

Town of Canandaigua

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Established 1789

**SITE DESIGN AND DEVELOPMENT
CRITERIA**

ADOPTED BY THE TOWN BOARD ON:

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DEAR APPLICANT:

Here is a manual created to assist you, whether you are a first time applicant to one of the Boards of the Town of Canandaigua or an experienced applicant. The flow chart directly behind this letter explains the critical path we would like to follow in order to ensure that your needs are met. We are interested in moving your project or your request forward in the most efficient manner possible. The steps in the path shown on this chart indicate all of the possible options. The packet of application forms you receive upon your initial intake interview will be flagged to indicate which of the forms apply to your situation; feel free to return or recycle the unnecessary forms as you pursue your project.

Whether your concerns are to be addressed by the Town Board, Zoning Board of Appeals or Planning Board, we are concerned that there is no unnecessary delay in the processing of your request. Prior to the submittal of your application to the appropriate Board, the Zoning Enforcement Officer will screen your submittal for code compliance and direct you to the appropriate Board for action. After the first review of the Planning Board or the Town Board, the Town Planner/Zoning Enforcement Officer will become responsible for the forward progress of your project. If you have questions regarding this part of the process or need clarification, as always feel free to call the Zoning Enforcement Officer or the Town Planner at 396-0430. Applicants can also contact either or both officers of the Town by accessing the Town of Canandaigua Web Page and locating the Development Office.

The appropriate Board will use the guidelines available from the Town (Forms: SF PZ 1 through 4) for the evaluation of your project. These criterion reference checklists will be used by Staff and Board members to conduct their formal review. A schedule of meetings is enclosed with your application forms for your planning needs. A mandatory New York State Town Law Section 239 referral may send your project to the Ontario County Planning Board for review. If your project is in a certified Agricultural District it may be reviewed by the County Agriculture Enhancement Board.

After all Board actions are completed, including possible reviews by the Town Consultant Engineer, you will be interviewing with the Town Code Enforcement Officer if you need to obtain a building permit. Further instructions from the Code Enforcement Office will be provided.

We hope this information is of some assistance in the pursuit of your project and we appreciate your interest in the planned and managed growth of the Town of Canandaigua.

Amendment Record

Date	Section No. / Page No.	Description of Change
4/12/02	Appendix S	Eliminated plastic services from main to curb stop
	Appendix G, H	Revised cul-de-sac island, adjusted radii
	Appendix H-2	Added this detail to the manual
	2.4 (A), Page 3	Added reference to Appendix H-2
	List of Appendices	Added reference to Appendix H-2
4/4/05	Appendix AB	Added design criteria for Ridgeline & Shoreline Development to the manual
9/29/08		Updated Appendices on Appendix sheet and throughout the report
	D, D-1, O-1, P, EE-1, GG	Added additional Appendices to report
		Made corrections to report per Town comments
		Revised formatting within text
		Updated NYSDOT Specification numbers within text and on detail sheets.
		Updated table of contents
12/16/08		Adopted by the Town Board
8/18/09	Section 4.1	Added (E)
	Section 7.0.A	Changed subpart (1) and added subpart (3)
	Section 7.0.G	Reformatted this subsection
	Section 7.8	Added subpart (9) and (10)
	Appendix A & B	Increased inspection percentage to 5%
	Appendix EE	Added notes (2) & (3)
8/18/09	Section 2.11	Deleted Section 2.11 (A–D) and added new paragraph (A)
	Section 7.8	Edited subpart (9) and (10)
8/18/09		Amended by the Town Board

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SITE DESIGN AND DEVELOPMENT CRITERIA
TOWN OF CANANDAIGUA, ONTARIO COUNTY, NEW YORK

ARTICLE I – GENERAL INFORMATION

1.0 GENERAL PURPOSE

See “Dear Applicant” letter and “Town of Canandaigua Application Process” flow chart immediately behind the title sheet to this manual.

The purpose of these Specifications is to provide minimum criteria for the design and construction of improvements within the Municipality, which, upon the satisfactory completion thereof, may be offered for dedication to the Town of Canandaigua for perpetual operation and maintenance. The information contained in this document is to be used in conjunction with the subdivision and site plan regulations provided in the Town Code.

The criteria established is intended to provide minimum standards, which may be upgraded to serve the best interests of the municipality. The information in this booklet is provided to aid in the submission of material in a uniform manner and attempt to expedite the various review and approval procedures.

These criteria shall govern in all areas of private, public, industrial and commercial development and/or areas that will involve the connections to existing municipal systems.

It should be noted that the Town of Canandaigua currently has inter-municipal agreements with the Town of Farmington, Town of Hopewell and the Town of Bristol regarding sanitary sewer and/or water installations and districts, which should be complied with as well.

ARTICLE II – DESIGN STANDARDS

2.0 GENERAL

- A. Proposed plans for development shall conform to the Town’s Comprehensive Plan as adopted by the Town Board.
- B. Standards applied should produce development that reflects the highest and best use of the land.
- C. The developer shall strive to comply with standards of good planning and adhere to the codes and ordinances of the Town as well as the rules of any agencies having jurisdiction over other aspects and phases of the project.
- D. The Planning Board shall review proposed development within the Town and based on the individual merit and the contribution of the project to the Town grant or deny its approval.

2.1 FLOODLAND, DEC WETLAND AND FEDERAL WETLANDS

- A. Land development within Federal and or State Regulated Wetland areas shall be subject to the appropriate agency approval. The Planning Board shall not be responsible for delineating, noting or bringing to the developer attention the existence of wetlands within a project. Furthermore, the Planning Board’s approval of a project does not relieve the developer from complying with the applicable agency approval for construction within or adjacent to a protected area.
- B. Land subject to flooding or land deemed by the Planning Board to be uninhabitable shall not be plotted for residential occupancy, or uses that may be a danger to health, life or property or aggravate an existing flood hazard. Such land areas shall be noted as “Un-developable” on the plan and set aside.

2.2 STREET LAYOUT

- A. Reasonable access shall be provided to all developable areas in a given tract of land. Under no circumstances shall a “Land Locked” parcel be created as part of land subdivision. A right-of-way must be provided at the time of the subdivision and reasonable access to existing streets provided.
- B. Streets shall be logically oriented, related to the existing topography and meet acceptable planning/engineering criteria, which will produce buildable lots and reasonable road grades.
- C. Minor streets shall be planned so as to discourage through traffic, but provide for excellent access to “connector” roadways with higher use classifications.

- D. Where a subdivision abuts or contains a major traffic street, the Planning Board may require that intermediate access streets, reverse-frontage lots or other treatments that will provide a reduction in the number of intersections with the major street and reasonable separation of local and through traffic.
- E. New, half or partial streets will not be permitted except where essential for reasonable subdivision of a tract in conformance with the other requirements and standards contained herein, and where, in addition, satisfactory assurance for dedication of the remaining part of the street can be secured.
- F. Wherever a tract to be subdivided borders on an existing half or Partial Street, the other part of the street shall be plotted within such tract.
- G. Dead-end streets shall be prohibited, except as stubs to permit future street extension into adjoining tracts or when designed as a cul-de-sac.
- H. Reserve strips that limit access to right-of-way or utility easements are prohibited. Reservations which encourage the extension of right-of-way and utilities may be required by the Town.
- I. Street names shall be submitted for approval to the County Planning Department, Postal Service and others designated by the Town Board to avoid duplications or use of similarly sounding or spelled names. A street, which is a continuation of an existing one, shall retain the same name.

2.3 STREET INTERSECTIONS

- A. Streets shall be laid out to intersect as nearly as possible at right angles. No street shall intersect another at an angle of less than 75 degrees.
- B. Multiple intersections involving a junction of more than two streets shall be avoided.
- C. Streets entering opposite sides of another street shall be laid out either directly opposite one another or with a minimum off-set of 250 feet between their center lines.
- D. Where a subdivision abuts or contains an existing street of inadequate right-of-way width, additional right-of-way width will be required.

2.4 CUL-DE-SAC STREETS

- A. Cul-de-sac streets, permanently designed as such, should not exceed 1,000 feet in length and shall be designed as noted in Appendices G, H, H – 2 and H – 3.
- B. Temporary hammerhead turnarounds, Appendix I, shall be constructed to Town road specifications.

2.5 BLOCKS

- A. The length, width and shape of blocks shall be determined with due regard to the following:
 - 1. Provision of adequate building sites
 - 2. Zoning requirements
 - 3. Topography
 - 4. Requirements for safe and convenient vehicular and pedestrian circulation and access
 - 5. Utility service and the operation and maintenance of same
- B. All blocks in a subdivision shall have a minimum length of at least 750 feet with a maximum length of 1,200 feet. Such blocks containing individual lots shall be at least two lot depths in width, except where reverse frontage may be employed along major highways. Modifications of the above requirements are possible in commercial and industrial developments.
- C. Crosswalks, a minimum of 6 feet in width, shall be provided in blocks with interior parks, in exceptionally long blocks, or where access to a school, shopping center, or where other community facilities are located.

2.6 LOTS

- A. The provisions of the Zoning Ordinance of the Town of Canandaigua at the time the applicant receives final approval shall control the minimum lot size and frontage.
- B. Double frontage lots are prohibited except where employed to prevent vehicular access to major traffic streets or required by other design parameters. A planting screen easement of at least 20 feet wide, through which there shall be no right of access shall be provided between the abutting roadway and the home site.
- C. Where either or both water supply and sanitary sewage disposal are provided by individual on-lot facilities and evidence indicates that the requirements of the Zoning Ordinance are not adequate, the Planning Board may require tests and designs, in accordance with the rules and regulations of the State Department of Health and/or Department of Environmental Conservation, undertaken at the expense of the Developer, to determine the adequacy of the proposed lot size and existing grade and soil conditions. Such tests and designs shall be subject to the review of the Planning and Zoning Department and the Town's Consultants.

- D. Where commercial subdivisions are proposed to be served by either or both on-lot sanitary sewage disposal and water supply facilities, the lot area and dimensions required to prevent health hazards shall be subject to individual review and determination by the Planning Board and the New York State Department of Health and/or Department of Environmental Conservation.
- E. Depth and width of parcels laid out or reserved for non-residential use shall be sufficient to provide satisfactory space for off-street parking and unloading as required by the provisions of the Zoning Ordinance.
- F. Corner lots shall be sized according to zoning requirements.

2.7 BUILDING LINES

- A. The minimum building setbacks shall be controlled by the provisions set forth in the Zoning Ordinance of the Town of Canandaigua.

2.8 UTILITIES

- A. If sewer, water, gas, electrical, street lighting or other public utility facilities are proposed, their location and installation shall be coordinated so that they may be operated and maintained at minimum cost. Backflow prevention (RPZ) may be required on water lines for commercial development per New York State Department of Health Public Water Supply Guide, Cross-Connection Control.

2.9 EASEMENTS

- A. Easements shall be provided for all utilities of a width necessary for installation, repair and/or replacement of said utility. The depth, type, size and location of a utility in addition to soil conditions will be considered when establishing an easement width.
- B. To the fullest extent possible, easements shall be centered on or adjacent to rear or side lot lines.
- C. Where a development is traversed by a watercourse, the applicant shall provide to the Town at no cost a drainage easement or right-of-way conforming substantially with the line of such watercourse and of such width as will be adequate to preserve natural drainage and maintain the same.

2.10 ALLEYS

- A. Alleys are prohibited in residential developments. In commercial or industrial districts, alleys shall be a minimum width of 22 feet. Where such alleys dead-end, they shall be provided with a turnaround having an outside roadway diameter to allow emergency vehicle access.

2.11 RESERVATION AND DEDICATION OF LANDS FOR PUBLIC USE

- A All applicants for subdivision or site development should also be aware that the Town of Canandaigua's code regarding "Reservation of Parkland" Contained in both the Town's subdivision and zoning regulations shall apply applications for subdivision and/or site development.

2.12 EROSION SEDIMENT CONTROL

A. General

1. It is the Town's intent to control soil movement by employing effective erosion and sediment control measures before, during and after site disturbance. The applicant should refer to Chapter 85, Soil Erosion and Sedimentation Control, of the Code for the Town of Canandaigua for additional information in this regard.
2. Erosion and sediment control measures, both temporary and permanent, must be installed in conformance with the approved plan prior to any soil disturbance. A site inspection to verify compliance may be required prior to issuance of the Site Development Permit.
3. The Planning Board and its designated representatives will evaluate submitted erosion and sediment control design plans against the most current edition of "New York Guidelines for Urban Erosion and Sediment Control" manual as prepared by the USDA - Soil Conservation Service. The Board and/or its representatives may require additional controls and details not specifically outlined in the aforementioned manual.

B. Vegetative Controls

1. To attain the Town's goals, vegetative measures should be used in a site design to control surface water runoff, provide soil stabilization methods and entrap soil sediments generated from the forces of erosion.
2. Site slopes shall be graded to be stable and provide control of any surface or subsurface water prior to vegetative plantings.
3. Site disturbance, especially in sensitive areas, shall be kept at a minimum. Designs shall limit the removal of existing trees, hedgerows and indigenous plant cover.
4. Physiographic features such as drumlins, wetlands and forested areas shall be retained in their natural form whenever possible.

5. The Site Developer shall take whatever action is necessary to establish a stabilized vigorous stand of vegetative cover on all disturbed site soils immediately following the completion of the bulk earth movement.
6. If phasing is necessary to meet these conditions, the Developer shall present such in the development plans presented for Town review.

C. Structural Controls

1. Some projects may require erosion and sediment controls that will be permanent in nature. If these measures are required to be constructed, they must be fully functional before upland site disturbance. Such structures may include but are not limited to siltation traps, storm check dams, stormwater management facilities, diversion swales and dikes.
2. All structural sediment controls including swales, berms, rip rap, etc. identified on the project plans shall be submitted with the supporting design of those controls to the Town for review.

D. Maintenance Measures

1. It is imperative that both the vegetative and structural components that are constructed be periodically reviewed and maintained for optimum erosion and sediment control before, during and after site disturbance.
2. Facilities must be cleaned, repaired and/or replaced as necessary to meet the original design criteria established in the project approval.

E. Erosion Control Guarantee

1. All projects must comply with the erosion control guidelines of this section. All projects are subject to an Erosion Control Bond, Letter of Credit or similar instrument of deposit and subsequent inspection at the developer/Owner's expense. The developer/Owner must comply with the bond requirements of section 2.5, E.
2. If the project under consideration involves possible dedication of constructed facilities to the Town, the Developer/Owner must provide a maintenance bond in the amount and for the duration as noted in section 2.5, H of these criteria. Periodic stormwater inspections in excess/addition to those required by General SPDES Permit may be required by the Planning Board and/or Town CEO at the expense of the developer/Owner.

F. Penalty

1. The Town is empowered to assess reasonable penalties to a Site Owner for failure to properly construct, operate and maintain an approved soil erosion and sedimentation control plan. The penalty shall be equivalent to twice the cost of properly installing the deficient facilities in addition to the cost of any fees or damages, which resulted from the improper installation.
2. The Site Owner shall be charged for the Town's costs for, but is not limited to, cleaning ditches, swales, drains or streams that require such due to the failure of the Site Owner to properly construct, operate and maintain site erosion and sedimentation control devices.
3. No further reviews of such project shall be conducted by the Town until all payments for the Town charges have been satisfied and/or satisfactory completion of the required erosion and sediment control measures has occurred by the Site Owner.

ARTICLE III - SITE IMPROVEMENTS

3.0 GENERAL

- A. The Developer of a parcel of land shall make improvements to the parcel in accordance with the approved plans or the minimum standards required in these regulations as applicable to a specific project.
- B. Where certain standards of development are not set forth they shall be established by the Planning Board, following their review of the particular situation.
- C. In many cases, alternate improvement standards may be permitted if the Planning Board deems them equal in performance characteristics for the proposed use intended, with the approval of the Town Board as a deviation from the adopted regulations. Additional or higher design standards of improvements may be required in specific cases where the Planning Board believes it necessary to create conditions essential to the health, safety, morale and general welfare of the citizens of the Town.

3.1 ROAD CONSTRUCTION

- A. The Town of Canandaigua has established basic guidelines for the classification of roads to be constructed in the Town. The guidelines are listed in these regulations under Article VIII.
- B. All streets or roads developed in the Town shall be constructed to at least the minimum standards as set forth in the specifications or as shown on plans approved by the Town for a given project.
- C. Due to the general soil conditions within the Town and normal construction sequences for development, it is deemed to be in the best interests of the Town that following procedures be followed:
 - 1. Binder material shall not be placed prior to the completion and approval of all underground utilities including the private utility services and a review of the road base by the Town.
 - 2. The weather and seasonal limitations as specified under the Standard Specifications of New York State Department of Transportation shall apply for placing of bituminous mixtures.
 - 3. Restrictions (A) and (B) imply completion of all underground systems well in advance of the Developer's schedule for paving.

- D. The following restrictions shall be adhered to regarding Building Permits and Certificates of Occupancy:
1. No building permits will be issued on a stone-base roadway without a Letter of Credit for paving and approvals by the Code Enforcement Officer, Highway Superintendent, and Town Board.
 2. No building permits will be issued without a stone-base roadway in place and approval of the water system by the Department of Health.
 3. No building permits will be issued along a stone-base roadway during the fall or winter months if the binder pavement can not be placed before a Certificate of Occupancy will be needed.
- E. Upon completion of the binder pavement and all other items related to the completion of a project, the Town may elect to accept for dedication the completed facilities if: (1) an acceptable two year maintenance bond is submitted to the Town; and, (2) the Developer presents a sum of money to complete the top pavement course. The amount of money to be transferred to the Town will be established by the Highway Superintendent. This sum shall be sufficient to cover the cost of labor and materials to cause the proper installation of the top course.
- F. It is the intent of this option by the Town to allow the Developer to offer the project for dedication before the final pavement is installed. This option will allow the Developer to substantially complete the related construction in the developed area prior to installing the top course. In this manner the area will receive a new pavement top that is less susceptible to marring or patching as a result of normal construction activity.
- G. In general, the final top course must be installed by the developer within one (1) year of the placement of binder course, unless a specific waiver of this time period is obtained (in writing) from the Highway Superintendent.
- H. Before the expiration of the maintenance bond and before the final top is applied, the Town or its representative and the Developer will hold a final site review to assess any damages or repairs that may be necessary by the Developer under the maintenance agreement. Once top course has been installed, final acceptance of all roadway improvements shall be obtained from the Town Board.

3.2 HAUL ROADS

Haul roads may be required by the Planning Board, when applicable upon review with the Town Highway Superintendent, Town Board and Town Engineer. Performance bonds may also be considered as an option in lieu of construction of a haul road for necessary repair and maintenance of existing public roads. See Appendix D – 1.

3.3 DRIVEWAY CULVERTS

- A. The installation of driveway culverts requires the approval and a permit for culvert location, size and material from the State, County or Town Highway Department having jurisdiction over a given road.
- B. The Town reserves the right to remove and/or install driveway or roadway culverts along any existing road to properly transmit surface drainage as determined by the Town Engineer and the Superintendent of Highways.
 - 1. All culverts shall be a minimum of 12” in size and a minimum of 20’ in length.
 - 2. All new culverts shall be provided with the supporting design for sizing for review by the Town.

3.4 SIDEWALKS

Sidewalks, when required, shall be installed on one side of the street and installed 1-foot inside the road right-of-way. See Appendix O.

3.5 TRAILS

Walking trails, when proposed or required, shall be designed (where possible) to connect with existing trail works in the Town of Canandaigua and shall be subject to the approval of the Town. See Appendix O – 1.

3.6 STORM AND SURFACE DRAINAGE

- A. All storm sewers and drainage facilities such as gutters, catch basins, bridges, culverts and swales shall be designed for the development and be subject to the approval of the Town. Such facilities shall be capable of handling upland flows that may be generated from future land development.
- B. The following points should be considered in the design of storm drainage facilities.
 - 1. Lots shall be laid out and graded to provide positive drainage away from buildings.
 - 2. Storm sewers, culverts and related installations shall be provided:

- a. To permit unimpeded flow of natural watercourses.
 - b. To insure adequate drainage of all low points.
 - c. To intercept storm water runoff along streets at intervals reasonably related to the extent and grade of the area drained.
3. Sump pumps (with check valves) will be required to be tied directly to the municipal storm sewer system. Sump pumps shall not be discharged to daylight. Roof leaders, gutters, and downspouts may be permitted to tie into the storm sewer, however, gravity basement drains will not be permitted to be tied to the municipal storm system. Gravity basement drains may be considered for discharge to daylight depending on local conditions. Should local conditions warrant the modification of the above-referenced, the design engineer and the Town Engineer can review changes and the Town Engineer may approve such changes, if appropriate.
 4. In the design of storm sewer systems, special consideration shall be given to avoidance of problems, which may arise from concentration of storm water runoff over adjacent properties.
 5. The Town requires the completed construction and the design engineer's certification of all surface drainage improvements and erosion control measures on a development before any building permits are issued.

3.7 WATER SUPPLY

- A. Where public water supply, in the opinion of the Planning Board, is reasonably accessible, the developer shall provide and dedicate to the Town a complete water distribution system. The design and installation of said system shall be subject to the approval of the Planning Board and jurisdictional agencies.
- B. Where public water supply is not within reasonable distance, an alternate supply, developed under the guidelines of the State Department of Health, shall be required. The Town does not guarantee or assume any liability for an individual water supply as shown on development plans.
- C. If a private on-site system is to be used as a water supply for a development:
 1. The individual source must have a minimum sustained flow of five gallons per minute of potable water.
 2. There must be a minimum flow pressure of 20 pounds at all fixtures in the proposed unit.

3. A certificate of water quality and quantity from a New York State approved testing laboratory must be submitted to the Building Department before a building permit is issued.
4. The Town does not allow any interconnections between the municipal supply and an individual water supply system.

3.8 LANDSCAPING

- A. Adequate site landscaping may be required of the developer/Owner on any lands developed in the Town. A landscape plan will designate plant species and locations. The Planning Board will notify the developer after the Board has reviewed the concept plan, if a specific landscape plan is required. See Appendix FF for Tree/Shrub Planting Details
- B. The landscaping plan shall also conform to the standards and techniques set forth in the Town Code.
- C. Visual impacts shall be considered for planting within sight distances.
- D. The trees are to be a minimum of 5 feet from the edge of any easement.
- E. There shall be no underground utilities within 10 feet of any proposed tree.
- F. All tree plantings shall be a minimum of 2" caliper or as specified in the Town Code.
- G. Spacing shall be at 50' intervals on both sides of the R.O.W. or as specified by the Planning Board.
- H. All plantings shall be covered under a landscaping bond, letter of credit or similar instrument of deposit with the Town for a period of one (1) year after a site inspection verifying conformance with the site plan.

3.9 STREET SIGNS

Permanent street signs, of the same specifications as those of the Town Highway Department, shall be erected at each intersection by the Highway Department and paid for by the developer.

3.10 STREET LIGHTING

- A. Lighting facilities may be required along all new subdivision streets. Light spacing, fixtures, and underground conduit shall meet with the requirements set forth by the Town Code (Chapter 105), Planning Board and Electric Corporation having jurisdiction in the service area.

- B. The Planning Board may also require additional site lighting to be installed. All non-residential sites will be independently reviewed in regard to lighting systems and may be required to submit an illumination plan. Such a system shall be coordinated with the electrical utility system and designed to keep light from illuminating areas outside of the developed site per the Town Code.

3.11 ELECTRIC, TELEPHONE, CABLE TV OR OTHER BURIED CABLE UTILITY

- A. In every development, provisions shall be made for service from the private utility supply systems. All utilities serving a major subdivision and a street lighting system shall be underground, rather than on poles, standard or towers. Underground conduit and cables shall be installed per the regulations of the Public Service Commission and a minimum of 2 feet below any drainage way.
- B. Utility services for any minor subdivision proposed shall be consistent with the service methods that exist within 500 feet of the proposed development area. Applicants shall discuss with the Planning Board the service method to be used for every development submitted for review.

3.12 GENERAL SITE CONSIDERATION

General site considerations should include pedestrian and vehicular access and circulation, as well as provisions for handicapped access. Location, arrangement, size, architectural features, and design of buildings, lighting and signs, protection of adjacent properties and general public against noise, glare and unsightliness, or other objectionable features will also be considered by the Board.

3.13 SITE LIGHTING

All proposed lighting systems on the parcel intended for development should be designed and installed in conformance with the Town Code.

3.14 PARKING AREAS

- A. All parking areas, passageways and driveways, except when provided in connection with one- and two-family residential uses, shall be surfaced with a dust-less, durable, all-weather pavement such as asphalt or concrete. Parking areas shall be so graded and drained as to dispose of all surface water accumulation. The Planning Board may alter this requirement at the time of site plan approval when surface water drainage or other special requirements exist. Appropriate screening and landscaping as deemed appropriate by the Planning Board will also be required.
- B. Pavement striping is discouraged within site development parking areas in favor of alternate means of deterring unwanted parking to be discussed with the Town.

3.15 OPEN SPACE

At least 30% of the lot area to be developed shall remain open and unused. This open area may include areas for landscaping, stormwater management, onsite wastewater systems (below ground), underground utilities, screening and fencing. The open area shall not be paved for parking, storage, buildings, or accessory buildings.

ARTICLE IV - GENERAL PROVISIONS

4.0 PURPOSE

- A. The purpose of these Specifications is to provide minimum criteria for the design and construction of improvements within the Town, which upon the satisfactory completion thereof, may be offered for dedication to the Town of Canandaigua for perpetual operation and maintenance. The information contained in Articles 5 – 10 is to be used in conjunction with Article 1 - 4 of these Regulations.
- B. The criteria established is intended to provide minimum standards, which may be upgraded to serve the best interests of the Town. The information in this booklet is provided to aid in the submission of material in a uniform manner and attempt to expedite the various review and approval procedures.
- C. These criteria shall govern in all areas of private, public, industrial and commercial development and/or areas that will involve the connections to existing municipal systems in the Town.

4.1 RESPONSIBILITY

- A. It is the responsibility of the Developer to insure preparation of the Plans is sufficient to meet the standards and requirements herein incorporated. Said Plans shall be prepared by a professional, licensed in the State of New York, who shall have experience in design of land development.
- B. The Town and/or its representatives shall review the proposed Plans as to their compliance with the standards and conditions encountered while meeting the best interests of the Town.
- C. It is the responsibility of the Contractor, acting for the Developer, to construct the facilities in conformance with the approved Plans and the Town standards.
- D. Construction observation shall be provided by the Town or its designated representative to review construction as it is being performed.
- E. The Town may stop work if determined that the contractor is not performing the work in the best interests of the municipality.
- F. The final results of the project remain the prime responsibility of the Developer and until the development is satisfactorily approved the Town and/or its representatives, said development shall not be accepted for dedication.

4.2 BUILDING PERMITS

A. Building permits shall not be granted until:

1. An approved subdivision plan is filed in the office of the Ontario County Clerk.
2. Easements affecting the development of a parcel are filed in the office of the Ontario County Clerk, and notification of such received by the Town.
3. A site plan has received final approval of the Planning Board and Item 1 above has been addressed.
4. When applicable, the water distribution system has been installed, tested and accepted by the New York State Department of Health, thereby providing fire protection capability for the site.
5. The stone subbase courses have been placed for the road, providing reasonable access to the site for emergency equipment.

B. The Code Enforcement Officer may refuse to issue a building permit during the fall or winter months if the building site is serviced by an unfinished and unpaved road, and it can be reasonably expected that a Certificate of Occupancy may be required for the building before the road can be paved. Under these circumstances, the Code Enforcement Officer may issue a building permit upon receipt of a hold harmless agreement, or disclaimer, in a form acceptable to the Town Attorney and executed by both the Builder and the Buyer, which acknowledges that the road will not be maintained or plowed by the Town until it has been paved, and that the Town will not be liable to claims for damages arising from its issuance of a building permit or Certificate of Occupancy for the site.

4.3 CERTIFICATE OF OCCUPANCY

A. Certificates of Occupancy may not be granted until:

1. Drainage improvements are completed as shown on such plan and reviewed by the Town and/or certified by the design engineer to the Building Department.
2. Easements effecting the development of a parcel are filed in the office of the Ontario County Clerk.
3. A certificate of water quality and quantity from a private water supply is obtained from a New York State approved testing laboratory.
4. The site temp./perm. stabilized in accordance with the standards identified in the New York State Stormwater Management Design Manual.

B. If all on-site improvements are complete but landscaping is incomplete, the certificate of occupancy may be issued but the escrow monies will be retained until final landscaping is complete at which point the escrow shall be released to the applicant.

- C. If within one year's time from the certificate of occupancy, remedial or landscaping work is incomplete, the Town shall complete said work and deduct costs from the escrow account.
- D. The Soil and Erosion Bond will be retained until all disturbed pervious areas are 80% covered with vegetative controls (grass), at which point the escrow shall be released to the applicant.
- E. An Instrument Survey with spot elevations to verify site drainage may be required at the discretion of the Town CEO.
- F. Review of Plans

If the project is not developed within 18 months after final approval, the plans must be resubmitted for completeness and conformance with current regulations.

ARTICLE V - DESIGN CRITERIA

5.1 INDIVIDUAL ON-SITE WASTEWATER TREATMENT SYSTEMS

A Individual On-site Wastewater Treatment Systems

Where public sanitary sewers are not available, individual on-site wastewater treatment systems shall be designed, conform to the minimum requirements established and built to the standards and specifications of the New York State Department of Health (NYS Public Health Law Appendix 75-A or latest revision) and Town Code, respectively, and any other agency or authority with jurisdiction.

1. Individual on-site wastewater systems proposed within the Canandaigua Lake Watershed must additionally conform to the requirements and procedures adopted by the Canandaigua Lake Watershed Commission and enforced by the Canandaigua Lake Watershed Inspector.
2. Provisions may be required to make the individual house plumbing for connection to future sanitary sewer system.
3. Maximum number of lots to be developed with individual on-site wastewater treatment systems shall be 49 within one subdivision.
4. Leach lines shall not cross over or under water, gas or storm laterals, nor be located underneath the driveway area.
5. Minimum total leach line lengths shall equal two hundred feet (200').

B. Alternate Systems

Alternate systems may be submitted for review by the New York State Department of Health with the following additional restrictions by the Town of Canandaigua:

1. Any fill or built-up system shall have a taper section ending a minimum of 50 feet from any property line.
2. Fill limits shall include a future expansion area.
3. Evapo-transpiration areas are not acceptable for new construction.
4. Fill systems require professional certification of percolation tests in the in-situ fill and placed fill after it has been in place for at least six months and over at least one winter season.

- C. Detail plans for all individual on-site wastewater treatment systems associated with developments defined as subdivisions by the Public Health Law shall be subject to the approval of the New York State Department of Health.

5.2 PUBLIC SANITARY SEWERS

- A. Generally, all public sanitary facilities and installations within the Town of Canandaigua are under the jurisdiction of the Ontario County Department of Public Works. Accordingly, all design, material, construction and testing shall be to the standard specifications of and subject to acceptance by this Agency.
- B. A small geographic area of the Town of Canandaigua is tributary to the Town of Farmington. In this area all design, material, construction and testing shall be to the specifications of and subject to acceptance by the Town of Farmington.
- C. Detail plans for all public sanitary sewage facilities shall meet the requirements of and be subject to the approval of the New York State Department of Health and the New York State Department of Environmental Conservation.

5.3 STORM DRAINAGE SYSTEMS

- A. General Design Criteria - This section is to provide guidance for the design of storm drainage facilities. These facilities shall be designed to collect and transport the run-off from streets, lawns, paved areas, roof areas, and upstream areas. The developer is required to follow the most current edition of New York State Phase II requirements located in the New York State Stormwater Management Design Manual. The developer is required to file for a State Pollutant Discharge Elimination System (“SPDES”) General Permit 0-08-001 (or most recent edition) for stormwater discharges from construction activities and submit a Notice of Intent (NOI) form to obtain permit coverage.
- B. Flow Determination - All development projects shall be required to provide for the adequate conveyance of storm drainage through the development. The natural drainage patterns are to be followed as much as possible. Drainage systems shall be sized to accommodate the future potential runoff based on the probable land use and the ultimate development of the upland watershed area. Water quality shall also be incorporated into all system designs.
- C. Storm Sewers and Drainage Facilities - A drainage area of up to 1,000 acres shall be designed to transmit the flow of a one-in-ten year storm. Larger systems and structures on natural watercourse channels shall have design return intervals as follows:

<u>Drainage Area</u>	<u>Design Return Interval</u>
1,000 acres to 4 square miles	25 year
4 square miles to 20 square miles	50 year
20 square miles and above	100 year

- C. Allowance for Overflow Conditions - Overflow conditions shall be designed into each system to protect against damage from major storms and provide an outlet for storm water, should inlets or pipes become damaged or plugged.
- D. Natural Channels and Open Swales - Natural channels are generally preferred alignments for major components of a residential drainage system. However, the utilization of open channels shall be evaluated as to the ease and cost of maintenance, safety hazards and aesthetics. The channels may require special invert or side design to properly convey water while keeping the maintenance cost minimal.
- E. Runoff Computations
 - 1. The design of one-in-ten year storm systems shall be generally established by the Rational Formula ($Q = CiA$) where:
 - Q = Runoff in cf/s
 - C = runoff coefficient
 - i = Rainfall intensity in inches/hour
 - A - Drainage basin area in acres
 - 2. Storms systems greater than the one-in-ten year storm, i.e. 25-, 50-, or 100-year storm events, shall utilize TR-20 or TR-55 in the design process.
 - a. Rainfall intensity figures shall be taken from the chart provided in Appendix C for the time of concentration and return period required for a particular basin.
 - b. Times of concentration shall be calculated by the Design Engineer but shall be a maximum of 15 minutes to the first inlet for a residential subdivision.
 - c. Runoff coefficients shall also be calculated by the Design Engineer to establish a weighted value representative of the type of development proposed. In general, the following ranges shall be adhered to:

Description of Area or Character of Surface	Runoff Coefficient (C)
Business District	0.70 to 0.95
Residential - Single family	0.40 to 0.50
Apartments	0.50 to 0.70
Industrial	0.50 to 0.90
Unimproved	0.10 to 0.30
Pavement	0.70 to 0.95
Lawns	0.10 to 0.35

3. Factors to be considered in the determination of the runoff coefficient are: Soil type, slope of land, development density, etc.

F. Water Quantity Control

1. Stormwater management facilities (SMF) shall be required to mitigate the impact of land development on downstream properties and drainage systems.
2. Stormwater management facilities shall address erosion control, flood prevention, the peak quantity of discharge, and water quality. The Town reserves the right to establish particular parameters in each individual instance, the general philosophy is to permit runoff from any particular development to an amount no more than 90% of which would normally occur under a natural, undeveloped condition. The following represents the basic philosophy regarding discharge from stormwater storage facilities:
 - a. No developed area shall discharge more stormwater into adjacent culverts and channels than occurs under a natural undeveloped condition.
 - b. The flow capacity of channels and culverts immediately downstream from a development does not necessarily govern the total drainage system capacity downstream.
 - c. Moving downstream in any given drainage basin (and therefore, away from any given development) the area contributing to the drainage channel is increasing.
3. Plan view and details are required to show the stormwater management facility location, size, inlet structures, and outlet structures, as well as any appurtenances. All facilities shall be constructed with a minimum 1:3 side slope from base of stormwater management facility to top of bank. A 25' access easement shall be provided around all portions of said stormwater management facility or the stormwater management facility may be located on land dedicated to the Town.
4. In designing the detention facility, attention shall be given to the types of soils found in the site. The Town may require that the stormwater management facility bottom be lined or constructed of impervious soils or manufactured sealants, (i.e. Bentonite) to prevent seepage or piping of stored water along the underlying bedrock.
5. During design, the Town may require the developer to provide a soils report done by a professional soils engineer to determine if the on-site material meets the requirements for infiltration capacity or as a stormwater management facility liner.
6. The developer's engineer shall submit, with his final plans, drainage calculations justifying the size of pipes, channels, impoundment basins, and related structures.

- 7 In order to arrive at an engineering estimate of storm flows and proposed detention stormwater management facility size, the engineer should proceed according to the steps listed herein. The design engineer may also be required to identify impacts of particular site drainage on the watershed as a whole. The use of computer modeling by the developer's engineers is encouraged.
- 8 The design engineer shall design the stormwater management facility (SMF) in accordance with the following regulations:
 - a. Requirements of the New York State Department of Environmental Conservation (NYSDEC) shall be considered and shall be used in cases where they are more stringent than these regulations.
 - b. SMF's shall be designed to discharge not more than 90% of Pre-Developed (natural/undeveloped) runoff rates under Post Developed conditions.
 - c. Best manageable practices shall be implemented where possible.
 - d. All detention/retention facilities designs shall evaluate the impacts of a 2-year, 10-year, 25-year, and 100-year design storm.
 - e. All SMF's shall be designed so that a 100-year storm event is routed through the principal spillway in lieu of utilizing the auxiliary/ emergency spillway.
 - f. New York State Dam Safety Regulations
9. The developer's engineer shall use existing topographic maps and the appropriate rainfall charts and graphs to determine the maximum expected rate of runoff for the design storm for the undeveloped site. Factors affecting this rate include slope of land, surface cover, area of drainage basin, and the presence or lack of well defined natural channels. 90% of this undeveloped rate of runoff shall be the controlling allowable discharge from any development. If downstream sewers, culverts, or channels have a capacity of less than the derived rate, this downstream capacity shall control as the allowable discharge rate.
 - a. Design the collection system using the applicable method as approved by the Town Engineer.
 - b. Design an outlet structure, which discharges water as a continuous function of head and which will discharge the maximum allowable flow at maximum stormwater management facility depth. Lesser storms should discharge approximately proportional lesser flows (see appendix P for an example of an outfall structure detail).

- c. Provide inflow hydrographs for a number of design storms of different durations and make a straight line approximately to an outflow hydrograph starting with $Q_0=0$ at $t=0$, assuming that good stormwater management facility design is based on the outflow reaching its peak just as the inflow equals the outflow.
- d. Provide a tabular form showing computed runoffs and design capacities of the system.
- e. Provide a map of the development showing the on-site drainage areas with inlets numbered in conjunction with the tabular calculation sheet.
- f. If desired, make a more detailed analysis using the now determined critical storm and standard flood routing techniques. Otherwise, use the above estimated volume and size the area of the stormwater management facility.

G. Flood Hazard Prevention

- 1. All development proposed within a Flood Hazard Area as defined by FEMA (Federal Emergency Management Agency) NFIP (National Flood Insurance Program) Maps shall comply with the regulations set forth within and coordinated by the Town Flood Plain Manager or Town CEO and the Town of Canandaigua.
- 2. The Design Engineer shall submit as a minimum, the following information for review of the drainage design:
 - a. U.S.C. & G.S. quadrangle reprint with the development and drainage basin outlined.

H. Water Quality Control

The Town of Canandaigua is supportive of initiative to preserve water quality in all major streams, creeks, and tributaries. Water quality initiatives are designed to reduce the thermal impacts, sediment load, and intrusion of pollutants into sensitive streams that support fish and wildlife habitat. Water quality measures shall be incorporated into all developments either through construction of man-made wetlands, mechanical purification methods, or cash contributions to regional water quality facilities. Development within the Canandaigua Lake Water shed shall provide Enhanced Phosphorous Treatment as outlined in chapter 10 of the New York State Stormwater Management Design Manual.

I. Design

- 1. All development shall incorporate water quality measures into the design of the project if they meet the following thresholds:

- a. Project involves the creation of an additional 10,000 square feet or more of impervious surface.
 - b. Project involves the creation of an additional 5,000 square feet or more of parking area.
2. Best management practices shall be utilized that are consistent with the latest edition of the “New York Guidelines for Urban Erosion and Sediment Control”.
 3. The required treatment volume shall be calculated per the formula described in the latest edition of the “New York State Stormwater Management Design Manual”.
 4. The use of mechanical treatment systems shall be considered upon review by the Town Engineer. The developer must submit a Property Maintenance Agreement to assure the long-term care and cleaning of any mechanical treatment systems.
 5. Under some instances, the Town may recommend and/or negotiate a fee in lieu of constructing an on-site stormwater treatment facility with the Developer, particularly when nearby downstream regional stormwater management facilities already exist and have the capacity to handle additional stormwater or site restrictions on the applicants' property inhibit the installation of such a facility or for other site related/stormwater related reasons as directed by the Town. This fee shall be used for either maintenance improvements to the existing downstream facility into which the proposed development would contribute stormwater, toward the maintenance and/or development of drainage channels, culverts, etc., or toward the possible creation of a new downstream regional stormwater management facility if there appears to be a need for one in the area.
 6. As per the latest edition of the NYS Stormwater Management Design Manual, a stormwater management facility landscaping plan is to be provided. The plan should include delineation of pondscaping zones, selection of corresponding plant species, planting plan, and sources of plant material.
 7. Snow storage should be considered with the sizing of the SMF.
- J. All facilities shall be designed to address the following:
1. Be aesthetically pleasing,
 2. Safe,
 3. Reliable,
 4. Provide wildlife habitat,
 5. Minimum maintenance, and
 6. Be of an appropriate scale to the adjoining area.

K. Construction

1. Water quality measures shall be utilized during the construction of all projects. Erosion and sedimentation control plans should mitigate any impacts to adjoining downstream properties and receiving waters.
2. A detailed construction sequence outlining the individual steps to be taken during construction shall be provided on the erosion and sediment control plan (see Appendix EE-1 for an example of a construction sequence).
3. All construction projects shall be designed, installed and maintained per the requirements set forth in the latest edition of the "New York Standards and Specifications for Erosion and Sediment Control Manual".
4. The Irrevocable Letter of Credit shall include sufficient costs to install, maintain, and remove erosion and sedimentation control measures for the approved erosion control plan.
5. Where possible, a finished grade should be established and then top-soiled and seeded as quickly as possible.

L. Culvert/Channel Design

1. Points of discharge shall be recognized on a U.S.C. & G.S. map. Critical drainage courses may require the Developer to dedicate easements for maintenance to the Town.
2. Culverts shall be designed to accommodate the design storm for the drainage area but shall be checked for the next highest increment of storm return interval to evaluate the possible complications. Headwater and/or tailwater calculations will be required to determine ponding that may occur. In general, the use of multiple culverts is discouraged because of maintenance problems. Inlets and outlets of culverts shall be protected from erosion or turbulence problems by the use of riprap, headwalls, energy dissipaters, etc.
3. Backyard swales shall be designed with minimum side slopes of 1 on 4 and a minimum longitudinal slope of 1.0 percent. Field inlets shall be generally provided every 300 lineal feet at all low points and where swales intersect.

M. Storm Drains

1. Minimum pipe size - 12 inch diameter
2. Minimum velocity when flowing full - 3 fp/s
3. Maximum manhole and catch basin spacing - 300 lineal feet.

4. In general, only natural waterways may be continued in open channels. Street drainage and other parts of a storm sewer system shall be in closed conduit. When gradient and tributary runoff require conduit greater than 36 inches in diameter, then open channel design may be considered after review by the municipality.
5. All pipes shall be smooth bore.

*Any drains less than 12" must be justified with drainage calculations and shall be approved by municipality.

N. Storm Laterals

Gravity laterals shall be a minimum of 6 inches in diameter. Sump pumps with check valves must discharge to storm laterals. Roof runoff will be permitted to tie into the storm laterals or discharge to splash pads.

O. Catch Basins

Catch basins shall be placed at all low points and intersections with maximum spacing of 300 feet. Catch basin leads shall only be connected to the storm sewers at manholes except in those areas where the storm sewer is 24 inches in diameter or greater.

P. Storm Manholes

Storm manholes shall be designed to accommodate the pipes entering and exiting the structures. A schedule of manhole diameters, inverts, and rim elevation shall be provided on the final plan.

Q. Drainage Easements

The minimum easement width shall be 20 feet, but the actual width acceptable to the Town will consider all those factors previously listed in section 2.9. Additionally, where a subdivision is traversed by a watercourse, there shall be provided a drainage easement or right-of-way conforming with the line of such watercourse.

5.4 WATER MAINS

A. Design

1. Water supply systems shall be designed (as a minimum) to conform with the latest edition of Ten States Standards.
2. Water supply system shall be designed to provide adequate domestic (average day and maximum day) usage and fire protection, while maintaining acceptable system pressures. Where public water supply is not accessible, an alternate private supply shall be furnished, which conforms to the New York State Health Department regulations (Subpart 5).

3. The Design Engineer shall substantiate all watermain and service sizes.
4. All watermains shall be a minimum of 8 inches.
5. See Appendices Q through Z for water/utility related typical details.

B Hydrants

Hydrants shall be spaced to comply with ISO and New York State Building Code requirements with a maximum 500-foot interval in subdivisions and 600-foot intervals in open spaces. See Appendix V and V – 2.

C. Valves

1. Valves shall be located such that no more than 30 dwelling units and no more than two hydrants need be out of service for repair of a water main. Valves shall be provided at intersections and be no more than 800-feet apart along the watermain.
2. Additional valves may be required at creek and/or railroad crossings depending on network configuration and permit requirements.
3. Air release valves shall be provided at critical high points along the watermain
4. Pressure reducing valves shall be designed and installed per Ontario County Department of Public Works requirements. .

D. Dead End Mains

Dead end mains are discouraged within the Town. Where they are unavoidable, a flushing hydrant (blow-off) shall be provided. Also, an auto flushing hydrant may be required by the Town in some locations.

E. Water Services

1. Provide minimum of 1-inch water service to the curb stop located at the right-of-way line of all individual lots or where an easement is provided, the service shall extend to the easement line, (or across utility easement). All services shall be Type K copper without line couplings or 200 psi polyethylene pipe. Meters shall be installed for each individual service and are to be purchased from the Town (See Appendix S).
2. If the distance from the Right-of-Way to the house is over 500-feet, the owner or developer will be required to purchase a meter pit from the Town. Specific applications may be subject for review by the Town of Canandaigua for a determination of need for an individual meter pit.

5.5 GRADING

A. General

1. Where possible, a finished grade shall be established and final seeding put in place as soon as possible.
2. The finished grading on developed lands shall provide for the effective removal of storm water runoff to a drainage system.
3. Areas that will not be impacted by subsequent construction are strongly encouraged to establish a turf surface during the initial phases of construction.
4. In general, the Design Engineer shall try to establish a finished grade at the structure line to permit a minimum of 2.0 percent grade away from the structure to the drainage system.
5. Drainage shall generally be to side or rear lot swales provided:
 - a. Swales are of a proper cross-section to permit ease of maintenance by the individual Owner.
 - b. Easements are provided for access and/or maintenance where necessary.
 - c. Finish grade at right-of-way line shall not be more than 2 feet above finish grade at centerline and the driveway slope within the lot shall not be greater than 15 percent. A leveling area of 3 percent maximum grade adjacent to the right-of-way shall be provided, at a minimum of 30 feet in length from the edge of the street pavement.
 - d. Where multi-lot grading is proposed, all swales required for positive drainage will be installed prior to the issuance of a Certificate of Occupancy.

B. Grading Plan

1. A Grading Plan shall be submitted, with the final plan for any development, showing at a minimum the following items:
 - a. Existing contours.
 - b. Proposed finish contours.
 - c. Spot elevations of proposed finish grades at key locations.
 - d. Garage floor elevations.
 - e. Minimum elevations of any architectural opening and base flood elevation where flood hazard areas exist.
 - f. Culvert invert elevations

- g. All elevations shall be established from USC&GS datum and the plan shall show a site benchmark.
- h. Drainage flow directional arrows
- i. See Appendix GG for Typical Grading Plan

5.6 ROADS

A. The following designations will be used by the Town to classify roads and their respective design criteria:

- 1. Town Collector
- 2. Subdivision
- 3. Minor Subdivision
- 4. Rural Development
- 5. Private Drive (non-dedicated)

B. The basic considerations of each road classification are as follows:

- 1. Town Collector
 - a. Provides connections to major roads and represents major traffic pattern throughout the Town.
 - b. Design speed of 55 m.p.h.
 - c. High volume of traffic
 - d. Provides access to subdivision roads
 - e. Relatively low density of development abutting such a road
- 2. Subdivision
 - a. Densities as are permitted by the current zoning provisions
 - c. Design speeds of 30 m.p.h. or less
 - d. Low volume of traffic.
 - e. Individual driveways at regular intervals.
 - f. Usually no affect on overall Town traffic pattern.
 - g. Generally rimmed with well maintained shrubs and lawns.
- 3. Minor Subdivision

- a. Twelve or less units on the road.
 - b. No possibility of future road extension.
 - c. Same criteria as “subdivision road”, items a through g.
4. Rural Development
- a. Density less than one-half units per acre.
 - b. Low volume of traffic.
 - c. Usually has no affect on overall Town traffic pattern.
 - d. Design speed of 30 m.p.h. or less
5. Private Drive (non-dedicated)
- a. Low volume of traffic
 - b. Design speed of 30 m.p.h. or less
 - c. Has a minimum of 40-foot fee ownership on a dedicated street.
 - d. Has no effect on overall Town traffic pattern
 - e. Maintenance covered by deed agreement or Homeowner's Association depending on number of units
- C. Each of these roads has basic characteristics, which may be varied to be consistent with unique proposals of development and construction. The individual variations of the conditions will not be permitted if they sacrifice design safety or maintenance of a proposed road type. Standard roads shall comply with the typical cross-sections shown in Appendices E – 1, E – 2, F – 1 and F – 2.

5.7 GENERAL ROAD DESIGN CONSIDERATIONS

A. Right-of-Way (R.O.W.)

- 1. Minimum width 60-feet for dedicated roads.
- 2. Private drive width depends on design constraints.
- 3. Private underground utilities to be located on easements beyond R.O.W limit.

B. Horizontal Alignment

1. The following factors shall be incorporated into the design of each road type:
 - a. Sight distance must conform to minimum safe stopping sight distance per “Geometric Design of Highways and Streets”, AASHTO Latest Edition.
 - b. Clear sight at intersections.
 - c. No centerline intersection angles less than 75 degrees.
 - d. Minimum centerline radius of 150-feet verified for design speed.
 - e. Road pavement intersections shall have a minimum of 35-foot radius.
 - f. Roadways ending in cul-de-sacs should not exceed 1,000-feet in length and end with an appropriately sized turnaround. (See Appendices G, H, H – 2 and H – 3.)
 - g. Access to future developments will be provided at the property lines.
 - h. Tangent sections shall be used between reverse curves and maintain the proper flow of traffic at design speeds.

C. Vertical Alignment

The minimum length of vertical curves shall be based upon current AASHTO policy and address stopping sight distance, passing sight distance, riding comfort, and headlight sight distance. Vertical curves are required whenever the net change in grade exceeds 0.5 percent.

D. Road Grades – Dedicated

1. Minimum – 0.7 percent with shoulders; 0.5 percent with gutters.
2. Preferred Maximum Grade – 8 percent.
3. Maximum – 12 percent – In particular areas in the southern portions of the Town grades up to 12% may be allowed. In these instances, grades over 8% may be allowed for short distances (500’ maximum) subject to approval by the Highway Superintendent and the Planning Board. Such road design should be accompanied by an engineering evaluation that includes provisions for: snow removal and storage, enhanced drainage facilities, widened shoulders, longer and flatter grades at intersections, with other features that would enhance safety and maintainability of the roadway. Where road grades exceed 8%, the Town may require flared catchbasins.

E. Leveling Areas

1. Leveling areas shall be incorporated at all intersections for a minimum distance of 100-feet from the edge of the pavement and the grade shall not exceed 3 percent.

F. Road Widths

Class	Pavement Width	Edge Treatment	Drainage
Town Collector	24'	2' paved shoulder + 2' stabilized shoulder	Roadside Swale
Subdivision Road	22'	2.5 ft. Conc. Gutter	Storm Sewer
Minor Subdivision Road/ Rural Development Road	22'	4' shoulder or 2.5 ft. Conc. Gutter	Roadside Swale or Storm Sewer
Private Drive	14' Min.	Req. approval	Req. approval

G. Special Considerations

1. Subsoil Conditions – A Geotechnical Engineering Report of the existing soils shall be provided for review.
2. Where roadside swales exceed 5% and/or unsuitable soil conditions warrants, the swales shall be provided with a concrete channel.
3. Underdrains –Underdrain shall be used under all concrete gutter, see Appendix K. Where sub surface conditions require underdrains may also be required.
 - a. Underdrain Variance Considerations:
 - When the general soil characteristics indicate a well drained granular material as indicated through general soils classifications procedures;
 - Where the highest seasonal groundwater table is not within three (3) feet of the subbase material;
 - Where the proposed longitudinal road grade exceeds 1.0%;
 - Where conduit underdrains are not required, stone wedges shall be installed as shown on the detail sheet.

Frontage Development – Where frontage development is to be approved along collector roads, the Planning Board may require that the roadside swale be enclosed in conduit along the fronts of the development. Such conduits shall be of the proper size to accommodate anticipated flows as previously outlined. (A parallel access road may also be considered by the Planning Board and discussed during concept plan submittal).

5.8 ROAD DESIGN

A. General Requirements

The Design Engineer shall consider the proposed use of the road or street when preparing a design. The following criteria is listed as minimum standards to be considered by the designer. It is the intent of these requirements to obtain a road and a base that is stable and capable of supporting H-20 loading to the sites.

B. Minimum Design Standards for Each Road Type

1. Town Collector

- a. Two 6-inch lifts of No. 2 and No. 3 crusher-run stone equally mixed.
- b. One 3-inch lift of Type 2 crusher-run stone.
- c. Asphaltic concrete courses shall be 4 inches compacted of Type 1 base, 2 “ type 3 binder and 1 ½ inch compacted of Type 7F top.
- d. Stabilized shoulder constructed of crushed stone with a single seal of 0.4 gal/S.Y. hot bituminous liquid with 25#/S.Y. of 1st stone.
- e. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Highway Superintendent.

2. Subdivision/ Minor Subdivision Road

- a. Two 6-inch lifts of No. 2 crusher-run stone equally mixed.
- b. One 3-inch lift of Type 2 crusher-run stone.
- c. Asphaltic concrete courses shall be 3 inches of Type 3 binder and 1 ½ inch of Type 7F.
- d. Concrete gutter per Appendix K.
- e. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Highway Superintendent.

4. Private

- a. A minimum of one 8-inch lift of No. 2 and No. 3 crusher-run stone mixed equally.
- b. One 3-inch lift of type 2 crusher-run stone.
- c. A private drive off a dedicated road shall:

- 1) Be designed to keep surface water flows from entering the travelway of the dedicated street.
 - 2) Finish grade and seeding of the area are to be completed immediately upon completion of the private drive base.
 - 3) Provide a hard surface from the edge of the existing pavement at least 30 feet toward the developed site.
 - 4) No private drive should exceed a slope of 3 percent from the edge of the pavement to a point 30 feet into the property being developed.
 - 5) Maximum grade within the development site shall be 10 percent.
- d. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Highway Superintendent.

5.9 DRIVEWAY DESIGN REQUIREMENT

A Design and location of driveways shall be in accordance with applicable Town Standards, County Standards and requirements of NYSDOT Policy and Standards for Entrances to State Highways.

1. Vertical Alignment

- a. Maximum grade shall not exceed 10%, unless a leveling area is provided per 5.9-A-1-b of the Town of Canandaigua Site Design and Development Criteria Manual.
- b. Finish grade at right-of-way line shall be not more than 2 feet above finish grade at centerline and the driveway slope within the lot shall not be greater than 15%. A leveling area of 3 percent maximum adjacent to the right-of-way shall be provided which is a minimum of 30 feet in length from the edge of the street pavement.
- c. Driveway shall slope away from the edge of road pavement at the same slope as the road shoulder, and the slope shall extend at least the full width of the shoulder so as not to create a bump or depression in the shoulder area unless shown otherwise in Standard Details.

2. Horizontal Alignment

- a. Minimum radius along the centerline of driveways shall be 60 feet.
- b. Minimum radius along the inside edge of driveway shall be 35 feet unless shown otherwise in Standard Details.
- c. Driveway turnaround areas, when applicable, should be incorporated into all plans.

3. Fire Department Requirements

- a. All common driveways regardless of length and individual driveways, which are longer than 500 feet, shall be constructed to support HS-20 loading and provide an emergency pull off area for emergency access clearance from the edge of the driveway to any obstruction. Plans and details of such driveways shall be submitted to the Fire Department for review.

5.10 DRIVEWAY CULVERTS

- A. Shall be provided along existing road frontage lots to properly convey roadside drainage. The culverts shall be installed to the proper grade to allow the natural flow of water. All culverts installed shall be subject to the review of the Superintendent of Highways having jurisdiction on the road.
- B. Minimum of 12" diameter unless they are a part of a larger drainage course, which may require larger diameter pipes. Larger sizes to be determined by the Highway Superintendent, Developer's Engineer, or Town Engineer.
- C. The culverts shall extend a minimum of 5' beyond the edge of the access driveway and be provided with end sections or headwalls. The slope from the driveway to the culvert end section shall be graded and seeded to maintain the slope stability.
- D. Elevations to be set by U.S.C. & G.S. datum whenever possible.
- E. Culverts shall have a minimum of 12" of cover. If High Density Polyethylene (HDPE) pipe is utilized, 12 inches of cover per 12-inch diameter of pipe shall be provided.
- F. If Corrugated Metal Pipes (CMP) is used, culverts shall be bituminous coated inside and out.

5.11 SIDEWALKS

Sidewalks may be required by the Planning Board and shall be determined at the time of conceptual review. If required, sidewalks shall be 5' in width, 5" in depth of 4,000 psi concrete on a 4" base of Type 2 crusher-run. The blocks shall be 5' in length with bituminous expansion joints every 25'. The finish shall be consistent with the gutter specifications as listed in NYSDOT Specification Section 702. See Appendix O for details.

5.12 TRAILS

Walking trails may be required by the Planning Board and shall be determined at the time of conceptual review. If required, walking trails shall be a minimum 6' in width, with a 5" base of Type 2 crusher-run (NYSDOT 304.12), and a 2" top of stone-dust conforming to screenings & 1B (NYSDOT Table 703-4). Shared use paths (walkers and bicyclists) may

require additional trail width. All trails shall be designed in conformance with the Federal Highway Administration recommendations. See Appendix (O – 1) for details.

5.13 CUL-DE-SAC

- A. The cul-de-sac shall be offset to the left whenever possible for ease of maintenance and traffic safety. See Appendices G, H, H – 2 and H – 3.
- B. The pavement depth shall match the road type.
- C. The pavement shall slope to the center of the cul-de-sac on subdivision and minor subdivision roads when stormwater pipes are provided. The outside edge of the pavement will have standard gutters or a 6-foot stabilized shoulder from the inside edge of the pavement. On Town Collector and rural development roads, the pavement may slope to the center of the cul-de-sac or to the right-of-way line. If the pavement slopes away from the center, both edges of the pavement will have stabilized shoulders consistent with the road type.

5.14 MONUMENTS

- A. Monuments shall be located at:
 - 1. Point of curvature (P.C.) and point of tangent (P.T.) of all horizontal curves along one side of the right-of-way.
 - 2. Maximum of 1,000 feet along one side of right-of-way line.
 - 3. Monuments shall be set by a licensed land surveyor before the final letter of credit amount is released by the Town.
 - 4. Monuments shall be set to have a clear sight distance between two monuments and shall be flush with the finished grade.
 - 5. The monuments shall be set as a minimum at all corners of the subdivision at final grade on one side of the streets at all changes of direction in the right-of-way lie.
 - 6. The monuments shall be as shown in the detail in the Appendix J.

5.15 RESERVED LAND FOR FUTURE USE

Where land areas are reserved for future connections to adjacent parcels, all improvements, i.e., sanitary, storm, water, roads, will be constructed to the common property line.

ARTICLE VI- MATERIAL SPECIFICATIONS

6.0 GENERAL INFORMATION

The materials intended to establish the degree of excellence are herein included and deemed to be of satisfactory quality for installation within the Town. When new materials may be made available, their use may be permitted in limited test sections with the restriction that should these materials prove unsatisfactory through the test period as established by the Town, they shall be removed and replaced with those herein called for at no expense to the Town.

6.1 STORM DRAIN

A. Reinforced Concrete Pipe (RCP)

Shall be supplied in conformance with ASTM C-76 Class II. Joints shall be of the bell and spigot type with compression type joint ASTM C-443.

B. Polyvinyl Chloride (PVC) Pipe

Shall meet the requirements of ASTM D-3034 or ASTM F-679, minimum wall thickness SDR-35 with elastomeric gasket joint, ASTM D-3212 or ASTM F-794 for ribbed gravity pipe. PVC pipe shall not be used as driveway culverts.

C. Corrugated Metal Pipe (CMP)

All pipes shall be coated inside and outside and have joints made with connecting bands. Thickness gauge will be dependent on the load conditions, except that 16 gauge shall be the minimum allowable thickness. Driveway culverts may utilize non-coated CMP.

D. High Density Polyethylene (HDPE)

All Pipes shall be smooth lined (smooth bore) and shall conform to the requirements of ASTM F-405 or ASTM F667

E Storm Laterals

1. Corrugated Metal Pipe shall be coated inside and outside and have joints with connecting bands. Thickness gauge will be dependent on the load conditions, except that 16 gauge shall be the minimum allowable thickness.
2. PVC conforming to ASTM D-3034, minimum 4 inches in diameter with fabricated tees and wyes.

3. HDPE shall conform to ASTM F-405 with fabricated tees and wyes.

F. Catch Basin Leads

1. Shall be a minimum of 12 inches in diameter. Acceptable materials are:
 - a. Reinforced Concrete Pipe (RCP).
 - b. Polyvinyl Chloride Pipe (PVC).
 - c. Corrugated Metal Pipe (CMP).
 - d. High Density Polyethylene Pipe (HDPE).

6.2 MANHOLES

A. Manholes

1. Precast reinforced concrete sections shall be manufactured in accordance with ASTM Specifications C-478. Riser sections shall have tongue and groove ends and super "O" joints and gaskets conforming to ASTM C-443. Manhole bases may be pre-formed or poured in the field. Roof slabs shall be precast structural concrete, reinforced for H-20 and 30 percent impact loading. A 24 inch diameter hole shall be eccentrically located in the roof slab. In place of preformed openings in base sections, flexible manhole sleeves may be cast directly into the base walls may be used with compatible pipe material.
2. All manholes shall be sealed inside and outside completely with two coats of heavy-duty water repellent protective coating which complies with ASTM Specification D-450, Type B.
3. Manholes constructed of other materials shall be considered for approval following a review of said manhole construction. In specifying these manholes, the Developer's Engineer shall submit adequate design data and/or shop drawings to substantiate the materials.
4. See Appendix N for typical storm sewer manhole and catch basin manhole.

B. Manhole Ladders and Steps

1. Manhole ladders or steps shall be provided in all sanitary and storm manholes and shall be constructed of one of the following materials.
 - a. Non-corrodible, aluminum magnesium alloy ladders, with intermediate supports at 5-foot intervals.
 - b. Forged aluminum with drop front design and groove tread surface.

- c. Cast iron with asphalt coating.
- 2. Steps shall be cast into walls of riser sections and shall be aligned in each section to form a continuous ladder with rungs equally spaced vertically in the assembled manhole at a distance of 12 inches apart.

C. Frames and Covers

1. Storm Manhole Frames and Covers

Shall be Syracuse Casting 1032 with a vented cover or other approved equal. The inside diameter for clearance shall be a minimum of 24 inches.

2. Catchbasin Frames and Grates

- a. Shall be rectangular, galvanized (ASTM A-123) and sized to fit gutter inlets or field inlets. The gutter grates shall be NYSDOT size No. 1 to fit the catch basin inside dimensions of 18" x 24". The minimum field inlet shall be NYSDOT size No. 9 to fit a field inlet of 24" x 24" inside dimension.
- b. Catch basin manholes shall be set to allow a NYSDOT size No. 1 grate to be installed.
- c. Frames and grates shall be as specified in NYSDOT Specifications Drawing 655-6R1 and Section 655 of the NYSDOT Standard Specification Manual. All grates shall be bolted to frames.

6.3 WATER MAINS

A. Ductile Iron (DIP) Pipe

DIP shall conform to AWWA C-151/A21.51, minimum allowable thickness shall be Class 52. Pipe shall be cement lined in accordance with AWWA C-104/A21.4 and shall have rubber gasket push-on joint in accordance with AWWA C-111/A21.11. If soil conditions warrant, polyethylene wrap shall be required.

B. Polyvinyl Chloride (PVC) Pipe

PVC shall meet specifications of AWWA C-900 made from PVC Compound 12454-B (ASTM D1784) with gasket joints meeting ASTM D3139.

C. Molecularly Oriented Polyvinyl Chloride (PVCO) Pipe

PVCO shall meet specifications of AWWA C-909 made from PVC Compound 12454-B (ASTM D1784) with gasket joints meeting ASTM D3139.

D. High-Density Polyethylene (HDPE) Pipe

HDPE shall meet specifications of AWWA C-906 made from compound 345464-C (ASTM D3350) with fittings to be used will be in accordance with the material's specification.

E. Fittings

Ductile iron shall meet AWWA C-153/A21.53 Specifications, minimum Class 350, with mechanical or push-on joint, except for hydrant branches which shall be mechanical joint. Fittings shall be cement lined in accordance with AWWA C-104/A21.4. Bolts and nuts shall be high-strength, low alloy steel. All joints shall conform to the requirements of AWWA C-111/A21.11.

6.4 HYDRANTS

Shall be manufactured in accordance with AWWA C-502. Hydrants shall be Kennedy K-81, or approved equal, manufactured for 5 foot bury with breakaway flange construction and 6 inch mechanical joint inlet. They shall open left and be painted red bodies. Hydrants shall be three-way with two 2-1/2 inch hose nozzles and one 4-1/2 inch pumper connection, all with National Standard threads. Main valve openings shall be 5-1/4 inch with the total unit consisting of the tee, guard valve, hydrant and adaptors. (See Appendix V).

6.5 FLUSHING HYDRANT – BLOWOFF

Shall be 2 inch self draining, non-freezing with 5 foot bury, with all bronze parts designed to connect to a 2 inch main line outlet as manufactured by GIL Industries, Inc., Model Slim Line 2, or approved equal.

6.6 GATE VALVE AND BOX

- A. Gate valves shall conform to AWWA C-509 or latest revision and shall have non-rising stems; "o" ring packing, and open left. They shall be of the 350 psi test class with a minimum working pressure of 250 psi. Valves shall be manufactured by Clow Valve Company, Model F-6100, Mueller Co., Model 2360, or approved equal, with MJ ends, a 2" square operating nut.
- B. Valve boxes shall be Bibby-Ste-Croix model number VB3000 series, or approved equal, two-piece screw-type, cast-iron construction, valve box, with a 5-1/4 inch inside diameter and covers marked "WATER".
- C. If the valves are buried deep they must have an extension stem that can be reached with a 6 foot valve box key.

6.7 TAPPING SLEEVE AND VALVE

All valves shall have mechanical joint ends and be furnished with sufficient quantities of accessories. Valves shall open left and be manufactured by Pratt. They are to be “ground hog” type, or approved equal.

6.8 ANCHORING FITTINGS

Anchoring pipe in accordance with ANSI-A21.4, or latest revision, shall be employed to anchor all hydrants to gate valves. The anchoring pipe shall be coal tar coated, cement lined and provided with a rotating gland. There should be a minimum 18 inches between hydrant and gate valve. These anchoring pipes shall be manufactured by the Tyler Company, Model 5-198, or Clow, Model F-1216, or approved equal.

6.9 BUTTERFLY VALVES

All valves greater than 12” in diameter shall be butterfly type. All butterfly valves shall conform to AWWA C-504, or latest revision.

6.10 RESTRAINERS

Shall be manufactured of high strength ductile iron pipe and incorporate a full 360 degree support around the pipe. They shall be as manufactured by Uni-Flange series 1300, 1350, 1390, or approved equal, depending on the specific use.

6.11 WATER SERVICE MATERIAL

- A. Corporation stop shall be cast brass with “O” ring seals, Mueller H-15008 (3/4”, 2”), AY McDonald 4701BT (3/4”, 2”) or approved equal.
- B. Curb stops shall have cast brass bodies with “O” ring seals, compression type, Mueller H-15209 (3/4”, 2”), AY McDonald 6100T (3/4”, 2”) or approved equal.
- C. Curb boxes shall be two (2) piece boxes with a slide type extension, a cast iron arch pattern lower section, a one (1) piece cast iron lid and a stationary shut-off rod, Mueller H-10314 (3/4”), H-10310 (2”), AY McDonald 5601 (3/4”) 5602 (2”) or approved equal.
- D. Water service pipe shall be Type “K” copper, minimum 150 psi working pressure, all according to ASTM B-88.
- E. Plastic pipe shall be copper tube size (CTS) polyethylene ASTM D-2737, PE4710 HDPE per AWWA C-901 on a minimum basis of 200 psi (only used from curb box to unit and a #10 gauge copper tracer wire shall be included from the curb box to the structure).

6.12 CONCRETE GUTTERS AND SIDEWALKS

A. Concrete

1. Shall be a minimum of 4000 psi (28-day strength) Class A concrete conforming to NYSDOT Specification Section 501.
2. Air entraining admixture conforming to ASTM Specification C-260.
3. Expansion joints shall conform to NYSDOT Specification 705-07.
4. Curing and sealing compound – conforming to ASTM C-309, Type I, Class B for curing and sealing.

6.13 ROAD MATERIALS

A. Sub-base and Base Courses

1. Crusher run stone shall conform to NYSDOT Specification Section 304-2.02, Type 2.
2. Aggregate shall conform to NYSDOT Gradation Table 703-4, size as specified.
3. NYSDOT Specification 304-2.02 Type 4 gravel may be substituted for No. 2 and No. 3 crusher run (NYSDOT Gradation Table 703-4) if acceptable subsoil conditions exist with the approval of the Superintendent of Highways and Town Engineer. The Design Engineer shall submit data justifying the use of gravel over specific subsoil conditions.

B. Bituminous Pavement

1. Base course shall conform to NYSDOT Specification Section 401, Type 1 Base.
2. Binder course shall conform to NYSDOT Specification Section 401, Type 3 (Dense Binder).
3. Top course shall conform to NYSDOT Specification Section 401, Type 7F.

C. Tack Coat

Shall conform to NYSDOT Specification Section 407. The grade shall depend on the specific use intended.

D. Premoulded Resilient Joint Filler

Shall conform to NYSDOT Specification Section 705-07.

E. Underdrains

Shall be 4 or 6 inch (depending on conditions) perforated SDR-35 PVC per NYSDOT 706-15 or High Density Polyethylene Tubing per AASHTO M-252.

6.14 EQUIVALENTS

- A. The mention of apparatus, articles or materials by name and such specific description of same as is made herein is intended to convey to the Developer and his Contractor an understanding of the degree of excellence required. The Town shall be the sole judge of the qualifications of the offerings and will determine all questions regarding the conformance of any offer outside the specifications.
- B. For any project it will be assumed that the Developer will furnish the exact materials specified on the plans and specifications unless the Developer files with the Town of Canandaigua prior to any use in the development, the names and complete description of each article which he proposes to substitute for approval by the Town Board.
- C. Any costs incurred by the Town or its representatives associated with the verification of substitute equipment and materials will be the responsibility of the Developer.

ARTICLE VII - INSTALLATION OF IMPROVEMENTS

7.0 GENERAL INFORMATION

A. Pre-Construction Meeting

1. A pre-construction meeting shall be requested by the Developer and scheduled through the Planning and Zoning Department or a Town Representative prior to the start of construction of a development. The Developer, his Contractor and Design Engineer shall meet with all private utility representatives, the Town Engineer, appropriate Department representatives and project observers to discuss the overall project, its impacts and schedules. A schedule of construction shall be presented in writing at this meeting by the site contractor.
2. Prior to scheduling a pre-construction meeting, the Developer shall obtain a checklist from the Planning and Zoning Department, identifying all items that the Developer must bring to the meeting.
3. Developments within the Canandaigua Lake Watershed will require the attendance of the Canandaigua Lake Watershed Inspector and the Canandaigua Lake Watershed Program Manager at the pre-construction meeting.

B. Meaning of Drawings

The Contractor shall abide by and comply with the true intent and meaning of all drawings and of the specifications taken as a whole. If the Contractor believes that the construction indicated on the project drawings will not, when executed, produce safe and substantial results or if it appears that there is any discrepancy in the drawings, it is his duty to immediately notify the Developer's Engineer, in writing, and to thereafter proceed only upon written order of the Town.

C. Protection of Property and Work

1. The Contractor shall conduct his operations to prevent damage to trees, garden plots, shrubbery, pipe lines, conduits, buildings and other structures. The Contractor shall use all necessary precautions to protect the work and adjacent structures of all kinds during construction and shall so conduct his operations that at no time shall the work or such structures be endangered.
2. Responsibility and damage - the Developer shall be responsible for all parts of his work, temporary or permanent, until the project is complete and shall thoroughly protect all work, finished or unfinished, against damage from any cause as all work is at the Contractor's risk until the same is accepted by the Developer. The use of part or all of the work by the Town as provided for in these specifications shall not

relieve the Developer of this responsibility. The Contractor shall be responsible for damage to life and property due to his operations and shall provide all necessary guards, rails, night lights, etc.

D. Construction Schedule

The Developer shall provide a construction schedule showing the order in which work will be completed at the pre-construction meeting. The schedule shall be reviewed at the pre-construction meeting and revised if necessary. No work will begin until a schedule is acceptable to and is on file with the Town. Hours of Operation within the Town of Canandaigua are the following:

- Weekdays from 7:00 am to 7:00 pm.
- Saturdays from 7:00 am to 6:00 pm
- Sundays – No work is permitted.

E. Permits

The Developer shall secure all necessary permits from the Town including Highway, Water Utilities Departments and/or any other agency who may have authority over any work prior to the start of construction.

F. Existing Utilities or Structures

1. Before construction begins near any existing utility or structure, the Contractor shall notify the appropriate Owner of his intention and their instructions as to the protection of their property must be followed. Before commencing work, the Contractor shall determine the exact location of any structure or underground utility in order that the Contractor's project will not damage or disrupt these facilities.
2. The Contractor shall take necessary precautions to prevent entry of mud, debris, etc. into existing utilities or onto streets near the site.
3. All existing underground facilities shall be checked for damage before backfilling. In the event a facility is damaged, the Owner of that facility shall be notified by the Contractor so as to insure an acceptable repair and/or replacement.

G. Facilities for Observation

1. The Contractor shall furnish all reasonable facilities and aid to the construction observers for safe and convenient footways, scaffolds, ladders, etc., that may be needed for the examination and review of any part of the work.
2. The Town of Canandaigua may stop work when the Contractor has no responsible agent on the project.

3. The Town may stop work if the Town determines that the Contractor is not performing the work in the best interests of the municipality.
4. Disorderly, intemperate and incompetent persons shall not be allowed on the project. The employees who neglect or refuse to follow the construction observer's instructions shall be permanently removed from the project by the Contractor.
5. Failure to conform to these controls may warrant refusal of the municipality to consider the development for dedication.

H. Layout

It shall be the responsibility of the Developer to have the work carefully laid out by qualified surveying or engineering personnel in a manner that will assure accurate completion of the work.

I. Defective Work

The review of the work shall not relieve the Developer of any of his obligations to comply with the specifications. Any defective work shall be made good and any unsuitable materials that have been previously overlooked by the Town or its representatives shall be removed and replaced. If the work or any part thereof shall be found defective at any time before the final acceptance of the project, the Developer shall make good such defect in a manner satisfactory to the Town.

J. Grading

1. Completion of grading per the grading plan to within 1 foot of design grade shall precede any trench excavation. Such grading shall include house "pads", removal of enough material to form "box" for road base, surface drainage channels, required temporary siltation basins, etc.
2. Construction brush and debris will not be buried on the site. Wood materials shall be cut, chipped, mulched or removed from the site and deposited in a permitted construction/demolition landfill.

K. Trench Excavation

1. Excavation

- a. Under this term will be included all excavation in trenches and pits, together with all backfilling and embankments that may be needed for the laying of the utilities and appurtenances or that may be necessary for the laying, changing and construction of any water, sewers, conduits, culverts, drainage

ditches or water courses, or for any other incidental work that may be required or ordered by the Town or its representative. See Appendix W.

- b. It is the Contractor's sole responsibility to make sure that all work shall be conducted in strict accordance with the Federal Safety Standards of OSHA.

L. Width of Trenches

The trenches shall be of such width as may be required by the Design Engineer to insure proper laying and handling of the pipes and appurtenances, proper tamping and backfilling operations. In all cases, trenches should be kept as narrow as possible. The Contractor shall be responsible to provide sheeting/bracing or other requirements to insure the safety of his workmen in conjunction with the proper installation of the pipe. See Appendix W.

M. Depth of Trenches

1. In general, the trenches shall be excavated to such a depth to properly install utilities to the grade established in the field by the Design Engineer. The depth of the excavation shall allow the proper bedding material to be placed under the pipe. See Appendix W.
2. Any extra-excavated depth by the Contractor shall be filled with compacted crushed stone to the proper grade required.
3. Utilities shall be designed to prevent damage from frost penetration or surface forces. Water mains and services shall be generally buried with 4'-6" of cover in fields but at least 6'-0" when they cross existing or proposed roads.

N. Tunneling

Work shall generally be conducted in open trenches or excavations, with proper protection. Tunneling shall be done only in areas specifically called for by the design plans with design details approved by the Town.

O. Blasting

Whenever necessary to resort to blasting for making the excavations, the trench shall be covered in a form to prevent fragments of rock from being thrown out. Only experienced, licensed workmen shall be employed in the handling and uses of explosives. All blasting operations shall be conducted in strict accordance with existing ordinances, regulations and specifications relative to rock blasting, storage and use of explosives.

P. Bailing and Draining

The Contractor shall furnish a sufficient pumping plant and shall provide and maintain, at his own expense, satisfactory drainage whenever needed in the trench and other excavations during the progress of the work and up to final inspection. No structures shall be laid in water. Water shall not be allowed to flow or rise upon any concrete or other masonry or flow on adjacent lands. All water pumped or bailed from the trench or other excavation shall be conveyed in a proper manner to a suitable point of discharge and may require temporary siltation traps.

Q. Bottom of Trench

1. The bottom of the trench shall be carefully graded and formed according to the directions of the Design Engineer, before any structures are laid thereon. When other instructions or design are not indicated, all trenches shall be excavated in a straight line. In hard pan, boulder formations or rock, the excavation shall extend at least 6 inches below the bottom of the pipe and a carefully compacted bed of crushed stone screenings placed in the bottom of the trench up to the level of the spring line of the pipe.
2. It is the intention of this specification to achieve not less than Class "B" pipe bedding.

R. Suitable Bedding and Safety Backfill Material

1. It shall be the responsibility of the Contractor to generally utilize material excavated from the trench in order to provide the required backfill to meet the listed specifications unless crossing an existing or proposed road. Should the nature of the soil be such that the Contractor is unable to meet the above requirements by selecting, with reasonable care, from the excavated material, he shall provide the following materials, if so ordered by the Town.
2. Sand, stone or concrete cradle when the trench bottom does not provide sufficient bearing capacity or when specification requires specific bedding for certain utilities.
3. Sand encasement shall be ordered by the Town when the trench is excavated in rock, boulders, or hard pan and none of the material above this level is suitable for backfilling the pipe.

S. Pipe Installation

1. Line and Grade

All pipes and appurtenances of whatever character shall, when set, conform to the alignments and grades required by the Design Engineer. All of the required special

castings and other fixtures that are indicated upon the plans, or that may be required during the progress of the work, shall be installed in their proper positions.

2. Laying Pipe and Castings

- a. The Contractor shall use suitable tools and appliances for the safe and convenient handling and laying of all utilities and appurtenances. All pipes and castings shall be carefully examined by the Contractor for defects and no pipe or casting which is known to be defective shall be laid. If defective pipe or castings should be discovered after being laid, these shall be removed and replaced with sound pipe or castings. The pipes shall be cleaned before they are laid and shall be kept clean until they are accepted with the completed work. All ends of the pipes shall be watertight capped to exclude water and debris from entering the pipes.
- b. Sewers shall be built to the lines and grades between manholes as shown on the project drawings. The Contractor shall provide sufficient grade control to properly install the pipe and appurtenances. Sewer pipe shall be laid upgrade with spigots placed in the direction of flow. All pipes shall be fitted together to form a smooth, even invert. Pipes disturbed after laying shall be removed and re-laid.
- c. After the pipe has been placed and adjusted to line and grade, the bed shall be trimmed to support the pipe for its entire length. Material used for bedding shall be thoroughly compacted under the bottom and the haunches of the pipe. The trench shall then be backfilled to above the top of the pipe and carefully compacted to hold the pipe in position.

3. Cutting Pipe

Whenever it may be necessary to cut any straight pipe it shall be completed by skilled workmen with proper tools, in such manner as will not cause any cracking of the pipe.

T. Thrust Blocks

At all tees, bends, or sharp curves and any other location determined necessary by the Design Engineer, concrete thrust blocks shall be poured between the pipe or fittings and the firm wall of the trench. Stone or wood blocks will not be permitted as thrust blocks except as temporary construction blocking. See Appendix U.

7.1 MANHOLE CONSTRUCTION

A. General

1. Manholes shall be constructed of the size, type and at the locations shown on the Plans, or as designated by the Design Engineer in the field.
2. The manhole bed shall be excavated level and include a minimum of 6 inches of crushed stone.
3. Manhole risers and flat slab covers shall be precast reinforced units. Manhole bases may be precast "Monobase" or field poured with 3,500 psi concrete.
4. Eccentric cone sections may be used on the top of manhole riser sections if the inside height dimension from the bench wall to the bottom of the eccentric section exceeds 8 feet.
5. Interior and exterior concrete surfaces shall be sealed by the supplier and touched up or recoated by the Contractor with like material.
6. Any pipe entering a manhole shall be neatly cut with proper sharp tools before installation in the manhole. Pipe shall not be "chipped off" after installation.
7. All openings and joints in the manhole sections shall be completely filled once the sections are set, with non-shrink grout and after initial set, waterproofed on the inside and outside with a coal tar coating. When PVC is used all openings around pipes shall be completely filled with 100 percent epoxy non-shrink grout.
8. Before each barrel of the manhole is set, the joint shall be cleaned and the barrel correctly aligned, so that the steps form a continuous ladder. The first step shall be no more than 30 inches below finished grade and continue to the top of the bench wall.
9. It is the intent of these specifications to construct first-class manholes, which will exclude all ground water by means of carefully constructed foundations, tight barrel joints and the coating of the inside and outside of the manholes.

B. Frames and Covers

The frames shall be firmly set in a bed of not less than one full inch of cement mortar and adjusted to the finished grade. The manhole frame may be set directly on the concrete roof slab, providing the top will be at the proper grade; otherwise, precast concrete spacers or bricks shall be mortared to the roof slab to raise the frame to the proper grade. A maximum of three courses of spacers or bricks shall be used to adjust the frames and grates to the proper grade.

C. Inverts

Inverts shall be constructed in all manholes. The inverts may be constructed of the mainline pipe or brick (Grade SS) and shall be the depth of the pipe. When PVC material is used, all brick, concrete or other masonry material that interfaces with the PVC shall be adhered to the PVC with 100 percent epoxy non-shrink grout.

D. Drop Manholes

1. Wherever the invert of the entering sewer is more than 2 feet above the invert of the outlet sewer, it shall be connected with a vertical outside drop with a clean-out pipe half bricked up. When drops are placed, the entire excavation around the drop pipe shall be filled with 3,000 psi concrete extending not less than 2 feet along the main sewer.
2. The clean-out opening in the barrel of the manhole shall be cut in after the manhole wall pipe is in place and the joint between the clean-out pipe and the manhole wall shall be thoroughly sealed with cement mortar on the inside and bituminous joint material on the outside.

E. Shallow Sewer Manholes

Where any manhole is less than 4 feet from invert to bottom of roof slab, the Contractor is to provide a manhole. The roof slab shall be precast structural concrete reinforced to withstand a concentrated H-20 load plus 30 percent impact. The slab shall be formed to fit into the ends of the vertical pipe and shall have a full bearing for its entire circumference.

F. Sealing of Manholes

All manholes shall be sealed with two coats of sealer as applied by the manhole manufacturer to the entire interior and exterior surfaces in minimum dry thickness of 11 mils per coat. Application shall be in accordance with the coating manufacturer's recommendations and shall be certified thereto by the suppliers. Before placement in the field, abraded areas shall be touched up with two coats by the Contractor. Covers and other exposed surfaces shall also be coated in the field. Improper materials or mil thickness shall be cause for rejection of manhole sections.

7.2 CATCH BASINS

A. General

1. Catch basins shall be constructed as shown in the Appendix L or as shown on the plans for special conditions. Catch basins shall be constructed of precast concrete structures.

2. All catch basins shall be coated inside and outside with two coats of heavy duty coal tar sealer.
3. Catch basins within the Canandaigua Lake Watershed shall be marked with a permanent metal storm drain marker such as “No Dumping – Drains to Lake.”

7.3 SEWER LATERALS AND WATER SERVICES

A. General

Sewer laterals and water services shall be installed to the right-of-way (or easement) line for all lots. Each service shall be located with a stake color coded in conformance with Industrial Code 53 to denote the type of service they represent.

7.4 HYDRANTS AND VALVES

A. General

1. A hydrant unit shall consist of a hydrant, guard valve, mechanical joint tee and anchor pipes.
2. Before hydrants or valves are installed they shall be checked to determine if they are in the proper working order.
3. Hydrants shall be set plumb with the break flange 3 inches above the finished grade. Hydrant weeps shall be surrounded by at least 10 cubic feet of crushed stone or gravel. If the ground water is higher than the drainage plug, the plug shall be closed and the crushed stone eliminated.
4. Valve boxes shall be placed plumb over the operating nut of the valve and adjusted to the final grade.
5. All hydrants shall be painted red and all valve box covers shall be painted blue.

7.5 BACKFILLING AND FINISHING

A. General

Trenches shall be immediately backfilled following the installation of utilities unless specifically changed in writing by the Design Engineer and approved by the Town. The roadways and sidewalks shall be left unobstructed, with their surface in a safe passable condition. The trench shall be tamped sufficiently to prevent settlement of or damage to existing or newly installed structures.

B. Backfill Immediately After Approval

Only select earth material shall be deposited around the utility and appurtenances covering them by hand for a depth of at least 12 inches above the pipe. This earth shall be thoroughly tamped as it is being placed so as to fill the lower portion of the trench thoroughly to give utilities a Class B bed for their entire length.

C. Restrictions as to Materials

No rock or frozen materials shall be placed in trenches within existing or proposed streets. Such material may be used in fields where immediate compaction is not necessary and at least 2 feet of select fill has been placed over the pipe.

D. Backfilling Pavement Crossings

1. All utility lines or laterals that cross existing or proposed streets shall be backfilled with crusher run stone conforming to NYSDOT Specification Section 304-2.02 Gradation Type 2. At the discretion of the Highway Superintendent, native trench material may be used for backfill in lieu of crusher-run.
2. Material shall be compacted in lifts of 1 foot maximum to the elevation of the road subgrade. From there the backfill shall conform to the material specifications for individual road sections.

E. Cleaning Up

1. As the work progresses or as directed by the Design Engineer, all rubbish or refuse, unused materials and tools, shall be removed at once from along and near the trench line construction.
2. All roadways, intersections, gutters, and sidewalks shall be routinely cleaned of accumulated debris, sediment and tools throughout the construction process.
3. Rough clean up along the route shall immediately follow installation procedures. Large spoil banks will not be permitted in developed areas.
4. Final clean up and landscaping shall proceed immediately after the installation, testing and approval of the facility.
5. Erosion control measures must be maintained throughout the construction process and removed only upon the approval of the Town.
6. In all cases, the project site shall be restored to a condition equal to or better than that which previously existed.

7.6 COMPACTION

A. General

1. Compaction densities specified herein shall be the percentage of the maximum density obtainable at optimum moisture content as determined and controlled, in accordance with AASHTO Standard T-10, Rodded Unit Weight. Field density tests shall be made in accordance with AASHTO Standard T-238.
2. Each layer of backfill shall be moistened or dried as required and shall be compacted to the following densities, unless otherwise specified.

B. Select Fill

1. Under all existing or proposed roads, driveways, parking areas shall be compacted to 95%
2. All other areas shall be compacted to 85%

C. Methods and Equipment

Methods and equipment proposed for compaction shall be subject to the approval of the Town. Compaction by rolling or operating heavy equipment over fill areas shall be conducted in a manner by which damage to existing utilities and structures shall be avoided. Any pipe or structure damaged thereby shall be replaced or repaired as directed by the Town at the expense of the Developer.

D. Testing

1. Field density tests may be ordered by the Town as necessary and will be paid for by the Developer.
2. The Developer shall furnish all necessary samples for laboratory tests and shall provide assistance and cooperation during field tests. The Developer shall plan his operations to allow adequate time for laboratory tests and to permit taking of field density tests during compaction.
3. Any areas found to be below required compaction densities shall be removed and replaced with new material at the Developer's expense. The methods of operation and/or the backfill materials shall be changed to meet required compactions.
4. Inadequate compaction shall be cause for the Town to issue a stop work order on a project.

7.7 TESTING OF UNDERGROUND UTILITIES

A. General

1. Upon the satisfactory completion of the installation of the underground utilities, the Contractor shall proceed to test each of the installed facilities as herein specified. All utilities shall be pre-tested by the contractor before the Town is to witness the final tests. No test will be accepted unless witnessed by the Town. Records and date of these tests shall be submitted to the municipality as part of the record drawing information.
2. Water or test required of the Developer during any procedures will be paid for by the Developer. All hydrants for water supply or testing use shall be operated only by the Town Water Utilities Department.

B. Sanitary Sewers (Gravity and/or Pressure Sewers) and Manholes

See Section 5.2

D. Storm Drains

All storm sewers shall be flushed clean by the Contractor and the lines shall be lamped with the Town.

E. Water Mains

1. Pressure Tests

The entire system, including services to the curb stops, shall be pressure tested at a minimum 1.5 times the working pressure or 200 psi whichever is greater for a period of two hours. The test pressure shall not vary by more than 5+ psi during the test period. No high pressure test will be allowed when temperature is less than 32 degrees, unless a heated shelter is provided for test equipment. A leakage test at operating line pressure shall be conducted for 24 hours in addition to the pressure test. These tests shall be performed in accordance with AWWA C-600 & C-605. The pressures at the point of testing shall be related to the highest elevation of the main.

2. Disinfection

Upon completion of the pressure testing the main shall be disinfected in accordance with AWWA C-651 as applicable.

3. Samples

After flushing of the newly disinfected main, the Town of Canandaigua Water Utilities Department shall obtain samples of water and submit them to a laboratory approved by the New York State Department of Health. Upon the receipt of a satisfactory laboratory report, this information together with the Town Engineer's Certificate of Construction shall be submitted to the New York State Department of Health for approval. Upon receipt of the Approval of Completed Work from the Health Department, the water system shall be considered complete and may be accepted for service by the Town.

4. Defective Areas

- a. In any areas where satisfactory results of applied tests cannot be obtained, the defective portion of the system shall be located and replaced with new material.
- b. That portion of the system shall then be re-tested until satisfactory results are obtained. Use of repair clamps will not be permitted by the Town.

7.8 EROSION & SEDIMENT CONTROL

A. General

In order to assure that the surrounding properties and watercourses will not be subjected to siltation or erosion the Developer shall be required to follow certain erosion control practices. Such procedures may include, but not limited to:

1. Installing and maintaining temporary sedimentation basins at the point or points of storm water discharge from the property.
2. Exposing the smallest practical area of land at any one time during development.
3. Provision for temporary vegetation and/or mulching to protect critical areas.
4. Provisions for adequate drainage facilities to accommodate effectively the increased runoff caused by changed soil and surface conditions during and after development.
5. Retention and protection of natural vegetation wherever possible.
6. Installation of permanent final vegetation and structures as soon as practical.
7. Provision of adequate protective measures when slopes in excess of 10% are graded; and minimizing such steep grading.

8. Provision for interceptor swales and sedimentation basins along the lower edges of all developments, and these shall be shown on the plans.
9. Development in the Canandaigua Lake Watershed that requires post construction water quality measures such as stormwater management facilities (SMF), the developer is required to provide daily observation of the site by a Licensed Professional or a Certified Persons in Erosion and Sediment Control (CPESC) until such time that the mass grading of that section or phase is completed and all stormwater management components of the SWPPP are installed and functioning. Development in the CLW that does not require post construction water quality measures but disturbs at least 1 acre and that have been determined by the Town CEO to have a high erosion risk are required to provide observation of the site at least two times per week (separated by at least two calendar days) by LP or CPESC until such time that all stormwater management components of the SWPPP are installed and functioning. Reduced observation frequency shall be only authorized by the Town CEO with consultation of approved governing agencies (Watershed Inspector, Watershed Program Manager, Town Engineer, etc.) after written request by the developer. These observations do not relieve the developer of the stormwater requirements per the NYS General Permit (GP 0-08-001). The observer will report any site compliance issues or deficiencies to the Town Code Enforcement Officer (CEO). The Code Enforcement Officer reserves the right to review the qualifications of the observer.
10. Development in the Canandaigua Lake Watershed that will disturb more than 5-acres at one time, shall be required to coordinate the regular stormwater observations (required by the GP 0-08-001) with the Watershed Inspector and the Watershed Program Manager. Developments that disturb less than 5 acres at one time may be inspected periodically by the Watershed Inspector and Watershed Manager to verify that all SWPPP components are installed properly and that the site is not contributing to the contravention of water quality standards.

7.9 ROADS, GUTTERS AND SIDEWALKS

A. General

1. The Contractor shall not proceed to construct any surface improvements until the underground system has been installed, tested and approved by the Town.
2. Careful attention shall be given by the Contractor to obtain the necessary compaction densities as specified. All surface improvements shall be constructed to the shape and dimensions as shown on the typical sections or on the approved plans.
3. A greater road width and base may be required in those areas where particular soil conditions or traffic patterns require special considerations.

7.10 ROADS

A. General

In an effort to assure the structural integrity of the road subgrade, the following general rules will apply:

1. Underground utilities will be designed to be constructed outside the pavement area where possible.
2. Where roads are designed on earth embankments or where utility trenches cross the pavement area, the area shall be compacted to 95% modified AASHTO density. The developer shall (if required by the Town) provide results of certified compaction tests on any section of the road. These tests shall be based on AASHTO Standard T-180, Method C. Field density tests shall be done by AASHTO Standard T-147.
3. If groundwater, poor soil conditions, or any suspect ground conditions are encountered in the road base, the developer shall remove such conditions and install drain pipe and/or crusher run stone to obtain a stable base.
4. The developer shall not proceed with the base construction until all underground utilities or casing affecting the road area are installed, tested, and approved by the Town.
5. The subgrade shall be shaped to proper grades and compacted with a minimum of a 10-ton, three-wheeled roller or vibra-roller.
6. All materials used for road construction shall conform to the latest Standard Specifications Construction and Materials of the New York State Department of Transportation Division of Construction and all revisions thereafter.

B. Design

1. The Design Engineer shall consider the proposed use of the road when preparing a road design. The minimum standards contained herein shall be considered by the designer.
2. It is the intent of these requirements to obtain a road and a base that is stable and capable of supporting H-20 loading. Pavement thickness may vary as required by Town Engineer.

7.11 MINIMUM DESIGN STANDARDS

A. Town Collector

1. Geotextile fabric shall be used over the compacted subsoil and prior to the installation of any stone base courses (as determined by the Highway Superintendent or Town Representative).
2. Two 6" lifts of No.2 or No.3 crusher run stone.
3. One 6" lift of fine crusher-run stone.
4. Asphaltic concrete courses shall have a total compacted thickness of 7-1/2", 4" of Type 1 base, 2" of Type 3 binder and 1 1/2" of Type 7F top.

B. Subdivision Road

1. Geotextile fabric shall be used over the compacted subsoil and prior to the installation of any stone base courses (as determined by the Highway Superintendent or Town Representative).
2. Two 6" lifts of No.2 or No.3 crusher run stone.
3. One 6" lift of fine crusher-run stone.
4. Asphaltic concrete course shall have a total compacted thickness of 3-1/2", 2" of Type 3 binder and 1 1/2" of Type 7F.
5. Concrete gutter per Appendix K.

C. Minor Subdivision / Rural Development Road

1. Two 6" lifts of No.2 or No.3 crusher run stone.
2. One 6" lift of fine crusher-run stone.
3. Asphaltic concrete course shall have a total compacted thickness of 4-1/2", 3" of Type 3 binder and 1 1/2" of Type 7F
4. Geotextile fabric shall be used where soil conditions warrant.

D. Private

1. One 6" lift of No. 2 or No. 3 crusher-run stone.
2. One 3" lift of fine crusher-run stone.
3. A private drive off a dedicated road shall:

- a. Be designed to keep surface water flows from entering the travelway of the dedicated street.
- b. Provide soil erosion measures on the site as it is being developed.
- c. Provide adequately sized culverts with end sections or headwall treatment.
- d. Finish grade and seed the area immediately upon completion of the private drive base.
- e. From the edge of the existing roadway pavement, a hard surface would be preferred for a distance of at least 30-feet toward the developed site.
- f. No private drive should exceed a slope greater than 3 percent from the edge of the pavement to a point 30-feet into the property being developed.
- g. Grades within the development site shall be reviewed on an individual basis by the Town and the Town Engineer.

7.12 MATERIALS SPECIFICATIONS

- A. Type 2 and Type 3 – Shall conform to item 304-2.02.
- B. Crusher Run Dolomite Limestone – Shall conform to Section 401.
- C. Bituminous Pavement –

Note 1: Item numbers refer to New York State Department of Transportation Specifications.

Note 2: All depths are compacted thickness.

- 1. Base Course – Type 1 – Shall conform to Section 401-2.
- 2. Binder Course – Type 3 shall conform to Section 401-2.
- 3. Top course – Type 7F – Shall conform to Section 401.2.
- 4. Stabilized shoulders (Town Collector and rural development) shall be constructed to the dimensions shown on the typical sections. Construction methods shall conform to NYSDOT Specification 410-3.023. The base course shall consist of a wedge of Type 4 stone with a minimum thickness of 6-inches at the outside edge.

5. Conventionally Formed Concrete Gutters – Shall conform to Item 624-2.02 and have a minimum compressive strength of 3,500 psi after 28 days and shall be a minimum of 6” thick.
- D. Underdrains – Shall be perforated polyvinyl chloride underdrain pipe in conformance with NYSDOT Specification 706-18.
 1. Underdrain Filter Material – Type II shall conform to NYSDOT Specification 605-2.02
- E. Tack Coat – Shall conform to NYSDOT Specification Section 407. Grade MS2h.
- F. Asphalt Filler – NYSDOT Specification 702.0700, Table 702-2 Misc. Asphalt Cement.

7.13 SUBGRADE

- A. The subgrade shall be graded to remove all unsatisfactory or unstable material. Where material is removed below the subgrade elevation, suitable granular material shall be used to bring the road to proper subgrade. Where ground water or poor soil conditions exist, the Developer shall be required to install perforated underdrain and crushed stone weeps to drain the base. The entire subgrade surface shall be thoroughly compacted according to NYSDOT Specification 203-3.12.
- B. Fabric filter material shall be required by the Town to stabilize the base and subbase before the Contractor proceeds to install same.
- C. No movement shall be observed in the subgrade material as the roller passes. When the subgrade is completed, the Contractor shall so notify the Town Highway Superintendent and the Town Engineer for a base determination. Upon the review and written approval of the subgrade by the Town Engineer or his representative, the base material may be placed.

7.14 BASE MATERIAL

- A. Approved base materials shall be uniformly deposited and compacted in layers with a roller, according to NYSDOT Specifications. Rolling shall begin at the sides and continue toward the center and shall continue until there is no movement of the course ahead of the roller. After compaction, the top surface of this course shall not extend above the theoretical elevation for this course and when tested with a straight-edge 16 feet in length, any bump or depression over 1/4 inch from the theoretical grade line shall be satisfactorily eliminated.
- B. When the base has been prepared to the satisfaction of the Town Engineer or his representative, the Developer may place the binder course, however, the Developer shall provide 48-hour notice to the Town Engineer or his representative prior to placement of the binder course.

- C. If base conditions are changed as determined by the Town Engineer or his representative before the binder is placed, he may order the Developer to seal the stone with a rapid sealing liquid asphalt emulsion as specified in NYSDOT Specification 702 with 0.5 gallons per square yard as determined by the conditions and not more than 24 hours prior to placement of binder asphalt.
- D. If the compaction of the base is questionable by the Town Engineer or his representative, it may require re-rolling or stone replacement by the Developer.

7.15 BITUMINOUS PAVEMENT

- A. Binder shall be placed and compacted to a minimum finished layer thickness of 2 inches with a self-propelled asphalt spreader and rolled according to NYSDOT Specifications 402-3.04 and 402-3.07. Before applying the top course, any irregularities in the binder course shall be eliminated but at no time will "cold patch" or "winter mix" be allowed on the binder for repair work.
- B. Before the surface course is placed, the binder will be cleaned by the Developer and inspected by the Town Engineer or his representative to determine the condition of the pavement. It may be necessary to apply a tack coat at the rate of 0.1 gallon/square yard before placing the surface.
- C. Surface Course shall be placed and compacted to a minimum finished layer thickness of 1 ½ inch with a self-propelled asphalt spreader and rolled in accordance with NYSDOT Specifications 402-3.04 and 402.3.07.

7.16 TEMPORARY ROAD CONSTRUCTION

- A. Where construction sequences preclude the specified road construction items and these requirements for Certificates of Occupancy, a temporary road consisting of the specified road section less top surface course may be constructed.
- B. This temporary road shall be reviewed by the Town Highway Superintendent and approved in writing prior to the issuance of any Certificate of Occupancy. The Town may accept dedication of the road if sufficient monies remain in the financial guarantee to top the road the next year.

7.17 CONTINUATION OF EXISTING ROAD

- A. When construction of a road is continued from an existing road or previous developed section, the pavements shall be joined with a triangular cut of at least 15 feet from edge of the pavement to the centerline of the old pavement. The intent of this provision is to eliminate any grade difference and make a smooth riding transition.
- B. All pavement joints shall receive a tack coat before placing the binder or top course.

7.18 STABILIZED SHOULDERS

Stabilized shoulders shall be constructed to the dimensions shown on the typical sections. Construction methods shall conform to NYSDOT Specification 410-3.02. The base course shall consist of a wedge of crusher run stone with a single surface treatment. See Appendix E-3.

7.19 UNDERDRAINS

Underdrains shall be installed in conformance with NYSDOT Specification 605 and underdrain filter Type 1 per NYSDOT Specification 605-2.02.

7.20 CONCRETE GUTTERS AND SIDEWALKS

A. Concrete Gutters

1. Concrete gutters shall be a minimum of 6 inches in depth and constructed true to the shape, line and grade on a thoroughly compacted base. The gutters may be constructed using a slip form method or in-place form work.
2. Joints between sections shall be placed every 10 feet at right angles to the flow line and must be "wet struck" 1/8 inch wide and 3/4 inch deep. Full depth bituminous expansion joints shall be placed every 50 feet and at all structures or inlets.
3. Gutters shall be broom finished before the joints are struck and the finish shall be consistent throughout the project.
4. Gutters shall be cured and sealed by spraying with an approved curing and sealing compound at the rate recommended by the manufacturer.
5. One coat of curing and sealing compound shall be applied when the work is complete and another coat after the gutters have set for 48 hours.
6. The use of burlap or coverings for curing or protection is not acceptable until after the concrete has been sprayed and set.
7. The gutters, prior to final paving, shall be flooded and checked for horizontal and vertical line and grade and finish. If any gutters are found to be constructed in an unacceptable manner by the Superintendent of Highways, they shall be removed and replaced.
8. Gutter replacements shall conform to the existing gutter regarding finish and color.

B. Concrete Sidewalks

1. Minimum 5 inches in depth and constructed true to shape, line and grade. Sidewalks installed through driveways shall be 6 inches in depth.
2. Sidewalks shall be designed in conformance with the Americans with Disabilities Act (ADA) and the Federal Highway Administration.
3. Minimum width shall be 5 feet or to match existing.
4. The base shall be thoroughly compacted crusher run stone with a thickness of 4 inches. The base material shall extend 6 inches outside each edge of the concrete sidewalk.
5. A cross slope of 1/4 inch per foot shall be maintained for positive drainage.
6. Construction joints shall be wet struck at 5 foot increments and be 3/4 inch deep. Full depth bituminous expansion joints shall be placed every 25 feet and at all castings.
7. Sidewalks shall be broom finished and have troweled edges with a corner radius of 1/4 inch. The finish shall be consistent throughout the project.
8. Two coats of approved curing and sealing compound shall be applied. One coat immediately following the finish work and the second coat 48 hours later.

C. Testing

1. The Contractor shall obtain in accordance with ASTM C-31 two samples from every other truck delivering concrete to the site and have the samples compression tested by an independent testing laboratory.
2. Results of these tests shall be submitted to the Superintendent of Highways.

7.21 MONUMENTS

The monuments shall be installed at those locations shown on the approved final plat and as located in the field by a Licensed Land Surveyor. They shall be installed to a depth of at least 30 inches below finished grade with the top surface to be flush with finished grade. Upon the installation of the monuments the location shall be certified to the Town by a Licensed Land Surveyor as to their accuracy. See Appendix J.

7.22 FINAL GRADING

- A Upon satisfactory completion of the utilities and roads, the entire area within the right-of-way shall be raked, graded, seeded and mulched to the approved plans.
- B The site Contractor shall be responsible to fine grade the right-of-way and maintain erosion control. In those areas where home building has started, clean up, site maintenance and erosion control will then become the responsibility of the builder.
- C Debris and spoil banks created during the development (not home building) of the site shall be entirely removed and/or disposed of from the site. No burying of debris or material shall be allowed on approved or proposed building lots.

7.23 FINAL CLEANING

During the time period between initial installation and testing and acceptance for dedication, debris and/or sediment may accumulate in the utility systems. The Developer shall be responsible to flush and remove this debris from the system prior to the final inspection for dedication.

7.24 SIGNS

- A. Street and traffic signs shall be supplied and installed by the Highway Department in accordance with standards outlined in the National Manual of Uniform Traffic Control Devices (including the New York State Supplement).
- B. Signs and posts shall be ordered by the Highway Department for consistency throughout the Town. Upon receipt of signs, they shall be placed in the field by the Highway Department with sign, post and installation cost the responsibility of the Developer.

ARTICLE VIII – FINANCIAL RESPONSIBILITIES FOLLOWING FINAL APPROVAL

8.0 GENERAL

Once the Planning Board has granted final approval and before the final signatures are placed on the plan, the Developer shall enter into an agreement with the Town Board for the subsequent completion of the platted improvements. The Developer shall submit with the tender of dedication and deeds to all streets, easements, and an irrevocable Letter of Credit so as to assure the proper and timely completion of the required improvements. The Letter of Credit must be accepted by the Town Board before the Site Development Permit is issued.

A. Offers of Cession

The developer shall tender offers of cession in a form certified as satisfactory by the Town Attorney of all land included in streets, highways or parks, not specifically reserved by him. Approval of a Plan by the Planning Board shall not constitute an acceptance by the Town Board of the dedication of any street; highway, utility, park or other public's open space.

B. Letter of Credit

A Letter of Credit furnished for the installation of the required improvements shall be in the amount as determined by the design professional and reviewed by the Town Engineer as to form, sufficiency and manner of execution. The Letter of Credit shall be issued in favor of the Town of Canandaigua and shall assure the complete installation of the required improvements within such period, not longer than three years. The Letter of Credit shall be issued to the Town for an initial minimum period of one year. See Appendix A for a typical Letter of Credit Summary Sheet.

The amount shall include but not be limited to the following items:

1. Total estimated construction cost of all utilities, laterals, water services, roads, gutters, earthwork, etc.
2. Minimum 10 percent contingency factor.
3. Engineering and construction observation charges will be a minimum of 6 percent based on the project complexity and construction schedule.
4. Street signs and surveyor's monuments.
5. Maps.
6. Record drawings of installed facilities.

C. Retainage

A retainage reduction of 10% shall be applied to all applications for payment from posted letters of credit.

D. Maintenance Bond

1. Upon completion of the construction and as a condition of dedication to the Town, a Maintenance Bond in the amount equal to 10% of the total construction value shall be provided by the Developer guaranteeing specified portions of the project against faulty workmanship or materials for a period of two years following the acceptance date by the Town. Individual portions of the project, i.e., sanitary system, water system, can be bonded with their individual acceptances by the Town.
2. A Maintenance Bond for the pavement, gutters and/or sidewalks, stormwater management facilities, trails or other portions of the project will not be accepted until the entire project is ready for dedication.

E. Special Bonding

1. General

Special Bonding shall be a form of surety guaranteeing that the plan is executed according to the final approval. In the event that the execution is not consistent with the approved plan the bond shall be exercised by the Town to put in place the required elements.

The Bookkeeper may receive the bond in the form of a Personal Check, Bank Check, or Insurance Certificate.

2. Erosion Control Guarantee

All minor projects shall provide an erosion control plan. The developers engineer shall provide an engineer's estimate of the cost to execute the plan for review. An Erosion Control Bond in an approved amount will be required prior to the issuance of a site development permit.

3. Landscaping Guarantee

The developer shall provide an estimate of the cost to execute the plan for review. A Landscaping Bond in an approved amount will be required prior to the issuance of a site development permit.

F. Filing Time Frames

All plats shall be duly filed with the Ontario County Clerk's office according to time frames prescribed by Town Law.

8.1 METHODS OF RELEASE OF FINANCING SECURITY

A. Letters of Credit

The procedure required for the release of funds is as follows:

- 1 Submission of periodic construction estimates by the Contractor to the Developer and the Design Engineer.
2. The site shall be reviewed by the Town and Developer's agents to review the comparison of the work completed to the monetary value of the requested release of funds.
3. The Developer's Engineer, Developer, Town Highway/Water Superintendent and Town Engineer shall approve in writing all requests for release of funds up to 90 percent of the total amount of an item. (See Appendix B for typical example of a release form.)
4. The Town Engineer shall then submit the proposed estimate to the Town's Planning Board for recommendation to the Town's Fiscal Office for release of funds from the Letter of Credit. Approval by the Town officials for authorized periodic payments is not to be construed as acceptance of the work completed to date.
5. Partial release from the Letter of Credit may be granted by the Planning Board as individual components of the subdivision development are completed. The Town shall not construe this as final acceptance of the work.
6. If the required improvements are not completely installed within the period fixed or extended by the Planning Board, the Town Board may declare the Letter of Credit in default and collect the amount payable thereunder. Upon receipt of such amount, the Town shall cause to install such improvements as were covered by the Letter and as commensurate with the extent of building development that has taken place in the subdivision, not exceeding in cost, however, the amount collected upon the Letter of Credit.

B. Release of Retainage

The Town Board shall consider Retainage release after a maintenance bond is in place and the systems have been tested and found acceptable by the Town's representatives.

C. Release of Special Bonding

1. General

The Town's representative shall make release of the special bonding following the written request by the developer to the Town and a satisfactory final inspection.

2. Erosion Control Guarantee

Release of the Erosion Control Guarantee shall be made following the completion of the approved work and the successful establishment of a permanent vegetative cover over all the disturbed areas.

3. Landscaping Guarantee

Release of the Landscaping Guarantee shall be made one year after verification of the successful planting of the proposed elements.

4. Release of Maintenance Bond

Release of Maintenance Bond shall be authorized in writing by the Town's Fiscal Officer upon final review of the project site by Town authorities. This review will be completed at least one month before the expiration of the Bond.

8.2 FORMATION OF DISTRICTS

- A. Between the interval of preliminary and final approvals of the land subdivision plat, the Developer shall petition the Town Board for the creation of the districts or extensions as necessary for a given development. Those districts or extensions may include water, sewer, drainage, sidewalks, lighting and/or any particular district creation for a specific development.
- B. The Town of Canandaigua does not operate and maintain sanitary sewer systems. The developer shall coordinate with Ontario County or the Town of Farmington, which manage sewage facilities within the Town.
- C. In order to preserve the continuity and format of the application of the districts to the various governing authorities, the Town Attorney and Town Engineer shall review the necessary documents and maps and the Town Clerk will be responsible for publication and filing requirements. All costs for the formation of these districts shall be paid for by the Developer to the Town within 30 calendar days of its receipt of a bill therefore.

- D. Required improvement districts must be extended or created by the Town Board before the signature of the Planning Board Chairperson may be affixed to the approved subdivision plan.

8.3 FORMATION OF EASEMENTS

- A. If easements are required on a project, the following procedure will be followed:

1. The developer will have his engineer and/or surveyor prepare maps and descriptions of all of the easements associated with the development.
2. The easements and descriptions are referred to the Town Engineer for technical review of bearings, distances.
3. After technical review by the Town Engineer, the easement maps and descriptions are sent to the Town Attorney to assure that the appropriate legal language is incorporated into the documents.
4. The Town Attorney will then contact the developer's attorney to work out any concerns associated with the easement descriptions.
5. If any revisions to the easements are needed they are made by the developer's engineer. Any changes must then be offered to the Town Board for acceptance.
6. Either the Town Attorney or the Town Clerk will duly file the final easements and the charge of such will be borne by the developer.

8.4 CONSTRUCTION OBSERVATION

Before any construction begins on a subdivision or facilities to be dedicated to the Town, a pre-construction meeting must be held to address the Plans and intended improvements. The installation of improvements and development of any land shall be subject to construction observation at all stages by representatives of the Town. For such purposes free access shall be accorded and requested information shall be promptly submitted. All costs of construction observation, including testing of materials, shall be paid for solely by the Developer. The Developer in either the Letter of Credit or cash shall provide a sufficient sum for the project observation costs.

8.5 HARDSHIPS

Where the Planning Board finds that because of unusual circumstances of shape, topography or other physical features of a proposed development – extraordinary hardship may result from the strict compliance with these regulations. The applicant should refer to the Code of the Town of Canandaigua for procedure regarding this issue.

ARTICLE IX - REQUIREMENTS FOR DEDICATION AND PROJECT ACCEPTANCE

9.0 GENERAL

- A. All construction within the right-of-way, easements or lands to be dedicated to the Town shall be complete with final site reviews and written approvals of the construction by the following:
1. Planning Board Chairman
 2. Town Engineer
 3. Town Superintendent(s)
 4. Code Enforcement Officer
 5. Any other agency approvals required by law
- B. In addition to the field review, the Town Attorney shall notify the Town in writing that all legal aspects of the project have been satisfied.

9.1 MONUMENTS

Monuments shall have been set in their required locations as required by Section 5.14 and certified to the Town.

9.2 GRADING

Final grading shall be completed within the right-of-way and all spoil removed from the site.

9.3 STREET SIGNS

All street and traffic signs shall be properly set in their designated locations.

9.4 RECORD DRAWINGS

- A. Record drawings and all testing results shall be supplied to the Town and are subject to their review and approval at least 15 calendar days prior to any dedication procedures.
- B. Record maps shall be prepared by a licensed professional and eight prints and a reproducible (mylar) shall be submitted to the Town's Building Department. The record drawings shall contain, at a minimum, the following information:
- C. The locations, sizes, elevations, lengths, slopes, inverts and top elevations of all structures in the sewer systems.
- D. The elevations of any drainage swales and drainage structures to be dedicated to the Town.

- E. The locations including ties to all valves, curb boxes and hydrants to permanent structures.
- F. The locations at the property or easement line of each individual lot
 - 1. Sanitary Lateral Cleanouts
 - 2. Storm Lateral
 - 3. Water Service Curb Box
- G. Any other significant details affecting the operation or maintenance of any system by the Town.
- H. The location of all facilities shall be tied to visible and reproducible objects.

9.5 MAINTENANCE BONDS

- A. The submission and acceptance of the two year Maintenance Bonds for all improvements to be offered to the Town for dedication. Maintenance Bonds shall be written by a surety licensed to do business in New York State and they shall be in the amount of 10 percent of the final construction cost. Bonds shall be approved as to form and content by the Town Attorney prior to any dedication procedure.

9.6 FINAL RELEASE OF FUNDS

- A. The Town Board, upon signature recommendation of the Design Engineer, Owner, Town Engineer, receipt of the Town Attorney's written opinion of legal status, receipt of two year Maintenance Bond, record drawings accepted by the Town Departments and a final field review report, shall then authorize release of monies retained in the Letter of Credit.