



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

DESIGN DIVISION
SUITE 1300 JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-3848
(615) 741-2221

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

INSTRUCTIONAL BULLETIN NO. 12-14

Regarding Pavement Design

Effective for the December 2012 letting (October 3 turn-in), the following sections of the Design Guidelines are new or revised.

3-125.01 is added regarding pavement design review.

Figure 3-3A is added regarding pavement design review.

4-414.05 is revised to clarify the use of tack coat with micro-surfacing pavements

4-416.00 is added regarding Safety Edge

6-150.00 is revised to include note 3 concerning Safety Edge.

Carolyn Stonecipher, P.E.,
Civil Engineering Director
Design Division

July 24, 2012
CAS:ARH:MWC

Attached:

3-125.01 REVIEW OF PAVEMENT DESIGN

If the pavement design will be more than 2 years old at the time of the construction field review, the designer shall submit a request for pavement design review (figure 3-3A) three weeks prior to the construction field review. The designer shall attach the pavement request review form, the original pavement design and updated traffic report in a single pdf file and email it to: TDOT.PavementDesign@tn.gov. The subject line of the email shall be:
"PAVEMENT DESIGN REVIEW – PIN NO"

4-414.05 COMPUTATIONS FOR MICRO-SURFACING

Item No. 414-03.01 Emulsified Asphalt for Micro-Surfacing

0.12 x Below aggregate quantity = Tons

NOTE: Application rate based on 12 percent of the dry weight of the aggregate.

Item No. 414-03.02 Aggregate for Micro-Surfacing

$$\frac{\text{Surface area (Sq. Yd.)} \times \text{XX Lb./ Sq. Yd.}}{2,000 \text{ Lb./ Ton}} = \text{Tons}$$

NOTE: Application rate of 32 pounds (approximate depth 0.375") per square yard shall be used if plans require a leveling mixture (14 pounds per square yard) and a surface mixture (18 pounds per square yard) to be placed, or 22 pounds (approximate depth 0.275") per square yard if only a surface mixture is to be placed, unless otherwise specified.

Item No. 403-01.01 Bituminous Material for Tack Coat (TC) to be used with Micro-Surfacing

$$\frac{\text{Surface area (Sq. Yd.)} \times \text{*rate (Gal./ Sq. Yd.)}}{231 \text{ Gal./ Sq. Yd.}} = \frac{\text{-----}}{4} \text{ Tons}$$

* Rate 0.10 - 0.15 (Gal./Sq. Yd.) of the diluted emulsion

NOTE: The tack coat shall consist of 1 part emulsion and 3 parts water. The quantity for the emulsion payment, Item No. 403-01, should be 1/4 of the estimated application rate.

A Tack Coat (TC) shall be applied between the existing asphalt surface and the first micro-surface lift. If there are multiple lifts, no tack coat is required between the 1st and 2nd lift.

4-416.00 SAFETY EDGE

On all projects involving asphalt paving without curbs, a safety edge will be applied to the edge of the shoulder. The safety edge is a sloped (25 to 30 degree) edge that more easily allows vehicles that have run off the road to regain the roadway than a standard vertical face. Pavement General Note 3 (Section 6-150.00) shall be added to the plans on all projects (new or resurfacing) that include paving without curbs.



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION
PAVEMENT DESIGN SECTION
SUITE 1300, JAMES K. POLK BUILDING
Nashville, Tennessee 37243-3848

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

REQUEST FOR REVIEW OF PAVEMENT DESIGN

DATE: _____ DESIGNER: _____
COUNTY: _____ ROUTE: _____
PROJECT NO. _____ PIN: _____
DESCRIPTION: _____

PROPOSED TURN-IN DATE: _____
ORIGINAL PAVEMENT DESIGN DATED _____

Please review the attached pavement design for this project and provide email confirmation that it is adequate for present conditions.

ATTACHMENTS

DATE REQUESTED

UPDATED TRAFFIC REPORT W/ADL'S (if available) _____
ORIGINAL PAVEMENT DESIGN _____
CONSTRUCTION FIELD REVIEW PLANS PDF ON FILENET UNDER THE NAME _____

PLEASE EXPLAIN ANY MISSING ATTACHMENTS (include date requested traffic):

cc: Design Manager

Figure 3-3A
Request for Pavement Design Review

6-150.00 PAVEMENT

NOTE: NOTES (1), (2), (3), (4), (5), (6), AND (9) ARE TO BE PLACED ON ALL RESURFACING PROJECTS ON ROADWAYS WITH SHOULDERS AND DITCHES (NO CURB AND GUTTER).

NOTE: NOTES (1), (2), (4), (7), (8), AND (9) ARE TO BE PLACED ON ALL RESURFACING PROJECTS ON ROADWAYS WITH URBAN CURB AND GUTTERS.

6-150.01 PAVING

(1) THE CONTRACTOR SHALL BE REQUIRED TO PAVE IN THE DIRECTION OF TRAFFIC.

(2) THE CONTRACTOR SHALL BE REQUIRED TO COLD PLANE AND PAVE IN THE DIRECTION OF TRAFFIC.

(3) THE CONTRACTOR SHALL ATTACH A DEVICE TO THE SCREED OF THE PAVER SUCH THAT MATERIAL IS CONFINED AT THE END GATE AND EXTRUDES THE ASPHALT MATERIAL IN SUCH A WAY THAT RESULTS IN A CONSOLIDATED WEDGE-SHAPE PAVEMENT EDGE OF APPROXIMATELY 25 TO 30 DEGREES AS IT LEAVES THE PAVER (MEASURED FROM A LINE PARALLEL TO THE PAVEMENT SURFACE.) THE DEVICE SHALL MEET THE REQUIREMENTS THAT ARE CURRENTLY SET FORTH IN SPECIAL PROVISION 407SE.

6-150.02 RESURFACING

NOTES (4) THROUGH (9) FOR RESURFACING ONLY

(4) WHERE DIRECTED BY THE TDOT ENGINEER, THE CONTRACTOR SHALL BE REQUIRED TO SHAPE PUBLIC SIDE ROADS, BUSINESS ENTRANCES, AND PRIVATE DRIVES, AS WELL AS CLEANING OF EXISTING DRAINS BEFORE PLACING MATERIALS. ALL COSTS ARE TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.

(5) ALL PUBLIC SIDE ROADS SHALL BE PAVED ONE PAVER WIDTH THROUGH THE INTERSECTION AS A MINIMUM. A SATISFACTORY TRANSITION FROM THE NEW PAVEMENT TO THE EXISTING GRADE OF THE INTERSECTING PUBLIC ROAD OR BUSINESS ENTRANCE SHALL BE PROVIDED. SHOULD THE PAVEMENT OF THE INTERSECTING PUBLIC ROAD BE DISTRESSED, THE RESURFACING WIDTH MAY BE INCREASED TO THE NORMAL RIGHT OF WAY LINE.

(6) PRIVATE DRIVEWAYS, FIELD ENTRANCES, AND BUSINESS ENTRANCES WILL BE RESURFACED A PAVER WIDTH (LANE WIDTH) AS A MINIMUM. A PAVEMENT TAPER TO TRANSITION THE NEW PAVEMENT SHALL BE REQUIRED, IT SHALL BE BASED ON AN ADDITIONAL ONE FOOT OF WIDTH PER ONE INCH DEPTH OF PAVEMENT. IF THE SHOULDER IS NARROW ENOUGH THAT THE SUM OF THE SHOULDER AND THE TRANSITION ARE LESS THAN A PAVER WIDTH, THE TRANSITION SHALL OCCUR WITHIN THE PAVER WIDTH. IF THE SUM OF THE SHOULDER AND THE TRANSITION IS

GREATER THAN A PAVER WIDTH (LANE WIDTH), THE TRANSITION SHALL OCCUR OUTSIDE OF THE PAVER WIDTH.

(7) ON CURB AND GUTTER SECTIONS, PUBLIC ROAD INTERSECTIONS SHALL BE RESURFACED TO THE END OF RADIUS. A SATISFACTORY TRANSITION FROM THE NEW PAVEMENT TO THE EXISTING GRADE OF THE INTERSECTING PUBLIC ROAD SHALL BE PROVIDED.

(8) ON URBAN TYPICAL SECTIONS, (CURB AND GUTTER), RESIDENTIAL DRIVEWAYS AND BUSINESS ENTRANCES SHALL HAVE A MINIMUM WIDTH OF MATERIAL NOT LESS THAN ONE FOOT USED IN THE TRANSITION TO FEATHER THE PAVEMENT EDGE.

(9) IN ALL CASES, THE LENGTH OF THE PAVEMENT TRANSITION, THE THICKNESS AND WIDTH OF THE RESURFACING AND ANY ADDITIONAL PAVEMENT MATERIALS SHALL BE AS DIRECTED BY THE TDOT ENGINEER.