

Notes:  
For pavement crown slope, thickness - "T", lane width - "W", see typical sections in plans.

**STEEL FABRIC REINFORCEMENT:** Steel fabric reinforcement shall consist of members rigidly attached at all joints or points of intersection except as noted below:(\*). Longitudinal members shall be of No. 2 gage wire spaced at 6" on centers. Traverse members shall be No. 4 gage wire, spaced at 12" on centers. (Wire Reinforcement Steel Institute Designation 6 x 12 - W5.5 x W4).

The widths of steel fabric sheets shall be 4" less than the width of the slab. The number of sheets allowable between contraction joints, or between contraction and expansion joints, shall not exceed 3.

All members, longitudinal or transverse, shall be so cut that the projecting ends will extend not less than 1" nor more than 11" from the joints or points of intersection of the fabric members.

When it is necessary to lap steel fabric reinforcement, the minimum amount of lap shall be equivalent to the spacing of the wires parallel to the lap.

Other types of mesh reinforcement may be used on written permission of the Engineer. The width of sheets and other general requirements, which apply, shall be the same as for steel fabric reinforcement.

Dowels at contraction joints may be placed in the full thickness of pavement by mechanical device in lieu of dowel baskets.

- \* Hinged steel reinforcement may be used in lieu of rigid sheets.

**LONGITUDINAL SECTION A-A**

**EXPANSION AND CONTRACTION JOINTS:** Construction joints in both plain and reinforced pavement shall have the same load transfer devices as noted for contraction joints in reinforced pavement.

Contraction joints of the type specified on Sheet 2 shall be spaced at 30 foot intervals for reinforced concrete pavement and at 15 foot intervals for plain concrete pavement unless otherwise noted on joint layouts in plans.

Adjacent to rigid structures: concrete street intersections, or R.R. grade x-ings, bridge approach expansion joints and/or transverse expansion joints are to be placed as shown on sheet 2 of 3. Other expansion joints are to be used as specified on plans.

If asphalt concrete is to be applied, all transverse joints are to be sawed, but not widened, except at the end of a days run and when interruptions occur in the concrete operations of more than 30 minutes duration. In these cases, butt construction joints are to be used.

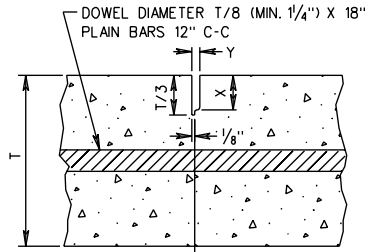
**PAVED SHOULDERS:** When asphalt concrete paved shoulders are to be used adjacent to either plain or reinforced cement concrete pavement, the edge of the concrete slab is to be painted, to its full depth, with asphaltic material either CRS-2 or RC-250 as directed by the Engineer.

**LONGITUDINAL JOINTS:** The contractor will be permitted to construct the concrete pavement in dual lanes, simultaneously, where the sum of the lane widths does not exceed 25 feet, provided a satisfactory and true longitudinal dummy groove joint is obtained. This is to be done by the use of an approved forming strip or by sawing, at the contractor's option. Where lanes are poured separately, the hook bolts or tie bolts shall be in accordance with the details shown of Sheet 2. Where both lanes are poured simultaneously, tie bars shall be as detailed on Sheet 2. The maximum width of pavement that may be constructed without a longitudinal joint is 14'-0". For widths greater than 14 feet the longitudinal joint shall be in the center. No other deviations are to be allowed unless shown on joint layout in plans, or directed by the Engineer.

**METHOD OF FINISHING AT EXPANSION JOINTS:** A protective cap or installation shield of 1/16" steel shall be placed over the top of the expansion joint filler. The finishing machine shall then be allowed to pass over the joint, leaving it as shown in Figure 1, Sheet 2. Prior to the initial set the shield shall be removed and a rectangular bar 1/4" less in width than the preformed filler placed on top of the filler, the concrete squeegee finished adjacent to it as shown in Figure 2, and the edges rounded with hand tools, using the bar as a guide. The bar shall then be withdrawn, leaving a joint gap of the same width as the filler.

SPECIFICATION REFERENCE	<p>PLAIN AND REINFORCED CONCRETE PAVEMENT SHOWING REINFORCEMENT, LONGITUDINAL AND TRANSVERSE JOINTS</p> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>
316	301.01





DETAIL OF TRANSVERSE CONTRACTION JOINT (BEFORE INSTALLATION OF SEAL)

GENERAL NOTES

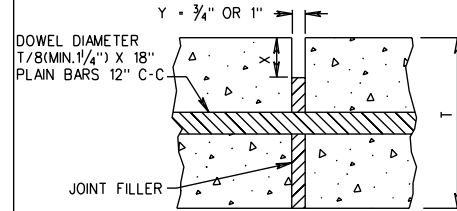
ALTERNATE PREFORMED SEALANTS HAVING A CROSS-SECTIONAL AREA COMPARABLE TO TYPE A (CONTRACTION JOINTS) AND TYPE D (EXPANSION JOINTS) AND MEETING THE APPROVAL OF THE ENGINEER MAY BE SUBSTITUTED.

OTHER TYPES OF JOINT MATERIAL ARE TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

ALL DETAILS NOT SHOWN HEREON TO BE IN ACCORDANCE WITH STANDARDS PR-2, SHEET 2 OF 5.

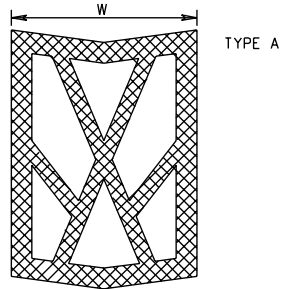
ALL CONTRACTION JOINTS TO BE SAWED IN CONFORMANCE WITH DETAIL TO THE LEFT, EXCEPT THAT WHERE GRAVEL AGGREGATE IS USED IN THE CONCRETE, THE JOINT MAY BE PREPARED BY FORMING 1/4" OR LESS OF THE WIDTH, FOR THE DEPTH SHOWN WITH NON-METALLIC OR REMOVABLE MATERIAL, FOLLOWED BY SAWING TO COMPLETE THE JOINT TO THE REQUIRED WIDTH AND DEPTH.

FOR DETAILS OF TRANSVERSE CONSTRUCTION JOINT, SEE BELOW.



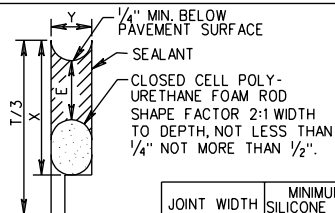
DETAIL OF TRANSVERSE EXPANSION JOINT (BEFORE INSTALLATION OF SEAL)

PREFORMED CHLOROPRENE ELASTOMERIC JOINT SEALANT



TYPE A

SILICONE JOINT SEALANT

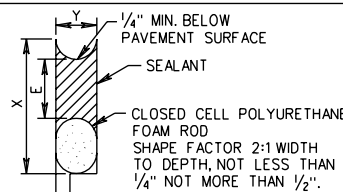


BACK-UP MATERIAL SHALL BE 25% GREATER DIAMETER THAN Y DIMENSION.

TYPE B

JOINT WIDTH (Y)	MINIMUM SILICONE SEALER THICKNESS(E)
1/4"	1/4"
3/8"	1/4"
1/2"	1/4"

SILICONE JOINT SEALANT



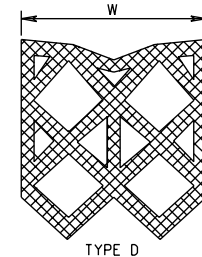
BACK-UP MATERIAL SHALL BE 25% GREATER DIAMETER THAN Y DIMENSION.

TYPE C

JOINT WIDTH (Y)	MINIMUM SILICONE SEALER THICKNESS(E)
3/4"	3/8"
1"	1/2"

PREFORMED CHLOROPRENE ELASTOMERIC JOINT SEALANT

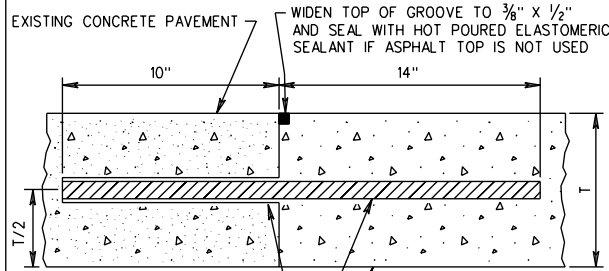
WHEN Y = 3/4" W = 1 1/4" X = 2"  
WHEN Y = 1" W = 1 5/8" X = 2"



TYPE D

SEALANTS FOR TRANSVERSE CONTRACTION JOINTS

SEALANTS FOR TRANSVERSE EXPANSION JOINTS



DRILL 10" X 1 1/8" HOLES, 30" C-C INTO EXISTING PAVEMENT 24" #7 DOWELS WITH EPOXY GROUT

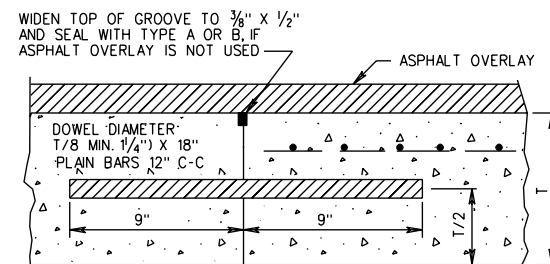
PROPOSED WIDENING 24" #7 DEFORMED DOWELS 30" C-C.

METHODS OF WIDENING CONCRETE PAVEMENT (PLAIN AND REINFORCED)

DIMENSION	SEALANT TYPE			
	A	B	C	D
X	1 3/4"	1/4"	1 3/4" - 2"	2"
Y	1/4"	1/4"	3/4" OR 1"	3/4" OR 1"
W	3/8" ± 1/16"	-	-	-

DIMENSION	SEALANT TYPE			
	A	B	C	D
X	1 3/4"	1/4"	1 3/4" OR 2"	2"
Y	3/8"	3/8"	3/4" OR 1"	3/4" OR 1"
W	1/4" ± 1/16"	-	-	-



IF JOINT COINCIDES WITH SPECIFIED JOINT, CONSTRUCT IN ACCORDANCE WITH DETAIL ON SHEET 2 (CONTRACTION OR EXPANSION JOINT).

DETAIL OF TRANSVERSE CONSTRUCTION (BUTT) JOINT (FOR USE WITH PLAIN, REINFORCED, AND PLAIN BASE WITH ASPHALT TOP)

SPECIFICATION REFERENCE

316

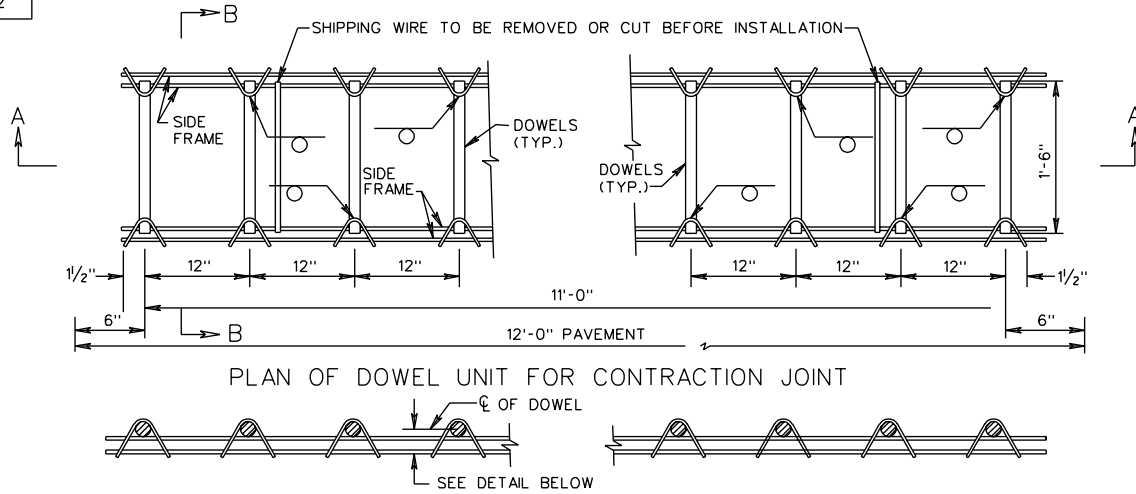
PLAIN AND REINFORCED CONCRETE PAVEMENT SHOWING REINFORCEMENT, LONGITUDINAL AND TRANSVERSE JOINTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

PR-2

SHEET 3 OF 5

301.03

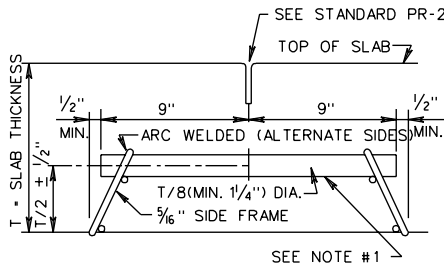


PLAN OF DOWEL UNIT FOR CONTRACTION JOINT

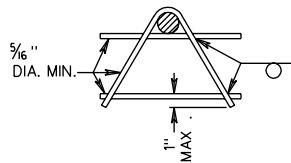
SIDE ELEVATION A - A CONTRACTION JOINT

NOTES:

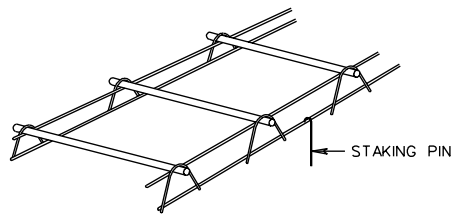
1. ENTIRE BAR TO BE LUBRICATED.
2. STAKING PINS, A MINIMUM SIX PER ASSEMBLY, THREE TO EACH SIDE.
3. EXPANSION AND CONTRACTION JOINTS: THE DEVICE FOR SUPPORTING DOWELS AT EXPANSION AND CONTRACTION JOINTS SHALL BE SO CONSTRUCTED THAT IT WILL HOLD THE DOWELS FIRMLY IN POSITION, PARALLEL TO THE SURFACE AND CENTERLINE OF THE SLAB.
4. NO MEMBERS SHALL BE PLACED SO THAT THEY WILL INTERFERE WITH THE FREE FLOW OF CONCRETE BETWEEN THE DOWELS.
5. ASSEMBLY AND WELDING OF ALL MEMBERS SHALL BE SUCH AS TO INSURE A GOOD WORKMANLIKE JOB, WITH ALL JOINTS TRUE AND SQUARE.
6. ASSEMBLIES WHICH HAVE BECOME WARPED OR DAMAGED IN TRANSIT OR STORAGE SO THEY WILL NOT CONFORM TO THE SUBGRADE SHALL NOT BE USED.
7. A SAMPLE OF THE SUPPORTING DEVICE SHALL BE SUBMITTED FOR APPROVAL PRIOR TO THE FILLING OF JOB ORDERS.



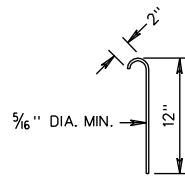
SECTION B - B THRU CONTRACTION JOINT



SIDE FRAME DETAIL

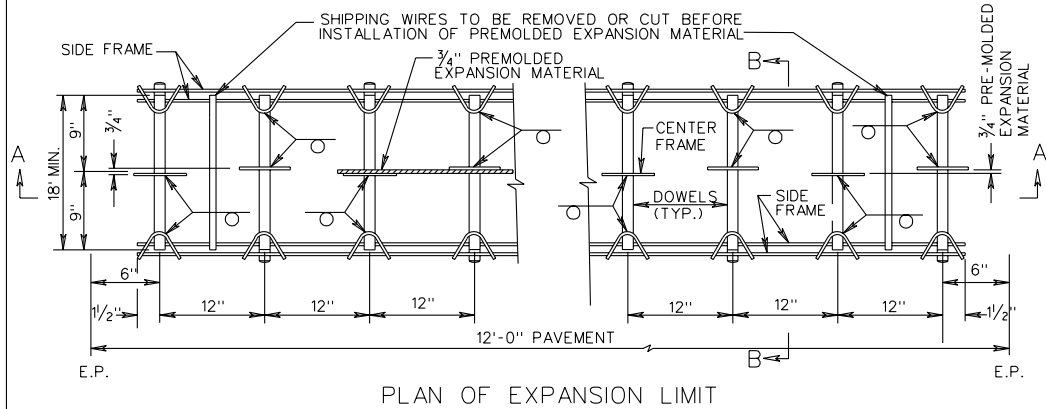


PERSPECTIVE VIEW

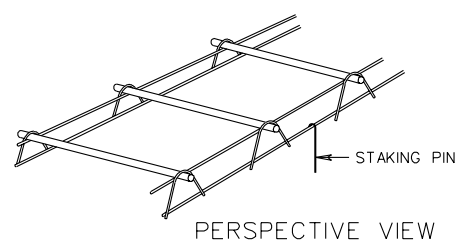


STAKING PIN

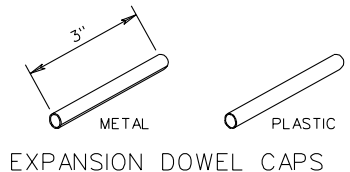
STANDARD LOAD TRANSFER ASSEMBLY CONTRACTION JOINT



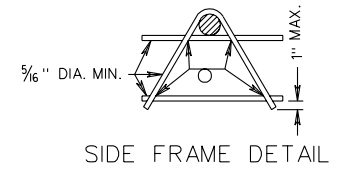
PLAN OF EXPANSION LIMIT



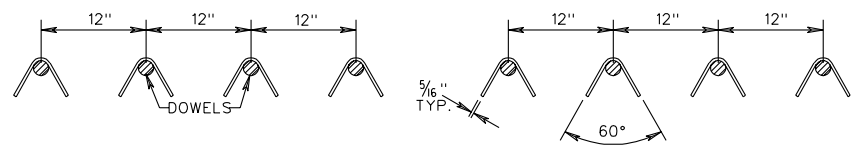
PERSPECTIVE VIEW



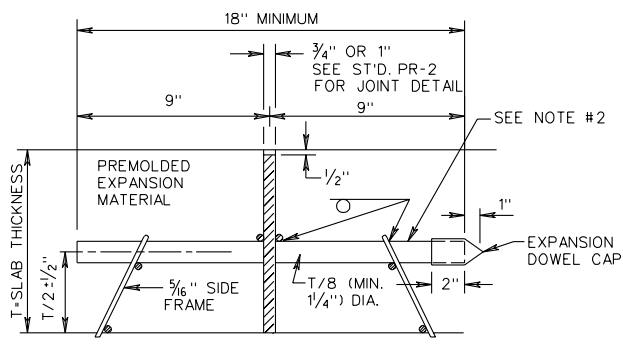
EXPANSION DOWEL CAPS



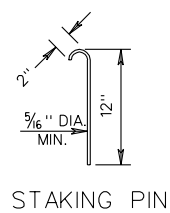
SIDE FRAME DETAIL



SECTION A - A CENTER FRAME



SECTION B - B THRU EXPANSION JOINT



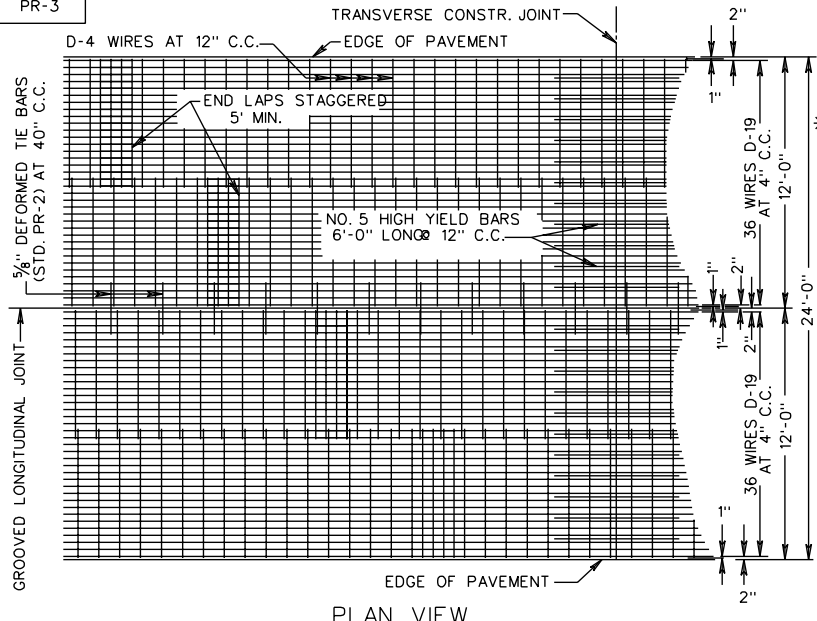
STAKING PIN

NOTES:

1. DOWEL BAR TO BE MIN. LENGTH OF 18". IF BAR IS NOT CENTERED THE LONG SIDE SHALL BE THE FREE END. SEE STANDARD PR-2.
2. ENTIRE BAR TO BE LUBRICATED.
3. STAKING PINS, A MINIMUM SIX PER ASSEMBLY, THREE TO EACH SIDE.
4. EXPANSION AND CONTRACTION JOINTS: THE DEVICE FOR SUPPORTING DOWELS AT EXPANSION AND CONTRACTION JOINTS SHALL BE SO CONSTRUCTED THAT IT WILL HOLD THE DOWELS FIRMLY IN POSITION, PARALLEL TO THE SURFACE AND CENTER-LINE OF THE SLAB.
5. NO MEMBERS SHALL BE PLACED SO THAT THEY WILL INTERFERE WITH THE FREE FLOW OF CONCRETE BETWEEN DOWELS.
6. ASSEMBLY AND WELDING OF ALL MEMBERS SHALL BE SUCH AS TO INSURE A GOOD WORKMANLIKE JOB, WITH ALL JOINTS TRUE AND SQUARE.
7. ASSEMBLIES WHICH HAVE BECOME WARPED OR DAMAGED IN TRANSIT OR STORAGE SO THEY WILL NOT CONFORM TO THE SUBGRADE SHALL NOT BE USED.
8. A SAMPLE OF THE SUPPORTING DEVICE SHALL BE SUBMITTED FOR APPROVAL PRIOR TO THE FILLING OF JOB ORDERS.

<p>SPECIFICATION REFERENCE</p>	<h2 style="margin: 0;">STANDARD LOAD TRANSFER ASSEMBLY EXPANSION JOINT</h2> <p style="margin: 0;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	<p>301.05</p>
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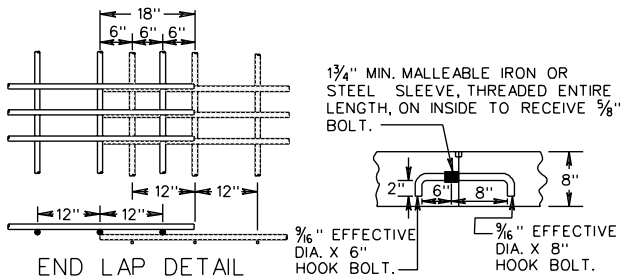
PR-3



PLAN VIEW

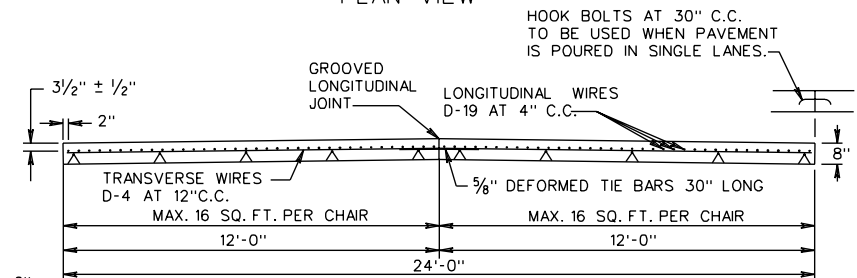
NOTES:  
 FOR 36' PAVEMENT, USE SINGLE 12' LANES WITH 2 CONSTRUCTION JOINTS, OR 12' AND 24' LANES WITH ONE GROOVE AND ONE CONSTRUCTION JOINT.  
 TRANSVERSE WIRES DO NOT EXTEND THROUGH LONGITUDINAL JOINTS.  
 TIE BARS AND DOWEL BARS ARE TO BE AS NEAR MIDPOINT OF PAVEMENT DEPTH AS FEASIBLE.  
 \* THE DOUBLE LAP REQUIREMENT (36') AND OR EXTRA BAR METHOD APPLIES ONLY TO LAPS FALLING WITHIN AN AREA 10' BEYOND THE CONSTRUCTION JOINT.  
 #5 X 2'-6" DEFORMED TIE BARS AT 30" O.C. MAY BE USED IN LIEU OF HOOK BOLTS WHERE SHOWN HEREON.

SMOOTH SURFACE TO BE STEEL TROWELED 8" IN FROM THE EDGE OF PAVEMENT EVERY 500 FEET, AND STATION NUMBER STAMPED INTO IT. THE DATE IS TO BE SHOWN IN A SIMILAR MANNER AT THE BEGINNING OF EACH DAYS POUR.  
 BOTH OUTSIDE EDGES OF DIVIDED HIGHWAY TO BE STAMPED. ONE EDGE OF UNDIVIDED HIGHWAYS WHERE FEASIBLE. (TRAVEL LANE)  
 SHEETS TO BE SECURELY FASTENED TO PREVENT SEPARATION DURING CONCRETE PLACEMENT.

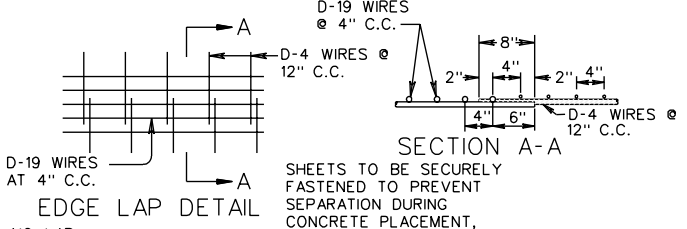


END LAP DETAIL

HOOK BOLT DETAIL

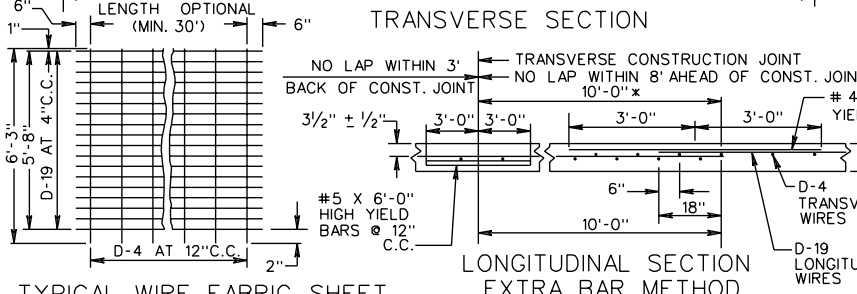


TRANSVERSE SECTION

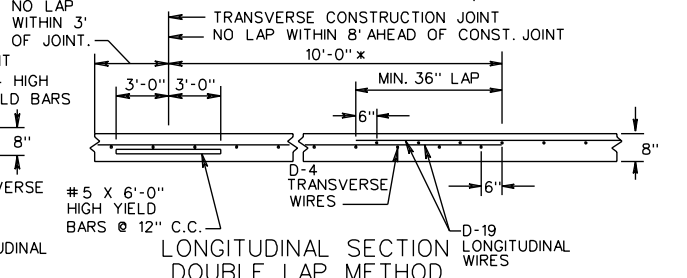


EDGE LAP DETAIL

SECTION A-A



LONGITUDINAL SECTION EXTRA BAR METHOD



LONGITUDINAL SECTION DOUBLE LAP METHOD

TYPICAL WIRE FABRIC SHEET

SHEET 1 OF 4

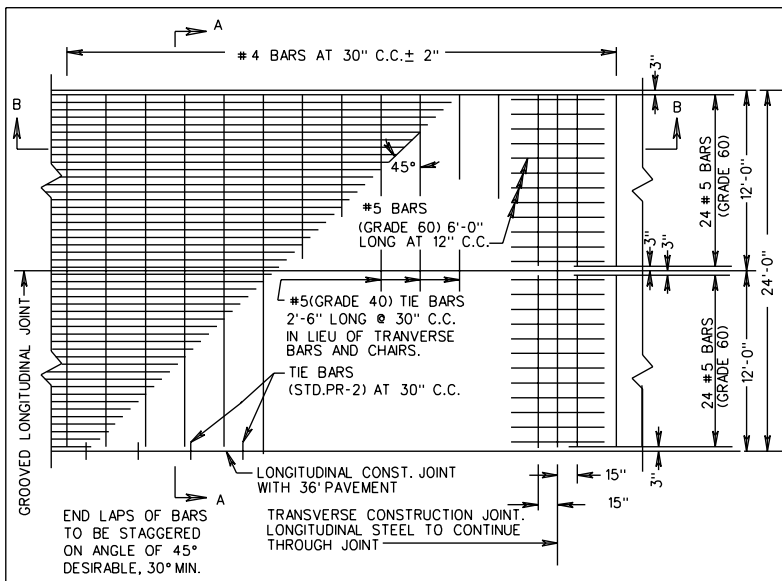
8" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
 (WIRE MESH REINFORCEMENT)

SPECIFICATION REFERENCE

316

301.06

VIRGINIA DEPARTMENT OF TRANSPORTATION

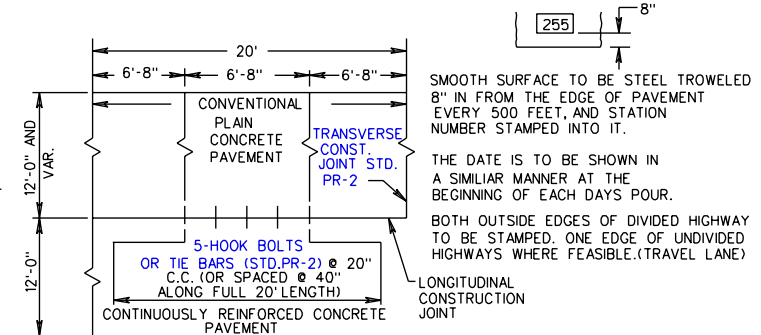


NOTES: HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS #4 TRANSVERSE BARS. WHERE NECESSARY ADJUST THE LOCATION OF HOOK BOLTS OR TIE BARS TO A 2 1/2" MINIMUM CLEARANCE BETWEEN HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.

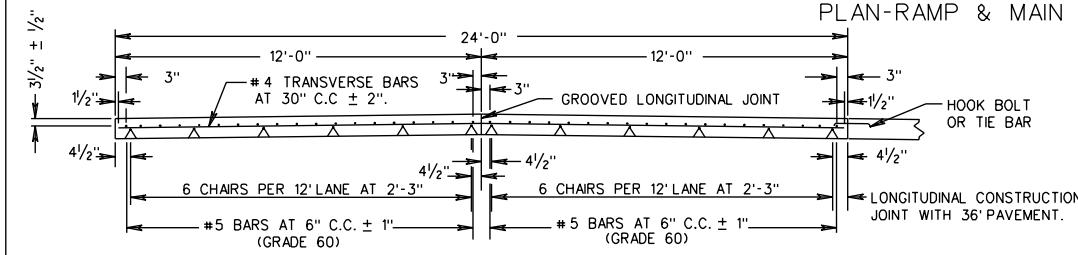
TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL AS #5 LONGITUDINAL BARS.

#5 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.

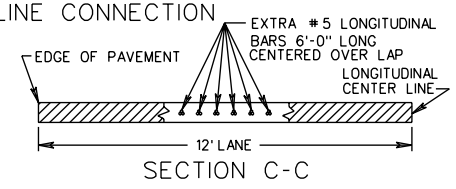
FOR 36' WIDTH PAVEMENT USE SINGLE 12' LANES WITH 2 LONGITUDINAL CONSTRUCTION JOINTS OR 12' AND 24' LANES WITH ONE LONGITUDINAL CONSTRUCTION JOINT AND ONE GROOVED LONGITUDINAL JOINT. TRANSVERSE BARS SHALL NOT EXTEND THROUGH LONGITUDINAL CONSTRUCTION JOINTS, BUT SHALL EXTEND FULL LENGTH (23'-9") FOR GROOVED LONGITUDINAL JOINTS.



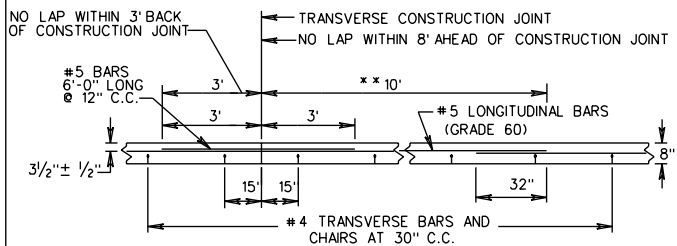
PLAN-RAMP & MAIN LINE CONNECTION



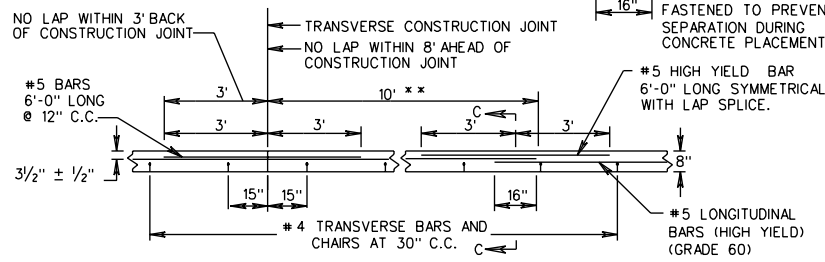
SECTION A-A



SECTION C-C



SECTION B-B  
DOUBLE LAP METHOD



SECTION B-B  
EXTRA BAR METHOD

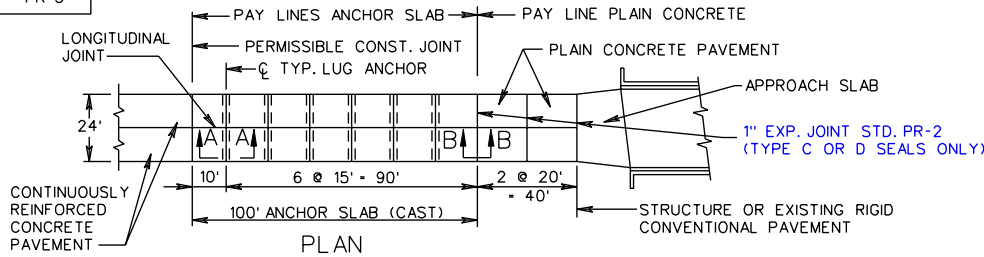
\*\* DOUBLE LAP REQUIREMENT (32") AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 10' BEYOND THE CONSTRUCTION JOINT.

SPECIFICATION REFERENCE	316
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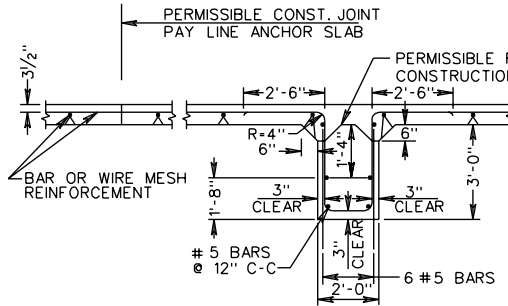
## 8" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (STEEL BAR REINFORCEMENT)

VIRGINIA DEPARTMENT OF TRANSPORTATION

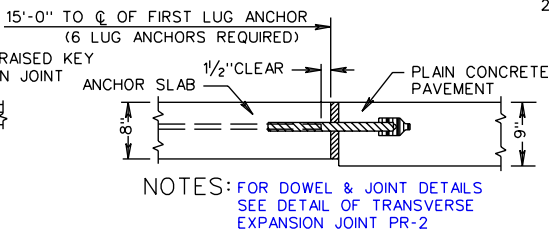
PR-3



PLAN



SECTION A-A



SECTION B-B  
ANCHOR SLAB TYPE I  
(FOR USE ADJACENT TO PLAIN CONCRETE PAVEMENT)

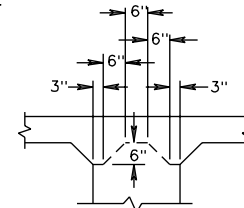
NOTES: FOR DWEL & JOINT DETAILS  
SEE DETAIL OF TRANSVERSE  
EXPANSION JOINT PR-2

NOTES:

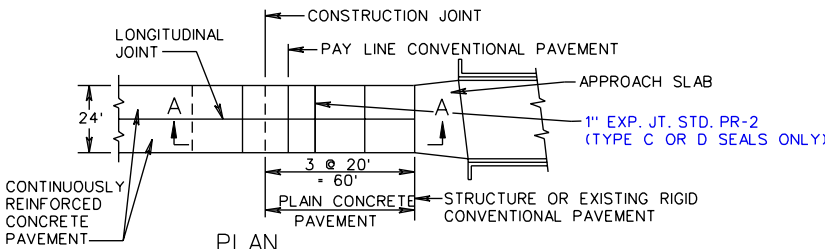
CONCRETE FOR LUG ANCHORS SHALL BE POURED AGAINST COMPACTED SUBGRADE. CONCRETE FOR LUGS AND ANCHOR SLAB MAY BE POURED MONOLITHICALLY OR POURED USING RAISED KEY CONSTRUCTION JOINT METHOD.

ADEQUATE CONSOLIDATION OF CONCRETE IN LUGS WILL BE OBTAINED WITHOUT DISPLACING LONGITUDINAL CONTINUOUS STEEL, BY THE USE OF INTERNAL VIBRATION.

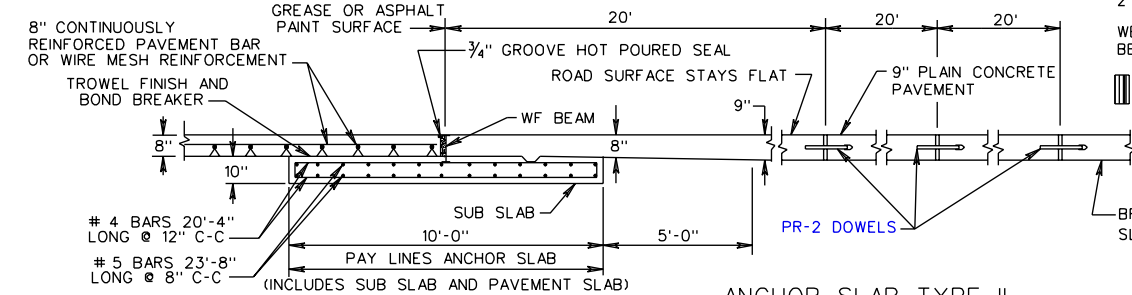
WHEN LESS THAN FULL WIDTH LUG AND PAVEMENT SLAB IS PLACED, THE # 5 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.



DETAIL-RAISED KEY  
CONSTRUCTION JOINT

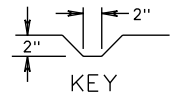


PLAN



SECTION A-A  
ANCHOR SLAB TYPE II  
(FOR USE ADJACENT TO PLAIN CONCRETE PAVEMENT)

WF BEAM (WEIGHT AND DIMENSIONS)					
CRCP THICKNESS	EMBEDMENT IN "SUB SLAB"	WF BEAM SIZE	FLANGE		WEB THICKNESS
			WIDTH	THICKNESS	
8"	6"	14 X 61	10"	5/8"	3/8"



KEY

NOTES:

CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMB.

2" MIN. CONCRETE COVER FOR STEEL IN SUB-SLAB.

WELDED 1/4" STEEL PLATE AT BOTH ENDS OF WF BEAM TO SEAL ENDS.

▨ DENOTES 1" EXPANSION JOINT MATERIAL POLYSTYRENE OR EQUIVALENT

SHEET 3 OF 4

8" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
(FOR USE WITH BAR OR WIRE MESH REINFORCEMENT)

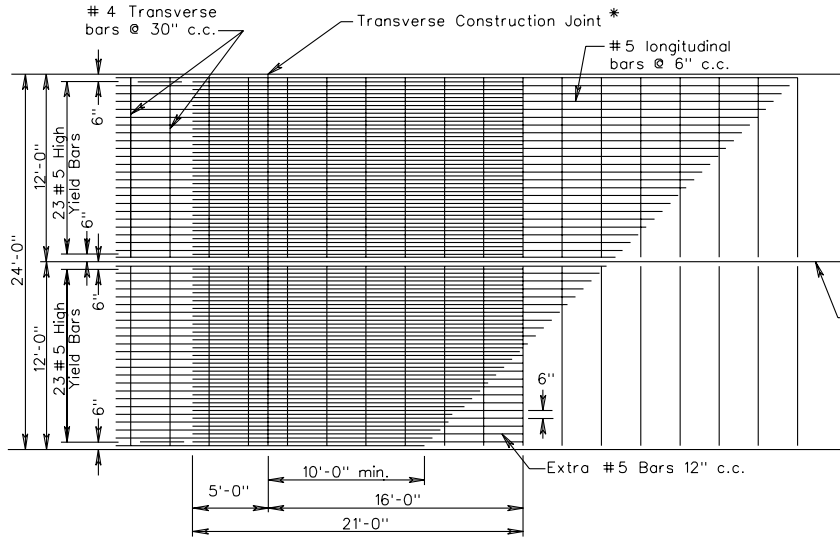
SPECIFICATION REFERENCE

316

301.08

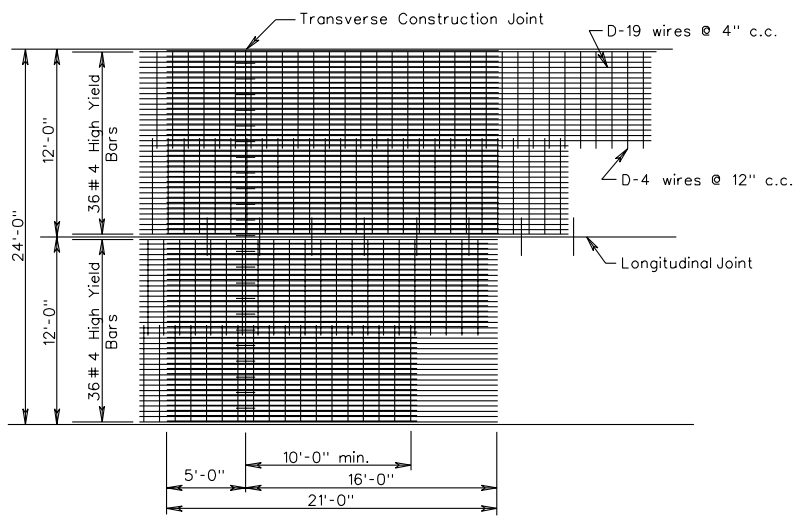
VIRGINIA DEPARTMENT OF TRANSPORTATION





\* Longitudinal steel to continue through joint.  
 Extra #5 (Grade 60) Bars (21' long) shall be spaced at 12" c.c.

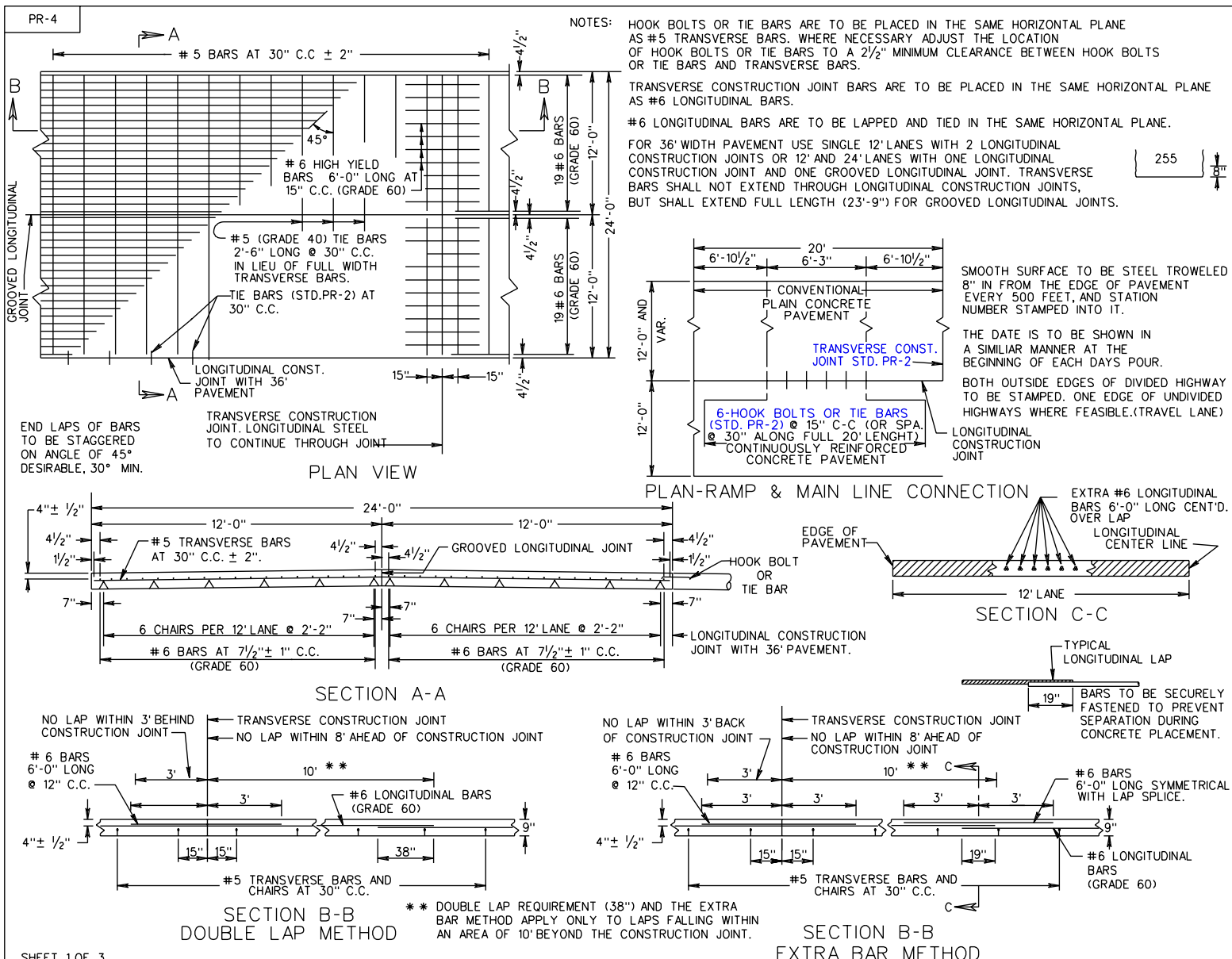
LEAVE OUT JOINT  
 FOR USE WITH STEEL BAR REINFORCEMENT



LEAVE OUT JOINT  
 FOR USE WITH WIRE MESH REINFORCEMENT

SPECIFICATION REFERENCE
316

8" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
 (LEAVE OUT JOINT DETAIL)



SHEET 1 OF 3

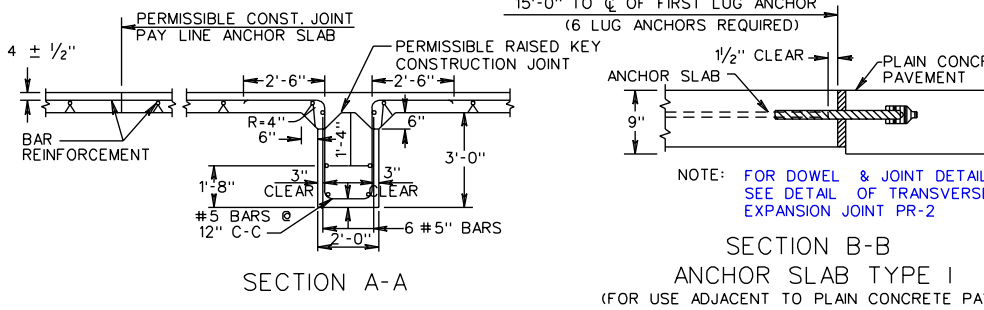
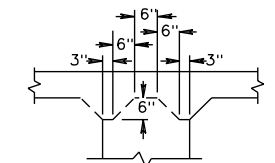
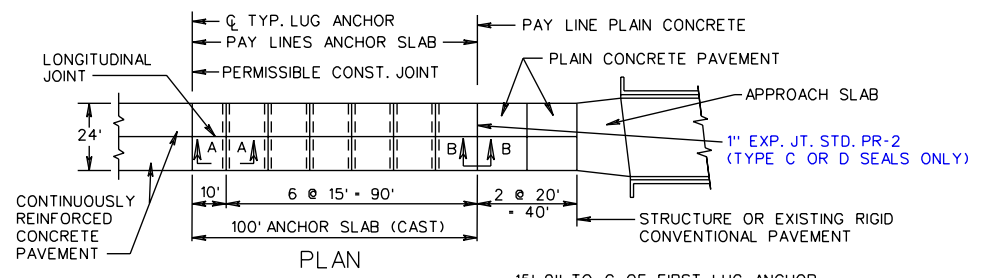
9" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
(STEEL BAR REINFORCEMENT)

SPECIFICATION REFERENCE

316

301.10

VIRGINIA DEPARTMENT OF TRANSPORTATION

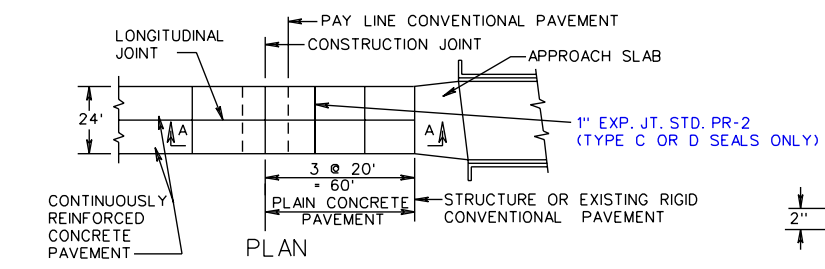


NOTES:

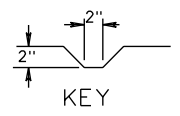
CONCRETE FOR LUG ANCHORS SHALL BE POURED AGAINST COMPACTED SUBGRADE. CONCRETE FOR LUGS AND ANCHOR SLAB MAY BE POURED MONOLITHICALLY OR POURED USING RAISED KEY CONSTRUCTION JOINT METHOD.

ADEQUATE CONSOLIDATION OF CONCRETE IN LUGS WILL BE OBTAINED WITHOUT DISPLACING LONGITUDINAL CONTINUOUS STEEL, BY THE USE OF INTERNAL VIBRATION.

WHEN LESS THAN FULL WIDTH LUG AND PAVEMENT SLAB IS PLACED, THE #5 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.



WF BEAM (WEIGHT AND DIMENSIONS)					
CRCP THICKNESS	EMBEDMENT IN "SUB SLAB"	WF BEAM SIZE	FLANGE		WEB THICKNESS
			WIDTH	THICKNESS	
9"	6"	14 X 61	10"	5/8"	3/8"

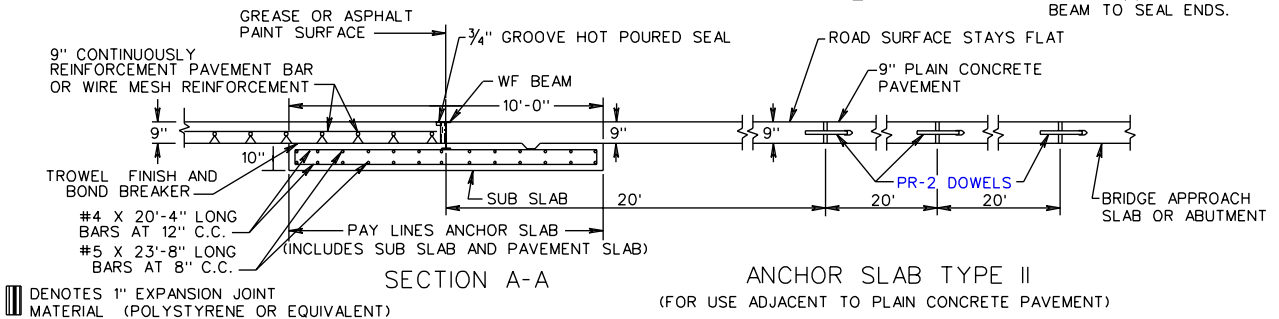


NOTES:

CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMB.

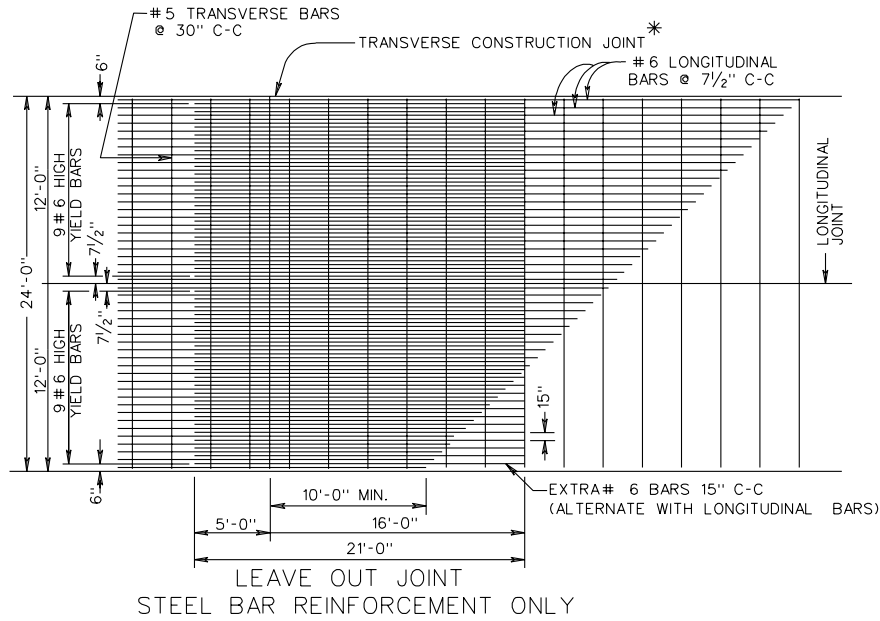
2" MIN. CONCRETE COVER FOR STEEL IN SUB-SLAB.

WELDED 1/4" STEEL PLATE AT BOTH ENDS OF WF BEAM TO SEAL ENDS.



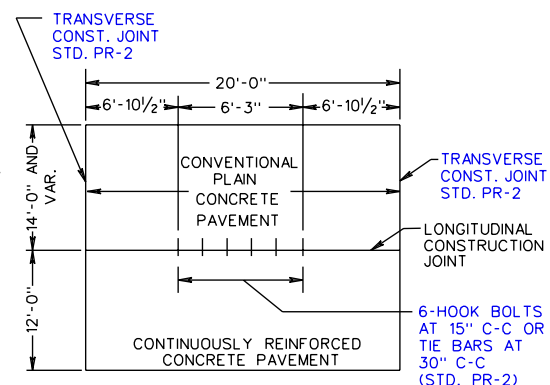
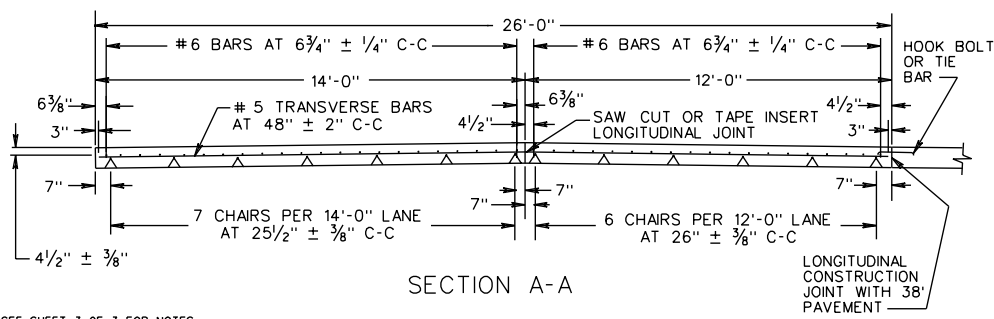
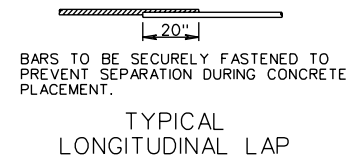
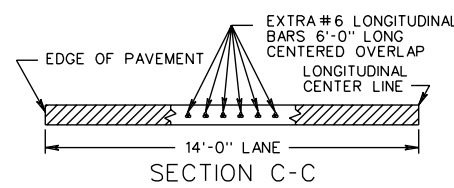
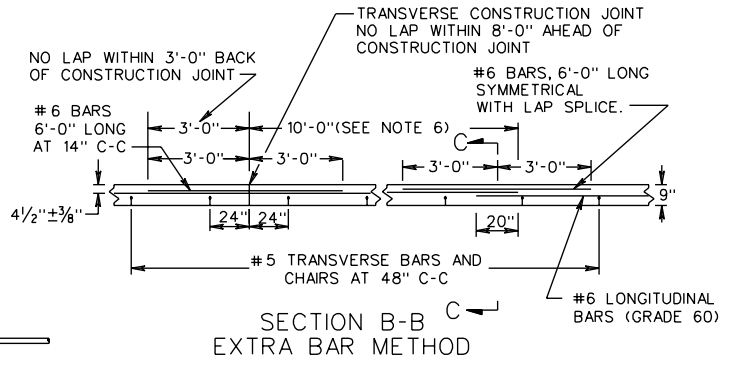
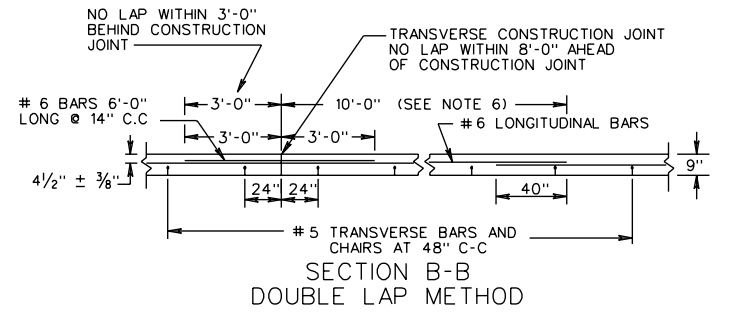
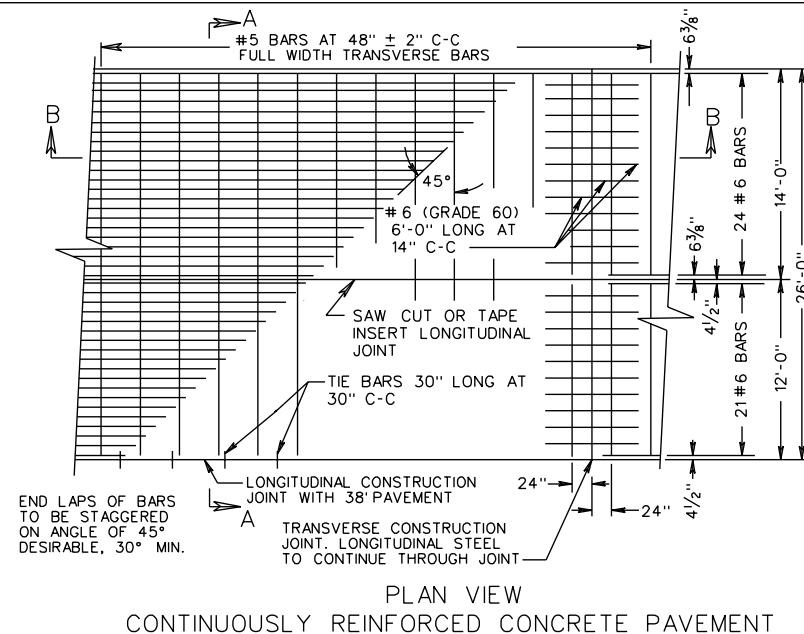
▮ DENOTES 1" EXPANSION JOINT MATERIAL (POLYSTYRENE OR EQUIVALENT)

SPECIFICATION REFERENCE	9" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT (FOR USE WITH BAR REINFORCEMENT ONLY)	SHEET 2 OF 3
316	VIRGINIA DEPARTMENT OF TRANSPORTATION	301.11



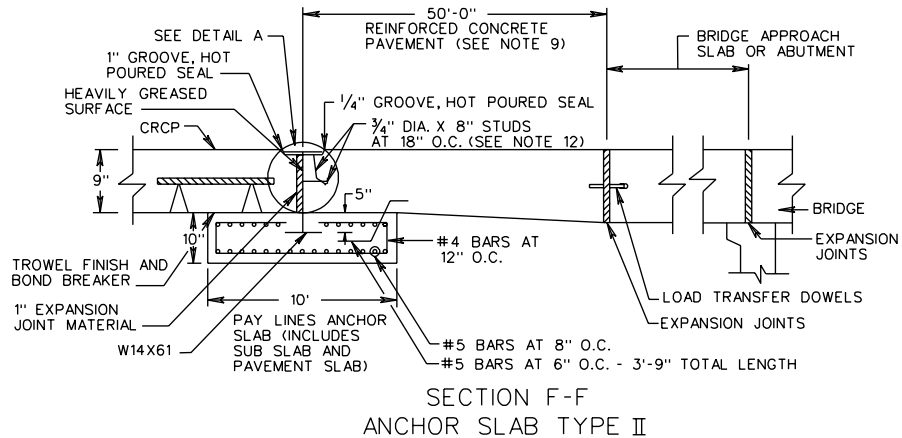
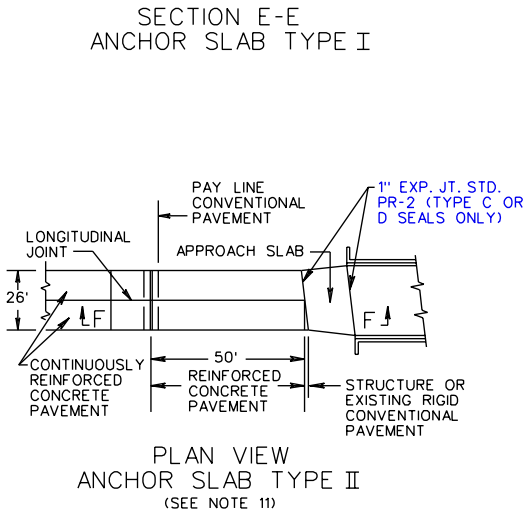
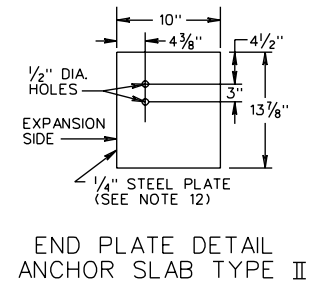
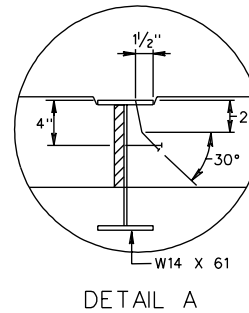
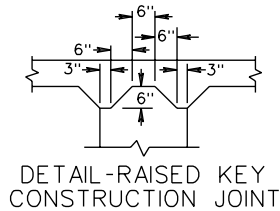
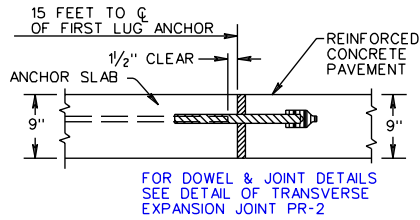
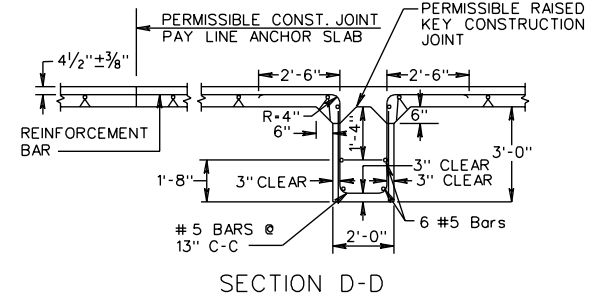
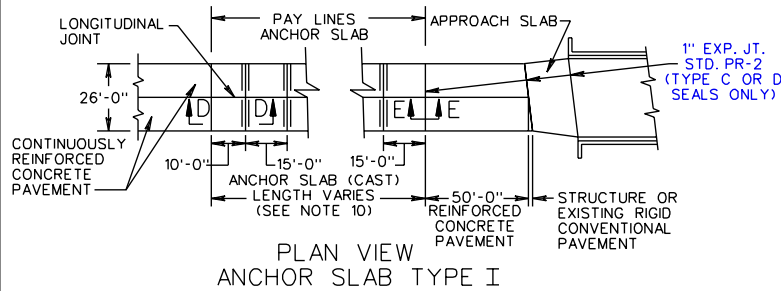
\* LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT.  
EXTRA # 6 (GRADE 60) BARS (21' LONG) SHALL BE SPACED AT 15" C-C.

9" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
(LEAVE OUT JOINT DETAIL)



SEE SHEET 3 OF 3 FOR NOTES.

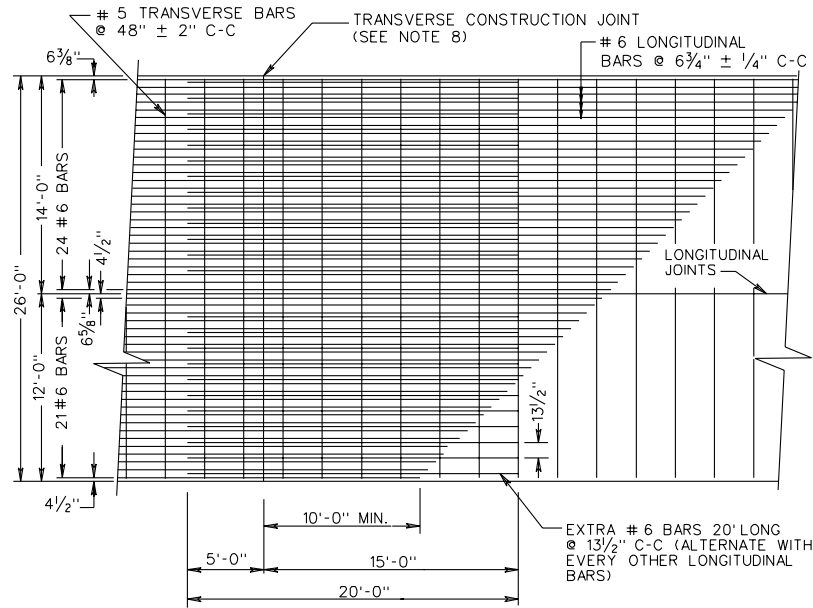
SPECIFICATION REFERENCE	9" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE
316	VIRGINIA DEPARTMENT OF TRANSPORTATION
	301.13



9" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
14 FOOT TRAVEL LANE

SPECIFICATION  
REFERENCE

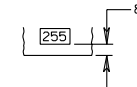
316



PLAN VIEW  
LEAVE OUT JOINT  
STEEL BAR REINFORCEMENT ONLY

NOTE:

1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE # 5 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 2 1/2" MINIMUM CLEARANCE BETWEEN HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #6 LONGITUDINAL BARS.
3. # 6 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
4. FOR THE 38 FOOT WIDTH PAVEMENT USE SINGLE 12 FOOT LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 12 FOOT AND 14 FOOT LANES WITH ONE LONGITUDINAL CONSTRUCTION JOINT AND ONE SAW CUT OR TAPE INSERT LONGITUDINAL JOINT. TRANSVERSE BARS SHALL NOT EXTEND THROUGH LONGITUDINAL CONSTRUCTION JOINTS, BUT SHALL EXTEND FULL LENGTH (25'-6") FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
5. SMOOTH SURFACE TO BE STEEL TROWELED 8" IN FROM EDGE OF PAVEMENT EVERY 500 FT., AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILAR MANNER AT THE BEGINNING OF EACH DAYS POUR. BOTH OUTSIDE EDGES OF DIVIDED HIGHWAY IS TO BE STAMPED. ONE EDGE OF UNDIVIDED HIGHWAY WHERE FEASIBLE (TRAVEL LANE).



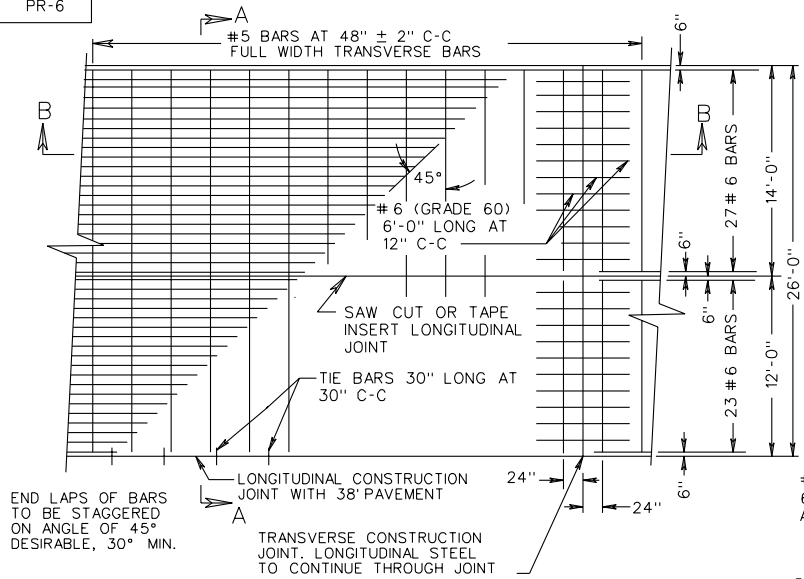
6. DOUBLE LAP REQUIREMENT (40") AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 10' BEYOND THE CONSTRUCTION JOINT.
7. CONCRETE FOR LUG ANCHORS SHALL BE POURED AGAINST COMPACTED SUBGRADE. CONCRETE FOR LUGS AND ANCHOR SLAB MAY BE POURED MONOLITHICALLY OR POURED USING RAISED KEY CONSTRUCTION JOINT METHOD. ADEQUATE CONSOLIDATION OF CONCRETE IN LUGS WILL BE OBTAINED WITHOUT DISPLACING LONGITUDINAL CONTINUOUS STEEL, BY THE USE OF INTERNAL VIBRATION. WHEN LESS THAN FULL WIDTH LUG AND PAVEMENT SLAB IS PLACED, THE # 5 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.
8. LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT. EXTRA # 6 (GRADE 60) BARS 20' LONG SHALL BE SPACED AT 13 1/2" C-C.
9. CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMBS.
10. ANCHOR SLAB TYPE I IS TO BE USED IN FIRM SOILS ONLY. FOR AASHTO CLASSIFICATION SOILS A-1 THROUGH A-4, 3 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 55'). FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 85'). USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE I IS USED TO RESTRICT MOVEMENT AGAINST THE STRUCTURE.
11. ANCHOR SLAB TYPE II MUST BE USED WHEN COHESIONLESS OR SOFT CLAY SOILS ARE ENCOUNTERED. USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE II ACCOMMODATES MOVEMENT OF THE CONTINUOUS PAVEMENT.
12. WELD STEEL END PLATE TO BOTH ENDS OF WF BEAM TO SEAL ENDS. WELD SHEAR CONNECTORS TO WEB AND FLANGE OF WF BEAM.
13. 2 INCH MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.
14. WIDE FLANGE BEAM TO BE TREATED WITH CORROSION INHIBITOR PER SECTION 407 OF THE ROAD AND BRIDGE SPECIFICATIONS.
15. ALL REINFORCED BARS SHALL BE GRADE 60 STEEL.

SPECIFICATION  
REFERENCE

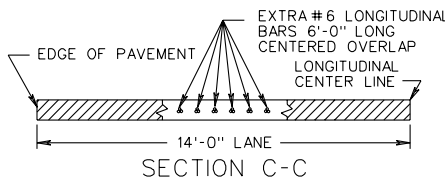
316

9" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
14 FOOT TRAVEL LANE

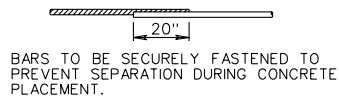
PR-6



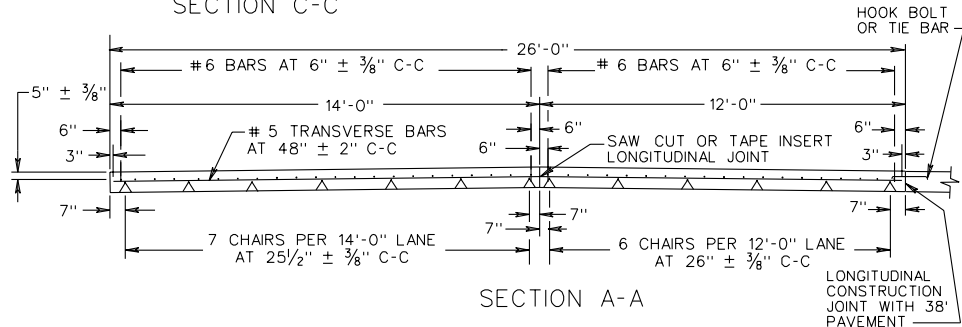
PLAN VIEW  
CONTINUOUSLY REINFORCED CONCRETE PAVEMENT



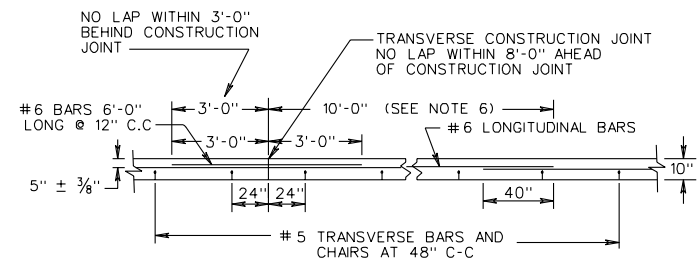
SECTION C-C



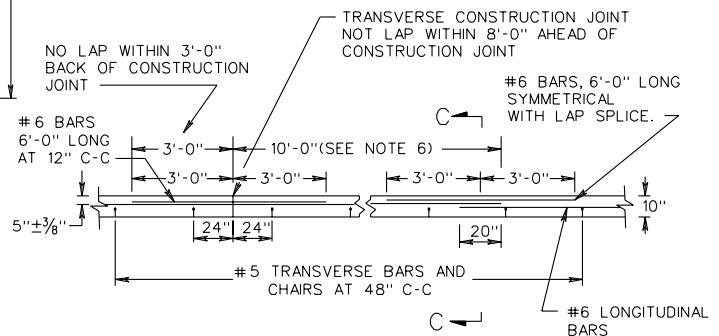
TYPICAL LONGITUDINAL LAP



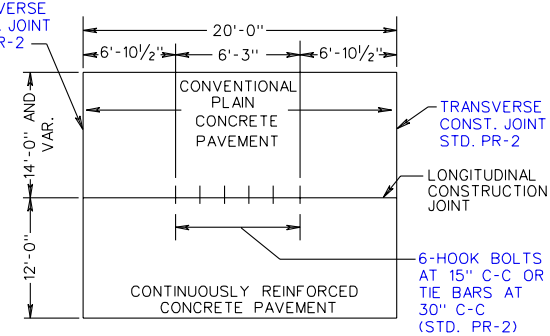
SECTION A-A



SECTION B-B  
DOUBLE LAP METHOD



SECTION B-B  
EXTRA BAR METHOD



PLAN-RAMP & MAIN LINE CONNECTION

SHEET 1 OF 3

SEE SHEET 3 OF 3 FOR NOTES.

10" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
14 FOOT TRAVEL LANE

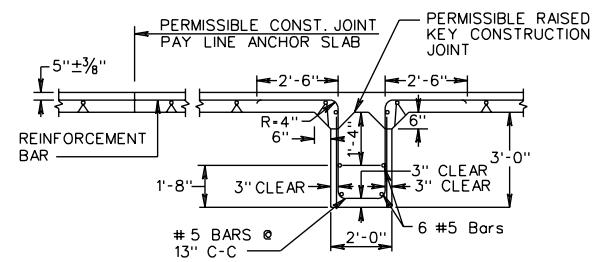
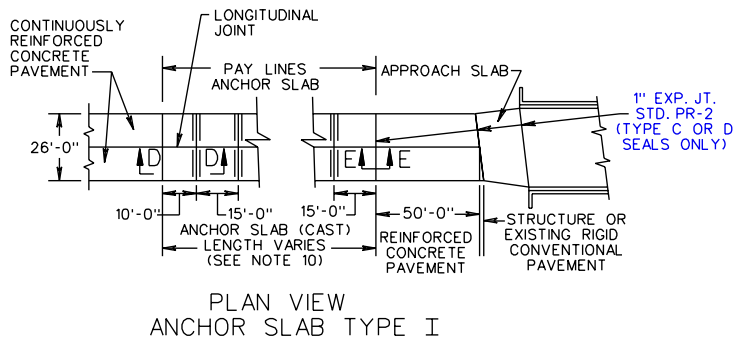
301.16

VIRGINIA DEPARTMENT OF TRANSPORTATION

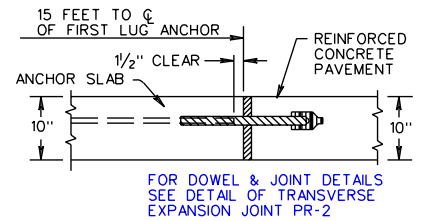
SPECIFICATION REFERENCE

316

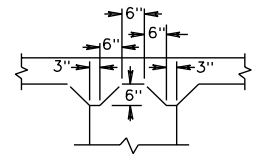




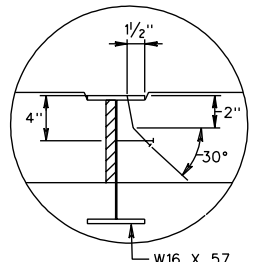
SECTION D-D



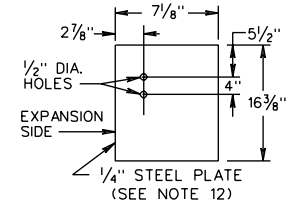
SECTION E-E ANCHOR SLAB TYPE I



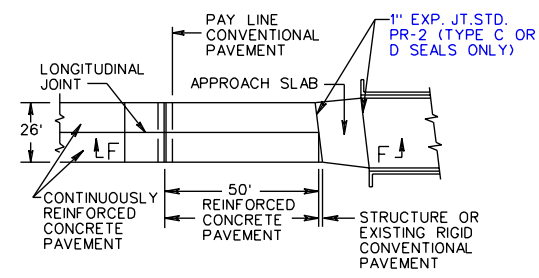
DETAIL-RAISED KEY CONSTRUCTION JOINT



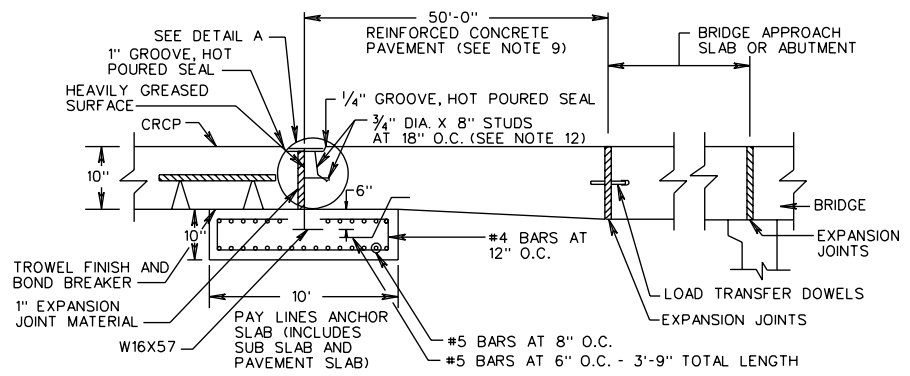
DETAIL A



ANCHOR SLAB TYPE II END PLATE DETAIL



PLAN VIEW ANCHOR SLAB TYPE II (SEE NOTE 11)

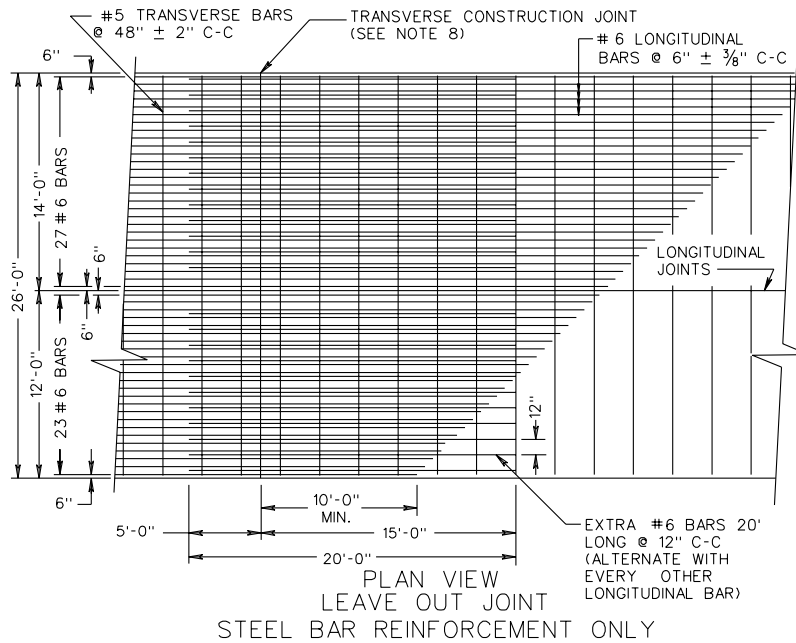


SECTION F-F ANCHOR SLAB TYPE II

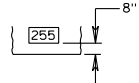
SEE SHEET 3 OF 3 FOR NOTES

SHEET 2 OF 3

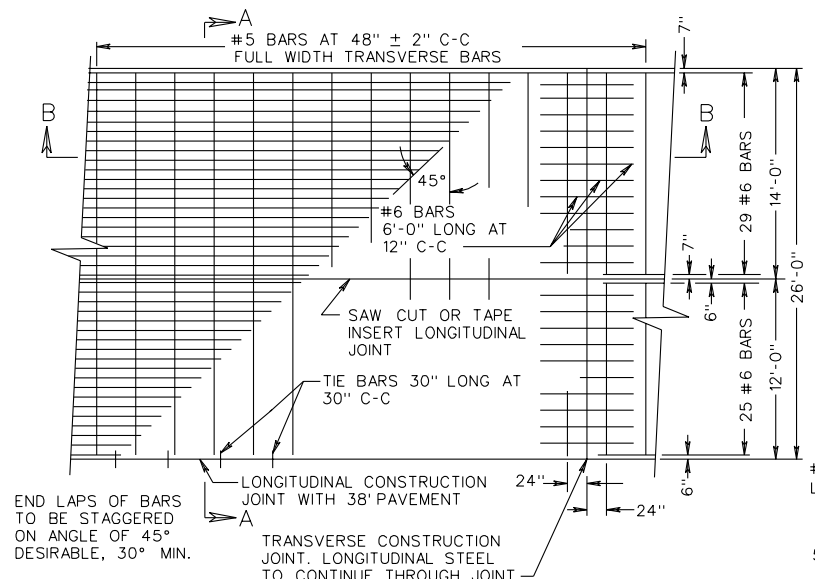
SPECIFICATION REFERENCE	10" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE
316	VIRGINIA DEPARTMENT OF TRANSPORTATION
	301.17



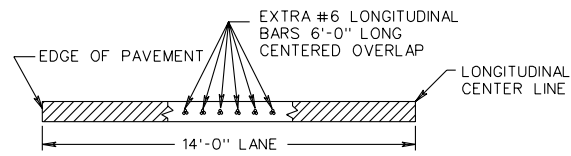
NOTES:

1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE # 5 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 2 1/2" MINIMUM CLEARANCE BETWEEN HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
  2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #6 LONGITUDINAL BARS.
  3. # 6 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
  4. FOR THE 38 FOOT WIDTH PAVEMENT USE SINGLE 12 FOOT LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 12 FOOT AND 14 FOOT LANES WITH ONE LONGITUDINAL CONSTRUCTION JOINT AND ONE SAW CUT OR TAPE INSERT LONGITUDINAL JOINT. TRANSVERSE BARS SHALL NOT EXTEND THROUGH LONGITUDINAL CONSTRUCTION JOINTS, BUT SHALL EXTEND FULL LENGTH (25'-6") FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
  5. SMOOTH SURFACE TO BE STEEL TROWELED 8" IN FROM EDGE OF PAVEMENT EVERY 500 FT., AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILAR MANNER AT THE BEGINNING OF EACH DAYS POUR. BOTH OUTSIDE EDGES OF DIVIDED HIGHWAY IS TO BE STAMPED. ONE EDGE OF UNDIVIDED HIGHWAY WHERE FEASIBLE (TRAVEL LANE).
- 
6. DOUBLE LAP REQUIREMENT (40") AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 10' BEYOND THE CONSTRUCTION JOINT.
  7. CONCRETE FOR LUG ANCHORS SHALL BE POURED AGAINST COMPACTED SUBGRADE. CONCRETE FOR LUGS AND ANCHOR SLAB MAY BE POURED MONOLITHICALLY OR POURED USING RAISED KEY CONSTRUCTION JOINT METHOD. ADEQUATE CONSOLIDATION OF CONCRETE IN LUGS WILL BE OBTAINED WITHOUT DISPLACING LONGITUDINAL CONTINUOUS STEEL. BY THE USE OF INTERNAL VIBRATION. WHEN LESS THAN FULL WIDTH LUG AND PAVEMENT SLAB IS PLACED, THE #5 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.
  8. LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT. EXTRA #6 (GRADE 60) BARS 20' LONG SHALL BE SPACED AT 12" C-C.
  9. CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMBS.
  10. ANCHOR SLAB TYPE I IS TO BE USED IN FIRM SOILS ONLY. FOR AASHTO CLASSIFICATION SOILS A-1 THROUGH A-4, 3 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 55'). FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 85'). USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE I IS USED TO RESTRICT MOVEMENT AGAINST THE STRUCTURE.
  11. ANCHOR SLAB TYPE TYPE II MUST BE USED WHEN COHESIONLESS OR SOFT CLAY SOILS ARE ENCOUNTERED. USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE II ACCOMMODATES MOVEMENT OF THE CONTINUOUS PAVEMENT.
  12. WELD STEEL END PLATE TO BOTH ENDS OF WF BEAM TO SEAL ENDS. WELD SHEAR CONNECTORS TO WEB AND FLANGE OF WF BEAM.
  13. 2 INCH MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.
  14. WIDE FLANGE BEAM TO BE TREATED WITH CORROSION INHIBITOR PER SECTION 407 OF THE ROAD AND BRIDGE SPECIFICATIONS.
  15. ALL REINFORCING BARS SHALL BE GRADE 60 STEEL.

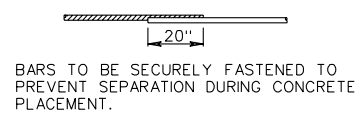
10" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
14 FOOT TRAVEL LANE



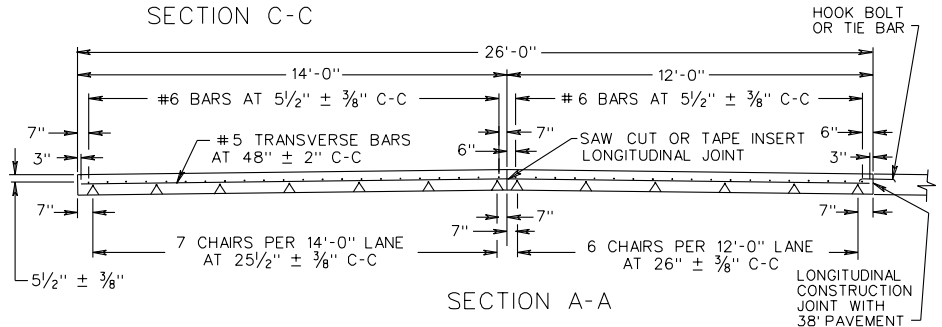
PLAN VIEW  
CONTINUOUSLY REINFORCED CONCRETE  
PAVEMENT



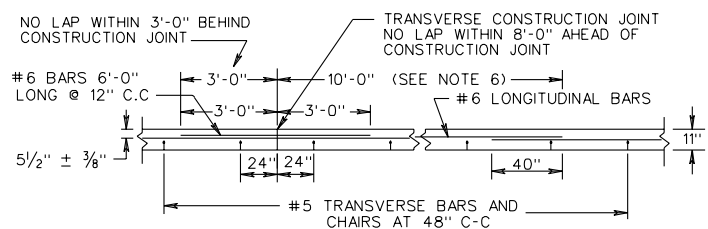
SECTION C-C



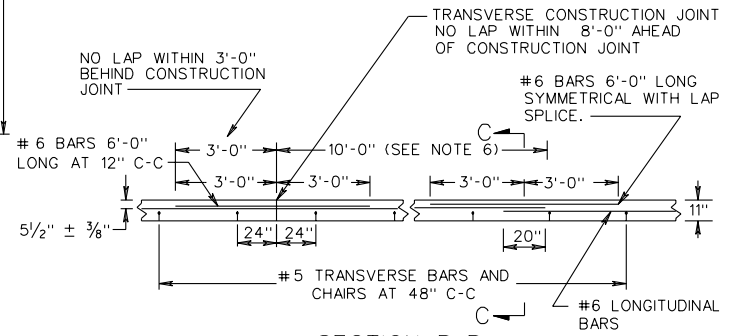
TYPICAL  
LONGITUDINAL LAP



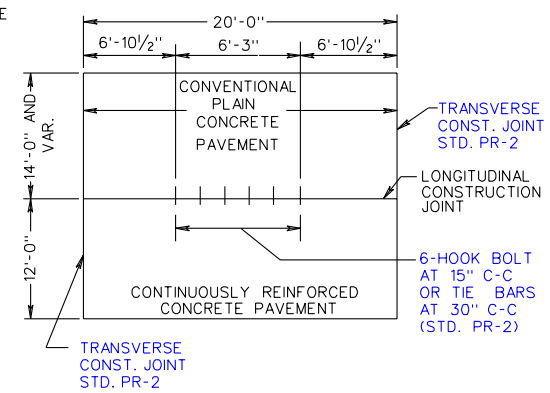
SECTION A-A



SECTION B-B  
DOUBLE LAP METHOD



SECTION B-B  
EXTRA BAR METHOD

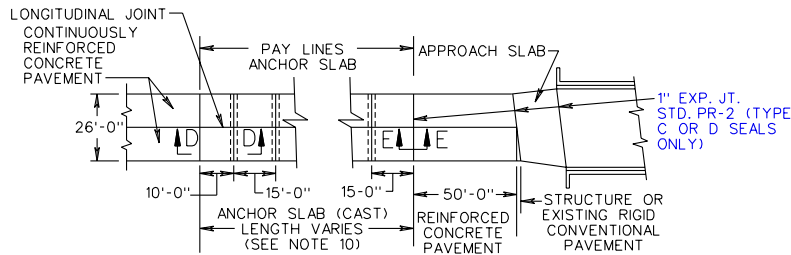


PLAN-RAMP & MAIN LINE  
CONNECTION

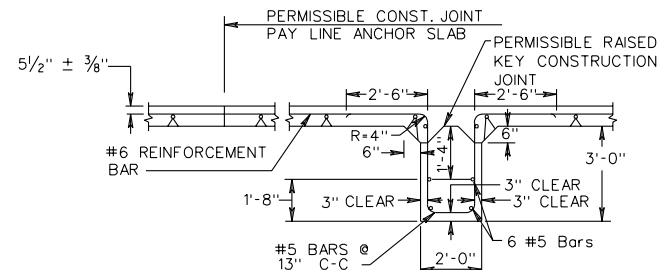
SEE SHEET 3 OF 3 FOR NOTES

SHEET 1 OF 3

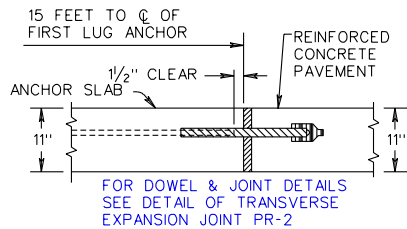
SPECIFICATION REFERENCE	11" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14 FOOT TRAVEL LANE
316	VIRGINIA DEPARTMENT OF TRANSPORTATION
	301.19



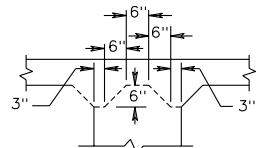
PLAN VIEW  
ANCHOR SLAB TYPE I



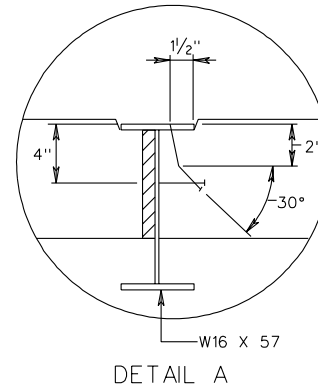
SECTION D-D



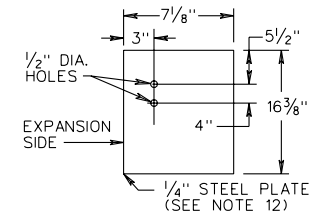
SECTION E-E  
ANCHOR SLAB TYPE I



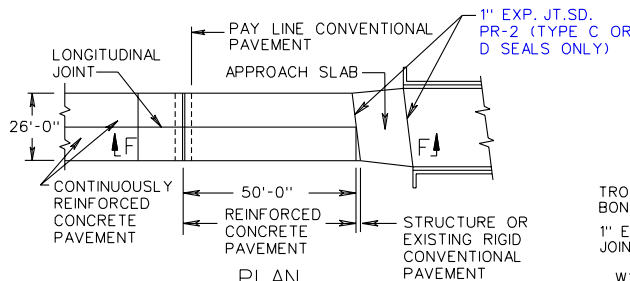
DETAIL-RAISED KEY  
CONSTRUCTION JOINT



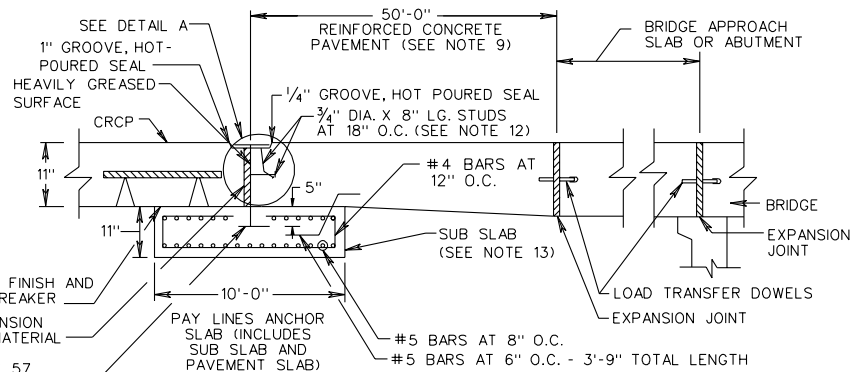
DETAIL A



ANCHOR SLAB TYPE II  
END PLATE DETAIL

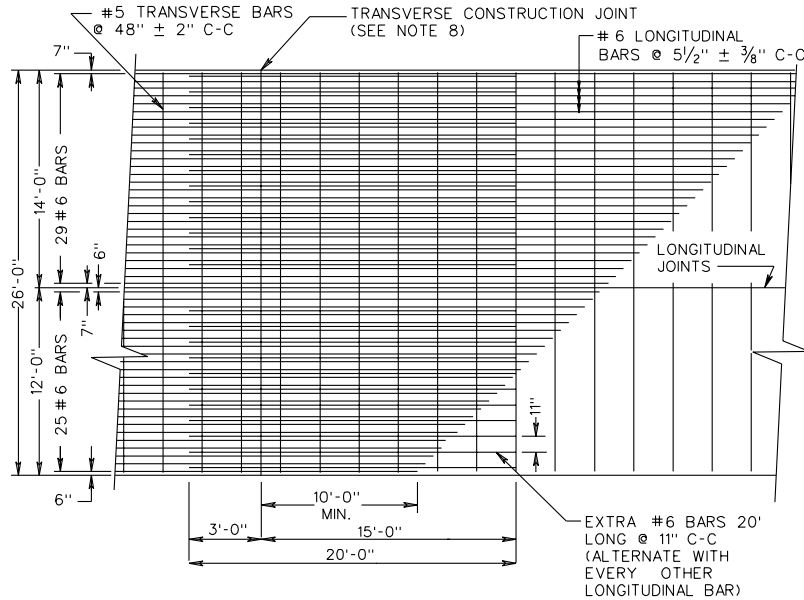


PLAN  
ANCHOR SLAB TYPE II  
(SEE NOTE 11)



SECTION F-F  
ANCHOR SLAB TYPE II

11" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
14 FOOT TRAVEL LANE

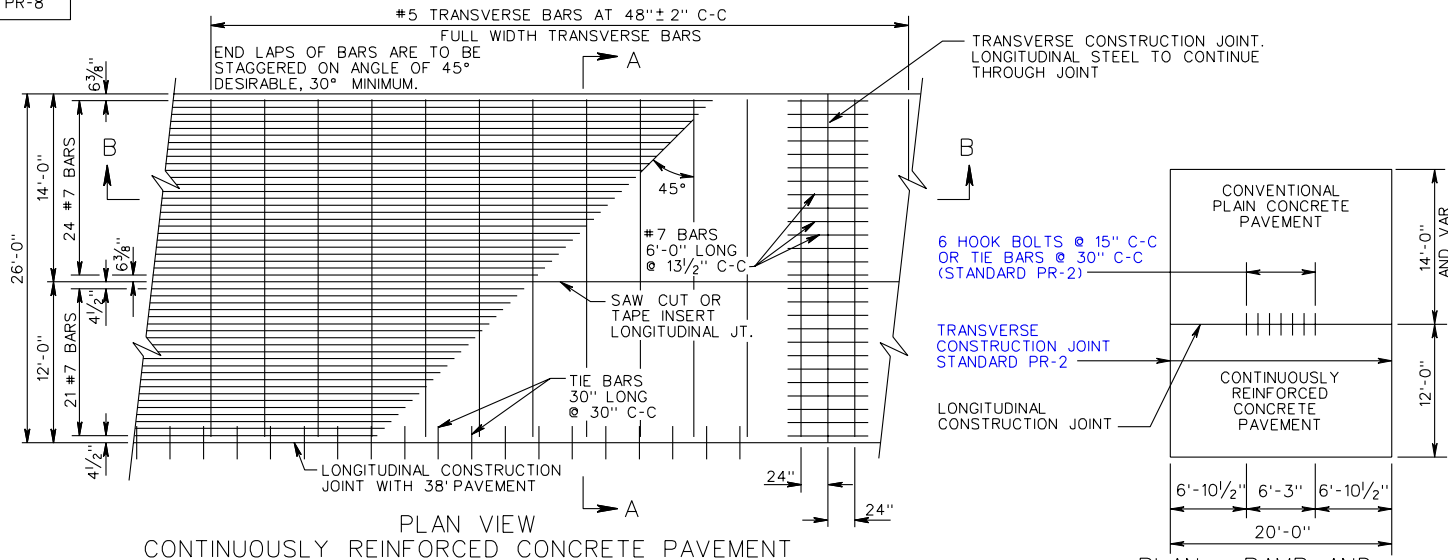


PLAN VIEW  
LEAVE OUT JOINT  
STEEL BAR REINFORCEMENT ONLY

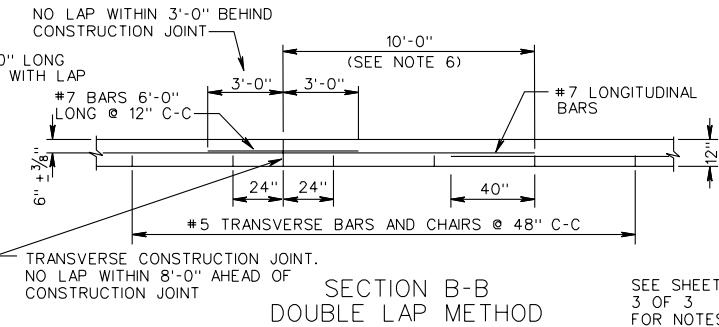
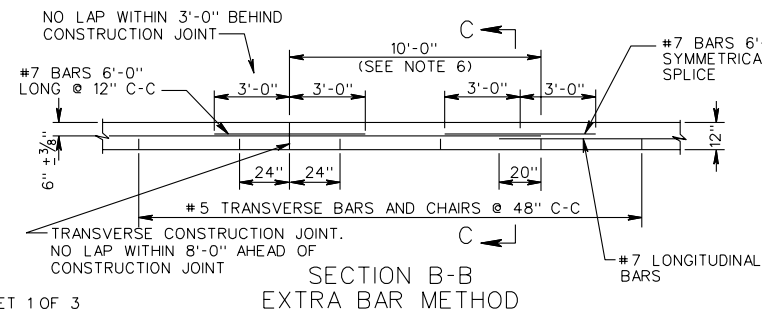
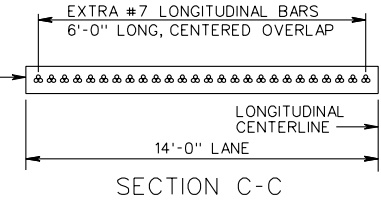
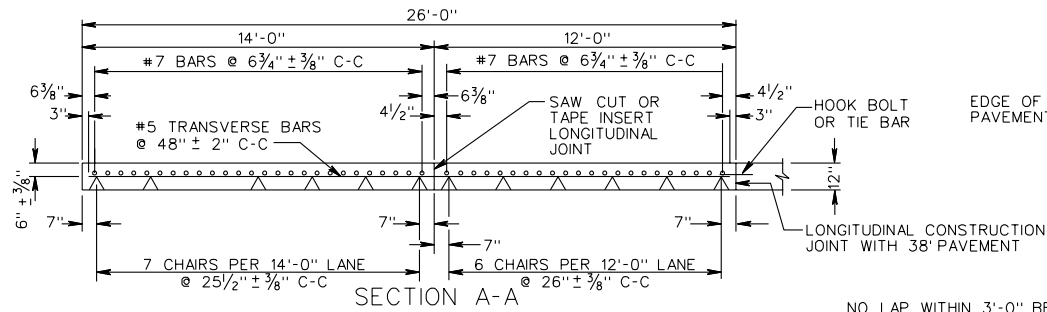
NOTES:

1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #5 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 2 1/2" MINIMUM CLEARANCE BETWEEN HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #6 LONGITUDINAL BARS.
3. #6 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
4. FOR THE 38 FOOT WIDTH PAVEMENT USE SINGLE 12 FOOT LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 12 FOOT AND 14 FOOT LANES WITH ONE LONGITUDINAL CONSTRUCTION JOINT AND ONE SAW CUT OR TAPE INSERT LONGITUDINAL JOINT. TRANSVERSE BARS SHALL NOT EXTEND THROUGH LONGITUDINAL CONSTRUCTION JOINTS, BUT SHALL EXTEND FULL LENGTH (25'-6") FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
5. SMOOTH SURFACE TO BE STEEL TROWELED 8" IN FROM EDGE OF PAVEMENT EVERY 500 FT., AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILAR MANNER AT THE BEGINNING OF EACH DAYS POUR. BOTH OUTSIDE EDGES OF DIVIDED HIGHWAY ARE TO BE STAMPED. ONE EDGE OF UNDIVIDED HIGHWAY WHERE FEASIBLE (TRAVEL LANE).
6. DOUBLE LAP REQUIREMENT (40") AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 10' BEYOND THE CONSTRUCTION JOINT.
7. CONCRETE FOR LUG ANCHORS SHALL BE POURED AGAINST COMPACTED SUBGRADE. CONCRETE FOR LUGS AND ANCHOR SLAB MAY BE POURED MONOLITHICALLY OR POURED USING RAISED KEY CONSTRUCTION JOINT METHOD. ADEQUATE CONSOLIDATION OF CONCRETE IN LUGS WILL BE OBTAINED WITHOUT DISPLACING LONGITUDINAL CONTINUOUS STEEL, BY THE USE OF INTERNAL VIBRATION. WHEN LESS THAN FULL WIDTH LUG AND PAVEMENT SLAB IS PLACED, THE #5 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.
8. LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT. EXTRA #6 BARS 20'-0" LONG SHALL BE SPACED AT 11" C-C.
9. CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMBS.
10. ANCHOR SLAB TYPE I IS TO BE USED IN FIRM SOILS ONLY. FOR AASHTO CLASSIFICATION SOILS A-1 THROUGH A-4, 3 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 55'). FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 85'). USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE I IS USED TO RESTRICT MOVEMENT AGAINST THE STRUCTURE.
11. ANCHOR SLAB TYPE TYPE II MUST BE USED WHEN COHESIONLESS OR SOFT CLAY SOILS ARE ENCOUNTERED. USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE II ACCOMMODATES MOVEMENT OF THE CONTINUOUS PAVEMENT.
12. WELD STEEL END PLATE TO BOTH ENDS OF WF BEAM TO SEAL ENDS. WELD SHEAR CONNECTORS TO WEB AND FLANGE OF WF BEAM.
13. 2" MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.
14. WIDE FLANGE BEAM TO BE TREATED WITH CORROSION INHIBITOR PER SECTION 407 OF THE ROAD AND BRIDGE SPECIFICATIONS.
15. ALL REINFORCING BARS SHALL BE GRADE 60 STEEL.

SPECIFICATION REFERENCE  316	<h2 style="margin: 0;">11" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT</h2> <h3 style="margin: 0;">14 FOOT TRAVEL LANE</h3> <p style="margin: 0; font-size: small;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	301.21
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PLAN - RAMP AND MAIN LINE CONNECTION



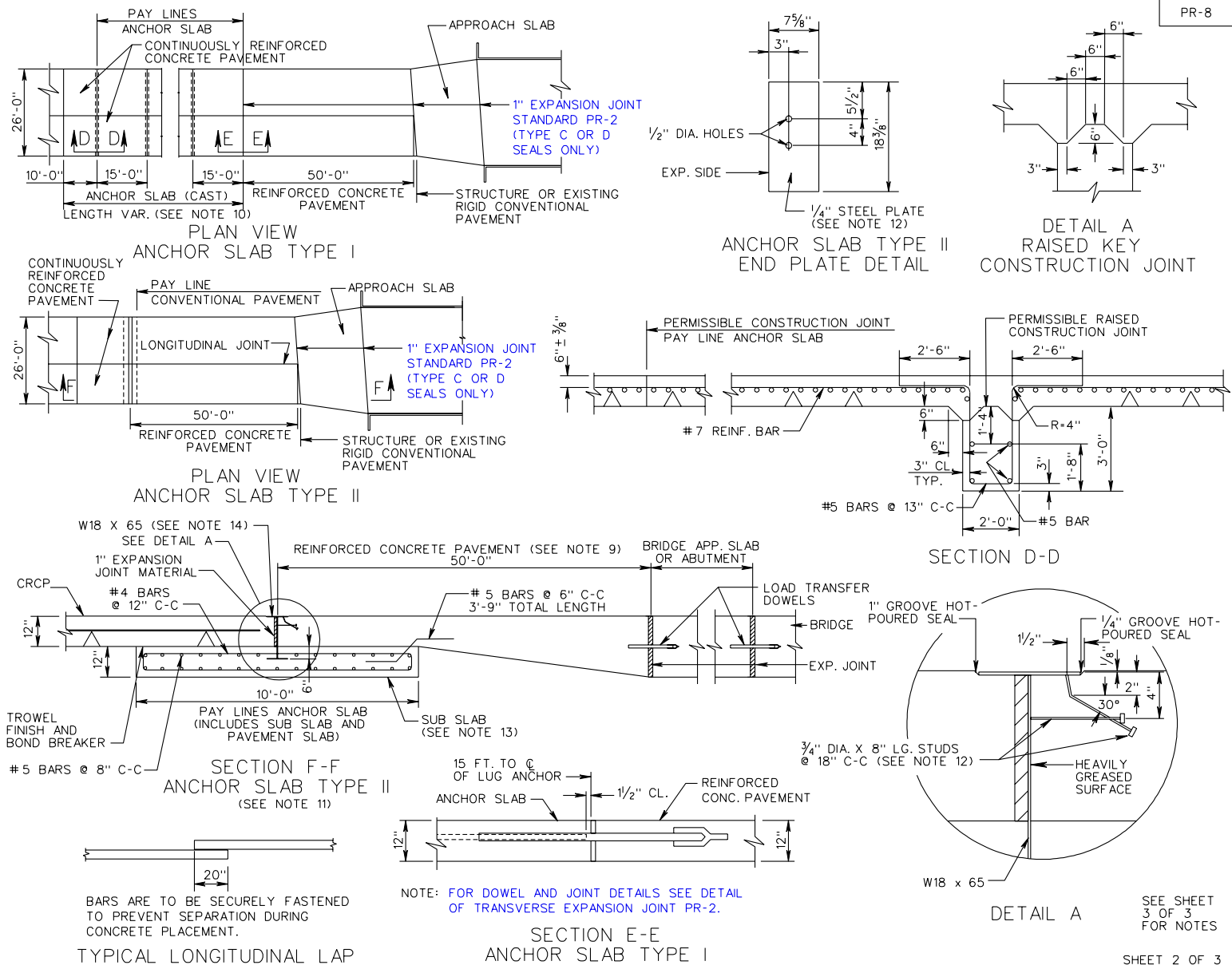
SHEET 1 OF 3

SEE SHEET 3 OF 3 FOR NOTES

12" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT-14' TRAVEL LANE

VIRGINIA DEPARTMENT OF TRANSPORTATION

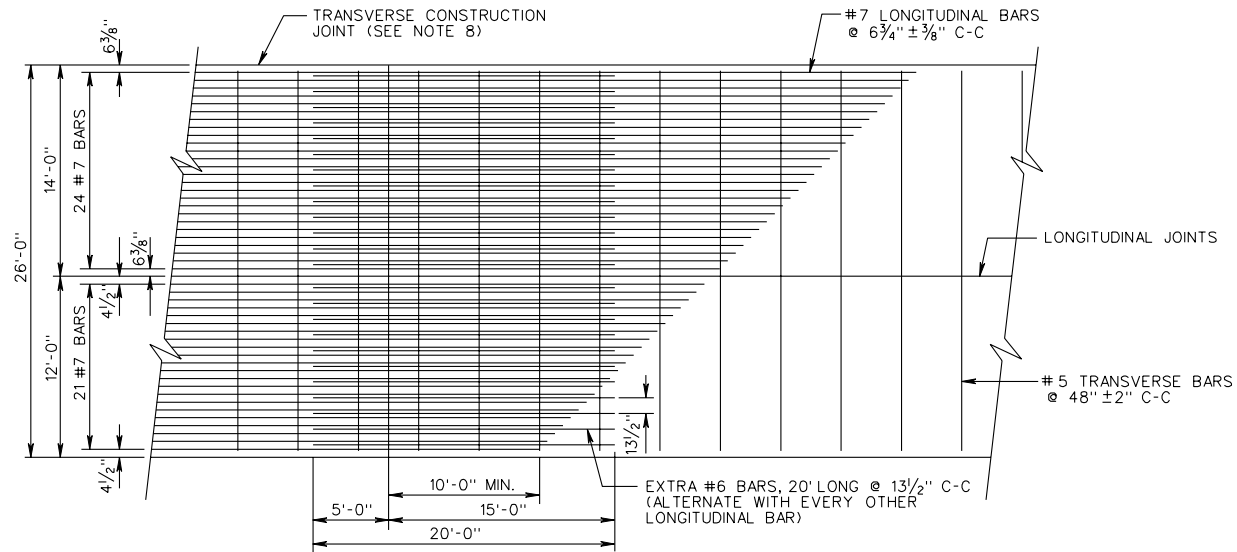
SPECIFICATION REFERENCE
316



BARS ARE TO BE SECURELY FASTENED TO PREVENT SEPARATION DURING CONCRETE PLACEMENT.

SEE SHEET 3 OF 3 FOR NOTES

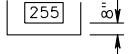
SPECIFICATION REFERENCE	<p>12" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 14' TRAVEL LANE</p> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	
316		301.23



PLAN VIEW  
LEAVE OUT JOINT STEEL BAR REINFORCEMENT ONLY

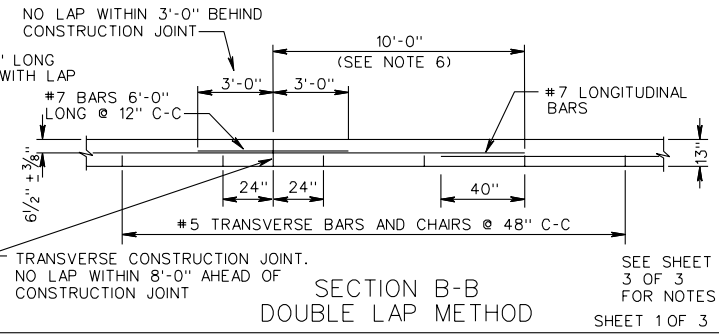
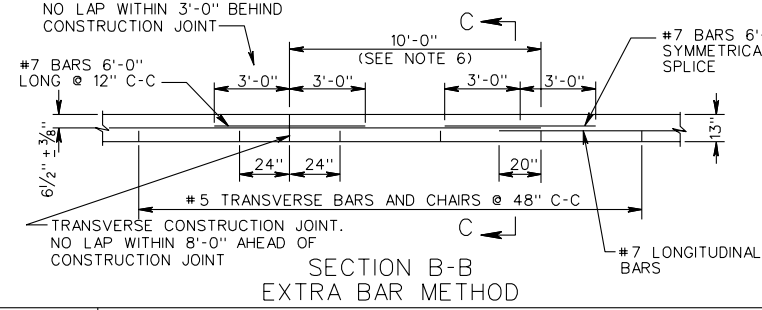
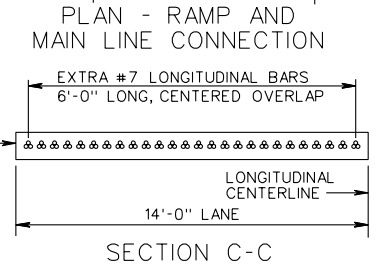
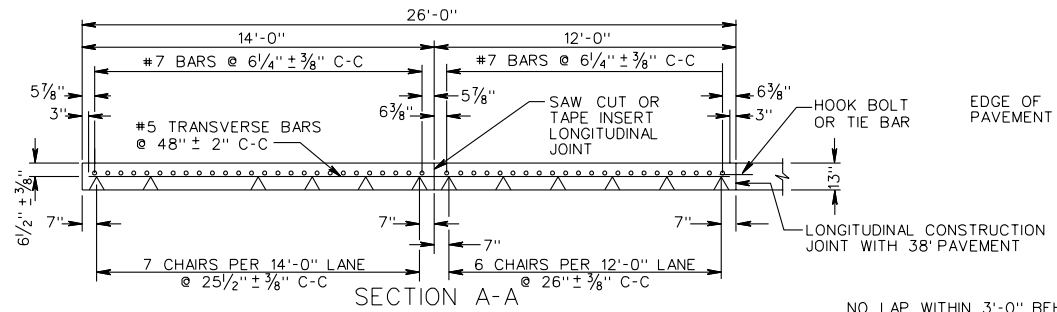
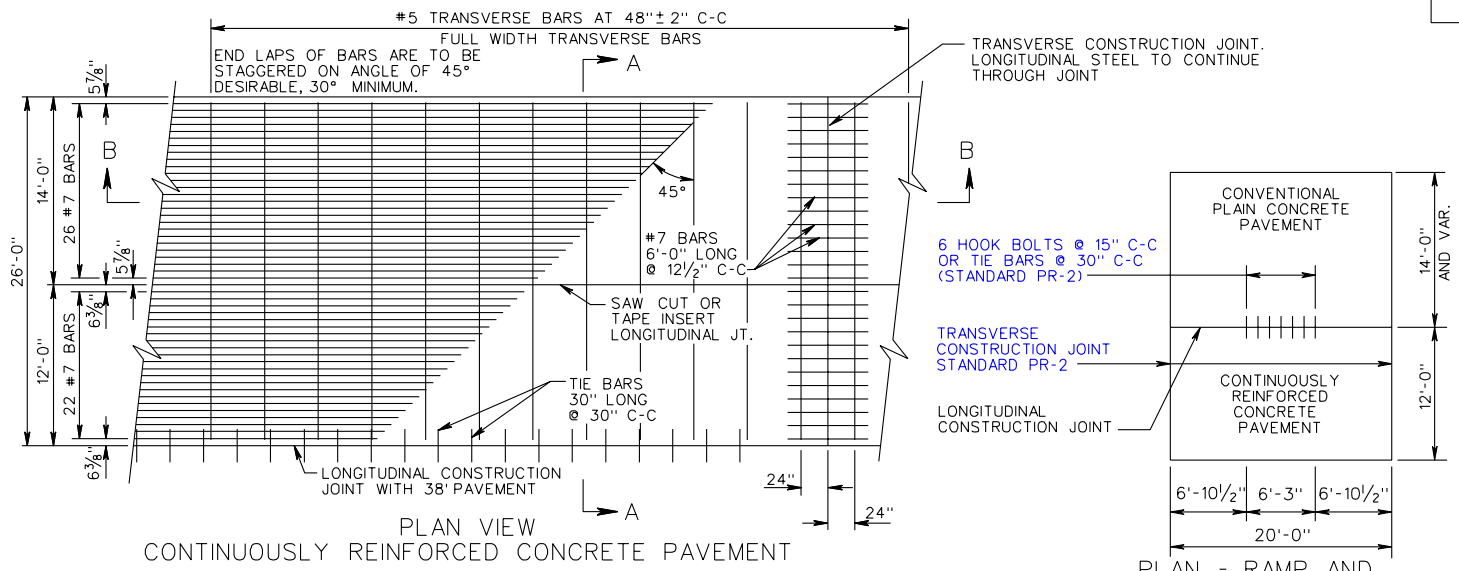
NOTES:

1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS #5 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 2 1/2" MIN. CLEARANCE BETWEEN HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #7 LONGITUDINAL BARS.
3. #7 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
4. FOR THE 38 FOOT WIDTH PAVEMENT USE SINGLE 12 FOOT LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 12 FOOT AND 14 FOOT LANES WITH ONE LONGITUDINAL CONSTRUCTION JOINT AND ONE SAW CUT OR TAPE INSERT LONGITUDINAL JOINT. TRANSVERSE BARS SHALL NOT EXTEND THROUGH LONGITUDINAL CONSTRUCTION JOINTS, BUT SHALL EXTEND FULL LENGTH (25'-6") FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
5. SMOOTH SURFACE TO BE STEEL TROWELED 8" FROM EDGE OF PAVEMENT EVERY 500 FT. AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILAR MANNER AT THE BEGINNING OF EACH DAYS POUR. BOTH OUTSIDE EDGES OF DIVIDED HIGHWAY ARE TO BE STAMPED. ONE EDGE OF UNDIVIDED HIGHWAY WHERE FEASIBLE (TRAVEL LANE).
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8. LONGITUDINAL STEEL IS TO CONTINUE THROUGH JOINT. EXTRA #7 BARS 20' LONG SHALL BE SPACED AT 13 1/2" C-C.
9. CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMBS.
10. ANCHOR SLAB TYPE I IS TO BE USED IN FIRM SOILS ONLY. FOR AASHTO CLASSIFICATION SOILS A-1 THROUGH A-4, 3 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 55'). FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 85'). USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE I IS TO BE USED TO RESTRICT MOVEMENT AGAINST THE STRUCTURE.
11. ANCHOR SLAB TYPE II MUST BE USED WHEN COHESIONLESS OR SOFT CLAY SOILS ARE ENCOUNTERED. USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE II ACCOMMODATES MOVEMENT ON THE CONTINUOUS PAVEMENT.
12. WELD STEEL END PLATE TO BOTH ENDS OF WF BEAM TO SEAL ENDS. WELD SHEAR CONNECTORS TO WEB AND FLANGE OF WF BEAM.
13. 2" MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.
14. WIDE FLANGE BEAM IS TO BE TREATED WITH CORROSION INHIBITOR PER SECTION 407 OF THE ROAD AND BRIDGE SPECIFICATIONS.
15. ALL REINFORCED BARS SHALL BE GRADE 60 STEEL.



12" CONTINUOUSLY REINFORCED CONCRETE PAVEMENT  
14' TRAVEL LANE

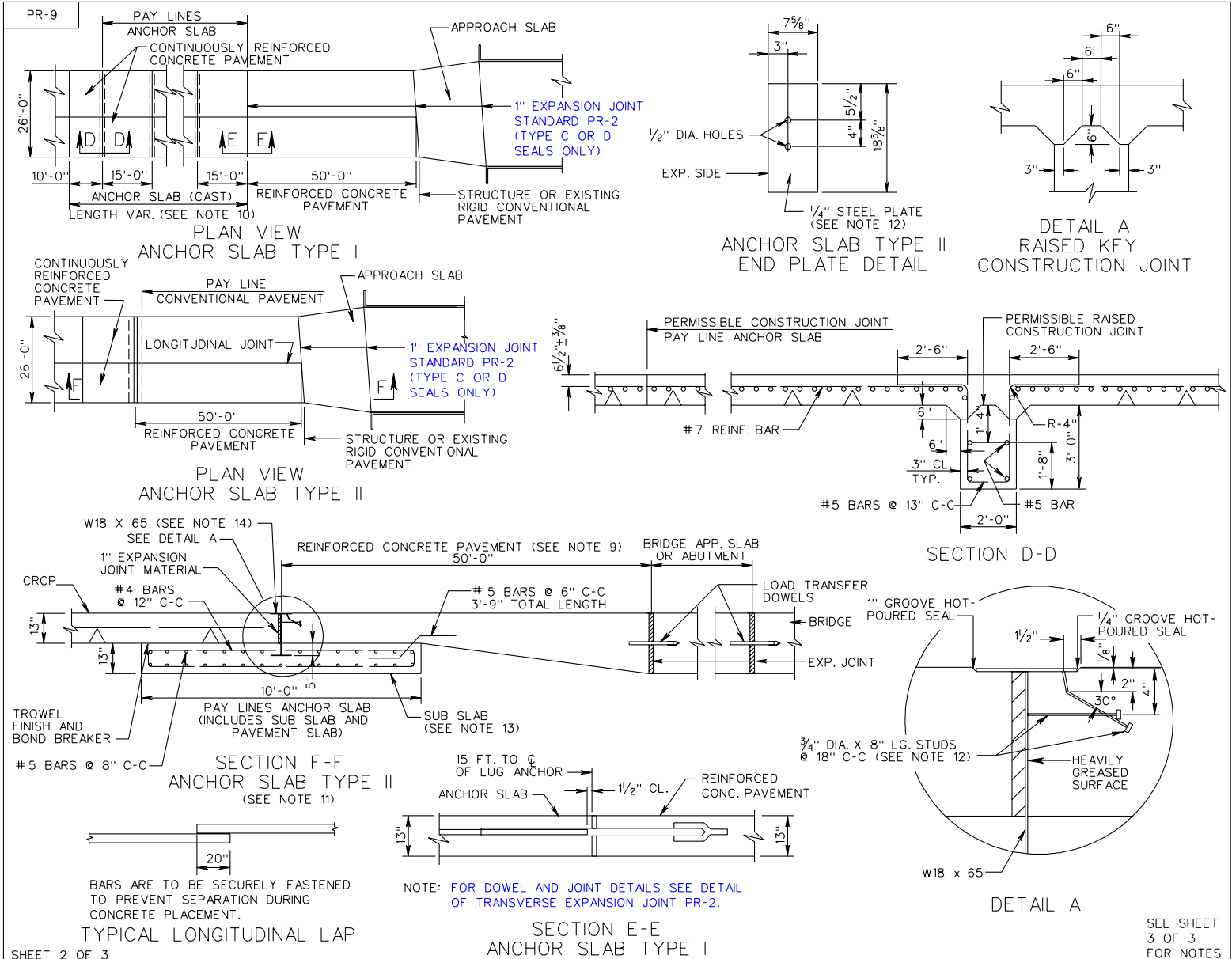


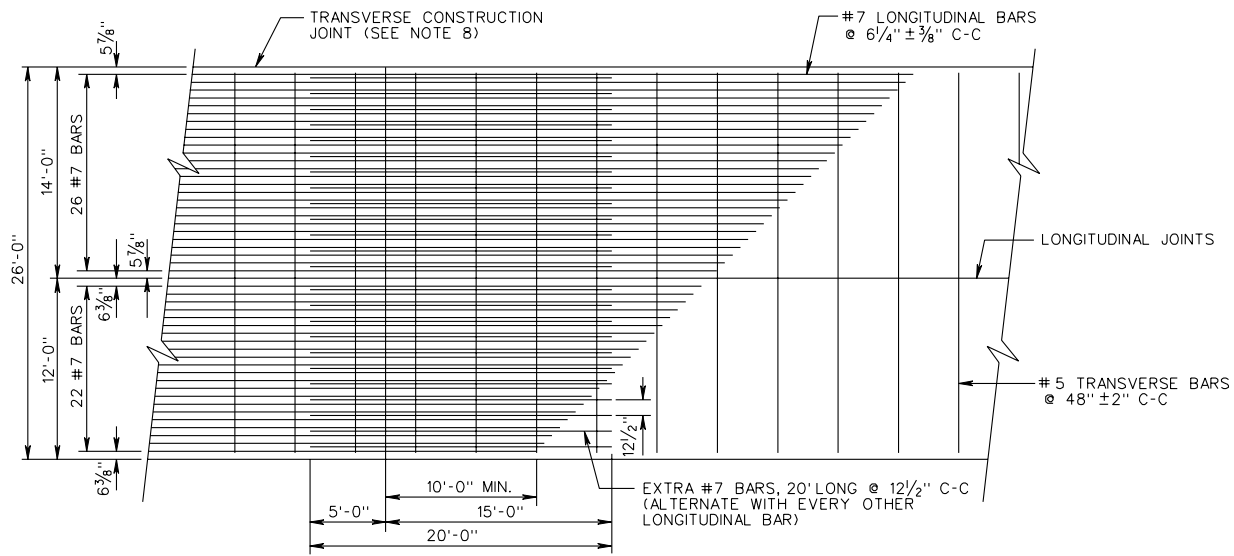


SEE SHEET 3 OF 3 FOR NOTES  
 SHEET 1 OF 3

SPECIFICATION REFERENCE
316

13" THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT-14' TRAVEL LANE  
 VIRGINIA DEPARTMENT OF TRANSPORTATION

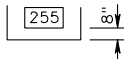




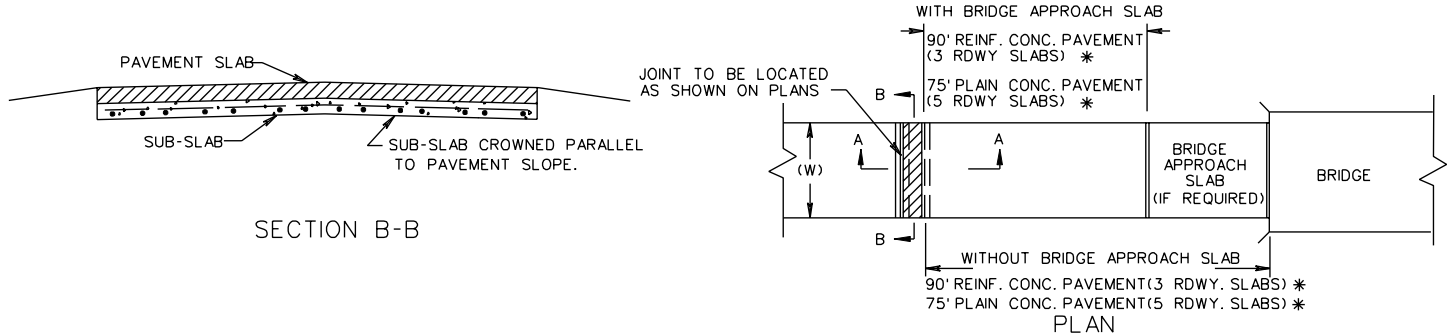
PLAN VIEW  
LEAVE OUT JOINT STEEL BAR REINFORCEMENT ONLY

NOTES:

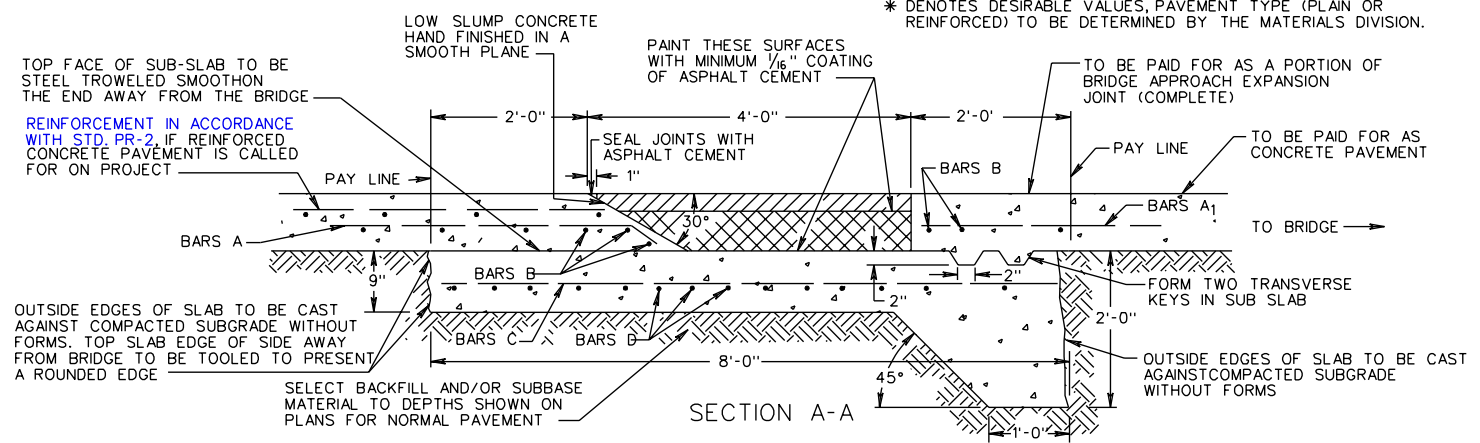
1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS #5 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 2 1/2" MIN. CLEARANCE BETWEEN HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #7 LONGITUDINAL BARS.
3. #7 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
4. FOR THE 38 FOOT WIDTH PAVEMENT USE SINGLE 12 FOOT LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 12 FOOT AND 14 FOOT LANES WITH ONE LONGITUDINAL CONSTRUCTION JOINT AND ONE SAW CUT OR TAPE INSERT LONGITUDINAL JOINT. TRANSVERSE BARS SHALL NOT EXTEND THROUGH LONGITUDINAL CONSTRUCTION JOINTS, BUT SHALL EXTEND FULL LENGTH (25'-6") FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
5. SMOOTH SURFACE TO BE STEEL TROWELED 8" FROM EDGE OF PAVEMENT EVERY 500 FT. AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILAR MANNER AT THE BEGINNING OF EACH DAYS POUR. BOTH OUTSIDE EDGES OF DIVIDED HIGHWAY ARE TO BE STAMPED. ONE EDGE OF UNDIVIDED HIGHWAY WHERE FEASIBLE (TRAVEL LANE).
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8. LONGITUDINAL STEEL IS TO CONTINUE THROUGH JOINT. EXTRA #7 BARS 20' LONG SHALL BE SPACED AT 12 1/2" C-C.
9. CONCRETE SHOULD BE ADEQUATELY VIBRATED UNDER BEAM FLANGE TO ELIMINATE HONEYCOMBS.
10. ANCHOR SLAB TYPE I IS TO BE USED IN FIRM SOILS ONLY. FOR AASHTO CLASSIFICATION SOILS A-1 THROUGH A-4, 3 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 55'). FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 85'). USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE I IS TO BE USED TO RESTRICT MOVEMENT AGAINST THE STRUCTURE.
11. ANCHOR SLAB TYPE II MUST BE USED WHEN COHESIONLESS OR SOFT CLAY SOILS ARE ENCOUNTERED. USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TYPE II ACCOMMODATES MOVEMENT ON THE CONTINUOUS PAVEMENT.
12. WELD STEEL END PLATE TO BOTH ENDS OF WF BEAM TO SEAL ENDS. WELD SHEAR CONNECTORS TO WEB AND FLANGE OF WF BEAM.
13. 2" MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.
14. WIDE FLANGE BEAM IS TO BE TREATED WITH CORROSION INHIBITOR PER SECTION 407 OF THE ROAD AND BRIDGE SPECIFICATIONS.
15. ALL REINFORCED BARS SHALL BE GRADE 60 STEEL.



SPECIFICATION REFERENCE  316	<h2 style="margin: 0;">13'' CONTINUOUSLY REINFORCED CONCRETE PAVEMENT</h2> <h3 style="margin: 0;">14' TRAVEL LANE</h3> <p style="margin: 0;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	301.27
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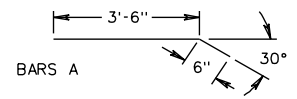
\* DENOTES DESIRABLE VALUES, PAVEMENT TYPE (PLAIN OR REINFORCED) TO BE DETERMINED BY THE MATERIALS DIVISION.



	APPROXIMATE QUANTITIES PER YARD OF TRANSVERSE MEASURE	
	MAIN LINE PAVEMENT DEPTH	
	8"	9"
CUBIC YARDS CLASS A3 CONCRETE	0.30	0.30
REINFORCING STEEL LBS.	33.44	33.44
ASPHALT CONCRETE BM-25.0 TONS	0.16	0.18
TONS ASPHALT CONCRETE CONN. SM-9.5A OR D	0.06	0.06
SQ. YARDS CONCRETE PAVEMENT **	0.51	0.52

\*\* BEVELED PORTION OF PAVEMENT SLAB HAS BEEN CONVERTED TO EQUIVALENT DESIGN DEPTH OF MAIN LINE PAVEMENT.

SCHEDULE OF REINFORCING STEEL					
MARK	SIZE	SPACING C-C	LENGTH	NO. REQ'D.	WEIGHT/FT. TRANSVERSE MEASURE LBS.
A	5	12"	4'-0"	(W)	4.172
A <sub>1</sub>	5	12"	3'-0"	(W)	3.129
B	5	6"	W-4"	5	5.215
C	4	6"	7'-8"	(W)(2)	10.240
D	4	6"	W-4"	16	10.688

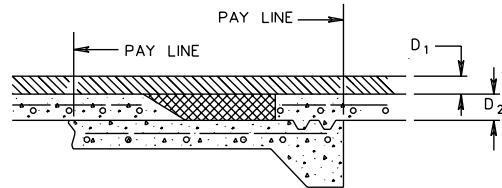


ASPHALT CONCRETE BASE COURSE TYPE BM-25.0  
6" WITH 8" PAVEMENT  
7" WITH 9" PAVEMENT  
2" ASPHALT CONCRETE TYPE SM-9.5A OR D

NOTES:  
CONCRETE IN SUBSLAB TO BE CLASS A3.  
BARS A, A<sub>1</sub>, & B TO BE PLACED AS SHOWN WHETHER PLAIN OR REINFORCED CONCRETE PAVEMENT IS USED.  
PORTIONS OF BARS A AND A<sub>1</sub>, WHICH ARE OUTSIDE OF THE INDICATED PAY LINES ARE INCLUDED IN PRICE BID FOR COMPLETE JOINT.

SPECIFICATION REFERENCE	<h2 style="margin: 0;">BRIDGE APPROACH EXPANSION JOINT</h2> <h3 style="margin: 0;">(FOR WIDENING OR MAINTENANCE OF EXISTING XJ-1 ONLY)</h3> <p style="margin: 0;">VIRGINIA DEPARTMENT OF TRANSPORTATION</p>	302.01
316		

XJ-1



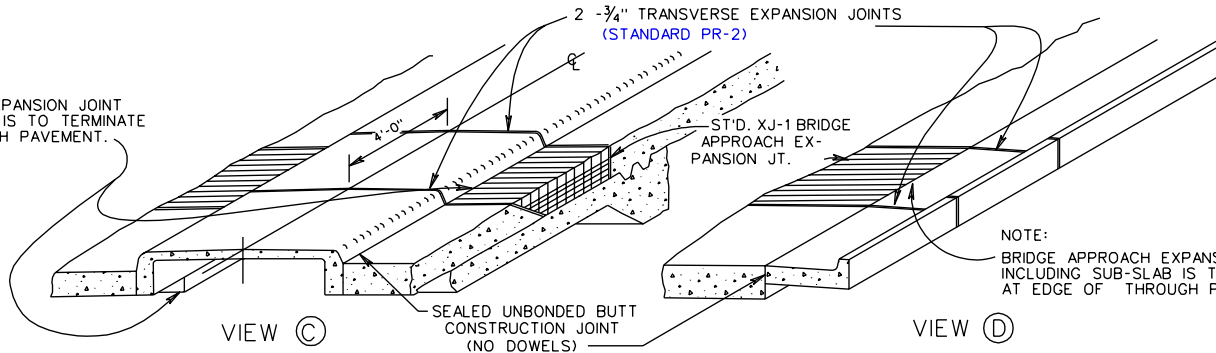
D<sub>1</sub> = DEPTH OF ASPHALT TOP USED ON APPROACHES  
 D<sub>2</sub> = DEPTH OF CONCRETE BASE USED ON APPROACHES

VIEW (A)

USED WITH CONCRETE BASE WITH ASPHALT CONCRETE SURFACE

NOTE:

BRIDGE APPROACH EXPANSION JOINT INCLUDING SUB-SLAB IS TO TERMINATE AT EDGE OF THROUGH PAVEMENT.



VIEW (C)

USED ADJACENT TO RAISED MEDIAN

VIEW (D)

USED ADJACENT TO CURB OR COMBINATION CURB AND GUTTER

NOTE:

BRIDGE APPROACH EXPANSION JOINT INCLUDING SUB-SLAB IS TO TERMINATE AT EDGE OF THROUGH PAVEMENT

NOTES:

ALL CONSTRUCTION FEATURES TO BE IN ACCORDANCE WITH SHEET 1 OF 2.  
 IF CONCRETE PAVEMENT IS USED ADJACENT TO CONCRETE PAVEMENT WITH ASPHALT CONCRETE SURFACE, THE JOINT IS TO CONTINUE ACROSS ENTIRE WIDTH IN ACCORDANCE WITH SHEET 1 OF 2 AND VIEW A.  
 IF CONCRETE PAVEMENT IS USED ADJACENT TO FLEXIBLE PAVEMENT THE JOINT IS TO EXTEND THROUGH RIGID PAVEMENT ONLY.

SHEET 2 OF 2

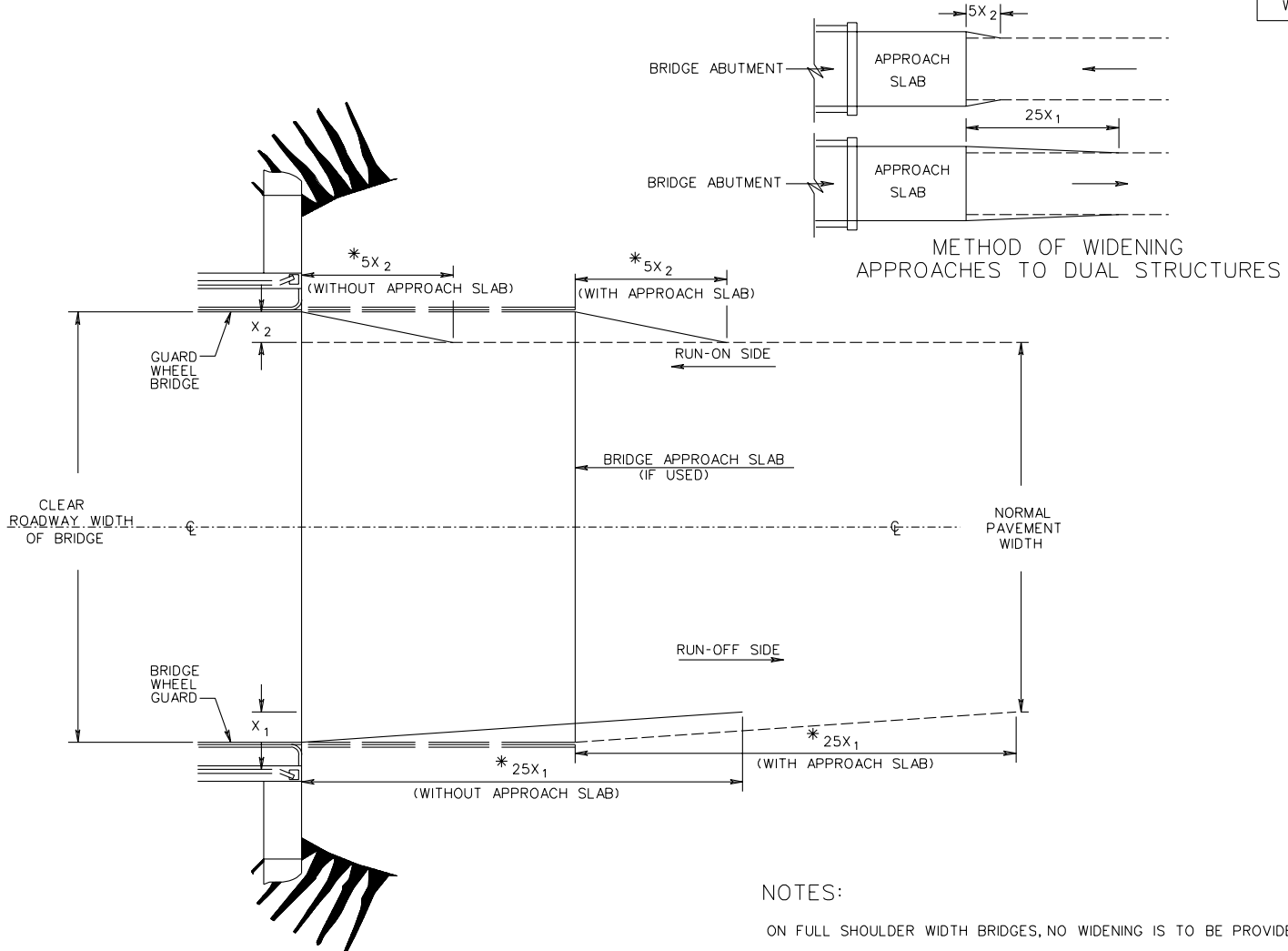
BRIDGE APPROACH EXPANSION JOINT  
 (INSTALLATION CRITERIA)

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION  
 REFERENCE

316

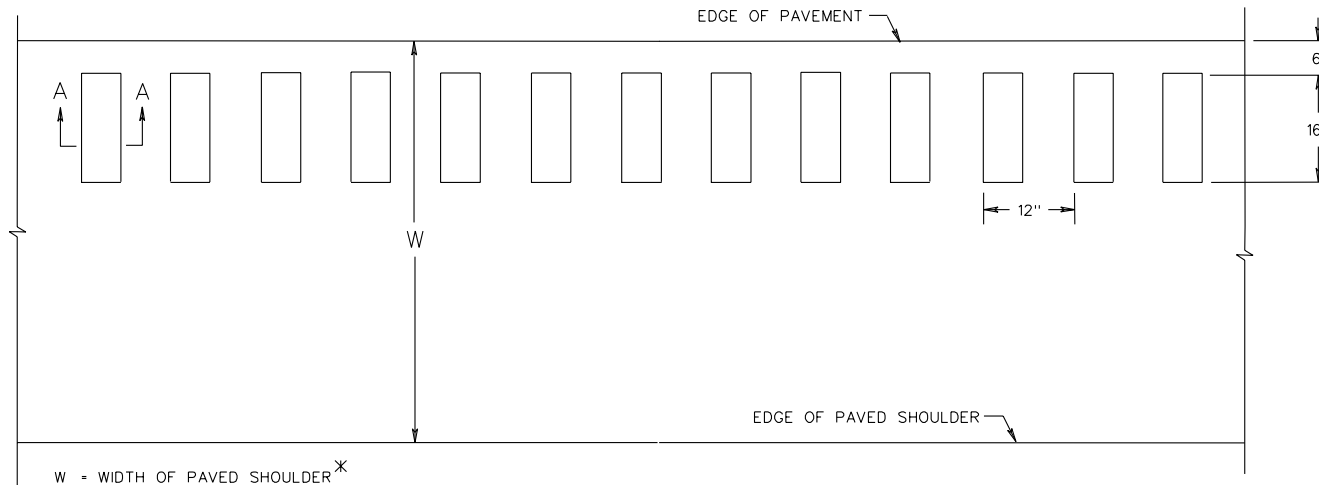
302.02



METHOD OF WIDENING APPROACHES TO DUAL STRUCTURES

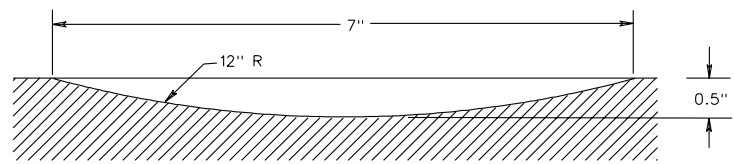
- NOTES:
- ON FULL SHOULDER WIDTH BRIDGES, NO WIDENING IS TO BE PROVIDED.
  - $X_1$  AND  $X_2$  = AMOUNT OF BRIDGE WIDENING PER SIDE (10' MAXIMUM).
  - \* IF BRIDGE DRAINAGE APRONS ARE REQUIRED THE PAVEMENT WIDENING IS TO BE APPLIED AT THE END OF THE DRAINAGE APRON FARTHEST FROM THE ABUTMENT BACKWALL.

SPECIFICATION REFERENCE	<p>METHOD OF WIDENING BRIDGE APPROACH PAVEMENT</p> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>
NONE	



W - WIDTH OF PAVED SHOULDER\*

PLAN VIEW



SECTION A-A

NOTES

RUMBLE STRIPS SHALL BE PLACED CONTINUOUSLY AS DIRECTED BY THE ENGINEER.

RUMBLE STRIPS SHALL NOT BE PLACED WITHIN LIMITS OF BRIDGE DRAINAGE APRONS OR SPECIAL DESIGN SHOULDER SLOT INLETS.

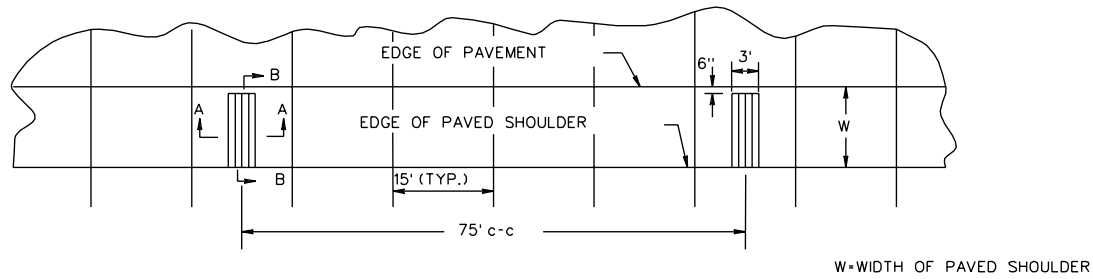
RUMBLE STRIPS SHALL BE PLACED ON MAINLINE SHOULDERS ONLY.

\* WHERE BICYCLES ARE NOT PROHIBITED, THE MINIMUM WIDTH OF THE OUTSIDE PAVED SHOULDER SHALL BE 8 FT.

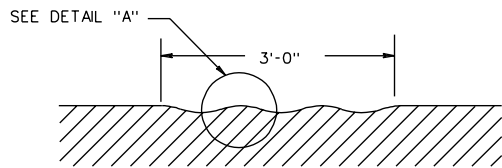
SPECIFICATION REFERENCE
310 315

### RUMBLE STRIPS (ASPHALT SHOULDER)

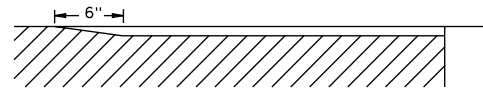
VIRGINIA DEPARTMENT OF TRANSPORTATION



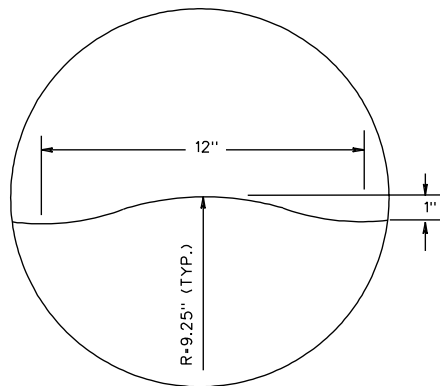
PLAN VIEW



SECTION A-A



SECTION B-B



DETAIL "A"

NOTES:

- NO DOWELS SHALL BE USED FOR SHOULDER CONTRACTION JOINTS ADJACENT TO SECTION INCLUDING RUMBLE STRIPS.
- RUMBLE STRIPS SHALL NOT BE PLACED WITHIN THE LIMITS OF BRIDGE DRAINAGE APRONS OR SPECIAL DESIGN SHOULDER SLOT INLETS.
- RUMBLE STRIPS SHALL BE USED ON MAINLINE SHOULDERS ONLY.

RUMBLE STRIPS (CONCRETE SHOULDER)

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SPECIFICATION REFERENCE

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