



Village of  
**ESTERO**

# Land Development Code Appendices

FIRST READING  
DECEMBER 9, 2020

## Appendix D

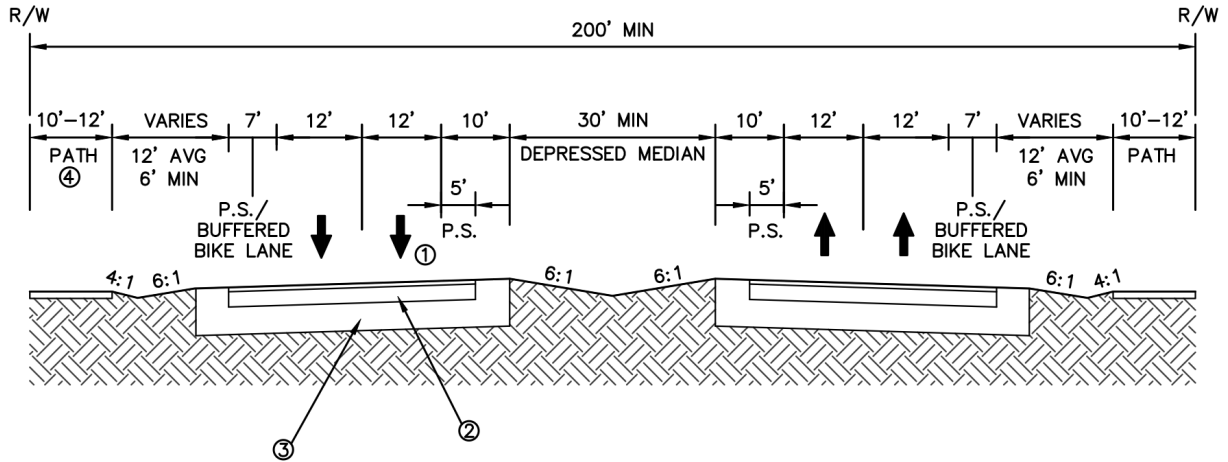




# APPENDIX D: ILLUSTRATIONS AND CROSS-SECTIONS

## A. Four- and Six-Lane Arterial Roads

- The following illustration applies to four-lane arterial roads in 200 foot right-of-way depressed median, open drainage, and on-site retention (rural section) (Rural = clear zones and open ditches):

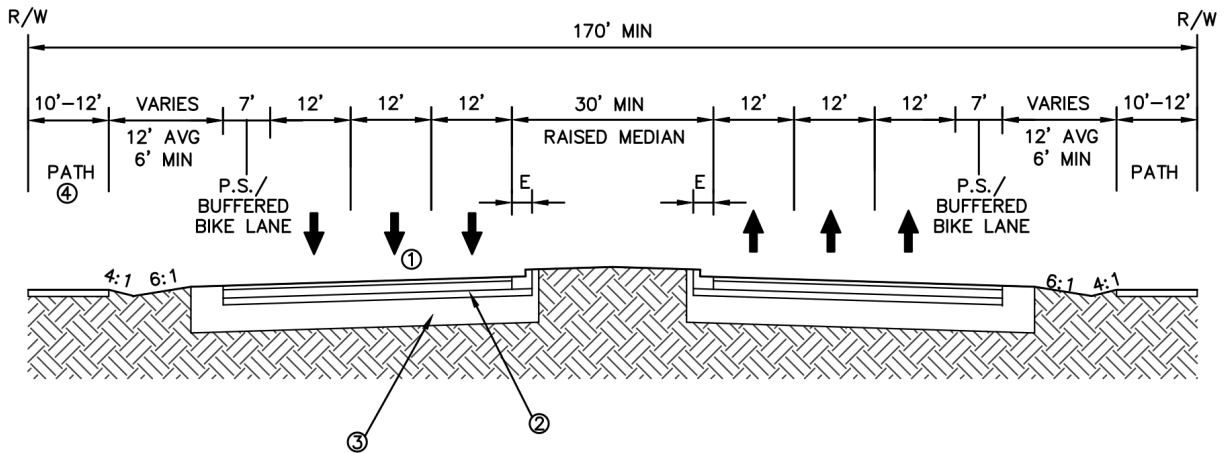


4-LANE RURAL ARTERIAL  
 DESIGN SPEED = 60 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

- One inch S-III wearing surface plus two and one half inch type S-1 asphaltic concrete.
- FDOT Optional BaseGroup 9 - 8" compacted limerock.
- 12 inch thick stabilized subgrade LBR 40.
- Pathways can be placed in easements located outside of right of way

2. The following illustration applies to six-lane arterial roads in 170 feet of right-of-way with open drainage and on-site retention (rural section) (Rural = clear zones and open ditches):

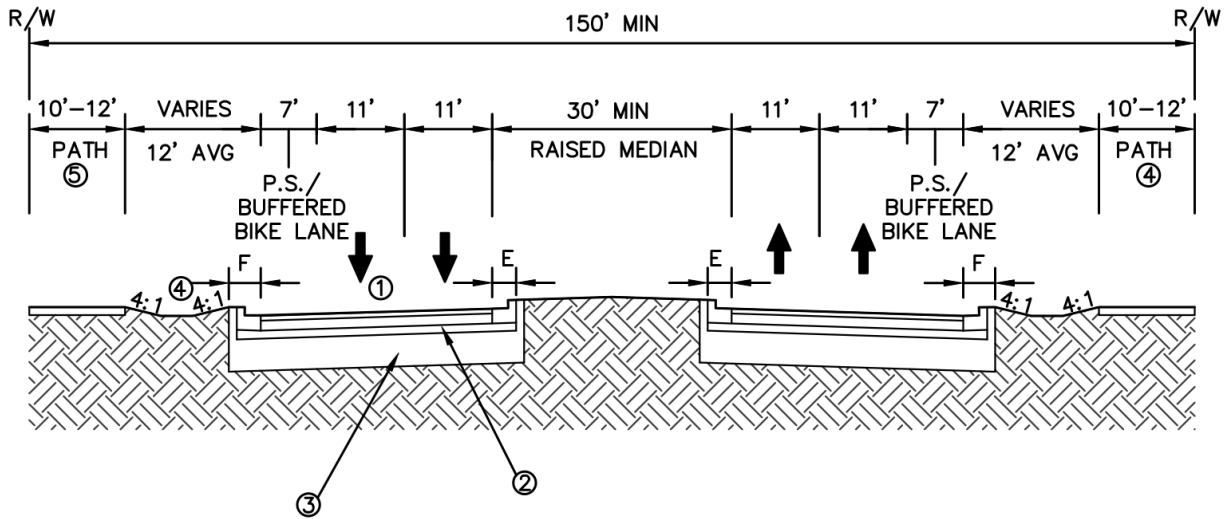


**6-LANE RURAL ARTERIAL**  
 DESIGN SPEED = 50 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

1. One inch S-III wearing surface plus two and one half inch type S-1 asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way

3. The following illustration applies to four-lane arterial roads in 150 feet of right-of-way with raised median, open drainage, and on-site retention (suburban section) (Suburban = curb and gutter and open ditches):

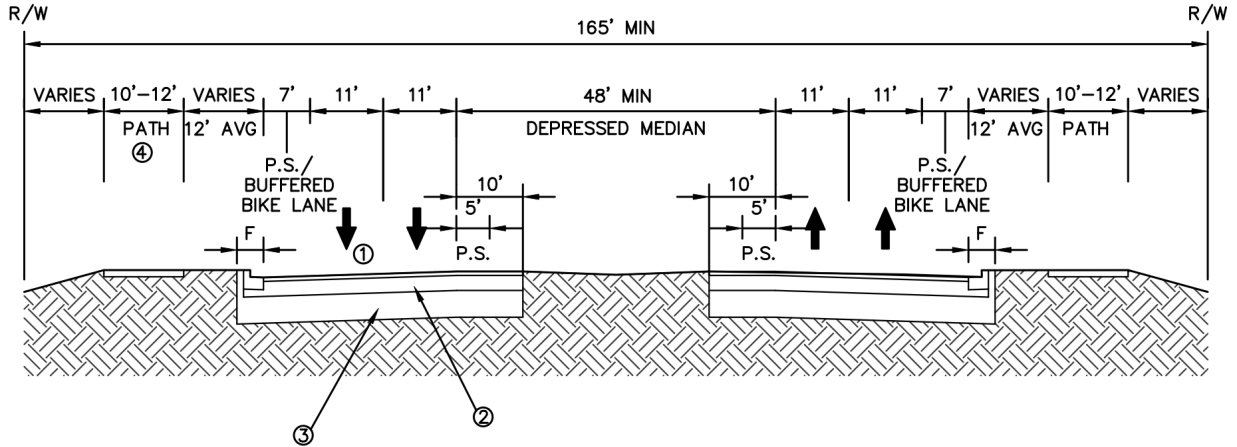


4-LANE SUBURBAN ARTERIAL  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

1. One inch S-III wearing surface plus two and one half inch type S-1 asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. This size open drainage ditches are insufficient in size to retain all stormwater. Off-site retention ponds or additional drainage easements may be required.
5. Pathways can be placed in easements located outside of right of way.

4. The following illustration applies to four-lane arterial roads in 165 feet of right-of-way with depressed median, closed drainage, and on-site retention (urban section) (Rural = clear zones and open ditches):

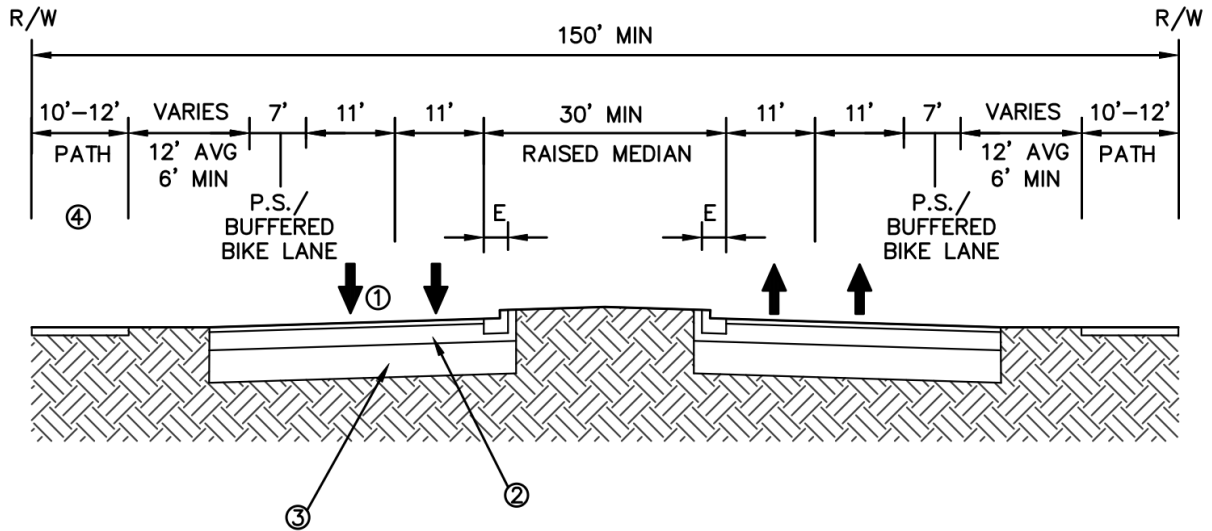


4-LANE URBAN ARTERIAL  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

1. One inch S-III wearing surface plus two and one half inch type S-1 asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way

5. The following illustration applies to four-lane arterial roads in 150 feet of right-of-way with raised median, open drainage, and on-site retention (rural section) (Rural = clear zones and open ditches):

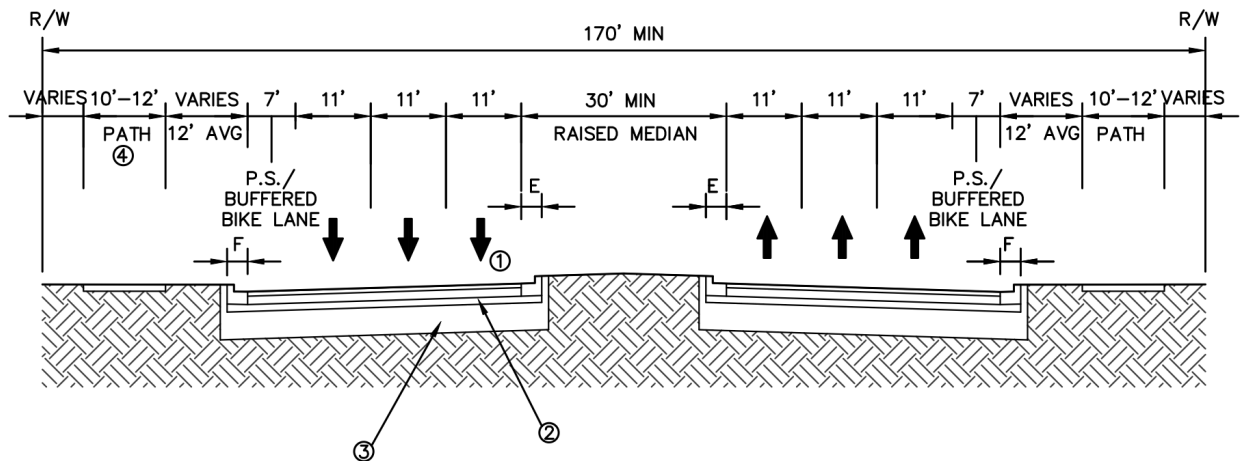


4-LANE RURAL ARTERIAL  
 DESIGN SPEED = 50 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

1. One inch S-III wearing surface plus two and one half inch type S-1 asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way

6. The following illustration applies to six-lane arterial roads in 170 feet of right-of-way with raised median, closed drainage and off-site retention (urban section):



6-LANE URBAN ARTERIAL  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

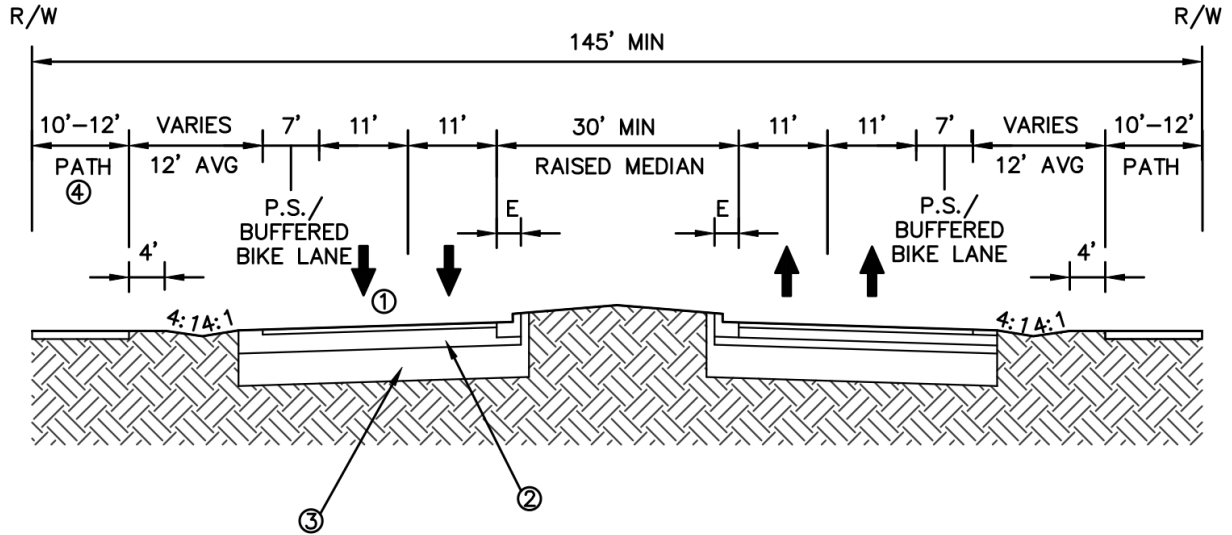
NOTES:

1. One inch S-III wearing surface plus two and one half inch type S-1 asphaltic concrete.
2. FDOT Optional Base Group 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way



**B. Collector Roads**

1. The following illustration applies to four-lane major collector roads in 145 feet of right-of-way with raised median, open drainage, and off-site retention (rural section) (Rural = clear zones and open ditches):

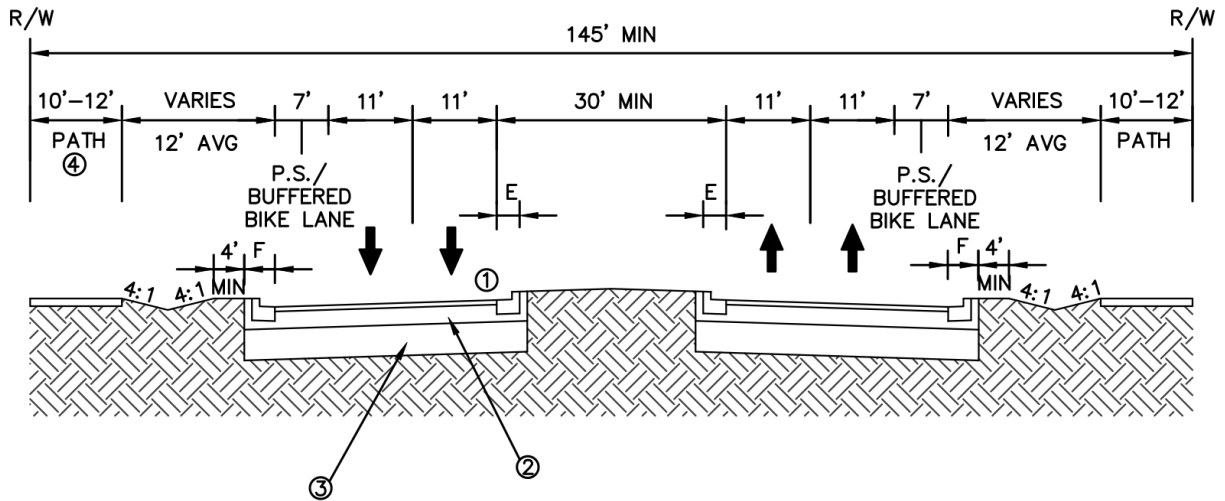


4-LANE RURAL MAJOR COLLECTOR  
 DESIGN SPEED = 50 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 SWALES FOR CONVEYANCE  
 N.T.S.

**NOTES:**

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. Eight inch compacted limerock (optional basegroup 9).
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way.

2. The following illustration applies to four-lane major collector roads in 145 feet of right-of-way with raised median, open drainage, and off-site retention (suburban section) (Suburban = curb and gutter and open ditches):



## 4-LANE SUBURBAN MAJOR COLLECTOR

DESIGN SPEED = 45 MPH

(AS APPROVED BY THE DIRECTOR)

SWALES FOR CONVEYANCE

OFF ROAD PEDESTRIAN FACILITY

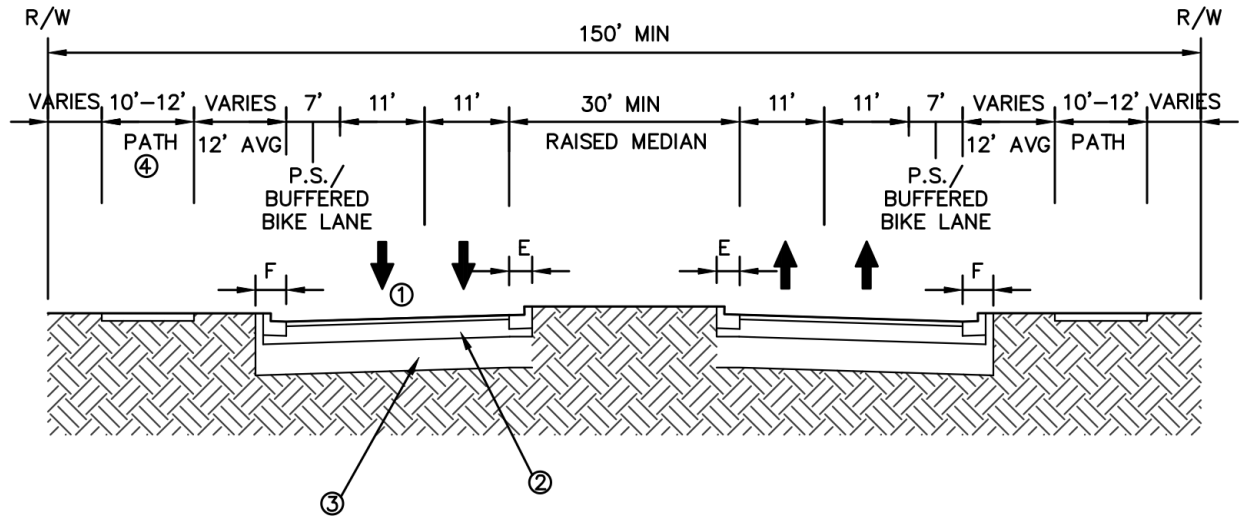
SUBSTITUTED FOR 3 FEET OUTSIDE LANE WIDTH

N.T.S.

**NOTES:**

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way.

3. The following illustration applies to four-lane major collector roads in 150 feet of right-of-way with raised median, closed drainage, and off-site retention (urban section) (Urban = curb and gutter and closed drainage):

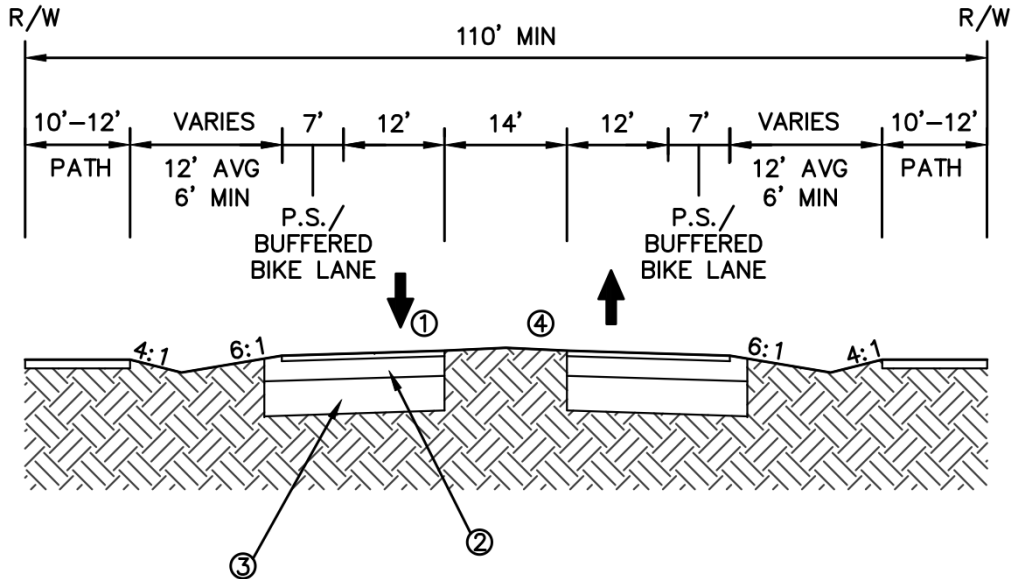


4-LANE URBAN MAJOR COLLECTOR  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. Pathways can be placed in easements located outside of right of way.

4. The following illustration applies to three-lane collector roads in 110 feet of right-of-way with a TWLTL (two-way left-turn lane) median with open drainage and off-site retention (rural section) (Rural = clear zones and open ditches):



### 3-LANE RURAL MAJOR COLLECTOR

DESIGN SPEED = 45 MPH

(AS APPROVED BY THE DIRECTOR)

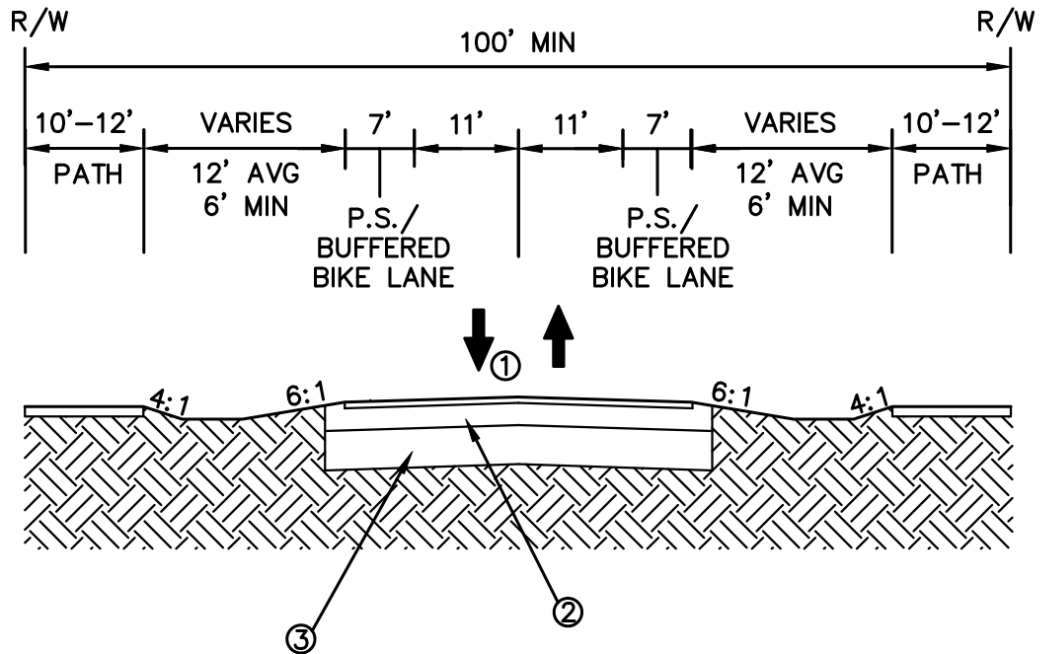
SWALES FOR CONVEYANCE

N.T.S.

**NOTES:**

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. FDOT Optional BaseGroup 9 – 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. A 14 foot two-way left turn lane may be considered subject to approval by the Public Works Director

5. The following illustration applies to two-lane collector roads in 100 feet of right-of-way, with no median, open drainage and on-site retention (rural section) (Rural = clear zones and open ditches):

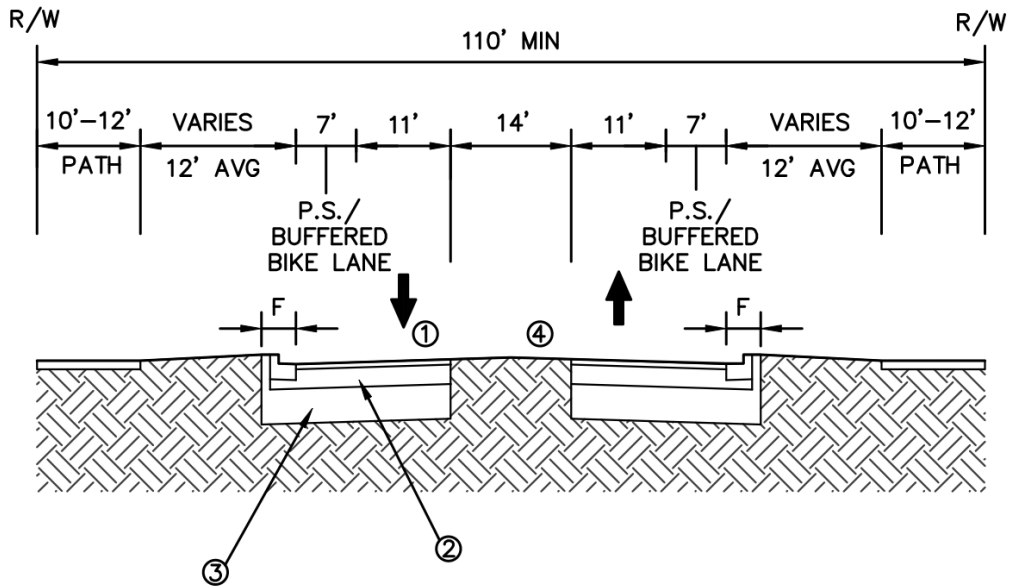


2-LANE RURAL COLLECTOR  
 DESIGN SPEED = 55 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 ON SITE RETENTION  
 N.T.S.

NOTES:

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.

6. The following illustration applies to three-lane collector roads in 110 feet of right-of-way with a two-way left turn (TWLTL) median, closed drainage and off-site retention (urban section) (Urban = curb and gutter and closed drainage):

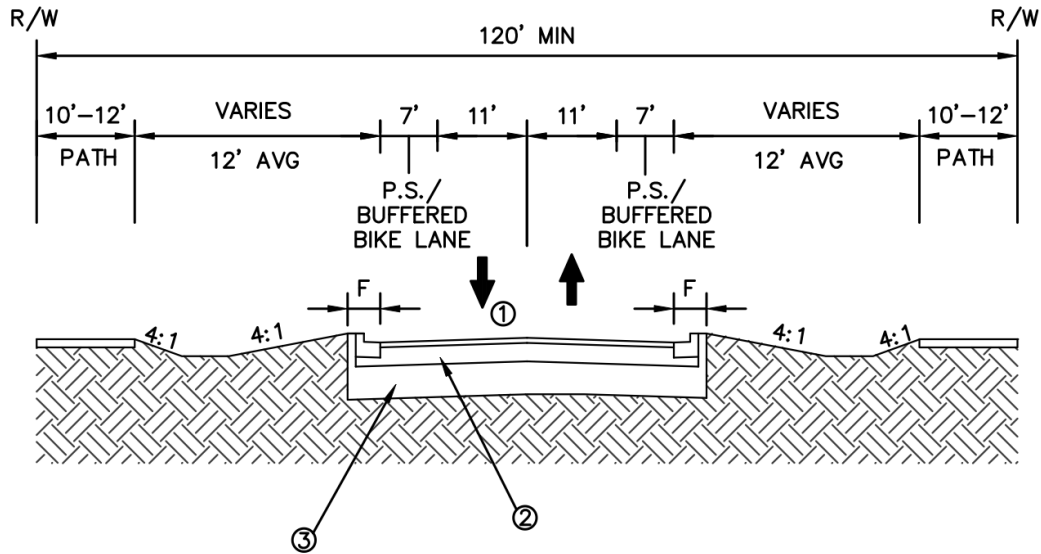


3-LANE URBAN COLLECTOR  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

NOTES:

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. FDOT Optional BaseGroup 9 - 8" compacted limerock.
3. 12 inch thick stabilized subgrade LBR 40.
4. A 14 foot two-way left turn lane may be considered subject to approval by the Public Works Director

7. The following illustration applies to two-lane collector roads in 120 feet of right-of-way with no median, open drainage and off-site retention (suburban section) (Suburban = curb and gutter and open ditches):

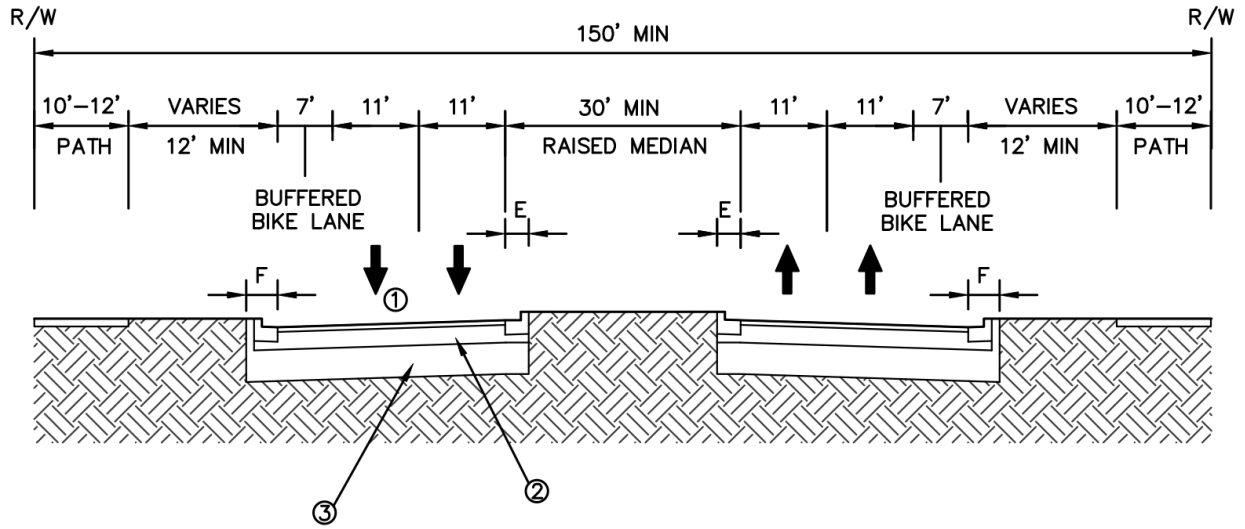


2-LANE SUBURBAN COLLECTOR  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 DITCHES FOR CONVEYANCE  
 N.T.S.

NOTES:

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. Eight inch compacted limerock (optional basegroup 9).
3. 12 inch thick stabilized subgrade LBR 40.

8. The following illustration applies to four-lane collector roads in 150 feet of right-of-way with raised median, closed drainage, and off-site retention (urban section) (Urban = curb and gutter and closed drainage):



**4-LANE URBAN COLLECTOR**  
 DESIGN SPEED = 45 MPH  
 (AS APPROVED BY THE DIRECTOR)  
 N.T.S.

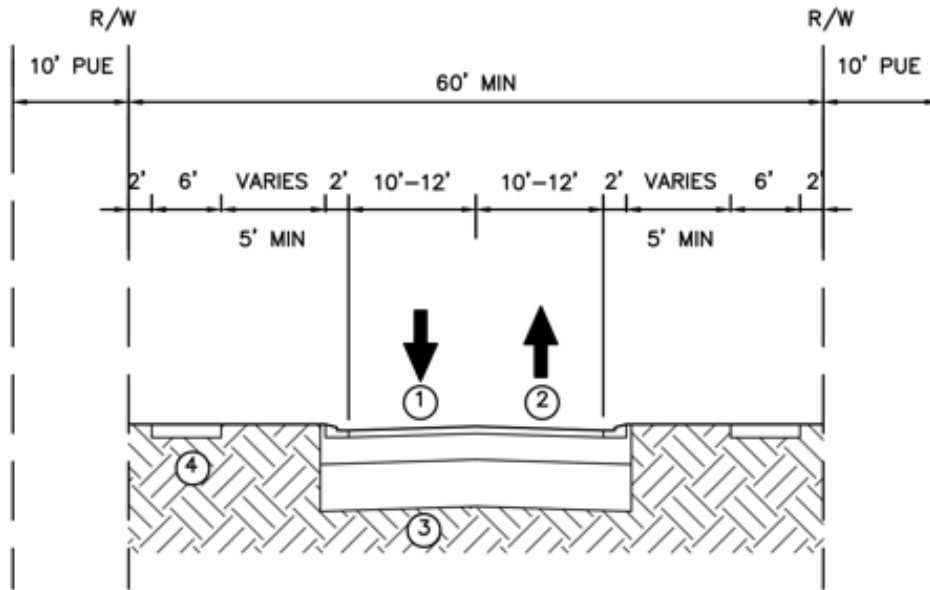
NOTES:

1. One and one half inch S-I plus one inch type S-III asphaltic concrete.
2. Eight inch compacted limerock (optional basegroup 9).
3. 12 inch thick stabilized subgrade LBR 40.



**C. Public Local Roads**

1. The following illustration applies to publicly maintained local roads with closed drainage and on-road bikeways, with a volume of less than 800 vehicles per day:

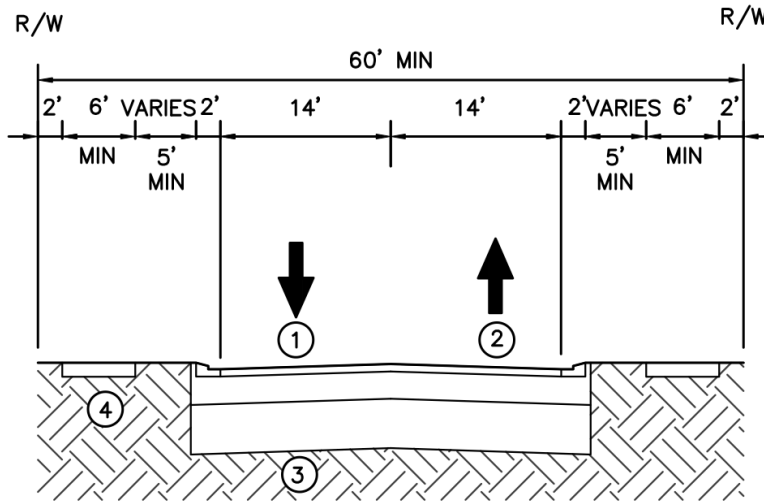


PUBLICLY MAINTAINED LOCAL STREET  
WITH CLOSED DRAINAGE, ON-ROAD  
BIKEWAYS  
N.T.S.

Note	Category B & C	Category A
1	1½" Type S-III or S-I asphalt concrete [2]	1½" Type S-I asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — both sides	Sidewalk — both sides

NOTES:  
 [1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way.  
 [2] Two ¾-inch lifts may be installed in accord with Sec. Section 10-4.B.13.D.1 if type S-III is used.

2. The following illustration applies to publicly maintained local roads with closed drainage and on-road bikeways, with a volume of more than 800 vehicles per day:

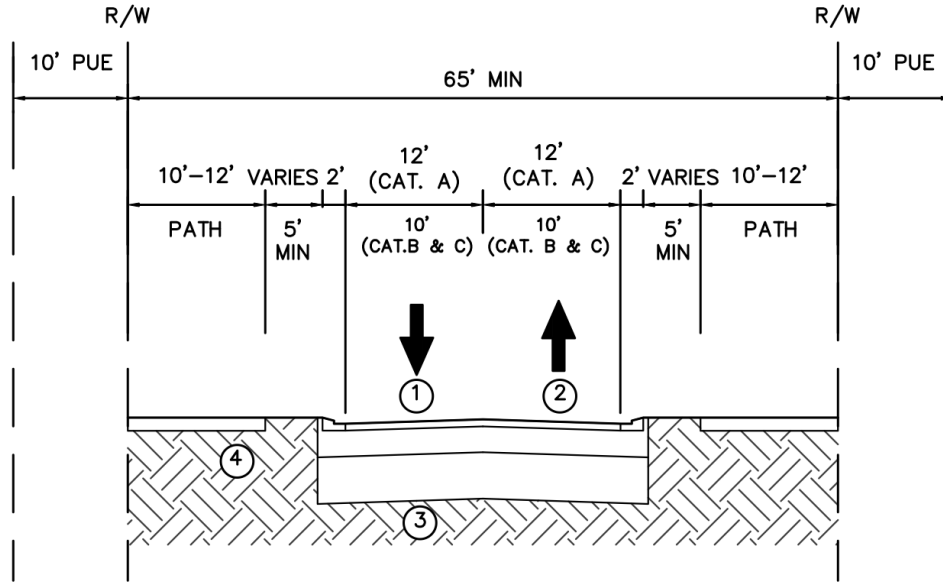


PUBLICLY MAINTAINED LOCAL STREET WITH  
CLOSED DRAINAGE AND ON-ROAD  
BIKEWAYS—VOLUME MORE THAN 800  
VEHICLES PER DAY  
N.T.S.

Note	Category B & C	Category A
1	1½" Type S-III or S-I asphalt concrete [2]	1½" Type S-I asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — both sides	Sidewalk — both sides

NOTES:  
 [1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way.  
 [2] Two ¾-inch lifts may be installed in accord with Sec. Section 10-4.B.13.D.1 if type S-III is used.

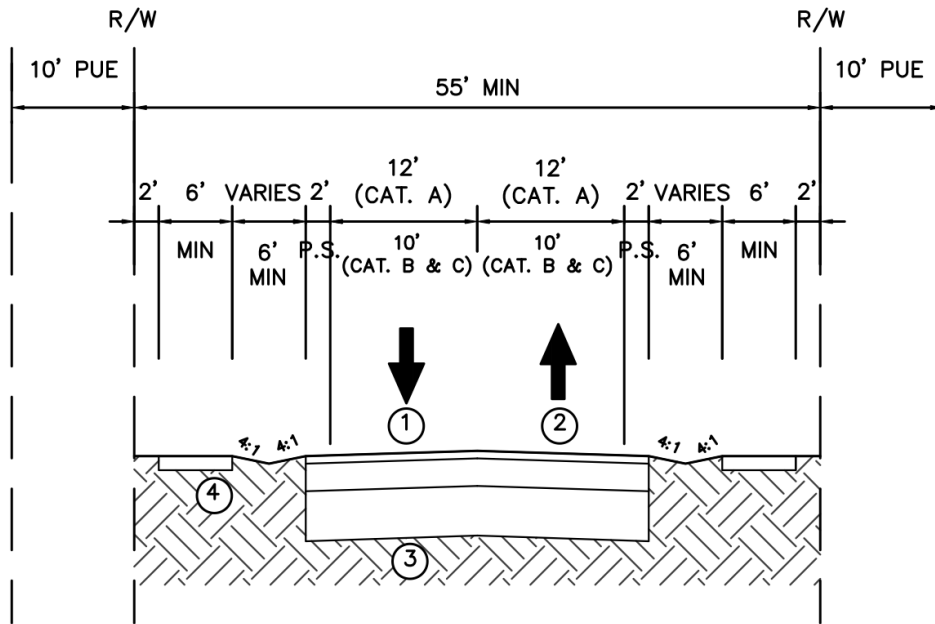
3. The following illustration applies to local public roads with closed drainage and off-road bikeways:



PUBLICLY MAINTAINED LOCAL STREET  
WITH CLOSED DRAINAGE AND OFF-ROAD  
BIKEWAYS  
N.T.S.

Note	Category B & C	Category A
1	1½" Type S-III or S-I asphalt concrete [2]	1½" Type S-I asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — both sides	Sidewalk — both sides
NOTES: [1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way. [2] Two ¾-inch lifts may be installed in accord with Sec. Section 10-4.B.13.D.1 if type S-III is used.		

4. The following illustration applies to publicly maintained local roads with open drainage and on-road bikeways, with a volume of less than 800 vehicles per day:

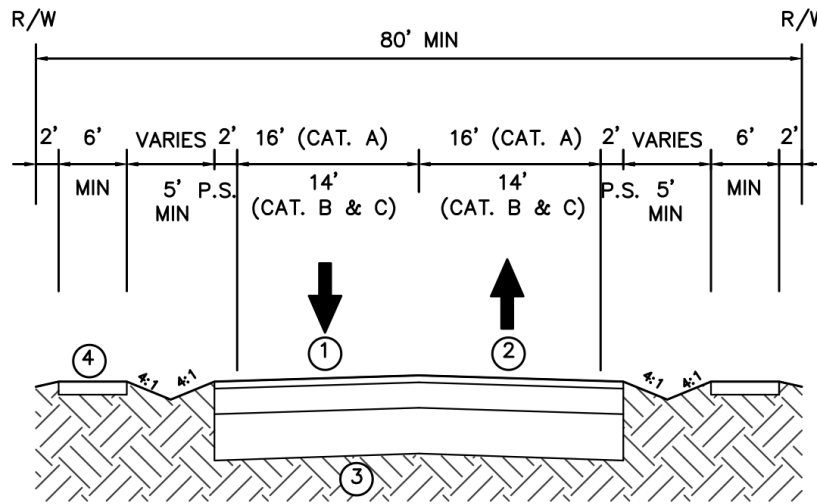


PUBLICLY MAINTAINED LOCAL STREET  
WITH OPEN DRAINAGE, ON-ROAD  
BIKEWAYS  
N.T.S.

Note	Category B & C	Category A
1	1½" Type S-III or S-I asphalt concrete [2]	1½" Type S-I asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — both sides	Sidewalk — both sides

NOTES:  
 [1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way.  
 [2] Two ¾-inch lifts may be installed in accord with Sec. Section 10-4.B.13.D.1 if type S-III is used.

5. The following illustration applies to publicly maintained local roads with open drainage and on-road bikeways, with a volume of more than 800 vehicles per day:

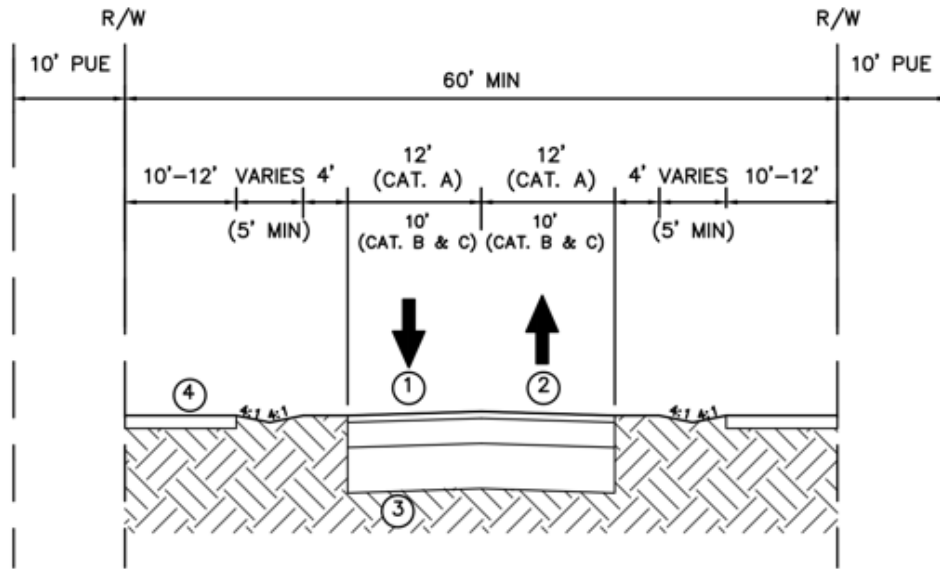


PUBLICLY MAINTAINED LOCAL STREET WITH  
OPEN DRAINAGE, ON-ROAD BIKEWAYS  
WITH A VOLUME OF MORE THAN 800  
VEHICLES PER DAY

N.T.S.

Note	Category B & C	Category A
1	1½" Type S-III or S-I asphalt concrete [2]	1½" Type S-I asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — both sides	Sidewalk — both sides
NOTES:		
[1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way.		
[2] Two ¾-inch lifts may be installed in accord with Sec. Section 10-4.B.13.D.1 if type S-III is used.		

6. The following illustration applies to publicly maintained local roads with open drainage and off-road bikeways:

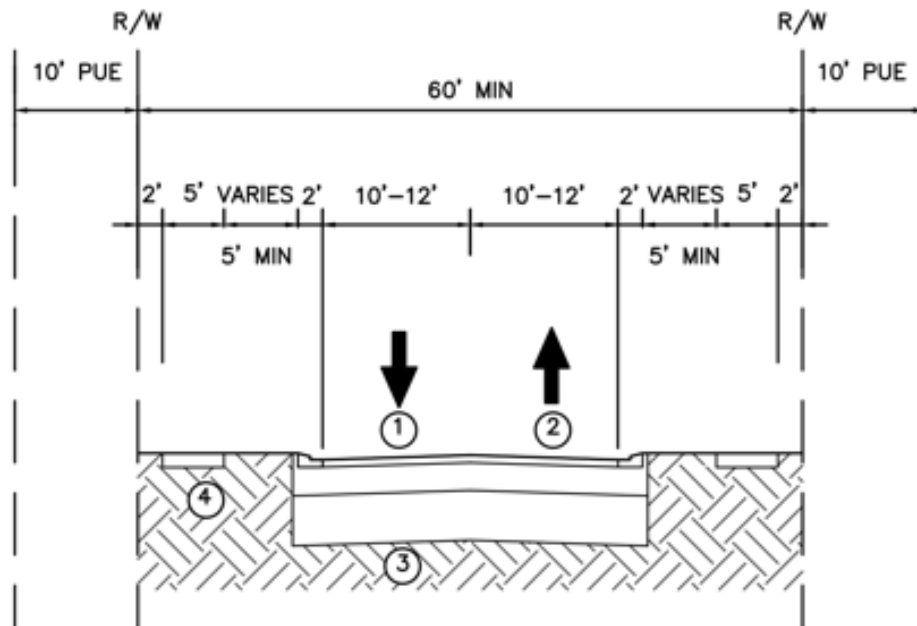


PUBLICLY MAINTAINED LOCAL STREET  
WITH OPEN DRAINAGE AND OFF-ROAD  
BIKEWAYS  
N.T.S.

Note	Category B & C	Category A
1	1½" Type S-III or S-I asphalt concrete [2]	1½" Type S-I asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — both sides	Sidewalk — both sides
NOTES: [1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way. [2] Two ¾-inch lifts may be installed in accord with Sec. Section 10-4.B.13.D.1 if type S-III is used.		

**D. Private Local Roads**

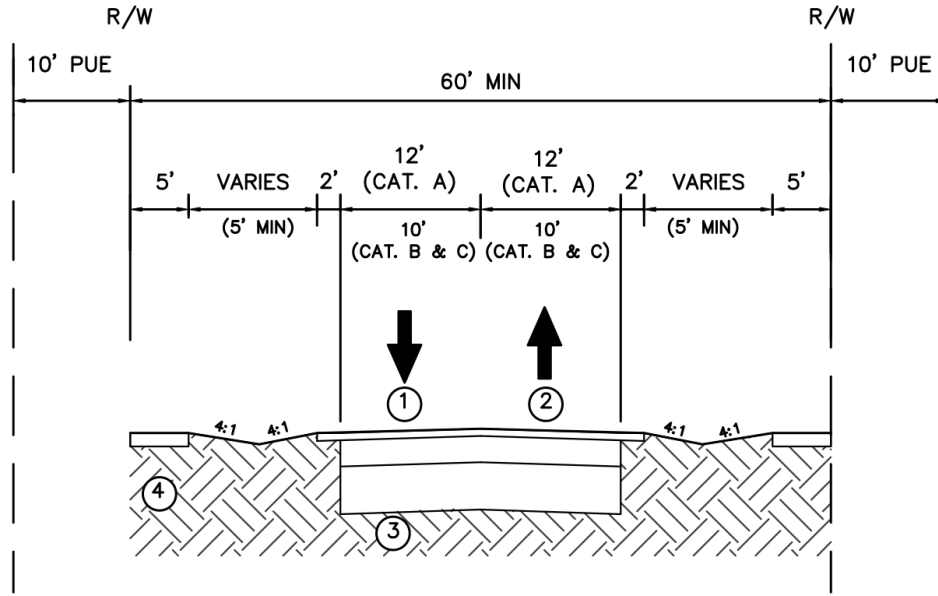
1. The following illustration applies to private local roads with closed drainage:



PRIVATELY MAINTAINED LOCAL STREET  
WITH CLOSED DRAINAGE  
N.T.S.

Note	Category B & C	Category A
1	1" Type S-III asphalt concrete [2]	1½" Type S-III asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — required on one side	Sidewalk — required on one side
NOTES: [1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way.		

2. The following illustration applies to private local roads with open drainage:



PRIVATELY MAINTAINED LOCAL STREET  
WITH OPEN DRAINAGE  
N.T.S.

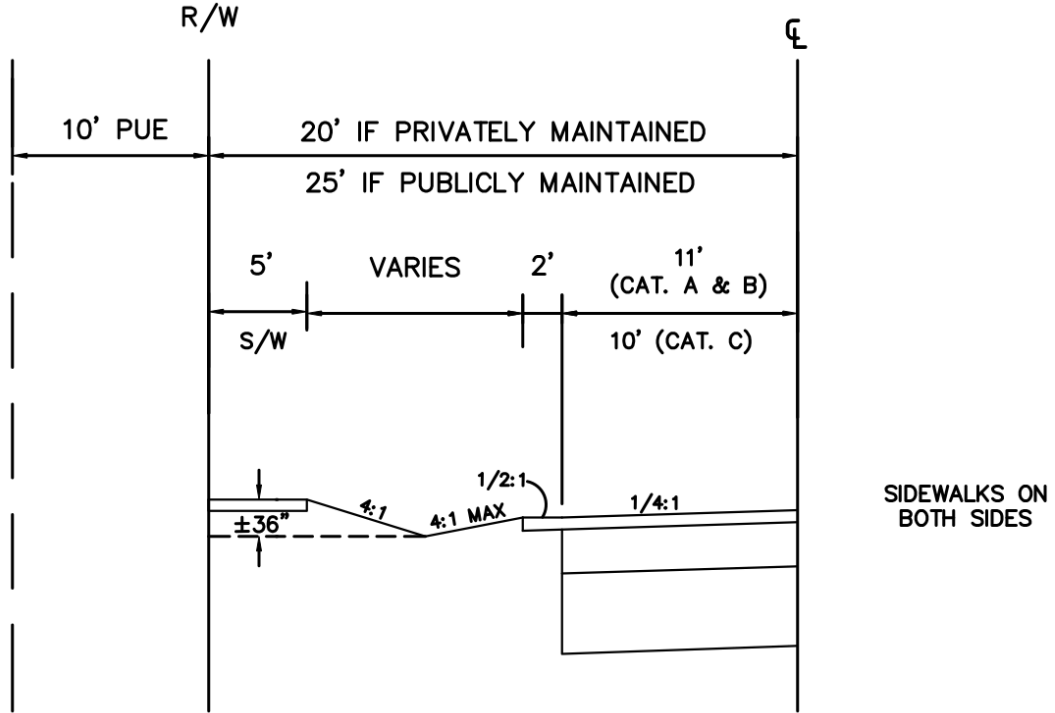
Note	Category B & C	Category A
1	1" Type S-III asphalt concrete [2]	1½" Type S-III asphalt concrete
2	6" Base	8" Base
3	6" Stabilized subgrade	12" Stabilized subgrade
4	Sidewalk — required on one side	Sidewalk — required on one side

NOTES:  
[1] A ten-foot-wide public utility easement shall be provided abutting each side of the right-of-way.



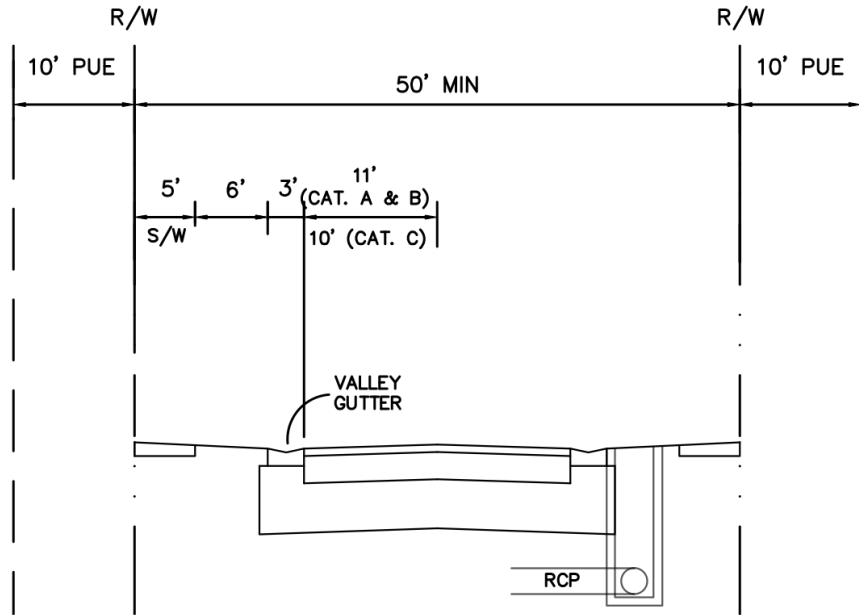
**E. Access Roads**

1. The following illustration applies to access roads with swale or ditch—35 feet right-of-way if Village maintained or 30 feet right-of-way if privately maintained. (This standard applies to front streets only. The local street standards apply to all other access streets including reverse frontage.)



ACCESS STREET  
WITH SWALE OR DITCH  
N.T.S.

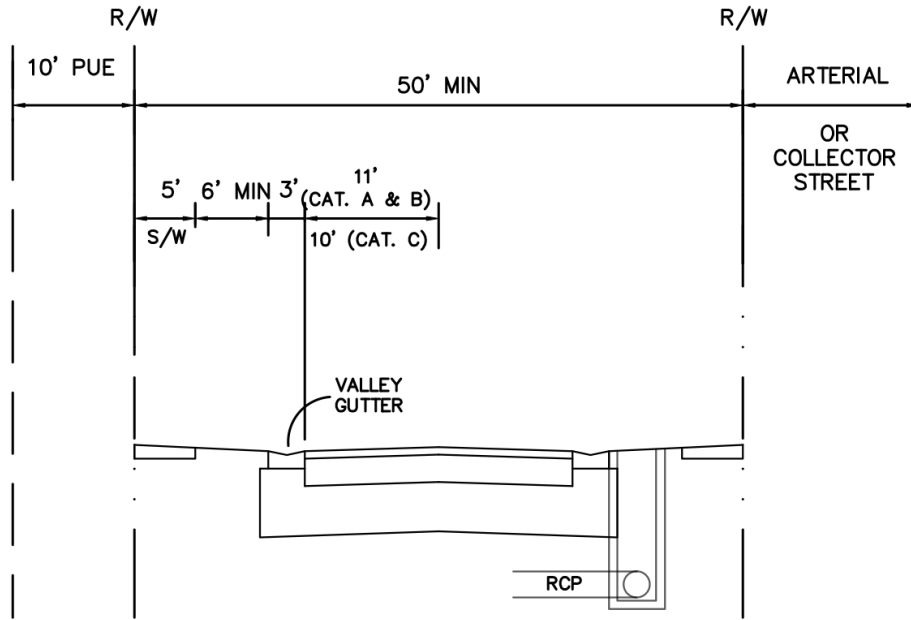
2. The following illustration applies to privately maintained access roads with underground drainage:



PRIVATELY MAINTAINED ACCESS STREET  
WITH UNDERGROUND DRAINAGE  
N.T.S.

Category	Minimum Pavement Width (ft)	Asphaltic Concrete Surface Course	Base (ft)	Stabilized Subgrade LBR 40 (ft)
A	22	1½" Type S-I	8	12
B	22	1" Type S-III	6	6
C	20	1" Type S-III	6	6

3. The following illustration applies to Village-maintained access roads with underground drainage:



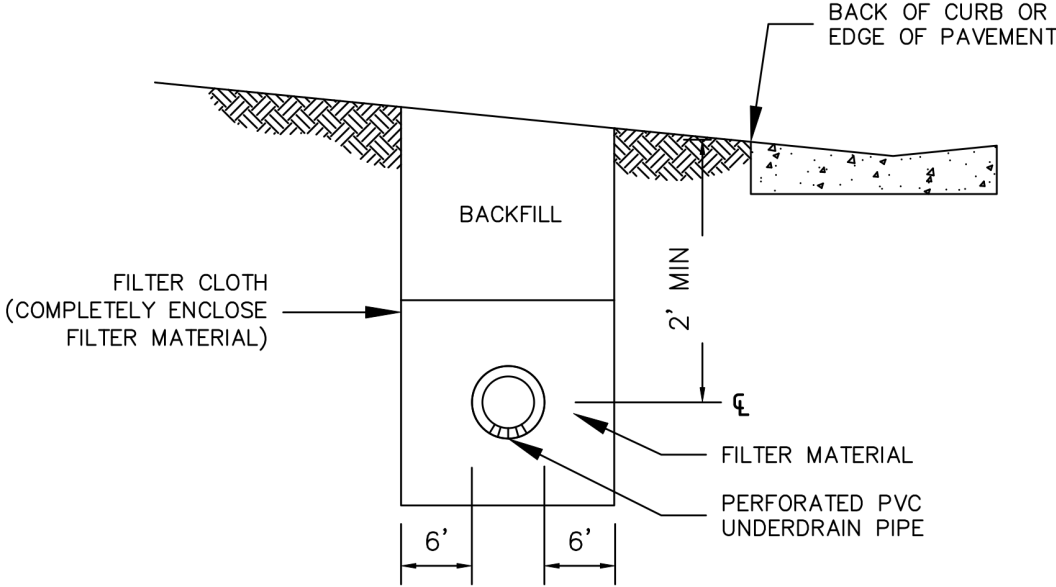
PUBLICLY MAINTAINED ACCESS STREET  
WITH UNDERGROUND DRAINAGE

N.T.S.

Category	Minimum Pavement Width (feet)	Asphaltic Concrete Surface Course	Base (ft)	Stabilized Subgrade LBR 40 (ft)
A	22	1½" Type S-I	8	12
B	22	1½" Type S-III	6	6
C	20	1½" Type S-III	6	6

**F. Recommended Underdrain Details**

The following diagram represents recommended underdrain details. The trench shall be backfilled in such a manner as to avoid damage to pipe or barrier or displacement of the filter material, and shall be compacted to a density equal to the adjacent soils.

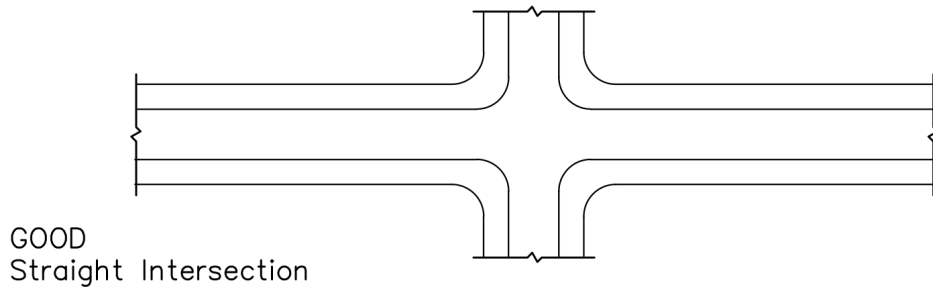


RECOMMENDED UNDERDRAIN DETAILS  
N.T.S.

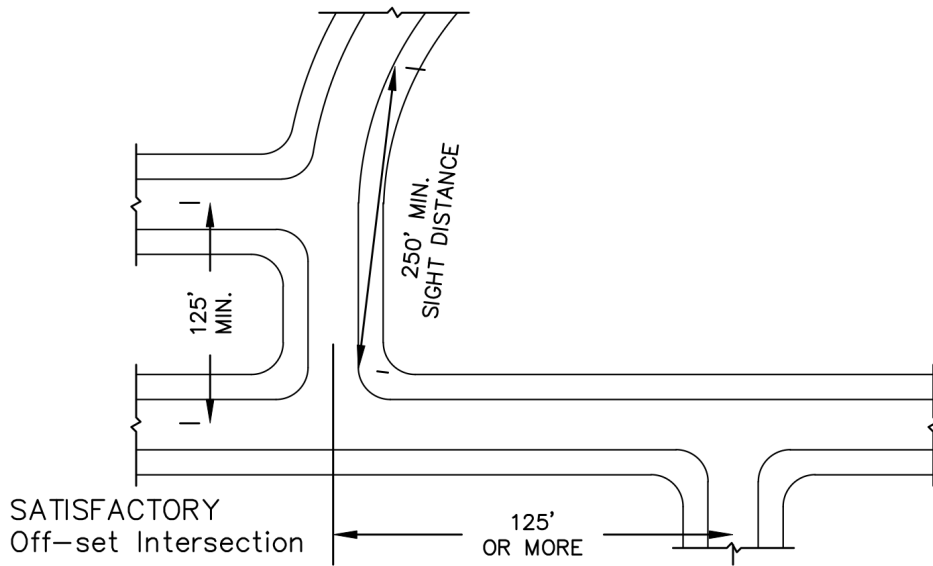
**G. Roads Intersections.**

The following illustrations apply to road intersections. All dimensions shall conform with requirements of the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways:

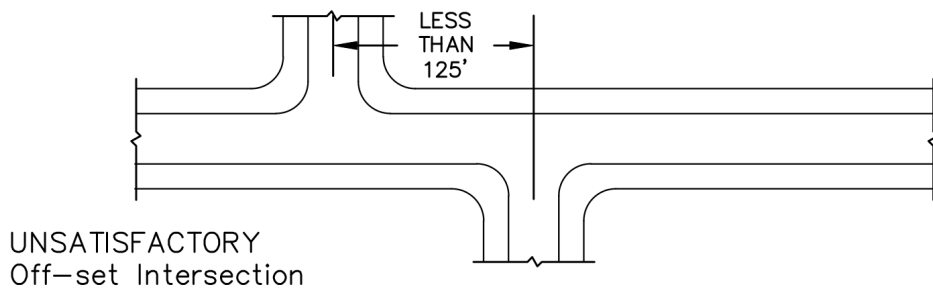
ROAD INTERSECTIONS  
N.T.S.



GOOD  
Straight Intersection



SATISFACTORY  
Off-set Intersection

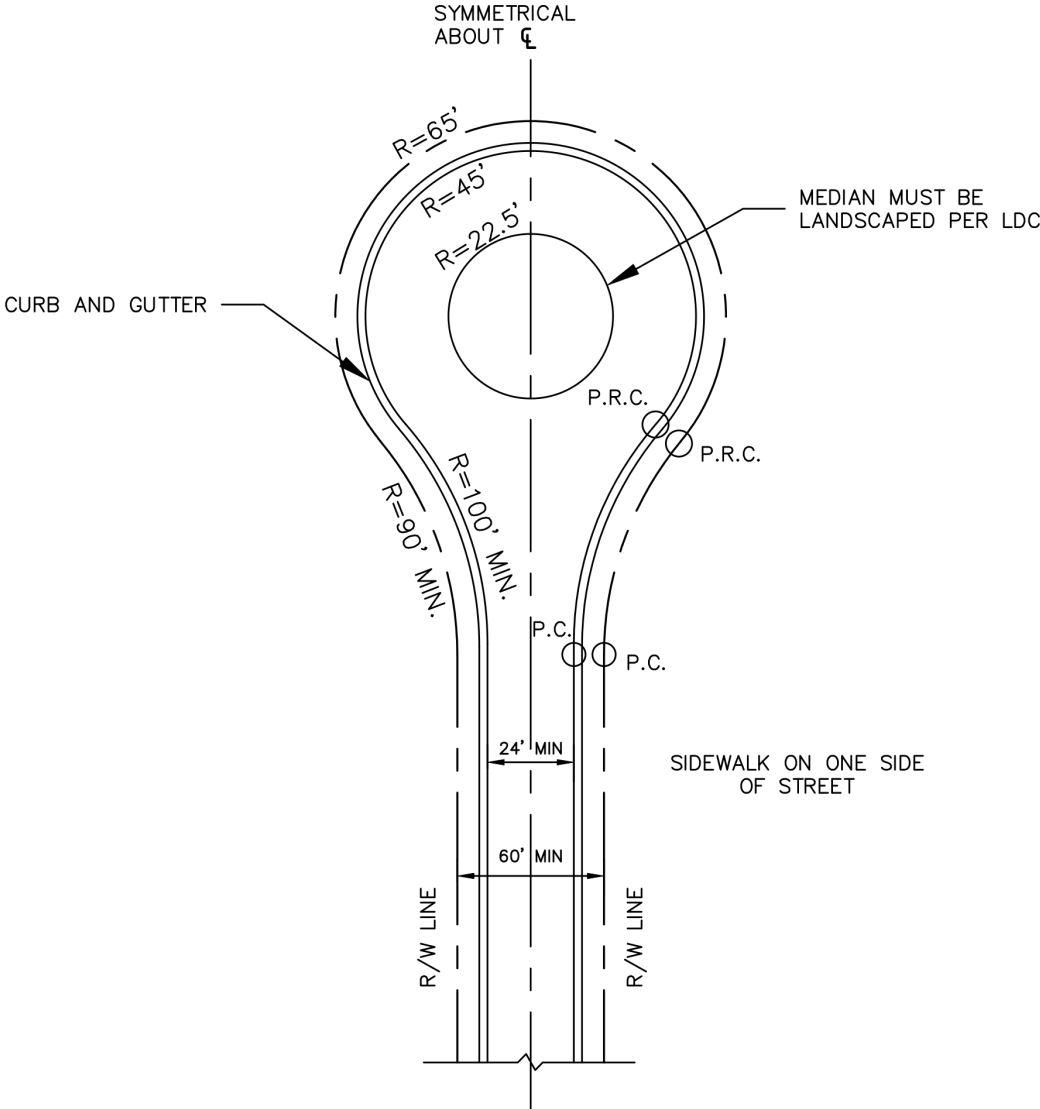


UNSATISFACTORY  
Off-set Intersection

H. Cul-de-sacs

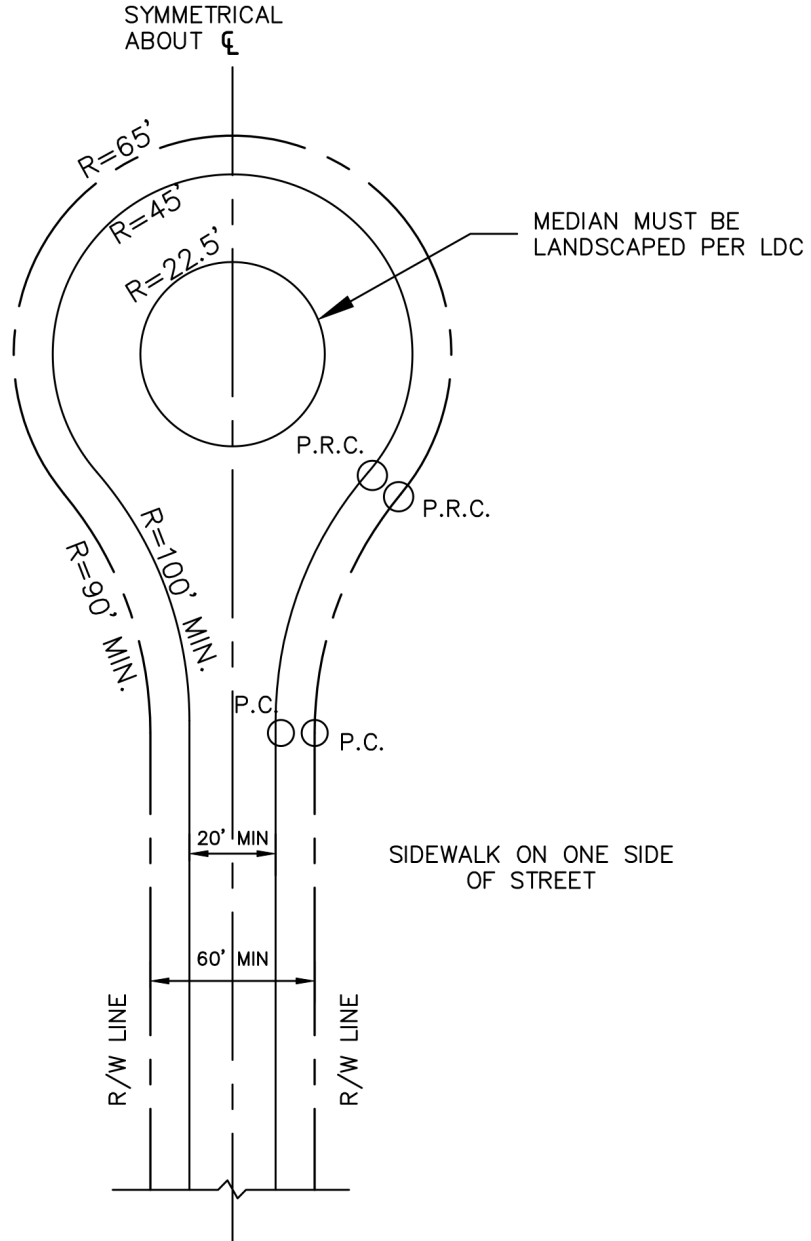
- 1. The following illustration applies to cul-de-sacs with curb and gutter:

CUL-DE-SAC CURB AND GUTTER  
N.T.S.



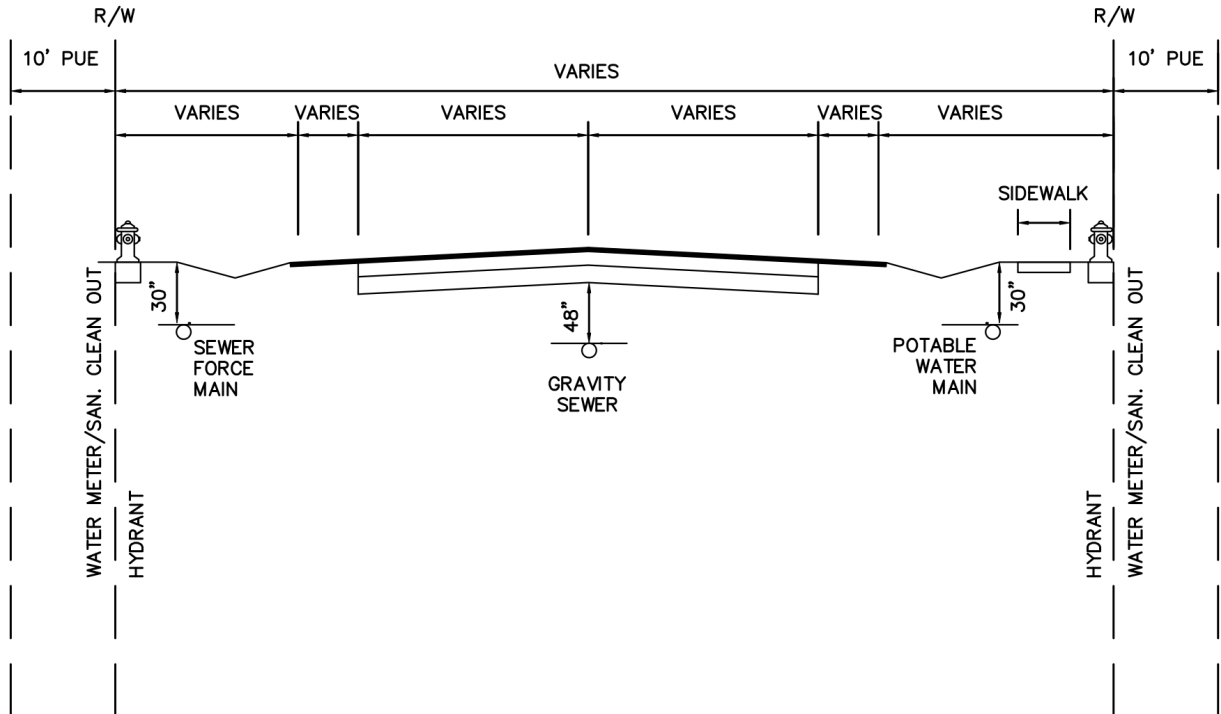
2. The following illustration applies to cul-de-sacs with ditch swale:

CUL-DE-SAC DITCH SWALE  
N.T.S.



**I. Utility Placement in Local Roads**

1. The following illustration applies to utility placement in local roads. The ten-foot-wide utility easement on each side of the right-of-way may be used for power lines, telephone lines, cable television lines, and gas lines.



TYPICAL LOCAL STREET CROSS SECTION  
SHOWING UTILITY PLACEMENT  
 N.T.S.