

SECTION 7

ROADS AND STREETS

7 - 01 DESIGN REQUIREMENTS

Public streets shall meet the requirement of Table 7.1 "Street Requirements" or Table 7.2 "Optional Suburban Street Requirements" herein and conform to the applicable sections of the "Subdivision Ordinance".

Private streets shall conform to the same design requirements as public streets except that "Right-of-Way Width" shall be replaced by "Easement Width". Asphalt concrete pavement is not required. New proposed private streets shall not serve more than four residences.

Pavement thickness sections shall be in accordance with Standard Drawings 7-010, 7-020, 7-030, 7-040, 7-050, 7-060, 7-065 and 7-066.

Street drainage requirement, manholes, catch basins, etc., shall meet the requirements of Section 9 "Conveyance Systems".

The following additional street requirements shall also apply:

1. Street classification shall be in conformance with the City's Comprehensive Plan.
2. Vertical curves shall be required when the algebraic difference at vertical points of intersection of center line grades exceeds one percent (1%). Vertical curves shall meet the following requirements:
 - a. Fifty feet (50') minimum length.
 - b. Elevations are required at twenty-five feet (25') stations and at the PVC, PVI, PVT, and low point or high point of the curve.
3. Plan and profile shall be on the same sheet with plan stationing aligned with profile stationing.
4. Accurate locations of monuments at all center line intersections, cul-de-sacs, PVCs and PVTs shall be determined (including PRCs where approved).

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When designing a new street, do not site at grade utility castings (i.e., manhole covers, valve covers) within the traffic tire track patterns of the street.

Where sloped intersections exist vehicle approach landings shall be provided.

The geometric design at intersections to achieve drainage shall meet the following requirements:

1. At the intersection of different classifications of street (i.e., a minor arterial with a collector), the center line slope and typical cross-section should be carried through the intersection of higher classified street with the lower classified street matching in a manner which will not interfere with the slope of cross-section of the higher classified street. Table 7.1 lists street classifications from the highest class (secondary arterial) to the lowest class (residential).
2. Where the same class of streets intersect (i.e., residential with residential), the center line and slopes shall vary through the intersection to allow drainage.
3. At intersections, to provide drainage location, on N.G.S. datum detailed plan showing finish center line and gutter line grades locations may be required in accordance with the City's "Typical Street Intersection" drawing.

All dead-end streets longer than 150 feet shall be designed per the Standard Drawing 8-010.

In residential subdivisions, the street system should be laid out with a minimum number of intersections with primary arterials. In general, intersections on a primary arterial should not be at closer intervals than 1000 feet.

Streets shall be laid out so as to intersect as nearly as possible at right angles and no street should intersect any other street at less than 60 degrees.

Street jogs with center line offsets less than 125 feet shall be avoided.

If a subdivision is traversed by a water course such as a drainage way, channel, or stream there shall be provided a storm water easement or drainage right-of-way conforming substantially with the lines of the water course, and such further width as will be adequate for the purpose.

Channelization and signs shall be in accordance the *Manual on Uniform Traffic Control Devices* (MUTCD) and/or *WSDOT Standard Plans for Road, Bridge and Municipal Construction*.

Power, telephone, and cable television locations shall be shown on the street plans. Proof of coordination with utility companies shall be required.

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City utility and private service (i.e., storm, sanitary sewer, water) locations shall be shown on the street plans.

7 - 02 STREET PLAN REQUIREMENTS

The following applicable requirements shall be shown on the plans:

A. STREET PLAN REQUIREMENTS

1. Plan and profile view, per Section 3.
2. Street names.
3. Center line bearings.
4. Center line/baseline stationing.
5. Center line elevations at every 50 feet and 100 feet stations, except as otherwise stated.
6. Where transverse slopes (crown) varies from that shown on the "Typical Street Cross-Section(s)", include gutter line elevations at every 50 feet and 100 feet stations and beginning, end, and other critical locations throughout the duration of slope variations (i.e., PVCs, PVTs, BVCs, EVCs and slope transition changes).
7. Center line grade shall be in percentage (%).
8. Horizontal curve on N.G.S. datum at center line.
9. Vertical curve on N.G.S. datum at center line.
10. Intersection gutter line and right-of-way curve on N.G.S. datum in accordance with the City's "Typical Street Intersection Detail".
11. Intersection elevation on N.G.S. datum.
12. "Typical Street Cross-Section(s)" per city standard drawings with actual design pavement thickness section.
13. Locations of monuments at all enter line intersections, cul-de-sacs, PVCs, PVTs and PRCs shall be required.
14. Locations, length, width of sidewalks, and driveways.

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15. Length, type, and location of curb and gutter.
16. Wheelchair ramp locations.
17. Right-of-way and width; lot/subdivision lines and street addresses.
18. Right-of-way radii.
19. Curb to curb pavement width.
20. Mailbox design and/or placement/replacement.
21. Street landscaping.
22. Standard Street Construction Notes.
23. Legend (complete for existing and new).

B. ILLUMINATION PLAN REQUIREMENTS

1. Luminaires - location, type, height, and wattage.
2. Service cabinets - location and type.
3. Conduits and wire - location, type, size, and length.
4. Junction boxes - locations and types.

C. CHANNELIZATION AND SIGNING PLAN REQUIREMENTS

1. Incorporation with "Illumination Plans".
2. Lane markers - locations and types.
3. Pavement markings - locations and types.
4. Sign - locations, types, and mountings.
5. Painted street curbs.

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D. SIGNALIZATION PLAN REQUIREMENTS

1. Separate detailed plans required.
2. Pole base locations.
3. Traffic loop location.
4. Conduit location.
5. Details of traffic signal system to be reviewed and approved by the city engineer.

E. UTILITY LOCATIONS PLAN REQUIREMENTS (NEW AND EXISTING)

1. Storm drainage system.
2. Water system.
3. Sanitary sewer system.
4. Telephone.
5. Power.
6. Cable TV.
7. Address any horizontal or vertical utility conflicts.

7 - 03 STREET PLAN NOTES

The applicable "General Plan Notes" in Section 3 shall be shown on the plans.

Table 7.1 Street Requirements

Characteristic	Secondary	Arterial	Collector		Local Access	
	Urban	Suburban	Urban	Suburban	Urban	Suburban
Design Speed (MPH)	45**	45**	40**	40**	25	25
Min. Horizontal Curve (ft)	*	*	*	*	160	160
Min. Tangent between Reverse Curves (ft)	*	*			100	100
Max. Grade (%)	*	*	12	12	12	12
Max. Superelevation (%)	6	6	4	4		
Min. Gutter Line Grade (%)	1	1	1	1	1	1
Min. Curve Radii (ft)	*	*	*	*	25	25
Min Street Intersection, ROW Radii (ft)	*	*	*	*		
Min. Stopping Sight Distance (ft)	*	*	*	*	150	150
Min. Pavement Width (ft)	32	32	26	26	18	18
Min. ROW Width (ft)	60	60	50	50	40	30
Min. Lane Width (ft)	10	10	10	10	9	9

“**” Use AASHTO, current edition

“***” Alternatively the 85% percentile speed may be used, based on traffic study approved by the City Engineer.

Table 7.2 Optional Residential Street Requirements

Characteristic	20 Lots or Less	10 Lots or Less	1 or 2 Lots
Design Speed (MPH)	25	25	20
Min. Horizontal Curve (ft)	160	160	100
Min. Tangent between Reverse Curves (ft)	100	100	
Max. Grade (%)	12	12	12
Min. Gutter Line Grade (%)	1	1	1
Min. Curve Radii (ft)	25	25	25
Min. Stopping Sight Distance (ft)	150	150	100
Min. Pavement Width (ft)	12 2-way traffic with turnouts every 300 ft or less, no parking allowed <i>OR</i> 12 1-way loop, no parking allowed if built-in fire protection is provided in all residences accessed	12 1-way loop, no parking allowed	12 2-way traffic with turnouts every 300 feet or less unless otherwise approved by the Fire District, no parking allowed.
Min. ROW Width (ft)	30*	30*	

* Utility easements may be required if utilities cannot be accommodated in the ROW. Utility easements to be adjacent to and contiguous with the ROW, unless otherwise approved by the City Engineer.