

RESOLUTION NO. R-09-2021

**A RESOLUTION OF EAGLE MOUNTAIN CITY, UTAH,
APPROVING AN INTERLOCAL COOPERATION AGREEMENT BETWEEN EAGLE
MOUNTAIN CITY AND THE CITY OF SARATOGA SPRINGS
RELATED TO THE
2021 PONY EXPRESS PARKWAY TYPE III MICRO SURFACE PROJECT**

PREAMBLE

WHEREAS, pursuant to the provisions of the Interlocal Cooperation Act ("Act"), Title 11, Chapter 13, Utah Code Annotated, 1953 as amended, public agencies, including political subdivisions of the State of Utah as therein defined, are authorized to enter into written agreements with one another for joint or cooperative action; and

WHEREAS, Eagle Mountain intends to obtain bids for Type III Micro Surface on certain sections of road within Eagle Mountain, including a section of Pony Express Parkway that continues into Saratoga Springs; and

WHEREAS, pursuant to the Act, the parties desire to work together through joint and cooperative action that will benefit the residents of Eagle Mountain and Saratoga Springs by jointly completing the micro-surfacing project.

NOW, THEREFORE, be it resolved by the City Council of Eagle Mountain City, Utah, as follows:

1. The Interlocal Cooperation Agreement for the 2021 Pony Express Parkway Type III Micro Surface Project, attached hereto as Exhibit A and incorporated herein, is hereby approved.

ADOPTED by the City Council of Eagle Mountain, Utah, this 4th day of May 2021.

EAGLE MOUNTAIN CITY, UTAH



Tom Westmoreland, Mayor



Fionnuala B. Kofoed, MMC
City Recorder



CERTIFICATION

The above Resolution was adopted by the City Council of Eagle Mountain City, Utah on this 4th day of May 2021.

| Those voting aye: | Those voting nay: | Those excused: | Those abstaining: |
|---|--|--|--|
| <input checked="" type="checkbox"/> Donna Burnham | <input type="checkbox"/> Donna Burnham | <input type="checkbox"/> Donna Burnham | <input type="checkbox"/> Donna Burnham |
| <input checked="" type="checkbox"/> Melissa Clark | <input type="checkbox"/> Melissa Clark | <input type="checkbox"/> Melissa Clark | <input type="checkbox"/> Melissa Clark |
| <input checked="" type="checkbox"/> Colby Curtis | <input type="checkbox"/> Colby Curtis | <input type="checkbox"/> Colby Curtis | <input type="checkbox"/> Colby Curtis |
| <input checked="" type="checkbox"/> Jared Gray | <input type="checkbox"/> Jared Gray | <input type="checkbox"/> Jared Gray | <input type="checkbox"/> Jared Gray |
| <input checked="" type="checkbox"/> Carolyn Love | <input type="checkbox"/> Carolyn Love | <input type="checkbox"/> Carolyn Love | <input type="checkbox"/> Carolyn Love |



Fionnuala B. Kofoed, MMC
City Recorder



Posted to City bulletin boards on 05.11.2021 by CP.

Exhibit A

**INTERLOCAL COOPERATION AGREEMENT BETWEEN
EAGLE MOUNTAIN CITY AND THE CITY OF SARATOGA SPRINGS
RELATED TO THE
2021 PONY EXPRESS PARKWAY TYPE III MICRO SURFACE PROJECT**

THIS IS AN INTERLOCAL COOPERATION AGREEMENT "Agreement" made and entered into the 5th day of May, 2021 by and between **Eagle Mountain City**, a political subdivision of the State of Utah, hereinafter referred to as "**Eagle Mountain**" and the **City of Saratoga Springs**, a political subdivision of the State of Utah, hereinafter referred to as "**Saratoga**".

WITNESSETH:

WHEREAS, pursuant to the provisions of the Interlocal Cooperation Act ("Act"), Title 11, Chapter 13, Utah Code Annotated, 1953 as amended, public agencies, including political subdivisions of the State of Utah as therein defined, are authorized to enter into written agreements with one another for joint or cooperative action; and

WHEREAS, Eagle Mountain intends to obtain bids for Type III Micro Surface on certain sections of road within Eagle Mountain, including a section of Pony Express Parkway that continues into Saratoga.

WHEREAS, pursuant to the Act, the parties desire to work together through joint and cooperative action that will benefit the residents of Eagle Mountain and Saratoga by jointly completing the micro-surfacing project; and

WHEREAS, the parties to this Agreement are public agencies as defined in the Act;

NOW, THEREFORE, the parties do mutually agree, pursuant to the terms and provisions of the Act, as follows:

SECTION 1. EFFECTIVE DATE; DURATION

This Agreement shall become effective and shall enter into force, within the meaning of the Act, upon the submission of this Agreement to, and the approval and execution thereof by Resolution of the governing bodies of each of the parties to this Agreement. The term of this Agreement shall be from the effective date hereof and shall terminate upon the earlier of (1) completion of the Project, final payment and expiration of any warranties, or (2) 10 years from the date of this Agreement. This Agreement shall not become effective until it has been reviewed and approved as to form and compatibility by the attorneys for each of the parties to this Agreement. Prior to becoming effective, this Agreement shall be filed with the person who keeps the records of each of the parties hereto.

SECTION 2. PURPOSES

This Agreement has been established and entered into between Eagle Mountain and Saratoga for

the application of a **Type III Micro Surface Treatment on Pony Express Parkway** (the “**Project**”). Maps showing the location of the micro surface treatment and surface area for the area of the micro surface treatment within Eagle Mountain and Saratoga are attached hereto as Exhibit A.

SECTION 3. ADMINISTRATION OF AGREEMENT

The parties to this Agreement do not contemplate nor intend to establish a separate legal entity under the terms of this Interlocal Cooperation Agreement. The parties further agree that this Agreement does not anticipate nor provide for any organizational changes in the parties. The parties agree to keep all books and records related to the 2021 Micro-Surface Project for a period of 2 years following the completion of said project and further agree that said books and records shall be open for examination by the parties hereto at all reasonable times.

SECTION 4. PARTIES’ RESPONSIBILITIES

Eagle Mountain and Saratoga hereby agree that the following enumerates the anticipated responsibilities both parties shall incur during the administration of the Project. Unless otherwise noted, the following items shall be completed in a collaborative manner with neither party being solely responsible.

1. **Project Scope.** The scope of the Project shall be in accordance with the Bid Schedule attached hereto as Exhibit B.

2. **Procurement.** Eagle Mountain shall bid the project in accordance with Eagle Mountain’s established procurement policies as well as all state law requirements in Utah Code § 11-39-101, *et seq.* The procurement shall include and be subject to the Micro-Surfacing specifications attached hereto as Exhibit C. Prior to issuing a Notice of Award, Eagle Mountain shall obtain written approval from Saratoga for the total cost of the Project that will be paid for by Saratoga.

3. **Construction Process / Timing.** Eagle Mountain shall be primarily responsible for overseeing the Project. Eagle Mountain shall notify Saratoga of the construction schedule for the Project.

4. **Project Completion.** Eagle Mountain and Saratoga will collaborate on the final inspection of the completed Project.

5. **Payment.**

a. **Saratoga Costs.** Saratoga shall be responsible for the Project costs for the portion of Pony Express Parkway from Redwood Road to the City boundary, as shown on Exhibit B (“**Saratoga’s Costs**”), which includes 72.6% of the cost of Items 1-4 of the Bid Schedule.

b. Change Orders. Any Change Orders that increase Saratoga's Cost must be approved in writing by Saratoga prior to Eagle Mountain approving a change order to the approved contract.

c. Invoicing and Payment. Eagle Mountain shall provide to Saratoga a copy of all invoices for Saratoga's Costs. Saratoga shall pay the invoices to Eagle Mountain with seven (7) business days of receiving an invoice.

SECTION 5. DISPUTE RESOLUTION

In the event of a dispute as to the interpretation or application of this Agreement, the parties shall first meet to discuss the dispute. If the parties cannot resolve the dispute, the MPO Program Manager shall resolve the dispute after receiving written comments from each of the parties. The MPO Program Manager shall issue a written decision within 10 days of receiving written comments from the parties. If the parties are not able to reach a resolution, either party may request binding arbitration. The parties shall mutually choose an arbitrator. The arbitrator's decision shall be final and neither party may appeal the decision. The standard of review for arbitration is whether there is substantial evidence on the record and the decision was not arbitrary, capricious, or illegal.

SECTION 6. METHOD OF TERMINATION

This Agreement will automatically terminate at the end of its term herein, pursuant to the provisions of paragraph one (1) of this Agreement. Prior to the automatic termination at the end of the term of this Agreement, any party to this Agreement may terminate the Agreement sixty (60) days after providing written notice of termination to the other party. The Parties of this Agreement agree to bring current, prior to termination, any financial obligation contained herein.

SECTION 7. INDEMNIFICATION

The Parties are governmental entities and subject to the Governmental Immunity Act of Utah, Utah Code Ann. §§ 63G-7-101, et seq. ("GIAU"). Subject to the provisions of the GIAU, the Parties agree to indemnify and hold harmless the other party, its agents, officers and employees from and against any and all actions, claims, lawsuits, proceedings, liability, damages, losses and expenses (including attorney's fees and costs) arising out of or resulting from the performance of this Agreement to the extent the same are caused by any negligent or wrongful act or omission of that party, its officers, agents or employees. Nothing in this Agreement shall be deemed a waiver of any rights, statutory limitations on liability, or defenses applicable to the Entity or the County under the GIAU.

SECTION 8. FILING OF INTERLOCAL COOPERATION AGREEMENT

Executed copies of this Agreement shall be placed on file in the office of the official keeper of records of Parties and shall remain on file for public inspection during the term of this Agreement.

SECTION 9. ADOPTION REQUIREMENTS

This Agreement shall be (a) approved by Resolution of the governing body of each of the parties, (b) executed by a duly authorized official of each of the parties (c) submitted to and approved by an Authorized Attorney of each of the parties, as required by Section 11-13-202.5, Utah Code Annotated, 1953 as amended, and (d) filed in the official records of each party.

SECTION 10. AMENDMENTS

Except as otherwise provided herein, this Agreement may not be amended, changed, modified or altered except by an instrument in writing which shall be (a) approved by Resolution of the governing body of each of the parties, (b) executed by a duly authorized official of each of the parties, (c) submitted to and approved by an Authorized Attorney of each of the parties, as required by Section 11-13-205.5, Utah Code Annotated, 1953 as amended, and (d) filed in the official records of each party.

SECTION 11. SEVERABILITY

If any term or provision of the Agreement or the application thereof shall to any extent be invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to circumstances other than those with respect to which it is invalid or unenforceable, shall not be affected thereby, and shall be enforced to the extent permitted by law. To the extent permitted by applicable law, the parties hereby waive any provision of law which would render any of the terms of this Agreement unenforceable.

SECTION 12. NO PRESUMPTION

Should any provision of this Agreement require judicial interpretation, the Court interpreting or construing the same shall not apply a presumption that the terms hereof shall be more strictly construed against the party, by reason of the rule of construction that a document is to be construed more strictly against the person who himself or through his agents prepared the same, it being acknowledged that each of the parties have participated in the preparation hereof.

SECTION 13. HEADINGS

Headings herein are for convenience of reference only and shall not be considered any interpretation of the Agreement.

SECTION 14. BINDING AGREEMENT

This Agreement shall be binding upon the heirs, successors, administrators, and assigns of each of the parties hereto.

SECTION 15. NOTICES

Each party shall designate an individual (the “**Project Lead**”) to receive notices under this

Agreement. If no Project Lead is designated, the City Recorder of each party shall be the Project Lead. Notices may be given by mail or email correspondence between the respective Project Leads.

SECTION 16. ASSIGNMENT

The parties to this Agreement shall not assign this Agreement, or any part hereof, without the prior written consent of all other parties to this Agreement. No assignment shall relieve the original parties from any liability hereunder.

SECTION 17. GOVERNING LAW

All questions with respect to the construction of this Agreement, and the rights and liability of the parties hereto, shall be governed by the laws of the State of Utah.

ATTEST:

EAGLE MOUNTAIN CITY

By:

Jeff B. Roper
City Recorder



Tom W. Drouley
City Administrator

Approved as to Form: _____
City Attorney

ATTEST:

CITY OF SARATOGA SPRINGS

By:

City Recorder

City Manager

Approved as to Form:

[Signature]
City Attorney, Eagle Mountain City

Agreement. If no Project Lead is designated, the City Recorder of each party shall be the Project Lead. Notices may be given by mail or email correspondence between the respective Project Leads.

SECTION 16. ASSIGNMENT

The parties to this Agreement shall not assign this Agreement, or any part hereof, without the prior written consent of all other parties to this Agreement. No assignment shall relieve the original parties from any liability hereunder.

SECTION 17. GOVERNING LAW

All questions with respect to the construction of this Agreement, and the rights and liability of the parties hereto, shall be governed by the laws of the State of Utah.

ATTEST:

EAGLE MOUNTAIN CITY

By: _____
City Recorder

City Administrator

Approved as to Form: _____
City Attorney


ATTEST:

CITY OF SARATOGA SPRINGS

By: 
City Recorder




City Manager

Approved as to Form: 
City Attorney

Pony Express Parkway Micro-Surface



The County of Eagle Mountain is pleased to announce the completion of the 2021 Micro-Surface project. This project is a critical component of the County's transportation infrastructure and will improve the safety and efficiency of the road network. For more information, please contact the County Engineer's Office at (360) 755-4462.

Legend

2021 Micro-Surface

Owner

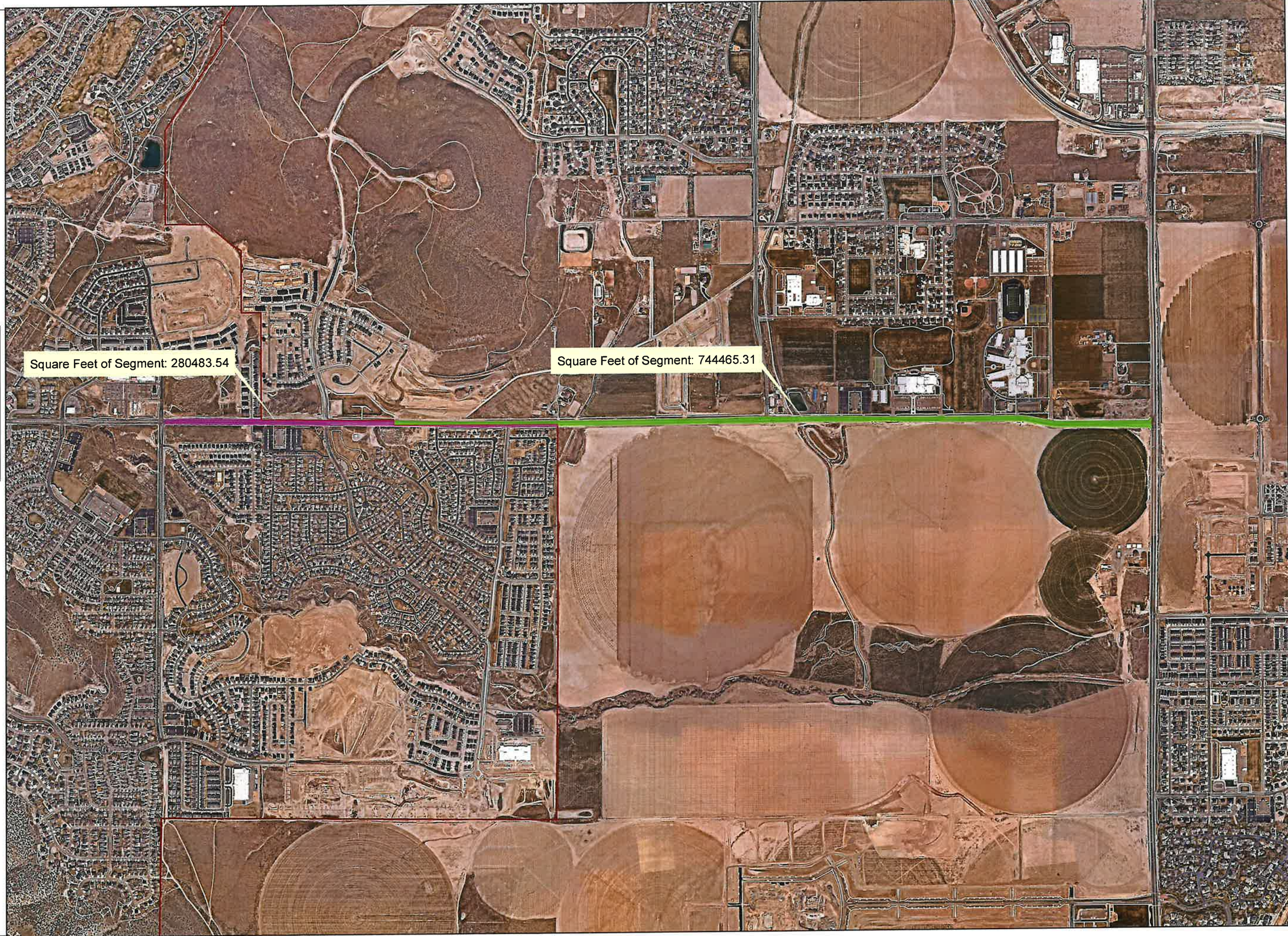
-  Eagle Mountain
-  Saratoga Springs
-  Municipal Boundary

Square Feet of Segment: 280483.54

Square Feet of Segment: 744465.31



0 750 1,500 Feet



Pony Express Parkway
Eagle Mountain Side
Micro-Surface



Legend
2021 Micro-Surface
Owner

-  Eagle Mountain
-  Saratoga Springs
-  Municipal Boundary

Square Feet of Segment: 744465.31



0 500 1,000 Feet



Pony Express Parkway
Eagle Mountain Side
Micro-Surface



The owner agrees to maintain the pavement with a minimum of 10% aggregate and 90% asphalt binder. The owner shall maintain the pavement to a minimum of 10% aggregate and 90% asphalt binder. The owner shall maintain the pavement to a minimum of 10% aggregate and 90% asphalt binder.

Consult Eagle Mountain CO
Engineering/311 Department
PC-10-14-16

Legend
2021 Micro-Surface
Owner

-  Eagle Mountain
-  Saratoga Springs
-  Municipal Boundary

Square Feet of Segment: 280483.54



0 237.5 475 Feet

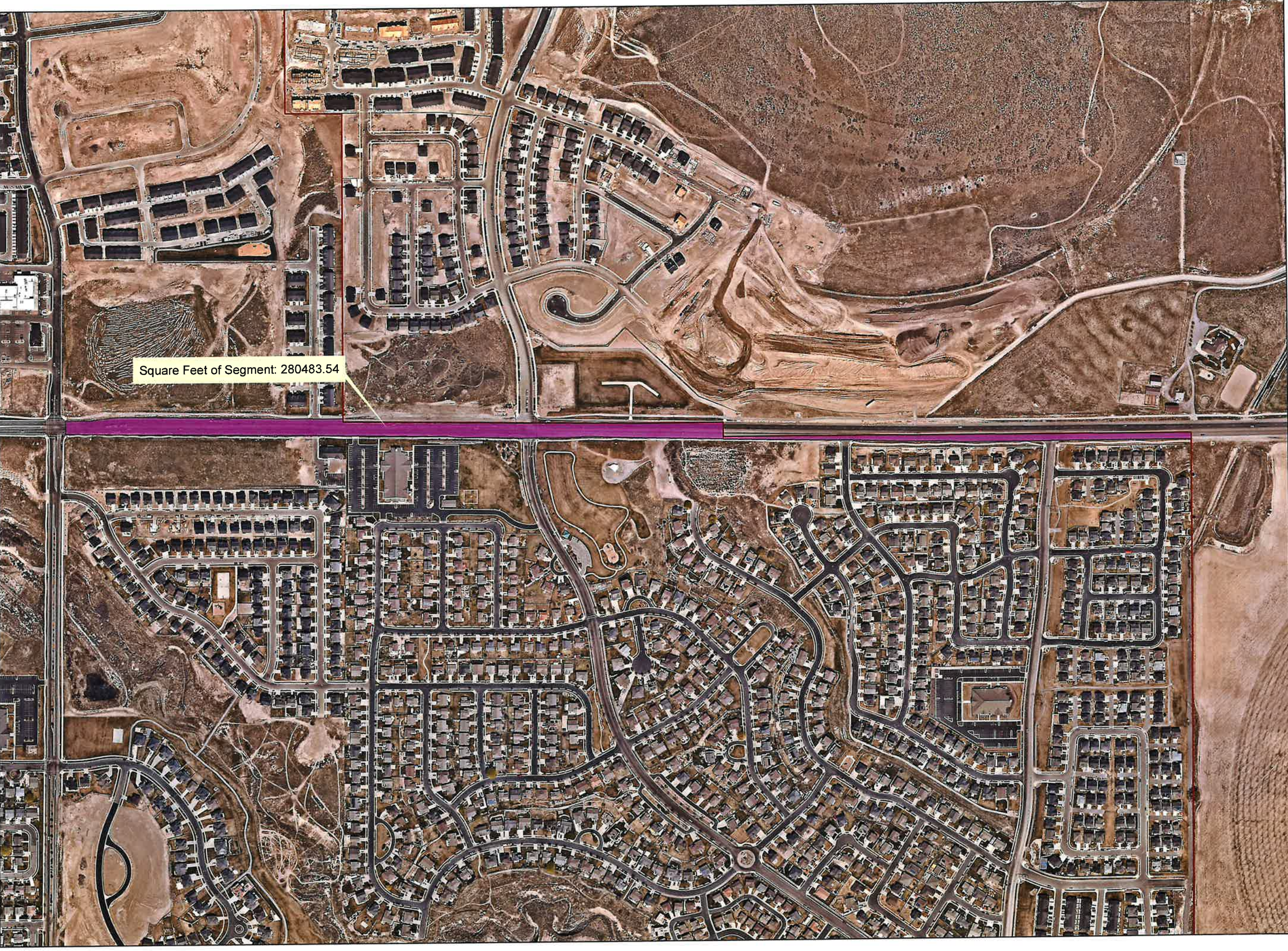


EXHIBIT B:
SCOPE/COST OF PROJECT

Bid Schedule

| Item No. | Description | Quantity | Units | Unit Cost | Total Cost |
|--|--|-----------|-------|-----------|------------|
| Pony Express Parkway (Porters Crossing to Redwood Road) | | | | | |
| 1 | Mobilization (not to exceed 5% of Bid Total) | 1 | LS | | |
| 2 | Place Type III Micro Surface | 1,024,949 | SF | | |
| 3 | Traffic Control | 1 | LS | | |
| 4 | Traffic Paint | 1 | LS | | |
| Total (1-4) | | | | | |
| Aviator Avenue (Pony Express to Eagle Mountain Blvd) | | | | | |
| 5 | Mobilization (not to exceed 5% of Bid Total) | 1 | LS | | |
| 6 | Place Type III Micro Surface | 183,802 | SF | | |
| 7 | Traffic Control | 1 | LS | | |
| 8 | Traffic Paint | 1 | LS | | |
| Total (5-8) | | | | | |
| Hidden Valley Parkway (Pony Express Parkway to White Birch Drive) | | | | | |
| 9 | Mobilization (not to exceed 5% of Bid Total) | 1 | LS | | |
| 10 | Place Type III Micro Surface | 64,618 | SF | | |
| 11 | Traffic Control | 1 | LS | | |
| 12 | Traffic Paint | 1 | LS | | |
| Total (9-12) | | | | | |
| Bid Schedule Total (1-12) | | | | | |
| Bid Schedule Total (In Word Form) | | | | | |

MEASUREMENT AND PAYMENT Bid Schedule

GENERAL

The method of measurement and payment for the various items comprising the completed work follows: Payment for the items shall be compensation in full for the furnishing of all overhead, labor, material, tools, equipment, and appurtenances necessary to complete the work in a good, neat, and satisfactory manner as indicated on the Plans or as specified, with all connections, testing, painting, cleanup, and related work completed. Each item, fixture, piece of equipment, etc., shall be complete with all necessary connections and appurtenances for the satisfactory use and/or operation of said item. No additional payment, including work done by the contractor for his convenience, shall be made for work related to each item unless specifically noted or specified. Measurement shall be in place in the completed work with no allowance for waste.

BID SCHEDULE – 2021 EAGLE MOUNTAIN MICRO SURFACE PROJECT

ITEM 1: MOBILIZATION

Measure and payment for “Mobilization” on Pony Express Parkway (Porters Crossing to Redwood Road) will be for a one-lump sum, not to exceed 5% of the total bid price for Pony Express Parkway and shall only include mobilization for Pony Express Parkway. This item shall be completed by Saturday, July 31, 2021.

ITEM 2: PLACE TYPE III MICRO SURFACE

Measurement and payment for placement of type III Micro Surface Seal for 1,024,949SF on Pony Express Parkway (Porters Crossing to Redwood Road) according to the Micro Surfacing Specification contained in the contract documents. This shall include labor, equipment, tools, notifications, sweeping, cleaning, preparing asphalt surface, and SWPPP protection. This item shall be completed by Saturday, July 31, 2021. See attached maps and document specification.

ITEM 3: TRAFFIC CONTROL

Measurement and payment for traffic control on Pony Express Parkway (Porters Crossing to Redwood Road) will be for a one-lump sum (all flaggers to be certified), not to exceed 5% of the total bid price for Pony Express Parkway and shall only include traffic control for Pony Express Parkway. **Traffic control plan shall be submitted and approved by city staff.** This item shall be completed by Saturday, July 31, 2021.

ITEM 4: TRAFFIC PAINT

Measurement and payment for re-striping road i.e. (traffic line, turn lanes, stop bars, and crosswalks) on Pony Express Parkway (Porters Crossing to Redwood Road) will be for one-lump sum and shall only include traffic paint for Pony Express Parkway. This item shall be completed by Saturday, July 31, 2021.

ITEM 5: MOBILIZATION

Measure and payment for “Mobilization” on Aviator Avenue (Pony Express to Eagle Mountain Blvd) will be for a one-lump sum, not to exceed 5% of the total bid price for Aviator Avenue and shall only include mobilization for Aviator Avenue. This item shall be completed by Saturday, July 31, 2021.

ITEM 6: PLACE TYPE III MICRO SURFACE

Measurement and payment for placement of type III Micro Surface Seal for 183,803SF on Aviator Avenue (Pony Express to Eagle Mountain Blvd) according to the Micro Surfacing Specification contained in the contract

documents. This shall include labor, equipment, tools, notifications, sweeping, cleaning, preparing asphalt surface, and SWPPP protection. This item shall be completed by Saturday, July 31, 2021. See attached maps and document specification.

ITEM 7: TRAFFIC CONTROL

Measurement and payment for traffic control on Aviator Avenue (Pony Express to Eagle Mountain Blvd) will be for a one-lump sum (all flaggers to be certified), not to exceed 5% of the total bid price for Aviator Avenue and shall only include traffic control for Aviator Avenue. **Traffic control plan shall be submitted and approved by city staff.** This item shall be completed by Saturday, July 31, 2021.

ITEM 8: TRAFFIC PAINT

Measurement and payment for re-striping road i.e. (traffic line, turn lanes, stop bars, and crosswalks) on Aviator Avenue (Pony Express to Eagle Mountain Blvd) will be for one-lump sum and shall only include traffic paint for Aviator Avenue. This item shall be completed by Saturday, July 31, 2021.

ITEM 9: MOBILIZATION

Measure and payment for "Mobilization" on Hidden Valley Parkway (Pony Express to White Birch Drive) will be for a one-lump sum, not to exceed 5% of the total bid price for Hidden Valley Parkway and shall only include mobilization for Hidden Valley Parkway. This item shall be completed by Saturday, July 31, 2021.

ITEM 10: PLACE TYPE III MICRO SURFACE

Measurement and payment for placement of type III Micro Surface Seal for 64,618SF on Hidden Valley Parkway (Pony Express to White Birch Drive) according to the Micro Surfacing Specification contained in the contract documents. This shall include labor, equipment, tools, notifications, sweeping, cleaning, preparing asphalt surface, and SWPPP protection. This item shall be completed by Saturday, July 31, 2021. See attached maps and document specification.

ITEM 11: TRAFFIC CONTROL

Measurement and payment for traffic control on Hidden Valley Parkway (Pony Express to White Birch Drive) will be for a one-lump sum (all flaggers to be certified), not to exceed 5% of the total bid price for Hidden Valley Parkway and shall only include traffic control for Hidden Valley Parkway. **Traffic control plan shall be submitted and approved by city staff.** This item shall be completed by Saturday, July 31, 2021.

ITEM 12: TRAFFIC PAINT

Measurement and payment for re-striping road i.e. (traffic line, turn lanes, stop bars, and crosswalks) on Hidden Valley Parkway (Pony Express to White Birch Drive) will be for one-lump sum and shall only include traffic paint for Hidden Valley Parkway. This item shall be completed by Saturday, July 31, 2021.

EXHIBIT C:
MICRO-SURFACING SPECIFICATIONS

MICRO-SURFACING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products and procedures for mixing and spreading a properly proportioned homogeneous mixture of aggregate, mineral filler, additives, polymer-modified asphalt emulsion and water to an existing pavement providing a firm surface adhesion and smooth stable skid resistant texture.

1.2 RELATED SECTIONS

- A. Section 02701: Pavement Smoothness
- B. Section 02746: Hydrated Lime

1.3 REFERENCES

- A. AASHTO M 17: Mineral Filler for Bituminous Paving Mixtures
- B. AASHTO M 85: Portland Cement
- C. AASHTO M 316: Polymer Modified Emulsion
- D. AASHTO T 11: Materials Finer Than 75 μm (No. 200) Sieve in Mineral Aggregate
- E. AASHTO T 27: Sieve Analysis of Fine and Coarse Aggregates
- F. AASHTO T 49: Penetration of Bituminous Materials
- G. AASHTO T 53: Softening Point of Bitumen
- H. AASHTO T 59: Testing Emulsified Asphalts

- I. AASHTO T 96: Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
- J. AASHTO T 104: Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
- K. AASHTO T 112: Clay Lumps and Friable Particles in Aggregate
- L. AASHTO T 176: Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
- M. AASHTO T 278: Surface Frictional Properties Using the British Pendulum Tester
- N. AASHTO T 279: Accelerated Polishing of Aggregates Using the British Wheel
- O. ASTM D 6372: Testing and Construction of Micro-Surfacing
- P. International Slurry Seal Association (ISSA) Specifications and Guidelines
- Q. UDOT Minimum Sampling and Testing Requirements
- R. UDOT Quality Management Plans

1.4 DEFINITIONS Not Used

1.5 SUBMITTALS

- A. Provide the mix design to the Engineer 10 days before beginning construction.
 - 1. Refer to this Section, article 2.6.
 - 2. Mix Design must be performed by an AMRL (AASHTO accredited) laboratory experienced in the design of micro surfacing systems.
 - 3. Provide the Engineer with the following for asphalt and polymer emulsion with job-mix design.
 - a. Test report that meets the requirements of this Section, Article 2.1.
 - b. Target gradation for combined aggregate and mineral filler.
 - c. Name of the asphalt and polymer emulsion supplier.
 - d. Verification the asphalt/polymer emulsion supplier adheres to UDOT Quality Management Plan Section 508 Asphalt Emulsion.
- B. Certificate of analysis and compliance from the manufacturer for each batch.

- C. Provide test reports for mineral aggregate.
 - 1. Refer to this Section, article 2.2.
- D. Provide Manufacturer's Certificate of Compliance for Mineral Filler.
 - 1. Refer to this Section, article 2.3.
- E. Provide calibration documentation for each mixing unit including an individual calibration for each material at various settings that corresponds to the mixing unit metering devices.
- F. Changes in the job-mix gradation.
 - 1. Submit a written request for a change in the job-mix gradation.
 - 2. Submit a new job-mix design if changes in gradation are outside the gradation band allowed by the stockpile tolerance in Table 4.

1.6 ACCEPTANCE

- A. Acceptance sampling and testing of material according to UDOT Minimum Sampling and Testing Requirements.
- B. The Department will assess price adjustments based on the average daily application rate of aggregate and emulsion residue per lot.
 - 1. A lot is defined as one day's production.
 - 2. Use the computerized monitoring system from the paver for the aggregate and emulsion totals per lot.
 - 3. Obtain square yards from the Contractors Daily Report, verified by the Engineer.
 - 4. Pay Factor = $PF_{rate} \text{ (Table 1)} \times PF_{residue} \text{ (Table 2)}$
- C. Application rate pay factor (PF_{rate}) is based on application rate of dry aggregate.
 - 1. Aggregate application target rate is 25 lbs/yd²

Table1

| Pay Factor Application Rate | |
|--|-------------------------------------|
| Average Application Rate (lbs/yd²) | PF_{rate} |
| Greater than 25.0 | 1.0 |
| 20.0 to 24.9 | (Avg. Rate ÷ 25) |
| Less than 20.0 | Reapplication with option to remove |

- D. Emulsion residue pay factor ($PF_{residue}$) is based on the residue of the emulsion placed each lot.

1. Target Value = Residual asphalt target value for emulsion based on the mix design.
2. Emulsion residue = Based on the Certificate of Compliance from the Emulsion Supplier.

Table2

| Pay Factor Emulsion Residue Content | |
|---|-------------------------------------|
| Average Daily Emulsion Residue % | PF_{residue} |
| Target Value less than $\pm 0.5\%$ | 1.0 |
| Target Value $\pm 0.51\%$ to Target Value $\pm 1.00\%$ | 0.8 |
| Greater than 1% of Target Value | Reapplication with option to remove |

- E. Smoothness
 1. Refer to Section 02701 for smoothness requirements.

PART 2 PRODUCTS

2.1 EMULSIFIED ASPHALT

- A. Use a polymer-modified asphalt emulsion manufactured specifically for micro-surfacing.
 1. Refer to AASHTO M 316 Polymer Modified Cationic Emulsified Asphalt.
 2. The supplier must be on the approved list adhering to the UDOT Quality Management Plan 508 Asphalt Emulsion.
- B. Mill or blend the polymer material into the asphalt or emulsifier solution before the emulsification process.
 1. Obtain certification from the asphalt emulsion manufacturer that the emulsion contains at least 3.0 percent natural latex rubber (NLR) based on the weight of asphalt (asphalt residual).
- C. Refer to Table 3 for Modified Emulsion Residue.
- D. The Department reserves the right to test the emulsion and also look at bill of ladings to verify the polymer or modifier types used.

Table 3

| Modified Emulsion Residue By Distillation | | |
|---|---|-------------------|
| Test Method | Description | Micro CQS-1P(NLR) |
| AASHTO T 49 (b) | Penetration, 25° C | 70 -120 |
| AASHTO T 53 | Softening point | 55° C Min |
| AASHTO T59 | Vicosity, Saybolt 25° C | 20 Min; 100 Max |
| AASHTO T59 | Particle Charge Test | Positive |
| AASHTO T59 | Sieve Test, % | 0.1 Max |
| AASHTO T 59-modified (c) | Residue by distillation | 65% Min |
| AASHTO T 301 (Modified) (d) | Elastic Recovery, 5 cm per min. | 60% Min recovery |
| (a) | N/A | |
| (b) | Take 6 penetrations in multiple locations and use the average of the higher 3. | |
| (c) | Modified distillation procedure – Heat emulsion residue to 177 ± 5° C and maintain that temperature for 20 min. Perform the distillation within 60 ± 15 min. | |
| (d) | Modify paragraph 4.5 as follows: Stop the ductilometer after 20 cm has been reached and within 2 seconds. Sever the specimen at its center with a pair of scissors. | |

- E. Formulate the polymer modified emulsified asphalt so the paving mixture will sufficiently cure allowing a return to traffic in one hour.

2.2 MINERAL AGGREGATE

- A. Use 100 percent crushed mineral aggregates, clean and free from organic matter or other detrimental substances that meet the following requirements:
1. Maximum clay lumps and friable particles of 2 percent for coarse and fine aggregates. Refer to AASHTO T 112.
 2. Maximum weighted sodium sulfate soundness loss of 15 percent. Refer to AASHTO T 104.
 3. Maximum loss by abrasion of 30 percent. Refer to AASHTO T 96.
 4. Sand equivalent of 65 or greater (Pre-wet method). Refer to AASHTO T 176.
 5. Minimum polishing value of 31. Refer to AASHTO T 278 and T 279.
 - a. Do not use predominantly limestone or dolomite aggregates.
- B. Establish a job mix or target gradation within the gradation band as specified in Table 4.
1. Base the mix design on the target gradation.
 2. Verify the percent passing each sieve does not vary by more than the stockpile tolerance and still remains within the gradation band. Refer to AASHTO T 11 and AASHTO T 27.

Table 4

| Job-Mix Gradation Design Limits | | |
|--|--------------------------------------|-----------------------------|
| Sieve Size | Job Mix Gradation Target Band | Stockpile Tolerances |
| $\frac{3}{8}$ | 100 | 0 |
| #4 | 70-90 | ±5 |
| #8 | 45-70 | ±5 |
| #16 | 28-50 | ±5 |
| #30 | 19-34 | ±5 |
| #50 | 12-25 | ±4 |
| #100 | 7-18 | ±3 |
| #200 | 5-15 | ±2 |

Percent passing based on total aggregate (dry weight) and fine and coarse aggregate with approximately the same bulk specific gravities.

2.3 MINERAL FILLER

- A. Use one of the following for Mineral Filler. Refer to AASHTO M 17.
1. Non-air entrained Type I/II portland cement. Refer to AASHTO M 85.
 2. Hydrated lime, free from lumps or foreign matter. Refer to Section 02746.
- B. Determine the amount of mineral filler needed through the laboratory mix design.
1. Verify the amount of mineral filler used is between 0.5 percent and 2.0 percent by the weight of dry aggregate.
 2. Adjust the percentage of mineral filler ± 0.5 percent as necessary for better consistency or to optimize set times with Engineer's approval.
 3. Mineral Filler is considered part of the aggregate gradation.

2.4 WATER

- A. Use potable water free from harmful salts, reactive chemicals, and any other contaminants.

2.5 ADDITIVES

- A. Use additives as required to accelerate or retard the break-set of the micro-surfacing mix, to improve the resulting finished surface, or to increase adhesion.

1. Determine the initial additive quantities from the mix design for the micro-surfacing mix or individual materials.
2. Use additives compatible with the other components of the mix.

2.6 JOB-MIX DESIGN

- A. Design according to ASTM D 6372.
 1. Show each ingredient amount meets the following:
 - a. Residual asphalt cement content, 8.0 percent minimum by dry total weight of aggregate.
 - b. Aggregate gradation (target) within the job-mix gradation design limits in Table 4.
 - c. Mineral filler, percentage by total dry weight of aggregate.
 - d. Polymer modifier 3.0 percent minimum solid polymer based on the residual asphalt content certified by emulsion supplier.
 2. Identify the optimum emulsion residue as a percentage of the dry weight of aggregate to meet Table 5 requirements. The job mix formula tolerance is +/- 0.5% emulsion residue.
 3. Identify additives as determined by design testing to control mix set times and cohesion.
 - a. Provide acceptable limits for additives.
 4. Conform to the ISSA A143 specifications listed in Table 5.
 5. Use the same materials and aggregate gradation to be used on the project.
 6. Provide a micro-surfacing mixture that can be spread in variable thickness cross-sections, ruts, scratch courses, and surfaces.
 7. Changes in aggregate source, emulsion, or mineral filler will require a new mix design submitted for approval by the engineer. A change in aggregate source, emulsion, or mineral filler will also require a new test strip as indicated in Section 3.5.

Table 5

| ISSA A 143 Specifications | | |
|---------------------------|---|--|
| ISSA Test No. | Description | Specification |
| ISSA TB-139 | <u>Wet Cohesion</u> @ 30 Minutes Minimum (Set) @ 60 Minutes Minimum (Traffic) | 12 kg-cm Minimum 20 kg-cm Minimum or Near Spin |
| ISSA TB-109 | Excess Asphalt by LWT Sand Abrasion | 50 g/ft ² Maximum (538 g/m ² Maximum) |
| ISSA TB-114 | Wet Stripping | Pass (90% Minimum) |
| *ISSA TB-100 | <u>Wet-Track Abrasion Loss</u> One-hour Soak Six-day Soak | 50 g/ft ² (538 g/m ²) Maximum 75 g/ft ² (807 g/m ²) Maximum |
| ISSA TB-147 | Lateral Displacement | 5% Maximum |
| ISSA TB-144 | Classification Compatibility | 11 Grade Points Minimum (AAA, BAA) |
| ISSA TB-113 | Mix Time @ 77° F (25° C) | Controllable to 120 Seconds Minimum |

* Perform the wet track abrasion test under laboratory conditions as a component of the mix design process.

2.7 EQUIPMENT

- A. Use mixing equipment specifically designed and manufactured to mix and place micro-surfacing.
 1. Mix the material by an automatically sequenced, self-propelled micro-surfacing mixing machine with a continuous flow revolving multi-blade double shafted mixing unit that:
 - a. Accurately delivers and proportions the aggregate, emulsified asphalt, mineral filler, controls setting additive, and water.
 - b. Discharges the mixed product on a continuous flow basis.
 2. Use a machine with sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive, and water to maintain an adequate supply to the proportioning controls.
 3. Use a machine capable of self-loading materials while continuing to place micro-surfacing.
 4. Verify that the operator has full control of the forward and reverse speed during applications of the micro-surfacing material.
 - a. Use original manufacturer designed equipment for the self-loading device, opposite side driver stations, and forward and reverse speed controls.
- B. Use a machine with a hydraulically adjustable (while applying mixture) type spreader box with a positive screed adjustment for yield control and a positive adjustment for the joint matcher.

- C. Equip the micro-surfacing spreader box with the following:
1. Ribbon flights mounted on an adjustable shaft to continually agitate and distribute the materials throughout the box.
 2. Curb bumpers and replaceable runners with at least 5 ft long end runners.
 3. A sufficient walkway to provide access to either side of the spreader box without walking through the freshly placed material.
 - a. Verify that the equipment provides sufficient turbulence to prevent the mix from setting in the box or causing excessive side buildup or lumps.
 4. Flexible seals in contact with the road, front and rear, to prevent the loss of the mixture from the box.
 5. A secondary strike-off located approximately 2 to 3 ft behind the primary strike-off to minimize transverse corrugations and to improve surface texture.
 - a. Verify that the secondary strike-off has elevation and width adjustments similar to the primary strike-off and a pivot point that can be tilted for texturing or raised completely off the surface.
 - b. Verify that the secondary strike-off has the same adjustments as the spreader box.
 6. Ability to side shift the box to compensate for variations in the pavement geometry.
 7. Capability of applying micro-surfacing mixture in variable widths up to 15 ft.
- D. Use a rut filling spreader box specifically designed to fill ruts with an average depth greater than $\frac{1}{2}$ inch. Ruts greater than $\frac{1}{2}$ inch deep require multiple passes to restore the cross section.
- E. Use a computerized material monitoring system with integrated material control devices such that the amount of each material can be determined at any time.
1. Calibrate each material control device before each mix application and as often thereafter as deemed necessary by the Engineer.
 2. Use a monitoring system capable of recording, displaying, and printing the following information:
 - a. Individual sensor counts for emulsion, aggregate, mineral filler, water, and additive.
 - b. Aggregate, emulsion, and mineral filler output in pounds per minute.
 - c. Percentages of emulsion, mineral filler, water, and additive.
 - d. Cumulative totals of aggregate, emulsion, mineral filler, water, and additive.
 - e. Scale factor for all materials.

- F. Verify the daily totals from the computerized monitoring system for the aggregate and the daily total from the scalping screen weighing system are within 2 percent.
- G. Calibrate each mixing unit in the presence of the Engineer before construction.
 - 1. Do not use any machine until calibration has been completed.
 - 2. During the project construction, any mechanical change to the equipment components that deliver micro surfacing materials to the pug mill mixer will require new calibration.

PART 3 EXECUTION

3.1 LIMITATIONS

- A. Do not apply micro-surfacing during rain, within 48 hours after a rain event, when road surface moisture is present or during other adverse weather conditions.
- B. Do not apply micro-surfacing if either the pavement or air temperature is below 50 degrees F.
- C. Do not apply micro-surfacing when the temperature is projected below 37 degrees F within 48 hours of placing micro-surfacing.
- D. Cease micro-surfacing operations when the weather or other conditions prolong opening road surface to traffic beyond two hours.
- E. Remove and replace the micro-surfacing if any of the following occurs:
 - 1. Lumping, balling, or unmixed aggregates.
 - 2. Separation of the coarse aggregate from the emulsion and fines.
 - 3. Excessive breaking of emulsion inside the spreader box.
 - 4. Streaking caused by oversized aggregate.
 - 5. Flushing or excessively rich areas appearing in the micro-surfacing after two hours from the time of placement.
 - 6. Any measurable rutting, shoving, or other evidence of premature deformation when exposed to traffic.
- F. Keep traffic off roadway surface until the micro-surfacing has cured.
 - 1. Allow for additional curing time at locations such as driveways, intersections, and where sharp turning movements may take place or where vehicles may accelerate quickly.

3.2 STOCKPILE

- A. Construct individual 500-ton stockpiles of micro-surfacing aggregates.
 - 1. Engineer will approve stockpiles at least one and at most seven days before use.
 - 2. Combining, altering, or moving 500-ton stockpiles may require re-approval by the Engineer before use.
- B. Notify the Engineer at least seven calendar days before micro-surfacing placement in order for the initial stockpiles to be sampled and tested for acceptance.
- C. Obtain the Engineer's written acceptance of a stockpile before its use for micro-surfacing.
- D. Provide stockpile Quality Control information to the Engineer for every 500 tons of aggregates to include the following:
 - 1. Aggregate gradation meeting job-mix formula tolerances according to Table 4.
 - 2. Sand Equivalency refer to AASHTO T 176.
- E. Be capable of determining aggregate moisture within 10 minutes at all times.
- F. Rework or remove material not meeting specifications from the stockpile area. Identify stockpiles that will be reworked.
- G. The Department will retest corrected material for acceptance.

3.3 PREPARATION

- A. Clean the pavement surface of all dirt, sand, dust, oil, and other objectionable material immediately before applying micro-surfacing.
- B. Allow un-sealed cracks to dry thoroughly before applying micro-surfacing when using water to clean the road surface.
- C. Cover manholes, valve boxes, drop inlets, and other service utility entrances before surfacing.
- D. Protect all structures, including items such as guardrail, guideposts, concrete barriers, drains, and parapet walls.

3.4 APPLICATION

- A. Pre-wet the pavement surface as required due to local conditions by fogging ahead of the micro-surfacing box.
 - 1. Do not create standing water on the pavement in front of the micro-surfacing box.

- B. Place micro-surfacing mix that meets the job-mix design.
 - 1. Control the ingredient proportions with metering or measuring devices on the micro-surfacing equipment.
 - a. Use readings from the metering or measuring devices to determine compliance with limits stated in the approved job-mix design.
 - 2. Limit any increase or decrease in the amount of mineral filler added to the mix during production to ± 1 percent of the job-mix design.
 - 3. Limit the set-control agent to ± 1 percent of the job-mix design.
 - 4. Verify that the emulsion submitted with the job-mix design is the same emulsion used throughout the project.
 - 5. Verify that emulsion asphalt residue is ± 0.5 percent of the job-mix design.
 - a. Engineer may require a new job-mix design and re-approval of the micro-surfacing if large disparities occur.
 - b. Calculate the percent emulsion on the daily electronic printout from the calibrated paver for emulsion and aggregate quantities.

- C. Produce a mixture according to the mix design and the quality control tolerances.
 - 1. Maintain quality control documentation and make available to the Engineer upon request or at completion of daily work.
 - 2. Calculate the percent asphalt content of the mixture from the equipment computer display readings randomly at least three times daily.
 - 3. Calculate the yield of the aggregate being placed from the equipment computer display readings randomly at least three times daily.
 - 4. Maintain a daily report and log sheet containing the following information:
 - a. Aggregate used, ton (dry)
 - b. Micro-Surfacing emulsion used, ton
 - c. Bituminous materials for tack coat used, if specified, ton
 - d. Mineral Filler used, lbs
 - e. Water used in mixture, gallons
 - f. Additive used in mixture, gallons
 - g. Surface area completed (square yards)

- h. Surface area application rate (dry lbs aggregate per square yard)
 - i. Percentage of emulsified asphalt based on dry aggregate
- D. Pass the mineral aggregate over a vibratory scalping screen before transfer to the micro-surfacing mixing machine to remove oversize material.
 - 1. Verify that the screening unit is capable of providing weigh tickets for each load of material.
- E. Carry a sufficient amount of micro-surfacing in all parts of the spreader box so that full width and complete coverage is obtained with no streaks or narrow spots.
 - 1. Avoid overloading the spreader box.
 - 2. Do not spray water directly into the spreader box during the application of micro-surfacing under any circumstances
- F. Apply micro-surfacing of proper consistency at a minimum rate of 25 lbs/yd² based on the dry weight of aggregate for each lot.
 - 1. Provide to the Engineer the square yards for each lot.
 - 2. Calculate the aggregate application rate using the daily tickets from the screening unit and daily electronic printout from the calibrated paver.
- G. Apply micro-surfacing for rut filling.
 - 1. Apply micro-surfacing as a scratch-coat pass using a steel or high density strike-off when required to fill ruts less than ½ inch deep or as directed by the Engineer.
 - 2. Make multiple passes with the rut filling spreader box for ruts greater than ½ inch deep or as directed by the Engineer.
 - 3. Allow 24-hour cure time after filling ruts, before placing additional micro-surfacing layer.
- H. Do not apply water to freshly placed micro-surfacing.

3.5 TEST STRIP

- A. Construct a test strip at least 500 ft long on the roadway before initial placement.
 - 1. With the coordination of the Engineer, arrange for the test strip to be constructed on the project site under anticipated placement conditions (intersections, travel lanes, approaches, time of day, temperature, and humidity).
 - 2. Construct the test strip with the job mix proportions, materials, and equipment to be used on the project.

3. Adjustments to the mixture formula will be permitted provided they do not exceed the values stated in the mix design.
 - a. If modifications to the mixture formula are in excess of the values in the mix design, prepare a new mix design and construct another test strip.
 4. The Engineer will evaluate the test strip owner to determine if the mixture set and cure properties as well as the equipment and placement techniques are acceptable.
 - a. Verify initial set is achieved within 30 minutes and the surface shows no signs of distress when exposed to traffic after curing for 1 hour.
 5. Remove and replace or repair at the Engineer's approval, at no cost to the Department, if the test strip does not meet the conditions stated above.
- B. Make necessary adjustments if test strip does not perform as required.
1. Repeat the test strip process.
 2. The Engineer may require a new job-mix design if failures indicate an ingredient problem.

3.6 FINISHING DETAILS

- A. Verify that the depth of each micro-surfacing course does not exceed twice the maximum aggregate size.
1. Not required when using a rut filling spreader box.
- B. Verify that the finished longitudinal and transverse joints are neat and uniform.
1. Construct longitudinal joints within 6 inches of the lane lines where possible.
 2. Verify that overlap of micro-surfacing at any joint does not exceed 6 inches.
 3. Repair the joints if any of the following conditions exist:
 - a. Build-up of material at the joints.
 - b. Uncovered areas at the joints.
 - c. Longitudinal and transverse joints with more than $\frac{1}{4}$ inch vertical space between the surface and a 4 ft straightedge placed perpendicular to the joint.
 4. Verify that the edges of the micro-surfacing follow the centerline, lane lines, shoulder lines, and curb lines.
 5. Repair the edges if they vary more than 6 inches.
 6. Use methods approved by the Engineer to correct deficiencies.
 - a. Verify that the repaired surfaces are dense with a uniform texture.
 - b. Repair sections with surface irregularities the same width as the existing pass of micro surfacing.

- c. Small areas of patching are not permitted.
- C. Verify that the finished micro-surfacing has a uniform texture free of scratches, tears, and other surface irregularities.
 - 1. Repair the surface, at Contractor's expense, if any of the following conditions exist:
 - a. More than one surface irregularity $\frac{1}{4}$ inch or wider and 10 ft or longer in any 100 ft section.
 - b. More than three surface irregularities $\frac{1}{2}$ inch or wider and more than 6 inches long in any 100 ft section.
 - c. Any surface irregularity 1 inch or wider and more than 4 inches long.
 - d. Any tire track damage to the fresh micro-surfacing.
 - e. Slick spots or any area of bleeding (surface flushing).
- D. Place micro-surfacing adjacent to concrete pavements or concrete curb and gutter with a straight longitudinal edge.
 - 1. Do not allow over-lap in these areas.
- E. Maintain neat construction lines at all locations.
- F. Place micro-surfacing at side streets and intersections out to right-of-way line including around radii where applicable.
- G. Use hand squeegees to spread micro-surfacing in areas where micro-surfacing machine cannot operate.
 - 1. Lightly dampen areas before mix placement.
 - 2. Provide complete and uniform coverage.
 - 3. Avoid unsightly appearance from handwork.
 - 4. Use the same type of finish in hand worked areas as applied by the spreader box.
- H. Use construction paper or comparable products so that beginning and ending joint lines from each construction pass are straight and neat.
- I. Use construction paper or comparable products to protect all roadway utilities.

END OF SECTION