CITY OF YUMA
PURCHASING DIVISION
NOTICE OF INVITATION FOR FORMAL BID

BID NUMBER: 2016-20000024

BID TITLE: Slurry Seal Services

BID DUE DATE AND TIME:

Tuesday, September 15, 2015 @ 2:00 pm Arizona Time

SCOPE OF WORK: Purchase and Delivery of Slurry Seal Services. This will be a one-year contract with the option to renew for four additional one-year periods, one period at a time based on performance and availability of funds.

BID OPENING AND SUBMITTAL LOCATION:

Please submit your bid to:

City of Yuma
Purchasing Division
One City Plaza
Yuma, AZ 85364-1436

Vendor shall return the Bid Form in a sealed envelope that clearly identifies the bid number, vendor's name and address. Bids must be received in the office of Purchasing Division, One City Plaza, Yuma, Arizona 85364 no later than the time stated in the bid. The time/date recorder located in the Purchasing Division Office will be used to record the official time of receipt.

SPECIAL NOTE: All Bidders must register with www.AZPurchasing.org. Please be advised if this solicitation is received by other than downloading the solicitation directly from www.AZPurchasing.org, you may not receive all the required documents. The City of Yuma will not accept any bids that are not on a City of Yuma Bid Form, which accompanies this solicitation.

VENDORS ARE STRONGLY ENCOURAGED TO CAREFULLY READ THE ENTIRE BID.

CITY OF YUMA
Slurry Seal Services
Bid #2010000419

2/3/2016

American Pavement Preservation, LLC
Las Vegas, NV

Vendor Contact: **Eric Reimschiissel @ (702) 249-5811 or ericr@americanpave.com**

Delivery: 45 Days ARO **Payment: Net 30 Days**

1.	**Emulsified Asphalt to be CQS-1H**	
2.	**Type II Slurry Seal with CQS-1H TR (Tire Rubber Modified) or LMCQS**	
	12 lbs	**$1.1530**
	13 lbs	**$1.2490**
	14 lbs	**$1.3450**
	15 lbs	**$1.4400**
	16 lbs	**$1.5300**
3.	**Type III Slurry Seal CQS-1H (TR) (Tire Rubber Modified 18 to 20 lbs**	**$1.9200**
4.	**Any additional lbs per sq yd of aggregate would be $.0961 per lb per sq yd over the 12 lb agreed price**	

This information is not the official results but is for informational purposes only. Please contact the Purchasing Division for further information.

116012

City of YUMA

Purchase Order Number Must Appear On All Invoices, Bill of Lading and Any Correspondence.

Bill To
City of Yuma - Accounting
One City Plaza
YUMA, AZ 85364
Payables@YumaAZ.Gov

Ship To
Street Division
155 W 14th St
Yuma, AZ 85364

Purchase Order
No. 2016-40000388

11/22/15

Vendor 112143 AMERICAN PAVEMENT PRESERVATION LLC

Contact
AMERICAN PAVEMENT PRESERVATION LLC
4725 E CARTIER AVENUE
LAS VEGAS, NV 89115

Deliver by 10/20/16
Bid # 2016-20000024 1 of 5
Freight Terms
Buyer MARY E ROMAN
Contract #
Purchasing (928) 373-5114

Quantity U/M	Description	Unit Cost	Total Cost
250000.0000 DL	Reseal	$1.0000	$250,000.00

Item Description TYPE 2 AND TYPE 3 SLURRY SEAL
Detail Description To be ordered as needed:
1. Emulsified Asphalt CQS -1H - $1.017
2. Type II Slurry Seal with CQS-1H TR - $1.153
(TR - Tire Rubber Modified)

G/L Account	*Project*	*Amount*	*Percent*
101-40-31-STPM.6501 (Maintenance of Facilities)			100.00%

Total $250,000.00

Authorized Signature

Special Instructions
Approved by Council - October 21, 2015
Vendor Contact: Eric Reimschiissel @ (702)507-5444; ericr@americanpave.com
City of Yuma Contact Martin Agundez @ (928) 373-4548

The City's Standard Terms and Conditions can be found at www.YumaAz.gov

Formal Bid

SLURRY SEAL SERVICES BID FORM

COPY

City of Yuma
Bid #2016-20000024

INSTRUCTIONS: COMPLETE THE SHADED AREAS ONLY. Return this completed document in a sealed envelope by mail to: City of Yuma, Purchasing Division, One City Plaza, Yuma, Arizona 85364-1436, with the bid number, vendor's name and address. Return no later than the time and date as stated in the bid. For best results, please complete this as a fill form and do not hand write your data. No other price pages or format acceptable.

The Vendor hereby offers and agrees to furnish, deliver and install materials, labor and all costs associated and in compliance with all terms, conditions, specifications, and any addenda to this bid. Failure to comply with the aforementioned may result in disqualification of the bid.

Prices quoted must remain firm - fixed prices for the first TWELVE (12) months, renewable for four (4) additional one year terms, one year at a time. It will be the vendor's responsibility to notify City of any price change thirty (30) days prior to the anniversary date of contract renewal. Failure to do so may result in the denial of any increase requested. The contract will automatically be renewed annually at the same price (s) if no request has been received.

In the event of an unpredictable change in the market that affects the then current contract price, the Vendor may submit justification for a price adjustment. The Contract Administrator and Purchasing Agent will review the justification and determine applicable price adjustment. Upon return to normal market conditions, the price will be adjusted to the price established by the original contract terms. The Purchasing Agent will be the final authority on any price adjustment due to unpredictable market change. If the Vendor, Manufacturer or Supplier at anytime during the course of this contract, makes a general price decrease to the Vendor, the Vendor must promptly notify the City in writing and extend such decrease to the City effective on the date of such general price decrease.

SPECIAL NOTE: All Bidders must register with www.AZPurchasing.org. Please be advised if the solicitation accompanying this Bid Form is received by other than downloading the solicitation directly from www.AZPurchasing.org, you may not receive all the required documents. The City of Yuma will not accept any bids that are not on this Bid Form.

	Delivery is guaranteed within:	**15**	days, after Receipt of Order (ARO)?
Date	**September 15, 2015**		
To:	City of Yuma, Yuma, Arizona		
From:	Vendor *(Business Name)*	Owner's Name	
	American Pavment Preservation	**APP Holdings**	
	Physical Business Address *(No PO Box)*		
	4725 East Cartier Avenue		
	Mark if City or Town		
	City ☑ Town ☐		
	County		
	Clark County Nevada		
	City		
	Las Vegas		
	State & ZIP		
	Nevada 89115		
	Telephone Number	Cellular Telephone Number	
	702-507-5444	**702-249-5811**	
	Fax		
	702-644-0128		
	E-mail Address		
	ericr@americanpave.com		

Return This Page

SLURRY SEAL SERVICES
BID FORM

ITEM NO.	DESCRIPTION	EST QTY	UOM	UNIT COST	TOTAL COST
1.	Emulsified Asphalt to be CQS-1H	200,000	Sq Yds	$1.017	$203,400.00
2.	Type II Slurry Seal with CQS-1H TR (Tire Rubber Modified)	200,000	Sq Yds	$1.153	$230,600.00
PROMPT PAYMENT DISCOUNT: As stated in the "Standard Terms & Conditions", "Discounts" the price(s) quoted herein can be discounted by:		0	%, if payment is made within	30	days.

NOTE: Unless Prompt Payment Discount is specified above, A NET/30 will be considered in determining the bid award.

Federal Taxpayer ID #	88-0453460

This number will be in the format of XX-XXXXXXX or XXX-XX-XXXX, meaning that a taxpayer ID number is nine numbers only, no letters, and the format is for an employer ID number or a social security number. Do not list your State tax license number here.

Name of your City	Las Vegas Nevada
Your City's Sales Tax %	8.10%
City of Yuma Business License #	CNTR 006718 01 2015
Is your Business located in the City Limits of Yuma?	YES ☐ NO ☑

By signing this document, Vendor agrees that the offered products complies with all specifications and additional requirements as stated in this bid. If there are any specifications or requirements, which you cannot comply with, please name and describe the nonconformance in the area provided below.

I hereby state the products I am offering complies with all specifications and requirements as stated in this bid, and any nonconformance issued have been recorded below:

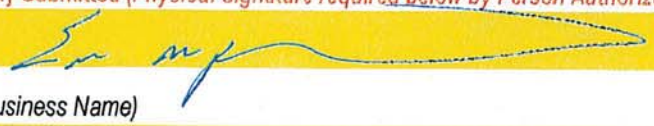
Item No.	Found on Page #	

If additional space is needed, please attach another sheet.

SLURRY SEAL SERVICES
BID FORM

Arizona Revised Statutes Compliance - Verification of Employment Eligibility
Verification of Employment Eligibility: Pursuant to A.R.S. § 41-4401, "After September 30, 2008, a government entity shall not award a contract to any Company or subcontractor that fails to comply with" the requirements of A.R.S. § 23-214. Section 23-214 imposes requirements upon employers to verify the employment eligibility of all its employees as set forth in that statute and its related definitions.
The City of Yuma will not enter into a contract with any Company or its providers or subcontractors that is/are not are in compliance with the requirements of A.R.S. § 23-214. All bidders and proposers agree and acknowledge that the City of Yuma is relying on the representations set forth in this Verification of Employment Eligibility form and would not consider a bid or proposal without the completion of this form by the bidder or proposer.
By signing below, Company, as named below, represents and warrants that this company is in full compliance with all federal, state, and local laws, rules, and regulations regarding employment eligibility of all its employees, including use of the requirements of A.R.S. § 23-214, and Company shall remain in compliance during the term of any (Contract)(Agreement) that it is awarded by the City of Yuma.
Company further represents and warrants that all providers or subcontractors providing goods or services under this (Contract)(Agreement) are in compliance with all federal, state, and local laws, rules and regulations regarding employment eligibility of all employees, including A.R.S. § 23-214, and that Company shall require all providers and subcontractors to remain in compliance during the term of any (Contract)(Agreement) that Company has with the City of Yuma.
Company shall defend, indemnify and hold the City of Yuma harmless from any loss, damage, expense, liability, penalty, claim, or fee (including reasonable attorneys fees) caused by or arising from, directly or indirectly, in whole or in part, any false or inaccurate representation set forth above, breach of any warranties set forth above, and/or any other failure to comply with A.R.S. § 23-214 or any other requirements of this Verification of Employment Eligibility form.
Under the provisions of A.R.S. § 41-4401, Company hereby warrants to the City that the Company and each of its subcontractors ("Subcontractors") will comply with, and are contractually obligated to comply with, all Federal Immigration laws and regulations that relate to their employees and AIR'S. § 23-214(A) (hereinafter "Company Immigration Warranty").
A breach of the Company Immigration Warranty shall constitute a material breach of this Contract and shall subject the Company to penalties up to and including termination of this Contract at the sole discretion of the City.
The City retains the legal right to inspect the papers of any Company or Subcontractors employee who works on this Contract to ensure that the Company or Subcontractor is complying with the Company Immigration warranty. Company agrees to assist the City in regard to any such inspections.
The City may, at its sole discretion, conduct random verification of the employment records of the Company and any of subcontractors to ensure compliance with Company's Immigration Warranty. Company agrees to assist the City in regard to any random verification performed.
Neither the Company nor any Subcontractor shall be deemed to have materially breached the Company Immigration Warranty if the Company or Subcontractor establishes that it has complied with the employment verification provisions prescribed by section 274A and 274B of the Federal Immigration and Nationality Act and the E-Verify requirements prescribed by A.R.S. § 23-214, Subsection A.
The provision of this Article must be included in any contract the Company enters into with any and all of its subcontractors who provide services under this Contract or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a Company or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

Respectfully Submitted *(Physical Signature required below by Person Authorized to sign)*



Vendor *(Business Name)*

AMERICAN PAVEMENT PRESERVATION LLC

Contact Name & Title

Eric M. Reimschiissel

Date September 15, 2015

CITY OF YUMA
BID #2016-20000024
SLURRY SEAL SERVICES

		Est Qty - Sq Yds	American Pavement Preservation Las Vegas, NV	Southwest Slurry Seal, Inc. Phoenix, AZ	VSS International Chandler, AZ
1.	Emulsified Asphalt to be CQS-1H	200,000	$1.017 $203,400.00	$1.210 $242,000.00	$1.480 $296,000.00
2.	Type II Slurry Seal with CQS-1H TR (Tire Rubber	200,000	$1.15 $230,600.00	$1.28 $256,000.00	$1.56 $312,000.00

This information is not the official results but is for informational purposes only.
Please contact the Purchasing Division for further information.

ATTACHMENT "A"

ISSA A105
Revised February 2010

Recommended Performance Guideline For Emulsified Asphalt Slurry Seal

A105 (Revised February 2010)

NOTICE

It is not intended or recommended that this guideline be used as a verbatim specification. It should be used as an outline, helping user agencies establish their particular project specification. Users should understand that almost all geographical areas vary as to the availability of materials. An effort should be made to determine what materials are reasonably available, keeping in mind system compatibility and specific job requirements. Contact ISSA for answers to questions and for a list of ISSA member contractors and companies.

International Slurry Surfacing Association
#3 Church Circle, PMB 250
Annapolis, MD 21401
(410) 267-0023
www.slurry.org

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RECOMMENDED PERFORMANCE GUIDELINE FOR EMULSIFIED ASPHALT SLURRY SEAL

1. SCOPE

The intent of this guideline is to aid in the design, testing, quality control, measurement and payment procedures for the application of Emulsified Asphalt Slurry Seal Surfacing.

2. DESCRIPTION

Slurry seal shall consist of a mixture of an emulsified asphalt, mineral aggregate, water, and additives, proportioned, mixed and uniformly spread over a properly prepared surface as directed by the Buyer's Authorized Representative (B.A.R.). The slurry seal shall be applied as a homogeneous mat, adhere firmly to the prepared surface, and have a skid-resistant texture throughout its service life.

3. SPECIFICATIONS

It is not normally required to run all tests on every project. A compilation of results from the listed tests should be indicative of system performance. Failure to meet specification for an individual test does not necessarily disqualify the system. If, for example, the system to be used on the project has a record of good performance, individual requirements for testing may be waived. Agency and testing methods are listed in the appendix (see Appendix A) and form a part of this guideline.

4. MATERIALS

4.1 EMULSIFIED ASPHALT

The emulsified asphalt, and emulsified asphalt residue, shall meet the requirements of AASHTO M 140 or ASTM D 977 for SS-1 or SS-1h. For CSS-1, CSS-1h, or CQS-1h, it shall meet the requirements of AASHTO M 208 or ASTM D 2397.
Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to indicate that the emulsion meets the specifications.

4.2 AGGREGATE

4.2.1 GENERAL

The mineral aggregate used shall be the type specified for the particular application requirements of the slurry seal. The aggregate shall be crushed stone such as granite, slag, limestone, chat, or other high-quality aggregate, or combination thereof. To assure the material is 100 percent crushed, the parent aggregate will be larger than the largest stone in the gradation to be used.

4.2.2 QUALITY TESTS

The aggregate should meet agency specified polishing values and these minimum requirements:

TEST	TEST METHOD		SPECIFICATION
	AASHTO	ASTM	
Sand Equivalent Value of Soils and Fine Aggregate	T 176	D 2419	45 Minimum
Soundness of Aggregates by Use of Sodium Sulfate of Magnesium Sulfate	T 104	C 88	15% Maximum w/NA_2SO_4 25% Maximum w/$MgSO_4$
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine[1]	T 96	C 131	35% Maximum

[1]The abrasion test is run on the parent aggregate.

4.2.3 GRADATION

When tested in accordance with AASHTO T 27 (ASTM C 136) and AASHTO T 11 (ASTM C 117), the mix design aggregate gradation shall be within one of the following bands (or one recognized by the local paving authority):

SIEVE SIZE		TYPE I PERCENT PASSING	TYPE II PERCENT PASSING	TYPE III PERCENT PASSING	STOCKPILE TOLERANCE FROM THE MIX DESIGN GRADATION
3/8	(9.5 mm)	100	100	100	
# 4	(4.75 mm)	100	90 - 100	70 - 90	± 5%
# 8	(2.36 mm)	90 - 100	65 - 90	45 - 70	± 5%
# 16	(1.18 mm)	65 - 90	45 - 70	28 - 50	± 5%
# 30	(600 um)	40 - 65	30 - 50	19 - 34	± 5%
# 50	(330 um)	25 - 42	18 - 30	12 - 25	± 4%
#100	(150 um)	15 - 30	10 - 21	7 - 18	± 3%
#200	(75 um)	10 - 20	5 - 15	5 - 15	± 2%

The gradation of the aggregate stockpile shall not vary by more than the stockpile tolerance from the mix design gradation (indicated in the table above) while also remaining within the specification gradation band. The percentage of aggregate passing any two successive sieves shall not change from one end of the specified range to the other end.

The aggregate will be accepted at the job location or stockpile based on five gradation tests sampled according to AASHTO T 2 (ASTM D 75). If the average of the five tests is within the stockpile tolerance from the mix design gradation, the material will be

accepted. If the average of those test results is out of specification or tolerance, the contractor will be given the choice to either remove the material or blend additional aggregate with the stockpile material to bring it into compliance. Materials used in blending must meet the required aggregate quality test specifications in Section 4.2.2 before blending and must be blended in a manner to produce a consistent gradation. Aggregate blending may require a new mix design.

Screening shall be required at the stockpile if there are any problems created by oversized materials in the mix.

Type I. This aggregate gradation is used to fill surface voids, address moderate surface distresses, and provide protection from the elements. The fineness of this mixture provides the ability for some crack penetration.

Type II. This aggregate gradation is used to fill surface voids, address more severe surface distresses, seal, and provide a durable wearing surface.

Type III. This aggregate gradation provides maximum skid resistance and an improved wearing surface.

4.3 MINERAL FILLER

Mineral filler may be used to improve mixture consistency and to adjust mixture breaking and curing properties. Portland cement, hydrated lime, limestone dust, fly ash, or other approved filler meeting the requirements of ASTM D 242 shall be used if required by the mix design. Typical use levels are normally 0.0 - 3.0 percent and may be considered part of the aggregate gradation.

4.4 WATER

The water shall be free of harmful salts and contaminants. If the quality of the water is in question, it should be submitted to the laboratory with the other raw materials for the mix design.

4.5 ADDITIVES

Additives may be used to accelerate or retard the break/set of the slurry seal. Appropriate additives, and their applicable use range, should be approved by the laboratory as part of the mix design.

5. LABORATORY EVALUATION

5.1 GENERAL

Before work begins, the contractor shall submit a signed mix design covering the specific materials to be used on the project. This design will be performed by a laboratory which has experience in designing Emulsified Asphalt Slurry Seal Surfacing. After the mix design has been approved, no material substitution will be permitted unless approved by the B.A.R.

ISSA can provide a list of laboratories experienced in slurry seal design.

5.2 MIX DESIGN

Compatibility of the aggregate, emulsified asphalt, water, mineral filler and other additives shall be evaluated in the mix design. The mix design shall be completed using materials consistent with those supplied by the contractor for the project. Recommended tests and values are as follows:

TEST	ISSA TB NO.	SPECIFICATION
Mix Time @ 77°F (25°C)	TB 113	Controllable to 180 Seconds Minimum
Slurry Seal Consistency	TB 106	0.79 – 1.18 inches (2.0 – 3.0 cm)
Wet Cohesion @ 30 Minutes Minimum (Set) @ 60 Minutes Minimum (Traffic)	TB 139 (For quick-traffic systems)	 12 kg-cm Minimum 20 kg-cm or Near Spin Minimum
Wet Stripping	TB 114	Pass (90% Minimum)
Wet-Track Abrasion Loss One-hour Soak	TB 100	75 g/ft^2 (807 g/m^2) Maximum
Excess Asphalt by LWT Sand Adhesion	TB 109 (Critical in heavy-traffic areas)	50 g/ft^2 (538 g/m^2) Maximum

The Wet Track Abrasion Test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content required in a slurry seal system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test. ISSA TB 136 describes potential causes for inconsistent results of the Wet Track Abrasion Test.

The mixing test is used to predict the time the material can be mixed before it begins to break. It can be a good reference check to verify consistent sources of material. The laboratory should verify that mix and set times are appropriate for the climatic conditions expected during the project.

The laboratory shall also report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect) according to AASHTO T19 (ASTM C29). The report must clearly show the proportions of aggregate, mineral filler (if used) and emulsified asphalt based on the dry weight of the aggregate.

The percentages of each individual material required shall be shown in the laboratory report. Based on field conditions, adjustments within the specific ranges of the mix design may be required.

The component materials shall be designed within the following limits:

COMPONENT MATERIALS	SUGGESTED LIMITS
Residual Asphalt	Type I: 10 - 16% Type II: 7.5 - 13.5% Type III: 6.5 - 12% (Based on dry weight of aggregate)
Mineral Filler	0.0 - 3.0% (Based on dry weight of aggregate)
Additives	As needed
Water	As required to produce proper mix consistency

5.3 MIX TOLERANCES

Tolerances for the slurry seal mixture are as follows:

a. After the residual asphalt content is determined, a variation ±1% by weight of dry aggregate will be permitted.
b. The slurry consistency, as determined according to ISSA TB No. 106, shall not vary more than ± 0.2" (± 0.5 cm) from the job mix formula after field adjustments.
c. The rate of application shall not vary more than ± 2 lb/yd^2 (± 1.1 kg/m^2) when the surface texture does not vary significantly.

6. EQUIPMENT

6.1 GENERAL

All equipment, tools, and machines used in the application of slurry seal shall be maintained in satisfactory working condition at all times.

6.2 MIXING EQUIPMENT

The machine shall be specifically designed and manufactured to apply slurry seal. The material shall be mixed by an automatic-sequenced, self-propelled, slurry seal mixing machine of either truck-mounted or continuous-run design. Continuous-run machines are those that are equipped to self-load materials while continuing to apply slurry seal. Either type machine shall be able to accurately deliver and proportion the mix components through a mixer and to discharge the mixed product on a continuous-flow basis. Sufficient storage capacity for all mix components is required to maintain an adequate supply to the proportioning controls.

The B.A.R. should decide which type of equipment best suits the specific project. In some cases, truck-mounted machines may be more suited, i.e. cul-de-sacs, small narrow roadways, parking lots, etc. On some projects, continuous-run equipment may be chosen due to the continuity of mix and the reduction of start-up joints. Generally, truck-mounted machines or continuous-run machines may be used on similar projects.

If continuous-run equipment is used, the machine shall provide the operator with full control of the forward and reverse speeds during application of the slurry seal. It shall be equipped with a self-loading device and opposite-side driver stations. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be of original-equipment-manufacturer design.

6.3 PROPORTIONING DEVICES

Individual volume or weight controls for proportioning mix components shall be provided and properly labeled. These proportioning devices are used in material calibration to determine the material output at any time.

6.4 SPREADING EQUIPMENT

The mixture shall be placed uniformly by means of a spreader box attached to the paver and mechanically equipped, if necessary, to agitate and spread the material evenly throughout the box. With some quick-set systems, mechanical agitation may extend mix time. The slurry seal mixture shall have the proper consistency as it enters the spreader box. Spraying of additional water into the spreader box will not be permitted.

A front seal shall be utilized to ensure no loss of the mixture at the road contact point. The rear seal shall act as final strike-off and shall be adjustable. The spreader box and rear seal shall be designed and operated to provide uniform mix consistency behind the box. The spreader box shall have suitable means to side shift to compensate for variations in the pavement width. A burlap drag or other approved screed may be attached to the rear of the spreader box to provide a highly textured uniform surface. A drag stiffened by hardened slurry is ineffective and should be replaced immediately.

6.5 AUXILIARY EQUIPMENT

Suitable surface preparation equipment, traffic control equipment, hand tools, and other support and safety equipment necessary to perform the work shall be provided by the contractor.

7. CALIBRATION

Each mixing unit to be used in performance of the work shall be calibrated in the presence of the B.A.R. prior to the start of the project. Previous calibration documentation covering the exact materials to be used may be acceptable, provided the calibration was performed during the previous 60 days. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine's metering devices. Any equipment replacement affecting material proportioning requires that the machine be recalibrated. No machine will be allowed to work on the project until the calibration has been accepted. ISSA Inspector's Manual describes a method of machine calibration. ISSA contractors and/or machine manufacturers may also provide methods of machine calibration.

8. WEATHER LIMITATIONS

The slurry seal shall not be applied if either the pavement or air temperature is below 50°F (10°C) and falling, but may be applied when both pavement and air temperatures are above 45°F (7°C) and rising. No slurry seal shall be applied when there is the possibility of freezing temperatures at the project location within 24 hours after application. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time.

9. NOTIFICATION AND TRAFFIC CONTROL

9.1 NOTIFICATION

Homeowners and businesses affected by the paving shall be notified at least one day in advance of the surfacing. Should work not occur on the specified day, a new notification will be distributed. The notification shall be posted in written form, stating the time and date that the surfacing will take place. If necessary, signage alerting traffic to the intended project should be posted.

9.2 TRAFFIC CONTROL

Traffic control devices shall be in accordance with agency requirements and, if necessary, conform to the requirements of the Manual on Uniform Traffic Control Devices. Opening to traffic does not constitute acceptance of the work.

In areas that are subject to an increased rate of sharp-turning vehicles, additional time may be required for a more complete cure of the slurry seal mat to prevent damage. Tire marks may be evident in these areas after opening but typically diminish over time with rolling traffic.

10. SURFACE PREPARATION

10.1 GENERAL

Prior to applying the slurry seal, loose material, oil spots, vegetation, and other objectionable material shall be removed. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before slurry surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the slurry seal by a suitable method. The B.A.R. shall approve the surface preparation prior to surfacing.

10.2 TACK COAT

Normally, tack coat is not required unless the surface to be covered is extremely dry and raveled or is concrete or brick. If required, the emulsified asphalt should be SS, CSS, or the slurry seal emulsion. Consult with the slurry seal emulsion supplier to determine dilution stability. The tack coat may consist of one part emulsified asphalt/three parts water and should be applied with a standard distributor. The distributor shall be capable of applying the dilution evenly at a rate of 0.05-0.15 gal/yd^2 (0.23-0.68 l/m^2). The tack coat shall be allowed to cure sufficiently before the application of slurry seal. If a tack coat is to be required, it must be noted in the project plans.

10.3 CRACKS

It is recommended to treat cracks wider than 0.25" (0.64cm) in the pavement surface with an approved crack sealer prior to application of the slurry seal.

11. APPLICATION

11.1 GENERAL

If required, it is recommended that a test strip be placed in conditions similar to those expected to be encountered during the project.

The surface may be wetted with water ahead of the spreader box. The rate of application of the water spray shall be adjusted during the day to suit temperature, surface texture, humidity, and dryness of the pavement. Pooling or standing water shall be avoided.

The slurry seal shall be of the desired consistency upon exiting the mixer. A sufficient amount of material shall be carried in all parts of the spreader box at all times so that complete coverage is achieved. Overloading of the spreader shall be avoided.

No lumping, balling, or unmixed aggregate shall be permitted.

Significant streaks, such as those caused by oversized aggregate or broken mix, shall not be left in the finished surface. If excessive streaking occurs, the job will be stopped until the cause of the problem has been corrected. Some situations may require screening the aggregate prior to loading it into the units going from the stockpile area to the jobsite.

11.2 RATE OF APPLICATION

The slurry seal mixture shall be of the proper consistency at all times so as to provide the application rate required by the surface condition. The average application rate shall be in accordance with the following table:

AGGREGATE TYPE	LOCATION	SUGGESTED APPLICATION RATE
Type I	Parking Areas Urban and Residential Streets Airport Runways	8 - 12 lb/yd^2 (4.3 - 6.5 kg/m^2)
Type II	Urban and Residential Streets Airport Runways	10 - 18 lb/yd^2 (5.4 - 9.8 kg/m^2)
Type III	Primary and Interstate Routes	15 - 22 lb/yd^2 (8.1 - 12.0 kg/m^2)

Suggested application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight and gradation of the aggregate and the demand of the surface to which the slurry seal is being applied.

11.3 JOINTS

No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable equipment to produce a minimum number of longitudinal joints throughout the project. When possible, a longitudinal joint shall not be placed in a wheel path. Less than full box width passes will be used only as required. If less than full box width passes are used, they shall not be the last pass of any paved area. A maximum of 6" (15.2 cm) shall be allowed for overlap of longitudinal joints.

11.4 MIXTURE

The slurry seal shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess liquids which create segregation of the aggregate. Spraying of additional water into the spreader box will not be permitted.

11.5 HANDWORK

Areas which cannot be accessed by the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. If necessary, the area to be handworked shall be lightly dampened prior to mix placement. Handwork shall exhibit the same finish as that applied by the spreader box and shall be completed prior to final surfacing.

11.6 LINES

Care shall be taken to apply straight lines along curbs, shoulders, and intersections. No run-off on these areas will be permitted. Roofing felt or heavy plastic may be used to begin or end a pull cleanly. This also provides for easy removal of excess slurry.

11.7 ROLLING

Rolling is usually not necessary for slurry seal on roadways. Airports and parking areas should be rolled by a self-propelled, 10-ton (maximum) pneumatic tire roller equipped with a water spray system. All tires should be inflated per manufacturer's specifications. Rolling shall not start until the slurry has cured sufficiently to avoid damage by the roller. Areas which require rolling shall receive a minimum of two (2) full coverage passes.

11.8 CLEAN UP

All utility access areas, gutters and intersections, shall have the slurry seal removed as specified by the B.A.R. The contractor shall remove any debris associated with the performance of the work on a daily basis.

12. QUALITY CONTROL

12.1 INSPECTION

Inspectors assigned to projects must be familiar with the materials, equipment and application of slurry seal. Local conditions and specific project requirements should be considered when determining the parameters of field inspection.

Proper mix consistency should be one of the major areas of inspector concern. If mixes are too dry, streaking, lumping and roughness will be present in the mat surface. Mixes applied too wet will flow excessively and not hold straight lane lines. Excessive liquids may also cause an asphalt-rich surface with segregation.

12.2 MATERIALS

To account for aggregate bulking, it is the responsibility of the contractor to check stockpile moisture content and to set the machine accordingly. At the B.A.R.'s discretion, material tests may be run on representative samples of the aggregate and emulsion. Tests will be run at the expense of the buyer. The buyer must notify the contractor immediately if any test fails to meet the specifications.

12.3 SLURRY SEAL

If required, representative samples of the slurry seal may be taken directly from the slurry unit(s). Consistency (ISSA TB No. 106) and residual asphalt content (ASTM D2172) tests may be run on the samples. Please note that the consistency test may not be applicable to certain Quick-Set and Quick-Traffic systems because of erratic results due to setting characteristics. If this test is run, it must be performed immediately after the sample is taken. Tests will be run at the expense of the buyer. The buyer must notify the contractor immediately if any test fails to meet specifications.

Data obtained from the proportioning devices on the slurry seal unit may be used to determine individual material quantities and application rate.

12.4 NON-COMPLIANCE

If any two successive tests fail on the stockpile aggregate, the job shall be stopped. If any two successive tests on the mix from the same machine fail, the use of the machine shall be suspended. It will be the responsibility of the contractor, at his expense, to prove to the B.A.R. that the problems have been corrected.

13. PAYMENT

The slurry seal shall be measured and paid for by the unit area or weight of aggregate and the weight of emulsion used on the work completed and accepted by the buyer. If paid by the weight of the aggregate and emulsified asphalt, the contractor shall submit to the B.A.R. certified delivery tickets which show quantities of each material delivered to the job site and used on the project. Payment shall be full compensation for all preparation, mixing and application of materials, and for all labor, equipment, tools, testing, cleaning, and incidentals necessary to complete the job as specified herein.

APPENDIX A

AGENCIES

AASHTO: American Association of State Highway and Transportation Officials
ASTM: American Society for Testing and Materials
ISSA: International Slurry Surfacing Association

TEST METHODS

EMULSIFIED ASPHALT

AASHTO TEST NO.	ASTM TEST NO.	TEST
M 140	D 977	Standard Specification for Emulsified Asphalt
M 208	D 2397	Specification for Cationic Emulsified Asphalt
T 40	D 140	Sampling Bituminous Materials
T 59	D 244	Test Methods and Practices for Emulsified Asphalts
T 59	D 6997	Distillation of Emulsified Asphalt

AGGREGATE AND MINERAL FILLER

AASHTO TEST NO.	ASTM TEST NO.	TEST
T 176	D 2419	Sand Equivalent Value of Soils and Fine Aggregate
T 104	C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
96	C 131	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine (This test should be performed on the parent rock that is used for crushing the finer gradation Micro Surfacing material.)
T 27	C 136	Sieve Analysis of Fine and Coarse Aggregates
T 11	C 117	Test Method for Materials Finer than 75µm (No. 200) Sieve in Mineral Aggregates by Washing
T 2	D 75	Sampling Aggregates
M 17	D 242	Mineral Filler for Bituminous Paving Mixtures
T 19	C 29	Bulk Density ("Unit Weight") and Voids in Aggregate

APPENDIX A

TEST METHODS (CONTINUED)

SLURRY SEAL SYSTEM

ISSA TEST NO.	Test
TB 100	Test Method for Wet Track Abrasion of Slurry Surfaces
TB 101	Guide for Sampling Slurry Mix for Extraction Test
TB 106	Measurement of Slurry Seal Consistency
TB 109	Test Method for Measurement of Excess Asphalt in Bituminous Mixtures by Use of a Loaded-Wheel Tester
TB 111	Outline Guide Design Procedure for Slurry Seal
TB 112	Method of Estimate Slurry Seal Spread Rates and To Measure Pavement Macrotexture
TB 113	Trial Mix Procedure for Slurry Seal Design
TB 114	Wet Stripping Test for Cured Slurry Seal Mixes
TB 115	Determination of Slurry Seal Compatibility
TB 139	Method of Classified Emulsified Asphalt, Aggregate Mixtures by Modified Cohesion Test Measurement of Set and Cure Characteristics
A105	Design, Testing, and Construction of Slurry Seal

NOTES:
ASTM D 3910, Standard Practice for Design, Testing, and Construction of Slurry Seal, is a combined reference of the ISSA Test Bulletins listed above.

ASTM D 2172, Standard Test Methods for Quantitative Extraction of Bitumen From Bituminous Paving Mixtures, is referenced in Section 12.3.

ISSA A105
Revised February 2010

International Slurry Surfacing Association
#3 Church Circle, PMB 250
Annapolis, MD 21401
(410) 267-0023
www.slurry.org

SECTION 715

SLURRY SEAL MATERIALS

715.1 GENERAL:

Slurry seal shall consist of a properly proportioned mixture of emulsified asphalt, mineral aggregate, mineral fillers, additives (if necessary), and water.

All material sources must be approved prior to their use. The Contractor will submit a job mix formula and if requested prequalifications for materials at least seven days prior to start of construction. When requested, additional samples will be furnished during the construction period at no cost to the Contracting Agency. This is a non-pay item.

715.2 AGGREGATE:

715.2.1 Mineral Filler: Mineral filler shall consist of finely divided matter, such as hydrated lime, Portland cement, limestone dust or fly ash, conforming to the requirements of ASTM D4318. Mineral filler shall be used only when needed to reduce the setting time, to improve the workability or to reduce the stripping characteristics of the aggregate emulsion mixture. The minimum amount of the required filler will be used and it will be considered as part of the blended aggregate. The expected range shall be between .25% and 2.0% by weight of aggregate.

715.2.2 Mineral Aggregate: Coarse and fine aggregates or approved mineral filler shall be per Section 701. The mineral filler will be considered as part of the blended aggregate. The material shall be non-plastic (ASTM D4318) with a sand equivalent (ASTM D2419) of at least 50. The abrasion loss (ASTM C131) shall not exceed 35 percent. Historical test data from source aggregate may be used that was run within the past two years. Mineral aggregates used shall be 100% crushed. No natural sand shall be allowed. The gradation of mineral aggregate without mineral filler shall conform to Table 715-1.

TABLE 715-1

SLURRY SEAL AGGREGATE

SIEVE SIZE	Type I % PASSING	Type II % PASSING	Type III % PASSING
3/8	100	100	100
No. 4	100	85/100	70/90
No. 8	90/100	65/90	45/70
No. 16	65/90	45/70	28/50
No. 30	40/60	30/50	19/34
No. 50	25/42	18/30	12/25
No. 100	15/30	10/21	7/18
No. 200	10/20	5/15	5/15
Emulsified Asphalt content as a % of Dry Wt. Of Aggregate (approx.) ASTM D3910 (W.T.A.T. TEST)	18	16	14
Residual Asphalt Range requirements % of Dry Wt. of Aggregate ASTM D3910 (W.T.A.T. TEST)	10-16	7.5-13	6.5-12
Pounds of Aggregate per Square Yard (approx.)	8-10	12-18	18-25

715.3 BITUMINOUS MATERIAL:

The emulsified asphalt used for seal coating shall be quick setting or slow setting as per Section 713.

Polymer modified cationic quick setting emulsion (PMCQS-1h) may be used when approved by the Engineer.

The quick setting emulsified asphalt shall be of the anionic or cationic quick set type such as QSH, CQSH, or PMCQS-1h that will react to chemically active mineral fillers such as Portland cement in such a way that the applied slurry mixture can support controlled traffic in 45-60 minutes after application. The amount of chemically active filler shall be determined by job mix formula and field performance.

Polymer modified cationic quick setting emulsion (PMCQS1-h) shall be homogeneous and the polymer used shall consist of either a solid polymer milled / blended into the asphalt or latex blended into the emulsifier solution prior to the emulsification process. The PMCQS-1h shall contain a minimum of three percent polymer and shall conform to Section 713.

Slow setting emulsion may be used when traffic control is not a critical item.

Quick Set Emulsion Mix Properties	
Slurry Seal Mixing, 70-85 degree F., Sec.	120 Sec. Min.
Slurry Seal Setting text, 70-85 degree F., 1 hour cure	No Brown Stain
Slurry Seal Water Resistance Test, 70-85 degree F., 30 minute cure	No More Than Slight Discoloration

Placement of slurry seal is temperature dependent and should be tested under field conditions.

715.4 WATER:

Water shall be potable and be compatible with the slurry ingredients used.

715.5 DETERMINATION OF JOB MIX FORMULA:

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 75 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 D3910 Design Testing and Construction of Slurry Seal.

715.5.1 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 not more than one hour. 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 graduation 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.

715.5.2 Trial Applications: The Contractor shall place a test strip of 60 square yards in the area designated by the Engineer. 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.

715.6 TEST CERTIFICATES & REPORTS:

Test certificates and reports for the bituminous material shall be furnished in accordance with Section 711.

715.7 CONVERSION OF QUANTITIES:

Volumetric conversions shall be accomplished in accordance with Section 713.

- End of Section -

Revised 2012

Purchasing Division
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ADDENDUM

DATE: Monday, September 14, 2015
TO: BID NO. 2016-20000024 – Slurry Seal Services
FROM: PURCHASING – Mary E. Roman, Buyer
SUBJECT: ADDENDUM NO. 1

NOTE: The balance of the specifications and instructions remain the same. Bidder must acknowledge receipt and acceptance of this addendum by signing and returning the entire addendum with the bid or proposal submittal.

CLARIFICATION:

Question #1 I understand we are responsible for providing written notice to all residents, apartment managers, and business, but will we also be responsible for posting the signage for 'No Parking' or will the city be handling?

Answer #1 This is the contractors responsibility.

Question #2 In protecting the pavement markers, does this include the center lines and striping or do we include the replacement costs for any Striping Replacement?

Answer #2 This does not include centerlines or striping.

ATTACHMENT:

Formal2016-20000024 – Slurry Seal Services pdf file – pages 1 - 15

Thank you
Mary E. Roman, Buyer

Company Name: _____

Contact Person: _____ ***Signature*** _____

Phone Number: ( ) _____ ***Fax Number: ( )*** _____

E-mail Address: _____

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ADDENDUM

DATE: Monday, September 14, 2015
TO: BID NO. 2016-20000024 – Slurry Seal Services
FROM: PURCHASING – Mary E. Roman, Buyer
SUBJECT: ADDENDUM NO. 2

NOTE: The balance of the specifications and instructions remain the same. Bidder must acknowledge receipt and acceptance of this addendum by signing and returning the entire addendum with the bid or proposal submittal.

CLARIFICATION:

Question #1 The answer to question #2 in the addendum (Addendum NO. 1) confuses me. So just for clarification, do we have to "cover and protect ALL pavement markings such as crosswalks, stop bars and left/right turn arrows from the slurry" as it says in paragraph A on page 14 of 15 of the bid documents?

Answer #1 ***Yes.***

Question #2 The answer to question #2 says protection is not necessary for centerlines and striping. I usually think of stop bars and crosswalks as "striping". Also, if we protect pavement markings is there any concern of creating puddle areas?

Answer #2 ***Stop bars and crosswalks are pavement markings. The City has practice these efforts for the last 15 years.***

Thank you
Mary E. Roman, Buyer

Company Name: _____

Contact Person: _____ ***Signature*** _____

Phone Number: ( ) _____ ***Fax Number: ( )*** _____

E-mail Address: _____