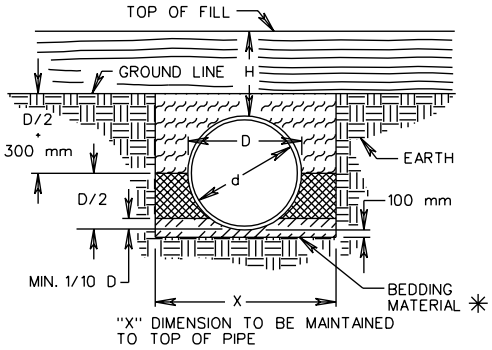
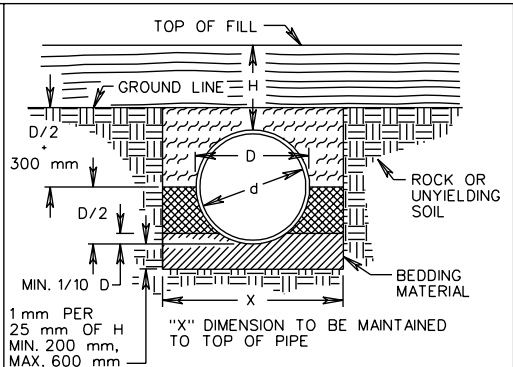
REVISED ON 5/00 REVISED ON 2/01

PB-1

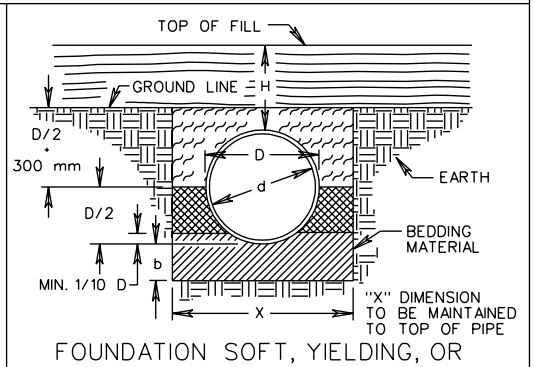
NO PROJECTION OF PIPE ABOVE GROUND LINE



NORMAL EARTH FOUNDATION

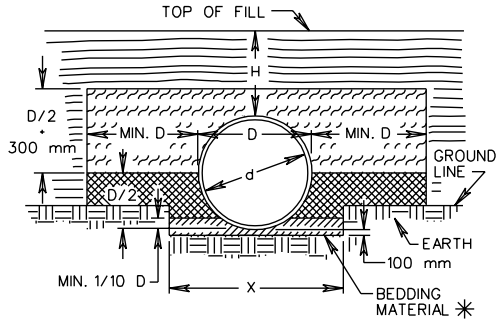


ROCK FOUNDATION

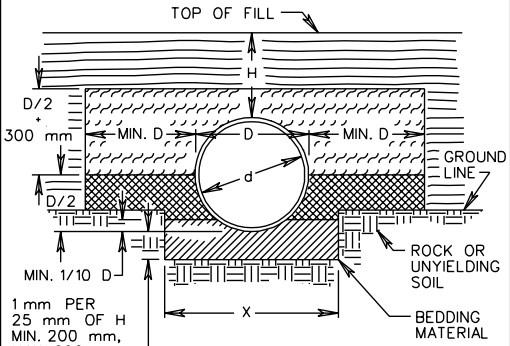


FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

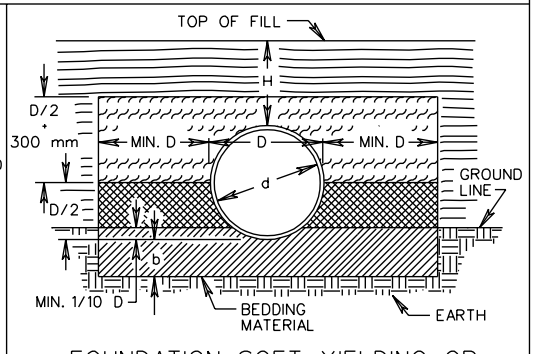
PIPE PROJECTION ABOVE GROUND LINE



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

CULVERTS LESS THAN d = 900 mm
X = D + 600 mm
CULVERTS WHERE d = 900 mm AND OVER
X = D + 900 mm

METHOD "A" PIPE BEDDING SHALL BE USED AS FOLLOWS UNLESS OTHERWISE NOTED ON PLANS:

RIGID PIPE

WHEN H IS LESS THAN OR EQUAL TO 9.1 m

FLEXIBLE PIPE

AS SHOWN ON TABLES

✳ MAY BE ELIMINATED UNDER ENTRANCE PIPE EXCEPT FOR PLASTIC PIPE INSTALLATIONS WHERE DIRECTED BY THE ENGINEER.

H = HEIGHT OF COVER MEASURED FROM TOP OF DRAINAGE STRUCTURE TO FINISHED GRADE.

D = OUTSIDE DIAMETER OF PIPE.

d = INSIDE DIAMETER OF PIPE.

b = DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.

✳✳ FOR PLASTIC PIPE INSTALLATIONS, CLASS I BACKFILL MATERIAL SHALL BE USED IN LIEU OF CLASS II.

BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS II BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS. ✳✳

EMBANKMENT

INSTALLATION OF PIPE CULVERTS AND STORM SEWERS
CIRCULAR PIPE BEDDING AND BACKFILL - METHOD "A"

REVISED 10/99

VIRGINIA DEPARTMENT OF TRANSPORTATION

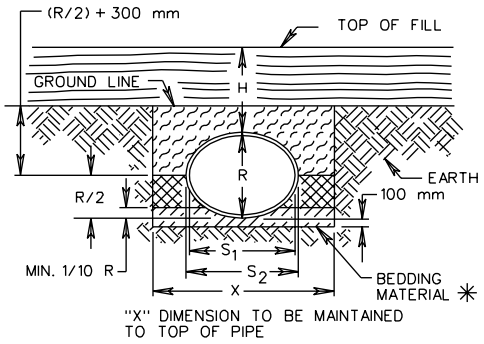
SPECIFICATION REFERENCE
302
303

107.01	UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

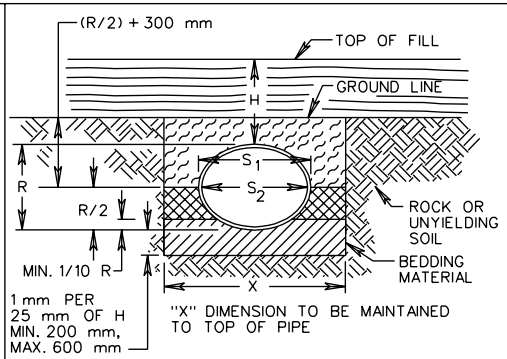
REVISED ON 5/00 REVISED ON 2/01

PB-1

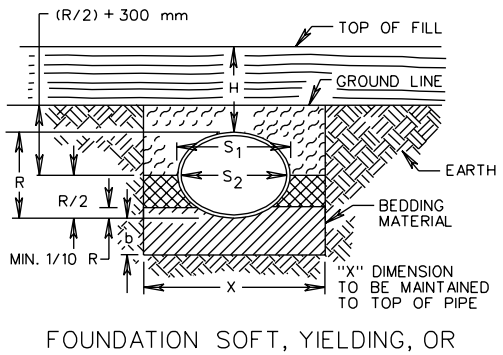
NO PROJECTION OF PIPE ABOVE GROUND LINE



NORMAL EARTH FOUNDATION

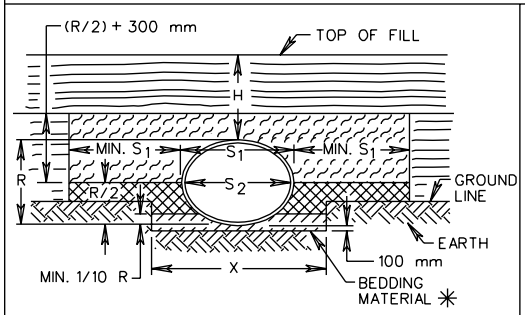


ROCK FOUNDATION

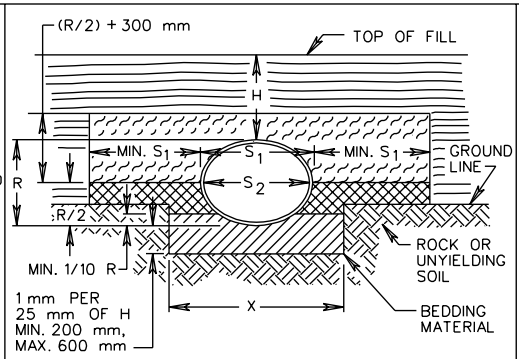


FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

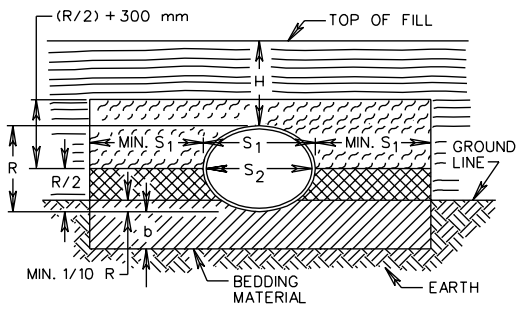
PIPE PROJECTION ABOVE GROUND LINE



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



FOUNDATION SOFT, YIELDING, OR OTHERWISE UNSUITABLE MATERIAL

CULVERTS LESS THAN S_1 = 900 mm
$X = S_2 + 600$ mm
CULVERTS WHERE S_1 = 900 mm AND OVER
$X = S_2 + 900$ mm
METHOD "A" PIPE BEDDING SHALL BE USED AS FOLLOWS UNLESS OTHERWISE NOTED ON PLANS:

RIGID PIPE

WHEN H IS LESS THAN OR EQUAL TO 9.1 m

FLEXIBLE PIPE

AS SHOWN ON TABLES

✳ MAY BE ELIMINATED UNDER ENTRANCE PIPE WHERE DIRECTED BY THE ENGINEER.

H = HEIGHT OF COVER MEASURED FROM TOP OF DRAINAGE STRUCTURE TO FINISHED GRADE.

S_1 = OUTSIDE SPAN OF PIPE.

S_2 = INSIDE SPAN OF PIPE.

R = OUTSIDE RISE OF PIPE.

b = DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.

BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS II BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

EMBANKMENT

Sheet 2 of 3

SPECIFICATION REFERENCE
302
303

INSTALLATION OF PIPE CULVERTS AND STORM SEWERS
ELLIPTICAL PIPE BEDDING AND BACKFILL - METHOD "A"

REVISED 10/99

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

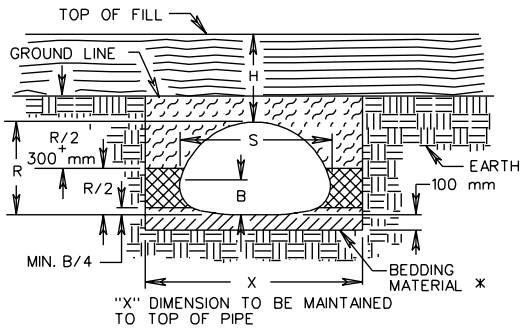
VIRGINIA DEPARTMENT OF TRANSPORTATION

107.02

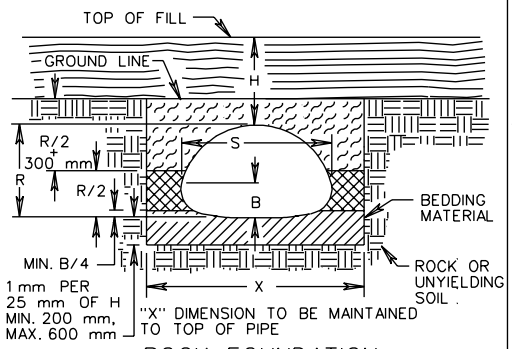
REVISED ON 5/00 REVISED ON 2/01

PB-1

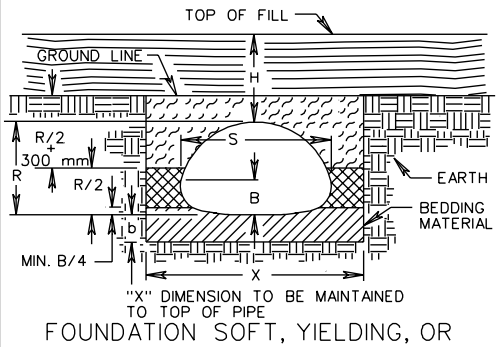
NO PROJECTION OF PIPE ARCH ABOVE GROUND LINE



NORMAL EARTH FOUNDATION

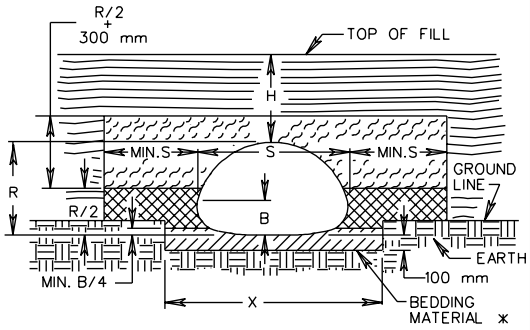


ROCK FOUNDATION

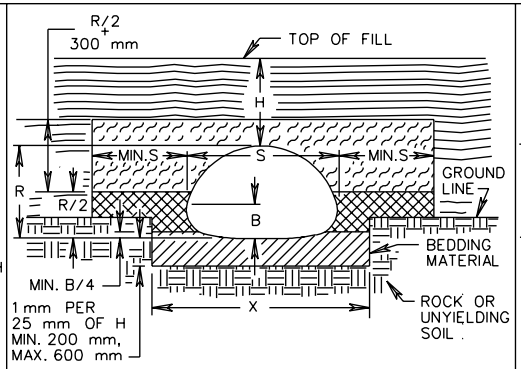


FOUNDATION SOFT, YIELDING, OR
OTHERWISE UNSUITABLE MATERIAL

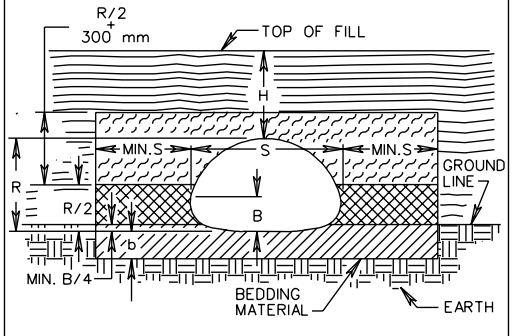
PIPE ARCH PROJECTION ABOVE GROUND LINE



NORMAL EARTH FOUNDATION



ROCK FOUNDATION



FOUNDATION SOFT, YIELDING, OR
OTHERWISE UNSUITABLE MATERIAL

SPANS (S) LESS THAN 875 mm
X = S + 600 mm
SPANS (S) GREATER THAN 875 mm
X = S + 900 mm

* MAY BE ELIMINATED UNDER ENTRANCE PIPE WHERE DIRECTED BY THE ENGINEER.

H = HEIGHT OF COVER MEASURED FROM TOP OF DRAINAGE STRUCTURE TO FINISHED GRADE.

S = SPAN

R = RISE

B = SEE STANDARD PC-1 FOR SPECIFIC PIPE MATERIAL.

b = DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.

BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

CLASS II BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.

EMBANKMENT

INSTALLATION OF PIPE CULVERTS AND STORM SEWERS
PIPE ARCH BEDDING AND BACKFILL

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED 10/99

107.03

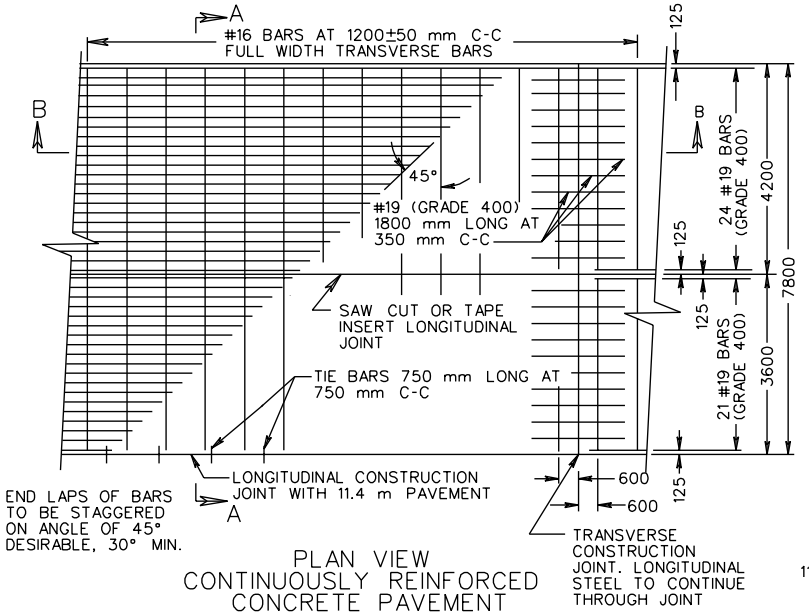
UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

SPECIFICATION REFERENCE

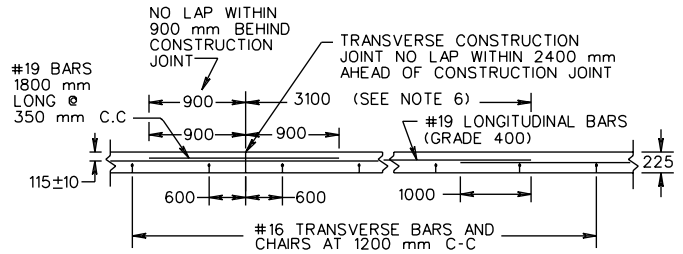
302
303

REVISED ON 2/01

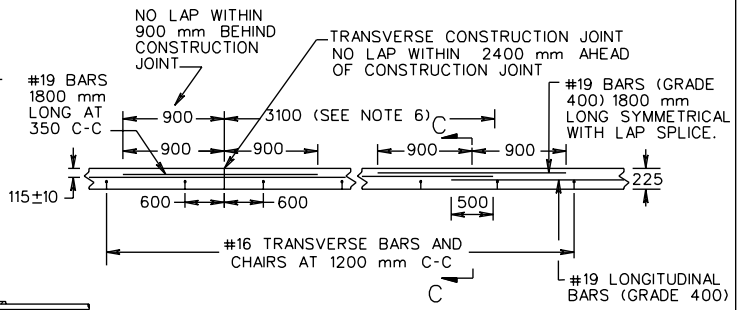
PR-5



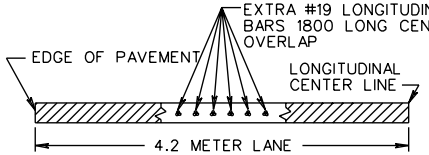
PLAN VIEW
CONTINUOUSLY REINFORCED
CONCRETE PAVEMENT



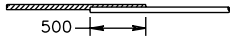
SECTION B-B
DOUBLE LAP METHOD



SECTION B-B
EXTRA BAR METHOD

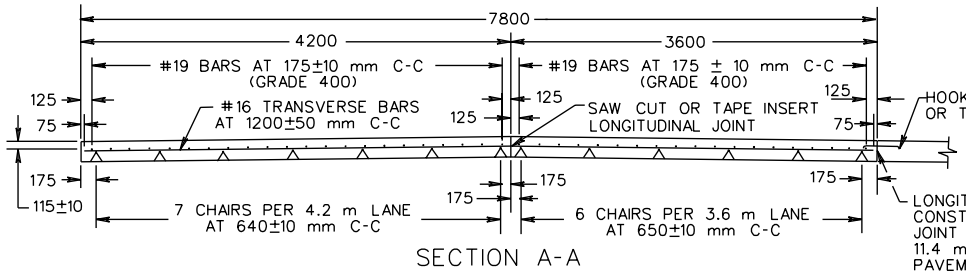


SECTION C-C

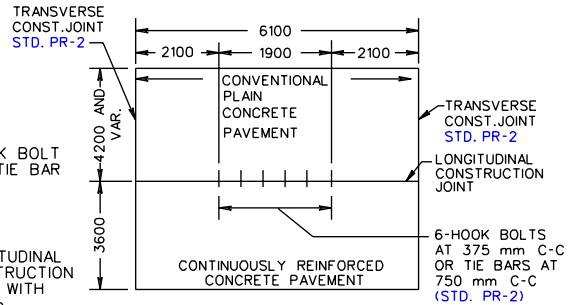


BARS TO BE SECURELY FASTENED TO
PREVENT SEPARATION DURING CONCRETE
PLACEMENT.

TYPICAL
LONGITUDINAL LAP



SECTION A-A



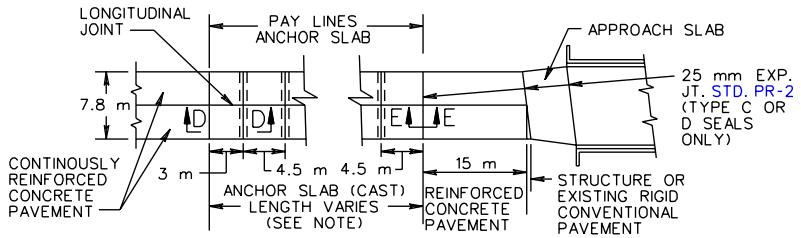
PLAN-RAMP & MAIN LINE
CONNECTION

SEE SHEET 3 OF 3
FOR NOTES

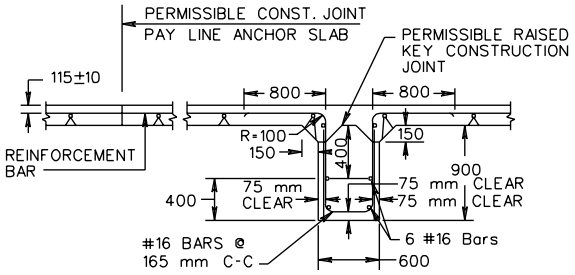
SPECIFICATION REFERENCE	225 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 4.2 m TRAVEL LANE	NEW 10/99
316	VIRGINIA DEPARTMENT OF TRANSPORTATION	UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS — 301.11

REVISED ON 2/01

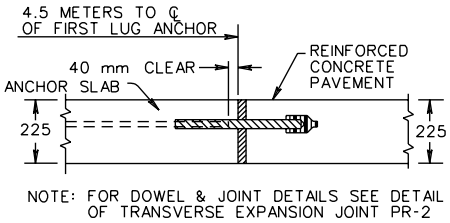
PR-5



PLAN VIEW
ANCHOR SLAB TYPE I

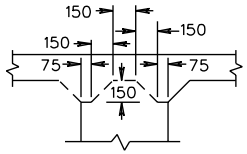


SECTION D-D

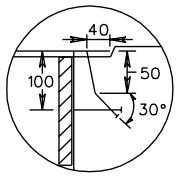


NOTE: FOR DOWEL & JOINT DETAILS SEE DETAIL OF TRANSVERSE EXPANSION JOINT PR-2

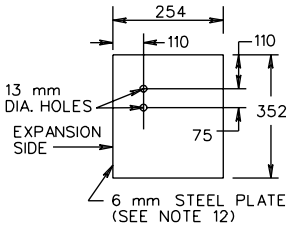
SECTION E-E
ANCHOR SLAB TYPE I



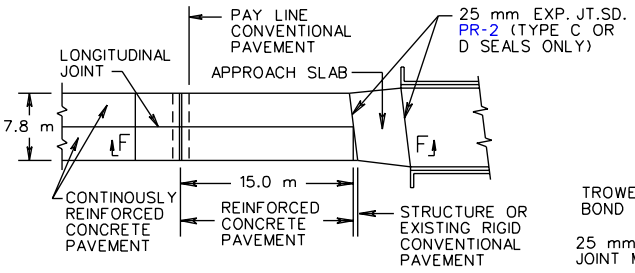
DETAIL-RAISED KEY CONSTRUCTION JOINT



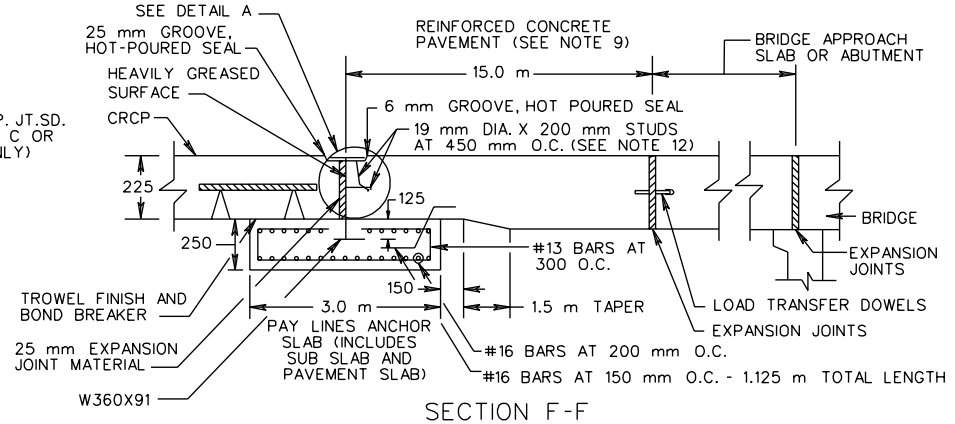
DETAIL A



END PLATE DETAIL
ANCHOR SLAB TYPE II



PLAN
ANCHOR SLAB TYPE I



SECTION F-F
ANCHOR SLAB TYPE II

SHEET 2 OF 3

SEE SHEET 3 OF 3 FOR NOTES

225 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
4.2 m TRAVEL LANE

SPECIFICATION REFERENCE

316

NEW 10/99

301.12

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

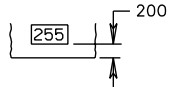
VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED ON 2/01

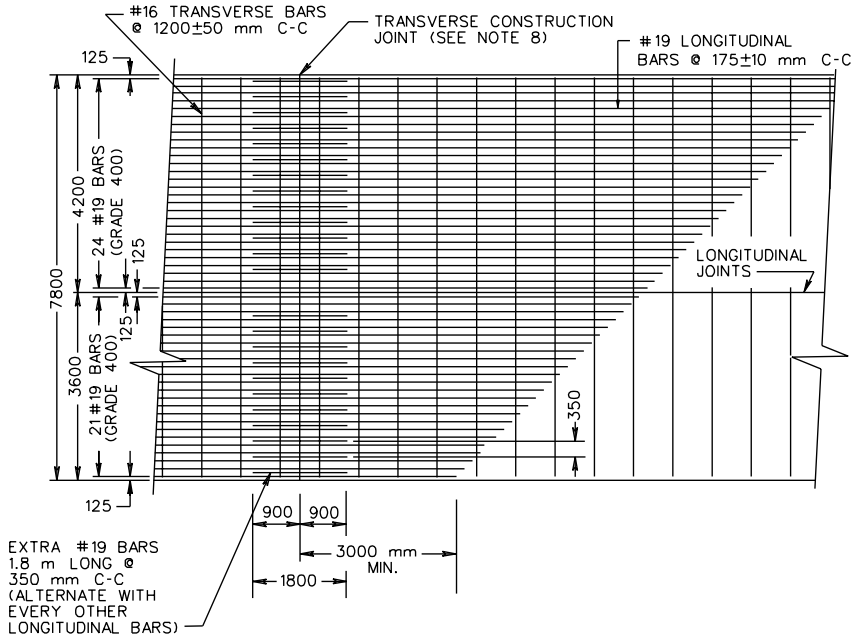
PR-5

NOTE:

1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #16 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 70 mm MINIMUM CLEARANCE BETWEEM HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #19 LONGITUDINAL BARS.
3. #19 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
4. FOR THE 11.4 METER WIDTH PAVEMENT USE SINGLE 3.6 METER LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 3.6 METER AND 4.2 METER 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 (7.55 m) FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
5. SMOOTH SURFACE TO BE STEEL TROWELED 200 mm IN FROM EDGE OF PAVEMENT EVERY 150 m, AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILIAR 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 (1000 mm) AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 3.00 m 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 #16 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.
8. LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT. EXTRA #19 (GRADE 400) BARS 1.8 m LONG SHALL BE SPACED AT 350 mm 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' (17m). FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 85' (26m). USE SAME REINFORCEMENT SIZE AND SPACING AS IN CONTINUOUS PAVEMENT. ANCHOR SLAB TY. 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 CONTINOUS PAVEMENT. ANCHOR SLAB TY. II ACCOMODATES 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. 50 mm 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.



PLAN VIEW
LEAVE OUT JOINT
STEEL BAR REINFORCEMENT ONLY

SHEET 3 OF 3

SPECIFICATION REFERENCE

316

225 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 4.2 m TRAVEL LANE

NEW 10/99

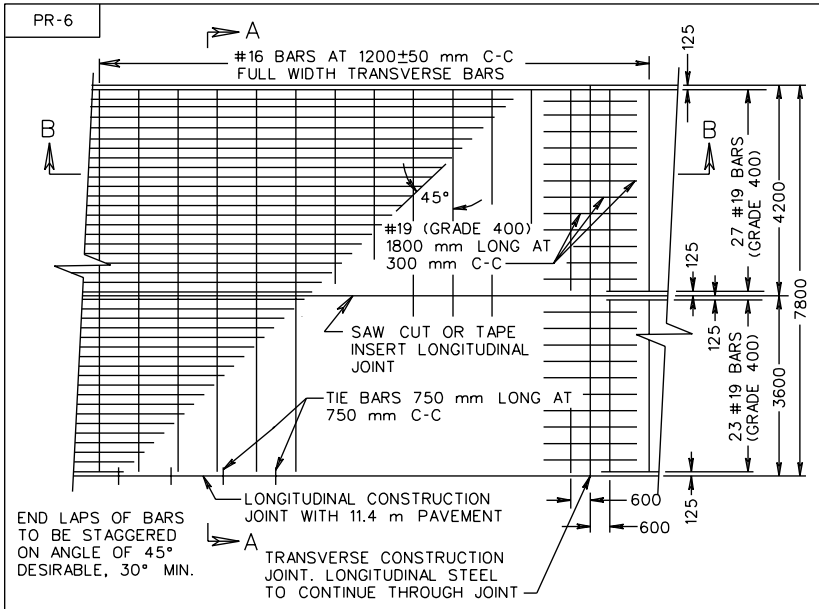
VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

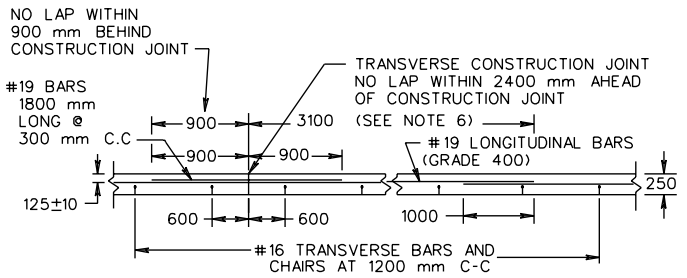
301.13

REVISED ON 2/01

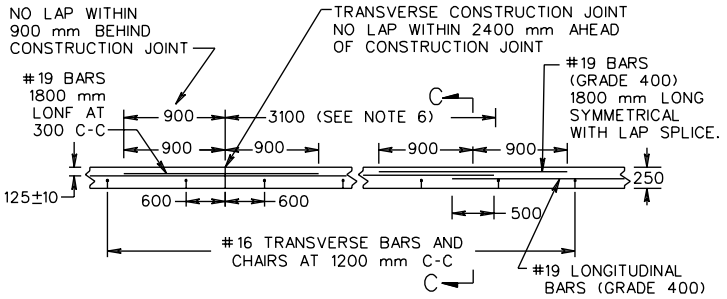
PR-6



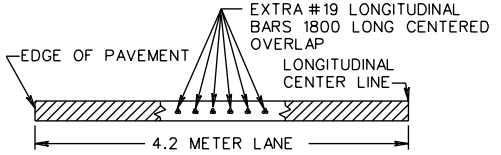
PLAN VIEW
CONTINUOUSLY REINFORCED CONCRETE PAVEMENT



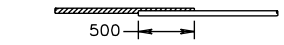
SECTION B-B
DOUBLE LAP METHOD



SECTION B-B
EXTRA BAR METHOD

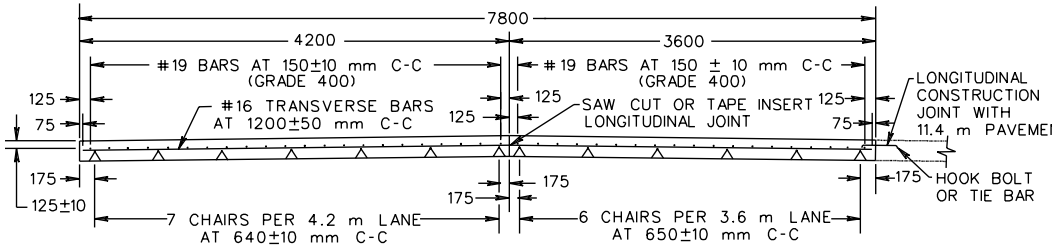


SECTION C-C

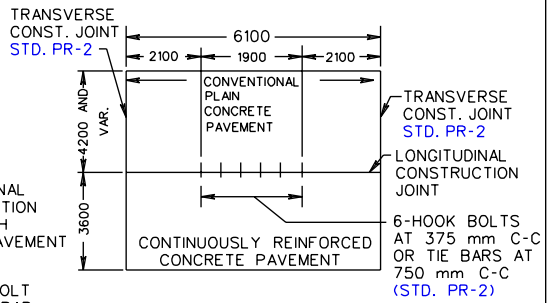


BARS TO BE SECURELY FASTENED TO PREVENT SEPARATION DURING CONCRETE PLACEMENT.

TYPICAL
LONGITUDINAL LAP



SECTION A-A



PLAN-RAMP & MAIN LINE
CONNECTION

SEE SHEET 3 OF 3
FOR NOTES

SHEET 1 OF 3

250 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
4.2 m TRAVEL LANE

NEW 10/99

SPECIFICATION REFERENCE

316

301.14 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

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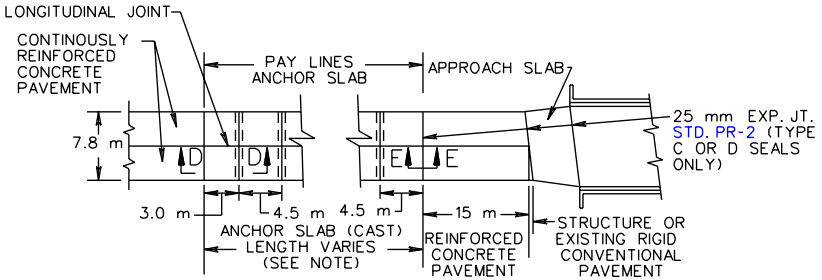
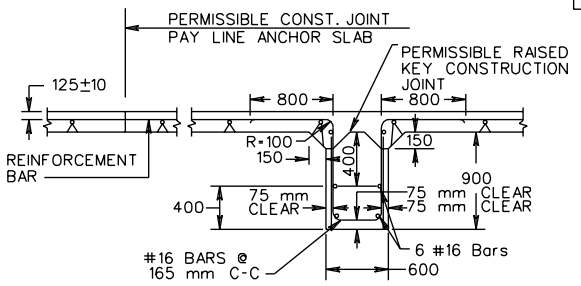
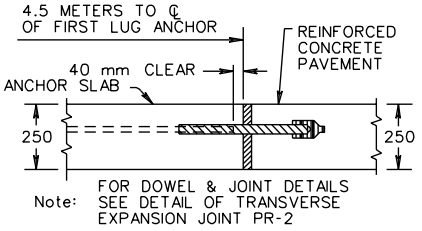
PR-6



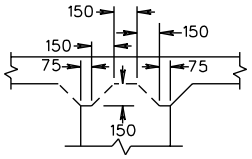
PLAN VIEW
ANCHOR SLAB TYPE I



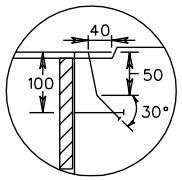
SECTION D-D



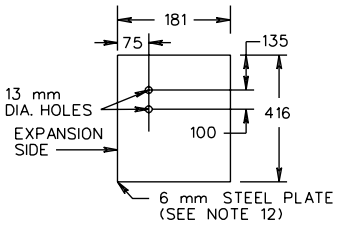
SECTION E-E
ANCHOR SLAB TYPE I



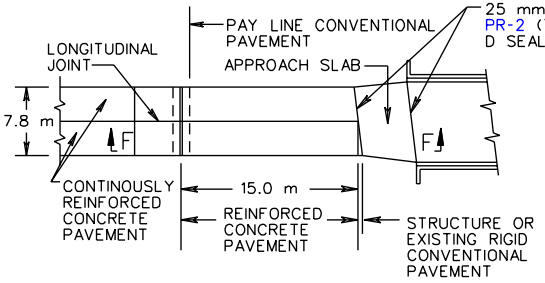
DETAIL-RAISED KEY
CONSTRUCTION JOINT



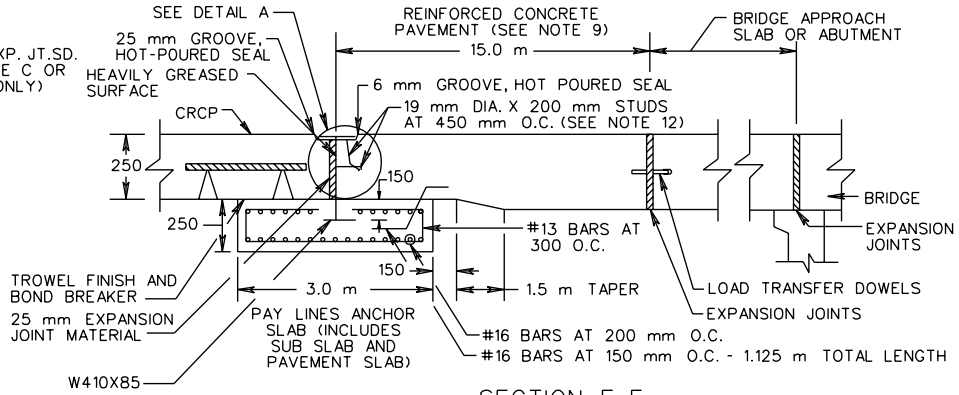
DETAIL A



ANCHOR SLAB TYPE II
END PLATE DETAIL



PLAN
ANCHOR SLAB TYPE II



SECTION F-F
ANCHOR SLAB TYPE II

SEE SHEET 3 OF 3 FOR NOTES

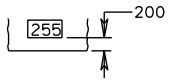
SPECIFICATION REFERENCE	250 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 4.2 m TRAVEL LANE	NEW 10/99
316	VIRGINIA DEPARTMENT OF TRANSPORTATION	UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS — 310.15

REVISED ON 2/01

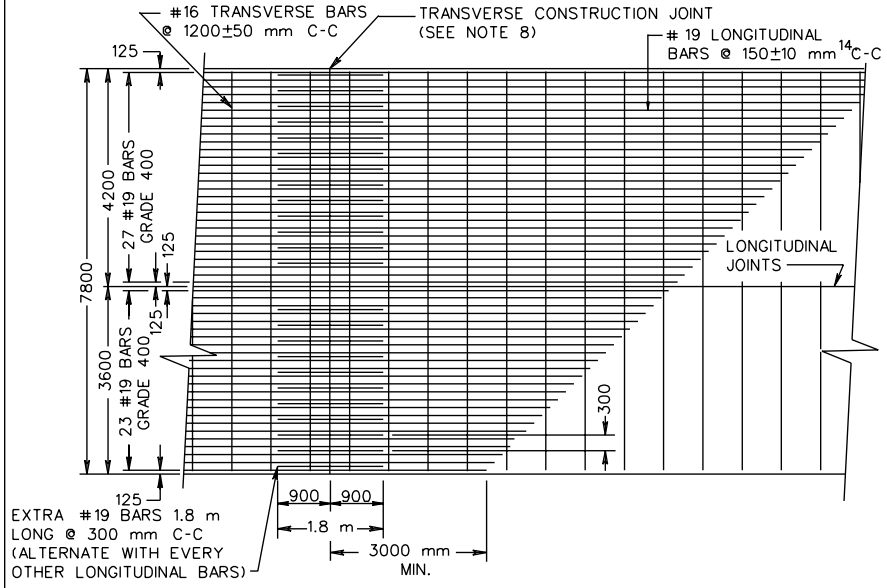
PR-6

NOTE:

1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #16 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 70 mm MINIMUM CLEARANCE BETWEEM HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.
2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #19 LONGITUDINAL BARS.
3. #19 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.
4. FOR THE 11.4 METER WIDTH PAVEMENT USE SINGLE 3.6 METER LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 3.6 METER AND 4.2 METER 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 (7.55 m) FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.
5. SMOOTH SURFACE TO BE STEEL TROWELED 200 mm IN FROM EDGE OF PAVEMENT EVERY 150 m, AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILIAR 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 (1000 mm) AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 3.00 m 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 #16 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.
8. LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT. EXTRA #19 (GRADE 400) BARS 1.8 m LONG SHALL BE SPACED AT 300 mm 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 = 17 m. FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 26 m). 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 ACCOMODATES 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. 50 mm MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.
14. WIDE FLANGE BEAM TO TREATED WITH CORROSION INHIBITOR PER SECTION 407 OF THE ROAD AND BRIDGE SPECIFICATIONS.



PLAN VIEW
LEAVE OUT JOINT
STEEL BAR REINFORCEMENT ONLY

SHEET 3 OF 3

250 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
4.2 m TRAVEL LANE

VIRGINIA DEPARTMENT OF TRANSPORTATION

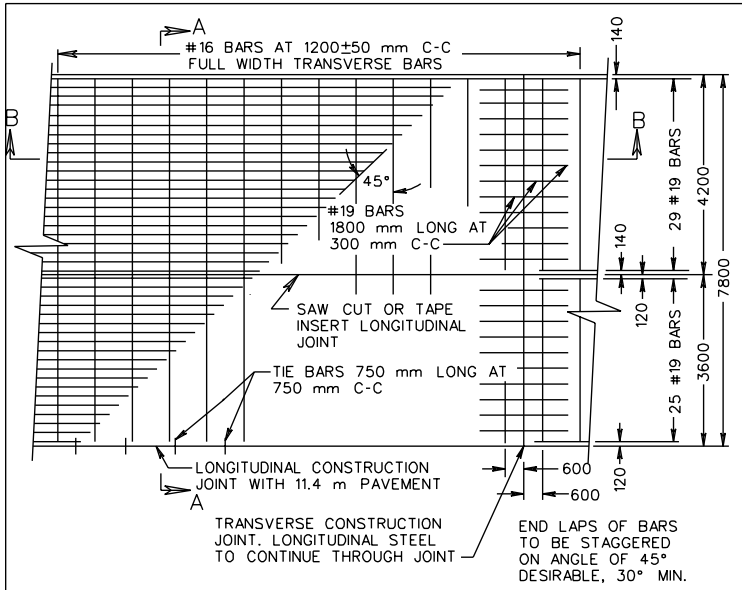
NEW 10/99

301.16 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

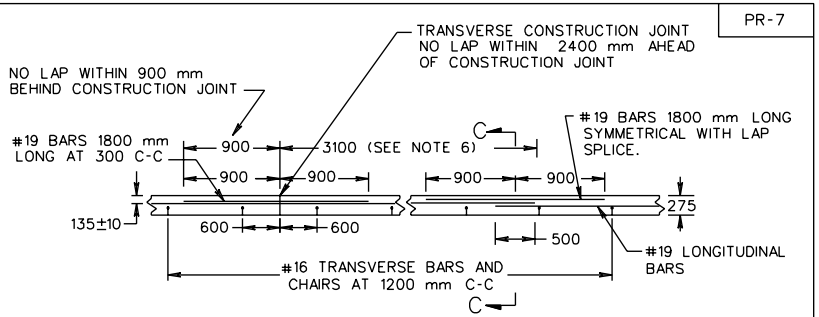
SPECIFICATION REFERENCE

316

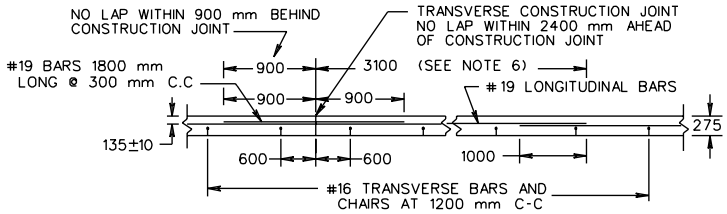
PR-7



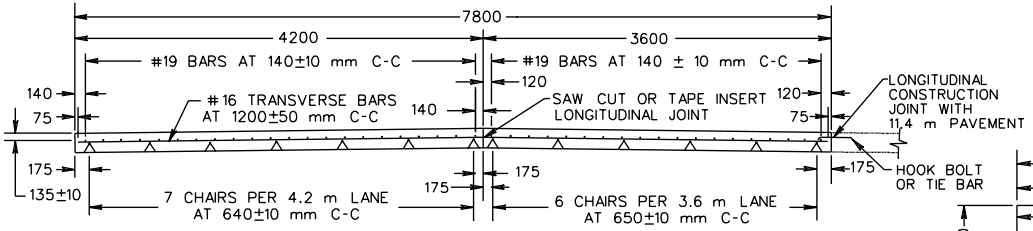
PLAN VIEW
CONTINUOUSLY REINFORCED CONCRETE PAVEMENT



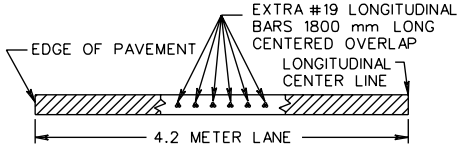
SECTION B-B
EXTRA BAR METHOD



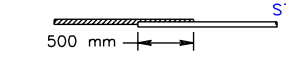
SECTION B-B
DOUBLE LAP METHOD



SECTION A-A

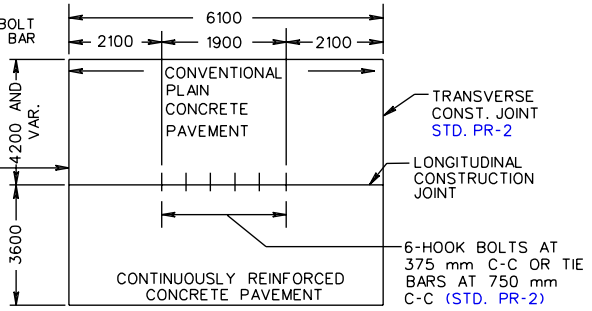


SECTION C-C



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

TYPICAL
LONGITUDINAL LAP



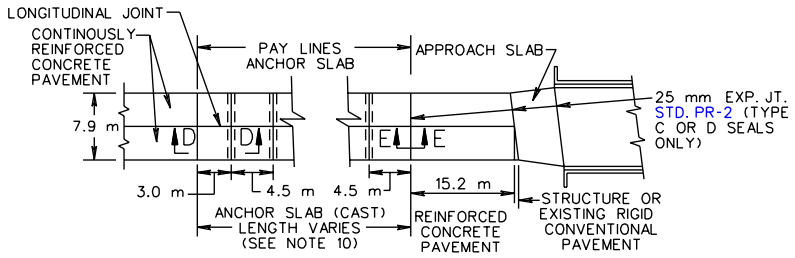
PLAN-RAMP & MAIN LINE
CONNECTION

SEE SHEET 3 OF 3
FOR NOTES

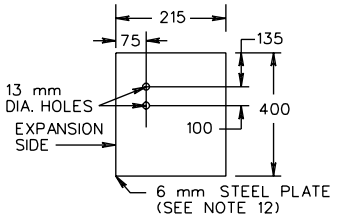
SPECIFICATION REFERENCE	275 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT 4.2 m TRAVEL LANE	NEW 10/99
316	VIRGINIA DEPARTMENT OF TRANSPORTATION	UNLESS OTHERWISE NOTED ALL DIMENSIONS ONB THIS SHEET ARE IN MILLIMETERS — 301.17

REVISED ON 2/01

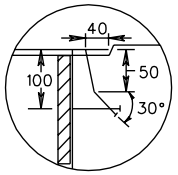
PR-7



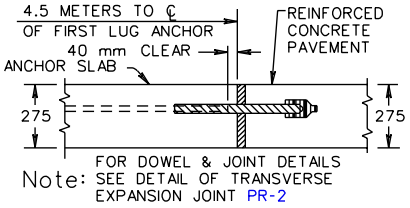
PLAN VIEW
ANCHOR SLAB TYPE



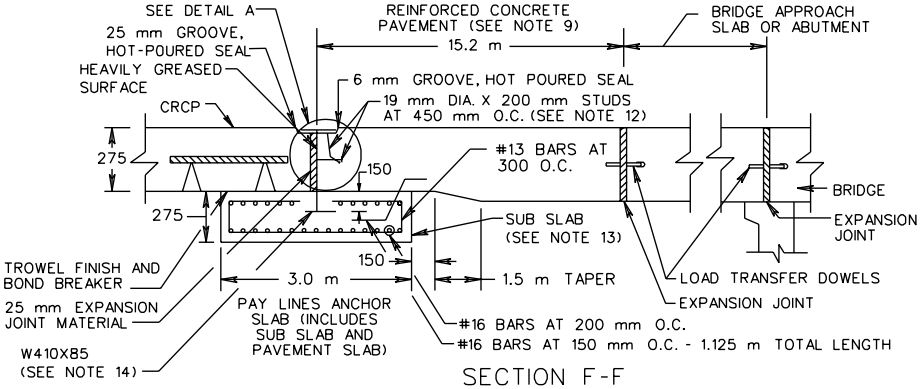
ANCHOR SLAB TYPE II
END PLATE DETAIL



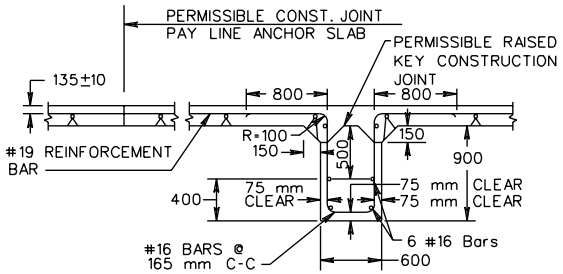
DETAIL A



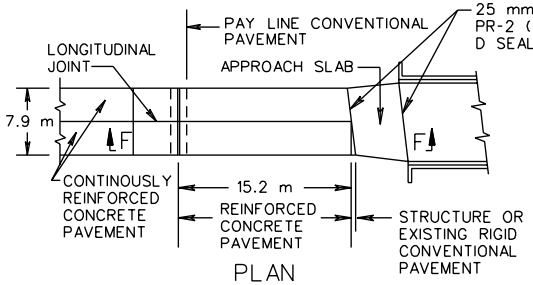
SECTION E-E
ANCHOR SLAB TYPE I



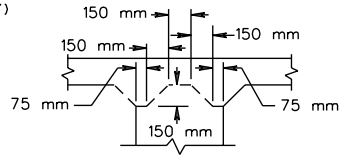
SECTION F-F
ANCHOR SLAB TYPE II
(SEE NOTE 11)



SECTION D-D



PLAN
ANCHOR SLAB TYPE II



DETAIL-RAISED KEY CONSTRUCTION JOINT

SHEET 2 OF 3

SEE SHEET 3 OF 3 FOR NOTES

275 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
4.2 m TRAVEL LANE

New 10/99

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

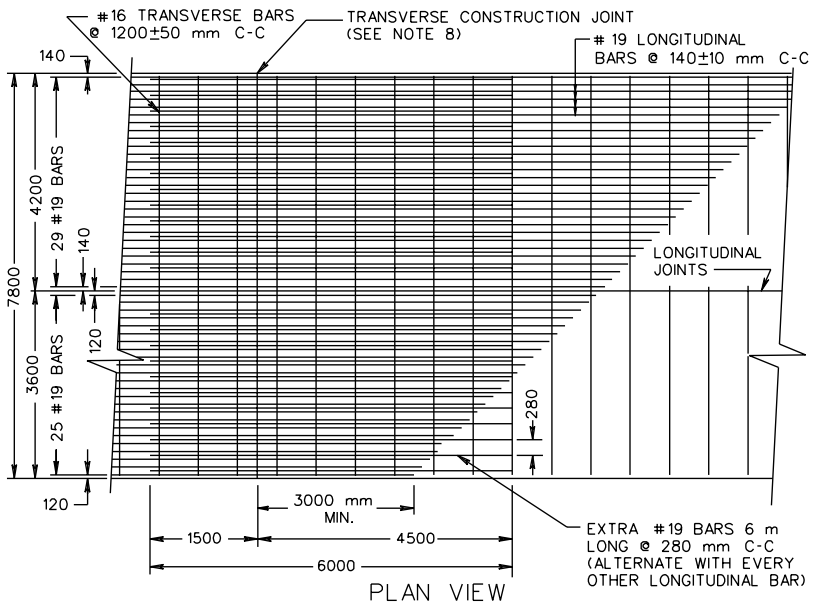
316

301.18

UNLESS OTHERWISE NOTED ALL DIMENSIONS ONB THIS SHEET ARE IN MILLIMETERS

REVISED ON 2/01

PR-7



PLAN VIEW
LEAVE OUT JOINT
STEEL BAR REINFORCEMENT ONLY

NOTES:

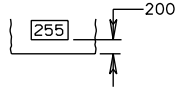
1. HOOK BOLTS OR TIE BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #16 TRANSVERSE BARS. WHERE NECESSARY, ADJUST THE LOCATION OF THE HOOK BOLTS OR TIE BARS TO A 70 mm MINIMUM CLEARANCE BETWEEM HOOK BOLTS OR TIE BARS AND TRANSVERSE BARS.

2. TRANSVERSE CONSTRUCTION JOINT BARS ARE TO BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #19 LONGITUDINAL BARS.

3. #19 LONGITUDINAL BARS ARE TO BE LAPPED AND TIED IN THE SAME HORIZONTAL PLANE.

4. FOR THE 11.4 METER WIDTH PAVEMENT USE SINGLE 3.6 METER LANES WITH TWO LONGITUDINAL CONSTRUCTION JOINTS OR 3.6 METER AND 4.2 METER 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 (7.55 m) FOR SAW CUT OR TAPE INSERT LONGITUDINAL JOINT.

5. SMOOTH SURFACE TO BE STEEL TROWELED 200 mm IN FROM EDGE OF PAVEMENT EVERY 150 m, AND THE STATION NUMBER STAMPED INTO IT AS SHOWN BELOW. THE DATE IS TO BE SHOWN IN A SIMILIAR 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 (1000 mm) AND THE EXTRA BAR METHOD APPLY ONLY TO LAPS FALLING WITHIN AN AREA OF 3.00 m 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 #16 TRANSVERSE STEEL IN THE LUGS SHALL BE EXTENDED, LAPPED AND SPLICED AT LEAST 25 DIAMETERS.

8. LONGITUDINAL STEEL TO CONTINUE THROUGH JOINT. EXTRA #19 BARS 6.0 m LONG SHALL BE SPACED AT 280 mm 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 = 17 m. FOR AASHTO CLASSIFICATION SOILS A-5 THROUGH A-7, 5 ANCHOR LUGS ARE REQUIRED (ANCHOR SLAB LENGTH = 26 m). 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 ACCOMODATES 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. 50 mm MINIMUM CONCRETE COVER FOR STEEL IN SUB-SLABS.

14. WIDE FLANGE BEAM TO BE GALVANIZED PER SECTION 233 OF THE ROAD AND BRIDGE SPECIFICATIONS.

15. ALL REINFORCING BARS SHALL BE GRADE 400 STEEL.

SPECIFICATION REFERENCE

316

275 mm THICK CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
4.2 m TRAVEL LANE

NEW 10/99

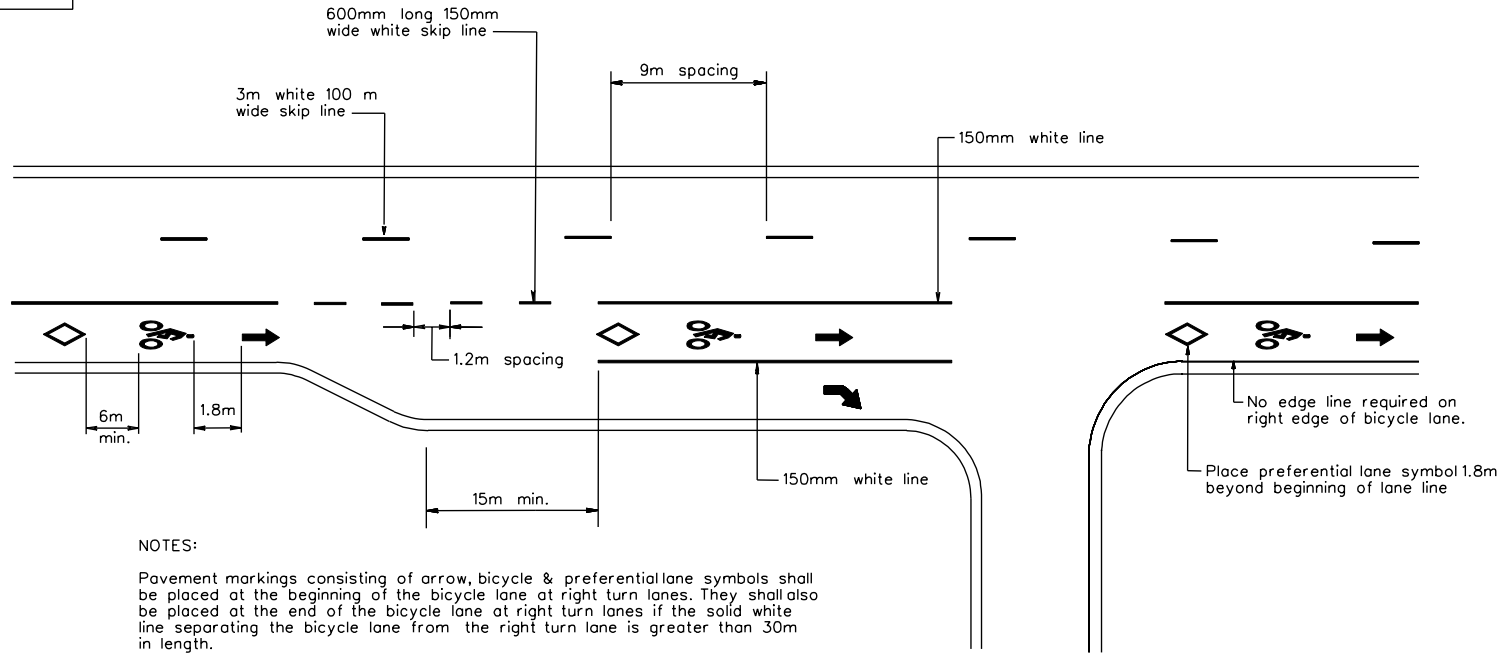
VIRGINIA DEPARTMENT OF TRANSPORTATION

UNLESS OTHERWISE NOTED ALL DIMENSIONS ONB THIS SHEET ARE IN MILLIMETERS

301.19

REVISED ON 2/01

PM-6



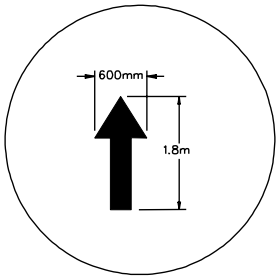
NOTES:

Pavement markings consisting of arrow, bicycle & preferential lane symbols shall be placed at the beginning of the bicycle lane at right turn lanes. They shall also be placed at the end of the bicycle lane at right turn lanes if the solid white line separating the bicycle lane from the right turn lane is greater than 30m in length.

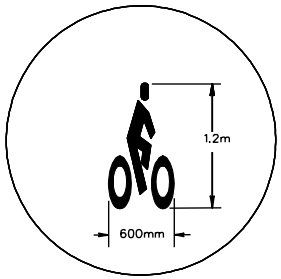
Bicycle lane symbols shall be placed a maximum of 155m apart.

The bicycle lane stripe shall be 1.2m from the edge of pavement on curb & gutter roadways unless otherwise noted on the plans or existing markings indicate otherwise. (Contact Traffic Engineering if additional guidance is required.)

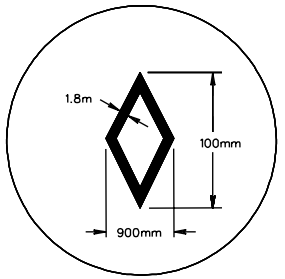
The bicycle lane stripe shall be 1.5m from the face of curb on roadways without a gutter pan unless otherwise noted on the plans or existing markings indicate otherwise. (Contact Traffic Engineering if additional guidance is required.)



ARROW DETAILS



BICYCLE LANE SYMBOL



PREFERENTIAL LANE SYMBOL

STANDARD PM-6

TYPICAL PAVEMENT MARKINGS FOR BICYCLE LANE

REVISED 10/99

1301.87 | UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION