

REDLINE

7.2 Rural Roads

A. Classification

Streets and roads are hereby classified according to the function which they are to serve, the type, speed, and volume they will carry. The broad categories shall be (a) arterials, (b) collectors, and (c) local roads. The designation in a transportation plan of arterials and collectors does not prevent other streets proposed in or adjoining subdivisions from being similarly classified. Classifications of rural roads are defined Section 2.

B. Relation to Present, Proposed and Future Road System

- (1)** The location and width of all streets and roads shall not be in conflict with any adopted Chatham County transportation plan. When a subdivision is proposed in an area designated for a future right-of-way on any County transportation plan and the construction of a road along this right-of-way is not necessary for the purpose of providing access to platted lots, or carrying the traffic that will be generated by the subdivision development, the construction of this road by the subdivider shall not be required. Such right-of-way shall, however, be reserved for dedication to the N.C. Department of Transportation for the purpose of implementing any transportation plan.
- (2)** For the purpose of these design standards, existing streets which terminate at or adjoin a subdivision boundary shall be deemed a part of the subdivision. The proposed street system shall extend the right-of-way of existing streets at no less width than the required minimum width. Subdivisions that adjoin only one side of existing streets shall dedicate one-half of the additional right-of-way needed to meet minimum width requirements. If any part of the subdivision includes both sides of an existing street all the required additional right-of-way shall be dedicated.
- (3)** Where necessary to provide public street access to adjoining landlocked property or connectivity to large tracts with future development potential, proposed public streets shall be extended by dedication of right-of-way to the boundary of such property. Legal documents shall be recorded assuring future public accessibility. Two of the issues to be reviewed when considering the extension of public roads are the improvement of traffic distribution to prevent unnecessary congestion and the improvement of public safety by providing increased access for law enforcement and emergency

vehicles. When developments are proposed with private gravel roads, the Board of Commissioners may require said roads right-of-ways be reserved to adjacent properties where deemed appropriate for future access. The future disposition of said right-of-ways is left to the discretion of the owners of the development.

If the proposed public street to be extended is to be used as access for any lots, such stub street will be required to provide a temporary turn around, located within the public right-of-way and/or a dedicated easement, and in accordance with **Section 7.3 Table 2**. ~~the standards shown either for cul-de-sacs in section 7.2C or for turnarounds in section 7.4B(3) and figure 8.~~ See Form 14 for a note to be included on the plat.

- (4)** When an arterial adjoins or is included in a subdivision, lots therein which abut the arterial shall have the number of access points limited or reduced with such conditions specified on the plat or shall be provided with another means of access, e.g.- (1) platting a single tier of lots which back to the arterial and front on a minor street, or (2) other method approved by the Planning Board such as a frontage road.
- (5)** When land is subdivided into larger parcels than ordinary building lots, such parcels may be required to be arranged so as to allow for the opening of streets in the future and for logical further re-subdivision.

C. **Design Standards for Roads**

~~(1)~~ **General Reserved**

~~Except as specified in these regulations all streets in subdivisions shall be public. The design and construction of all public streets and roads, including the grading, roadbed, shoulders, slopes, medians, ditches, drainage, driveway entrances to lots, right-of-way and pavement widths, grades, curves, intersections and other proposed features shall conform to the respective current standards of the North Carolina Department of Transportation Division of Highways, except as provided. The minimum cul-de-sac pavement radius for curb and gutter section and shoulder section is 40 feet. The minimum right-of-way radius for curb and gutter section and shoulder section is 55 feet. The roadway into the cul-de-sac shall remain unobstructed.~~

(2) Impervious Surface Area

All subdivisions shall comply with applicable watershed and stormwater regulations.

(3) Reserve Strips

There shall be no reserve strips controlling access to public streets except where the control of such strips is placed with the community under conditions approved by the Board of Commissioners.

(4) Street Names

Proposed streets which are obviously in alignment with others already existing and named shall bear the names of existing streets. In no case shall the name for a proposed street duplicate any existing street names in Chatham County or the towns therein, irrespective of the use of the suffix street, avenue, boulevard, road, pike, drive way, place, court, or other derivatives.

(5) Offer of Dedication

A developer of roads in subdivisions that are to be public roads shall provide an irrevocable offer of dedication prior to Final Plat approval.

D. Private Road

(1) Private roads may be allowed in the following types of developments:

- a. Developments which due to the very nature of their design could not occur if required to meet the requirements ~~of section 7.3. for subdivision roads by the Division of Highways.~~ Such developments include conservation subdivisions, mobile home parks, apartment complexes, and planned unit developments **shall meet the requirements of 7.3.**
- b. The division of land into tracts which are on the average five (5) acres or greater in size with no tract less than three (3) acres. The acreage of a tract is determined by the area located within lot lines. Tracts larger than ten (10) acres will not be included when calculating the average lot size of the subdivision. All land within the lot lines except public right-of-ways may be included in the lot area. **Such developments shall meet the requirements of 7.3.**

(2) Private Roads may be allowed when the following conditions exist.

- a. The subdivision does not include any part of a proposed thoroughfare or street shown on the Chatham County Thoroughfare Plan; and
- b. The developer shall reference on the Final Plat the recording of a roads instrument that provides the following:
 - i Guarantees full right of access via any private road in the subdivision to any lot served by that road.
 - ii Specifies the standards to which private roads in the subdivision have been designed and constructed.
 - iii Affirms the developer's responsibility to maintain the private roads in the subdivision to the specified standards until such responsibility is formally transferred to a legally constituted association of subdivision homeowners.
 - iv Includes a road maintenance agreement which at a minimum establishes the following:
 - *a legally constituted association of subdivision homeowners with specified authority to set and collect fees from members for road maintenance purposes*
 - *a sinking fund for emergency repair and long range improvement of subdivision roads*
 - *an association decision-making process*
 - *an association road maintenance policy with related standards.*
 - v If a large lot subdivision has 24 or less lots and the road is to be paved then it shall be constructed to state standards although not designed to state standards.
 - vi If there is an established (prior to subdivision) 60 foot wide easement to adjacent land on property and the developer proposes to use the easement as the road of access, then the road shall be designed and built to state standards.

(3) Design and Construction Standards for Private Roads:

Standards proposed for such developments as mobile home parks, apartment complexes, and planned unit developments shall meet the requirements of Section 7.3. ~~be reviewed by the Board of Commissioners based on the type of requirements necessary for the development. Low density developments~~

~~(as specified in D(1)b above) with private roads shall meet the following requirements:~~

- ~~a. The minimum width of right of ways shall be sixty (60) feet. Where necessary for adequate drainage additional right of way may be required.~~
- ~~b. The travel way width shall be not less than eighteen (18) feet, shall be unobstructed, and at a minimum shall be constructed to the design specifications shown in figure 6.~~
- ~~c. The ditch slope shall be established according to best management practices which deter erosion.~~
- ~~d. Cut and fill slopes shall be established to maintain stability and provide for maintenance where necessary.~~
- ~~e. The maximum grade of the travel way shall be ten (10) percent. Grades at stop intersections shall not be greater than four (4) percent for a distance not less than fifty (50) feet from the intersection of right of ways.~~
- ~~f. Private roads that are cul-de-sacs shall have an adequate turn around which has a road bed with a radius not less than forty (40) feet. The radius of the right of way of the turn around shall not be less than fifty five (55) feet. The roadway into the cul-de-sac shall remain unobstructed.~~
- ~~g. Sight distance easements at the intersection of private roads with public state maintained roads shall be equal to or greater than those required by the Division of Highways.~~
- ~~h. Drainage and erosion control measures shall be equal to those required for public roads.~~
- ~~i. All roads which will provide direct or indirect access to twenty five (25) or more subdivision lots shall be designed to meet N.C. Division of Highways' standards for subdivision roads, and travel ways shall be constructed to said standards.~~

(4) Engineer Approval Certification of Private Roads

The design and construction of private roads either existing, upgraded, or newly constructed serving three (3) or more lots shall be certified to be in compliance with Section 7.3 Fire Apparatus Road Access Standards by a licensed engineer.

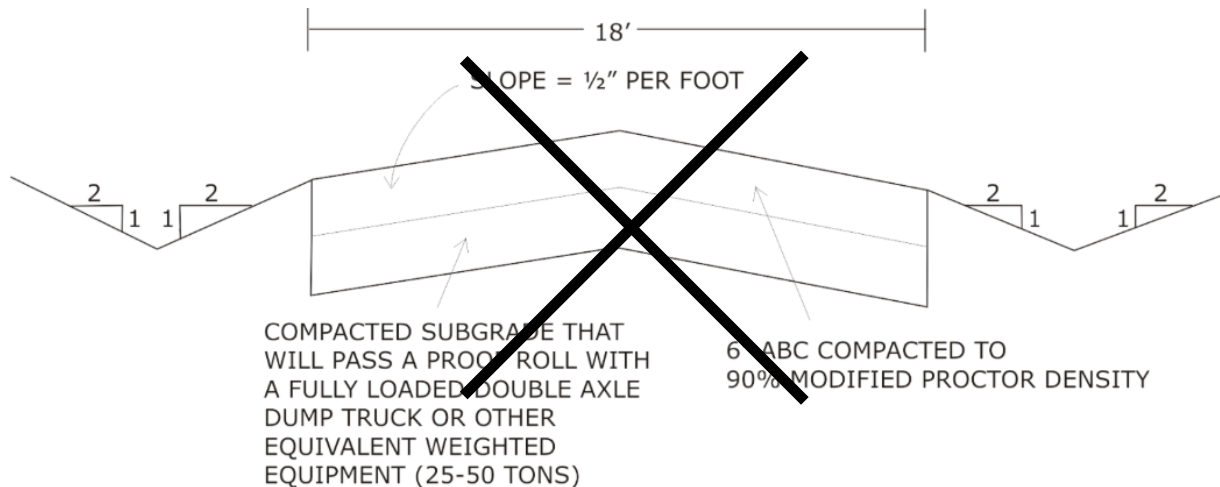


Figure 6: Minimum 18' Gravel Road Standard

~~The design and construction of private roads shall be certified to be in compliance with these regulations by a licensed engineer.~~

7.3 Blocks-Fire Apparatus Access Road Standards

The standards in this section shall be enforced by the Chatham County Fire Marshals office. Any variance to requirements set forth in Sections 7.2., 7.3, and 7.4 must be approved by the Fire Code Official pursuant to Section 503 of the current addition of the North Carolina State Building Code: Fire Prevention Code and shall follow the procedure outlined in section 18 of the Chatham County Zoning Ordinance.

A. Length Scope

~~Fire apparatus access roads shall be in accordance with this section and all other applicable requirements of the International Fire Code. Maximum block lengths will vary by zoning district, but are geared toward creating a connected street network that accommodates bicycle and pedestrian scale connections. Minimum block lengths are limited only by safety concerns such as sight distance and throat length, and by other provisions of this ordinance such as lot width.~~

District (s) or Density for Residential	Maximum Block Length (includes cul-de-sac length)
More than 8 units/acre net density (site acres minus open space & natural space)	480'
3 to 8 units/acre net density (site acres minus open space & natural space)	660' (one eighth mile)
Compact Community	660' in developed areas, 1320' through intervening open space
O&I, B-1, NC, CB, RB	660' (one eighth mile)
IL, IH	1320' (one quarter mile)

In blocks greater than six hundred and sixty (660) feet in length (or at the end of cul-de-sacs) the Board of Commissioners may require at locations it deems necessary one (1) or more public pedestrian through accesses of not less than ten (10) feet in width to extend entirely across the block, or pedestrian easements in lieu thereof. Blocks are allowed to exceed maximum length where environmental conditions make connections infeasible.

B. Width-Required Access

Blocks shall be wide enough to allow two (2) rows of lots, except where reverse frontage on major streets is provided or where prevented by topographic conditions or size of the property or location next to an arterial, in which case the Board of Commissioners may approve a single row of lots.

(1) Access and Loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds (34,050kg).

C. Minimum Specifications

(1) Access Road width with hydrant. Where a fire hydrant is located on a fire apparatus access road within commercial, industrial, and multi-family developments the minimum road width shall be 26 feet (7,925 mm), exclusive of shoulders. For more information contact Fire Marshals office.

(2) Access Road width within Major Residential Subdivisions. Fire apparatus access roads shall meet the minimum of either the NC Building

Code: Fire Prevention Code, or the NCDOT Subdivision Road Minimum Construction Standards.

(3) Grade. Fire Apparatus access roads shall not exceed shall not exceed shall not exceed 10% in grade.

(a) **Exception:** Grades steeper than 10% as approved by the fire marshal.

(3) Turning Radius. The minimum turning radius shall be determined by the fire code official.

(4) Dead Ends. Dead-ends fire apparatus access roads in excess of 150 feet (45,720mm) shall be provided with width and turnaround provisions in accordance with Table 1.

Table 1

<u>Length (feet)</u>	<u>Width (feet)</u>	<u>Turnarounds Required</u>
<u>0 - 150</u>	<u>20</u>	<u>None required</u>
<u>151 - 500</u>	<u>20</u>	<u>120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D 103.1</u>
<u>501 - 750</u>	<u>26</u>	<u>120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1</u>
<u>Over 750</u>	<u>Special approval required</u>	

(5) Fire Apparatus Access Road Gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

- a. Where a single gate is provided, the gate width shall be not less than 20 feet (6,096 mm). Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet (3,658 mm).
- b. Gates shall be of the swinging or sliding type.
- c. Construction of gates shall be of materials that allow manual operation by one person.

d. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.

e. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.

f. Methods of locking shall be submitted for approval by the fire code official.

g. Electric gate operators, where provided, shall be listed in accordance with UL 325.

h. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

(6) Signs. Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING-FIRE LANE signs complying with Figure 2. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by 7.3 C (7) and 7.3 C (8).

(7) Roads 20 to 26 feet in width. Fire lane signs as specified in Section 7.3 C (6) shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7,925 mm).

(8) Roads more than 26 feet in width. Fire lane signs as specified in Section 7.3 C (6) shall be posted on one side of fire apparatus access roads more than 26 feet wide (7,925 mm) and less than 32 feet wide (9,754 mm).

(9)

(10) Access road widths for divisions of lands under Section 7.4 F. All weather access roads shall conform to the 20' private road standard cross-section in 7.3 Table 2.

Table 2: 20' Private Road Standards:

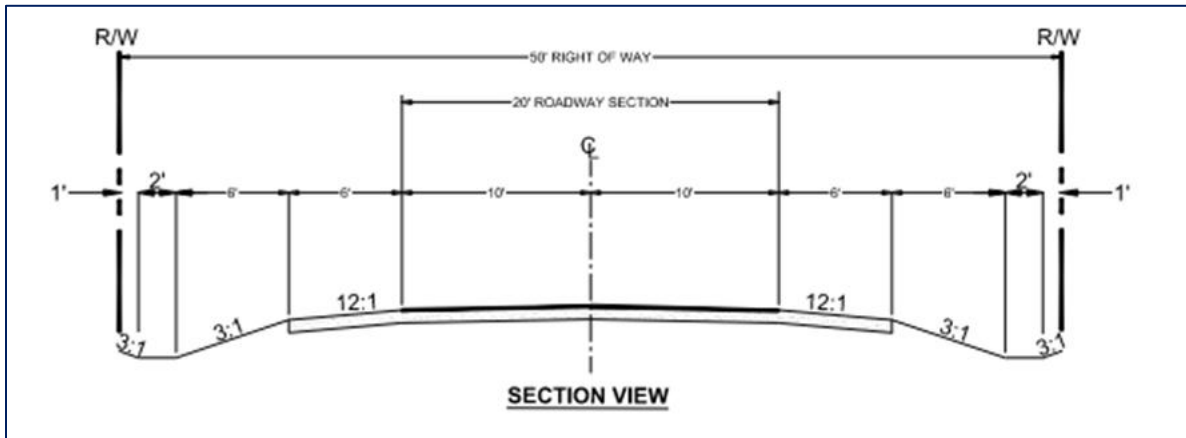


Figure 1

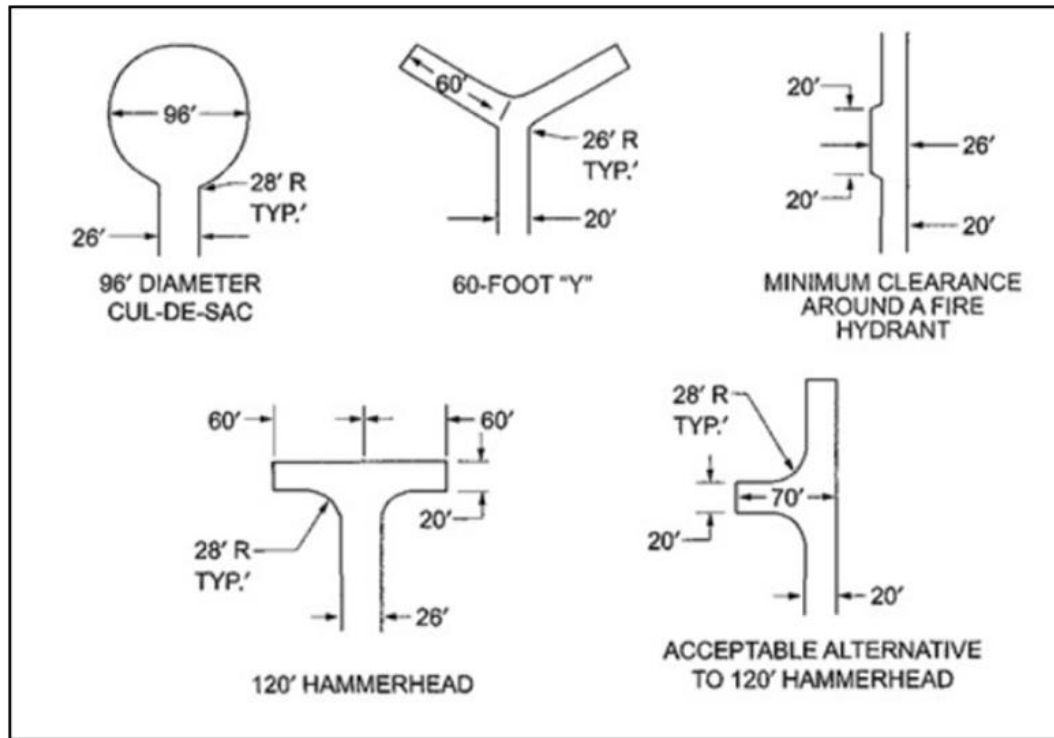
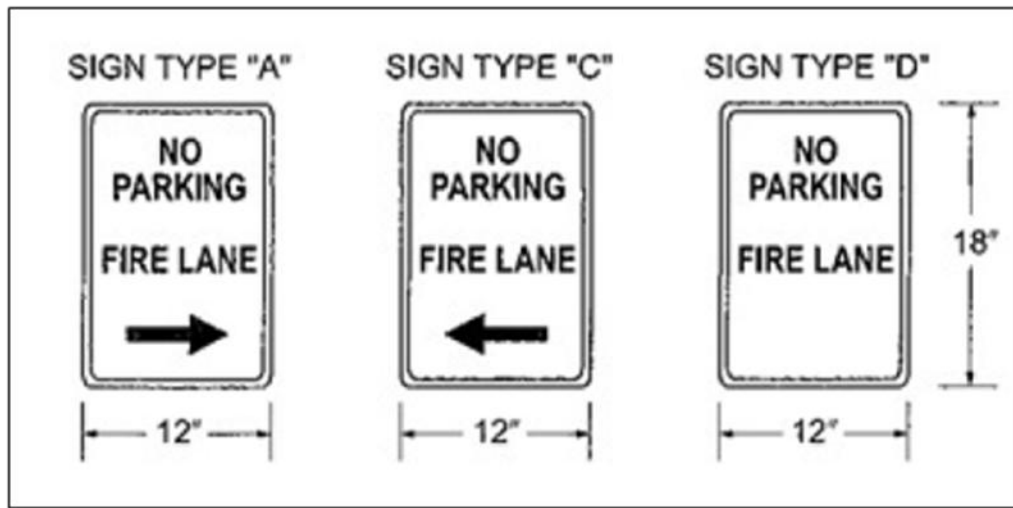


Figure 2



D. COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

(1) Buildings exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet (9,144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.

(2) Buildings exceeding 62,000 square feet in area. Buildings or facilities having a gross building area of more than 62,000 square feet (5,760 m²) shall be provided with two separate and approved fire apparatus access roads.

a. Exception. Projects having a gross building area of up to 124,000 square feet (11,520 in²) that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

(3) Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

E. AERIAL FIRE APPARATUS ACCESS ROADS.

(1) Where required. Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9,144 mm), approved aerial

fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.

(2) Width. Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7,925 mm), exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

(3) 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. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.

(4) Obstructions. Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building. Other obstructions shall be permitted to be placed with the approval of the fire code official.

F. MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENTS

(1) Projects having more than 100 dwelling units. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

a. Exception. Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Fire Code.

(2) Projects having more than 200 dwelling units. Multiple-Family residential projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system.

(3) Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

G. ONE-OR TWO-FAMILY RESIDENTIAL DEVELOPMENTS

(1) One or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 100 shall be provided with two separate and approved fire apparatus access roads.

a. Exception. Where there are more than 100 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 of the International Fire Code, access from two directions shall not be required.

b. Exception. 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.

(2) Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

7.4 Lots

E. Adequate Building Sites

Each lot shall contain a building site suitable for habitation as defined in 7.1, Suitability of the Land.

F. Arrangement

Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines. Every lot shall have frontage on a public street except as provided below.

- (1)** Subdivision lots may be allowed provided that every lot has frontage on a private road as specified in ~~7.2~~Section 7.3.
- (2)** One additional subdivision lot may be allowed provided that the lot has frontage on a perpetual easement or private road that extends to meet a public road, if the easement or private road existed prior to October 1, 1975. Proof of the existence of said easement prior to said date and proof of its permanence shall be provided to the Planning Director and certified by the applicant's attorney. A subdivider shall not create any subdivision in the same immediate location that has this type of frontage, for a period of twelve (12) months after receiving approval of a subdivision with this type of frontage, if he owns, has an option on,

or has any legal interest in any property adjacent to the property to be subdivided.

Both the additional lot and the remaining parcel if ten (10) acres or less in size shall be plated and approved. The road standards in section 7.3 shall apply.

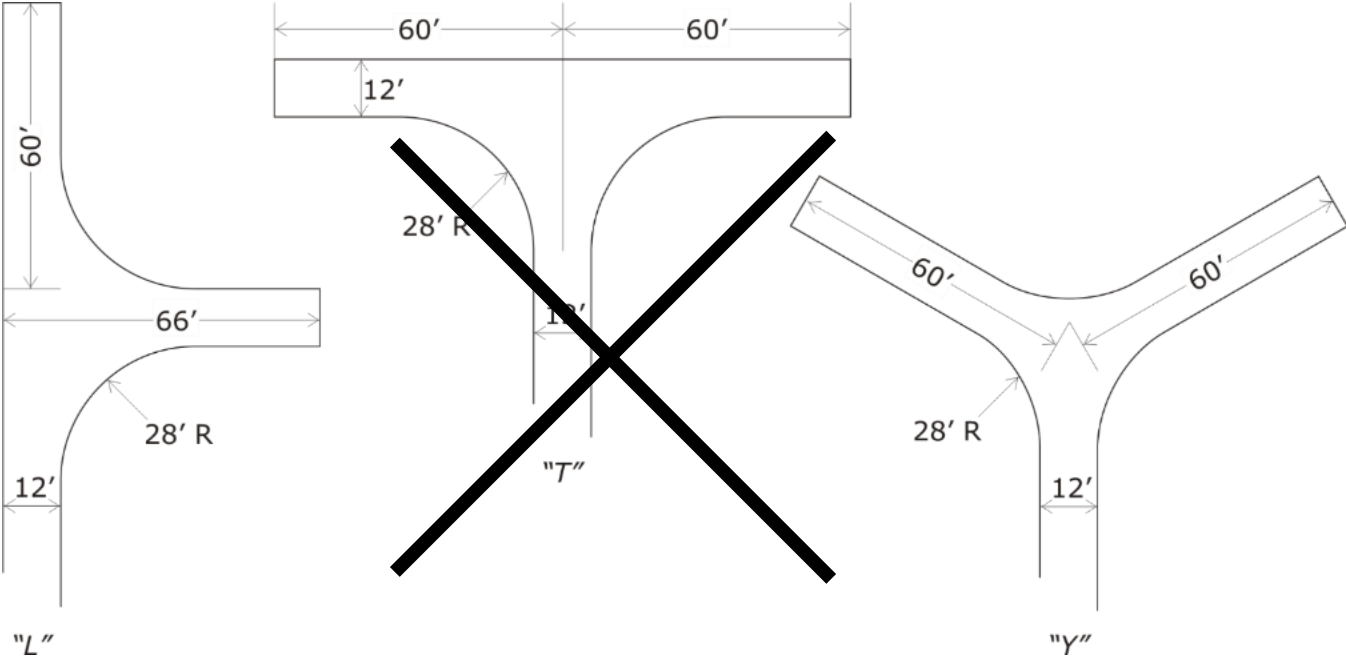
- (3) **Minor Subdivision Roads either existing, upgraded, or newly constructed serving up to five (5) lots shall be certified to be in compliance with Section 7.3 Fire Apparatus Road Access Standards by a licensed engineer.** ~~Up to four (4) subdivision lots may be allowed provided that every lot has frontage on a perpetual easement not less than thirty (30) feet in width that meets a public road. The easement shall not be within one hundred (100) feet of another easement of this type, unless approved by the Board of County Commissioners after considering lot design, land ownership, topography, and other appropriate information. Easements shall have no connectivity with another access easement. If additional subdivision lots are to be created and served by the easement, it shall be sixty (60) feet in width and meet other standards required unless a variance is granted. Proof of the permanence of the easement shall be provided to the Planning Director and shall be certified by the applicant's attorney. The applicant shall contact the State Department of Transportation to determine if a driveway permit is needed and shall provide proof of such to the Planning Director.~~ **Roads constructed under this section shall meet the provisions of section 7.3.**

~~Easements serving one lot shall be improved such that the road has a minimum clearance of 12 feet wide and 14 feet high and an all weather travel surface. Such improvement shall be made prior to the occupancy of any dwelling on said subdivision lot. Easements serving more than more one lot shall be improved such that the road has a minimum unobstructed clearance of 12 feet wide and 14 feet high, have an all weather travel surface, and at a minimum be designed to the specifications in figure 7. The design and construction of the private road shall be certified to be in compliance with these regulations by a licensed engineer. If the length of the road is more than 250 feet, then a turnaround shall be provided at the end of the road within the easement. Options for acceptable turnarounds are shown in Figure 8 below. If applicable, one or more legs of the turnaround may be the entrance to a private driveway, provided that the minimum dimensions of the turnaround are accommodated entirely within the easement. Additionally, for roads that are more~~

than 500 feet in length, the road shall be widened to 22 feet wide for a distance of 40 linear feet to provide a pull-out for safe passing, at a maximum interval of 500 feet as measured from the center of the pull-out. The maximum distance between the turnaround and a pull-out shall be 500 feet. See Figure 9 below for an illustration of pull-outs for private roads. Such improvements shall be made prior to the issuance of a building permit for a building on said subdivision lot. See Form 13 for a note to be included on the plat.

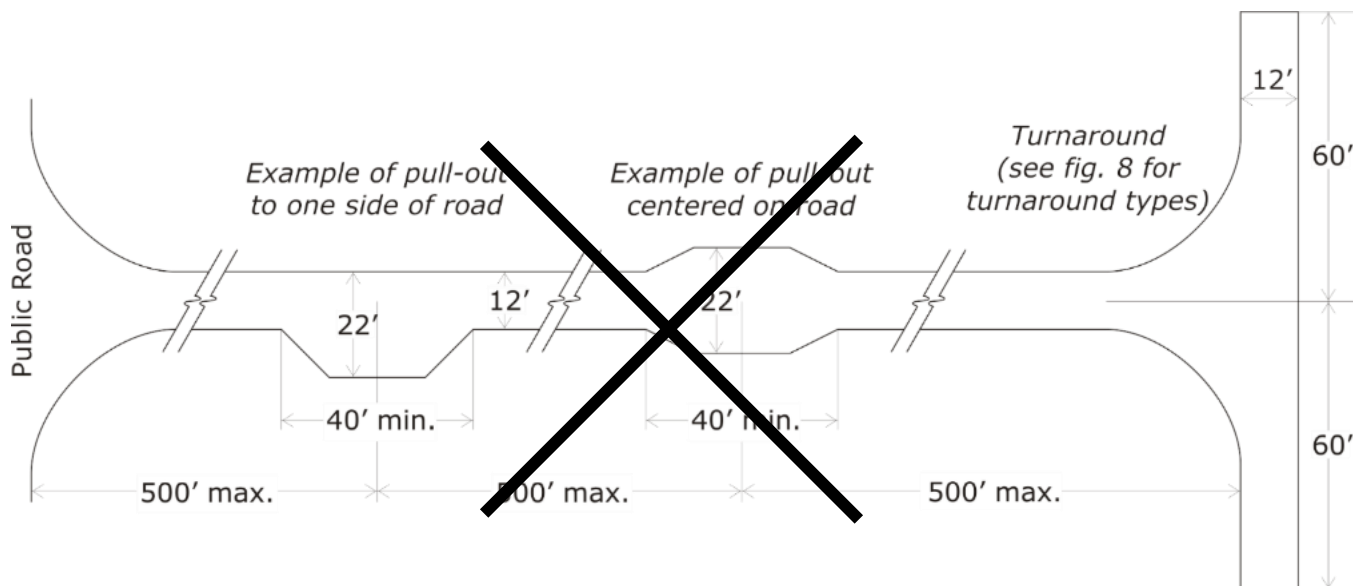
~~* Must follow entire length of roadbed and the design and construction of private roads shall be certified to be in compliance with these regulations by a licensed engineer per Section 7.2.D~~

Figure 7: 12' Minimum Gravel Road Standard



~~* Must follow construction of entire length of roadbed and construction of private roads shall be certified to be in compliance with these regulations by a licensed engineer per Section 7.2.D~~

Figure 8. ~~Options for Turnarounds for Private Travelways~~



~~*Additional pullouts must meet gravel detail (see Figure 7) and construction of private roads shall be certified to be in compliance with these regulations by a licensed engineer per Section 7.2.D~~

Figure 9. Illustration of Pull-outs for Private Travelways

- ~~(4)~~ Lots designated for duplex development (two family dwellings) or other attached residential units may be divided provided:
 - a. they meet the provisions of 7.4C (2)
 - b. access from each unit to a public or private road as specified herein or to a previously platted and recorded sixty foot perpetual easement is had by an easement not less than ten feet in width. shall comply with section 7.3.
 - c. the total number of units allowed on said lots is not increased by said subdivision.
- (5) The types of lot arrangements described in (2), (3), and (4) above may be reviewed according to the minor subdivision procedure described in SECTION 4B and 5.3, Minor Subdivisions. The lot

arrangements described in (4) may follow the minor subdivision procedure with no limit on the number of lots or times the procedure may be used in this situation.

- (6)** Before additional lots may be created along a private road that was created after October 1, 1975 said lots must front on a public or private road as specified in these regulations unless said lots fit in one of the categories listed above.