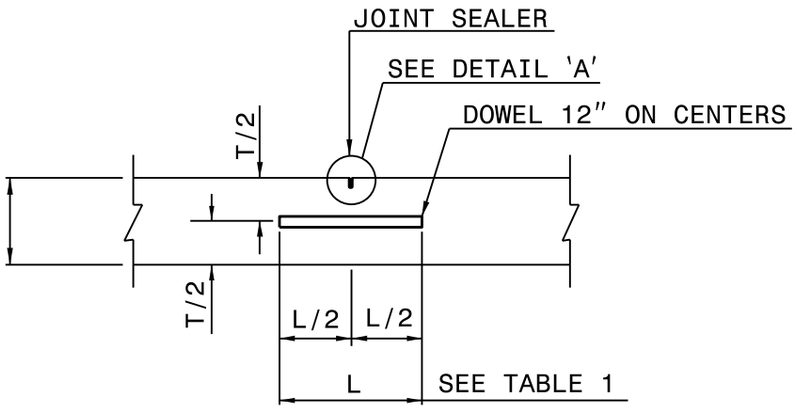
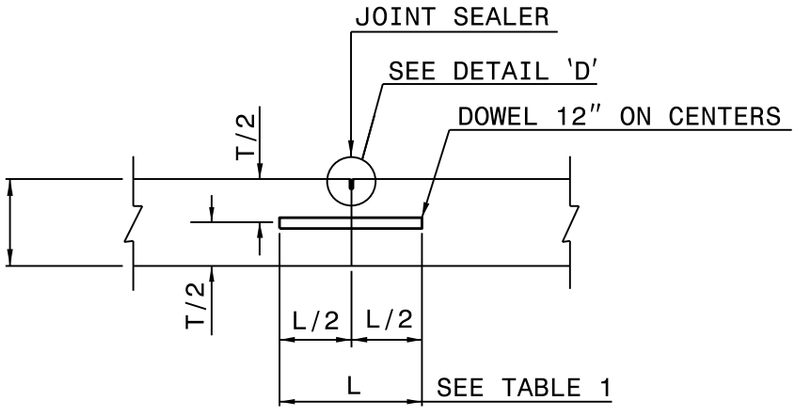
GENERAL NOTES:
- FORM TRANSVERSE CONTRACTION JOINTS BY SAWING WITH APPROVED EQUIPMENT.
- SPACE TRANSVERSE CONTRACTION JOINTS AT INTERVALS OF 15′.
- USE A DOWEL ASSEMBLY OR OTHER APPROVED DOWEL INSERTION TECHNIQUE IN ALL TRANSVERSE CONTRACTION JOINTS. DOWEL ASSEMBLIES ARE COVERED IN DETAIL 700.03.
- PROVIDE SMOOTH DOWEL BARS. PROVIDE DEFORMED TIE BARS.
- DOWEL BARS IN TRANSVERSE CONTRACTION JOINTS SHALL BE EPOXY COATED.

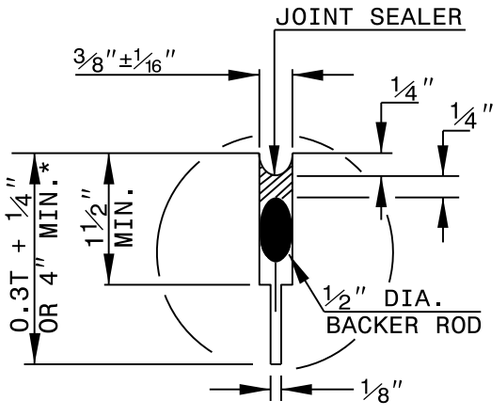
*WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 3″.



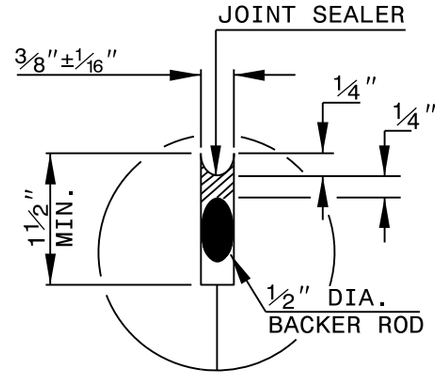
TRANSVERSE CONTRACTION JOINT



PLANNED TRANSVERSE CONSTRUCTION JOINT



DETAIL 'A'



DETAIL 'D'

TABLE I - DOWEL BARS		
SLAB THICKNESS	DOWEL BAR "D"	DOWEL LENGTH "L"
8″ OR LESS	1″	14″
8½″ TO 9½″	1⅛″	16″
10″ TO 10½″	1¼″	18″
11″ AND ABOVE	1½″	18″

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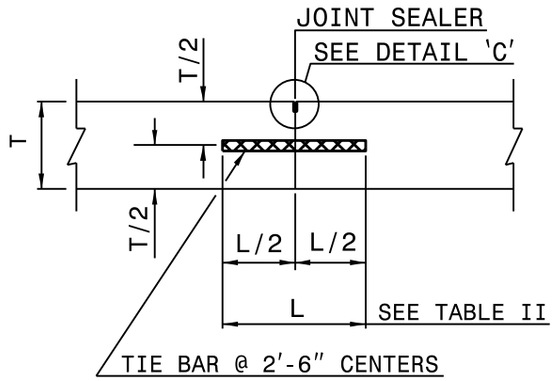
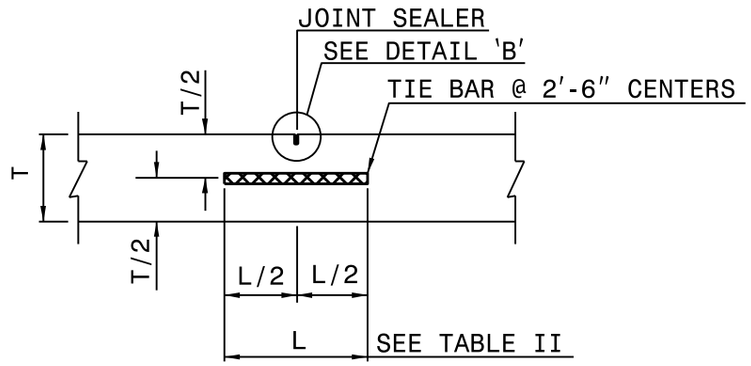
ROADWAY STANDARD DRAWING FOR

CONCRETE PAVEMENT JOINTS

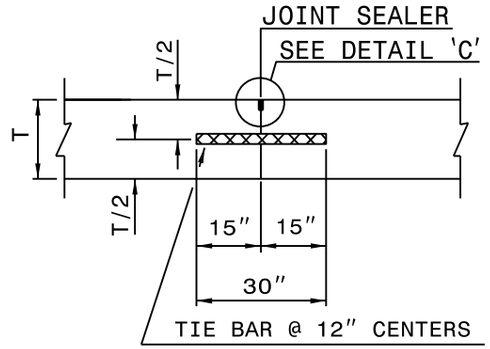
CONSTRUCTION AND CONTRACTION JOINTS



LONGITUDINAL CONSTRUCTION JOINT



LONGITUDINAL JOINT

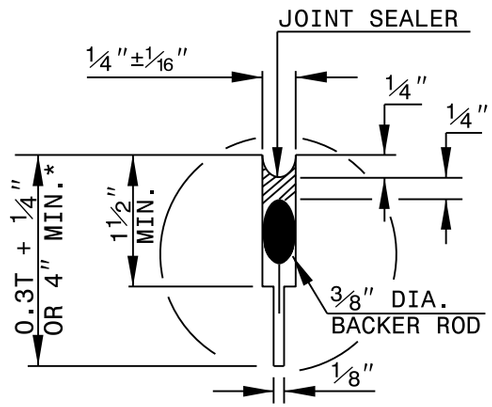


EMERGENCY TRANSVERSE CONSTRUCTION JOINT

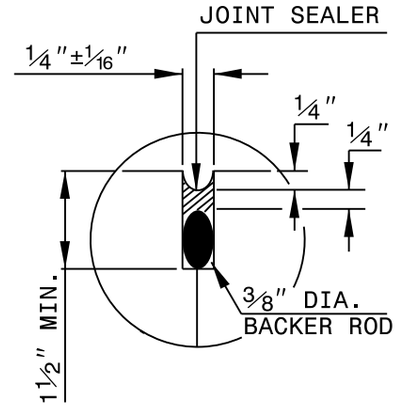
GENERAL NOTES:

- -CONSTRUCT TRANSVERSE CONSTRUCTION JOINTS AT THE END OF EACH DAY'S OPERATION (PLANNED JOINT) OR WHEN THE PLACING OF CONCRETE IS SUSPENDED FOR MORE THAN 30 MINUTES (EMERGENCY JOINT).
- -USE AN APPROVED HEADER AT EMERGENCY JOINTS STD. DWG. 700.04 AND DESIGNED TO PERMIT THE PLACEMENT OF AND CORRECTLY HOLD IN PLACE TIE BARS.
- -USE TIE BARS OF THE SAME DIAMETER AS DOWEL BARS FOR EMERGENCY TRANSVERSE CONSTRUCTION JOINTS.
- -LOCATE PLANNED TRANSVERSE CONSTRUCTION JOINTS AT THE SPACING REQUIRED FOR CONTRACTION JOINTS. USE AN APPROVED METHOD OF INSTALLING DOWELS IN ALL PLANNED TRANSVERSE CONSTRUCTION JOINTS.
- -DO NOT LOCATE EMERGENCY TRANSVERSE CONSTRUCTION JOINTS LESS THAN 6' FROM ANY CONTRACTION JOINT OR PLANNED CONSTRUCTION JOINT.
- -DO NOT PLACE TIE BARS IN LONGITUDINAL JOINTS WITHIN 1'-4" OF A TRANSVERSE JOINT.

*WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 3".



DETAIL 'B'



DETAIL 'C'

TABLE II - LONGITUDINAL TIE BARS		
SLAB THICKNESS	TIE BAR DIA. "D"	TIE BAR LENGTH "L"
8 1/2" OR LESS	1/2"	30"
9" OR ABOVE	5/8"	30"

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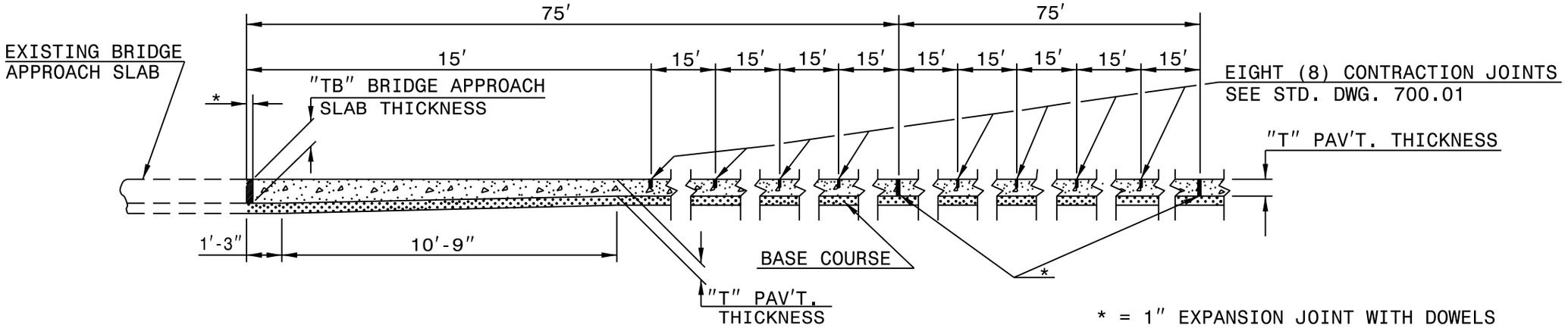
ROADWAY STANDARD DRAWING FOR

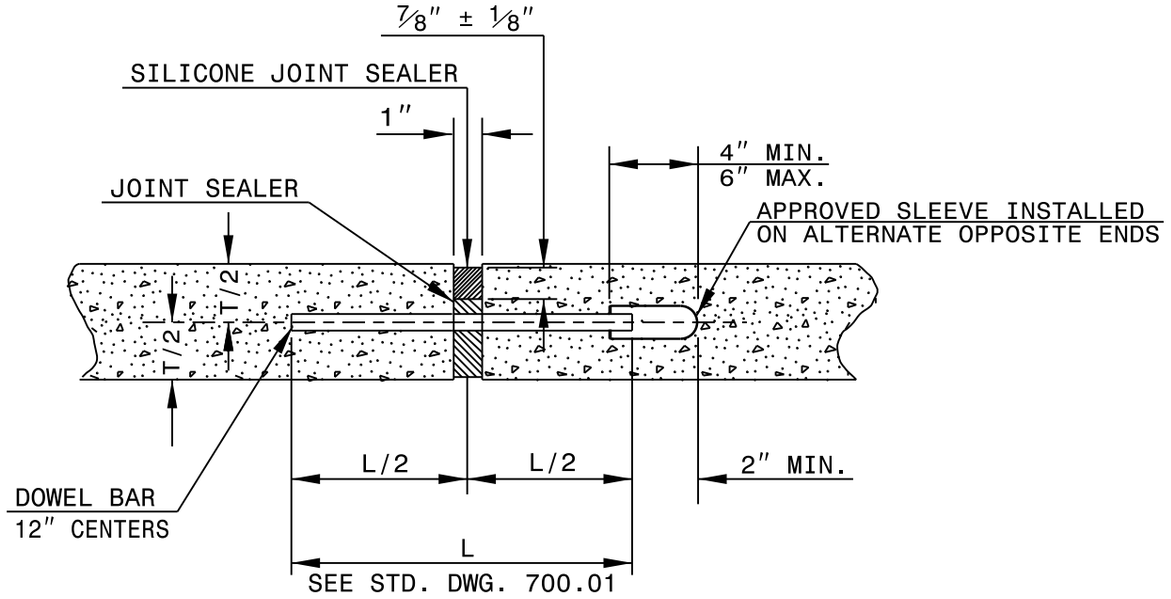
CONCRETE PAVEMENT JOINTS

CONSTRUCTION AND CONTRACTION JOINTS



* = 1" EXPANSION JOINT WITH DOWELS
3 JOINTS TOTAL

SECTION THRU JOINT LAYOUT



EXPANSION JOINT DETAIL

GENERAL NOTES:

-USE AN APPROVED TYPE OF DOWEL ASSEMBLY IN ALL TRANSVERSE EXPANSION JOINTS. USE RIGID CONSTRUCTED DOWEL ASSEMBLY, CAPABLE OF HOLDING THE DOWEL BARS IN PROPER POSITION DURING PLACEMENT OF THE CONCRETE AND DESIGNED TO PERMIT UNRESTRICTED MOVEMENT OF THE PAVEMENT SLAB. SEE STANDARD 700.03 FOR DOWEL ASSEMBLY.

-EXTEND EXPANSION JOINT ADJACENT TO THE APPROACH SLAB ACROSS THE ENTIRE PAVEMENT WIDTH INCLUDING THE PAVED SHOULDERS.

-SEE STD. DWG. 700.01 FOR TOLERANCE AND BAR SIZE.

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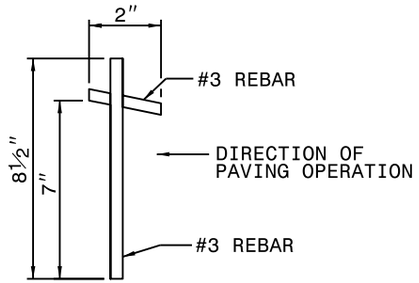
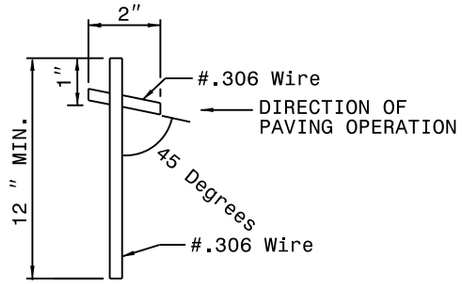
ROADWAY STANDARD DRAWING FOR

EXPANSION JOINT LAYOUT

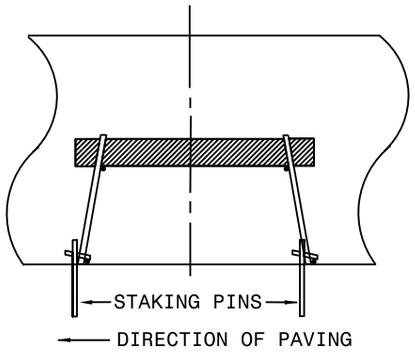
FOR RIGID DOWELED PAVEMENT AT BRIDGES

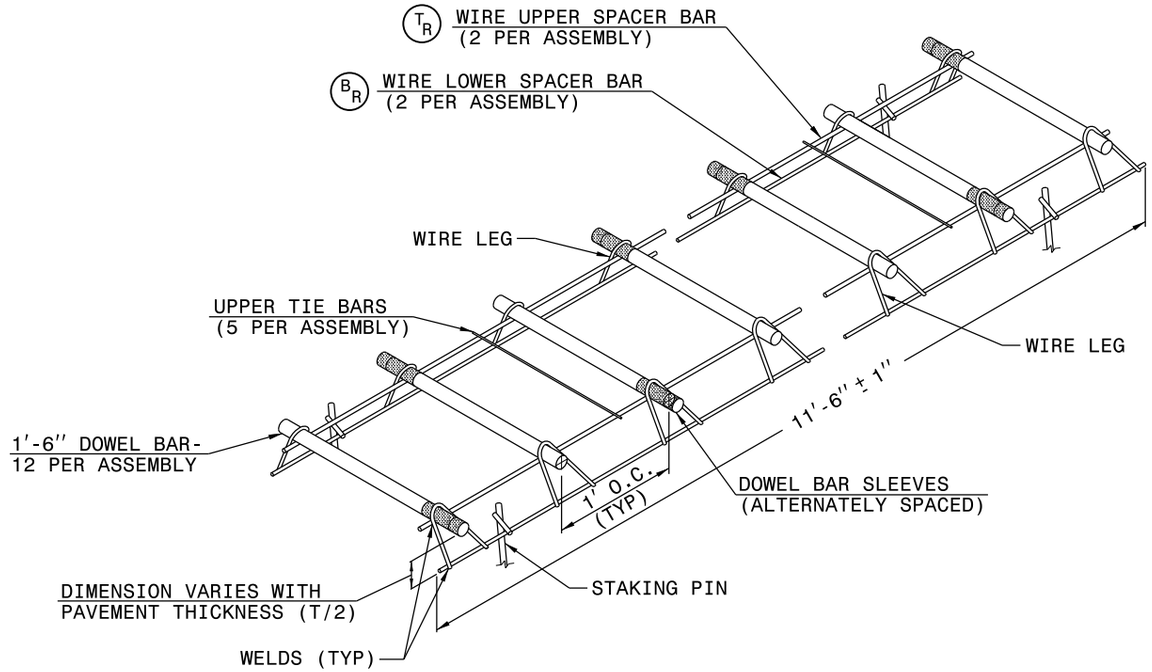


STAKING PIN
(MIN. 8 PER BASKET)

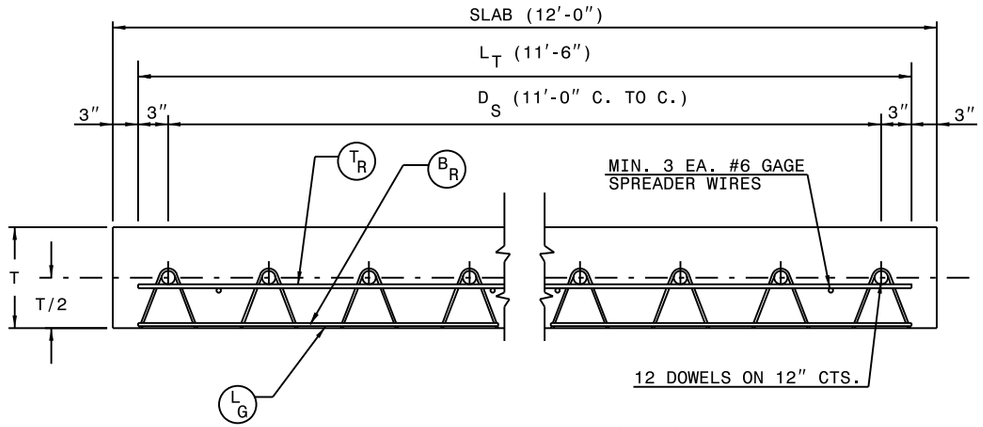


STAKING PIN ALTERNATE
(MIN. 8 PER BASKET)





ISOMETRIC VIEW



TYPICAL UNIT DIMENSIONS

"V" LEG ONLY			
SLAB THICKNESS	WIRE GAGE		
	T_R	B_R	L_G
8" OR LESS	2	2	2
8½" - 10"	0	2	2
10½" & ABOVE	2/0's	2/0's	2/0's

GENERAL NOTES:
-USE RIGID CONSTRUCTED DOWEL ASSEMBLY CAPABLE OF HOLDING THE DOWEL BAR IN PROPER POSITION DURING PLACMENT OF CONCRETE AND DESIGNED AS TO PERMIT UNRESTRICTED MOVEMENT OF THE SLAB. USE DOWEL ASSEMBLY APPROVED BY THE ENGINEER PRIOR TO USE.
-USE DOWEL ASSEMBLIES MANUFACTURED WITH DOWELS ALTERNATELY WELDED TO FRAME MEMBERS.
-USE STAKING PIN OR APPROVED ALTERNATE.
-SAW CUT EPOXY COATED DOWELS, BUFFING AS NECESSARY TO FACILITATE PROPER WELDING OF THE DOWEL TO THE ASSEMBLY FRAME. TOUCH UP OF THE BUFFED AREA WILL NOT BE REQUIRED.
-RESISTANCE WELD FRAME MEMBERS; DOWELS AND SPREADER WIRES MAY BE ARC WELDED. WELD IN ACCORDANCE WITH AWS WELDING CODE.
-FULLY DIP THE DOWEL ASSEMBLIES TO ASSURE A COMPLETE COATING OF WAX.
-SEE DETAIL 700D01 FOR DOWEL BAR SIZES.

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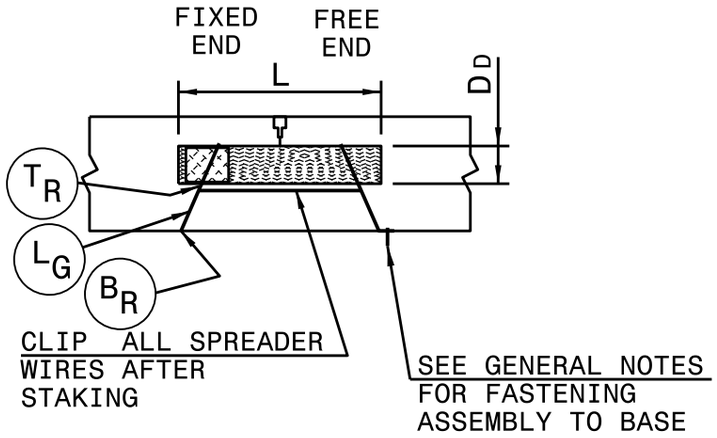
ROADWAY STANDARD DRAWING FOR

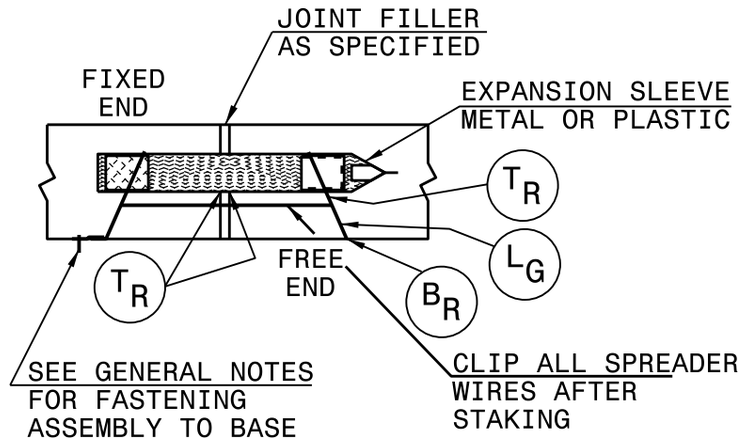
DOWEL ASSEMBLY

SHEET 1 OF 2

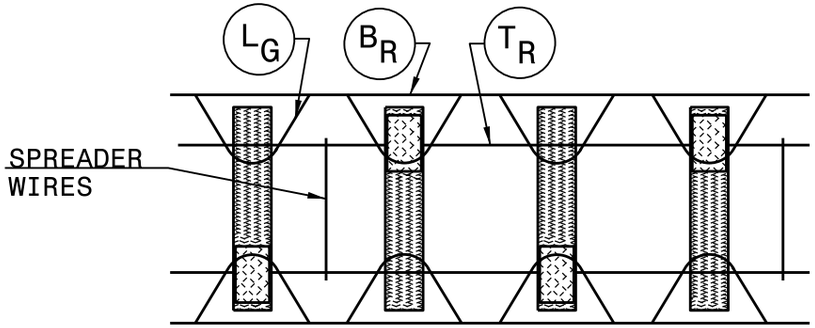
700.03



SECTION - CONTRACTION

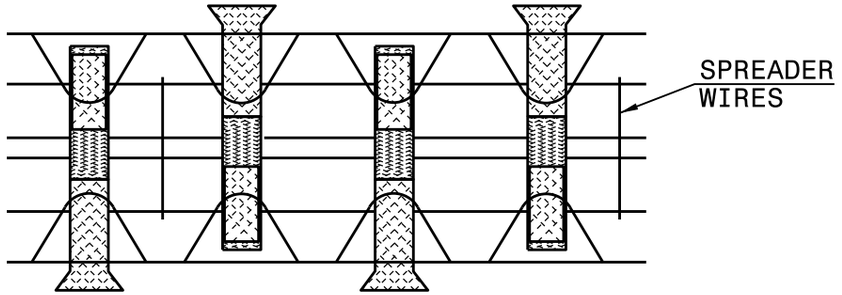


SECTION - EXPANSION



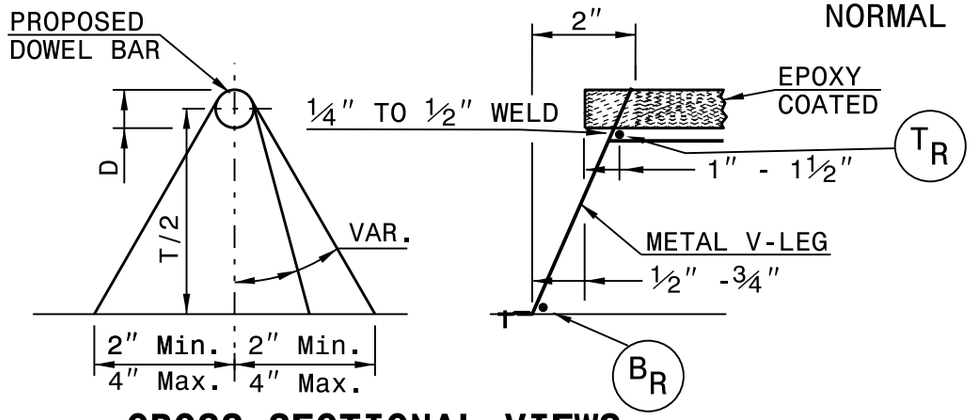
PARTIAL PLAN CONTRACTION

NORMAL



PARTIAL PLAN EXPANSION

NORMAL



CROSS SECTIONAL VIEWS

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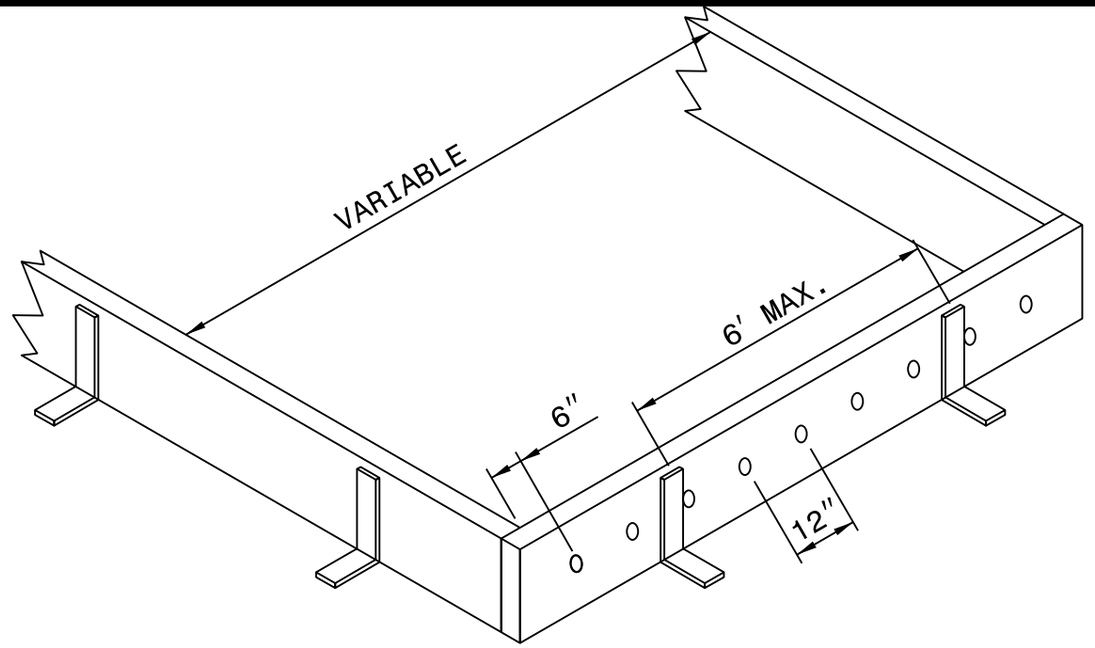
ROADWAY STANDARD DRAWING FOR

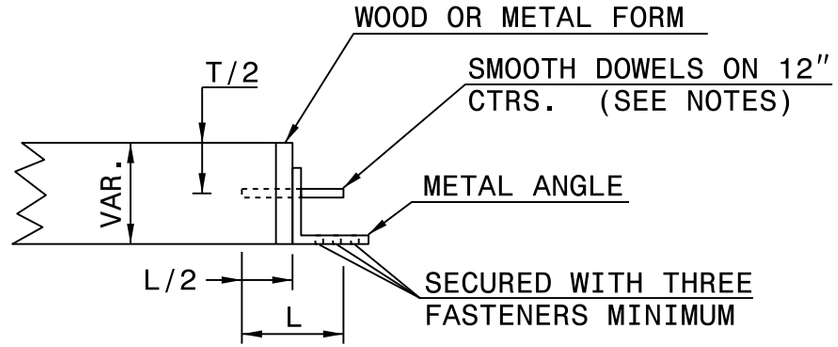
DOWEL ASSEMBLY

SHEET 2 OF 2

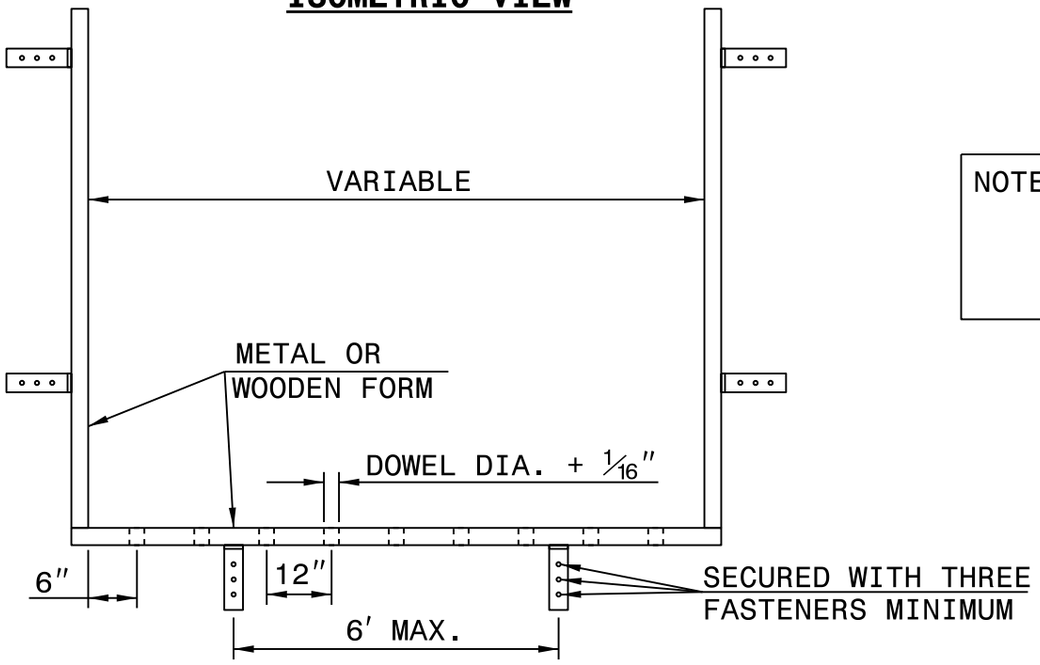
700.03



ISOMETRIC VIEW



TRANSVERSE HEADER SECTION



PLAN

NOTE: UPON COMPLETION OF FINAL SLAB, REMOVE DOWEL BARS AT SUCH TIME AS CONCRETE HAS CURED ENOUGH TO LEAVE A CAVITY FOR RESETTING AT A LATER DATE.

USE WOOD OR METAL FORM OF SUFFICIENT RIGIDITY TO ADEQUATELY SUPPORT THE EDGES OF THE SLAB.

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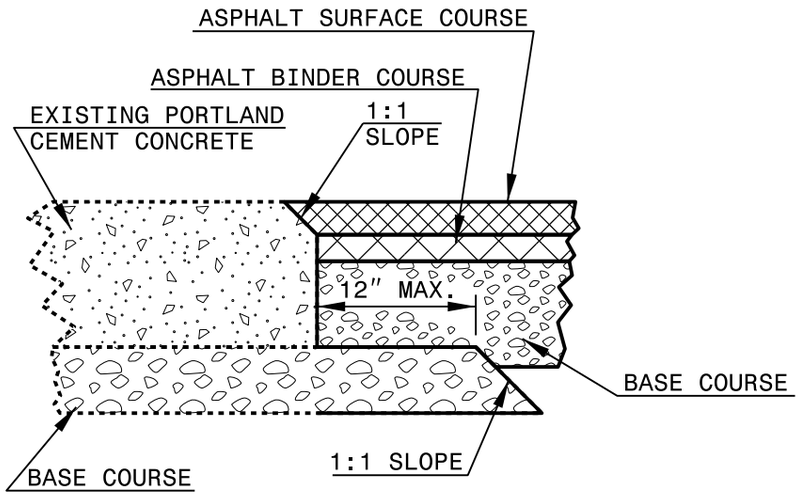
ROADWAY STANDARD DRAWING FOR

CONCRETE PAVEMENT HEADER BOARD

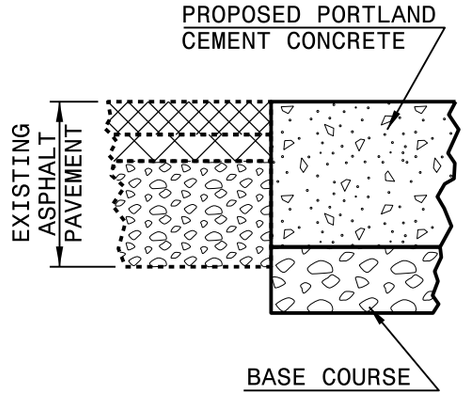
SHEET 1 OF 1

700.04



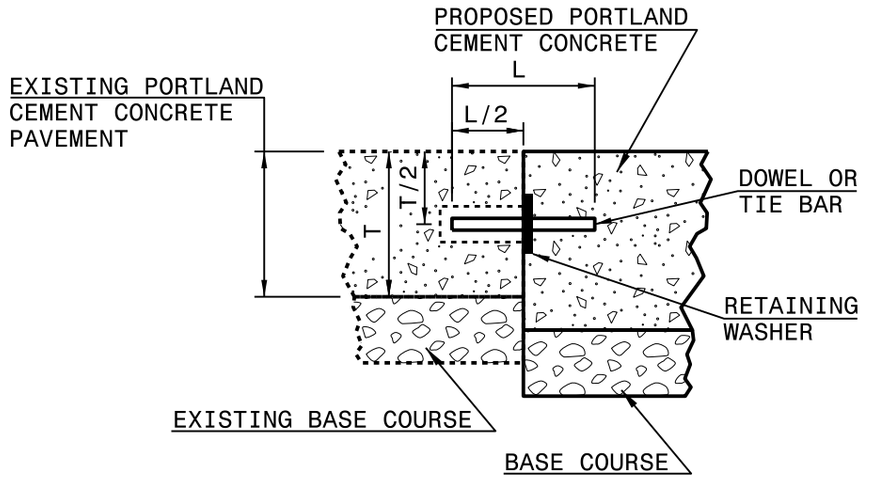
LONGITUDINAL SECTION 'A-A'

EXISTING PORTLAND CEMENT CONCRETE
TO
PROPOSED ASPHALT CEMENT CONCRETE



LONGITUDINAL SECTION 'A-A'

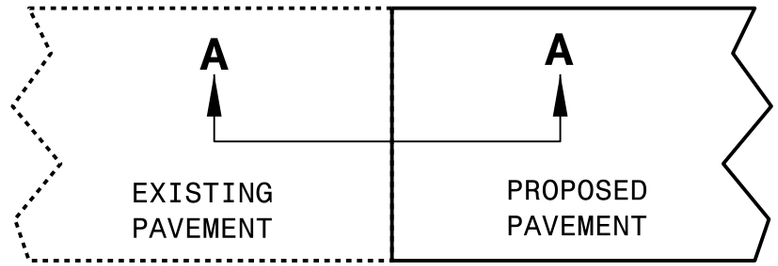
EXISTING ASPHALT CEMENT CONCRETE
TO
PROPOSED PORTLAND CEMENT CONCRETE



LONGITUDINAL OR TRANSVERSE SECTION 'A-A'

EXISTING PORTLAND CEMENT CONCRETE
TO
PROPOSED PORTLAND CEMENT CONCRETE

(DO NOT USE DOWEL BARS FOR EMERGENCY CONSTRUCTION JOINTS, SEE STANDARD DRAWING 700.01 SHEET 2 OF 2)



PLAN

SHOWING LONGITUDINAL OR TRANSVERSE JOINT

GENERAL NOTES:
-JOIN PAVEMENTS AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER.
-PLACE TIE BARS (DEFORMED STEEL BARS) ALONG THE LONGITUDINAL JOINTS AT 30" ON CENTER. PLACE DOWEL BARS (SMOOTH STEEL BARS) ALONG THE TRANSVERSE JOINTS AT 12" ON CENTER. THE PLACEMENT AND/OR SPACING OF TIE OR DOWEL BARS MAY BE MODIFIED BY THE PLANS OR THE ENGINEER. MEASURE THE HOLES, TO ACCEPT THESE BARS, THE O.D. OF THE BAR PLUS 1/8" IN DIAMETER AND 1/2 THE LENGTH OF THE BAR PLUS 1" UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER OF THE ADHESIVE. USE RETAINING WASHERS (NYLON, PLACTIC OR COMPOSTIE) ON ALL BARS TO HOLD THE ADHESIVE MATERIAL IN PLACE. THE RETAINING WASHERS SHALL BE: I.D.=BAR O.D., O.D.=HOLE I.D. + 1/4" MIN., THICKNESS= 1/16" MIN. SEE STANDARD DRAWING 700.01 FOR BAR SIZES AND OTHER JOINT RELATED INFORMATION. PROVIDE ADHEVSIVE BONDING MATERIAL SPECIFICED BY SECTION 1081 OF THE STANDARD SPECIFICATIONS FOR TYPE 3 OR 3A ADHESIVES.
-SEE TYPICAL SECTIONS FOR PAVEMENT COMPOSITION, SUMMARY OF QUANTITIES AND FOR OTHER SPECIFIC INFORMATION.

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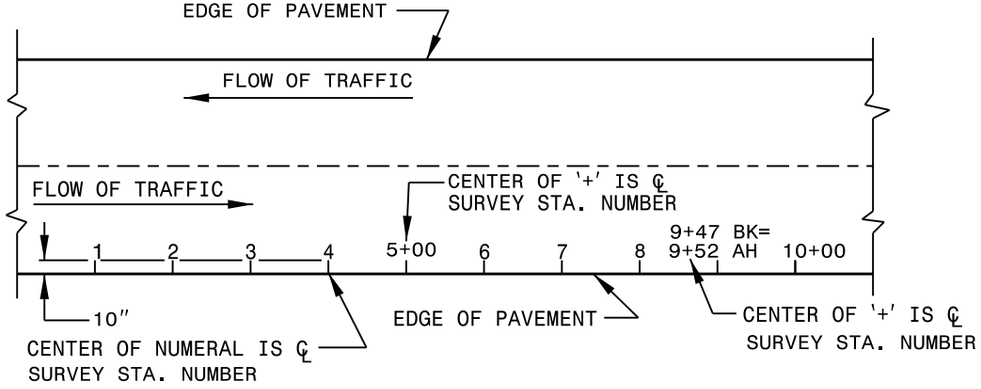
ROADWAY STANDARD DRAWING FOR

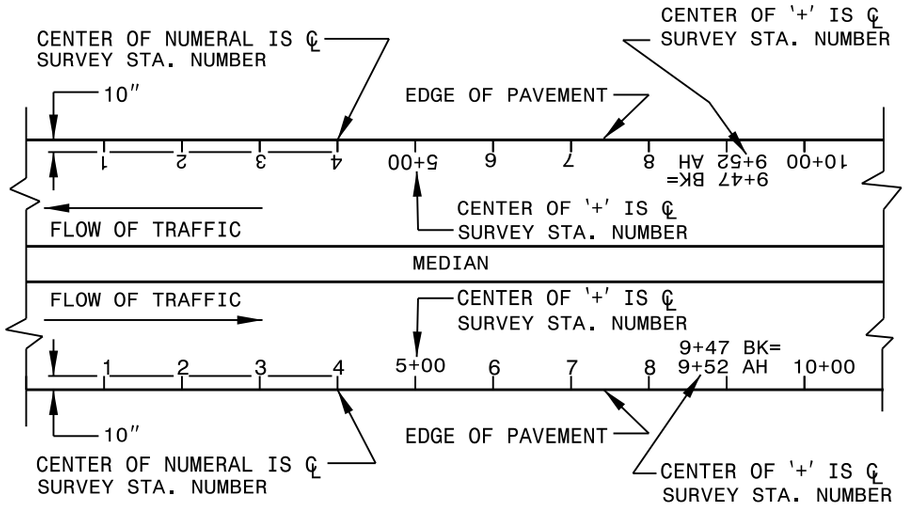
TYING PROPOSED PAVEMENT TO EXISTING PAVEMENT

SHEET 1 OF 1

700.05



TWO LANE PAVEMENT



DIVIDED ROADWAYS (4-6 LANES)

GENERAL NOTES:

PROVIDE THE MARKING BY THE USE OF METAL DIES HAVING A BEVELED FACE PRESSED INTO THE CONCRETE. MAKE THE NUMBERS BETWEEN 4″ AND 6″ HIGH.

MARK STATIONS 1,2,3 ETC. EXCEPT AT EACH MULTIPLE OF FIVE STATIONS, MARK AS 5+00, 10+00, 15+00 ETC. SHOW FULL EQUATIONS. WHERE AN EQUATION FALLS WITHIN 50 FEET OF A STATION MARKING, SHOW THE EQUATION AND ELIMINATE STATION MARKING.

MARK THE PAVEMENT BEFORE THE CONCRETE HAS TAKEN ITS INITIAL SET, AND REMOVE ALL DISPLACED AGGREGATE SO THAT THE SURFACE OF THE PAVEMENT IS LEFT IN A SMOOTH CONDITION WITH LETTERS FULLY AND NEATLY FORMED.

TWO LANE PAVEMENTS

MARK STATION NUMBERS AND EQUATIONS ALONG THE OUTSIDE EDGE OF THE PAVEMENT OF THE RIGHT LANE IN SUCH A POSITION AS TO BE READ RIGHT SIDE UP FROM THE DRIVERS SEAT OF A CAR TRAVELING ON THE SHOULDER. WHEN PAVING TWO LANES OF A FUTURE MULTI-LANE SECTION, POSITION STATION MARKING IN ACCORDANCE WITH THE REQUIREMENTS FOR MULTI-LANE PAVEMENT.

DIVIDED ROADWAYS (4-6 LANES)

MARK STATION NUMBERS AND EQUATIONS ALONG THE OUTSIDE EDGE OF BOTH LANES IN SUCH A POSITION AS TO BE READ RIGHT SIDE UP FROM THE DRIVERS SEAT OF A CAR TRAVELING ON THE SHOULDER OF EACH TWO LANE COMPONENT.

RAMPS

MARK STATION NUMBERS AND EQUATIONS ON THE RIGHT SIDE OF THE PAVEMENT EDGE IN THE DIRECTION OF THE FLOW OF TRAFFIC SUCH THAT THEY CAN BE READ RIGHT SIDE UP FROM THE DRIVERS SEAT OF A CAR TRAVELING ON THE RIGHT SHOULDER.

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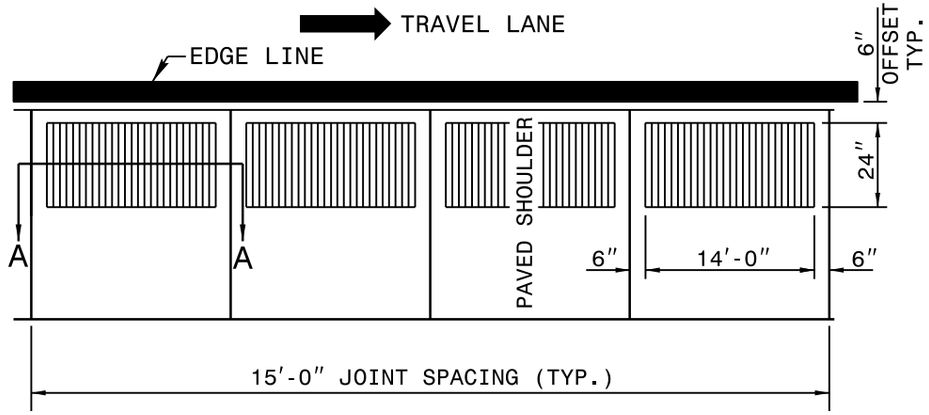
ROADWAY STANDARD DRAWING FOR

CONCRETE PAVEMENT

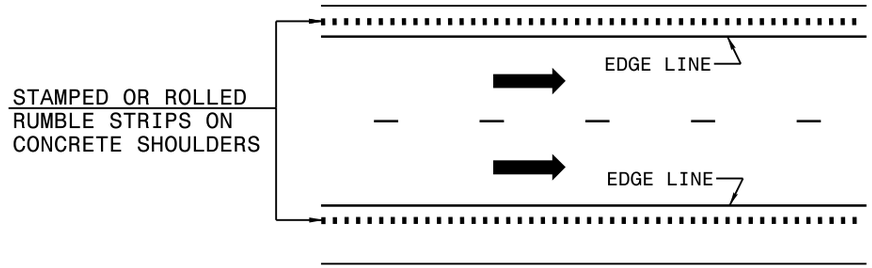
STATION MARKING

SHEET 1 OF 1

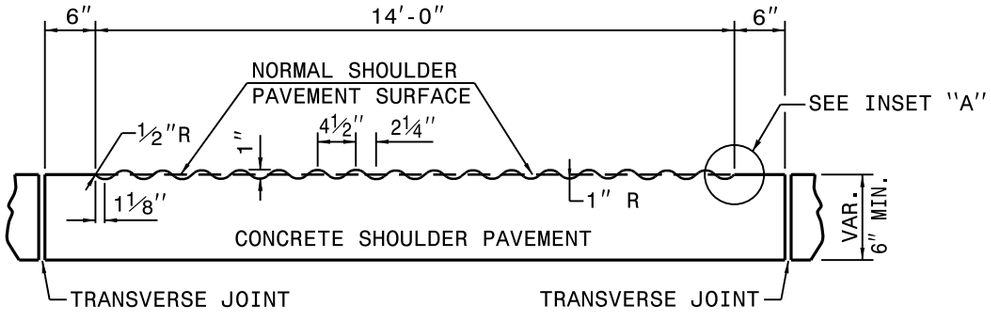
710.01



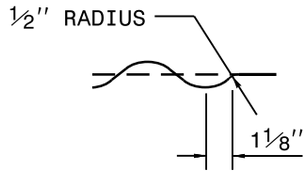
PLAN VIEW
PAVED SHOULDER



LANE TREATMENT



SECTION A-A
DETAILS FOR RUMBLE STRIP



INSET "A"

NOTES:

1. SEE TYPICAL SECTIONS, PLAN SHEETS, AND INTERCHANGE DETAILS FOR WIDTHS OF PAVED SHOULDERS.
2. THE STAMPING OR ROLLING OPERATION SHALL MAINTAIN A MINIMUM CLEARANCE OF 3″ FROM CONSTRUCTION JOINTS.
3. MATCH CONCRETE SHOULDER TRANSVERSE JOINTS TO THAT OF THE ADJACENT CONCRETE PAVEMENT.
4. SAW AND SEAL THE LONGITUDINAL JOINT AND TRANSVERSE JOINTS. SEE STD. DWG. 700.01 FOR DETAILS.
5. SEE DETAIL SHOWING "METHOD OF CONCRETE SHOULDER CONSTRUCTION" FOR PAVEMENT SLOPES.

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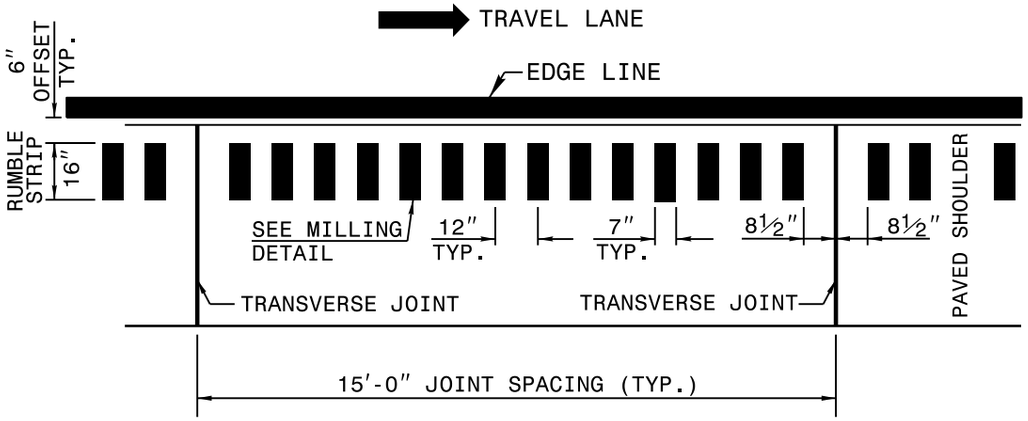
ROADWAY STANDARD DRAWING FOR

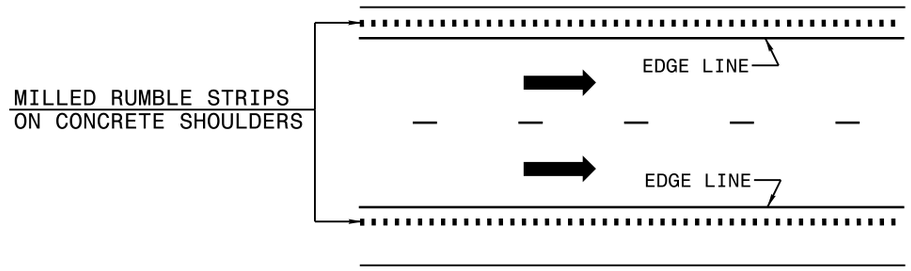
CONCRETE SHOULDER
STAMPED OR ROLLED RUMBLE STRIPS

ON FULL CONTROL ACCESS FACILITIES

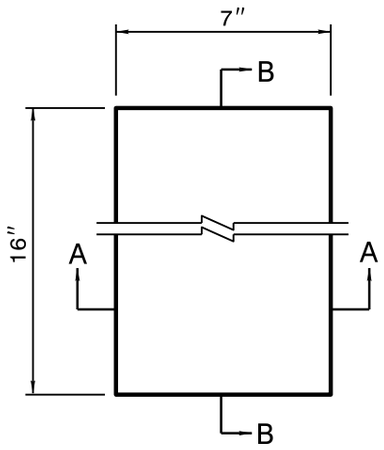
720.01



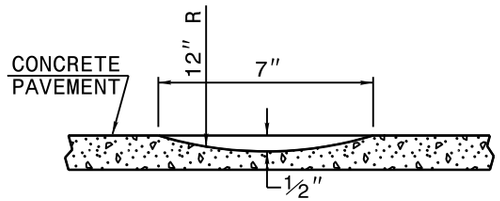
PLAN VIEW
PAVED SHOULDER



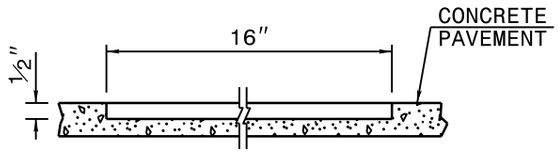
LANE TREATMENT



PLAN VIEW
MILLING DETAIL



SECTION A-A



SECTION B-B

NOTES:

1. SEE TYPICAL SECTIONS, PLAN SHEETS, AND INTERCHANGE DETAILS FOR WIDTHS OF PAVED SHOULDERS.
2. THE MILLING OPERATION SHALL MAINTAIN A MINIMUM CLEARANCE OF 3" FROM CONSTRUCTION JOINTS.
3. MATCH CONCRETE SHOULDER TRANSVERSE JOINTS TO THAT OF THE ADJACENT CONCRETE PAVEMENT.
4. SAW AND SEAL THE LONGITUDINAL JOINT AND TRANSVERSE JOINTS. SEE STD. DWG. 700.01 FOR DETAILS.
5. SEE DETAIL SHOWING "METHOD OF CONCRETE SHOULDER CONSTRUCTION" FOR PAVEMENT SLOPES.

STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

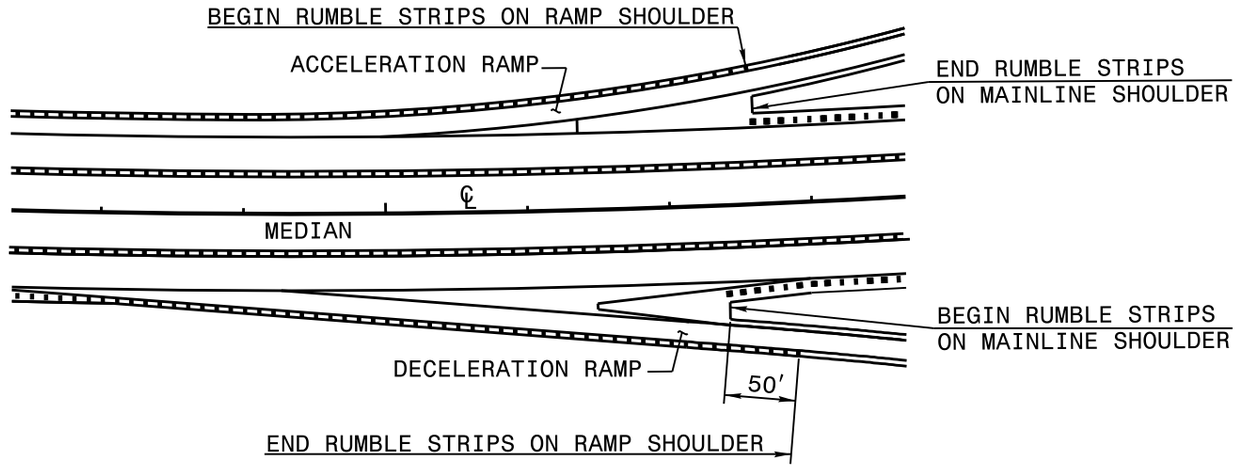
1-24

ROADWAY STANDARD DRAWING FOR

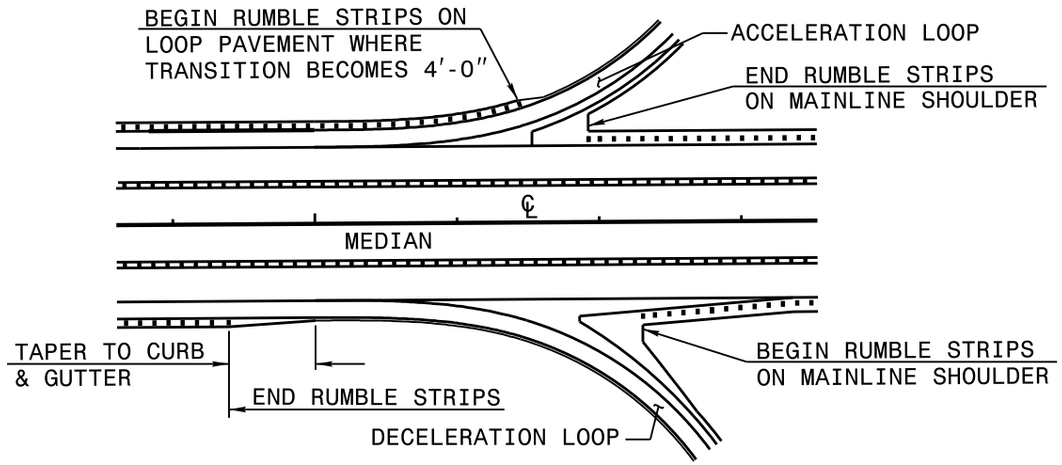
CONCRETE SHOULDER MILLED RUMBLE STRIPS

ON FULL CONTROL ACCESS FACILITIES

720.01



TREATMENT AT RAMP TERMINALS



TREATMENT AT LOOP TERMINALS

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1-24

ROADWAY STANDARD DRAWING FOR

LIMITS OF CONCRETE SHOULDER RUMBLE STRIPS

SHEET 1 OF 1

720.02