**Guidelines for Interpreting Non-standard Readings Using the MIT-Scan-2**

This guidance is necessary because of confusion caused by occasional non-standard readings obtained from the MIT-Scan-2 when testing for dowel bar conformity. This construction bulletin clarifies examples of readings with the MIT-Scan-2 for the Standard Special Provision Revision of Sections of 105, 106, 412, and 601 Conformity to the Contract of Portland Cement Concrete Pavement and Dowel Bars for Transverse Weakened Plane Joints, dated April 26, 2012. Field evaluations have indicated instances when additional evaluation and/or engineering judgment may be required to fully analyze the field-placed dowel bar locations.

**New section 412.11 is hereby added to the Construction Manual with the following text:**

When dowels have been placed using a dowel bar inserter (DBI) machine, the MIT‑Scan‑2 has read the dowel positions very accurately, with a few detailed exceptions. (See attached illustrations.)

The MIT-Scan-2 should also be used for location of dowels placed in dowel baskets, but has been observed to have some detailed exceptions. (See attached illustrations.) A common cause of incorrect dowel bar placement is incorrect sawing of the transverse joint. The specification requires: The Contractor shall detail his methodology for ensuring correct marking of dowel bar insertion points and correct sawing of the joints.

There may be instances with dowel baskets where additional analysis and engineering judgment may be required to make a final determination of the acceptability of the placed dowel bars.

The Engineer is encouraged to discuss the proposed dowel placement and potential MIT-Scan-2 reading exceptions at the Pre-Construction or Pre-Pave conferences to determine a method of handling these conditions.

The exceptions do not waive the Contractor’s requirement to place dowel and tie bars per the specified contract tolerance.

This guidance is attached to this bulletin for your reference. It is recommended that the MIT reading variance guidance be used on any concrete paving projects where the MIT-Scan-2 is used. Before applying these guidelines, ensure the MIT-Scan-2 device has been calibrated properly and settings entered correctly.

If you have questions regarding this guidance document, please contact the Staff Materials Concrete and Physical Properties Unit or your Area Engineer in Contracts and Market Analysis.

**References:**

Construction Bulletins can be found on the CDOT intranet at:

<http://www.coloradodot.info/business/designsupport/bulletins_manuals/construction-bulletins>

