To: All Plan Holders of Record

The Plans and Specification prepared by DOWL dated FEBRUARY 25, 2019 shall be clarified and added as follow. The bidder proposes to perform all the following clarifications or changes. It is understood that the Base Bid shall include any modification of Work or Additional Work that may be required by reason of the following change or clarifications.

The Bidders are to acknowledge the receipt of this Addendum by inserting its number and date into their Bid Forms. Failure to acknowledge may subject the Bidder to disqualification and rejection of the bid. This Addendum forms part of the Contract Documents as if bound therein and modifies them as follows:

I. PRIOR APPROVALS
   A. None

II. AMENDMENTS TO THE PROJECT MANUAL
   B. Addition of the following specifications sections:
      
      *Section 02112 – REMOVAL OF EXISTING PAVEMENT, CONCRETE CURB, SIDEWALK, DRIVEWAY, AND/OR STRUCTURES*
      
      *Section 02234 – SUB BASE COURSE*
      
      *Section 02235 – CRUSHED BASE COURSE*
      
      *Section 02510 - ASPHALT CONCRETE PAYMENT*
      
      *Section 02574 – CRACK SEALING*

III. AMENDMENTS TO THE DRAWINGS
   A. None

IV. GENERAL INFORMATION
   A. Adds additional specification sections for asphalt spot repair.

I:\18-0000\18-2189 FGH Parking Maintenance 2019\2 Project Manual Plans Specifications\Addendum 1\18-2189_Addendum No. 1.doc
DIVISION 2 — SITE WORK

(Reference MPWSS Section 02112)

SECTION 02112
REMOVAL OF EXISTING PAVEMENT, CONCRETE CURB, SIDEWALK, DRIVEWAY, AND/OR STRUCTURES

All applicable portions of Montana Public Works Standard Specification Section 02112 shall apply with the following additions, deletions, and/or modifications.

PART 3: EXECUTION

C. Delete the last sentence

Add the following:

D. Edges on all concrete and asphalt shall be straight lines and vertical cuts made with a saw. Concrete shall be cut with a saw to a depth of 4 inches minimum Section deeper than 4 inches may be broken after cutting. Resulting face shall not be flatter than a 1:1 from vertical. Construction methods will not disturb the remaining concrete slabs.

E. All slabs to remain shall be replaced, if disturbed, at no cost to the owner.

PART 4: MEASUREMENT AND PAYMENT

DELETE: Entire Section

END OF SECTION
DIVISION 2 — SITE WORK

(Reference MPWSS Section 02234)

SECTION 02234
SUB BASE COURSE

All applicable portions of Montana Public Works Standard Specification (MPWSS) Section 02234 shall apply with the following additions, deletions, and/or modifications.

PART 1: GENERAL

1.2 REFERENCES

DELETE: Reference to AASHTO T191 Density of Soil In-Place by Sand Cone Method.

PART 2: PRODUCTS

2.3 GRADATION

ADD: Crushed leveling base course shall be 3" minus OR one half the thickness of the base course, whichever is less.

PART 4: MEASUREMENT AND PAYMENT

DELETE: Entire Section

END OF SECTION
DIVISION 2 — SITE WORK

(Reference MPWSS Section 02235)

SECTION 02235
CRUSHED BASE COURSE

All applicable portions of Montana Public Works Standard Specification (MPWSS) Section 02235 shall apply with the following additions, deletions, and/or modifications.

PART 1: GENERAL

1.2 REFERENCES

DELETE: Reference to AASHTO T191 Density of Soil In-Place by Sand Cone Method.

PART 2: PRODUCTS

2.3 GRADATION

ADD: Crushed leveling base course shall be 1.5" minus.

PART 4: MEASUREMENT AND PAYMENT

DELETE: Entire Section

END OF SECTION
DIVISION 2 — SITE WORK

(Reference MPWSS Section 02510)

SECTION 02510
ASPHALT CONCRETE PAVEMENT

All applicable portions of Montana Public Works Standard Specification (MPWSS) Section 02510 shall apply with the following additions, deletions, and/or modifications.

PART 1: GENERAL

1.2 REFERENCES

DELETE: Reference to AASHTO T191 Density of Soil In-Place by Sand Cone Method.

PART 2: PRODUCTS

2.3 GRADATION

ADD: Crushed leveling base course shall be 1.5" minus.

PART 3: EXECUTION

3.29 PAVEMENT AND MATERIAL TESTING REQUIREMENTS

A. ADD: Compaction testing shall be performed on each strip of asphalt placed and at a minimum frequency of one test every 50 lineal feet.

END OF SECTION
PART 1 - GENERAL

1.01 DESCRIPTION

This work involves cleaning and/or routing out existing cracks and placing of hot asphalt-rubber sealant material in joints and cracks shown on the plans or at the locations directed by the ENGINEER.

1.02 RELATED WORK

Drawings and general provisions of the contract, including general and supplementary conditions and Division I and II of these specifications.

1.03 SUBMITTALS

Certificates and Test Reports: Submit certificates of compliance and test reports for asphalt mixtures, rubber compounds, temperatures, and compaction signed by the material producer and CONTRACTOR.

1.04 APPLICABLE PUBLICATIONS

1.05 PRODUCT HANDLING

Crack sealant shall be delivered to the site in unopened containers or packages. Sealant delivered to the site in the machine hopper shall not be accepted. The product shall be transported in strict conformance with the manufacturer's guidelines or recommendations.

1.06 SCHEDULING OF WORK

The CONTRACTOR shall work with the ENGINEER to schedule the work covered in this section to minimize inconvenience to the OWNER's operation on the site. The CONTRACTOR's schedule shall be approved by the ENGINEER prior to commencing work. Section 01100 contains OWNER’s preferred schedule.

PART 2 - PRODUCTS

2.01 ASPHALT-VULCANIZED RUBBER MATERIAL

A. The asphalt to be used shall have a maximum penetration of 150 when tested in accordance with procedures outlined by AASHTO. Crafco brand sealant Roadsaver #221 or approved equal is an acceptable crack sealing material and compatible with Montana State University parking lot maintenance.

B. Rubberized sealant may be considered by the Engineer and if proposed shall meet the specifications below. The contractor shall also provide information verifying compatibility of crack sealant with existing crack sealing material in place on the surface.
The granulated crumb rubber (100 percent vulcanized) shall meet the following requirements.

<table>
<thead>
<tr>
<th>Passing Sieve</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 8</td>
<td>100</td>
</tr>
<tr>
<td>No. 10</td>
<td>98-100</td>
</tr>
<tr>
<td>No. 40</td>
<td>0-10</td>
</tr>
</tbody>
</table>

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

The specific gravity of the granulated crumb rubber shall be 1.15 ± 0.02 and shall be free of fabric, wire, or other contaminating materials, except that up to 4 percent of calcium carbonate may be included to prevent particles from sticking together.

The proportions of the two materials by weight shall be 75 percent ± 2 percent asphalt and 25 percent ± 2 percent rubber.

The material will be packaged in boxes with a polyethylene liner.

2.02 EQUIPMENT

A. **General:** The crack sealing equipment shall consist of a heated rubberized asphalt joint sealing machine of at least 50 gallon capacity of current manufacture.

B. **Heating and Capacity:** The mixing/holding tank shall have a minimum 50-gallon capacity. It will be heated indirectly by an oil chamber welded to the lower half of the tank. The oil chamber will have heating elements sufficient to heat the oil to the mixing temperature.

The entire tank is to be insulated with a minimum of 2 inches of fiberglass. The tank should have a solid hinged lid to prevent heat loss.

C. **Agitation:** The equipment shall have an auger mechanism capable of thoroughly mixing the sealant. Direction of rotation and speed of agitation shall be able to be controlled by the operator, either in an automatic, semi-automatic, or manual mode.

D. **Material Pump and Piping System:** The pump shall be mounted on the unit. The pump should be a hot asphalt pump. The plumbing on the unit shall be arranged so the pump can fill the tank with the initial charge of material, apply pressure to the application nozzles, or recirculate the material in the tank.

A tank shall be provided to hold solvent. It shall be plumbed into the piping system so that the solvent can be added to the mixture or be used to clean the piping system.

E. **Applicator Hose:** One applicator hose equipped with a shutoff cock and applicator and shall be provided. A pressure regulating device shall be provided to regulate pressure on the applicator nozzles. This device should be mounted so it will bypass into the holding tank if the applicator nozzles are shut off.

F. **Power to operate** the material pump, agitator, and heater shall be of dependable operation capable of performing the operation and in good repair. The power shall be transmitted through
hydraulic pumps and motors in such a manner that the material pump and auger can be operated together or separately in either forward or reverse rotation.

G. Crack Cleaning Apparatus: Routing and sandblasting equipment in good repair and of acceptable industry standards shall be used for cleaning all cracks.

PART 3 - EXECUTION

3.01 GENERAL

Sealing operations of prepared joints and cracks shall not begin prior to approval of the ENGINEER.

3.02 CRACK PREPARATION

Prior to the application of hot asphalt-based sealant, joints and cracks more than 1/2 inch wide shall be cleaned to remove dust, dirt, moisture and foreign material or old sealant. Joints and cracks less than 1/2 inch and more than 1/8 in width require routing to widen the cracks to a width of 1/2 inch and to a depth of 7/8 inch, ± 1/8 inch. Cracks less than 1/8 inch in width do not require crack sealing.

3.03 MIXING AND AGITATING

Asphalt sealant material shall be unpacked and placed in joint and crack sealing machine for heating and mixing. The asphalt-rubber shall be heated to a minimum temperature of 300°F. Material shall not be heated in excess of manufacturer's recommendations. The material shall be held in the mixing tank at application temperature until very little separation of the rubber and asphalt occurs when a bead of sealant material is placed on the pavement. Sealant material may be added to the mix as long as the minimum temperature of 300°F is maintained.

3.04 SEALING JOINTS AND CRACKS

A. Joints and cracks should be sealed from the bottom up. Sealant material shall be applied so it is flush with the surface and is smooth.

B. Traffic shall not be allowed on the material until it has cured or until it has been sanded or papered to prevent tracking.

3.05 SWEEPING

All work will be scheduled at the direction of Montana State University Parking Manager and his authorized appointees.

Parking lots shall be swept free of all dust, dirt, and residual gravel and sand left over from the winter plowing, sanding operations, routing and cracksealing, general debris, and foreign matter by means of a power street sweeper or hand brooming. Water washing may be required to remove agglomerated clay, shale or other material that resists removal by mechanical or hand methods. If necessary, hand blowers may be used to ensure all corners and curb areas are blown free of debris and to ensure that the lots are completely clean.
Since lot striping/painting requires that the surfaces to be striped are clean, each lot will be swept immediately following the cracks being sealed in that lot unless directed by the OWNER or representative to do otherwise. CONTRACTOR must be able to sweep lots within 24 hours notice if sweeping does not directly follow cracksealing.

All materials swept from MSU parking lots need to be disposed of in accordance with State and Federal guidelines. Montana State is required to keep records of the amount of sand swept up from its parking lots, therefore the CONTRACTOR will need to keep records of how much material is swept in every lot and when each lot was swept.

END OF SECTION
B. This addendum clarifies the areas where crack sealing is required and where it is not. Crack sealing is not required for alligator cracks. For definition alligator cracking is defined as:

*Interconnected cracks forming small pieces generally ranging in size form about 1-inch to 6-inches.*

Other types of cracks must be sealed these include transverse, longitudinal, and block cracks.

V. ATTACHMENTS

A. Referenced specification sections from Section II.