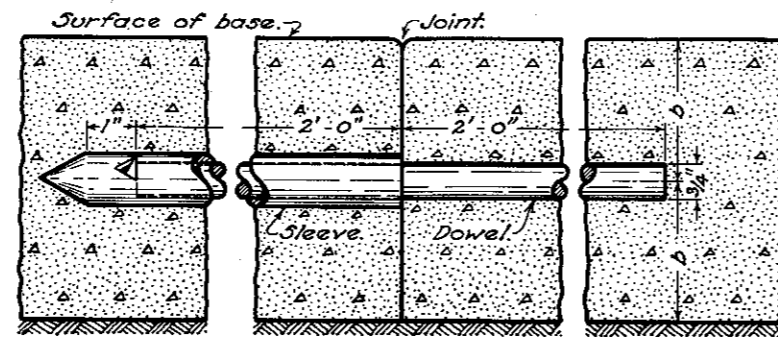


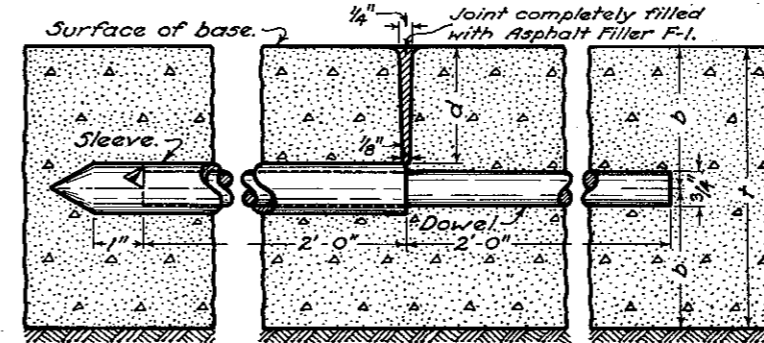
TRANSVERSE JOINTS

CONSTRUCTION JOINT



DETAIL OF DOWEL JOINT

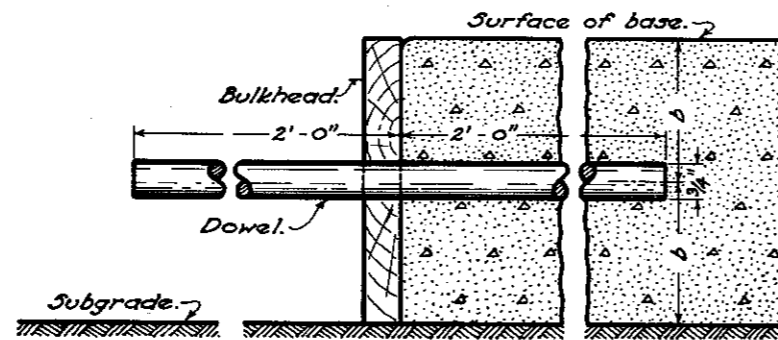
CONTRACTION JOINT



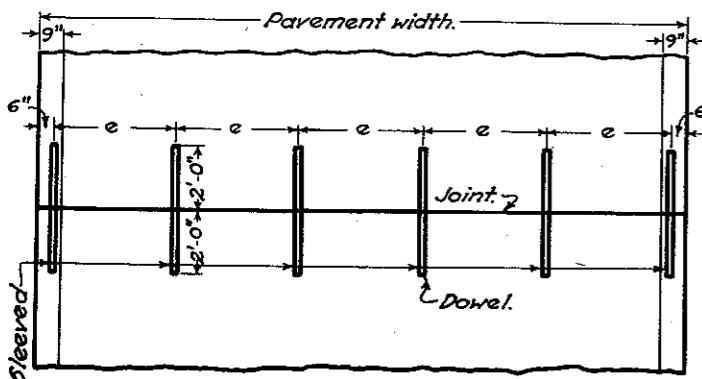
DETAIL OF JOINT

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

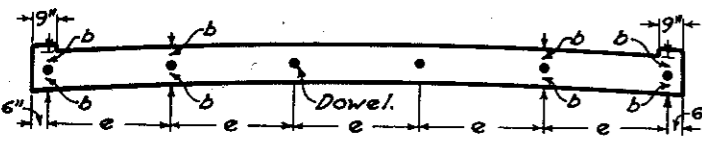
DESCRIPTION:— This joint shall be formed by impressing a device or bar into the newly deposited concrete before initial setting. The device or bar shall be removed as soon as the concrete is in such condition as to preclude of distortion or injury to the concrete. The groove thus formed shall be of the dimensions shown on the plan. 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 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 base.



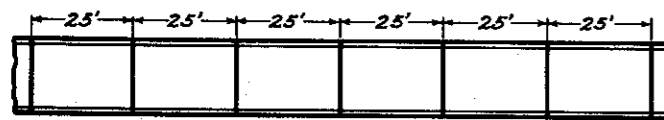
DETAIL OF BULKHEAD



PLAN OF JOINTS



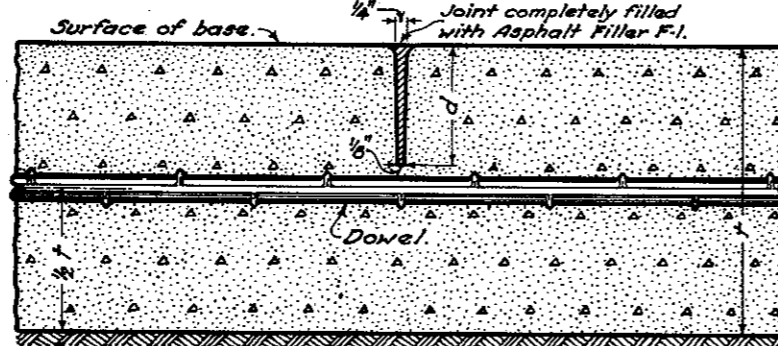
DETAIL OF DOWEL SPACING



DETAIL OF JOINT SPACING

LONGITUDINAL JOINTS

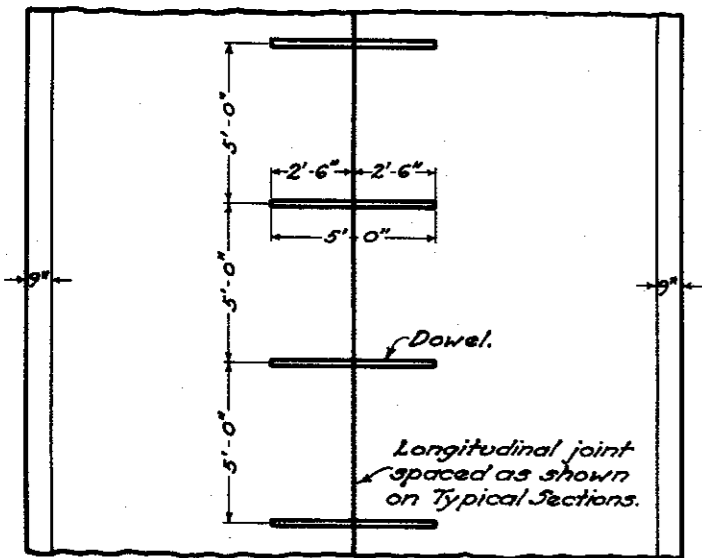
IMPRESSED JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 of the dimensions shown on the plan. 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 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 base.



PLAN OF JOINT



DETAIL OF JOINT

TRANSVERSE JOINTS

GENERAL:

All dowels to be 3/4" round, smooth bars with neat fitting, sliding sleeves on one end; sleeves shall be of metal.

All dowels 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'.

CONSTRUCTION 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.

Spacing shall (except in cases of emergency) be 25' from nearest contraction joint.

CONTRACTION JOINTS:

The spacing for joints shall be 25 feet. Care shall be taken to see that the ends of the sleeves on the dowels will come directly under the contraction joint.

LONGITUDINAL JOINTS

GENERAL:

Longitudinal joints shall be used only when pavement width exceeds 24' and shall be spaced as shown on the plans.

Dowels to be 1/2" round, deformed bars placed 5 foot centers extending across joint.

A satisfactory chair will be used to hold dowel bars in proper position.

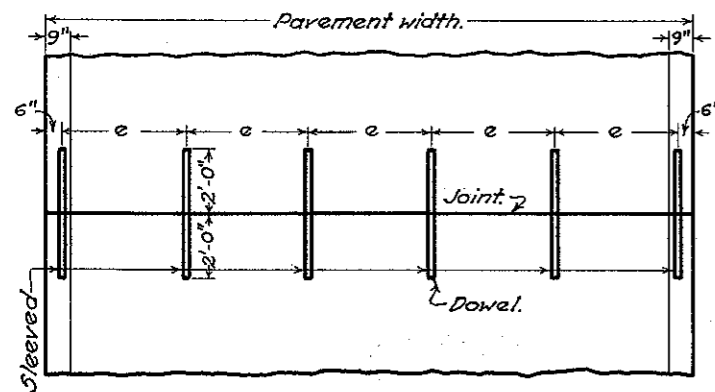
BUREAU OF CONSTRUCTION
OHIO
DEPARTMENT OF HIGHWAYS

JOINTS
CONCRETE
BASE

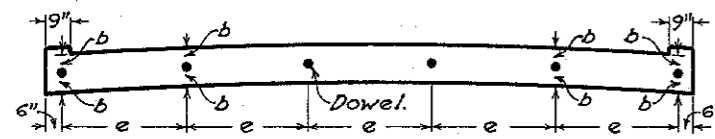
STANDARD
CONSTRUCTION DRAWING B-70J
JUNE 1933

APPROVED: G. H. CHIEF ENGR. CONST.

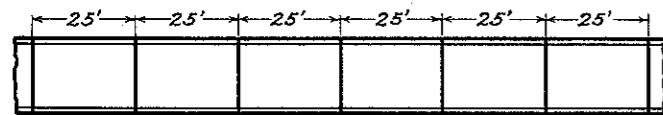
TRANSVERSE JOINTS



PLAN OF JOINTS

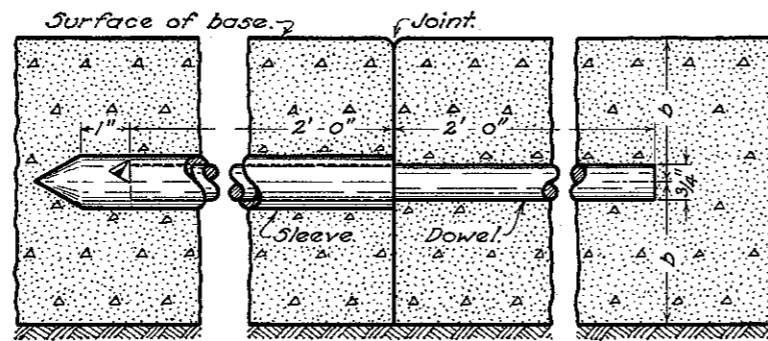


DETAIL OF DOWEL SPACING



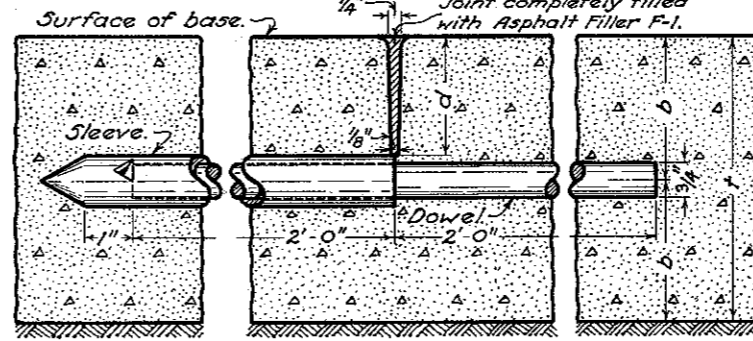
DETAIL OF JOINT SPACING

CONSTRUCTION JOINT



DETAIL OF DOWEL JOINT

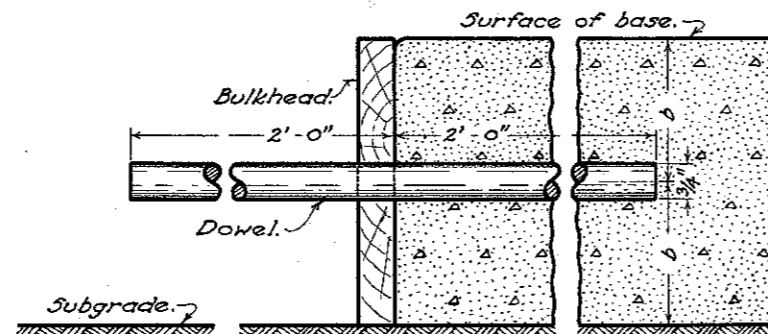
CONTRACTION JOINT



DETAIL OF JOINT

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

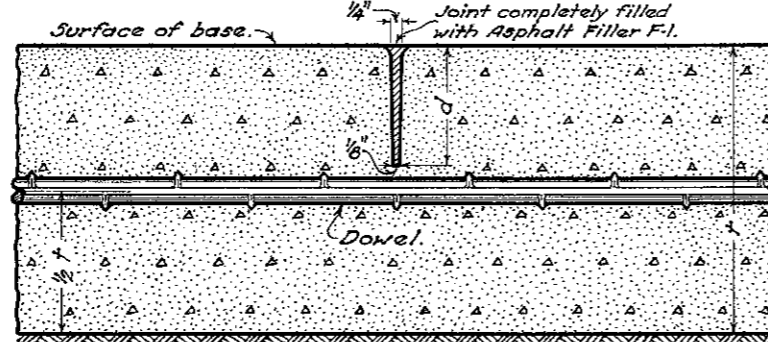
DESCRIPTION: This joint shall be formed by impressing a device or bar into the newly deposited concrete before initial setting. The device or bar shall be removed as soon as the concrete is in such condition as to preclude of distortion or injury to the concrete. The groove thus formed shall be of the dimensions shown on the plan. 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 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 base.



DETAIL OF BULKHEAD

LONGITUDINAL JOINTS

IMPRESSED JOINT

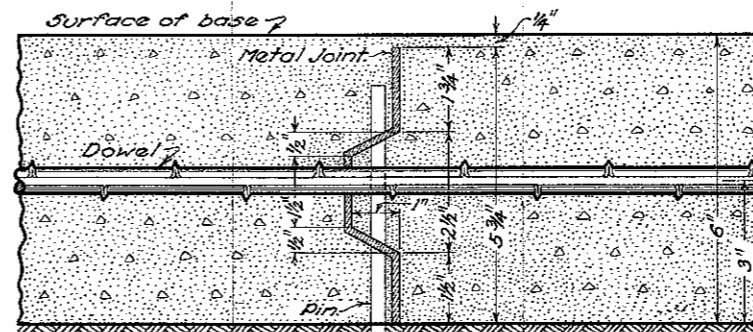


DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 of the dimensions shown on the plan. 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 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 base.

METAL CENTER JOINT



DETAIL OF JOINT

NOTE: This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4" of the surface of the base. Other deformations may be used if approved by the engineer. Upon the option of the contractor the metal plate or form may be removed after the joint is formed.

TRANSVERSE JOINTS

GENERAL:
All dowels to be 3/4" round, smooth bars with neat fitting, sliding sleeves on one end; sleeves shall be of metal.

All dowels 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'.

CONSTRUCTION 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.

Spacing shall (except in cases of emergency) be 25' from nearest contraction joint.

CONTRACTION JOINTS:

The spacing for joints shall be 25 feet.

Care shall be taken to see that the ends of the sleeves on the dowels will come directly under the contraction joint.

LONGITUDINAL JOINTS

GENERAL:

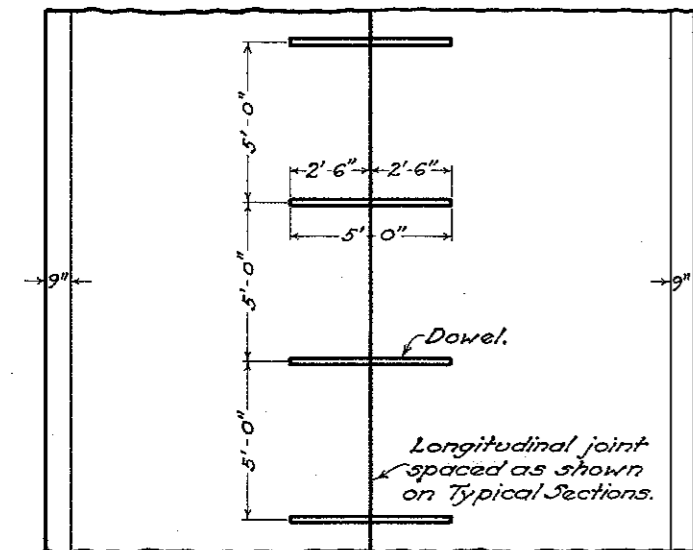
Longitudinal joints shall be used only when pavement width exceeds 24' and shall be spaced as shown on the plans.

Dowels to be 1/2" round, deformed bars placed 5 foot centers extending across joint.

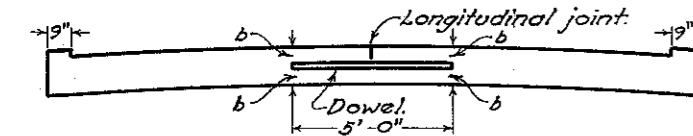
A satisfactory chair will be used to hold dowel bars in proper position.

METAL CENTER JOINT:

Metal center joint to be used only when called for on the plans.



PLAN OF JOINT



DETAIL OF JOINT

BUREAU OF CONSTRUCTION
OHIO
DEPARTMENT OF HIGHWAYS

**JOINTS
CONCRETE
BASE**

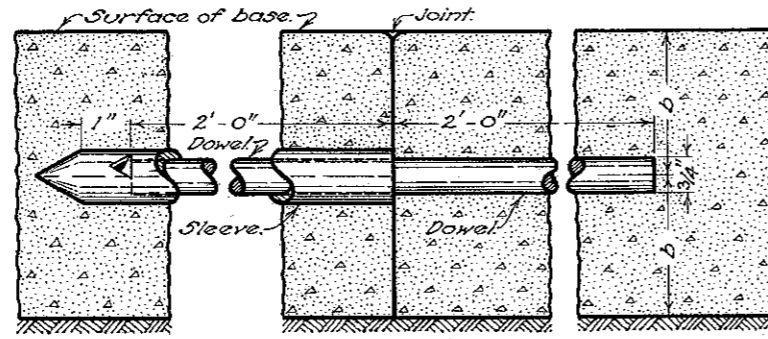
STANDARD
CONSTRUCTION DRAWING B-70J
JUNE 1933

APPROVED *[Signature]* CHIEF ENGR. CONST.

REVISED
SEP. 1933

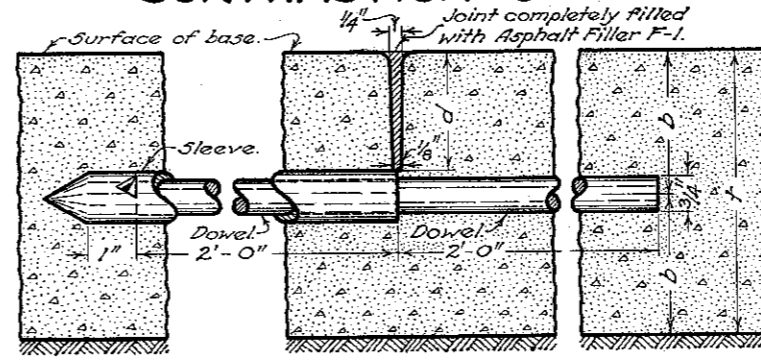
TRANSVERSE JOINTS

CONSTRUCTION JOINT



DETAIL OF DOWEL JOINT

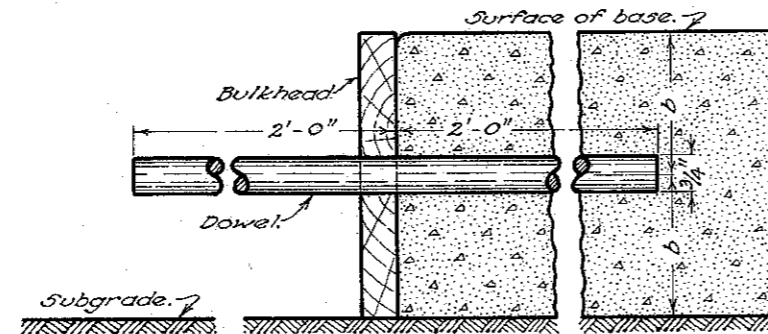
CONTRACTION JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 of the dimensions shown on the plan. 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 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 base.



DETAIL OF BULKHEAD

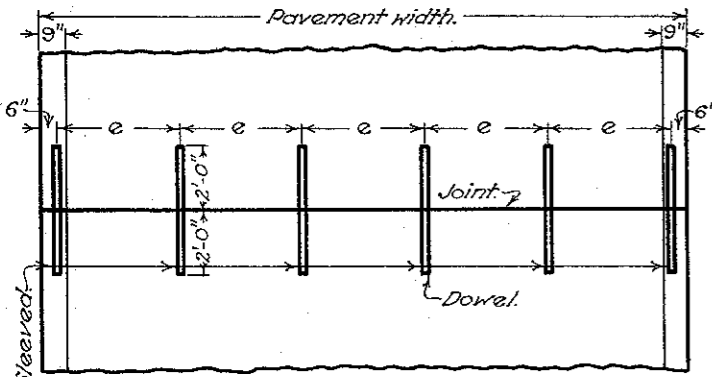
TRANSVERSE JOINTS

GENERAL:
 All dowels to be 3/4" round, smooth bars with neat fitting, sliding sleeves on one end; sleeves shall be of metal.
 All dowels shall be supported by means of an approved device.
 All joints to be edged with a beading tool of 1/4" radius and shall be completely filled with Asphalt Filler F-1.
 If the width of the pavement exceeds 24 feet, additional sleeved dowel bars shall be placed to preclude of dimension "e" exceeding 4.5 feet.

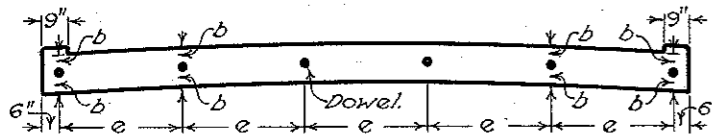
CONSTRUCTION JOINTS:
 Care shall be taken in removing bulkhead and placing adjacent concrete to see that the dowel bars are embedded in the concrete without being bent.

Spacing shall (except in cases of emergency) be 25 feet from nearest contraction joint.

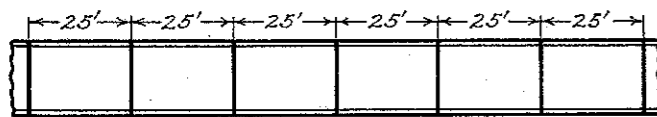
CONTRACTION JOINTS:
 The spacing for joints shall be 25 feet.
 Care shall be taken to see that the ends of the sleeves on the dowels will come directly under the contraction joint.



PLAN OF JOINT



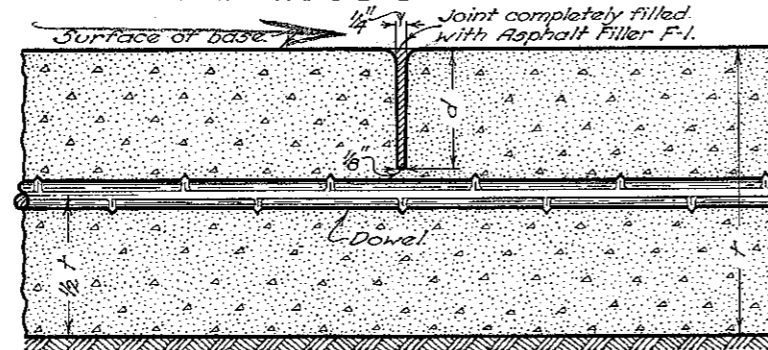
DETAIL OF DOWEL SPACING



DETAIL OF JOINT SPACING

LONGITUDINAL JOINTS

IMPRESSED JOINT

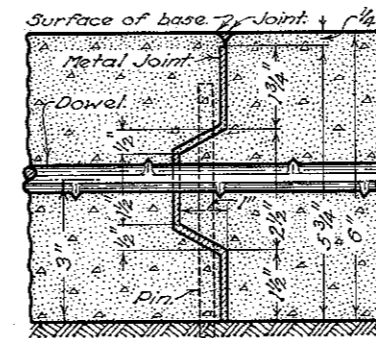


DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 of the dimensions shown on the plan. 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 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 base.

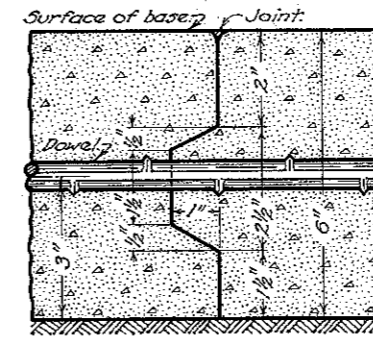
METAL JOINT



DETAIL OF JOINT

NOTE: This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4" of the surface of the base. Other deformations may be used if approved by the engineer.

KEY JOINT



DETAIL OF JOINT

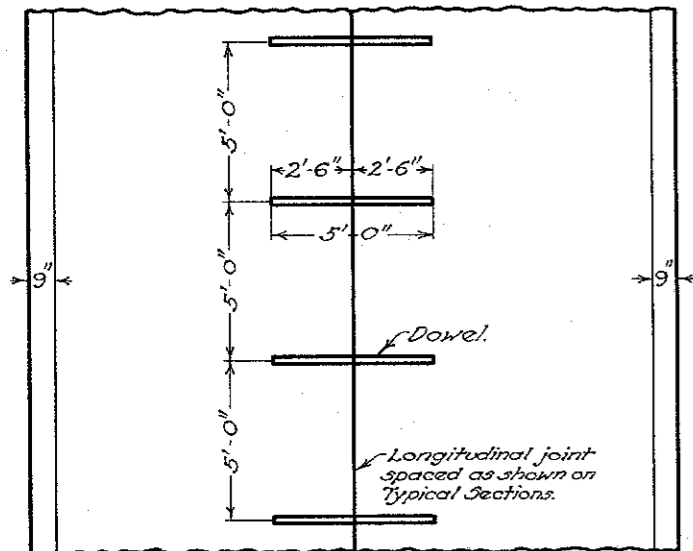
NOTE: This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

LONGITUDINAL JOINTS

GENERAL:
 Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on the standard construction drawing.
 All joints to be edged with a beading tool of 1/4" radius and shall be completely filled with Asphalt Filler F-1.
 Dowels to be 1/2" round, deformed bars placed 5 foot centers extending across joint.
 A satisfactory chair will be used to hold dowel bars in proper position.

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 and shall be painted with two coats of Asphalt Filler F-1.



PLAN OF JOINT

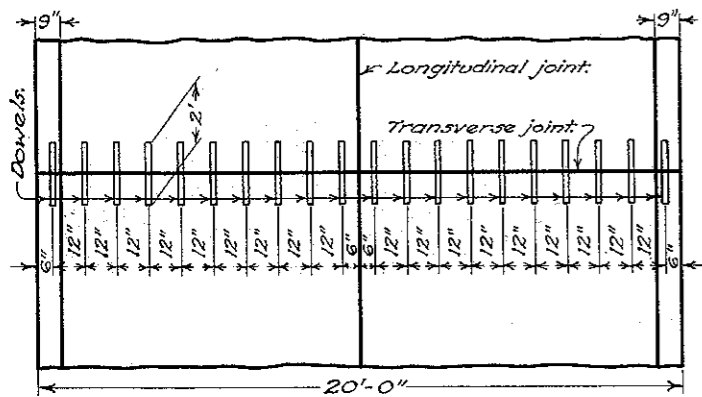


DETAIL OF JOINT

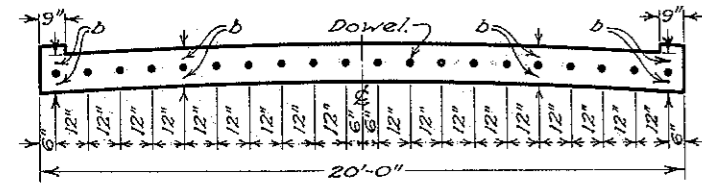
BUREAU OF CONSTRUCTION
 OHIO
 DEPARTMENT OF HIGHWAYS
**JOINTS
 CONCRETE
 BASE**
 STANDARD
 CONSTRUCTION B-70 J.
 DRAWING
 APPROVED *E. H.* CHIEF ENGR. CONST.

MAY 1934

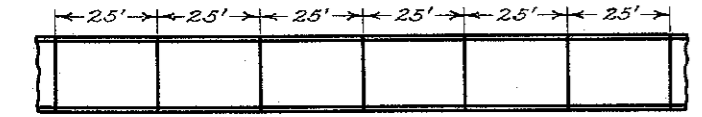
TRANSVERSE JOINTS



PLAN OF JOINT

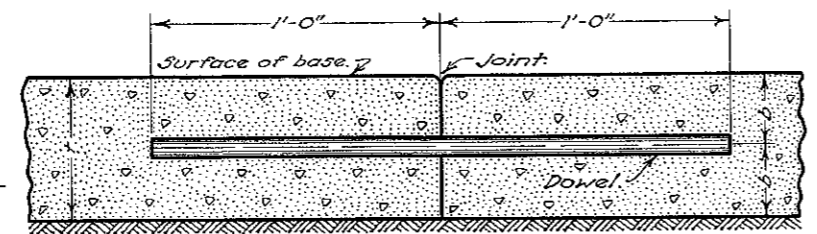


DETAIL OF DOWEL SPACING

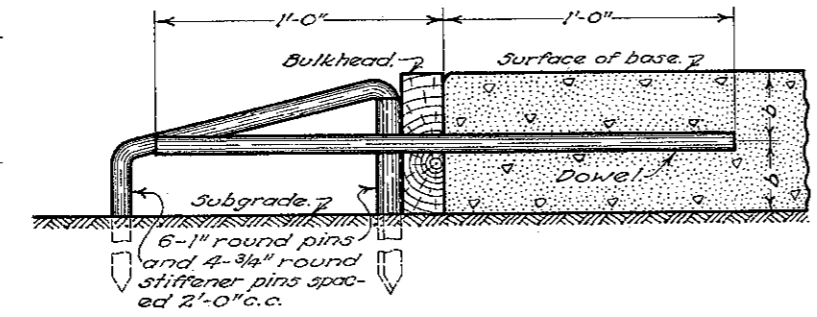


DETAIL OF JOINT SPACING

CONSTRUCTION JOINT

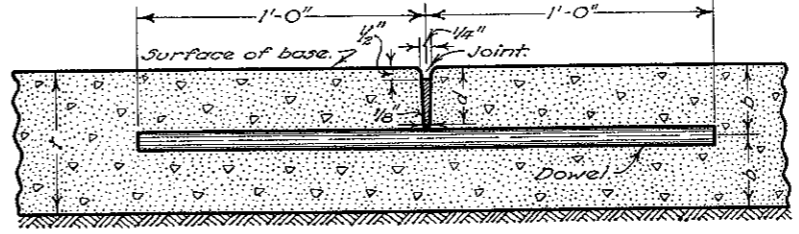


DETAIL OF DOWEL JOINT



DETAIL OF BULKHEAD

CONTRACTION JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 of the dimensions shown on the plan. 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 1/2 inch of the top with Asphalt Filler F-1 except where surface course consists of Items T-50, T-60 or T-61 the Asphalt Filler F-1 shall be omitted. 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 base.

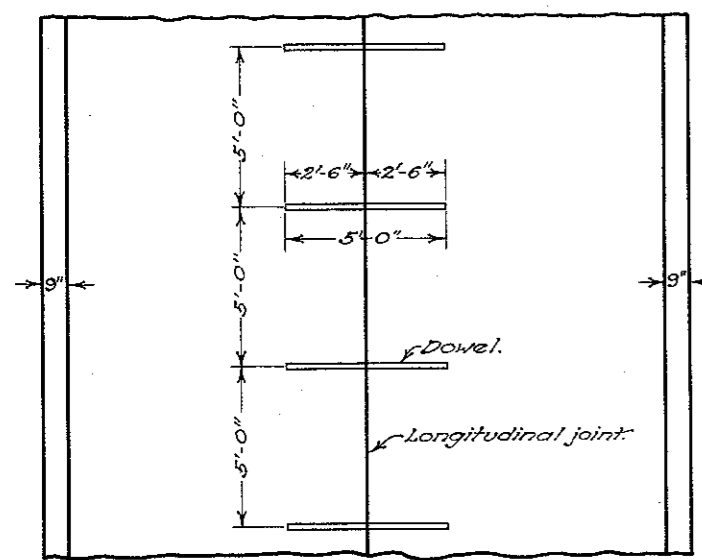
TRANSVERSE JOINTS

GENERAL:—
 All dowels to be 3/4 inch round, smooth bars greased or otherwise treated to prevent bonding.
 All dowels shall be supported by means of an approved device to insure the same being installed accurately, perpendicular to the joint.
 If the width of the base varies from the 20 foot width as shown herewith, the spacing of the dowels will be as shown on the typical section.
 All joints to be edged with a beading tool of 1/4 inch radius.

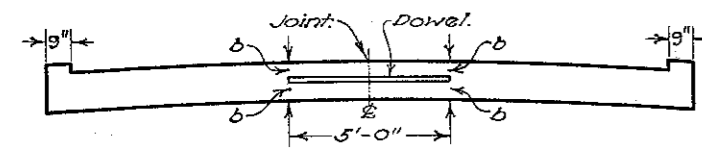
CONSTRUCTION JOINTS:—
 Care shall be taken in removing bulkhead and placing adjacent concrete to see that the dowel bars are embedded in the concrete without being bent.
 Spacing shall (except in cases of emergency) be 25 feet from nearest contraction joint.

CONTRACTION JOINTS:—
 Spacing for joints shall be 25 feet.

LONGITUDINAL JOINTS

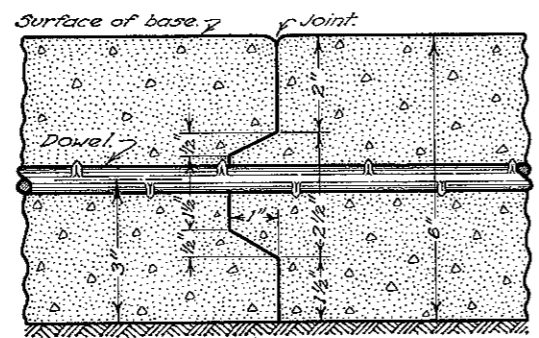


PLAN OF JOINT



DETAIL OF JOINT

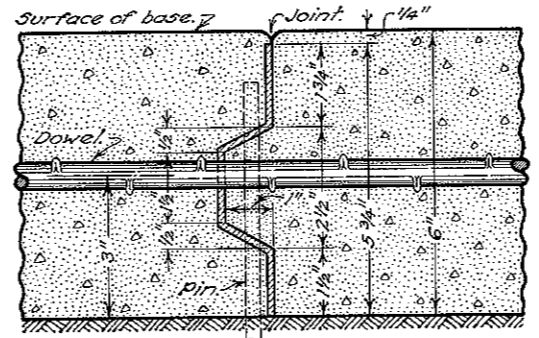
KEY JOINT



DETAIL OF JOINT

Note:— This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

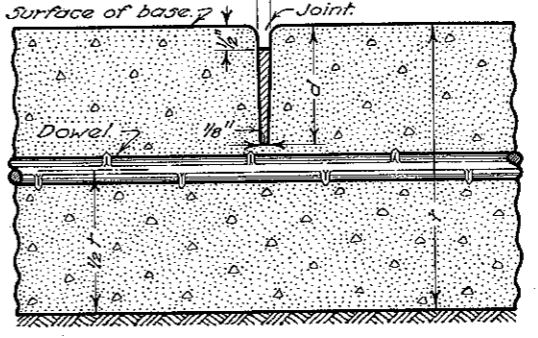
METAL JOINT



DETAIL OF JOINT

Note:— This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4" of the surface of the base. Other deformations may be used if approved by the engineer.

IMPRESSED JOINT



DETAIL OF JOINT

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 base 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 1/2 inch of the top with Asphalt Filler F-1 except where surface course consists of Items T-50, T-60 or T-61 the Asphalt Filler F-1 shall be omitted. 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 base.

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

LONGITUDINAL JOINTS

GENERAL:—
 Longitudinal joints shall be used when called for on the typical section and shall be constructed as shown on the standard construction drawing. All joints to be edged with a beading tool of 1/4 inch radius.
 Dowels to be 1/2 inch round, deformed bars placed 5 foot centers extending across joint.
 A satisfactory device shall be used to hold the dowels in proper position.

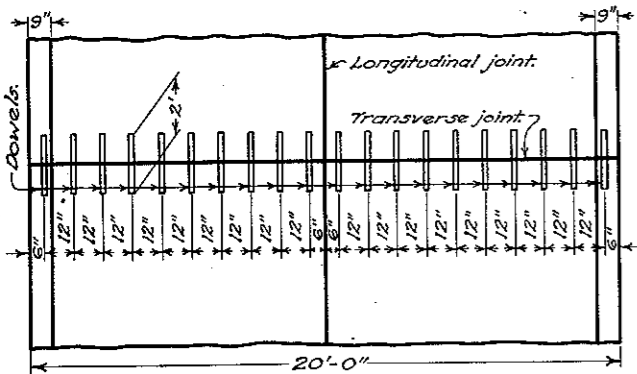
METAL JOINTS:—
 Metal joints to be used only when called for on the plans.

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.

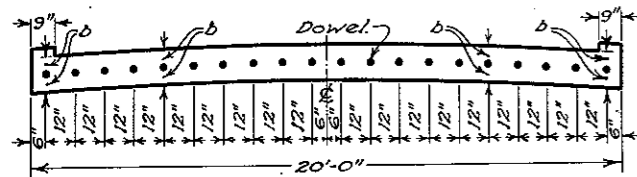
BUREAU OF LOCATION & DESIGN
 OHIO
 DEPARTMENT OF HIGHWAYS
**JOINTS
 CONCRETE
 BASE**
 STANDARD
 CONSTRUCTION B-70 J.
 DRAWING
 APPROVED _____ CHIEF ENGINEER.

JULY-1934
 10-1-34

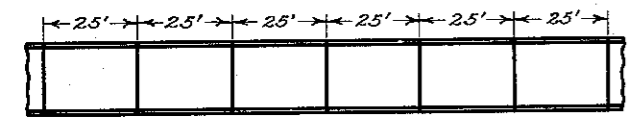
TRANSVERSE JOINTS



PLAN OF JOINT

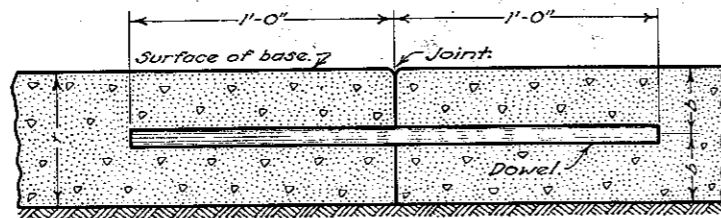


DETAIL OF DOWEL SPACING

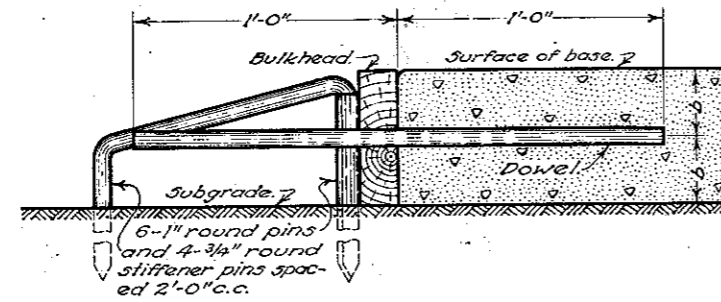


DETAIL OF JOINT SPACING

CONSTRUCTION JOINT

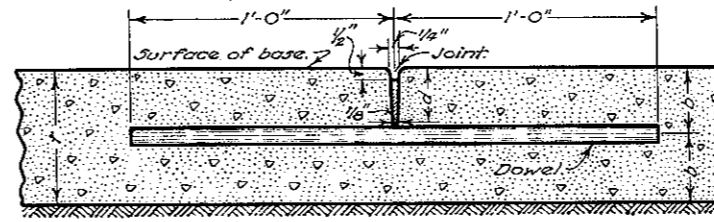


DETAIL OF DOWEL JOINT



DETAIL OF BULKHEAD

CONTRACTION JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 of the dimensions shown on the plan. 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 1/2 inch of the top with Asphalt Filler F-1 except where surface course consists of Items T-50, T-60 or T-61 the Asphalt Filler F-1 shall be omitted. 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 base.

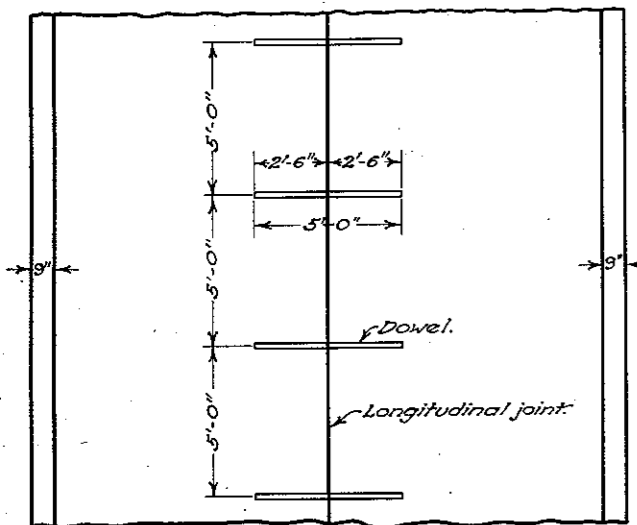
TRANSVERSE JOINTS

GENERAL:
 All dowels to be 3/4 inch round, smooth bars greased or otherwise treated to prevent bonding.
 All dowels shall be assembled in a unit, for either construction or contraction 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.
 If the width of the base varies from the 20 foot width as shown herewith, the spacing of the dowels will be as shown on the typical section.
 All joints to be edged with a beading tool of 1/4 inch radius.

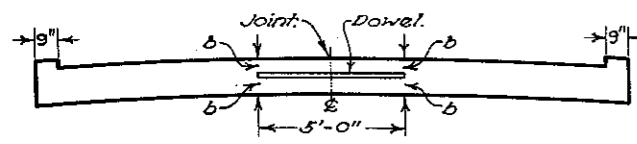
CONSTRUCTION JOINTS:
 Care shall be taken in removing bulkhead and placing adjacent concrete to see that the dowel bars are embedded in the concrete without being bent. Spacing shall (except in cases of emergency) be 25 feet from nearest contraction joint.

CONTRACTION JOINTS:
 Spacing for joints shall be 25 feet.

LONGITUDINAL JOINTS

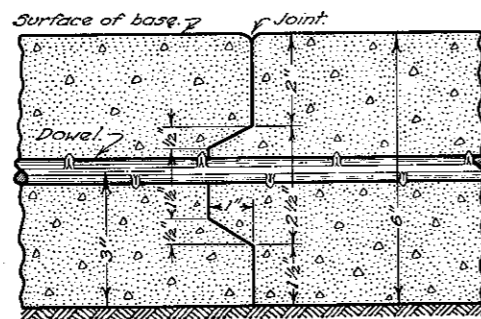


PLAN OF JOINT



DETAIL OF JOINT

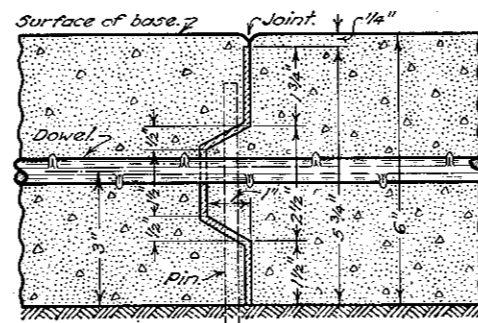
KEY JOINT



DETAIL OF JOINT

Note: This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

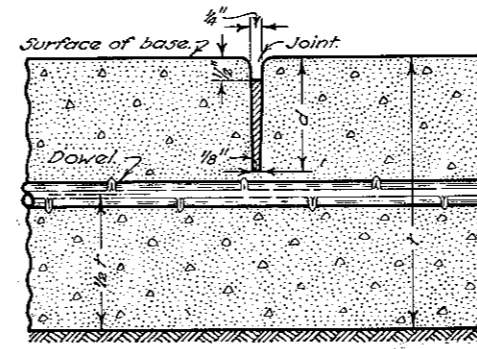
METAL JOINT



DETAIL OF JOINT

Note: This joint is designed for 6" base. When a greater or less thickness is used the joint shall be proportionally designed to extend within 1/4" of the surface of the base. Other deformations may be used if approved by the engineer.

IMPRESSED JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2 1/2"	3"	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 base 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 1/2 inch of the top with Asphalt Filler F-1 except where surface course consists of Items T-50, T-60 or T-61 the Asphalt Filler F-1 shall be omitted. 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 base.

LONGITUDINAL JOINTS

GENERAL:
 Longitudinal joints shall be used when called for on the typical section and shall be constructed as shown on the standard construction drawing. All joints to be edged with a beading tool of 1/4 inch radius.
 Dowels to be 1/2 inch round, deformed bars placed 5 foot centers extending across joint.
 A satisfactory device shall be used to hold the dowels in proper position.

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

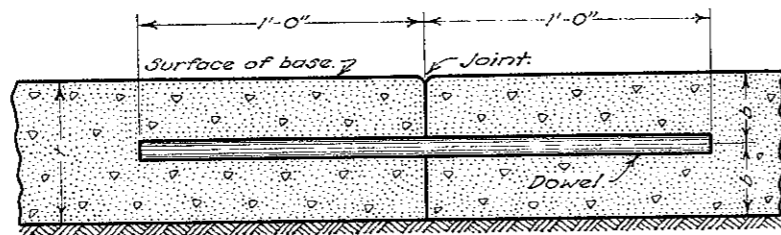
KEY JOINTS:
 Key joints to be used only when called for on the plans.
 Key joints used in part width construction shall be painted with two coats of Asphalt Filler F-1 before the adjoining slabs are poured.

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 DEPARTMENT OF HIGHWAYS
**JOINTS
 CONCRETE
 BASE**
 STANDARD
 CONSTRUCTION B-70 J.
 DRAWING
 APPROVED *R.L.R.* CHIEF ENGINEER

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

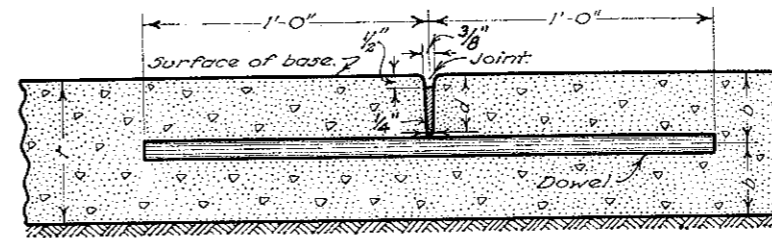
TRANSVERSE JOINTS

CONSTRUCTION JOINT



DETAIL OF DOWEL JOINT

CONTRACTION JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2½"	3"	3½"

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 of the dimensions shown on the plan. 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 ½ inch of the top with Asphalt Filler F-1 except where surface course consists of Items T-50, T-60 or T-61 the Asphalt Filler F-1 shall be omitted. 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 base.

TRANSVERSE JOINTS

GENERAL: All dowels to be ¾ inch round, smooth bars greased or otherwise treated to prevent bonding.

All dowels shall be assembled in a unit, (unit to remain in place in base) for either construction or contraction 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.

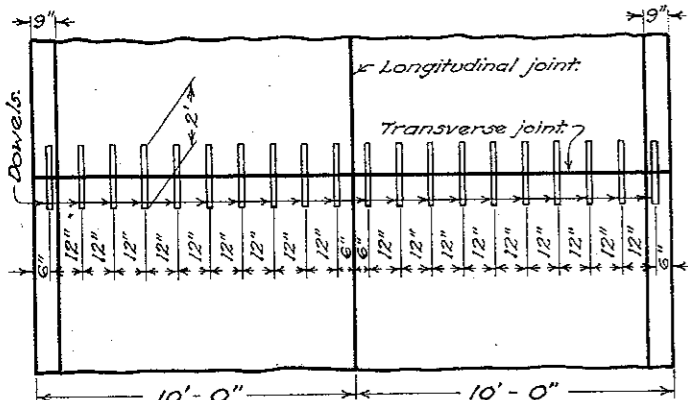
If the width between longitudinal joints of the base varies from the 10 feet as shown herewith, the spacing of the dowels will be as shown on the typical section.

All joints to be edged with a beading tool of ¼ inch radius.

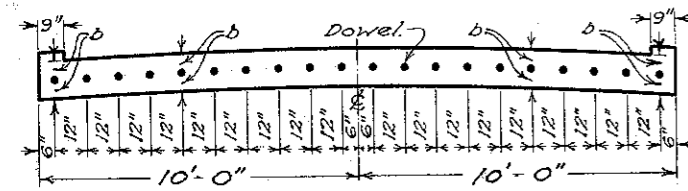
CONSTRUCTION JOINTS: Care shall be taken in removing bulkhead and placing adjacent concrete to see that the dowel bars are embedded in the concrete without being bent.

Spacing shall (except in cases of emergency) be 25 feet from nearest contraction joint.

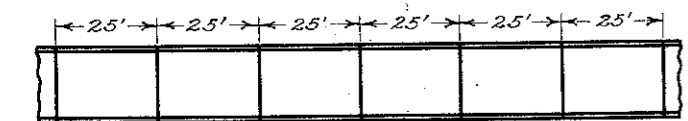
CONTRACTION JOINTS: Spacing for joints shall be 25 feet and shall be placed as per standard construction drawing and in accordance with the specifications unless otherwise specifically shown on the typical section.



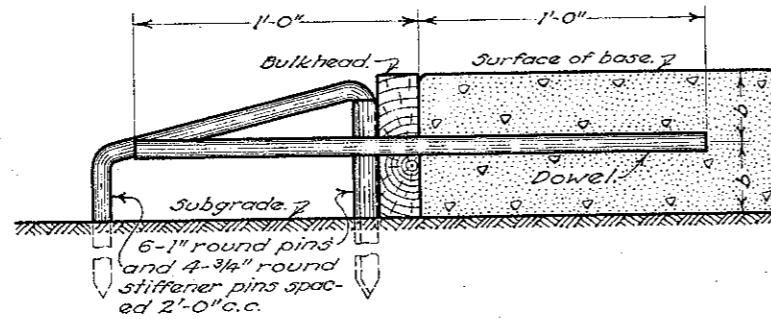
PLAN OF JOINT



DETAIL OF DOWEL SPACING



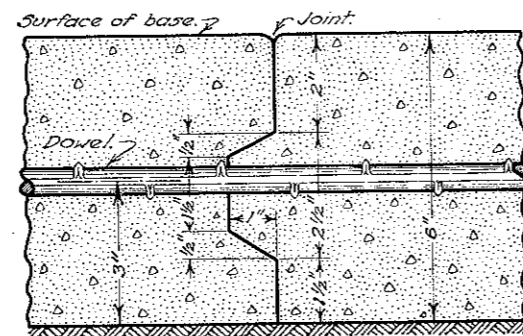
DETAIL OF JOINT SPACINGS



DETAIL OF BULKHEAD

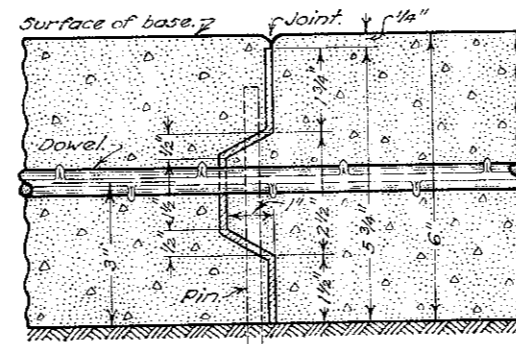
LONGITUDINAL JOINTS

KEY JOINT



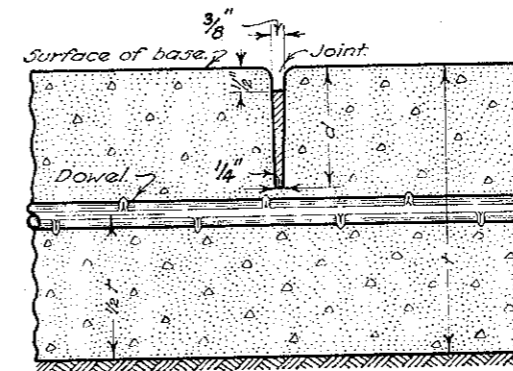
DETAIL OF JOINT

METAL JOINT



DETAIL OF JOINT

IMPRESSED JOINT



DETAIL OF JOINT

t	6"	7"	8"
d	2½"	3"	3½"

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 base 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 ½ inch of the top with Asphalt Filler F-1 except where surface course consists of Items T-50, T-60 or T-61 the Asphalt Filler F-1 shall be omitted. 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 base.

LONGITUDINAL JOINTS

GENERAL: Longitudinal joints shall be used when called for on the typical section and shall be constructed as shown on the standard construction drawing. All joints to be edged with a beading tool of ¼ inch radius.

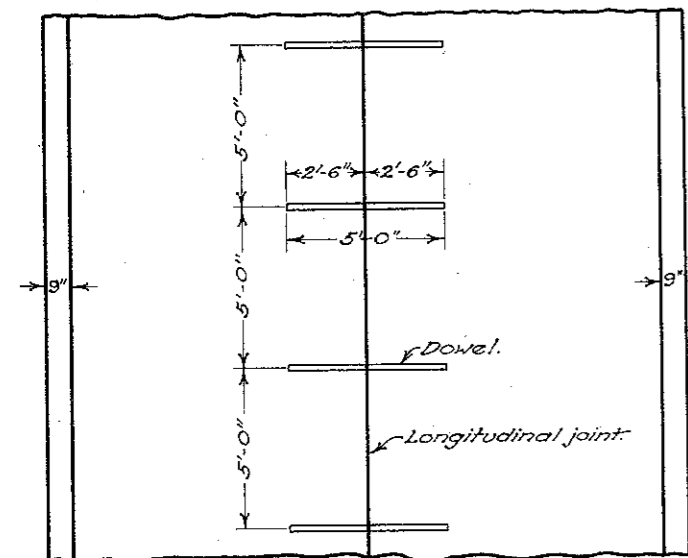
Dowels to be ½ inch round, deformed bars placed 5 foot centers extending across joint.

A satisfactory device shall be used to hold the dowels in proper position.

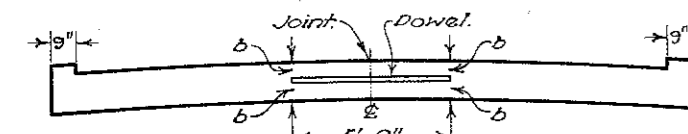
METAL JOINTS to be used only when called for on the plans.

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.



PLAN OF JOINT



DETAIL OF JOINT

NOTE: This joint is designed for 6" base. 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 6" base. When a greater or less thickness is used the joint shall be proportionally designed to extend within ¼" of the surface of the base. Other deformations may be used if approved by the engineer.

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**JOINTS
CONCRETE
BASE**

STANDARD
CONSTRUCTION **B-70 J.**
DRAWING

APPROVED *K. L. R.* CHIEF ENGINEER

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4-15-36