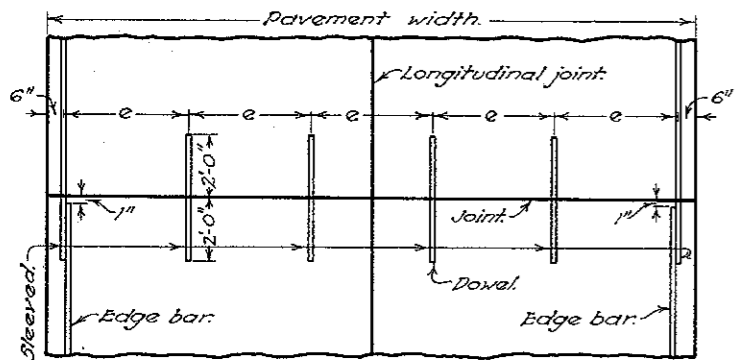
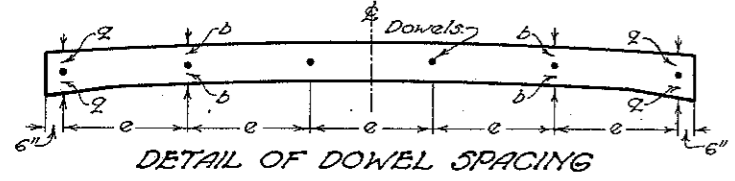


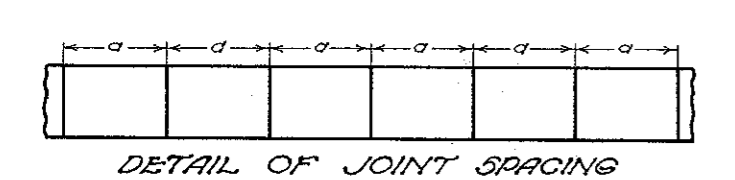
# TRANSVERSE JOINTS



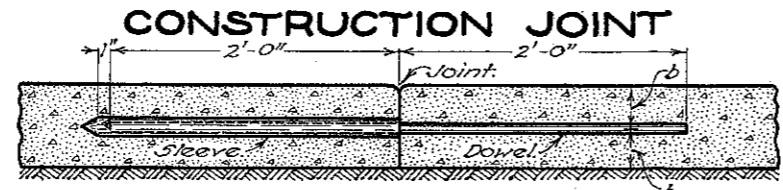
PLAN OF JOINT



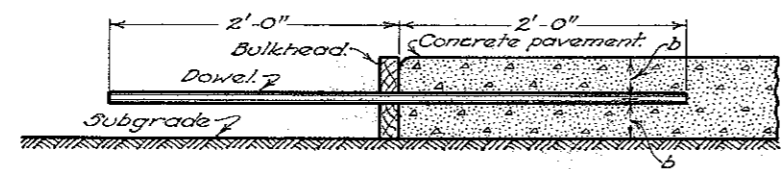
DETAIL OF DOWEL SPACING



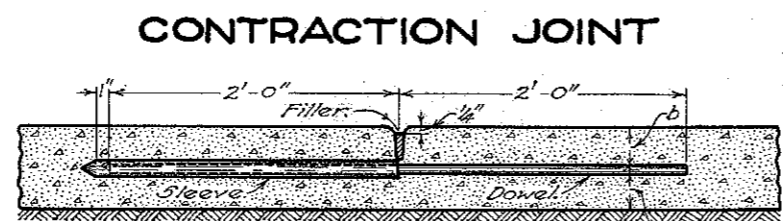
DETAIL OF JOINT SPACING



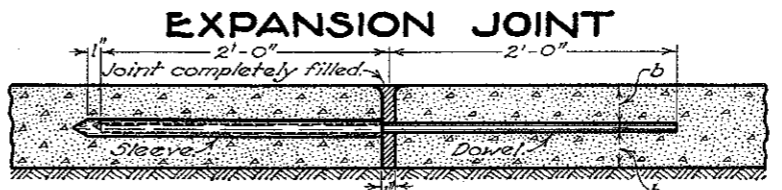
DETAIL OF DOWEL JOINT



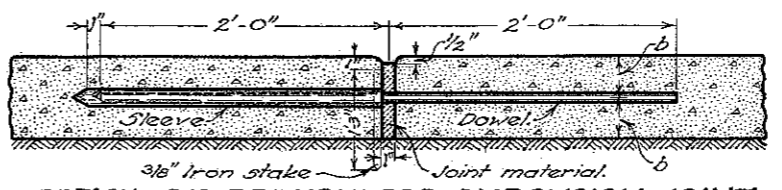
DETAIL OF BULKHEAD



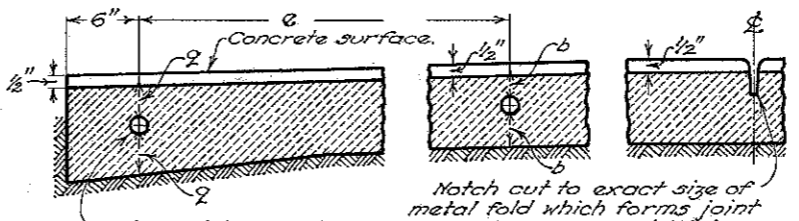
DETAIL OF IMPRESSED CONTRACTION JOINT  
(To conform to Impressed Longitudinal Joint.)



DETAIL OF POURED EXPANSION JOINT



DETAIL OF PREMOULDED EXPANSION JOINT



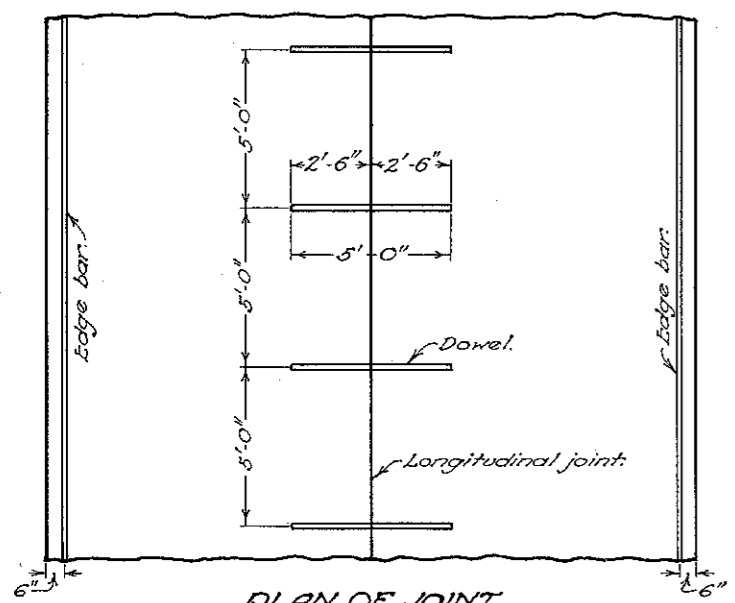
PLAN OF PREMOULDED EXPANSION JOINT MATERIAL

## TRANSVERSE JOINTS

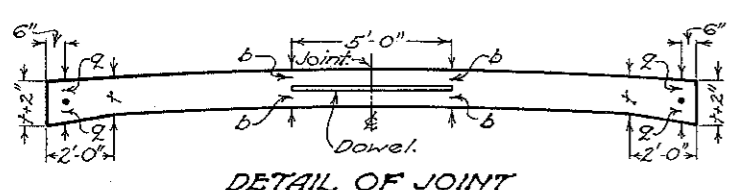
**GENERAL:**  
 All dowels and edge bars to be 3/4" round smooth bars with neat fitting, sliding sleeves on one end; sleeves shall be of metal.  
 All dowels and edge bars shall be supported by means of an approved device.  
 All joints to be edged with a beading tool of 1/4" radius.  
 If the width of the pavement exceeds 24', additional sleeved dowel bars shall be placed to preclude of dimension "e" exceeding 4.5 feet.  
 The spacing for joint "a" will be 30 feet for a gravel aggregate or resurfacing and 40 feet for a broken stone or slag aggregate. Whenever the contraction joint exceeds 40 feet the edge bar shall be painted as per specifications.  
**CONSTRUCTION JOINTS:**  
 All bulkheads to be constructed to permit edge bars to be continuous through joints.  
 Care shall be taken in removing bulkhead and placing adjacent concrete, to see that the dowel bars are embedded in the concrete without being bent.  
 Joints to be completely filled with Asphalt Filler F-1.

**CONTRACTION JOINTS:**  
 To be placed as per General Specifications unless otherwise specifically mentioned on the plans.  
 Care shall be taken to see that the ends of the sleeves on the dowels will come directly under the contraction joint.  
**EXPANSION JOINTS:**  
 To be placed as per General Specifications unless otherwise specifically mentioned on the plans.  
 If the pavement is constructed between the dates of September 15th and May 15th expansion joints shall be constructed at each third joint as per specifications. Between May 15th and September 15th, every fourth joint.  
 If the pre-moulded expansion joint material is not in a single piece, the adjoining portion of it shall be cut so that when laid all ends will be closely joined.

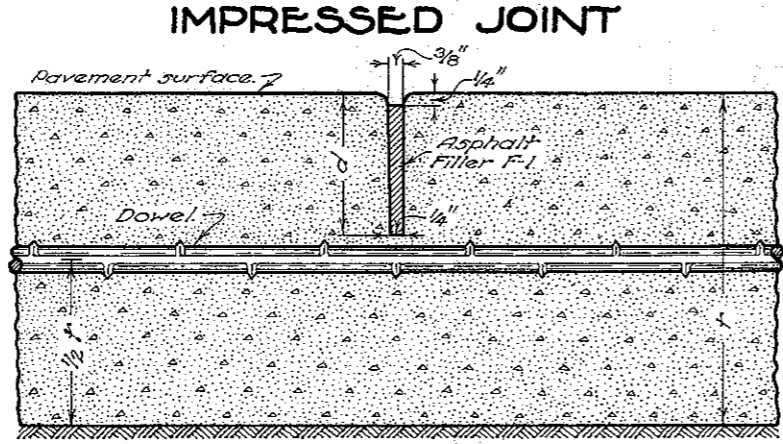
# LONGITUDINAL JOINTS



PLAN OF JOINT



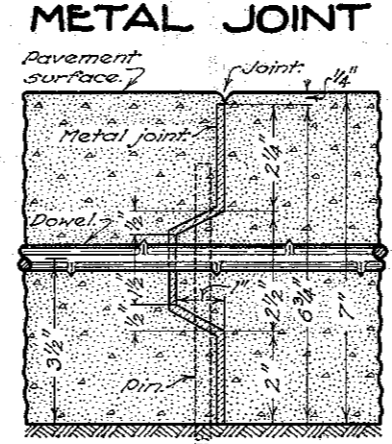
DETAIL OF JOINT



DETAIL OF JOINT

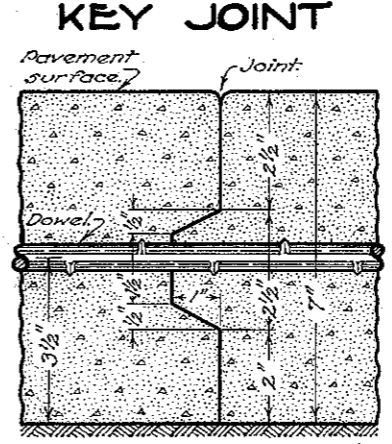
t	6"	7"	8"	9"	10"
d	2 1/2"	3"	3 1/2"	3 1/2"	3 1/2"

**Description:**— 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 distortion or injury to the concrete. The groove thus formed shall be on the center line of the pavement unless otherwise shown on the plans, and of the dimensions as detailed above. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed. The joint shall be filled to within 1/4 inch of the top with Asphalt Filler F-1. The asphalt filler shall be handled in such manner that it will be confined to the joint and in no wise mar the surface of the pavement.



DETAIL OF JOINT

**Note:**— This joint is designed for 7" pavement. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4 inch of the surface of the pavement. Other deformations may be used if approved by the engineer.



DETAIL OF JOINT

**Note:**— This joint is designed for 7" pavement. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

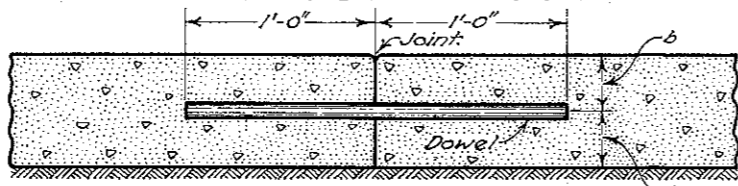
## LONGITUDINAL JOINTS

**GENERAL:**  
 Edge bars to be 3/4" round smooth bars when called for on the plans and when spliced they must be lapped 24". Edge bars to be painted before being placed, whenever the spacing of transverse joints exceed 40'.  
 Dowels to be 1/2" round, deformed bars placed 5 foot centers extending across joint.  
 A satisfactory chair will be used to hold both edge and dowel bars in proper position.  
 All joints to be edged with a beading tool of 1/4" radius.  
**METAL JOINTS:**  
 Metal joint to be used only when called for on the plans and shall be completely filled with Asphalt Filler F-1.  
**KEY JOINTS:**  
 Key joint to be used only when called for on the plans and shall be painted with two coats of Asphalt Filler F-1.  
 Joints shall be completely filled with Asphalt Filler F-1.

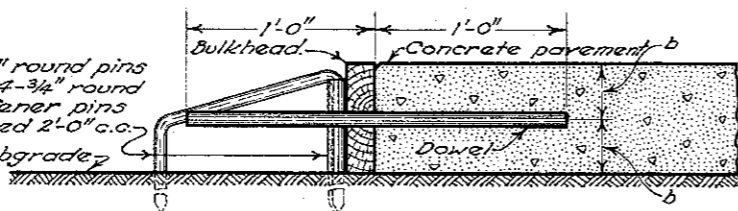
BUREAU OF CONSTRUCTION  
 OHIO  
 DEPARTMENT OF HIGHWAYS  
**JOINTS  
 CONCRETE  
 PAVEMENT**  
 STANDARD  
 CONSTRUCTION T-70 J.  
 DRAWING  
 APPROVED *[Signature]* CHIEF ENGR. CONST.

# TRANSVERSE JOINTS

## CONSTRUCTION JOINT

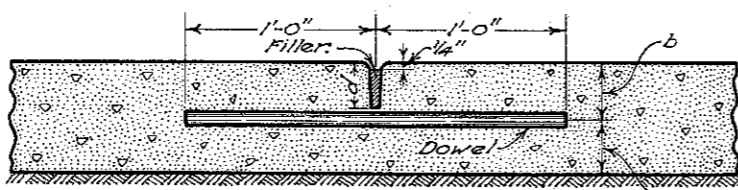


DETAIL OF DOWEL JOINT



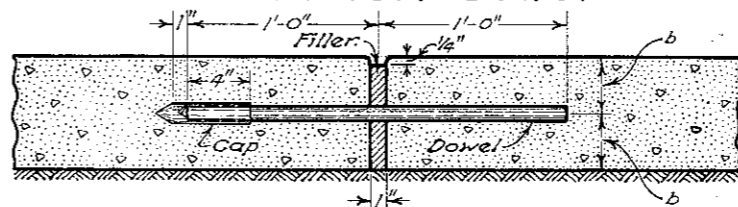
DETAIL OF BULKHEAD

## CONTRACTION JOINT

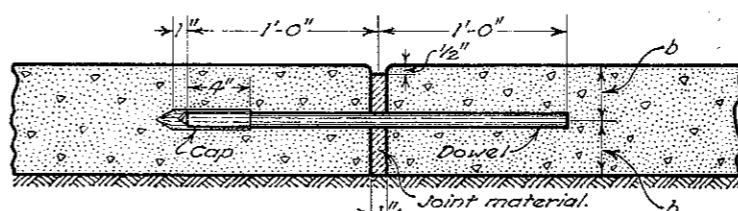


DETAIL OF IMPRESSED CONTRACTION JOINT  
(To conform to Impressed Longitudinal Joint.)

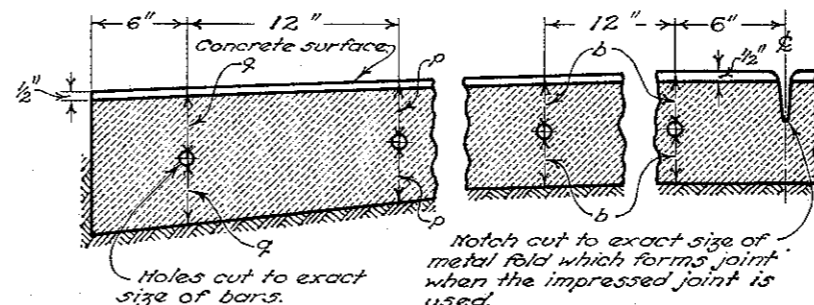
## EXPANSION JOINT



DETAIL OF POURED EXPANSION JOINT



DETAIL OF PREMOULDED EXPANSION JOINT



PLAN OF PREMOULDED EXPANSION JOINT MATERIAL

## TRANSVERSE JOINTS

**GENERAL:**  
All dowels and edge bars to be 3/4 inch round, smooth bars. The entire dowel and that part of the edge bar that extends beyond the joint shall be greased or otherwise treated to prevent bonding.

All edge bars shall be supported by means of approved devices spaced not more than 5 feet center to center to insure the same being installed accurately. Edge bars, when spliced, must be lapped 24 inches.

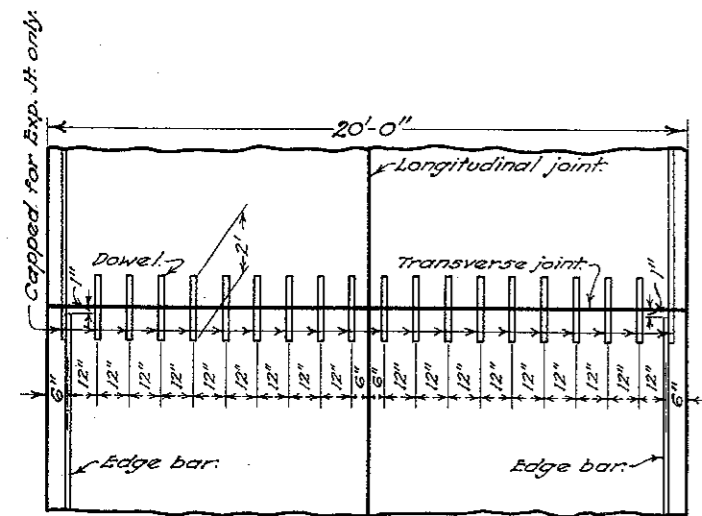
All dowels shall be assembled in a unit for either construction, contraction or expansion joints prior to placing and of a unit width not less than the distance between longitudinal joints. Sufficient support shall be provided to hold the dowels accurately perpendicular to the joint in no case less than five (5) supports to the unit on each side of the joint.

All joints to be edged with a beading tool of 1/4 inch radius. If the width of the pavement varies from the 20 foot width as shown herewith, the spacing of the dowels and edge bars will be as shown on the typical section.

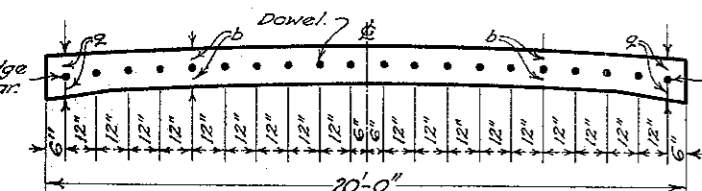
**CONSTRUCTION JOINTS:**  
All bulkheads to be constructed to permit edge bars and dowels to extend through joints. Care shall be taken in removing bulkhead and placing adjacent concrete to see that the edge bars and dowels are embedded in the concrete without being bent.

**CONTRACTION JOINTS:**  
To be placed as per standard construction drawing unless otherwise specifically shown on the typical section.

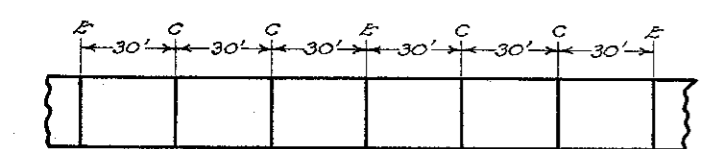
**EXPANSION JOINTS:**  
To be constructed as shown herewith of Asphalt Filler F-1 or bituminous pre-moulded expansion joint material, or as specifically shown on the typical section. If the pre-moulded expansion joint material is in two pieces, they shall be cut so that when placed in position their ends shall be closely joined. All dowels and edge bars shall be equipped with neat fitting metal caps on one end.



PLAN OF JOINT



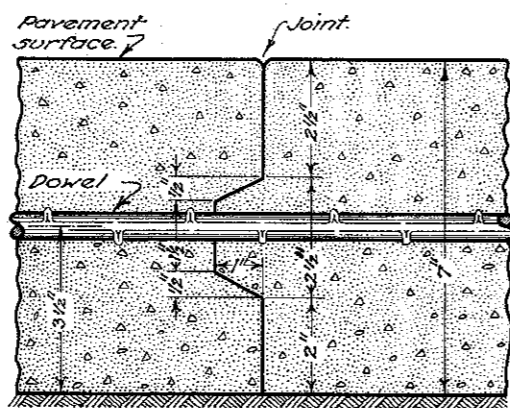
DETAIL OF DOWEL SPACING



DETAIL OF JOINT SPACING

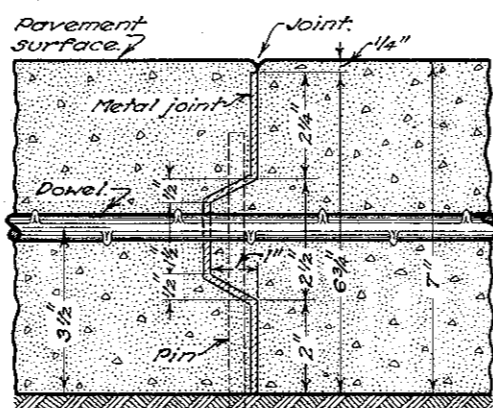
# LONGITUDINAL JOINTS

## KEY JOINT



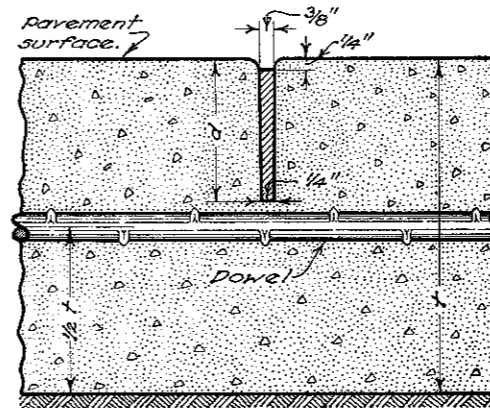
DETAIL OF JOINT

## METAL JOINT



DETAIL OF JOINT

## IMPRESSED JOINT



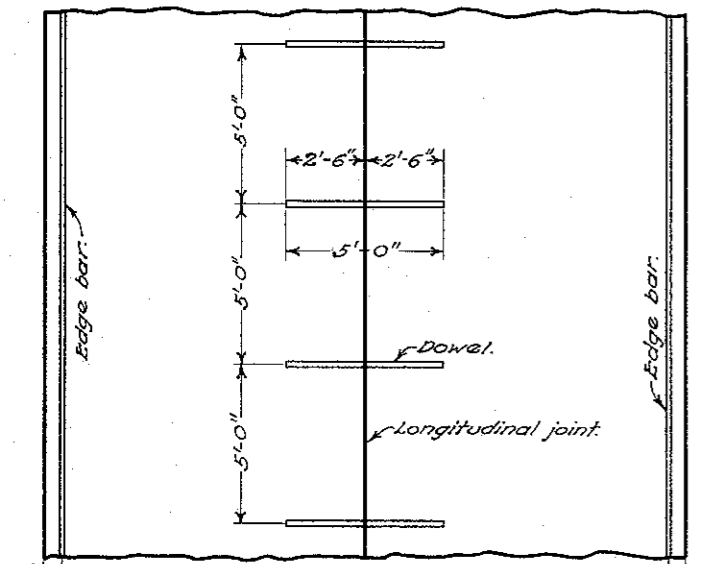
DETAIL OF JOINT

## LONGITUDINAL JOINTS

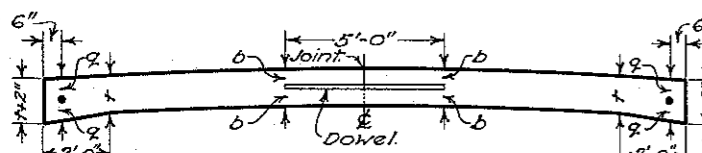
**GENERAL:**  
Dowels to be 1/2 inch round, deformed bars placed 5 foot centers extending across joint. Dowels shall be supported by means of a satisfactory device. All joints to be edged with a beading tool of 1/4 inch radius.

**METAL JOINTS:**  
Metal joints to be used only when called for on the plans.

**KEY JOINTS:**  
Key joints to be used only when called for on the plans. Key joints used in part width construction shall be painted with two coats of Asphalt Filler F-1 before the adjoining slabs are poured.



PLAN OF JOINT



DETAIL OF JOINT

**NOTE:** This joint is designed for 7" pavement. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

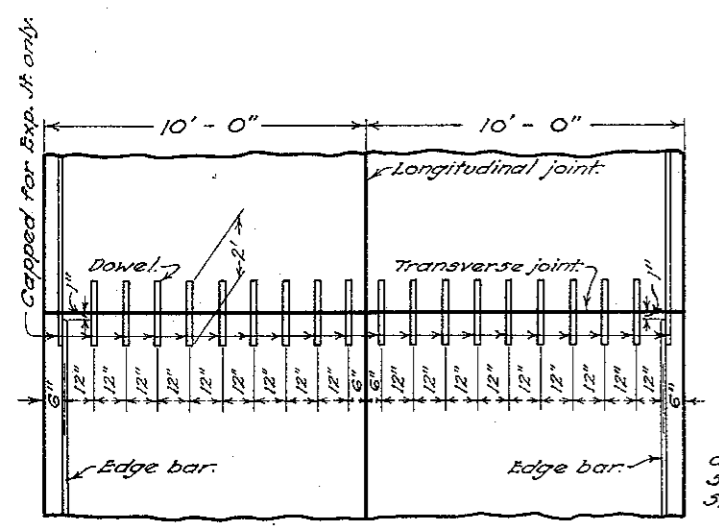
**NOTE:** This joint is designed for 7" pavement. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4 inch of the surface of the pavement. Other deformations may be used if approved by the engineer.

**DESCRIPTION:** 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 distortion or injury to the concrete. The groove thus formed shall be on the center line of the pavement unless otherwise shown on the plans, and of the dimensions as detailed above. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed. The joint shall be filled to within 1/4 inch of the top with Asphalt Filler F-1. The asphalt filler shall be handled in such manner that it will be confined to the joint and in no wise mar the surface of the pavement.

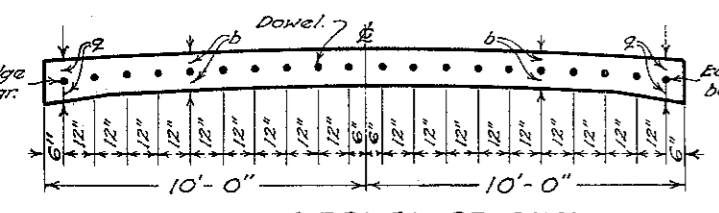
t	6"	7"	8"	9"	10"
d	2 1/2"	3"	3 1/2"	3 1/2"	3 1/2"

BUREAU OF LOCATION & DESIGN  
OHIO  
DEPARTMENT OF HIGHWAYS  
**JOINTS  
CONCRETE  
PAVEMENT**  
STANDARD  
CONSTRUCTION T-70 J.  
DRAWING  
APPROVED *N.L.R.* CHIEF ENGINEER

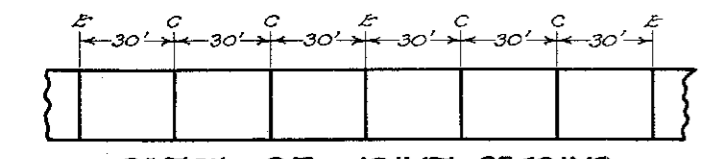
JULY-1934  
10-1-'34  
10-3-'34  
11-1-'35



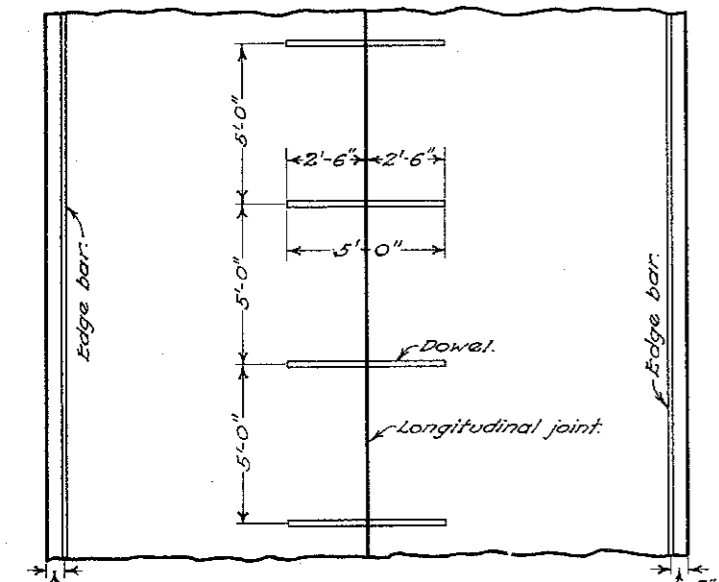
PLAN OF JOINT



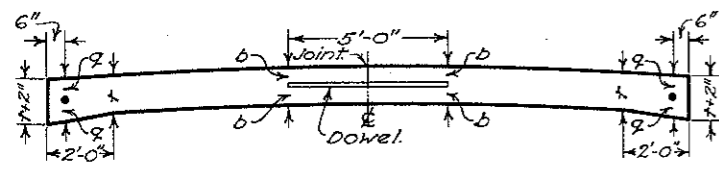
DETAIL OF DOWEL SPACING



DETAIL OF JOINT SPACING

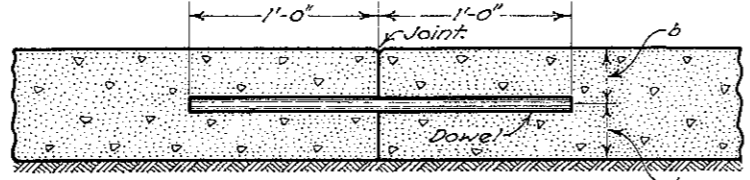


PLAN OF JOINT

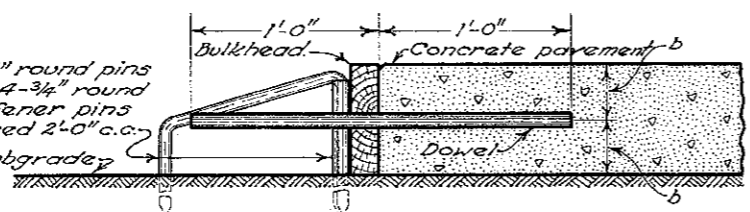


DETAIL OF JOINT

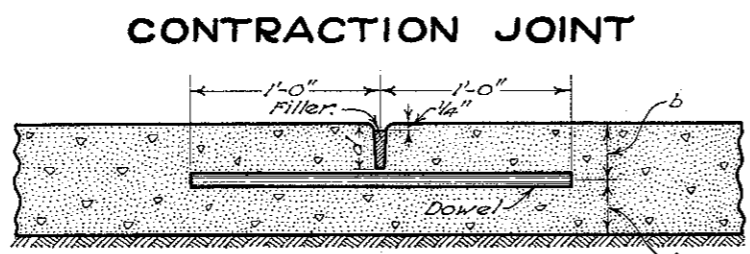
# TRANSVERSE JOINTS



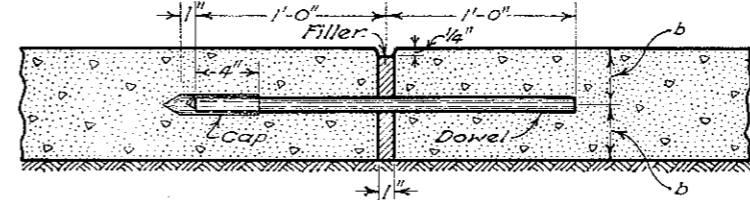
DETAIL OF DOWEL JOINT



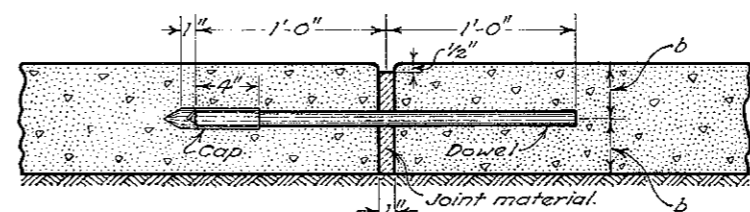
DETAIL OF BULKHEAD



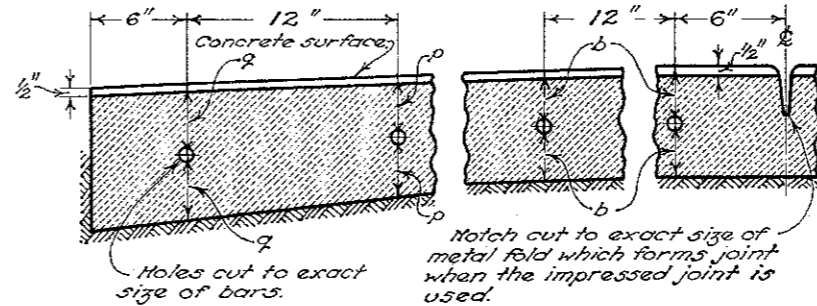
DETAIL OF IMPRESSED CONTRACTION JOINT  
(To conform to Impressed Longitudinal Joint.)



DETAIL OF POURED EXPANSION JOINT



DETAIL OF PREMOULDED EXPANSION JOINT



PLAN OF PREMOULDED EXPANSION JOINT MATERIAL

## TRANSVERSE JOINTS

**GENERAL:** All dowels and edge bars to be 3/4 inch round, smooth bars. The entire dowel and that part of the edge bar that extends beyond the joint shall be greased or otherwise treated to prevent bonding. All edge bars shall be supported by means of approved devices spaced not more than 5 feet center to center to insure the same being installed accurately. Edge bars when spliced, must be lapped 24 inches.

All dowels shall be assembled in a unit (unit to remain in place in pavement) for either construction, contraction or expansion joints, prior to placing and of a unit width not less than the distance between longitudinal joints. Sufficient support shall be provided to hold the dowels accurately perpendicular to the joint, in no case less than five (5) supports to the unit on each side of the joint.

All joints to be edged with a beading tool of 1/4 inch radius.

If the width between longitudinal joints of the pavement varies from the 10 feet as shown here-with, the spacing of the dowels will be as shown on the typical section.

**CONSTRUCTION JOINTS:** All bulkheads to be constructed to permit edge bars and dowels to extend through joints.

Care shall be taken in removing bulkhead and placing adjacent concrete to see that the edge bars and dowels are embedded in the concrete without being bent.

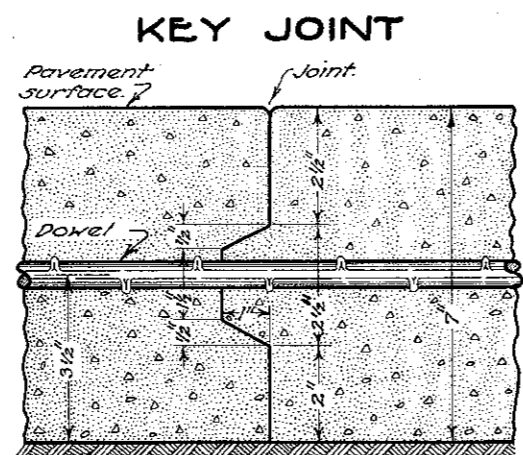
**CONTRACTION JOINTS:** To be placed as per standard construction drawing and in accordance with the specifications unless otherwise shown on the typical sections.

**EXPANSION JOINTS:** To be constructed as shown here-with of Asphalt Filler F-1 or bituminous pre-moulded expansion joint material, or as specifically shown on the typical section.

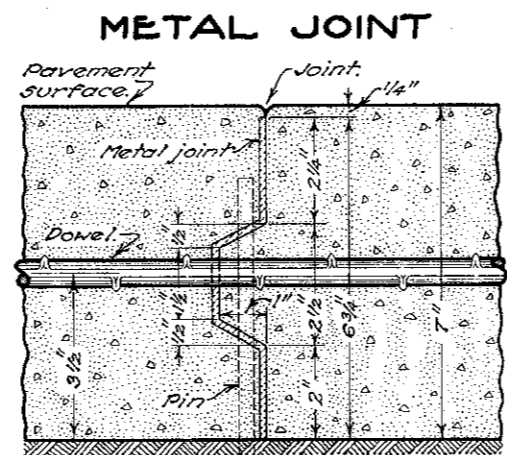
If the pre-moulded expansion joint material is in two pieces, they shall be cut so that when placed in position their ends shall be closely joined.

All dowel and edge bars shall be equipped with neat fitting metal caps on one end.

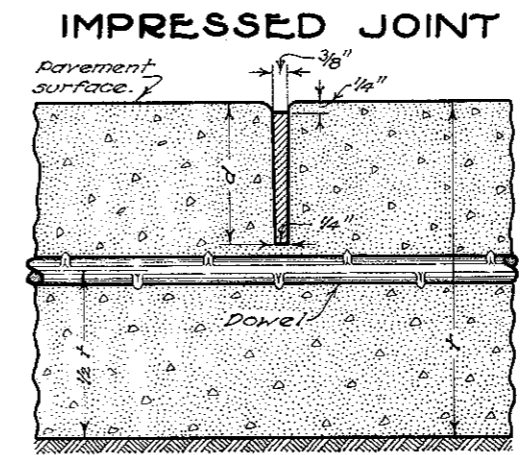
# LONGITUDINAL JOINTS



DETAIL OF JOINT



DETAIL OF JOINT



DETAIL OF JOINT

## LONGITUDINAL JOINTS

**GENERAL:** Dowels to be 1/2 inch round, deformed bars placed 5 foot centers extending across joint. Dowels shall be supported by means of a satisfactory device.

All joints to be edged with a beading tool of 1/4 inch radius.

**METAL JOINTS** to be used only when called for on the plans.

**KEY JOINTS** to be used only when called for on the plans.

Key joints used in part width construction shall be painted with two coats of Asphalt Filler F-1 before the adjoining slabs are poured.

**NOTE:** This joint is designed for 7" pavement. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

**NOTE:** This joint is designed for 7" pavement. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/8 inch of the surface of the pavement. Other deformations may be used if approved by the engineer.

**DESCRIPTION:** 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 distortion or injury to the concrete. The groove thus formed shall be on the center line of the pavement unless otherwise shown on the plans, and of the dimensions as detailed above. After the joint is formed it must be protected from dirt and foreign matter until the filler is placed. The joint shall be filled to within 1/8 inch of the top with Asphalt Filler F-1. The asphalt filler shall be handled in such manner that it will be confined to the joint and in no wise mar the surface of the pavement.

+	6"	7"	8"	9"	10"
d	2 1/2"	3"	3 1/2"	3 1/2"	3 1/2"

BUREAU OF LOCATION & DESIGN  
OHIO  
DEPARTMENT OF HIGHWAYS

**JOINTS  
CONCRETE  
PAVEMENT**

STANDARD  
CONSTRUCTION T-70 J.  
DRAWING

APPROVED *K.L.P.* CHIEF ENGINEER

JULY-1934  
10-1-34  
10-3-34  
11-1-35  
4-15-36