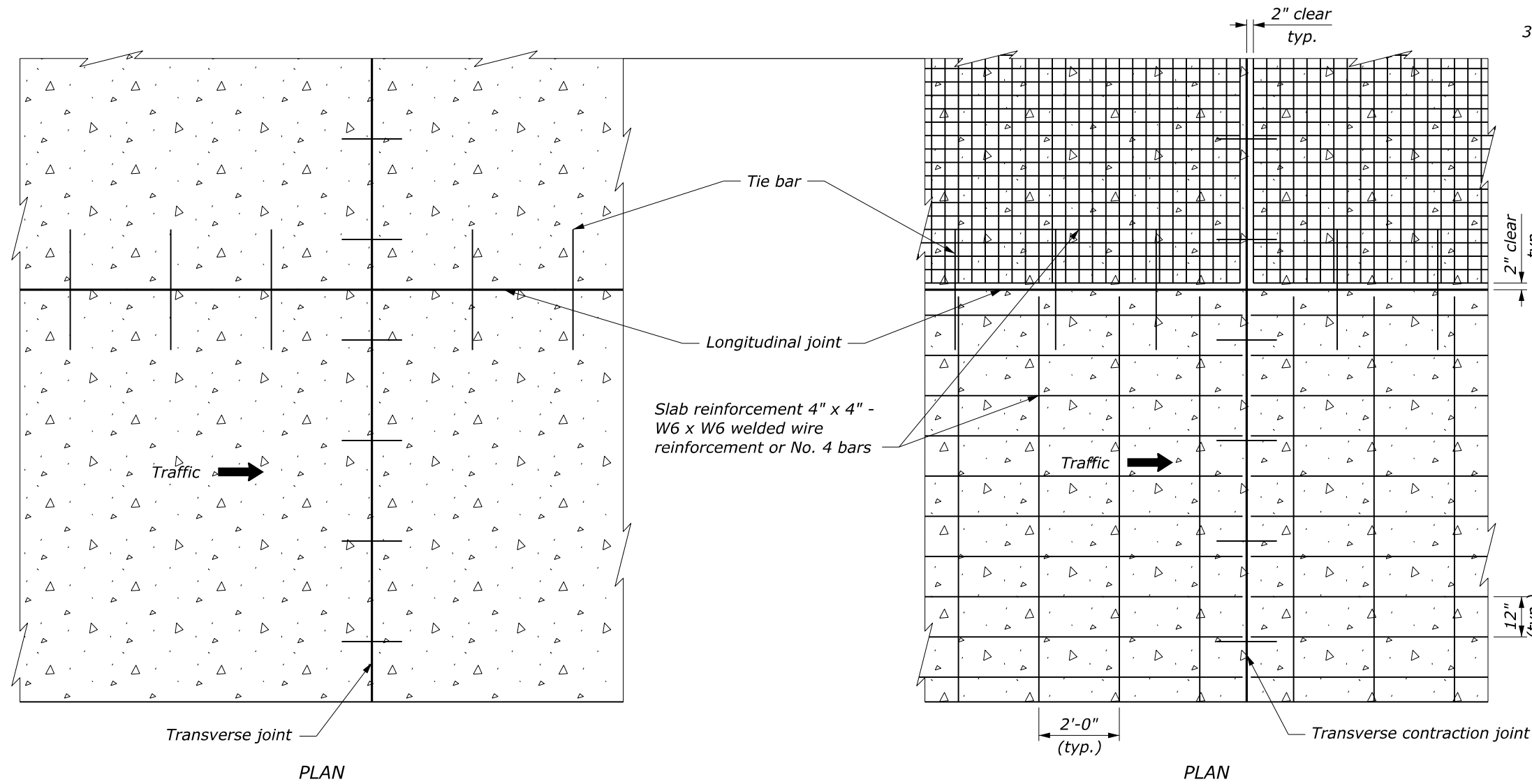
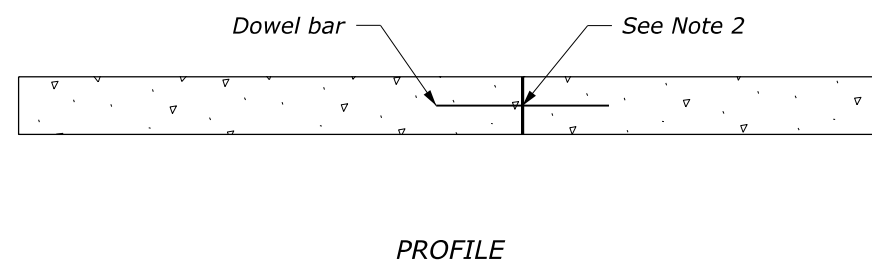


NOTE:

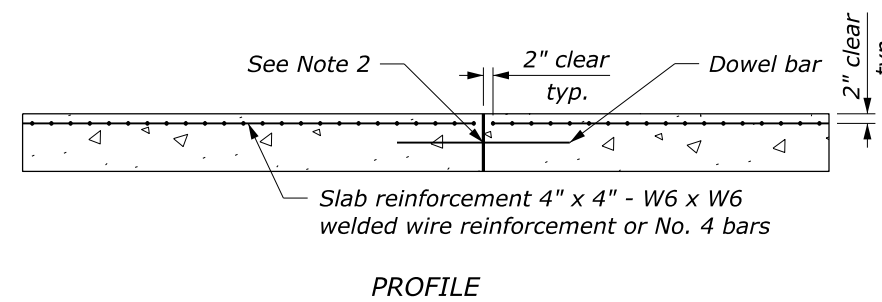
1. Provide the same type of dowel assemblies and tie bars for joints in plain portland cement concrete pavement as shown for joints in reinforced pavement.
2. See Standard 501-2 for joint and joint sealing details.
3. Lap longitudinal and transverse reinforcement not less than 15 inches.



PAVEMENT THICKNESS (in)	TRANSVERSE JOINT SPACING (ft)
$T < 6$	10
$6 \leq T < 12$	15



PLAIN MINOR CONCRETE PAVEMENT



REINFORCED MINOR CONCRETE PAVEMENT

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

FLH STANDARD

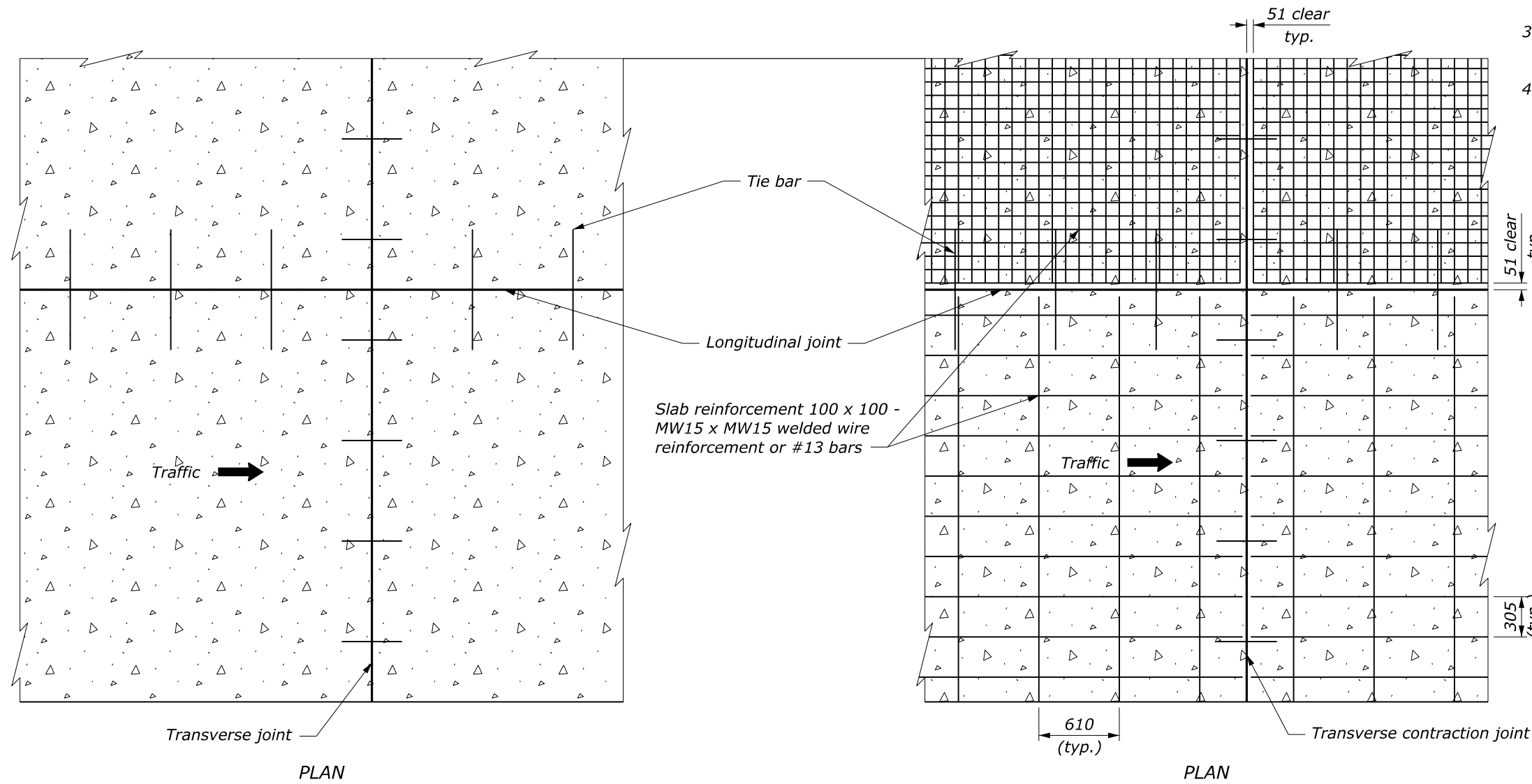
MINOR CONCRETE PAVEMENT

STANDARD APPROVED FOR USE --/----
REVISED: 9/2016

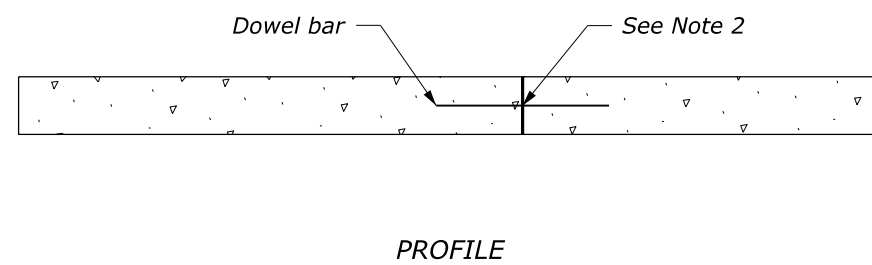
STANDARD
501-1

NOTE:

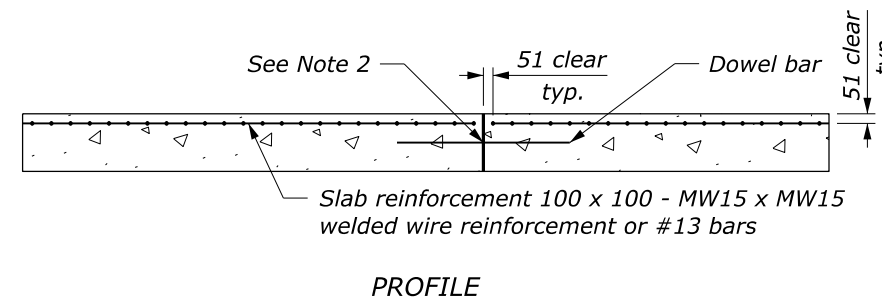
1. Provide the same type of dowel assemblies and tie bars for joints in plain portland cement concrete pavement as shown for joints in reinforced pavement.
2. See Standard M501-2 for joint and joint sealing details.
3. Lap longitudinal and transverse reinforcement not less than 380 mm.
4. Dimensions without units are millimeters.



PAVEMENT THICKNESS (mm)	TRANSVERSE JOINT SPACING (m)
$T < 150$	3
$150 \leq T < 300$	4.5



PLAIN MINOR CONCRETE PAVEMENT



REINFORCED MINOR CONCRETE PAVEMENT

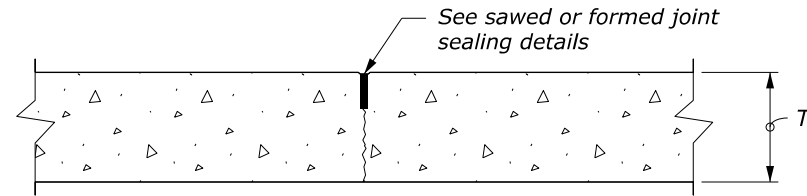
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 OFFICE OF FEDERAL LANDS HIGHWAY
 METRIC FLH STANDARD

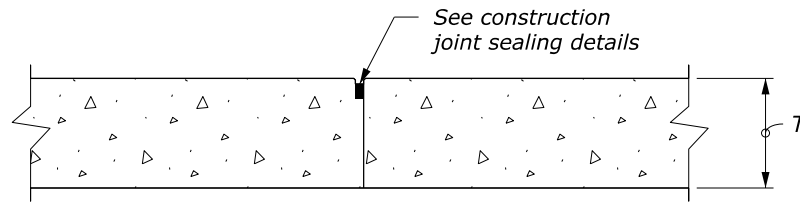
MINOR CONCRETE PAVEMENT

STANDARD APPROVED FOR USE 3/1996
 REVISED: 6/1997
 DRAFT: 9/2016

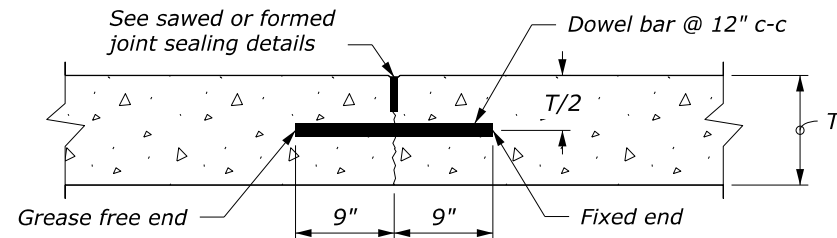
STANDARD M501-1



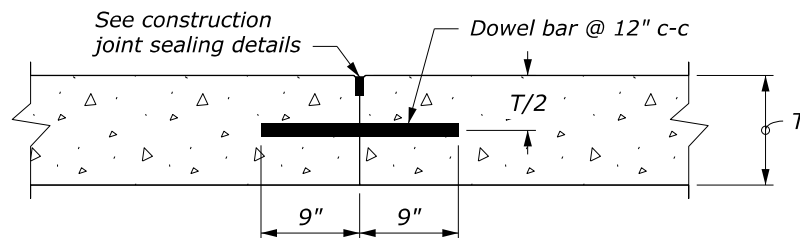
CONTRACTION JOINT
UNDOWELED - TRANSVERSE and
UNTIED - LONGITUDINAL



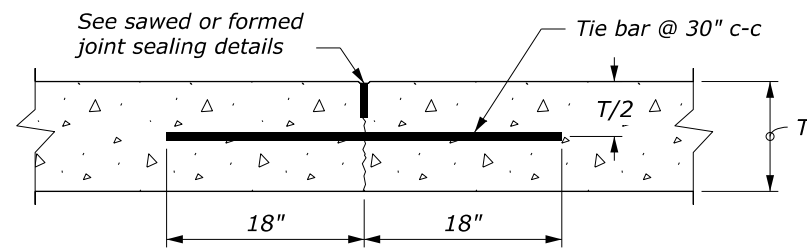
CONSTRUCTION JOINT
PLAIN - TRANSVERSE or LONGITUDINAL



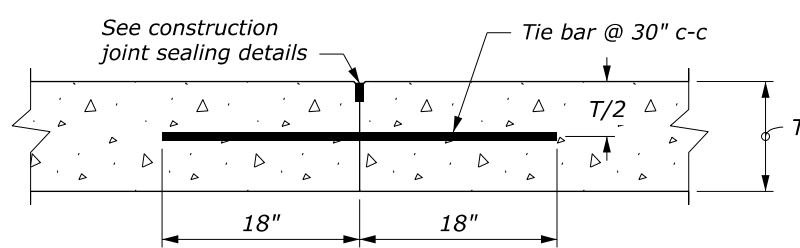
CONTRACTION JOINT
DOWELED - TRANSVERSE



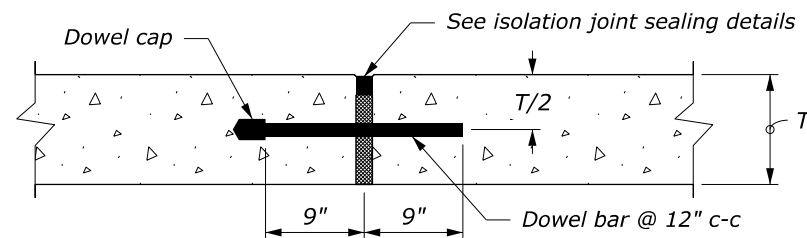
CONSTRUCTION JOINT
DOWEL BUTT - TRANSVERSE



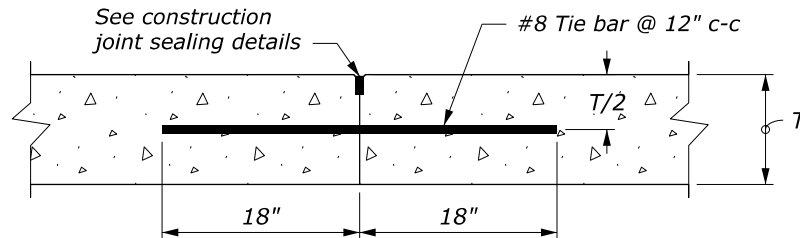
CONTRACTION JOINT
TIED - LONGITUDINAL



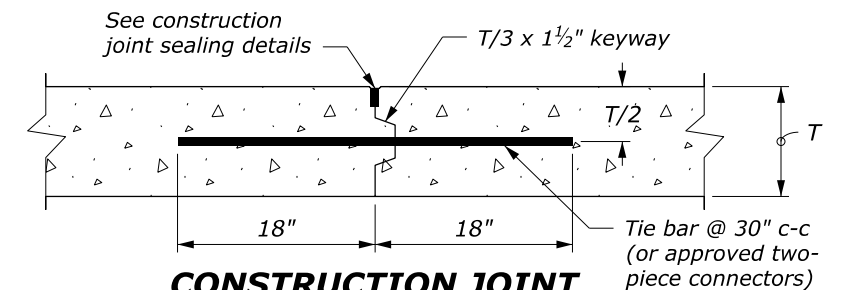
CONSTRUCTION JOINT
TIED BUTT - LONGITUDINAL



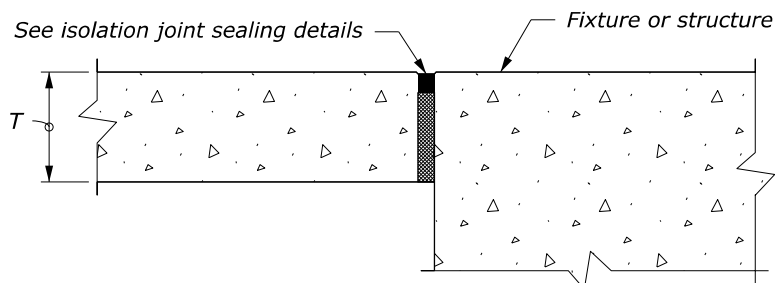
ISOLATION/EXPANSION JOINT
DOWELED - TRANSVERSE



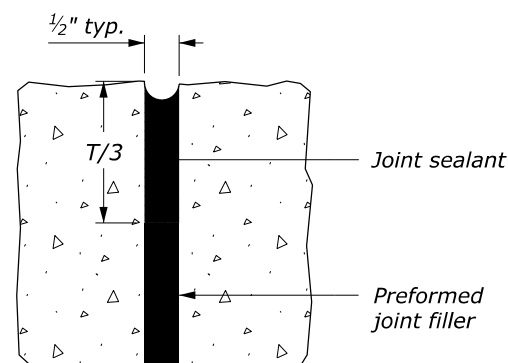
CONSTRUCTION JOINT
TIED BUTT - TRANSVERSE



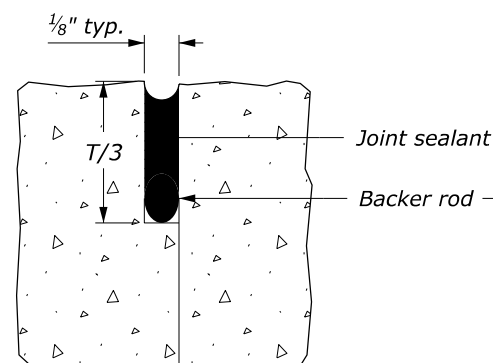
CONSTRUCTION JOINT
KEYWAY - LONGITUDINAL



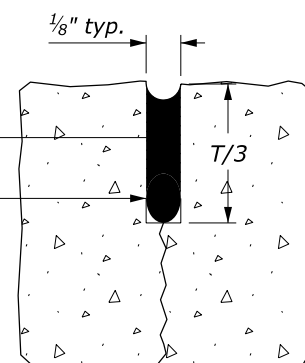
ISOLATION JOINT
UNDOWELED - LONGITUDINAL



ISOLATION JOINT



CONSTRUCTION JOINT



SAWED OR FORMED JOINT

MINOR CONCRETE PAVEMENT JOINT SEALING DETAILS

NOTE:

1. Use epoxy-coated material for all tie bars, dowels, and other steel used in the construction of concrete pavement.
2. Deformed reinforcing bars or hook bolts may be used for tie bars.
3. Do not place tie bars within 15 inches of transverse joints.
4. Install isolation joints when abutting a fixed structure. Use expansion joint material extending the full depth and length of the concrete surface.
5. Transverse and longitudinal construction joints are not included in the joint layout plan. Use transverse and longitudinal construction joints sparingly. Submit planned construction joint locations for approval.
6. For construction joints, if tie bars and dowels are not set into concrete during placement, drill and anchor the tie bars and dowels into the existing concrete construction with epoxy resin.
7. Maintain joint sealant shape factor of 1:1; except when silicone sealant is used maintain the width to depth shape factor of 2:1 or as recommended by sealant manufacturer.
8. See Section 712 for joint material requirements.
9. See Standards 501-1 or 502-1 for reinforcement details.

BAR SIZES		
PAVEMENT THICKNESS (T) (in)	TIE BAR	DOWEL BAR DIAMETER (in)
T ≤ 8	#5	1
8 < T ≤ 10	#5	1 1/4
10 < T ≤ 12	#6	1 1/2

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

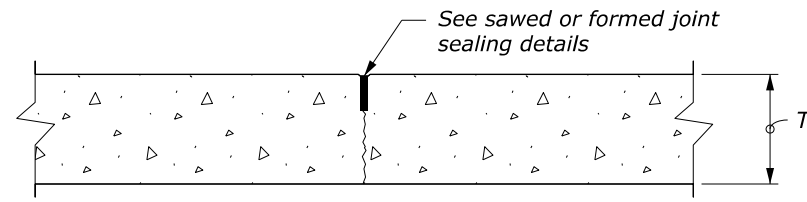
FLH STANDARD

MINOR CONCRETE PAVEMENT JOINTS

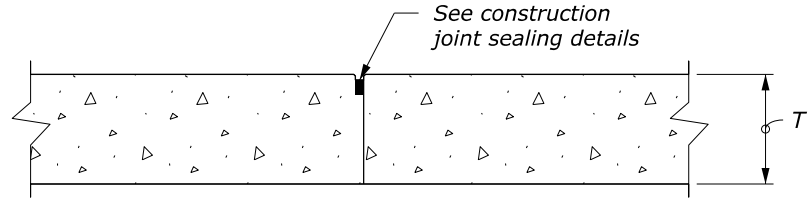
STANDARD APPROVED FOR USE --/----
REVISED: 9/2016

STANDARD
501-2

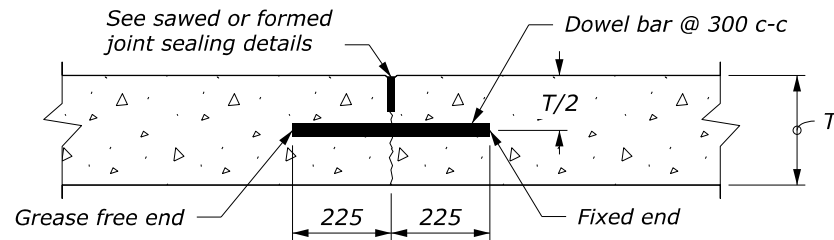
NO SCALE



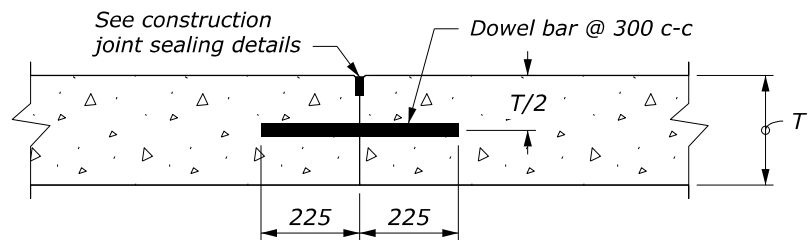
CONTRACTION JOINT
UNDOWELED - TRANSVERSE and
UNTIED - LONGITUDINAL



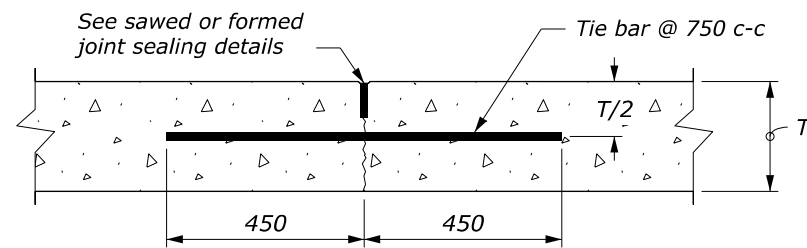
CONSTRUCTION JOINT
PLAIN - TRANSVERSE or LONGITUDINAL



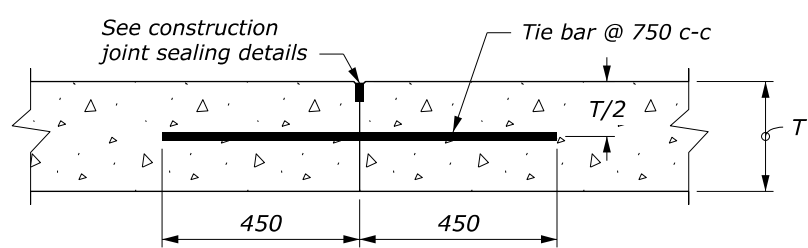
CONTRACTION JOINT
DOWELED - TRANSVERSE



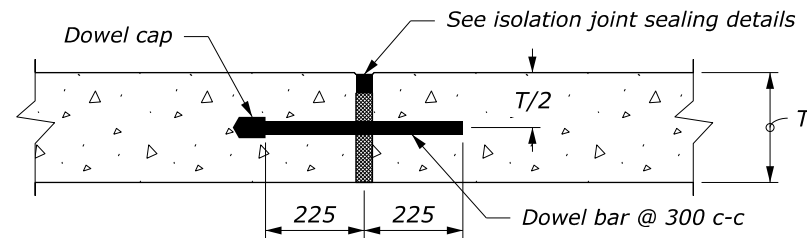
CONSTRUCTION JOINT
DOWEL BUTT - TRANSVERSE



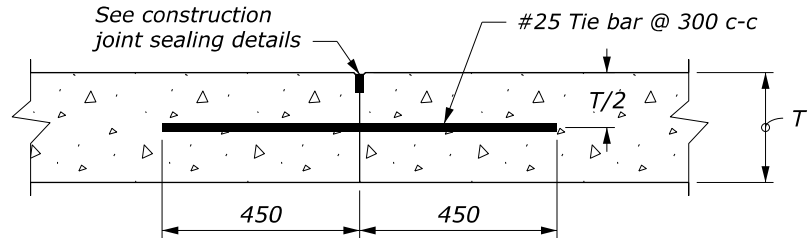
CONTRACTION JOINT
TIED - LONGITUDINAL



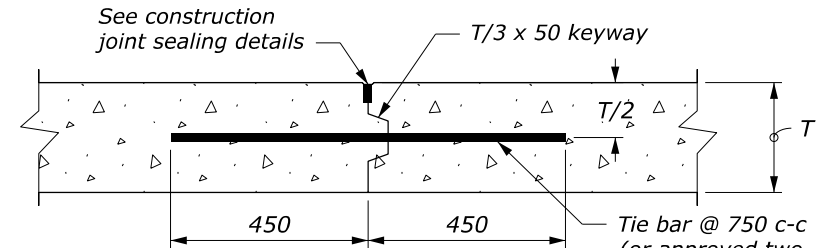
CONSTRUCTION JOINT
TIED BUTT - LONGITUDINAL



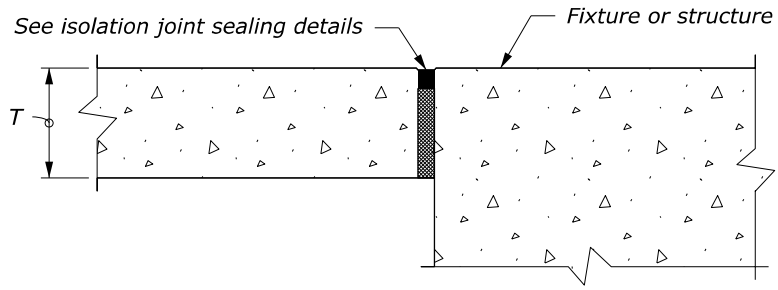
ISOLATION/EXPANSION JOINT
DOWELED - TRANSVERSE



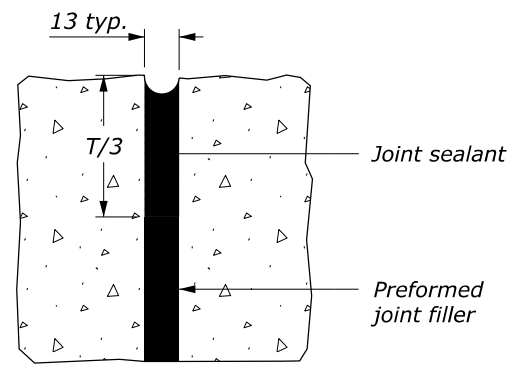
CONSTRUCTION JOINT
TIED BUTT - TRANSVERSE



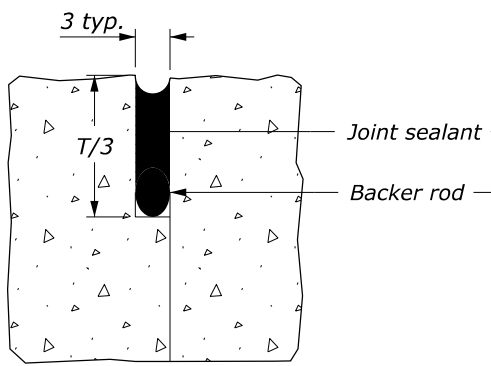
CONSTRUCTION JOINT
KEYWAY - LONGITUDINAL



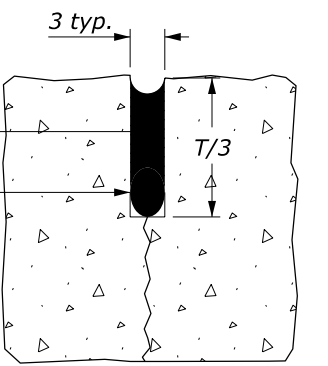
ISOLATION JOINT
UNDOWELED - LONGITUDINAL



ISOLATION JOINT



CONSTRUCTION JOINT



SAWED OR FORMED JOINT

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7. Maintain joint sealant shape factor of 1:1; except when silicone sealant is used maintain the width to depth shape factor of 2:1 or as recommended by sealant manufacturer.
8. See Section 712 for joint material requirements.
9. See Standards M501-1 or M502-1 for reinforcement details.
10. Dimensions without units are millimeters.

BAR SIZES		
PAVEMENT THICKNESS (T) (mm)	TIE BAR	DOWEL BAR DIAMETER (mm)
T ≤ 200	16	25
200 < T ≤ 250	16	32
250 < T ≤ 300	19	43

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
OFFICE OF FEDERAL LANDS HIGHWAY

METRIC FLH STANDARD

MINOR CONCRETE PAVEMENT JOINTS

STANDARD APPROVED FOR USE 3/1996
REVISED: 6/1997
DRAFT: 9/2016

STANDARD M501-2

NO SCALE