



Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATIONS FOR PCC PAVING 3-D MACHINE CONTROL

Effective Date
October 16, 2012

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

12025.01 DESCRIPTION.

- A. This specification contains requirements for slip formed PCC paving using 3-D machine control techniques. Use this specification in conjunction with Sections 2301 and 2526 of the Standard Specifications.
- B. The Contractor may use equipment controlled with a PCC Paving 3-D Machine Control System in the construction of the subgrade, subbase, or PCC pavement.
- C. Prior to letting, the Contracting Authority will provide available electronic surface models of the roadway design in common file formats. When such models are provided, the Contractor will be responsible for manipulating the provided file formats to make them compatible with the respective equipment and systems being used.
- D. The Contractor may use any type of PCC Paving 3-D Machine Control equipment and system resulting in meeting the elevation, cross slope, thickness, and smoothness specification requirements.

12025.02 EQUIPMENT.

Provide equipment to accomplish PCC Paving 3-D Machine Control. Use equipment that generates results meeting quality requirements of the Standard Specifications.

12025.03 CONSTRUCTION.

A. Contracting Authority Responsibilities.

1. For new construction, the Engineer will set the initial horizontal and vertical control points.
2. For reconstruction or PCC overlays, the Engineer will furnish information on existing horizontal and vertical control points.
3. The Engineer will review and approve the proposed surface model within two weeks following receipt of the model.

B. Contractor Responsibilities.

1. When an electronic surface model is not furnished by the Contracting Authority, develop an electronic model providing the minimum design depth of pavement. For PCC overlays, compute an estimated quantity of overlay concrete based on pavement profiles prior to start of paving and the electronic model. This quantity will serve as the estimated concrete quantity for the project and must be approved by the Engineer prior to start of construction.
2. Provide a digital terrain model (DTM) of the subgrade surface from top of shoulder to top of shoulder for construction grading.
3. Provide an electronic file such as a D45 file, or equivalent, identifying x, y, and z coordinates for shoulder and pavement edges as well as the pavement centerline based on project alignments and elevations.
4. Make available to the Engineer a rover for use during paving operations. Provide training on the use of the rover to allow the inspector to make random checks of subgrade, subbase, and pavement station locations and surface elevations. The rover will remain property of the Contractor.
5. When total stations are used for the PCC Paving 3-D Machine Control system, set additional control points at maximum 500 foot (150 m) intervals on each side of the pavement. Furnish x,y,z coordinates and station offset information for each point.
6. Set paving hubs with cut/fill to finish pavement elevation at A, B, C, and D points along superelevated curve transitions and at station equation locations. Additional paving hubs will not be required for mainline pavement.
7. Prior to start of construction, provide the Engineer a maximum of 8 hours training on PCC Paving 3-D Machine Control equipment and system.
8. Submit required information to the Engineer for approval at least three weeks prior to start of work.
9. If necessary, check and recalibrate PCC Paving 3-D Machine Control system daily prior to start of work. Include equipment type, control software manufacturer, and software version in the submittal.

12025.04 METHOD OF MEASUREMENT.

None.

12025.05 BASIS OF PAYMENT.

- A. Payment for PCC Paving 3-D Machine Control will be lump sum contract price.
- B. Payment is full compensation for equipment, preparation of electronic files, survey, training, and all other items required for using PCC Paving 3-D Machine Control System.
- C. Additional payment or contract period extensions will not be made for:
 1. Delays due to late submittal of electronic files,
 2. Placement of paving hubs and stringline due to failure of the PCC Paving 3-D Machine Control System,
 3. Rework resulting from failure or errors in using a PCC Paving 3-D Machine Control System, or
 4. Additional quantities placed resulting from using a PCC Paving 3-D Machine Control System.