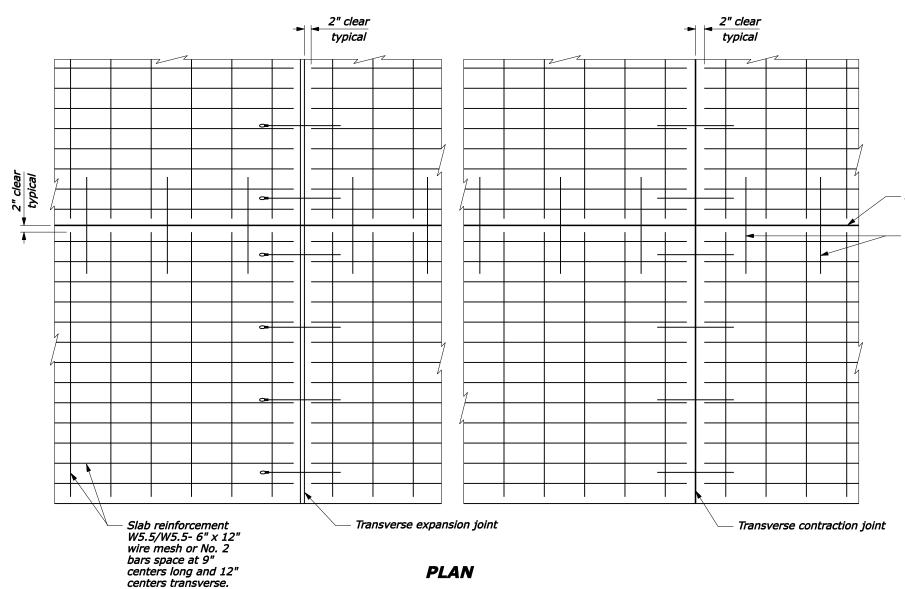
STATE PROJECT SHEET NUMBER

FOR COMMENT



NOTE:

- 1. Lap longitudinal reinforcement not less than 13-inches.
- 2. Lap transverse reinforcement not less than 9-inches.
- 3. Eliminate all longitudinal and transverse reinforcing steel, wire, or bars where plain portland cement concrete pavement or base is required.
- 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.
- 5. Space transverse expansion joints at a minimum of 280 feet.
- 6. Space transverse contraction joints for reinforced concrete pavement at not more than 40 foot intervals and for plain concrete pavement or base at not more than 20 foot intervals.
- 7. See Standard 501-2 for joint details and joint sealing details

Longitudinal construction joint

#5 tie bars x 3'-0" at 2'-6" centers (or approved two-piece connectors)

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

U.S. CUSTOMARY STANDARD

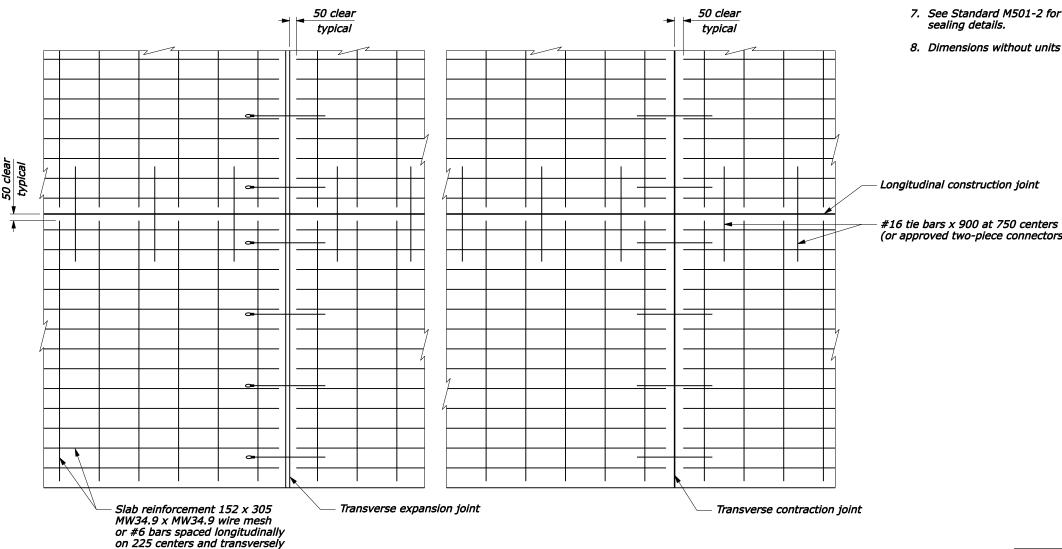
PORTLAND CEMENT CONCRETE PAVEMENT

NO SCALE

STANDARD APPROVED FOR USE --/--- STANDARD
REVISED:
DRAFT: 9/2004 501-1

STATE PROJECT NUMBE

FOR COMMENT



PLAN

on 300 centers

NOTE:

1. Lap longitudinal reinforcement not less than 325 mm.

2. Lap transverse reinforcement not less than 225 mm.

3. Eliminate all longitudinal and transverse reinforcing steel, wire, or bars where plain portland cement concrete pavement or base is required.

4. 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.

5. Space transverse expansion joints at a minimum of 84

6. Space transverse contraction joints for reinforced concrete pavement at not more than 12 meter intervals and for plain concrete pavement or base at not more than 6 meter intervals.

7. See Standard M501-2 for joint details and joint

8. Dimensions without units are millimeters.

(or approved two-piece connectors)

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

METRIC STANDARD

PORTLAND CEMENT CONCRETE PAVEMENT

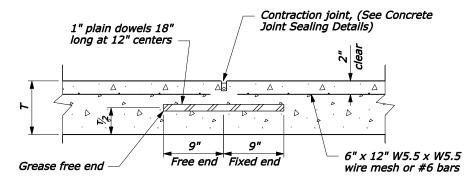
NO SCALE

STANDARD APPROVED FOR USE 3/1996 STANDARD M501-1

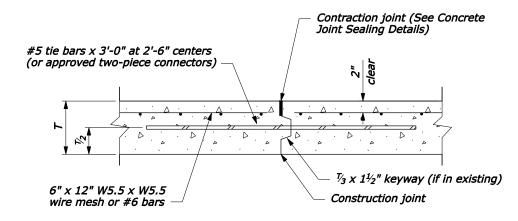
- Anchor tie bars and dowels into existing concrete pavement with epoxy resin adhesive.
- 2. Space expansion joints a minimum of 280 feet.
- 3. W= 3/8" for longitudinal contraction joints and 3/4" for transverse expansion and contraction joints field conditions require larger openings.
- Maintain joint sealant shape factor of 1:1 except that when silicone sealant is used, the width to depth (W:D) shape factor is 1:2.

Expansion joint (See Concrete Joint Sealing Details) 3" (max.) Fixed end Grease free end 1" 8" 9½" 6" x 12" W5.5 X W5.5 Wire mesh or #6 bars

TRANSVERSE EXPANSION JOINT

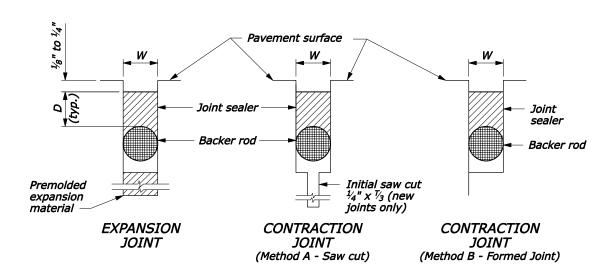


TRANSVERSE CONTRACTION JOINT



LONGITUDINAL CONSTRUCTION JOINT

REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT JOINT DETAILS



FOR COMMENT

REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT JOINT SEALING DETAILS

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

U.S. CUSTOMARY STANDARD

PORTLAND CEMENT
CONCRETE PAVEMENT JOINTS

NO SCALE

STANDARD APPROVED FOR USE/	STANDARD	
REVISED: DRAFT: 9/2004	501-2	

20

230

152 x 305

MW34.9 x MW34.9

wire mesh or #19 bars

TRANSVERSE EXPANSION JOINT

200

Grease free end

(min.)

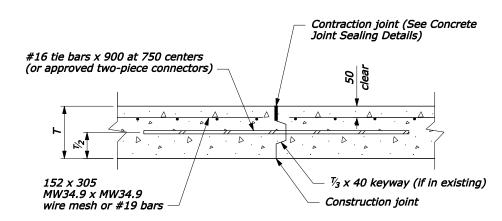
FOR COMMENT

NOTE:

- 1. Anchor tie bars and dowels into existing concrete pavement with epoxy resin adhesive.
- 2. Space expansion joints a minimum of 84 meters.
- 3. W= 10 for longitudinal contraction joints and 20 for transverse expansion and contraction joints field conditions require larger openings.
- 4. Maintain joint sealant shape factor of 1:1 except that when silicone sealant is used, the width to depth (W:D) shape factor is 1:2.
- 5. Dimensions without units are millimeters.

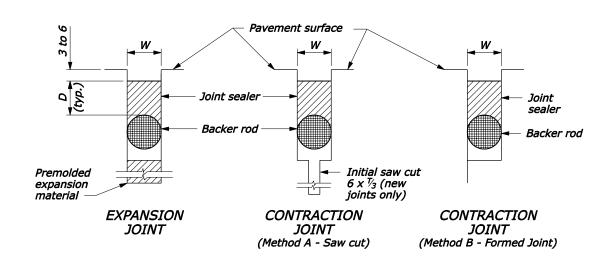
Contraction joint, (See Concrete 25 plain dowels 450 Joint Sealing Details) long at 300 centers 225 225 152 x 305 MW34.9 x MW34.9 Free end Fixed end Grease free end wire mesh or #19 bars

TRANSVERSE CONTRACTION JOINT



LONGITUDINAL CONSTRUCTION JOINT

REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT JOINT DETAILS



REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT JOINT SEALING DETAILS

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

METRIC STANDARD

PORTLAND CEMENT CONCRETE PAVEMENT JOINTS

NO SCALE

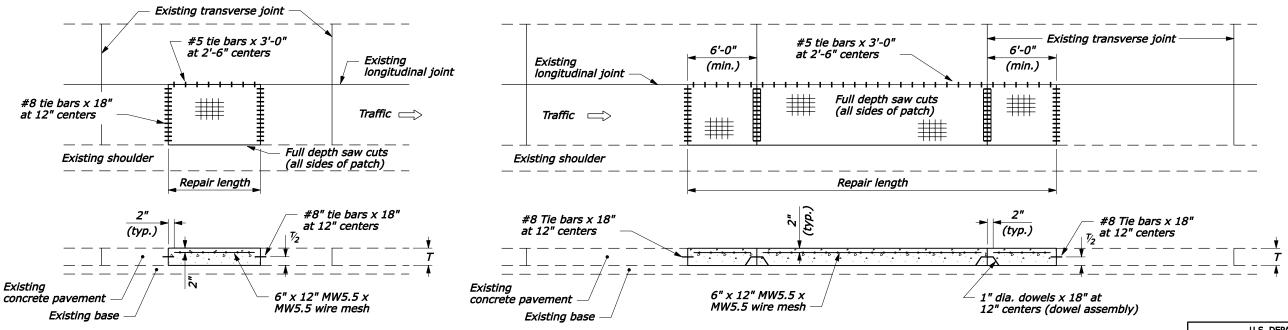
STANDARD APPROVED FOR USE 3/1996 STANDARD REVISED: 6/1997 DRAFT: 9/2004 M501-2

FOR COMMENT

Existing transverse joint -Existing transverse joint Existing transverse joint -#5 tie bars x 3'-0" 6'-0" 6'-0" at 2'-6" centers ''-0<u>"</u> 3'-0<u>"</u> Existing (min.) Existing Place bond breaker longitudinal joint longitudinal joint Full depth saw cuts #5 tie bars x 3'-0" (all sides of patch) #8 tie bars x 18" Traffic => at 2'-6" centers Traffic => ## at 12" centers Full depth saw cuts Existing shoulder Existing shoulder all sides of patch) Repair Repair length Length 1" dia. dowels x 18" #8 tie bars x 18" #8 tie bars x 18" at 12" centers 7/2 at 12" centers (typ.) (typ.) at 12" centers Existing Existing 1" dia. dowels x 18" 6" x 12" MW5.5 concrete pavement concrete pavement x MW5.5 wire mesh at 12" centers 6" x 12" MW5.5 x Existing base Existing base MW5.5 wire mesh **METHOD** C METHOD A

NOTE:

- 1. Drill holes for the dowels and tie bars simultaneously to the required depth using frame mounted drills which will maintain the drills parallel to profile and longitudinal joint.
- 2. See Standard 501-4 for pavement repair saw cuts for lift-out method.
- 3. Orient wire mesh so that the 12-inch dimension parallels the existing longitudinal joint.
- 4. An approved two-piece longitudinal tie device may be used in lieu of the #5 tie bars.
- 5. See Standard 501-1 for reinforcement for full depth concrete pavement repair.



METHOD D

METHOD B

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

U.S. CUSTOMARY STANDARD

CONCRETE **PAVEMENT PATCHING**

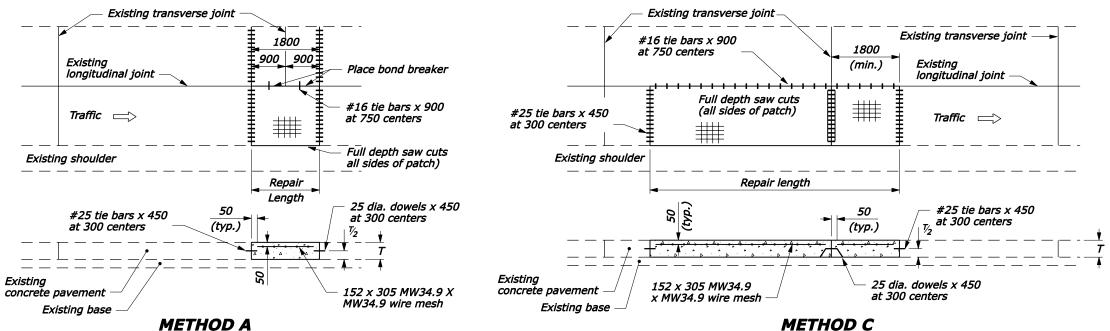
NO SCALE

REVISED:

STANDARD APPROVED FOR USE --/----STANDARD 501-3 DRAFT: 9/2004

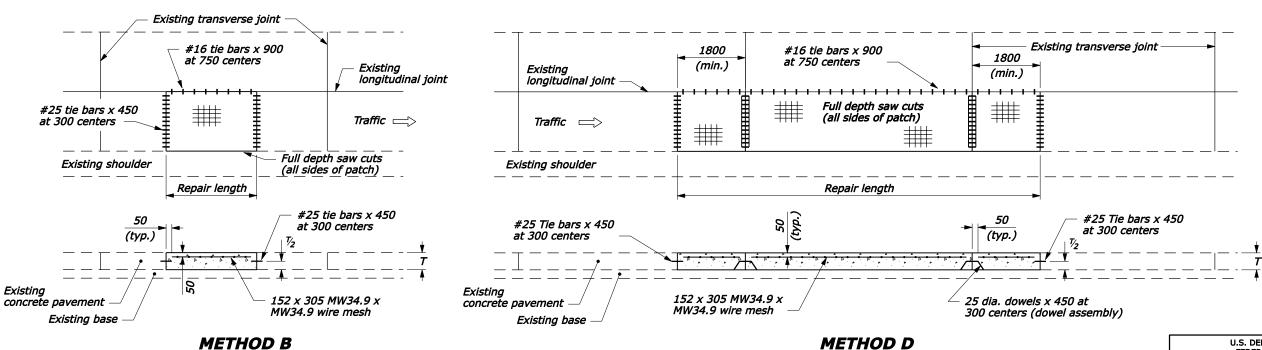
STATE PROJECT SHEET NUMBER

FOR COMMENT



NOTE:

- 1. Drill holes for the dowels and tie bars simultaneously to the required depth using frame mounted drills which will maintain the drills parallel to profile and longitudinal joint.
- 2. See Standard M501-4 for pavement repair saw cuts for lift-out method.
- 3. Orient wire mesh so that the 300 mm dimension parallels the existing longitudinal joint.
- 4. An approved two-piece longitudinal tie device may be used in lieu of the #16 tie bars.
- 5. See Standard M501-1 for reinforcement for full depth concrete pavement repair.
- 6. Dimensions without units are millimeters.



NO SCALE

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

METRIC STANDARD

CONCRETE PAVEMENT PATCHING

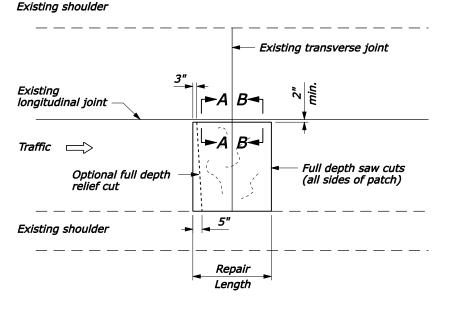
STANDARD APPROVED FOR USE 3/1996 STANDARD
REVISED: 5/1997
DRAFT: 9/2004 M501-3

STATE	PROJECT	SHEET NUMBER	

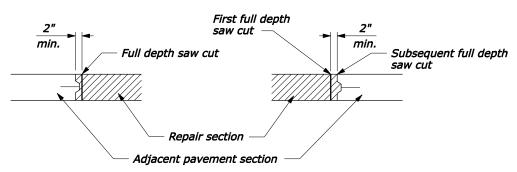
NOTE:

- 1. Shoulder joints may be cut directly into the existing joint.
- 2. Make cuts running parallel and adjacent to a lane of traffic a minimum of 2 inches from the existing joint.
- 3. Saw cuts may be made into the shoulder.
- 4. If it is determined that the keyway is formed in the adjacent pavement section, the subsequent full depth saw cut may be made on the longitudinal joint.

FOR COMMENT



PLAN



SECTION A-A KEYWAY IN REPAIR SECTION SECTION B-B KEYWAY IN ADJACENT PAVEMENT SECTION

REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT SAW CUTS FOR LIFT OUT METHOD

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

U.S. CUSTOMARY STANDARD

CONCRETE PAVEMENT REMOVAL METHODS

NO SCALE

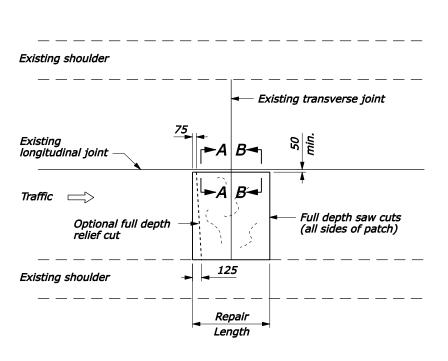
STANDARD APPROVED FOR USE --/--- STANDARD
REVISED: 9/2004 501-4

STATE PROJECT SHEET NUMBER

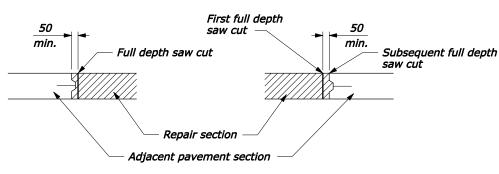
NOTE:

- 1. Shoulder joints may be cut directly into the existing joint.
- 2. Make cuts running parallel and adjacent to a lane of traffic a minimum of 50 mm from the existing joint.
- 3. Saw cuts may be made into the shoulder.
- 4. If it is determined that the keyway is formed in the adjacent pavement section, the subsequent full depth saw cut may be made on the longitudinal joint.
- 5. Dimensions without units are millimeters.

FOR COMMENT



PLAN



SECTION A-A KEYWAY IN REPAIR SECTION SECTION B-B KEYWAY IN ADJACENT PAVEMENT SECTION

REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT SAW CUTS FOR LIFT OUT METHOD

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

METRIC STANDARD

CONCRETE PAVEMENT REMOVAL METHODS

NO SCALE

STANDARD APPROVED FOR USE 3/1996 STANDARD
REVISED: M501-4