehicles from the streets. The notification should be done in writing by the use of "door hangers". The door hangers shall be placed in a secure manner on the front door of each residence or business or if not accessible, in a location which the owner will see and be able to read. Door hangers should be printed on some bright colored paper, which will be easily seen. Door hanger notices must be approved by the Contract Administrator/designee prior to being used. Items to be included on the door hangers are:

- Date of work to be done
- Type of work – Slurry Seal surfacing
- Name of CONTRACTOR –
- CONTRACTOR's phone number –
- Statement: "No parking on street allowed for next 24-hours; if necessary, cars will be towed at owner's expense. No sharp turns are allowed for next 24 hours on slurry seal to reduce material scarring on street surfaces".

- Ask residents not to drive on fresh slurry seal material for _____ hours, and provide information to the residents as to how to remove slurry material from shoes, driveways or vehicles.

2. **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.
- 2.1 **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 B. 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.
3. **TRIAL APPLICATIONS.** CONTRACTOR shall place a test strip of 60 square yards in the area designated by the Contract Administrator/designee. The test sections shall be placed using the same equipment and methods as will be used on the job. Slurry mixtures placed in test strips shall conform to the design mix as determined by the tests with minor variations to obtain crack filling, set time, pavement bond and a skid resistant texture. If the materials do not meet the requirements for fluidity, non-segregation, or surface texture, a new job mix shall be formulated and tested. Work shall not proceed before approval of design mix and acceptance following the placing of a test strip.
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. The polymerized emulsion shall meet the following specifications listed in Table 1.

TABLE 1

| Polymerized Emulsion for Arterial Slurry Seal Projects¹ | | |
|--|--------------------|-----------------------------|
| Tests on Emulsion: | Test Method | Specification Limits |
| Viscosity, Saybolt Furol seconds @ 25 °C (77 °F) | AASHTO T 59 | 15-100 |
| Sieve test, retained on 850 µm (No. 20), % | AASHTO 59 (2) | 0.1 Max (2) |
| Storage Stability, 24 hours, % | AASHTO T 59 | 1.0 Max |
| Particle Charge | AASHTO T 59 | Positive |
| Evaporation Residue, % | Arizona 512 (2) | 60 Min |
| Tests on Residue by Evaporation | Arizona 504 | |
| Kinematic Viscosity @ 275 °F, cst | AASHTO T 201 | 650 Min |
| Penetration, 25 °C (77 °F), 100 grams, 5 seconds, dmm | AASHTO T 49 | 40 - 90 |
| Ductility, 25 °C (77 °F), 5 cm/minute | AASHTO T 51 | 60 Min |
| Elastic Recovery by means of Duclilometer, 25 °C (77 °F), % | AASHTO T 301 | 55 Min |
| Tests Evaporation Residue after RTFO | | |
| Softening Point, °F | AASHTO T 53 | 140 Min |
| Kinematic Viscosity @275 °F, cst,aging ratio | AASHTO T 201 | 3.0 Max |
| <p>(1) A minimum of 4% polymer solids, by total weight of polymer and asphalt residue, shall be added prior to emulsification.</p> <p>(2) The maximum of 0.1 percent applies to the preapproval of emulsions sampled from the supplier tank. A maximum of 0.3 percent is allowed for emulsions that are sampled at the project site.</p> | | |

| Polymerized Emulsion for Residential Slurry Seal Projects¹ | | |
|--|--------------------|-----------------------------|
| Tests on Emulsion: | Test Method | Specification Limits |
| Viscosity, Saybolt Furol seconds @ 25 °C (77 °F) | AASHTO T 59 | 15-100 |
| Sieve test, retained on 850 μm (No. 20), % | AASHTO T 59 | 0.1 Max (2) |
| Storage Stability, 24 hours, % | AASHTO T 59 | 1.0 Max |
| Particle Charge | AASHTO T 59 | Positive |
| Evaporation Residue, % | Arizona 512 | 57 Min |
| Tests on Residue by Evaporation | Arizona 504 | |
| Kinematic Viscosity @ 275 °F, cst | AASHTO T 201 | 650 Min |
| Penetration, 25 °C (77 °F), 100 grams, 5 seconds, dmm | AASHTO T 49 | 40 - 90 |
| Ductility, 25 °C (77 °F), 5 cm/minute | AASHTO T 51 | 40 Min |
| Elastic Recovery by means of Ductilometer, 25 °C (77 °F), % | AASHTO T 301 | 55 Min |
| Tests Evaporation Residue after RTFO | | |
| Softening Point, °F | AASHTO T 53 | 130 Min |
| Kinematic Viscosity @275 °F, cst, aging ratio | AASHTO T 201 | 3.0 Max |
| <p>(1) A minimum of 3% SBS polymer solids, by total weight of SBS polymer and asphalt residue, shall be added prior to emulsification.</p> <p>(2) The maximum of 0.1 percent applies to the preapproval of emulsions sampled from the supplier tank. A maximum of 0.3 percent is allowed for emulsions that are sampled at the project site.</p> | | |

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 arterial slurry surface mix, or improve the resulting finished surface. The use of additives in the arterial slurry surface mix shall be supplied in quantities by the laboratory mix design.
10. **PROPORTIONING.** The arterial slurry 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 arterial slurry 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 arterial slurry 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 agg. |
| Mineral Filler | .1% - 1% by dry weight of agg. |
| 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 inutes 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. TESTING THE ARTERIAL SLURRY SURFACE. CONTRACTOR shall take samples throughout the project for testing by the approved laboratory per ISSA TB101. Testing shall be at the expense of the contractor, for the following:

- a. Asphalt content
- b. Aggregate gradation
- c. % Polymer content and type

13. MIXING EQUIPMENT. The machine shall be specifically designed and manufactured to lay a 4% polymer modified slurry seal. The material shall be mixed by an automatic sequenced, self-propelled slurry surfacing mixing machine which shall be a continuous flow mixing unit, able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive and water to a revolving multi-blade double shafted mixer and discharge the mixed product on a continuous flow basis. The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls. On arterial streets and collectors the machine will be a self-loading machine capable of loading materials while continuing to lay slurry surfacing, thereby minimizing construction joints. The self-loading machine shall be equipped to allow the operator to have full control of the forward and reverse speed during application of the slurry surfacing material and be equipped with opposite side driver stations to assist in alignment. The self-loading device, opposite side driver stations, and forward and reverse speed controls shall be original equipment manufacturer design.

14. MATERIAL CONTROL:

- 14.1 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.
- 14.2 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.
- 14.3 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.
- 14.4 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.
- 14.5 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.
- 14.6 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.
- 14.7 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.
- 15 OPERATOR CONTROLS.** CONTRACTOR shall provide controls that will allow the operator to sequence and proportion the material per mix design.
- 15.1 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.

15.2 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.

16 APPLICATION:

16.1 GENERAL. The arterial slurry seal 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.

16.2 WEATHER. The arterial slurry seal surfacing shall be placed when the temperature is at least 45 °F and rising, and when it is not raining. The surface temperature shall be 50°F or higher when the mixture is applied.

The arterial slurry seal 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.

16.3 PROTECTION OF EXISTING SERVICES. CONTRACTOR shall take all necessary precautions to prevent arterial slurry seal 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.

16.4 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.

16.5 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.

16.6 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.

16.7 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 an arterial slurry 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.

16.8 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.

16.9 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.

16.10 PROTECTION OF ARTERIAL SLURRY SEAL 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.

16.11 DAMAGE TO ARTERIAL SLURRY SEAL SURFACE. CONTRACTOR's responsibility to replace arterial slurry surface damage by unexpected rain after spreading shall be limited to the period within four (4) hours of placement of the arterial slurry surface.

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

17.1 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.

17.2 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/Butadiene/Styrene (SBS) or Ethylene/Vinylacetate (EVA) synthetic rubber. 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.

| Polymerized Emulsion for Arterial Slurry Seal Projects¹ | | |
|--|--------------------|-----------------------------|
| Tests on Emulsion: | Test Method | Specification Limits |
| Viscosity, Saybolt Furol seconds @ 25 °C (77 °F) | AASHTO T 59 | 15-100 |
| Sieve test, retained on 850 µm (No. 20), % | AASHTO 59 (2) | 0.1 Max (2) |
| Storage Stability, 24 hours, % | AASHTO T 59 | 1.0 Max |
| Particle Charge | AASHTO T 59 | Positive |
| Evaporation Residue, % | Arizona 512 (2) | 60 Min |
| Tests on Residue by Evaporation | Arizona 504 | |
| Kinematic Viscosity @ 275 °F, cst | AASHTO T 201 | 650 Min |
| Penetration, 25 °C (77 °F), 100 grams, 5 seconds, dmm | AASHTO T 49 | 40 - 90 |
| Ductility, 25 °C (77 °F), 5 cm/minute | AASHTO T 51 | 60 Min |
| Elastic Recovery by means of Ductilometer, 25 °C (77 °F), % | AASHTO T 301 | 55 Min |
| Tests Evaporation Residue after RTFO | | |
| Softening Point, °F | AASHTO T 53 | 140 Min |
| Kinematic Viscosity @275 °F, cst,aging ratio | AASHTO T 201 | 3.0 Max |
| <p>(1) A minimum of 4% polymer solids, by total weight of polymer and asphalt residue, shall be added prior to emulsification.</p> <p>(2) The maximum of 0.1 percent applies to the preapproval of emulsions sampled from the supplier tank. A maximum of 0.3 percent is allowed for emulsions that are sampled at the project site.</p> | | |

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.

17.3 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.**

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

17.5 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.

17.6 ADDITIVES. No additives will be added.

17.7 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.

18 MIX DESIGN:

18.1 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.

18.2 **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.

18.3 **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 Na2SO4 or 25% Max using MgSO4 |
| AASHTO T96 ASTM C131 | Abrasion Resistance | 35% Max |
| ISSA TB115 | Compatibility | Compatibility |
| ISSA TB100 | Wet Track Abrasion | 50g/SF Max |

18.4 **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 agg |
| Mineral Filler | 0.1% to 1.5% by dry weight of agg |
| 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 |

19 **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

19.1 **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.

20 MATERIAL CONTROL.

- 20.1 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.

- 20.2 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.
- 20.3 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.
- 20.4 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.
- 20.5 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.
- 20.6 OPERATOR CONTROLS. Controls will allow the operator to sequence and proportion the material per the mix design.
- 20.7 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.
- 20.8 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.

21 APPLICATION.

- 21.1 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.
- 21.2 WEATHER. The mixture shall be placed when the temperature is at least 45°F and rising, and when it 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.

21.3 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 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.

21.4 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.

21.5 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.

21.6 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.

21.7 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.

21.8 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.

21.9 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.

22 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.

- 23 **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.

- 24 **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.

- 25 **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.

- 26 **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.

- 27 **ALTERNATE WORK - PARKING LOT RESURFACING.** The possibility exists that there will be some additional work added to this contract involving the resurfacing of CITY owned parking lots. At this time there are not quantities to bid on, so we are asking for a unit price complete for this work. The following information should be considered when calculating a unit price for this work.

The material will be the same as requested in the specification, Type II Slurry Seal with polymer added.

CONTRACTOR will provide any and all traffic control needed. CITY will provide all sweeping and cleaning needed in the parking lots and will be responsible for having all the vehicles removed. CONTRACTOR shall provide for all labor, equipment, materials, bond, insurance and overhead in his unit price quoted for this work.

- 28 **TRAFFIC STRIPING.** All striping will be completed within 72 hours of a street being sealed. School crossings will be striped within 24 hours of the street being sealed.

Lit barricades and signs will be placed on cross walk areas, school crossing and speed humps until they are permanently striped. The temporary roll out dot will be placed for the school crossing guards until CONTRACTOR paints the circle for the crossing guard.

All striping will follow the CITY Standard Detail and Specification book. All striping will be pre-inventoried and laid out by CONTRACTOR. All striping must be reviewed and accepted by CITY Traffic before the work is started. Failure to do this CONTRACTOR will be liable for all costs related to the removal and replacement of the striping.

All paint is to be Traffic rated paint, not oil based. Paint to be 15 mil and thermo plastic 125 mil thick. Cold Plastic brand name for tape.

29 LMCQS-TR MS, Tire Rubber Modified Asphalt Emulsion (OPTIONAL)

29.1 DESCRIPTION. Latex modified cationic quick set emulsion for use in arterial slurry seal applications manufactured from tire modified asphalt.

29.2 MATERIALS.

| <u>Test Description</u> | <u>AASHTO/ASTM Method</u> | <u>Typical Analysis</u> | <u>Specs</u> |
|---|---------------------------|-------------------------|--------------|
| <u>Characteristics of Base Asphalt:</u> | | | |
| Solubility in TCE % | T-44/D-2042 | 98+ | 97.5 min |
| % digested tire rubber* | Report | 5+ | 5 min |
| <u>Test on Emulsion:</u> | | | |
| Viscosity @ 122 F, SFS | T-59/D-7496 | 54 | 20-100 |
| Particle Charge | T-59/D-244 | + | Positive |
| Sieve Test, WT% | T-59/D-6933 | 0.01 | 0.10 max |
| Latex Solids, % | | 3.0+ | 3.0 min |
| Storage Stability 24 Hrs % | T-59/D-6930 | 0.01 | 1.0 max |
| Residue by Distillation | D-244/D-6997 | 63 | 58 min |
| VOC, % @ 500 F | Rule 340 & 301 | 1.0 | 3.0 max |
| <u>Test on Residue from D 244:</u> | | | |
| Penetration @ 25 C, 100g, 5s, dmm | T-49/D-5 | 55 | 40-110 |
| Elastic Recovery 10 C 10cm elongation, 5 min hold, % | T-301/D-6084 | 50+ | 45 min |

*Whole Scrap Tire Rubber must be fully digested into the asphalt prior to emulsification and meet ASTM D2042 solubility specifications.

30. CQS-TR, Tire Rubber Modified Asphalt Emulsion (OPTIONAL)

30.1 DESCRIPTION. Cationic quick set emulsion for use in residential slurry seal applications manufactured from tire rubber modified asphalt.

30.2 MATERIALS.

| <u>Test Description</u> | <u>AASHTO/ASTM Method</u> | <u>Typical Analysis</u> | <u>Specs</u> |
|---|---------------------------|-------------------------|--------------|
| <u>Characteristics of Base Asphalt:</u> | | | |
| Solubility in TCE % | T-44/D-2042 | 98+ | 98.0 min |
| % digested tire rubber* | Report | 5+ | 5 min |
| <u>Test on Emulsion:</u> | | | |
| Viscosity @ 122 F, SFS | T-59/D-7496 | 54 | 20-100 |
| Particle Charge | T-59/D-244 | + | Positive |
| Sieve Test, WT% | T-59/D-6933 | 0.01 | 0.10 max |
| Storage Stability 24 Hrs % | T-59/D-6930 | 0.01 | 1.0 max |
| Residue by Distillation | D-244/D-6997 | 63 | 58 min |
| VOC, % @ 500 F | Rule 340 & 301 | 1.0 | 3.0 max |
| <u>Test on Residue from D 244:</u> | | | |
| Penetration @ 25 C, 100g, 5s, dmm | T-49/D-5 | 55 | 40-110 |
| Ductility 25 C, 5cm | T-51/D-113 | 70+ | 60 min |

*Whole Scrap Tire Rubber must be fully digested into the asphalt prior to emulsification and meet ASTM D2042 solubility specifications.

**EXHIBIT C
PRICE LIST**

| ITEM NO. | DESCRIPTION | QUANTITY* | UNIT PRICE | EXTENDED TOTAL |
|-----------------|--------------------|------------------|-------------------|-----------------------|
|-----------------|--------------------|------------------|-------------------|-----------------------|

Residential Slurry Seal Type II (Approximately 638,300 Square Yards)

| | | | | |
|----|-------------------------|------------|------------------|----------------------|
| 1. | PMQS-h / PMCQS-1h | 670 Tons | \$ <u>400.00</u> | \$ <u>268,000</u> |
| 2. | Dry Aggregate (type II) | 4,790 Tons | \$ <u>97.46</u> | \$ <u>466,833.40</u> |

Arterial Slurry Seal Type II (Approximately 267,500 Square Yards)

| | | | | |
|----|-------------------------|------------|------------------|----------------------|
| 3. | CSS-1h | 375 Tons | \$ <u>400.00</u> | \$ <u>150,000</u> |
| 4. | Dry Aggregate (type II) | 2,675 Tons | \$ <u>110.42</u> | \$ <u>295,373.50</u> |

NOTE: All striping quantities are based on 4" equivalent.

| ITEM NO. | DESCRIPTION | QUANTITY* | UNIT PRICE | EXTENDED TOTAL |
|-----------------|--------------------|------------------|-------------------|-----------------------|
|-----------------|--------------------|------------------|-------------------|-----------------------|

| | | | | |
|-----|-------------------------------|------------|------------------|---------------------|
| 5. | 4" Solid Yellow Traffic Paint | 60,160 LF | \$ <u>.06</u> | \$ <u>3609.60</u> |
| 6. | 4" Solid White Traffic Paint | 21,740 LF | \$ <u>.06</u> | \$ <u>1304.40</u> |
| 7. | 6" Solid White Traffic Paint | 133,080 LF | \$ <u>.06</u> | \$ <u>7984.80</u> |
| 8. | 8" White Thermoplastic | 28,040 LF | \$ <u>.23</u> | \$ <u>6449.20</u> |
| 9. | 12" White Thermoplastic | 15,890 LF | \$ <u>.45</u> | \$ <u>7150.50</u> |
| 10. | 18" White Thermoplastic | 7,040 LF | \$ <u>.46</u> | \$ <u>3238.40</u> |
| 11. | 24" White Thermoplastic | 740 LF | \$ <u>.46</u> | \$ <u>340.40</u> |
| 12. | RRX Symbol (per MUTCD) | 4 SET | \$ <u>170.00</u> | \$ <u>680.00</u> |
| 13. | Yellow School Crosswalk | 1 SET | \$ <u>200.00</u> | \$ <u>200.00</u> |
| 14. | Yellow School Roll Out Dot | 3 EA | \$ <u>25.00</u> | \$ <u>75.00</u> |
| 15. | Turn Arrows Thermoplastic | 120 EA | \$ <u>85.00</u> | \$ <u>10,200.00</u> |
| 16. | Bike Lane Symbol | 140 EA | \$ <u>68.00</u> | \$ <u>9520.00</u> |
| 17. | Speed Hump Striping | 6 SET | \$ <u>113.50</u> | \$ <u>681.00</u> |
| 18. | Blue Fire Hydrant Reflectors | 410 EA | \$ <u>2.40</u> | \$ <u>984.00</u> |
| 19. | Temporary Chip Seal Tabs | 2,000 EA | \$ <u>3.50</u> | \$ <u>7000.00</u> |
| 20. | Raised Pavement Markers | 2,000 EA | \$ <u>2.40</u> | \$ <u>4800.00</u> |

| | | | | |
|-----|---|---------|------------------|---------------------|
| 21. | Traffic Control | 90 DAYS | \$ <u>100.00</u> | \$ <u>9000.00</u> |
| 22. | CoC Uniformed Police Officer (Contractor to be paid actual cost of hiring Police Officer) | N/A | N/A | \$ <u>20,000.00</u> |

*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.

OPTIONAL MATERIALS – TIRE RUBBER MODIFIED ASPHALT EMULSION

| <u>ITEM NO.</u> | <u>DESCRIPTION</u> | <u>UNIT</u> | <u>UNIT PRICE</u> |
|--|-------------------------|-------------|-------------------|
| Residential Slurry Seal Type II | | | |
| 1. | CQS-TR | Ton | \$ <u>450</u> |
| 2. | Dry Aggregate (type II) | Ton | \$ <u>92.50</u> |
| Arterial Slurry Seal Type II | | | |
| 3. | LMCQS-TR MS | Ton | \$ <u>450</u> |
| 4. | Dry Aggregate (type II) | Ton | \$ <u>106.16</u> |

Bids shall include all charges for all materials, labor, construction equipment, incidental expenses, general conditions, supervision, taxes, insurance, overhead and profit.

ALTERNATE WORK - PARKING LOT RESURFACING

In bidding this work, Bidder should consider the following information:

- i. The material will be the same as requested in the specification, Type II Slurry Seal PMQS-h / PMCQS-1h or CSS-1h.
- ii. CONTRACTOR will provide any and all Traffic control needed. CITY will provide all sweeping and cleaning needed in the parking lots and will be responsible for having all the vehicles removed. CONTRACTOR shall provide for all labor, equipment, materials, bond, insurance and overhead in his unit price bid for this work.

- 1. Unit Price to slurry seal Parking Lot (PMCQS-1h) \$ 2.50 per sq. yd. complete in place
- 2. Unit Price to slurry seal Parking Lot (CSS-1h) \$ 2.75 per sq. yd. complete in place

MEASUREMENT:

Additional quantities and materials for this work will be paid for at the contract price per unit of measurement for each of the following pay items as indicated in the bid.

| | |
|-------------------------------|------------------|
| Emulsified asphalt for slurry | Ton (undiluted) |
| Aggregate for slurry | Ton |
| Striping | Lineal Foot (LF) |

EXHIBIT D1
BID BOND

ARIZONA STATUTORY BID BOND PURSUANT TO
TITLES 28,34 AND 41.
OF THE ARIZONA REVISED STATUTES
(Penalty of this bond must not be less than 10% of the bid 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 offices in _____,
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, held and firmly bound unto
_____, (hereinafter "Obligee"), as Obligee, in the amount of Ten Percent (10%) of the
amount of the bid of Principal, submitted by Principal to the Obligee for the work described below, for the
payment of which sum, the Principal and the Surety bind themselves, and their heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has submitted a bid for:
Slurry Seal Materials & Installation; Bid No. ST5-745-3500

NOW, THEREFORE, if the Obligee accepts the proposal of the Principal and the Principal shall enter into
a contract with the Obligee in accordance with the terms of the proposal and give the bonds and certificates of
insurance as specified in the Standard Specifications with good and sufficient surety for the faithful performance of
the contract and for the prompt payment of labor and materials furnished in the prosecution of the contract, or in
the event of the failure of the Principal to enter into the contract and give the bonds and certificates of insurance, if
the Principal pays to the Obligee the difference not to exceed the penalty of the bond between the amount
specified in the proposal and such larger amount for which the Obligee may in good faith contract with another
party to perform the work covered by the proposal then this obligation is void. Otherwise to remain in full force and
effect provided, however, that this bond is executed pursuant to the provisions of Section 34-201, Arizona Revised
Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of that section to the
extent as if it were copied at length herein.

Witness our hands this _____ day of _____, 20_____.

Principal

SEAL SURETY

By: _____
Attorney-in-Fact

By: _____
SEAL

Its: _____

AGENCY OF RECORD

AGENCY ADDRESS

**EXHIBIT D2
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 _____, _____, for **Slurry Seal Materials & Installation; Bid No. ST5-745-3500**, 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 _____, 2015.

PRINCIPAL SEAL

AGENT OF RECORD

BY _____

SURETY SEAL

AGENT ADDRESS

EXHIBIT D3
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 _____, 20____, for **Slurry Seal Materials & Installation; Bid No. ST5-745-3500**, 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 _____, 20____.

AGENT OF RECORD

AGENT ADDRESS

PRINCIPAL SEAL

BY _____

SURETY SEAL

EXHIBIT E



**2014 / 2015 RESIDENTIAL
SLURRY SEAL**

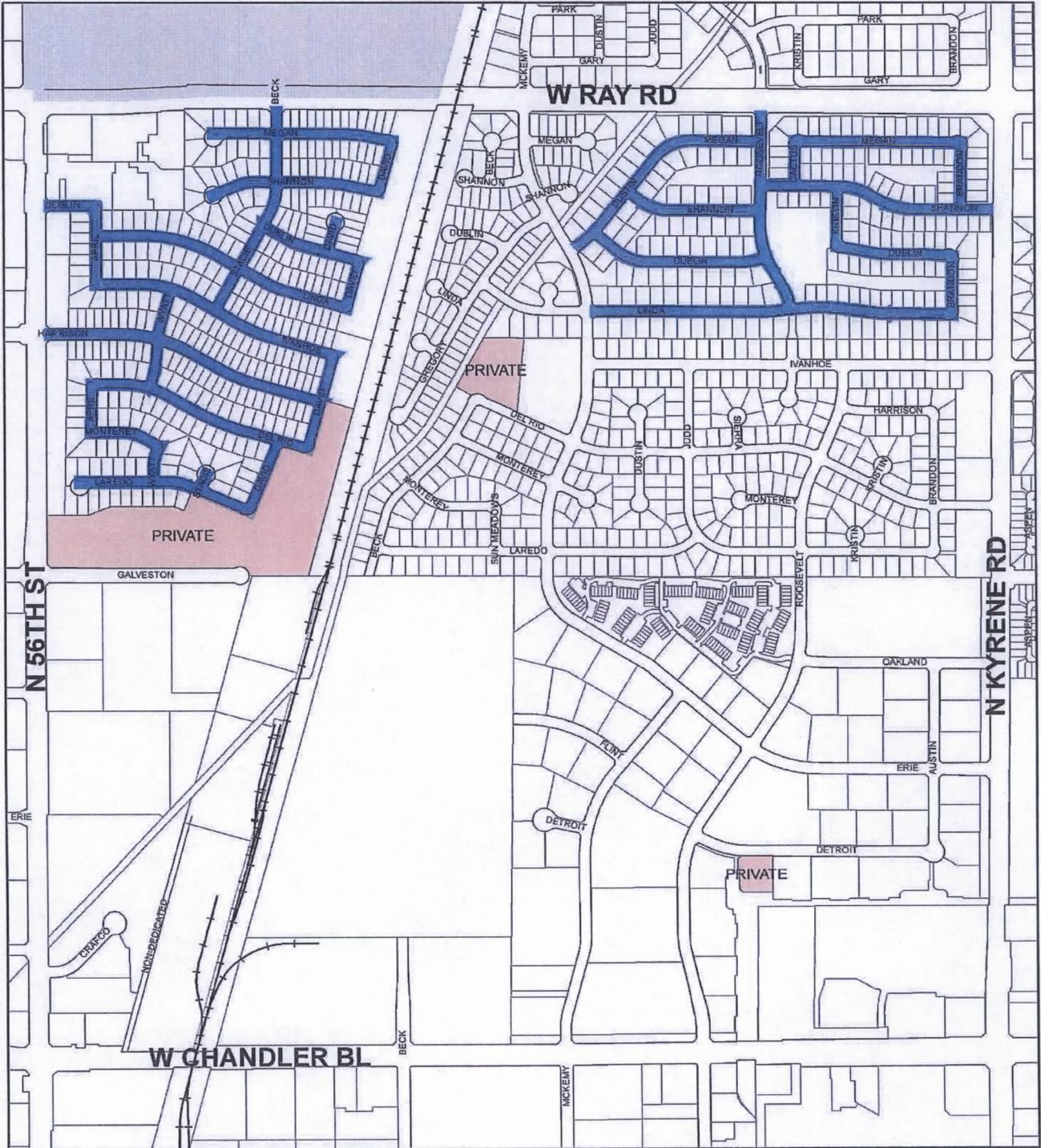
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|----|----|----|-----------|----|----|----|----|-----------|----|----|----|----|----|---------------|----|----|----|----|----|--------|----|----|----|----|----|-------------|----|----|----|----|----|----|----------|----|----|----|----|----|------------|----|----|----|----|----|----|----|----|----|----|----|----|----------------|----|----|----|----|----|----|----|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------|----|----|----|----|----|----|----|----|----|----|----|----|----------|-----|-----|-----|-----|---------|----------------|-----------|----------------|------------|------------|-----------|------------|------------|--------------|
| 01 | 02 | 03 | 04 | ELLIOT RD | 05 | 06 | 07 | 08 | WARNER RD | 09 | 10 | 11 | 12 | 13 | MCCLINTOCK DR | 14 | 15 | 16 | 17 | 18 | RAY RD | 19 | 20 | 21 | 22 | 23 | CHANDLER BL | 24 | 25 | 26 | 27 | 28 | 29 | PECOS RD | 30 | 31 | 32 | 33 | 34 | GERMANN RD | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | QUEEN CREEK RD | 47 | 48 | 49 | 50 | 51 | 52 | 53 | OCOTILLO RD | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | CHANDLER HEIGHTS RD | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | RIGGS RD | SL1 | SL2 | SL3 | SL4 | HUNT HW | S OLD PRICE RD | DOBSON RD | ALMA SCHOOL RD | ARIZONA AV | MCQUEEN RD | COOPER RD | GILBERT RD | LINDSAY RD | VAL VISTA DR |
|----|----|----|----|-----------|----|----|----|----|-----------|----|----|----|----|----|---------------|----|----|----|----|----|--------|----|----|----|----|----|-------------|----|----|----|----|----|----|----------|----|----|----|----|----|------------|----|----|----|----|----|----|----|----|----|----|----|----|----------------|----|----|----|----|----|----|----|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---------------------|----|----|----|----|----|----|----|----|----|----|----|----|----------|-----|-----|-----|-----|---------|----------------|-----------|----------------|------------|------------|-----------|------------|------------|--------------|



**2014/2015
RESIDENTIAL SLURRY SEAL**



2014 / 2015 RESIDENTIAL SLURRY SEAL

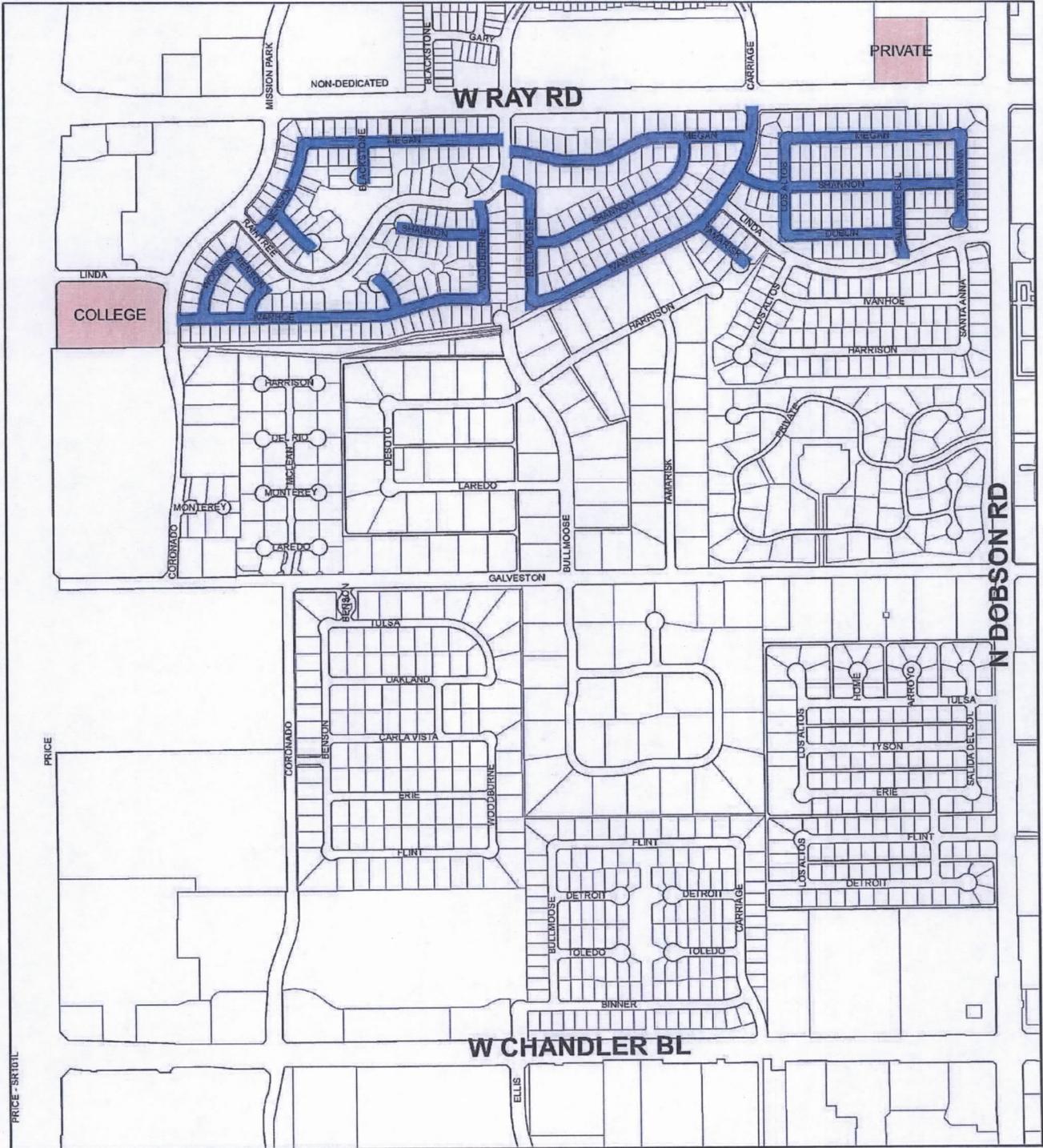


 SCHOOLS
 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 20



2014 / 2015 RESIDENTIAL SLURRY SEAL

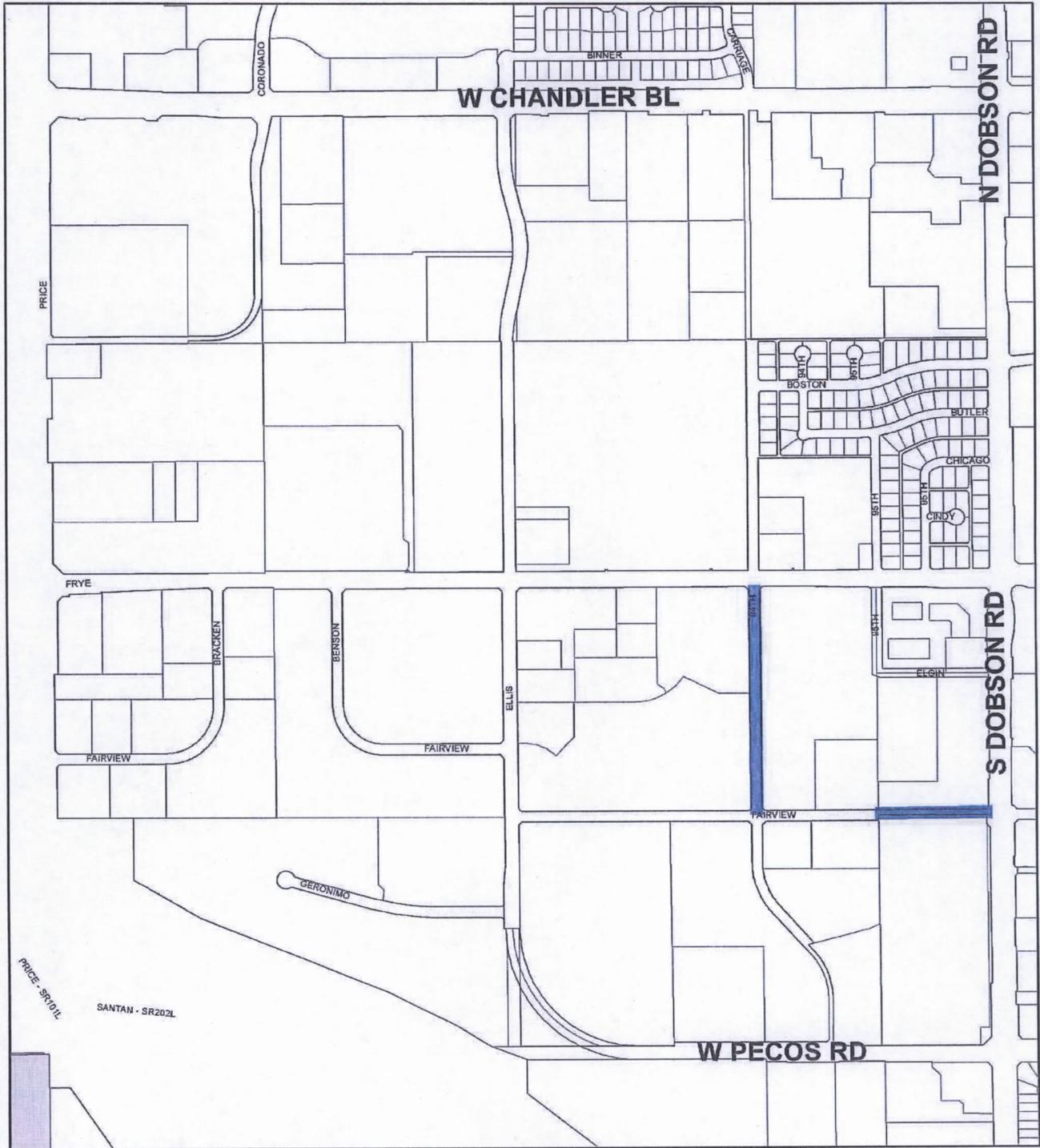


 SCHOOLS
 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 24



2014 / 2015 RESIDENTIAL SLURRY SEAL



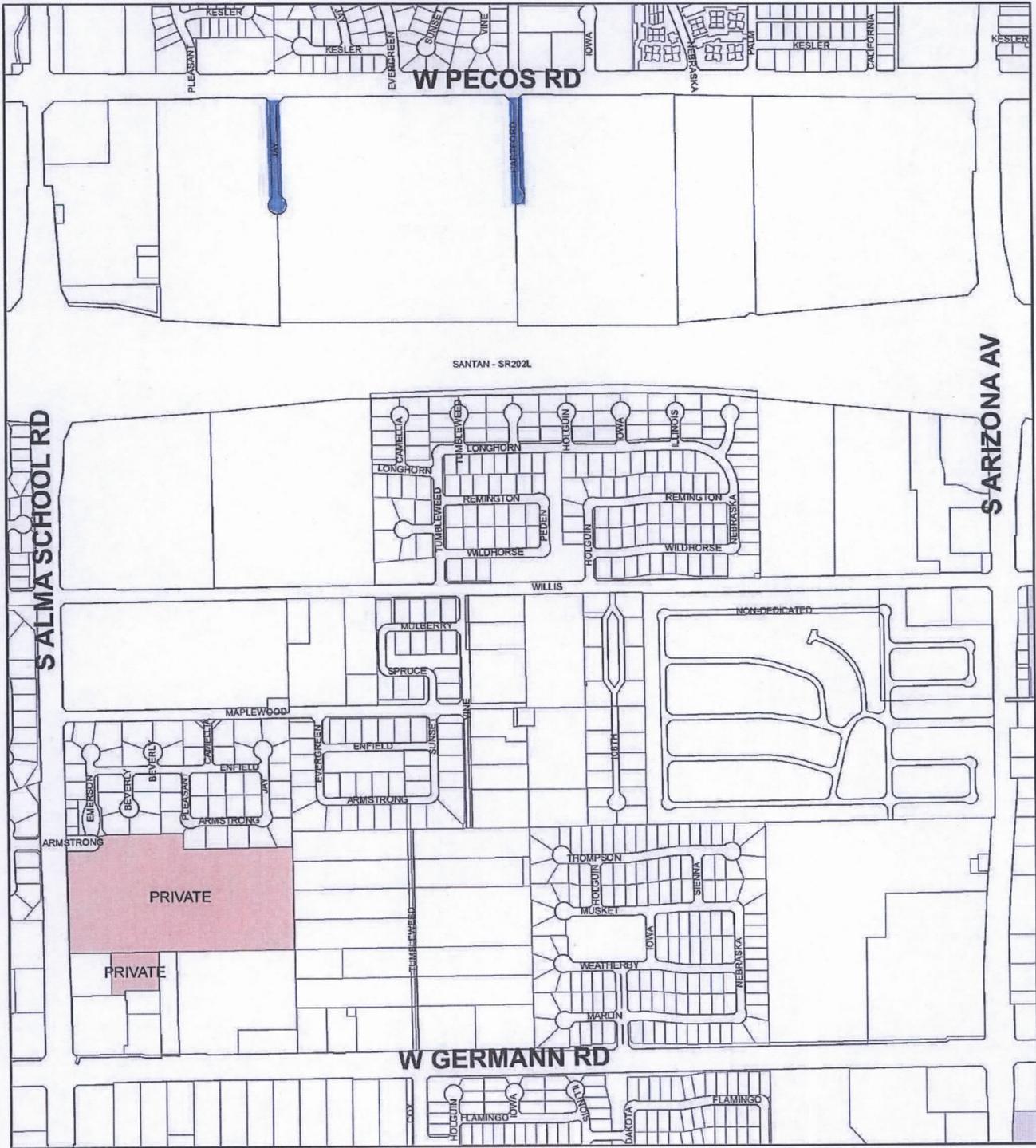
 SCHOOLS

 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 35



2014 / 2015 RESIDENTIAL SLURRY SEAL



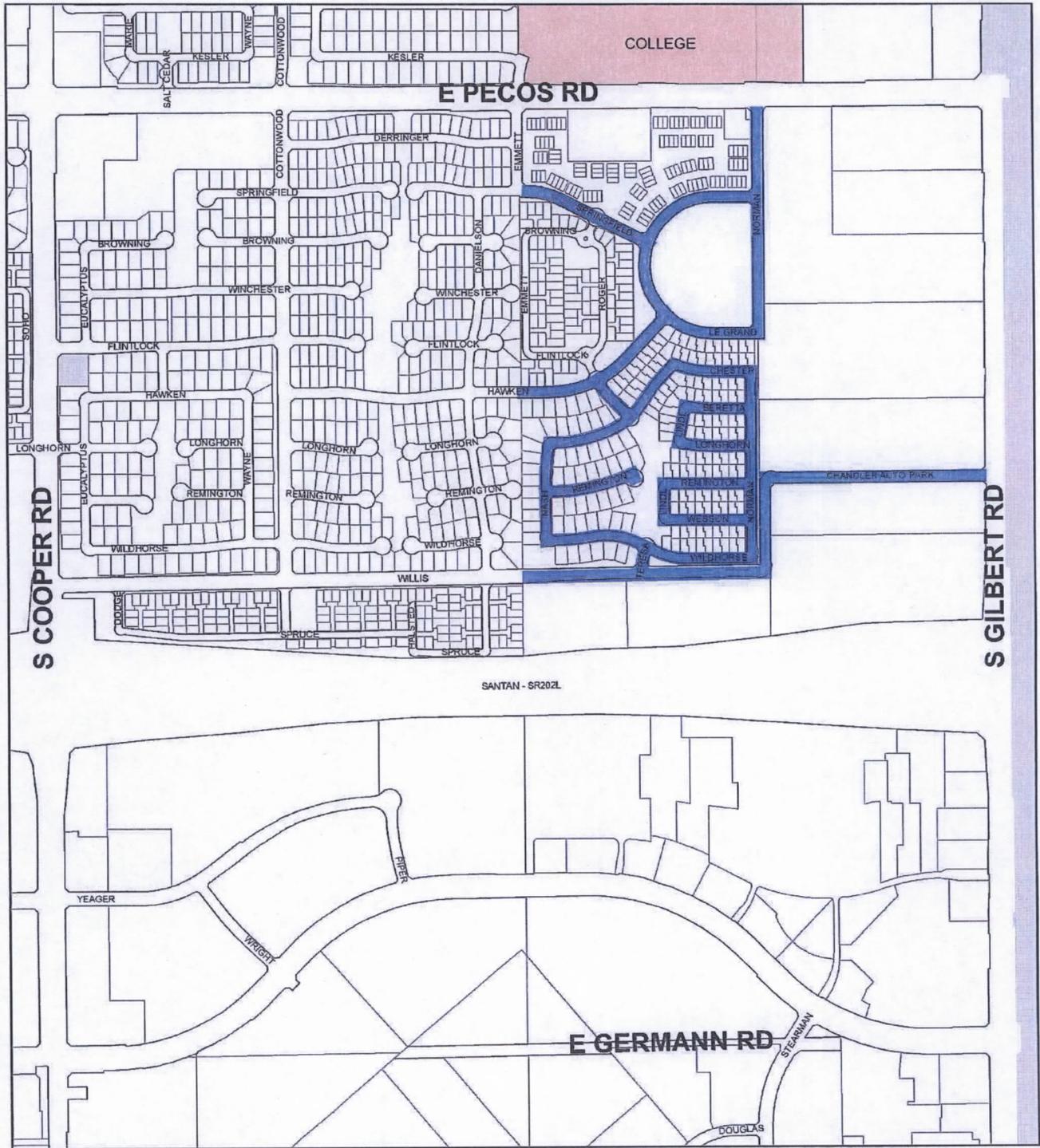
- SCHOOLS
- 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 43

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Streets\STREETS PAVEMENT HISTORY\2014-2015 PAVEMENT MAINTENANCE\2014-2015 SEAL COAT\2014-2015 BASE MAP.mxd 1/14/2015 SALLYB



2014 / 2015 RESIDENTIAL SLURRY SEAL



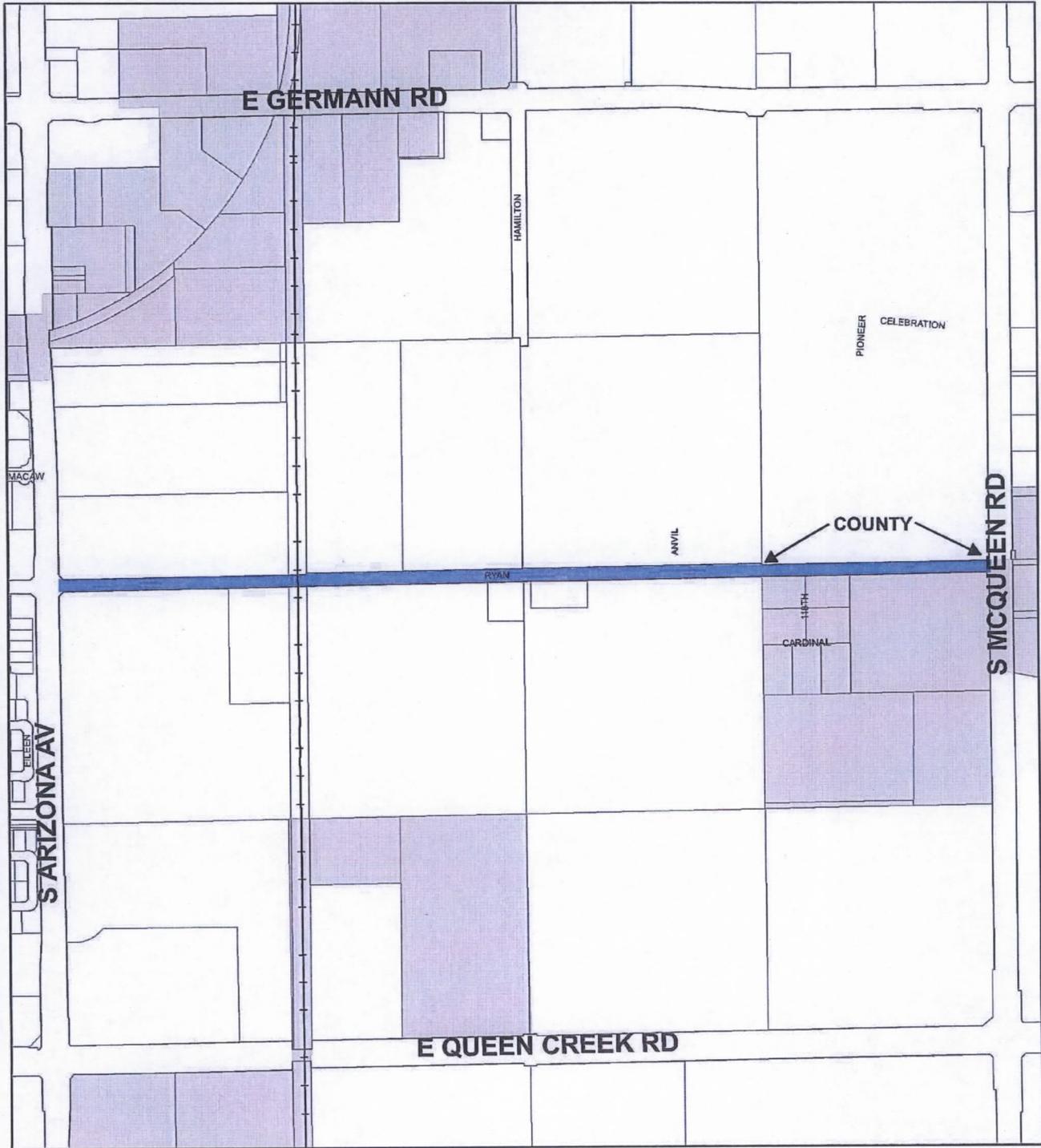
SANTAN - SR20ZL

- SCHOOLS
- 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 46



2014 / 2015 RESIDENTIAL SLURRY SEAL



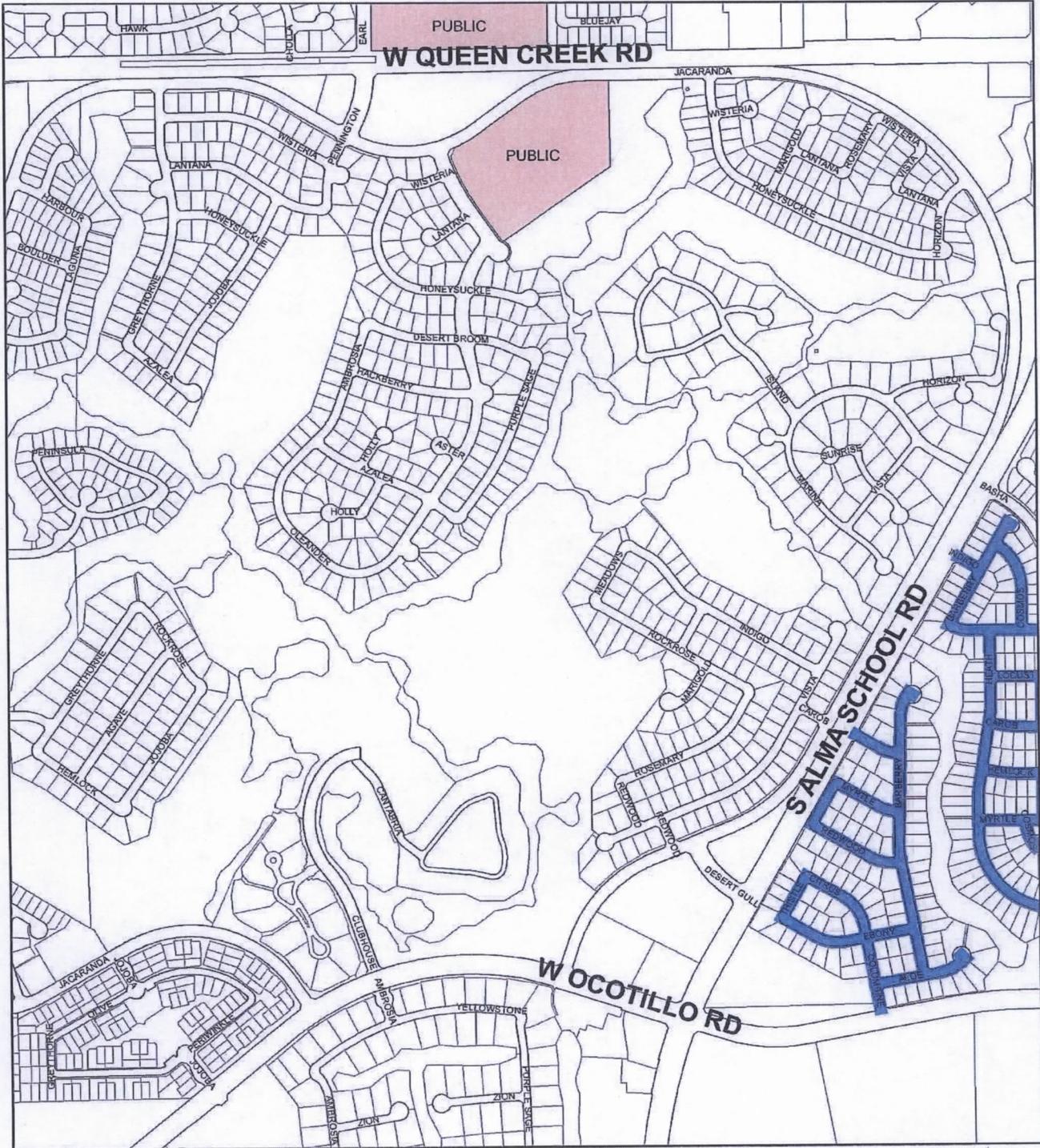
 SCHOOLS

 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 50



2014 / 2015 RESIDENTIAL SLURRY SEAL



SCHOOLS

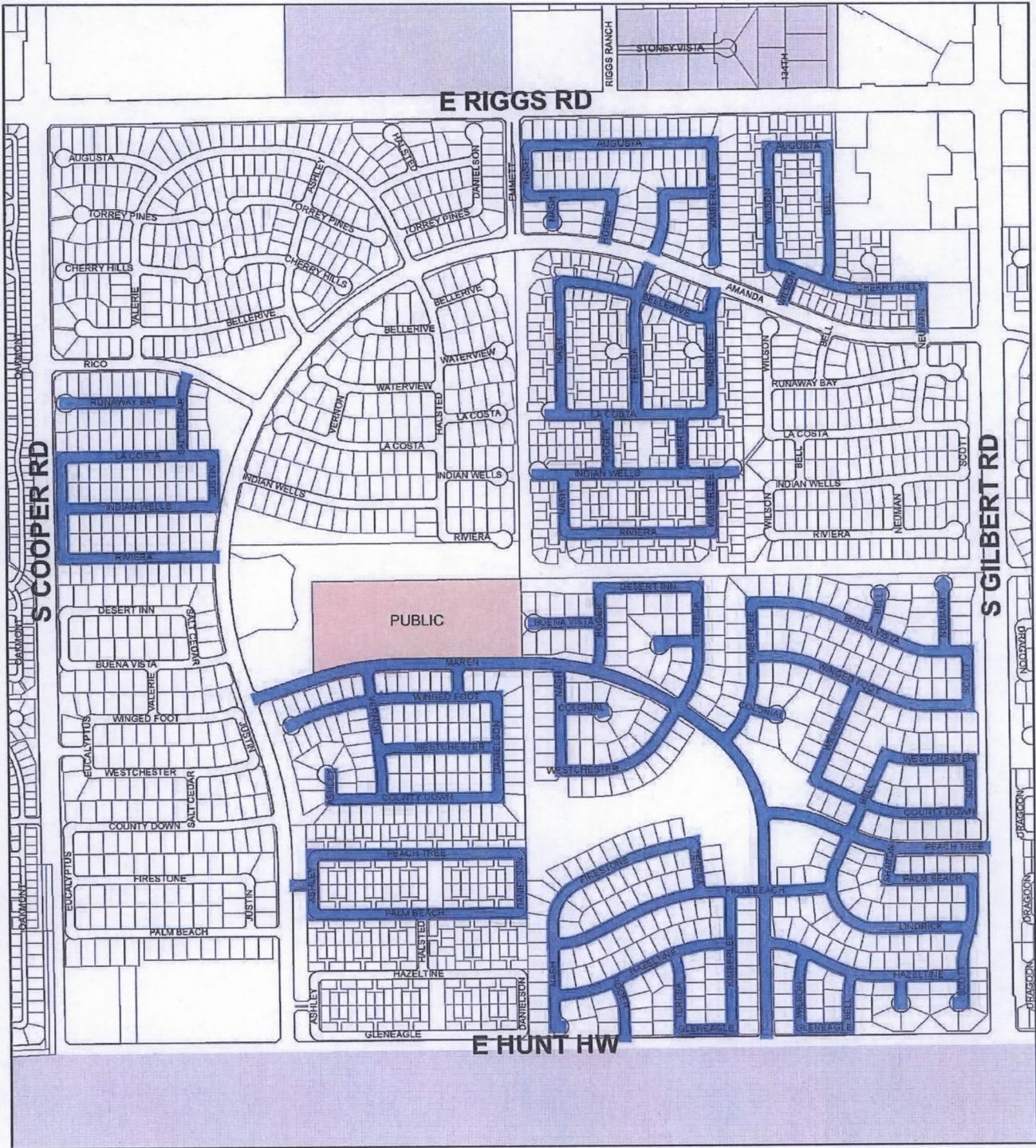


2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 55



2014 / 2015 RESIDENTIAL SLURRY SEAL



 SCHOOLS
 2014/2015 RESIDENTIAL SLURRY SEAL

FMA PAGE 78

F:\ENGINEER\GENSERV\ ArcMap_Shared\Map Requests\Streets\STREETS PAVEMENT HISTORY\2014-2015 PAVEMENT MAINTENANCE\2014-2015 SEAL COAT\2014-2015 BASE MAP.mxd 1/14/2015 SALLYB



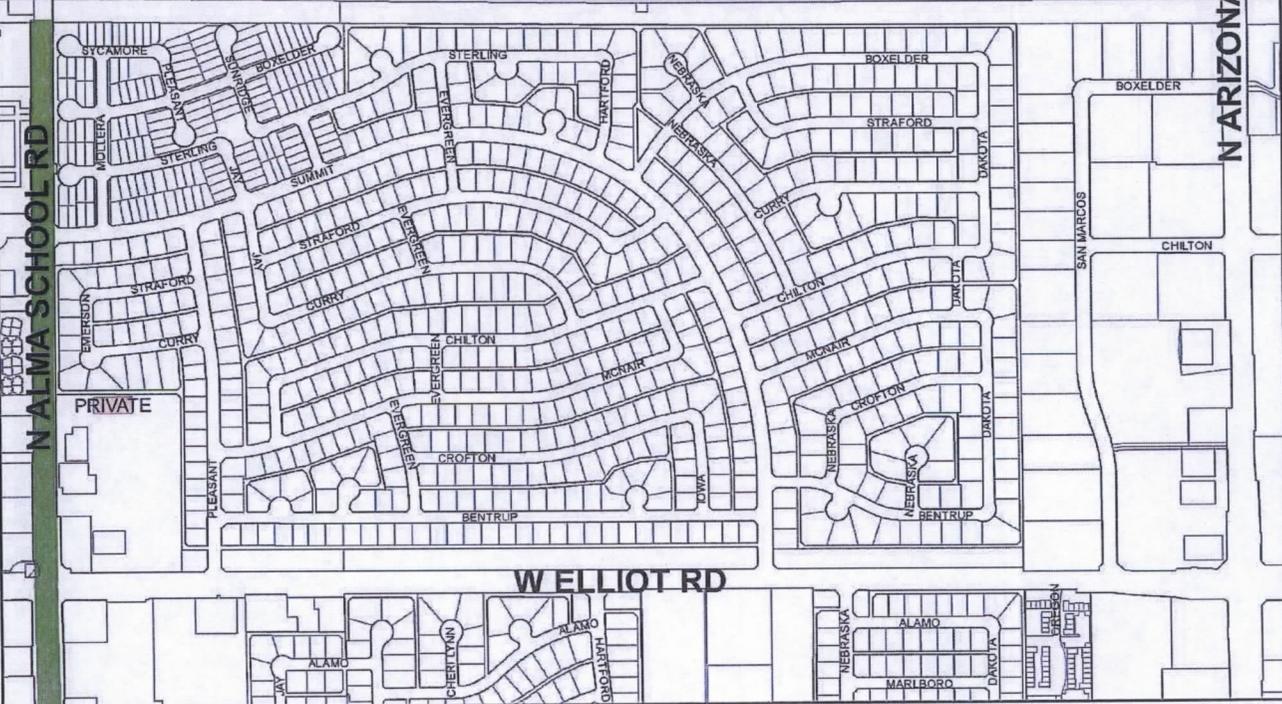
2014 / 2015 ARTERIAL SLURRY SEAL



SALMA SCHOOL RD

MESA

N ARIZONA AV



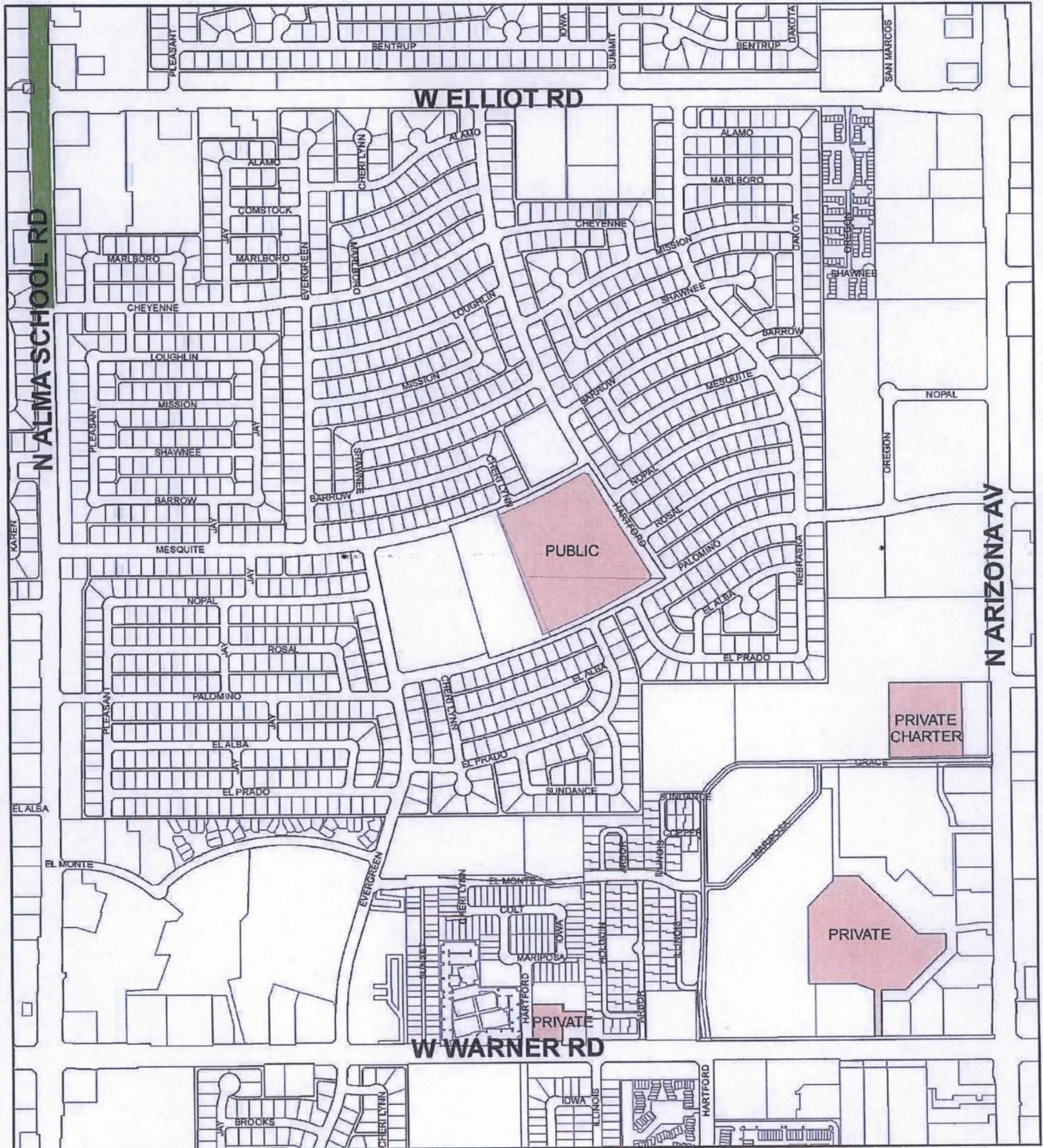
 SCHOOLS

 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 03



2014 / 2015 ARTERIAL SLURRY SEAL



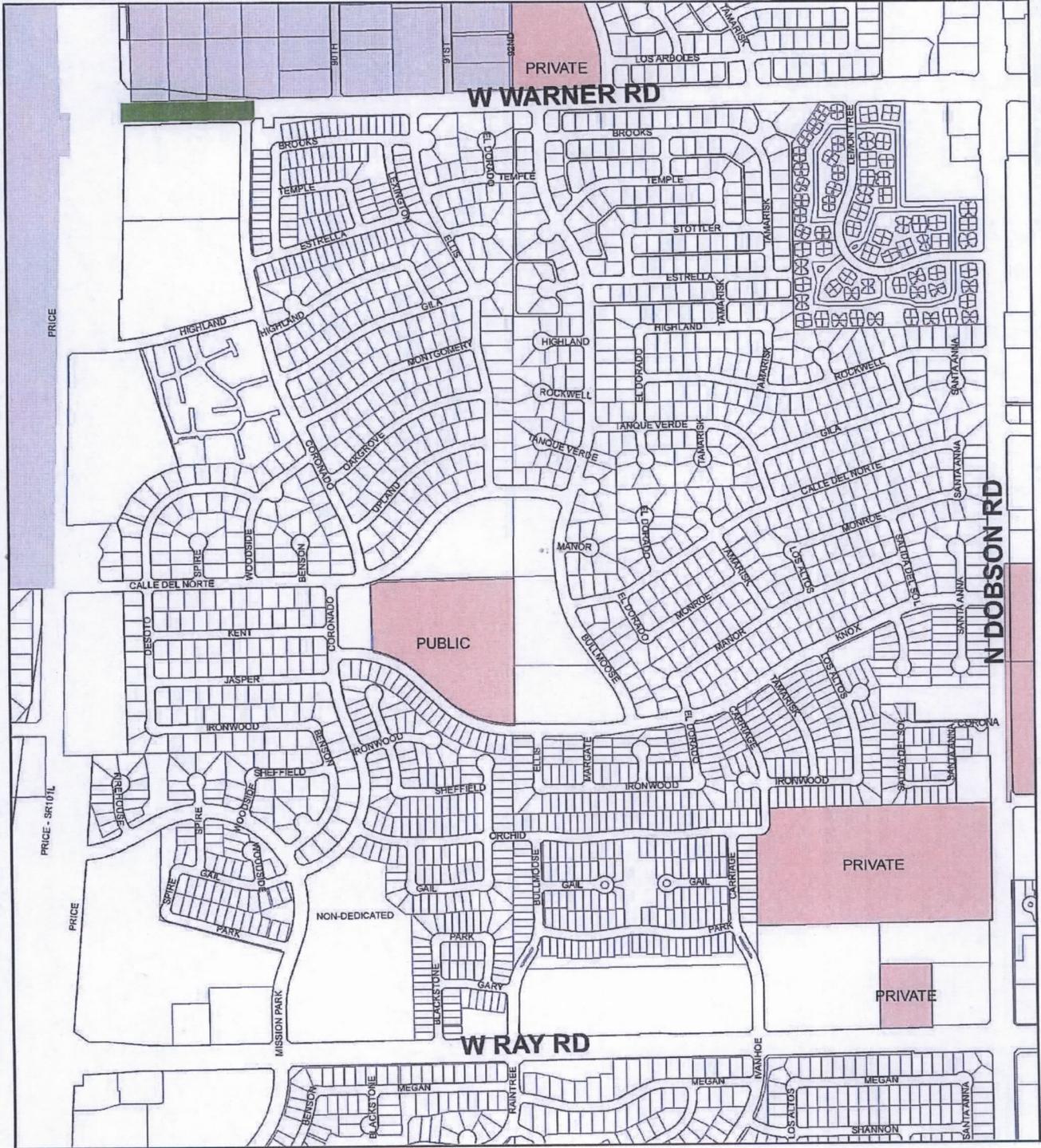
SCHOOLS
 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 07

F:\ENGINEER\GENSERV_ArcMap_Shared\Map Requests\Streets\STREETS PAVEMENT HISTORY\2014-2015 PAVEMENT MAINTENANCE\2014-2015 SEAL COAT\2014-2015 BASE MAP.mxd 1/14/2015 SALLYB



2014 / 2015 ARTERIAL SLURRY SEAL

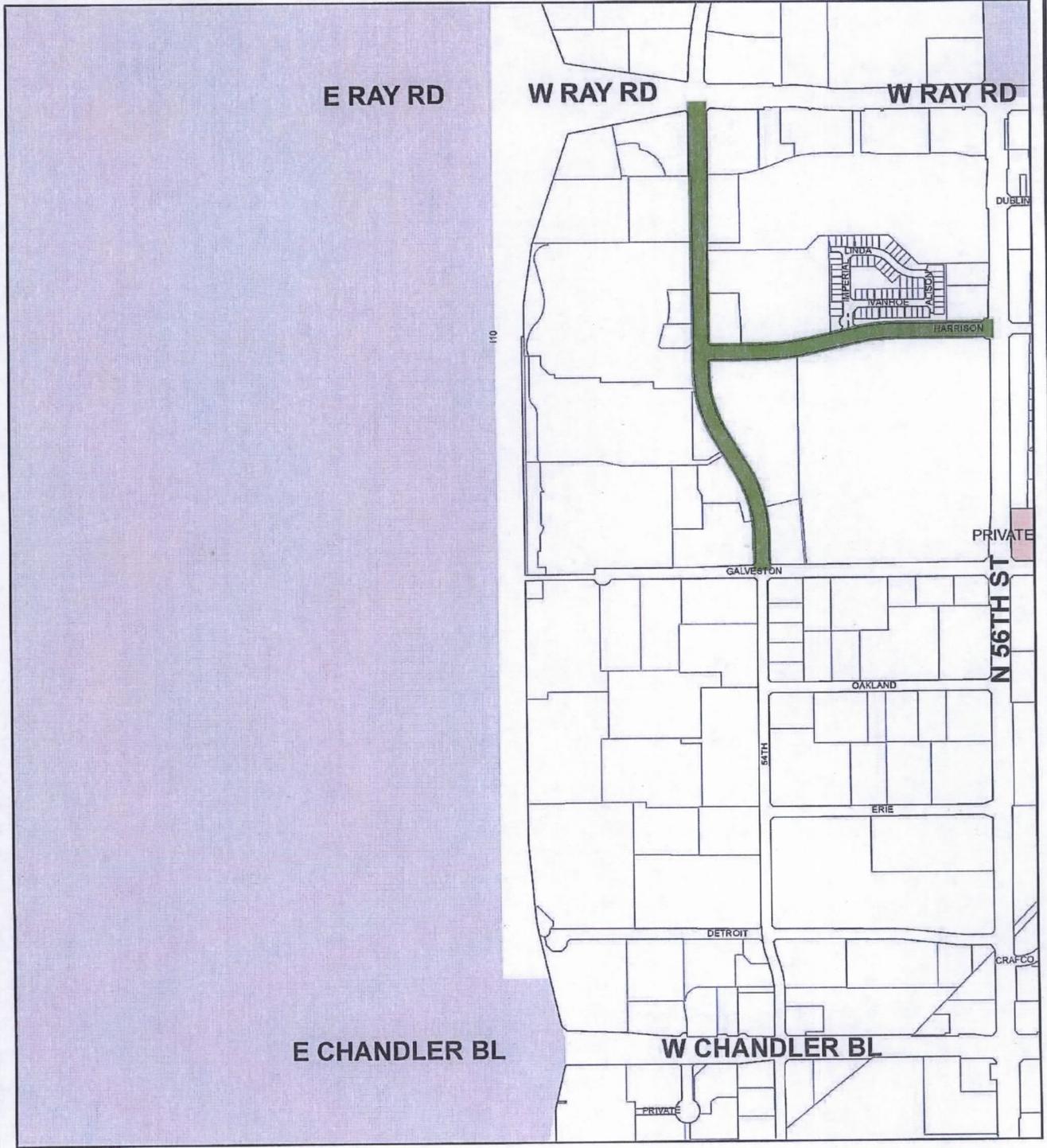


- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 14



2014 / 2015 ARTERIAL SLURRY SEAL

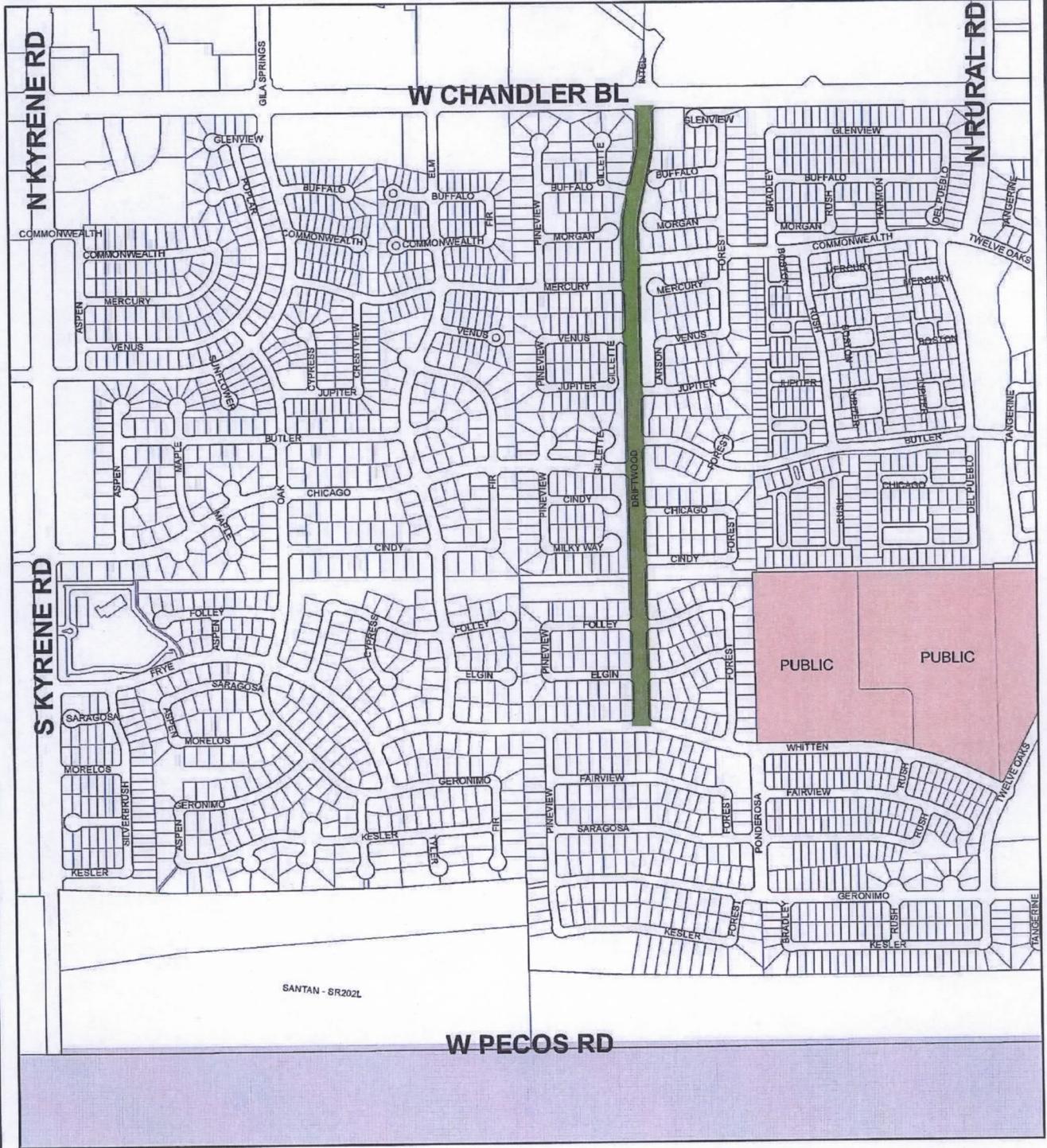


- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 19



2014 / 2015 ARTERIAL SLURRY SEAL

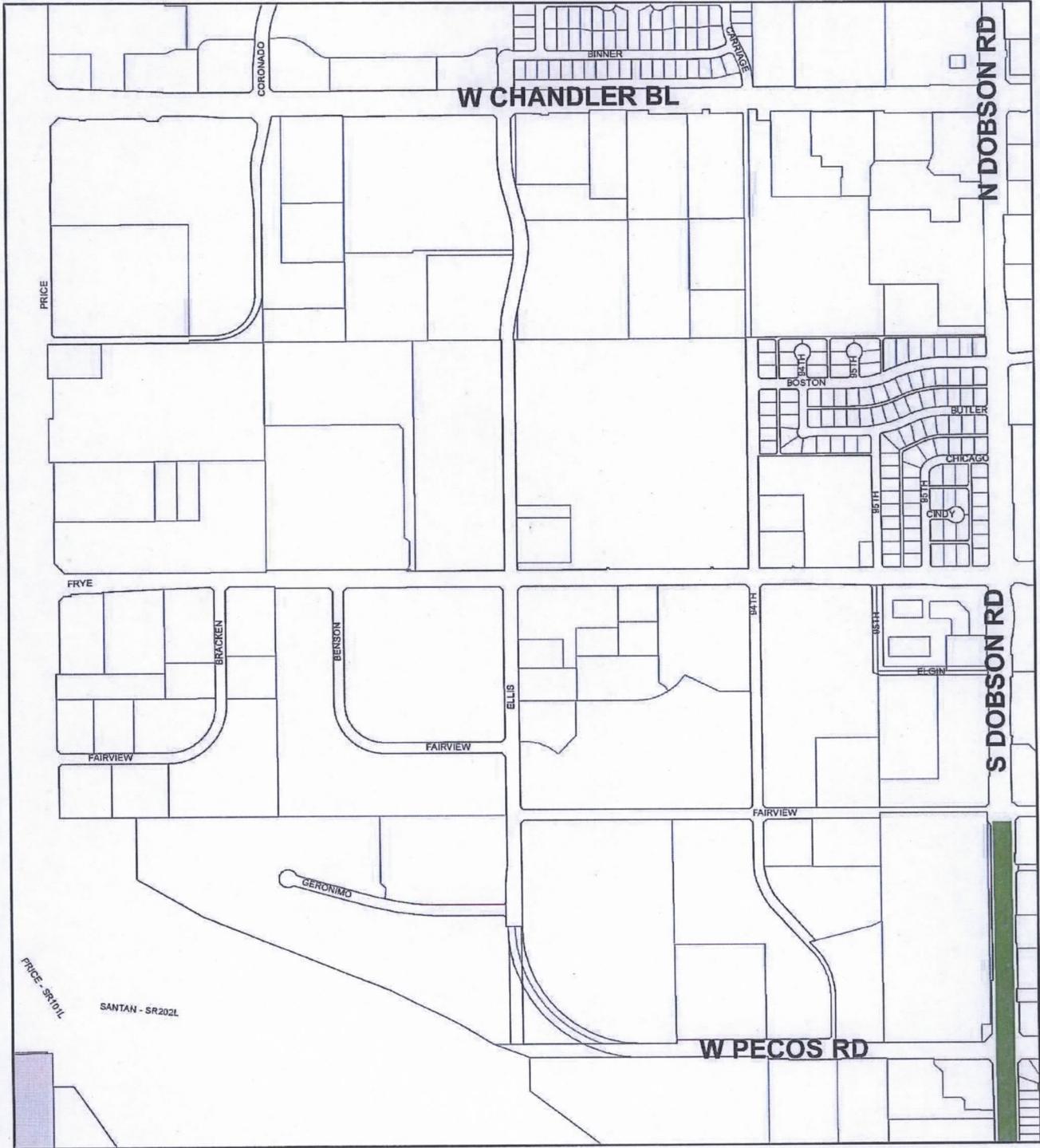


- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 32



2014 / 2015 ARTERIAL SLURRY SEAL

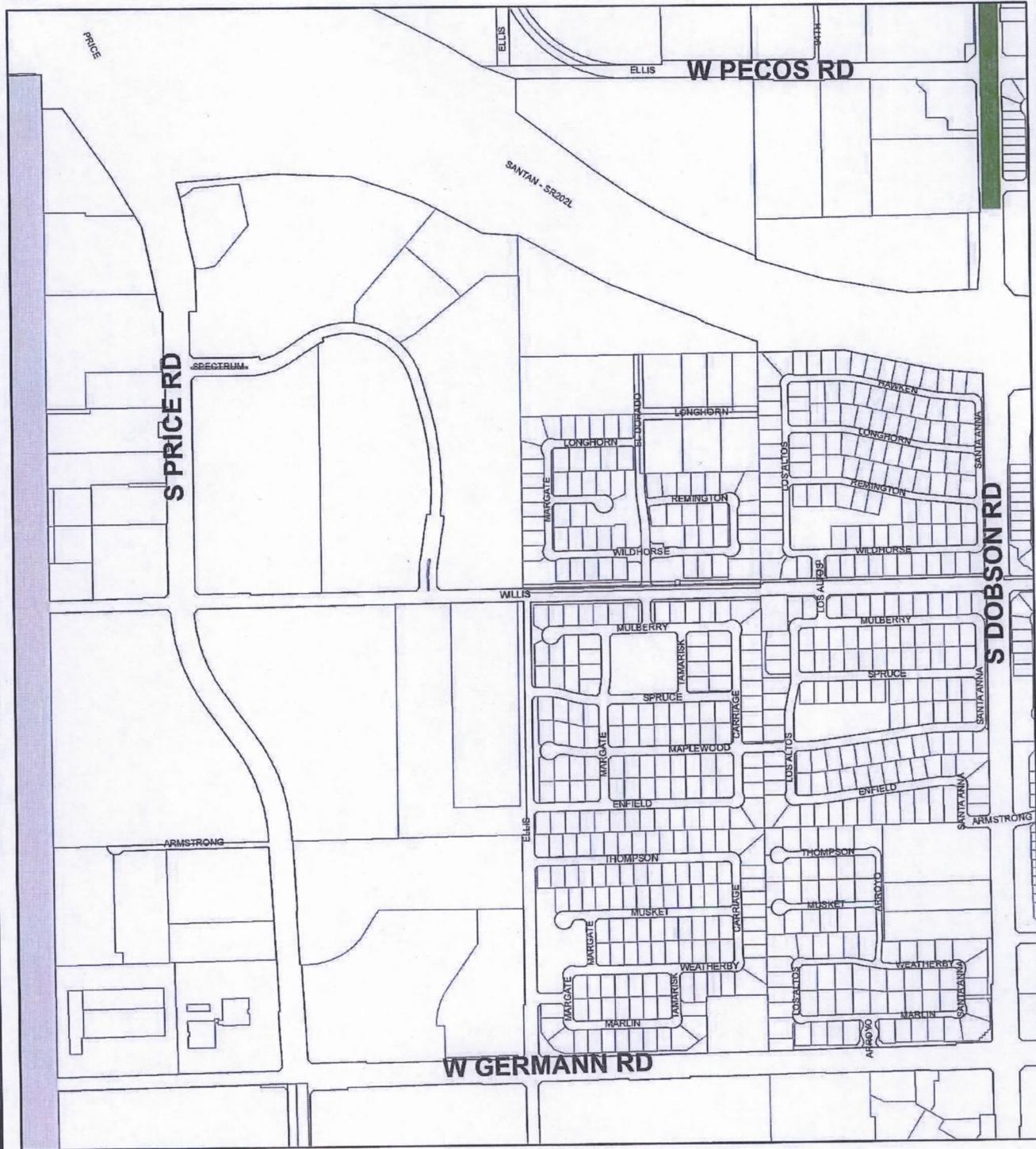


- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 35



2014 / 2015 ARTERIAL SLURRY SEAL



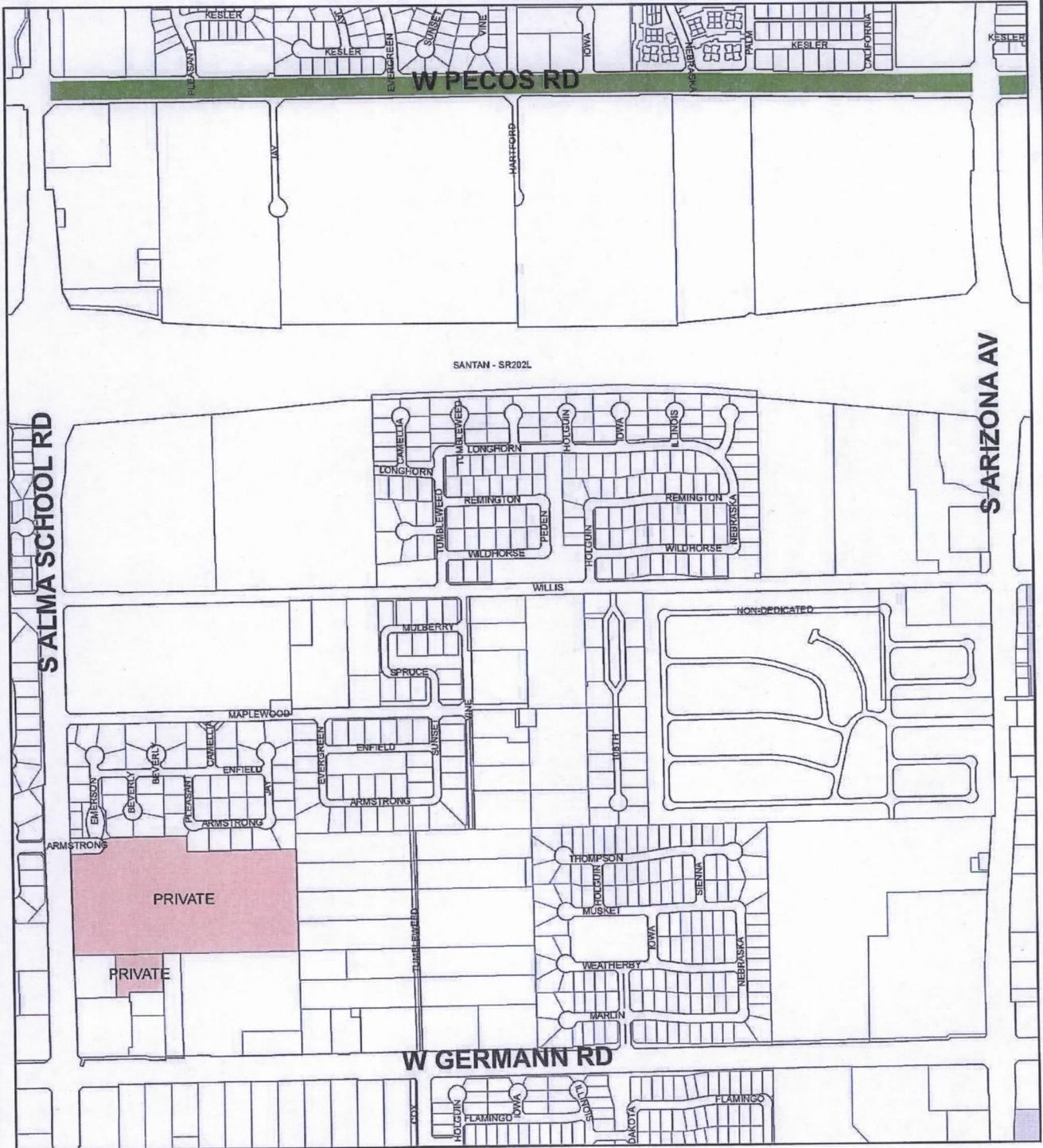
 SCHOOLS

 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 41



2014 / 2015 ARTERIAL SLURRY SEAL



- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 43



2014 / 2015 ARTERIAL SLURRY SEAL

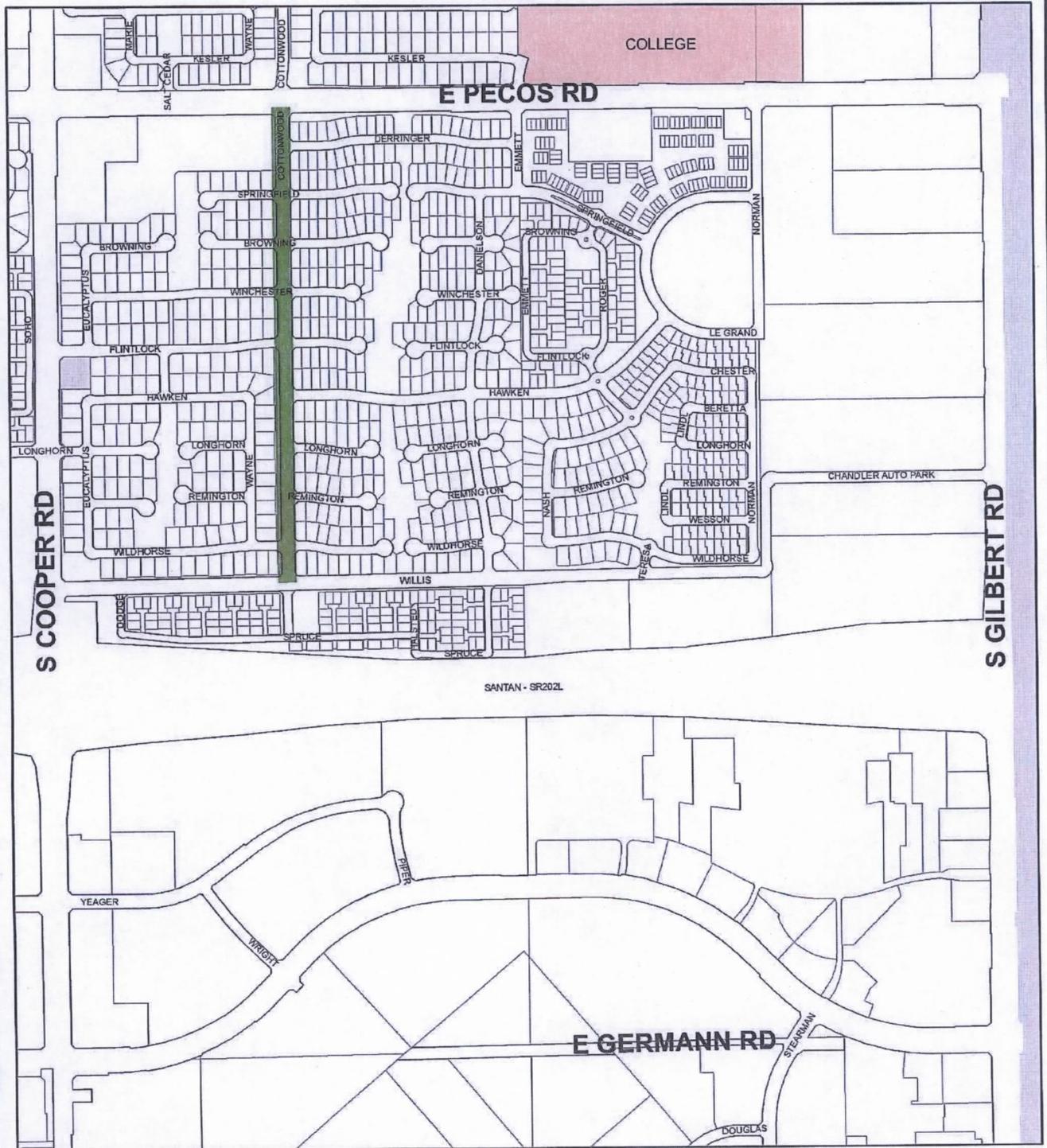


- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 44



2014 / 2015 ARTERIAL SLURRY SEAL



- SCHOOLS
- 2014/2015 ARTERIAL SLURRY SEAL

FMA PAGE 46