



Marysville Fire District

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Fire Apparatus Access Roads in Marysville

These documents all address various requirements for Fire Apparatus Access Roads:

- Marysville Fire District (MFD) Fire Lane Standards.
- 2009 International Fire Code (IFC) as amended by Marysville Municipal Code (MMC) Section 9.04.0503. Link: <http://www.codepublishing.com/wa/Marysville/>
- City of Marysville Community Development (CD) Engineering Design and Development Standards.

The basic requirements of Fire Apparatus Access Roads are as follows:

- Minimum width of 20 feet (26 feet is required in some locations).
- Maximum dead-end length of 600 feet for public roads and 300 feet for private roads.
- Turnaround provisions are required for dead-end lengths exceeding 150 feet.

Our plan reviews of civil plans and building site plans include evaluation of access requirements for fire apparatus. Some typical comments regarding access concerns are listed below:

- Access for fire apparatus appears inadequate. An approved fire apparatus access road, with a minimum 20' wide unobstructed emergency access, is required.
- Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be increased to 26', extending 20' on either side of a fire hydrant.
- A minimum 26' wide access road is required in the immediate vicinity of any building more than 30 feet in height.
- An approved fire apparatus access road is required. Provide a minimum 20' wide fire access route with an approved turnaround.
- Turnaround provision is required for dead-end fire apparatus access roads in excess of 150 feet. A minimum 40 foot radius turnaround is required, or an approved alternate design turnaround.
- Proposed driveway and parking configuration provides an adequate alternate turnaround area for fire apparatus.
- Recommend the length of the roadway be posted "NO PARKING" due to the minimal 20' width of the roadway.
- The length of the roadway shall be posted "NO PARKING" as needed to maintain a minimum 20' wide unobstructed emergency access along the roadway; and to maintain a minimum 26' wide access within 20 feet of all hydrants and in the immediate vicinity of any building more than 30 feet in height.
- An approved residential sprinkler system may be considered to mitigate access problems. Refer to IFC Section 503, and IFC Appendix D, for access guidelines. Appendix D details alternative hammerhead, "Y", and cul-de-sac turnarounds that may be utilized.

FIRE LANE STANDARDS

- Shall be a minimum of 20 ft. wide.
- Shall have a minimum of 13 ft. 6 in. vertical clearance.
- Provide Fire Department access to within 50 ft. of the front of the building.
- Provide Fire Department access to within 150 ft. of any portion of the building.
- Provide Fire Department access to all on-site fire hydrants.
- Provide Fire Department access to within 50 ft. of sprinkler and standpipe connections.
- Shall be circulating or have an approved turnaround provision if over 150 ft. long.
- Shall be paved with asphalt or approved equivalent.
- Shall be marked with the words “Fire Lane – No Parking.” Words to be painted on the pavement every 50 ft. center to center. Letters to be a minimum of 12 in. high and red in color.
- Shall have perimeter striping wherever necessary to delineate the boundaries of the fire lane. Striping to be a minimum of 4 in. wide and red in color.
- Shall be capable of supporting the imposed loads of a fire apparatus.
- Shall have adequate turning radius to allow maneuvering of fire apparatus. Inside radius – 25 ft., outside radius – 45 ft.

2009 International Fire Code (Amended)
Chapter 5 - Fire Service Features

SECTION 501 - GENERAL

501.3 Construction documents.

Construction documents for proposed fire apparatus access, location of fire lanes , security gates across fire apparatus access and construction documents and hydraulic calculations for fire hydrant systems shall be submitted to the fire department for review and approval prior to construction.

501.4 Timing of installation.

When fire apparatus access roads or a water supply for fire protection is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles in accordance with Section 505.2.

SECTION 502 - DEFINITIONS

502.1 Definitions.

The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FIRE APPARATUS ACCESS ROAD. A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane , public street, private street, parking lot lane and access roadway.

FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

KEY BOX. A secure device with a lock operable only by a fire department master key, and containing building entry keys and other keys that may be required for access in an emergency.

SECTION 503 - FIRE APPARATUS ACCESS ROADS

9.04.0503 International Fire Code (IFC) Section 503 adopted – Fire Apparatus Access Roads.

Section 503.1 shall be adopted as written, Sections 503.1.1, 503.1.2, 503.1.3, 503.2, 503.3, and 503.4, being sections of the International Fire Code (2009 Edition) not adopted by the Washington State Building Code Council, are hereby adopted and enacted in the city of Marysville. (Ord. 2739 § 1, 2008; Ord. 2532 § 7, 2004; Ord. 2378 § 6, 2001. Formerly 9.04.070(1)).

503.1 Where required.

Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3.

503.1.1 Buildings and facilities.

Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exception: The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

503.1.2 Additional access.

The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

503.1.3 High-piled storage.

Fire department vehicle access to buildings used for high-piled combustible storage shall comply with the applicable provisions of Chapter 23.

9.04.0503.1.4 Section 503.1.4 added - Aerial Fire Apparatus Access Roads.

503.1.4 Where Required. Buildings or portions of buildings or facilities exceeding 30 feet (9,144 mm) in height above the lowest level of fire department vehicle access shall be provided with approved fire apparatus access roads capable of accommodating fire department aerial apparatus. Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.

503.1.4.1 Width. Fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7,925 mm) in the immediate vicinity of any building or portion of building more than 30 feet (9,144 mm) in height.

503.1.4.2 Proximity to building. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet (4,572 mm) and a maximum of 30 feet (9,144 mm) from the building, and shall be positioned parallel to one entire side of the building.

(Ord. 2739 § 1, 2008).

9.04.0503.1.5 Section 503.1.5 added - One- or Two-Family Dwelling Residential Developments.

503.1.5 Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with separate and approved, unobstructed fire apparatus access roads and shall be placed a distance apart equal to not less than one half of the length of maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official. (Ord. 2739 § 1, 2008).

9.04.0503.2 IFC Section 503.2 amended – Access – Specifications:

503.2 Specifications.

Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8.

503.2.1 Dimensions.

Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

Section 503.2.1 Dimensions is amended to add:

Where a fire hydrant or fire department connection is located on a fire apparatus access road, the minimum road width shall be increased to 26', extending 20' on either side of a fire hydrant or fire department connection. (Ord. 2739 § 1, 2008).

503.2.2 Authority.

The fire code official shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

503.2.3 Surface.

Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

Section 503.2.3 Surface is amended to add an additional sentence reading as follows: ~~The surface shall be entirely composed of gravel, crushed rock, asphalt or concrete, and designed to support the imposed load of fire apparatus weighing at least 75,000 pounds.~~” (Ord. 2739 § 1, 2008; Ord. 2532 § 7, 2004; Ord. 2378 § 6, 2001. Formerly 9.04.070(3)).

503.2.4 Turning radius.

The required turning radius of a fire apparatus access road shall be determined by the fire code official.

Section 503.2.4 Turning radius is amended to add an additional sentence reading as follows: ~~A turning radius will be approved only if it is in accordance with the Engineering Design and Development Standards for the City of Marysville.~~” (Ord. 2739 § 1, 2008; Ord. 2532 § 7, 2004; Ord. 2378 § 6, 2001. Formerly 9.04.070(4)).

503.2.5 Dead ends.

Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus.

Section 503.2.5 Dead ends is amended to add an additional three sentences reading as follows:

Turnarounds shall be a minimum eighty (80) foot diameter cul-de-sac with no obstructions within the cul-de-sac. Planters may be installed in cul-de-sacs when the outside radius of the cul-de-sac is a minimum of fifty (50) feet and inside radius is minimum of 25 (twenty five) feet. An approved hammerhead turnaround may be used if there are no alternatives, and it is approved by the fire code official. (Ord. 2739 § 1, 2008; Ord. 2532 § 7, 2004; Ord. 2378 § 6, 2001. Formerly 9.04.070 (5)).

503.2.6 Bridges and elevated surfaces.

Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the fire code official.

503.2.7 Grade.

The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the fire department's apparatus.

Section 503.2.7 Grade is amended to add an additional sentence reading as follows:

—A gradient will be approved only if it is in accordance with the Engineering Design and Development Standards for the City of Marysville.” (Ord. 2739 § 1, 2008; Ord. 2532 § 7, 2004; Ord. 2378 § 6, 2001. Formerly 9.04.070(6)).

503.2.8 Angles of approach and departure.

The angles of approach and departure for fire apparatus access roads shall be within the limits established by the fire code official based on the fire department's apparatus.

503.3 Marking.

Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

503.4 Obstruction of fire apparatus access roads.

Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 shall be maintained at all times.

503.5 Required gates or barricades.

The fire code official is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

9.04.0503.5 IFC Section 503.5 Required gates or barricades is amended.

Section 503.5 is amended by adding:

Entrances to roads, trails or other access ways which have been closed with gates and barriers shall not be obstructed by parked vehicles. (Ord. 2739 § 1, 2008).

503.5.1 Secured gates and barricades.

When required, gates and barricades shall be secured in an approved manner. Roads, trails and other accessways that have been closed and obstructed in the manner prescribed by Section 503.5 shall not be trespassed on or used unless authorized by the owner and the fire code official.

Exception: The restriction on use shall not apply to public officers acting within the scope of duty.

503.6 Security gates.

The installation of security gates across a fire apparatus access road shall be approved by the fire chief. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

9.04.0503.6 IFC Section 503.6 Security gates is amended.

Section 503.6 is amended by adding:

Gates installed in a residential community shall be equipped with a strobe activating device. Minimum gate width opening shall be 20 feet. The gate is required to open automatically with the approach of emergency vehicles. In the event of a loss of power, the gate shall open automatically and remain in the open position until power is restored. The gate shall remain in the open position until such time that the power is restored.

Exemption: 5 or fewer dwelling units.

(Ord. 2739 § 1, 2008).

9.04.0503.7 Add Section 503.7 Split entries.

Section 503.7 Split Entries. Split entries to plats, short plats, commercial development and other sites requiring emergency vehicle access, shall be allowed where each aisle (lane) is at least 14 (fourteen) feet in width. (Ord. 2739 § 1, 2008).

SECTION 505 - PREMISES IDENTIFICATION

505.2 Street or road signs.

Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replaced by permanent signs.

SECTION 506 - KEY BOXES

506.1 Where required.

Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type and shall contain keys to gain necessary access as required by the fire code official.

506.1.1 Locks.

An approved lock shall be installed on gates or similar barriers when required by the fire code official.

506.2 Key box maintenance.

The operator of the building shall immediately notify the fire code official and provide the new key when a lock is changed or rekeyed. The key to such lock shall be secured in the key box.

**Marysville Development Code
Engineering Design and Development Standards**

To access Marysville Development Code:

http://marysvillewa.gov/CommunityDev/Planning/docs/edds_2007/engstd.html

CHAPTER 3

ENGINEERING DESIGN and DEVELOPMENT STANDARDS

September 1999
Revised May 2007

Prepared by:

City of Marysville Public Works / Community Development

3-202 Residential Access Streets

See Standard Pland No 3-202-001 through 3-202-004

CLASSIFICATION	NEIGHBORHOOD COLLECTORS	LOCAL ACCESS STREETS	LOCAL ACCESS STREETS	PRIVATE ROADS (RESIDENTIAL) (13)
Land Use Area				
Serving Potential Number of Single-Family Dwelling Units	300 Max.	100 Max.	9 Max.	1 to 4 total lots and 2 to 8 total Units
CRITERIA				
A. Typical Road Type	Curb & Gutter	Curb & Gutter	Curb & Gutter	Shoulder
B. Design Speed (MPH) [5]	30	25	25	20
C. Horizontal Curvature Min. Radius (Ft.) [12]	300	165	165	90
D. Max. Grade [6]	12	15	15	15
E. Standard Stopping Sight Distance (Ft.) [7]	200	155 ft.	155	115
F. Standard Entering Sight Distance (Ft.) [8]	250	200	200	150
G. Pavement Width (Ft.)	36	28	24	Varies (See Std. Plan 3-202004)
H. Right-of-way Width (Ft.)	60	50	40	Varies (See Std. Plan 3-202004)
I. Corner Radii	See Section 3-209	See Section 3-209	See Section 3-209	See Section 3-209
J. Min. Half St. Paved Width (Ft.)	20	20	None	None

NOTES:

1. Within the above parameters, geometric design for specific streets shall be consistent with AASHTO Policy on Geometric Design of Highways and Streets.
2. See Section 3-213 for one-way loops.
3. See Section 3-215 for residential access connection requirements.
4. See Section 3-216 for urban exception criteria.
5. Design speed is a basis for determining geometric elements and does not imply posted or legally permissible speed.
6. Maximum grade may be exceeded for short distances. (See Section 3-210).
7. Standard Stopping Sight Distance (SSD) shall apply unless otherwise approved by the Engineer. (See Section 3-211).
8. Standard Entering Sight Distance (ESD) shall be determined at intersections and driveways unless otherwise approved by the Engineer (See Section 3-212).
11. For guardrail installation, shoulders shall be two feet wider.
12. For Local Access Streets only an elbow intersection may be constructed in accordance with standard plan 3-209-002
13. Private roads are only permitted in Short Subdivisions with 4 or less total development lots.

3-203 Commercial Access Streets¹

CLASSIFICATION	MIXED USE DISTRICT ACCESS STREETS	BUSINESS ACCESS STREETS	INDUSTRIAL ACCESS STREETS
CRITERIA			
A. Typical Road Type	Curb & Gutter	Curb & Gutter	Curb & Gutter
B. Design Speed (MPH) [3]	35	35	35
C. Horizontal Curvature Min. Radius (Ft.) [3]	See Table 3-2.1	See Table 3-2.1	See Table 3-2.1
D. Maximum Grade (%) [4]	12	12	11
E. Standard Stopping Sight Distance (Ft.) [5]	See Table 3-2.1	See Table 3-2.1	See Table 3-2.1
F. Standard Entering Sight Distance (Ft.) [6]	See Table 3-2.1	See Table 3-2.1	See Table 3-2.1
G. Right-of-Way Width (Ft.)[8]	50-70	50-70	50
H. Min. Half Street Paved Width (Ft.)	20	20	20
I. Min. one-way Paved Width (Ft.)	20	22	24

NOTES:

- 1 See standard plan 3-201-003, 3-201-004 and 3-203-001
- 2 "Commercial Access Streets" serve multiple dwelling, business, and industrial developments. Within the above parameters, geometric design requirements shall be determined for specific streets consistent with the WSDOT Design Manual.
- 3 Design speed is a basis for determining geometric elements and does not imply posted or legally permissible speed. Curves shall be designed within parameters of section 3-204).
- 4 Maximum grade may be exceeded for short distances (See Section 3-210).
- 5 Standard Stopping Sight Distance (SSD) shall apply unless otherwise approved by the Engineer. (See Section 3-211).
- 6 Standard Entering Sight Distance (ESD) shall apply at intersections and driveways unless otherwise approved by the Engineer. (See Section 3-212).
- 7 For guardrail installations, shoulders shall be two feet wider.
- 8 Right-of-Way width varies based on roads classified with bike lanes and or planter strips.

Arterial Horizontal Curvature and Sight Distance Design Values

The design values shown in Tables 3-2.1 are minimum values necessary to meet the requirements of Sections 3-201 and 3-203 for a selected design speed and road classification. Superelevation on horizontal curves shall not be used unless approved by the Public Works Director or designee.

Table 3-2.1
Arterial Streets and Commercial Access Streets Design Values

3-205 Private Streets

Design Speed (mph)	30	35	40
Horizontal Curvature (Ft.)	300	454	667
Stopping Sight Distance (Ft.)	200	250	305
Entering Sight Distance (Ft.)	375	470	575
Passing Sight Distance (Ft.) for a 2-Lane Road	1,100	1,300	1,500

A. While community street requirements are usually best served by public streets, owned and maintained by the City, private streets may be appropriate for some local access streets. Usually these are minor access streets, either residential or commercial.

B. Private streets may be approved only when they are:

1. Permanently established by right-of-way, tract or easement providing legal access to each affected lot, dwelling unit, or business and sufficient to accommodate required improvements, to include provision for future use by adjacent property owners when applicable; and
2. Built to these Standards as set forth herein; Standard Plan 3-202-004; and
3. Accessible at all times for emergency and public service vehicle use; and
4. Not obstructing, or part of, the present or future public neighborhood circulation plan developed in the Marysville Comprehensive Plan.
5. Not going to result in land locking of present or future parcels; and
6. Not needed as public roads to meet the minimum road spacing requirements of these Standards; and
7. A private road maintenance agreement consistent with Appendix E has been approved, recorded, and verified with the City, which will provide for maintenance of the private streets and associated parking areas by owners in the development.
8. At least one of the following conditions exists:
 - a. The private street is located within a short subdivision that has a total of four (4) or fewer developed lots and in the case of duplexes eight (8) or fewer total units.
 - b. The roadways serve commercial or industrial facilities where no circulation continuity is necessary.
 - c. The Public Works Director or designee and Fire Marshal determines that no other access is available and the private road is adequate.

9. Maintained by a capable and legally responsible owner or homeowners' association or responsible entity or parties including all benefited property owners; and

10. Clearly described on the face of the plat, short plat, or other development authorization and clearly signed at street location as a private street, for the maintenance of which City of Marysville is not responsible.

C. The City of Marysville will not accept private streets for maintenance as public streets until such streets are brought into conformance with current City road standards.

D. The City of Marysville will not accept private streets within short plats when the roads providing access to the short plat are private and already have the potential to serve more than the number of lots specified in Section 3-202. Short plats proposed on properties to which the access is over private streets that do not meet the standards in this section shall be denied.

E. Private access shall conform to Standard Plan 3-202-004 for private roads and access easements subject to:

- 1 A maximum of four (4) total lots or in the case of duplexes (8) total units are in the development.
- 2 Minimum tract width of 20 feet for up to one (1) lot or two (2) units, and 30 feet for two (2) to four (4) lots or four (4) to eight (8) units.
- 3 Access road length shall not exceed 300 feet and shall not extend from any portion of a public cul-de-sac.
- 4 Private roads exceeding 150' shall construct a turn-a-round consistent with Standard Plan 3-207-004.

3-207 Cul-de-sacs and Eyebrows

See standard plans 3-207-001 through 3-207-003.

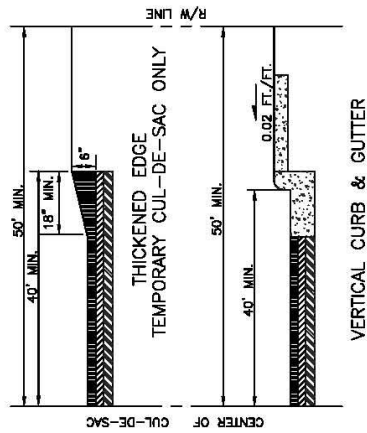
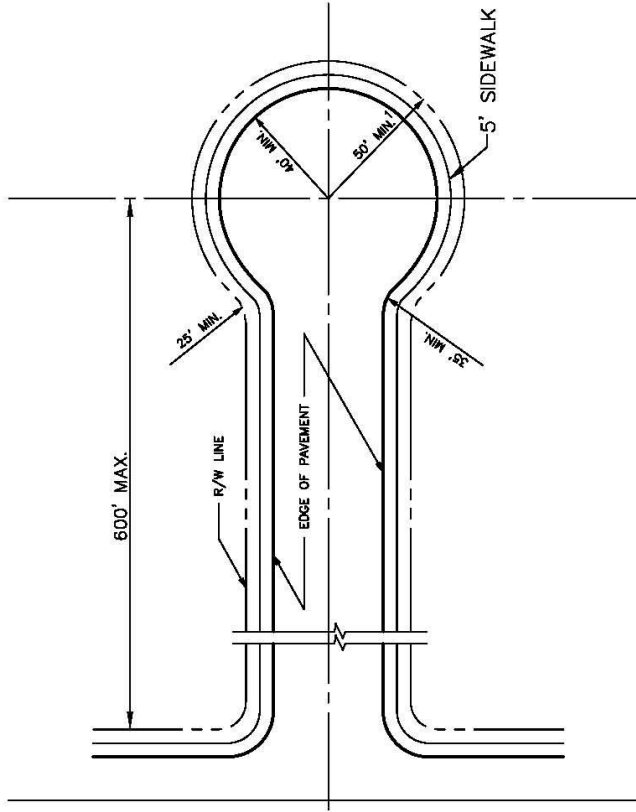
A. Whenever a dead end public street serves 5 or more lots or a private/public road extends more than 150 feet from edge of the intersecting right of way to farthest extent of the road an approved turn-a-round shall be constructed as follows:

1. Minimum right-of-way diameter across bulb section: 100 feet in a permanent cul-de-sac for all public roads; and 84 feet in a temporary cul-de-sac, with bulb area lying outside straight-street right-of-way provided as temporary easement pending forward extension of the street.
2. Minimum diameter of surfacing across bulb: 80 feet of paving in curb, gutter, and sidewalk roadway section; 80 feet total in shoulder type or thickened edge cul-de-sacs to include 64 feet of paving and eight-foot shoulders with compacted crushed surfacing material. See Standard Plan 3-207-001.
3. Private roads shall construct a turn-a-round consistent with Standard Plan 3-207-004.

B. A permanent cul-de-sac shall not be longer than 600 feet measured from the edge of intersecting street right of way to the geometric center monument of the cul-de-sac. The Public Works Director or designee based on pertinent traffic planning factors such as topography; sensitive areas and existing development will consider exceptions to this rule.

C. The Public Works Director or designee may require an emergency vehicle access to connect a cul-de-sac at its terminus with other streets.

- D. If a temporarily cul-de-sac exists, removal of the temporary cul-de-sac, regrading/restoration of disturbed area, and extension of the sidewalk shall be the responsibility of the developer who extends the road. See Standard Plan 3-207-002.
- E. The maximum cross slope in a bulb shall not exceed 6 percent. Partial bulbs or eyebrows shall have a minimum paved radius and an island configuration as shown on Standard Plan 3-207-003. Island shall be offset two feet from edge of traveled way.
- G. Pedestrian walkways shall be provided on all permanent cul-de-sacs to abutting property see Standard Plan 3-207-001.



NOTES:

1. ALL PERMANENT CUL-DE-SACS SHALL BE CONSTRUCTED WITH A VERTICAL CURB AND GUTTER SECTION.
2. SEE SECTION 3-207 FOR CUL-DE-SAC LENGTH EXCEPTION.
3. ROLLED CURB MAY BE ACCEPTED IN CUL-DE-SACS IN SPECIAL CIRCUMSTANCES REQUIRING CITY ENGINEER OR DESIGNER APPROVAL.

APPROVED BY

MARYSVILLE CITY ENGINEER

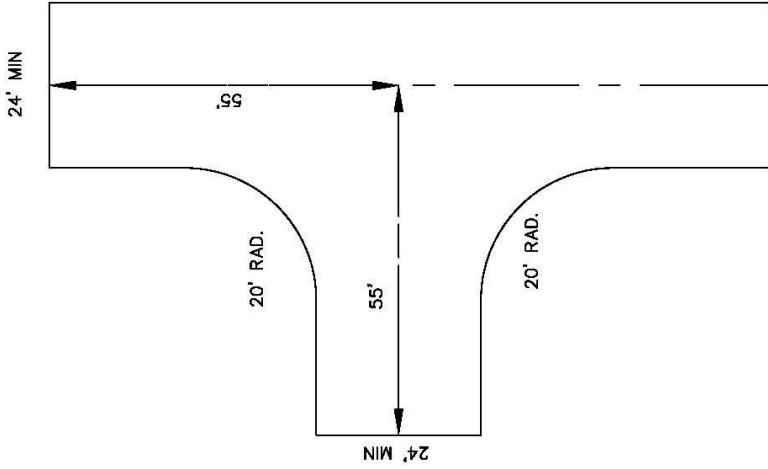
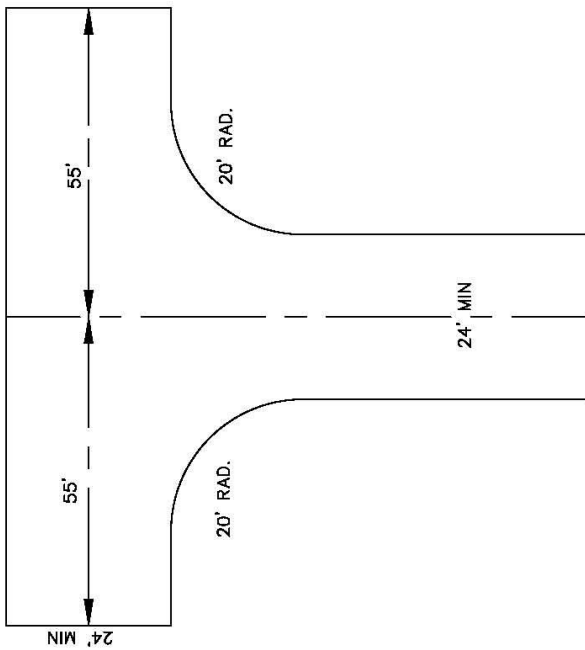
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CUL-DE-SAC DETAIL



STANDARD PLAN 3-207-001

LAST REVISED 9/14/06



NOTES

1. THIS STANDARD SHALL BE USED FOR 30' PRIVATE ROADS WHEN THEY EXCEED 150' IN LENGTH. (NOTE: THE LENGTH OF A PRIVATE ROAD SHALL BE MEASURED FROM THE EDGE OF THE INTERSECTING ROW TO THE END OF THE PRIVATE ROAD TRACT OR EASEMENT.)
2. ALL DIMENSIONS ARE MINIMUM PAVEMENT REQUIREMENTS.
3. THE TURNAROUND SHALL BE MARKED AS A FIRE LANE AND POSTED WITH NO PARKING SIGNS.
4. ALTERNATIVE TURNAROUNDS ARE NOT PERMITTED FOR PUBLIC ROADS.

APPROVED BY

MARYSVILLE CITY ENGINEER

DATE

**PRIVATE ROAD
ALTERNATIVE TURNAROUNDS**



LAST REVISED 10/12/01

STANDARD PLAN 3-207-004