

CONSTRUCTION OF PRECAST CONCRETE PAVEMENT SLABS (Tollway)

Effective:

Description. Install precast concrete pavement slabs in accordance with the contract documents. The precast slab system selected must be approved by the Tollway based on compliance with the Special Provision for Precast Pavement Slab Systems.

Materials. The materials must meet the requirements of the Special Provision "Precast Concrete Pavement Slab Systems."

Construction Details

General. Pavement areas to be repaired will be delineated by the Engineer using spray paint furnished by the Contractor. Any areas of pavement removed and replaced outside the limits established by the Engineer shall be done entirely at the Contractor's expense. After removal of the concrete pavement in a repair area, the Engineer shall determine the suitability of the existing subbase material and the steps necessary to restore the subbase.

Meetings. Convene a preplacement meeting 7 to 14 calendar days before the planned start of slab installation with the Engineer, manufacturer, supplier, system designer, and any relevant subcontractors to review and coordinate all aspects of pavement removal, placement and inspection including equipment and personnel requirements. Install slabs to the line and grade depicted in the contract documents \pm ¼-inch.

Technical Assistance. Several processes in this specification are performed in accordance with the system designer's instructions. The system designer must supply on-site technical assistance at the beginning of the installation until the Engineer determines the assistance is no longer required. Provide approved system designer instructions to the Engineer at least 30 calendar days before starting work associated with slab installation.

Weather Limitations. Article 420.07 shall apply.

Pavement Removal. If the limits of a repair area are marked on existing contraction joints, no sawing of the existing pavement will be required.

Equipment and methods used for removing old pavement shall be such as to prevent cracking, shattering or spalling of the pavement remaining in place. Should the remaining pavement be damaged by this operation the Contractor shall immediately change equipment and/or methods to prevent damage to any more pavement. Care shall be exercised in the removal of the pavement to prevent damage to load transfer devices, tie bars, or adjacent concrete surfaces or edges in portions of the pavement that are to remain in place. Adjacent pavement or bars damaged as a result of the removal process shall be replaced at the Contractor's expense to the satisfaction of the Engineer.

Disposal of Excavated Materials. Materials resulting from the removal of concrete pavement and materials removed for base course restoration, as required, shall be

disposed of by the Contractor at his expense, in accordance with the applicable portions of Article 202.03.

Subbase Course. The subbase shall be prepared to the requirements of Special Provision "Aggregate Subgrade, 12-inch" for new construction and add-on lanes. For pavement repair, any areas of the subbase that are below the required elevation of the finished subbase, due to the Contractor's operations in breaking or removing old pavement, shall be built up to meet the level of the surrounding subbase to the satisfaction of the Engineer in accordance with the contract documents at the Contractor's expense. If the Engineer determines that the existing granular subbase is unsuitable for the intended purpose, the Contractor shall remove the unsuitable material in the pavement removal areas to the depth specified by the Engineer and replace the material removed with an equal thickness of new material placed and compacted in accordance with the requirements of the Special Provision for "Base Course Restoration". Follow the system designer's instruction for any final subbase preparation prior to slab installation. Do not disturb the prepared surface before installation.

Slab Installation. Install the slabs in accordance with the system designer's instructions. Set grade-supported slabs to achieve maximum contact with the prepared subbase.

Joints. Submit a proposed joint layout with the Fabricator Working Drawings, submitted in accordance with the Special Provision "Precast Concrete Pavement Slab Systems." Align joints both transversely and longitudinally between abutting precast slabs, i.e., do not stagger joints, except where approved on the joint layout. When tying precast slabs to existing concrete pavement, such as an add-on lane, joint alignment is not required. However, do not drill and anchor longitudinal joint ties within 16 inches of a transverse joint in the existing pavement.

Joint Widths. For pavements remaining concrete surfaced, install slabs such that joint widths are less than ½-inch regardless of joint orientation. These dimensions apply to joints between adjacent precast slabs or joints between precast slabs and existing pavement.

Bed and Level Slabs. Bed and level slabs in accordance with the system designer's instructions such that the vertical differential across any joint is ¼-inch or less.

Backfill Pavement Hardware. Backfill around pavement hardware in accordance with the system designer's instructions.

Smoothness (Pavements Remaining Concrete Surfaced). Article 420.10 shall apply.

Opening to Traffic (Grade-Supported Slabs). It is highly desirable to open precast slabs to traffic after the following:

- The backfill material around the pavement hardware obtains 2,500 psi compressive strength.
- The bedding and/or slab leveling materials obtain 300 psi compressive strength.
- The joints shall be sealed in accordance with Article 420.12.

Slabs may be opened before backfill material and/or bedding grout/slurry is placed. In this case, backfill material and bedding grout/slurry must be placed within 24 hours of

the first slab's placement. Remove and reset any slabs having a vertical differential greater than ¼-inch across any joint.

The longer slabs are opened to loads before backfilling and grouting, the greater the potential for slab movement. Schedule work to minimize the amount and duration of ungrouted slabs open to traffic.

Opening to Traffic (Grout-Supported Slabs). Open precast slabs to traffic after the following:

- The backfill material around the pavement hardware obtains 2,500 psi compressive strength.
- The bedding and/or slab leveling materials obtains sufficient strength to support loads without deflection.
- The joints shall be sealed in accordance with Article 420.12

Slabs may be opened before backfill material around the pavement hardware has been placed. In this case, backfill material must be placed within 24 hours of the first slab's placement. Remove and reset any slabs having a vertical differential greater than ¼-inch across any joint.

The longer slabs are opened to loads before backfilling, the greater the potential for slab movement. Schedule work to minimize the amount and duration of ungrouted slabs open to traffic.

Method of Measurement. CONSTRUCTION OF PRECAST CONCRETE PAVEMENT SLABS will be measured for payment in square foot of the area of slab delivered and placed, and accepted in accordance with the Contract.

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Basis for Payment. Payment for CONSTRUCTION OF PRECAST CONCRETE PAVEMENT SLABS, measured as specified above will be made at the Contract unit price per square foot which payment shall constitute full compensation for furnishing all materials required for the slab, including concrete, reinforcement, inserts and other embedded metalwork; for delivering the slab to the designated sites; for unloading, erection and placement into the pavement including all labor, equipment, tools, and other incidental necessary to complete this item as specified, including technical assistance from the system designer.

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