



## Florida Department of Transportation

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### ESTIMATES BULLETIN 15-01

DATE: January 23, 2015

TO: District Estimates Engineers, District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Consultant Project Management Engineers, District Roadway Design Engineers, District Construction Engineers, District Maintenance Engineers, District Traffic Operations Engineers and Program Management Engineers

FROM: Phillip "Greg" Davis, PE, State Estimates Engineer

A handwritten signature in blue ink that reads "Phillip G. Davis".

COPIES TO: Brian Blanchard, Tom Byron, Duane Brautigam, David Sadler, Tim Lattner, Trey Tillander, Michael Shepard, Robert Robertson, Mark Wilson, Bruce Dana, John Krause, Rudy Powell, Greg Schiess, Nick Finch (FHWA), Chad Thompson (FHWA), and Phillip Bello (FHWA), David Sadler, Daniel Scheer, Gevin McDaniel, Chester Henson, Stefanie Maxwell, Deanna Carroll, Chris Lewis

SUBJECT: Pavement Marking Guidance

This bulletin updates the pay items, in coordination with Roadway Design Bulletin 15-02, for the selection of pavement marking materials. The criteria and guidelines included in the bulletin were developed by a Department wide task team to clarify and agree on the proper pavement marking material selection for each application. The method of measurement and basis of payment were also updated in the specifications, to be consistent across the various pavement marking sections.

### REQUIREMENTS

1. Meet the requirements of Roadway Design Bulletin 15-02, including the Plans Preparation Manual (PPM) changes for Pavement Marking Materials Selection.
2. Meet the requirements of Estimates Bulletin 15-02/Roadway Design Bulletin 15-03 for Rumble Stripe.

### IMPLEMENTATION PLAN

Effective with the July 2015 letting, update the pay items in accordance with the Roadway Design Bulletin and PPM changes and the changes noted below. Refer to the Roadway Design Bulletin for additional guidance.

The following pay item changes have been made. Shaded areas are for maintenance use. Pay item and description changes are noted with **redline** and ~~strikeout~~. Note the unit of measure changes, especially for solid, 3-9 dotted and 2-4 dotted/ guidelines.

Estimators: Carefully review quantities for all pay item changes. Update unit prices as needed.

### **701-1A-BCD ~~AUDIBLE & VIBRATORY~~ PROFILED THERMOPLASTIC**

*Use Profiled Thermoplastic on concrete pavement for edge lines and center lines on all rural two lane and multi-lane, flush shoulder, rural, non-limited access facilities, where posted speed is 50 mph or greater. Contrast is not allowed with profiled thermoplastic markings. These markings are NOT used on bridges with concrete riding surfaces, due to vibration/durability; refer to PPM guidance for concrete bridges.*

*The pay items for Audible & Vibratory Pavement Marking have been updated to include "Profiled Thermoplastic" in the description field. After a transition period of approximately one year, the term "Audible & Vibratory" will be removed. During the transition period, either the old, transition, or new description is acceptable in the plans. DO NOT require a plans revision to change the pay item description.*

*Not valid for transverse or other markings.*

*Pay items for "asphalt surfaces" will be valid through 6-30-2015. Rumble Stripe is required for asphalt surfaces, in accordance with Roadway Design Bulletin 15-02.*

### **701- 1A-BCD PROFILED THERMOPLASTIC**

A= Class

1 (Standard) valid through 12-31-13\*

5 (Standard- Open graded asphalt surfaces) for 6" and 8" longitudinal stripes; C=1 or 2

6 (Standard- Other surfaces) for 6" and 8" longitudinal stripes on dense graded asphalt or concrete surfaces; C=1 or 2

7 (Standard- concrete surfaces) C=1 or 2, effective 7-1-15

B= Color

1 (White)

2 (Yellow)

C= Type of Marking

0 (Solid) GM effective 7-1-15

1 (Solid) NM valid through 6-30-15

2 (Skip) GM

D= Width

1 (6")

2 (8") approval required\*

### **709- 1A-BCD TRAFFIC STRIPE-TWO REACTIVE COMPONENTS**

*Two Reactive Components may be used as an alternative to Standard Thermoplastic markings for edge lines and skip lines on asphalt surfaces and edge lines only on concrete surfaces. The use must be approved by both the District Maintenance Engineer and the District Construction Engineer on a project specific basis.*

*For existing asphalt surfaces, contact the District Maintenance Engineer to determine if black paint contrast is required for skip lines, messages and arrows.*

*Not valid for transverse or other markings. (Possible future use for transverse markings is under review by Product Evaluation.)*

### **709- 1A-BCD TWO REACTIVE COMPONENTS PAVEMENT MARKINGS**

A= Class

1 (Standard)

7 (Remove) SF, BCD= Blank. NOT FOR MOT marking removal

B=Color

- 1 (White)
- 2 (Yellow)
- 3 (Black) valid through 6-30-15

C= Type of Marking

- 0 (Solid) GM effective 7-1-15
- 1 (Solid) NM; D=1 or 2
- 2 (Solid) LF valid through 6-30-15
- 3 (Skip/Dotted) GM;
  - D= 1 for 6" wide 10-30 skip or 3-9 dotted
  - D=3 for 12" wide 3-9 dotted lane drop
- 4 (2'-4' Dotted Guide line/ 6'-10' Dotted Extension line) GM, D=1 effective 7-1-15
- 5 (6-10 Gap Extension) LF, D=1

D= Width

- 1 (6")
- 2 (8")
- 3 (12")
- 4 (18") valid through 6-30-15
- 5 (24") valid through 6-30-15

## 710- 11-BCD PAINTED PAVEMENT MARKINGS

Use Standard Paint for temporary markings on asphalt and concrete surfaces.

Use Durable Paint for refurbishment of markings on existing asphalt surfaces where the service life of Refurbishment Thermoplastic is not required. Contact the District Maintenance Engineer to determine if Durable Paint is acceptable.

For refurbishment markings, consider the following factors:

- Required service life
- Traffic volumes
- Cost of markings
- Thickness and conditions of existing markings
- Other special requirements such as contrast or rumble striping

The term "Guideline" was changed to "2-4 Dotted" on Design Standard Index 17346. DO NOT require a plans revision to update this pay item description change.

## 710- 1A-BCD PAINTED PAVEMENT MARKINGS

A= Class

- 1 (Standard)
- 2 (Durable)
- 7 (Remove) SF, BCD=blank.
  - Maintenance use only. NOT FOR MOT marking removal; see details above.

B= Color

- 1 (White)
- 2 (Yellow) C= 0, 1, 2, 3, 4, 5, 9
- 3 (Black) C=3
- 4 (Blue)
  - C=2 for accessible markings
  - C=6 valid through 6-30-15

C= Type of Marking

- 0 (Solid) GM effective 7-1-15
- 1 (Solid) NM; D = 1, 2\*, 3 valid through 6-30-15
- 2 (Solid) LF; D = 1, 2, 3, 4, 5
- 3 (Skip/Dotted) GM;
  - D= 1 for 6" wide 10-30 skip or 3-9 dotted
  - D= 3 for 12" wide 3-9 dotted lane drop and approach to toll plaza

- 4 (2'-4' Dotted Guide line/ 6'-10' Dotted Extension line) GM, D=1 effective 7-1-15
- 5 (2'-4' Dotted Guide line/ 6'-10' Dotted Extension line) LF; D=1 valid through 6-30-15
- 6 (Message or Symbol) EA; D=0,
- 7 (Arrows) EA complete marking; D=0
- 8 (Yield Line) LF; D=0 see details above
- 9 (Island Nose) SF; D=0

D= Width

0 valid for C=6-9

1 (6") NM-valid through 6-30-15

1 (6") GM

1 (6" for parking lot- accessible markings) blue only, LF

1 (6" for parking lot and maintenance use) LF

2 (8") LF-valid through 6-30-15

2 (8") NM valid through 6-30-15

2 (8" for interchange and urban island) GM effective 7-1-15

3 (12") NM valid through 6-30-15

3 (12") GM

3 (12" for cross walk or roundabout) LF

4 (18" for diagonal or chevrons) LF

5 (24" for stop line or crosswalk) LF

#### Maintenance pay items

A=2 (Durable)

*Durable paint items will be opened upon request through the Maintenance Office.*

#### 711- 1A-BCD THERMOPLASTIC

*711-11-BCD, 711-15-BCD, and 711-16-BCD are all Standard Thermoplastic.*

*Use Standard Thermoplastic material for all lines and markings not meeting the criteria for Rumble Striping, Profiled Thermoplastic, Preformed Thermoplastic or Permanent Tape.*

**Maintenance pay items** (for use on Maintenance Contracts ONLY. LF pay items are permitted for longitudinal markings, in accordance with maintenance specifications.)

#### 711- 12-BCD THERMOPLASTIC- REFURBISHMENT

*Refer to Roadway Design Bulletin 15-02 or the PPM for guidance on refurbishment markings on existing surfaces.*

#### 711-13-BCD THERMOPLASTIC- HOT SPRAY

*Hot Spray is used by Maintenance for edge and skip pavement markings. DO NOT use for new construction.*

#### 711-14-BCD PREFORMED THERMOPLASTIC

*Asphalt pavement:*

- *Bicycle symbols, messages and arrows shown on Design Standards Index 17347*
- *Special Emphasis Crosswalks*

- *All Route Shields*
- *Exit numbers for ramps. For exit numbers to be placed on existing asphalt surfaces, contact the District Maintenance engineer to determine if black paint contrast is required.*

*Concrete pavement (including bridges with concrete riding surfaces):*

- *All bicycle markings shown on **Design Standards Index 17347***
- *Exit Numbers for ramps*
- *Special Emphasis Crosswalks*
- *All Route Shields*
- *White dotted Lines (2'-4') with trailing black contrast (2' white preformed thermoplastic + 2' black preformed thermoplastic). Use only the alternating skip pattern.*
- *Arrows, Messages and Symbols. Black contrast border is required for design speeds 45 mph and less, and black contrast block is required for design speeds 50 mph and greater.*

## **711- 1A-BCD THERMOPLASTIC PAVEMENT MARKINGS**

A=Class

- 1 (Standard) Use A=5 or 6 for 6" or 8" longitudinal stripes
- 2 (Refurbishment)
- 3 (Hot Spray) Maintenance Use Only
- 4 (Preformed)
- 5 (Standard- Open graded asphalt surfaces) for 6" and 8" longitudinal stripes; C=1 or 3
- 6 (Standard- Other surfaces) for 6" and 8" longitudinal stripes on dense graded asphalt or concrete surfaces; C=1 or 3
- 7 (Remove) SF, BCD=blank. NOT FOR MOT marking removal; see details above.

B=Color

- 1 (White) C=1-8
- 2 (Yellow) C=04-5
- 3 (Black) not valid as of 12-15-05; use 710 paint items. See details above.
- 4 (Blue) C=2, 6
- 5 (White with Black Contrast) A=4 only; C=6 or 7 only
- 6 (Multi-color) defined in plans; specs may be needed- DO NOT OPEN

C= Type of Marking

- 0 (Solid) GM effective 7-1-15
- 1 (Solid) NM, longitudinal lines, D=1, 2 valid through 6-30-15
- 2 (Solid) LF, transverse lines; D = 2, 3, 4, 5
- 3 (Skip/Dotted) GM, longitudinal lines
  - D= 1 for 6" wide 10-30 skip or 3-9 dotted
  - D= 3 for 12" wide 3-9 dotted lane drop and approach to toll
- 4 (2'-4' Dotted Guide line/ 6'-10' Dotted Extension line) GM, D=1 effective 7-1-15
- 5 (Dotted/Guideline/6-10 Gap Extension) LF, D=1, 2 or 3
- 6 (Message or Symbol) EA Includes Yield Messages and painted curb face, D=0
- 7 (Arrows) EA ; D=0
- 8 (Yield Line) LF, D=0

D= Width

- 0 valid for C=6-8
- 1 (6") NM valid through 6-30-15
- 1 (6") GM
- 1 (6" for parking lot- accessible markings) blue only, LF
- 1 (6" for parking lot and maintenance use) LF2 (8")
  - 8" solid longitudinal lines, channelizing line
  - 8", 2'-4' skip at roundabout
- 2 (8") LF valid through 6-30-15
- 2 (8") NM valid through 6-30-15
- 2 (8" for interchange and urban island) GM effective 7-1-15
- 3 (12") NM valid through 6-30-15
- 3 (12") GM

- 3 (12" for crosswalk or roundabout) LF
- 4 (18" for diagonal or chevrons) LF
- 5 (24" for stop line or crosswalk) LF

### 713-1A-BCD ~~PREFORMED~~ PERMANENT TAPE-

"Preformed Tape" was changed to "Permanent Tape". The term "High Performance" was removed from the specification. The pay items have been updated to reflect this change.

Use Permanent Tape for the following conditions on concrete pavement:

- White skip lines (10'-30') with trailing black contrast (10' white tape + 10' black tape). Use only the alternating skip pattern.
- White dotted lines (6'-10') with trailing black contrast (6' white tape + 6' black tape). Use only the alternating skip pattern.
- White dotted lines (3'-9') with trailing black contrast (3' white tape + 3' black tape). Use only the alternating skip pattern.
- Yellow skip lines. Do not use contrast.
- Center lines and edge lines of bridges with concrete riding surfaces. Do not use contrast.

Include the removal pay item when installing permanent tape on concrete pavement.

### 713-1AA-BCD PERMANENT TAPE

AA= Class

01 (Standard) Transverse lines, arrows, and messages only, per spec. Valid through 12-31-13.

02 (High Performance) required for longitudinal skip stripe, per spec

03 blank- no class distinction in spec, effective 7-1-15

07 (Removal of Permanent Tape or Paint for Surface Preparation) SF, BCD=blank.

B= Color

1 (White)

2 (Yellow)

3 (Black)

C= Type of Marking

0 (Solid, for bridges with concrete surfaces) GM

1 (Solid) NM, valid through 6-30-15

3 (Skip/Dotted, for concrete surfaces) GM;

D= 1 for 6" wide 10-30 or 3-9 skip-dotted

D= Width

1 (6")

**Plans:** For applicable projects, update the plans, tabulation sheets/Plan Summary Boxes, and Proposal Summary of Quantities (Transport report).

**Plans Preparation Manual (PPM):** The PPM will be updated with the Roadway Design Bulletin.

**Specifications:** Specifications are available with the July 2015 eBook.

**Design Standards:** Rumble Strip and Rumble Stripe standards are available, as well as changes to Index 17346. Refer to the Roadway Design Bulletin and web pages for additional information.

**Basis of Estimates (BOE):** The BOE will be updated to clarify the use of the pay items, as described above.

If you have any questions, please contact:

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