

ARTICLE 3
DESIGN STANDARDS

301

GENERAL PRINCIPLES

1. Design With the Land

Subdivisions should be planned to take advantage of the natural topography of the land to economize in the construction of drainage facilities, to reduce the amount of grading, to minimize the destruction of top soil and trees, and to preserve such natural features as water course, unusual rock formations, large trees, sites of historical significance, and other assets which, if preserved, will add attractiveness and value to the subdivision and community.

2. Limiting Factors of the Land

The physical characteristics of the land may, however, inhibit development. The Planning Commission shall not approve a subdivision of land if it has determined from adequate investigations that the development would be detrimental to the public welfare. Such inhibiting factors may include, but are not limited to, flooding, adverse drainage problems, unsuitable soil, excessive slope of the land, surface or sub-surface rock formations, and other features which may endanger health, life, or property aggravate erosion, increase flooding potential, or necessitate the excessive expenditure of public funds for supply and maintenance of services.

3. Other Limiting Factors

Other factors that might preclude development include land unsuitably located which might involve danger or injury to the health or safety of the future property owners; and uneconomic utilization of the land due to the lack of, or adverse affect on, the water supply, transportation facilities, or other public services or facilities which might necessitate an excessive expenditure of public funds.

302

STREETS

All streets shall be constructed to the standards of the Town of Signal Mountain. A copy of these standards labeled "New Street Criteria" is available at Town Hall.

302.1

Widths of Existing Streets (Added May 6, 1993)

On existing Town streets, property lines shall be located with iron pins at the corners of all lots, at least twenty-five (25) feet from the centerline of the existing right-of-way, unless the Town Manager permits a narrower right-of-way.

302.1.1

If the subdivision is located on both sides of the existing street, at least fifty (50) feet shall be dedicated and the drainage facilities in the street shall be improved to the point that the increased run-off water caused by the development of the subdivision will be accommodated to the satisfaction of the Town Manager.

This dedication requirement may be waived by the Town Manager if he deems a narrower right-of-way to be acceptable by signing a "Cronaflex" showing such a narrower right-of-way.

- 302.1.2 If the subdivision is located on only one side of the existing street, twenty-five (25) feet measured from the center line of the existing right-of-way shall be dedicated and the drainage facilities in the street shall be improved to the point that the increased run-off water caused by the development of the subdivision will be accommodated to the satisfaction of the Town Manager.

This dedication requirement may be waived by the Town Manger if he deems a narrower right-of-way to be acceptable by signing a "Cronaflex" showing such a narrower right-of-way.

303. REQUIRED ACCESS, FRONTAGE, DEPTH AND AREA FOR ALL LOTS

1. Required Access for All Lots

All lots must have frontage on a dedicated and publicly accepted road R.O.W.

2. Lot Frontage, Depth and Minimum Area

Residential lot frontage, minimum area and minimum lot depth shall conform to the Zoning Ordinance.

3. Lot Area for Residential Lots

- a. The Health Department may require additional lot area for any residential lot which uses a septic tank and field lines for sewage disposal.
- b. For lots served by septic tank systems, any area separated from the building site by a drainage easement, and the drainage easement, (except the standard five (5) foot drainage easements along the side and rear lot lines), shall not be included in the minimum lot area. Areas subject to flooding, or standing water during brief periods of high rainfall, or with seasonally high water tables, as determined from a soil survey, shall not be included in the minimum lot areas. This regulation may be varied by the Health Department.
- c. Lots that do not have public water furnished must be a minimum of 25,000 square feet and be approved by the Health Department.
- d. For lots served by septic tank systems, the minimum lot size required is determined by the number of bedroom proposed according to the following:
(Added 1-28-99)

1, 2 or 3 BDR	21,780 square feet
4 BDR	25,000 square feet
5 BDR	32,670 square feet
6 BDR	37,670 square feet
Over 6 BDR	5,000 square feet per additional bedroom

4. Lot Frontage, Depth and Area for Non-Residential Lots and Community Lots

There shall be no minimum lot frontage, depth or area for non-residential lots and community lots except as require by the Health Department, the Planning Commission, the Town Manager, the Town Council or the Zoning Ordinance.

304. MISCELLANEOUS LOT REQUIREMENTS

1. Lot Lines

- a. Generally, side lot lines should be straight and perpendicular to the street, or radial to street curves or the center of cul-de-sac turnarounds.
- b. Side lot lines may be at an angle to the street (more nearly parallel to the contour lines on steep land) to reduce driveway and lot grades.
- c. Lot lines should follow drainage ways or easements (where practical) rather than leaving a portion of the lot separated from the main body of the lot by a drainage way or easement.
- d. Corner radii at street intersections shall be twenty-five (25) feet, unless shown on the plat.

2. Flag Lots

Flag lots are not permitted in the Town of Signal Mountain.

3. Building Setback Lines

All lots shall have a usable building site area exclusive of the building setback (yard areas) as required by the Signal Mountain Zoning Ordinance, or as required by the Planning Commission and shown and labeled on the lots on the plat.

4. Lots Divided by Municipal, County or State Lines

The division of lots by municipal, county or state lines shall be avoided, where possible.

5. Reserve Strips and Remnants Prohibited

- a. There shall be no reserve strips controlling access to streets or any parcel of land.
- b. No remnants of property shall be left which do not conform to lot requirements, or which are not required for a private or public utility purpose, or which are not accepted by the local government and/or any other public body, or home owners' association for an appropriate use.

305. MONUMENTATION

1. Concrete monuments four (4) inches square, three (3) feet long, with a flat top, shall be set at all angular corners of the subdivision boundaries. The top of the monument shall have an indented cross to identify the location and shall be set flush with the finished grade.
2. All other lot corners shall be marked with iron pins minimum of one half (1/2) inch in diameter and minimum of eighteen (18) inches long and drive so as to be flush with the finished grade.
3. All monuments and iron pins shall be permanently installed prior to the signing of the "Cronaflex" by the Town Manager. Boundary monuments shall be installed on the exterior of the entire subdivision, but need not be installed on the boundaries of each unit in phase subdivisions. If monuments and pins are not installed prior to the time that the "Cronaflex" is ready for signing, the developer may post a bond with the Town Manager in an amount sufficient to ensure that the monuments and pins can be installed.
4. For residential subdivision with more than 25 lots and any development over 25 acres, at least two of the concrete monuments required under §305.1 shall be designated as control monuments and located with a ration of precision of no less than 1:20,000 in Tennessee State Plane coordinate in the North American Datum of 1983 (NAD83). The intent of these location coordinates is to position the subdivision on the surface of the Earth and the final plat on the official Hamilton County property maps. The monuments shall be separated by sufficient distance to allow them to locate the entire boundary properly. (Added 7-6-2000)

306. EROSION AND SEDIMENTATION CONTROL

The development of land usually necessitates some degree of grading, excavating, or the removal of topsoil, trees and vegetation. Such major changes in the landscape usually produce adverse conditions to adjoining properties, public drainage facilities and rights-of-way. Erosion and sedimentation become even more serious when changes in the landscape occur on moderately to steeply sloped land.

1. Requirements

When deemed necessary, the Town Manager shall require that a detailed erosion/sedimentation control plan be submitted with the plat, and that the developer use appropriate control measures to ensure that erosion, or adverse conditions by erosion or sedimentation, is eliminated or held to a minimum.

2. Control Measures

The following control measures should be used on all subdivisions for effective control of erosion and sedimentation:

- a. The development plan should be fitted to the topography and soils to reduce erosion.

- b. The smallest practical area of land should be exposed at any one time during development.
- c. When land is exposed during development, the exposure should be kept to the shortest practical period of time. No area shall be left exposed (without some planted or seeded vegetation) for longer than three (3) months.
- d. Mulching or other temporary protective measures should be used to protect exposed areas during development.
- e. Temporary furrows, terraces, sediment or debris basins should be installed to prevent washing and erosion during construction.
- f. The permanent final vegetation and structures should be installed as soon as practical in the development after the land area is exposed.

307 SANITARY SEWAGE DISPOSAL SYSTEMS

1. Jurisdiction with Public Sewer Systems

- a. Where an adequately sized sanitary sewer is on the site, or on the street abutting the site, or readily accessible (as determined by the developer's financial feasibility study) without the need for off-site easements, or a construction contract for a sewer to be located on or adjacent to the site has been signed, the developer shall construct, at his own expense, a sewage collection system and connect it to the existing sanitary sewer. The design and construction of sanitary sewers and appurtenances shall be in accordance with the regulations, standards and specifications of the Division of Sanitary Engineering, Tennessee Department of Public Health and the Town of Signal Mountain. Sewer connections to individual lots shall be installed by the developer.
- b. Where an adequately sized sanitary sewer is not on the site, nor on the street adjacent to the site, nor readily accessible to the site without the need for off-site easements, the developer shall have the option of choosing one of the following methods of sewage disposal:
 - (1) Installing septic tanks and field lines in areas where soil conditions, geology and topography are favorable. The design, construction and installation of the septic tanks and field lines shall be in conformance with the standards and regulations of the Chattanooga-Hamilton County Health Department and subject to the approval of the Health Department.
 - (2) Constructing, at the developer's expense, a sanitary sewage disposal system, or collection lines connected to a public sewer system.
 - (3) The developer may elect to install and maintain a private sanitary sewage disposal system, or collection lines connected to a public sewer system.

- c. If the developer chooses to install septic tanks and field lines, the developer shall also have a sanitary sewage collection system designed by a registered engineer or surveyor and approved by the Town Manager, with all applicable construction and permanent easements for the sewage system dedicated to the local government. If the sewer lines are to be located in the street, the developer shall furnish all materials as specified by the engineer and approved by the Town Manager, and install the sewage collection system. Also, sewers crossing a street shall be installed by the developer.
- d. These regulations do not supercede any other local regulations pertaining to the design, financing or installation of sewers, nor do they supercede any regulations pertaining to the payments of fees to the local governments to pay for the installation of sewers. The Town of Signal Mountain has a lot fee for all lots recorded that do not have available sewers.

2. Individual On-Site Subsurface Sewage Disposal Systems (Septic Tanks and Field Lines)

In areas where public sewage systems are not available or required and where soil conditions, geology and topography are favorable, septic tanks and field lines may be used. The design, construction and installation of the septic tanks and field lines shall be in conformance with the standards and regulations of the Chattanooga-Hamilton County Health Department and subject to the approval of the Health Department.

308. WATER FACILITIES

1. Public Water Supply

- a. Where a public water main is accessible, the developer shall install, or cause to be installed, adequate water facilities (including fire hydrants) subject to the specifications and approval of the Division of Water Supply, Tennessee Department of Public Health, the local water company or utility district, and the local fire authority having jurisdiction.
- b. Water supply lines are to be located at least ten (10) feet from septic disposal systems and sewer lines.
- c. Water drops are to be installed by the owner/developer.

2. Individual Wells

If a public water system is not available, as determined by the Planning Commission, individual wells may be used, subject to the standards and approval of the Chattanooga-Hamilton County Health Department. Wells are to be located uphill and at least fifty (50) feet from any septic disposal system and sewer lines.

3. Fire Hydrants

The developer shall install fire hydrants for all major subdivisions except:

- a. Those served by individual wells, and
- b. Subdivisions that meet the requirements given below based on existing fire hydrants.

Fire hydrants shall be located no more than 500 feet apart in the Low Density Residential Zone and 300' in all other areas (measuring along the street) and within 250 feet (measured along the street) of any structure. The location of all fire hydrants shall be approved by the Signal Mountain Fire Department.

Fire hydrants shall meet Town specifications.

309. Setback and Elevation Requirements on Unmapped Watercourses
(Added March 3, 1994)

Due to the potential flood hazard on property adjacent to an unmapped watercourse draining 300 acres or more above the property under consideration, the Planning Commission may require that each unmapped watercourse draining 300 or more acres be investigated by a professional engineer and the setbacks, floodway, 100 year flood boundary and 100 year flood elevations be marked on the subdivision plat. The minimum elevation of the proposed structure shall be determined on the basis of a 100 year storm elevation water level. The engineer shall use an accepted national method of calculations. Example: USDA Technical Release No. 55 "Urban Hydrology for Small Watersheds"; ASCE Manual of Practice No. 37 "Design and Construction of Sanitary and Storm Sewers". The minimum setback shall be determined by an elevation of the unmapped watercourse based on the erosion potential of the watercourse and lot elevation as determined by the engineer. All subdivision adjacent to an unmapped watercourse draining 300 or more acres and for which 100 year storm elevation calculations were required shall have a certification by a professional engineer which reads as follows:

I _____ have made a flood hazard study of the subdivision and the drainage area above it and all affected lots within this subdivision are marked with a minimum building elevation. A bench mark of public record of reference is noted on the plat, and established on the subdivision. Unmarked lots have been determined to not require a minimum building elevation due to their location and the existing drainage structure design.

SEAL _____ NAME _____ P.E. # _____

309.1 The developer may choose to have the Tennessee Valley Authority do the flood investigation. If this is done, the engineer's statement and bench mark are not necessary.

310 Sidewalks on New Public and Private Streets (Added April 6, 2000)

1. Sidewalks

- A. With respect to all subdivision plats submitted to the Planning Commission for approval after April 6, 2000, that include construction of new public or private streets, sidewalks shall be required on both sides of the street within the right-of-way of all new arterial, collector and residential streets, built to conform to the gradient corresponding to that of the street.
- B. In no event shall any utilities be located under the sidewalk, other than to cross under it perpendicularly for the purpose of providing utilities to the lot adjacent to the street. An unpaved grass strip may be located between the sidewalk edge and the curb or the edge of the street pavement, as the case may be, for future planting purposes, or street lighting purposes, if deemed appropriate by the Planning Commission.

C. Sidewalks shall be constructed pursuant to the following specifications:

1. All sidewalks shall be located in the street right-of-way with the outside edge of the sidewalk coinciding with the right-of-way line.
2. All sidewalks shall be constructed of high quality, durable portland cement concrete.
3. All sidewalks shall be 5 feet wide.
4. All sidewalks shall have a minimum thickness of 4 inches.
5. All sidewalks shall have a minimum 2 inches of compacted stone prepared base in subgrade.
6. All sidewalks shall be constructed of Class A concrete that meets the following requirements:
 - A. Minimum 564 lb./cy cement;
 - B. 6% + 1% entrained air;
 - C. Minimum 3,500 P.S.I. compression strength within 28 days after being poured; and
 - D. Maximum 5-inch slump.
7. All sidewalks shall be reinforced with fibermesh.
8. Expansion joints in the sidewalks shall be troweled at 8 foot intervals.
9. All sidewalks shall have a slope of $\frac{1}{4}$ inch per foot towards adjacent street.
10. Forms used to construct sidewalks shall be: (a) made of wood or metal; (b) straight and free from warp; and (c) of sufficient strength when in place to hold the concrete true to line and grade without springing or distortions.
11. After finishing operations have been completed, the entire surface of the sidewalks shall be covered with wetted burlap or other approved material and kept continuously damp for a period of not less than 5 days to permit the concrete to cure properly and to prevent it from drying too rapidly.
12. After the concrete has set sufficiently and in no event less than 24 hours after a sidewalk has been poured, the side forms shall be removed, all excess materials (other than the materials described in paragraph 11 above) and debris shall be left in a neat and workmanlike condition.
13. A driveway may have an ornamental surface where the driveway crosses the sidewalk, so long as that portion of the driveway that crosses the sidewalk meets or exceeds the above specifications.

D. Sidewalk improvements shall be considered as part of the required improvements for subdivisions within the Town that must be bonded.

E. As construction of each house within the subdivision is completed, the builder or the developer, as the case may be, shall construct the sidewalk(s) for the entire street frontage(s) of the lot on which such house is located. Notwithstanding the provisions of the immediately preceding sentence, at the time the surface coat construction of each street is completed and in no event later than one year after construction of the streets within the development commences, the developer shall complete all remaining portions of sidewalk construction in the subdivision.

F. Exceptions, etc.

1. If all lots within a subdivision are greater than three acres, or if the minimum street frontage for each lot is greater than 300 feet, the Planning Commission may, but shall have not obligation to, waive the sidewalk requirements. For subdivision lots that have the potential for future division into lots with street frontages that would be less than 300 feet, or potential for future division into lots below three acres, the Planning Commission shall assess the likelihood that such future division will occur before deciding whether to waive the sidewalk requirements in connection with approving such final plat. If the Planning Commission determines that such future division is reasonably likely to occur, then the Planning Commission may either:
 - (a) require sidewalks to be constructed along such subdivision lots even though such lots are larger than three acres each or have street frontage greater than 300 feet; or
 - (b) waive the sidewalk requirements, subject to an additional requirement that a restriction acceptable to the Planning Commission shall be included on the final, recorded subdivision plat which requires that in the event that any such lot is subdivided in the future such that any resulting lot is less than three acres or the street frontage of any such resulting lot is less than 300 feet, then the owner of any such resulting lot shall be required to install sidewalks hereunder at such owner's expense.
2. In its discretion, the Planning Commission may elect to waive these sidewalk requirements with respect to the portions of any street within a subdivision that have a grade greater than 15%.
3. Notwithstanding the foregoing exceptions, in the case of a subdivision which contains lots that have different sizes and frontages, if more than 50% of the subdivision lots would be required to have sidewalks hereunder, then sidewalks must be constructed throughout the entire development.