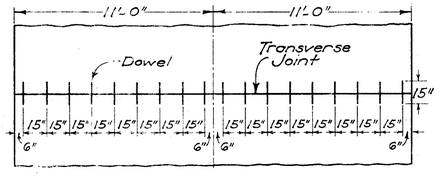
FED. RD. DIST. Nº	STATE	F.A.G.C. PROJECT	FISCAL YEAR
10	OHIO	F.A.G.M.70-A(6)	1941

3-B 50

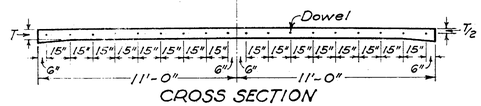
LAKE COUNTY
S.H.520 SEC. PAINESVILLE (PT.)
GRADE SEPARATION

TRANSVERSE JOINTS

DOWEL SPACING

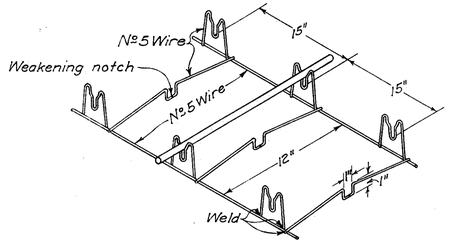


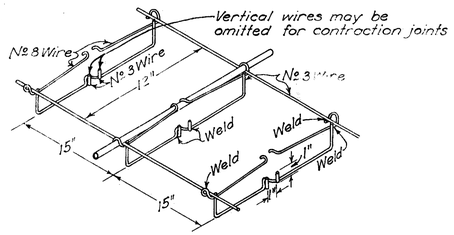
PLAN

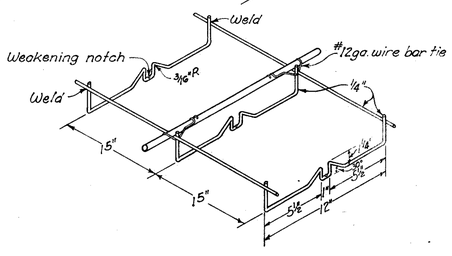


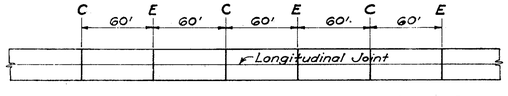
CROSS SECTION

DOWEL SUPPORT UNITS



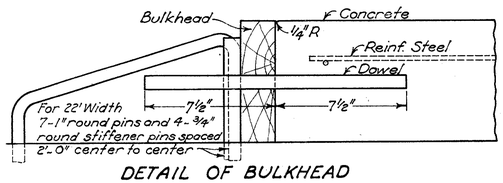




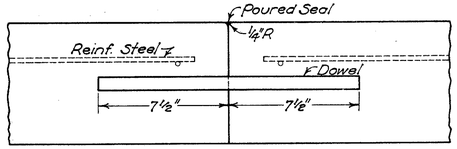


ARRANGEMENT OF TRANSVERSE JOINTS
C = Contraction Joint
E = Expansion Joint

CONSTRUCTION JOINT

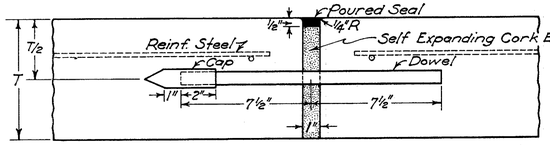


DETAIL OF BULKHEAD

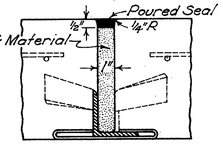


DETAIL OF DOWEL JOINT

SELF EXPANDING CORK EXPANSION JOINT

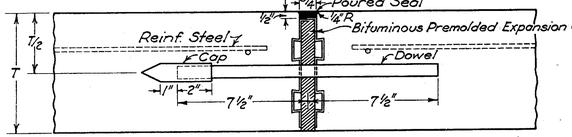


TRANSFER OF LOAD BY DOWEL

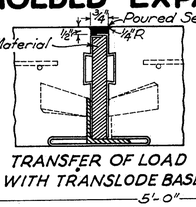


TRANSFER OF LOAD WITH TRANSLODE BASE

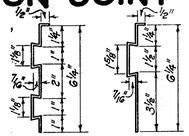
NON-EXTRUDING BITUMINOUS PREMOLDED EXPANSION JOINT



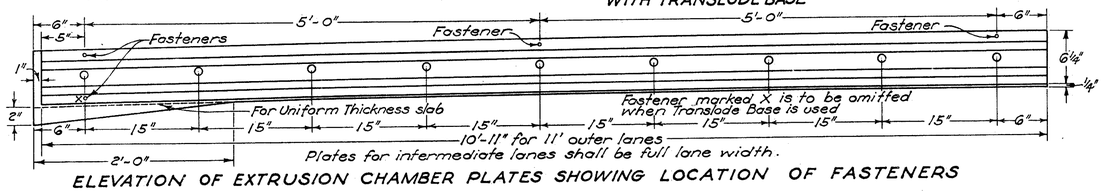
TRANSFER OF LOAD BY DOWEL



TRANSFER OF LOAD WITH TRANSLODE BASE

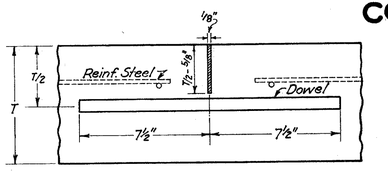


DETAILS OF SIDE PLATES

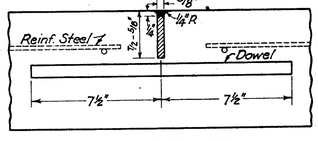


ELEVATION OF EXTRUSION CHAMBER PLATES SHOWING LOCATION OF FASTENERS

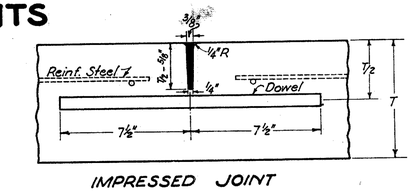
CONTRACTION JOINTS



PREMOLDED JOINT

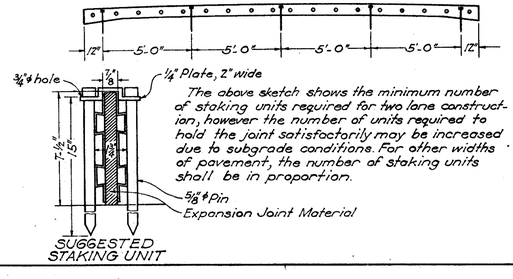


PREMOLDED JOINT



IMPRESSED JOINT

METHOD OF STAKING JOINTS



The above sketch shows the minimum number of staking units required for two lane construction, however the number of units required to hold the joint satisfactorily may be increased due to subgrade conditions. For other widths of pavement, the number of staking units shall be in proportion.

SUGGESTED STAKING UNIT

CONTRACTION JOINTS. Contraction joints shown are to be considered as alternates; the type to be used on any project shall be optional with the contractor; and shall be constructed as shown herewith. 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 as specifically shown on the plans.

PREMOLDED CONTRACTION JOINTS. The filler material shall meet the requirements of Sec. M-10.1 or Sec. M-10.13. The top edge of contraction joint material shall be shaped to fit the surface of the pavement.

IMPRESSED CONTRACTION JOINT. This joint shall 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 disfortion or injury to the concrete. The groove thus formed shall be of dimensions detailed. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed.

· NOTES ·

GENERAL. Expansion joints shown are to be considered as alternates; 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. All dowels shall be ¾" inch round, straight, smooth bars, free from burring and flattening at ends. The entire dowel shall be thoroughly coated before placing in the pavement using either Bit. Mat, Sec. M-511 SC-2 or heavier, or an oil such as 600 W or equal.

Prior to placing, all dowels shall be assembled in a unit which is to remain in place for construction, contraction or expansion joints. 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. Expansion joint material shall be forced over the lower cross wires so as to fit snugly on the subgrade. The design of the dowel support unit may be as shown herewith or may be an approved equal, and it shall be shop assembled. 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 10½", but not less than 3".

CONSTRUCTION JOINTS. A bulkhead shall be constructed to permit dowels to extend through the joint. Care shall be taken in removing bulkhead and placing adjacent concrete to see that dowels are embedded in the concrete without being bent.

EXPANSION JOINTS. Expansion joints shall be constructed as shown herewith. The spacing of the expansion joints shall not exceed 120 feet. The type and arrangement of expansion joints at intersections shall be as specifically shown on the plan.

Each dowel bar shall be equipped with a neat fitting metal cap on one end. The surface width of expansion joints shall not be greater than the width shown herewith. The bituminous material for the poured seal shall meet the requirements of Section M-5.4 F-1.

The top edge of the extrusion chamber plates, and also the edges of all expansion joint materials shall be shaped to fit the section of the pavement.

Joints in monolithic curbs shall be constructed with the same type of filler material as used in the expansion joints. When premolded material is used in curbs over 3 inches in height, sufficient holes shall be provided in the material to prevent extrusion.

SELF EXPANDING CORK JOINT. The filler material for this joint shall meet the requirements of Supplemental Specification Nº M-110.11, and shall be accurately held in place by means of approved steel bulkheads. Dowel holes shall be ⅝ inch in diameter.

NON-EXTRUDING BITUMINOUS PREMOLDED JOINT. The filler material shall meet the requirements of Sec. M-10.1. The extrusion chamber plates shall be constructed of 24 gauge metal rolled to true section. When assembled in the field, a template and protected bench shall be provided for the workmen to insure accuracy in assembling.

Dowel holes shall be punched in the filler material, and shall be 1 1/16 inch round holes to insure tight fitting dowels.

Dowel holes in the side plates shall be ⅞ inch in diameter. In no case shall dowels interfere with the extrusion chambers. At each edge of the pavement the extrusion chambers shall be bent down to seal the ends of the chambers. The joint shall at all times be protected from heat and other agencies which tend to cause distortion. The assembled joint shall be securely fastened together by ⅛ inch stove bolts or other approved fasteners. The holes for the fasteners may be made in the plates at the factory; when made in the field, they shall be drilled after the joint is assembled. The stove bolts shall be fastened with thin nuts, speed nuts, or rubber tubing screwed on. In order for this joint to function properly, the plates must be fitted snugly against the filler material and held in position while concrete is being deposited so that no mortar enters between the plate and filler, after which the fasteners must function in such a manner as will permit the plates to move with the concrete slab. The use of clinched nails or any such fasteners as would prevent the movement of the plates will not be permitted. The joint shall then be staked rigidly to the subgrade.

BITUMINOUS SEAL AND FILLER. Material for sealing expansion, contraction and contraction joints and for filling impressed contraction joints shall meet the requirements of Section M-5.4 F-1. 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.

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

TREATMENT OF EXPANSION JTS. AT LONGITUDINAL JTS. A positive method to maintain required alignment shall be used in connecting the expansion joints at longitudinal joints. The expansion material and metal plates shall meet in a vertical joint. Longitudinal keys and keyways, where used, shall be omitted for the thickness of the expansion joint.

DATE
3-1-39
3-28-39
5-4-39
7-20-39
9-18-39
8-1-40
10-22-40

TJ-6