

TABLE 1. GEOMETRIC DESIGN STANDARDS

	Subdivision Minor Street	Subdivision Minor Street	Subdivisions Collector Street
Right-of Way, feet	50	60	60
Pavement width, feet	26	32	36
Horizontal alignment minimum radius at feet	150	300	300
Vertical alignment stopping site distance, feet	200	250	250
<u>Grade - Percent</u>			
a. Maximum	8.00	8.00	8.00
b. Minimum	1.00	1.00	1.00
<u>Intersection</u>			
a. Minimum angle, degrees	90*	90	Not Permitted
b. Minimum offset, feet	125	125	125
c. Minimum radius at roadway edge (1)	25	25	50
d. Minimum sight distance, feet	200	250	250
e. Minimum lengths of the two legs of a triangle whose legs are measured along the center of the nearest lane of the traveled way from the point of intersection within which no structure or vegetation shall be over 3 feet in height.	100	150	150

*May be reduced to 75 degrees with the permission of the Highway and Fire Departments.

Dead-End Streets

a. Maximum length, feet	650	650	Not Permitted
b. Minimum turnaround radius at roadway edge, feet	55	55	Not Permitted
c. Minimum turnaround radius at property line, feet	65	65	Not Permitted
d. Cul-de-sac without island			
(1) Minimum pavement radius, feet	55	55	Not Permitted
(2) Minimum right-of-way radius, feet	65	65	Not Permitted
	Subdivision	Subdivision	Subdivisions
	Minor Street	Minor Street	Collector Street
e. Cul-de-sac with island			
(1) Minimum pavement radius, outer edge, feet	110	110	Not Permitted
(2) Maximum pavement radius, inner edge, feet	85	85	Not Permitted
(3) Minimum height of island above surrounding pavement, inches	16	16	Not Permitted
(4) Maximum height of island above surrounding pavement, inches	36	36	Not Permitted
(5) Minimum right-of-way radius, feet	120	120	Not Permitted

The actual cul-de-sac shall be centered on the right-of-way.

All island plantings shall not block the view across the cul-de-sac.

APPENDIX A

REQUIREMENTS FOR ENVIRONMENTAL IMPACT STATEMENT

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In accordance with Section 4.3.2.1, the applicant shall submit an Environment Impact Statement. The statement shall discuss the following:

Natural Environment

1. Air
 - a. Describe possible sources and duration of significant amounts of odors, smoke and dust.
 - b. Describe precaution to be taken to eliminate or minimize the adverse environmental effects of the smoke, dust or odors generated.
 - c. Describe the relationship of the location of the subdivision and prevailing wind patterns to nearby residences, businesses, recreation areas, and other public areas.
 - d. If incineration of refuse is proposed for the subdivision, describe the effects resultant emissions will have on air quality in the area. Include proof that the incinerator complies with the latest local and state standards.
2. Land
 - a. Describe the existing general physical conditions of the site, including existing use, general topography, unusual geologic formations and soils, and how the project will effect these features.
 - b. Describe any limitations on proposed project caused by subsurface soil and water conditions, and methods to be used to overcome them.
 - c. Describe procedures and findings of percolation tests conducted on the site.
 - d. Describe the types and amounts of land which will be permanently affected by construction of the subdivision.
 - e. Describe proposed rough grading plans.
3. Water and Wetlands
 - a. Evaluate how and to what extent the project will affect the quality and quantity of any existing or potential public or private water supply, including watersheds, reservoirs and groundwater.
 - b. Describe the methods to be used during construction to control erosion and sedimentation and siltation including use of sediment basins and type of

mulching, matting, or temporary vegetation; approximate size and location of land to be cleared at any given time and length of time to exposure; covering of soil stockpiles; and other control methods used. Evaluate effectiveness of proposed methods on the site and on the surrounding areas.

- c. Describe the permanent methods to be used to control erosion and sedimentation. Include description of

- (1) any areas subject to flooding or ponding;
- (2) proposed surface drainage system;
- (3) proposed land grading and permanent vegetation cover;
- (4) methods to be used to protect existing vegetation;
- (5) the relationship of the development to the topography;
- (6) any proposed alterations of shorelines marshes or seasonal wet areas;
- (7) any existing or proposed flood control or wetland easements;
- (8) estimated increase of peak runoff caused by altered surface conditions, and methods to be used to return water to the soils.

- d. Discuss probability that project will increase pollution or turbidity levels within receiving waterway and the precautions to be taken to minimize the effects.
- e. Discuss the project's effect on the waterway's aquatic biota and use as habitats.
- f. Discuss the project's effects on groundwater quality and supply and efforts to recharge groundwater supplies.
- g. Discuss what effect the project will have on increasing the incidents of flooding, including areas outside the subdivision.
- h. Discuss the effect of the proposed sewage disposal methods on surface and groundwater supplies and quality.

4. Energy

- a. Describe the types and increased quantity of energy required to serve the needs of the project residents.
- b. Indicate what the sources of this energy will be.

5. Noise

- a. Describe the time, duration and types of noises generated by the project, both during and after construction.

- b. Discuss what effect these noises will have on both humans and wildlife.
 - c. Describe the controls which will be used to eliminate or minimize the effects of these noises.
- 6. Local Flora and Fauna
 - a. Discuss the project's effects on land-based ecosystems, such as the indigenous wildlife, stream bank cover, and vegetal or wooded growth.
 - b. Describe proposed types and amounts of vegetal cover.
 - c. Discuss the existence of rare or endangered plant, wildlife or fish species in the project area.

Man-Made Environment

- 1. Land use
 - a. Describe how the proposed project conforms with the growth plans for the area and the Town in general.
 - b. Describe land uses adjacent to the project.
 - d. Describe any existing or proposed public or common recreational or open areas within the subdivision.
- 2. Density
 - a. Provide a tabulation of proposed buildings by type, size (number of bedrooms, floor area), ground coverage, and a summary showing the percentage of the tract to be occupied by buildings, parking and other paved vehicular areas, and usable open space.
- 3. Zoning
 - a. Indicate the zoning designations for the site and adjacent areas.
- 4. Architecture
 - a. Describe the architectural and landscaping techniques which will be used to blend the structures with the surrounding area.
 - b. Discuss the heights of the structures in relation to the surrounding area.
 - c. Discuss the project's visual impact and possible interference with natural views.

- d. Describe type of construction, building materials used, location of common areas, location and type of service facilities (laundry, trash, garbage disposal).
- 5. Historic Buildings, Historical Sites and Archeological Sites
 - a. Indicate location and significance of any historic buildings or sites on or adjacent to the project.

Public Facilities

- 1. Water supply, flow, pressure and distribution.
 - a. Describe the groundwater an/or surface water supply to be used.
 - b. Discuss the demands of the project for consumption and fire protection.
- 2. Sanitary sewerage connection, distribution and facilities.
 - a. Discuss the quantity and type of sewage which will be generated by the project.
 - b. Describe the method of sewage treatment, if any, proposed for the project.
- 3. Storm drainage facilities
 - a. Describe where connection to the Town system is proposed.
- 4. Disposition of stormwater
 - a. Indicate the location of all proposed outfalls.
 - b. Describe the effect of the outfalls and their discharge on the receiving waters, i.e., increased flows, pollution, etc.
 - c. Discuss the quantity of stormwater to be discharged
- 5. Refuse disposal
 - a. Estimate the quantity and types of refuse that will be generated by the subdivision.
 - b. Describe the proposed methods of refuse disposal.
- 6. Traffic facilities
 - a. Discuss future vehicular circulation patterns including number and types of vehicles.
 - b. Describe the proposed pedestrian circulation pattern.

- c. Discuss the location and number of parking spaces proposed.
- 7. Electric power
 - a. Discuss the power demand of the subdivision.
 - b. Discuss the source of the electric power and the method of supplying the area.
- 8. Gas
 - a. Discuss the demands of the subdivision.
 - b. Describe what the gas will be used for in the area.
 - c. Describe the source of gas supply and the proposed method of supplying the area.

Community Services.

- 1. Schools
 - a. Discuss the effect of the subdivision on existing schools, including number and ages of children generated by the subdivision.
 - b. Describe the location of the nearest existing schools.
- 2. Recreation
 - a. Describe existing and proposed recreational facilities, including active and passive types; and age groups participating, and state whether recreational facilities and open space are available to all Topsfield residents.
 - b. Indicate location and width of existing and proposed pedestrian ways, bikeways or bridle paths.
- 3. Police
 - a. Estimate the total population projected for the subdivision.
 - b. Estimate the total number of automobiles for the area.
- 4. Fire
 - a. Discuss the total number of buildings to be constructed and their types and construction.
 - b. Describe the source and quantity of water available for fire protection for the area.
- 5. Public Works
 - a. Calculate the total linear feet of roadway to be publicly maintained and plowed.

- b. Calculate the linear feet of street drains, culverts, sanitary sewers, and waterlines to be publicly maintained.

Human Considerations

1. Aesthetics and visual impact
 - a. Discuss the change in the present character of the area due to the project, i.e., land use, density of development, etc.
 - b. Discuss the measures to be taken to minimize the adverse effects of the project, i.e., architecture, buffers, etc.
2. Parks, forests and recreational areas
 - a. Discuss how the siting and construction of the project will affect existing and potential park and recreation areas, open spaces, natural areas, and scenic values.
 - b. Discuss how the project will affect recreational opportunities in the area due to removal of parks, forests, or open areas from public use.
3. Public Health
 - a. Discuss the project's effects on residents' public health due to changes in water quality, air quality, noise levels, etc.