

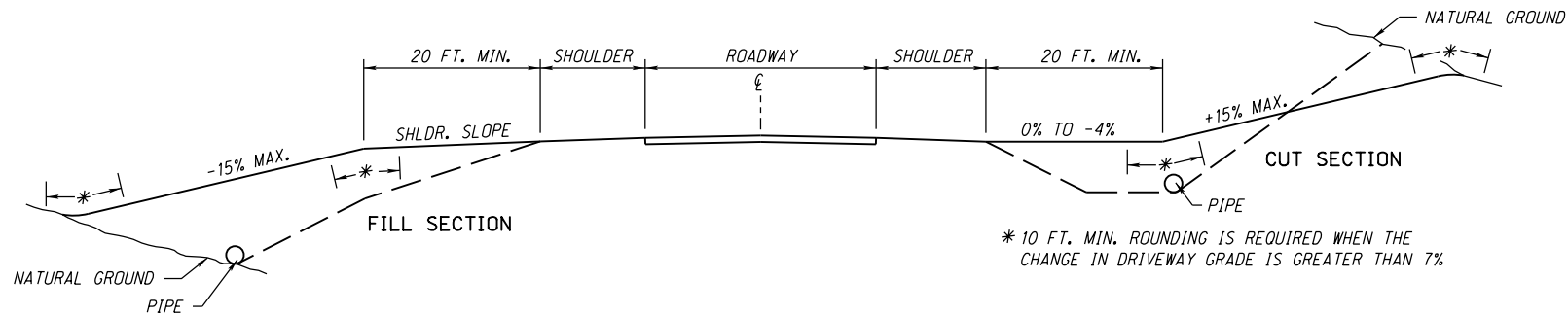
Typical X-Section Table of Contents

June 1, 2023

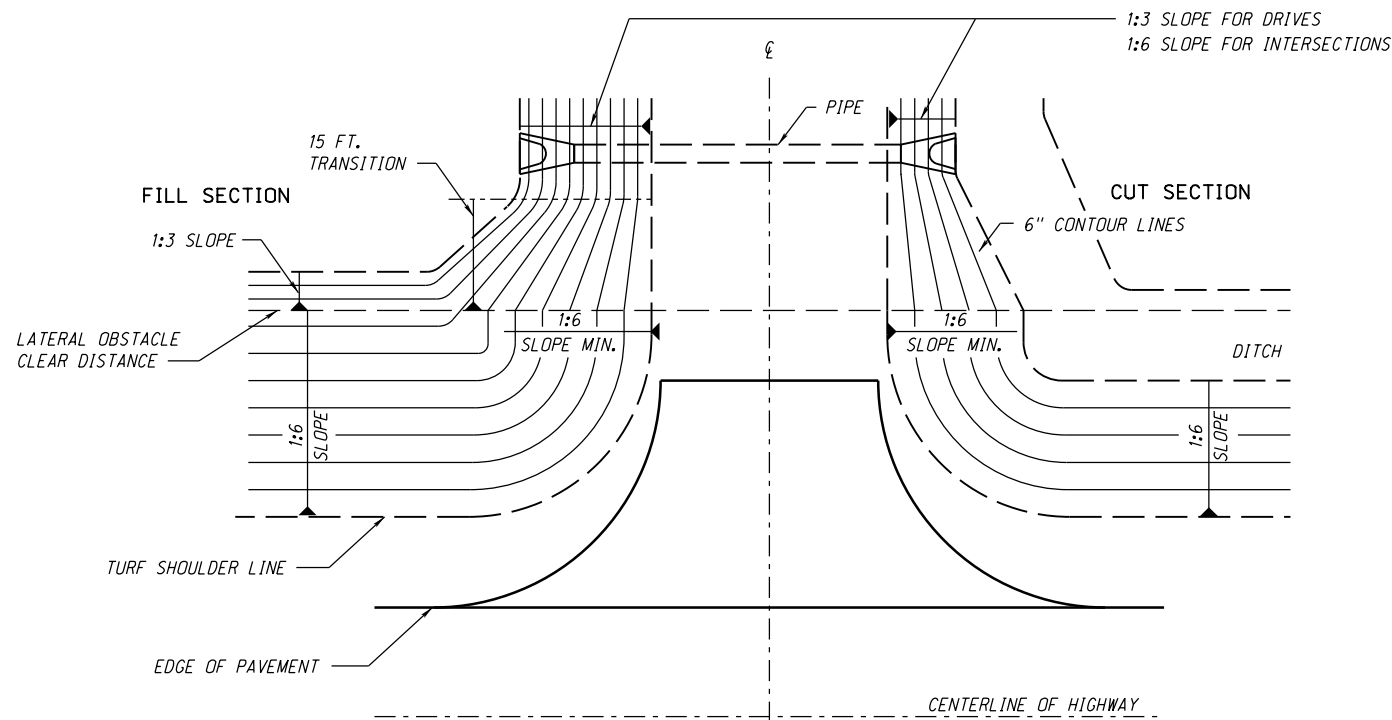
Plan No.	Title	Comments
1100 2 R4	Rural Intersections and Driveways	
1110 2 R0	Typical Cross Sections of Old Road Obliteration	
1700 2 R1	Grading for Guardrail End Treatments	
1702 2 R0	Grading for Terminal Anchorage Section	
1910 2 R0	Details of Maintenance Turnaround with 40' Median	
1911 2 R0	Details of Maintenance Turnaround with 64' Median	
3850 2 R24	Joint/Pavement Repair	
3851 2 R18	Joint/Pavement Repair (Overlay)	

RURAL INTERSECTIONS & DRIVEWAYS

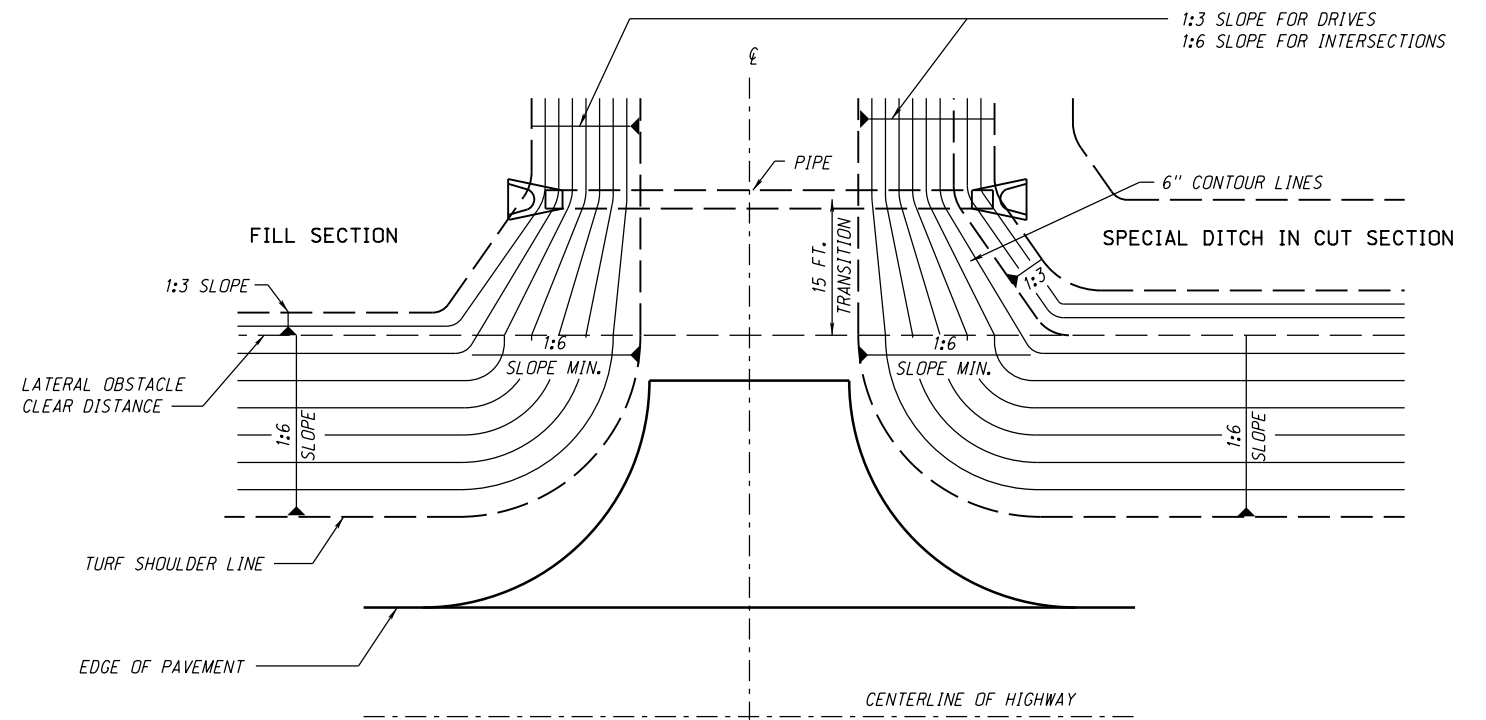
ROADWAY DESIGN DIVISION



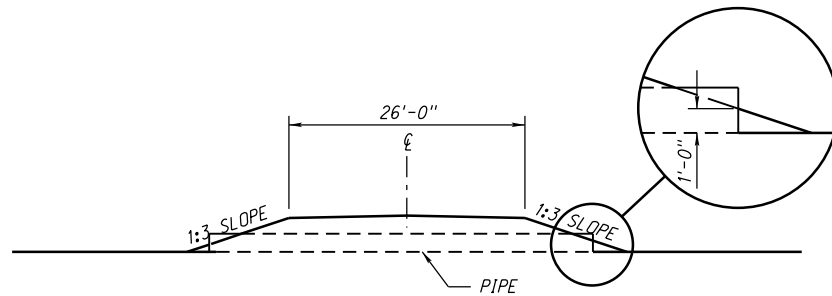
PROFILES FOR DRIVEWAY OR INTERSECTION GRADE EXCEEDING 8%



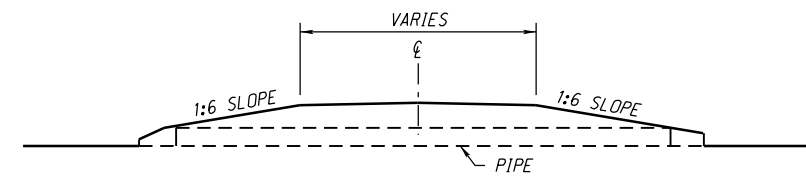
INTERSECTION OR DRIVEWAY WITHOUT SPECIAL DITCH



INTERSECTION OR DRIVEWAY WITH SPECIAL DITCH



SECTION OF DRIVEWAY WITH PIPE

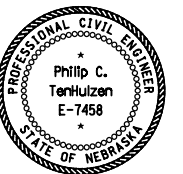


SECTION OF INTERSECTION WITH PIPE

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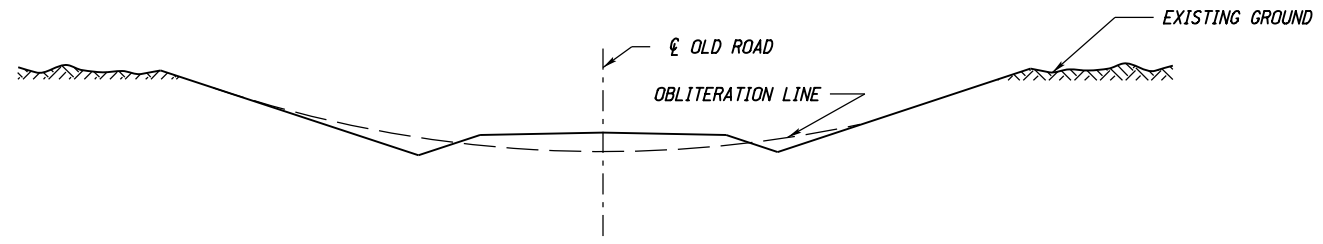
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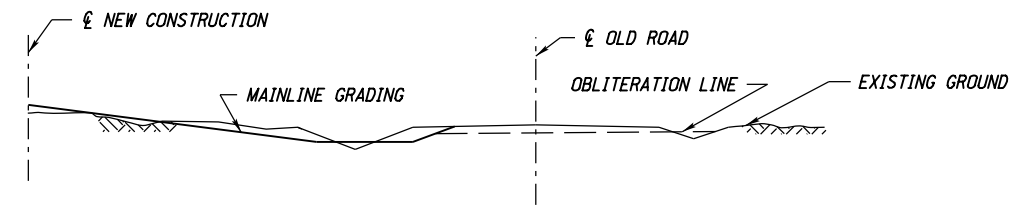


TYPICAL CROSS SECTIONS OF OLD ROAD OBLITERATION

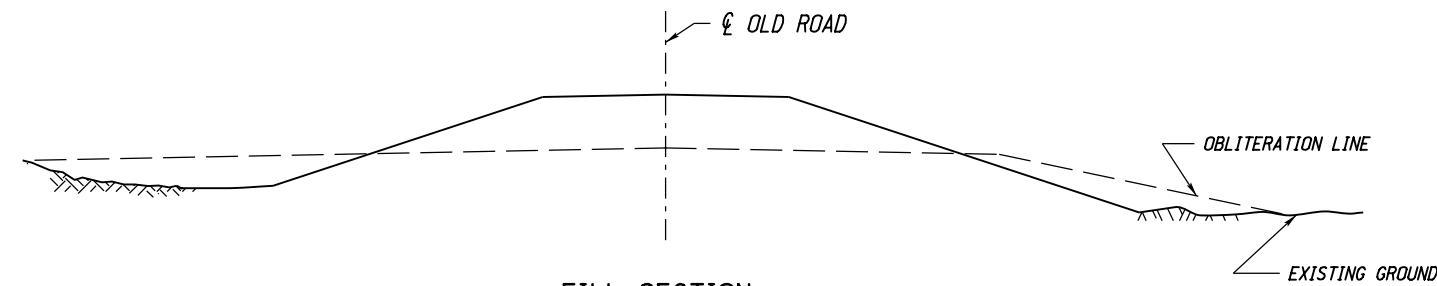
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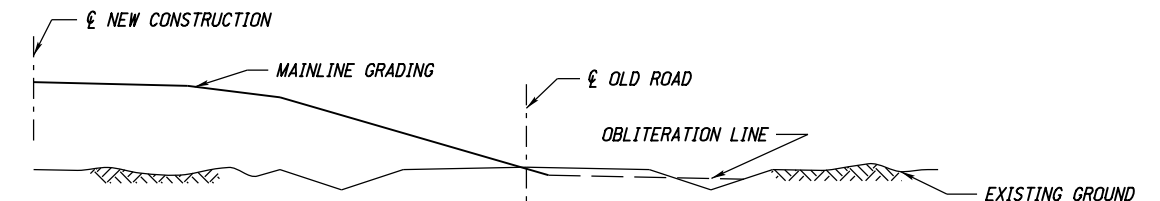
CUT SECTION
(OLD ROAD AWAY FROM NEW CONSTRUCTION)



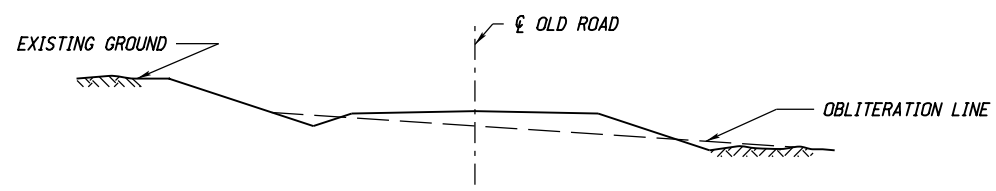
CUT SECTION
(OLD ROAD NEAR CUT SECTION, NEW CONSTRUCTION)



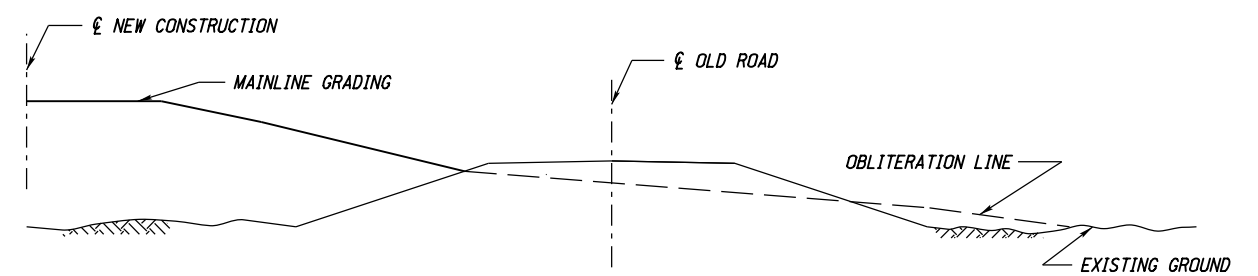
FILL SECTION
(OLD ROAD AWAY FROM NEW CONSTRUCTION)



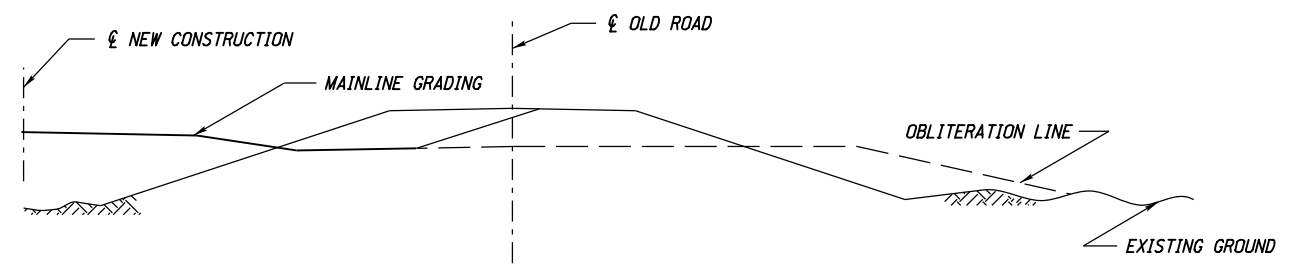
CUT SECTION
(OLD ROAD NEAR FILL SECTION, NEW CONSTRUCTION)



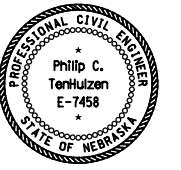
HALF CUT SECTION & HALF FILL SECTION
(OLD ROAD AWAY FROM NEW CONSTRUCTION)



FILL SECTION
(OLD ROAD NEAR FILL SECTION, NEW CONSTRUCTION)

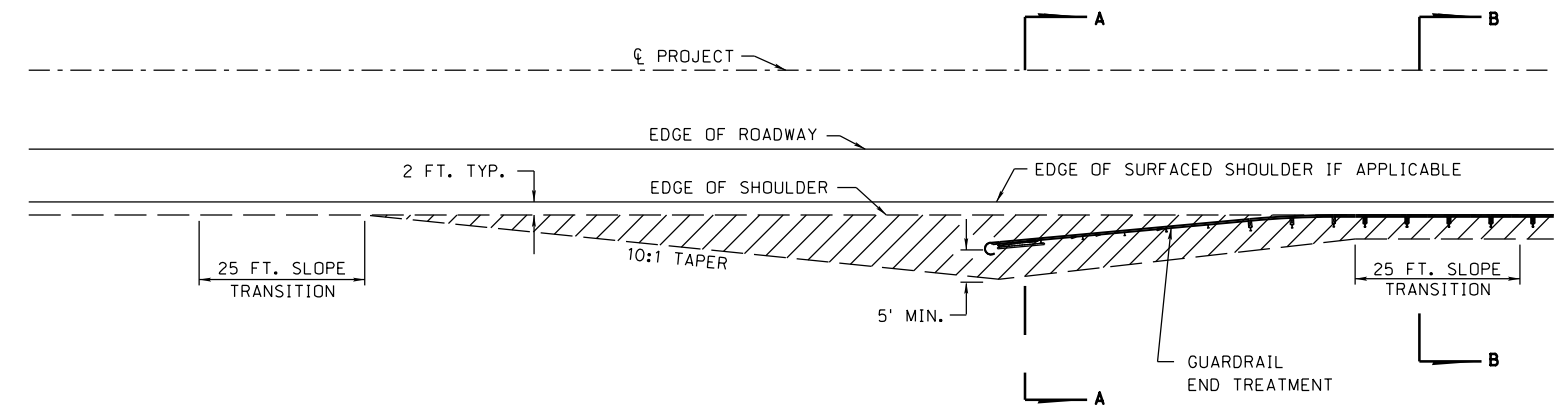


FILL SECTION
(OLD ROAD NEAR CUT SECTION, NEW CONSTRUCTION)



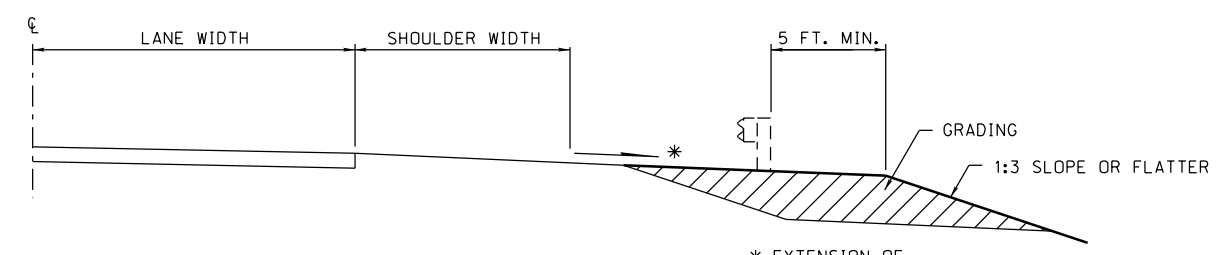
TYPICAL CROSS SECTIONS

ROADWAY DESIGN DIVISION

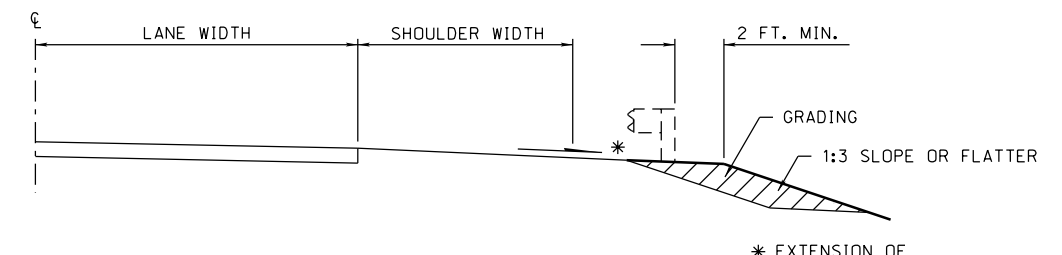


GRADING FOR GUARDRAIL END TREATMENTS

PLAN



SECTION A-A



SECTION B-B

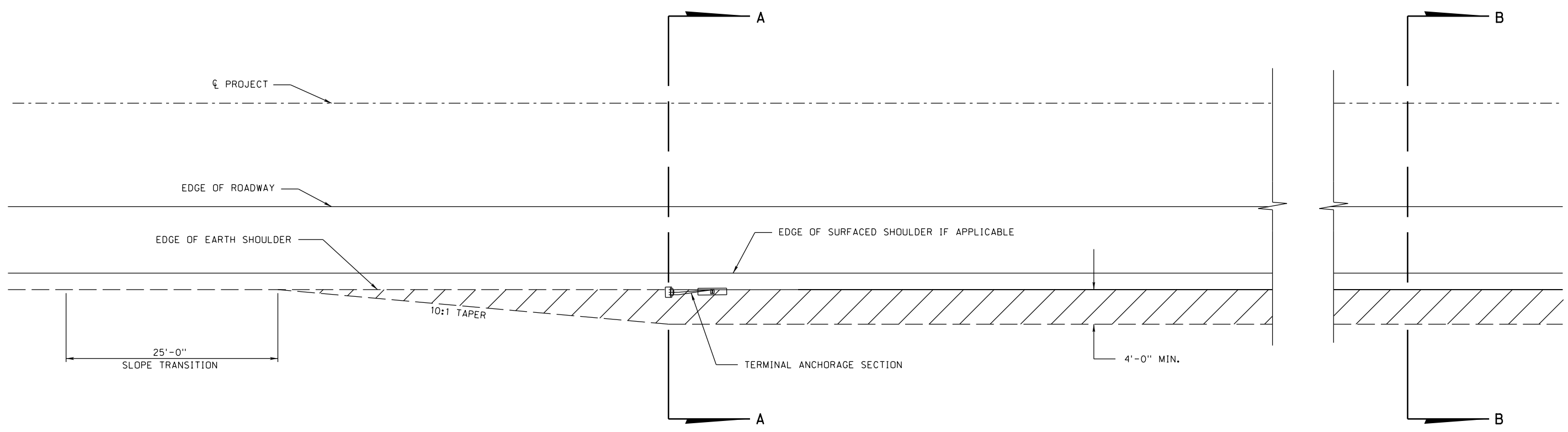
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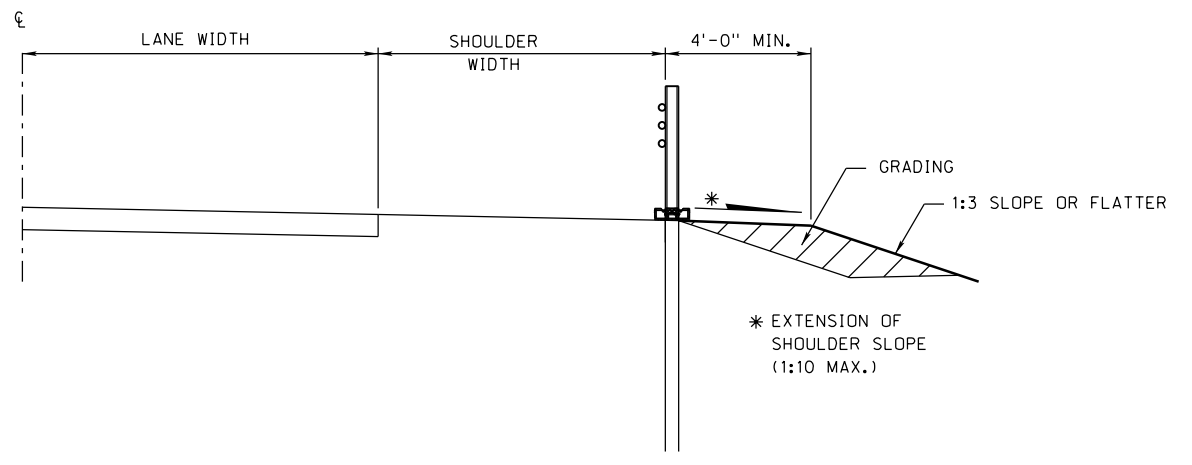
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TYPICAL CROSS SECTIONS

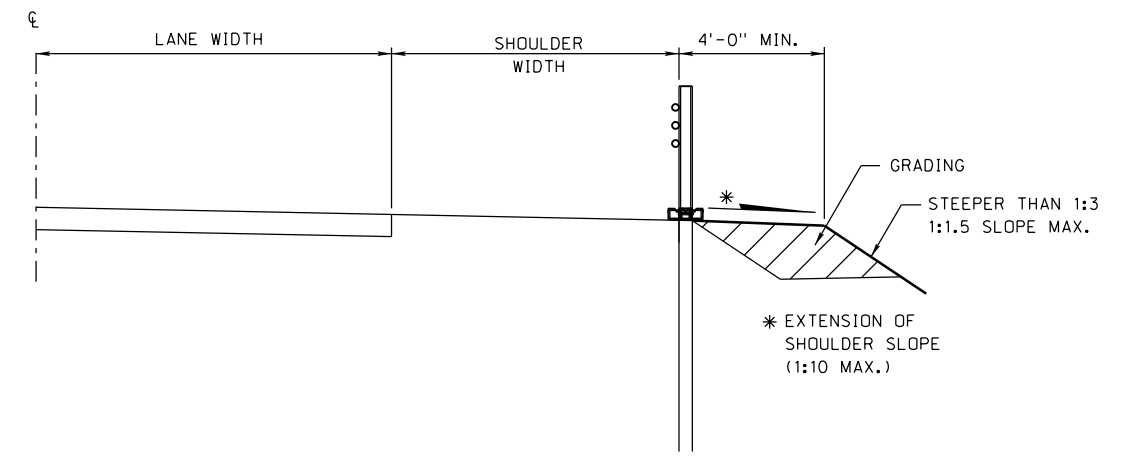
ROADWAY DESIGN DIVISION



PLAN



SECTION A-A



SECTION B-B

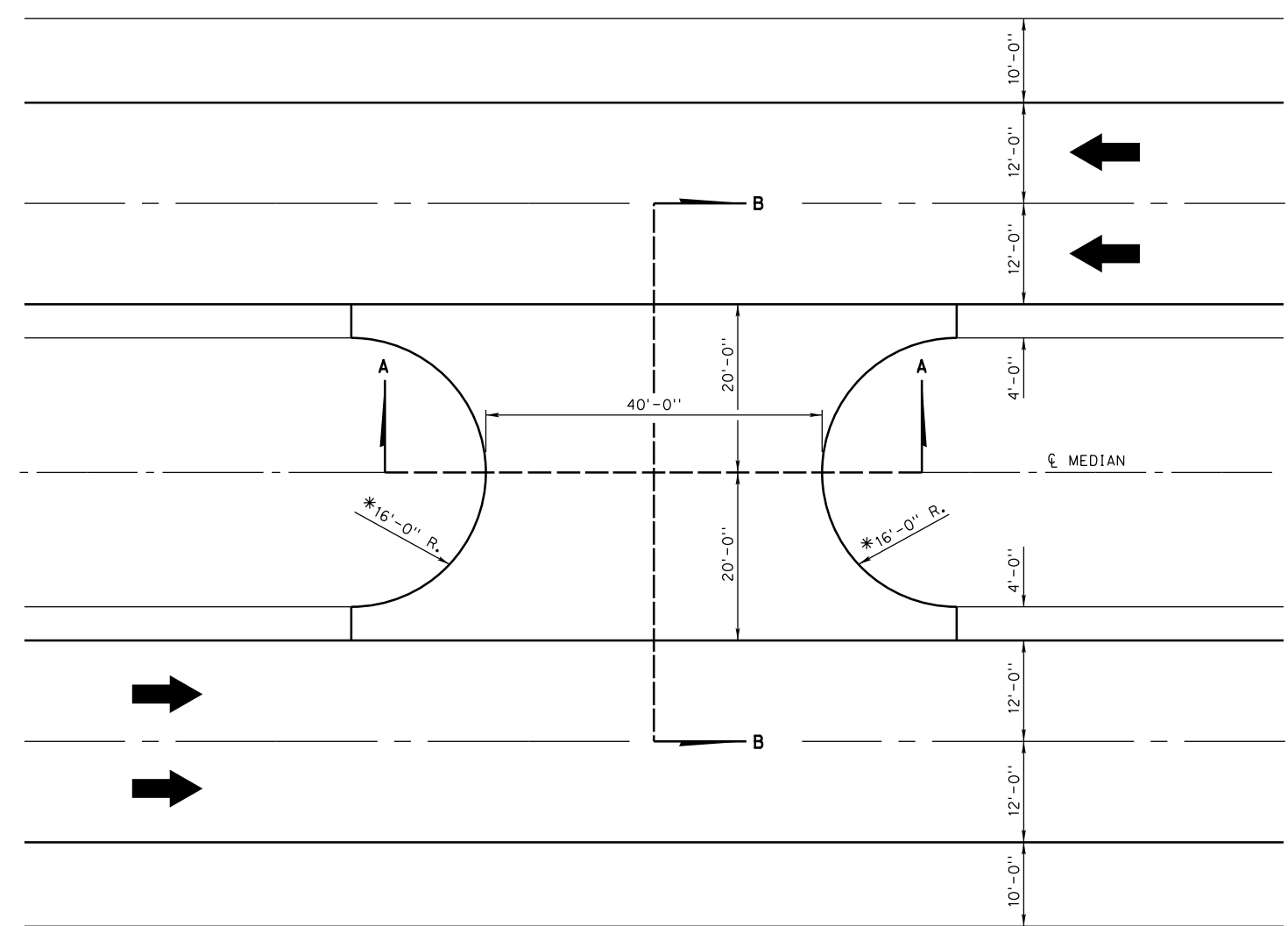
GRADING FOR TERMINAL ANCHORAGE SECTIONS

Computer: NDOTDESIGN134

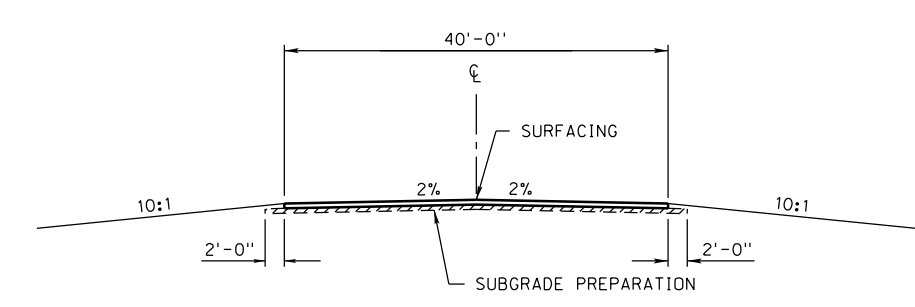
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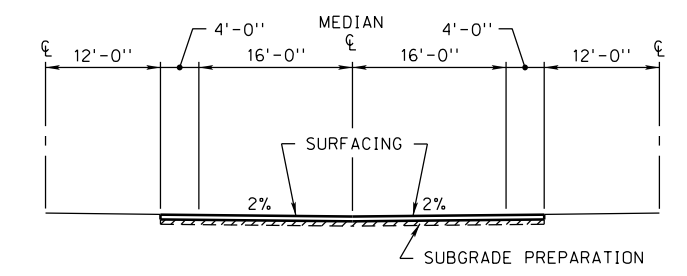
TYPICAL CROSS SECTIONS



PLAN



SECTION A-A



SECTION B-B

DETAILS OF MAINTENANCE TURNAROUND (40'-0" MEDIAN)

* NOTE: 16'-0" RADIUS BASED ON 4'-0" SHOULDER.

ROADWAY DESIGN DIVISION

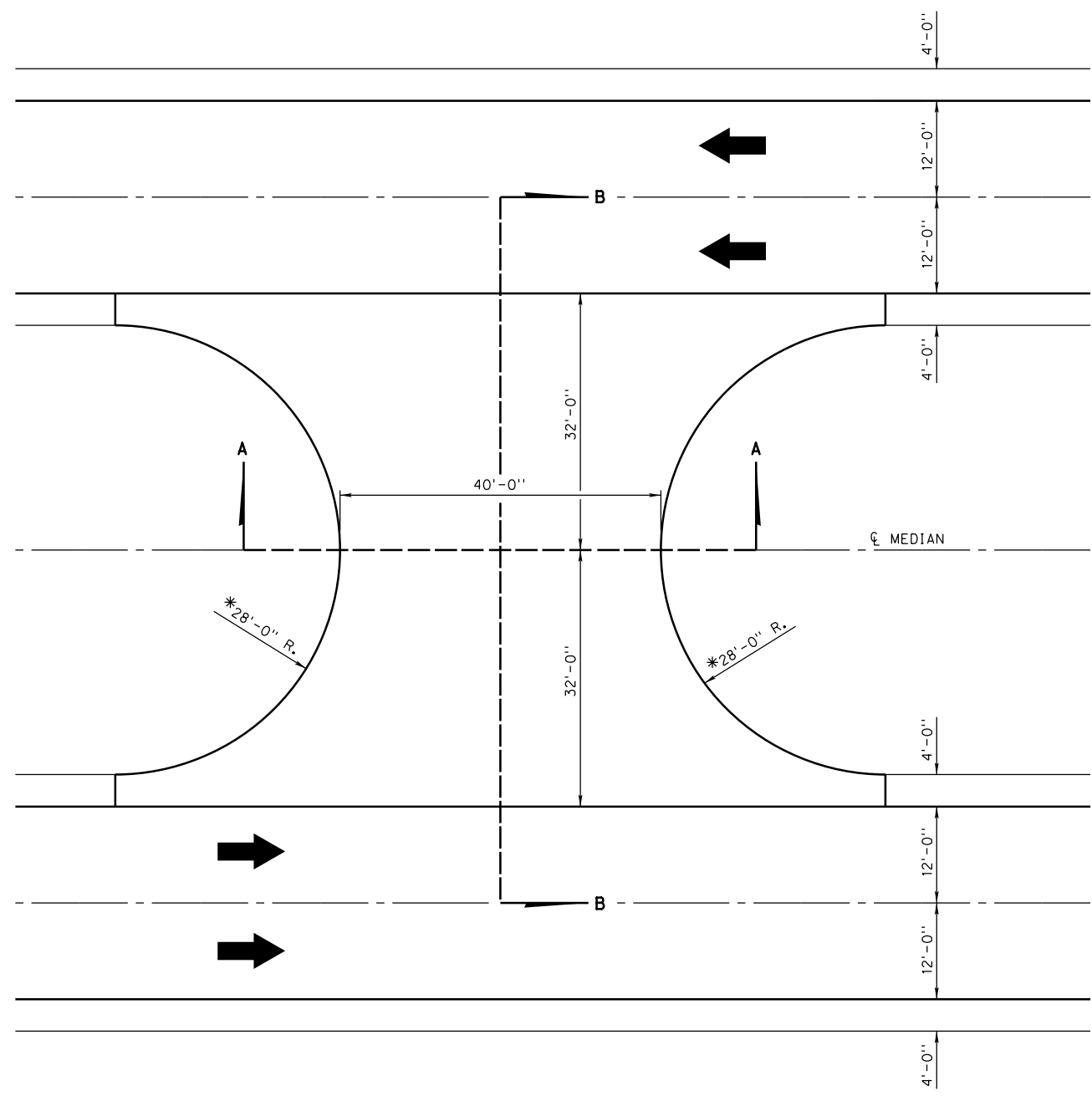
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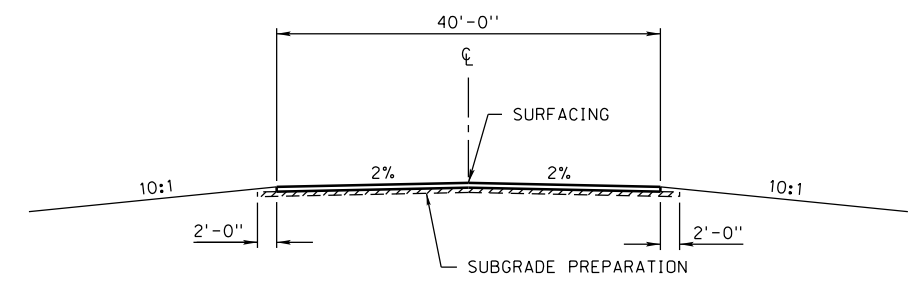
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TYPICAL CROSS SECTIONS

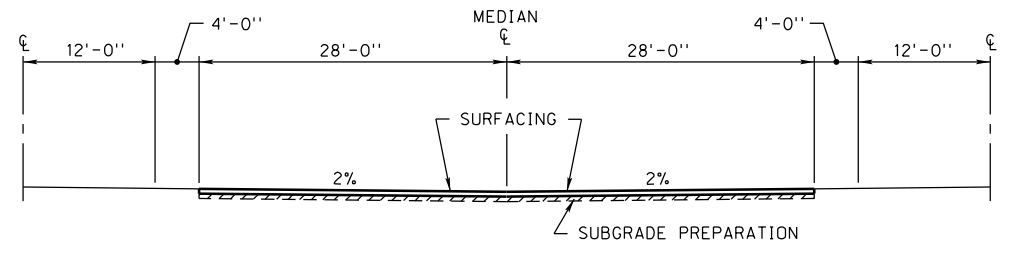
ROADWAY DESIGN DIVISION
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SHEET 1 OF 2



PLAN



SECTION A-A

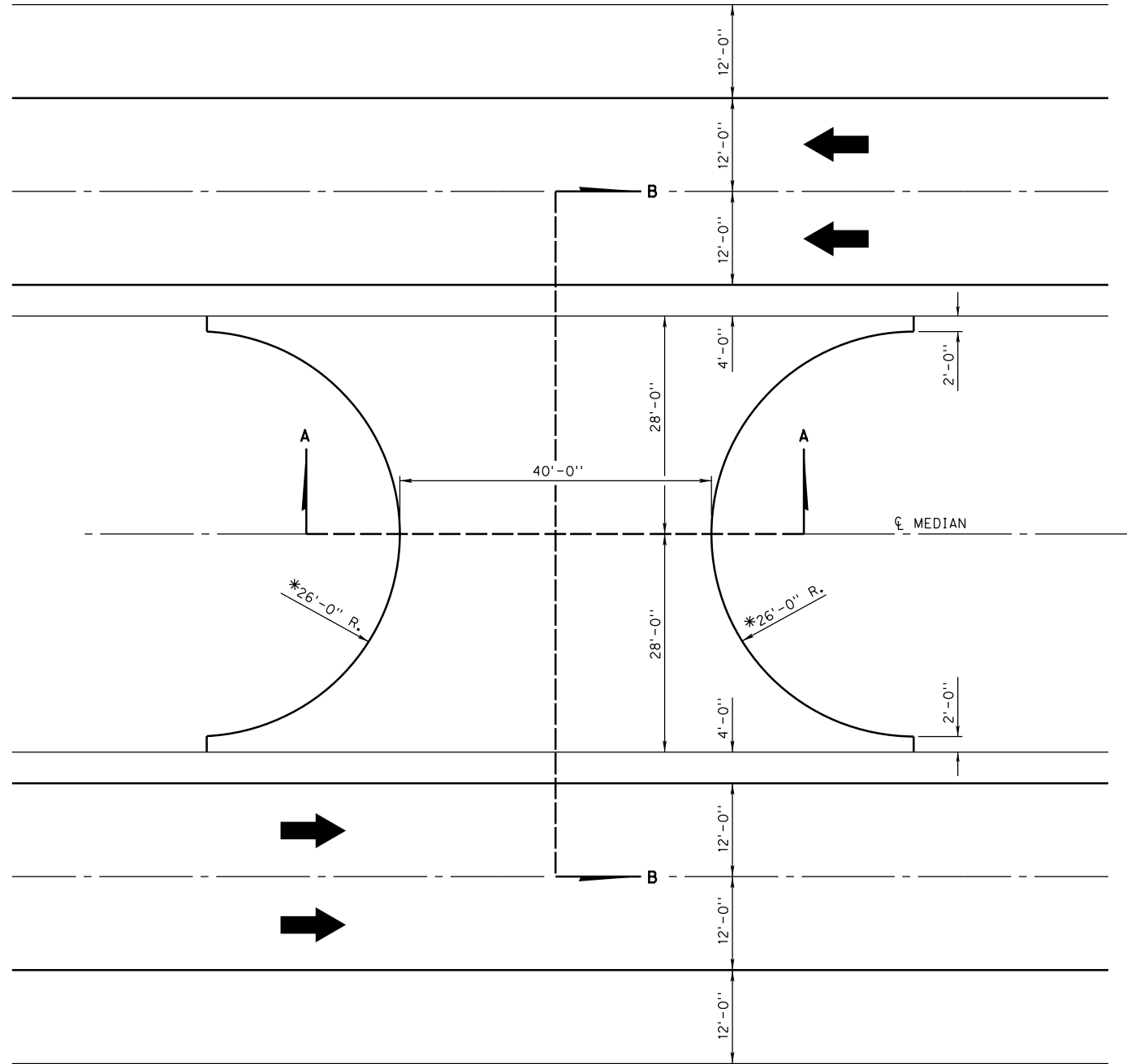


SECTION B-B

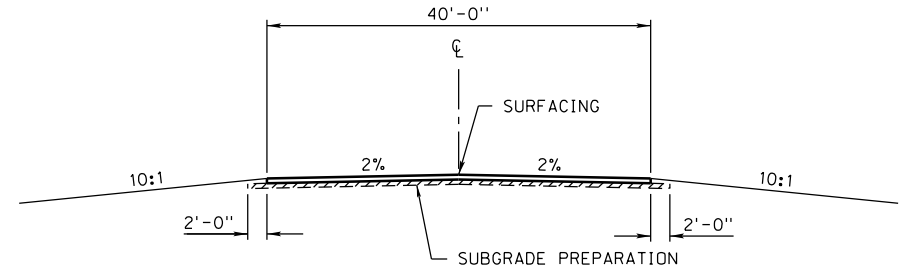
DETAILS OF MAINTENANCE TURNAROUND (64'-0" MEDIAN)

* NOTE: 28'-0" RADIUS BASED ON 4'-0" SHOULDER

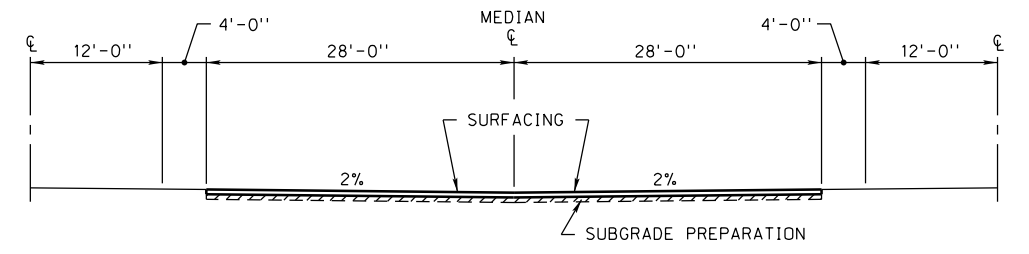
TYPICAL CROSS SECTIONS



PLAN



SECTION A-A



SECTION B-B

DETAILS OF MAINTENANCE TURNAROUND (64' MEDIAN)

* NOTE: 26'-0" RADIUS BASED ON 4'-0" SHOULDER WITH 2'-0" LUGOUT

ROADWAY DESIGN DIVISION
 Computer: NDOTDESIGN134
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 File: 1912e00.dgn 1911-2-F-00
 SHEET 2 OF 2

TYPICAL CROSS SECTIONS

NO OVERLAY JOINT REPAIR

- ① FULL DEPTH DIAMOND SAW CUT.
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.

- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS.
- ④ TIE BARS REQUIRED.

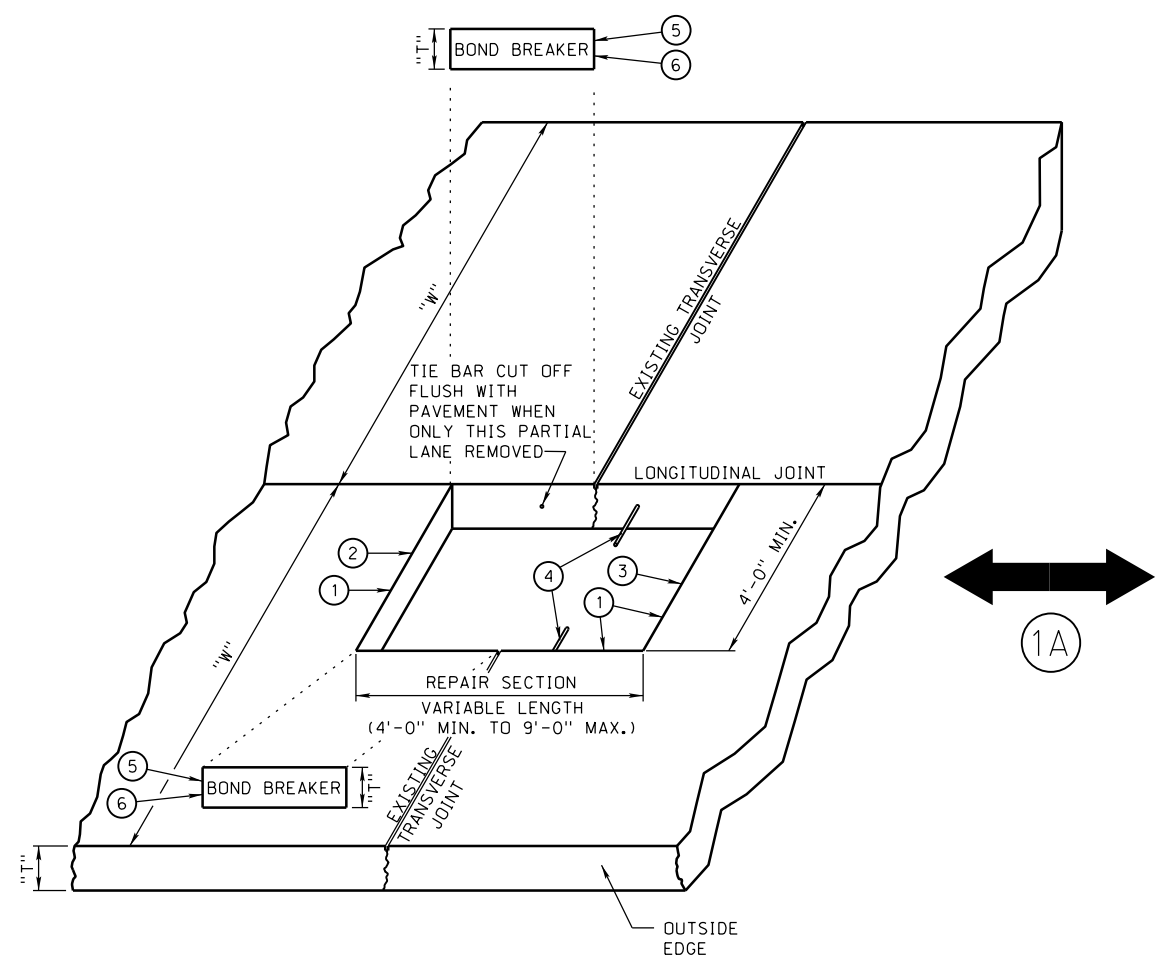
- ⑤ LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.

- ⑥ BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED TRANSVERSE JOINT AND THE EXISTING TRANSVERSE JOINT.

30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT FULL DEPTH LONGITUDINAL JOINT WHEN APPROVED BY THE ENGINEER. JOINT MUST BE SEALED.

NOTES:

ALL DOWEL BARS AND TIE BARS WILL BE EPOXY COATED.
THE EXISTING TRANSVERSE JOINT SHALL NOT BE RE-ESTABLISHED IN THE JOINT REPAIR.



CONCRETE PAVEMENT JOINT REPAIR, PARTIAL LANE

NOTES:

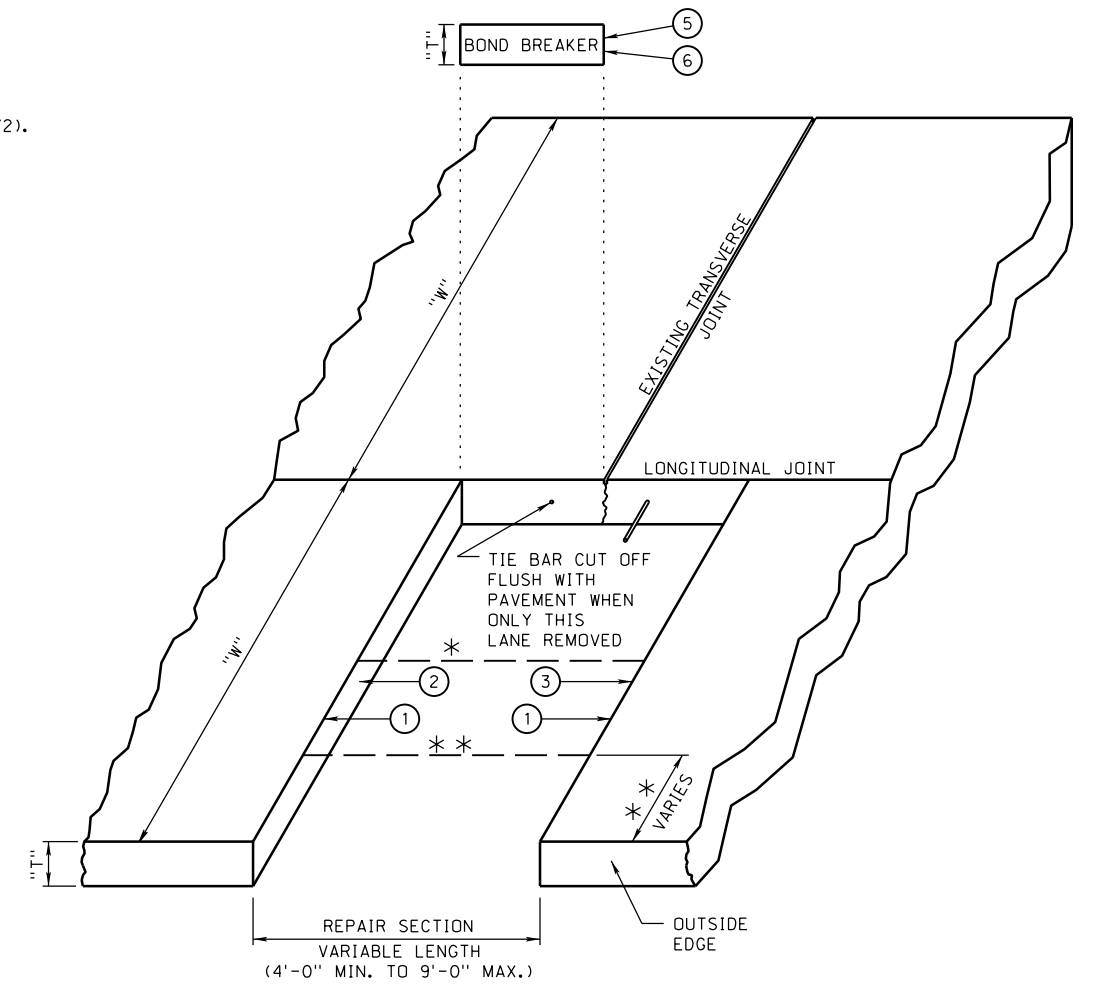
* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).
CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

OR

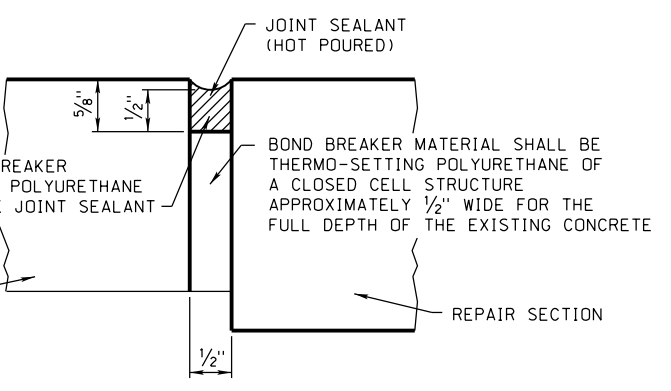
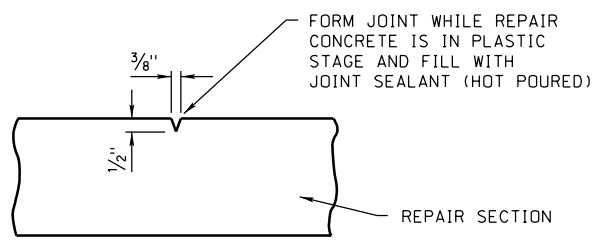
** IF THE WIDTH OF PANEL ("W") WAS PREVIOUSLY WIDENED, CONSTRUCT A TOOLED LONGITUDINAL JOINT TO MATCH THE LONGITUDINAL JOINTS OF THE ADJOINING PANELS.
IF THE PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB.

LEGEND

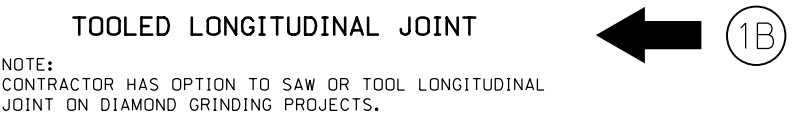
"W" WIDTH OF PANEL
"L" LENGTH OF PANEL
"T" THICKNESS OF CONCRETE
NOTE: FOR JOINT REPAIR LOCATIONS, SEE SHEET C



CONCRETE PAVEMENT JOINT REPAIR



THERMO-SETTING POLYURETHANE BOND BREAKER



FORMED JOINT

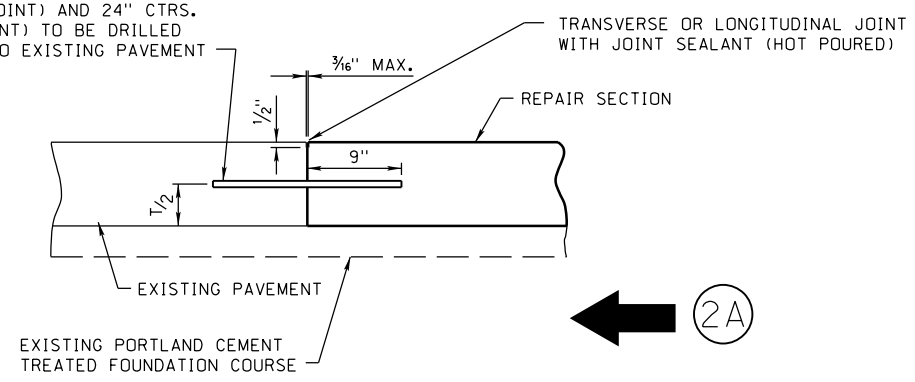
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Computer: NDOTDESIGN134
Date: 10-APR-2020 11:10
FILE: 38502e74.dgn 3850-2-E-24
SHEET 1 OF 10

TYPICAL CROSS SECTIONS

NO OVERLAY TIES, DOWELS AND SEALING

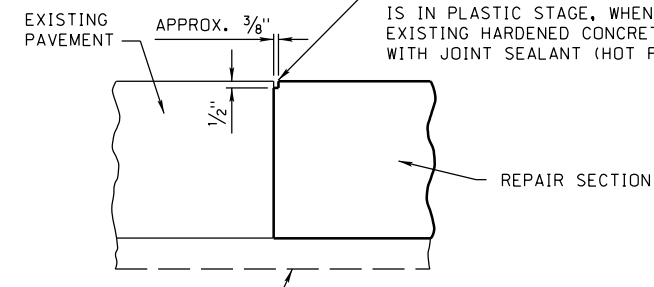
ROADWAY DESIGN DIVISION

NO. 5 x 18" TIE BARS AT 33" CTRS. (LONGITUDINAL JOINT) AND 24" CTRS. (TRANSVERSE JOINT) TO BE DRILLED AND EPOXIED INTO EXISTING PAVEMENT

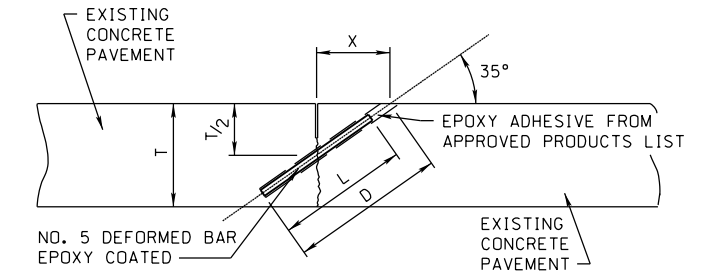


TIE BAR

FORM JOINT WHILE REPAIR CONCRETE IS IN PLASTIC STAGE, WHEN ADJOINING EXISTING HARDENED CONCRETE AND FILL WITH JOINT SEALANT (HOT POURED)



FORMED JOINT

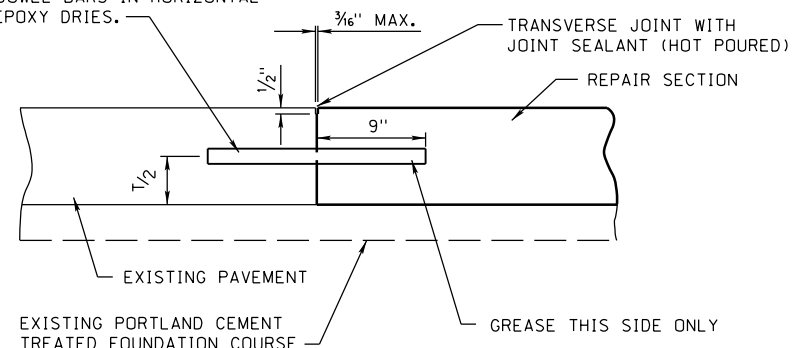


CROSS STITCHING EXISTING CONCRETE PAVEMENT (SEE SHEET C FOR LOCATIONS)

"T"	"X"	"D"	"L"
8.0"	5.7"	11.9"	9.8"
9.0"	6.5"	13.5"	11.5"
10.0"	7.0"	14.0"	12.5"
11.0"	8.0"	16.0"	13.0"
12.0"	8.5"	17.5"	14.0"
13.0"	9.5"	20.0"	18.0"
14.0"	10.0"	21.0"	18.0"

NOTE: DEFORMED BAR SHALL BE 1" BELOW THE SURFACE

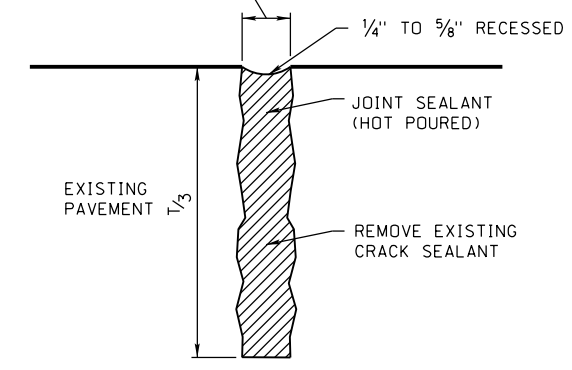
1 1/4" DIA. x 18" DOWEL BARS "T" = 8" TO 9",
1 1/2" DIA. x 18" DOWEL BARS "T" = 10" OR MORE
DOWEL BARS TO BE DRILLED AND EPOXIED INTO EXISTING PAVEMENT. PLACE EPOXY RETENTION DISK. SUPPORT DOWEL BARS IN HORIZONTAL POSITION UNTIL EPOXY DRIES.



DOWEL BAR

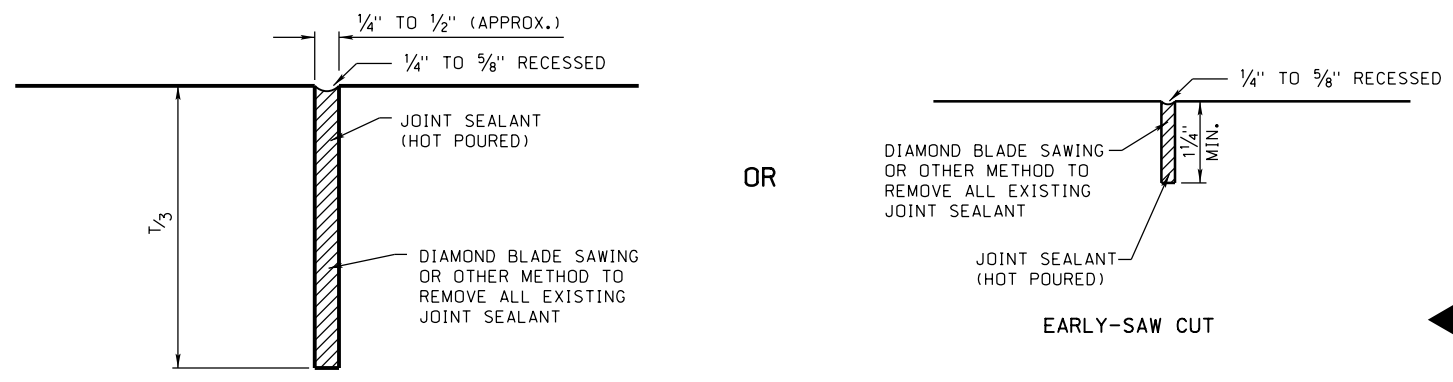
NOTE: ALL DOWEL BARS WILL BE EPOXY COATED

WIDTH VARIABLE FROM GREATER THAN 1/4" TO APPROX. 1"



TYPICAL TRANSVERSE AND LONGITUDINAL CRACK

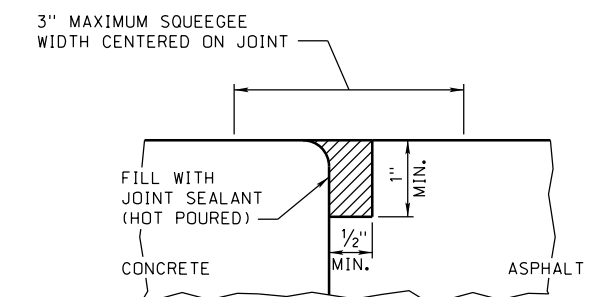
NOTE: FOR CRACK SEALING LOCATIONS, SEE SHEET C



TRANSVERSE AND LONGITUDINAL JOINT DETAILS

"T" = *

NOTE: JOINT MAY BE SAWN 1/8" WIDER THAN EXISTING, UP TO 5/8" MAXIMUM WIDTH, TO FACILITATE EXISTING JOINT SEALANT REMOVAL.



LONGITUDINAL JOINT SEALING DETAIL (ASPHALT TO CONCRETE)

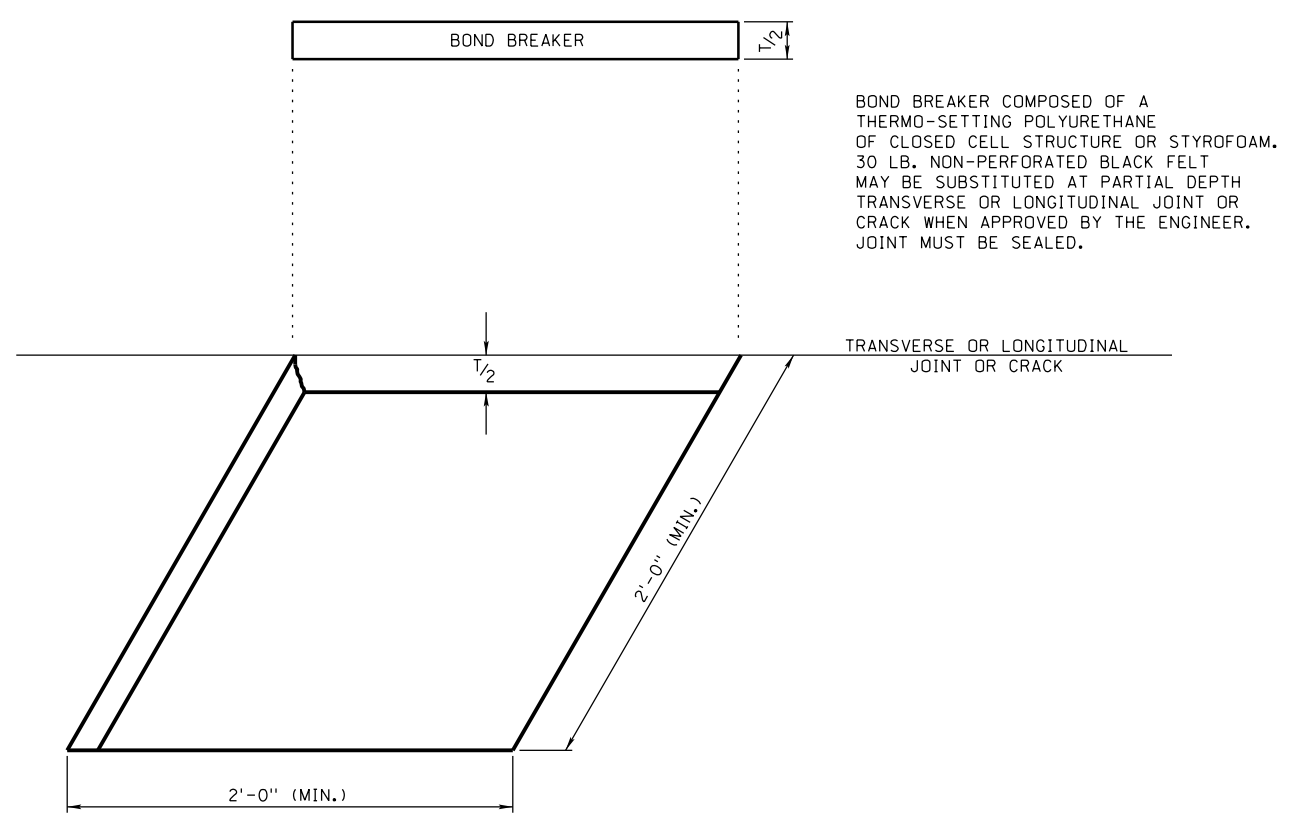
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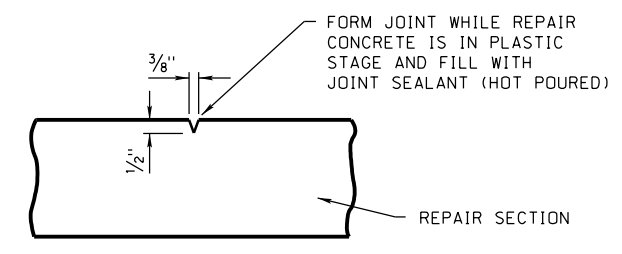
File: 38502e24.dgn 3850-2-E-24 SHEET 2 OF 10

TYPICAL CROSS SECTIONS

NO OVERLAY PARTIAL DEPTH REPAIR



TRANSVERSE OR LONGITUDINAL JOINT OR CRACK

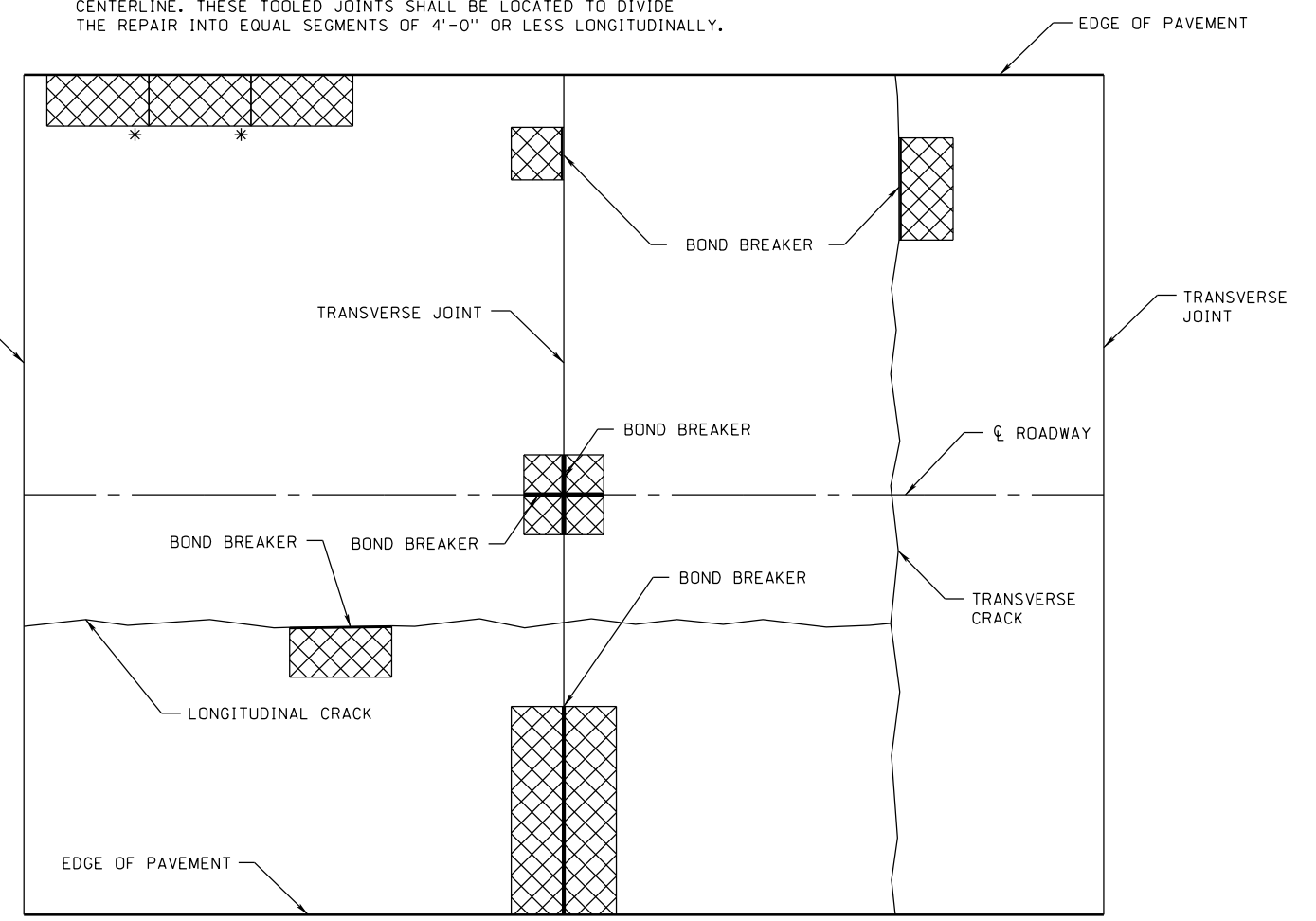


TOOLED LONGITUDINAL JOINT

NOTE:
CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

* IF PARTIAL DEPTH REPAIR IS LONGER THAN 4'-0" LONGITUDINALLY, TOOLED TRANSVERSE JOINTS SHALL BE MADE PERPENDICULAR TO CENTERLINE. THESE TOOLED JOINTS SHALL BE LOCATED TO DIVIDE THE REPAIR INTO EQUAL SEGMENTS OF 4'-0" OR LESS LONGITUDINALLY.

3A

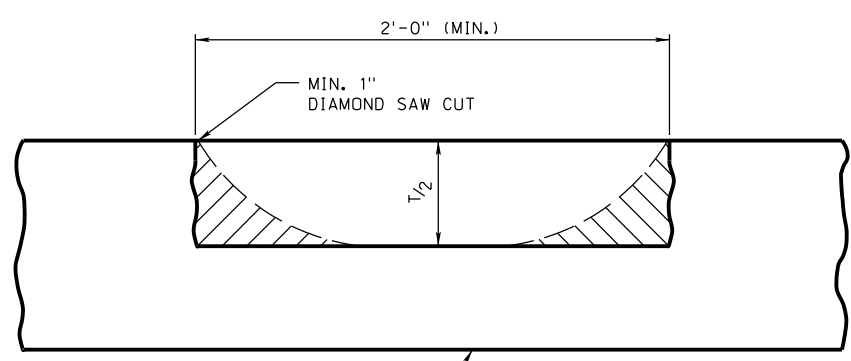


CONCRETE REPAIR SECTIONS

NOTE:
WHERE REPAIR EXTENDS THROUGH THE INTEGRAL CURB, IT SHALL BE RECONSTRUCTED TO THE SAME DIMENSIONS OF THE EXISTING CURB

CONCRETE PAVEMENT REPAIR, TYPE "A", TYPE "B" AND TYPE "C", PARTIAL DEPTH

NOTE:
FOR CONCRETE PAVEMENT REPAIR (PARTIAL DEPTH) LOCATIONS, SEE SHEET C.



INDICATES MATERIAL LEFT AT MARGINS OF MILLED CUTS TO BE REMOVED WITH A 15# MAXIMUM CHIPPING HAMMER TO PROVIDE VERTICAL EDGES ALL AROUND

TYPICAL SECTION OF PARTIAL DEPTH REPAIRS

ROADWAY DESIGN DIVISION

Computer: NDOTDESIGN134

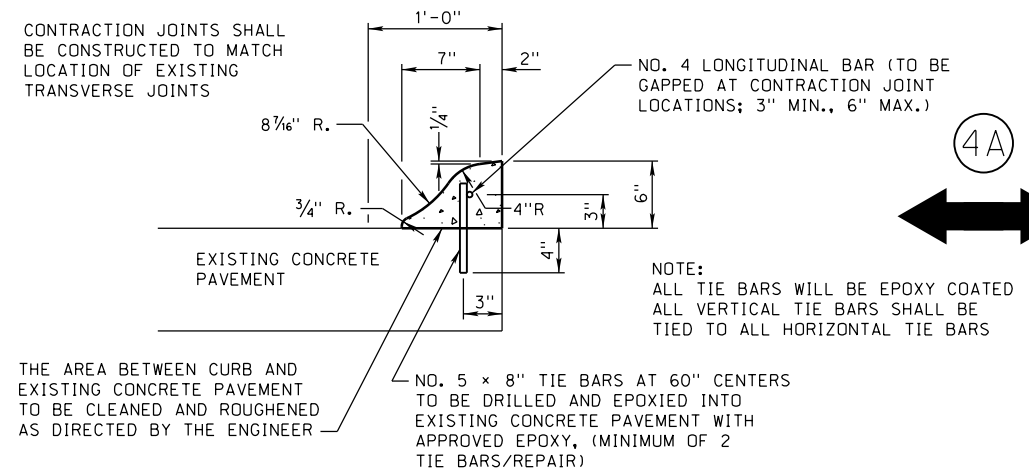
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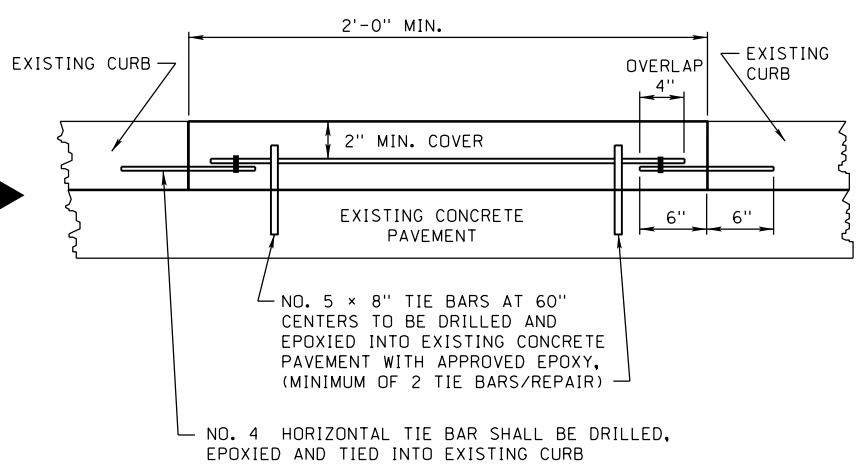
TYPICAL CROSS SECTIONS

NO OVERLAY CURB REPAIR

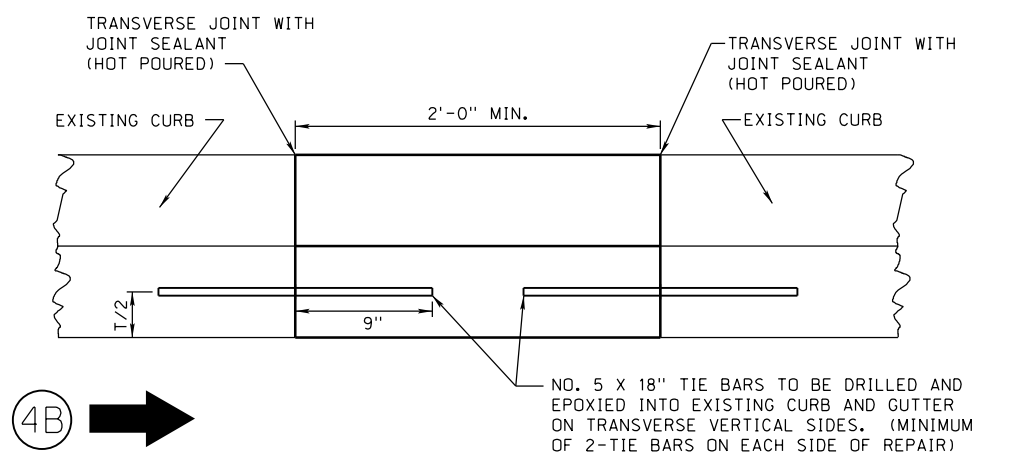
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SHEET 4 OF 10



CONCRETE TACK-ON CURB

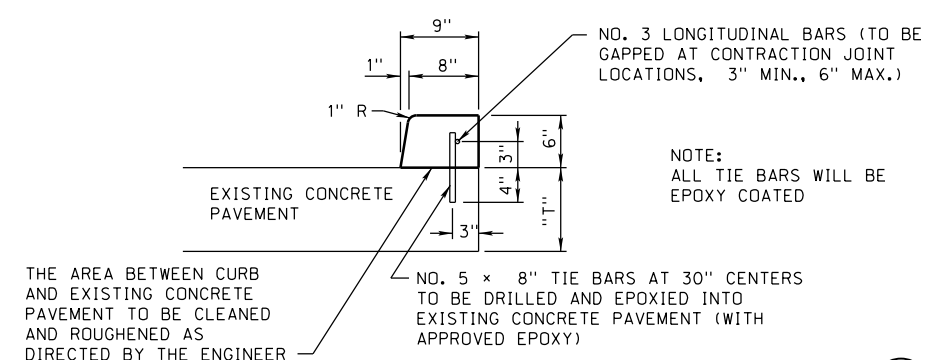


FRONT VIEW OF TACK-ON CURB REPAIR

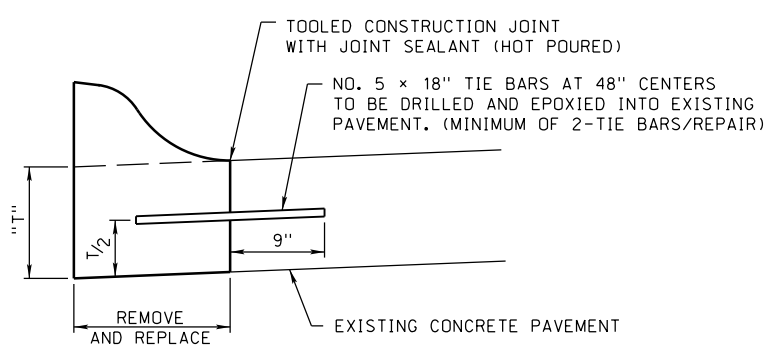


CONCRETE CURB AND GUTTER REPAIR

NOTE: ALL TIE BARS WILL BE EPOXY COATED

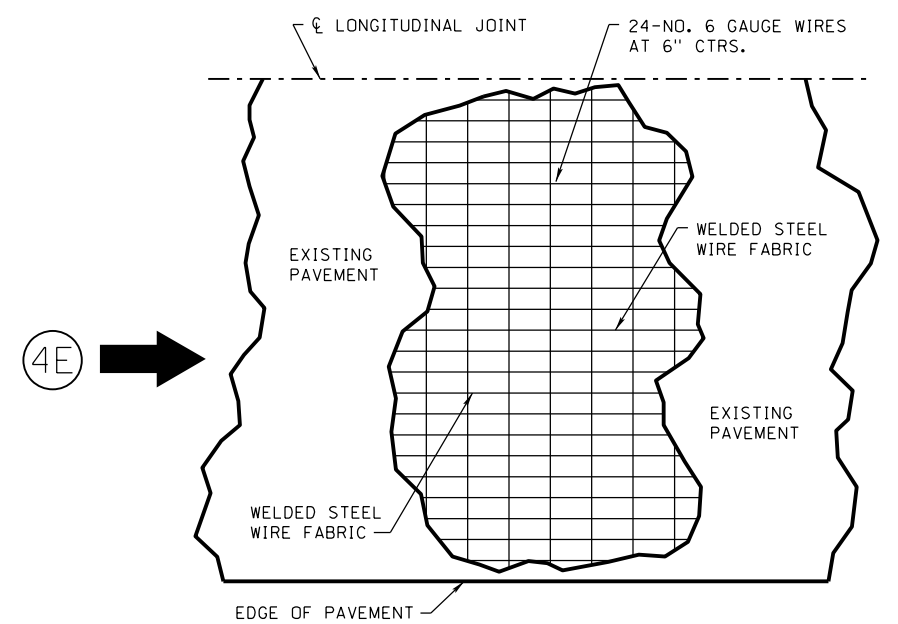


INTEGRAL CONCRETE CURB REPAIR (BARRIER TYPE)



INTEGRAL CURB REPAIR

NOTE: ALL TIE BARS WILL BE EPOXY COATED



EXISTING 9"-6"-9" AND 9"-7"-9" REINFORCED CONCRETE PAVEMENT

TYPICAL CROSS SECTIONS

- ① FULL DEPTH DIAMOND SAW CUT.
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS. MINIMUM 2-TIE BARS PER SIDE.
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.

- ⑤ IN THE CASE OF PANEL REPLACEMENT, DOWEL BARS SHALL BE INSTALLED 2'-0" BEYOND THE EXISTING TRANSVERSE JOINTS. (3-DOWEL BARS PER WHEEL PATH.)
- ⑥ IN THE CASE OF MULTIPLE PANEL REPLACEMENTS, DOWEL BARS SHALL BE INSTALLED AT 12" CENTERS, AS SHOWN IN THE STANDARD PLANS. BASKETS SHALL BE USED ACCORDING TO THE STANDARD SPECIFICATIONS, SUBSECTION 603.03.

- ⑦ LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.
- 30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT FULL DEPTH LONGITUDINAL JOINT WHEN APPROVED BY THE ENGINEER. JOINT MUST BE SEALED.

- ⑧ BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED JOINT AND THE EXISTING TRANSVERSE JOINT.

NOTE:
THE EXISTING TRANSVERSE JOINT SHALL NOT BE RE-ESTABLISHED IN THE PAVEMENT REPAIR.

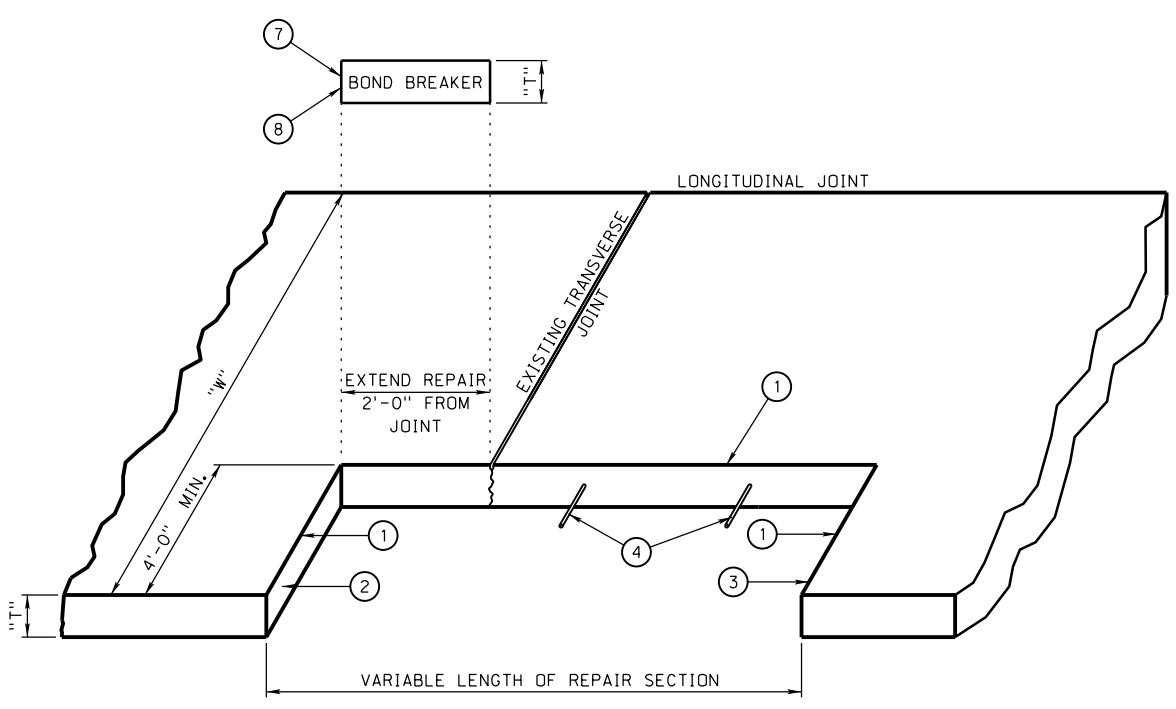
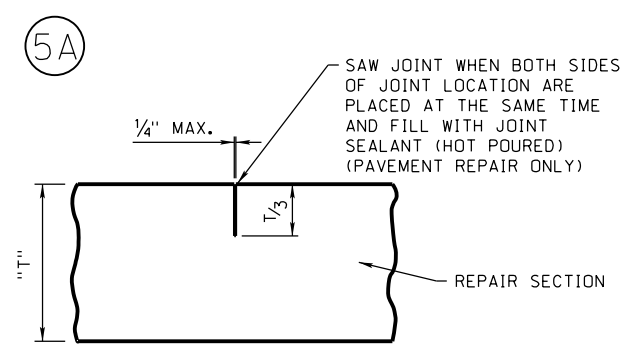


FIGURE B



TRANSVERSE JOINT

NOTE: FORMED JOINTS ARE NOT REQUIRED ON DIAMOND GRINDING PROJECTS.

LEGEND

- "W" WIDTH OF PANEL
- "L" LENGTH OF PANEL
- "T" THICKNESS OF CONCRETE
- (E) EXISTING TRANSVERSE JOINT
- [Hatched] CONCRETE REMOVAL (PARTIAL LANE WIDTH)
- [Hatched] CONCRETE REMOVAL (FULL LANE WIDTH)

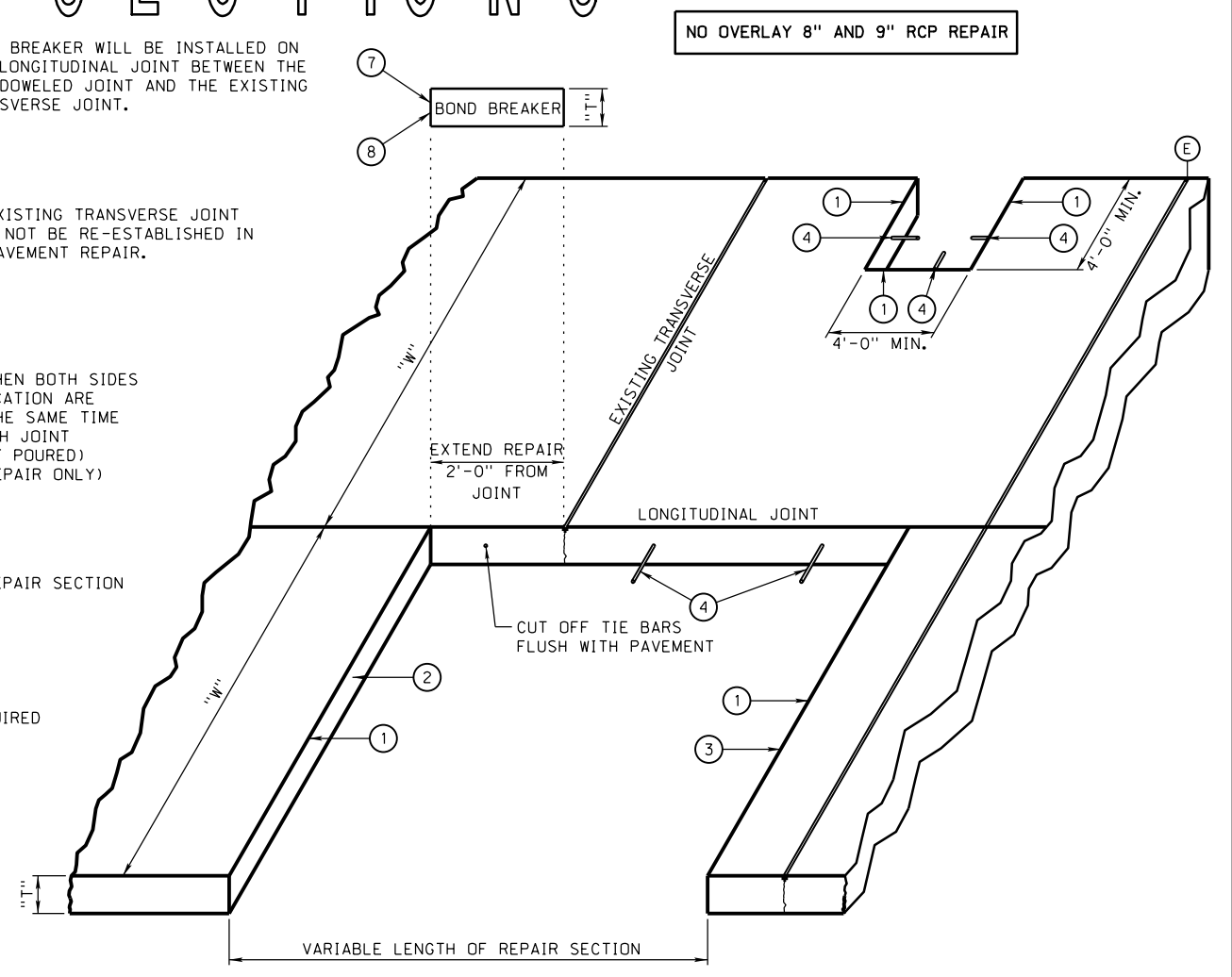
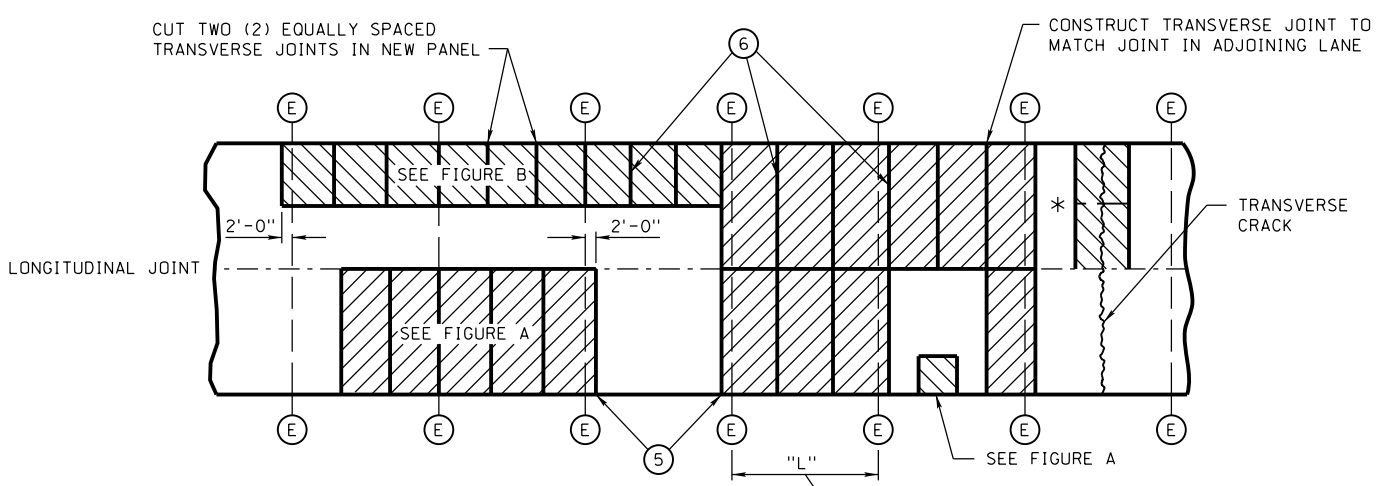


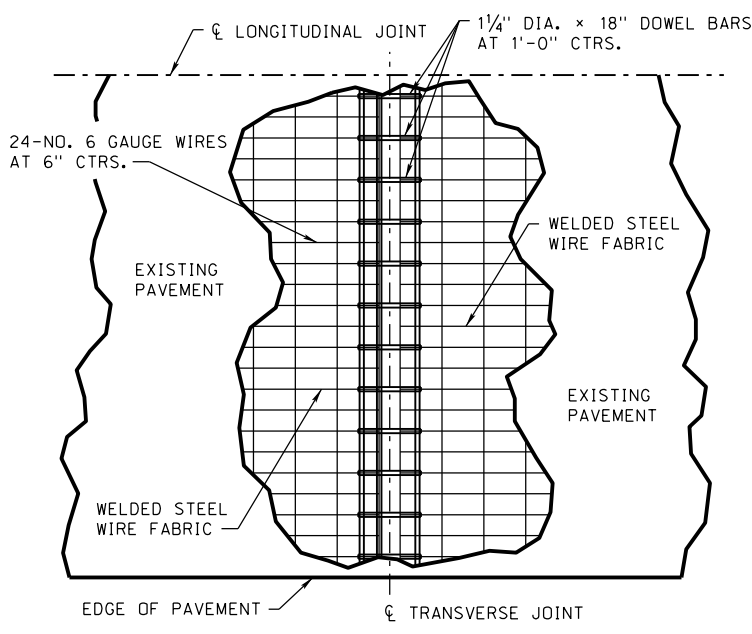
FIGURE A



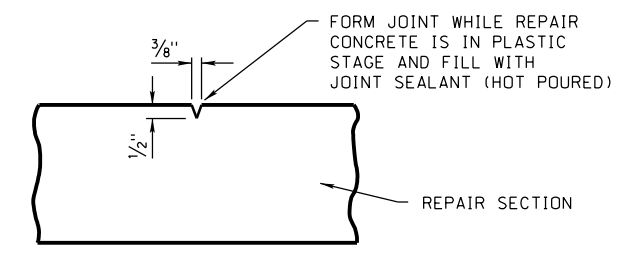
NOTE:
IF PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB

SEE REPAIR TABLES (FULL DEPTH) FOR ACTUAL REPAIR DIMENSIONS

8" AND 9" REINFORCED CONCRETE PAVEMENT REPAIR



EXISTING 8" AND 9" REINFORCED CONCRETE PAVEMENT (RCP)



TOOLED LONGITUDINAL JOINT

NOTE:
CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND THE WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C

ROADWAY DESIGN DIVISION

Computer: NDOTDESIGN134

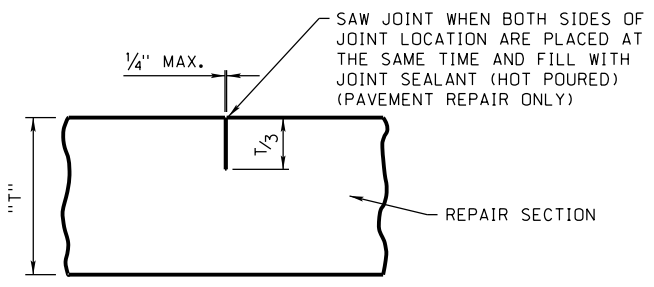
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File: 38502e24.dgn 3850-2-E-24 SHEET 3 OF 10

TYPICAL CROSS SECTIONS

NO OVERLAY PLAIN CONCRETE PAVEMENT REPAIR

- ① FULL DEPTH DIAMOND SAW CUT (MAY NOT BE REQUIRED AT EXISTING TRANSVERSE JOINT).
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS. MINIMUM 2-TIE BARS PER SIDE.
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.
- ⑤ IN THE CASE OF PANEL REPLACEMENT, DOWEL BARS SHALL BE INSTALLED AT EXISTING TRANSVERSE JOINTS. (3-DOWEL BARS PER WHEEL PATH.)
- ⑥ IN THE CASE OF MULTIPLE PANEL REPLACEMENTS, DOWEL BARS SHALL BE INSTALLED AT 12" CENTERS, AS SHOWN IN THE STANDARD PLANS. BASKETS SHALL BE USED ACCORDING TO THE STANDARD SPECIFICATIONS, SUBSECTION 603.03.



TRANSVERSE JOINT

NOTE: FORMED JOINTS ARE NOT REQUIRED ON DIAMOND GRINDING PROJECTS.

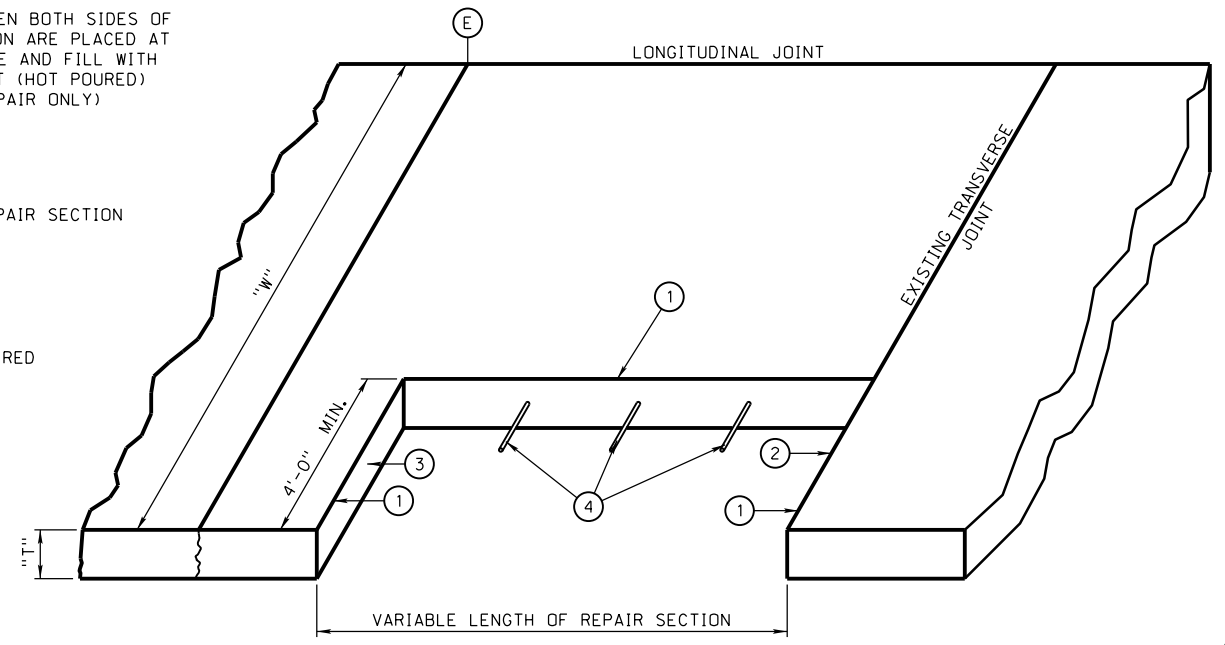


FIGURE B

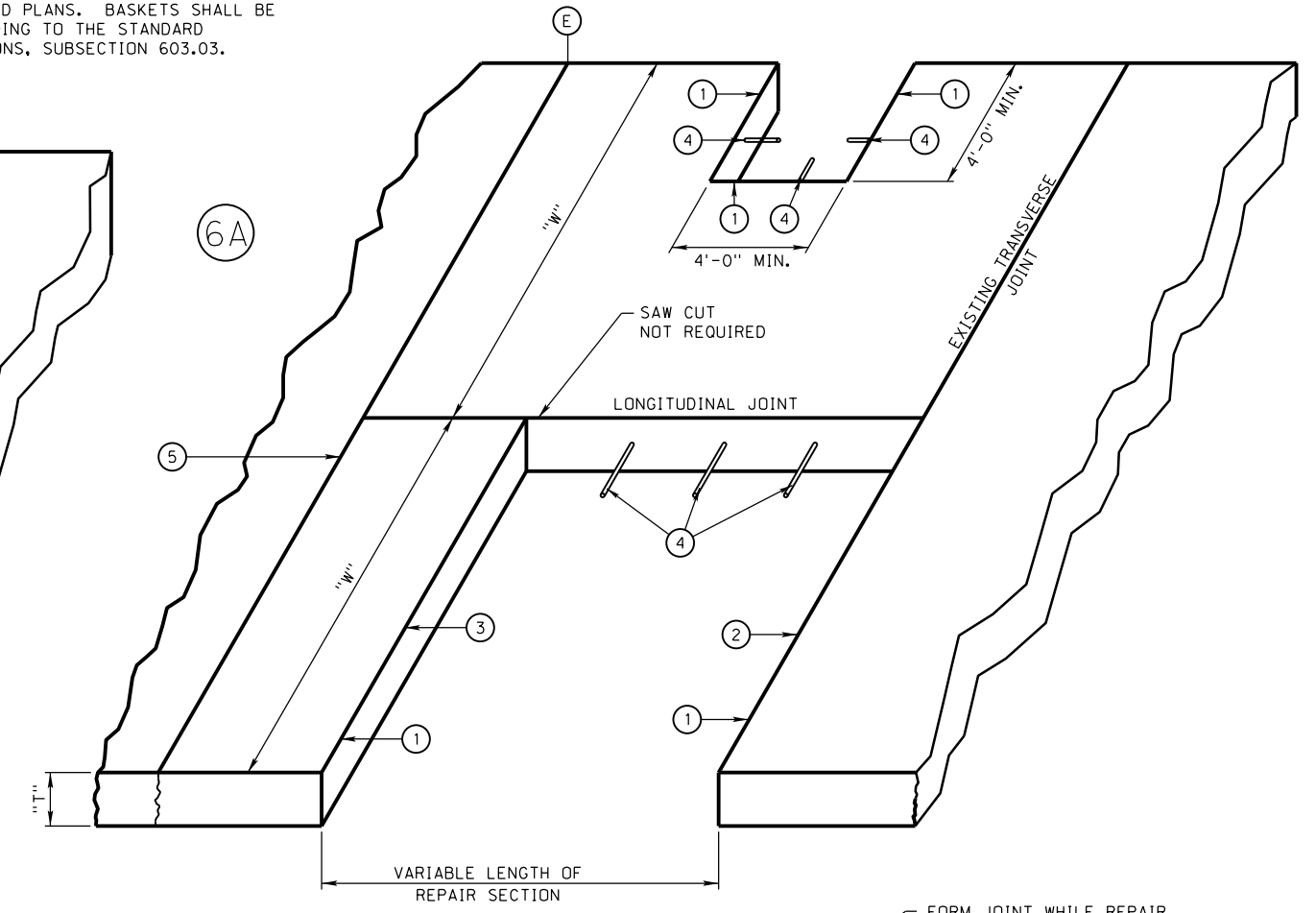
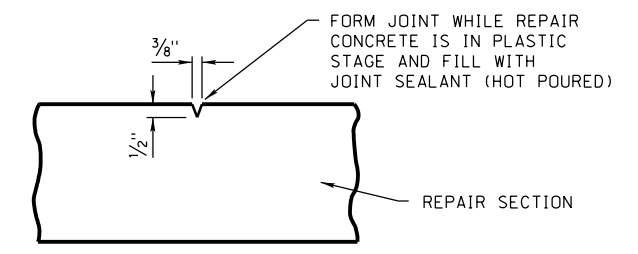


FIGURE A



TOOLED LONGITUDINAL JOINT

NOTE: CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

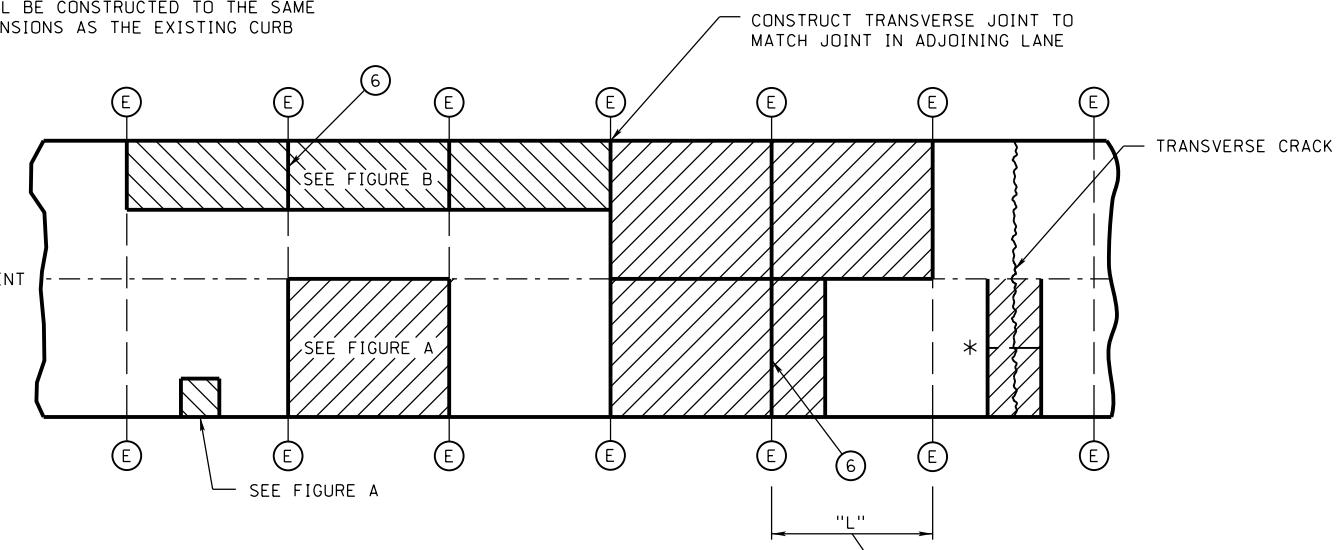
* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND THE WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

OR

IF THE WIDTH OF PANEL ("W") WAS PREVIOUSLY WIDENED, CONSTRUCT A TOOLED LONGITUDINAL JOINT TO MATCH THE LONGITUDINAL JOINTS OF THE ADJOINING PANELS. SEE JOINT DETAIL FOR THIS TOOLED LONGITUDINAL JOINT.

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C

NOTE: IF PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB



PLAIN CONCRETE PAVEMENT REPAIR

LEGEND

"W"	WIDTH OF PANEL
"L"	LENGTH OF PANEL
"T"	THICKNESS OF CONCRETE
ⓔ	EXISTING TRANSVERSE JOINT
	CONCRETE REMOVAL (PARTIAL LANE WIDTH)
	CONCRETE REMOVAL (FULL LANE WIDTH)

ROADWAY DESIGN DIVISION

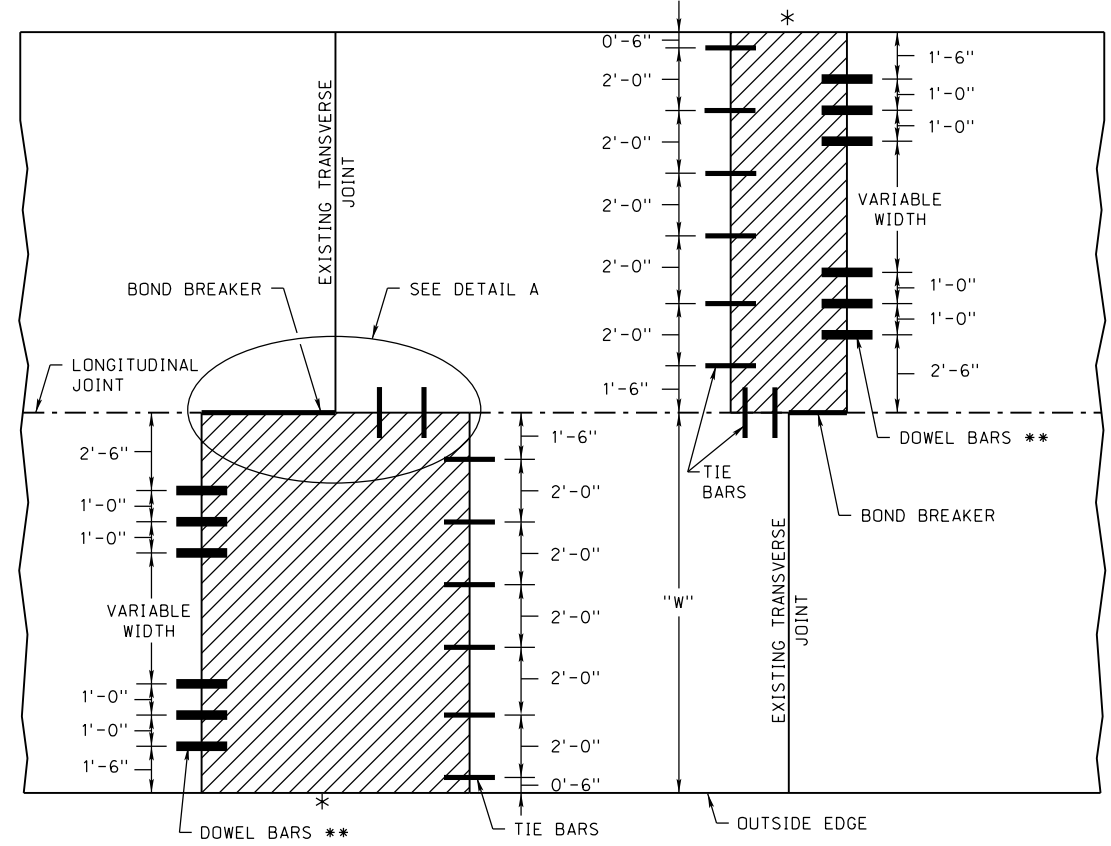
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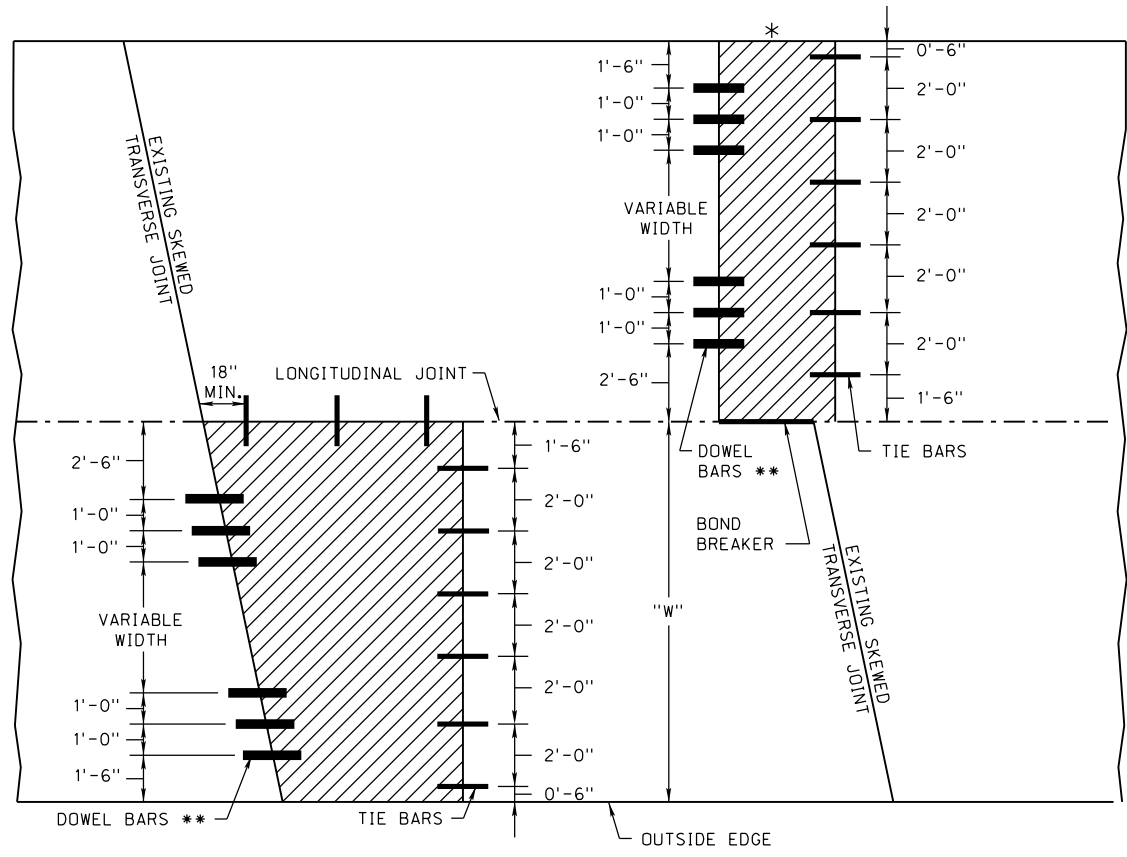
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TYPICAL CROSS SECTIONS

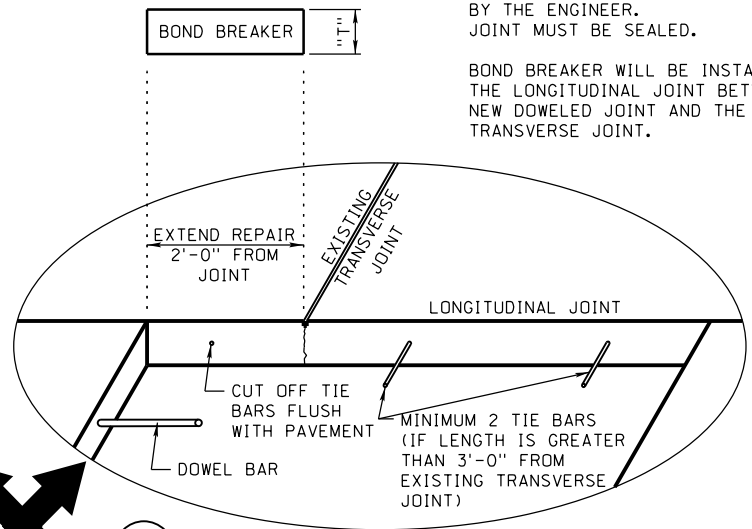
NO OVERLAY TIE AND DOWEL PLACEMENT, EXCLUDES 6" & 7" PCC



TRANSVERSE JOINT DETAILS



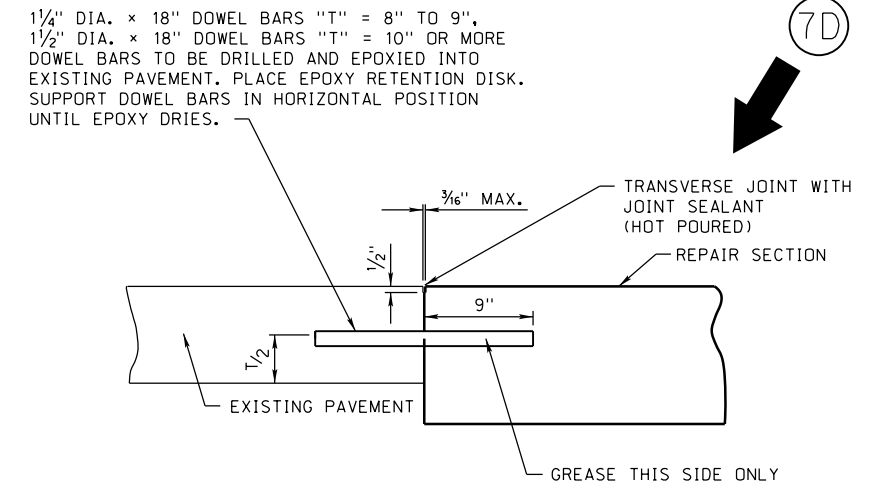
SKEWED TRANSVERSE JOINT DETAILS



DETAIL A

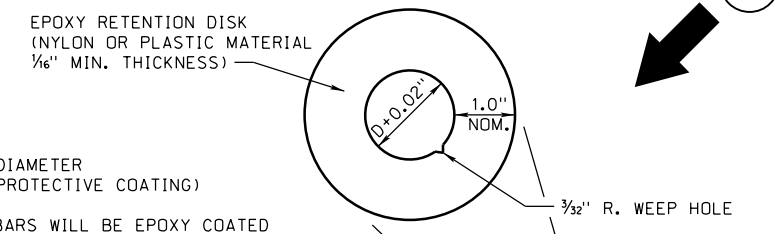
* FOR EXISTING CONCRETE SHOULDERS MATCH BOND BREAKER ON OPPOSITE LONGITUDINAL JOINT.
 ** INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
 NOTE: BAR SPACING MAY VARY DEPENDING ON LANE WIDTH.

CONCRETE REMOVAL



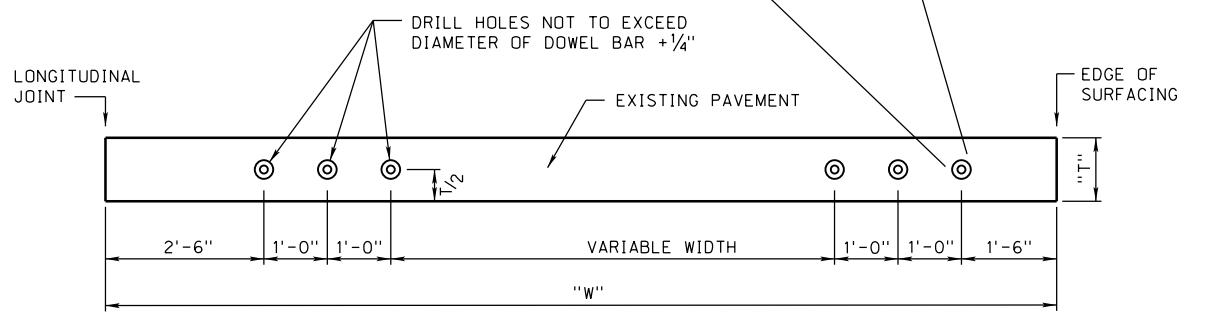
DOWEL BAR

NOTE: ALL DOWEL BARS WILL BE EPOXY COATED



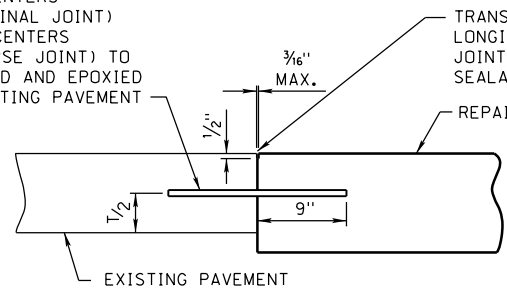
NOTE: D = DOWEL DIAMETER (INCLUDING PROTECTIVE COATING)

ALL DOWEL BARS WILL BE EPOXY COATED



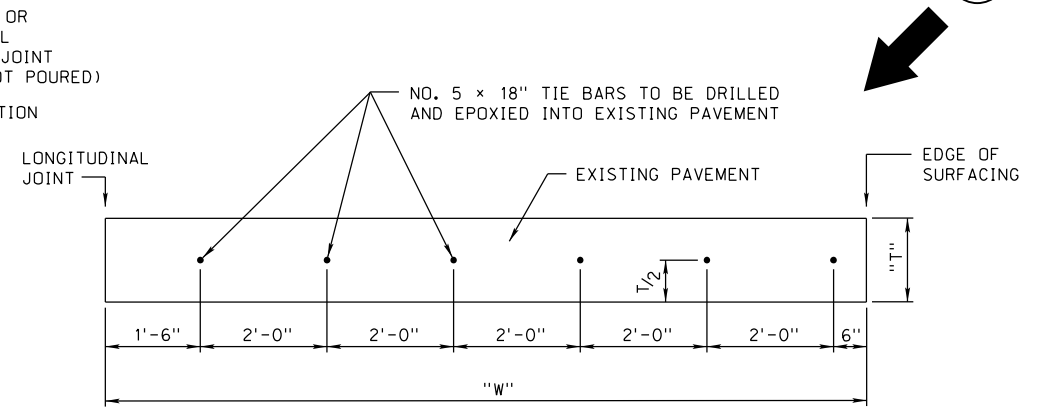
DOWEL BAR SPACING

NO. 5 x 18" TIE BARS AT 33" CENTERS (LONGITUDINAL JOINT) AND 24" CENTERS (TRANSVERSE JOINT) TO BE DRILLED AND EPOXIED INTO EXISTING PAVEMENT



TIE BAR

NOTE: ALL TIE BARS WILL BE EPOXY COATED



TIE BAR SPACING

ROADWAY DESIGN DIVISION

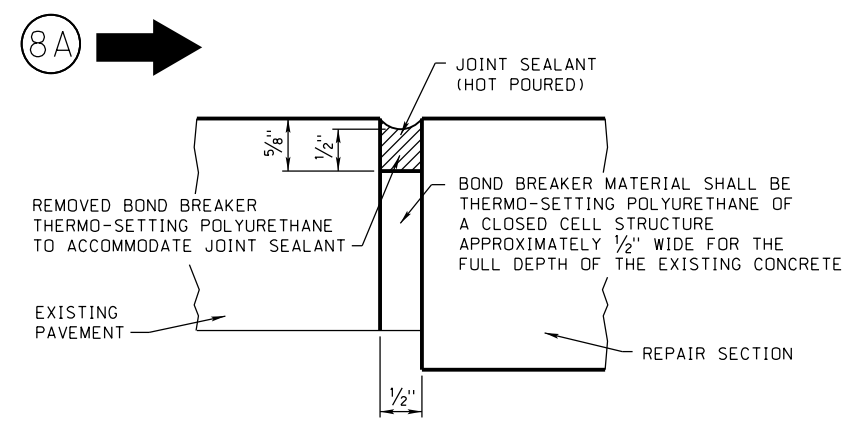
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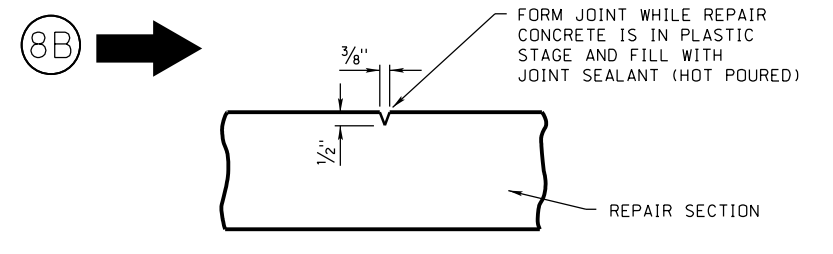
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TYPICAL CROSS SECTIONS

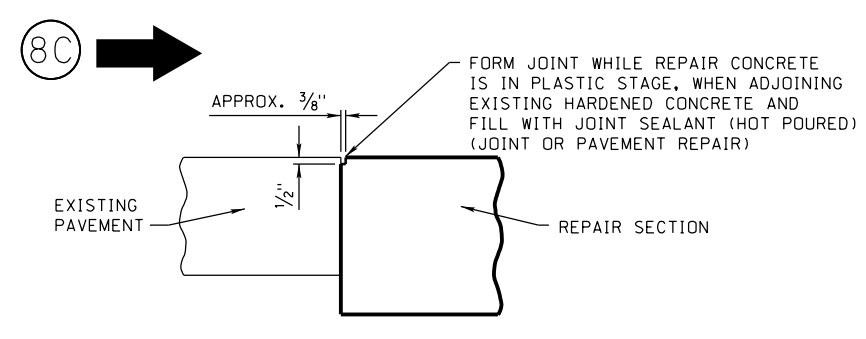
NO OVERLAY 6" & 7" JOINT REPAIR



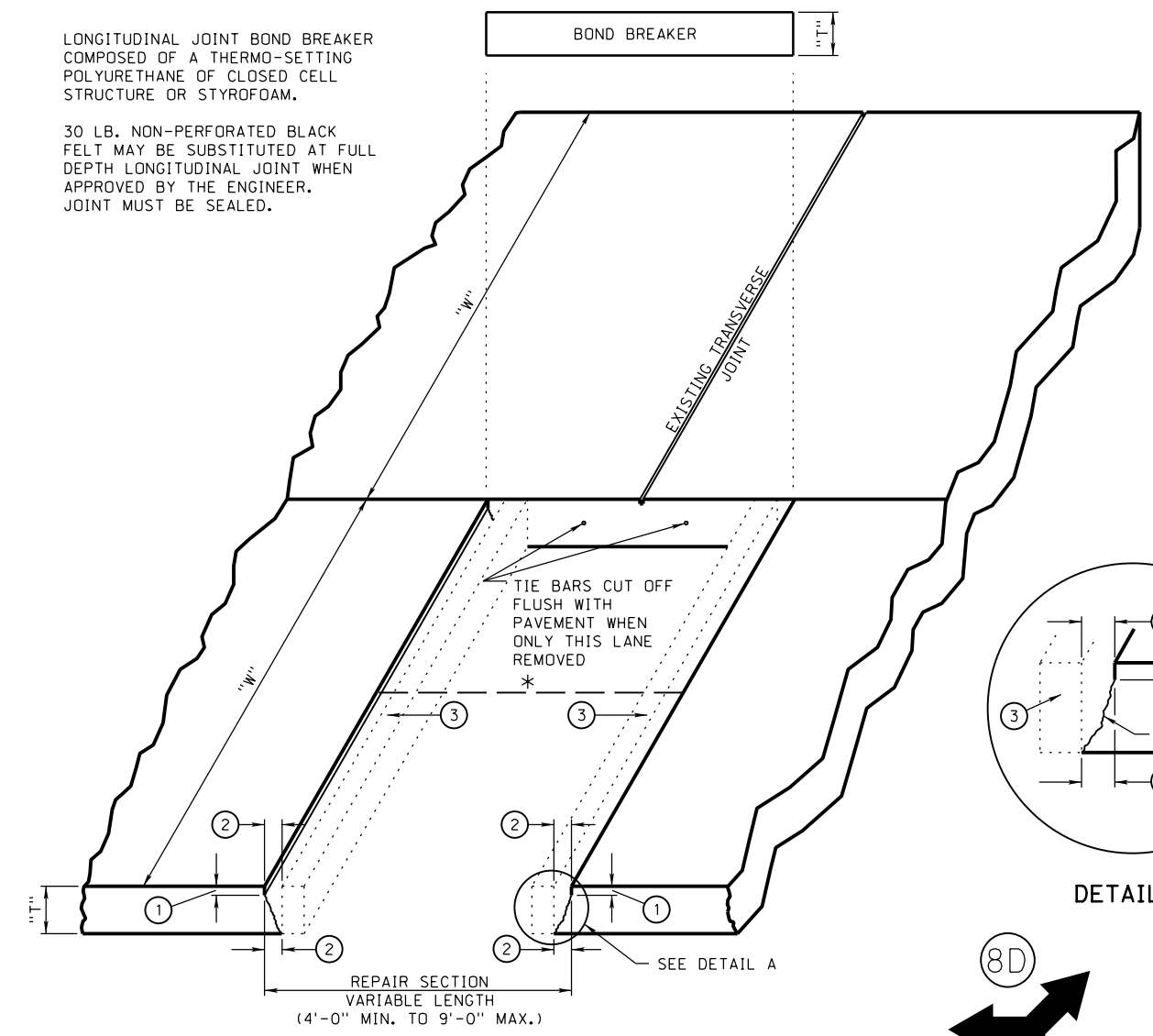
THERMO-SETTING POLYURETHANE BOND BREAKER



TOOLED LONGITUDINAL JOINT



FORMED JOINT



CONCRETE PAVEMENT JOINT REPAIR

- ① 1" ± 1/4" DIAMOND SAW CUT
- ② APPROX. 4" WHEEL CUTTER SAW CUT 2" ± 1/2" INBOARD FROM DIAMOND SAW CUT ON EACH SIDE OF SECTION TO BE REMOVED. A 15# MAXIMUM CHIPPING HAMMER SHALL BE USED TO CONSTRUCT THE CHIPPED FACE.
- ③ 4" WHEEL CUTTER SAW CUT

NOTE: CONTRACTOR MAY USE FULL DEPTH DIAMOND SAW CUT IN PLACE OF 4" WHEEL CUTTER SAW CUT. (2" ± 1/2" INBOARD FROM DIAMOND SAW CUT)

THE EXISTING TRANSVERSE JOINT SHALL NOT BE RE-ESTABLISHED IN THE JOINT REPAIR.

NOTES:

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

IF THE PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB.

LEGEND

- "W" WIDTH OF PANEL
- "L" LENGTH OF PANEL
- "T" THICKNESS OF CONCRETE

NOTE: FOR JOINT REPAIR LOCATIONS, SEE SHEET C

ROADWAY DESIGN DIVISION

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TYPICAL CROSS SECTIONS

NO OVERLAY 6" & 7" PLAIN CONCRETE REPAIR

ROADWAY DESIGN DIVISION
Computer: NDOTDESIGN134
Date: 10-APR-2020 11:10
FILE: 38502e24.dgn 3850-2-E-24
SHEET 3 OF 10

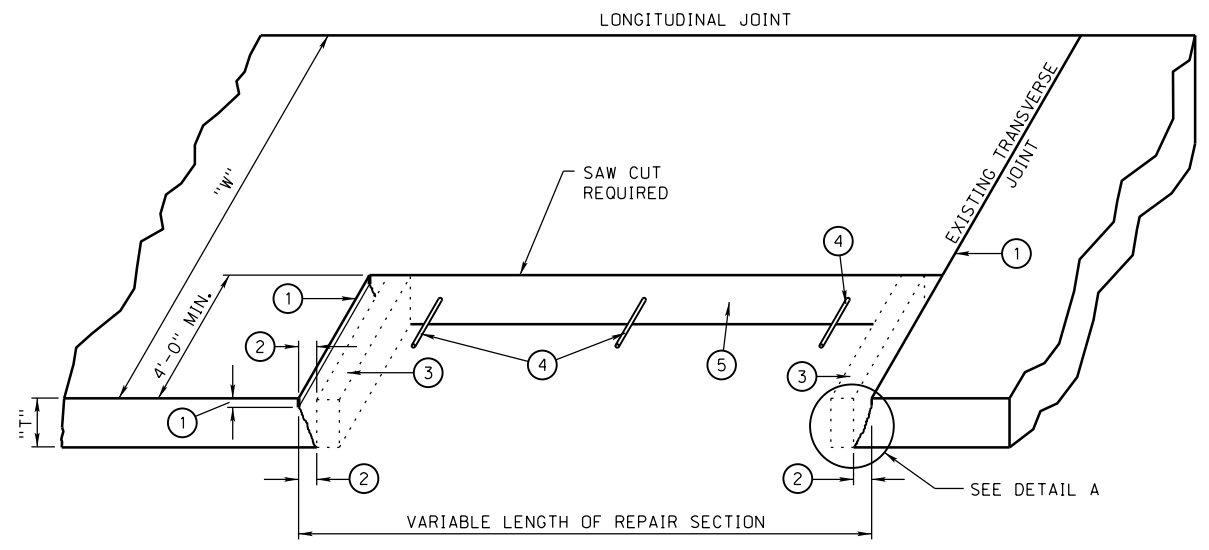


FIGURE B

- ① 1" ± 1/4" DIAMOND SAW CUT
- ② APPROX. 4" WHEEL CUTTER SAW CUT 2" ± 1/2" INBOARD FROM DIAMOND SAW CUT ON TRANSVERSE SIDES OF SECTION TO BE REMOVED. A 15# MAXIMUM CHIPPING HAMMER SHALL BE USED TO CONSTRUCT THE CHIPPED FACE. (MAY NOT BE REQUIRED AT EXISTING TRANSVERSE JOINT, IF ADEQUATE SLOPED FACE EXISTS)
- ③ 4" WHEEL CUTTER SAW CUT
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.
- ⑤ FULL DEPTH DIAMOND SAW CUT.

NOTE:
CONTRACTOR MAY USE FULL DEPTH DIAMOND SAW CUT IN PLACE OF 4" WHEEL CUTTER SAW CUT. (2" ± 1/2" INBOARD FROM DIAMOND SAW CUT)
IF REPAIR EXTENDS THROUGH EXISTING TRANSVERSE JOINT, SEE JOINT REPAIR DETAIL FOR PROPER BOND BREAKER PLACEMENT.

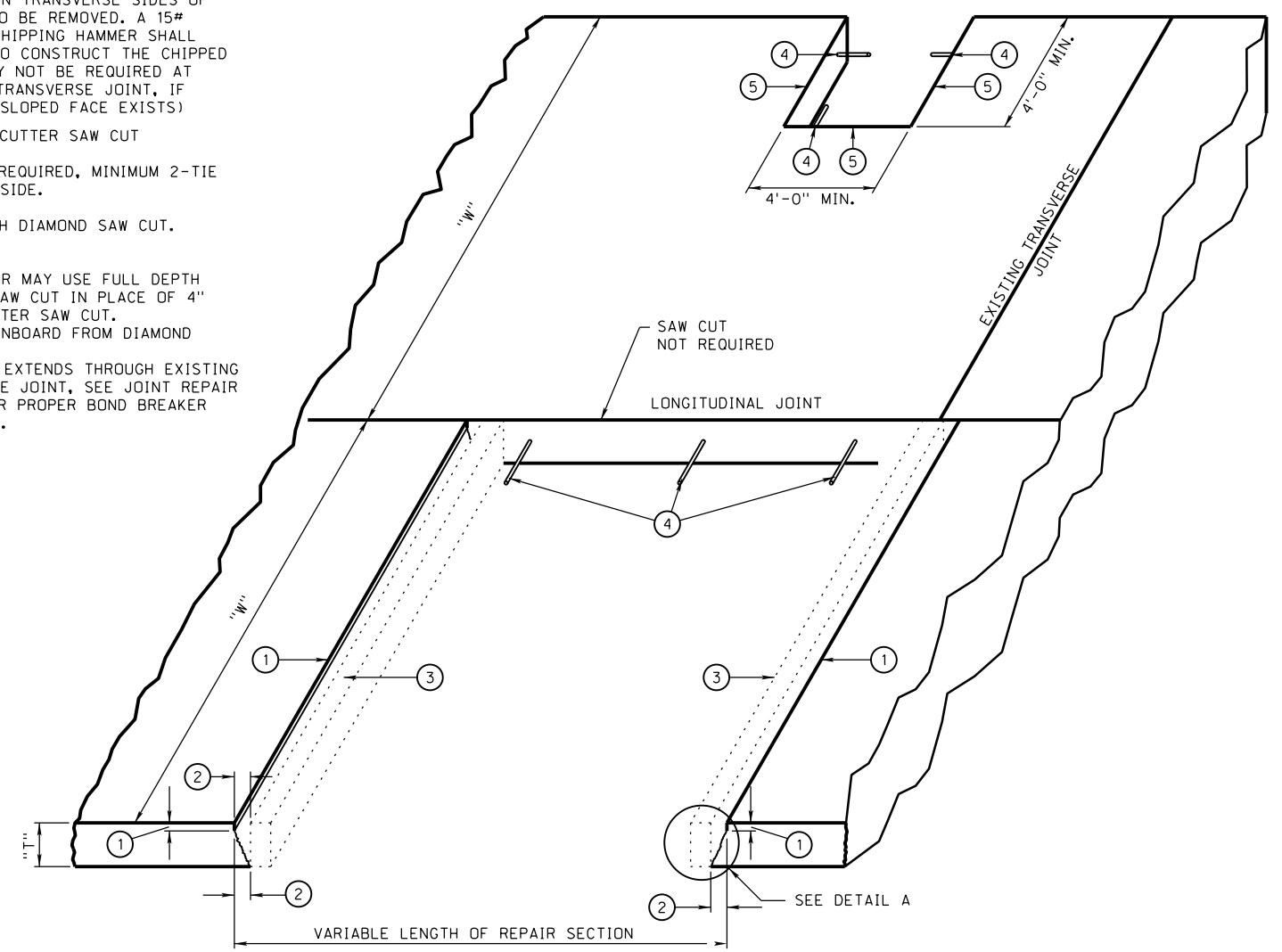
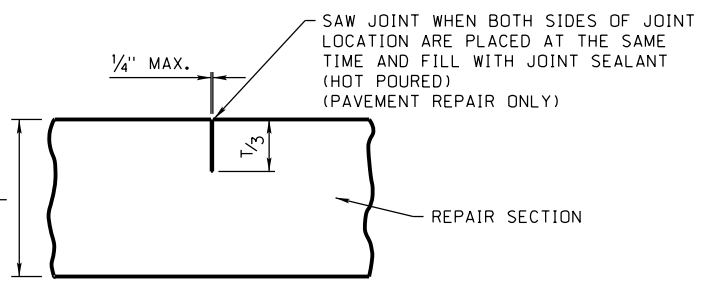
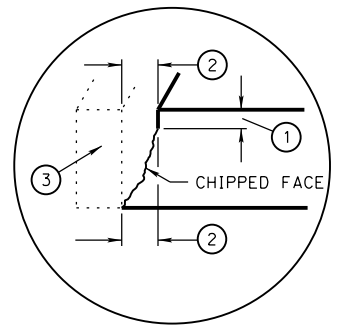


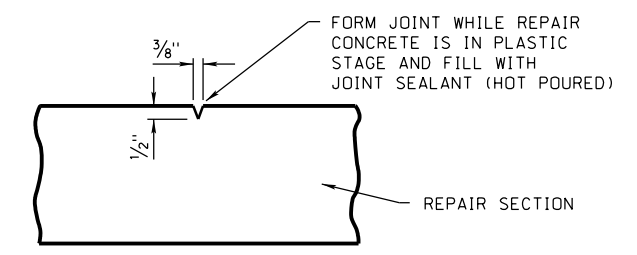
FIGURE A



TRANSVERSE JOINT



DETAIL A

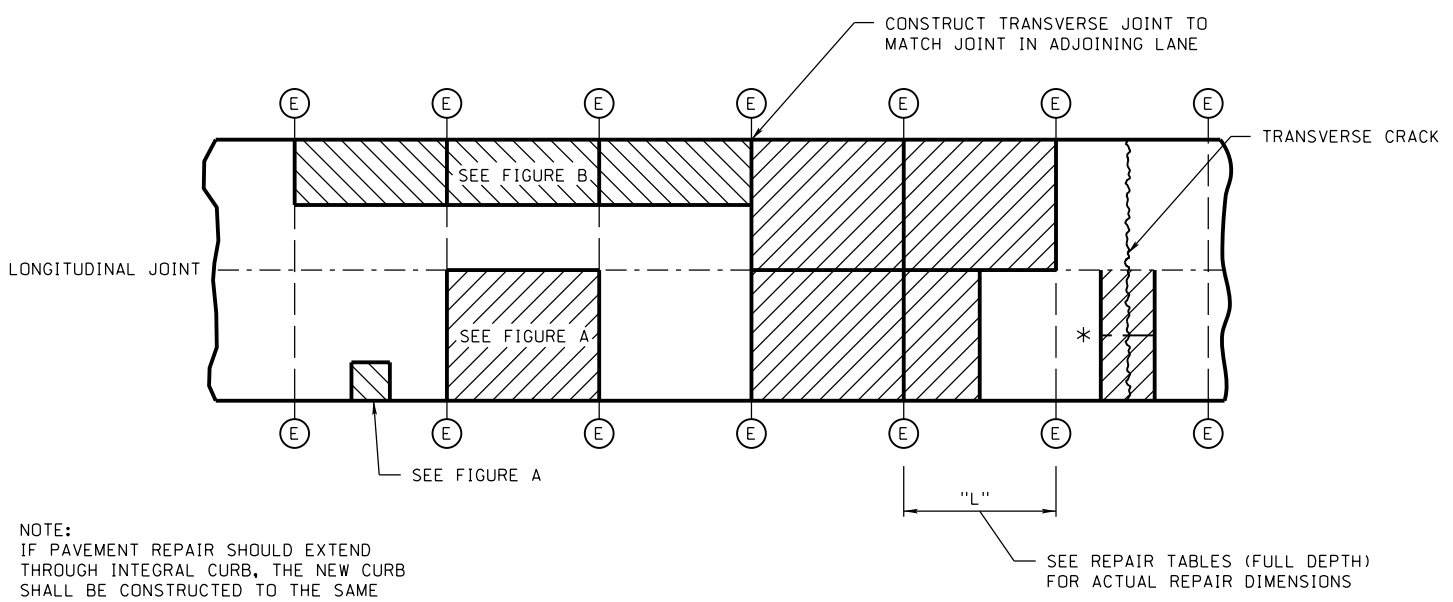


TOOLED LONGITUDINAL JOINT

NOTE:
CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND THE WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C



PLAIN CONCRETE PAVEMENT REPAIR

- LEGEND**
- "W" WIDTH OF PANEL
 - "L" LENGTH OF PANEL
 - "T" THICKNESS OF CONCRETE
 - (E) EXISTING TRANSVERSE JOINT
 - CONCRETE REMOVAL (PARTIAL LANE WIDTH)
 - CONCRETE REMOVAL (FULL LANE WIDTH)

NOTE:
IF PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB

SEE REPAIR TABLES (FULL DEPTH) FOR ACTUAL REPAIR DIMENSIONS

TYPICAL CROSS SECTIONS

- ① FULL DEPTH DIAMOND SAW CUT.
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS. MINIMUM 2-TIE BARS PER SIDE.
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.

- ⑤ IN THE CASE OF PANEL REPLACEMENT, DOWEL BARS SHALL BE INSTALLED 2'-0" BEYOND THE EXISTING TRANSVERSE JOINTS. (3-DOWEL BARS PER WHEEL PATH.)
- ⑥ IN THE CASE OF MULTIPLE PANEL REPLACEMENTS, DOWEL BARS SHALL BE INSTALLED AT 12" CENTERS, AS SHOWN IN THE STANDARD PLANS. BASKETS SHALL BE USED ACCORDING TO THE STANDARD SPECIFICATIONS, SUBSECTION 603.03.

- ⑦ LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.
- ⑧ 30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT FULL DEPTH LONGITUDINAL JOINT WHEN APPROVED BY THE ENGINEER.

- ⑧ BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED JOINT AND THE EXISTING TRANSVERSE JOINT.

NO OVERLAY DOWELED CONCRETE PAVEMENT REPAIR

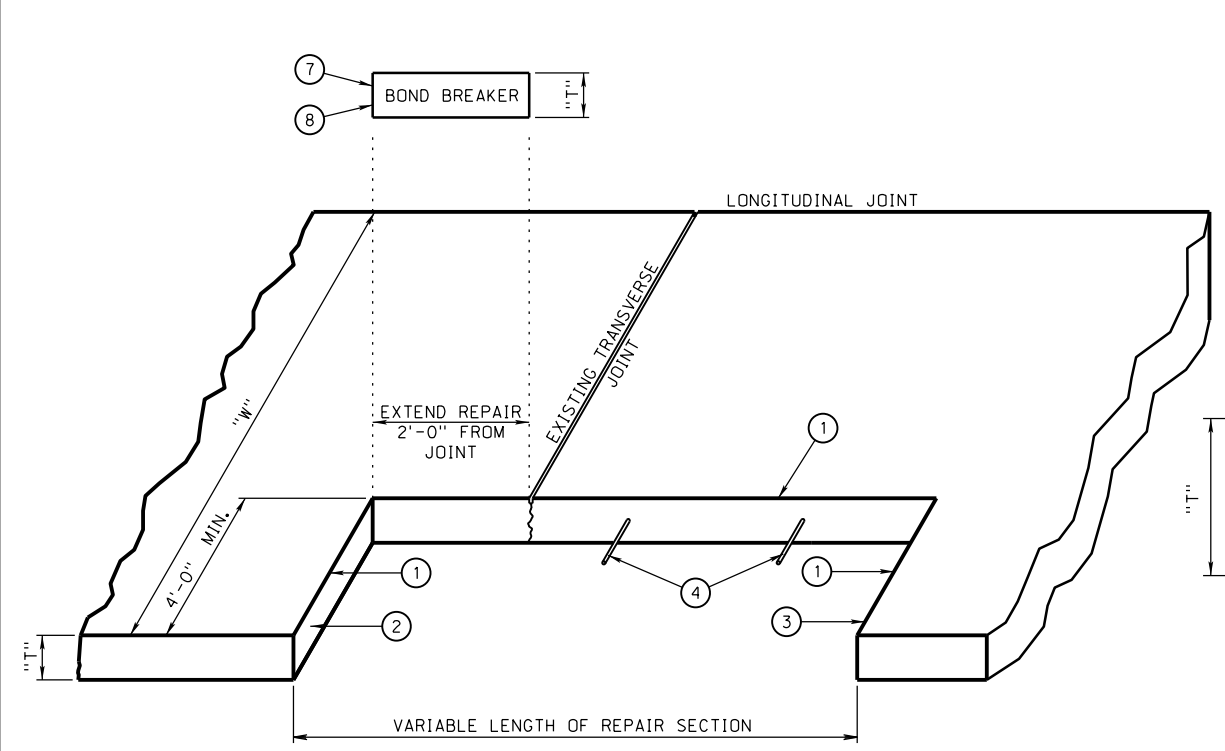
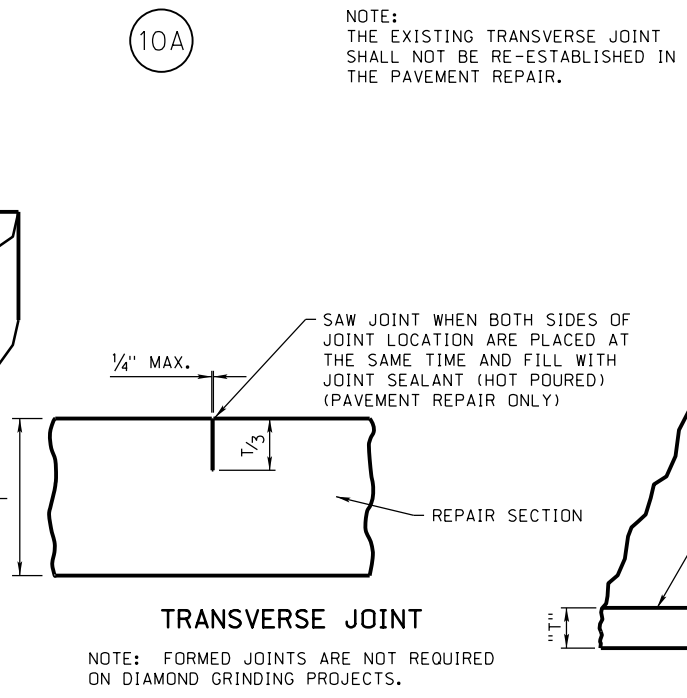


FIGURE B



TRANSVERSE JOINT

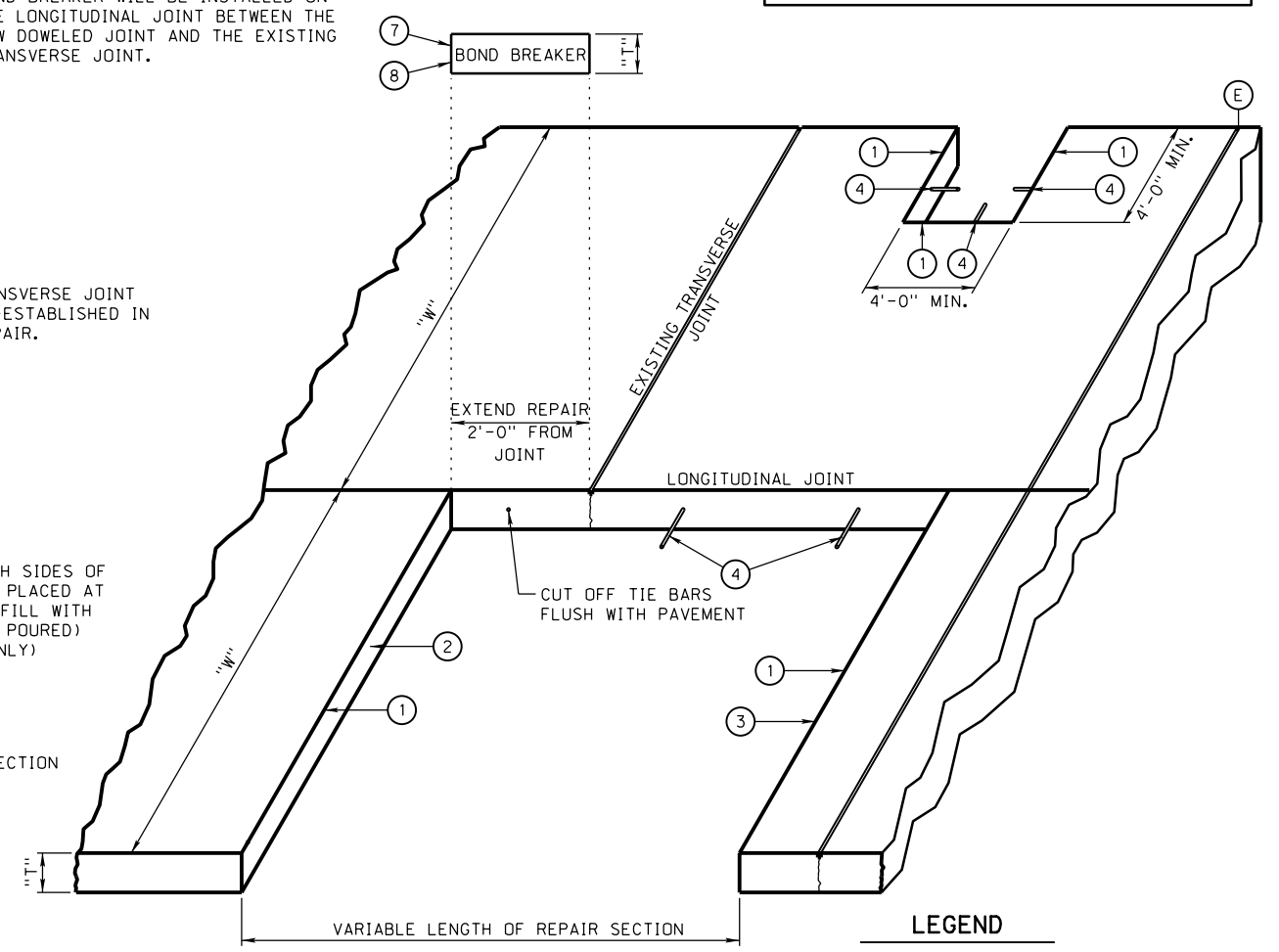
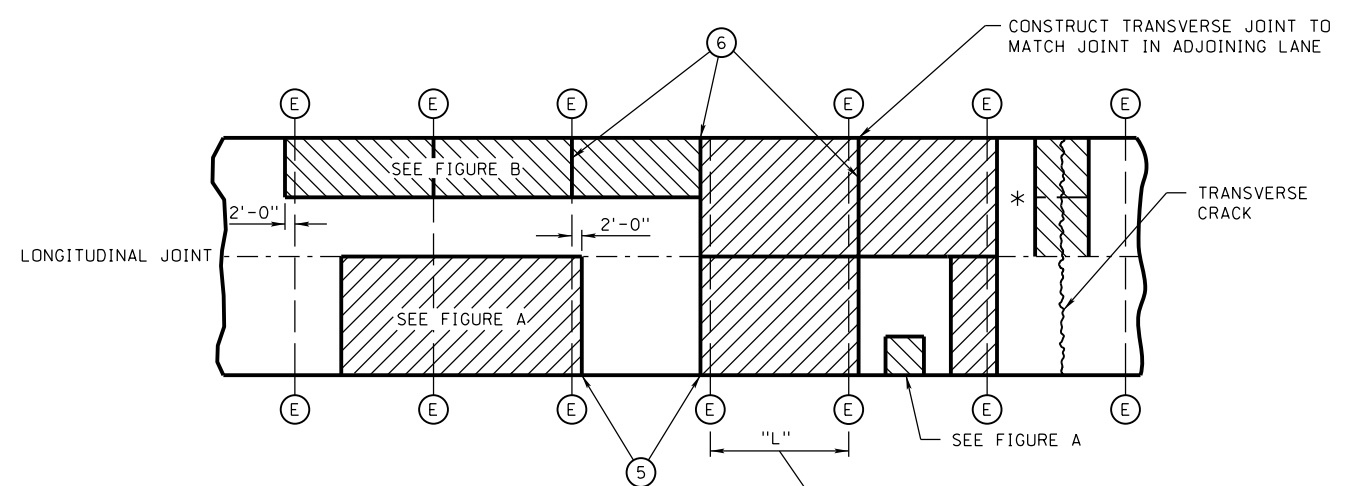
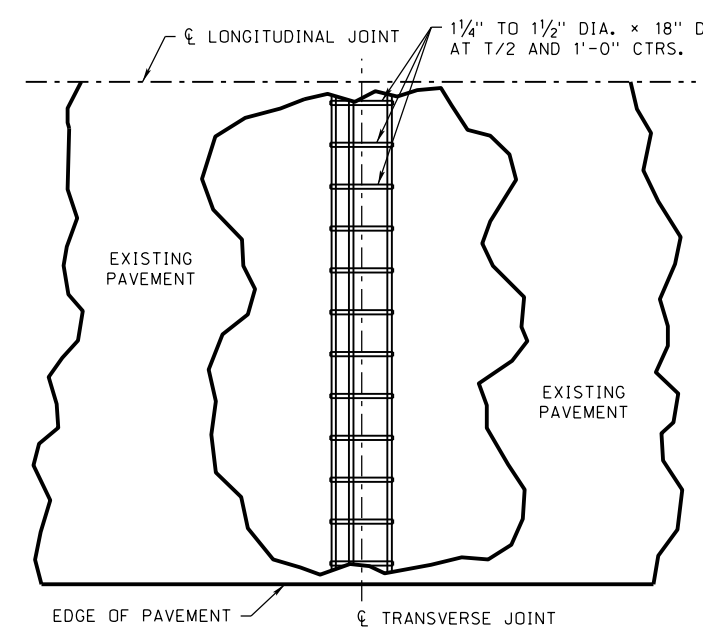


FIGURE A

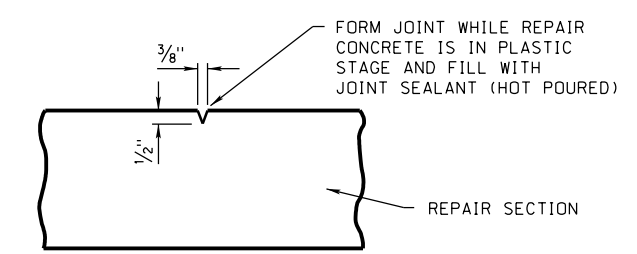
- LEGEND**
- "W" WIDTH OF PANEL
 - "L" LENGTH OF PANEL
 - "T" THICKNESS OF CONCRETE
 - ⓔ EXISTING TRANSVERSE JOINT
 - ▨ CONCRETE REMOVAL (PARTIAL LANE WIDTH)
 - ▩ CONCRETE REMOVAL (FULL LANE WIDTH)



DOWELED CONCRETE PAVEMENT REPAIR



EXISTING DOWELED CONCRETE PAVEMENT



TOOLED LONGITUDINAL JOINT

- NOTE:
- CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.
 - * IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND THE WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).
 - NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C

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SHEET 10 OF 10

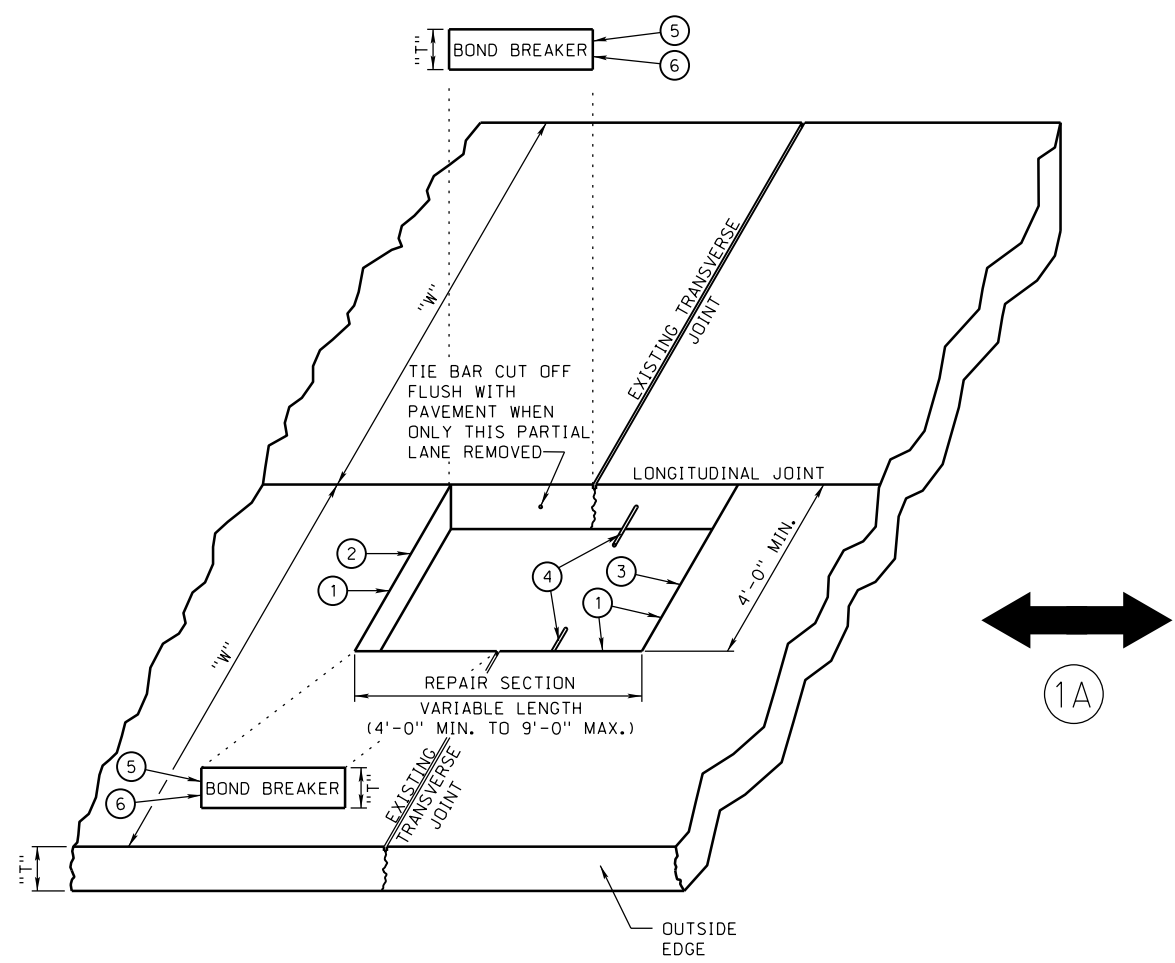
TYPICAL CROSS SECTIONS

OVERLAY ONLY JOINT REPAIR

- ① FULL DEPTH DIAMOND SAW CUT (FULL DEPTH 4" WHEEL CUTTER SAW CUT WILL BE PERMITTED IF REPAIR IS OVERLAID.)
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS.
- ④ TIE BARS REQUIRED.
- ⑤ LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.
- ⑥ BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED TRANSVERSE JOINT AND THE EXISTING TRANSVERSE JOINT.

NOTES:

ALL DOWEL BARS AND TIE BARS WILL BE EPOXY COATED.
THE EXISTING TRANSVERSE JOINT SHALL NOT BE RE-ESTABLISHED IN THE JOINT REPAIR.



CONCRETE PAVEMENT JOINT REPAIR, PARTIAL LANE

NOTES:

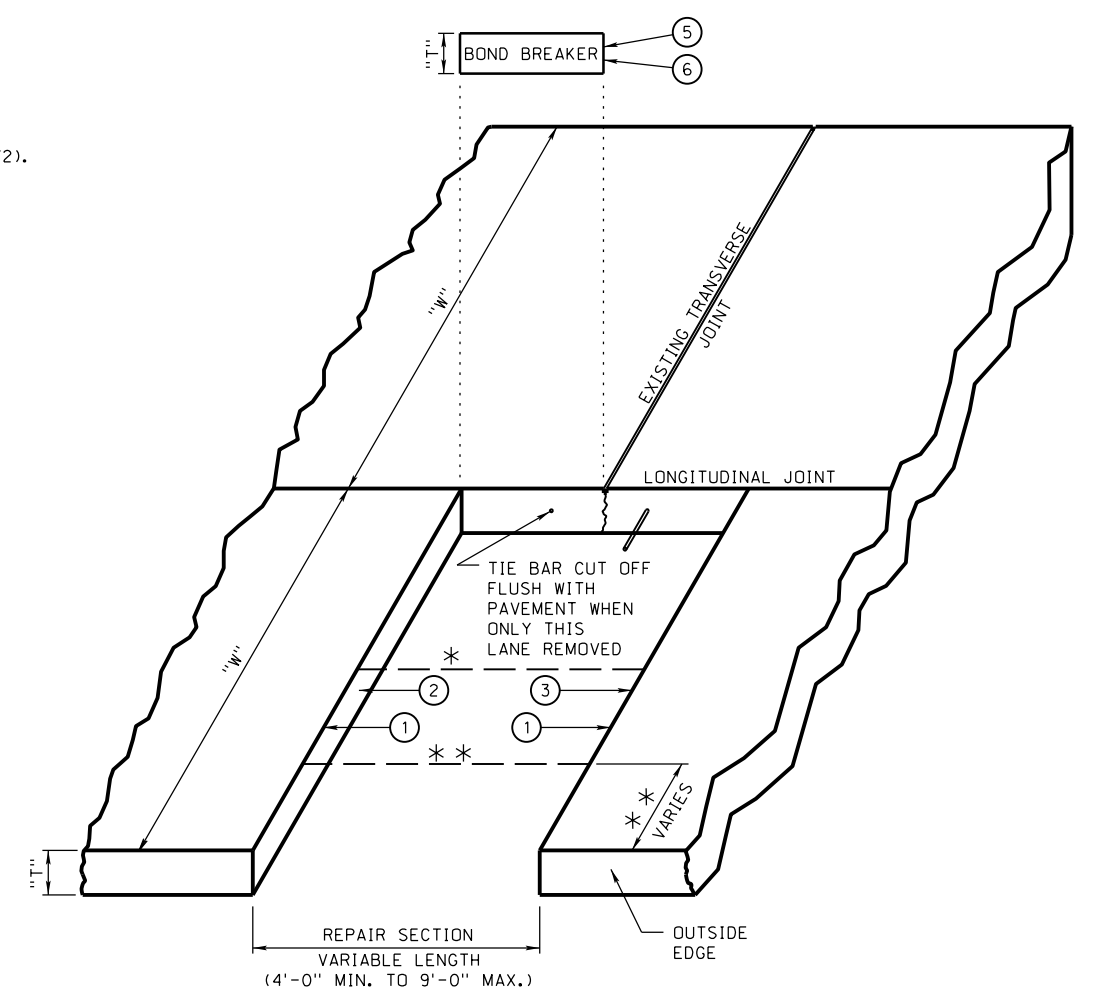
* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).
CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

OR

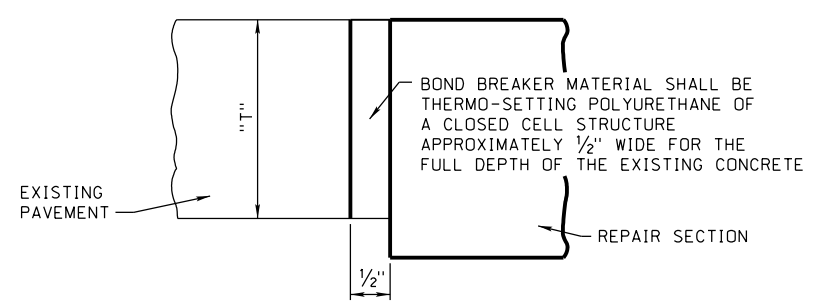
** IF THE WIDTH OF PANEL ("W") WAS PREVIOUSLY WIDENED, CONSTRUCT A TOOLED LONGITUDINAL JOINT TO MATCH THE LONGITUDINAL JOINTS OF THE ADJOINING PANELS.
IF THE PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB.

LEGEND

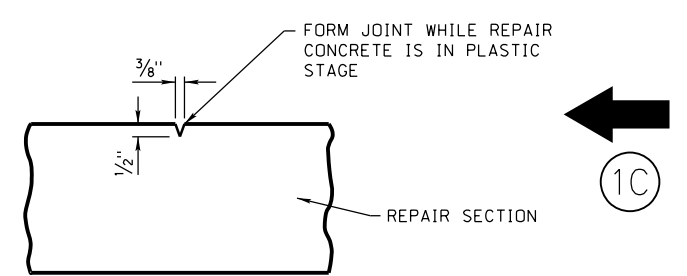
"W" WIDTH OF PANEL
"L" LENGTH OF PANEL
"T" THICKNESS OF CONCRETE
NOTE: FOR JOINT REPAIR LOCATIONS, SEE SHEET C



CONCRETE PAVEMENT JOINT REPAIR



THERMO-SETTING POLYURETHANE BOND BREAKER



TOOLED LONGITUDINAL JOINT

ROADWAY DESIGN DIVISION

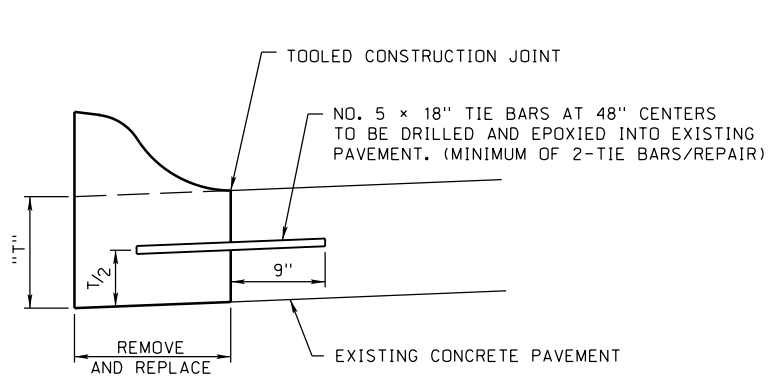
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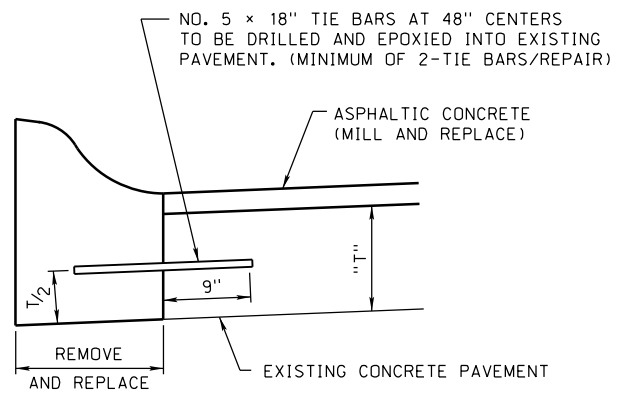
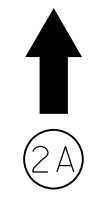
TYPICAL CROSS SECTIONS

OVERLAY ONLY CURB REPAIR



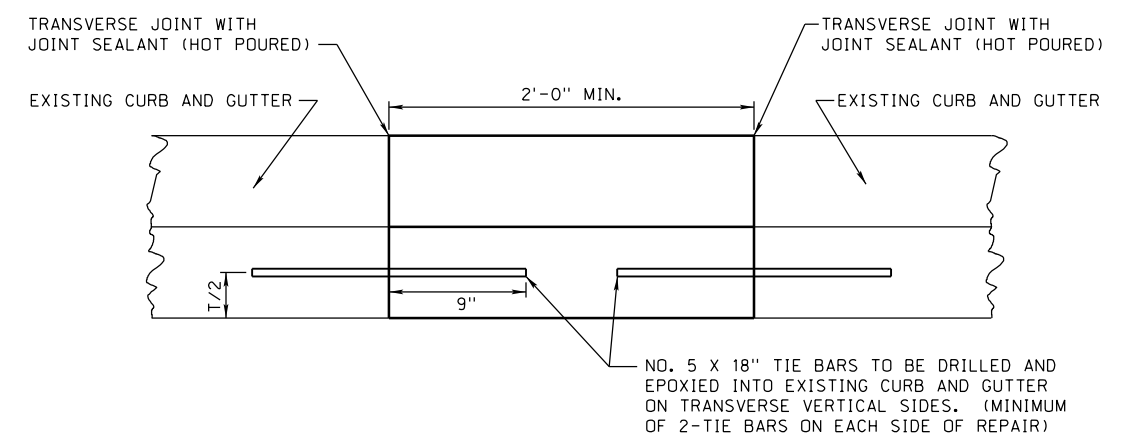
INTEGRAL CURB REPAIR

NOTE: ALL TIE BARS WILL BE EPOXY COATED



INTEGRAL CURB REPAIR

NOTE: ALL TIE BARS WILL BE EPOXY COATED

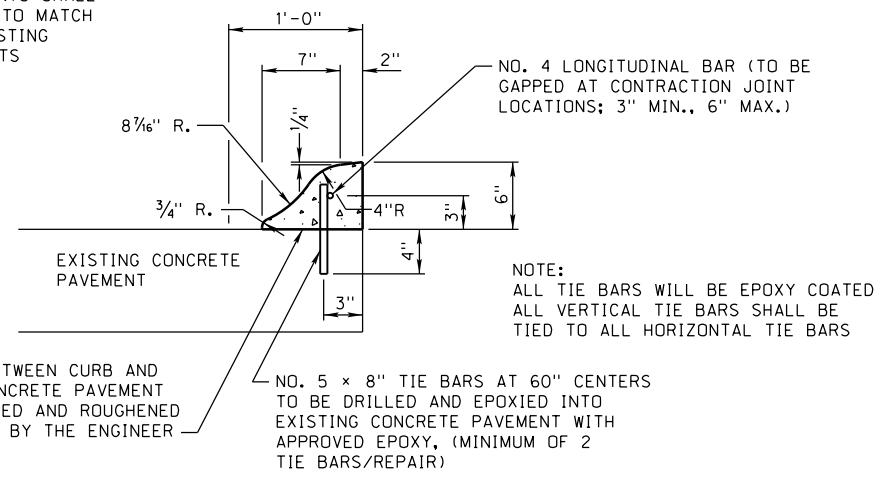


CONCRETE CURB AND GUTTER REPAIR

NOTE: ALL TIE BARS WILL BE EPOXY COATED



CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH LOCATION OF EXISTING TRANSVERSE JOINTS



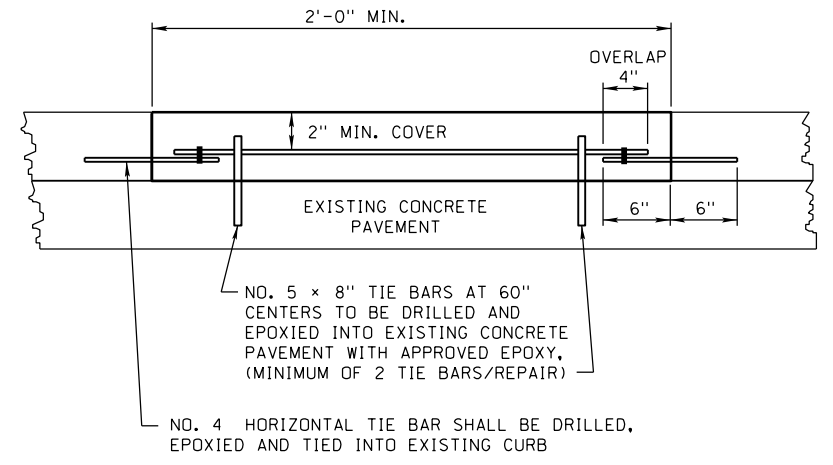
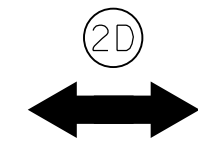
CONCRETE TACK-ON CURB

THE AREA BETWEEN CURB AND EXISTING CONCRETE PAVEMENT TO BE CLEANED AND ROUGHENED AS DIRECTED BY THE ENGINEER

NO. 5 x 8" TIE BARS AT 60" CENTERS TO BE DRILLED AND EPOXIED INTO EXISTING CONCRETE PAVEMENT WITH APPROVED EPOXY, (MINIMUM OF 2 TIE BARS/REPAIR)

NO. 4 LONGITUDINAL BAR (TO BE GAPPED AT CONTRACTION JOINT LOCATIONS; 3" MIN., 6" MAX.)

NOTE: ALL TIE BARS WILL BE EPOXY COATED ALL VERTICAL TIE BARS SHALL BE TIED TO ALL HORIZONTAL TIE BARS



FRONT VIEW OF TACK-ON CURB REPAIR

ROADWAY DESIGN DIVISION

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Date: 10-APR-2020 11:10

FILE: 38510618.dgn 3851-2-E-18 SHEET 2 OF 10

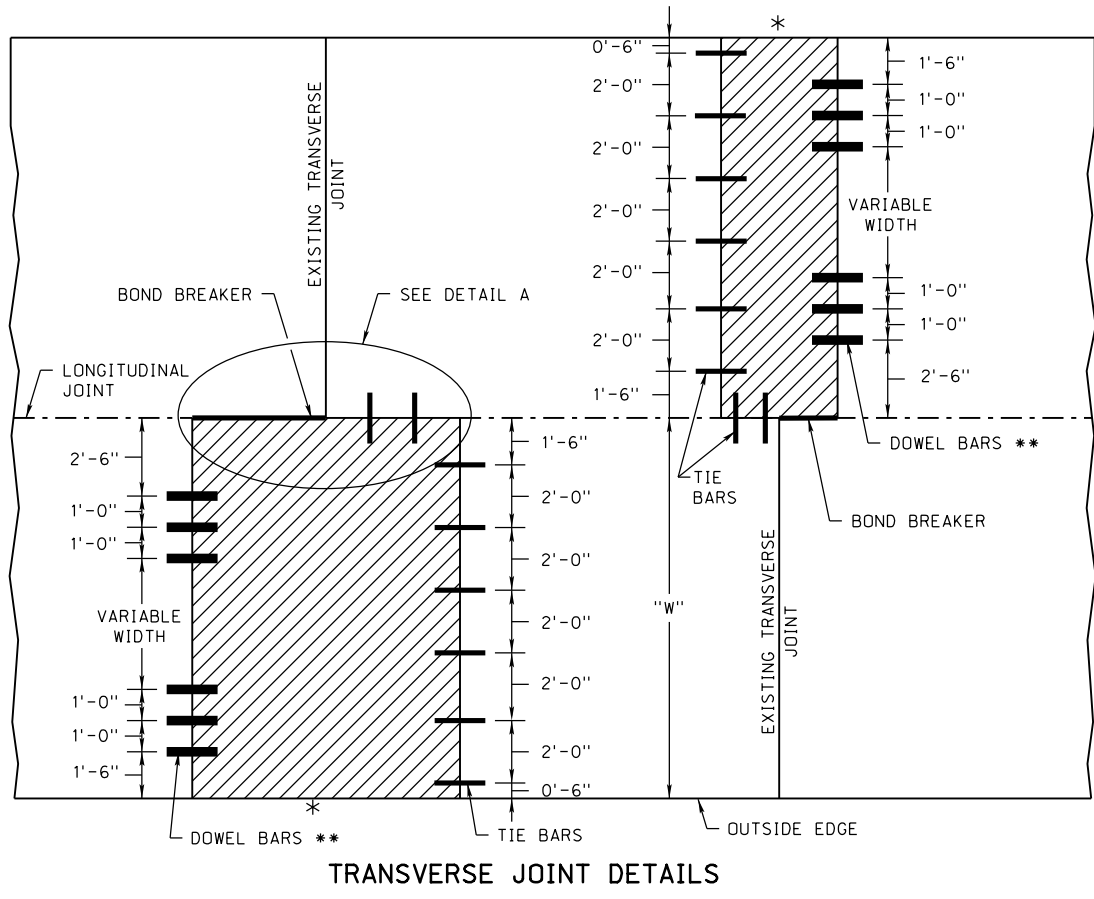
ROADWAY DESIGN DIVISION

TYPICAL CROSS SECTIONS

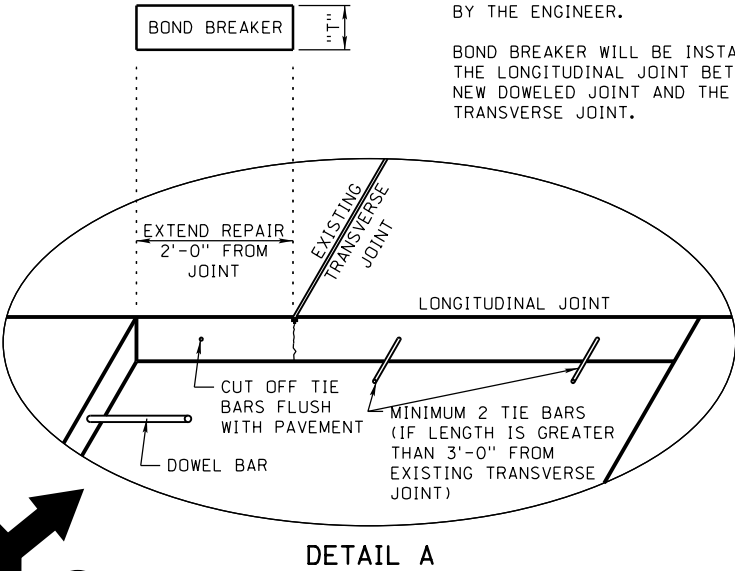
PROJECT NO. SHEET NO.

C.N.

OVERLAY ONLY TIE AND DOWEL PLACEMENT EXCLUDES 6" AND 7" PCC



TRANSVERSE JOINT DETAILS



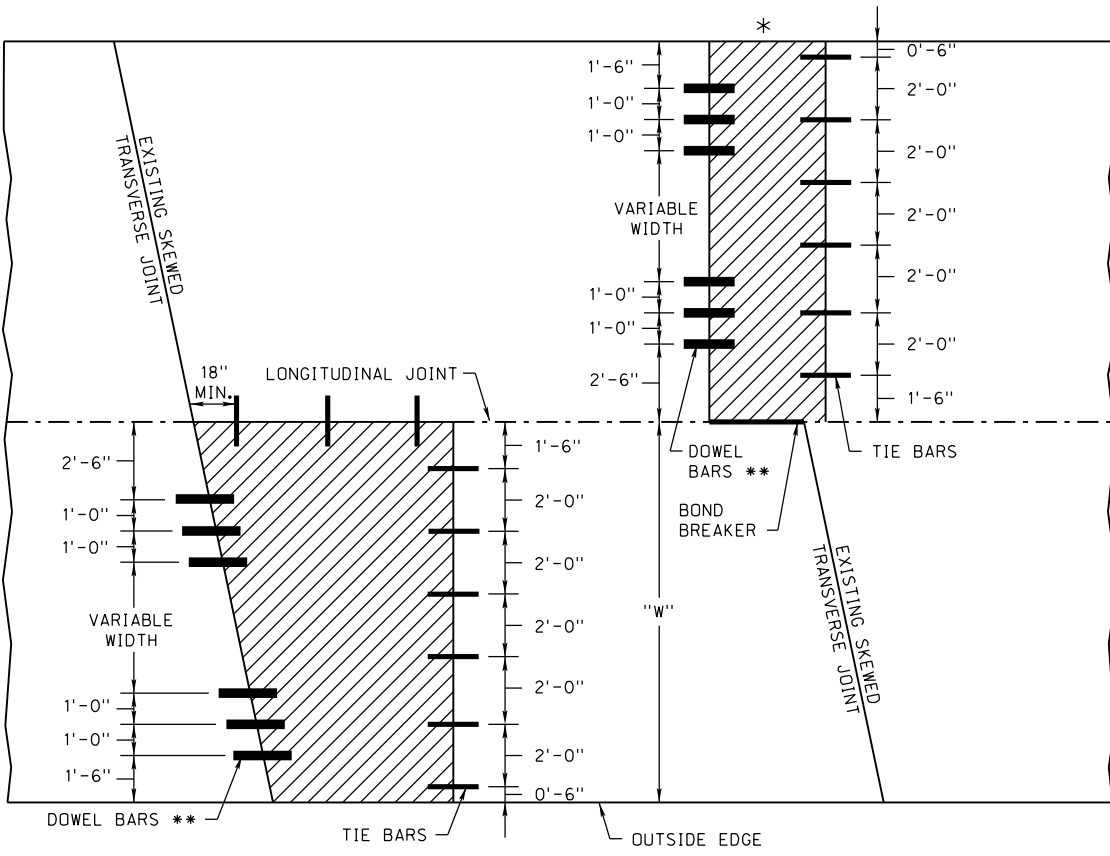
DETAIL A

* FOR EXISTING CONCRETE SHOULDERS MATCH BOND BREAKER ON OPPOSITE LONGITUDINAL JOINT.

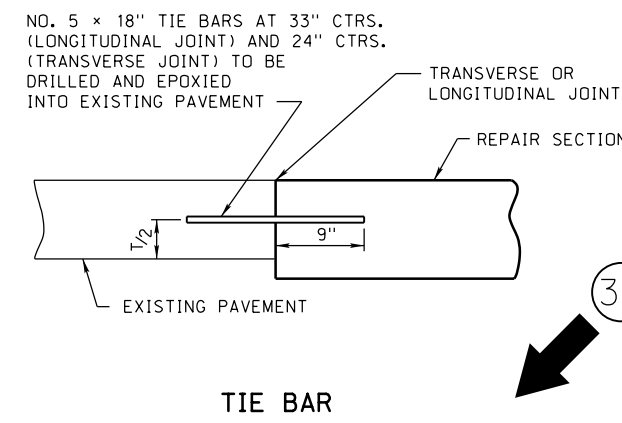
** INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.

NOTE: BAR SPACING MAY VARY DEPENDING ON LANE WIDTH.

CONCRETE REMOVAL



SKEWED TRANSVERSE JOINT DETAILS



TIE BAR

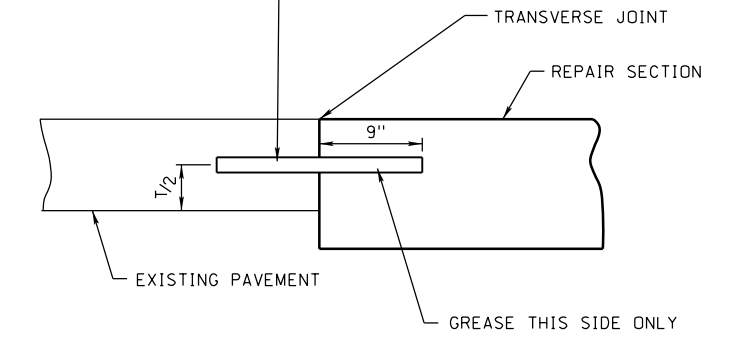
NOTE: ALL TIE BARS WILL BE EPOXY COATED

LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM

30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT FULL DEPTH LONGITUDINAL JOINT WHEN APPROVED BY THE ENGINEER.

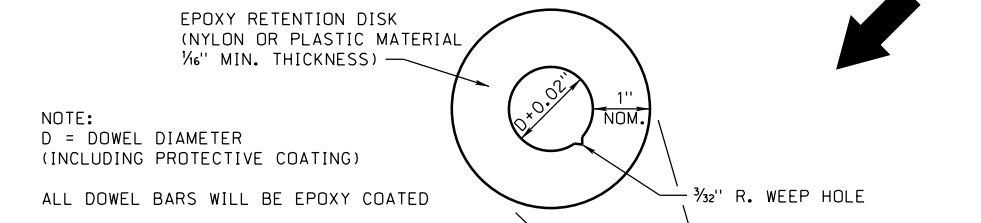
BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED JOINT AND THE EXISTING TRANSVERSE JOINT.

1 1/4" DIA. x 18" DOWEL BARS "T" = 8" TO 9",
1 1/2" DIA. x 18" DOWEL BARS "T" = 10" OR MORE
DOWEL BARS TO BE DRILLED AND EPOXIED INTO EXISTING PAVEMENT. PLACE EPOXY RETENTION DISK. SUPPORT DOWEL BARS IN HORIZONTAL POSITION UNTIL EPOXY DRIES.



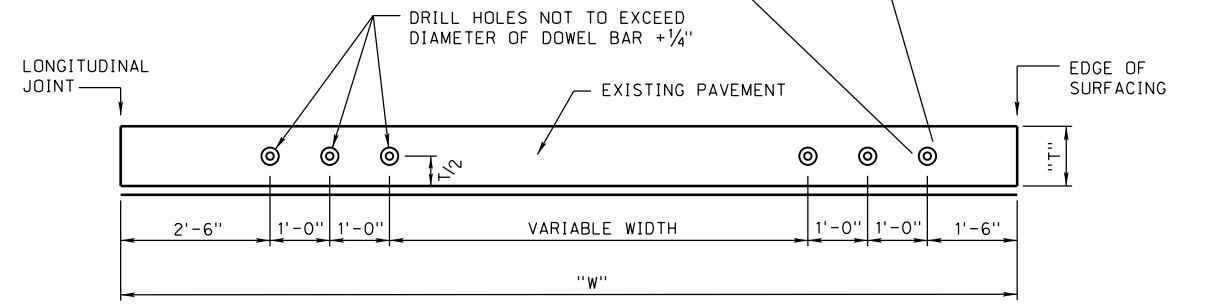
DOWEL BAR

NOTE: ALL DOWEL BARS WILL BE EPOXY COATED

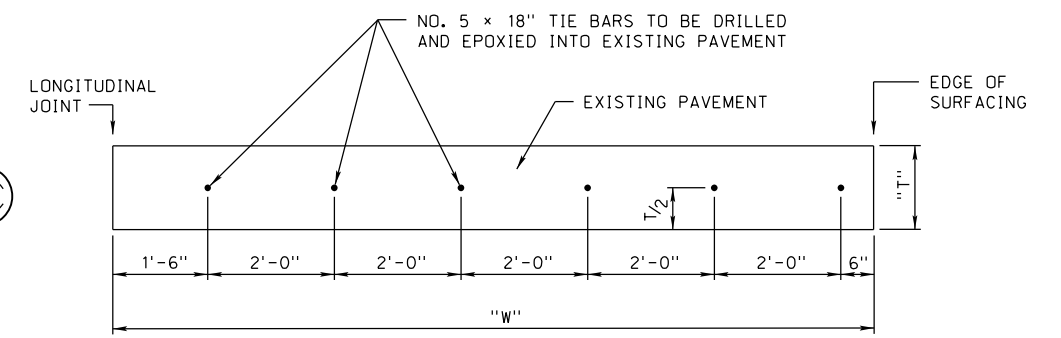


NOTE: D = DOWEL DIAMETER (INCLUDING PROTECTIVE COATING)

ALL DOWEL BARS WILL BE EPOXY COATED



DOWEL BAR SPACING



TIE BAR SPACING

Computer: NDOTDESIGN134

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TYPICAL CROSS SECTIONS

- ① FULL DEPTH DIAMOND SAW CUT. (FULL DEPTH 4" WHEEL CUTTER SAW CUT WILL BE PERMITTED IF REPAIR IS OVERLAID.)
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS. MINIMUM 2-TIE BARS PER SIDE.

- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.
- ⑤ IN THE CASE OF PANEL REPLACEMENT, DOWEL BARS SHALL BE INSTALLED 2'-0" BEYOND THE EXISTING TRANSVERSE JOINTS. (3-DOWEL BARS PER WHEEL PATH.)
- ⑥ IN THE CASE OF MULTIPLE PANEL REPLACEMENTS, DOWEL BARS SHALL BE INSTALLED AT 12" CENTERS, AS SHOWN IN THE STANDARD PLANS. BASKETS SHALL BE USED ACCORDING TO THE STANDARD SPECIFICATIONS, SUBSECTION 603.03.

- ⑦ LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.
 - ⑧ BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED JOINT AND THE EXISTING TRANSVERSE JOINT.
- 30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT FULL DEPTH LONGITUDINAL JOINT WHEN APPROVED BY THE ENGINEER.

OVERLAY ONLY 8" AND 9" RCP REPAIR

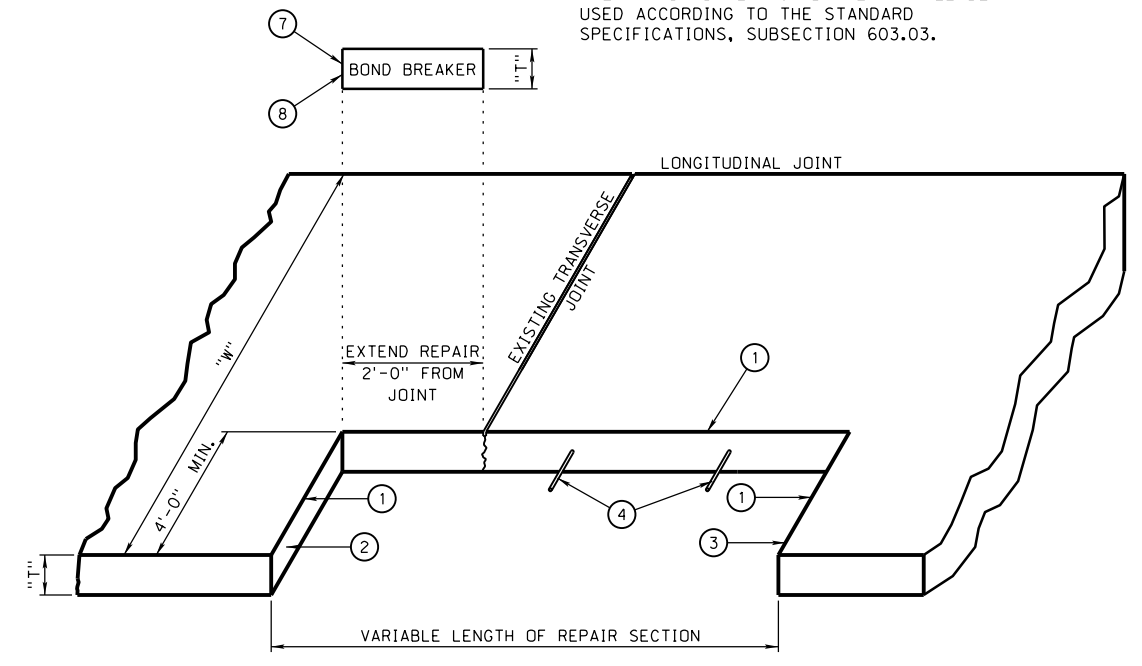
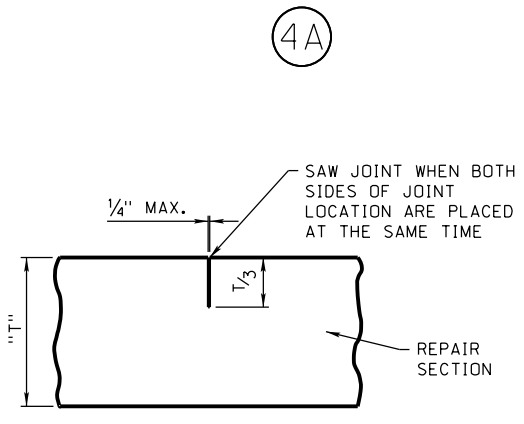


FIGURE B



TRANSVERSE JOINTS

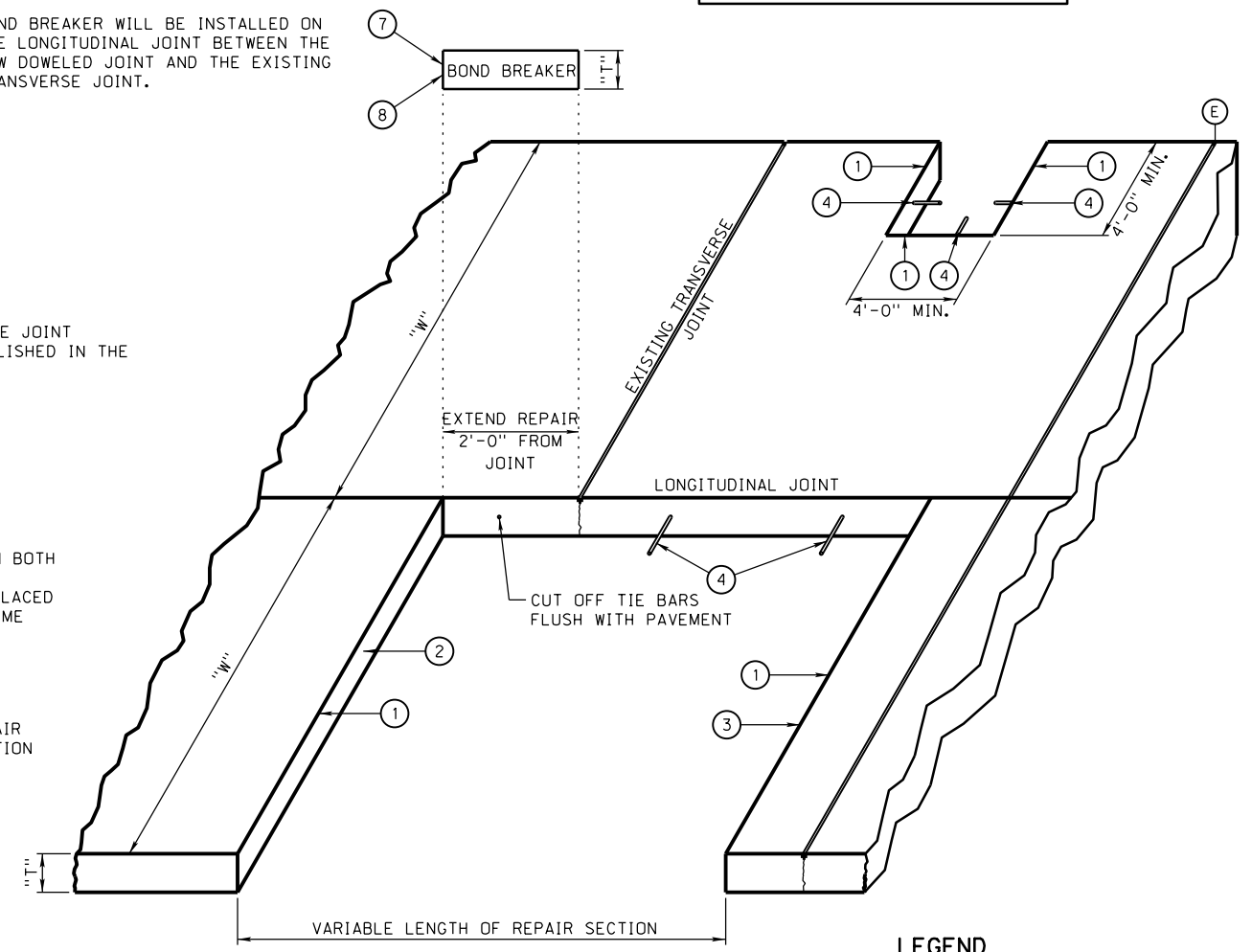
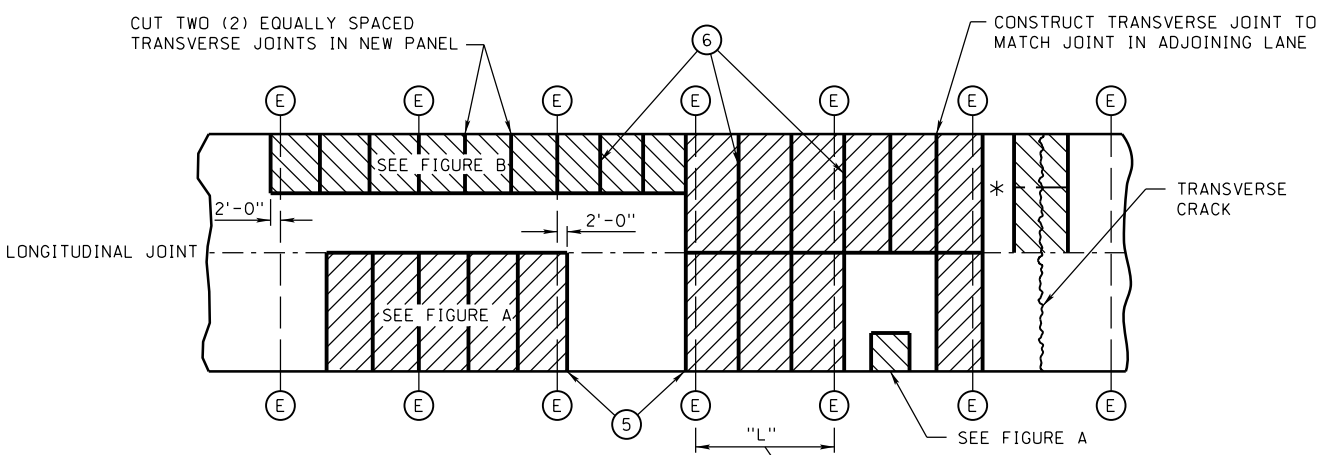


FIGURE A

LEGEND

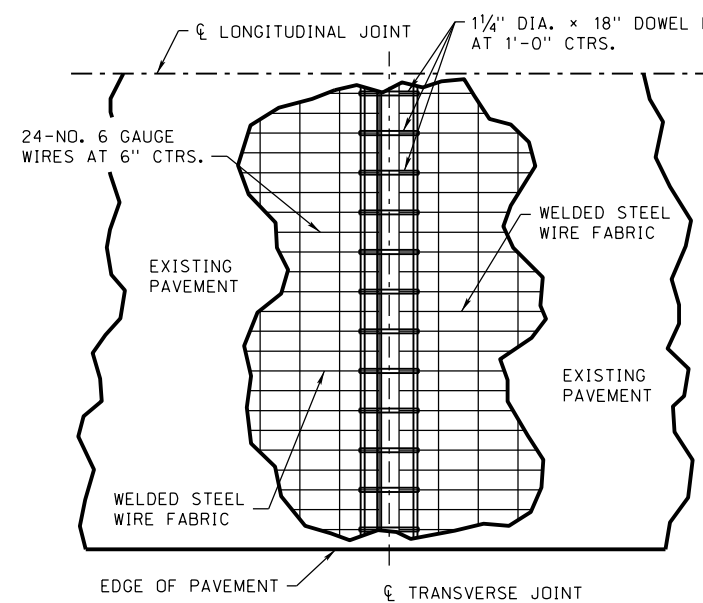
- "W" WIDTH OF PANEL
- "L" LENGTH OF PANEL
- "T" THICKNESS OF CONCRETE
- (E) EXISTING TRANSVERSE JOINT
- [Hatched] CONCRETE REMOVAL (PARTIAL LANE WIDTH)
- [Diagonal Hatched] CONCRETE REMOVAL (FULL LANE WIDTH)



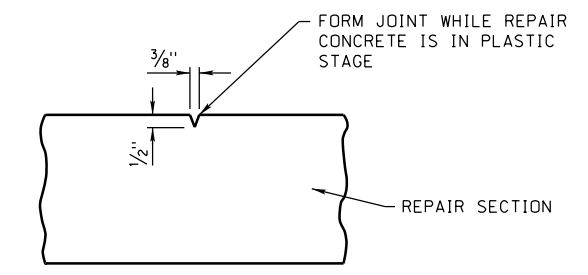
NOTE: IF PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB

SEE REPAIR TABLES (FULL DEPTH) FOR ACTUAL REPAIR DIMENSIONS

8" AND 9" REINFORCED CONCRETE PAVEMENT REPAIR



EXISTING 8" AND 9" REINFORCED CONCRETE PAVEMENT (RCP)



TOOLED LONGITUDINAL JOINT

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C

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TYPICAL CROSS SECTIONS

- ① FULL DEPTH DIAMOND SAW CUT. (FULL DEPTH 4" WHEEL CUTTER SAW CUT WILL BE PERMITTED IF REPAIR IS OVERLAID.) (MAY NOT BE REQUIRED AT EXISTING JOINT.)
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS. MINIMUM 2-TIE BARS PER SIDE.
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.
- ⑤ IN THE CASE OF PANEL REPLACEMENT, DOWEL BARS SHALL BE INSTALLED AT EXISTING TRANSVERSE JOINTS. (MINIMUM 3-DOWEL BARS PER WHEEL PATH.)
- ⑥ IN THE CASE OF MULTIPLE PANEL REPLACEMENTS, DOWEL BARS SHALL BE INSTALLED AT 12" CENTERS, AS SHOWN IN THE STANDARD PLANS. BASKETS SHALL BE USED ACCORDING TO THE STANDARD SPECIFICATIONS, SUBSECTION 603.03.

OVERLAY ONLY PLAIN CONCRETE PAVEMENT REPAIR

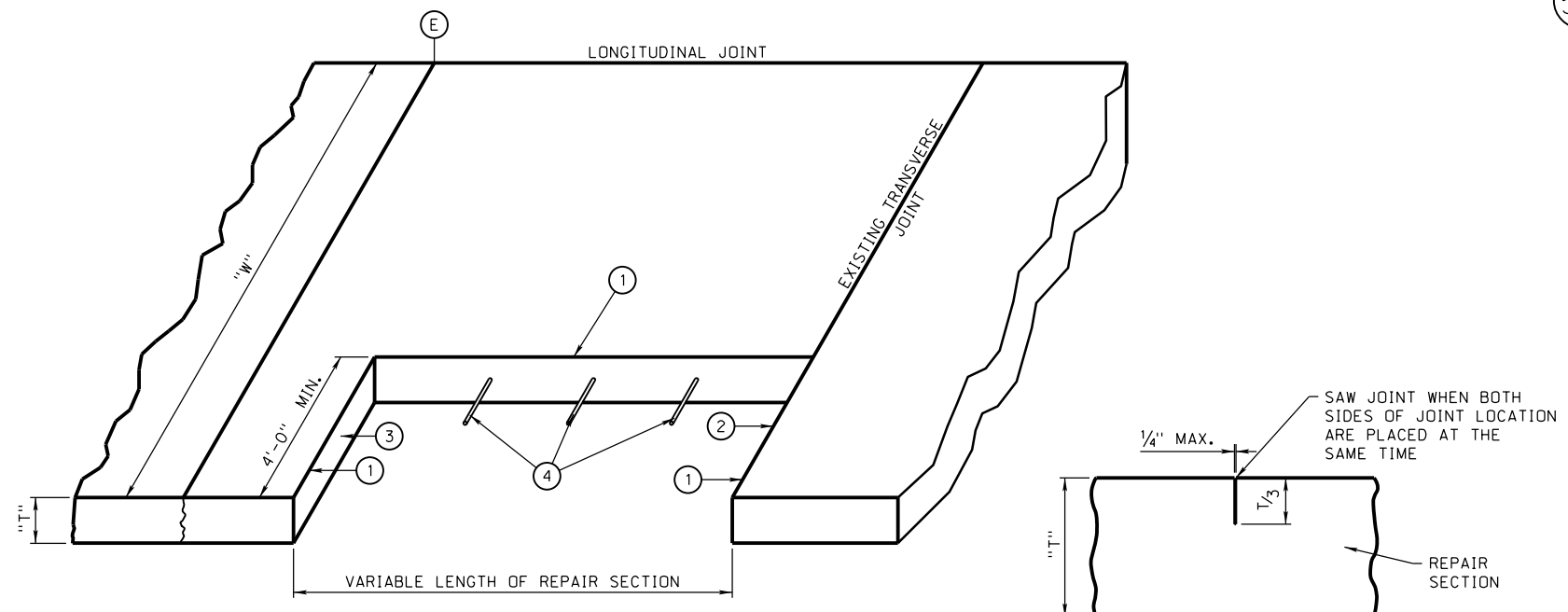


FIGURE B

TRANSVERSE JOINTS

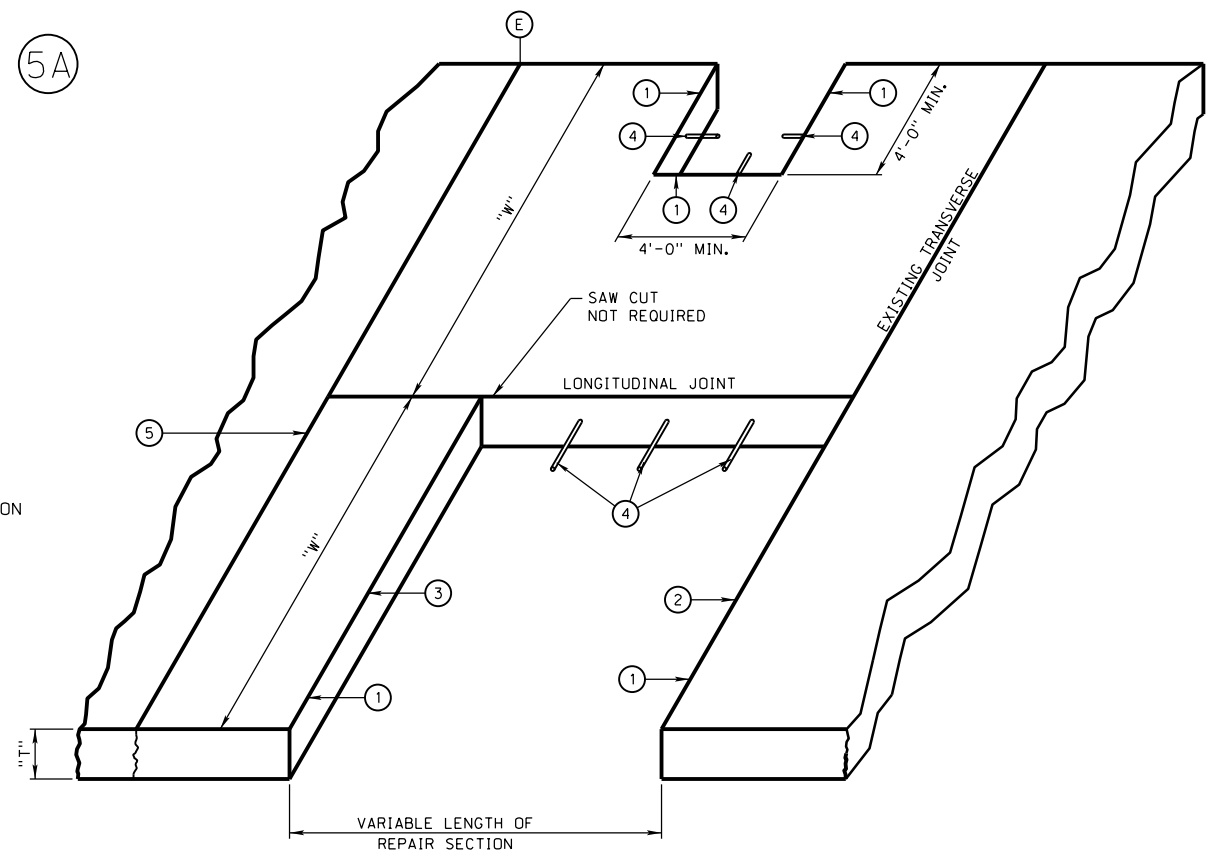
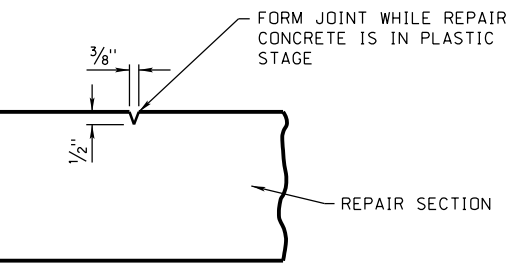


FIGURE A



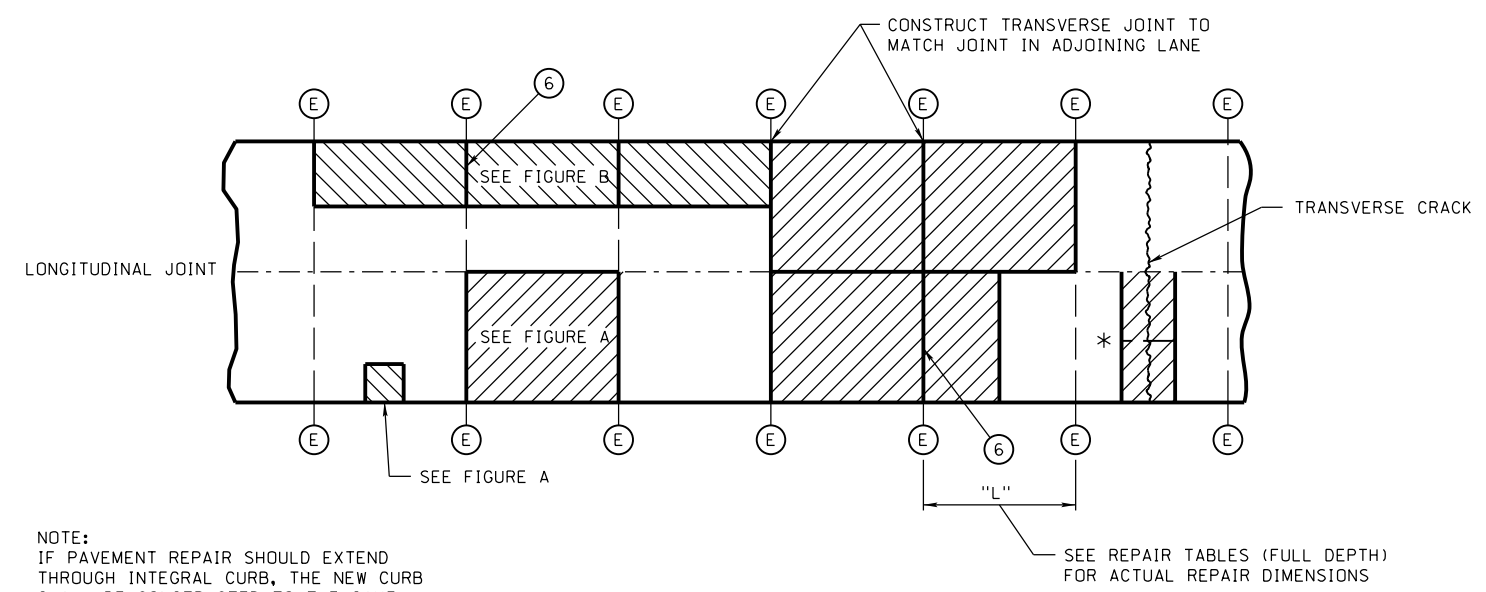
TOOLED LONGITUDINAL JOINT

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

OR

IF THE WIDTH OF PANEL ("W") WAS PREVIOUSLY WIDENED, CONSTRUCT A TOOLED LONGITUDINAL JOINT TO MATCH THE LONGITUDINAL JOINTS OF THE ADJOINING PANELS. SEE JOINT DETAIL FOR THIS TOOLED LONGITUDINAL JOINT.

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C



PLAIN CONCRETE PAVEMENT REPAIR

LEGEND

- "W" WIDTH OF PANEL
- "L" LENGTH OF PANEL
- "T" THICKNESS OF CONCRETE
- ⓔ EXISTING TRANSVERSE JOINT
- ▨ CONCRETE REMOVAL (PARTIAL LANE WIDTH)
- ▩ CONCRETE REMOVAL (FULL LANE WIDTH)

NOTE: IF PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB

SEE REPAIR TABLES (FULL DEPTH) FOR ACTUAL REPAIR DIMENSIONS

ROADWAY DESIGN DIVISION

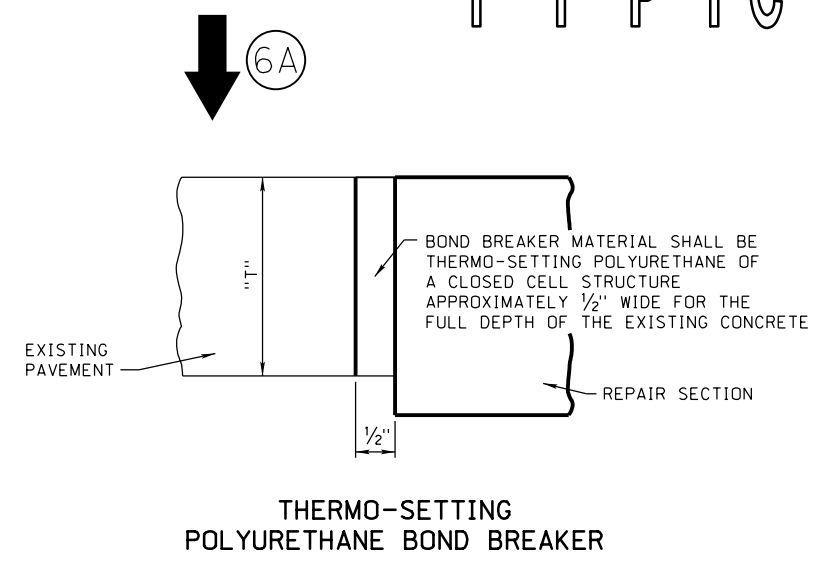
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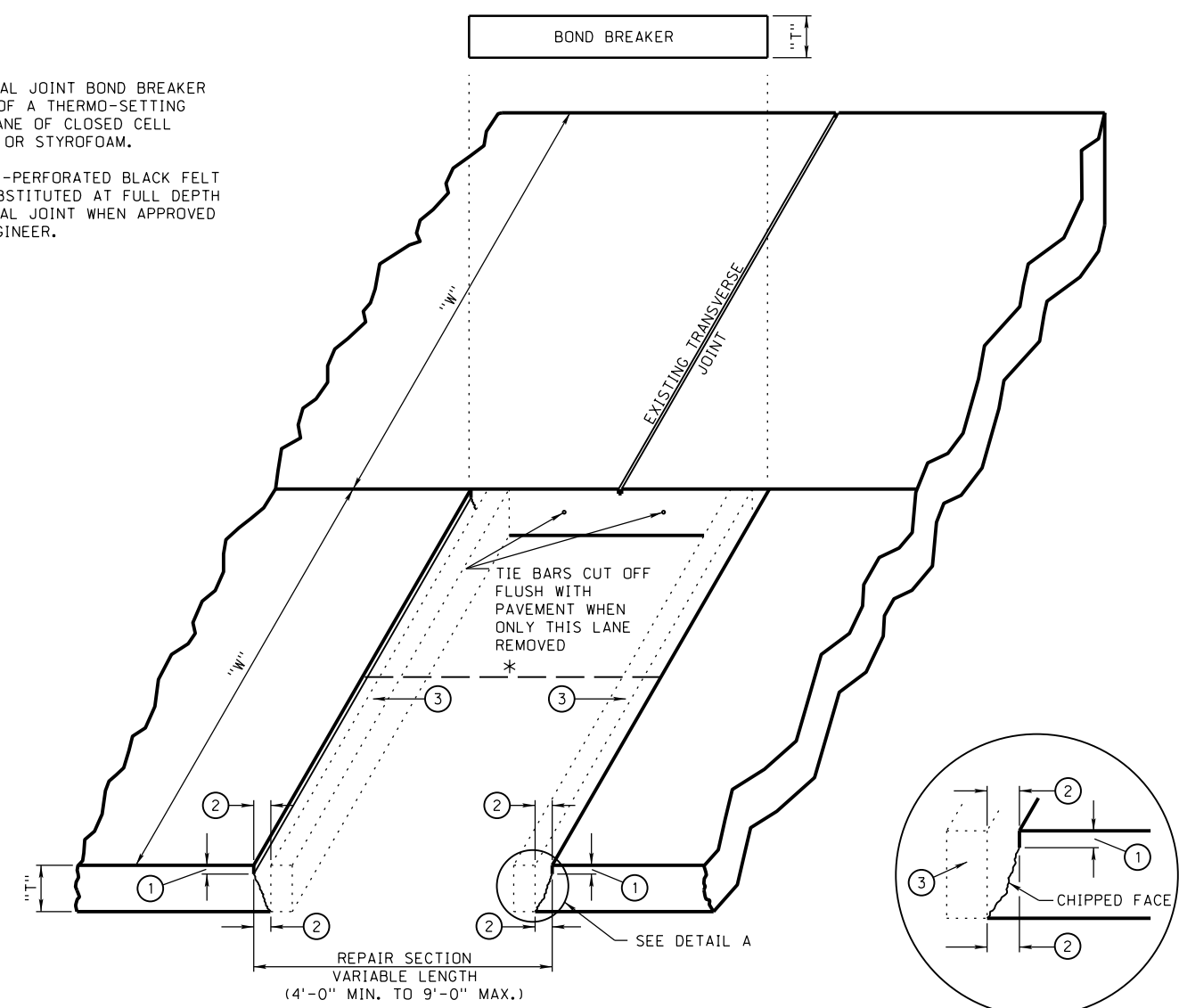
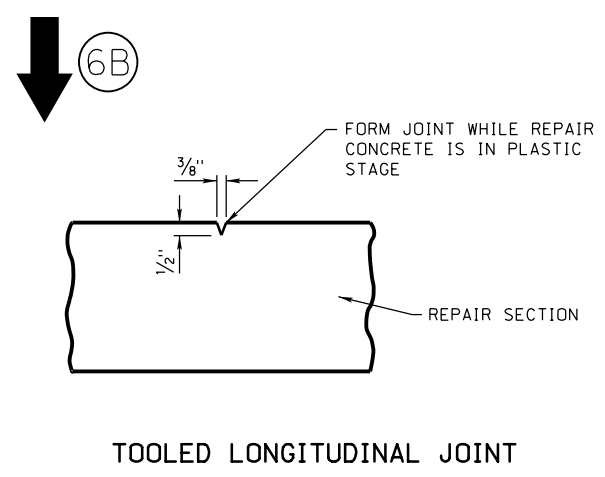
TYPICAL CROSS SECTIONS

OVERLAY ONLY 6" AND 7" JOINT REPAIR



LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.

30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT FULL DEPTH LONGITUDINAL JOINT WHEN APPROVED BY THE ENGINEER.



- 6D
- 1 1" ± 1/4" DIAMOND SAW CUT
 - 2 APPROX. 4" WHEEL CUTTER SAW CUT 2" ± 1/2" INBOARD FROM DIAMOND SAW CUT ON EACH SIDE OF SECTION TO BE REMOVED. A 15# MAXIMUM CHIPPING HAMMER SHALL BE USED TO CONSTRUCT THE CHIPPED FACE.
 - 3 4" WHEEL CUTTER SAW CUT

NOTE:
CONTRACTOR MAY USE FULL DEPTH DIAMOND SAW CUT IN PLACE OF 4" WHEEL CUTTER SAW CUT. (2" ± 1/2" INBOARD FROM DIAMOND SAW CUT)

THE EXISTING TRANSVERSE JOINT SHALL NOT BE RE-ESTABLISHED IN THE JOINT REPAIR.

NOTES:

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).
IF THE PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB.

LEGEND

- "W" WIDTH OF PANEL
- "L" LENGTH OF PANEL
- "T" THICKNESS OF CONCRETE

NOTE: FOR JOINT REPAIR LOCATIONS, SEE SHEET C

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TYPICAL CROSS SECTIONS

OVERLAY ONLY 6" AND 7" PLAIN CONCRETE REPAIR

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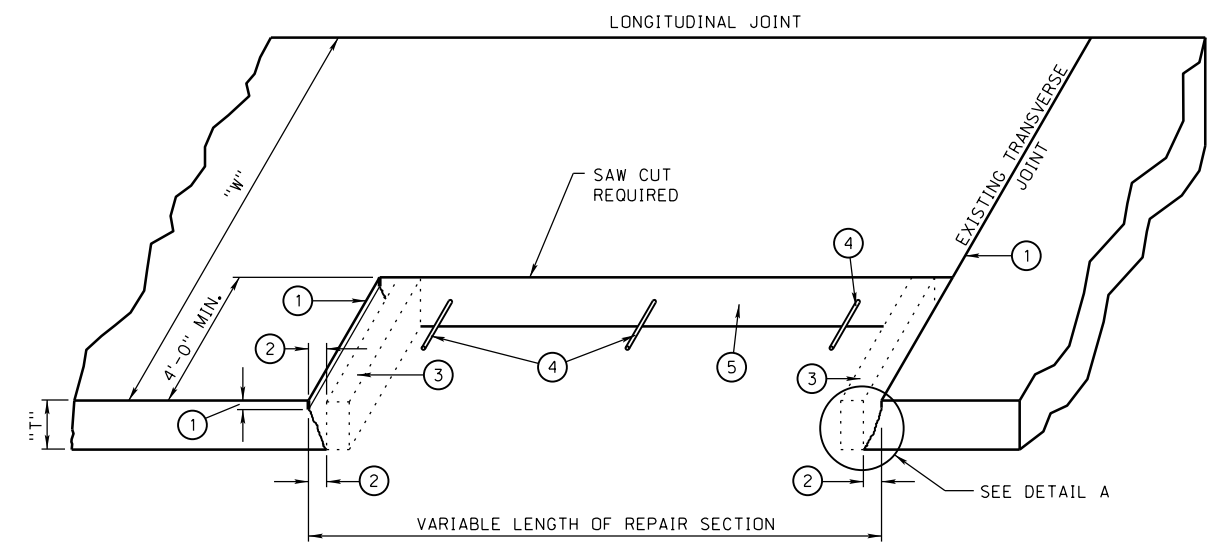
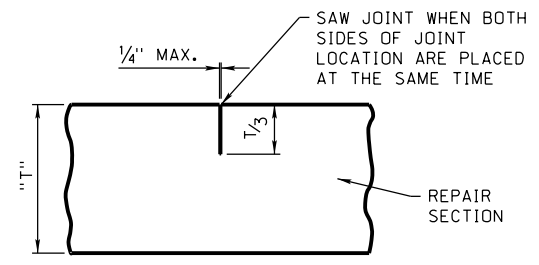
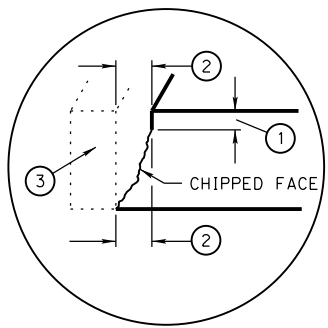


FIGURE B



TRANSVERSE JOINTS



DETAIL A

- ① 1" ± 1/4" DIAMOND SAW CUT
- ② APPROX. 4" WHEEL CUTTER SAW CUT 2" ± 1/2" INBOARD FROM DIAMOND SAW CUT ON TRANSVERSE SIDES OF SECTION TO BE REMOVED. A 15# MAXIMUM CHIPPING HAMMER SHALL BE USED TO CONSTRUCT THE CHIPPED FACE. (MAY NOT BE REQUIRED AT EXISTING TRANSVERSE JOINT, IF ADEQUATE SLOPED FACE EXISTS)
- ③ 4" WHEEL CUTTER SAW CUT
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.
- ⑤ FULL DEPTH DIAMOND SAW CUT.

NOTE:
CONTRACTOR MAY USE FULL DEPTH DIAMOND SAW CUT IN PLACE OF 4" WHEEL CUTTER SAW CUT. (2" ± 1/2" INBOARD FROM DIAMOND SAW CUT)
IF REPAIR EXTENDS THROUGH EXISTING TRANSVERSE JOINT, SEE CONCRETE PAVEMENT JOINT REPAIR FOR PROPER BOND BREAKER PLACEMENT.

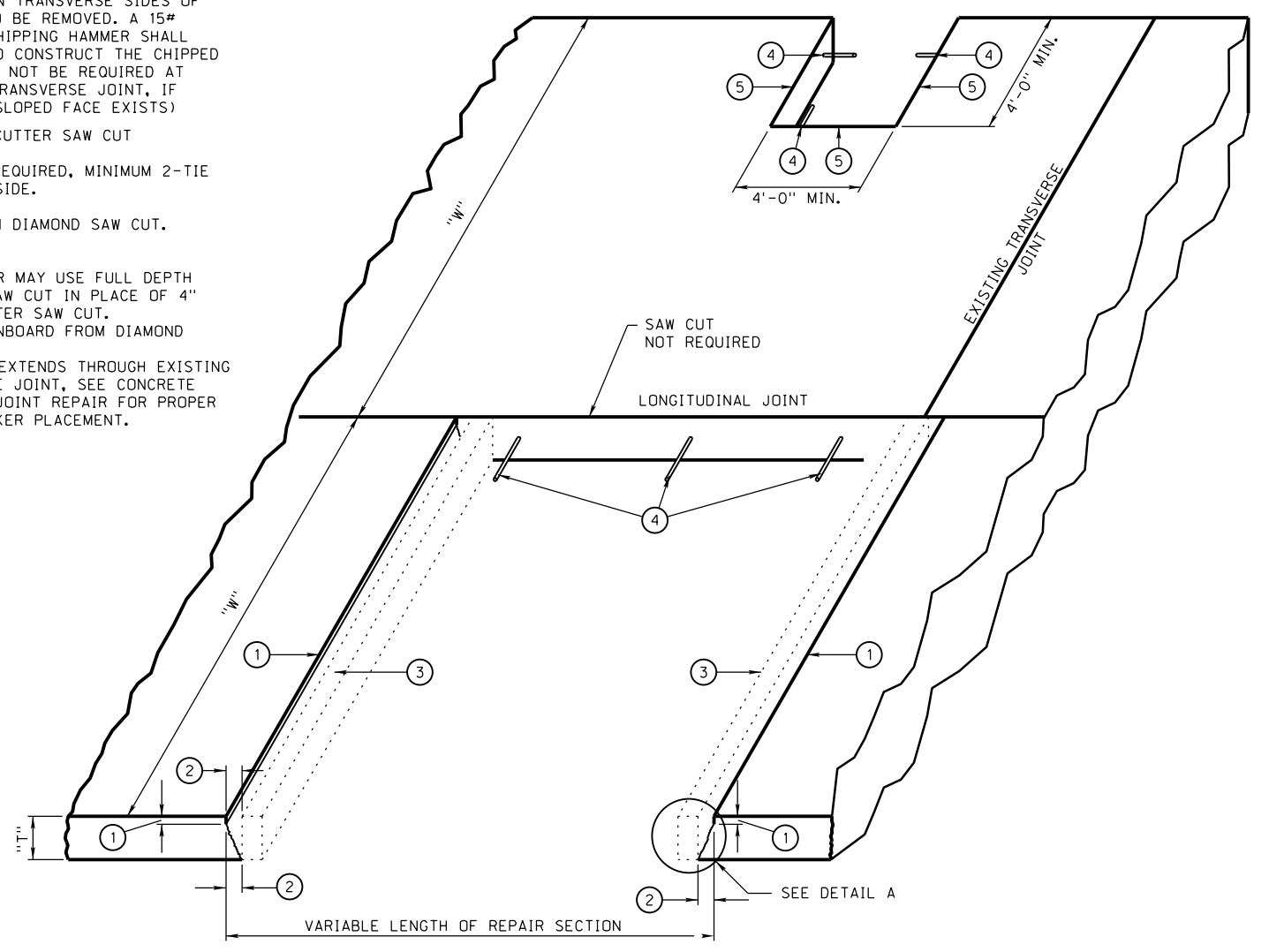
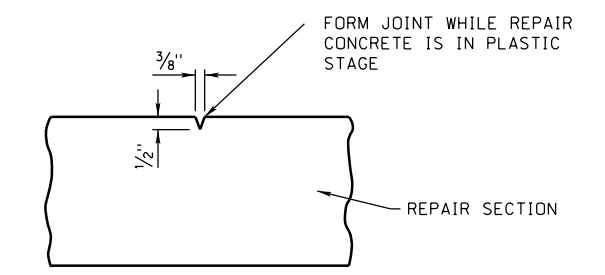
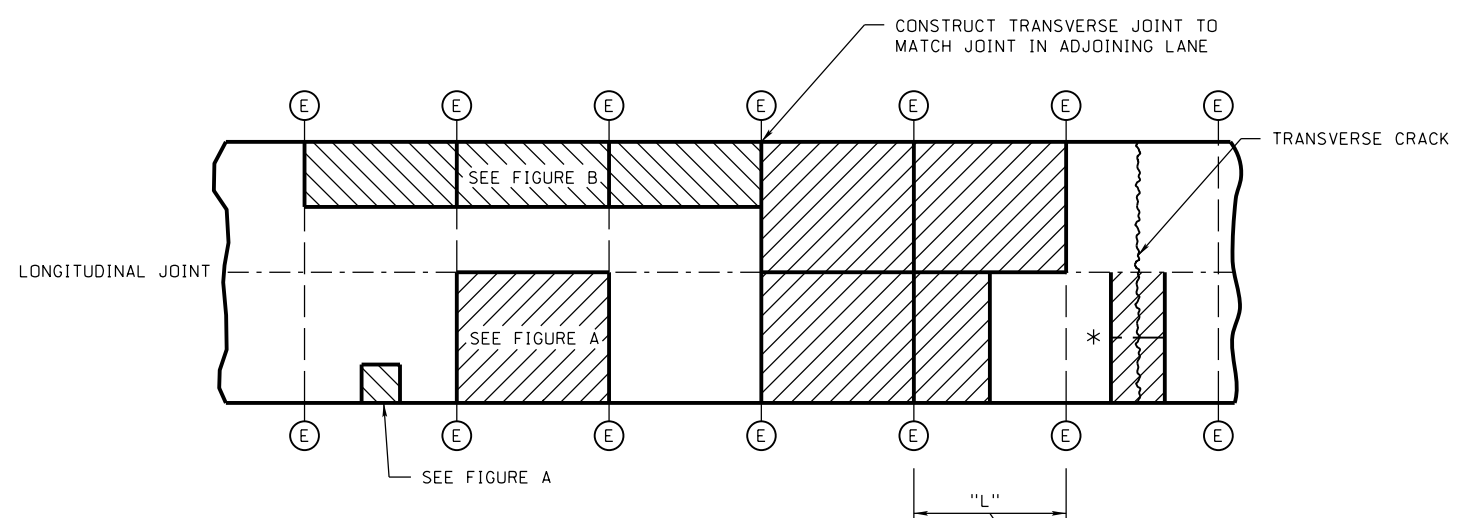


FIGURE A



DETAIL OF TOOLED LONGITUDINAL JOINT

* IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).



PLAIN CONCRETE PAVEMENT REPAIR

NOTE:
IF PAVEMENT REPAIR SHOULD EXTEND THROUGH INTEGRAL CURB, THE NEW CURB SHALL BE CONSTRUCTED TO THE SAME DIMENSIONS AS THE EXISTING CURB

SEE REPAIR TABLES (FULL DEPTH) FOR ACTUAL REPAIR DIMENSIONS

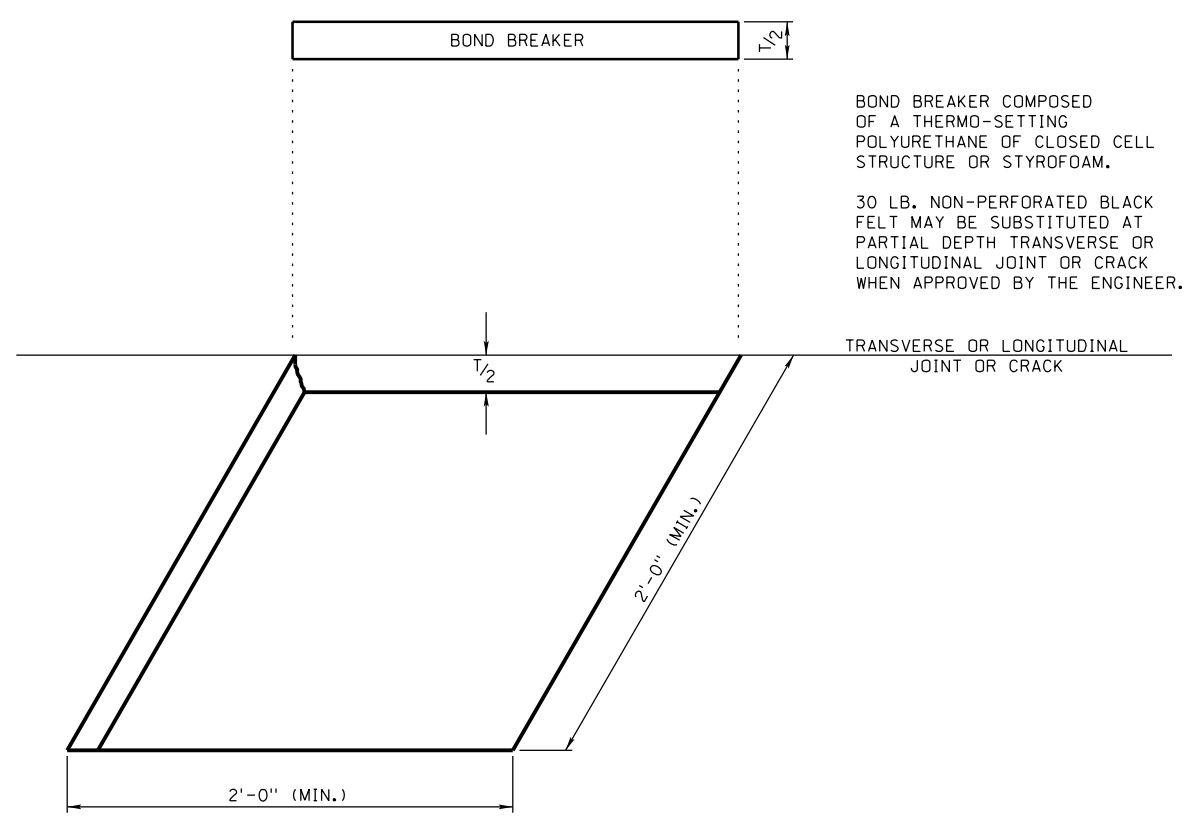
- LEGEND**
- "W" WIDTH OF PANEL
 - "L" LENGTH OF PANEL
 - "T" THICKNESS OF CONCRETE
 - (E) EXISTING TRANSVERSE JOINT
 - [Hatched] CONCRETE REMOVAL (PARTIAL LANE WIDTH)
 - [Diagonal Hatched] CONCRETE REMOVAL (FULL LANE WIDTH)

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C

TYPICAL CROSS SECTIONS

OVERLAY ONLY PARTIAL DEPTH REPAIR

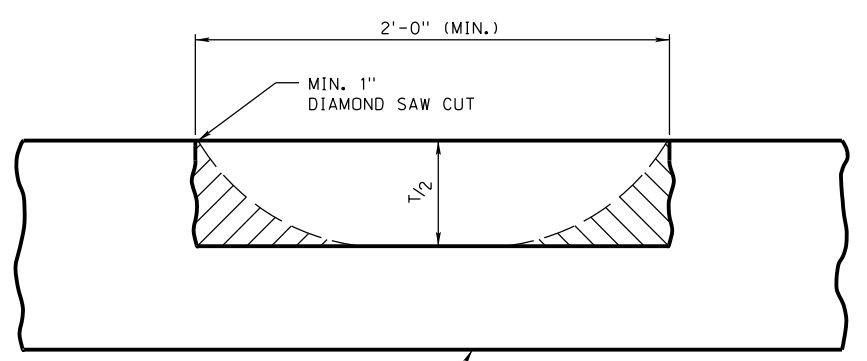
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BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.

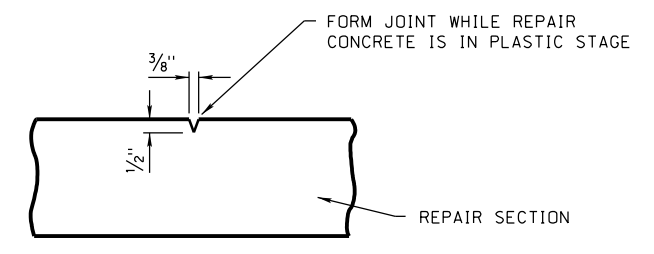
30 LB. NON-PERFORATED BLACK FELT MAY BE SUBSTITUTED AT PARTIAL DEPTH TRANSVERSE OR LONGITUDINAL JOINT OR CRACK WHEN APPROVED BY THE ENGINEER.

TRANSVERSE OR LONGITUDINAL JOINT OR CRACK



INDICATES MATERIAL LEFT AT MARGINS OF MILLED CUTS TO BE REMOVED WITH A 15# MAXIMUM CHIPPING HAMMER TO PROVIDE VERTICAL EDGES ALL AROUND

TYPICAL SECTION OF PARTIAL DEPTH REPAIRS

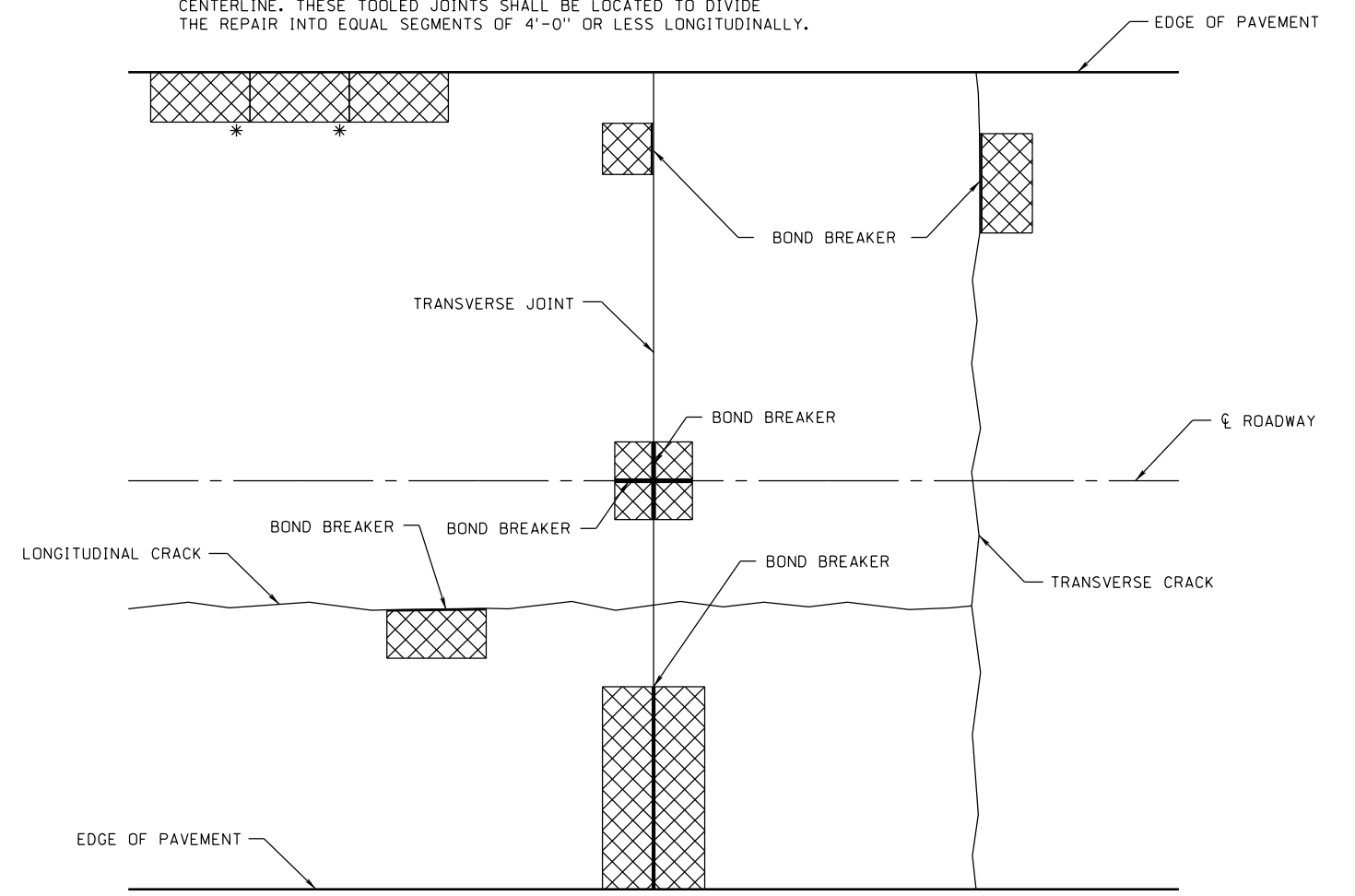


TOOLED LONGITUDINAL JOINT

NOTE:
CONTRACTOR HAS OPTION TO SAW OR TOOL LONGITUDINAL JOINT ON DIAMOND GRINDING PROJECTS.

* IF PARTIAL DEPTH REPAIR IS LONGER THAN 4'-0" LONGITUDINALLY, TOOLED TRANSVERSE JOINTS SHALL BE MADE PERPENDICULAR TO CENTERLINE. THESE TOOLED JOINTS SHALL BE LOCATED TO DIVIDE THE REPAIR INTO EQUAL SEGMENTS OF 4'-0" OR LESS LONGITUDINALLY.

8A



CONCRETE REPAIR SECTIONS

NOTE:
WHERE REPAIR EXTENDS THROUGH THE INTEGRAL CURB, IT SHALL BE RECONSTRUCTED TO THE SAME DIMENSIONS OF THE EXISTING CURB

CONCRETE PAVEMENT REPAIR, TYPE "A", TYPE "B" AND TYPE "C", PARTIAL DEPTH

NOTE:
FOR CONCRETE PAVEMENT REPAIR (PARTIAL DEPTH) LOCATIONS, SEE SHEET C.

TYPICAL CROSS SECTIONS

OVERLAY ONLY DOWELED CONCRETE PAVEMENT REPAIR

- ① FULL DEPTH DIAMOND SAW CUT.
- ② INSTALL DOWEL BARS AT NEW TRANSVERSE JOINT NEAREST TO EXISTING TRANSVERSE JOINT.
- ③ INSTALL TIE BARS AT NEW TRANSVERSE JOINT OPPOSITE OF DOWEL BARS. MINIMUM 2-TIE BARS PER SIDE.
- ④ TIE BARS REQUIRED, MINIMUM 2-TIE BARS PER SIDE.
- ⑤ IN THE CASE OF PANEL REPLACEMENT, DOWEL BARS SHALL BE INSTALLED 2'-0" BEYOND THE EXISTING TRANSVERSE JOINTS. (3-DOWEL BARS PER WHEEL PATH.)
- ⑥ IN THE CASE OF MULTIPLE PANEL REPLACEMENTS, DOWEL BARS SHALL BE INSTALLED AT 12" CENTERS, AS SHOWN IN THE STANDARD PLANS. BASKETS SHALL BE USED ACCORDING TO THE STANDARD SPECIFICATIONS, SUBSECTION 603.03.
- ⑦ LONGITUDINAL JOINT BOND BREAKER COMPOSED OF A THERMO-SETTING POLYURETHANE OF CLOSED CELL STRUCTURE OR STYROFOAM.
- ⑧ BOND BREAKER WILL BE INSTALLED ON THE LONGITUDINAL JOINT BETWEEN THE NEW DOWELED JOINT AND THE EXISTING TRANSVERSE JOINT.

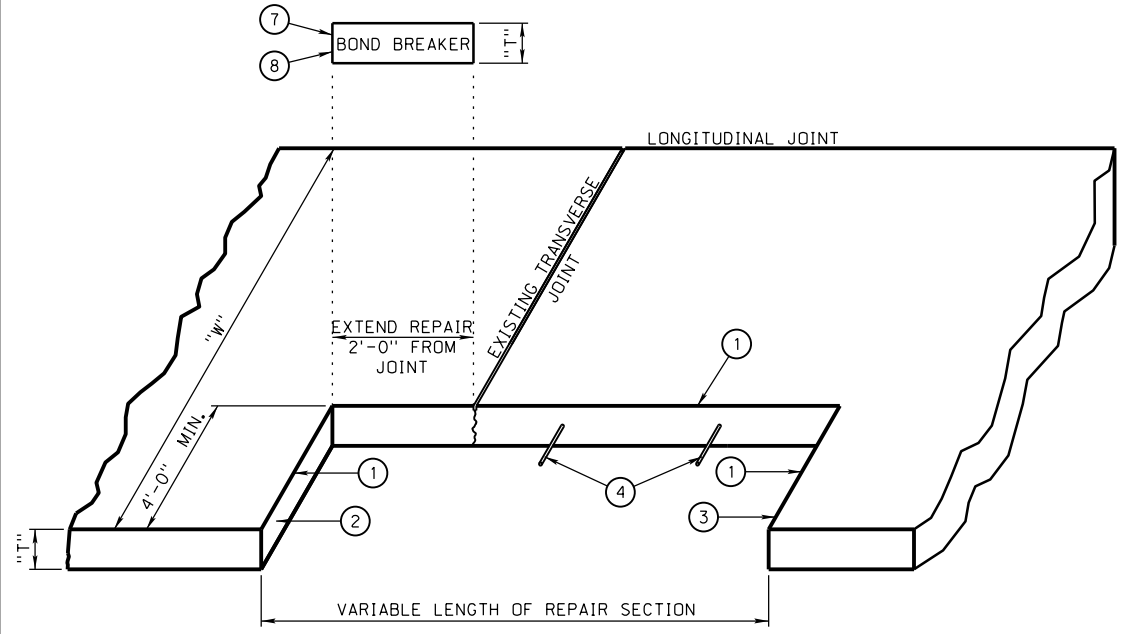
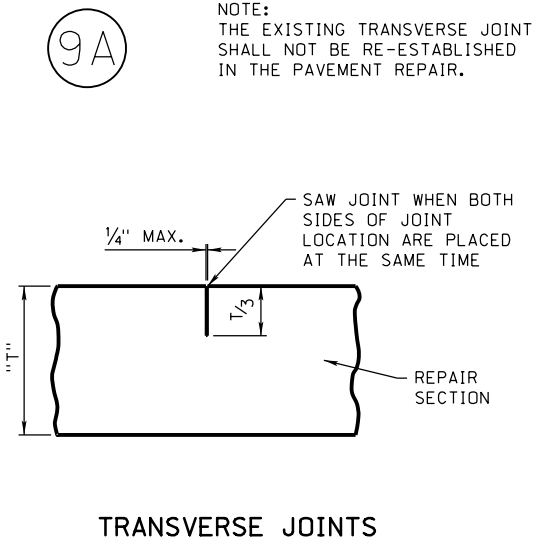


FIGURE B



TRANSVERSE JOINTS

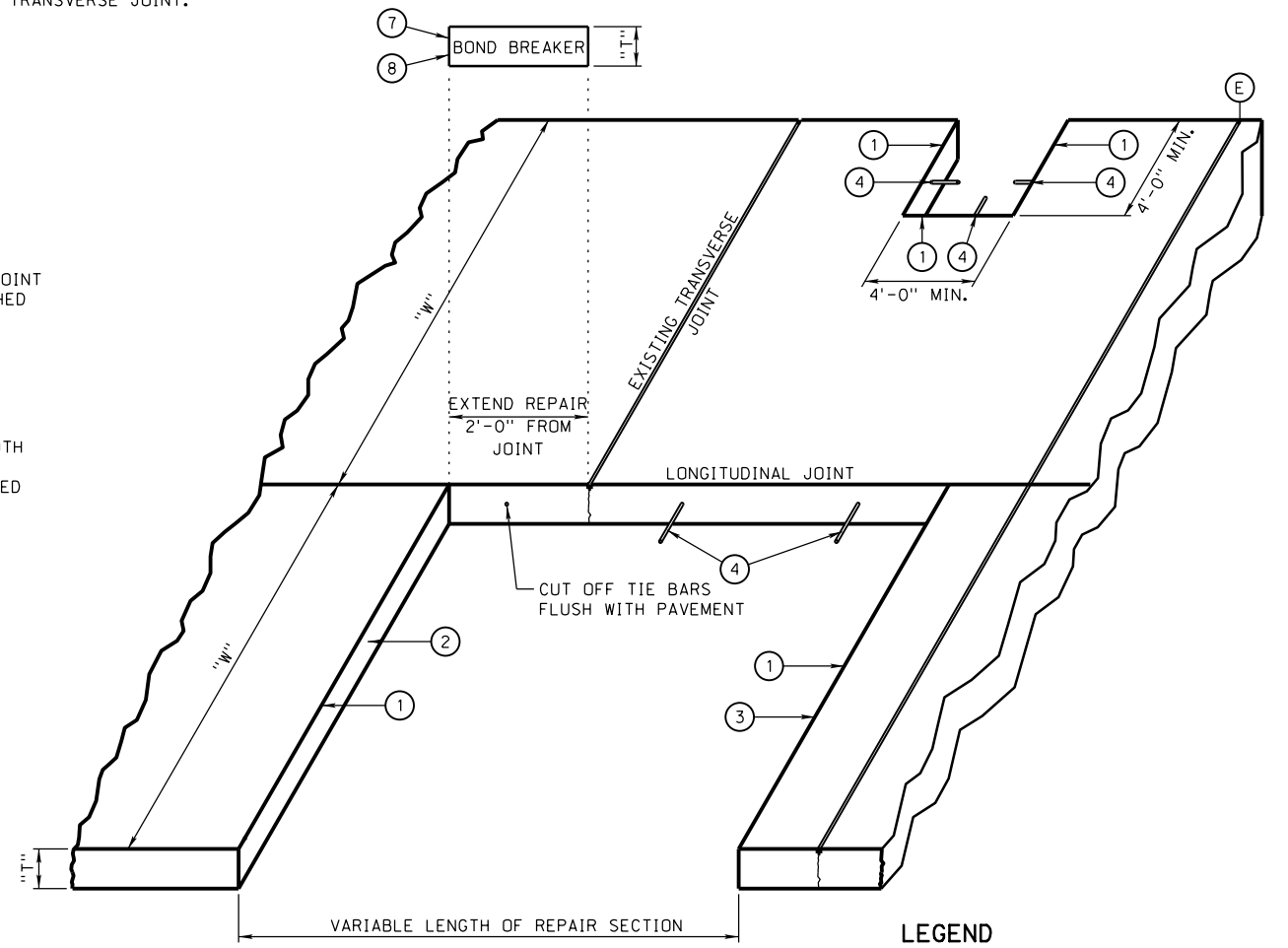
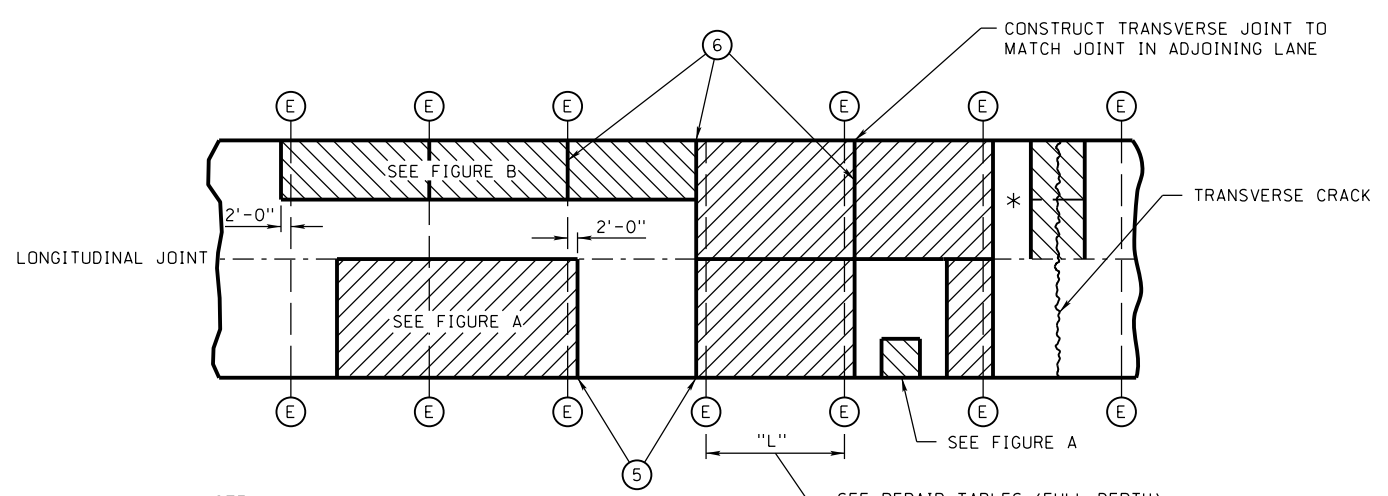


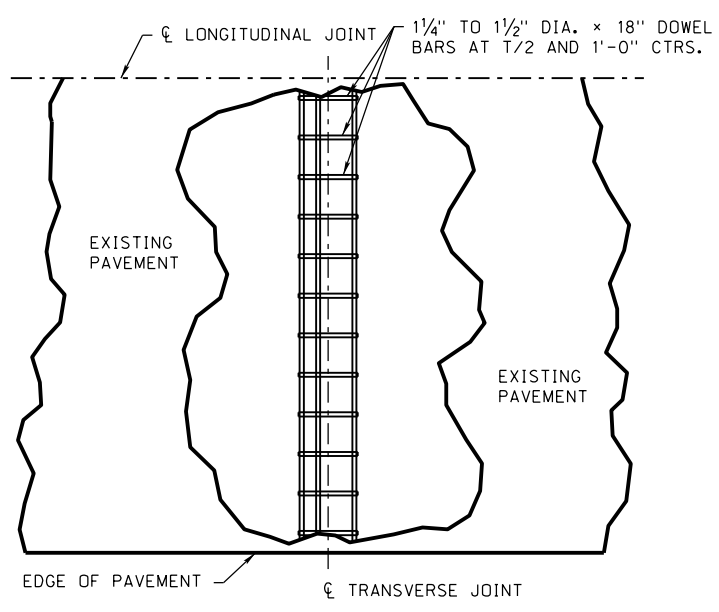
FIGURE A

LEGEND

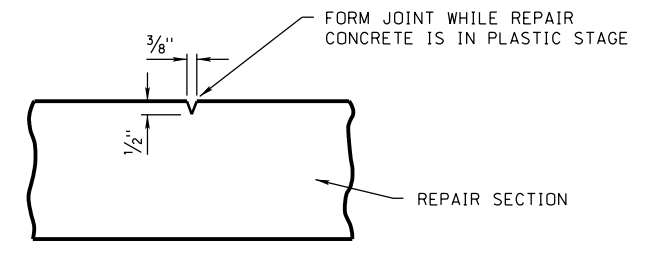
- "W" WIDTH OF PANEL
- "L" LENGTH OF PANEL
- "T" THICKNESS OF CONCRETE
- (E) EXISTING TRANSVERSE JOINT
- [Hatched] CONCRETE REMOVAL (PARTIAL LANE WIDTH)
- [Hatched] CONCRETE REMOVAL (FULL LANE WIDTH)



DOWELED CONCRETE PAVEMENT REPAIR



EXISTING DOWELED CONCRETE PAVEMENT



TOOLED LONGITUDINAL JOINT

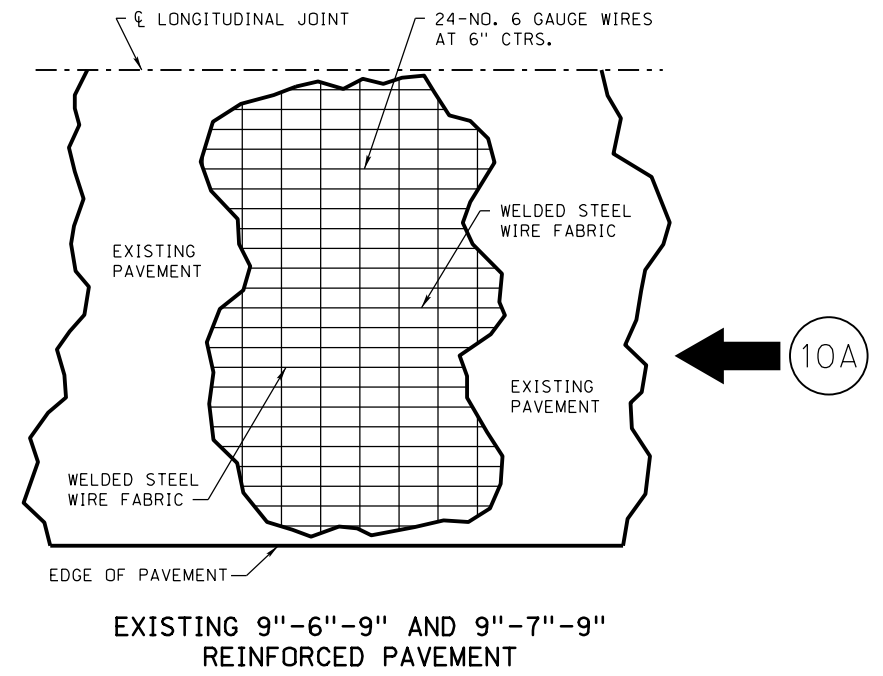
NOTE: * IF THE LENGTH OF REPAIR IS 9'-0" OR LESS AND THE WIDTH OF REPAIR IS GREATER THAN 6'-0", CONSTRUCT A TOOLED LONGITUDINAL JOINT AT THE MIDPOINT OF THE REPAIR (W/2).

NOTE: FOR PAVEMENT REPAIR LOCATIONS, SEE SHEET C

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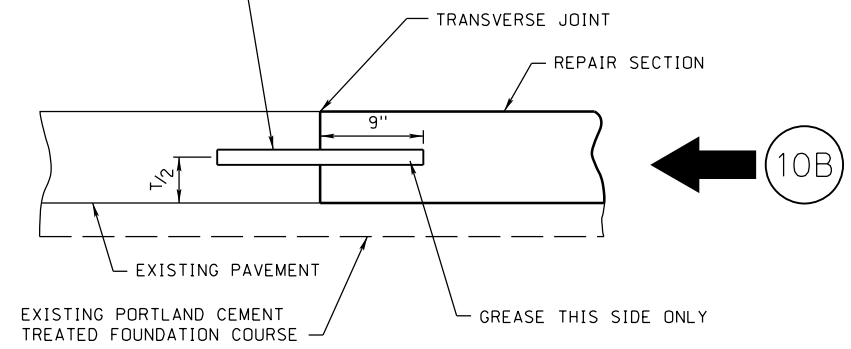
TYPICAL CROSS SECTIONS

ROADWAY DESIGN DIVISION



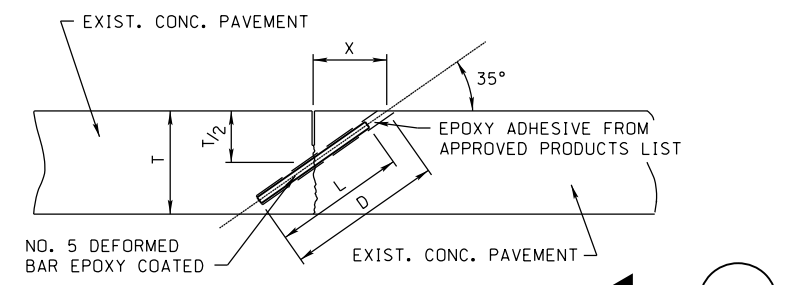
EXISTING 9"-6"-9" AND 9"-7"-9" REINFORCED PAVEMENT

1/4" DIA. x 18" DOWEL BARS "T" = 8" TO 9",
1/2" DIA. x 18" DOWEL BARS "T" = 10" OR MORE
DOWEL BARS TO BE DRILLED AND EPOXIED INTO
EXISTING PAVEMENT. PLACE EPOXY RETENTION
DISK. SUPPORT DOWEL BARS IN HORIZONTAL
POSITION UNTIL EPOXY DRIES.



DOWEL BAR

NOTE: ALL DOWEL BARS WILL BE EPOXY COATED

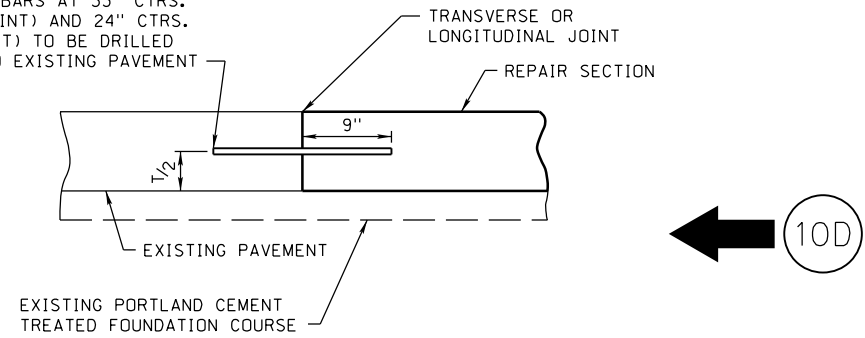


CROSS STITCHING EXISTING CONCRETE PAVEMENT
(SEE SHEET C FOR LOCATIONS)

"T"	"X"	"D"	"L"
8.0"	5.7"	11.9"	9.8"
9.0"	6.5"	13.5"	11.5"
10.0"	7.0"	14.0"	12.5"
11.0"	8.0"	16.0"	13.0"
12.0"	8.5"	17.5"	14.0"
13.0"	9.5"	20.0"	18.0"
14.0"	10.0"	21.0"	18.0"

NOTE: DEFORMED BAR SHALL BE 1" BELOW THE SURFACE

NO. 5 x 18" TIE BARS AT 33" CTRS.
(LONGITUDINAL JOINT) AND 24" CTRS.
(TRANSVERSE JOINT) TO BE DRILLED
AND EPOXIED INTO EXISTING PAVEMENT



TIE BAR

NOTE: ALL TIE BARS WILL BE EPOXY COATED

Computer: NDOTDESIGN134
Date: 10-APR-2020 11:10
FILE: 38512618.dgn 3851-2-E-18
SHEET: 10 OF 10