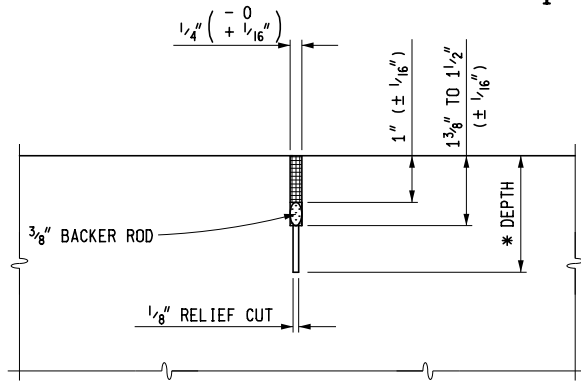


SYMBOL (Cp) AND (C3p)

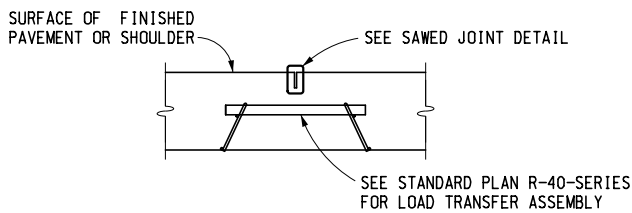


| SYMBOL | LOAD TRANSFER | JOINT USE |
|--------|---------------|-----------|
| (Cp) | YES | PAVEMENT |
| (C3p) | NO | SHOULDER |

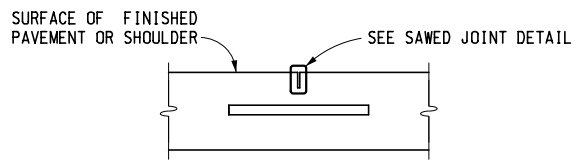
SAWED JOINT DETAIL

SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

* DEPTH OF RELIEF CUT FOR JOINT (Cp) AND (C3p) SHALL BE 1/4 THE SLAB THICKNESS FOR PAVEMENTS LESS THAN OR EQUAL TO 7" IN THICKNESS AND 1/3 THE SLAB THICKNESS FOR PAVEMENTS GREATER THAN 7" THICK.



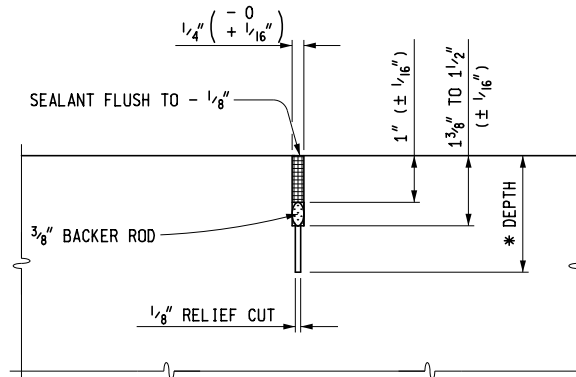
LOAD TRANSFER ASSEMBLY METHOD



DOWEL BAR INSERTER METHOD

TRANSVERSE CONTRACTION JOINT

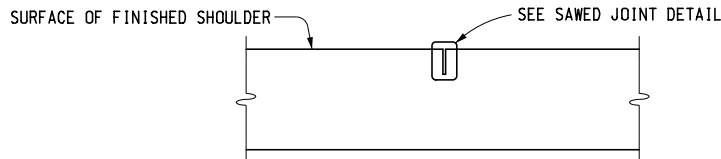
SYMBOL (W)



SAWED JOINT DETAIL

SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

* DEPTH OF RELIEF CUT FOR JOINT 1/4 THE SLAB THICKNESS.



TRANSVERSE AND INTERSECTION PLANE OF WEAKNESS JOINTS



PREPARED BY
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Stuedle

APPROVED BY: _____
ENGINEER OF DELIVERY

APPROVED BY: _____
ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)**

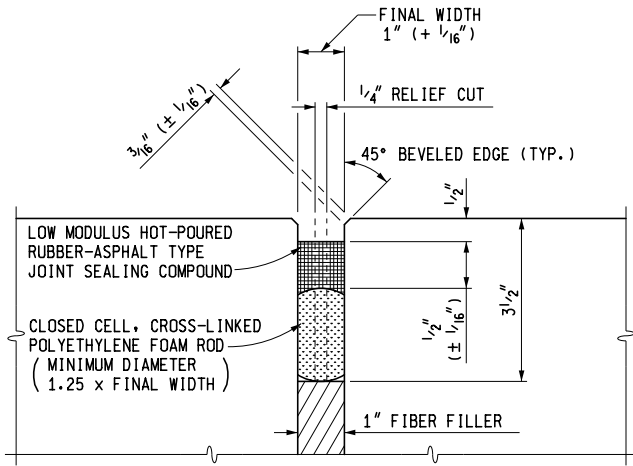
F.H.W.A. APPROVAL

7-13-2016
PLAN DATE

R-39-J

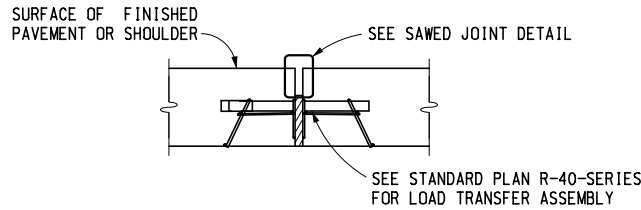
SHEET
1 OF 5

SYMBOL (E2) AND (E4)



SAWED JOINT DETAIL

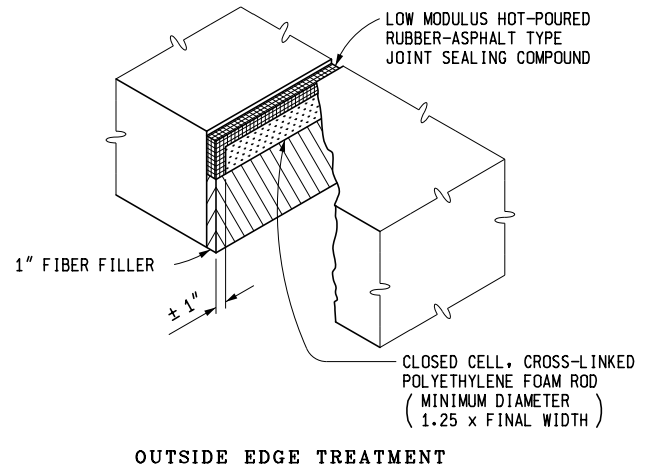
SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.



NOTE:

THE FINAL WIDTH OF THE GROOVE SHALL BE $1" + \frac{1}{16}"$ PLUS ANY INCREASE OR MINUS ANY DECREASE IN THE WIDTH OF THE RELIEF CUT. THE FINAL SAW CUT SHALL BE TO THE TOP OF THE FIBER FILLER WITH A MINIMUM DEPTH AS SHOWN AND SHALL BE CENTERED OVER THE FIBER FILLER WITH A HORIZONTAL TOLERANCE OF $\frac{1}{4}"$. FIBER FILLER FOR EXPANSION JOINTS IN CONCRETE SHOULDERS SHALL BE FREE OF HOLES OR OTHER DEFECTS AND TRIMMED TO FIT SHOULDER CONFIGURATIONS.

| SYMBOL | LOAD TRANSFER ASSEMBLY | JOINT USE |
|--------|------------------------|-----------|
| (E2) | YES | PAVEMENT |
| (E4) | NO | SHOULDER |

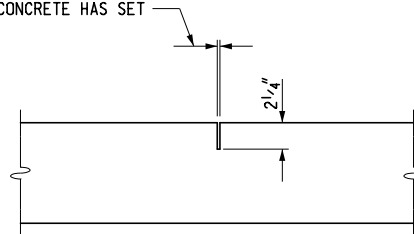


OUTSIDE EDGE TREATMENT

TRANSVERSE EXPANSION JOINT

SYMBOL (U)

$\frac{1}{8}"$ SAWED JOINT OR A FORMED JOINT MADE BY PLACING $\frac{1}{4}"$ HARDBOARD OR OTHER APPROVED MATERIAL FLUSH WITH THE SURFACE OF THE CONCRETE BASE COURSE AND TRUE TO POSITION AND LINE BEFORE THE CONCRETE HAS SET



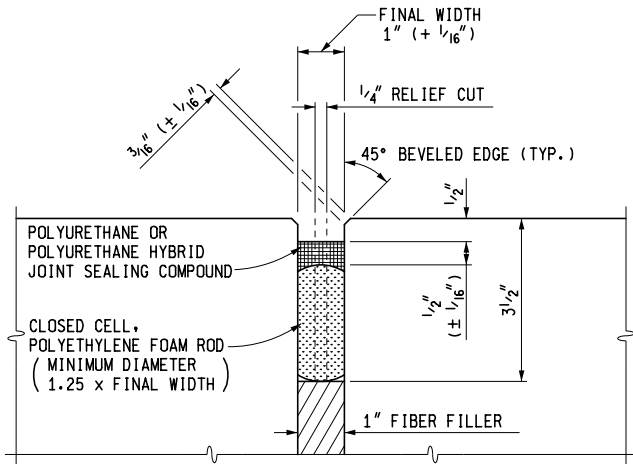
TRANSVERSE PLANE OF WEAKNESS JOINTS IN CONCRETE BASE COURSE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)**

| | | | |
|-------------------|------------------------|--------|-----------------|
| F.H.W.A. APPROVAL | 7-13-2016 PLAN DATE | R-39-J | SHEET 2 OF 5 |
|-------------------|------------------------|--------|-----------------|

SYMBOL (E3)



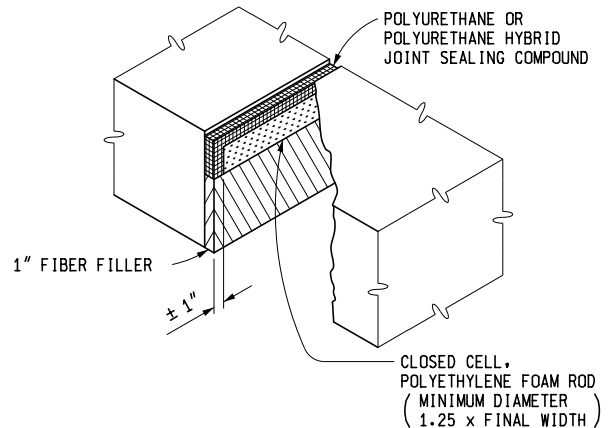
SAWED JOINT DETAIL

SAWED JOINT SEALED WITH POLYURETHANE OR POLYURETHANE HYBRID JOINT SEALING COMPOUND.

NOTE:

THE FINAL WIDTH OF THE GROOVE SHALL BE 1" + 1/16" PLUS ANY INCREASE OR MINUS ANY DECREASE IN THE WIDTH OF THE RELIEF CUT. THE FINAL SAW CUT SHALL BE TO THE TOP OF THE FIBER FILLER WITH A MINIMUM DEPTH AS SHOWN AND SHALL BE CENTERED OVER THE FIBER FILLER WITH A HORIZONTAL TOLERANCE OF 1/4". FIBER FILLER FOR EXPANSION JOINTS IN CONCRETE SHOULDERS SHALL BE FREE OF HOLES OR OTHER DEFECTS AND TRIMMED TO FIT SHOULDER CONFIGURATIONS.

| SYMBOL | LOAD TRANSFER ASSEMBLY | JOINT USE |
|--------|------------------------|---------------------|
| (E3) | NO | PAVEMENT & SHOULDER |



OUTSIDE EDGE TREATMENT

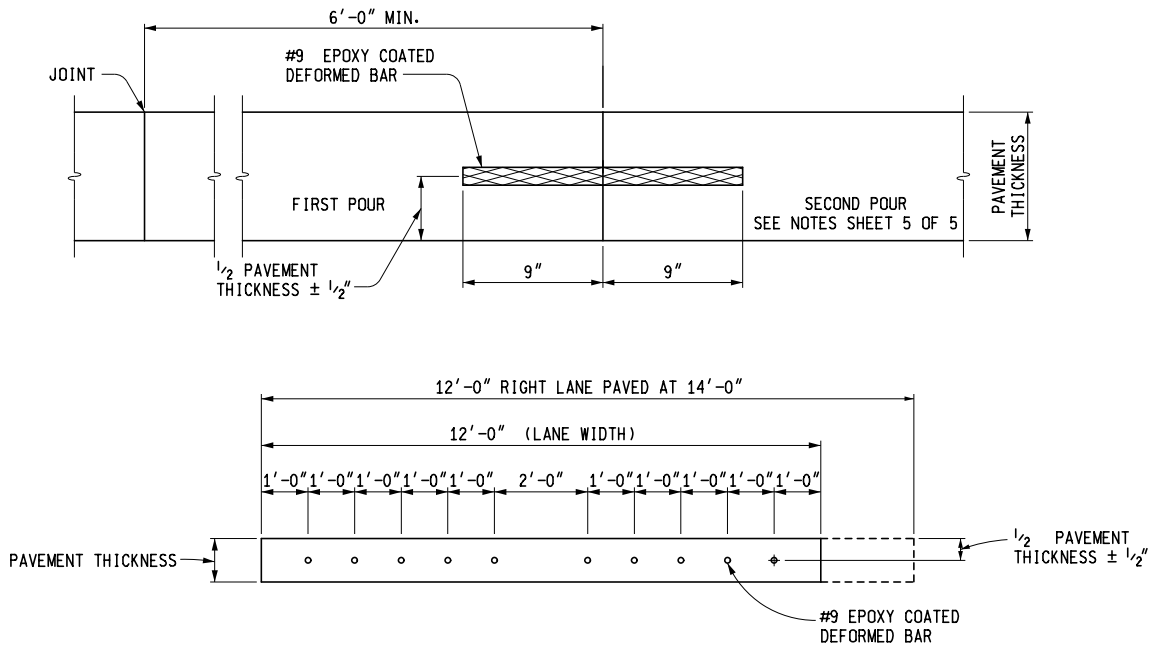
TRANSVERSE EXPANSION JOINT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

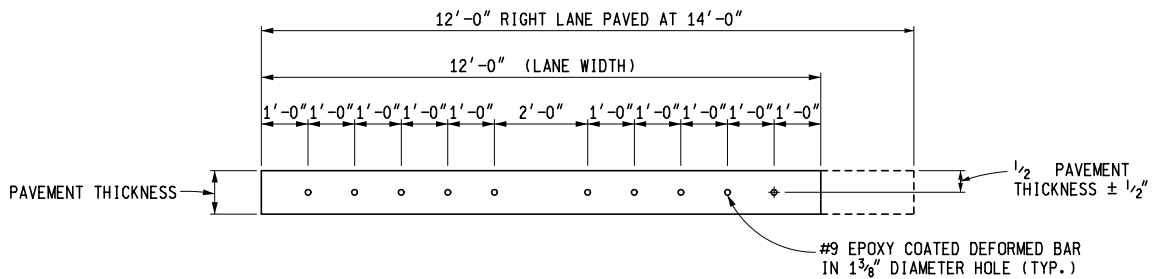
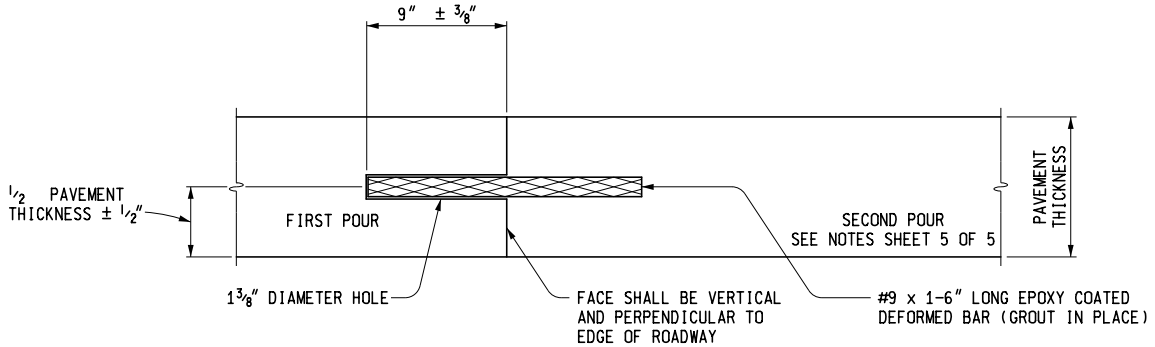
**TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)**

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|-------------------|------------------------|--------|-----------------|
| F.H.W.A. APPROVAL | 7-13-2016 PLAN DATE | R-39-J | SHEET 3 OF 5 |
|-------------------|------------------------|--------|-----------------|

SYMBOL (H)



**DEFORMED BAR SPACING
TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD)**

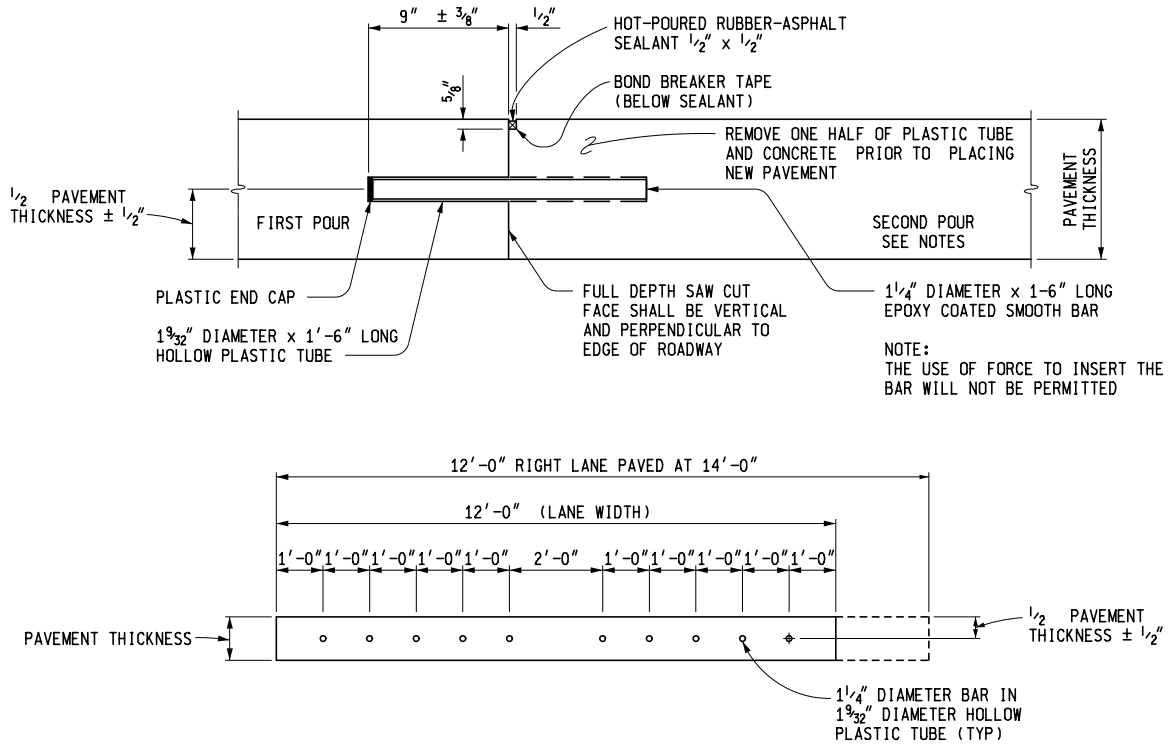


**DEFORMED BAR SPACING
TRANSVERSE END OF POUR JOINT (DRILLED IN METHOD)**

NOTE: THE HOLE SPACING MAY BE ADJUSTED 1" HORIZONTALLY, RAISED 1/2", OR LOWERED 1" FROM THE ABOVE LOCATIONS TO AVOID DRILLING INTO THE REINFORCEMENT.

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| MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR | | |
| TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT) | | |
| F.H.W.A. APPROVAL | 7-13-2016 PLAN DATE | R-39-J |
| | | SHEET 4 OF 5 |

SYMBOL (H)



DEFORMED BAR SPACING

TRANSVERSE END OF POUR JOINT (PLASTIC TUBE METHOD)

NOTES:

LOAD TRANSFER ASSEMBLIES ARE DETAILED ON THE CURRENT STANDARD PLAN R-40-SERIES.

TRANSVERSE JOINTS SHALL BE SPACED ACCORDING TO THE CURRENT STANDARD PLAN R-43-SERIES.

A TRANSVERSE END OF POUR JOINT (DRILLED IN METHOD) SYMBOL (H), SHALL BE CONSTRUCTED WHEN IT IS ANTICIPATED THAT THE SECOND POUR WILL BE DELAYED 7 DAYS OR LONGER.

A TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD) OR (PLASTIC TUBE METHOD) SHALL BE USED AT THE END OF THE DAY'S POUR OR WHEN THERE IS AN UNAVOIDABLE INTERRUPTION OF THE WORK FOR MORE THAN ONE-HALF HOUR AND LESS THAN 7 DAYS. THE JOINT SHALL BE CONSTRUCTED ACCORDING TO TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD) OR (PLASTIC TUBE METHOD), SYMBOL (H).

THE EXPANSION JOINT MATERIAL IN THE SHOULDERS SHALL BE SUPPORTED BY ONE OF THE FOLLOWING METHODS:

1. A CONTINUOUS SUPPORT WIRE, AS SPECIFIED FOR EXPANSION LOAD TRANSFERS ASSEMBLIES, AS DETAILED ON STANDARD PLAN R-40-SERIES, SHALL BE USED ON EACH SIDE OF EXPANSION MATERIAL. THIS WIRE SHALL BE EQUIPPED WITH STAKES AND STAKE POCKETS TO RIGIDLY HOLD THE EXPANSION MATERIAL IN PLACE DURING CONCRETE PLACEMENT. STAKES SHALL BE AS SPECIFIED ON STANDARD PLAN R-40-SERIES, SPACED NOT MORE THAN 2'-0" APART.
2. "U" OR "J" SHAPE STAPLES OF W8 WIRE (0.319" NOMINAL DIAMETER) SHALL BE SPACED ON 2'-0" CENTERS EACH SIDE OF THE EXPANSION MATERIAL. EACH VERTICAL LEG OF THE STAPLE SHALL BE AT LEAST 1'-3" LONG.
3. OTHER EQUIVALENT METHODS MAY BE USED WHEN APPROVED BY THE ENGINEER.

JOINTS SHALL NOT BE SEALED IN CONCRETE BASE COURSE.

WHEN CONCRETE SHOULDERS ARE CAST SEPARATELY FROM MAINLINE CONCRETE PAVEMENT, A KEYWAY MAY BE USED TO FACILITATE THE PLACING OF LANE TIES. WHEN A KEYWAY GROOVE IS USED, IT SHALL BE CONTINUOUS AND UNIFORM.

THE LOCATION OF TRANSVERSE JOINTS IN CONCRETE SHOULDERS SHALL MATCH THE LOCATION OF ADJACENT TRANSVERSE PAVEMENT JOINTS. CORRESPONDING TRANSVERSE CONCRETE SHOULDER AND PAVEMENT JOINTS SHALL BE (C3P) SHOULDER WITH (CP) PAVEMENT, (E4) SHOULDER WITH (E2) PAVEMENT, AND (E3) BEING THE SAME IN BOTH SHOULDER AND PAVEMENT.

DEFORMED BARS FOR TRANSVERSE END OF POUR JOINTS (DRILLED IN METHOD) SHALL BE GROUTED INTO EXISTING PAVEMENT WITH A GROUT SELECTED FROM THE PREQUALIFIED MATERIALS LISTED IN THE DEPARTMENT'S "MATERIALS SOURCE GUIDE" UNDER ADHESIVE SYSTEMS FOR GROUTING DOWEL BARS AND TIE BARS FOR FULL-DEPTH PAVEMENT REPAIRS.

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|--|------------------------|---------------|-----------------|
| MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR | | | |
| TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT) | | | |
| F.H.W.A. APPROVAL | 7-13-2016 PLAN DATE | R-39-J | SHEET 5 OF 5 |