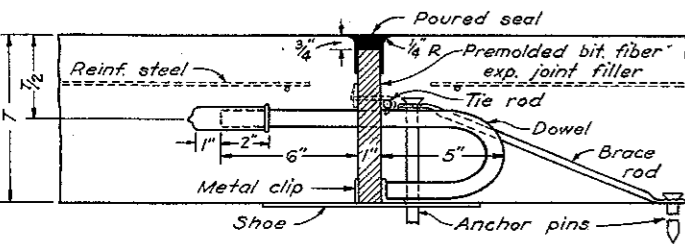


TRANSVERSE JOINTS

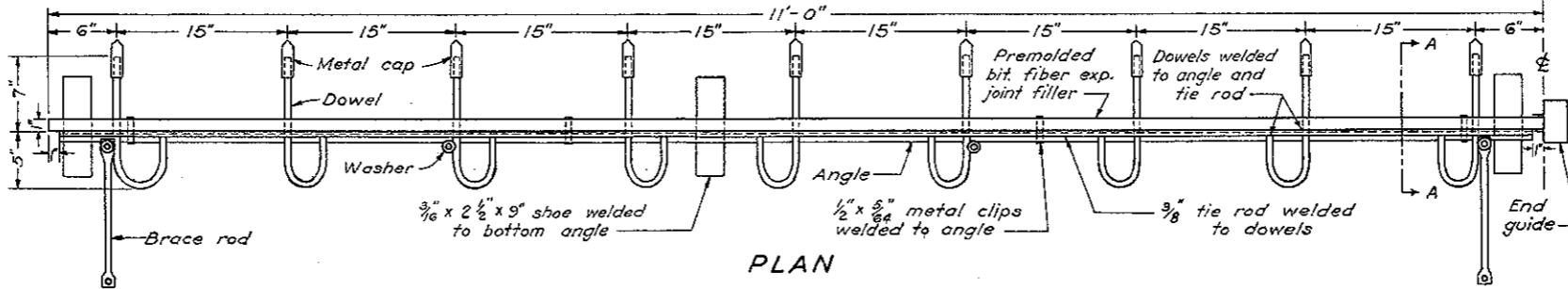
FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
10	OHIO		194

EXPANSION JOINT

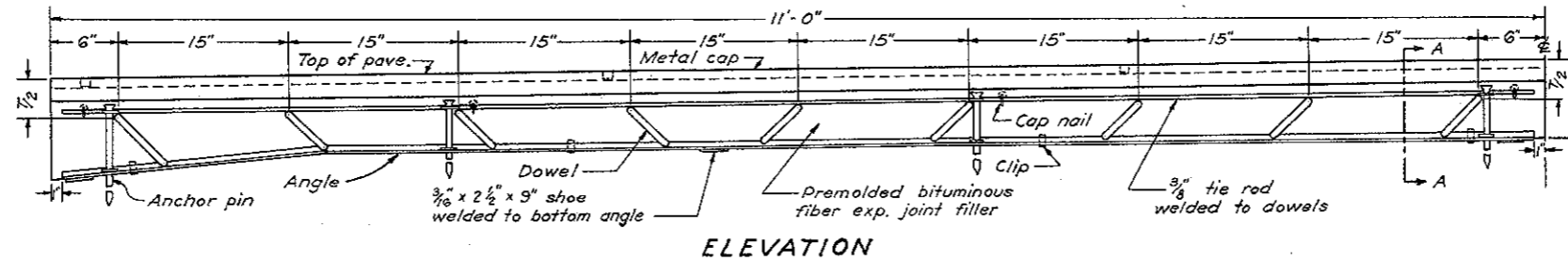


TRANSFER OF LOAD BY DOWEL

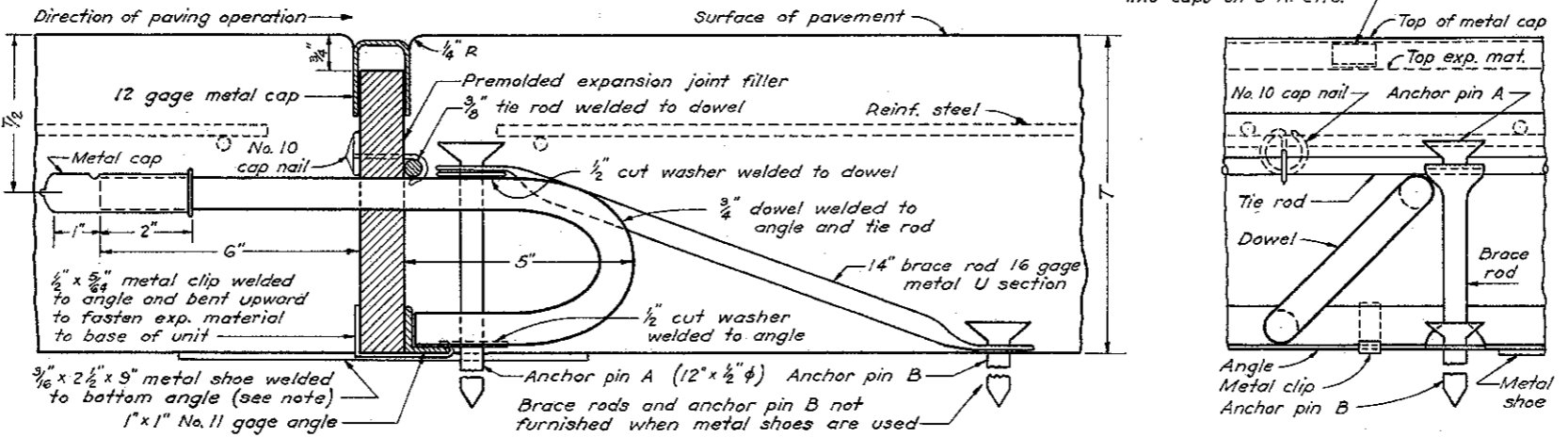
JOINT ASSEMBLY



PLAN



ELEVATION



SECTION A-A

ELEVATION

CONSTRUCTION DETAILS - The assembled unit shall be rigidly held in such position as will keep the plane of the dowels parallel to the surface of the pavement and the expansion joint material at right angles to the pavement surface. This shall be accomplished by staking the unit to the subgrade with a sufficient number of anchor pins "A", and by bracing with a sufficient number of brace rods and anchor pins "B". Not less than four "A" pins, two brace rods and "B" pins shall be used for each eleven foot section. Anchor pins 18" long shall be used where necessary to hold the unit in position. The metal shoes may be used in lieu of brace rods where hard shale or rock subgrade is encountered. The metal cap shall fit closely on the dowel so that when forced on it can not easily be displaced. It shall be crimped to receive only two inches of the dowel and leave one inch space in the end for future movement of the dowel. It shall be made to prevent mortar from entering any part of it when in place on the dowel.

GENERAL - Expansion, contraction and construction joint assemblies shown hereon are to be considered as alternates with joint assemblies shown elsewhere in the plans, the type to be used on any project shall be optional with the contractor. The type of joint selected by the contractor and all operations and materials for assembling and installing the joints shall be approved by the engineers.

DOWELS - Prior to placing, dowels shall be assembled into a unit, as shown hereon, which is to remain in place for expansion, contraction and construction joints. The straight end of each dowel shall be neatly fitted with a metal cap as shown hereon. The straight end of each dowel shall be thoroughly coated, before placing in the pavement, with either bituminous material Sec. M-5.11 S.C. 2 or heavier, or 600 W grease or equal. The length of the unit shall be not less than the distance between longitudinal joints and sufficient support shall be provided to hold the dowels accurately perpendicular to the joint. When the lane width varies from 11 feet, the spacing of the dowels shall be 15 inches and the 6" end spaces shall be equally increased or decreased and shall be less than 10 1/2" but not less than 3".

EXPANSION JOINTS - The spacing of the expansion joints shall not exceed 120 feet. The type and arrangement of expansion joints at intersections will be specifically shown on the plan. The base angle of the dowel assembly and the edges of the expansion joint material shall be shaped to fit the section of the pavement. Joints in monolithic curbs shall be constructed with the same type of premolded filler material as used in the expansion joints.

CONTRACTION JOINTS - Contraction joints shall be spaced so that the length of any slab between transverse joints shall not exceed 60 feet. Joint arrangement at intersections shall be specifically shown on the plans. Premolded contraction joint filler shall meet the requirements of Sec. M-10.1 or Sec. M-10.13 and its upper edge shall be shaped to fit the surface of the pavement.

IMPRESSED CONTRACTION JOINTS - Impressed contraction joints shall consist of grooves, of the dimensions shown hereon and be formed by impressing a device or bar into the newly deposited concrete before initial setting. The device or bar shall be removed as soon as the concrete is in such condition as to preclude of distortion or injury to the concrete. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed.

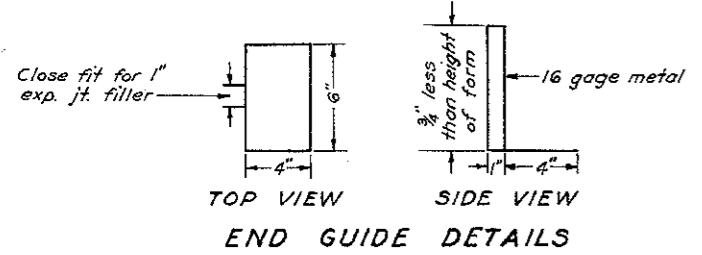
CONSTRUCTION JOINTS - At construction joints the assembled dowel unit shall be reversed so that the straight end of the dowels point in the direction of the concreting operation. This is to permit the rigid bulkhead to be slipped over the straight ends of the dowels. If the construction joint is at an expansion joint the premolded expansion joint filler shall be placed to hold the concrete and be backed up by the rigid bulkhead or it shall be slipped over the dowels after the rigid bulkhead is removed. Care shall be taken in removing the bulkhead and placing the adjacent concrete to see that the dowels are embedded in the concrete without being bent.

PREMOLDED BITUMINOUS FIBER EXPANSION JT. FILLER
This joint filler material shall meet the requirements of Supplemental Specification N^o. M-110.12. Dowel holes 1/16 inch in diameter shall be accurately punched in the filler material to insure tight fitting dowels. The joint shall at all times be protected from the heat and other agencies which tend to cause distortion. A 12 gage metal cap as shown hereon shall be placed before concreting, over the upper edge of each joint filler. After the concrete has set care shall be exercised in removing the cap so as not to damage the concrete at the edges of the joint. The filler material shall be securely fastened to the 1 inch by 1 inch angle with metal clips and to the 3/8 inch tie rod with N^o. 10 cap nails. The dowel unit assembled with the filler material shall then be staked rigidly to the subgrade, with anchor pins and brace rods or metal shoes as shown hereon.

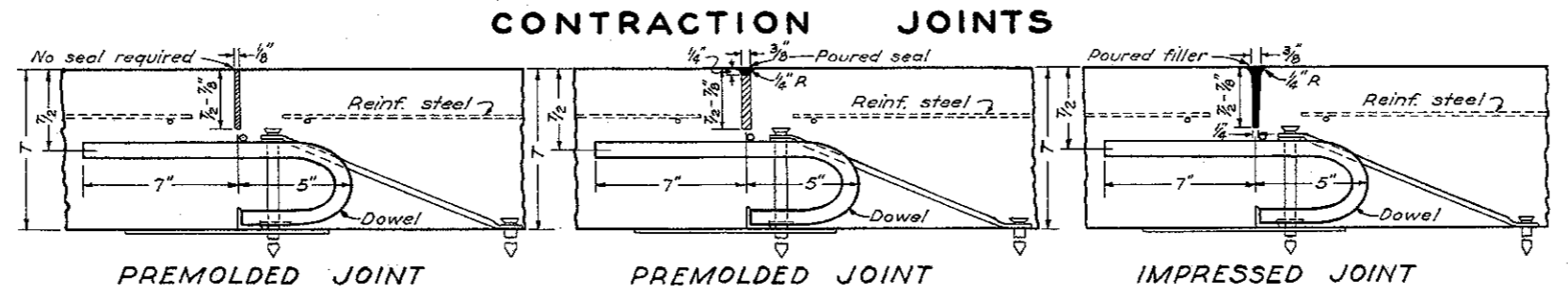
TREATMENT OF EXPANSION JTS. AT LONGITUDINAL JTS.
At the junction of longitudinal and transverse joints a positive method shall be used to connect the joints and maintain the vertical and longitudinal alignment of the two joints. Longitudinal keys and keyways, where used, shall be omitted for the thickness of the joint.

EDGING JOINTS - Special care shall be exercised in edging joints so that the width of the opening does not exceed that shown.

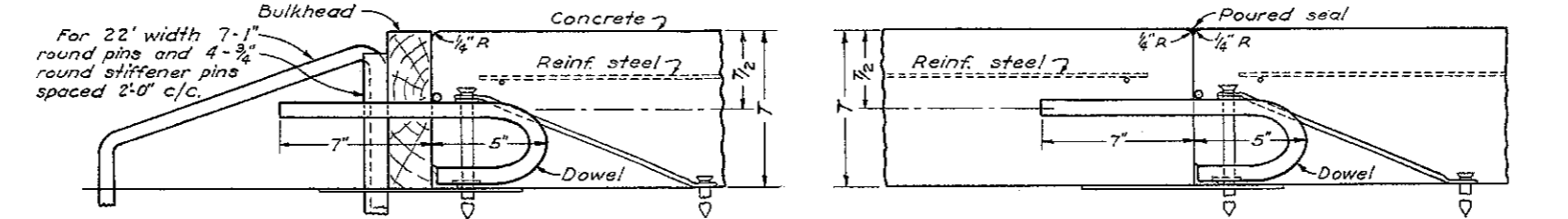
BITUMINOUS SEAL AND FILLER - Material for sealing expansion, contraction and construction joints and for filling impressed contraction joints shall meet the requirements of Section M-5.5 F-2. Immediately before placing liquid bituminous seal or filler an application of kerosene shall be applied to the area of the joint to be in contact with the seal or filler. Application of kerosene shall be by pressure spray, brush or swab.



END GUIDE DETAILS

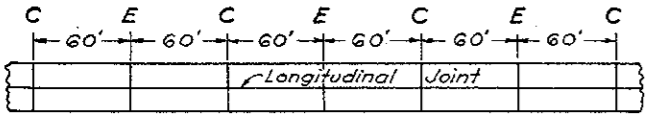


CONSTRUCTION JOINT



DETAIL OF BULKHEAD

DETAIL OF DOWEL JOINT



ARRANGEMENT OF TRANSVERSE JOINTS

C = Contraction Joint
E = Expansion Joint

DATE