

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MATERIALS CONTROL, SOILS AND TESTING DIVISION

MATERIALS PROCEDURE

FIELD CALIBRATION AND OPERATION OF
ROLLING TEN FOOT STRAIGHT EDGE ON BRIDGE DECKS

1. PURPOSE

- 1.1 To establish a field calibration procedure for the 10 ft. rolling straight edge.
 - 1.2 To establish a procedure for documenting out of tolerance bridge deck sections.
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2. FIELD CALIBRATION

- 2.1 Under each set of wheels place a piece of steel or other suitable solid material, with dimensions approximately 3 in. x 12 in. x 0.5 in. Stretch a piece of string between the front and rear wheels, across the top of each of the pieces, and adjust the center riding wheel so that it just touches the string.
 - 2.2 When straight edging a deck with a vertical curve, the riding wheel should be adjusted as above and then a final adjustment up or down should be made according to the vertical differences of the curve in a 10 ft. length.
 - 2.3 When the center wheel is in proper alignment, the dial on the straight edge should read zero. If adjustment is needed, lengthen, or shorten the linkage to this center wheel as per the instructions of the manufacturer of the straight edge.
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3. OPERATION

3.1 Preparation

Obtain a bridge deck floor plan from the project plans and place this plan sheet on a hard surface. Cover the deck floor plan with graph paper. Align the graph paper so that the lines are parallel to the centerline of the deck. Draw a centerline and parallel lines, set to scale at 2 ft. intervals, the length of the deck.

As an alternate method, the bridge floor plan may be printed on graph paper with one set of lines parallel to the centerline or a sketch may be drawn on graph paper.

If the bridge includes a horizontal curve, mark locations on the scale drawing that are 25 ft. to 50 ft., apart along the centerline. Lay off lines at these locations, perpendicular to the centerline. Mark locations that represent 2 ft. intervals along these lines. Connect these locations to produce lines parallel to the centerline.

3.2 Procedure

Mark the centerline of the bridge with suitable chalk. If stations are available on the bridge, draw a transverse perpendicular line every 25 ft. to 50 ft. Continue to mark off longitudinal lines parallel to the centerline at 2 ft. centers. Transfer the location of the transverse perpendicular lines to the bridge deck plans or overlay.

Pull the rolling straight edge down the bridge centerline with the center wheel running over the chalk line. When the pass is completed, move the straight edge

to the next 2 ft. line and push it back across the bridge. Repeat this operation until all lines have been straight edged. The direction the straight edge is oriented should not be changed.

Transfer the location of any high or low readings (measure to the nearest 1 inch.) from the deck to the overlay paper or other appropriate paper. Mark high and low lines and tie them together as per the example in Attachment 1. The lines should be extended and joined approximately 2 ft. into the next two segments of the bridge deck area. The areas may then be computed by use of a planimeter.



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MP 601.11.20 Steward – Pavement Analysis and Evaluation Section
RLS:Aw
ATTACHMENT

Attachment 1: Example of a 10 ft Rolling Straight Edge Profile

