Memorandum

To: e-Distribution
See Below

From: Lesly Tribelhorn, P.E.
Highways Engineer

Date: June 17, 2016

Subject: Tack and Fog Seal

Emulsified Asphalt
Emulsified asphalt will be measured and paid for under separate items for tack and fog seal. This memo supersedes previous guidance for tack and fog seal. The effective date for plan changes is for all projects let to contract after November 1, 2016.

Any applications that are not on the finished top surface are considered Tack, regardless of the rate.

Fog Seal, when specified, is for applications on the finished top surface.

In all cases, the method of measurement and basis of payment shown in the plans, is per gallon at the undiluted rate.

The new bid items are:

   Emulsified Asphalt – Tack
   Emulsified Asphalt – Fog Seal

Round the total quantities for tack and fog seal to the nearest gallon. There are different rates in the basis of plan quantities specific to each application as shown below.

Guidance for Basis of Plan Quantities
Show the following application rates in the basis of plan quantities unless project specific guidance is provided from Surfacing Design:

<table>
<thead>
<tr>
<th>Description</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Tack applied on concrete surfaces</td>
<td>0.10 gallon/S.Y.(undiluted)</td>
</tr>
<tr>
<td>Tack applied on all other surfaces; whether paving on top of plant mix, a milled surface, treated aggregate, or cement treated base</td>
<td>0.05 gallon/S.Y.(undiluted)</td>
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<tr>
<td>Fog seal application on top of seal and cover</td>
<td>0.075 gallon/S.Y.(undiluted)</td>
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<tr>
<td>Fog seal application on top of rumble strips that will not be chip sealed</td>
<td>0.10 gallon/S.Y.(undiluted)</td>
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</tbody>
</table>
Note: Always show aggregate treatment when paving directly on top of aggregate, regardless of whether traffic is allowed or not.

**Showing Tack in the Plans**
Use the bottom width (largest application width) of the plant mix for all applications when computing tack quantities for PMS lifts. Unless otherwise specified, assume 0.2’ as the maximum lift thickness. There is one application of tack under the plant mix and one application in between each lift. Identify (on the typical quantity frame) the number of applications assumed to calculate the quantity. For example, a typical section showing a 0.22’ isolation lift and overlay would utilize two applications.

Tack is paid for whether the plant mix is commercial or non-commercial.

**Showing Fog Seal in the Plans:**
Fog Seal is always one application, although the application rates may vary for different treatments and/or operations.

For fog sealing on top of the chip seal, show the dimension on the typical section and calculate a pay item quantity (at the rate shown in the Basis of Plan Quantities) in the Surfacing frame.

If fog seal is identified in the specifications as necessary for rumble strips or chip seal sequencing, based on anticipated contractor operations, it is measured for information only, and included in the cost of rumble strips in the Rumble Strips frame.

Fog Seal is typically not applied to any 3/8” plant mix. Contact Surfacing Design for any special circumstances (i.e., bike paths that are not using 3/8’ mix).

If you have any questions concerning this memo, please contact me at 444-6242.

**Attachment (design sheet examples)**

de-distribution:
Dustin Rouse, Preconstruction Engineer
Kevin Christensen, Construction Engineer
Lesly Tribelhorn, Highways Engineer
James Combs, Highways Design Engineer
Damian Krings, Road Design Engineer
Roy Peterson, Traffic & Safety Engineer
Ivan Ulberg, Traffic Design Engineer
Kent Barnes, Bridge Engineer
Matt Strizich, Materials Engineer
Ryan Dahlke, Consultant Design Engineer
Bryan Miller, Consultant Plans Engineer
Lisa Durbin, Construction Administration Services Engineer
Paul Jagoda, Construction Engineering Services Engineer
Suzy Price, Contract Plans Bureau Chief
Tim Tilton, Contract Section Supervisor
Jim Frank, Glendive District Preconstruction Engineer
Gary Neville, Billings District Preconstruction Engineer
Jen Nelson, Butte District Preconstruction Engineer
Shane Stack, Missoula District Preconstruction Engineer
Steve Prinzing, Great Falls District Preconstruction Engineer
Tom Martin, Environmental Services Bureau Chief
John Cornell, Road Plans Checker
Jerry Sabol, Road Plans Checker
TYPICAL SECTION

MAINLINE

10+00.00 TO 14+75.00

QUANTITIES

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<tr>
<th>UNIT</th>
<th>DESCRIPTION</th>
<th>SURFACING</th>
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<td>UNIT</td>
<td>ACREAGE</td>
<td>SQ. YD.</td>
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<tr>
<td>UNIT</td>
<td>IMPERVIOUS MATERIAL</td>
<td>IMPERVIOUS MATERIAL</td>
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BASIS OF PLAN QUANTITIES (QUANTITIES FOR ESTIMATING PURPOSES ONLY)

- CUM. ASSIST. DUMP: 3,000 CUB. YR.
- CUM. RECYC. DUMP: 3,000 CUB. YR.
- ASPHALT CONCRETE: 5,400 SQ. YD.
- CONCRETE: 4,200 SQ. YD.
- BULK MATERIAL: 4,200 SQ. YD.
- ASPHALT - NCH (CONCRETE SURF.: 200 SQ. YD.
- ASPHALT - NCH (CONCRETE SURF.): 200 SQ. YD.
- ASPHALT - NCH (PLANS): 200 SQ. YD.
- SEAL: 20 SQ. YD.

SURFACING

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REMARKS