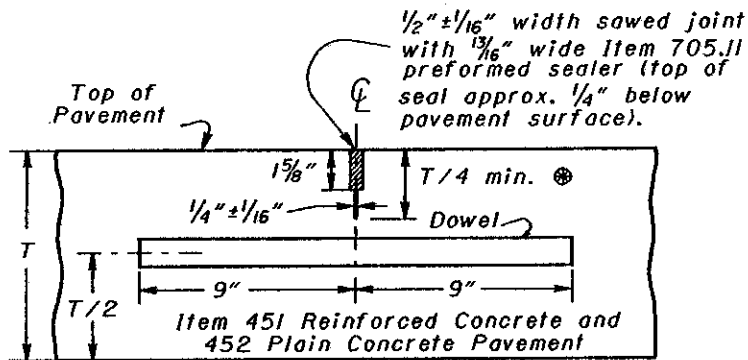
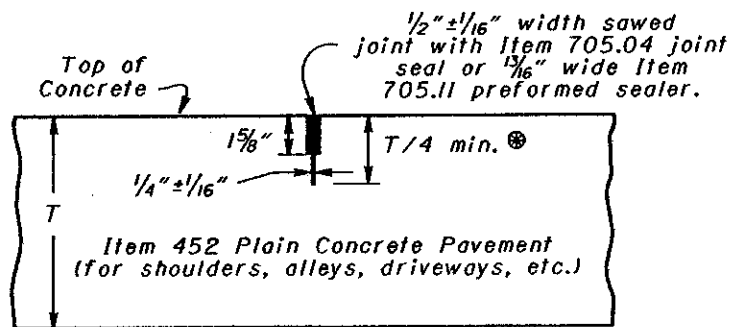


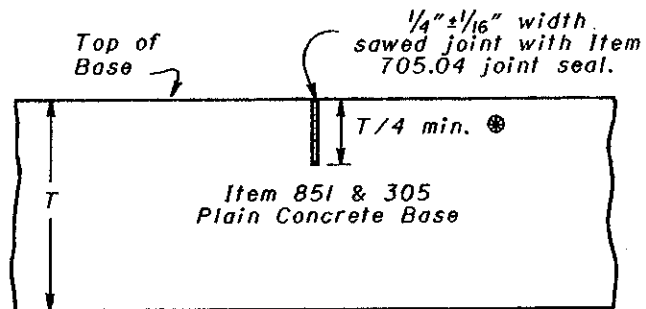
CONTRACTION JOINTS



SECTION - ITEM 451 & 452
(See Notes)



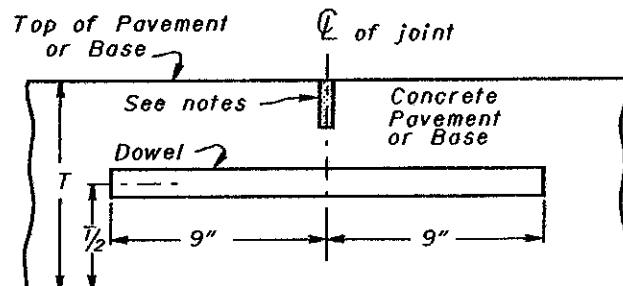
SECTION - ITEM 452
(See Notes)



SECTION - ITEM 851 & 305 BASE

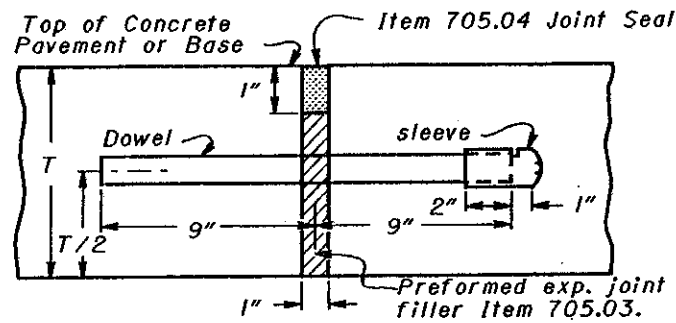
⊙ Where $T > 10"$, the sawcut depth shall be $T/3$.

CONSTRUCTION JOINT

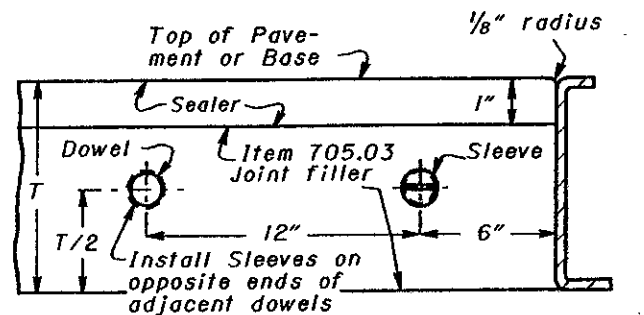


SECTION THROUGH CONSTRUCTION JOINT

EXPANSION JOINT



SECTION THROUGH EXP. JOINT



SIDE ELEVATION OF EXP. JOINT

NOTES

GENERAL: Notes and details shown on this drawing shall be considered in conjunction with and supplemental to the pertinent specifications for portland cement concrete pavement and bases, and incidentals related thereto.

All joints shall be constructed normal to the centerline of the pavement lane unless otherwise directed.

Where dowels are specified, they shall be round, straight steel bars of the size indicated in the following table. Steel bars and dowel basket assemblies shall be coated in accordance with the requirements of Item 709.13.

Dowels shall be spaced at 12" centers, beginning 6" from the longitudinal joint.

DOWEL SIZE	
(T) THICKNESS OF PAVEMENT	DIAMETER OF STEEL DOWEL
8.5" or less	1"
8.6" to 10"	1 1/4"
over 10"	1 1/2" or as shown on plan

ASSEMBLY: Each joint assembly used to hold dowels in position shall be continuous between longitudinal joints or between longitudinal joint and pavement edge. The assembly shall be firmly held in proper position by at least eight 1/2" steel pins driven at an angle to brace the assembly from lateral and vertical displacement during the placing of the concrete. These pins shall be at least 18" in length. Two of these pins shall

be driven opposite each other at each end of the assembly and the remaining pins shall be driven in staggered positions on each side of the assembly. In exceptional cases where it is impractical to use the 18" length pins, such as where hardpan or rock is encountered, the Engineer may authorize use of shorter pins provided the assembly is held firmly. Where the assembly is placed on granular material which may allow settlement or distortion, the assembly shall be anchored to prevent settlement or distortion with some combination of pins and/or steel plates, or by some other means to the satisfaction of the Engineer.

When concrete pavement is placed on an existing concrete pavement or a stabilized base, the joint assemblies (baskets) shall be held firmly in position by the use of a power driven fastener and an appropriate clip at 6 locations along the assembly (3 each side of the assembly) to secure the basket from lateral and vertical displacement during concrete placement.

Dowel spacing is shown for pavement lanes of even foot widths. Where other widths are specified, standard cages may be used with dowel spacings adjusted as follows:

The 6" dowel spacing shall be maintained at the longitudinal joint. The spacing at the outer edge of the lane may be increased up to 12". Where an odd width of lane occurs, a dowel shall be placed 6" from the outer edge of the lane if the standard cage would provide for a space exceeding 12". Such a dowel shall be held rigidly in proper position by a method satisfactory to the Engineer or a dowel cage of greater length than required may be used by cutting the assembly and splicing to attain the required length.

This drawing is intended for use with a uniform depth pavement. When the project involves the placing of variable depth pavement, the joint components shall be held in place in accordance with the method shown in the plan or as approved by the Engineer.

EXPANSION JOINTS: Expansion joint filler shall be held rigidly in position and shall be continuous for the full width of each lane. The face of the expansion joint shall be perpendicular to the concrete surface and shall not be skewed horizontally except when abutting a skewed bridge approach slab.

Smooth dowels shall be used, and free movement shall be provided by applying a coating of a thin layer of oil or other "bond-breaking" material just prior to placing the concrete. One free end of each dowel shall be equipped, after coating, with a sleeve of metal or other approved material approximately 3" long, designed with crimped end and overlapping seams fitting closely around the dowel. Each sleeve shall be provided with a depression or interior projection to act as a stop for the dowel, sufficiently distant from the crimped end to allow 1" for longitudinal dowel movement with pavement expansion. In lieu of this requirement, any other means may be used if approved by the Director.

Proper size dowel holes shall be punched or drilled into the preformed expansion joint filler in order to insure tight fitting dowels.

CONTRACTION JOINTS: All contraction joints in Item 451 Reinforced Concrete Pavement shall be dowelled. Contraction joints in Item 452 Plain Concrete Pavement shall be dowelled where they are located in mainline pavement, ramps, acceleration/deceleration lanes, or collector/distributor lanes, or

shoulders within 500 feet of a pressure relief joint. Contraction joints in Item 452 Plain Concrete Pavement shall not be dowelled in alleys, private drives, or commercial drives.

To provide for longitudinal movement at the joint, dowels shall be smooth and coated with a bond breaking material such as a thin layer of oil just prior to placing the concrete.

Contraction joints of the type specified shall be spaced in accordance with the following table:

CONTRACTION JOINT SPACING	
TYPES OF PAVEMENT OR BASE	MAXIMUM SPACING BETWEEN JOINTS
Item 451 Reinforced Concrete Pavement	21 lin. ft.
Item 452 Plain* Concrete Pavement	17 lin. ft.
Items 851 & 305 Plain Concrete Base	20 lin. ft.

* Where Item 452 Plain Concrete Pavement (for shoulders, etc.) is being placed and tied longitudinally to Item 451, Reinforced Concrete Pavement, or Item 305, Plain Concrete Base, the joints in Item 452 shall match the spacing alignment, sawing, and sealing requirements of the joints in the Item 451 or 305. Where Item 452, Plain Concrete Pavement, is being used as a shoulder, rumble strips shall be placed as per Std. Constr. Dwg. BP-8.1.

CONSTRUCTION JOINTS: Smooth dowels shall be used in transverse construction joints in all portland cement concrete pavements, shoulders and base. The joint shall be formed by using an adequate bulkhead that will provide a straight joint. The bulkhead shall have openings provided for dowel bars spaced as outlined under "GENERAL." The bulkhead shall be shaped to fit the typical section of the pavement or base. Dowels shall be held rigidly in position during the placing of the concrete.

Construction joints in reinforced concrete pavement may be located at a contraction joint or between contraction joints, provided they are not closer than 10 feet to another parallel joint. In plain concrete pavement or concrete base a construction joint shall not be located closer than 6 feet to another parallel joint.

Kerf and seal conforming in all respects to details shown for contraction joints shall be provided at each construction joint in concrete pavement and base.

SEALING BASE CONTRACTION JOINTS: All contraction joints for plain concrete bases shall be sealed as detailed hereon and the cost included in the unit price bid for Item 305 or 851.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF TRANSPORTATION	
TRANSVERSE PAVEMENT JOINTS	DATE 2-21-92 10-28-94
STANDARD CONSTRUCTION DRAWING BP-2.2	APPROVED W.K. Anderson ENGR., L & D