

SECTION

6

SUBDIVISION DESIGN STANDARDS

6.1 **LOTS**

Proposed lots shall be arranged to make the best use of the natural terrain, to preserve important natural features, and to afford maximum opportunity for the use of solar energy.

6.1.1 Lots shall conform to the requirements of the *Zoning Regulations for the Town of North Stonington, Connecticut*, as amended.

6.1.2 Where practical, side lot lines shall be at right angles to the road on which the lots front, or radial to curved road lines.

6.1.3 To the maximum extent possible, lots shall be generally rectangular in shape. Excessively deep or irregularly shaped lots shall be avoided.

6.1.4 Lots should be arranged in a manner that provides the best opportunity for the use of solar energy in buildings subsequently constructed on the lots. As a general rule, lot arrangements should enable principal buildings to be situated so that each longest axis lies in an east/west direction, so as to expose the front or rear of the building to the south. Attention should be given to ensuring that expected building locations are not shaded by topographic features or by buildings on adjoining properties.

6.1.5 Where a lot in a subdivision has frontage on, or potential access from more than one roadway, it shall be accessed by the lower intensity roadway unless alternative access is specifically approved by the Commission upon recommendation of the Town Engineer.

6.2 **ROADS**

6.2.1 All roads in any subdivision shall have free access to one or more State highways or Town approved roads.

6.2.2 Where the proposed subdivision abuts an existing Town road, the applicant shall consult with the Board of Selectmen to determine the right-of-way width along such road and the possible need to deed additional land to permit its widening. All subdivision approvals shall require that all land within a minimum of twenty-five (25) feet from the centerline of the traveled portion of existing roads be deeded to the Town of North Stonington and this shall be so noted on the map presented to the Commission for approval. In industrial and commercial subdivisions, the land required shall be a minimum of thirty (30) feet from the road centerline.

A. No lots shall be conveyed by the applicant until the road right-of-way for the entire subdivision along its frontage with an existing Town Road, as denoted on the plan, has been deeded to and accepted by the Town or an executable deed has been submitted to the Town for recording purposes.

6.2.3 Road jogs with centerline offset of less than one hundred and twenty-five (125) feet shall be avoided.

6.2.4 Except where impractical because of topography or other conditions, all roads shall join each other so that for a distance of at least fifty (50) feet the road is at right angles to the road it joins and has a maximum grade of three (3) percent.

6.2.5 Four-way intersections shall generally be minimized and shall, in any event, be specifically approved by the Commission upon recommendation of the Town Engineer.

6.2.6 To the maximum extent possible, roads shall be laid out in a generally east/west direction to facilitate solar orientation of buildings on abutting lots.

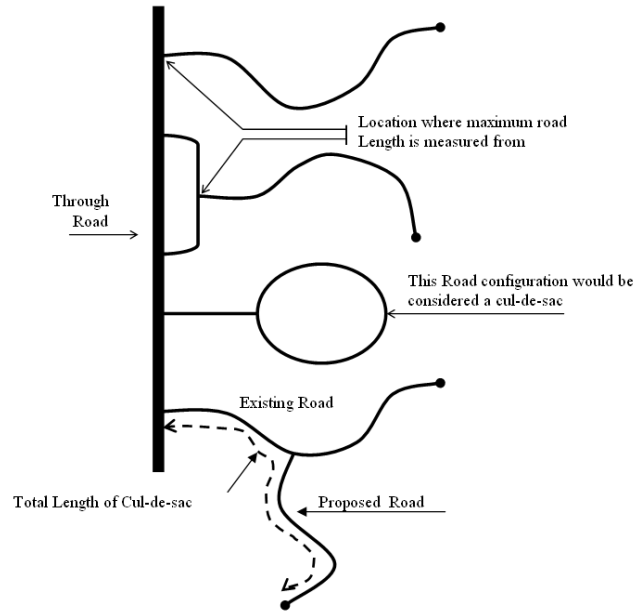
6.2.7 The road standards presented in Table 6-1 shall be complied with unless:

- A. a waiver is granted by the Commission in accordance with Section 3.5 of these Regulations, or
- B. an alternative design standard (such as a boulevard or a hammerhead turnaround, for example) is found by the Commission to be acceptable in the specific circumstances.

6.2.8 Cul-de-Sac Length Limitation

- A. Unless otherwise approved by the Commission, no permanent cul-de-sac shall be created that:
 - 1. is less than two hundred and fifty (250) feet in length; or
 - 2. exceeds six hundred (600) feet in length measured from the center of the nearest intersection, whether inside or outside of the subdivision that has two (2) means of access and egress to the center of the turnaround.
- B. With receipt of approval that authorizes a modification of the provisions of the road ordinance, a greater length for a permanent cul-de-sac may be permitted by the Commission for:
 - 1. significant preservation of open space;
 - 2. significant preservation of natural features;
 - 3. exemplary overall subdivision design;
 - 4. the demonstrated likelihood of future road extension and connection to other streets providing an alternative means of access and egress; or
 - 5. the creation of similar community benefits.
- C. If allowing a greater length of cul-de-sac, the Commission may, in its sole discretion, require or accept plan modifications which offset the increased development in a less accessible location, such as:
 - 1. increased pavement thickness and/or road shoulders that will accommodate emergency vehicles;
 - 2. increased open space preservation and/or fewer lots in the overall development; and/or
 - 3. other improvements such as significant community amenities.

FIGURE 6-1: MEASURING THE LENGTH OF CUL-DE-SACS



6.3 **SIDEWALKS AND TRAILS**

6.3.1 Every subdivision shall, unless waived by the Commission, make provision for pedestrian and/or bicycle accessibility and circulation and this requirement may, with approval of the Commission, be met through:

- A.** the provision of stone dust (or other material acceptable to the Commission) greenway trails within open space areas on the land being subdivided or, with approval of the landowner and the Commission, on other open space areas in North Stonington;
- B.** the provision of stone dust (or other material acceptable to the Commission) greenway trails on one side of the street on the land being subdivided or, with approval of the Commission, elsewhere in North Stonington;
- C.** the provision of sidewalks on one side of the street on the land being subdivided within a 1-mile radius of a school or other major generator of pedestrian traffic or, with approval of the Commission, elsewhere in North Stonington;
- D.** the provision of sidewalks unrelated to roads as may be required by the Commission, where pedestrian access to schools, shopping, or employment centers is possible; and/or
- E.** the provision of an easement to the Town of North Stonington for future trails or sidewalks.
- F.** All sidewalks must be a minimum width of five (5) feet, made of concrete with a minimum thickness of four (4) inches.

6.4 DRAINAGE

An adequate system of storm water drainage shall be provided and no natural watercourse shall be altered or obstructed in such a way as to reduce the natural runoff capacity unless substitute means of runoff are provided. If deemed necessary by the Commission, the developer shall provide additional capacity in adjacent culverts and other drainage features for accommodating increased runoff from the proposed development. All existing and proposed drainage systems shall be indicated on plans and profile sheets as to their material, size, and location.

6.4.1 The quantity of storm water carried by drains shall be determined by the method prescribed in Technical Release No. 55 of the U. S. Soil Conservation Service, and the design storm shall be fifty (50) years except for bridges, in which case it shall be one hundred (100) years.

6.4.2 Drainage rights-of-way through lots shall be at least twenty (20) feet wide, and follow property lines wherever possible. The Commission may require culverts and other storm water drainage installations, where it deems necessary, to connect with one or more natural watercourses. All necessary easements for drainage shall be provided prior to plan approval.

6.5 FLOODING CONSIDERATIONS

The Commission shall determine that proposed subdivisions are reasonably safe from flooding. When a subdivision is proposed in an "A" Zone on the Town's Flood Hazard Boundary Map or Flood Insurance Rate Map, it shall be reviewed to assure the following:

6.5.1 That all proposals are consistent with the need to minimize flood damage within the flood-prone areas.

6.5.2 That all public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage.

6.5.3 That adequate drainage is provided to reduce exposure to flood hazards.

6.5.4 That new and replacement water supply systems are designed to minimize or eliminate infiltration of floodwaters into the systems.

6.5.5 That new and replacement sanitary sewer systems are designed to minimize or eliminate infiltration of floodwaters into the systems or discharges from the systems into floodwaters.

6.5.6 That on-site sewage disposal systems are located to avoid their impairment or contamination from them during flooding.

6.5.7 The Planning and Zoning Commission shall require the applicant to provide BFE data for all subdivision proposals, including manufactured home parks and subdivisions. In all special flood hazard areas where base flood elevation (BFE) data is not available, the applicant shall provide a hydrologic and hydraulic engineering analysis performed by a registered professional engineer that generates BFEs for all subdivision proposals and other proposed development, including manufactured home parks and subdivisions.

6.6 **OPEN SPACE, PARKS, PLAYGROUNDS, AND MUNICIPAL LAND**

6.6.1 **General**

- A.** As provided for in Connecticut General Statutes Section 8-25, every subdivision of land for residential use shall provide for open space in order to:
- 1.** protect and conserve natural features;
 - 2.** protect and conserve community resources;
 - 3.** establish greenbelts and other linkages that connect open spaces;
 - 4.** provide for parks, playgrounds, and other active and passive recreation areas;
 - 5.** supplement existing open space areas;
 - 6.** provide, protect, or enhance local trails;
 - 7.** protect and provide for the preservation of agricultural land and uses;
 - 8.** implement the open space and other recommendations in the Plan of Conservation and Development;
 - 9.** protect and preserve the rural character of the Town of North Stonington by retaining natural open space areas and scenic views where they are most visible from public roads and parks and by preventing unsightly development of ridge tops and providing natural buffers;
 - 10.** protect and preserve forest resources;
 - 11.** protect and preserve natural resources including ledge outcroppings, stands of unique trees, unusual or unique wildlife habitats and other unusual and unique topographical and physical features;
 - 12.** protect and preserve historical and cultural resources, including historic and prehistoric archaeological sites, stone walls, trails, and cemeteries;
 - 13.** protect ground water, watersheds, aquifers and other aquatic resources; and/or
 - 14.** protect important ecological resources.
- B.** This open space requirement may, with approval of the Commission, be met through:
- 1.** dedication of land within the proposed subdivision or resubdivision in fee or by conveyance of a conservation easement;
 - 2.** dedication of land acceptable to the Commission elsewhere in North Stonington,
 - 3.** a fee-in-lieu-of-land donation;
 - 4.** dedication of land and a fee-in-lieu-of-land-donation; or
 - 5.** some other arrangement that shall be found by the Commission to be acceptable (such as a scenic preservation easement, a trail easement, a conservation easement, or similar proposal).

- C. The Commission may solicit or accept comment regarding the proposed land dedication from any Town board or commission, Town official, land trust, or qualified consultant with respect to:
1. the need for a land dedication in the subdivision;
 2. the land resources available;
 3. the implications of a dedication in relation to open space system in the Town; and/or
 4. preferred ownership.

6.6.36.6.2 Dedication of Land

- A. Where the open space requirement shall be met through the dedication of land:
1. at least fifteen (15) percent of the total area of the subdivision shall be so dedicated; and
 2. unless waived or modified by the Commission, the area reserved to meet the minimum dedication requirement shall not consist of a greater percentage of area classified as wetland, watercourse, 100-year floodplain, or slopes in excess of twenty-five (25) percent than the parcel as whole. Such information shall be provided for the overall parcel and the proposed open space by a Connecticut-licensed civil engineer or a Connecticut-licensed landscape architect.

EXAMPLE: *Say a fifty (50) acre parcel of land is being subdivided and twenty (20) percent of the entire parcel is wetland, watercourse, 100-year floodplain, or steep slopes.*

Regulation 6.6.2(A)(1) requires that at least fifteen (15) percent of the fifty (50) acres shall be provided as open space (at least seven and one half (7.5) acres).

Regulation 6.6.2(A)(2) requires that no more than twenty (20) percent of the seven and one half (7.5) acres can be wetland, watercourse, 100-year floodplain, or steep slopes (no more than one and a half (1.5) acres). In other words, six (6) acres of the open space must be land that is not wetland, watercourse, 100-year floodplain, or steep slopes.

More land on the parcel may be dedicated as open space but at least six (6) acres of the open space must be land that is not wetland, watercourse, 100-year floodplain, or steep slopes.

- B. If an applicant/developer transfers land to the Town for municipal purposes other than for required road widening, such transfer may be considered by the Commission as a credit toward any dedication requirements.
1. Such dedication shall be in locations deemed proper by the Commission.
 2. Such dedication shall be shown on the subdivision plan or on another suitable map if located elsewhere in North Stonington.

- C. When a subdivision abuts an existing open space, the Commission may require the lot lines of such land form a continuation of the existing open space to provide a single, unified area.
- D. Land intended for dedication shall be suitable for the purpose intended.
- E. The Commission may defer the requirements for the immediate provision of such land in a subdivision, which is a part of a larger tract of land, provided that the applicant/developer dedicates an area of land in the undeveloped portion of the tract equal to the requirements of this section in the developed portion.
- F. In determining the appropriateness of an area proposed for open space or other public purposes, the Commission shall consider:
 - 1. recommendations in the Plan of Conservation and Development, the presence or absence of any existing or potential dedicated open spaces in the area,
 - 2. the opportunities to interconnect existing, proposed, and future open space dedications into a comprehensive greenway and trail system,
 - 3. the size of the subdivision, and
 - 4. responses to any referrals regarding need, resources, connection to the open space system of the Town and preferred ownership.
- G. Fee title or a conservation easement shall be deeded in perpetuity and the applicant shall designate which entity is, or entities are, proposed to own the fee title or conservation easement to ensure its permanent protection as provided in these Regulations. The following are acceptable grantees of open space:
 - 1. the Town for conservation or other purposes; or
 - 2. the Town for active recreational purposes after all improvements have been completed; or
 - 3. a recognized private organization legally constituted to accept and to maintain land for conservation purposes (such as a land trust) under terms acceptable to the Commission; or
 - 4. a private association consisting of the owners of the lots within the subdivision (i.e. homeowners' association) for specified recreational or conservation purposes upon such terms and conditions, as approved by the Commission, that will protect the public welfare and assure the continued use of the open space for the purpose intended. A copy of the homeowner's deed and the by-laws of the homeowners' association shall be submitted with the application.
- H. Fee title or a conservation easement deeded to a private organization or a homeowners' association and shall provide in such deed that ownership shall revert to the Town for recreational or conservation purposes if such corporation or association shall cease to exist or shall relinquish ownership. If the land in question has been preserved as open space prior to the filing of the application via a conservation easement, it shall be sufficient that the existing conservation easement contains a reverter clause to a recognized private organization legally constituted to accept and

to maintain land for conservation purposes (such as land trust) or is otherwise satisfactory to the Commission.

- I. The Commission may require that any land have direct access to a public road through a right-a-way dedicated to public use and that it be graded and improved to allow for pedestrian access.
- J. Land areas to be dedicated for open space shall not be used as a depository for brush, stumps, earth, building materials, or debris, except as may arise from activities permitted under a conservation easement.
- K. Whenever the Commission has required land areas to be dedicated for open space, standard markers (available from the Town) shall be placed in the field delineating the area. No endorsement of the approved plans shall occur, and no mylars shall be recorded with the Town Clerk until the applicant has verified in writing that the markers have been installed and the Commission, or its delegated representative, has field verified the installation.
- L. Where land reserved for open space abuts land used for residential purposes or other uses that are reasonably likely to lead to encroachment, its boundaries shall be set in the field and marked by permanent, readily visible markers at the intersection of any lot line, road or perimeter lines and at intervals along the boundaries of all open space parcels deemed sufficient by the Commission to protect the open space land from encroachment and insure that its boundaries are identifiable.
- M. Where open space or easements are provided without frontage or other public access, a right of way shall be granted to the recipient of the open space or easement for the purpose of maintenance and monitoring.

6.6.3 Fee In Lieu of Open Space

- A. Where dedication of land as open space will not meet the purposes of this section, the Commission may:
 - 1. authorize the applicant/developer to pay a fee to the Town, or pay a fee to the Town and transfer land to the Town in lieu of any requirement to provide land, or
 - 2. request the applicant/developer pay a fee to the Town or pay a fee to the Town and transfer land in lieu of the requirement to provide land.
- B. If payment of a fee in lieu of open space is proposed by the applicant/developer, the Commission may refuse such fee if it determines, in its sole discretion, that there are acceptable areas on the Subdivision, which merit preservation by one of the methods, set forth in these Regulations.

- C. The open space payment shall be placed in the Town's Open Space Fund.
- D. Unless otherwise agreed by the Commission and the applicant/developer, (such as a fee based upon the assessed market value of the land or other basis), fee in lieu of open space procedures shall be in accordance with Connecticut General Statutes 8-25, as amended, provided that any required appraisal shall be performed by a Senior Residential Appraiser (SRA) or a Member Appraisal Institute (MAI).
- E. The fee in lieu of open space may be paid in one lump sum by the applicant/developer or may be made in partial payments at the time of the sale of each approved lot in the subdivision. If partial payments are to be made, each payment shall be prorated in value relative to the number of approved lots in the subdivision.
- F. When fractional payments are provided in lieu of open space, the applicant/developer shall execute a mortgage securing the fee-in-lieu-of-open space and such mortgage shall be recorded on the Town of North Stonington Land Records with a priority, form, and substance acceptable to the Town Land Use Attorney. Partial releases shall be provided upon the tender of each fractional payment.

6.6.4 **Open Space Dedication Exemption.** In accordance ~~with Connecticut~~ with Connecticut General Statutes 8-25 as amended, the open space dedication requirement shall not apply if:

- A. the transfer of all land in a subdivision of less than five (5) parcels is to a parent, child, brother, sister, grandparent, grandchild, aunt, uncle, or first cousin for no consideration; or
- B. the subdivision contains affordable housing, as defined in Connecticut General Statutes Section 8-39a, equal to twenty percent (20) percent or more of the total housing to be constructed in such subdivision.

6.7 **ROAD SIGNS**

Road name signs shall be placed at all intersections on at least two (2) diagonally opposite corners. In the case of a T-junction, only one (1) sign shall be required.

6.7.1 Roads that join, or are in alignment with roads of an adjoining or neighboring property, shall bear the same name.

6.7.2 No duplication of road names shall be permitted except as indicated in Section 6.7.1, and all road names shall be subject to the approval of the Commission.

6.8 **EASEMENTS**

Easements for utilities across lots, or centered on rear or side lot lines, shall be provided where necessary and shall be at least twelve (12) feet wide.

6.8.1 Where a subdivision is traversed by a watercourse, drainage way, channel or stream, the Commission may require that a storm water easement or drainage right-of-way be provided of adequate width to conform substantially to the lines of such watercourse, drainage way, channel or stream, and to provide for construction or other necessary purposes.

6.9 **PROTECTION OF NATURAL AND HISTORIC FEATURES**

Due regard shall be shown for all natural and historic features, such as large trees, watercourses, scenic points, historic spots, and similar community assets, which, if preserved, will add attractiveness and value to the subdivision.

6.10 FIRE PROTECTION

6.10.1 Contingent upon receipt of a favorable recommendation from the Fire Department by the close of the public hearing on an application, each subdivision shall, at the applicant/developer's expense, provide supplemental water supply system(s) in order to protect public safety. Such supplemental water systems, where required by the Commission upon recommendation of the Fire Department, may include:

- A. a dry hydrant accessing a pond with adequate water supply for firefighting purposes;
- B. an underground tank or cistern providing adequate water supply for firefighting purposes; or
- C. individual fire protection sprinkler systems within homes.

6.10.2 The Fire Department may review and comment on the proposed location, size, design, construction specifications, and installation of such supplemental water supply system(s) and access thereto.

6.10.3 An as-built drawing shall be provided to the Fire Department prior to any request for acceptance of such supplemental water supply system(s).

6.10.4 The Fire Department will notify the Town upon acceptance of such supplemental water supply system(s).

6.10.5 The land area containing any supplemental water supply system(s) and access thereto shall, as necessary, be encumbered by easements approved by the Town Attorney to ensure the Town's perpetual right to access and maintain any supplemental water supply system(s) and access thereto for firefighting purposes, and obligate the property owners to not inhibit the use of the fire protection facility for firefighting purposes without the approval of the Fire Department.

6.10.6 The Commission may require the use of landscaping or other materials to screen pipes, access drives, or other structures associated with the installation of supplemental water supply system(s). Such landscaping or other materials shall be approved by the Fire Department.

6.10.7 All fire protection measures required by the Commission and the Fire Department shall be completed prior to the issuance of a certificate of occupancy for any dwelling in the subdivision.

TABLE 6-1
ROAD DESIGN STANDARDS

CHARACTERISTICS	RESIDENTIAL SUBDIVISION	COMMERCIAL OR INDUSTRIAL SUBDIVISION
Right-of-way width	50 feet	60 feet
Width of travel lanes (2 each)	12 Feet	12 Feet
Number of parking lanes (if required)	1	2

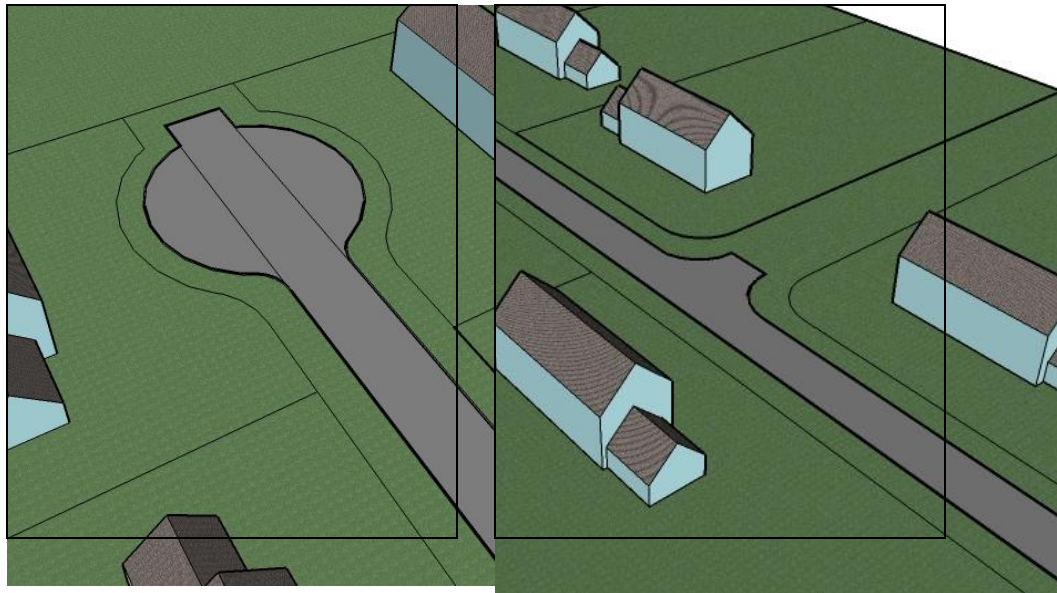
SECTION 6

SUBDIVISION DESIGN STANDARDS

Width of parking lanes (if required)	8 feet	10 feet
Total pavement width	24 feet	32 feet
Planting strip (2 each)	10 feet	2 feet
Sidewalk	See Section 6.3(When required minimum width shall be 5')	See Section 6.3. (When required minimum width shall be 5')
Radii at Curb-line Corner	25 feet	30 feet
Radii at Right-of-Way Corner	15 feet	20 feet
Centerline radius (horizontal)	150 feet	270 feet
Sight distance at intersection with State Highway	575 feet	575 feet
Sight distance at intersection with Town Road	350 feet	350 feet
Tangent distance between reverse curves	100 feet	100 feet
Block length (maximum)	None	None
Block length (minimum)	400 feet	400 Feet
Cul-de-sac length (maximum as measured from the center of the intersection road to the center of the turn-around)	Minimum Length – 250' Maximum Length – 600' See Section 6.2.8	Minimum Length – 250' Maximum Length – 600' See Section 6.2.8
Cul-de-sac turn-around right-of-way diameter (minimum)	100 feet	120 feet
Cul-de-sac turn-around pavement diameter (minimum)	80 feet	100 feet
Cul-de-sac Center Islands on Cul-de-Sacs	Encouraged	Not Allowed
Gradient minimum	.05 %	.05 %
Gradient maximum	12%	8%
Curbing	Granite or Portland cement slope curbing unless waived by the Commission per Section 7.4.2	Granite or Portland cement slope curbing unless waived by the Commission per Section 7.4.2
Minimum pipe drain diameter	15 inches	15 inches

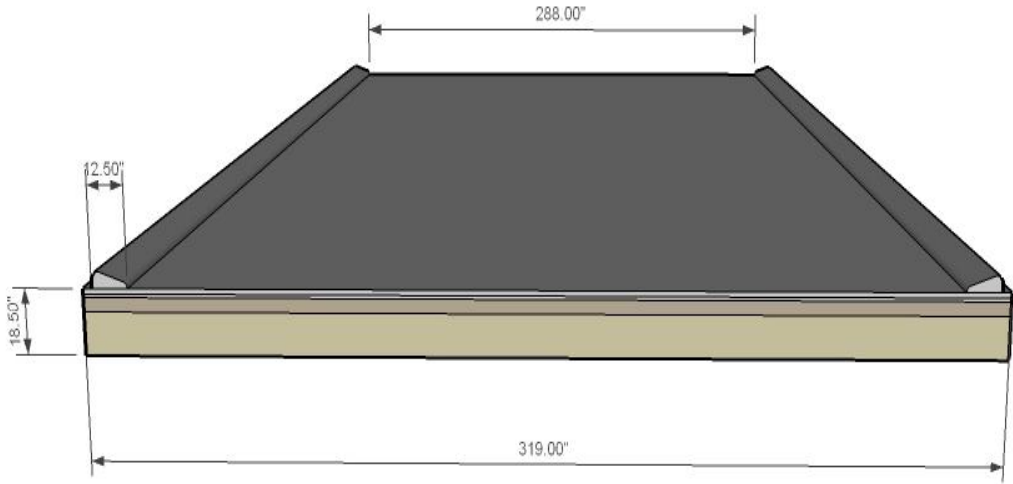
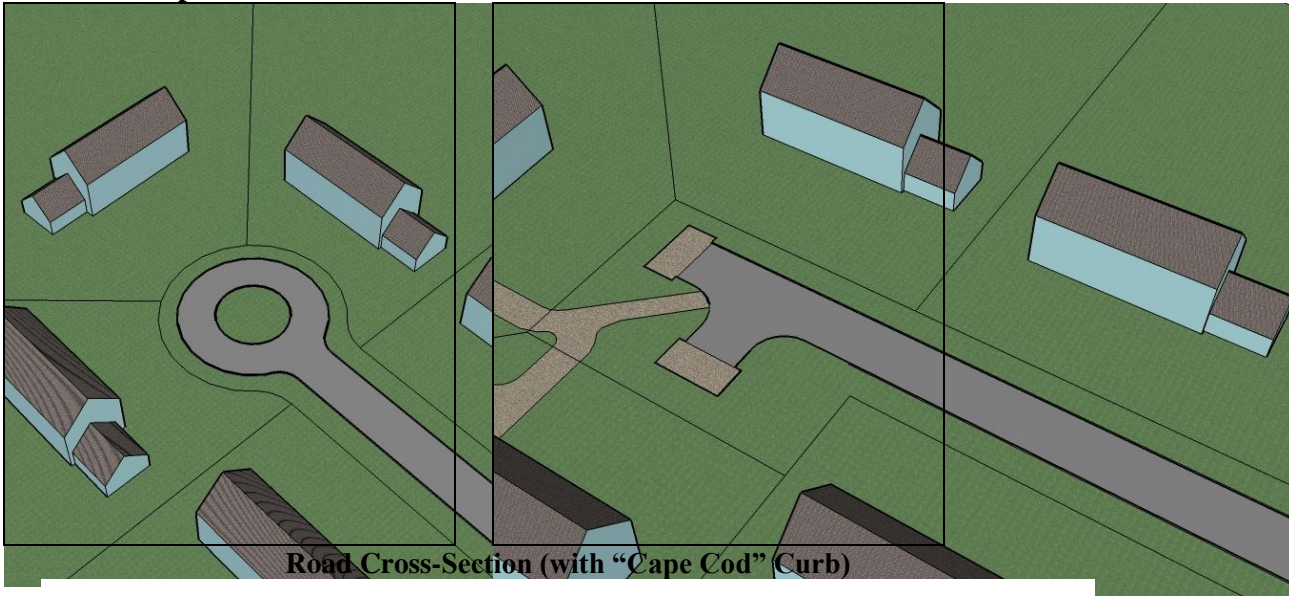
**Temporary Cul-De-Sac
Design For Future
Cul-De Sac Extension**

**Temporary Cul-De-Sac
Design For Future
Lateral Road Connection**



Permanent Cul-De-Sac
Design With
Landscape Center Island

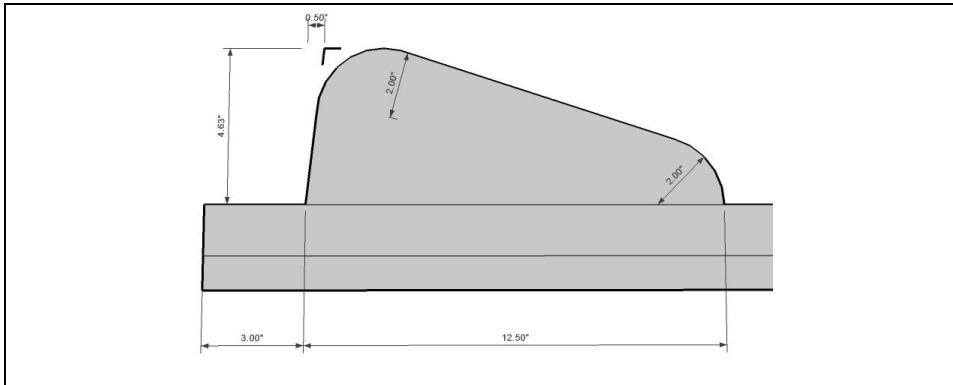
Permanent Cul-De-Sac
Design With
“Hammerhead” Turnaround



“Cape Cod” Curb Detail

SECTION 6

SUBDIVISION DESIGN STANDARDS



Concrete Slope Curb Detail

