

CHAPTER 172: SUBDIVISION ORDINANCE

Section

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§172.01 GENERAL PROVISIONS

(A) Title. This ordinance is known and may be cited as the "Subdivision Ordinance of Mt. Crawford, Virginia."

(B) Policy. It is declared to be the policy of the Town of Mt. Crawford to consider land subdivisions as part of a plan for the orderly, efficient and economical development of the Town. Such Subdivisions shall be guided and regulated in such a manner as to meet the requirements set out in this ordinance for orderly and harmonious growth.

(C) Definitions. For the purposes of this ordinance and any addenda, the following words and phrases shall have the meanings ascribed to them by this section:

(1) "Agent" The Zoning Administrator of the Town of Mt. Crawford, Virginia or his designee.

(2) "Alley" A passageway open to public travel affording a secondary means of vehicular access to abutting lots, but not intended for general traffic circulation.

(3) "Clerk's Office" The Clerk's Office of the Circuit Court of Rockingham County, Virginia.

(4) "Commission" The Planning Commission of the Town of Mt. Crawford, Virginia.

(5) "Council" The Council of the Town of Mt. Crawford, Virginia.

(6) "Cul de sac" A street with only one outlet and having an appropriate turnaround for safe and convenient vehicular traffic movement.

(7) "Paper street" A street which exists only on a Plat drawn by a surveyor, and does not physically exist.

(8) "Person" Includes individuals, partnerships, corporations, and all forms of legal entities.

(9) "Plat" A map or drawing on which the proposed Subdivision of land is presented for approval and, when in final form, for recording.

(10) "Street" Any passageway (other than alleys), specifically designed for vehicular traffic, including streets, lanes, boulevards, expressways, roads, highways, thoroughfares, or however otherwise designated.

(11) "Subdivide" To divide a parcel of land for the purpose of transferring ownership or development, whether future or immediate, excluding dedications of land to the Town.

(12) "Sub-divider" A Person owning a parcel of land to be subdivided.

(13) "Subdivision" All real property shown on a final Plat approved by the Town.

(D) Prohibition Against Subdividing Without Complying With Ordinance

(1) Subject to the provisions of § 172.01(E) concerning Subdivision exceptions, no Person shall Subdivide land without fully complying with the provisions of this title, including the making and recording a Plat of such Subdivision.

(2) No such Plat of any Subdivision shall be recorded unless and until it shall have been submitted to and approved by the Agent.

(3) No Person shall sell or transfer any land of a Subdivision before such Plat has been duly approved and recorded as provided in this title, unless such Subdivision was lawfully created prior to the adoption this title.

(4) It shall be unlawful for any Person to Subdivide or improve property in a manner which deviates from the final Plat as approved.

(5) Any Person violating the foregoing provisions shall be subject to a fine of not more than \$500 for each lot or parcel of land so subdivided or transferred or sold; and the description of such lot or parcel by metes and bounds in the instrument of transfer or other document used in the process of selling or transferring shall not exempt the transaction from such penalties or from the remedies provided herein. (Code of Virginia, § 15.2-2254)

(E) Subdivision Exceptions.

(1) Exceptions.

(a) Finding. Under the authority of § 15.2-2242 (A)(J) of the Code of Virginia, the Council finds that requiring Subdividers to comply with this title in its entirety could create substantial injustice or hardship with respect to the classes of Subdivisions defined in paragraph (1)(b) of this section.

(b) Qualification. This section shall apply to the following classes of Subdivisions:

(i) Divisions of property into two pieces, with one being retained by the Sub-divider and the other being conveyed to the owner of an adjoining lot, including boundary line adjustments;

(ii) Subdivisions in which no water, sewer, drainage, street, or other improvements are required, and in which no such improvements will be dedicated to public use or otherwise transferred to the Town.

(2) Procedures. With respect to Subdivisions identified in paragraphs (1)(b)(i) and (1)(b)(ii) of this section, the Agent may permit the Sub-divider to submit his proposal under the abbreviated procedures of this section, if the Agent is satisfied that doing so will not undermine the Council's intent expressed in §172.01(B). The abbreviated procedures consist of the following:

(a) The Sub-divider shall submit a written summary describing the salient features of the Subdivision;

(b) He shall also submit a final Plat complying with §172.02(D);

(c) If the Subdivision is an adjoining-lot transfer under paragraph (1)(b)(i) of this section, the final Plat shall also indicate-by a broken line-the preexisting boundary between the portion of the divided lot being conveyed and the adjoining lot. The broken line shall be labeled with the following language: "Property line hereby vacated." Recordation of the final Plat shall operate to vacate the common property line.

(d) The Agent shall review the materials submitted, and approve the final Plat if the Subdivision complies with the terms of this Title.

(e) If the Agent rejects the proposal, the Sub-divider may resubmit his materials to the Agent under this section or

invoke the full Subdivision procedures set out in this Title,

(D) Payment of Share of Certain Costs. Every Sub-divider shall be obligated to pay the pro-rata share of the cost of providing reasonable and necessary sewerage, water, and drainage facilities, located outside the Subdivision, but necessitated or required, at least in part, by the construction or improvement of the Subdivision; provided, however, that no such payment shall be required until such time as the Town of Mt. Crawford or a designated department or agency thereof shall have established a general sewer, water and drainage improvement program for an area having related and common sewer, water, and drainage conditions, and within which the Subdivision is located.

Such a program must contain regulations establishing reasonable standards to determine the proportionate share of total estimated costs of ultimate sewerage, water, and drainage facilities required to adequately serve a related and common area, when and if fully developed in accord with the comprehensive plan of the Town, that shall be borne by each Sub-divider within the area. Such share shall be limited to the proportion of such total estimated cost which the increased sewage flow, water flow, and/or increased volume and velocity of storm water runoff to be actually caused by the Subdivision bears to total estimated volume and velocity of such sewage, water, and/or runoff from such area in its fully developed state.

Each such payment received shall be expended for the study and construction of those facilities identified in the established sewer, water, and drainage program. The payments received shall be kept in a separate account for each of the individual improvement programs until such time as they are expended for the improvement program. In lieu of such payment, however, the Sub-divider may post a personal, corporate, or property bond, cash escrow, or letter of credit conditioned on payment in full at the commencement of such construction. (Code of Virginia, § 15.2-2243.)

(E) Building Permit Withheld. No building permit shall be issued for any structure or building to be located on any land which has been subdivided until a Plat of such Subdivision shall have been recorded as provided in this title.

(F) Proceeding to Restrain or Abate Violations. In case of any violation or attempted violation of the provisions of this title, the Town Council or the Agent, in addition to other remedies, may institute any appropriate action or proceeding to prevent such violation, or attempted violation, to restrain, correct, or abate such violation, or attempted violation, or to prevent any act which would constitute such a violation,

(G) Administrative Procedures; Right of Agent to Establish. In addition to the provisions of this title, the Agent may establish additional reasonable administrative procedures deemed necessary for the proper administration of this title but such procedures shall be subject to disapproval by the Council. (Code of Virginia, § 15.2-2241(9).)

§172.02 PLATS

(A) Preliminary Plat. The first step in the approval of a Subdivision shall be the filing of a preliminary Plat with the Agent.

(B) Preliminary Plat-Contents. The preliminary Plat shall be drawn to scale and shall include the following supporting data:

- / (1) The proposed Subdivision name and acreage;
- / (2) Date, north point, and graphic scale;
- (3) Names and addresses of the owners of the property, including any existing mortgagees, and the designer of the layout;
- (4) Location and names of adjoining Subdivisions or names of the owners of adjoining lands;
- (5) Existing and proposed streets, easements and other rights of way within and adjoining the Subdivision, including right of way and roadway widths, approximate grades, and proposed street names;
- (6) Location of existing and proposed utilities adjacent to the tract to be subdivided, including size and elevation;
- (7) Location of building setback lines and zoning district lines;
- (8) Lot lines, lot and block numbers, and approximate bearings and distances;
- (9) Proposed method of water supply, drainage provisions, sanitary sewer layout or other accepted sanitary plan, methods of flood control where applicable, and all other public utilities. Connections with existing facilities, sizes of proposed facilities, and any accessory structure shall also be shown;
- (10) The location of existing water courses and other geographic features;
- (11) Any landscaping required by other provisions of this Code.

(C) Preliminary Plat-Approval. The Agent shall review the preliminary Plat with the Commission, which shall approve or disapprove it. Within sixty (60) days from the time of submission the Agent shall advise the Sub-divider of approval or disapproval of the preliminary Plat as submitted or modified and, if approved, the same shall be expressed on the Plat stating the conditions of approval, if any, or if disapproved, shall express such disapproval in writing and the reasons therefore and shall state the corrections or modifications which will permit approval. Approval of the preliminary Plat does not constitute approval of the final Plat (Code of Virginia § 15.22259).

(D) Final Plat-Requirements and Contents.

(1) A final Plat (for at least a section of the Subdivision) shall be filed with the Agent within six months of the approval of the preliminary Plat; if not, the preliminary Plat shall be deemed abandoned, and the approval of the Preliminary plat shall be void. The final Plat shall be prepared in all cases by a surveyor or professional civil engineer duly licensed by the Commonwealth of Virginia. The Sub-divider shall submit to the Agent a reasonable number of copies, as required by the Agent, clearly and legibly drawn to scale and of a size compatible with size requirements of the Clerk's Office, for recordation purposes. When more than one sheet is necessary, an index sheet of the same size shall be required showing the entire Subdivision.

(2) The final Plat shall show:

(a) Bearings and distances to nearest existing street lines or other permanent monuments and shall be accurately described on the Plat.

(b) Exact boundary lines of the tract.

(c) Name of Subdivision, total acreage, exact location, width and names of all streets and alleys within and immediately adjoining the Plat, north point, graphic scale and date.

(d) Streets and lines showing angles of deflection, angles of intersection, radii and lengths of tangents.

(e) Lot lines with dimensions to the nearest one-hundredth (11100) foot and bearings to the nearest 10 seconds.

(f) Numbered lots and blocks.

(g) Location, dimensions, and purposes of any easements and any areas to be reserved or dedicated for public use. Easements shall be labeled specifically as to type, i.e. "15 foot storm water drainage easement."

(h) Accurate location and description of monuments and markers, and the type of material used for the monuments or markers.

(i) The following certificate, in addition to any professional engineer's or land surveyor's certificate:

"The platting or dedication of the following described land (here insert a correct description of the land subdivided) is with the free consent and in accordance with the desire of the undersigned owners, proprietors, and trustees, if any."

This statement shall be signed by the necessary parties, including trustees, and acknowledged before a notary public or other officer authorized to take acknowledgements.

(j) Names and addresses of the owners of the subject property, including any existing mortgagees, and the designer of the layout.

(k) The place or places of record of the last instrument or instruments in the chain of title.

(3) The final Plat shall

(a) Comply with the Minimum Standards and Procedures for Land Boundary Surveying Practice and all other regulations adopted by the Board for Architects, Professional Engineers, Land Surveyors and Landscape Architects of the Commonwealth of Virginia.

(b) Be oriented so that north is shown at the top of the page, wherever practicable.

(c) Comply with the standards adopted under § 42.1-82 of the Virginia Public Records Act. (Code of Virginia, § 15.2-2241(1)

(E) Additional Filings With Final Plat. At the time of filing the final Plat with the Agent, the Sub-divider shall also submit the following:

(1) A certificate as to adequacy of the proposed water supply and sewage system, if not connected to the Town's system (but this provision does not constitute authorization for alternative or private water or sewer systems);

(2) A certificate by a professional engineer that any required improvements constructed by the Sub-divider have been designated to meet the minimum standards of these regulations or as otherwise required by law;

(3) The performance bond or other instrument described under §172.03(D).

(F) Approval of Final Plat; Recordation in Clerk's Office.

(1) Approval. The Agent shall act on the final Plat, without review by the Commission or Council, in the same manner and within the same time restraints as is required on the preliminary Plat under §172.02(C). It shall be approved if it is consistent with the preliminary Plat and otherwise complies with this ordinance. If the final Plat is approved, such fact shall be endorsed on the Plat itself, executed by the Agent. No approval shall be granted until the provisions of §172.04(D) pertaining to the construction of improvements have been complied with.

(2) Recordation-Generally. After approval the Plat shall then, subject to all of the provisions of this title, be filed and recorded in the Clerk's Office, and indexed in the general index to deeds under the names of the owners of land signing the statement set forth under §172.02(D)(2)(i) and under the name of the Subdivision.

(3) Timing of Recordation. Subject to paragraphs (4)(a) and (4)(b) of this section, unless the approved final Plat is filed for recordation within six (6) months after final approval, or such longer period as may be approved by the Council in writing, the approval previously given shall be deemed withdrawn and the Sub-divider shall return the Plat marked "void" to the Agent.
(Code of Virginia, §15.2-2241(8).)

(4) Extensions of Recordation Deadline.

(a) Incremental Recordation. If a Sub-divider records a final Plat comprising a section of a Subdivision as shown on an approved preliminary Plat and furnishes the guaranty required by §172.04(D) for that section, the Sub-divider shall have the right to record the remaining sections shown on the preliminary Plat for a period of five years from the recordation date of the first section or for such longer period as the Agent may determine to be reasonable. (Code of Virginia, § 15.2-2241(5).)

(b) Improvements underway. In any case where construction of facilities to be dedicated for public use has commenced pursuant to an approved plan or permit (and with a guaranty approved under §172.04(D)) the time for such Plat recordation shall be extended to one year after final approval or the time limit specified in the surety agreement approved by the governing body, whichever is greater. (Code of Virginia, § 15.2-2241(8).)

S172.03 DESIGN STANDARDS

(A) Streets and Alleys

(1) Names of Streets. Proposed streets that are in alignment with existing streets already named shall bear their existing names. No new streets shall duplicate names of existing streets in the Town, irrespective of any suffix. All street names shall be subject to approval by the Town Council.

(2) Alleys for Commercial and Industrial Use. Alleys at least twenty (20) feet in width shall be provided at the rear of all lots designated for commercial and industrial use; this requirement may be waived by the Agent where other definite and assured provision is made for service access, such as off-street loading, unloading, and parking, consistent with and adequate for the uses proposed. Intersecting alleys, where unavoidable, shall feature at least a fifteen (15) foot radius at each corner. Dead end alleys are prohibited.

(3) Prohibition of Alleys on Residential Lots. Alleys are prohibited at the rear or side of residential lots.

(4) Prohibition of Reserved Strips. Reserved strips controlling access to streets are prohibited.

(5) Connection of Streets. Wherever deemed feasible by the Town, streets shall extend to the edge of the Subdivision in designated locations so that they may be connected to streets in present or future adjacent subdivisions. Such streets shall be coordinated acceptably not only in location, but also in width, grade and drainage, but no curb, guttering or asphalt shall be required for "Paper Streets" provided solely for future connection. (Code of Virginia, §15.2-2241(2) and (4)..)

(B) Lots and Blocks

(1) Size, etc. of Lots. The dimensions, shapes, and other characteristics of lots created by a Subdivision must comply with the Town's zoning ordinance. If the Subdivider's oral or written submissions indicate a proposed use for the property, the lots must be designed so that the proposed use could be conducted on them. If no use has been proposed, the lots must be designed so that some use, lawful in the zoning classification, could be conducted on them.

(2) Prohibition Against Peculiarly Shaped Elongations. Lots shall not rely upon peculiarly-shaped elongations in order to meet the Town zoning ordinance's minimum requirements for square footage of a lot.

(3) Length, Width and Shape of Blocks. The length, width and shape of blocks shall be determined with due regard to:

- (a) Availability of adequate building sites suitable to the needs of the type of use contemplated, where applicable;
- (b) Zoning requirements as to lot sizes and dimensions;
- (c) Need for convenient access, circulation, control and safety of vehicular traffic;
- (d) Limitations and opportunities of topography.

(4) Approval of Design of Irregularly Shaped Blocks, etc.

Irregularly shaped blocks or oversized blocks indented by cul de sacs, parking courts, or loop streets and containing interior block parks or playgrounds will be acceptable when the design is approved by the Agent.

(C) Survey Monuments and Pins

(1) Installation of Permanent and Other Monuments. Permanent reference monuments shall be installed to mark Subdivision boundaries, street corners, intersections of street lines, and Subdivision boundaries and angle points. (Code of Virginia § 15.2-2241(7).)

Additionally, each lot in any new Subdivision must contain at least one permanent monument. All monuments, including permanent ones, shall be as set forth under the Addendum to this title entitled "Standards for Improvements."

§ 172.04 Improvements; Easements, Maintenance of Streets by Town

(A) Utility Easements; Other Easements. Easements at least ten (10) feet wide, centered on side or rear lot lines, shall be provided for utilities. Title to such easements shall be held by the Town, subject to the use of public service corporations and other entities by applicable franchises or agreements. Easements may also be required in, along, or adjacent to natural water courses as drains for sanitary sewers. In appropriate cases approved by the Town, utility easements may be conveyed directly to public service corporations furnishing cable television, gas, telephone and electric service to the proposed Subdivision by reference on the final Plat to a declaration of terms and conditions of such common easements and recorded in the Clerk's Office. (Virginia Code, § 15.2-2241(6))

(B) Whenever (i) a storm water drainage system is to be constructed by (or on behalf of) the Sub-divider on land to be conveyed to purchasers of lots and (ii) the Agent finds a significant risk of drainage or erosion problems if the system be neglected or intentionally defeated, the Agent may require the Sub-divider to provide for the integrity of the drainage system by attaching a covenant running with the lots in the Subdivision, in substantially the following form:

"Some lots in the Subdivision are encumbered by a storm water drainage easement, and no lot owner shall interfere with the drainage system within that easement-by grading, filling, landscaping, or otherwise changing it-without the written permission of the developer and the Town of Mt. Crawford. The Town may enter any lot on which such storm water drainage system lies for the purpose of inspecting, modifying, or repairing the system. If such repairs are necessitated because of interference with the system by the lot owner, the town shall be entitled to effect such repairs at the lot owner's expense. Further, the Town shall be entitled to its attorneys' fees in any judicial action to enforce this covenant. This covenant creates no obligation on the part of the Town."(Virginia Code, § 15.2-2241(3).)

(C) Maintenance of Streets by Town. No part of any proposed Subdivision within the Town and no passageway proposed to be used as a street within the Town shall be taken over by the Town for improvement or maintenance, and the Town shall be under no obligation to improve or maintain the same and such proposed streets shall not be considered as public streets of the Town until a properly approved final Plat is recorded in the Clerk's Office, and the required improvements are accepted by the Town.

(D) Construction of Improvements; Guaranty by Sub divider.

(1) Basic Requirement. All of the improvements required of the Sub-divider shall be installed by the Sub-divider at its cost. Unless the Planning Commission determines otherwise when approving the preliminary Plat, all required improvements shall

be completed within 24 months after recordation of the final Plat.

(2) **Guaranty.** Prior to approval of the final Plat, the Subdivider shall guarantee construction of the improvements required by this title. For purposes of the guarantee, the Agent shall estimate the cost of the improvements and may also require an additional 25% guarantee in order to allow for inflation, administrative costs, and damage to existing roads and utilities.

(3) **Form of Guaranty.** The Sub-divider may guarantee construction of the improvements by prepaying the Person or Persons who will construct them and certifying to the Agent that he has done so. In lieu of making such advance payment, the developer may furnish instruments of guaranty in appropriate legal form and consisting of:

- (a) A certified check or cash escrow, or
- (b) A personal, corporate, or property bond with surety or security satisfactory to the Council, or
- (c) An irrevocable letter of credit from a banking or savings and loan institution, or
- (d) A contract for the construction of such facilities guaranteed by contractor's bond with satisfactory surety.

(4) **Release of Guaranties.** Subject to § 172.04(F), all guaranties shall be released by the Agent in the manner provided by § 15.2-2245(J) of the Code of Virginia. Partial releases, where appropriate, shall be for a percentage of the original bond equal to the percentage of the facilities which are completed and approved, up to a maximum of 80% of the original bond amount.
(Code of Virginia, §§ 15.2-2241(5), 15.2-2245.)

(E) **Standards for Improvements.** All public improvements in the Subdivision, either required by this title or to be dedicated to the Town shall comply with the Town's "Standards for Subdivision Improvements." (Code of Virginia §15.2-2241(4).)

(F) **Inspection of Improvements.**

(1) **Generally.** No improvements will be accepted by the Town, nor will any guarantees be released, until the improvements are inspected as provided in this section.

(2) **Certificate of Completion.** A certificate of partial or final completion of improvements from either a duly licensed professional engineer or land surveyor as defined in and limited to § 54.1-400 of the Code of Virginia, may be accepted in lieu of an inspection at the discretion of the Agent.

(3) Notice. When improvements are complete and ready for inspection, the developer may file a written notice with the Agent requesting full or partial release of his guaranty. Within 30 days after receiving the notice, the Agent or his designee shall inspect the improvements, notify the developer of any deficiencies, and suggest corrective measures.

(4) Failure to Act on Notice. If the Agent has not acted on the notice described in paragraph (3) of this section within the 30 day period, the improvements shall be deemed approved and the guaranty released. However, if the developer has requested final approval of the improvements and final release of his guaranty, no approval by default shall be created by this paragraph (4) unless the Town Manager or the Council's designee is given an additional 10-working-day notice (by certified mail, return receipt requested), and the Town still fails to act.

(Virginia Code, § 15.2-2245.)

\$172.05 Fees and Miscellaneous

(A) Fees. A Sub-divider shall pay to the treasurer of the Town a fee for review of Plats and plans as the Council deems appropriate. The fee shall include inspection services and only one fee shall be paid even though the Sub-divider may file both a preliminary and a final Plat. An additional charge may be imposed if the Agent deems desirable the retention of an independent engineer, surveyor, or other professional for the purpose of inspection. Code of Virginia, §15.2-2241(9).)

(B) Vacation. In addition to the other methods of vacation prescribed by the Code of Virginia, plats may be vacated in the manner set forth in § 15.2-2275(J) of that Code.

TOWN OF MT. CRAWFORD STANDARDS FOR
SUBDIVISION IMPROVEMENTS

Streets

Design Standards. All streets must be designed to meet the urban standards specifications 1 in the latest edition of the Virginia Department of Transportation's Subdivision Street Requirements, except the Town requires curb and guttering on all subdivision streets. On streets with speed limits less than or equal to 40 miles per hour, the curb and guttering shall be of type CG-6, as specified in the Department of Transportation requirements. On streets with speed limits greater than 40 miles per hour, the curb and guttering shall be of the type specified as CG-7. The subdivision street requirements make use of certain categories of streets, traffic volume, and terrain. The Town shall determine which categories apply.

Construction.

- (a) Sub-dividers shall be required to install the base, and curb and guttering for all streets in the subdivision. At the time the final plat is approved, the Sub-divider must either pay to the Town the cost of applying final surfacing, as such cost is estimated by the agent, or the Sub-divider may apply final surfacing itself.
- (b) If a subdivision is bounded by an existing street which does not meet the Town's current subdivision standards, sub-dividers shall be required to pay one-half of the cost of bringing the street into compliance with current standards, and the Town will likewise pay one-half of the cost. This joint obligation includes all work to be done within the street right-of-way itself, including curb, guttering, paving, drainage, etc. If extra right-of-way width is required to meet Town standards, the Sub-divider shall dedicate it. Nevertheless, if the street borders the Subdivision only on one side, only that side need be brought into compliance with Town standards, and if extra right-of-way width is required, the Sub-divider need dedicate only half of it. For example, if an existing street containing a 30 foot right-of-way bounds a Subdivision on one side, and Town standards require 50 feet of right-of-way, the Sub-divider need dedicate only ten feet of additional right-of-way.

Lighting.

Subdividers shall be required to install street lights throughout the subdivision at their expense, and according to the street lighting standards to the Town of Mt. Crawford, as prepared by the agent.

Utilities

If water and sewer lines do not already serve the property to be subdivided, the Town, subject to §172.01(F) of the Town Code, will extend its lines to the boundary of the developer's property (if such property boundary is within the Town), but the developer must extend the lines throughout the subdivision in easements to be owned by the Town. The lines installed must meet the Town's specifications, which are specified below. However, the agent is authorized to make these specifications more rigid whenever minimal compliance would be detrimental to the proposed development or the Town.

Subdivision water mains must be constructed of 8" class 52 ductal iron pipe. All water mains shall be a minimum of eight (8) inches in diameter. Minimum separation from wastewater lines shall be maintained as specified by the Virginia Department of Health. Wherever practicable, the water system shall employ looped lines. Dead end lines shall be equipped with fire hydrants, flush valves, or blow-offs to allow flushing. Air relief valves shall be installed at high points. A minimum fire flow of 500 gpm in single-family residential areas shall be included in the system design. A minimum of 1,000 gpm shall be designed for in other areas. Valves shall be placed so that a minimum of customers will be without water during a water cutoff for necessary repairs.

Fire hydrants shall be placed to provide adequate fire protection. In single-family residential areas, fire hydrant spacing shall not exceed 600 feet. In multi-family residential, commercial, and industrial areas, this spacing shall not exceed 400 feet. All fire hydrant leads shall be valved. Service lines shall be installed to the property line. Meter boxes and yolks shall be set in place. The depth shall be sufficient to prevent freezing but not so deep as to require extensions and make it difficult to maintain or read the meters.

All wastewater mains shall be a minimum of eight (8) inches in diameter, and shall be composed of schedule 35 PVC or equivalent. Lines shall have a uniform slope with a straight alignment between manholes. Minimum grades shall be as follows:

<u>Pipe Diameter (inches)</u>	<u>Minimum Slope (ft/100 ft.)</u>
8	0.40
10	0.28
12	0.22
14	0.17
15	0.15
18	0.12
21	0.10
24	0.08

Slopes greater than these are desirable. Pipe sizes shall not be increased to achieve a flatter grade. (Minimum grades are established to produce a velocity of approximately two feet per second when the pipe is flowing full or half full based on Manning's formula and using a "n" value of 0.013. However, when the design flow is less than that required to achieve a depth of 0.5 of the pipe diameter, the velocity with minimum slope will be less

than two feet per second, and proper cleansing may not occur. Therefore, in these cases the Town may require a pipe slope greater than the minimum otherwise computed.)

Manholes shall be provided at all intersections with other mains, points of change in alignment or grade, change of pipe size, and at the end of a line that will be extended at a later date. The length of line between manholes shall not exceed 500 feet. Manholes for sewer lines up to 24 inches in diameter shall not be less than four feet inside diameter with an opening of 24 inches. Steps shall be provided. Service laterals shall be installed to the property line of the lot and properly marked as to their location.

Water and sewer mains must be placed in the right-of-way to be dedicated to the Town. Once properly installed, the lines become part of the Town's utility system, and they become Town property. All fees for connection to the Town's water and sewer systems through the new lines shall accrue to the Town.

All utilities, including gas, electric, telephone, and television cable distribution lines and connections must be underground.

Drainage

If an area-wide storm sewer system has been established under §172.01(F), curb drop inlets are required near street intersections and designated intermediate locations to collect surface water. Otherwise, the subdivider may be required to designate certain areas of the subdivision or other land for seepage and absorption.

All drainage facilities including curbs, gutters, inlets, storm sewers, and channels shall be designed to intercept and transport runoff from a minimum 10-year frequency storm. Design shall be for a fully developed watershed. The system must be designed to accommodate storm runoff from the design frequency storm without causing inundation of areas outside of drainage ways or substantial interruption of traffic flow.

Pipe shall be reinforced concrete except as otherwise approved by the agent. The 10-year frequency storm shall be carried without surcharge. Wherever practicable, when the pipe is flowing full or half-full, the velocity shall be a minimum of 2.5 feet per second in order to have proper scouring action. An "n" value of 0.013 shall be used for concrete pipe. The system shall be designed for minimum maintenance. Manholes or accessible inlets should be placed at no more than 300 feet intervals to insure proper access for cleaning. All storm sewer discharge points shall have approved rip-rap installed.

Open channels shall have side slopes of 3 or less to allow for proper maintenance. All open channels shall be designed to carry a minimum 10 year frequency storm with a 0.5 foot freeboard. Where velocities will exceed acceptable levels (in the opinion of the agent); rip-rap, concrete retards, drop structures, concrete lining, or an approved erosion control matting shall be utilized. A minimum "n" value of 0.035 shall be used for grass

lined channels, with an "n" value of 0.015 for concrete lined channels, and an "n" value of 0.050 for rip-rap lined channels.

Monuments

Permanent monuments shall consist of a steel rod 7/8 inch in diameter, 30 inches long, driven so as to be flush with the finished grade, capped by a two inch diameter pressure fit aluminum cap bearing the surveyor's name and license number.

Non-permanent monuments shall consist of a steel rod 5/8 inch in diameter, 24 inches long, driven so as to be flush with the finished grade. (Code of Virginia, § 15.2-2241(7).)