Florida Department of Transportation

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STEPHANIE KOPELOUSOS
SECRETARY

December 22, 2010

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 702
Proposed Specification: 7020400 Wet Weather Pavement Markings - Application**.**

Dear Ms. Gourdine:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

These changes were proposed by Chester Henson of the State Roadway Design Office to clarify how the audible bump should be measured.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to SP965RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4280.

Sincerely,

Rudy Powell, Jr., P.E.
State Specifications Engineer

RP/cah
Attachment
cc: Gregory Jones, Chief Civil Litigation
Florida Transportation Builders' Assoc.
State Construction Engineer

WET WEATHER PAVEMENT MARKINGS.
(REV 11-4-10)

ARTICLE 702-4 (of the Supplemental Specification) is deleted and the following substituted:

702-4 Application.

702-4.1 General: Before applying traffic stripes and markings, remove any material that would adversely affect the bond of the traffic stripes by a method approved by the Engineer.

Before applying traffic stripes over portland cement concrete surface, apply a primer, sealer or surface preparation adhesive recommended by the manufacturer. Offset traffic stripes a minimum of 2 inches from any longitudinal joints of portland cement concrete pavement.

Apply traffic stripes and markings only to dry surfaces and when the ambient air and surface temperature is at least 50ºF and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

Apply striping to the same tolerances in dimensions and in alignment specified in 710-5. When applying traffic stripes and marking over existing markings, ensure that not more than 2 inches on either end and not more than 1- inch on either side of the existing line is visible.

Conduct field tests in accordance with FM 5-541 and ASTM E 2177 (Bucket Method).*Take test readings representative of the striping performance.* Remove and replace traffic stripes not meeting the requirements of this Section.

702-4.2 Thickness and Dimensions of Markings: For flat thermoplastic markings provide a thickness of 0.100- to 0.150- inches when measured above the pavement surface ~~at the edge of the baseline~~.

As an alternative to the flat baseline, a profiled baseline meeting the following dimensions may be applied. For profiled thermoplastic markings make profile measurements above the pavement surface. Provide a baseline thickness not to exceed 0.050 inches. Provide individual profiles across the full width of the marking on approximately 1.0 inch centers with a space between profiles of approximately .25 inches and an average thickness of at least 0.110 inches above the baseline profile.~~For profiled thermoplastic markings, provide a minimum height of 0.155 inches for the profile when measured above the pavement surface at the edge of the profile. Provide a baseline thickness of 0.035 to 0.050 inches. Provide individual profiles across the full width of the marking at approximately 1.0 inch on center with a space between profiles of 0.090 to 0.310 inches.~~

Measure, record and certify on a Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM- 5-541.

702-4.3 Dimensions of Audible Bumps: Apply the raised bump with a profile such that the leading and trailing edge are sloped at a sufficient angle to create an audible and vibratory warning.

Bumps on shoulder and centerline markings shall *be at least* ~~have a minimum height of~~ 0.45- inches *at the highest point of the bump, above the pavement*

surface, including the base line. The height shall be measured ~~above the pavement surface at the edge of the marking,~~ after application of reflective elements. Bumps shall have a minimum *baseline coverage* dimension of 2.5- inches *in both transverse and longitudinal directions*. Bumps may have a drainage channel, the width of each drainage channel will not exceed 1/4 inch at the bottom of the channel. The longitudinal distance between bumps shall be approximately 30- inches.

702-4.4 Retroreflectivity: Apply white and yellow traffic stripes and markings that will attain an initial dry retroreflectivity of not less than 300- mcd/lx·m^2 and not less than 250- mcd/lx·m^2, respectively, and also attain an initial wet recovery retroreflectivity of not less than 150- mcd/lx·m^2 and not less than 125- mcd/lx·m^2, respectively.

Measure, record and certify on a Department approved form and submit to the Engineer, the retroreflectivity of white and yellow pavement markings in accordance with Florida Method FM- 5-541 for dry and ASTM E 2177 (Bucket Method) for wet recovery.

~~The Department reserves the right to test the markings within 3 days of receipt of the Contractor's certification. The test readings should be representative of the Contractor's striping performance. If the retroreflectivity values measure below values shown above, the striping will be removed and reapplied at the Contractor's expense.~~

702-4.5 Color: Use pavement marking materials that meet the requirements of 971-1.

702-4.6 Reflective Elements: Apply reflective elements to all pavement markings, at the rates determined by the manufacturer's recommendations as identified for the QPL System.

702-4.7 Loss: If more than 1% of the bumps or more than three consecutive bumps are missing or broken (less than half a bump remaining) within the first 45- days under traffic, replace all failed bumps at no expense to the Department. If more than 2% of the bumps fail within the first 45- days under traffic, the replacement period will extend an additional 45- days from the date all replacement bumps were installed. If, at the end of the additional 45- days, more the 2% of all bumps (initial and replacement) fail, replace all failed bumps at no expense to the Department. Measure, record and certify on a Department approved form and submit to the Engineer, the loss of bumps.

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Conduct field tests in accordance with FM 5-541 and ASTM E 2177 (Bucket Method).Take test readings representative of the striping performance. Remove and replace traffic stripes not meeting the requirements of this Section.

702-4.2 Thickness and Dimensions of Markings: For flat thermoplastic markings provide a thickness of 0.100 to 0.150 inches when measured above the pavement surface.

As an alternative to the flat baseline, a profiled baseline meeting the following dimensions may be applied. For profiled thermoplastic markings make profile measurements above the pavement surface. Provide a baseline thickness not to exceed 0.050 inches. Provide individual profiles across the full width of the marking on approximately 1.0 inch centers with a space between profiles of approximately .25 inches and an average thickness of at least 0.110 inches above the baseline profile.

Measure, record and certify on a Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.

702-4.3 Dimensions of Audible Bumps: Apply the raised bump with a profile such that the leading and trailing edge are sloped at a sufficient angle to create an audible and vibratory warning.

Bumps on shoulder and centerline markings shall be at least 0.45 inches at the highest point of the bump, above the pavement surface, including the base line. The height shall be measured after application of reflective elements. Bumps shall have a minimum baseline coverage dimension of 2.5 inches in both transverse and longitudinal directions. Bumps may have a drainage channel, the width of each drainage channel will not exceed 1/4 inch at the bottom of the channel. The longitudinal distance between bumps shall be approximately 30 inches.

702-4.4 Retroreflectivity: Apply white and yellow traffic stripes and markings that will attain an initial dry retroreflectivity of not less than 300 mcd/lx·m^2 and not less than 250 mcd/lx·m^2, respectively, and also attain an initial wet recovery retroreflectivity of not less than 150 mcd/lx·m^2 and not less than 125 mcd/lx·m^2, respectively.

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