

**SERIAL 11067 S ASPHALT SERVICE AND REPAIR**

**DATE OF LAST REVISION: September 25, 2014 CONTRACT END DATE: September 30, 2017**

**CONTRACT PERIOD THROUGH SEPTEMBER 30, 2014-2017**

TO: All Departments  
FROM: Department of Materials Management  
SUBJECT: Contract for **ASPHALT SERVICE AND REPAIR**

Attached to this letter is published an effective purchasing contract for products and/or services to be supplied to Maricopa County activities as awarded by Maricopa County on **September 28, 2011**

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All purchases of products and/or services listed on the attached pages of this letter are to be obtained from the vendor holding the contract. Individuals are responsible to the vendor for purchases made outside of contracts. The contract period is indicated above.

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Wes Baysinger, Chief Procurement Officer  
Materials Management

**NP/jl**  
Attach

Copy to: Materials Management  
**Larry Hall, MCDOT**

**CACTUS TRANSPORT, INC. , 8211 W. SHERMAN ST., TOLLESON, AZ 85353**

COMPANY NAME: Cactus Asphalt a division of Cactus Transport, Inc  
 DOING BUSINESS AS (DBA) NAME: Cactus Asphalt  
 MAILING ADDRESS: 8211 W. Sherman St, Tolleson AZ 85353  
 REMIT TO ADDRESS: \_\_\_\_\_  
 TELEPHONE NUMBER: 623-907-2800  
 FACSIMILE NUMBER: 623-907-2900  
 WEB SITE: www.cactusasphalt.com  
 REPRESENTATIVE NAME: Jeff Martinez James Gallegos  
 REPRESENTATIVE TELEPHONE NUMBER: 623-907-2800  
 REPRESENTATIVE E-MAIL: [jmm@cactusasphalt.com](mailto:jmm@cactusasphalt.com) jg@cactusasphalt.com

|  | <u>YES</u>                          | <u>NO</u>                           | <u>REBATE</u> |
|--|-------------------------------------|-------------------------------------|---------------|
| WILL ALLOW OTHER GOVERNMENTAL ENTITIES TO PURCHASE FROM THIS CONTRACT: | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |               |
| WILL ACCEPT PROCUREMENT CARD FOR PAYMENT:                              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |               |

NET 30 DAYS

| Title  |          | Unit Price | Qty | UofM        | Total Price |
|--|----------|------------|-----|-------------|-------------|
| Crack Seal (1-20,000 sy)                     | 4th call | \$0.45     | 1   | square yard | \$0.45      |
| Crack Seal (20,001 - 40,000 sy)              | 5th call | \$0.42     | 1   | square yard | \$0.42      |
| Crack Seal (40,001 - 80,000 sy)              | 5th call | \$0.41     | 1   | square yard | \$0.41      |
| Crack Seal (80,001 - 140,000 sy)             | 5th call | \$0.42     | 1   | square yard | \$0.42      |
| Crack Seal (140,001 - 200,000 sy)            | 5th call | \$0.41     | 1   | square yard | \$0.41      |
| Slurry (1-20,000 sy)                         | 2nd call | \$3.19     | 1   | square yard | \$3.19      |
| Slurry (20,001 - 40,000 sy)                  | 2nd call | \$2.07     | 1   | square yard | \$2.07      |
| Slurry (40,001 - 80,000 sy)                  | 2nd call | \$1.97     | 1   | square yard | \$1.97      |
| Slurry (80,001 - 140,000 sy)                 | 2nd call | \$1.87     | 1   | square yard | \$1.87      |
| Slurry (140,001 - 200,000 sy)                | 2nd call | \$1.78     | 1   | square yard | \$1.78      |
| Asphalt Milling (1-20,000 sy)                | 3rd call | \$1.95     | 1   | square yard | \$1.95      |
| Asphalt Milling (20,001 - 40,000 sy)         | 3rd call | \$1.87     | 1   | square yard | \$1.87      |
| Asphalt Milling (40,001 - 80,000 sy)         | 3rd call | \$1.82     | 1   | square yard | \$1.82      |
| Asphalt Milling (80,001 - 140,000 sy)        | 3rd call | \$1.79     | 1   | square yard | \$1.79      |
| Asphalt Milling (140,001 - 200,000 sy)       | 3rd call | \$1.78     | 1   | square yard | \$1.78      |
| Asphalt Concrete Paving (1-20,000 sy)        | 3rd call | \$14.02    | 1   | square yard | \$14.02     |
| Asphalt Concrete Paving (20,001 - 40,000 sy) | 3rd call | \$13.74    | 1   | square yard | \$13.74     |
| Asphalt Concrete Paving (40,001 - 80,000 sy) | 3rd call | \$13.69    | 1   | square yard | \$13.69     |

**CACTUS TRANSPORT, INC., 8211 W. SHERMAN ST., TOLLESON, AZ 85353**

|   |          |          |   |             |          |
|---|----------|----------|---|-------------|----------|
| Asphalt Concrete Paving (80,001 - 140,000 sy)               | 3rd call | \$13.66  | 1 | square yard | \$13.66  |
| Asphalt Concrete Paving (140,001 - 200,000 sy)              | 3rd call | \$13.66  | 1 | square yard | \$13.66  |
| Asphalt Rubber Overlay (1-2,000 sy lane mile)               | 3rd call | \$19.53  | 1 | square yard | \$19.53  |
| Asphalt Rubber Overlay (2,001 - 4,000 sy lane mile)         | 3rd call | \$14.55  | 1 | square yard | \$14.55  |
| Asphalt Rubber Overlay (4,001 - 6,000 sy lane mile)         | 2nd call | \$13.11  | 1 | square yard | \$13.11  |
| Asphalt Rubber Overlay (6,001 - 8,213 sy lane mile)         | 2nd call | \$12.14  | 1 | square yard | \$12.14  |
| Asphalt Chip Seal (1 - 20,000 sy)                           | 2nd call | \$3.37   | 1 | square yard | \$3.37   |
| Asphalt Chip Seal (20,001 - 40,000 sy)                      | 1st call | \$2.95   | 1 | square yard | \$2.95   |
| Asphalt Chip Seal (40,001 - 80,000 sy)                      | 2nd call | \$2.87   | 1 | square yard | \$2.87   |
| Asphalt Chip Seal (80,001 - 140,000 sy)                     | 2nd call | \$2.81   | 1 | square yard | \$2.81   |
| Asphalt Chip Seal (140,001 - 200,000 sy)                    | 2nd call | \$2.81   | 1 | square yard | \$2.81   |
| Traffic Control Crew  |          | \$245.00 | 1 | hour        | \$245.00 |
| Crew Foreman (min 4 hrs)                                    |          | \$117.09 | 1 | hour        | \$117.09 |
| Standy By - Crew Foreman                                    |          | \$76.11  | 1 | hour        | \$76.11  |
| Crew (6 person crew, min 4 hrs)                             |          | \$175.00 | 1 | hour        | \$175.00 |
| Standy By - Crew  |          | \$175.00 | 1 | hour        | \$175.00 |
| Paver (min 4 hrs)   |          | \$732.00 | 1 | hour        | \$732.00 |
| Roller (min 4 hrs)  |          | \$146.00 | 1 | hour        | \$146.00 |
| Crack Seal for Patching Cracks 1-1/2 (inches) to 6 (inches) |          | \$1.06   | 1 | pound       | \$1.06   |

PRICING SHEET: NIGP CODE 91394

Vendor Number: 2011001132 0

Certificates of Insurance Required

Contract Period: To cover the period ending **September 30, 2014-2017.**

**CBJ CONTRACTORS, P.O. BOX 75157, PHOENIX, AZ 85087**

COMPANY NAME: CBJ Asphalt & Concrete Contractors, LLC  
 DOING BUSINESS AS (DBA) NAME: CBJ Contractors, LLC  
 MAILING ADDRESS: P.O. Box 75157 Phoenix, AZ 85087  
 REMIT TO ADDRESS: P.O. Box 75157 Phoenix, AZ 85087  
 TELEPHONE NUMBER: 623-434-5076  
 FACSIMILE NUMBER: 623-434-5078  
 WEB SITE: www.cbjcontractors.com  
 REPRESENTATIVE NAME: Corey Jones  
 REPRESENTATIVE TELEPHONE NUMBER: 623-330-4474  
 REPRESENTATIVE E-MAIL: cbjcont3@aol.com

|  | <u>YES</u>                          | <u>NO</u>                           | <u>REBATE</u> |
|--|-------------------------------------|-------------------------------------|---------------|
| WILL ALLOW OTHER GOVERNMENTAL ENTITIES TO PURCHASE FROM THIS CONTRACT: | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |               |
| WILL ACCEPT PROCUREMENT CARD FOR PAYMENT:                              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |               |

NET 30 DAYS

| Title   |          | Unit     | Qty | UofM        | Total    | Bidder Notes             |
|---|----------|----------|-----|-------------|----------|--------------------------|
| Crack Seal (1-20,000 sy)                                    | 2nd call | \$0.28   | 1   | square yard | \$0.28   |                          |
| Crack Seal (20,001 - 40,000 sy)                             | 2nd call | \$0.27   | 1   | square yard | \$0.27   |                          |
| Crack Seal (40,001 - 80,000 sy)                             | 2nd call | \$0.265  | 1   | square yard | \$0.265  |                          |
| Crack Seal (80,001 - 140,000 sy)                            | 2nd call | \$0.26   | 1   | square yard | \$0.26   |                          |
| Crack Seal (140,001 - 200,000 sy)                           | 2nd call | \$0.255  | 1   | square yard | \$0.255  |                          |
| Traffic Control Crew  | award    | \$250.00 | 1   | hour        | \$250.00 |                          |
| Crew Foreman (min 4 hrs)                                    | award    | \$49.00  | 1   | hour        | \$49.00  | crack seal services only |
| Standy By - Crew Foreman                                    | award    | \$49.00  | 1   | hour        | \$49.00  | crack seal services only |
| Crew (6 person crew, min 4 hrs)                             | award    | \$210.00 | 1   | hour        | \$210.00 | crack seal services only |
| Standy By - Crew  | award    | \$185.00 | 1   | hour        | \$185.00 | crack seal services only |
| Crack Seal for Patching Cracks 1-1/2 (inches) to 6 (inches) | award    | \$0.55   | 1   | pound       | \$0.55   |                          |

PRICING SHEET: NIGP CODE 91394

Vendor Number: 2011001141 0

Certificates of Insurance Required

Contract Period: To cover the period ending **September 30, 2014 2017.**

**CHOLLA PAVEMENT MAINTENANCE, INC., 5254 S WARNER DRIVE, APACHE JUNCTION, AZ 85120**

COMPANY NAME: Cholla Pavement Maintenance, Inc  
 DOING BUSINESS AS (DBA) NAME: \_\_\_\_\_  
 MAILING ADDRESS: 5254 S Warner Dr ., Apache Junction, AZ 85120-9580  
 REMIT TO ADDRESS: Same As Above  
 TELEPHONE NUMBER: 480-893-1044  
 FACSIMILE NUMBER: 480-893-1064  
 WEB SITE: www.chollapavementmaintenance.com  
 REPRESENTATIVE NAME: Chance Cherry  
 REPRESENTATIVE TELEPHONE NUMBER: 480-797-8728  
 REPRESENTATIVE E-MAIL: chance@chollapavement.com

|  | <u>YES</u>                          | <u>NO</u>                           | <u>REBATE</u> |
|--|-------------------------------------|-------------------------------------|---------------|
| WILL ALLOW OTHER GOVERNMENTAL ENTITIES TO PURCHASE FROM THIS CONTRACT: | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |               |
| WILL ACCEPT PROCUREMENT CARD FOR PAYMENT:                              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |               |

NET 30 DAYS

| Title   |          | Unit Price | Qty | UofM        | Total Price |
|---|----------|------------|-----|-------------|-------------|
| Crack Seal (1-20,000 sy)                                    | 3rd call | \$0.36     | 1   | square yard | \$0.36      |
| Crack Seal (20,001 - 40,000 sy)                             | 4th call | \$0.36     | 1   | square yard | \$0.36      |
| Crack Seal (40,001 - 80,000 sy)                             | 4th call | \$0.36     | 1   | square yard | \$0.36      |
| Crack Seal (80,001 - 140,000 sy)                            | 4th call | \$0.36     | 1   | square yard | \$0.36      |
| Crack Seal (140,001 - 200,000 sy)                           | 4th call | \$0.36     | 1   | square yard | \$0.36      |
| Traffic Control Crew  | award    | \$125.00   | 1   | hour        | \$125.00    |
| Crew Foreman (min 4 hrs)                                    | award    | \$45.00    | 1   | hour        | \$45.00     |
| Standy By - Crew Foreman                                    | award    | \$45.00    | 1   | hour        | \$45.00     |
| Crew (6 person crew, min 4 hrs)                             | award    | \$280.00   | 1   | hour        | \$280.00    |
| Standy By - Crew  | award    | \$280.00   | 1   | hour        | \$280.00    |
| Paver (min 4 hrs)   | award    | \$250.00   | 1   | hour        | \$250.00    |
| Roller (min 4 hrs)  | award    | \$85.00    | 1   | hour        | \$85.00     |
| Crack Seal for Patching Cracks 1-1/2 (inches) to 6 (inches) | award    | \$2.00     | 1   | pound       | \$2.00      |

PRICING SHEET: NIGP CODE 91394

Vendor Number: 2011000043 0  
 Certificates of Insurance Required  
 Contract Period: To cover the period ending **September 30, 2014 2017.**

**CPC CONSTRUCTIONS INC., 1534 W. SCOTT AVENUE, GILBERT, AZ 85233**

COMPANY NAME: CPC Construction, Inc.  
 DOING BUSINESS AS (DBA) NAME: \_\_\_\_\_  
 MAILING ADDRESS: 1534 W. Scott Ave. , Gilbert, AZ 85233  
 REMIT TO ADDRESS: Same  
 TELEPHONE NUMBER: 480-839-6300  
 FACSIMILE NUMBER: 480-820-9958  
 WEB SITE: \_\_\_\_\_  
 REPRESENTATIVE NAME: Troy Colby  
 REPRESENTATIVE TELEPHONE NUMBER: 480-839-6300  
 REPRESENTATIVE E-MAIL: tcolby@cpconstruction.com

|  |                                     |                                     |               |
|--|-------------------------------------|-------------------------------------|---------------|
|  | <u>YES</u>                          | <u>NO</u>                           | <u>REBATE</u> |
| WILL ALLOW OTHER GOVERNMENTAL ENTITIES TO PURCHASE FROM THIS CONTRACT: | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <b>0</b>      |
| WILL ACCEPT PROCUREMENT CARD FOR PAYMENT:                              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |               |

NET 30 DAYS

| Title  |          | Unit Price | Qty | UofM        | Total Price | Bidder Notes               |
|--|----------|------------|-----|-------------|-------------|----------------------------|
| Crack Seal (1-20,000 sy)                     | 5th call | \$0.50     | 1   | square yard | \$0.50      |                            |
| Crack Seal (20,001 - 40,000 sy)              | 3rd call | \$0.30     | 1   | square yard | \$0.30      |                            |
| Crack Seal (40,001 - 80,000 sy)              | 3rd call | \$0.30     | 1   | square yard | \$0.30      |                            |
| Crack Seal (80,001 - 140,000 sy)             | 3rd call | \$0.30     | 1   | square yard | \$0.30      |                            |
| Crack Seal (140,001 - 200,000 sy)            | 3rd call | \$0.30     | 1   | square yard | \$0.30      |                            |
| Asphalt Milling (1-20,000 sy)                | 1st call | \$1.86     | 1   | square yard | \$1.86      | Based on 1 1/2" Mill Depth |
| Asphalt Milling (20,001 - 40,000 sy)         | 2nd call | \$1.63     | 1   | square yard | \$1.63      | Based on 1 1/2" Mill Depth |
| Asphalt Milling (40,001 - 80,000 sy)         | 2nd call | \$1.60     | 1   | square yard | \$1.60      | Based on 1 1/2" Mill Depth |
| Asphalt Milling (80,001 - 140,000 sy)        | 2nd call | \$1.58     | 1   | square yard | \$1.58      | Based on 1 1/2" Mill Depth |
| Asphalt Milling (140,001 - 200,000 sy)       | 2nd call | \$1.58     | 1   | square yard | \$1.58      | Based on 1 1/2" Mill Depth |
| Asphalt Concrete Paving (1-20,000 sy)        | 1st call | \$12.88    | 1   | square yard | \$12.88     |                            |
| Asphalt Concrete Paving (20,001 - 40,000 sy) | 1st call | \$12.32    | 1   | square yard | \$12.32     |                            |

**CPC CONSTRUCTIONS INC., 1534 W. SCOTT AVENUE, GILBERT, AZ 85233**

|   |          |          |   |             |          |  |
|---|----------|----------|---|-------------|----------|--|
| Asphalt Concrete Paving (40,001 - 80,000 sy)                | 1st call | \$12.32  | 1 | square yard | \$12.32  |  |
| Asphalt Concrete Paving (80,001 - 140,000 sy)               | 1st call | \$11.75  | 1 | square yard | \$11.75  |  |
| Asphalt Concrete Paving (140,001 - 200,000 sy)              | 1st call | \$11.20  | 1 | square yard | \$11.20  |  |
| Asphalt Rubber Overlay (1-2,000 sy lane mile)               | 2nd call | \$15.40  | 1 | square yard | \$15.40  |  |
| Asphalt Rubber Overlay (2,001 - 4,000 sy lane mile)         | 2nd call | \$13.72  | 1 | square yard | \$13.72  |  |
| Asphalt Rubber Overlay (4,001 - 6,000 sy lane mile)         | 3rd call | \$13.44  | 1 | square yard | \$13.44  |  |
| Asphalt Rubber Overlay (6,001 - 8,213 sy lane mile)         | 3rd call | \$12.32  | 1 | square yard | \$12.32  |  |
| Traffic Control Crew  | award    | \$125.00 | 1 | hour        | \$125.00 | 1 Man, 1 Truck 500' Lane Closure, Prewarning Signs |
| Crew Foreman (min 4 hrs)                                    | award    | \$65.00  | 1 | hour        | \$65.00  |  |
| Standby By - Crew Foreman                                   | award    | \$65.00  | 1 | hour        | \$65.00  |  |
| Crew (6 person crew, min 4 hrs)                             | award    | \$160.00 | 1 | hour        | \$160.00 | Labor Only. Does not include equipment.            |
| Standby By - Crew   | award    | \$160.00 | 1 | hour        | \$160.00 | Labor only. Does not include equipment.            |
| Paver (min 4 hrs)   | award    | \$195.00 | 1 | hour        | \$195.00 |  |
| Roller (min 4 hrs)  | award    | \$80.00  | 1 | hour        | \$80.00  |  |
| Crack Seal for Patching Cracks 1-1/2 (inches) to 6 (inches) | award    | \$0.90   | 1 | pound       | \$0.90   |  |

PRICING SHEET: NIGP CODE 91394

Vendor Number: 2011001138 0

Certificates of Insurance Required

Contract Period: To cover the period ending **September 30, 2014 2017.**

**D & O CONTRACTORS, INC., 7591 N 74<sup>TH</sup> AVENUE, GLENDALE, AZ 85303**

COMPANY NAME: D & O Contractors Inc.  
 DOING BUSINESS AS (DBA) NAME: \_\_\_\_\_  
 MAILING ADDRESS: 7591 N 74th Ave., Glendale, AZ 85303  
 REMIT TO ADDRESS: 7591 N 74th Ave., Glendale, AZ 85303  
 TELEPHONE NUMBER: 623-463-0555  
 FACSIMILE NUMBER: 623-847-0888  
 WEB SITE: DOContractors.com  
 REPRESENTATIVE NAME: Dan A Olson  
 REPRESENTATIVE TELEPHONE NUMBER: 623-463-0555  
 REPRESENTATIVE E-MAIL: dolson@docontractors.com

|  |                                     |                                     |               |
|--|-------------------------------------|-------------------------------------|---------------|
|  | <u>YES</u>                          | <u>NO</u>                           | <u>REBATE</u> |
| WILL ALLOW OTHER GOVERNMENTAL ENTITIES TO PURCHASE FROM THIS CONTRACT: | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |               |
| WILL ACCEPT PROCUREMENT CARD FOR PAYMENT:                              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |               |

1% 10 DAYS NET 30 DAYS

| Title                                |          | Unit Price | Qty | UofM        | Total Price | Bidder Notes                            |
|--------------------------------------|----------|------------|-----|-------------|-------------|---|
| Crack Seal (1-20,000 sy)             | 1st call | \$0.19     | 1   | square yard | \$0.19      |   |
| Crack Seal (20,001 - 40,000 sy)      | 1st call | \$0.14     | 1   | square yard | \$0.14      |   |
| Crack Seal (40,001 - 80,000 sy)      | 1st call | \$0.13     | 1   | square yard | \$0.13      |   |
| Crack Seal (80,001 - 140,000 sy)     | 1st call | \$0.12     | 1   | square yard | \$0.12      |   |
| Crack Seal (140,001 - 200,000 sy)    | 1st call | \$0.11     | 1   | square yard | \$0.11      |   |
| Slurry (1-20,000 sy)                 | 1st call | \$0.42     | 1   | square yard | \$0.42      | MTR Applied at .15 Gallons/Square Yard. |
| Slurry (20,001 - 40,000 sy)          | 1st call | \$0.40     | 1   | square yard | \$0.40      | MTR Applied at .15 Gallons/Square Yard. |
| Slurry (40,001 - 80,000 sy)          | 1st call | \$0.39     | 1   | square yard | \$0.39      | MTR Applied at .15 Gallons/Square Yard. |
| Slurry (80,001 - 140,000 sy)         | 1st call | \$0.39     | 1   | square yard | \$0.39      | MTR Applied at .15 Gallons/Square Yard. |
| Slurry (140,001 - 200,000 sy)        | 1st call | \$0.39     | 1   | square yard | \$0.39      | MTR Applied at .15 Gallons/Square Yard. |
| Asphalt Milling (1-20,000 sy)        | 2nd call | \$1.90     | 1   | square yard | \$1.90      |   |
| Asphalt Milling (20,001 - 40,000 sy) | 1st call | \$1.60     | 1   | square yard | \$1.60      |   |
| Asphalt Milling (40,001 - 80,000 sy) | 1st call | \$1.25     | 1   | square yard | \$1.25      |   |

**D & O CONTRACTORS, INC., 7591 N 74<sup>TH</sup> AVENUE, GLENDALE, AZ 85303**

|   |          |          |   |             |          |  |
|---|----------|----------|---|-------------|----------|--|
| Asphalt Milling (80,001 - 140,000 sy)                       | 1st call | \$1.15   | 1 | square yard | \$1.15   |  |
| Asphalt Milling (140,001 - 200,000 sy)                      | 1st call | \$1.10   | 1 | square yard | \$1.10   |  |
| Asphalt Concrete Paving (1-20,000 sy)                       | 2nd call | \$13.00  | 1 | square yard | \$13.00  |  |
| Asphalt Concrete Paving (20,001 - 40,000 sy)                | 2nd call | \$13.00  | 1 | square yard | \$13.00  |  |
| Asphalt Concrete Paving (40,001 - 80,000 sy)                | 2nd call | \$12.65  | 1 | square yard | \$12.65  |  |
| Asphalt Concrete Paving (80,001 - 140,000 sy)               | 2nd call | \$12.65  | 1 | square yard | \$12.65  |  |
| Asphalt Concrete Paving (140,001 - 200,000 sy)              | 2nd call | \$12.65  | 1 | square yard | \$12.65  |  |
| Asphalt Rubber Overlay (1-2,000 sy lane mile)               | 1st call | \$9.20   | 1 | square yard | \$9.20   |  |
| Asphalt Rubber Overlay (2,001 - 4,000 sy lane mile)         | 1st call | \$7.70   | 1 | square yard | \$7.70   |  |
| Asphalt Rubber Overlay (4,001 - 6,000 sy lane mile)         | 1st call | \$7.00   | 1 | square yard | \$7.00   |  |
| Asphalt Rubber Overlay (6,001 - 8,213 sy lane mile)         | 1st call | \$6.50   | 1 | square yard | \$6.50   |  |
| Asphalt Chip Seal (1 - 20,000 sy)                           | 1st call | \$3.00   | 1 | square yard | \$3.00   |  |
| Asphalt Chip Seal (20,001 - 40,000 sy)                      | 2nd call | \$3.00   | 1 | square yard | \$3.00   |  |
| Asphalt Chip Seal (40,001 - 80,000 sy)                      | 1st call | \$2.70   | 1 | square yard | \$2.70   |  |
| Asphalt Chip Seal (80,001 - 140,000 sy)                     | 1st call | \$2.70   | 1 | square yard | \$2.70   |  |
| Asphalt Chip Seal (140,001 - 200,000 sy)                    | 1st call | \$2.70   | 1 | square yard | \$2.70   |  |
| Traffic Control Crew  | award    | \$200.00 | 1 | hour        | \$200.00 |  |
| Crew Foreman (min 4 hrs)                                    | award    | \$55.00  | 1 | hour        | \$55.00  |  |
| Standy By - Crew Foreman                                    | award    | \$55.00  | 1 | hour        | \$55.00  |  |
| Crew (6 person crew, min 4 hrs)                             | award    | \$700.00 | 1 | hour        | \$700.00 |  |
| Standy By - Crew  | award    | \$500.00 | 1 | hour        | \$500.00 |  |
| Paver (min 4 hrs)   | award    | \$700.00 | 1 | hour        | \$700.00 |  |
| Roller (min 4 hrs)  | award    | \$150.00 | 1 | hour        | \$150.00 |  |
| Crack Seal for Patching Cracks 1-1/2 (inches) to 6 (inches) | award    | \$5.00   | 1 | pound       | \$5.00   |  |

PRICING SHEET: NIGP CODE 91394

Vendor Number: 2011001127 0

Certificates of Insurance Required

Contract Period: To cover the period ending **September 30, 2014-2017.**

**ASPHALT SERVICE AND REPAIR**

1.0 INTENT:

The intent of this Invitation For Bids is to source contractors to perform asphalt repairs, patching, crack filling, resurfacing, removal and replacement, seal coating, line striping, rpm placement for various roads owned by Maricopa County.

This contract is to be utilized for public roadways, parking lots, intersections, turn lanes, road widening, extensions, and other work deemed necessary by County.

**All work shall be governed by MAG specs and MCDOT supplement. Manual of Uniform Traffic Control Devices (MUTCD) will be a guided for Traffic Control setup.**

Other County department may use this contract. The Maricopa Department of Transportation is not responsible for contract administration of this contract when services are requested by other County agencies.

Other governmental entities under agreement with the County may have access to services provided hereunder (see also Sections 2.33 and 2.34, below).

The County reserves the right to award in whole or in part, by item or group of items, by section or geographic area, or make multiple awards, where such action serves the County’s best interest.

The County reserves the right to add additional contractors, at the County’s sole discretion, in cases where the currently listed contractors are of an insufficient number or skill-set to satisfy the County’s needs or to ensure adequate competition on any project or task order work.

2.0 SCOPE OF SERVICES:

2.1 CONTRACTOR PERFORMANCE REQUIREMENTS:

Contractor to supply all labor, supervision, materials, supplies, equipment, transportation, and all effort necessary to perform the specifications herein.

2.2 **CRACK SEALING:** Crack Sealing shall consist of furnishing crack seal material and applying this material to cracks in asphalt concrete pavement, in accordance with these specifications.

2.2.1 MATERIAL:

Material Specifications: The crack sealant material shall be a hot applied elastically polymer modified asphalt or single asphalt rubber component. The asphalt rubber sealant shall be a blend of asphalt cement, crumb rubber, virgin rubber, fillers, and plasticizers formulated for hot arid climates. The asphalt rubber modified compound shall:

- (A) Be formulated to cure as it cools.
- (B) Sufficiently cure after a twenty-minute set time to resist pick up and tracking by vehicular traffic.
- (C) Not bleed or become tacky under traffic during summer temperatures.

The asphalt component shall be paving grade asphalt per MAG Section 711.

The supplied sealant material shall be formulated for use during hot climatic conditions and meet the following specifications:

| PROPERTY                   | TEST METHOD | REQUIRE-MENT |
|----------------------------|-------------|--------------|
| Ductility @ 77° F, cm      | ASTM D113   | 15 Min.      |
| Flash Point, Degrees F     |             | 450 Min.     |
| Softening Point, Degrees F | ASTM D36    | 200 Min.     |
| Cone Penetration @ 77° F,  | ASTM D5329  | 25-40        |

|   |            |               |
|---|------------|---------------|
| dmm                                     |            |               |
| Resilience, %                           | ASTM D5329 | 30 Min.       |
| Bitumen Content, %                      | ASTM D4    | 60 Min.       |
| Brookfield Viscosity @ 375° F, Poise    | ASTM D2196 | 40-90         |
| Asphalt Compatibility                   | ASTM D5329 | Pass          |
| Material Unit Weight @ 60° F, lbs/gal   |            | 10 Max.       |
| Pouring Consistency                     |            | Self-Leveling |
| Safe Heating Temperature, Degrees F     |            | 400           |
| Recommended Pour Temperature, Degrees F |            | 380           |

Additionally, the specific gravity of the crumb rubber shall be 1.15 +/- 0.02 and free from fabric, wire, and other contaminating materials. The material shall contain a minimum of 18 percent crumb rubber by weight of total asphaltic components. The material containing crumb rubber shall be reacted at the plant to provide a homogenous mix of components. A maximum of 4 percent calcium carbonate may be added to prevent particle clumping.

The crumb rubber shall comply with the following table:

| <b>SIEVE (see Note)</b> | <b>PERCENT PASSING</b> |
|-------------------------|------------------------|
| #8                      | 100                    |
| #20                     | 98-100                 |
| #40                     | 0-10                   |

Note: The sieves shall comply with the requirements of AASHTO M-92

The Contractor shall not change the crack sealant material or supplier unless authorized by the Engineer.

The Contractor shall submit copies of all invoices for crack sealant material to the Engineer within 24 hours of material receipt.

2.2.2 Material Testing: Crack sealant material will be sampled and tested for compliance at a frequency of not less than one per month. The complete lot will be rejected if the material fails to comply. No payment will be made for pavement area in which the rejected material was used.

2.2.3 CONSTRUCTION METHODS:

2.2.3.1 Equipment: The Engineer must approve all equipment designated for use by the Contractor. The equipment shall comply with all applicable OSHA, industry and local government safety procedures, rules, and regulations. The Contractor must utilize safe and serviceable equipment capable of transporting required material and equipment to each job site.

2.2.3.2 Melter Applicator: The melter applicator unit shall be capable of heating and applying without any further equipment modification, all grades of asphalt rubber sealant, specification joint sealant, and fiber modified sealant. The machine shall be capable of starting at ambient temperature and bringing the sealing material up to application temperature in one hour or less. All qualified bidders must have and maintain a complete inventory of repair parts as well as having experienced service personnel for this equipment. The tank shall be well insulated and equipped with suitable heating devices (burners and flues) to assure a uniform specified application viscosity and temperature. It shall have an internal mixing device to keep asphalt rubber from separating from the compound. It shall have a double boiler type jacket to create a reservoir, which shall hold a minimum

capacity of 200 gallons at ambient temperature. The machine, heating chamber and wand shall be so designed and constructed that under day-to-day operation no clean-out procedure is required. Diesel fuel or any other cleaning materials detrimental to the crack sealant product shall not be used to clean melter applicator equipment.

2.2.3.3 Weather: In no case shall sealant be placed during damp roadway conditions that exist such as wet roadway surfaces or damp material inside the cracks. Operations stopped by the Engineer, due to weather, shall be at no additional cost to the County.

2.2.3.4 Cleaning Cracks: Immediately before applying the sealant, cracks shall be thoroughly cleaned of loose particles, grass, grass roots, weeds, dust, and other deleterious substances by means of high velocity compressed air or by other methods approved by the Engineer. Compressed air alone may not be sufficient to clean the cracks properly. Additional handwork may be required.

The compressor used shall be capable of a sustained pressure of 90 psi. The crack cleaning equipment shall be capable of cleaning cracks to a minimum depth of 1/2 inch. The equipment shall also be capable of dust containment by filtering particulate matter 10 micrometers or less in diameter with no dust clouds visible to the naked eye as determined by the Engineer (i.e. vacuum).

During the cleaning of cracks, the Contractor shall protect against damage to items such as, but not limited to, cars, people, driveways, walkways, landscape materials, etc. in the work area. During and after placement of the sealant, the Contractor shall protect against harm to persons or animals that may be exposed to the hot material.

2.2.3.5 Application: The Contractor shall protect all utilities from damage. The Contractor shall immediately contact the appropriate utility company if damage should occur and shall be responsible for all claims for damage due to their operations.

All cracks, including the space between the asphalt concrete pavement and the curb and gutter, which have an average clear opening 1/8 inch or greater, shall be sealed for the entire length of the visible crack. Sealant is to include portions of the crack sections smaller than 1/8 inch. The maximum crack width to be sealed shall be 1-1/2 inches. All cracks that have an average clear opening greater than 1-1/2 inches shall not be sealed unless directed to do so by the Engineer.

The sealant shall be placed in a manner that will completely fill the crack and not form a lap of greater than 1 inch on each side after forcing material into the crack with a squeegee. Immediately after the application, a rubber squeegee, or other acceptable method, shall be used to force the material into the crack, level the sealant with roadway surface, and form the lap.

The sealant shall be heated to the written manufacturer specifications, or as directed by the Engineer, before starting any crack sealant application. The sealant shall only be applied to clean dry cracks that have been approved by the Engineer.

2.2.3.6 Inspection: Inspection will include, but not be limited to, the quality of workmanship, width of cracks filled, cleanliness of cracks, and lapping.

The Contractor, at no additional cost to the County, will correct unacceptable work. Unacceptable work shall include, but not be limited to, unsealed cracks,

material wastage on the sides of the roadway, and such quantities of material on the roadway that driving is affected.

Correction of unacceptable workmanship shall be accomplished within five working days after notification from the Engineer of the unacceptable work. The Contractor shall not progress to a new area until the unacceptable work is corrected to the satisfaction of the Engineer.

The Contractor shall meet with the Engineer on a daily basis and supply a signed daily report indicating the amount of crack sealant material applied for the day in total pounds and total square yards. In addition, the Contractor shall supply the Engineer with the dates of completion for each segment of road.

2.2.4 MEASUREMENT: Crack sealing shall be measured by the square yards of asphalt concrete pavement surface area sealed.

2.2.5 PAYMENT: Payment shall be made at the contract price per square yard of road area sealed and accepted with crack sealant material. This price shall be full compensation for furnishing, preparation, and placing of this material, all labor, equipment, tools, and incidentals including taxes, necessary to complete the item. Also included as incidental items are cleaning of cracks, application of blotter material, and all costs associated with any construction water and clean up.

2.2.6 PREPATATION OF SURFACES

2.2.6.1 This item shall consist of cleaning and patching existing transverse and longitudinal cracks wider than 1-1/2" to 6" in bituminous pavements in accordance with these specifications.

The quantity shown is for bidding purposes and has been approximated. Actual payment for the work will be determined by field measurements of the work completed. The Engineer will determine the cracks to be patched.

2.2.7 MATERIALS

2.2.7.1 PATCHING MATERIAL. Unique Paving Material or approved equivalent for patching shall conform to these requirements:

|                        |                  |
|------------------------|------------------|
| Limestone              | 91-97% by weight |
| Petroleum Asphalt Base | 2-8% by weight   |
| Petroleum Solvent      | 1-3% by weight   |
| Additives              | <1.0% by weight  |

2.2.7.2 MATERIAL ACCEPANCE. Prior to the use of the Patching material, the contractor shall submit to the Engineer, the appropriate material certification or laboratory test indicating that the material meets specification requirements. If the contractor applies the material prior to receipt of the test reports, payment for the material shall be withheld until they are received. If the material does not pass the specification it shall be replaced at the contractor's expense.

The Engineer may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

2.2.8 CONSTRUCTION METHODS

2.2.8.1 WEATHER LIMITATIONS. The material can be applied any time of the year due to different grades designed for optimum performance during various temperatures of application.

- 2.2.8.2 **EQUIPMENT.** All machines, tools and equipment used in the performance of work required by these specifications will be subject to the approval of the Engineer and maintained in a satisfactory working condition at all times.

Hand tamper, vibratory plate compactor and rollers are acceptable for cracks as a final compaction. Depending on depth of crack a steel rod with a 1-1/2" diameter head shall be used to compact in lifts.

- 2.2.8.3 **PREPARATION OF CRACKS.** No material shall be installed until all cracks have been cleaned free of all deleterious materials, including any dust, old sealant, incompressibles, and organic material.

When vegetation exists in the cracks and joints, it shall be removed and those cracks and joints shall be treated with a herbicide that sterilizes the soil subject to the approval of the Engineer. Cost for treatment is incidental.

- 2.2.8.4 **APPLICATION OF PATCHING MATERIAL.** No patching material shall be installed until all cracks to be patched have been inspected and approved by the Engineer.

- 2.2.8.5 **PAVEMENT CLEANING AND PROTECTION.** The pavement surface and all work areas shall be left in a clean condition.

2.2.9 **METHOD OF MEASUREMENT**

Measurement for payment shall be by the pound of patching material used and accepted by the Engineer.

- 2.2.9.1 **BASIS OF PAYMENT.** Payment shall be made at the contract unit price per pound of crack patching. This price shall be full compensation for furnishing all materials, for all preparation, and placing of the material, and for all labor, equipment, tools, and incidentals necessary to complete this item.

2.3 **ASPHALT EMULSION SLURRY SEAL COAT:**

- 2.3.1 **DESCRIPTION:** The work covered by this specification consists of furnishing all labor, equipment, and materials necessary to perform all operations required for the application of an asphalt emulsion slurry surface. The Engineer prior to their use must approve all material sources. Once approved, material sources shall not be changed without the approval of the Engineer. If requested by the Engineer, the Contractor shall submit material samples at least seven (7) days prior to start of construction. When requested, additional samples shall be furnished during the construction period at no cost to the County. Material sample submittal is a non-pay item.

- 2.3.2 **MATERIALS:** The asphalt emulsion material, mineral aggregate and mineral filler shall be as specified in Section 715.

- 2.3.3 **DETERMINATION OF JOB MIX:** The job mixture shall be designed to provide a suitable surface for traffic conditions, climate and curing. All materials shall be pre-tested in a qualified laboratory to determine their suitability for use in the slurry seal. The Wet Track Abrasion Test (W.T.A.T.) will be used for design purposes to establish the mix design to be used in the specified slurry seal.

The test will show a maximum wear loss of 50 grams per square foot. Samples of materials to be used on the job shall be used to run the W.T.A.T. The test will be performed in accordance with ASTM D-3910 Design Testing and Construction of Slurry Seal.

The Contractor shall submit a signed original mix design covering the specific materials to be used on the project, prior to commencement of the work. Any additives used shall be approved by the testing laboratory as part of the mix design. The Materials certification of crude source and asphalt type to be used on the project shall also be included in the submittal. The design shall be performed by an approved laboratory, experienced in slurry seal mix designs, with materials the Contractor will use on the project. After the mix design has been approved no substitution will be permitted, unless approved by the Engineer.

2.3.3.1 **Composition of Slurry Seal Mixtures:** The job mixture shall conform to the requirements of the contract documents. The mixture shall attain an initial set in not less than 5 minutes nor more than one hour.

The mix design report shall show the test results performed on the materials and how the results of the materials tested compare to the required specifications. The mix design report shall include, as a minimum, the following information:

| <b>SPECIFICATION</b>    | <b>TEST METHOD</b> | <b>REQUIREMENT</b> |
|-------------------------|--------------------|--------------------|
| Slurry Seal Consistency | ISSA TB 106        | 2-3 cm.            |
| W.T.A.T.                | ASTM D-3910        | 50 grams/sf (max)  |
| Compatibility           | ISSA TB 115        | Pass               |

Replace the fifth sentence in the first paragraph with the following:

The mixture shall be a Type II with the combined aggregates conforming to the gradation requirements of Table 715-1.

In cases where the surface is not critical to be open to traffic, a longer set time may be allowed, however not to exceed 12 hours. The setting time may be adjusted by the addition or removal of approved mineral fillers or chemical agents. The mixture shall be one of three types whose combined aggregates conform to the gradation requirements of Table 715-1. The mixture shall be sufficiently free flowing to fill cracks in the pavement. The mixture shall not segregate during or after laydown. The mixture shall produce a skid-resistant surface.

2.3.3.2 **Trail Applications:** The Contractor shall place a test strip of 1000 square yards in the area designated by the Engineer. The test strip shall be placed the day prior to construction with the area residents notified 48 hours prior to any test strip placement. The test section shall be placed using the same equipment and methods as will be used on the job. The slurry mixture placed in a test strip shall conform to the design mix as determined by the W.T.A.T. 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.

2.3.4 **Equipment**

2.3.4.1 **General:** When requested by the Engineer, descriptive information on the slurry seal mixing and applications equipment to be used will be submitted for approval no less than 7 days before the starts.

2.3.4.2 **Self-Contained Slurry Machine(s):** The mixing machine shall be a self-propelled or truck mounted, able to accurately deliver and proportion aggregate, mineral filler, water, additive(s) and polymer modified 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 all materials 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 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 shall not be used until measuring devices are repaired.

The slurry machine shall have a clearly audible and functioning back-up horn.

A Certificate of Calibration, no more than three (3) months old, shall be submitted to the Engineer.

- 2.3.4.3 Slurry Seal Spreading Equipment: Attached to the mixer machine shall be a mechanical type squeegee spreader equipped with flexible material in contact with the surface to prevent loss of slurry from the distributor. It shall be maintained to prevent loss of slurry on varying grades and crown by adjustments to assure uniform spread. There shall be a steering device and a flexible strike-off. The spreader box shall have an adjustable width. The box shall be kept clean. Build-up of asphalt and aggregate on the box shall not be permitted. The use of burlap drags or other drags shall be approved by the Engineer.

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 dead zones. Equipment shall be designed and operated so that 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 lay-down box.

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.

- 2.3.4.4 Rollers: Rollers shall be approved by the Engineer.
- 2.3.4.5 Cleaning Equipment: Pick-up brooms, water flushing equipment, and hand brooms shall be suitable for cleaning the surface and cracks of the old surface.
- 2.3.4.6 Auxiliary Equipment: Hand squeegees, shovels, and other equipment shall be provided as necessary to perform the work.

2.3.5 Preparation of the Surface:

- 2.3.5.1 Cleaning: Immediately before applying the slurry, the area to be surfaced shall be cleaned of dirt, loose material, and other objectionable material. The slurry seal shall be applied the same day the pavement is cleaned. 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. When necessary, cleaning of the existing pavement surface shall be supplemented by hand brooms or other methods, approved by the Engineer, to assure a good bond between the asphalt emulsion slurry seal and

the pavement surface. Power brooms or pick up brooms alone may not be adequate to thoroughly clean the surface. This also includes the removal of grass or weeds, which are growing in the joint between the street and the concrete gutter

The Contractor shall take all steps, procedures, and means to prevent dust pollution due to his construction practices in connection with this work. Dust prevention measures shall be maintained at all times during construction of the project to the satisfaction of the Engineer, in accordance with "Maricopa County Air Pollution Control Regulations".

Prior to the Pre-Construction meeting, the Contractor shall have a dust control plan, approved by the Maricopa County Division of Air Pollution Control. For information and requirements for the dust control plan, the Contractor shall contact:

Maricopa County Environmental Services Department  
Division of Air Pollution Control  
2406 South 24th Street, Suite E-214  
Phoenix, AZ 85034  
(602) 506-6727

The Contractor shall remove and dispose of raised pavement markers (if any) prior to the placement of the slurry seal. Removal shall be by chipping, grinding, or any other method approved by the Engineer. The cost of raised pavement marker removal is incidental to pavement preparation.

Prior to striping removal, the Contractor shall document and detail the existing pavement striping and delineation. The details shall include as a minimum the type, size, color, dimensions, and specific detailed location of the delineation, acceptable to the Engineer, so that contractor or County Forces can replace the delineation, as it existed prior to the removal. The details shall be submitted to the Engineer a minimum three (3) working days prior to covering the striping with slurry.

The slurry shall not be applied until an inspection of the surface has been made by the Engineer and he has determined that it is suitable.

2.3.5.2 Water Fogging: When required by local conditions, the surface, directly ahead of the slurry box, shall be pre-wetted by fogging. The fogging shall be accomplished in such a manner that the entire surface is damp with no apparent flowing water or puddles.

Water Fogging is required and the rate of application of the fog spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement. Water for construction is the responsibility of the Contractor. Any cost associated with water shall be incidental to the project. Sprayers shall be kept clean and operating at all times. The spray systems shall always be controlled by the slurry operator and not the driver of the vehicle. The system shall be a dual operated immediately in front of the truck and the spreader box. Slurry vehicles without the dual spray operator controlled system will not be permitted to work.

2.3.6 WEATHER LIMITATIONS: The slurry seal shall not be applied during inclement weather, or weather determined unsuitable by the Engineer. The slurry seal shall not be applied if either the pavement or the air temperature is below 50 degrees F and falling, nor applied when the ambient temperature exceeds 105 degrees F, measured in the shade. No slurry seal shall be applied when the ambient temperature is expected to drop below 35 degrees F within 24 hours of application.

- 2.3.7 **PROTECTION OF UNCURED SURFACE:** Adequate methods such as barricades, flagmen, pilot cars, etc. shall be used to protect the uncured slurry surface from all types of traffic.

The Contractor shall be responsible for the repair of all damage done within 24 hours of initial application.

- 2.3.8 **MIXING AND APPLICATIONS:** The mixing time shall not exceed four minutes. Excessive mixing will not be allowed. The resulting mixture shall have the desired consistency, when placed on the surface. If breaking, hardening, segregation, balling or lumping occurs during the mixing process, the batch will be discarded.

A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that a complete coverage is obtained.

No streaks caused by oversized aggregate shall be left in the finished surface. Build-up on longitudinal and transverse joints will be kept to a minimum. Approved squeegees shall be used to spread slurry in areas nonaccessible to the slurry mixer.

- 2.3.8.1 **Joints:** No excess build up, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. When possible the longitudinal joints shall be placed on lane lines. Half passes and odd width passes will be used only when required. If half passes are used they shall not be the last passes of any paved area. A maximum of six inches (6") shall be allowed for overlap of longitudinal lane line joints.

- 2.3.8.2 **Lines:** Care should be taken to insure straight lines along curbs and shoulders. No runoff shall be permitted at the above-mentioned area. Lines at intersections shall be kept straight to provide a neat appearance.

- 2.3.8.3 **Hand Work:** Areas that cannot be reached with the slurry seal machine shall be surfaced using hard squeegees to provide complete and uniform coverage. The area to be hand worked shall be lightly dampened prior to mix placement and the slurry placed in a time period so that the finish is the same as the finish achieved by use of the spreader box.

- 2.3.8.4 **Stockpile and Clean up:** The Contractor shall locate and acquire areas to stockpile materials and equipment needed for construction. The cost of material stockpiling, equipment storage and clean up is incidental to the project.

Before final acceptance by the County, all private or public property and grounds occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment, and all parts of the work area shall be left in an acceptable condition. Clean-up shall also include the daily removal of slurry seal materials from manhole covers, valve covers, fire hydrant markers, gutters, curbs, sidewalks, survey monuments (brass caps), etc. in the project area.

- 2.3.8.5 **Material Testing:** The Contractor is responsible for the quality control of all materials used. Testing performed by the Engineer will assure that materials conform to the specifications and shall not be considered a quality control measure.

**Asphalt Emulsion:** Provisions for properly sampling emulsion from distributor trucks or on-site bulk storage units shall be made by the Contractor. Emulsion sampling shall be performed by the Contractor and witnessed by the Engineer in accordance with the latest edition of ASTM D-140, "Standard Methods of Sampling Bituminous Materials." Testing will be performed by the Engineer in

accordance with the latest edition of ASTM D-244, "Testing Emulsified Asphalts".

The minimum amount of sampling and testing shall be once for every 500 tons of emulsion. Material found in non-compliance will be rejected and shall be removed from the job site. No payment will be made for rejected material. The project shall not resume until the new material is tested and found in compliance. No lost time will be considered as a result of material being found in non-compliance.

**Fine Aggregate Material:** Material will be sampled and tested by the Engineer in accordance with the latest edition of ASTM C-136, "Sieve Analysis of Fine and Coarse Aggregates." The Engineer will sample aggregate cover material for acceptance at the stockpile location.

The minimum amount of sampling fine aggregate material and testing shall be once per day. Material found in non-compliance will be rejected. No payment will be made for rejected material. The area represented by the test shall be that area covered the day the sample was taken. No lost time will be considered as a result of material being found in non-compliance.

The Contractor shall permit the County to take samples of the materials and slurry used in the project at the County's discretion.

If any two successive tests of the stockpile material fail, the job shall be stopped. The Contractor shall, at his own expense, provide proof to the County that the conditions have been corrected.

If any two successive tests of the mix from the same machine fail, the use of the machine shall be suspended. The Contractor shall, at his own expense, provide proof to the County that the problems have been corrected and that the machine is working properly.

The Contractor shall check stockpile moisture content and set the machine accordingly to account for aggregate bulking. The County will use the following minimum sampling and testing guide for the contract.

**AGGREGATE:** Gradation, ASTM C-136, during production

| <b>SAMPLE POINT</b> | <b>FREQUENCY</b>                                   | <b>SIZE</b> | <b>ACCEPTANCE</b> |
|---------------------|--|-------------|-------------------|
| Stockpile or Unit   | Once per day<br>on the job site<br>(average of 2*) | 3/8"        | 100% passing      |
|                     |  | #4          | ± 5% of design    |
|                     |  | #8          | ± 5% of design    |
|                     |  | #16         | ± 5% of design    |
|                     |  | #30         | ± 5% of design    |
|                     |  | #50         | ± 4% of design    |
|                     |  | #100        | ± 3% of design    |
|                     |  | #200        | ± 2% of design    |

Supplier Stockpile 1 prior to start up

\* The percentage of aggregate passing shall not go from the high end to the low end of specified range on any two successive sieves.

**AGGREGATE:** Sand Equivalent, ASTM D-2419, during production

| <b>SAMPLE POINT</b> | <b>FREQUENCY</b>    | <b>ACCEPTANCE</b>   |
|---------------------|---------------------|---------------------|
| Stockpile or Unit   | Weekly              | 50 min (any sample) |
| Supplier Stockpile  | 1 prior to start up |                     |

**EMULSION:** Percent Residue, ASTM D-244, during production

| <u>SAMPLE POINT</u>  | <u>FREQUENCY</u>      | <u>ACCEPTANCE</u>        |
|----------------------|-----------------------|--------------------------|
| Storage Tank or Unit | Monthly & at start up | ± 1% of design (60% min) |

**SLURRY MIX:** Percent Emulsion Measured and Calculated, during production

| <u>SAMPLE POINT</u> | <u>FREQUENCY</u> | <u>ACCEPTANCE</u> |
|---------------------|------------------|-------------------|
| NA                  | Daily            | ± 1% of design    |

**SLURRY MIX:** Application Rate Measured and Calculated, during production

| <u>SAMPLE POINT</u> | <u>FREQUENCY</u> | <u>ACCEPTANCE</u> |
|---------------------|------------------|-------------------|
| NA                  | Daily            | 18-24 lbs/sy      |

2.3.9 **ROLLING:** As soon as the asphalt slurry has been set sufficiently to prevent any material from being picked up, it shall be rolled until all ridges have been ironed out and a uniform surface is obtained.

2.3.10 **MEASUREMENT:** 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 proposal.

- 2.3.10.1 Bituminous tack coat if specified Ton (Diluted)
- 2.3.10.2 Emulsified asphalt for slurry Ton (Undiluted)
- 2.3.10.3 Aggregate for slurry Ton (Surface Dry)

Payment for various bid items shall be compensation in full for furnishing all materials, labor, tools, equipment, and appurtenances necessary to complete the work in a satisfactory manner, as specified.

No additional payment will be made for work related to any item, unless specifically called for in the bid. No payment will be made for materials used to patch unacceptable work.

Price per ton of aggregate will include the price of the mineral filler. Total quantities indicated in the proposal are approximate and for bidding purposes only.

Only certified tickets of the bituminous tack coat, emulsion, and dry weight of aggregate delivered to a County representative will be accepted for payment. Overweight tickets shall not be accepted and material shall be partially unloaded, at no expense to the contracting agency, to a legal status for re-weighing. A new ticket will be required for the remaining load. No deliveries shall be accepted prior to 7:00 a.m., or after 4:30 p.m. Any deliveries before or after this time frame will not be compensated.

A daily tabulation of materials delivered, used, square yards covered, application rate, etc., shall be compared between the Contractor and the Engineer. Adjustments and agreements are final at the end of each stockpile. Materials placed without approval of the inspector, or materials rejected due to improper placing, improper proportions of materials, or materials found to be defective, will not be compensated.

- 2.3.11 **SAND BLOTTER (Contingent Item):** Sand Blotter shall be in accordance with MAG Sections 333.3.2 and 333.7, except as modified below

The Contractor shall apply sand blotter prior to opening the roadway to traffic where there is an excess of asphalt emulsion, if requested by the Engineer. The Contractor shall also be responsible for sweeping the sand within 24 hours of opening the roadway to traffic.

If the paved roadway must be sanded, the surface shall be sanded at approximately two pounds per square yard. No more sand shall be used than necessary, and the amount specified shall not be increased without prior approval of the Engineer.

After the treated area has been opened to traffic, the Contractor shall immediately cover any excess asphalt emulsion that comes to the surface with additional sand.

- 2.4 **ASPHALT MILLING:** The work under this section shall consist of milling existing asphalt concrete pavement where shown on the Plans or requested by the Engineer.

- 2.4.1 **CONSTRUCTION REQUIREMENTS:**

Contractor is responsible for locating all milling hazards on and below the surface within the areas to be milled including areas requiring special milling. Special milling is not a separate pay item and shall be paid for as Asphalt Milling.

The milling cut depth shall be the depth indicated on the Plans plus or minus 1/8 inch. The milling machine shall have electronic grade controls. Contractor shall remove the milled material and sweep the roadway clean with a power pick-up broom to the satisfaction of the Engineer.

Asphalt pavement adjacent to manholes, valve boxes, small radius curbs and other fixed objects that produce confined area shall be removed with milling equipment specifically designed to operate in constricted areas. The equipment shall be capable of removing asphalt concrete of the specified thickness without damage to, or displacement of, the adjacent object(s).

The Contractor shall be responsible for continually checking the milling operation to determine that the proper depth of milling has been achieved, that the proper profile and cross slope are achieved, and that the surface texture is (a) free from longitudinal ridges, and (b) has a uniform pattern.

The Contractor shall immediately notify the Engineer when:

- The existing pavement thickness is found to be less than anticipated and breaking of the underlying material occurs.
- Delamination of underlying material occurs.

The work shall result in a clean milled surface to the specified depth for the area indicated by the construction documents including the areas immediately around and next to any individual hazard within the area to be milled. The edge of milled area shall form a straight clean cut line.

Road sections with curb and gutter shall be edge milled in accordance with the Detail No. 2013 "MILLING FOR OVERLAY", dated January 2, 2009, included in these special provisions or as directed by the Engineer.

Road sections without curb and gutter shall be milled at the road terminations.

Asphalt milling shall be performed for areas containing high points, rutting, shoving, seal coats, or other special circumstances as requested by the Engineer.

The Contractor shall not mill existing pavement until the Engineer approves the asphalt-rubber concrete mix design.

Pavement markings removed by the milling operation shall be replaced with temporary traffic control devices in order to provide continuous marking and control of the construction area, including delineation of traffic lanes.

Roadway without intersecting roads, curb and gutter, etc. will not require asphalt milling unless requested by the Engineer.

Any damage done to milled surfaces by traffic or other circumstances, prior to the placement of asphalt-rubber concrete, shall be repaired by Contractor as specified by the Engineer at no additional cost to the County.

#### 2.4.2 MEASUREMENT AND PAYMENT

Measurement for Asphalt Milling will be by the square yard and shall only include area milled to the required depth and cross section.

Payment for Asphalt Milling at the contract unit price shall be full compensation for the work, complete-in-place, including all asphalt milling, milling around structures, removal and disposal of milled materials, and sweeping.

#### 2.5 ASPHALT CONCRETE PAVEMENT

2.5.1 DESCRIPTION: This section is to provide specifications for furnishing all materials, mixing at a plant, hauling and placing a mixture of aggregate materials, mineral admixture and asphalt binder to form a pavement course for placement upon a previously prepared base or sub base.

2.5.2 MATERIALS AND MANUFACTURE: The materials shall conform to Section 710 for the type specified. The specific required mix type shall be called out in the contract documents or as directed by the Engineer.

2.5.3 WEATHER AND MOISTURE CONDITIONS: Asphalt concrete shall be placed only when the surface is dry, and when the atmospheric temperature in the shade is 40 degrees F. (50 degrees F for Asphalt Concrete lift less than 2 inch thick) or above. No asphalt concrete shall be placed when the weather is foggy or rainy, or when the base or sub base on which the material is to be placed is unstable. Asphalt concrete shall be placed only when the Engineer determines that weather conditions are suitable.

2.5.4 APPLICATION OF TACK COAT: A tack coat shall be applied to all existing and to each new course of asphalt concrete prior to the placing of a succeeding lift of asphalt concrete. The tack coat may be deleted when a succeeding layer of asphalt concrete is being applied over a freshly laid course that has been subjected to very little traffic when approved by the Engineer.

The application of the tack coat shall comply with Section 329. The grade of emulsified asphalt shall be SS-1 h or CSS-1 h as specified in Section 713.

The same material that is specified above for the tack coat shall be applied to the vertical surfaces of existing pavements, curbs, and gutters, against which asphalt concrete is to be placed.

The surface to be covered may require repair or patching as directed by the Engineer. This shall be addressed in the project specifications prior to the bidding of the project.

2.5.5 **MIX DESIGN:** The mix design shall be submitted to the Engineer at least five working days prior to the start of asphalt concrete production. Mix designs provided by the agency may be utilized on projects at the Engineer’s discretion. The Engineer will review and approve the mix design to assure it contains all of the required information as outlined in Section 710.3.1. The target values for gradations, binder contents, and air voids will be established as the accepted Job Mix Formula (JMF) based upon the mix design. Mix designs not containing all of the information will be returned within five working days of receipt of all mix design information, for action and resubmission by the contractor.

Once the mix design has been approved by the agency and the mixing plant selected, the Contractor and/or his supplier shall not change plants nor utilize additional mixing plants without prior approval of the Engineer.

If the contractor elects to change its source of material, the contractor shall furnish the Engineer with a new mix design, which meets the requirements of Section 710, as amended by the Project Specifications.

The contractor may make self-directed target changes to the approved mix design within the limits shown below. Requests for self-directed target changes shall be made in writing and acknowledged by the Engineer prior to the start of production of a lot and will remain in effect until such time as any additional changes are implemented.

The self-directed target changes must meet the contract requirements for mix design criteria and gradation limits.

| <b>ALLOWABLE SELF-DIRECTED TARGET CHANGES</b> |   |
|---|---|
| <b>MEASURED CHARACTERISTICS</b>               | <b>ALLOWABLE SELF-DIRECTED TARGET CHANGES</b> |
| Gradation (Sieve Size)                        |   |
| 3/8 INCH                                      | + 2% from mix design target value             |
| No 8  | + 2% from mix design target value             |
| No 30   | + 1% from mix design target value             |
| No 200  | none  |
| Binder Content                                | + 0.2% from mix design target value           |
| Effective Air Voids                           | None  |

The contractor may propose target changes, other than self-directed changes, to the approved mix design for the approval of the Engineer. The Engineer will determine if the proposed target change will result in mix production that meets the contract requirements for mix design criteria and gradation limits. The target changes will not be retroactive for the purpose of acceptance.

2.5.6 **MIX PRODUCTION:** All materials shall be proportioned by weight in a hot mix asphalt plant in the proportions required by the mix design to provide a homogeneous and workable mass. Each hot mix asphalt plant shall be inspected in accordance with the provisions contained in the ‘Hot Mix Asphalt Production Facilities’ by the Arizona Rock Products Association and shall have a current inspection certificate. All measuring devices shall be calibrated at least annually by a technician licensed by the Arizona Bureau of Weights & Measures. Mixing plants shall conform to the requirements of AASHTO M 156, except as modified herein.

In drum mix plants the mineral admixture shall be added and thoroughly mixed with the mineral aggregate by means of a mechanical mixing device prior to the mineral aggregate and mineral admixture entering the dryer. The moisture content of the combined mineral aggregate shall be a minimum of three percent by weight of the aggregate during the mixing process.

For drum-mix plants, the mineral admixture shall be weighed across a weigh belt, or other approved alternative weighing system, with a weight totalizer prior to entry into the mechanical mixing device. The mechanical mixing device shall be a pugmill type mixer that is in good working condition. The rate of the aggregate feed shall not exceed the mixing device's capacity in ton per hour. The mixer shall be constructed to minimize the loss of mineral admixture and shall be located in the aggregate delivery system at a location where the mixed material can be readily inspected. The mixing device shall be capable of effective mixing in the full range of the asphalt concrete production rates.

The hot plant and equipment shall be constructed and operated to prevent loss of mineral admixture through the dust collection system of the plant.

A positive signal system shall be provided and utilized during production whereby the mixing shall automatically be stopped if the mineral admixture is not introduced into the mineral aggregate. The plant will not be permitted to operate unless the signal system is in good working condition.

The introduction of bituminous material shall be controlled by an automated system fully integrated with the controls of the mineral aggregate and mineral admixture. The production of the plant shall be controlled by the rate required to obtain a uniform mixture of all components. Drying and heating shall be accomplished in such a manner as to preclude the mineral admixture from becoming coated with un-spent fuel. The completed asphalt concrete may be held in storage for up to 12 hours in insulated or heated silos, providing the minimum temperature noted herein for placement and compaction is met behind the placement device. If the Engineer determines that there is an excessive amount of heat, heat loss, drain down, segregation and/or oxidation of the mixture due to temporary storage, use of surge bins or storage bins will be discontinued.

The temperature of the asphalt concrete, with unmodified binders, upon discharge from the mixer shall not exceed 335 degrees F. The discharge temperature may be increased on the recommendation of the binder supplier, when approved by the Engineer. If the asphalt concrete is discharged from the mixer into a hopper, the hopper shall be constructed so that segregation of the asphalt concrete will be minimized.

- 2.5.7 Pavement Smoothness (Rideability): Pavement smoothness payment adjustments shall only apply to roadways with new asphalt pavement surfacing length greater than 0.25 miles, a functional classification of collector or higher, and a posted speed limit of 40 mph or greater. When the new asphalt pavement has a minimum of two courses of hot mix asphalt, each layer being 1.0 inch or greater; or the pavement has a new overlay of at least 1.5 inches the final pavement surface shall be evaluated for smoothness by the Engineer.

The Engineer shall determine if the rideability shall be applied to road segments, where a single lift overlay of 1.5" or greater is applied to existing pavement with a before overlay IRI of greater than 220 "International Roughness Index" (IRI). The "Before IRI Overlay" is defined as the average IRI of the existing pavement for a road section from starting to end termini. The before overlay IRI shall be provided by the Engineer. If the pavement structure is determined to be of sufficient thickness a bid item shall be included for mandatory profile milling as a pay item. All applicable road segments shall be identified in the pre-bid documents. For road segments with a before overlay IRI between 120 and 220 profile milling is optional and will not be a pay item. Road segments with a before overlay IRI of less than 120 shall follow the new construction portion of the smoothness specification.

Prior to the placement of the final course of pavement, the Engineer will furnish the Contractor with an International Roughness Index (IRI) value that results from the Engineer's evaluation of the material placed to date. The actual time of this "preliminary" evaluation will be coordinated between the Engineer, the Contractor, and the MCDOT Road Management Section (RMS) Supervisor. This evaluation will be limited to one (1) test run in a single lane in each direction of travel. The IRI value will serve as a guide to the Contractor in evaluating his current level of conformance with the smoothness specification. Preliminary IRI evaluations shall **NOT** be performed on road segments with profile milling, due to the extreme rough texture created by the profiler. The IRI value for the final course of pavement will be the basis for determining payment adjustments for smoothness. The smoothness adjustment will be in accordance with the New Construction Rideability Adjustment Schedule (Table 1) or the Overlay Rideability Adjustment Schedule (Figure 1).

2.5.7.1 Evaluation Method: The MCDOT Road Management Section shall evaluate the final pavement surface for smoothness, using the MCDOT IRI vehicle equipped with an International Cybernetics Corp. Laser Road Profiler. The IRI value is the calculated measurement of the deviation of a pavement surface from a true planar surface. The IRI data is typically collected at the posted speed limit, however speeds may range from 20-60mph. A zero IRI value would indicate a perfectly smooth pavement surface, while increasing IRI values would correspond to an increasingly rough pavement surface. IRI values will be calculated in inches of vertical displacement for every 0.10 mile lane segment and normalized to inches/mile. [Example: a 0.10-mile section yielding an actual vertical displacement of ten (10) inches would be normalized to an IRI value of 100 inches/mile.]

The final pavement surface being evaluated will be divided into 0.10-mile road segments and individual lanes. The final road segment will include any remaining portion of a segment not equaling 0.10 miles. [Example: 1.52 miles of pavement divides into 15 segments with the last one measuring 0.12 miles.] The IRI is calculated for each 0.10-mile segment and shall be averaged (three runs per lane) to determine the IRI value for that segment. All values obtained from the RMS IRI vehicle shall be final.

The following shall be subject to smoothness testing:

1. Roadway lanes that are 0.25 miles or greater in length.
2. Smoothness data will not be computed for the following project Sections;
  - Lanes less than 0.25 miles in length.
  - Shoulders.
  - Pavement on horizontal curves that require the test vehicle to travel at speeds less than 20 mph.
  - Test segments with an irregularity such as bridge joints, cattle guards, drainage swales, railroad tracks, valley gutters, or other irregularity item as identified by the Engineer shall have a reduction in length of the test section by a minimum of 0.01 mile (53'), to exclude the irregularity from the data set.
3. Bridge decks shall be included only if paved as part of the project. If bridge decks are not included as part of the construction project, profile testing will be suspended before the first joint between the asphalt surfacing and the bridge/approach slab and restarted after the last joint between the bridge/approach slab and the asphalt surfacing.

4. Smoothness measurement testing will start and stop at the transverse joints of the project limits.

When requested by the Engineer, the Contractor shall provide traffic control for smoothness testing to allow the test vehicle to safely travel through signalized intersections and/or stop controls oriented in the test direction of travel.

The Contractor shall notify the Engineer within ten (10) working days after completion of all pavement repairs that the pavement is ready for smoothness testing. The Engineer will have the testing conducted within twenty (20) working days after notification by the Contractor. All Asphalt concrete pavements shall conform to Section 321 and 325 prior to smoothness testing.

When the smoothness measurements indicate corrective work is required, the Engineer shall notify the Contractor in writing within ten (10) working days after the completion of the smoothness testing. The Contractor shall have twenty (20) working days following such notification to make repairs to the pavement.

The Contractor shall notify the Engineer within ten (10) working days after completion of all pavement repairs that the pavement is ready for smoothness re-testing. The Engineer will conduct the testing within twenty (20) working days after notification by the Contractor.

No testing shall be conducted during rain or under other conditions deemed inclement by the Engineer. During testing the roadway must be free of moisture and other materials that might affect the evaluation. Any work associated with preparing the roadway for the evaluation, such as but not limited to sweeping, will not be measured for payment.

- 2.5.7.2 Payment Adjustment for Rideability: All Asphalt concrete shall conform to Section 321 and 325 prior to final payment adjustment for smoothness. Positive adjustments for rideability **shall not be made** for those areas subsequently reviewed and determined by the Engineer to be otherwise defective. The Area shall be considered defective if it does not conform to Section 321 and 325 requirements for Air Voids, Binder Content, Gradation, Density, and/or Pavement Thickness.

Payment adjustments shall be made under the contract item Rideability. When a project is considered to be new construction or re-construction with grade control from the sub-grade material and up, the payment to the Contractor shall be based on the IRI value according to the New Construction Rideability Adjustment Schedule (Table 1). In the case of single lift 1.5" or greater overlays the payment to the contractor shall be based on the IRI value according to the Overlay Rideability Adjustment Schedule (Figure 1). The adjustment will be applied to each one tenth mile (0.10 mi.) segment of each lane subject to smoothness testing. The rideability payment will be the indicated percent adjustment multiplied times the adjusted contract price for the surface course quantities of the hot mixed asphalt, asphalt overlay, or rubber asphalt overlay incorporated into the final construction.

Payment for Rideability will be distributed based on segment areas; the area of each lane segment will be the segment length times the segment width. The segment width shall be the striped traffic lane width or modified lane width. The width for exterior lanes will be the striped traffic lane width modified to include the asphalt area of adjacent bicycle lanes, paved shoulders, and short auxiliary lanes. The width of the innermost traffic lanes will be the striped

traffic lane width modified to include the asphalt area of adjacent asphalt paved medians and left turn bays.

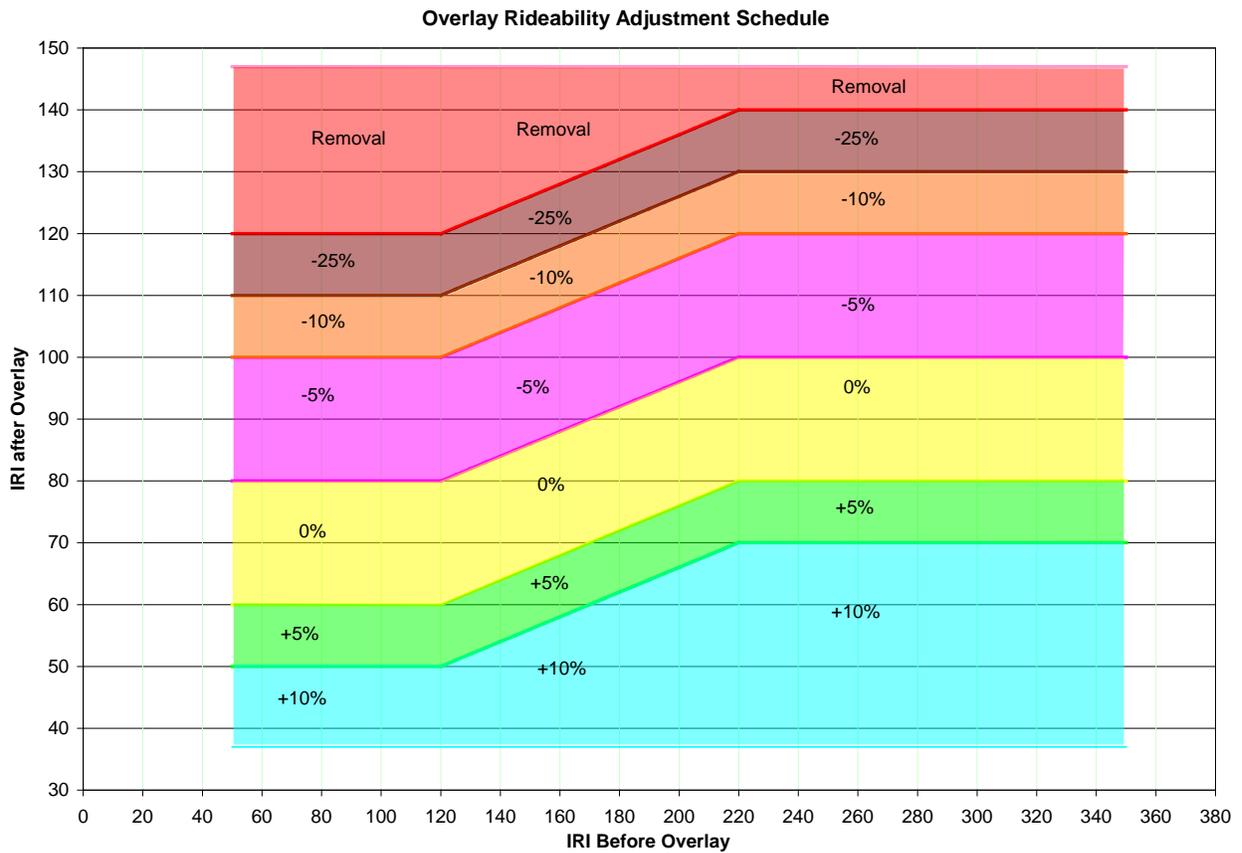
Table 1: New Construction Rideability Adjustment Schedule

| IRI (inches per mile) | PERCENT ADJUSTMENT |
|-----------------------|--------------------|
| ≤ 50                  | +10                |
| 51 - 60               | +05                |
| 61 - 80               | 0                  |
| 81 - 100              | -05                |
| 101 - 110             | -10                |
| 111 - 120             | -25                |
| >120                  | RxR Required       |

**NOTES:**

All IRI values will be rounded to the nearest whole number. (Example: 75.5 shall be rounded to 76.) “RxR Required” is the Removal and Replacement of the defective area.

Figure 1:



Note: 1. For initial IRI below 120, the smooth specification is the same as that for new pavement construction.  
 2. For initial IRI above 220, profile milling is mandatory and will be a pay item.  
 3. For initial IRI between 120 and 220, profile milling will not be a pay item.

- 2.5.8 **TRANSPORTATION:** Petroleum distillates or other substances that will have a detrimental effect on the asphalt concrete shall not be used as a release agent.

The beds of all transportation units shall be clean and smooth to allow the free flow of material into the paving machine's hopper.

Tarpaulins shall be furnished on all trucks and used when weather condition warrant, or if directed by the Engineer.

- 2.5.9 **PLACEMENT:**

- 2.5.9.1 **Placing:** All courses of asphalt concrete shall be placed and finished by means of a self-propelled paving machine equipped with an automatically actuated control system, except under certain conditions or at locations where the Engineer deems the use of a self-propelled paving machine impracticable.

The control system shall control the elevation of the screed at each end by controlling the elevation of one end directly and the other end indirectly either through controlling the transverse slope or alternatively when directed, by controlling the elevation of each end independently.

The control system shall be capable of working with one of the following devices:

- (A) Ski or non-contact device of not less than 30 feet in length, supported throughout its entire length
- (B) Taut stringline or wire set to grade
- (C) Short ski or sonar sensing units from curb control
- (D) Joint matching shoe

Failure of the control system to function properly shall be cause for the suspension of asphalt concrete production. In order to achieve a continuous operation, the speed of the paving machine shall be coordinated with the hot mix plant and transport units.

If the asphalt concrete is dumped from the hauling vehicles directly into the paving machine, care shall be taken to avoid jarring the machine or moving it out of alignment. No vertical load shall be exerted on the paving machine by the truck.

If asphalt concrete is dumped upon the surface being paved and subsequently loaded in the paving machine, the loading equipment shall be self-supporting and shall not exert any vertical load on the paving machine. Substantially all of the asphalt concrete shall be picked up and loaded into the paving machine.

Self-propelled paving machines shall spread the mixture without segregation or tearing, true to line, grade and crown indicated on the Project plans. Pavers shall be equipped with hoppers and augers that will distribute the mixture uniformly in front of an adjustable floating screed. The raising of the hopper wings must be minimized and the paving machine will not be operated when in an empty condition.

Screeds shall include any strike-off device operated by tamping or vibrating action which is effective, without tearing, shoving or gouging the mixture and which produces a course with a uniform texture and density for the full width being paved. Screeds shall be adjustable as to height and crown and shall be equipped with a controlled heating device for use when required. In the case of the screed, auger extensions and vibrators shall be installed wherever the screed is extended more than one (1) foot beyond the end of the base auger or auger

extension. However, when placing material against an extremely uneven curb or edge over a short distance, the Engineer may waive the auger extensions and vibrators.

At any place not accessible to the roller, the mixture shall be thoroughly compacted with tampers to provide a uniform and smooth layer over the entire area compacted in this manner.

- 2.5.9.2 Joints: Transverse joints, before a surface course is placed in contact with a cold transverse construction joint, the cold existing asphalt concrete shall be trimmed to a vertical face for its full depth and exposing a fresh face. After placement and finishing the new asphalt concrete, both sides of the joint shall be dense and the joint shall be smooth and tight. The surface in the area of the joint shall not deviate more than ¼ inch from a 12-foot straightedge, when tested with the straightedge placed across the joint, parallel to the centerline.

Longitudinal Joints of each course shall be staggered a minimum of 6 inches with relation to the longitudinal joint of the immediate underlying course cold transverse construction joint, the cold existing asphalt concrete shall be trimmed to a vertical face for its full depth and exposing a fresh face. The fresh face shall be tacked prior to placement of the adjacent course. After placement and finishing the new asphalt concrete, both sides of the joint shall be dense and the joint shall be smooth and tight. The surface in the area of the joint shall not deviate more than ¼ inch from a 12-foot straightedge, when tested with the straightedge placed across the joint, parallel to the centerline. The joint will be tack coated if required by the Engineer.

- 2.5.9.3 Leveling Course: A leveling course shall be used when specified, or as directed in writing by the Engineer, to bring existing pavement to a uniform grade prior to placing an overlay or other course. If a leveling course is being applied on an Asphalt surface, a tack coat shall be applied. The compaction requirements contained in Section 321.10 do not apply to leveling courses.

- 2.5.9.4 Compaction Base and Surface: It is the contractor's responsibility to perform any desired Quality Control monitoring and/or testing during compaction operations to achieve the required compaction. Asphalt concrete immediately behind the laydown machine shall be referenced to Table 321.3. The probe type thermocouple thermometer shall have a current calibration sticker attached. When measuring the temperature of the mat, the probe shall be inserted at mid-depth and as horizontal as possible to the mat.

Asphalt compaction equipment shall be of sufficient size and weight to accomplish the required compaction. All compaction equipment shall be operated and maintained in accordance with the manufacturer's recommendations and the project requirements. During the rolling operation, the speed of the roller shall not exceed 3 miles per hour, unless otherwise approved by the Engineer.

Pneumatic tired compactors shall be equipped with skirt-type devices mounted around the tires so that the temperature of the tires will be maintained during the compaction process.

The Engineer will determine the acceptability of the pavement compaction in accordance with Section 2.5.11

- 2.5.9.5 Smoothness: The completed surfacing shall be thoroughly compacted, smooth and true to grade and cross-section and free from ruts, humps, depressions or irregularities. An acceptable surface shall not vary more than one-fourth (¼) inch from the lower edge of a 12-foot straightedge when the straightedge is placed parallel to the centerline of the roadway.

- 2.5.9.6 Asphalt Concrete Overlay: Asphalt concrete overlay consists of the placing and compacting plant mix asphalt concrete over existing asphalt concrete paving. The thickness of the overlay shall be as shown on the plans or as specified in the special provisions. Preliminary preparation of existing surfaces will be required except when accomplished by the Contracting Agency, and it is so stipulated in the special provisions. With the exception of those which have been preheated and remixed only, existing surfaces shall receive a tack coat.

Asphalt concrete mix aggregate gradation and percentage of asphalt binder shall be in accordance with Section 710 using a 1/2-inch Marshall-Low Traffic asphalt concrete mix designation for overlay more than one and one-half inch in thickness and a 3/8-inch Marshall-Low Traffic asphalt concrete mix designation for overlay one and one-half inch or less in thickness, unless otherwise shown or specified in the special provisions.

Except when they have been preheated and remixed, pavement surfaces shall be prepared as follows:

- (a) Before placing asphalt concrete overlay, severely raveled areas or cracked areas that are depressed more than 3/4-inch from the adjoining pavement shall be cut out and patched at least 48 hours prior to the resurfacing operation. Over-asphalted areas or rough high spots shall be either milled or cut out and patched. Large shrinkage cracks shall be filled with asphalt sealing compound acceptable to the Engineer. The entire surface shall be cleaned with a power broom. Raveled areas that do not require removing shall be cleaned by hand brooming. The above are incidental, and the cost thereof shall be included in the bid items.
- (b) Before placing asphalt concrete overlay, milling shall be done as shown on the plans or specified in the special provisions and shall be in accordance with Section 317.
- (c) After surfaces have been prepared to the satisfaction of the Engineer, they shall receive a tack coat per Section 321.4. Traffic will not be permitted over surfaces which have received a tack coat. When the overlay is to extend onto the concrete gutter, the gutter shall be thoroughly cleaned of loose dust and cement particles and shall be tack coated.

Asphalt concrete overlay shall be placed as specified in Section 321.8.1 and compacted as specified in Section 321.8.4. The surface smoothness shall meet the tolerances specified in Section 321.8.5.

Manholes shall be built up and the frames set flush with the finished surface of the new paving, and tops of valve boxes, clean-outs and other existing structures shall be adjusted to finish grade. In the event the base course and original paving have been removed or disturbed in order to build up the manhole, they shall be replaced with approved materials which shall be thoroughly compacted. The asphalt concrete around the manhole frame shall be completed and made flush with the adjacent overlay.

- 2.5.9.7 Pavement Fabric Interlayer: Pavement fabric interlayer shall be used only when specified on the plans or in the specifications.

Pavement fabric interlayer shall be in accordance with Table 796-1 and be the class designated on the plans or in the specifications.

Asphalt binder coat used to bond the fabric to the pavement shall be paving asphalt PG 70-10 asphalt cement conforming to the requirements of Section

711. The application and distributing equipment for the asphalt binder shall conform to the requirements of Section 330. The asphalt binder coat shall be uniformly spray applied to the prepared pavement surface at the rate of 0.20 gallons per square yard for Class B fabric or at the rate of 0.25 gallons per square yard for Class A fabric. Some underlying surfaces may require a higher or lower application rate. A test strip may be necessary to determine the proper application rate. The width of liquid asphalt cement application shall be the fabric width, plus six inches.

Neither the asphalt binder coat or fabric interlayer shall be placed when weather conditions, in the opinion of the Engineer, are not suitable. The asphalt binder and fabric interlayer shall only be placed when the pavement is dry, the ambient air temperature is 50 degrees F and rising, and pavement temperature is 40 degrees F and rising.

Equipment for placing the fabric shall be mechanized and capable of handling full rolls of fabric. The equipment shall be able to lay the fabric smoothly to maximize pavement contact and remove air bubbles. Stiff bristle brooms shall be used to smooth the fabric. The equipment used to place the fabric shall be in good working order and is subject to approval by the Engineer.

Pavement fabric interlayer shall not be placed if the in-place binder is hotter than 325 degrees F or has cooled to 180 degrees F or below (as determined by non-contact thermometer).

Pavement fabric interlayer shall be placed onto the asphaltic binder with the heat bonded side up with a minimum amount of wrinkling or folding. Remaining wrinkles or folds 1-inch and larger shall be removed or slit and shingle-lapped in the direction of paving. Burning or torching of wrinkles is not allowed. Fabric shall overlap three to six inches to insure full closure of the joint. Transverse joints shall be shingle-lapped in the direction of paving to prevent edge pickup by the paver. A second application of hand-placed asphalt binder may be required at laps and repairs as determined by the Engineer to ensure proper binding of the narrow double fabric layer.

All areas where fabric has been placed shall be paved with asphaltic concrete during the same workshift. Placement of the asphaltic concrete shall closely follow fabric lay down. The temperature of the asphaltic concrete immediately behind the laydown machine shall not exceed 325 degrees F. In the event that the asphalt binder coat bleeds through the fabric causing construction problems before the overlay is placed, the affected areas shall be sanded with a sand blotter in compliance with Section 333. Excess sand shall be removed before beginning the paving operation. In the event of rainfall prior to the placement of the asphaltic concrete, the fabric shall be allowed to dry before the asphalt concrete is placed.

Turning of the paving machine or of other vehicles on the fabric shall be gradual and kept to a minimum to avoid damage to the fabric. Should equipment tires stick to the fabric during pavement operations, small quantities of paving asphalt concrete shall be broadcast on the fabric to prevent pick-up. Decrease of binder rate in order to minimize pick-up on tires is not allowed.

| <b>TABLE 321.2</b>                                    |                        |     |     |       |     |               |
|---|------------------------|-----|-----|-------|-----|---------------|
| <b>MINIMUM ASPHALT CONCRETE PLACEMENT TEMPERATURE</b> |                        |     |     |       |     |               |
| Base <sup>(1)</sup> Temp<br>(/F)                      | Mat Thickness (inches) |     |     |       |     |               |
|   | 1/2                    | 3/4 | 1   | 1 1/2 | 2   | 3 and greater |
| 40 – 50   | --                     | --  | 310 | 300   | 285 | 275           |
| 50 – 60   | --                     | 310 | 300 | 295   | 280 | 270           |
| 60 – 70   | 310                    | 300 | 290 | 285   | 275 | 265           |

|         |     |     |     |     |     |     |
|---------|-----|-----|-----|-----|-----|-----|
| 70 – 80 | 300 | 290 | 285 | 280 | 270 | 265 |
| 80 – 90 | 290 | 280 | 270 | 270 | 265 | 260 |
| + 90    | 280 | 275 | 265 | 265 | 260 | 255 |

**(1) Base on which mix is to be placed**

2.5.10 **QUALITY CONTROL:** It is the contractor’s responsibility to perform Quality Control monitoring and/or testing during asphalt concrete production to achieve the required compaction and to perform Quality Control monitoring and/ or testing during asphalt concrete production to achieve the required mix properties. The Engineer may obtain samples of any portion of any material at any point of the operations for his own use. Also, the Engineer may order the use of any drying, proportioning and mixing equipment or the handling of any material discontinued which, in his/her opinion, fails to produce a satisfactory mixture.

The asphalt concrete produced shall conform to the properties of the mix design. When the asphalt concrete does not conform to the approved mix design properties, it shall be reported to the Engineer, and corrective quality control measures shall be implemented, or production shall cease immediately at no additional cost to the contracting Agency or Engineer.

2.5.11 **ACCEPTANCE:**

2.5.11.1 **Acceptance Criteria:** Unless otherwise specified, asphalt concrete will be divided into lots for the purpose of acceptance. A lot shall be considered to be one day’s production. When the quantity of asphalt concrete placed in a day exceeds 500 tons but is less than 2000 tons, the lot shall be divided into 500 ton sublots or fraction thereof. Where the quantity of asphalt concrete placed in a day exceeds 2000 tons, the day’s production will be divided into four (4) approximately equal sublots. A minimum of one sample will be obtained from each lot. Tests used to determine acceptance will be performed by the Engineer or a laboratory employed by the Engineer. In either case the laboratory shall be accredited by the AASHTO Accreditation Program (AAP), for the tests being performed. The acceptance laboratory will take representative samples of the asphalt concrete from each subplot to allow for gradation, binder content, air voids, pavement thickness and compaction of base and surface course. Each subplot will be accepted based upon the test data from the sample(s) from that subplot. All acceptance samples shall be taken using random locations or times designated by the Engineer in accordance with ASTM D 3665.

2.5.11.2 **Gradation, Binder Content and Air Voids:** The acceptance laboratory will take a sample of the asphalt concrete in accordance with the requirements of Section 2 or 4 of Arizona Test Methods 104 or AASHTO T168 from each subplot. The minimum weight of the sample shall be 45 pounds. Asphalt binder content and gradation shall be determined in accordance with AASHTO T308 using the ignition furnace for each subplot. The acceptance laboratory is responsible for obtaining the necessary materials and performing an ignition furnace calibration as outlined in AASHTO T308 for each asphalt concrete mixture utilized on the project. The correction factor used for each test shall be clearly indicated on the report. The bulk density for Marshall Mix designs shall be tested in accordance with AASHTO T245. The bulk density for Gyratory mix designs shall be tested in accordance with AASHTO T312. The maximum theoretical density shall be tested in accordance with the requirements of AASHTO T209. Effective voids determined on the laboratory compacted specimens will be determined at a minimum of once per lot in accordance with the requirements of AASHTO T269. Should the testing for effective air voids not meet the “Full Payment” or “No Corrective Action” requirements of Table 321-5, additional testing for laboratory air voids on the remaining sublots will be performed as necessary to determine the extent of the deficiency.

Acceptance testing results will be furnished to the contractor within five working days of receipt of samples by the acceptance laboratory.

The allowable deviations for acceptable production of each measured characteristic from the values established in the JMF for each subplot are as follows:

| <b>TABLE 321-3</b>                                |              |
|---|--------------|
| <b>ACCEPTANCE LIMITS FOR ASPHALT CONCRETE</b>     |              |
| Maximum Aggregate Size                            | 100% passing |
| Nominal Maximum Aggregate Size                    | ±7%          |
| No. 8 Sieve to the Nominal Maximum Aggregate Size | ±6%          |
| No. 100 and No. 30 Sieves                         | ±4%          |
| No. 200 Sieve                                     | ±2%          |

If the results from a single acceptance sample fall outside of the acceptance limits in Table 321-3 a second sample shall be taken and if the second acceptance sample is also outside of the acceptance limits in Table 321-3 the Contractor shall cease production of asphalt concrete. Production shall not begin again until calibration test results verify that adjustments made to materials or proportions yield a gradation that falls within acceptance limits in Table 321-3.

The asphalt binder content shall be considered acceptable if it is within ± 0.40% of the mix design target value.

| <b>TABLE 321-4</b>   |  |  |
|--|--|--|
| <b>ASPHALT BINDER CONTENT CORRECTIVE ACTION FOR DEVIATIONS</b> |  |  |
|  | When the contracting agency is the owner:          | When the contracting agency is not the owner (i.e. permits): |
| Deviation from that permitted                                  | Payment Reduction (\$ per ton of asphalt concrete) | Corrective Action  |
| 0.0 to 0.1% points   | \$2.00   | EA (see 2.5.11.6)  |
| Over 0.1 to 0.2% points  | \$6.00   | EA (see 2.5.11.6)  |
| Over 0.2% points   | Removal*   | Removal*   |

Note: Removal\* refers to Section 2.5.11.6

| <b>TABLE 321-5</b>  |  |  |
|---|--|--|
| <b>LABORATORY VOIDS ACCEPTANCE AND PENALTIES</b>                              |  |  |
|   | When the contracting agency is the owner:          | When the contracting agency is not the owner (i.e. permits): |
| Laboratory Air Voids (Measured at N <sub>des</sub> or 75 blows as applicable) | Payment Reduction (\$ per ton of asphalt concrete) | Corrective Action  |
| Less than 1.5%  | Removal*   | Removal*   |
| 1.5-2.0%  | \$2.50   | EA (see 2.5.11.6)  |
| 2.1-2.7%  | \$1.00   | EA (see 2.5.11.6)  |
| 2.8-6.2%  | Full Payment                                       | No corrective action   |
| 6.3-6.9%  | \$1.00   | EA (see 2.5.11.6)  |
| 7.0-8.0%  | \$2.50   | EA (see 2.5.11.6)  |
| Greater than 8.0%   | Removal*   | Removal*   |

Note: Removal\* refers to Section 2.5.11.6

If an agency or Engineer is purchasing asphalt concrete directly from a commercial material supplier, the agency or Engineer will use Section 321.10 and specifically Tables 321-3, 321-4 and 321-5 from Section 321.10 when determining the acceptance of the asphalt concrete with the material supplier.

- 2.5.11.3 Surface Testing: If directed by the Engineer surface drainage test shall be performed. The completed surfacing shall be thoroughly compacted, smooth and true to grade and cross-section and free from ruts, humps, depressions or irregularities. An acceptable surface shall not vary more than 1/4 inch from the lower edge of a 12-foot straightedge when the straightedge is placed parallel to the centerline of the roadway. The straightedge shall be furnished by the contractor and shall be acceptable to the Engineer.

All streets shall be water tested for drainage in the presence of the Engineer or designated representative before final acceptance. Any areas not draining properly shall be corrected to the Engineer's satisfaction at the Contractor's expense. Water for this testing shall be provided and paid for by the Contractor.

When deviations in excess of the above tolerance are found, humps or depressions shall be corrected to meet the specified tolerance, or shall be cut out along neat straight lines and replaced with fresh hot mixture and thoroughly compacted to conform with and bond to the surrounding area. Materials and work necessary to correct such deviations shall be at no additional cost to the Contracting Agency.

- 2.5.11.4 Asphalt Pavement Thickness: Asphalt Pavement thickness will be determined from cores secured from each subplot for this purpose. Such cores will be taken and measured by the Asphalt Concrete Coring Method. This method can be found at in Section 321.14. Each core location will be patched by the party responsible for the testing.

If the pavement thickness is deficient from the target thickness by 0.25 inches or less, it will be paid for at the contract unit price. If the pavement thickness deficiency is greater than 0.25 inches and the contracting agency is not the owner (i.e. permits) the following steps will apply:

- (1) If the thickness deficiency of the pavement exceeds 0.25 inch, the limits of the deficient area will be isolated by coring at maximum intervals of 100 feet from the deficient core. The thicknesses of the original deficient core will be averaged with the thicknesses of the cores taken from 100 feet on each side of it to determine compliance with the acceptance requirements.
- (2) If the pavement thickness from step one above deviates from the target thickness by more than 0.25 inch but not more than 0.50 inch, corrective action will be required. This corrective action will consist of application of a Type II slurry seal coat in accordance to Section 715. The Contractor may present an engineering analysis outlining other proposed remedial measures for the consideration of the Engineer. The Engineer will review the engineering analysis and decide within 30 working days whether to accept the proposed remedial measures.
- (3) If the pavement thickness from step one above deviates from the target thickness by more than 0.50 inch, corrective action will be required. The deficient area will be overlaid with no less than 1 inch thick lift, for the full width of the pavement to meet or exceed the designed thickness, with the appropriate end and edge milling, with a mixture approved by the Engineer. The Contractor may present an engineering analysis outlining other proposed remedial measures for the Engineer's consideration. The

Engineer will review the engineering analysis and decide within 10 working days whether to accept the proposed remedial measures. If the Engineer chooses to reject the engineering analysis, the indicated overlay will be constructed by the Contractor at no additional cost to the Owner.

If the pavement thickness deficiency is greater than 0.25 inches and the contracting agency is the owner, Table 321-6 will apply.

| TABLE 321-6  |  |
|--|--|
| <b>ASPHALT PAVEMENT THICKNESS PAYMENT REDUCTION</b>                                |  |
| <b>For Thickness Deficiency of More Than 0.25 inches and less than 0.50 inches</b> |  |
| <b>Specified Mat Thickness</b>   | <b>Reduction in Payment or Corrective Action</b> |
| Less than 1.5 inches   | 50%  |
| 1.50 inches to 1.99 inches   | 33%  |
| 2.00 inches to 2.49 inches   | 25%  |
| 2.50 inches to 2.99 inches   | 20%  |
| 3.00 inches and over   | 17%  |

2.5.11.5 Density: Achieving the required compaction is the responsibility of the contractor. The number and types of rollers is the contractor’s responsibility and shall be sufficient to meet these requirements.

In-place air voids shall be determined in accordance with AASHTO T269 utilizing cores taken from the finished pavement. The maximum theoretical density used in the determination of in-place air voids will be the average value from the acceptance samples determined for the Lot as outlined in 2.5.11.1

The Engineer will designate two random test locations for each subplot and the acceptance laboratory will obtain two cores from each location. The two cores will be averaged for acceptance. The outside one foot of each pass of the pavement course or any unconfined edge will be excluded from testing. The Engineer may exclude areas from the compaction lot that are not accessible by normal compaction equipment.

The Contractor will provide the traffic control to facilitate any coring operations necessary for compaction acceptance.

Cores will be taken per the Asphalt Concrete Coring Method. This method can be found in Section 321.14. The acceptance laboratory will furnish test results within three working days of receipt of the cores.

If the pavement density has in-place voids of 8.0% or less, the asphalt concrete will be paid for at the contract unit price. If the pavement density has in-place voids greater than 8.0%, the limits of the deficient area will be isolated within the subplot by coring at maximum intervals of 100 feet from the deficient core. The in-place voids of the original deficient core will be averaged with the in-place voids of the cores taken from 100 feet on each side of it to determine compliance with the acceptance requirements. If the average of the in-place voids is greater than 8.0% then Table 321-6 shall apply to the subplot.

| TABLE 321-7                       |  |   |
|-----------------------------------|--|---|
| <b>PAVEMENT DENSITY PENALTIES</b> |  |   |
| Limits of In-place Air voids      | When the contracting agency is the owner:<br>Payment Reduction | When the contracting agency is not the owner (i.e. permits):<br>Corrective Action |
| Less than 1.5 inches              | (\$ per ton of asphalt concrete)                               |   |
| 8.1% to 9.0%                      | \$4.00   | EA  |

|                    |          |                           |
|--------------------|----------|---------------------------|
| 9.1% to 10.0%      | \$6.00   | EA and Type II Surry Seal |
| 10.1% to 11.0%     | Removal* | Removal*                  |
| Greater than 11.0% | Removal  | Removal                   |

\*Notes: Removal\* refers to Section 2.5.11.6. The Contractor shall remove and replace the entire subplot that is deficient. Removal for In-place Air Voids greater than 11.0% is not eligible for Section 2.5.11.6.

2.5.11.6 Engineering Analysis (EA): Within 10 working days after receiving notice that a subplot of asphalt concrete is deficient for “Removal” by the Engineer, the contractor may submit a written proposal (Engineering Analysis) to accept the material in place at the applicable penalties listed in the “Removal” category. Engineering Analysis can also be proposed for non-removal categories of “Corrective actions” when the contracting agency is not the owner (i.e. permits).

The Engineering Analysis shall contain an analysis of the anticipated performance of the asphalt concrete if left in place. The Engineering Analysis shall also detail the effect of any proposed corrective action on the performance. The Engineering Analysis shall be performed by a professional engineer experienced in asphalt concrete testing and mix designs. If the subplot is submitted for referee testing by the contractor, the ten working days allowed to prepare an engineering analysis will begin upon notification of referee test results.

When an Engineering Analysis recommends that a specific lot or subplot not be removed, the Engineering Analysis will recommend that the following penalties (Table 321-8) be paid when the contracting agency is the owner, for the specific criteria being reviewed by the EA.

| TABLE 321-8   |                                      |   |
|---|--------------------------------------|---|
| ENGINEERING ANALYSIS PENALTIES for REMOVAL* LOTS/SUBLOTS LEFT IN-PLACE        |                                      |   |
| Acceptance Criteria   | Acceptance Limits                    | Penalty When Contracting Agency is the Owner (\$/Ton) |
| Asphalt Binder Content  | Over 0.2% points from that Permitted | \$9.00  |
| Laboratory Air Voids (Measured at N <sub>des</sub> or 75 blows as applicable) | Less than 1.5% or Greater Than 8.0%  | \$3.75  |
| Limits of In-place Air Voids  | 10.1% to 11.0%                       | \$9.00  |

2.5.12 REFEREE: In the event the contractor elects to question the acceptance test results for a subplot, the Contractor may make a written request for additional testing of that subplot. The Contractor will engage an independent laboratory (at the Contractors own expense) who is accredited by AAP in all of the acceptance tests. The independent laboratory shall be acceptable to the Engineer and shall perform a complete new set of acceptance tests (as required by Section 2.5.11 representing the area or set of tests in question).

These tests shall include asphalt binder content, aggregate gradation, Marshall or Gyratory unit weight, and maximum theoretical unit weight. Samples for referee testing shall come from representative samples obtained from the completed pavement, as directed by the Engineer.

The number of samples taken will be the same as specified in Section 2.5.11. The independent laboratory shall compile the test results and transmit them to both the

Engineer and the Contractor. The independent laboratory shall include a letter signed by an Engineer registered in the State of Arizona, who is experienced in asphalt concrete testing and mix designs. The signed letter shall give an opinion that the material evaluated either does or does not comply with project specifications, and shall clearly describe any deficiencies, and the results will be binding between all parties.

- 2.5.13 **MEASUREMENT:** Asphalt concrete pavement will be measured by the ton, or by the square yard, for the mixture actually used as allowed above, which shall include the required quantities of mineral aggregates, asphalt binder, and mineral admixture. Measurement shall include any tonnage used to construct intersections, roadways, streets, or other miscellaneous surfaces indicated on the plans or as directed by the Engineer.
- 2.5.14 **PAYMENT:** The asphalt concrete measured as provided above will be paid for at the contract price per ton or square yard, as adjusted per Section 2.5.11, which price shall be full compensation for the item complete, as herein described and specified. Payment for tack coat will be by the ton diluted, based on the rate of application, as directed by the Engineer.

No payment will be made for any overrun in quantity of asphalt concrete in excess of 10 percent based on actual field measurement of area covered, design thickness, and the mix design unit weight. The calculations and payment for overrun will be by individual pay item. To compensate or adjust for a thickness deficiency in an underlying asphalt concrete course, the Engineer may authorize a quantity increase in excess of 10 percent for a subsequent asphalt concrete course. In such cases, the quantity in excess of 10 percent will be paid for at the lowest unit price.

Except as otherwise specified in the special provisions, no separate payment will be made for work necessary to construct miscellaneous items or surfaces of asphalt concrete.

- 2.5.15 **ASPHALT CORE METHOD:** Core Drilling of Hot Mix Asphalt (HMA) for Specimens of 4" or 6" diameter
- 2.5.15.1 **Scope:** This method is to establish a consistent method of the use of a diamond bit core to recover specimens of 4 or 6 inch diameter for laboratory analysis and testing. The method will require the use of: water, ice (bagged or other suitable type), dry ice, and a water-soap solution to be utilized when coring asphalt rubber concrete. Individuals doing the specimen recovery should be observing all safety regulations from the equipment manufacturer as well as the required job site safety requirements for actions, and required personal protective equipment.
- 2.5.15.2 **Core Drilling Device:** The core drilling device will be powered by an electrical motor, or by an acceptable gasoline engine. Either device used shall be capable of applying enough effective rotational velocity to secure a drilled specimen. The specimen shall be cored perpendicularly to the surface of pavement, and that the sides of the core are cut in a manner to minimize sample distortion or damage. The machinery utilized for the procedure shall be on a mounted base, have a geared column and carriage that will permit the application of variable pressure to the core head and carriage throughout the entire drilling operation. The carriage and column apparatus shall be securely attached to the base of the apparatus; and the base will be secured with a mechanical fastener or held in place by the body weight of the operator. The core drilling apparatus shall be equipped with a water spindle to allow water to be introduced inside of the drill stem while operating. The cutting edge of the core drill bit shall be of hardened steel or other suitable material with embedded diamond chips in the cutting surface. The core barrel shall be of sufficient diameter to secure a specimen that is a minimum of four or six inches or whichever is prescribed for necessary testing. The core barrel shall not be missing more than one of the teeth used for cutting; if so it shall be discarded and another barrel shall be used. The core

barrel shall also be a minimum of two inches longer than the anticipated depth of pavement in accordance with project paving plans.

- 2.5.15.3 Accessory Equipment: A sufficient supply of ice and dry ice shall be provided to sufficiently cool the pavement prior to securing the samples from the designated areas in the pavement. The ice should also be used to adjust the temperature of the water used to cool the core bit. A water supply (usually a plastic 35 – 55 gal drum) with sufficient hose to introduce the water into and through the spindle of the coring device by gravity feed. The drum should be white or light in color to minimize excessive thermal heating of the water (*for coring of asphalt rubber cores see Note 1*). At no time shall the water utilized in the coring operation exceed 65° F during the coring operation. Ice shall be utilized to ensure the temperature control of the water being introduced during the cutting operation. An ice chest or other suitably insulated container that can maintain a temperature of less than 70° F shall be used to secure the specimens during transport. The container will be equipped with flat shelving that will support the drilled cores throughout the entire specimen dimension during transport back to the testing facility.

Miscellaneous hand tools to remove the drilled specimen from the drill hole or the core barrel taking great care in not disturbing the specimen more than necessary (refer to fig. 1 in ASTM D 5361-05).

- 2.5.15.4 Process: The pavement surface at the time of coring shall not exceed a temperature of 90° F, the pavement shall be conditioned with ice or dry ice to ensure that this requirement is met. Immediately after it has been ensured that the pavement has dropped to the required temperature, core drilling shall begin. The operator will then apply an even and continuous pressure (Note 2) to penetrate through the full depth of the pavement. The operator will concurrently ensure that enough water is moving over the core surface as to adequately remove any and all cuttings that could damage the drilled core. After the pavement thickness has been penetrated the core shall be carefully removed from either the drill hole or the core barrel and be immediately transferred to an ice chest or other suitable container. Each individual core shall be placed on a shelf in the cooler with the exposed side of the specimen facing down, or the “top side” down. If the specimen is a two lift core, the only acceptable means of separating lifts is with a power or other acceptable wet saw type of equipment (conforming to ASTM D 5361-05); however, at no time shall cores be split using a mallet and screwdriver or metal straight edge when being tested for bulk density. Perpendicularity of the specimen shall be checked in the field after the specimen has been extracted from the surface. The core operator shall hold the core up to eye level and place the core top side down in a “speed square” or small carpenters square. The specimen placed in the square shall not depart from perpendicular to the axis more than 0.5° (approximately equivalent to 1/16 of an inch in 6 inches). If the specimen is outside of this distance from square it shall be discarded in the field and another sample cored that falls within tolerance. The cores upon arriving at the laboratory for testing shall be carefully cleaned and measured for thickness in accordance with ASTM D 3549. A speed square shall be utilized to measure squareness as compared to a 90° degree angle and shall not depart from perpendicular to the axis more than 0.5° (approximately equivalent to 1/16 of an inch in 6 inches). All remaining testing shall be done within the parameters of the current project and / or agency required specification.

- **Note 1** – It should be noted that when the material to be cored is a rubberized asphalt mixture a wetting agent such as liquid dish soap shall be added to the water barrel to hinder the material from sticking or allowing the binder to spread during coring.
- **Note 2** – This refers to pressure exerted on the core barrel and machine during the coring process. Too much pressure can cause damage to the core barrel and the motor; and too little

pressure can cause a glazing of the diamonds, reducing cutting efficiency and premature wear of the barrel.

2.6 ASPHALT-RUBBER CONCRETE, GAP GRADED

2.6.1 DESCRIPTION: Asphalt-rubber concrete consists of supplying, placing and compaction of plant mixed gap graded asphalt-rubber concrete over asphalt surfaces. The thickness of the finished asphalt-rubber concrete overlay shall be within the range of one to two inches as shown on the plans or as specified in the special provisions. The County will make any repairs needed to roadway prior to overlay.

2.6.2 MATERIALS: Asphalt-rubber concrete shall consist of a mixture of aggregate and asphalt-rubber binder. Tack coat, asphalt-rubber concrete mix and transportation thereof shall be as specified in Sections 710 and 321, except as modified below:

2.6.2.1 AGGREGATE:

The aggregate shall meet the following gradation:

| <u>Sieve Size</u>        | <u>Percent Passing</u> |
|--------------------------|------------------------|
| ½ inch                   | 100                    |
| 3/8 inch                 | 78-92                  |
| #4                       | 28-42                  |
| #8                       | 15-25                  |
| #30                      | 5-15                   |
| #200                     | 3-7                    |
| *Type II portland cement | 1.5%                   |
| Or                       |                        |
| *Hydrated Lime           | 1.0%                   |

**\*By total weight of the mineral aggregate.**

The aggregate shall conform to the requirements of Sections 701 and 710 for asphalt concrete, except as modified below:

|  |             |
|--|-------------|
| Sand Equivalent  | 65% minimum |
| Crushed Aggregate retained on #8 sieve (at least one crushed face, produced by crushing) | 85% minimum |

2.6.2.2 Asphalt-Rubber Binder: The asphalt-rubber binder shall conform to Section 717.

2.6.2.3 Mix Designs: At the Pre-Construction Meeting, the Contractor shall submit the name of the asphalt-rubber concrete supplier, a description of the materials, and the job mix design(s). The design method used shall be in accordance with the Marshall Mix procedure, 75 blows, as described in "Design Methods for Hot-Mixed Asphalt-Rubber Concrete Paving Materials" by James G. Chehovits, October 1989. The job mix designs are subject to approval by the Engineer.

The asphalt-rubber concrete job mix design shall be for High Traffic conditions.

Asphalt Rubber Binder Content:

The percent of asphalt-rubber binder in the mix(es) shall be within the following range:

| Traffic Condition | Asphalt Rubber Binder |
|-------------------|-----------------------|
| Low Traffic       | 8.4% to 8.8%          |
| High Traffic      | 8.0% to 8.4%          |

The amount of asphalt-rubber binder in each mix shall be provided in the design subject to approval by the Engineer. Low traffic areas include residential streets. High traffic areas include arterial streets.

Air Voids:

The percent of air voids in the mix(es) shall be within the following range:

| Traffic Condition | Air Voids    |
|-------------------|--------------|
| Low Traffic       | 3.0% to 5.0% |
| High Traffic      | 4.0% to 6.0% |

The amount of air voids in each mix shall be provided in the design subject to approval by the Engineer.

Mix designs shall include the following information as a minimum:

- (1) Aggregate
  - Source and identification (for each material used)
  - Gradation (for each material used)
  - Blend percentage
  - Mixture gradation
- (2) Asphalt - Rubber Binder (No extender oil allowed)
  - Source and PG grade of asphalt cement
  - Source and identification of ground rubber
  - Ground rubber gradation
  - Ground rubber percentage of the asphalt - rubber binder
  - Type and amount of additive(s), if required
  - Temperature when added to aggregate
- (3) Recommended asphalt - rubber binder content by both weight of total mix and by weight of dry aggregate.
- (4) Recommendations for maximum / minimum temperatures during material production and lay down; and the allowable ambient air and existing pavement surface temperatures during lay down.

The mix design shall include sufficient test results and documentation to assure that all requirements for rubber, aggregate and the asphalt-rubber binder are fulfilled.

- 2.6.2.4 Calibration Factors: A minimum of one week prior to the production of asphalt rubber hot mix, the Contractor shall submit to the Engineer samples of all hot mix materials that will be used on the project. The materials shall be used to determine the calibration factors using the acceptance laboratory and the Contractor supplied ignition furnaces and related quality control test equipment. Calibration factors shall be recalculated whenever a change in the asphalt rubber hot mix materials occurs and when requested by the Engineer.

- 2.6.3 **SURFACE PREPARATION:** Before placing asphalt-rubber concrete on existing pavements, severely raveled areas or cracked areas that are depressed more than 3/4" from the adjoining pavement shall be cut out and patched at least 48 hours prior to the resurfacing operation. Overasphalted (bleeding or flushing) areas or rough high spots shall be removed by burning or blading. Large shrinkage cracks shall be filled with asphalt sealing compound acceptable to the Engineer. The entire surface shall be cleaned with a power broom. Raveled areas that do not require removing shall be cleaned by hand brooming. The above surface cleaning requirements are included as part of the Asphalt-Rubber Concrete paving operations, and the cost thereof shall be included in the Asphalt-Rubber Concrete pay item.

Pavement repairs and crack sealing when required are to be compensated for by other appropriate contract pay items.

Prior to placing the asphalt-rubber concrete on milled surfaces, pot-holes left by the milling operation shall be repaired by the Contractor, as a related non-pay item and as required by the Engineer. The milled area shall be swept.

After surfaces have been prepared to the satisfaction of the Engineer, they shall receive a tack coat as specified in Section 321. Traffic will not be permitted over surfaces which have received a tack coat. When the overlay is to extend onto a concrete surface, the concrete surface shall be thoroughly cleaned of loose dust and cement particles and shall be tack coated.

Surface preparation shall include removal by the Contractor existing raised pavement markers prior to sweeping and application of the tack coat.

- 2.6.4 **CONSTRUCTION METHODS:** Asphalt-rubber concrete shall be placed only when the surface is dry, and when the atmospheric temperature in the shade is 55°F or above. No asphalt-rubber concrete shall be placed when the weather is foggy or rainy. Asphalt-rubber concrete shall be placed only when the Engineer determines that weather conditions are suitable.

Except as otherwise noted, placing and rolling of the asphalt-rubber concrete and the smoothness of the surface shall be as specified in Section 321 for asphalt concrete. The spreading equipment shall be equipped with a mat reference ski-type control device of not less than 30 feet in length, or other method of control approved by the Engineer.

The density of the compacted mixture shall not be less than 95% of the laboratory unit weight composed of the same mixture compacted by the 75 blow method of ASTM D-1559 at 290/ F ± 5° F, or at the job mix design specified compaction temperature. Pneumatic rollers shall not be used.

Placement and compaction temperature shall be specified with the submitted mix design data but in no case less than 275° F at the point of placement. The temperature of the material in the truck shall be measured by inserting a thermometer, or other approved measuring device, to a point at least 6" below the surface of material.

If asphalt-rubber concrete is placed in a windrow during paving, the windrow shall not exceed a distance greater than 150 feet in front of the paving machine.

Rideability shall be tested in accordance with the provisions of Section 321.6.7 Pavement Smoothness.

- 2.6.4.1 **Lime Water:** An application of lime water shall be applied by the Contractor to the compacted asphalt rubber concrete surface after final compaction, prior to opening the roadway to traffic, or when requested by the Engineer to cool the pavement to prevent tracking and pick-up. The lime water solution shall be

applied at the rate of approximately ½ gallon/square yard. The lime shall be mixed using a minimum of (1) one 50-pound bag per 3,000 gallons of water.

2.6.4.2 Quality Control and Acceptance: Production requirements for asphalt-rubber concrete shall be as specified in Section 321.9 Quality Control and Section 321.10 Acceptance. The production tolerances and corrective action will be enforced for asphalt-rubber concrete.

2.6.4.3 Adjustments: After installation of an overlay course all necessary frame and cover adjustments for manholes, valve boxes, survey monuments, sewer clean-outs, etc., shall be completed by the Contractor within the given segments being surfaced. On roads without curb and gutter, the existing shoulder elevation shall be adjusted by the Contractor to match the elevation at the edge of new overlay and slope away from the new pavement surface at a rate that the existing quantity of shoulder material will allow. Shoulder material includes the existing shoulder, millings, untreated base materials, or a granular material approved by the Engineer. Shoulder material shall be compacted to a minimum of 95% of maximum density, determined in accordance with section 301.3.

2.6.5 MEASUREMENT: Asphalt-Rubber Concrete shall be measured by the ton, for the mixture actually used, which shall include the required quantities of mineral aggregates, filler material, rubberized asphalt binder and anti-strip agent.

Application of Lime Water shall be measured by the square yard. The measured area shall be the area of asphalt-rubber pavement to which the lime water is applied. The measured area shall only be counted one time regardless of the number of applications applied to the asphalt-rubber pavement section.

Shoulder adjustment to match the new pavement surface elevation shall not be measured. The cost of this work shall be included in the price paid for Asphalt-Rubber Concrete or other related pay items.

## 2.7 TACK COAT

2.7.1 DESCRIPTION: Tack coat for bituminous paved surfaces shall consist of the application of emulsified asphalt as specified in Section 713. A tack coat shall be applied to all asphalt concrete surfaces prior to the application of the asphalt-rubber concrete.

2.7.2 PREPARATION OF SURFACE: Surfaces to be treated shall be cleaned of all loose material as specified in Section 330.

2.7.3 APPLICATION: Tack coat shall be diluted in the proportion of 50 percent water and 50 percent emulsion and applied at the rate of 0.05 to 0.10 gallons per square yard. Application shall be made in advance of subsequent construction as ordered by the Engineer.

2.7.4 EQUIPMENT: Tack coat shall be applied by distributor trucks designed, equipped, maintained and operated in accordance with Section 330. Hand spray by means of hose or bar through a gear pump or air tank shall be acceptable for resurface work, corners or tacking of vertical edges. Care shall be taken to provide uniform coverage. Equipment that performs unsatisfactory shall be removed from the job.

2.7.5 PROTECTION FOR ADJACENT PROPERTY: According to Section 333.

2.7.6 MEASUREMENT: Bituminous emulsion that is diluted prior to application will be measured by the ton of diluted material. Any conversion from volumetric quantities shall be in accordance with Section 713.

- 2.7.7 PAYMENT: Payment for the emulsified bituminous tack coat will be by the ton, diluted.
- 2.7.8 ADJUSTING FRAMES, COVERS: Adjust manhole cover in accordance with MAG Uniform Standard Detail 422.

2.8 ASPHALT CHIP SEAL:

- 2.8.1 DESCRIPTION: This work shall consist of the application of a bituminous material followed by the application of a cover material.
- 2.8.2 MATERIALS: The Engineer must approve all material sources prior to their use. Once approved, material sources shall not be changed without the approval of the Engineer. If required by the Engineer, the Contractor shall submit material samples at least seven days prior to start of construction. When requested, additional samples shall be furnished during the construction period at no cost to the County. Material sample submittal is a non-pay item.
- 2.8.3 Rubber Asphalt Binder (RAB): The asphalt binder shall consist of asphalt cement, Granulated Reclaimed Tire Rubber (CRM), and SBS Polymer. This material is designated as Rubber Asphalt Binder (RAB). The RAB may be manufactured by terminal blending or field blending.

The ground tire rubber shall be any crumb rubber, derived from processing whole scrap tires or shredded tire materials taken from automobiles, trucks, or other equipment owned and operated in the United States. The processing shall not produce, as a waste, casings, or other ground material that can hold water when stored or disposed above ground. Rubber tire buffing produced by the re-treading process qualifies as a source of crumb rubber.

The Contractor shall determine RAB/stone chip compatibility. Proposed aggregate samples shall be submitted to the RAB supplier prior to the preparation of the mix design to test the aggregate for stripping characteristics. All test results shall be submitted to the Engineer.

- 2.8.3.1 Rubber Asphalt Binder (RAB) - Terminal Blend: The terminal blended binder shall be smooth, homogeneous and comply with the following requirements:

| <b>TABLE 330-1</b>   |   |                    |
|--|---|--------------------|
| <b>RUBBER ASPHALT BINDER (RAB) - TERMINAL BLEND</b>  |   |                    |
| <b>Property</b>  | <b>Test Method</b>                            | <b>Requirement</b> |
| Ground Tire Rubber Content,<br>% of weight of total RAB                                    | Certificate of Compliance                     | 5 Min.             |
| SBS Polymer,<br>% of weight of total RAB   | Certificate of Compliance                     | 2-3                |
| Penetration @ 77°F, 100g/5 sec., DMM   | ASTM D-5                                      | 55-75              |
| Kinematic Viscosity @ 275°F, -cSt  | ASTM D-2170                                   | 2000 Max.          |
| Softening Point, °F  | ASTM D-36                                     | 140 Min.           |
| Solubility, %  | ASTM D-2042                                   | 97.5 Min.          |
| Elastic Recovery @ 77°F, 5cm/min.,<br>% Recovery After 1 Hour                              | ASTM D-6084 Modified<br>(Modify 10cm to 20cm) | 55 Min.            |
| Separation of Polymer, 325°F, %  | TEX 540-C (see Note below)                    | Report             |
| Retained Penetration Ratio<br><u>RTFO Pen. @ 77°F, 100g/5 sec.</u><br>Original Pen. @ 77°F | ASTM D-5                                      | 0.6-1.0            |

**Note:** A 350-gram sample of the RAB is poured into a friction-top pint can (approximately 3-1/2 inch diameter by 4 inch height) and stored for 48 hours at 325°F. Upon completion of storage time the sample is visually examined for separation of polymer from the asphalt (smoothness and homogeneity). If after visual evaluation a question still exists about the separation of polymer,

samples will be taken from the top and bottom for softening point determination. A difference between the softening points of top and bottom samples of 4 percent or more, based on the average of the top and bottom softening points, constitutes separation (Tex 540-C).

Application and storage temperatures shall comply with the following requirements:

| Type-Grade | Recommended Range, °F | Max. Allowable, °F | Max. Heating and Storage, °F |
|------------|-----------------------|--------------------|------------------------------|
| RAB        | 340-360               | 375                | 375 (see Note below)         |

**Note:** Maximum temperature for storage by the Asphalt Supplier or the Contractor shall be 360°F. For RAB designated for surface treatment work, the temperature of the modified asphalt binder may be increased to a maximum of 375°F by the supplier loading through an in-line heater, or by the Contractor just prior to application. In any case, the heating, storage, and application temperatures used shall be the lowest temperatures practical.

2.8.3.2 Rubber Asphalt Binder (RAB) - Field Blend: The field blended binder shall be smooth, homogeneous and comply with the following requirements:

2.8.3.2.1 Base Asphalt: The recommended type and grade of asphalt cement utilized to manufacture the RAB shall be PG 64-16. The actual grade used may be changed, as long as the end product complies with these specifications.

2.8.3.2.2 **Granulated Reclaimed Tire Rubber (CRM) and SBS Polymer:** The CRM used shall be produced primarily from the processing of automobile and truck tires. The rubber shall be produced by ambient temperature grinding processes only. The SBS Polymer shall be a pelletized or granulated thermoplastic elastomer type linear styrene-butadiene block copolymer. It shall have a high enough molecular weight to provide excellent mechanical and elastic properties to compound. The gradation of the SBS modifier shall meet the RAB provider’s need to produce homogeneous concentrate and final RAB product. The gradation for CRM modifier when tested in accordance with ASTM C-136 (dry sieve only) and using a 50-gram sample, shall comply with the following requirements.

| TABLE 330-2                            |                |  |
|--|----------------|--|
| GRANULATED RECLAIMED TIRE RUBBER (CRM) |                |  |
| Sieve Size                             | CRM, % Passing |  |
| No. 8                                  | -----          |  |
| No. 10                                 | -----          |  |
| No. 16                                 | 100            |  |
| No. 30                                 | 98-100         |  |
| No. 50                                 | Open           |  |
| No. 200                                | Open           |  |

The use of CRM from multiple sources is acceptable provided that the overall blend of rubber meets the gradation requirements. The CRM shall have a specific gravity of 1.15 +/- 0.05 and shall be free of loose fabric, wire and other contaminants except that up to 4 percent (by weight of rubber) calcium carbonate or talc may be added to prevent the rubber particles from sticking together. The rubber shall be sufficiently dry so as to be free flowing and not produce a foaming problem when blended with the hot asphalt cement. The CRM shall be accepted by certification from the rubber supplier.

2.8.3.2.3 Rubber Asphalt Binder (RAB): The final RAB product shall be a result of two homogenous blends of CRM concentrate and SBS Polymer concentrate and shall comply with the following requirements.

| <b>TABLE 330-3</b>  |  |                    |
|---|--|--------------------|
| <b>RUBBER ASPHALT BINDER (RAB) - FIELD BLEND</b>            |  |                    |
| <b>Property</b>   | <b>Test Method</b>                         | <b>Requirement</b> |
| Ground Tire Rubber Content, % of weight of total RAB        | Certificate of Compliance                  | 5-10               |
| SBS Polymer, % of weight of total RAB                       | Certificate of Compliance                  | 1-4                |
| Penetration @ 77°F, 100g/5 sec., DMM                        | ASTM D-5                                   | 30-65              |
| Rotational Viscosity @ 400°F, Spindle 1 @ 12 rpm, cps       | ASTM D-2669                                | 300-900            |
| Softening Point, °F   | ASTM D-36                                  | 140 Min.           |
| Elastic Recovery @ 77°F, 5cm/min., % Recovery After 2 Hours | ASTM D-6084 Modified (Modify 10cm to 20cm) | 50 Min.            |
| Separation of Polymer, 325°F, %                             | TEX 540-C (see Note, top of page 5 of 16)  | Report             |
| Solubility, %   | ASTM D-2042                                | 92.5 Min.          |
| Dynamic Shear, G*/sinδ @76°C kPa                            | AASHTO T315                                | 1.00 Min.          |
| Resilience %  | ASTM D-5329                                | 20 Min.            |

The exact CRM and SBS Polymer content for final RAB shall be determined by the rubber asphalt binder design submitted by the RAB supplier. The viscosity shall be conducted by using a hand held RYAN VISCOMETER, Model VT-02 with rotor 1, or equivalent.

2.8.3.2.4 Rubber Asphalt Binder (RAB) Formulation: The RAB supplier shall furnish to the Engineer within 15 days of the notice to proceed the RAB formulation, which shall contain the following information:

- (A) Asphalt Cement
  - (1) Source of Asphalt Cement
  - (2) Grade of Asphalt Cement
  - (3) Percentage of Asphalt Cement by total weight of RAB mixture
- (B) Granulated Reclaimed Tire Rubber (CRM)
  - (1) Source of CRM
  - (2) Grade of CRM
  - (3) Percentage of CRM by total weight of the RAB mixture
- (C) SBS Polymer
  - (1) Source of SBS Polymer
  - (2) Grade of SBS Polymer
  - (3) Percentage of SBS Polymer by total weight of the RAB mixture
- (D) Test results of specified properties listed in Section 2.8.3.2.3

If CRM from more than one source is to be utilized, then the above information will be required for each type of CRM used.

- 2.8.3.2.5 Rubber Asphalt Binder (RAB) Mixing and Reaction: The final RAB product shall be a results of two step blending. During the first step of blending, homogenous blends of CRM and SBS concentrates with elevated concentration, as determined by RAB design, are produced separately at different specified temperatures. During the second step, the two concentrates are blended to form a homogenous binder.

The temperature of the asphalt cement shall be between 375° F and 450° F at the addition of the CRM to produce CRM concentrate; and the temperature of the asphalt cement shall be between 350° F and 400° F at the addition of the SBS Polymer to produce SBS concentrate. The concentrates then shall be combined and mixed together, at the proper ratio as determined in the rubber asphalt binder design, in an agitated interaction tank and reacted for a minimum period of 60 minutes.

The temperature of the RAB mixture shall be at or above 375° F during the reaction period, but shall not exceed 400° F and any time. Completely mixed and reacted RAB shall be stored within a temperature range of 350° F and 400° F just prior to application. Exceeding the 400° F limit will be grounds for rejection of the affected rubber asphalt binder.

When a job delay occurs after full reaction and a batch of RAB is not used within six hours, the RAB may be allowed to cool. When the temperature of RAB cools below 350°F and is then reheated, the process is considered a reheating cycle. The total number of reheating cycle shall not exceed two. The RAB shall be re-heated slowly to a uniform temperature not less than 375°F, and agitated.

- 2.8.3.2.6 Rubber Asphalt Binder (RAB) Equipment: All equipment utilized in the production and application of RAB materials shall be described as follows:

- (A) An asphalt cement heating tank with a hot oil heat transfer system or a retort heating system capable of heating the asphalt cement to the proper temperature for blending with the CRM and SBS Polymer.
- (B) The mechanical blender shall have a two stage continuous mixing process capable of producing a homogenous blend of asphalt cement, CRM, and SBS Polymer at the mix design specified ratios, as directed by the Engineer. This unit shall be equipped with a two compartment granulated materials feed system capable of supplying the asphalt cement feed system, as not to interrupt the continuity of the blending process.

The maximum capacity of the primary blending vessel shall be 500 gallons. Both the primary and secondary blenders shall be equipped with an agitation device orientated horizontally in the blending vessel. The blending unit shall be capable of fully blending the individual CRM and rubber particles with the asphalt cement. Separate asphalt cement feed pump and finished product pump are required. This unit shall have an asphalt cement/totalizing meter in gallons and a flow rate meter in gallons per minute.

An approved "Siefer style" mill, or equivalent shall be capable of producing a homogenous blend of SBS Polymer concentrate at the binder design specified ratio. The interaction storage tank shall be mechanically agitated.

- (C) A distributor truck equipped with a heating unit, and an internal mixing device capable of maintaining a uniform mixture of asphalt cement, CRM, and SBS Polymer. It shall be equipped with a full circulating spreader bar and pumping system capable of applying RAB material within +/- 0.05 gallons per square yard tolerance of the specified application rate, and must achieve a uniform covering of the surface to be treated. The distributor shall have a boot board on the rear of the vehicle and a bootman shall accompany the distributor. The bootman shall ride in a position so that all the spray bar tips are in full view and readily assessable for unplugging, if a plugged tip should occur. The distributor shall also include a tachometer, pressure gauge, a volume-measuring device, and thermometer and shall also have a computer rate control (CRC) installed.

2.8.4 **Material Testing:** The Contractor is responsible for the quality control of the materials used. Testing done by the Engineer will be for acceptance and assurance that materials used conform to the specifications and not considered quality control.

2.8.4.1 **Asphalt Binder:** Provisions for properly sampling from distributor trucks or on-site bulk storage units shall be made by the Contractor. Sampling shall be done by the Contractor and witnessed by the Engineer in accordance with the latest edition of ASTM D-140, "Standard Methods of Sampling Bituminous Materials". The Engineer will test in accordance with the latest edition of ASTM or AASHTO.

The minimum amount of assurance sampling and testing shall be once per 500 tons of asphalt binder. Material found in non-compliance will be rejected and removed from the job site. No payment will be made for rejected material. The project shall not resume until the new material is tested by the Contractor's ASSHTO asphalt accredited, independent, materials laboratory, and found in compliance. The Contractor's test results shall be submitted to the Engineer for compliance verification. No lost time will be considered as a result of material being found in non-compliance.

2.8.4.2 **Stone Chips:** The stone chips will be sampled and tested by the Engineer in accordance with the latest edition of ASTM C-136, "Sieve Analysis of Fine and Coarse Aggregates." The Engineer will sample and test the stone chips, for approval, from the completed stockpile.

2.8.5 **TIME OF APPLICATION AND WEATHER CONDITIONS:** Chip seal shall not be applied for at least 7 days after completion of new bituminous paving.

The chip seal shall be placed only when the roadway surface is dry and there is no imminent threat of rain or if wind deflects the asphalt binder spray from vertical. The surface treatment shall not be applied unless the pavement temperature is at least 60 F and rising (measured in a shaded area).

Caution should be exercised in the placement of asphalt chip seal between the dates of Oct. 1 and April 1.

**2.8.5.1 CONSTRUCTION METHODS:**

2.8.5.1.1 Preparation of surfaces: Immediately before applying the bituminous material, the area to be surfaced shall be cleaned of dirt and other objectionable material. In urban areas, the surface shall be cleaned with a self-propelled pickup sweeper. In rural areas, power brooms may be used. When necessary, cleaning shall be supplemented by hand brooms.

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

For chip seals using paving grade asphalt as the binder, a bituminous tack coat shall be applied prior to sealing. The tack coat shall comply with Section 329. The exact rate shall be determined by the Engineer.

2.8.5.1.1.1 **DOCUMENT PAVEMENT MARKINGS:** The Contractor shall document and detail the existing pavement markings, traffic signal detection loops, and fire hydrant locations as required in section 401.2.4 Pavement Markings and place temporary chip seal pavement markers.

2.8.5.1.1.2 **REMOVE PAVEMENT MARKINGS:** The Contractor shall remove and dispose of raised pavement markers (if any) and non-paint (thermoplastic) symbols/legends prior to the placement of the chip seal. Removal shall be by chipping, grinding, or any other method approved by the Engineer. The cost of raised pavement marker removal shall be considered as incidental to pavement preparation.

2.8.5.1.1.3 **CHIP SEAL PAVEMENT MARKERS (Temporary):** Prior to applying the surface treatment, the Contractor shall purchase and install chip seal pavement markers in accordance with Arizona Department of Transportation Standard Specifications, Section 701-2.05. The cost for this item is considered incidental to striping.

Markers shall be placed at all tangent points and installed every 100 feet, following the existing pavement centerline and lane line striping, except that edge line striping need not be marked. These markers shall be used as a guide for the Contractor's striping crews.

Temporary pavement markers shall be placed with the reflective side facing on-coming traffic. After the surface treatment is applied to the pavement, the Contractor shall remove the plastic cover to expose the reflective tape.

2.8.5.1.1.4 **SURFACE CLEANING:** Immediately before applying the bituminous material, the area to be surfaced shall be cleaned of dirt and other objectionable material. The surface shall be cleaned with a self-propelled pickup sweeper. When necessary, cleaning of the existing pavement surface shall be supplemented by hand

brooms or other methods, approved by the Engineer, to assure a good bond between the surface treatment and the pavement surface. Pick up brooms alone may not be adequate to thoroughly clean the surface. If water is used, the pavement shall be dry before applying the asphalt binder. The Contractor shall conduct all sweeping operations in the same direction as traffic flow.

The Contractor shall take all steps, procedures, and means to prevent dust pollution due to his construction practices in connection with this work. Dust prevention measures shall be maintained at all times during construction of the project to the satisfaction of the Engineer, in accordance with Maricopa County Air Pollution Control Regulations

- 2.8.5.2 Application of Bituminous Material: The bituminous material shall be applied the same day the surface is prepared. Asphalt binder containing particulate modifiers may be susceptible to separation of the modifier. Appropriate circulation or agitation in storage shall be provided if separation of the modifier is expected, suspected, or if the modified asphalt binder will be stored at elevated temperature for more than one day before use.

The quantity of liquid or emulsified asphalts will be between the range of 0.20 and 0.40 gals./sq. yd. The quantity of paving grade asphalt will be between the range of 0.17 and 0.31 gals./sq. yd. The exact rate of application will be determined by the Engineer.

The Engineer will determine the precise application rate of the asphalt binder. For bidding purposes the application rate shall be 0.50 gal/sy for low volume, and 0.60 gal/sy for high volume at 60 F. At application temperature, the rate could be .05 gal/sy higher. At all times, application rate shall be kept to a minimum.

The chips shall be spread before the bituminous material sets. The maximum distance that the bituminous material is applied in advance of the chips will be determined by the Engineer.

The asphalt binder shall be applied only to asphalt pavement surfaces. The spraying of asphalt binder on concrete curb and gutter, on concrete valley gutters, or on the concrete aprons around catch basins, shall be removed by the Contractor.

- 2.8.5.3 Application of Cover Material: At an appropriate time, as determined by the Contractor following the application of the bituminous material, the chips shall be spread with a self-propelled mechanical spreader. The spreader shall be a self-propelled machine with an aggregate receiving hopper in the rear, belt conveyors to carry the aggregate to the front, and a spreading hopper equipped with a full width distribution auger and spread roll. The spreader shall be in good mechanical condition and be capable of applying the cover material uniformly across the spread at the specified rate. The minimum width of the spreader shall be twelve feet.

At the time of application, precoated aggregate shall be within the temperature range of 200 degrees F. and 300 degrees F. measured at a point 6 to 12 inches below the top of the load.

At the time of application, uncoated chips shall not contain moisture in excess of a saturated, surface dry condition when liquid or paving grade asphalt are used as the seal coat binder.

At the time of application, chips shall be surface wet but free from running water when emulsified asphalt is used as the seal coat binder.

The Engineer will determine the application rate of the cover material. For bidding purposes assume a maximum application rate of 20 lbs/sy for low volume, and 28 lbs /sy for high volume. At all times, application rate shall be kept to a minimum.

Trucks for hauling stone chips shall be tailgate discharge and shall be equipped with a device to lock onto the hitch at the rear of the stone chip spreader. Haul trucks shall also be compatible with the stone chip spreader so that the dump bed will not push down on the spreader when fully raised or have too short a bed, which results in stone chip spillage while dumping into the receiving hopper.

- 2.8.5.4 Rolling: Immediately following the application of the cover material, the surface shall be rolled with self-propelled pneumatic-tired rollers. Three coverages shall be made with a pneumatic roller. Each roller shall carry a minimum of 2,000 pounds on each wheel and a minimum of 60 psi in each tire. The roller shall not travel in excess of 12 miles per hour. A minimum of 3 self-propelled pneumatic rollers shall be required for projects over 10,000 sq. yds. On projects under 10,000 sq. yds., one roller may be used provided it performs the same number of coverages.

In residential areas, rollers shall be completely skirted.

Three operational pneumatic-tired rollers, with operators shall be provided to accomplish the required embedment of the stone chips. If the Contractor is working at more than one location, there shall be a minimum of three rollers, with operators at each location.

Sufficient rollers shall be used for the initial rolling to cover the width of the stone chip spread with one pass. The first pass shall be made immediately behind the stone chip spreader. Three complete passes with pneumatic-tired rollers shall be made and one final pass with a 12 to 14 ton steel wheel roller. The inspector may require extra rolling on Cul-de-Sacs. All rolling completed within one hour after the application of the stone chips. If the spreading is stopped for an extended period, the stone chip spreader shall be moved ahead or off to the side so that all stone chips can be immediately rolled.

- 2.8.5.5 Joints: All joints shall be constructed as approved by the Engineer such that there be a uniform application of cover material and bituminous material.

Paper, or other material approved by the Engineer, shall be used at the beginning and end of the surface treatment section to make a smooth, straight, clean transition. Paper shall also be used at concrete bridge decks. Overlap of asphalt binder at transverse stopping points, creating a bump, is not allowed.

- 2.8.5.6 Surplus Aggregate Removal: Surplus aggregate shall be removed from the surface using methods specified in subsection 330.4.1 and stockpiled in the location indicated on the plans or as approved by the Engineer. In no event shall surplus aggregate be left on the pavement for more than 1 day (24 hours).

The Contractor shall keep all driveways and sidewalks clean of any loose stone chips on a daily basis during construction. Air powered blowers are not

allowed. Cleanup shall also include the daily removal of surface treatment materials from manhole covers, valve covers, survey monuments, fire hydrant markers, gutters, curbs, sidewalks, etc. in the project area.

The Contractor shall conduct all sweeping operations in the same direction of traffic flow. Pick-up brooms shall be used on subdivision roads, and roads with curb and gutter.

- 2.8.5.7 Distributing Equipment: Distributor trucks shall be of the pressure type with insulated tanks. Gravity distributors will not be permitted.

Spray bars and extensions shall be of the full circulating type. The spray bar shall be adjustable to permit varying height above the surface to be treated.

The nozzle spacings, center to center, shall not exceed 6 inches. The valves shall be operated so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from the nozzles shall be of a positive acting design so as to provide a uniform, unbroken spread of bituminous material on the surface.

The distributor shall be equipped with devices and charts to provide for accurate, rapid determination and control of the amount of bituminous material being applied. The distributor shall be equipped with a tachometer of the auxiliary wheel type registering speed in feet per minute. The distributor shall also be equipped with pressure gauges and an accurate thermometer for determination of the temperature of bituminous material. The spreading equipment shall be designed so that uniform application of a bituminous material can be applied in controlled amounts ranging from 0.05 to 2.0 gallons per square yard. Transverse variation rate shall not exceed ten (10) percent of the specified application rate. The distributor shall be equipped with a hose and nozzle attachment to be used for spotting skipped areas and areas inaccessible to the distributor. Distributor and booster tanks shall be maintained as to prevent dripping of bituminous material from any part of the equipment.

Equipment that fails to perform satisfactorily shall be removed from the job.

Distributor trucks shall comply with the requirements of Section 404-3.02 (A) of the Arizona Department of Transportation Standard Specifications for Road and Bridge Constructions, 2008 edition. For each distributor truck proposed to be used on the project, an Arizona Test Method 411 Report shall be submitted to the Engineer. If the reports are over 12 months old, the Contractor's AASHTO Accredited Testing Laboratory will test the trucks, with the results submitted to the Engineer.

- 2.8.5.8 Sand Blotter: Sand blotter shall be in accordance with Section 333.3.2.

The Contractor shall apply sand blotter, as many times as necessary, prior to opening the roadway to traffic where there is an excess of asphalt, or as requested by the Engineer. The Contractor shall be responsible for sweeping the sand within 24 hours of opening the roadway to traffic.

If the paved roadway is to be sanded, the surface shall be sanded at approximately two pounds per square yard. No more sand shall be used than necessary, and the amount specified shall not be increased without prior approval of the Engineer.

- 2.8.5.9 Performance: The completed surface treatment shall leave a homogeneous mat, adhere firmly to the prepared surface, and have a skid resistant surface texture.

2.8.5.10 Cleanup: Before final acceptance by the County, all private or public property and grounds occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures, and equipment. All parts of the work area shall be left in a condition equal to, or better than, it was prior to the start of the project.

Before final acceptance by the County, the Contractor shall sweep the completed project area and repeat the surface treatment where the old road surface is exposed, or where binder lies uncovered by stone chips

2.8.6 MEASUREMENT: Certified weight slips of all material shall be delivered to the Engineer before the materials are applied. Certified weight slips of any material being weighed back in for credit shall be delivered to the Engineer the next day. Certified weight slips are required for all asphalt binder.

2.8.7 PAYMENT: Quantities of materials for this work will be paid for at the contract unit price.

|  |     |
|--|-----|
| (A) Binder Material:   | Ton |
| (B) Asphalt Cement, Liquid Asphalt, Emulsion, Diluted Emulsion | Ton |
| (C) Chips  | Ton |

There will be no payment for materials not placed in accordance with this specification.

The cost associated with sand blotter, the material supplies, application, and clean-up shall be included in the unit price of related pay items. No direct payment or measurement for pay purposes will be made for sand blotter.

2.9 TRAFFIC CONTROL:

**Reference Exhibit 2 section 401.**

2.10 SURFACE PREPARATION:

2.10.1 Prior to MTR or any other Surface Sealant:

Immediately before applying the bituminous material, the area to be surfaced shall be cleaned of dirt and other objectionable material. The surface shall be cleaned with a self-propelled pickup sweeper. When necessary, cleaning of the existing pavement surface shall be supplemented by hand brooms or other methods, approved by the County Project Manager, to assure a good bond between the surface treatment and the pavement surface. Pick up brooms alone may not be adequate to thoroughly clean the surface. If water is used, the pavement shall be dry before applying the asphalt binder. The Contractor shall conduct all sweeping operations in the same direction as traffic flow.

The Contractor shall take all steps, procedures, and means to prevent dust pollution due to his construction practices in connection with this work. Dust prevention measures shall be maintained at all times during construction of the project to the satisfaction of the County Project Manager, in accordance with Maricopa County Air Pollution Control Regulations.

2.10.2 Prior to Crack Sealing:

In no case shall sealant be placed during damp roadway conditions that exist such as wet roadway surfaces or damp material inside the cracks. Operations stopped by the County Project Manager, due to weather, shall be at no additional cost to the County.

Immediately prior to applying the sealant, cracks shall be thoroughly cleaned of loose particles, grass, grass roots, weeds, dust, and other deleterious substances by means of high velocity compressed air or by other methods approved by the County Project

Manager. Compressed air alone may not be sufficient to clean the cracks properly. Additional handwork may be required.

The compressor used shall be capable of a sustained pressure of 90 psi. The crack cleaning equipment shall be capable of cleaning cracks to a minimum depth of 1/2 inch. The equipment shall also be capable of dust containment by filtering particulate matter 10 micrometers or less in diameter with no dust clouds visible to the naked eye as determined by the County Project Manager (i.e. vacuum).

During the cleaning of cracks, the Contractor shall protect against damage to items such as, but not limited to, cars, people, driveways, walkways, landscape materials, etc. in the work area. During and after placement of the sealant, the Contractor shall protect against harm to persons or animals that may be exposed to the hot material.

2.11 AVAILABILITY OF SITE PLANS:

When deemed necessary, and if possible, the Maricopa Department of Transportation or the County requesting agency will furnish the Contractor plans of the site.

2.12 PROJECT WORK:

2.12.1 All work under this contract that exceeds the established ceilings listed below shall be performed as PROJECT work:

- (a) Crack Seal project quote if over 200,000 sy
- (b) Slurry: project quote if over 2000,000 sy
- (c) **Asphalt Milling project quote if over 200,000 Sy**
- (d) **Asphalt Concrete Paving project quote if over 200,000 Sy**
- (e) ~~(e)~~ Asphalt Rubber Overlay: project quote if over 8,213 sy (lane mile)
- (f) ~~(f)~~ Rubberized Bituminous Surface Treatment: project quote if over 200,000 sy
- (g) **Asphalt Chip Seal project quote if over 200,000 Sy**

2.12.2 The Contractors shall meet with the County requesting agency staff at the site to ascertain what work is to be performed. Each of the contractors assigned to this contract shall be provided a request for project quote with a detailed Scope of Work. As such, each contractor MUST submit a response, with award to the lowest quote of the project. Contractors are not to submit their own project quote sheets. Only County letterhead quote sheets are acceptable. All terms and conditions are those established under this agreement. All additional labor charges outside the Scope Of Work are those established in pricing line items. ALL contractors are to have an opportunity to bid on project work and the County user agencies MUST ensure all contractors of record receive a project quote.

2.12.3 The Contractor should visit the site and familiarize themselves with any conditions that may affect performance and project quotes. Submission of a project quote will be prima facie evidence that the Contractor did, in fact, make a site inspection and is aware of all conditions affecting performance and bid prices.

2.12.4 The submitted project price quote shall be all-inclusive. That is, any cost overruns to be absorbed by the Contractor, or cost savings to be additional profit. Exceptions to this are changes requested by the County that incur higher project cost and longer delays. All change orders to a project must be in writing, referencing the contract serial number, and

approved by MCDOT (or County user agency if request was made by them) prior to any authorization to proceed. A Contractor who fails to acquire change orders in writing runs the risk of incurring these additional costs without payment.

2.12.5 Project pricing shall include everything the contractor anticipates is necessary to complete the job (i.e., rental equipment, materials, labor, supervision, subcontractor costs, mobilization costs, demobilization costs, permits, traffic control etc.). These costs to be part of the overall project price and as such not itemized.

2.12.6 Sales tax on project work SHALL be included in the total project cost and not a separate line item in the project quote. Any work that is delineated as PROJECT shall be so noted on the quote AND the invoice.

2.13 NON-PROJECT WORK – WORK BASED ON SIZE OF THE JOB BY SQUARE FOOTAGE; SQUARE YARDS; OR GALLONS – AS LISTED IN THE PRICING SCHEDULE:

2.13.1 This contract may also be used for non-project work, that is, work that estimated to be less than the ceilings listed in §2.5.1 and not be exceeded. Each bidder shall be ranked, based on their pricing submitted, as first call second call, third call, and so on for non-project work. The lowest bid for items §1.1 through §1.47 in Attachment A, PRICING, shall be the first contractor called to perform non-project work.

2.13.2 Taxes on non-project work may be taxed as a separate line item. Due to the nature that this type of work includes both LABOR and MATERIALS as a combined cost, a *construction tax*, not to exceed 65% of the retail tax rate, may be applied. If applied, it shall be a separate line item cost - and not included in the labor and materials portion. Any work that is delineated as NON-PROJECT shall be so noted on the quote AND the invoice.

2.14 TIME AND MATERIALS WORK:

If it is required that the Contractor be called out for repair work, and anticipated that the repair will be straight T&M, the labor rate bid, per line item 1.48 in pricing, shall also be ranked as first call (labor), second call, third call, and so on. Any work that is delineated as T&M shall be so noted on the invoice as such. Sales tax may be imposed, but for materials and supplies purchased, as labor shall not be taxed (See §2.30 TAX).

2.15 MILLING:

The Contractor shall have a minimum of three (3) years experience in milling of asphalt concrete. Proof of such must accompany bid package. Not all work in the County roads may require milling. The Contractor and the County department shall determine milling of asphalt concrete. Milling may be subcontracted providing the prime contractor notifies the County as to whom the sub-contractor will be (See §3.16).

2.16 COMMENCING OF WORK:

For project and non-project work, the Contractor shall commence work as dictated by the authorized County representative. The Contractor shall be sent a Notice To Proceed letter issued by the County agency. Notice to proceed shall be in writing and reference the contract serial number. Time and materials work may be verbal.

2.17 DELAY TIME:

Any delay time caused by the County that is not actual operating time or mobilization time shall be paid as hourly standby time, either as *per man* (hourly bid rate) or *per crew* (crew bid rate).

Down time or other delay time caused by equipment break down, or caused by the Contractor, or caused by inclement weather, will not be considered for delay time payment.

**2.18 SAFETY:**

2.18.1 The Contractor shall be responsible for providing and for the placement of barricades, tarps, plastic, flag tape, and other safety/traffic equipment required to protect its employees, the public, surrounding areas, equipment, and vehicles. The flow of vehicular traffic shall not be impeded at any time during this project. The safety of the Contractor's employees and the public is of prime concern to the County, and the Contractor must take all necessary steps to assure proper safety during the performance of this agreement.

2.18.2 Contractor is required to adhere to all OSHA regulations, rules, policies, and procedures that are in place during the term of this contract. The firm shall keep fully informed of existing and future Federal, State and Local laws, ordinances, and safety regulations, which in any manner affect the fulfillment of this Contract, and shall comply with the same.

**2.19 SITE PREPARATION:**

2.19.1 If deemed part of the scope of work, Contractor is to excavate and fill as necessary to prepare the area. Excess soil generated shall be removed and disposed of by the Contractor. If additional soil is required, it shall be sourced by the Contractor and billed to the County. If quoted as a project, there shall be no additional costs unless the work or materials is in addition the initial scope of work.

2.19.2 Contractor shall take care to avoid damage to adjacent finished materials that are to remain. If finished materials are damaged, Contractor shall repair and finish to match existing materials as approved by the County at Contractor's expense.

**2.20 PERMITS/FEES:**

The Contractor shall procure all permits, fees, or any such approvals of plans or specifications as may be required by federal, state, and local laws, ordinances, rules, and regulations, for the proper execution and completion of the work under the specifications of this contract. The cost of such shall be a pass-through to the County without mark-up.

**2.21 SITE CLEANUP:**

The Contractor shall at all times, keep the work area free from accumulation of waste materials or rubbish generated by the performance of the specifications herein. The Contractor at his expense shall dispose of all surplus material, rubbish, and debris. No surplus materials, rubbish, and/or debris shall be disposed of into County trash containers.

If the Contractor fails to clean up the work site, the County will complete the task and deduct such cost from monies due the Contractor.

**2.22 DAMAGE TO COUNTY PROPERTY:**

The Contractor shall perform all work so that no damage to buildings or grounds results. Contract shall repair any damage caused to the satisfaction of the County and at no cost to the County.

**2.23 QUALITY OF WORK:**

2.23.1 Where not more specifically described in any various sections of these specifications, workmanship shall conform to all of the methods and operations of best standards and accepted practices of the asphalt paving and repair trade, and shall include all items of fabrications, construction, or installation regularly furnished or required for completions. All work shall be executed by personnel skilled in their respective kinds of work.

2.23.2 The County's authorized representative from the County department shall decide all questions that may arise as to the quality and acceptability of any work performed under

this contract. If, in the opinion of the County's representative, the performance becomes unsatisfactory, the County shall notify the Contractor of such and the Contractor shall make acceptable such performance at no additional cost to the County.

2.23.3 The Contractor shall have three (3) calendar days from that time, not including weekends or County holidays, to correct any specific instances of unsatisfactory performance. In the event the unsatisfactory performance is not corrected within the time specified above, the County shall have the immediate right to complete the work to its satisfaction and shall deduct the cost to cover from any balances due or become due the Contractor. Repeated incidences of unsatisfactory performance may result in cancellation of the agreement for default.

2.24 LICENSING:

Contractor shall have a current State of Arizona Registrar of Contractors license for asphalt paving A-14 or A-General. Copy must accompany bid package.

2.25 ENGLISH SPEAKING REQUIREMENT:

There shall be at least one (1) person or more, as directed by the Maricopa Department of Transportation, or the County Using Department, on each shift on site, who can speak, read and write English. This is not meant to require that all Contractor personnel speak, read, and write English. Most tasks may require only the job supervisor, crew leader, or crew member to speak, read, and write English. This requirement is necessary due to the following reasons, which include but are not limited to:

- (a) Warnings of emergencies and hazards.
- (b) Communication with Maricopa County Personnel and Tenants.

2.26 DELIVERY:

It shall be the Contractor's responsibility to meet the County's delivery requirements, as called for in the Technical Specifications. Maricopa County reserves the right to obtain services on the open market in the event the Contractor fails to make delivery and any price differential will be charged against the Contractor

2.27 INVOICES AND PAYMENTS:

2.27.1 The Contractor shall submit two (2) legible copies of their detailed invoice before payment(s) can be made. At a minimum, the invoice must provide the following information:

- Company name, address and contact
- County bill-to name and contact information
- Contract Serial Number
- County purchase order number
- Job site name and address
- Invoice number and date
- Payment terms
- Date of service or delivery
- Quantity (number of days or weeks)
- Description of Purchase (product or services)
- Pricing per unit of purchase
- Extended price
- Arrival and completion time (if applicable)

2.27.2 Problems regarding billing or invoicing shall be directed to the using agency as listed on the Purchase Order.

2.27.3 Payment shall be made to the Contractor by Accounts Payable through the Maricopa County Vendor Express Payment Program. This is an Electronic Funds Transfer (EFT) process. After Contract Award the Contractor shall complete the Vendor Registration Form located on the County Department of Finance Vendor Registration Web Site ([www.maricopa.gov/finance/vendors](http://www.maricopa.gov/finance/vendors)).

2.27.4 EFT payments to the routing and account numbers designated by the Contractor will include the details on the specific invoices that the payment covers. The Contractor is required to discuss remittance delivery capabilities with their designated financial institution for access to those details.

2.28 USAGE REPORT:

The Contractor, upon request, shall furnish the County a quarterly usage report delineating the acquisition activity governed by the Contract. The format of the report shall be approved by the County and shall disclose the quantity and dollar value of each contract item by individual unit.

~~2.29 INVOICES AND PAYMENTS:~~

~~2.29.1 The Contractor shall submit two (2) legible copies of their detailed invoice before payment(s) can be made. At a minimum, the invoice must provide the following information:~~

- ~~• Company name, address and contact~~
- ~~• County bill to name and contact information~~
- ~~• Contract Serial Number~~
- ~~• County purchase order number~~
- ~~• Invoice number and date~~
- ~~• Payment terms~~
- ~~• Date of service or delivery~~
- ~~• Quantity (number of days or weeks)~~
- ~~• Contract Item number(s)~~
- ~~• Description of Purchase (product or services)~~
- ~~• Pricing per unit of purchase~~
- ~~• Freight (if applicable)~~
- ~~• Extended price~~
- ~~• Mileage w/rate (if applicable)~~
- ~~• Arrival and completion time (if applicable)~~
- ~~• Total Amount Due~~

~~2.29.2 Problems regarding billing or invoicing shall be directed to the using agency as listed on the Purchase Order.~~

~~2.29.3 Payment shall be made to the Contractor by Accounts Payable through the Maricopa County Vendor Express Payment Program. This is an Electronic Funds Transfer (EFT) process. After Contract Award the Contractor shall complete the Vendor Registration Form located on the County Department of Finance Vendor Registration Web Site ([www.maricopa.gov/finance/vendors](http://www.maricopa.gov/finance/vendors)).~~

~~2.29.4 EFT payments to the routing and account numbers designated by the Contractor will include the details on the specific invoices that the payment covers. The Contractor is required to discuss remittance delivery capabilities with their designated financial institution for access to those details.~~

2.30 TAX:

No tax shall be levied against labor. It is the responsibility of the Contractor to determine any and DELIVERY:

~~It shall be the Contractor's responsibility to meet the proposed delivery requirements. Maricopa County reserves the right to obtain services on the open market in the event the Contractor fails to make delivery and any price differential will be charged against the Contractor.~~

~~2.31 FUEL COST PRICE ADJUSTMENT:~~

~~2.31.1 This provision provides for limited increased or decreased costs of motor fuels (fuels) used to perform services under this Contract. This provision does not apply to burner fuel (i.e. propane, natural gas, fuel oil, used motor oil). It applies to motor fuel only. Fuel cost adjustments may be either positive or negative. A positive fuel cost adjustment will result in an increase in payments to Contractor while a negative fuel cost adjustment will result in a decrease in payments to Contractor.~~

~~2.31.2 This provision is intended to minimize risk to both parties to this Contract due to fuel cost fluctuations that may occur during the term of this Contract. This provision is not designed to estimate actual quantities of fuel used in providing services under this Contract, but to provide a reasonable basis for calculating a fuel cost adjustment based on average conditions.~~

~~2.31.3 Application of this provision will come into effect upon Contractor submittal of a fuel cost adjustment request. A request may be submitted only when the increased cost of fuel, established as a percentage of total contract price (base fuel cost) upon award of this Contract, exceeds ten (10%) percent of the base fuel cost. The Contractor may request a fuel surcharge no more than four (4) times annually, during the month(s) of March, June, September and December. The request must be submitted no later than the tenth (10<sup>th</sup>) of the month. Any surcharge shall be effective the first of the following month after receipt and approval. The date of County approval of a fuel cost adjustment request shall become the base date for any future Contractor adjustment requests.~~

~~2.31.4 Contractor shall include, as part of its price bid, the percentage of total contract price fuel represents (e.g., fuel cost equals 10% of Contractor cost) (see also, Attachment A, Vendor Information). This percentage will represent and establish the base fuel cost for this Contract. The base fuel cost shall be established as the due date for submission of proposals for this Contract. All subsequent fuel cost adjustments shall be based upon the date the County approves a Contractor's request for fuel cost adjustment (e.g. fuel cost adjustment approved by County on January 1, 2006, January 1, 2006 becomes base date for any next Contractor request for adjustment).~~

~~2.31.5 Fuel Cost Application Requirement. The Contractor must provide documentation including type of motor fuel and fuel invoices with price of the fuel used in providing services under this Contract, from the month bids were due and the month of the cost adjustment request, with any fuel cost adjustment application. The fuel cost adjustment application must be completed with all applicable data, and signed by the Contractor.~~

~~2.31.6 The fuel surcharge shall be based on the current quarterly index of the West Coast (PADD5) Diesel (On-Highway) All Types or Reformulated Areas Gasoline compared to the previous quarterly index period as reported on the Energy Information Administration (EIA) website: <http://www.eia.doe.gov/>~~

~~2.31.7 The computation of the fuel surcharge amount shall be determined as follows:~~

~~2.31.7.1 The fuel cost component from Attachment A (Vendor Information) of the Contract with Maricopa County, multiplied by the percent of change indicated by the EIA report from the previous index period.~~

~~2.31.7.2 Upon agreement by the County to the surcharge, the County shall issue written approval of the change prior to any adjusted invoicing submitted for payment.~~

~~2.31.7.3 The surcharge shall be added as a separate line item to the invoice.~~

2.32 STRATEGIC ALLIANCE for VOLUME EXPENDITURES (\$AVE):

The County is a member of the \$AVE cooperative purchasing group. \$AVE includes the State of Arizona, many Phoenix metropolitan area municipalities, and many K-12 unified school districts. Under the \$AVE Cooperative Purchasing Agreement, and with the concurrence of the successful Respondent under this solicitation, a member of \$AVE may access a contract resulting from a solicitation issued by the County. If you **do not** want to grant such access to a member of \$AVE, **please so state** in your proposal. In the absence of a statement to the contrary, the County will assume that you do wish to grant access to any contract that may result from this Request for Proposal.

2.33 INTERGOVERNMENTAL COOPERATIVE PURCHASING AGREEMENTS (ICPA's)

County currently holds ICPA's with numerous governmental entities throughout the State of Arizona. These agreements allow those entities, with the approval of the Contractor, to purchase their requirements under the terms and conditions of the County Contract. Please indicate on Attachment A, your acceptance or rejection regarding such participation of other governmental entities. Your response will not be considered as an evaluation factor in awarding a contract.

3.0 CONTRACTUAL TERMS & CONDITIONS:

3.1 CONTRACT TERM:

This Invitation for Bid is for awarding a firm, fixed price purchasing contract to cover a three (3) year term.

3.2 OPTION TO RENEW:

The County may, at their option and with the approval of the Contractor, renew the term of this Contract up to a maximum of three (3) additional years, (or at the County's sole discretion, extend the contract on a month to month basis for a maximum of six (6) months after expiration). The Contractor shall be notified in writing by the Materials Management Department of the County's intention to renew the contract term at least thirty (30) calendar days prior to the expiration of the original contract term.

3.3 PRICE ADJUSTMENTS:

Initial pricing will be made with ninety (90) day firm fixed pricing [Pricing submitted will be held firm for ninety (90) days]. Thereafter, each ninety (90) day interval shall be competitively bid amongst the suppliers currently on the contract. Every vendor on the contract will be given the chance to quote each item on the contract. Any requests for price increase will not be accepted. Respondents not submitting a quotation shall forfeit their opportunity to supply these items to the County for that ninety (90) day period. Any respondent missing four (4) consecutive pricing quotes will be deemed non-responsive and terminated for default.

3.4 INDEMNIFICATION:

3.4.1 To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless County, its agents, representatives, officers, directors, officials, and employees from and against all claims, damages, losses and expenses, including, but not limited to, attorney fees, court costs, expert witness fees, and the cost of appellate proceedings, relating to, arising out of, or alleged to have resulted from the negligent acts, errors, omissions, mistakes or malfeasance relating to the performance of this Contract.

Contractor's duty to defend, indemnify and hold harmless County, its agents, representatives, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss or expense that is caused by any negligent acts, errors, omissions or mistakes in the performance of this Contract by the Contractor, as well as any person or entity for whose acts, errors, omissions, mistakes or malfeasance Contractor may be legally liable.

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

3.4.3 The scope of this indemnification does not extend to the sole negligence of County.

3.5 INSURANCE:

3.5.1 **Contractor, at Contractor's own expense, shall purchase and maintain the herein stipulated minimum insurance from a company or companies duly licensed by the State of Arizona and possessing a current A.M. Best, Inc. rating of B++. In lieu of State of Arizona licensing, the stipulated insurance may be purchased from a company or companies, which are authorized to do business in the State of Arizona, provided that said insurance companies meet the approval of County. The form of any insurance policies and forms must be acceptable to County.**

3.5.2 All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Contract is satisfactorily completed and formally accepted. Failure to do so may, at the sole discretion of County, constitute a material breach of this Contract.

3.5.3 Contractor's insurance shall be primary insurance as respects County, and any insurance or self-insurance maintained by County shall not contribute to it.

3.5.4 Any failure to comply with the claim reporting provisions of the insurance policies or any breach of an insurance policy warranty shall not affect the County's right to coverage afforded under the insurance policies.

3.5.5 The insurance policies may provide coverage that contains deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to County under such policies. Contractor shall be solely responsible for the deductible and/or self-insured retention and County, at its option, may require Contractor to secure payment of such deductibles or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

3.5.6 County reserves the right to request and to receive, within 10 working days, certified copies of any or all of the herein required insurance certificates. County shall not be obligated to review policies and/or endorsements or to advise Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve Contractor from, or be deemed a waiver of County's right to insist on strict fulfillment of Contractor's obligations under this Contract.

3.5.7 The insurance policies required by this Contract, except Workers' Compensation, and Errors and Omissions, shall name County, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

3.5.8 The policies required hereunder, except Workers' Compensation, and Errors and Omissions, shall contain a waiver of transfer of rights of recovery (subrogation) against County, its agents, representatives, officers, directors, officials and employees for any claims arising out of Contractor's work or service.

3.5.9 Commercial General Liability:

**Commercial General Liability insurance and, if necessary, Commercial Umbrella insurance with a limit of not less than \$2,000,000 for each occurrence, \$2,000,000 Products/Completed Operations Aggregate, and \$4,000,000 General Aggregate Limit. The policy shall include coverage for bodily injury, broad form property damage, personal injury, products and completed operations and blanket contractual coverage, and shall not contain any provision which would serve to limit third party action over claims. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.**

3.5.10 Automobile Liability:

**Commercial/Business Automobile Liability insurance and, if necessary, Commercial Umbrella insurance with a combined single limit for bodily injury and property damage of not less than \$2,000,000 each occurrence with respect to any of the Contractor's owned, hired, and non-owned vehicles assigned to or used in performance of the Contractor's work or services under this Contract.**

3.5.11 Workers' Compensation:

**3.5.11.1 Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work or services under this Contract; and Employer's Liability insurance of not less than \$1,000,000 for each accident, \$1,000,000 disease for each employee, and \$1,000,000 disease policy limit.**

3.5.11.2 Contractor waives all rights against County and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the Workers' Compensation and Employer's Liability or commercial umbrella liability insurance obtained by Contractor pursuant to this Contract.

3.5.12 Errors and Omissions Insurance:

Errors and Omissions insurance and, if necessary, Commercial Umbrella insurance, which will insure and provide coverage for errors or omissions of the Contractor, with limits of no less than \$1,000,000 for each claim.

3.5.13 Certificates of Insurance.

3.5.13.1 Prior to commencing work or services under this Contract, Contractor shall furnish the County with certificates of insurance, or formal endorsements as required by the Contract in the form provided by the County, issued by Contractor's insurer(s), as evidence that policies providing the required coverage, conditions and limits required by this Contract are in full force and effect. Such certificates shall identify this contract number and title.

3.5.13.2 Prior to commencing work or services under this Contract, Contractor shall have insurance in effect as required by the Contract in the form provided by the County, issued by Contractor's insurer(s), as evidence that policies providing the required coverage, conditions and limits required by this Contract are in full force and effect. Such certificates shall be made available to the County upon 48 hours' notice. **BY SIGNING THE AGREEMENT PAGE THE CONTRACTOR AGREES TO THIS REQUIREMENT AND FAILURE TO MEET THIS REQUIREMENT WILL RESULT IN CANCELLATION OF CONTRACT.**

3.5.13.2.1 In the event any insurance policy (ies) required by this contract is (are) written on a “claims made” basis, coverage shall extend for two years past completion and acceptance of Contractor’s work or services and as evidenced by annual Certificates of Insurance.

3.5.13.2.2 If a policy does expire during the life of the Contract, a renewal certificate must be sent to County fifteen (15) days prior to the expiration date.

3.5.14 Cancellation and Expiration Notice.

Insurance required herein shall not be permitted to expire, be canceled, or materially changed without thirty (30) days prior written notice to the County.

3.6 PROCUREMENT CARD ORDERING CAPABILITY:

County may determine to use a procurement card that may be used from time-to-time, to place and make payment for orders under this Contract. Contractors without this capability may be considered non-responsive and not eligible for award consideration.

3.7 INTERNET ORDERING CAPABILITY:

It is the intent of County to use the Internet to communicate and to place orders under this Contract. Contractors without this capability may be considered non-responsive and not eligible for award consideration.

3.8 ORDERING AUTHORITY.

3.8.1 Respondents should understand that any request for purchase of materials or services shall be accompanied by a valid purchase order, issued by Materials Management, or by a Certified Agency Procurement Aid (CAPA).

3.8.2 Maricopa County departments, cities, other counties, schools and special districts, universities, nonprofit educational and public health institutions may also purchase from under this Contract at their discretion and/or other state and local agencies (Customers) may procure the products under this Contract by the issuance of a purchase order to the Respondent. Purchase orders must cite the Contract number.

3.8.3 Contract award is in accordance with the Maricopa County Procurement Code. All requirements for the competitive award of this Contract have been met. A purchase order for the products is the only document necessary for Customers to purchase and for the Respondent to proceed with delivery of materials available under this Contract.

3.8.4 Any attempt to represent any product not specifically awarded under this Contract is a violation of the Contract. Any such action is subject to the legal and contractual remedies available to the County, inclusive of, but not limited to, Contract cancellation, suspension and/or debarment of the Respondent.

3.9 REQUIREMENTS CONTRACT:

3.9.1 Contractors signify their understanding and agreement by signing a bid submittal, that the Contract resulting from the bid will be a requirements contract. However, the Contract does not guarantee any minimum or maximum number of purchases will be made. It only indicates that if purchases are made for the materials contained in the Contract, they will be purchased from the Contractor awarded that item. Orders will only be placed when the County identifies a need and proper authorization and documentation have been approved.

3.9.2 County reserves the right to cancel Purchase Orders within a reasonable period of time after issuance. Should a Purchase Order be canceled, the County agrees to reimburse the Contractor but only for actual and documentable costs incurred by the Contractor due to and after issuance of the Purchase Order. The County will not reimburse the Contractor for any costs incurred after receipt of County notice of cancellation, or for lost profits, shipment of product prior to issuance of Purchase Order, etc.

3.9.3 Contractors agree to accept verbal notification of cancellation from the Materials Management Procurement Officer with written notification to follow. By submitting a bid in response to this Invitation for Bids, the Contractor specifically acknowledges to be bound by this cancellation policy.

3.10 UNCONDITIONAL TERMINATION FOR CONVENIENCE:

Maricopa County may terminate the resultant Contract for convenience by providing sixty (60) calendar days advance notice to the Contractor.

3.11 TERMINATION FOR DEFAULT:

If the Contractor fails to meet deadlines, or fails to provide the agreed upon service/material altogether, a termination for default will be issued. The termination for default will be issued only after the County deems that the Contractor has failed to remedy the problem after being forewarned.

3.12 TERMINATION BY THE COUNTY:

If the Contractor should be adjudged bankrupt or should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, the County may terminate the Contract. If the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to provide enough properly skilled workers or proper materials, or persistently disregard laws and ordinances, or not proceed with work or otherwise be guilty of a substantial violation of any provision of this Contract, then the County may terminate the Contract. Prior to termination of the Contract, the County shall give the Contractor fifteen- (15) calendar day's written notice. Upon receipt of such termination notice, the Contractor shall be allowed fifteen (15) calendar days to cure such deficiencies.

3.13 STATUTORY RIGHT OF CANCELLATION FOR CONFLICT OF INTEREST:

Notice is given that pursuant to A.R.S. § 38-511 the County may cancel any Contract without penalty or further obligation within three years after execution of the contract, if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the County is at any time while the Contract or any extension of the Contract is in effect, an employee or agent of any other party to the Contract in any capacity or consultant to any other party of the Contract with respect to the subject matter of the Contract. Additionally, pursuant to A.R.S § 38-511 the County may recoup any fee or commission paid or due to any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the County from any other party to the contract arising as the result of the Contract.

3.14 OFFSET FOR DAMAGES;

In addition to all other remedies at Law or Equity, the County may offset from any money due to the Contractor any amounts Contractor owes to the County for damages resulting from breach or deficiencies in performance of the contract.

3.15 ADDITIONS/DELETIONS OF SERVICE:

The County reserves the right to add and/or delete materials to a Contract. If a service requirement is deleted, payment to the Contractor will be reduced proportionately, to the amount

of service reduced in accordance with the bid price. If additional materials are required from a Contract, prices for such additions will be negotiated between the Contractor and the County.

3.16 SUBCONTRACTING:

3.16.1 The Contractor may not assign a Contract or Subcontract to another party for performance of the terms and conditions hereof without the written consent of the County. All correspondence authorizing subcontracting must reference the Bid Serial Number and identify the job project.

3.16.2 The Subcontractor's rate for the job shall not exceed that of the Prime Contractor's rate, as bid in the pricing section, unless the Prime Contractor is willing to absorb any higher rates. The Subcontractor's invoice shall be invoiced directly to the Prime Contractor, who in turn shall pass-through the costs to the County, without mark-up. A copy of the Subcontractor's invoice must accompany the Prime Contractor's invoice.

3.17 AMENDMENTS:

All amendments to this Contract shall be in writing and approved/signed by both parties. Maricopa County Materials Management shall be responsible for approving all amendments for Maricopa County.

3.18 ACCESS TO AND RETENTION OF RECORDS FOR THE PURPOSE OF AUDIT AND/OR OTHER REVIEW:

3.18.1 **In accordance with section MCI 367 of the Maricopa County Procurement Code the Contractor agrees to retain all books, records, accounts, statements, reports, files, and other records and back-up documentation relevant to this Contract for six (6) years after final payment or until after the resolution of any audit questions which could be more than six (6) years, whichever is latest. The County, Federal or State auditors and any other persons duly authorized by the Department shall have full access to, and the right to examine, copy and make use of, any and all said materials.**

3.18.2 **If the Contractor's books, records , accounts, statements, reports, files, and other records and back-up documentation relevant to this Contract are not sufficient to support and document that requested services were provided, the Contractor shall reimburse Maricopa County for the services not so adequately supported and documented.**

3.18.3 **If at any time it is determined by the County that a cost for which payment has been made is a disallowed cost, the County shall notify the Contractor in writing of the disallowance. The course of action to address the disallowance shall be at sole discretion of the County, and may include either an adjustment to future claim submitted by the Contractor by the amount of the disallowance, or to require reimbursement forthwith of the disallowed amount by the Contractor by issuing a check payable to Maricopa County.**

3.19 AUDIT DISALLOWANCES:

If at any time it is determined by the County that a cost for which payment has been made is a disallowed cost, the County shall notify the Contractor in writing of the disallowance and the required course of action, which shall be at the option of the County either to adjust any future claim submitted by the Contractor by the amount of the disallowance or to require repayment of the disallowed amount by the Contractor forthwith issuing a check payable to Maricopa County.

3.20 VALIDITY:

The invalidity, in whole or in part, of any provision of the Contract shall not void or affect the validity of any other provision of the Contract.

3.21 RIGHTS IN DATA:

The County shall have the use of data and reports resulting from a Contract without additional cost or other restriction except as may be established by law or applicable regulation. Each party shall supply to the other party, upon request, any available information that is relevant to a Contract and to the performance thereunder.

3.22 INFLUENCE

**As prescribed in MC1-1202 of the Maricopa County Procurement Code, any effort to influence an employee or agent to breach the Maricopa County Ethical Code of Conduct or any ethical conduct, may be grounds for Disbarment or Suspension under MC1-902.**

**An attempt to influence includes, but is not limited to:**

3.22.1 **A Person offering or providing a gratuity, gift, tip, present, donation, money, entertainment or educational passes or tickets, or any type valuable contribution or subsidy,**

3.22.2 **That is offered or given with the intent to influence a decision, obtain a contract, garner favorable treatment, or gain favorable consideration of any kind.**

**If a Person attempts to influence any employee or agent of Maricopa County, the Chief Procurement Officer, or his designee, reserves the right to seek any remedy provided by the Maricopa County Procurement Code, any remedy in equity or in the law, or any remedy provided by this contract.**

3.23 RELATIONSHIPS:

In the performance of the services described herein, the Contractor shall act solely as an independent contractor, and nothing herein or implied herein shall at any time be construed as to create the relationship of employer and employee, partnership, principal and agent, or joint venture between the County and the Contractor.

3.24 CERTIFICATION REGARDING DEBARMENT AND SUSPENSION

3.25.1 The undersigned (authorized official signing for the Contractor) certifies to the best of his or her knowledge and belief, that the Contractor, defined as the primary participant in accordance with 45 CFR Part 76, and its principals:

3.25.1.1 are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency;

3.25.1.2 have not within 3-year period preceding this Contract been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

3.25.1.3 are not presently indicted or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

3.25.1.4 have not within a 3-year period preceding this Contract had one or more public transaction (Federal, State or local) terminated for cause of default.

- 3.25.2 Should the Contractor not be able to provide this certification, an explanation as to why should be attached to the Contact.
- 3.25.3 The Contractor agrees to include, without modification, this clause in all lower tier covered transactions (i.e. transactions with subcontractors) and in all solicitations for lower tier covered transactions related to this Contract.

3.25 ALTERNATIVE DISPUTE RESOLUTION:

3.25.1 After the exhaustion of the administrative remedies provided in the Maricopa County Procurement Code, any contract dispute in this matter is subject to compulsory arbitration. Provided the parties participate in the arbitration in good faith, such arbitration is not binding and the parties are entitled to pursue the matter in state or federal court sitting in Maricopa County for a de novo determination on the law and facts. If the parties cannot agree on an arbitrator, each party will designate an arbitrator and those two arbitrators will agree on a third arbitrator. The three arbitrators will then serve as a panel to consider the arbitration. The parties will be equally responsible for the compensation for the arbitrator(s). The hearing, evidence, and procedure will be in accordance with Rule 74 of the Arizona Rules of Civil Procedure. Within ten (10) days of the completion of the hearing the arbitrator(s) shall:

3.25.1.1 Render a decision;

3.25.1.2 Notify the parties that the exhibits are available for retrieval; and

3.25.1.3 Notify the parties of the decision in writing (a letter to the parties or their counsel shall suffice).

3.25.2 Within ten (10) days of the notice of decision, either party may submit to the arbitrator(s) a proposed form of award or other final disposition, including any form of award for attorneys' fees and costs. Within five (5) days of receipt of the foregoing, the opposing party may file objections. Within ten (10) days of receipt of any objections, the arbitrator(s) shall pass upon the objections and prepare a signed award or other final disposition and mail copies to all parties or their counsel.

3.25.3 Any party which has appeared and participated in good faith in the arbitration proceedings may appeal from the award or other final disposition by filing an action in the state or federal court sitting in Maricopa County within twenty (20) days after date of the award or other final disposition. Unless such action is dismissed for failure to prosecute, such action will make the award or other final disposition of the arbitrator(s) a nullity.

3.26 VERIFICATION REGARDING COMPLIANCE WITH ARIZONA REVISED STATUTES §41-4401 AND FEDERAL IMMIGRATION LAWS AND REGULATIONS:

3.26.1 By entering into the Contract, the Contractor warrants compliance with the Immigration and Nationality Act (INA using e-verify) and all other federal immigration laws and regulations related to the immigration status of its employees and A.R.S. §23-214(A). The contractor shall obtain statements from its subcontractors certifying compliance and shall furnish the statements to the Procurement Officer upon request. These warranties shall remain in effect through the term of the Contract. The Contractor and its subcontractors shall also maintain Employment Eligibility Verification forms (I-9) as required by the Immigration Reform and Control Act of 1986, as amended from time to time, for all employees performing work under the Contract and verify employee compliance using the E-verify system and shall keep a record of the verification for the duration of the employee's employment or at least three years, whichever is longer. I-9 forms are available for download at USCIS.GOV.

3.26.2 The County retains the legal right to inspect contractor and subcontractor employee documents performing work under this Contract to verify compliance with paragraph 3.26.1 of this Section. Contractor and subcontractor shall be given reasonable notice of the County's intent to inspect and shall make the documents available at the time and date specified. Should the County suspect or find that the Contractor or any of its subcontractors are not in compliance, the County will consider this a material breach of the contract and may pursue any and all remedies allowed by law, including, but not limited to: suspension of work, termination of the Contract for default, and suspension and/or debarment of the Contractor. All costs necessary to verify compliance are the responsibility of the Contractor.

~~3.27 VERIFICATION REGARDING COMPLIANCE WITH ARIZONA REVISED STATUTES §§35-391.06 AND 35-393.06 BUSINESS RELATIONS WITH SUDAN AND IRAN:~~

~~3.27.1 By entering into the Contract, the Contractor certifies it does not have scrutinized business operations in Sudan or Iran. The contractor shall obtain statements from its subcontractors certifying compliance and shall furnish the statements to the Procurement Officer upon request. These warranties shall remain in effect through the term of the Contract.~~

~~3.27.2 The County may request verification of compliance for any contractor or subcontractor performing work under the Contract. Should the County suspect or find that the Contractor or any of its subcontractors are not in compliance, the County may pursue any and all remedies allowed by law, including, but not limited to: suspension of work, termination of the Contract for default, and suspension and/or debarment of the Contractor. All costs necessary to verify compliance are the responsibility of the Contractor.~~

3.28 CONTRACTOR LICENSE REQUIREMENT:

3.28.1 The Respondent shall procure all permits, insurance, licenses and pay the charges and fees necessary and incidental to the lawful conduct of his/her business, and as necessary complete any required certification requirements, required by any and all governmental or non-governmental entities as mandated to maintain compliance with and in good standing for all permits and/or licenses. The Respondent shall keep fully informed of existing and future trade or industry requirements, Federal, State and Local laws, ordinances, and regulations which in any manner affect the fulfillment of a Contract and shall comply with the same. Contractor shall immediately notify both Materials Management and the using agency of any and all changes concerning permits, insurance or licenses.

3.28.2 Respondents furnishing finished products, materials or articles of merchandise that will require installation or attachment as part of the Contract, shall possess any licenses required. A Respondent is not relieved of its obligation to possess the required licenses by subcontracting of the labor portion of the Contract. Respondents are advised to contact the Arizona Registrar of Contractors, Chief of Licensing, at (602) 542-1525 to ascertain licensing requirements for a particular contract. Respondents shall identify which license(s), if any, the Registrar of Contractors requires for performance of the Contract.

3.29 PUBLIC RECORDS:

**All Offers submitted and opened are public records and must be retained by the Records Manager at the Office of Procurement Services. Offers shall be open to public inspection after Contract award and execution, except for such Offers deemed to be confidential by the Office of Procurement Services. If an Offeror believes that information in its Offer should remain confidential, it shall indicate as confidential, the specific information and submit a statement with its offer detailing the reasons that the information should not be disclosed. Such reasons shall include the specific harm or prejudice which may arise. The Records Manager of the Office of Procurement Services shall determine whether the identified information is confidential pursuant to the Maricopa County Procurement Code.**

3.30 POST AWARD MEETING:

The Contractor may be required to attend a post-award meeting with the Using Agency to discuss the terms and conditions of this Contract. This meeting will be coordinated by the Procurement Officer of the Contract.