SP- 230467
(New)

SPECIAL PROVISIONS
FOR
PENETRATING ENGINEERED FOG SEAL

Palo Alto County
NHSN-018-3(123)--2R-74
NHSX-018-3(122)--3H-74
NHSX-018-3(124)--3H-74

Plymouth County
STPN-012-2(052)--2J-75

Wapello County
STP-149-1(100)--2C-90

Effective Date
December 15, 2026

THE STANDARD SPECIFICATIONS, SERIES 2023, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

230467.01 DESCRIPTION.

Clean the pavement surface and apply engineered emulsion to the milled shoulder rumble strips and/or milled centerline rumble strips using a bituminous distributor.

230467.02 MATERIALS.

A. Material Properties.
When applied to the pavement, the material shall change the physical properties of the asphalt binder contained in at least the upper 1/4 inch (or deeper) of the existing surface. The Engineer may verify in the field.

Table 230467.02-1: Engineered Emulsion Performance Requirements

Tests on Recovered Binder (ASTM D 2172, ASTM D 1856)	Treated vs Untreated
Complex Shear Modulus @ 60°C, 10 rad/sec (AASHTO T 315)	≥ 40% reduction

B. Use approved products from Materials I.M. 439. See Materials I.M. 439 for approval process.

C. Do not reduce the retroflectivity of traffic paint and/or pavement markings by more than 5% when measured per Materials I.M. 386.

230467.03 CONSTRUCTION.

A. Equipment.
Use equipment meeting the requirements of Articles 2001.12 and 2001.14 of the Standard Specifications.

B. Cleaning.
Immediately prior to placement, clean the entire surface to be treated. Use scrapers, compressed air, or other approved methods.

C. General.
Calibrate the distributor to the specified target rate prior to start of work.

D. Application.

1. Uniformly apply engineered fog sealer at the approved rate (gallons per square yard of treatment area). The approved rate is product specific and is listed in Materials I.M 439 Appendix A. The Engineer may require a test strip to ensure adequate coverage. Provide metered quantities to the Engineer for yield checks.

2. The optimum application rate may be adjusted by the Engineer based on texture, porosity, and age of the treatment surface.

3. Use safety and convenience to the public without soiling their vehicles as a controlling factor.

4. For pavement applications, apply at a width of one-half of the roadway plus an overlap of approximately 4 inches at the middle of the road. Cover each width in one application while the opposite one-half of the roadway is left open to public traffic.

5. For shoulder applications, apply so the entire shoulder surface or milled rumble strip is covered in one application.

6. Do not apply to bridge decks or railroad rails and flangeways.

7. Test the reflectivity of the existing pavement markings before and after the application. Use the procedure in Materials I.M. 386 to determine retroreflectivity. Replace pavement markings when retroreflectivity is less than 100 when measured within 7 calendar days.

E. Limitations.

1. Unless the Engineer approves, do not place on damp or wet surfaces, during rainy or damp weather, or when rain is anticipated within one hour after application is completed.

2. Apply during weather conditions which allow satisfactory application. Do not apply when either surface temperature or air temperature is below 50°F.

3. A sand dam or other approved means may be necessary to prevent the material from running on to the area adjacent to the work area in areas of superelevated curves.

4. Do not allow traffic on the treated surface until the engineered fog sealer has fully cured.

F. Scheduling.

1. A preconstruction conference will be required for this work. This will normally be a single conference for all work of this type in each residency.

2. At the preconstruction conference, provide the Engineer a probable schedule for work of this type in the District jurisdiction, including the sequence for each project.

3. Schedule the test strip if required by the Engineer.

230467.04 METHOD OF MEASUREMENT.

A. Measurement for Engineered Emulsion for Fog Seal (Shoulder Rumble Strips) will be in square yards.

B. Measurement for Engineered Emulsion for Fog Seal (Centerline Rumble Strips) will be in square yards.

230467.05 BASIS OF PAYMENT.

A. Engineered Emulsion for Fog Seal (Shoulder Rumble Strips).

1. Payment for Engineered Emulsion for Fog Seal (Shoulder Rumble Strips), measured as provided above, will be at the contract unit price per square yard that is used on the project.

2. Payment is full compensation for:
   - Cleaning the shoulder surface,
   - Furnishing and applying the emulsion, and
   - Protecting the pavement adjacent to the work area in areas of superelevated curves.

B. Engineered Emulsion for Fog Seal (Centerline Rumble Strips).

1. Payment for Engineered Emulsion for Fog Seal (Centerline Rumble Strips), measured as provided above, will be at the contract unit price per square yard that is used on the project.

2. Payment is full compensation for:
   - Cleaning the pavement surface,
   - Furnishing and applying the emulsion, and
   - Protecting the pavement adjacent to the work area in areas of superelevated curves.

C. Any pavement markings that do not retain 95% of their initial retroreflectivity will be replaced at no cost to the Contracting Authority.