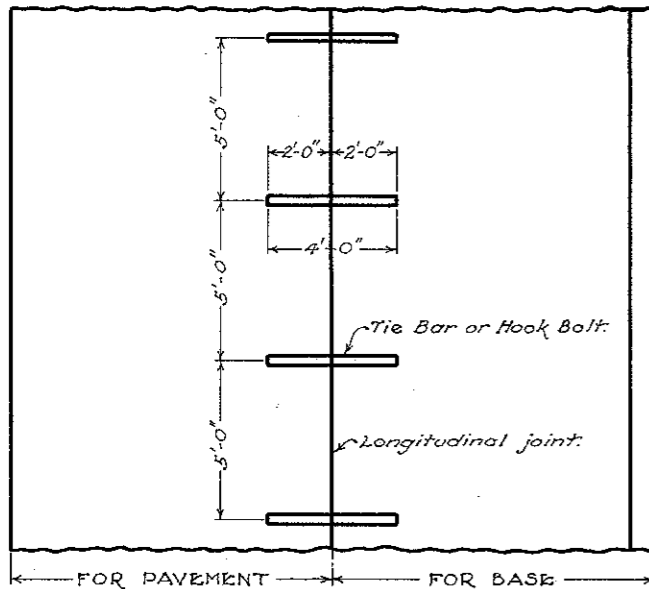
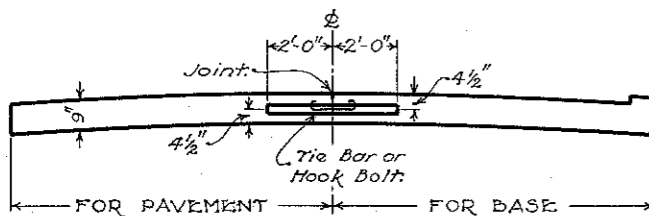


LONGITUDINAL JOINTS

TIE BAR OR HOOK BOLT SPACING

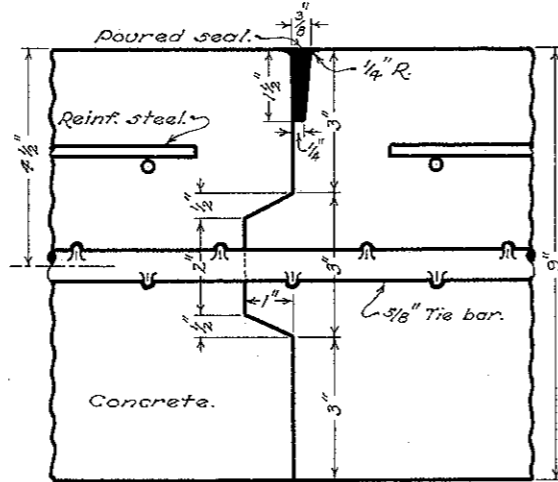


PLAN



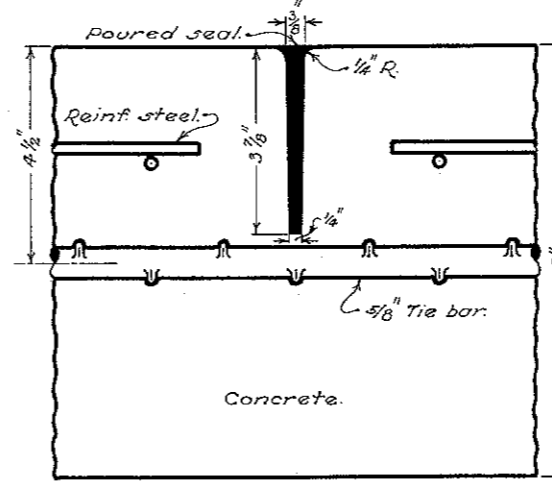
CROSS SECTION

KEY JOINT



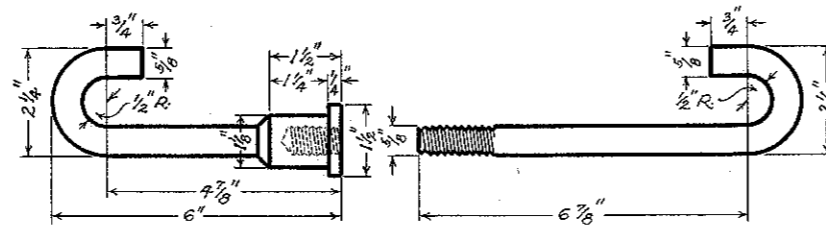
DETAIL OF JOINT

IMPRESSED JOINT



DETAIL OF JOINT

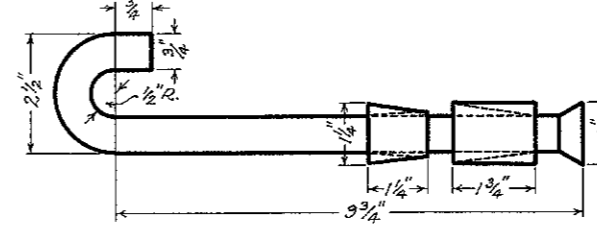
HOOK BOLT



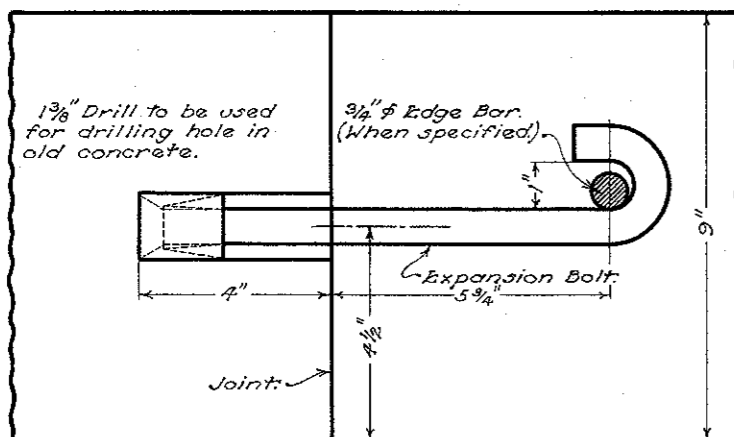
INSERT

J BOLT

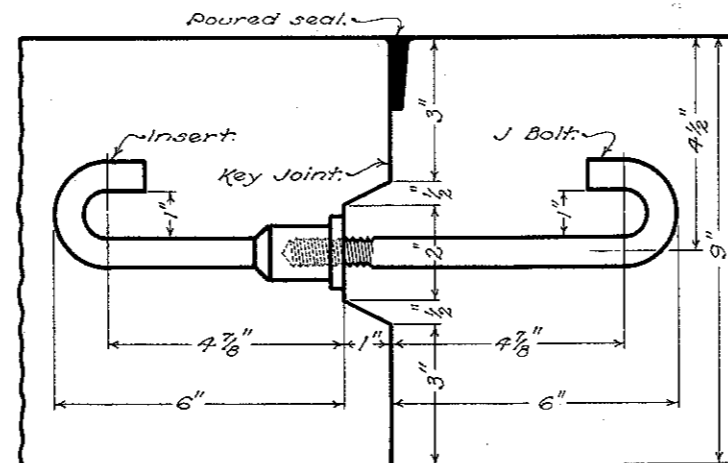
EXPANSION BOLT



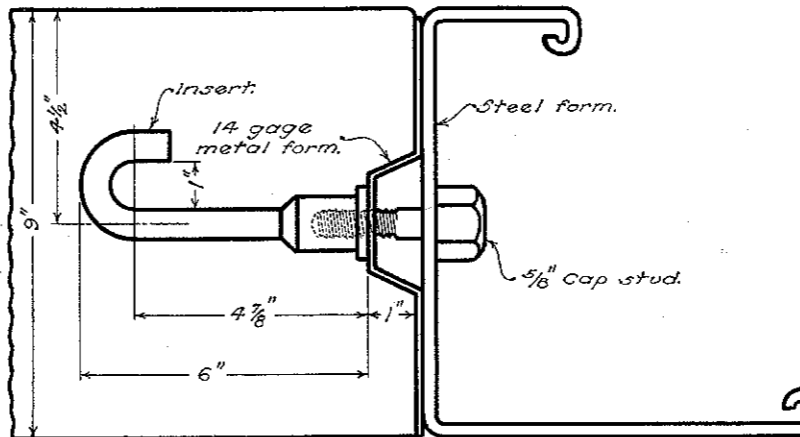
EXPANSION BOLT JOINT



HOOK BOLT AND KEY JOINT



ACCEPTABLE METHOD OF FORMING JOINT



NOTES

GENERAL:—Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this sheet.

Tie bars to be 3/8 inch round, deformed bars. A satisfactory device shall be used to hold the tie bars in proper position.

The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American hook bolts or equal, or billet steel (Sec. M-7.1) tie bars, unless otherwise shown on the plans.

If tie bars are bent no portion of the bend shall extend into the first slab poured.

Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

Key joints used in part with construction shall be painted with two coats of bituminous material as per Sec. M-5.12, AE-1 or 2, before adjoining slabs are poured.

The joints shall be on the center line unless otherwise shown on the plans.

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

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

KEY JOINT:—This joint is designed for a 9 inch slab. When a greater or less thickness is used the joint shall be proportionally designed. Other deformations may be used if approved by the engineer.

A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete. The groove thus formed shall be of the dimensions detailed.

Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having a fourth inch radius. The depth of the vertical lip shall not exceed one-half inch.

After the joint is formed it shall be protected from dirt and foreign matter until the seal is placed.

EXPANSION BOLT JOINT:—This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.

BITUMINOUS SEAL AND FILLER:—Material for sealing key joints and for filling impressed joints shall meet the requirements of Sec. M-5.4, F-1.

BUREAU OF LOCATION & RIGHT OF WAY
OHIO DEPARTMENT OF HIGHWAYS

LONGITUDINAL JOINTS

DATE:
8-24-'44

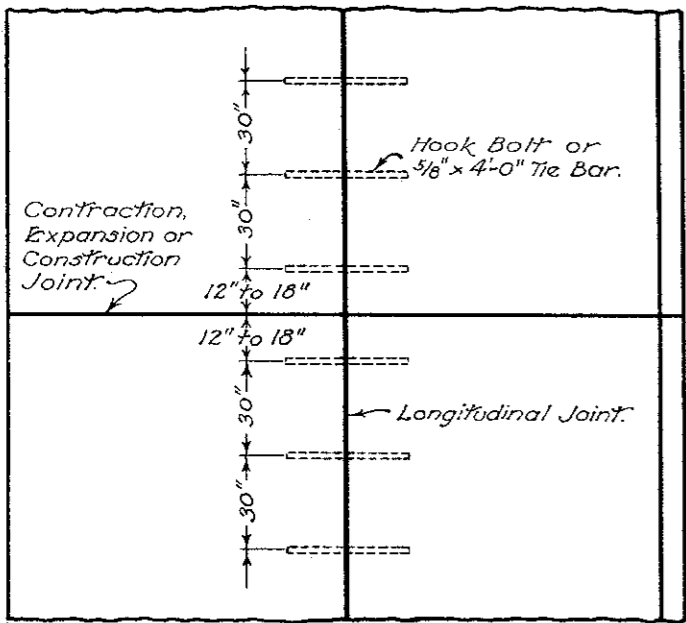
STANDARD
CONSTRUCTION
DRAWING

L J
No. 1

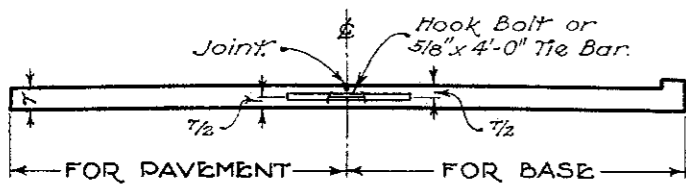
APPROVED _____ CHIEF ENGINEER

LONGITUDINAL JOINTS

TIE BAR OR HOOK BOLT SPACING

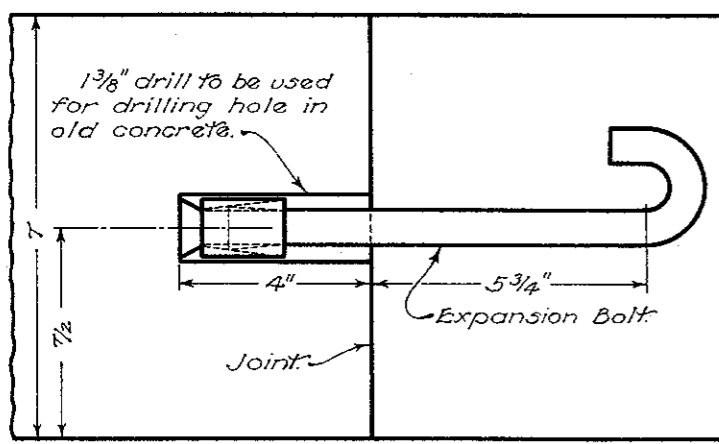


PLAN

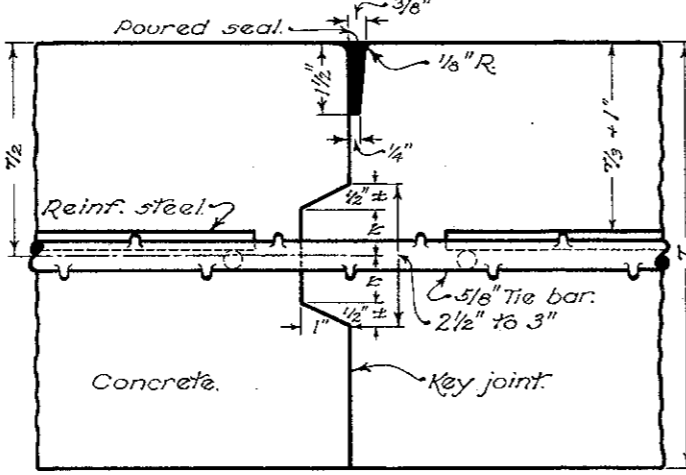


CROSS SECTION

EXPANSION BOLT JOINT

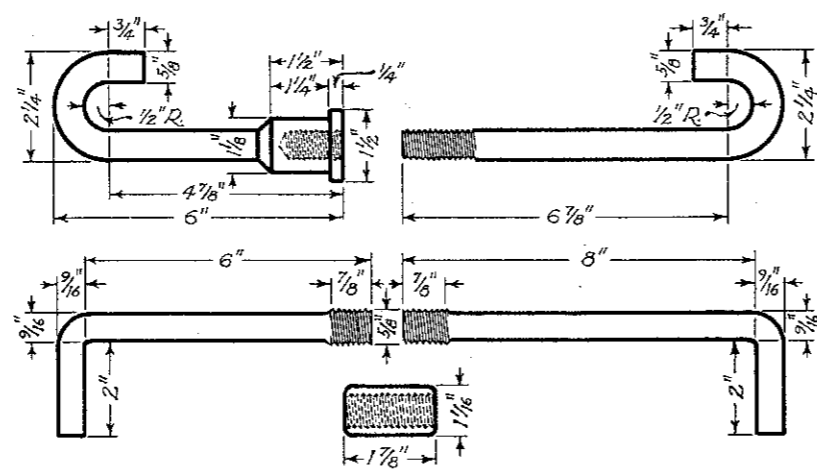


KEY JOINT

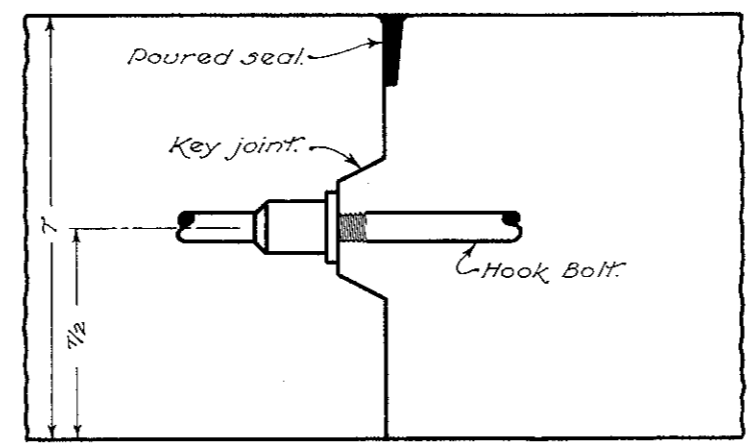


DETAIL OF JOINT

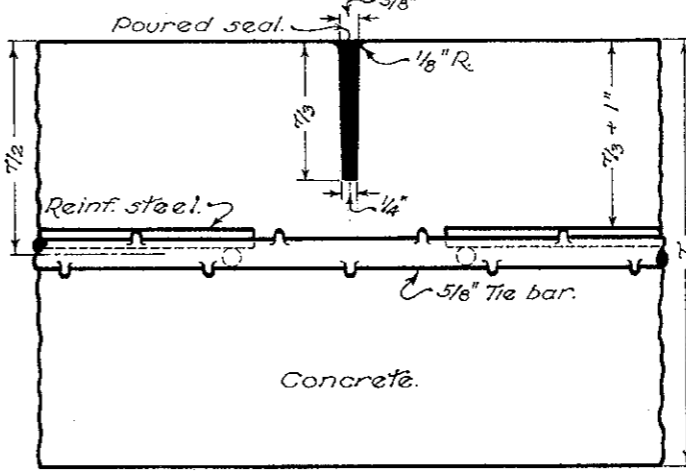
HOOK BOLTS



HOOK BOLT AND KEY JOINT

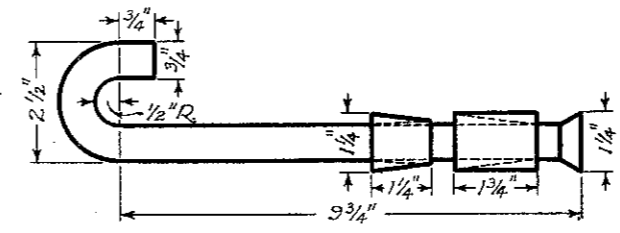


IMPRESSED JOINT

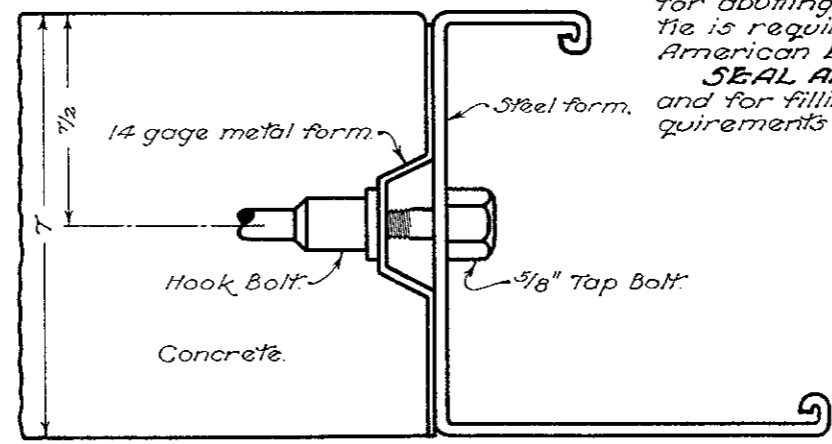


DETAIL OF JOINT

EXPANSION BOLT



ACCEPTABLE METHOD OF FORMING JOINT



NOTES

GENERAL: Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this drawing.

The bars to be 3/8 inch round, deformed bars.

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

The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American Hook Bolts or equal, or billet steel tie bars, unless otherwise shown on the plans.

If tie bars are bent no portion of the bend shall extend into the first slab poured.

Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

The joints shall be on the center line of the pavement unless otherwise shown on the plans.

Special care shall be exercised in edging impressed joints to insure that the width of the opening does not exceed that shown.

Any impression left in the surface of the pavement by the flat part of the edging tool shall be eliminated.

IMPRESSED 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 distortion or injury to the concrete. The groove thus formed shall be of the dimensions as detailed. After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

When two adjacent reinforced portland cement concrete pavement lanes are poured simultaneously, the 5/8" x 4'-0" tie bars may be omitted provided that the reinforcing steel mats are placed across the longitudinal joint for the full width of the two lanes.

KEY JOINT: A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete.

Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having an eighth inch radius.

After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

Keys shall be discontinued approximately 12" from transverse joints.

EXPANSION BOLT JOINT: This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.

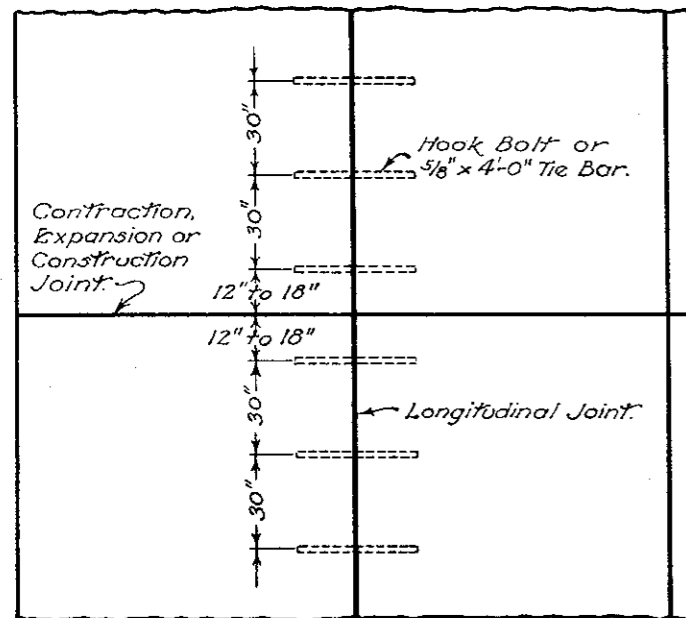
SEAL AND FILLER: Material for sealing key joints and for filling impressed joints shall meet the requirements of Supplemental Specification M-110.23.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS	
PAVEMENT JOINTS	
STANDARD CONSTRUCTION DRAWING	L. J. NO. 1
APPROVED <i>[Signature]</i>	CHIEF ENGINEER

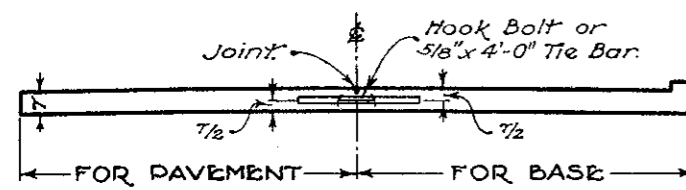
DATE: 2-7-50

LONGITUDINAL JOINTS

TIE BAR OR HOOK BOLT SPACING

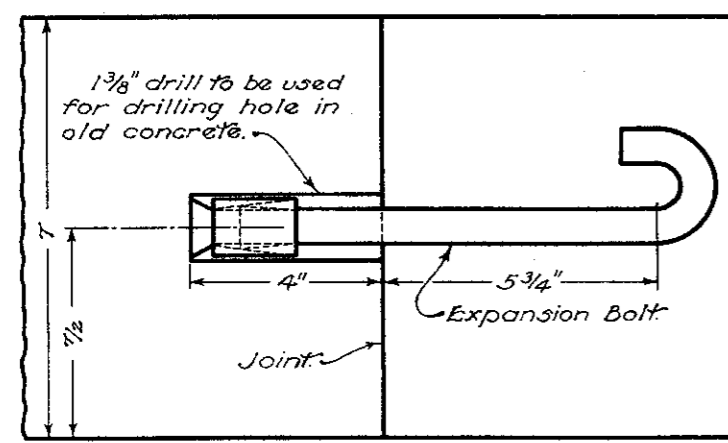


FOR PAVEMENT FOR BASE
PLAN

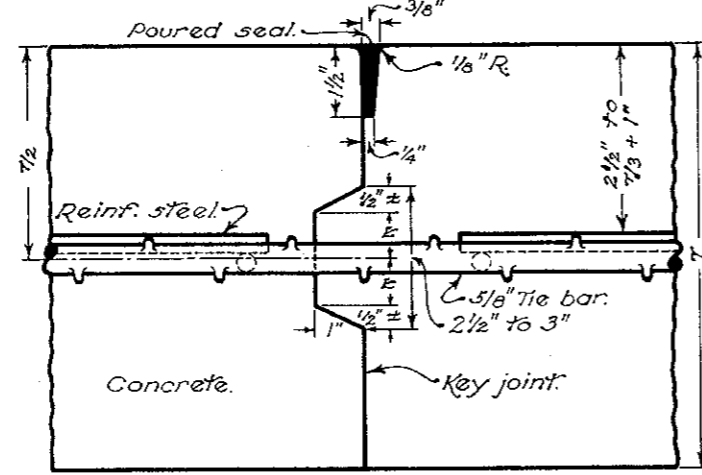


CROSS SECTION

EXPANSION BOLT JOINT

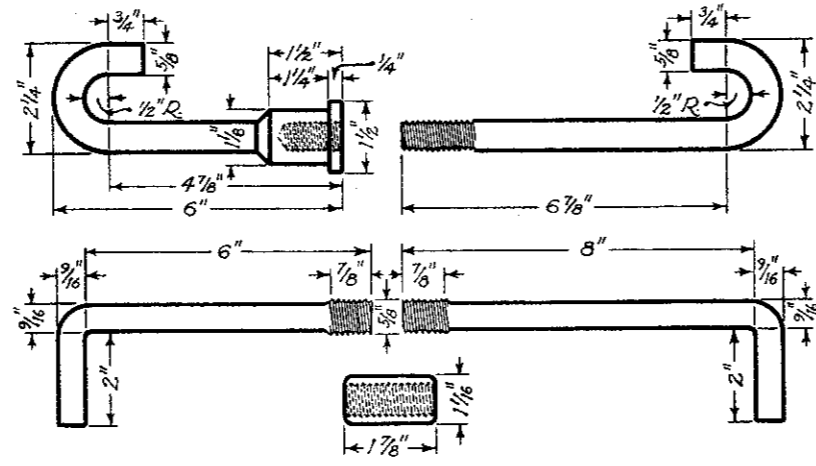


KEY JOINT

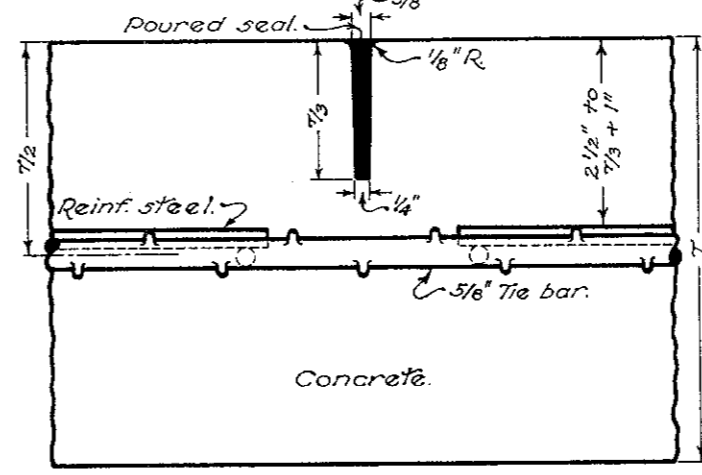


DETAIL OF JOINT

HOOK BOLTS

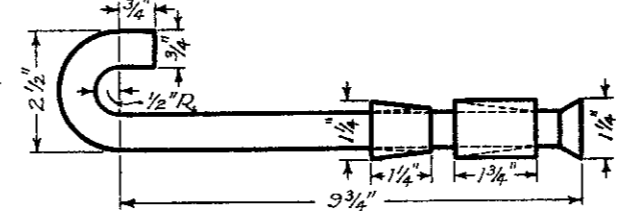


IMPRESSED JOINT

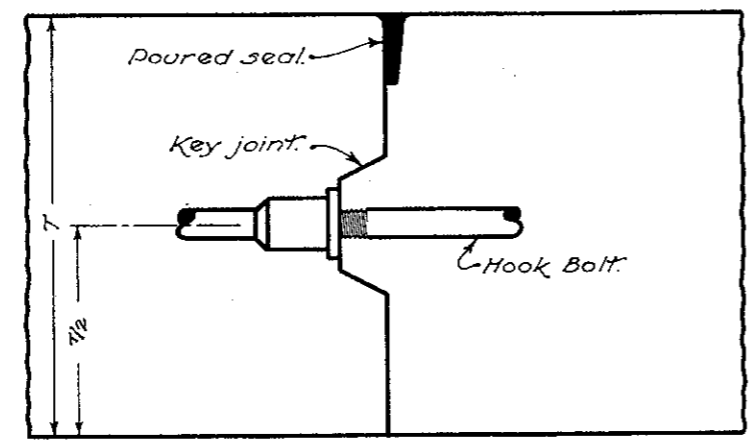


DETAIL OF JOINT

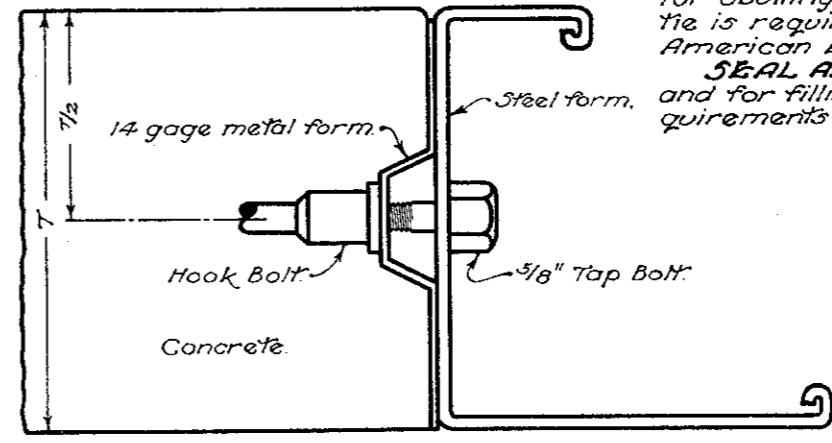
EXPANSION BOLT



HOOK BOLT AND KEY JOINT



ACCEPTABLE METHOD OF FORMING JOINT



NOTES

GENERAL:—Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this drawing.
 Tie bars to be 5/8 inch round, deformed bars.
 A satisfactory device shall be used to hold the tie bars in proper position.
 The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American Hook Bolts or equal, or billet steel tie bars, unless otherwise shown on the plans.
 If tie bars are bent no portion of the bend shall extend into the first slab poured.
 Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.
 The joints shall be on the center line of the pavement unless otherwise shown on the plans.
 Special care shall be exercised in edging impressed joints to insure that the width of the opening does not exceed that shown.

Any impression left in the surface of the pavement by the flat part of the edging tool shall be eliminated.
IMPRESSED 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 distortion or injury to the concrete. The groove thus formed shall be of the dimensions as detailed. After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.
 When two adjacent reinf. portland cement concrete pavement lanes are poured simultaneously, the tie bars may be omitted provided that the reinforcing steel mats are placed across the longitudinal joint in which case the mats shall be placed 7/8 + 1" below top of pavement.

KEY JOINT:—A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete.
 Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having an eighth inch radius.
 After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.
 Keys shall be discontinued approximately 12" from transverse joints.

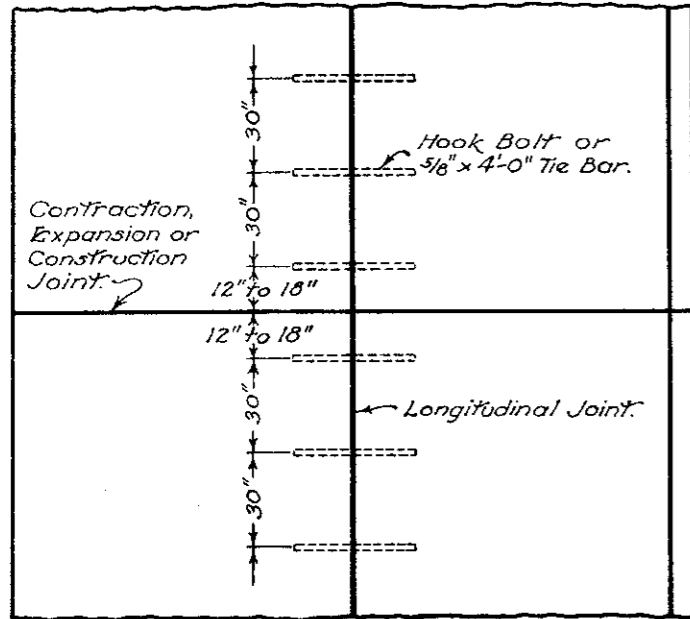
EXPANSION BOLT JOINT:—This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.
SEAL AND FILLER:—Material for sealing key joints and for filling impressed joints shall meet the requirements of Supplemental Specification M-110.23.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS	
PAVEMENT JOINTS	
STANDARD CONSTRUCTION DRAWING	L. J. No. 1
APPROVED <i>[Signature]</i>	CHIEF ENGINEER

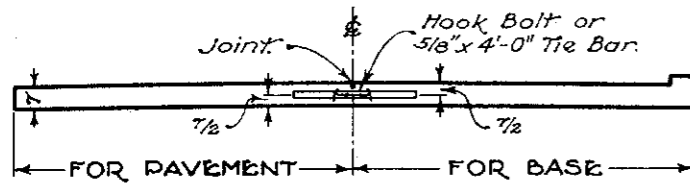
DATE
2-7-50
7-1-50

LONGITUDINAL JOINTS

TIE BAR OR HOOK BOLT SPACING

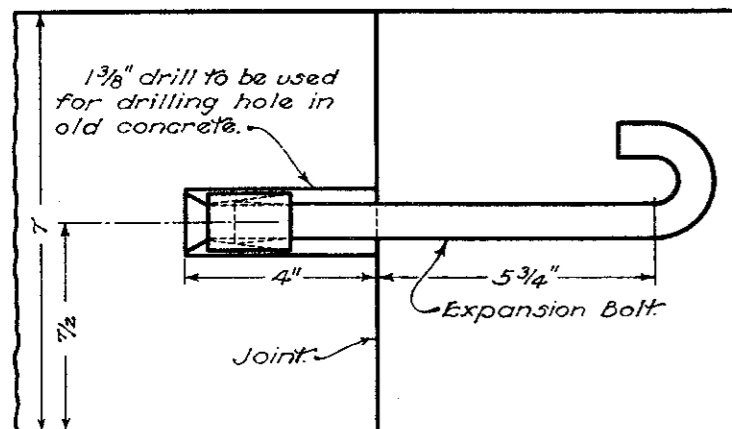


PLAN

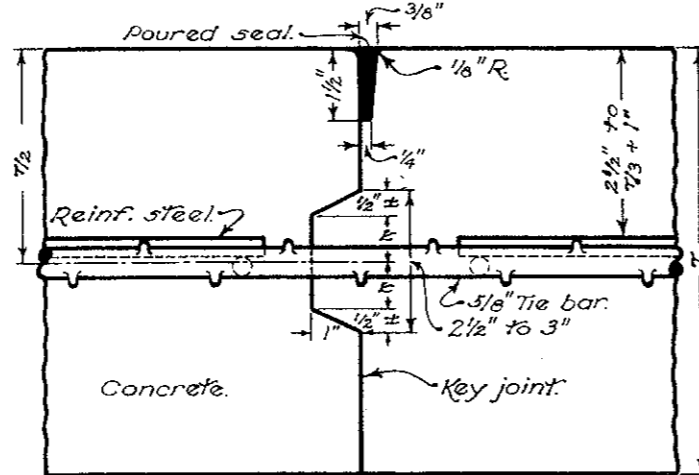


CROSS SECTION

EXPANSION BOLT JOINT

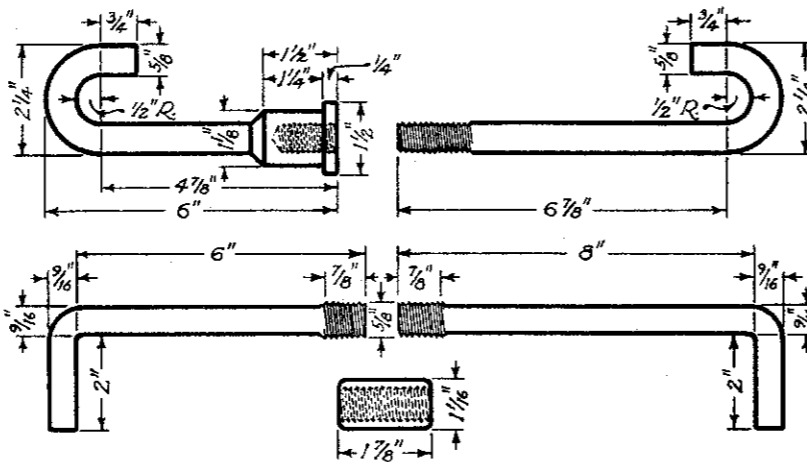


KEY JOINT

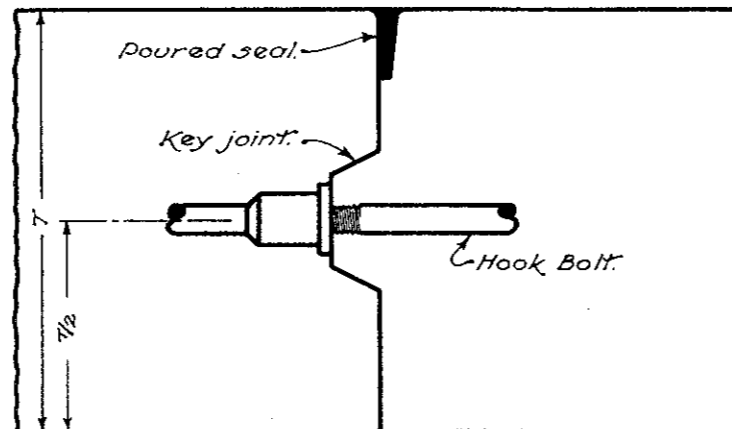


DETAIL OF JOINT

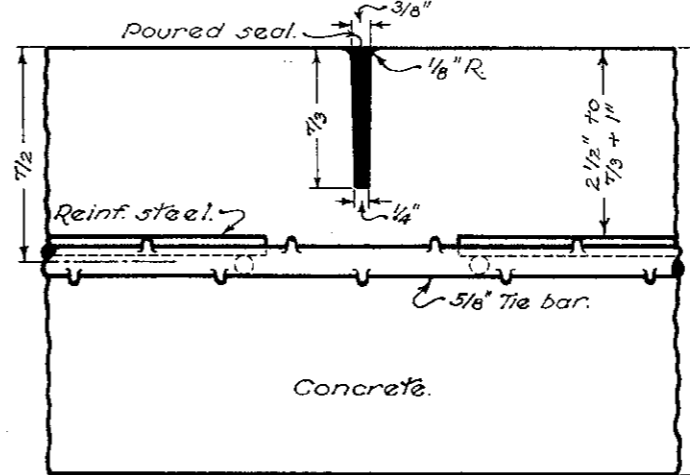
HOOK BOLTS



HOOK BOLT AND KEY JOINT

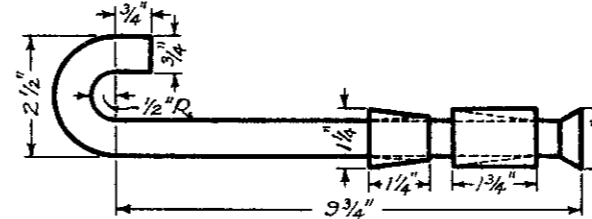


IMPRESSED JOINT

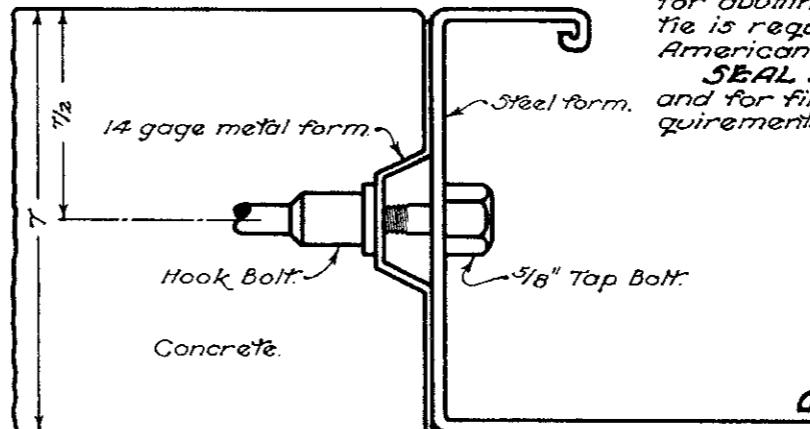


DETAIL OF JOINT

EXPANSION BOLT



ACCEPTABLE METHOD OF FORMING JOINT



NOTES

GENERAL:—Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this drawing.

Tie bars to be 5/8 inch round, deformed bars.

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

The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American Hook Bolts or equal, or billet steel tie bars, unless otherwise shown on the plans.

If tie bars are bent no portion of the bend shall extend into the first slab poured.

Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

The joints shall be on the center line of the pavement unless otherwise shown on the plans.

Special care shall be exercised in edging impressed joints to insure that the width of the opening does not exceed that shown.

Any impression left in the surface of the pavement by the flat part of the edging tool shall be eliminated.

IMPRESSED 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 distortion or injury to the concrete. The groove thus formed shall be of the dimensions as detailed. After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

When two adjacent reinf. portland cement concrete pavement lanes are poured simultaneously, the tie bars may be omitted provided that the reinforcing steel mats are placed across the longitudinal joint, in which case the mats shall be placed 7/8 + 1" below top of pavement.

KEY JOINT:—A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete.

Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having an eighth inch radius.

After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

Keys shall be discontinued approximately 12" from transverse joints.

EXPANSION BOLT JOINT:—This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.

SEAL AND FILLER:—Material for sealing key joints and for filling impressed joints shall meet the requirements of Section 11-10.23.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT JOINTS

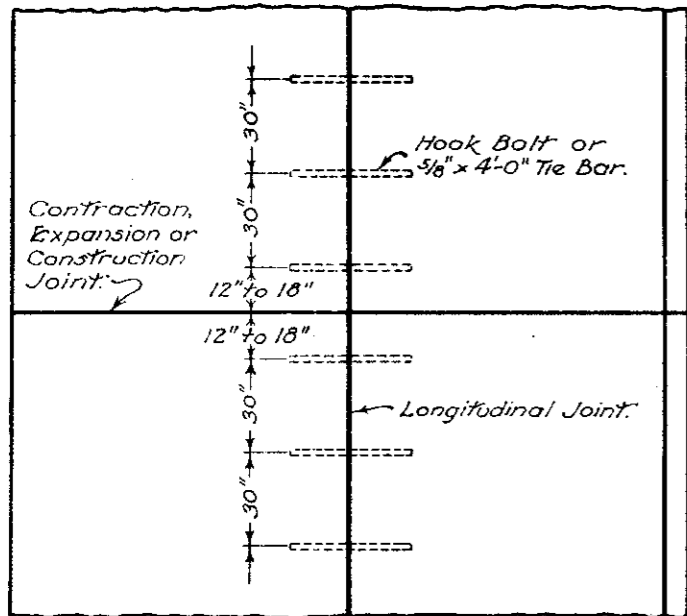
STANDARD CONSTRUCTION DRAWING
APPROVED *[Signature]* CHIEF ENGINEER

L. J. No. 1

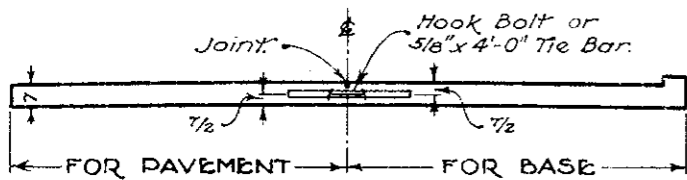
DATE
2-7-50
7-1-50
1-2-51

LONGITUDINAL JOINTS

TIE BAR OR HOOK BOLT SPACING

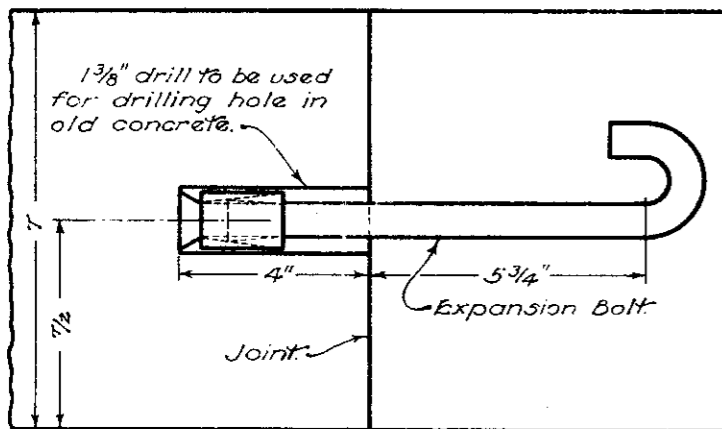


PLAN

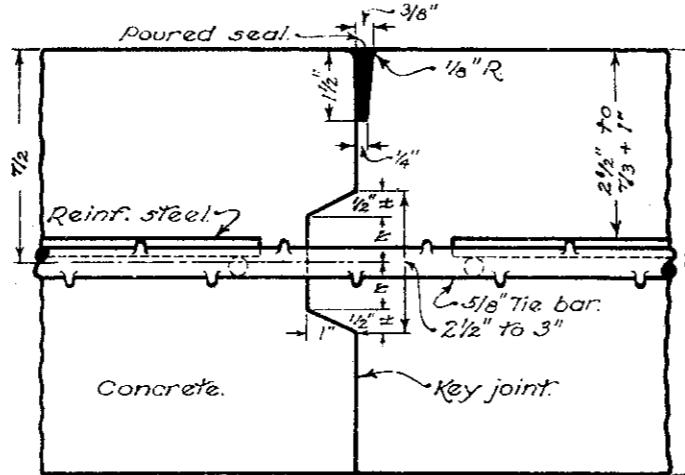


CROSS SECTION

EXPANSION BOLT JOINT

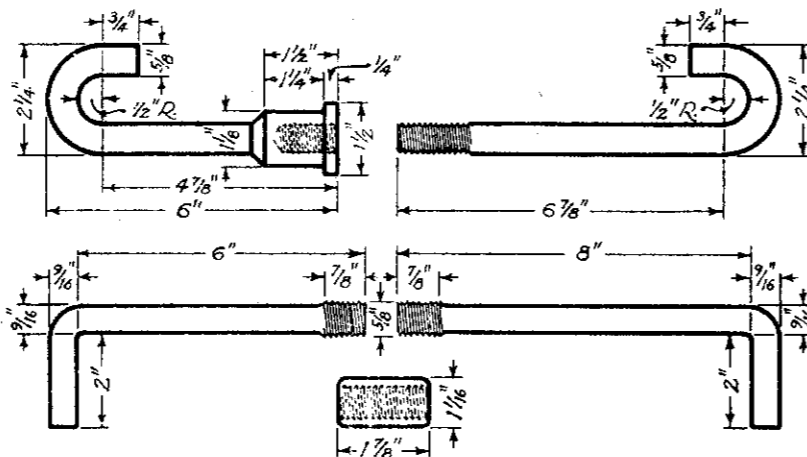


KEY JOINT

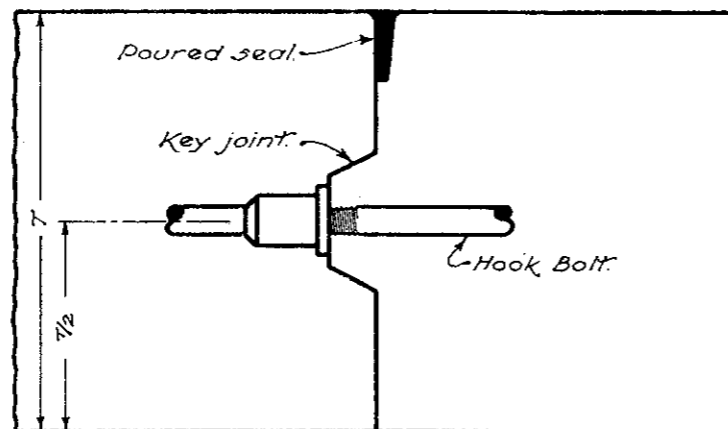


DETAIL OF JOINT

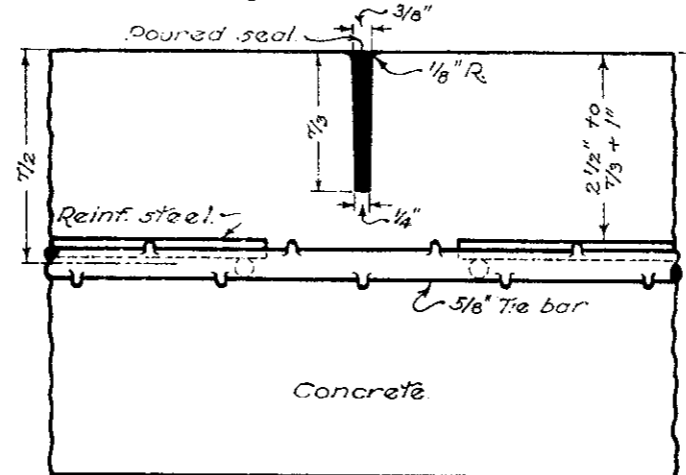
HOOK BOLTS



HOOK BOLT AND KEY JOINT

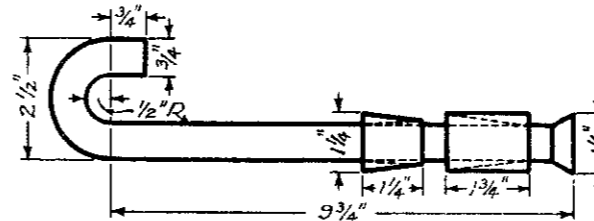


IMPRESSED JOINT

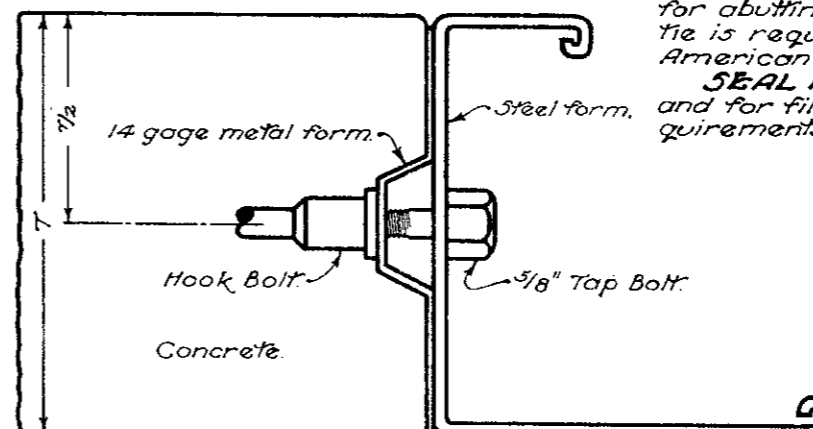


DETAIL OF JOINT

EXPANSION BOLT



ACCEPTABLE METHOD OF FORMING JOINT



NOTES

GENERAL:—Longitudinal joints shall be used when called for on the typical section, and shall be constructed as shown on this drawing.

Tie bars to be 5/8 inch round, deformed bars.

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

The longitudinal joint between adjoining slabs poured in separate operations shall be a key joint with American Hook Bolts or equal, or billet steel tie bars, unless otherwise shown on the plans.

If tie bars are bent no portion of the bend shall extend into the first slab poured.

Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

The joints shall be on the center line of the pavement unless otherwise shown on the plans.

Special care shall be exercised in edging impressed joints to insure that the width of the opening does not exceed that shown.

Any impression left in the surface of the pavement by the flat part of the edging tool shall be eliminated.

IMPRESSED 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 distortion or injury to the concrete. The groove thus formed shall be of the dimensions as detailed. After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

When two adjacent reinf. portland cement concrete pavement lanes are poured simultaneously, the tie bars may be omitted provided that the reinforcing steel mats are placed across the longitudinal joint, in which case the mats shall be placed 1/3 + 1" below top of pavement.

KEY JOINT:—A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete.

Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having an eighth inch radius.

After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

Keys shall be discontinued approximately 12" from transverse joints.

EXPANSION BOLT JOINT:—This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.

SEAL AND FILLER:—Material for sealing key joints and for filling impressed joints shall meet the requirements of Section 11-10.23, or Sup. Spec. 11-10.25.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT
JOINTS

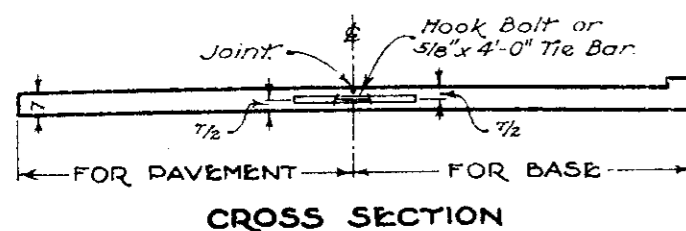
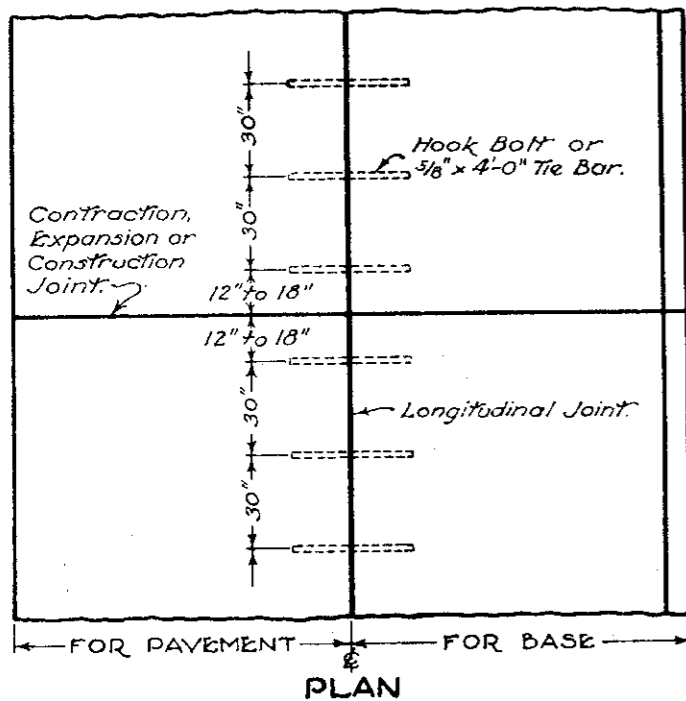
STANDARD CONSTRUCTION DRAWING
APPROVED *[Signature]* CHIEF ENGINEER

L. J.
No. 1

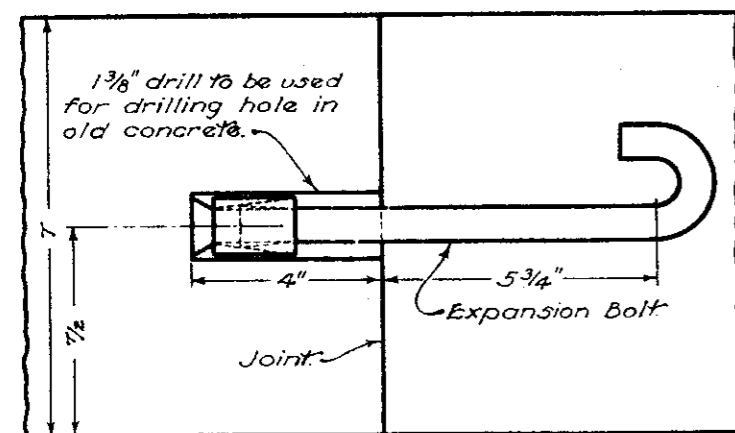
DATE
2-7-50
7-1-50
1-2-51
8-1-51

LONGITUDINAL JOINTS

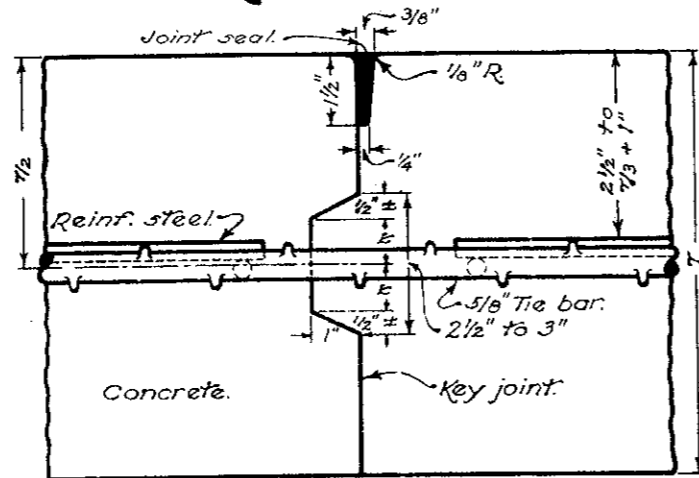
TIE BAR OR HOOK BOLT SPACING



EXPANSION BOLT JOINT

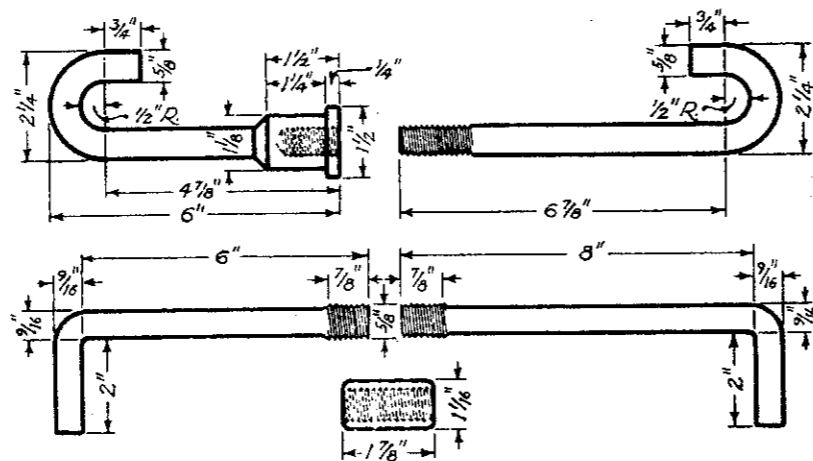


KEY JOINT

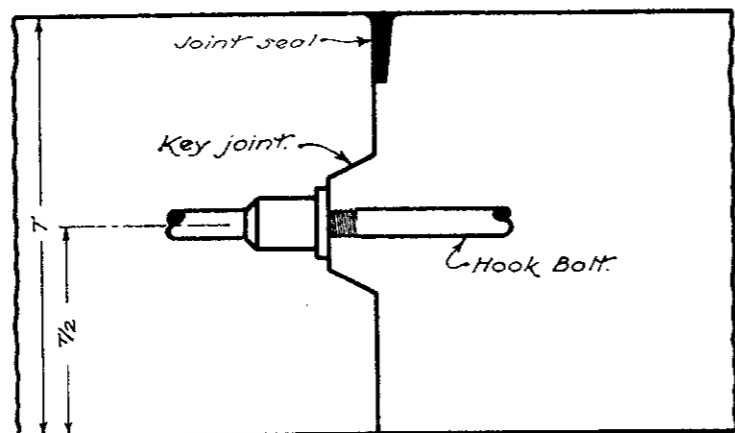


DETAIL OF JOINT

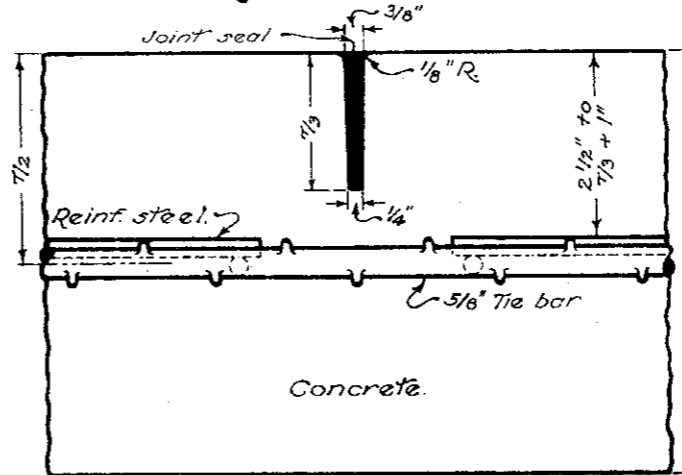
HOOK BOLTS



HOOK BOLT AND KEY JOINT

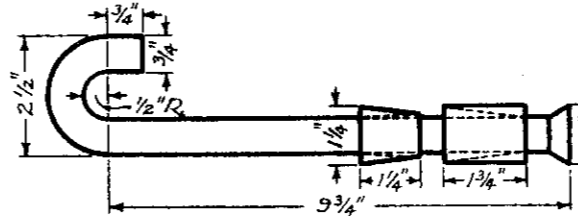


IMPRESSED JOINT

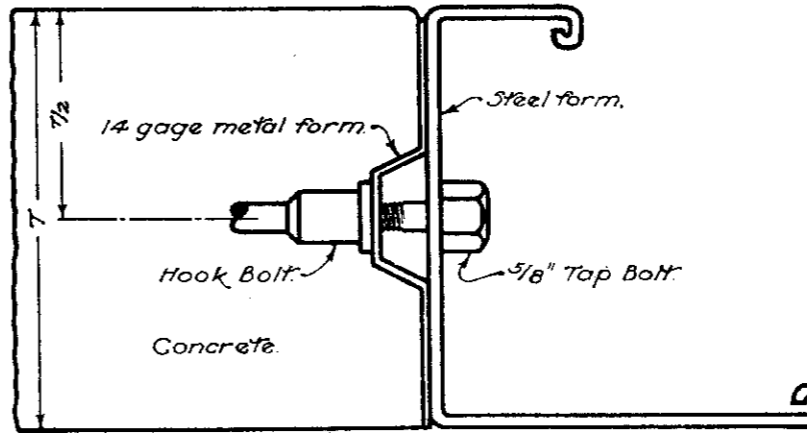


DETAIL OF JOINT

EXPANSION BOLT



ACCEPTABLE METHOD OF FORMING JOINT



NOTES

GENERAL: Longitudinal joints shall be used when called for on the typical section and shall be constructed as shown on this drawing.

Tie bars to be 5/8 inch round, deformed bars. A satisfactory device shall be used to hold the tie bars in proper position.

The longitudinal joint between adjoining slabs poured in separate operations shall be key joint with American Hook Bolt or equal, or billet steel tie bars, unless otherwise shown on the plans.

If tie bars are bent no portion of the bend shall extend into the first slab poured.

Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

The joint shall be on the centerline of the pavement unless otherwise shown on the plans.

Special care shall be exercised in edging impressed joints to insure that the width of the opening does not exceed that shown.

Any impression left in the surface of the pavement by the flat part of the edging tool shall be eliminated.

IMPRESSED 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 distortion or injury to the concrete. The groove thus formed shall be of the dimensions as detailed. After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

SAWED JOINT: In lieu of the impressed joint, longitudinal joints may be sawed with concrete saw. The groove shall be cut when the concrete is more than 10 hours old and less than 8 days old. The concrete shall be sawed at an age when spalling will not occur.

The sawed joint shall not be less than 3 inches deep and shall have a width of not less than 1/8 inch nor more than 3/8 inch. Sawed joints shall be sealed with material meeting the requirements of Section M-10.26.

KEY JOINT: A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete.

Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having an eighth inch radius.

After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

Keys shall be discontinued approximately 12 inches from transverse joints.

EXPANSION BOLT JOINT: This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.

SEAL AND FILLER: Material for sealing longitudinal joints shall meet the requirements of Section M-10.23 or Section M-10.26.

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT
JOINTS

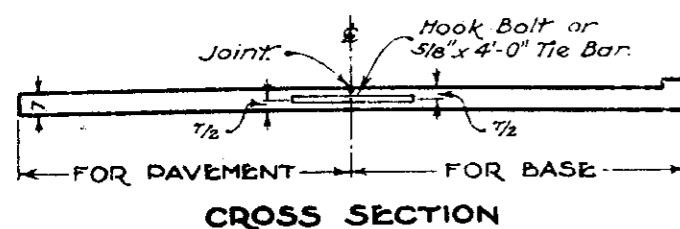
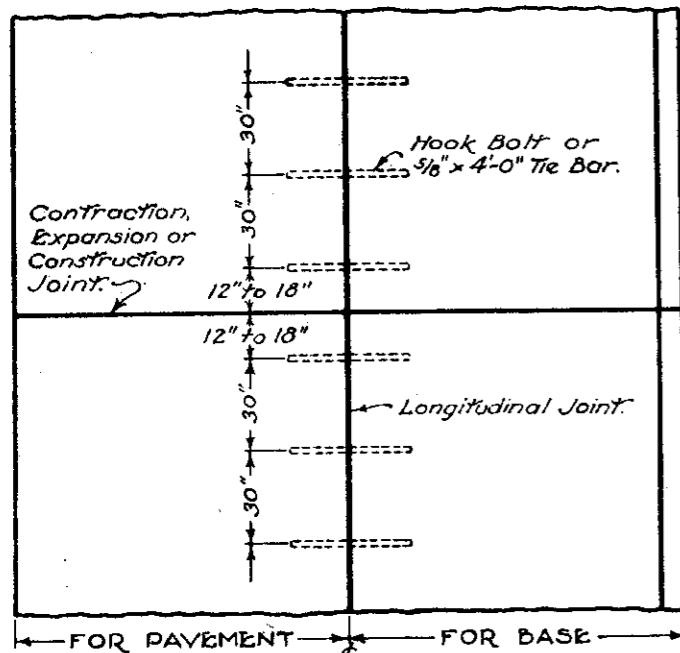
STANDARD CONSTRUCTION DRAWING
APPROVED *[Signature]* CHIEF ENGINEER

L. J.
No. 1

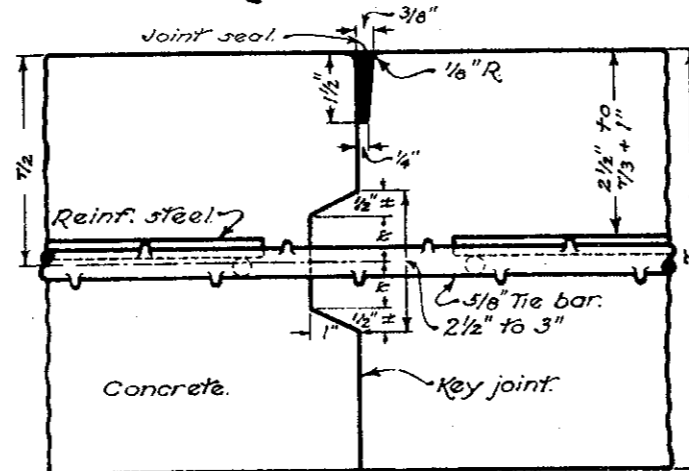
DATE
2-7-50
7-1-50
1-2-51
8-1-51
3-2-53

LONGITUDINAL JOINTS

TIE BAR OR HOOK BOLT SPACING

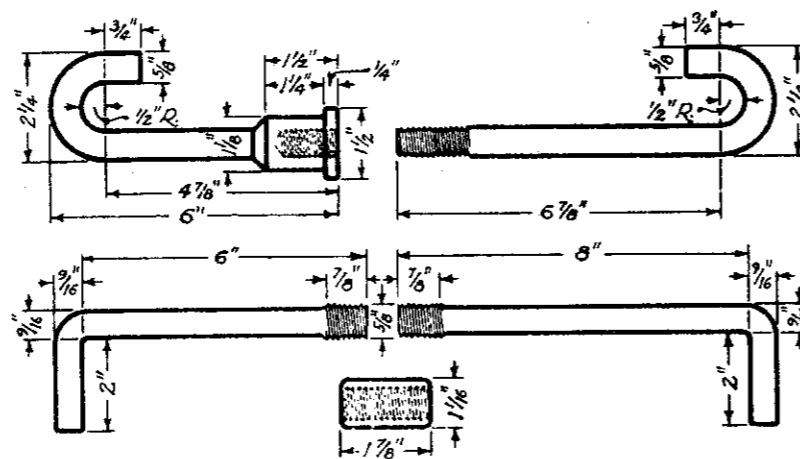


KEY JOINT

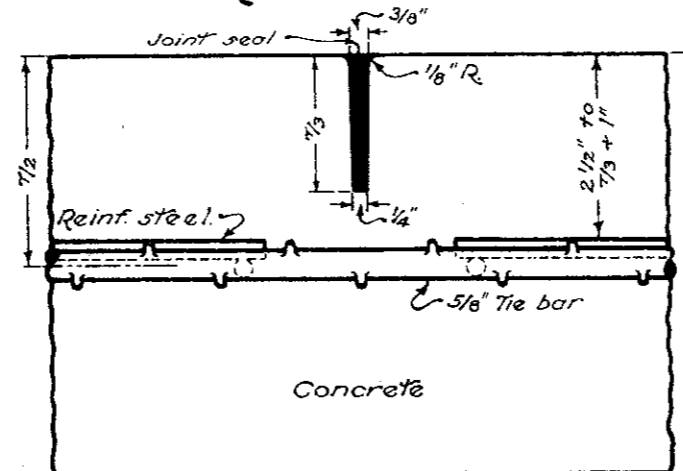


DETAIL OF JOINT

HOOK BOLTS

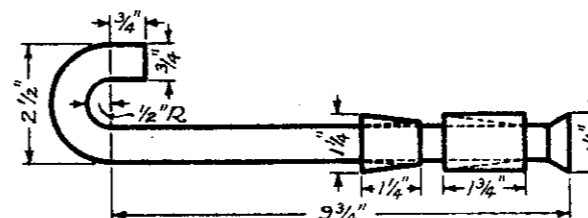


IMPRESSED JOINT



DETAIL OF JOINT

EXPANSION BOLT



NOTES

GENERAL:—Longitudinal joints shall be used when called for on the typical section and shall be constructed as shown on this drawing.

Tie bars to be $\frac{3}{8}$ inch round, deformed bars. A satisfactory device shall be used to hold the tie bars in proper position.

The longitudinal joint between adjoining slabs poured in separate operations shall be key joint with American Hook Bolts or equal, or billet steel tie bars, unless otherwise shown on the plans.

If tie bars are bent no portion of the bend shall extend into the first slab poured.

Immediately prior to placing the second slab, bent tie bars shall be straightened by means of a pipe slipped over the free end of the bar.

The joint shall be on the centerline of the pavement unless otherwise shown on the plans.

Special care shall be exercised in edging impressed joints to insure that the width of the opening does not exceed that shown.

Any impression left in the surface of the pavement by the flat part of the edging tool shall be eliminated.

IMPRESSED 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 distortion or injury to the concrete. The groove thus formed shall be of the dimensions as detailed. After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

SAWED JOINT:—In lieu of the impressed joint, longitudinal joints may be constructed by sawing as prescribed in the plan or proposal.

KEY JOINT:—A groove for sealing shall be formed by impressing a device or bar into the newly deposited concrete adjacent to the previously poured lane. The device or bar shall be removed as soon as the concrete is in such condition as to preclude distortion or injury to the concrete.

Adjoining slabs adjacent to the longitudinal key joint shall be edged with a thin metal edger having an eighth inch radius.

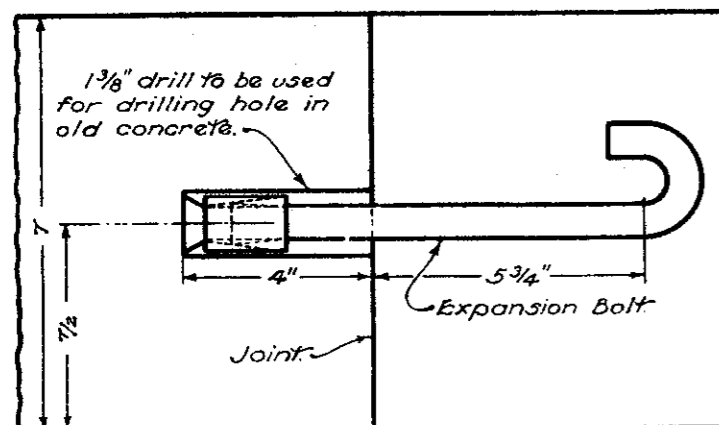
After the joint is formed it shall be protected from dirt and foreign matter until the joint seal is placed.

Keys shall be discontinued approximately 12 inches from transverse joints.

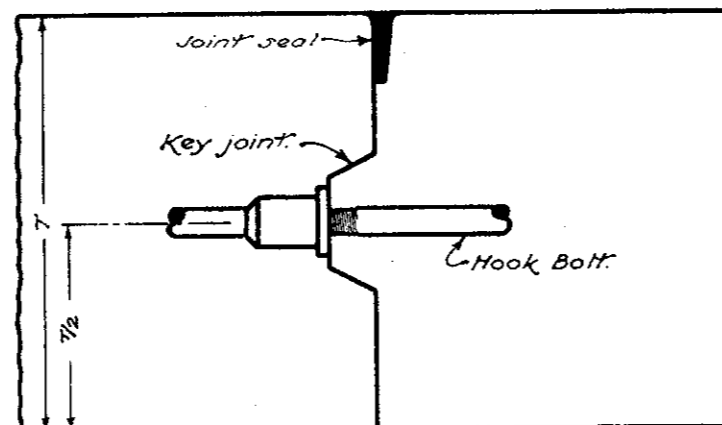
EXPANSION BOLT JOINT:—This joint is designed for abutting new concrete construction to old when a tie is required. The tie is effected by the use of American Expansion Bolts or equal.

SEAL AND FILLER:—Material for sealing longitudinal joints shall meet the requirements of Section M-10.23 or Section M-10.26.

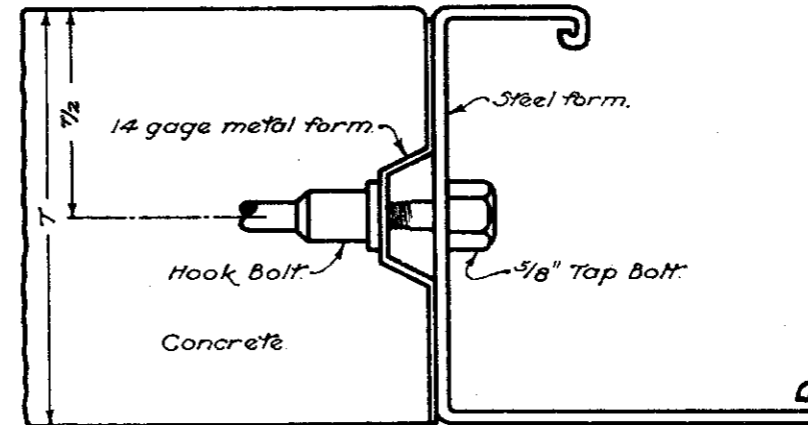
EXPANSION BOLT JOINT



HOOK BOLT AND KEY JOINT



ACCEPTABLE METHOD OF FORMING JOINT



BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT
JOINTS

STANDARD
CONSTRUCTION
DRAWING
APPROVED *K.H.H.*

L. J.
No. 1
ENGR. L. & D.

DATE
2-7-50
7-1-50
1-2-51
8-1-51
3-2-53
7-1-55