



Development Guidelines

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Prepared by



Engineering, Architecture & Surveying, D.P.C.

THE CULVER ROAD ARMORY

145 CULVER ROAD, SUITE 160, ROCHESTER, NEW YORK 14620

TELEPHONE: (585) 381-9250 FACSIMILE: (585) 381-1008

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Village of Churchville Development Guidelines

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SECTION 1 General Information

1.1 Purpose

The purpose of these Development Guidelines 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 Village of Churchville 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 Village 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.

The Village of Churchville participates in the Monroe County Stormwater Coalition. Developers are required to follow all the regulations relating to the: NYS DEC SPDES Permit for Stormwater Discharges from Construction Activities for General Construction and the NYS Stormwater Management Design Manual. The development must provide the appropriate Stormwater Pollution Prevention Plan (SWPPP) and ensure the equivalency of the design specification to the erosion and sediment control practices and performance criteria and the sizing criteria of post construction practices.

1.2 Sequence of Events

- A. The following sequence of events is a general outline of the procedures necessary to successfully complete a project. It is presented here as a guideline so that each project proceeds in an orderly manner. It is recommended that developers and their legal and design professionals follow these guidelines for their benefit in expediting the approval process.
 - 1. Developer retains competent legal and design professional counseling to deal with legal and design matters, and to provide the required technical details.
 - 2. Developer contacts the Village Superintendent & Village Clerk for guidance relating to the Village's procedures and requirements. Applicant should refer to the Village Code Book, Comprehensive

Plan and these guidelines. A checklist is included in Appendix A of this document.

3. Developer contacts Village planning Secretary to be placed on Planning Board agenda for presentation of concept plan.
4. Developer presents a Concept Plan to the Planning Board. - Developer should be prepared to present a plan of the proposed project and necessary related information to show how it is intended to develop the property and how the proposed development relates to adjoining properties.
5. Developer prepares a Preliminary Plan. - If utilities are to be connected into facilities of other agencies, the developer or a designated representative will contact the responsible agency for information on regulations and requirements.
6. Developer applies to Planning Board for Preliminary plan review. - Development Review Application and Checklist submitted to Village Clerk, along with appropriate fees and forms.

Planning Board Secretary will distribute the application, plans, and backup information to appropriate boards, staff, and agencies:

<i>Official File</i>	<i>1 set</i>
<i>Planning Board</i>	<i>7 sets</i>
<i>Building Inspector</i>	<i>1 set</i>
<i>Village Attorney</i>	<i>1 set</i>
<i>Engineer for the Village</i>	<i>2 sets</i>
<i>Village Superintendent</i>	<i>1 set</i>
<i>Monroe County Planning</i>	<i>2 sets</i>

7. Village Planning Secretary reviews application for completeness, and places the item on the Planning Board agenda, if complete.
8. Planning Board Secretary shall submit the preliminary plan to Monroe County Planning Department for General Municipal Law Section 239 review.
9. Developer presents Preliminary Plan to Planning Board.
10. Planning Board classifies, pursuant to New York State Environmental Quality Review Act (SEQRA), the type of action involved.
11. Planning Board makes a decision regarding the lead agency for meeting SEQRA requirements.

12. Legal Notice published in official newspaper
13. Public Hearing held on Preliminary Plan.
14. Planning Board makes a decision on the Preliminary Plan.
15. Developer has legal and design professionals prepare Final Plans and necessary documents.
16. Final Plan presented to Planning Board.
17. Planning Board makes a decision on the Final Plan.
18. Developer prepares and submits, with aid of its legal and design professional:
 - a. An engineer's estimate of probable project costs
 - b. Letter of Credit or other financial security
 - c. All easement documents
 - d. All offerings of dedication
19. Developer obtains the required signatures on the plans from all Village officials and agencies identified by the Planning Board.
20. Developer retains contractors to install utilities and construct other facilities of the development.
21. When items 1 through 20 above are completed and acknowledged on the Development Checklist, a pre-construction conference will be scheduled by the Village Engineer. - Notice of the meeting and invitations to attend will be sent to the following officials or agencies:

Engineer for the Village
Village Superintendent
Building Inspector
Developer
Developer's Design Professional
Contractors
Major subcontractors
Utility companies
Monroe County Water Authority

Village of Churchville sewer
Village of Churchville electric
Rochester Gas & Electric
Frontier Telephone
Time Warner Communication
Others

The contractor shall be prepared to discuss the proposed work plan, schedule, and personnel to be used on the project. Other items to be of discussed include, but are not limited to, permits, special conditions, safety, project inspections, and financial security considerations.

22. After the pre-construction conference, the Village Engineer may issue a NOTICE TO PROCEED to the developer.

NO WORK IS TO START UNTIL THE NOTICE TO PROCEED IS ISSUED.

No construction is to be undertaken prior to notifying the Village and other agencies, IN WRITING, 48 hours before commencing work.

23. As construction progresses, the Developer may submit periodic estimates of work completed and requests for release of funds from the financial security.
24. After final inspection of all facilities to be dedicated to public agencies, the developer shall have its design professional prepare record plans, and provide the Village Superintendent with six (6) copies and one (1) original mylar.
25. Developer files with the Village Clerk the required maintenance Bonds or other financial security for the specified warranty periods.
26. Upon completion of all items on the checklist (refer to Appendix) of the Development Application and Checklist, the Developer petitions the Village Board to pass resolutions of acceptance (for projects to be dedicated to the Village).
27. The Village Board passes resolutions of acceptance and appropriate documents are filed. The Village takes responsibility for and begins maintaining all facilities dedicated to the Village.
28. 90 days prior to the expiration of the warranty period, the Developer shall, IN WRITING, request final inspections. The Village

will make the inspections within 30 days of the request and provide the Developer with a list of items to be corrected, if any.

Developer will make the necessary repairs or corrections PRIOR to the expiration of the warranty period, or shall provide the Village with WRITTEN extension of the warranty period.

1.3 Responsibility

DEVELOPER:

- Retain competent legal and design professionals to provide the necessary counseling and technical information;
- Make application to appropriate review agencies;
- Pay all fees and charges related to the project;
- Provide sound engineering design of all facilities;
- Obtain all of the appropriate approvals from all review agencies and authorities;
- Pay all review and inspection costs incurred by the Village.
- Ensure that all construction and work is in accordance with approved plans, permit conditions and generally accepted standards.

DESIGN PROFESSIONAL:

- Be licensed to practice the appropriate discipline in New York State;
- Design project in accordance with the requirements of the Village of Churchville.
- Provide designs that meet requirements of other review agencies;
- Secure all required permits and approvals;
- Provide engineering design that conforms to Village of Churchville and generally accepted standards.
- Provide inspections necessary for certifications to all appropriate agencies regarding: Stormwater Pollution Prevention Plans, completion of work, Notices of Termination.

BUILDING INSPECTOR AND/OR PLANNING BOARD CHAIRPERSON:

- Hold initial meeting with developer;
- Review plans for necessary permits required;
- Review plans for compliance with zoning laws;
- Review plans for street names.

PLANNING BOARD SECRETARY:

- Provide developer with application package;
- Receive application for review and approval;
- Review application for completeness;
- Issue NOTICE OF COMPLETE APPLICATION;
- Place project on Planning Board agenda;

- Distribute plans and backup information to Village officials for review;
- Submit plans to Monroe County Department of Planning for Section 239 review;
- Refer application to Village Clerk or their designee to publish advertisement for public hearings in official paper of the Village;
- Mail notices to property owners within 500 feet of proposal;
- Maintains official Planning Board files;
- Keeps minutes of Planning Board meetings;
- Sends out official Notice of Planning Board decisions.

ENGINEER FOR THE VILLAGE:

- Review street and road layout;
- Review utility design;
- Provide recommendations to the Village of any special conditions;
- Review easement and special district descriptions and maps;
- Review Design Professional's estimate of probable project cost;
- Review Developer's request for release of funds;
- Provide inspection services as requested by the Village;
- Make final inspections prior to expiration of warranty period;

VILLAGE ATTORNEY:

- Provide legal guidance to board members and Village officials;
- Review notices for public notices, format of hearings;
- Review necessary legal papers for dedication;
- Review easement documents;
- Review financial security forms;
- Review petitions for Special Districts.

VILLAGE SUPERINTENDENT:

- Review and approve street and drainage layout;
- Review water and sanitary sewer layout;
- Make periodic inspections during construction;
- May provide full-time inspection with Highway personnel or Engineer for the Village;
- Make final inspections prior to expiration of warranty period.

BUILDING INSPECTOR:

- Review plans to determine permits required;
- Inspect structures for compliance with Building Code;
- Issue Certificate of Occupancy.

FIRE MARSHALL:

- Review plans for sufficient maneuvering room for public safety apparatus;
- Review plans for adequate water for fire protection;
- Review plans for street names and coordinate with 911 review Board;
- Provide the fire department with information relating to the project.

VILLAGE CLERK:

- Receive all application materials.
- Publish advertisements for hearings and special meetings.
- Receive and hold financial security from developer or contractor;
- Release funds as advised by staff, and approved by Village Board.

1.4 Definitions

APPLICANT — A property owner or agent of a property owner who has filed an application for a land development activity as defined herein.

APPROVAL — Favorable decision to an application that indicates acceptance and the terms of the application, as written or modified, are satisfactory. Includes both approval and approval with conditions.

BLOCK — The length of a street between two intersections or between an intersection and its termination.

BUFFER — A unit of land, together with a specified type and amount of planting and/or fencing thereon, which may be required to eliminate or minimize conflicts between land uses. Also referred to as “screening.”

BUILDING — Any structure other than a boundary wall or fence.

CALIPER — The measurement of the size in inches of the diameter of small trees (under six inches), usually measured at six inches above grade. Trees greater than six inches in diameter are measured 12 inches above the ground. This measurement is generally used for tree-planting measurement applications.

CODE ENFORCEMENT OFFICER (CEO) — The duly designated Code Enforcement Officer of the Village of Churchville.

COLLECTOR ROAD or STREET — Dedicated main road or street used to carry traffic from local streets to primary street or road, including principal entrance street to a subdivision or development.

CONTRACTOR — The party of the second part to the contract or permit, the individual, firm, or corporation undertaking the execution of the work under the terms and conditions of the contract or permit and acting directly through their agents or employees.

CUL-DE-SAC — Dedicated minor street or private road open at one end, with a circular turn-a-round at the other.

DESIGN PROFESSIONAL — The New York State licensed professional engineer, architect, or land surveyor retained by the developer for preparation of plans, specifications, and estimates of probable costs for the proposed development.

DEVELOPER — The owner or agent for the owner of property being improved who shall be financially responsible to the Village of Churchville for satisfactory completion of the improvements.

DRIVE-THROUGH — A structure wherein the sale of goods or delivery of services is provided directly to patrons while seated in motor vehicles located on the premises.

DWELLING UNIT — One or more rooms designed for occupancy by one family for cooking, living and sleeping purposes.

DWELLING, SINGLE-FAMILY — A building containing one dwelling unit and designed or used exclusively for occupancy by one family.

DWELLING, TWO-FAMILY — A building containing two dwelling units and designed or used exclusively for occupancy for two families living independently of each other; or two single-family dwellings having a party wall in common. Also referred to as a "duplex."

DWELLING, MULTI-FAMILY — A building or portion thereof containing three or more dwelling units and designed or used for occupancy by three or more families living independently of each other.

DWELLING, UPPER FLOOR UNIT — A dwelling unit located within a mixed-use, multi-story building on any floor other than the ground floor.

FRONT BUILDING LINE — A line parallel to the front lot line, drawn through that point or projection of a building face which is closest to the front lot line; provided, however, that where side lot lines are not perpendicular to the front lot line, then the front building line shall be the shortest line drawn through that point or projection of a building face which is closest to the front lot line and perpendicular to either side lot line. The building face shall include any portion of the building or structure, enclosed or unenclosed, except steps.

FRONT LOT LINE OR STREET LINE — The line dividing the public right- of-way from the lot; also known as "street frontage."

FRONTAGE — The extent of a building or a lot abutting a street or right-of-way.

INSPECTOR — A representative of the Village designated to inspect the materials and methods of construction for conformance with the criteria and standards of the Village.

LOCAL STREET or ROAD — Dedicated minor street or road used as access to individual properties or development, not conducive to through traffic.

LOT — A parcel of land occupied or capable of being occupied by one building or a group of buildings, and the accessory buildings or uses customarily incident thereto, including such open spaces as are required by this by the Village Zoning Codes, but not including any portion between the center line of a street and the street line.

LOT COVERAGE — The share of the area of the lot covered by structures and impervious surfaces.

LOT LINES — The property lines bounding the lot. Where any property line parallels a street and is not coincident with the street line, the street line shall be construed as the property line for the purpose of complying with the area and setback regulations of this Chapter. In the case of a lot abutting on more than one street, the owner may elect any street line as the front lot line.

LOT WIDTH — The least horizontal distance across the lot between the side lot lines, measured at the front of a main building erected or to be erected on such lot or at a distance from the front lot line equal to the required depth of the front yard.

MARGINAL ACCESS ROAD — Local street which is parallel and adjacent to a Primary Street or Road, and which provides access to abutting properties and provides protection from through traffic.

OPEN SPACE — An area that is intended to provide light and air and is designated for either environmental, scenic or recreational purposes. Open space shall not be deemed to include driveways, parking lots or other surfaces designed or intended for vehicular travel, as well as stormwater management facilities. In no event shall any area of a developable lot nor any part of an existing or future road or right-of-way be counted as constituting open space.

PARKING SPACE — An off-street space used for the temporary location of one licensed motor vehicle, not including access driveway(s).

PEDESTRIAN-ORIENTED — Refers to a pedestrian-friendly design policy providing clear, comfortable pedestrian access to residential and nonresidential areas as well as providing for the construction of buildings, sites, and amenities to be human-scaled, purposefully engaging and accommodating pedestrians.

PLANNING BOARD — The duly designated Planning Board of the Village of Churchville as provided for and established in the Village Zoning Code.

PRIMARY STREET or ROAD — Dedicated major road used to carry through traffic from developed neighborhoods and municipal boundaries, including all streets serving commercial and industrial developments.

PRIVATE DRIVEWAY — Undedicated drive or right-of-way used as ingress/egress to private property.

PRIVATE ROAD — Undedicated road or private right-of-way used as ingress and egress to two or more properties.

PUBLIC RIGHT-OF-WAY — The entire width between the boundary line of all property which is owned by or has been acquired by the Village of Churchville, County of Monroe or State of New York, by purchase, dedication or use, for public street or highway purposes, including, where applicable, public sidewalks. On lots where sidewalks are located in an easement to the Village of Churchville, the regulations of this Chapter relating to signs within the public right-of-way shall be interpreted so as to apply to such easements.

SEQRA — The New York State Environmental Quality Review Act.

SITE PLAN — A rendering, drawing or sketch prepared to specifications and containing necessary elements, as set forth in this the Village Zoning Code and this document, which shows the arrangement, layout and design for the proposed use of a single parcel of land as shown on said plan. Plats showing lots, blocks or sites which are subject to subdivision review and approval pursuant to authority provided by NYS Village Law Section 7-725-a.

SPECIALLY PERMITTED USE — A particular land use which is permitted within a given zoning district, subject to conditions imposed to assure that the proposed use is in harmony with the requirements of this Chapter and will not adversely affect the neighborhood or vicinity if such conditions are met.

STORMWATER MANAGEMENT FACILITY — A stormwater control structure designed to treat and release surface and stormwater runoff from the site at a slower rate than it is collected by the drainage facility system, the difference being held in temporary storage or infiltration.

STORY — That portion of a building between the surface of any floor and the surface of the floor next above it, or, if there is no floor above it, then the space between any floor and the ceiling next above it. A basement shall be counted as a story for the purpose of height measurement, if the ceiling is more than five feet above the average adjoining ground level or if it is used for business or dwelling purposes. A half story is a story under a sloping roof having a ceiling height of seven feet or more for not more than 1/2 the floor area of the uppermost full story in the building.

STREET — Any right-of-way for a public street or any approved private right-of-way.

STREET LINE — A line separating a lot from a street.

STRUCTURE — Anything constructed or erected which requires permanent location on the ground or attachment to something having such location, but not including a trailer.

SUPERINTENDENT OF PUBLIC WORKS — That individual appointed by the Village of Churchville Mayor and confirmed by the Village of Churchville Board as the Superintendent of Public Works. Such an individual shall be qualified to oversee roads, electric, stormwater and wastewater facilities operations. This definition shall also include his authorized deputy, agent or representative.

TELECOMMUNICATIONS — The transmission and reception of audio, video, data and other information by wire, radio, light and other electronic or electromagnetic systems.

TELECOMMUNICATIONS FACILITY — Includes telecommunication towers, accessory facilities or structures and/or antennas and any buildings and/or equipment used in connection with the provision of cellular telephone service, personal communication services (PCS's), paging services, radio and television services and similar broadcast services.

TELECOMMUNICATIONS TOWER — A communications tower on which one or more transmitting and or receiving antenna is located.

TOWER — Any structure, including but not limited to a pole, windmill or other such structure, whether attached to a building, guyed or freestanding, designed and/or used for the support of any device for the transmission and/or reception of radio frequency signals, including but not limited to broadcast, shortwave, citizen's band, FM or television or microwave and/or for the support of any wind-driven device, whether used for energy conservation or not.

TOWNHOUSE — A single- or two-family dwelling which is constructed with at least one wall in common with an adjacent dwelling. Each unit may be located on a separate lot with zero side yard setbacks.

USE — The specific purpose for which land or a building is designed, arranged, intended or for which it is or may be occupied or maintained. The term "permitted use" or the equivalent shall not be deemed to include any nonconforming use.

UTILITIES — Includes, but is not limited to, roads, sidewalks, gutters, drains, sewers, water mains, electric, storm water facilities, and appurtenances, either private or dedicated to the Village.

VILLAGE BOARD — The Board of Trustees of the Village of Churchville, New York.

YARD — An unoccupied space on a lot that remains open to the sky.

YARD, FRONT — That area of a lot extending across the entire front of a lot bounded by the street line and the front building line and between the two side lot lines.

YARD, REAR — That area of a lot extending across the entire rear of a lot bounded by the rear lot line and the rear building line and between the two side lot lines.

YARD, SIDE — The area between a side building line and its related side lot line and between the front yard and the rear yard.

ZONING BOARD OF APPEALS (ZBA) — The duly designated board of appeals of the Village of Churchville as provided for and established by this Chapter.

1.5 Building Permits

Building permits shall not be granted until:

- A. An approved subdivision plat is filed in the office of the Monroe County Clerk; and/or
- B. An approved site plan is filed in the Village Office; and/or
- C. Either an area variance or use variance has been granted by the Zoning Board of Appeals; and/or
- D. A special use permit has been granted by the Planning Board.

1.6 Dedication of Improvements

All utilities including: sanitary sewers, storm sewer systems and stormwater management facilities, roads, sidewalks and landscaping in the right-of-way and easements shall be completed, tested and dedicated to the Village prior to any service connections being made.

All streets and related facilities shall be dedicated to the Village, prior to issuance of any Certificate of Occupancy. Certificate of Occupancy may be considered prior to dedication of facilities if:

1. There is sufficient security in the form of letter of credit, bonds, or cash to complete remaining work.
2. Access to site seeking Certificate of Occupancy is sufficient.

1.7 Utilities

If sewer, water, gas, electrical, street lighting or other public utility facilities are to be located within street right-of-way, their location and installation shall be coordinated so that they may be added to, repaired or enlarged at minimum cost.

Lighting is required by the Village. Where required by the Planning Board, the developer shall first be responsible for the installation of street lights in accordance with the Board's condition of final approval.

Where proposed development abuts adjacent lands (identified in the comprehensive plan as being) suitable for future development, then the utilities shall be installed within the site seeking approval up to the property line and an easement granted to the Village for access and maintenance purposes.

1.8 Road Construction

Due to the general soil conditions within the Village and normal construction sequences for development, it is deemed to be in the best interests of the Village that the following procedures be followed:

- A. Binder material shall not be placed prior to the completion and approval of all underground utilities and inspection of the base by the Superintendent of Public Works.
- B. The weather and seasonal limitations as specified under the Standard Specifications of New York State D.O.T. shall apply for placing of bituminous mixtures.
- C. Restrictions (a) and (b) imply completion of all underground systems well in advance of the Developer's schedule for paving.
- D. No Certificates of Occupancy will be approved unless a proper road surface as herein specified has been constructed.
- E. Should construction sequences not allow the required road construction to be completed in the current construction season, the Developer shall provide a temporary road surface as herein specified over which proper ingress and egress throughout the development can be obtained by the residents, school buses, emergency vehicles and highway plows.
- F. The temporary road surface shall only be accepted should the Developer and/or Builder desire Certificates of Occupancy for any residences within the development.

- G. Upon the completion of the binder pavement and all other items related to the completion of a project, the Village may elect to accept for dedication the completed facilities if (1) a two-year maintenance agreement (letter of credit or certified check) is submitted to and accepted by the Village (2) the Developer presents a sum of money to complete the top pavement course by Village in the future. The amount of money to be transferred to the Village will be established by the Superintendent of Public Works. This sum shall include the cost of the Village's labor and material to cause the proper installation of the top course.
- H. It is the intent of this option by the Village to allow the Developer to offer the project for dedication before the final pavement is installed. In the opinion of the Village and when the Developer has substantially completed the related construction in the developed area, the Village will install the final pavement top. In this manner the area will receive a new pavement top that has not been marred or patched as a result of normal construction activity.
- I. Before the expiration of the maintenance agreement and before the final top is applied, the Village and the developer will hold the final site review to assess any damages or repairs that may be necessary by the developer under the maintenance agreement.

1.9 Haul Roads

Haul roads are temporary roads built to facilitate the movement of people, materials and equipment along the route of a job off of existing public roads. Haul roads may be required by the Planning Board, when applicable upon review with the Superintendent of Public Works, Village Construction Inspector, Village Board and/or Village Engineer. All vehicles 10 tons or more are required to use the haul roads. Performance bonds [a form of surety acceptable by the Village Board] may also be considered as an option in lieu of construction of a haul road for necessary repair and maintenance of existing public roads.

1.10 Driveway Culverts

New driveway culvert installation shall be the responsibility of the landowner. The Superintendent of Public Works shall approve the proposed location, size and material of such culverts. See Section 2.5 and 2.6 and associated Appendices for additional design information regarding driveways.

The Village reserves the right to remove and/or install driveway or roadway culverts along existing Village roads to properly transmit surface drainage as determined by the Superintendent of Public Works.

1.11 Financial Guarantees

The following guarantees will be required:

A. Letter of Credit

An irrevocable letter of credit shall be submitted by the developer to insure the installation of improvements in an amount determined by the Developer's Engineer and approved by the Village Board.

The amount shall include but not be limited to the following items. Total estimated construction cost of all utilities, laterals, water services, roads, gutters, earthwork, sidewalks, stormwater management facilities, etc.

1. Minimum 10% contingency factor
2. Engineering and inspection charges
3. Street signs and surveyor's monuments
4. Record Maps

1.12 Partial Releases of Credit

Refer to Section 5.10, Letter of Credit Release Procedure, of this manual.

1.13 Maintenance Guarantee

A maintenance guarantee (an irrevocable Letter of Credit, or bond) shall be provided guaranteeing the total construction value of the project against faulty workmanship or materials for a period of two (2) years after acceptance by the Village Board. Individual portions of the development roads, sidewalks, sanitary system, storm drainage system, water system (as required by the Village and Monroe County Water Authority) acceptances by the Village. The financial guarantee for the pavement, gutters, street lights and/or sidewalks will not be accepted until the entire project is ready for dedication (see Section 5.09 through 5.12 for procedural requirements).

1.14 Methods of Release of Funds

A. Surety Release Procedure

The procedure required for the release of funds is referenced in Section 5.10 of this manual. The format of the letter of credit shall be approved by the Village Engineer.

B. Release of Retainage

Retainage release shall be considered only after a two-year maintenance bond has been accepted by the Village Board and after the systems have been tested, approved and dedicated to the Village (see Section 5.12 Final Release of Funds of this manual for additional procedural requirements).

C. Release of Maintenance Guarantee

Release of Maintenance Guarantee shall be authorized in writing by the Village Mayor upon final inspection of the project site and by Village authorities including the Superintendent of Public Works, Construction Inspector and Code Enforcement Officer. This inspection shall be completed at least one month before the expiration of the Maintenance Guarantee (see Section 5.11).

1.15 Applicability of Regulations

The guidelines contained in Sections 2, 3, 4 and 5 of this document shall **apply to all improvements** within the Village of Churchville.

1.16 Record Information

The Village reserves the option to complete the record drawings themselves and draw from the letter of credit, bond, or other surety the appropriate monies to complete them.

Record Information shall be provided in accordance with the New York State Department of Transportation (NYSDOT) Land Surveying Standards and Procedures Manual, latest revision. Standards procedures, Control Network Densification and Extensions Surveys are performed to Federal Geodetic Control Subcommittee Standards and Specifications approved by NYSDOT and the National Geodetic Survey.

The Base Mapping Digital Terrain Models and Geometry shall conform to the NYSDOT CADD Software Standards and the NYSDOT CADD Standards and Procedure Manual (see Section 5.8 for additional Record Information requirements). Final documents shall be provided to the Village in the following formats: CADD, TIFF and PDF. Survey data for points shall be provided in CSV and TXT formats.

1.17 Review of Plans

If construction has not commenced within 12-months after final approval, the plans must be resubmitted to the Planning Board for completeness and conformance with current regulations.

SECTION 2 Design Criteria

2.1 Sewage Disposal Systems

Connection to the Village Sewer system is mandatory. On-site wastewater treatment and disposal is not permitted.

A. Public Sanitary Sewers (see also Appendices S-1.0 thru S-7.0)

A minimum 25-foot sanitary sewer easement shall be provided to the Village and may be greater where conditions necessitate additional width (i.e. sewers deeper than 12 feet) as determined by the Village. Additionally, no structures shall be within 5-feet of the easement.

Minimum requirements shall be as established by the New York State Department of Health and/or the Department of Environmental Conservation, the Village of Churchville Sewer Use Law(s) except as noted herein:

1. Gravity Sewers

- a. Sewer mains shall be a minimum of 8-inch diameter.
- b. Manhole spacing, maximum of 400 L.F.
- c. The sewer shall be designed at such a depth to provide basement drainage. If site conditions are such that basement drainage cannot be provided to all units, a specific note to that effect shall be placed on the plan.
- d. Water mains, sewer mains and sewer laterals shall not be allowed in a common trench. There shall be at least a ten-foot (10') horizontal separation between the water service and this sewer lateral all the way to the basement wall with a minimum eighteen-inch (18") vertical separation.
- e. All necessary mains and laterals required to connect to the public sewage system as shown on the final approved plan shall be installed by the Developer.
- f. Elevations - Where other utilities parallel or cross the sanitary system, vertical clearance between the systems shall be provided to permit the satisfactory installation of all services.
- g. Laterals for each individual lot shall be:
 - i) Minimum of 4 inches in diameter.
 - ii) Minimum of slope 1/4"/L.F. (2%).
 - iii) Cleanouts shall be provided at a maximum distance of 85 feet and one shall be located on the right-of-way or easement line. Cleanout caps shall be cast iron to be durable and facilitate location.
- h. Sanitary Manholes – for sewer 8"- 12", minimum 4'-0" inside diameter; over 12", minimum 5'-0" inside diameter; three or

more pipes in a manhole requires a 5'-0" inside diameter. Larger pipes may require special design.

- i. Connections to existing manholes shall utilize core boring with no impact tools and rubber boots with stainless steel snap locks or screw-wedge or sand collars epoxied in place.

B. Sewage Lift Stations

1. Design

- a. Certain geographic areas or topographic constraints may require the use of a sewage lift station to transmit proposed effluent to the appropriate gravity collector sewer. Once the Department of Public Works deems the use of a sewage lift station is appropriate, the Village and developer shall agree on the most advantageous location for said lift station. In general, sewage lift stations shall be located and sized so as to provide the maximum benefit to not only the new development but also adjacent unsewered areas and provide for ease of access and maintenance.
- b. Once the location of the sewage lift station has been determined, the developer's engineer shall prepare an Engineering Report that identifies the following design parameters:
 1. Anticipated flow rates (initial and full build out):
Average Day, Maximum Day, Day Peak Hour
 2. Number of parcels served
 3. Total static head
 4. Total dynamic head (TDH)
 5. Operating set points
 - i) Pump Off
 - ii) Lead Pump On
 - iii) Lag Pump On
 6. High Level Alarm
 7. High point in forcemain
 8. Elevation at forcemain discharge
 9. Flow capacity of forcemain from high point to end under gravity flow conditions
 10. Wet well sizing calculations
 11. Net positive suction head required
 12. Net positive suction head available
 13. System curve
 14. Pump performance point
 15. Anticipated storage time based on average and peak flows including corresponding liquid level elevations related to the lowest floor

16. Anticipated cycle times per hour (initial and full build out)
 17. Map of design service area and any other lands that are tributary to the pump station
 18. Demonstrate the ability of the pump station to be upgraded for future expansion
 19. Need for odor control
 20. Power requirements
 21. Velocity in forcemain at pump design point, 2.0 fps (minimum)
Retention time in forcemain based on pump cycle time and design point.
- c. This hydraulic data shall incorporate the following minimum standards:
1. The pump station shall be sized to accommodate gravity sewer service for the fully developed contributing drainage basin, based on current zoning.
 2. Pump station invert elevations shall accommodate reasonable expansion of the sewer system.
 3. The pump station capacity shall incorporate the following parameters:
 - i) Cycle times to be between one (1) start per hour minimum and ten (10) starts per hour maximum.
 - ii) Wet well shall be sized to hold a minimum of two (2) hours of average design flow and one (1) hour of peak design flow from "high water alarm" to lowest inflow pipe invert elevation.
 4. Compliance with the current policies and directives of the New York State Department of Environmental Conservation, New York State Health Department, and applicable sections of the "Recommended Standards for Wastewater Facilities," latest revision.
 5. Compliance with the standard details contained herein.
- d. Once the specific hydraulic data has been determined, the developer's engineer shall submit to the Superintendent of Public Works a report, sealed by a professional engineer, which recommends a specific pumping system based on pump performance curves and substantial conformance to the preceding "Pump Station and Equipment" specifications.
- e. The Superintendent of Public Works and Village Engineer will review and approve the report. Approval of the report shall

in no way relieve the design engineer of responsibility or liability for the project.

- f. The report shall be accompanied by a utility plan and profiles which relate all pump station appurtenances to the proposed development as a whole including any offsite force main locations and all easements.

2. General

- a. It is not the intent of these specifications to provide standardization of pumping systems. The specifications contained herein are deemed by the Department of Public Works most suitable to meet the anticipated service requirements. Proposed equipment that may be considered as an equivalent to these specifications will be evaluated on the basis of substantial compliance to these specifications. The Village of Churchville reserves the right to accept or reject products, systems and/or manufacturers based on substantial compliance to these specifications.
- b. The pump station supplier shall furnish one (1) factory pre-assembled, above ground, automatic sewage lift station with integral electrical control panel as specified herein. The pump station shall be equipped with two (2) factory pre-mounted, self-priming, horizontal shaft, non-clog, centrifugal, V-belt driven sewage pumps.
- c. The pump station enclosure shall be manufactured of reinforced fiberglass designed to allow access to the pump station components for service.
- d. Valves and all internal piping shall be factory pre-mounted inside the station enclosure.
- e. The electrical control panel shall be factory pre-mounted in the pump station enclosure inclusive of conduit and common terminal strip for field connection of power supply.
- f. The electrical control panel shall be equipped with a sanitary pressure sensor liquid level sensing and control system utilizing an electronic pressure switch.
- g. The pump station enclosure shall be equipped with factory installed heater, dehumidifier, sump pump, fresh air blower, and lighting.

- h. The electric distribution equipment shall be located above grade and shall include a transfer switch, fused disconnect and an emergency generator.

3. Pump Station Enclosure

- a. The station enclosure shall be made of molded reinforced orthophthalic polyester resins with 30% fiberglass and 70% resin.
- b. The enclosure shall slide in either direction with locks and latches, which permit routine maintenance without exposing equipment to inclement weather. For major maintenance, the enclosure shall be removable.
- c. The enclosure shall have provisions for and be supplied with a ventilation blower capable of exchanging the air in the enclosure once every two minutes.
- d. The enclosure base shall be constructed of pre-cast reinforced concrete bonded inside a fiberglass form. The base shall have internal drainage provisions.
- e. The pump station shall be provided with a suitably sized electric heater with cord, thermostat, and grounding plug. Ungrounded heaters shall not be acceptable.
- f. The pump station shall be insulated.
- g. Pump station shall be supplied with a thermostat, which shall monitor interior station temperature. The control shall incorporate a control relay and an un-powered dry contact wired to terminal blocks for field connection to a remote alarm device in the event that the temperature within the enclosure falls below a preset point between 35 – 100 degrees F.
- h. The pump station enclosure shall be equipped with the following environmental systems:
 - i) Fluorescent light fixtures each having (2) 20-watt tube.
 - ii) Dehumidifier with % relative humidity and temperature settings.
 - iii) Fresh air blower with automatic and timer modes.

Where determined that odor control is needed, the station enclosure shall be sized to also house the odor control system.

4. Pumps

- a. Pumping system will be equipped with two (2) identical factory mounted non-clog pumps of a horizontal self-priming type, specifically designed for handling raw, unscreened, domestic sewage.
- b. The pump shafts shall be sealed against leakage by a double-floating, self-aligning mechanical seal. The seal cavity shall have an oil level sight gauge.
- c. All openings and passageways in the pump, including the priming re-circulation port shall be capable of passing the same size spherical solid as the pump impeller and any trash or stringy material, which can pass through the average residential collection system. Pump volute casing shall be gray iron Class 30.
- d. Pumps must be equipped with a removable cover plate, allowing complete access to pump material to permit the clearance of stoppages and to provide simple access for service and repairs without disturbing suction or discharge piping or the drive end of the pump.
- e. Pump shall also be fitted with a replaceable wear plate. Adjustment of the impeller face clearance (distance between impeller and wear plate) shall be accomplished by external means. Clearances shall be maintained by external shimless cover plate adjustment, utilizing collar and adjusting screw design for incremental adjustment of clearances by hand.
- f. Pump shaft shall be covered and protected with a removable sleeve.
- g. The pump shall incorporate a suction check valve, which can be removed or installed through a removable cover plate opening without disturbing the suction piping.
- h. Pump shaft shall be high strength carbon steel, ASE #1045 minimum, accurately machined and of sufficient size to transmit full drive output. It shall be protected from the pump mechanical seal by a renewable shaft sleeve in the stuffing box area. Shaft shall be sealed by a synthetic

rubber O-ring between the sleeve and the impeller hub and a suitable gasket between the impeller hub and the adjoining shaft shoulder.

5. Motor

- a. The pump motors shall be standard horizontal NEMA T frame, open drip-proof, induction type, with normal starting torque and low starting current characteristics suitable for the available power. Motors shall be cast iron frame with copper windings. Designs requiring the use of motors other than standard horizontal NEMA T frame motors will not be acceptable.
- b. For owner flexibility and interchangeability, pumps shall be v-belt driven. Each drive assembly shall have a minimum of two belts and a safety factor of 1.5 or greater.

6. Unit Base

- a. The unit base shall comprise a base plate, perimeter flange, and reinforcements. Base plate shall be fabricated of steel not less than 1/4" thick, and shall incorporate openings for access to all internal cavities to permit complete grouting of unit base after installation. Perimeter flange and reinforcements shall be designed to prevent flexing or warping under operating conditions. Base plate and/or flange shall be drilled for hardware used to secure unit base on concrete pad as shown on the contract drawings. Unit base shall contain provisions for lifting the complete pump unit during shipping and installation.

7. Valves and Piping

- a. Each pump shall be equipped with a full flow type check valve, capable of passing a 3" spherical solid, with flanged ends and be fitted with an external lever and spring. Valves shall have a replaceable stainless-steel seat, resilient flapper, and be fitted with an access plate large enough to clean out the check valve and replace all internal parts including the flapper without removing the valve from the piping system.
- b. The discharge header shall include plug valves on each pump to permit either or both pumps to be isolated from the common discharge header. Three-way valves shall not be

used. The valves shall pass a 3" spherical solid. Plug valves shall be non-lubricated with 125-pound standard flanges.

- c. Emergency bypass piping shall be provided and shall include a valve and quick connect fitting. The bypass piping shall terminate outside the enclosure.
- d. Each pump shall be equipped with a minimum 4" diameter glycerin filled compound suction gauge and a 4" diameter glycerin filled pressure gauge. They both shall be calibrated in feet of water column. They shall be mounted on a resilient panel and provided with stainless steel tubing and shut-off valves.
- e. The pump shall be equipped with automatic air release valves. Valves shall close upon completion of a priming or re-priming cycle and prevent re-circulation. Valves shall provide visual indication of valve closure and operate solely on pump discharge pressure and not the presence of liquid. The valve shall be constructed of cast iron and stainless steel, include a 3" clean-out port, and be field adjustable for varying discharge heads. Discharge piping shall be stainless steel with unions on both sides of the valve.
- f. Each pump shall have a drains hard pipes to the wet well with stainless steel piping and shutoff valves.

8. Piping

- a. Flanged header pipe shall be centrifugally cast, ductile iron, complying with ANSI/AWWA A21.51/C115 and class 51 thickness. Suction pipe shall be Class 53 thickness.
- b. Flanges shall be cast iron class 125 and Comply with ANSI B16.1.
- c. Pipe and flanges shall be threaded and suitable thread sealant applied before assembling flange to pipe.
- d. Bolt holes shall be in angular alignment within $1/2^{\circ}$ between flanges. Flanges shall be faced and a gasket finish applied.
- e. Station piping that terminates below the station for connection to below grade pipe and fitting shall be provided with flanged connections.

9. Control Panel

- a. Each pump shall have an open frame, across-the-line, NEMA rated magnetic motor starter. All motor starters shall be equipped to provide under voltage release and overload protection on all three phases.
- b. Overload relays shall be block type, and shall be manual reset only. Trip setting shall be determined by heater element only and not by adjustable settings.
- c. A properly sized heavy-duty air circuit breaker shall be furnished for each pump motor. All circuit breakers shall be sealed by the manufacturer after calibration to prevent tampering. A pad locking operating mechanism shall be installed on each motor circuit breaker. Operator handles for the mechanism shall be located on the exterior of the control compartment door, with interlocks which permit the door to be opened only when the circuit breakers are on the off position.
- d. A duplex ground fault indicating utility receptacle providing 115-volt, 60 Hz, single phase current shall be mounted on the side of the control enclosure. Receptacle circuit shall be protected by a 15-ampere thermal magnetic circuit breaker.
- e. The control panel shall be equipped with circuitry to override the level control system and shut down the pump motor when required to protect the pump from damage caused by excessive temperature. A thermostat shall be mounted on each pump to detect its temperature and a magnetic switch shall be supplied for each thermostat. An indicator, visible on the front of the control panel shall indicate the pump motor has been stopped because of high temperature conditions. Pump shall remain locked out until it has cooled and the circuit has been manually set.
- f. The control panel shall also be supplied with HOA switches, alternator relay, pump run indicators, elapsed time indicators, and sequence selector switch.

10. Level Control

- a. The level control shall be a Multi-Trode Level Sensor or approved equal, which shall sequence the pumps and alarm. The probe shall operate using the conductive

properties of the water to complete a circuit with a controller. The probe shall be installed in a 3-inch diameter schedule 40 PVC pipe to reduce turbulence and grease build-up. The probe shall be installed with a mounting bracket that includes a cleaning device. which shall sequence the pumps and alarm.

- b. The electronic pressure switch shall have a digital panel meter with a 3-1/2" display of wet well level or set points.
- c. The level control shall incorporate automatic pump alternation independent lag pump, high water alarm, and alarm silence.
- d. The level control shall have pressure sensors, electronic comparators, and output relays to perform its function reliably.

11. Operational Test

- a. The pump manufacturer shall design and manufacture the entire pumping system. The pumps, motors, piping, valves, and controls shall be totally factory assembled and be given an operational test in accordance with the standards of the Hydraulic Institute. The test shall substantiate the correct performance of the equipment at the design head, capacity, suction lift, speed and HP as herein specified.

12. Electrical Supply Equipment

- a. All electrical supply equipment shall be placed above grade, mounted in a freestanding NEMA 4X enclosure installed by a Licensed Electrician and inspected by the New York State Board of Fire Underwriters.
- b. Electrical supply equipment shall include the following:
 - 1. 1 - 480V/3ph meter receptacle
 - 2. 1 - 480V/3ph double throw transfer switch
 - 3. 1 - 480V/3ph fused disconnection
 - 4. 1 - 480V/3ph Emergency generator connection including weather tight panel compatible with the Village's generator.
- c. Electrical enclosure shall include but not be limited:
 - 1. supply equipment,
 - 2. strip heaters,
 - 3. terminals,

4. indicating contacts,
 5. breakers,
 6. dead front panel,
 7. back panel,
 8. padlock handle
 9. power block,
 10. din rails,
 11. GFI service receptacle,
 12. transformers.
- d. This equipment shall have the proper ampacity rating as determined by the manufacturer, site engineer and the Department of Public Works.
- e. The pump station shall include a stand-by generator and automatic transfer switch. Generator shall be fueled with natural gas where available or diesel fuel where natural gas is not available. Stand-by Generator shall be a Commercial/Industrial Grade product equivalent to Cummins Onan D1703 with a minimum rating of 10kW or greater sized for the proposed pump station power requirements. Generator shall include:
1. Cummins, Kubota or approved equal heavy-duty engine 4- cycle, liquid-cooled, industrial diesel power.
 2. Alternator – sized for appropriate motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.
 3. Control system – equivalent to Cummins PowerCommand 1.1 electronic control equipment including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.
 4. Cooling system - integral set-mounted radiator system, designed and tested for rated ambient temperatures.
 5. Enclosure - weather protective and sound attenuated enclosures.
 6. Fuel Tank - Dual wall sub-base fuel tank.
 7. NFPA - The genset shall accept full rated load in a single step in accordance with NFPA 110 for Level 1 systems.
- f. At locations where 480V/3ph power is not available, Developer may propose a 240V/1ph service. Prior approval from the Village is required.

- g. All equipment and installation shall conform to the most recent publication of the National Electric Code and standard details attached.
- h. The developer shall make applications to utilities for gas and telecommunications for new service. Billing accounts will be turned over to the Department of Public Works after acceptance of the pump station.

13. Wet Well and Suction Lines

- a. The lift station shall utilize a pre-cast concrete wet well having a minimum inside diameter of eight (8') feet and coated inside and out. Six (6') foot wet wells will be considered based on wet well sizing calculations. The wet well shall have a standard pre-cast top slab adequately reinforced to provide H-20 loading with penetrations needed for the pump station a standard opening for a twenty-four (24") inch manhole cover.
- b. The final depth of the wet well bottom shall be determined as a function of anticipated flow from a fully developed service area and volumetric storage capacity as outlined in the previous Design section. The inside diameter of the wet well specified above is a minimum dimension and may need to be increased due to required storage volume and re-prime lift considerations.
- c. The pump station suction lines (2) and bypass suction line (1) shall be fastened to the wet well with "core 10" or stainless-steel hardware. This piping shall be adequately braced per the standard detail contained herein. Submittals verifying material of this hardware shall be required.
- d. Penetrations through the wall of the wet well shall be made in the field by means of core bore after an accurate location of the lines has been determined.
- e. The auxiliary suction line for bypass pumping shall be completely vertical and exit through the top slab of the wet well and terminate per the standard detail. Pipe shall be cast iron or PVC with mechanical fittings.
- f. All three (3) suction lines shall have a ninety (90) degree increasing elbow mounted at the bottom of the wet well. The size of the increased diameter shall be determined

based on maximum allowable entrance velocities as determined by the pump station manufacturer.

14. Bypass Pumping Provisions

- a. The pump station shall be designed and equipped with provisions for isolating the pump station and utilizing a portable pump to draw from a separate, auxiliary suction line and pump directly into the force main. The isolation valve shall be installed on the forcemain outside the pump station.
- b. Bypass connections shall include CL-51 D.I.P. suction and discharge lines that terminate through the wall of the enclosure. Terminations shall include male end quick coupler.

15. Testing

- a. All field installed piping shall be pressure or vacuum tested.
- b. The entire length of the force main shall be pressure tested with water. The force main shall hold one and one-half (1.5) x the working pressure of the pump system or fifty (50) PSI minimum for a thirty (30) minute period with a loss of pressure not to exceed five (5) PSI.
- c. The full length of all suction lines shall be vacuum tested. The suction lines shall hold negative ten (10") inches of Hg. (Mercury) indefinitely. Special attention shall be given to this test because of its relationship to re-prime performance.
- d. The pump station distributor shall include a one half (1/2) day start up procedure with the pump station. A factory-trained representative shall be present to witness all functions of the station and approve their installation in accordance with the manufacturer's warranty.
- e. Upon completion of installation, the lift station shall be tested by continuous operation as directed by the Superintendent of Public Works. The lift station shall also be tested using the standby generator. Stations with a fixed mounted generator shall be tested with the generator. The supplier shall be responsible for the complete installation of the pump station.

16. Warranty

- a. The pump station manufacturer shall supply warranty certificates as follows:
- b. Station Enclosure – Five (5) years from defects in material and workmanship and corrosion.
- c. Mechanical equipment and apparatus shall be fully warranted from defects in material and workmanship for a period of one (1) year from the date of acceptance.
- d. The date of acceptance shall be the date of startup witnessed by the factory-trained representative together with submittal of warranty certificates.

2.2 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 while meeting the NYS DEC and Village requirements. The developer is required to follow the most current edition of New York State New York State Stormwater Management Design Manual. Also, is required to file for latest version of the State Pollutant Discharge Elimination System ("SPDES") General Permit for stormwater discharges from construction activities and submit a Notice of Intent (NOI) form to obtain permit coverage. Prior to submitting this information to NYSDEC for coverage, a SWPPP Acceptance Form is required to be completed and submitted to the Village of Churchville for approval. Once approved, this form is to be submitted to NYSDEC along with the SWPPP and NOI. A copy of the Acceptance form is to remain within the approved SWPPP.

In general, the preservation of natural watercourses is preferable to the construction of drainage channels and wherever practical such natural watercourses should be preserved. Storm sewers and drainage facilities shall be based upon a design flow with the minimum return interval of ten (10) years. The design of natural watercourse channels shall depend upon the drainage area according to the following table:

DESIGN RETURN INTERVALS FOR NATURAL WATERCOURSES

<u>Drainage Area</u>	<u>Recurrence Interval</u>
Above 20 square miles	100 years
Between 4 to 20 square miles	50 years

Less than 4 square miles

25 years

Storm drains and channels shall be designed and provided to adequately convey the anticipated runoff from the development, as well as, all contributing area upstream or uphill from the development in question. The minimum size piping used for storm drains shall be twelve (12") inches.

The minimum curve number to be used is shall be based upon the NYSDEC Stormwater Management Design Manual. Runoff within the subdivision shall be computed by TR-55, TR-20 or other computer modeling software using the "10-year storm". Design of major channels or piping systems conveying water through the subdivision shall be designed using the "25-year storm". Time of concentration to first inlet shall be taken as not less than five (5) minutes and not more than fifteen (15) minutes. The design engineer shall give particular attention to time of concentration in hilly areas. Analysis of the time of concentration shall be submitted to the Village for review and approval.

Open channels serving as main drainage ways normally will not be accepted by the Village where, by engineering design, it has been established that the future flow (under conditions of full development) could be conveyed in a pipe system, up to and including a size of forty-eight (48") inches in diameter or equivalent. Where a forty-eight (48") inch diameter pipes system is not adequate, the Village may require an eight (8") inch thick concrete gutter of adequate width, based on required capacity of the drainage way, to substantially contain flows. The concrete gutter shall be constructed as per the standard details provided herein. The developer's engineer bears the responsibility of providing technical design data in this regard, which shall be submitted to the Village Engineer for approval.

The developer's engineer shall be responsible for furnishing, as part of their plans to be presented before the Planning Board, full and sufficient calculations and details of all hydraulic structures. This includes, but is not limited to, cross sections of drainage channels, special manholes and all such other items as may be necessary to establish fully the methods and materials to be followed in construction.

The developer's engineer shall design the vertical control of their subdivision so that surcharge of storm drainage systems will not cause a backup or flooding of basements. This will normally require that cellar drains not be connected to the storm drainage system unless (a) the cellar floor is higher than pavement grade in order that the street drainage system can run fully surcharged or (b) that basements drainage discharges through a sump pump and check valve.

In the design of storm drainage piping systems, an "N" of 0.013 shall be used for smooth pipe and an "N" of 0.024 shall be used for corrugated metal pipe, unless the corrugated metal pipe has an approved "smooth" lining where "N" of 0.013 may be used.

Where open swales or creeks are involved, the banks shall be constructed with slopes no steeper than one (1) horizontal on three (3) vertical. If for any reason this cannot be achieved, the watercourse shall be piped.

Storm sewer piping along the side or rear of a structure shall be extended past the proposed residence or structure in conformance with the following criteria:

1. All existing open drainage swales shall be piped to a point which is a minimum distance of one hundred forty (140') feet measured perpendicular from any point on adjacent setback lines.
2. Provide piping one hundred (100') feet from the end section to the rear of the structure, including garage.

B. Accommodations for House and Lot Storm Drainage

Finished ground level adjacent to house foundation wall shall be a minimum of one (1') foot higher than the edge of pavement or shall provide a minimum slope of 2% away from the foundation to a swale, culvert, or other collection system. Provisions shall be made for draining positively the surface of each lot by proper grading and construction of swales, ditches or drains. These items shall receive the same careful design attention as the street drainage system.

Provisions shall be made for disposing of roof and basement drainage into the street drainage system. This shall be accomplished with the use of storm sewer laterals. When positive discharge from the basement drain cannot be obtained, sump pumps with appropriate check valves shall be installed.

Where storm sewers are not available, roof and basement drainage shall be discharged to splash blocks.

No laundry, sanitary, or kitchen wastes shall be discharged to a storm drainage system. No drain connections from garage floors shall be permitted to enter drainage swales.

Storm drain laterals shall have outside cleanouts, located at right-of-way or easement lines. Cleanouts shall include cast iron caps.

Rear yard swales shall have a minimum grade of 2%. Where this cannot be provided, a concrete gutter is required. Under no conditions will a grade of less than 1% be allowed for drainage swales.

Yard inlets shall be provided along swales to collect runoff from a maximum distance of three (3) lots or four hundred (400') feet (in any one direction), whichever is less.

C. Stormwater Management Facilities

Stormwater management facilities, sedimentation basins, and erosion control measures in all new land development shall be provided where, in the judgment of the Village Engineer and compliance with the NYSDEC requirements; it is felt necessary in order to provide proper drainage and/or erosion control.

Plan view and details are required to show the pond location, size, inlet structures, and outlet structures as well as any appurtenances. All stormwater management facilities shall be constructed with a minimum 1:3 side slope from base of pond to top of bank. If to be dedicated to the Village, a twenty-five (25') foot access easement shall be provided around all portions of said pond and pond maintenance road to allow access or the pond shall be located on lands dedicated to the Village of Churchville. If the facilities are not to be dedicated to the Village, then a temporary access easement over the maintenance road, outfall structure and forebays are required to allow access to the facility during construction.

In designing the detention facility, attention shall be given to the types of soils found in the site. The Village may require that the pond 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.

During design, the Village may require the Developer to provide a soils report done by a professional soil engineer to determine if the on-site material meets the requirements for infiltration capacity or as a pond liner. The Developer's engineer shall submit, with his final plans, drainage calculations justifying the size of pipes, channels, impoundment basins, and related structures.

Stormwater management facilities shall be required to mitigate the impact of land development to downstream properties and drainage systems. The increased rates of stormwater run-off may cause environmental problems downstream such as highly erosive velocities, flooding and over-topping of banks. The Village may require stormwater basins where deemed appropriate and to have these basins designed in

a manner compatible with these specifications. The purpose of this regulation is:

1. To establish the basic general philosophy for these facilities;
2. To set forth a series of parameters or rules governing the design.

While the Village 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 would normally occur under a natural, undeveloped condition, for the particular design storm. The discharge from these facilities shall be at a rate equivalent to the discharge from the upstream area under a natural, undeveloped condition.

The Developer shall design all storm drainage improvements in conformance with the Village's watershed drainage studies. Where on site detention/retention is not required, the Developer shall submit the equivalent fees for their share of any off-site facilities.

The Village reserves the right to establish other more restrictive parameters. For example, if the downstream area has been subject to floods in the past, even while the upstream areas were not developed, and if the Village deems it desirable and appropriate to remedy this situation, they may at their discretion, require an impoundment area of the size and type, which can assist in rectifying the downstream flooding situation.

The following represents the basic philosophy regarding stormwater discharge:

1. No developed area shall discharge more stormwater into adjacent culverts and channels than occurs under a natural undeveloped condition.
2. The flow capacity of channels and culverts immediately downstream from a development does not necessarily govern the adequacy of the total drainage system downstream
3. As one travels downstream in any given drainage basin (and, therefore, from any given development) the area contributing to any drainage channel is increasing.
 - a. Culverts and channels downstream from any development may be able to handle the total runoff from that development alone, but this does not imply that said channels and culverts can handle the total runoff to that location.

- b. The fact that downstream facilities are inadequate prior to the development and, therefore, flood at certain times, does not imply that this flooding condition or any greater frequency flooding is desirable.

D. Engineering Procedures

In order to arrive at an engineering estimate of storm flows and proposed detention pond 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 developer's engineers is permitted. However, proper documentation of the variables and procedures for the software should be submitted to the Village Engineer for review and approval.

1. The design engineer shall design the stormwater facility and Storm Water Pollution Prevention Plan in accordance with the most recent edition of the following regulations:
 - a. NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity.
 - b. NYS DEC SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4).
 - c. NYS DEC Stormwater Management Design Manual.
2. 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. The runoff coefficient for developed conditions shall be a weighted number based upon area of impervious surfaces.
3. Design the collection system using the standard rational method, TR-20, or other methods as approved by the Village Engineer.
4. With an area designated for the location of the pond, determine the maximum depth of the pond.
5. Bench marks shall be set on outfall structure elevations.
6. Design an outlet structure, which discharges water as a continuous function of head and which will discharge the maximum allowable flow at maximum pond depth. Lesser storms should discharge approximately proportional lesser flows.

7. 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 $t=0$ and assuming that good pond design is based on the outflow reaching its peak just as the inflow equals the outflow.
8. Calculate the accumulated volume for each of the above cases. The one giving the greatest volume is the critical storm for this retention pond.
9. 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 pond.

E. Flood Hazard Prevention

Flood hazard prevention shall include the control of soil erosion of land surface and drainage channels and the prevention of inundation and excessive ground water seepage by comprehensive site grading and the establishment of adequate elevations of buildings, building openings and roadways above the observed, anticipated or computed water levels of storm sewers, streams, channels, floodplains, detention basins and swales.

Particular attention shall be paid to development in the vicinity of Black Creek, tributaries and their floodplains. No alteration of the existing characteristics of the area shall take place without the specific approval of the regulatory agency and the Village Engineer as to the adequacy of the protective measures taken, if any. The effects of such development on upstream and downstream reaches of the watercourses, as well as adjacent properties, shall be defined by the applicant.

All development proposed within the special Flood Hazard Area as delineated by the National Flood Insurance Program and defined by the Federal Insurance Administration shall comply with the various regulations set forth by the Federal Insurance Administrator and the Village of Churchville Code.

Any filling within a floodplain shall be compensated with an excavated area that is 1.25 times the volume filled within the designated floodplain. The compensatory storage area shall be located in an area adjacent to the affected floodplain. No filling within a floodplain shall be allowed without a Floodplain Development Permit first being issued by the Village Code Enforcement Officer (CEO).

Where developments are located in the lower reaches of a watershed, the Village Engineer may elect to waive all requirements for

detention/retention facilities to allow runoff to pass through the area before impact of upstream runoff is observed.

F. Erosion Control

1. General

In order to ensure that the land can be developed without danger of flooding or erosion of downstream areas, the Village shall require the developer to follow prepare a Stormwater Pollution Prevention Plan (SWPPP) meeting the requirements of the NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity and DEC Stormwater Management Design Manual.

2. Design and Implementation

It shall be the sole responsibility of the developer's engineer to incorporate into the subdivision and/or site plans the SWPPP for approval by the Village Engineer and Village Superintendent of Public Works. All procedures for inspections and corrections must be completed in accordance with the SPDES General Permit.

The Village Engineer, or other field representative, reserves the right to modify or order periodic maintenance of said erosion control measures.

If any portion of the erosion control devices fail, causing downstream siltation, the developer shall bear the cost for any associated clean up or removal of silt from drainage ways, culverts, or ponds. The Village reserves the right to hold contingency money to insure proper remediation.

G. Storm Drains

1. Minimum pipe size - 12-inch diameter*
2. Minimum velocity when flowing full - 3 fps
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 subject for review by the Superintendent of Public Works and forwarded to the Village Engineer.

H. Storm Laterals

Laterals installed to the right-of-way or easement line shall be a minimum of 6 inches in diameter. Sump pumps and roof runoff will be required to discharge to storm laterals or, in the absence of storm sewers, to splash pads directed to side or rear yard drainage swales.

I. 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. In these instances, the catch basin leads can connect directly to the pipe.

J. Storm Manholes

Storm manholes shall be designed to accommodate the pipes entering and exiting the structures.

A schedule of manhole diameters shall be provided on the final plan.

K. Drainage Easements

Drainage easements shall be provided when requested by the Village. The minimum easement width shall be 20 feet. Where open channel drainage is permitted, easements shall be of a proper width to permit adequate maintenance as approved by the Village.

2.3 Water Mains

All work performed and materials furnished for the purpose of supplying the development with potable water shall comply with the following:

Recommended Standards for Water Works;
Village of Churchville;
Monroe County Water Authority;
NYS Department of Health;
Monroe County Department of Health.

Location of water system appurtenances, such as: water mains, valves, hydrants, meter pits, backflow preventers, etc. shall be coordinated with the Village of

Churchville for consideration of future extensions, maintenance of roads, drainage, aesthetic and related concerns.

2.4 Grading

A. General

The finished grading on developed lands shall provide for the effective removal of storm water runoff to a drainage system.

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.

Drainage shall generally be to side or rear lot swales provided:

1. Swales are of a proper cross-section to permit ease of maintenance by the individual owner.
2. Easements are provided for access and/or maintenance where necessary.
3. Where multi-lot grading is proposed, all swales required for positive drainage will be installed prior to the issuance of a building permit. Easements will be required in this instance to cover all affected lots.

B. Grading Plan

A Grading Plan shall be submitted, with the final plan for any development, showing at a minimum the following items:

1. Existing contours.
2. Proposed finish contours.
3. Spot elevations of proposed finish grades at key locations.
4. Garage floor elevations.
5. Minimum elevations of any architectural opening where flood hazard areas exist.
6. Culvert invert elevations.
7. All elevations shall be established from USC&GS datum and the plan shall show a site benchmark.

8. Drainage flow directional arrows.

2.5 Driveway Design Requirement

Design and location of driveways shall be in accordance applicable Village Standards contained in these regulations and requirements of the New York State Department of Transportation Policy and Standards for Entrances to State Highways. These standards shall also apply to driveways entering on Town, County and Village roads and streets.

A. Vertical Alignment

1. Maximum grade shall not exceed 10%.
2. 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 10 percent.
3. 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.
4. 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.
5. All driveways shall be designed so as to avoid the sheeting of surface water runoff onto an adjacent highway.

B. Horizontal Alignment

1. Minimum radius along the centerline of driveways shall be 60 feet.
2. Minimum radius along the inside edge of driveway shall be 35 feet unless shown otherwise in Standard Details.
3. Driveway pavement shall extend at least 10 feet back from the edge of the travel lane.
4. Driveway turnaround areas, when practical, should be incorporated into all plans.
5. All driveways shall be designed so as to avoid the sheeting of surface water runoff onto an adjacent public highway.

6. Where practical, all driveways are to be a minimum 5 feet from the property lines.

All driveways are to be a minimum distance of 43 feet or twice the width of the driveway (14') plus 15 feet from all intersections as measured from the shoulder.

C. Application Requirements

Written application including a plan and a profile of the driveway may be required by the Superintendent of Public Works for approval.

D. Fire Department Requirements

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 that is 30' x 80' at intervals of 250' 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.

2.6 Driveway Culverts

Design and location of driveway culverts shall be in accordance with applicable Village Standards and requirements of NYSDOT Policy and Standards for Entrances to State Highways. These standards shall apply also to driveways entering on County and Village roads and streets.

- A. Shall be provided along existing road frontage lots to properly convey roadside drainage. The culverts shall be set to the proper grade to allow the natural flow of water. All culverts set shall be subject to the review of the Superintendent of Public Works having jurisdiction on the road (see Appendices H-1.0 and H-2.0 for driveway culvert installation requirements).
- B. Minimum of 12-inch diameter unless they are a part of a larger drainage course, which may require larger diameter pipes.
- C. The culverts shall extend a minimum of 3 feet beyond the edge of the driveway pavement and be provided with end sections or headwalls. Riprap material or other energy dissipation material should be used as determined by the Superintendent of Public Works.
- D. Elevations to be set by U.S.C. & G.S. datum.

- E. Culverts shall have a minimum of 12 inches 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 CMP is used, culverts shall be bituminous coated inside and out.

2.7 Roads

The following designations will be used by the Village to classify roads and their respective design criteria (see Appendices H-1.0 through H-10.0):

- Village Collector/Industrial Road
- Local (subdivision) Road
- Private (non-dedicated)

The basic considerations of each road classification are as follows:

- A. Collector/Industrial
 - 1. Provides connections to major roads and represents major traffic pattern throughout the Village
 - 2. Design speed of 25 MPH or less
 - 3. High volume traffic and/or heavy truck traffic
 - 4. Provides access to local roads
 - 5. Relatively low density of development abutting such a road
 - 6. Represents typical road built or reconstructed by the Village Department of Public works
- B. Local (Subdivision)
 - 1. Densities as permitted by the zoning ordinance
 - 2. Design speeds of 30 MPH or less
 - 3. Low volume of traffic
 - 4. Individual driveways at regular intervals
 - 5. Usually no effect on overall Village traffic pattern
- C. Private (non-dedicated)
 - 1. Has a minimum of 40-feet ownership on a dedicated street
 - 2. Low volume of traffic
 - 3. Has no effect on overall Village traffic pattern
 - 4. Design speed of 25 MPH or less
 - 5. Maintenance covered by deed agreement or Homeowner's Association depending on number of units.

Each of these roads has basic characteristics that 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 on Appendix H-3.0 and H-4.0.

2.8 General Road Design Considerations

A. Right-of-Way

1. Minimum width 60 feet for dedicated roads.
2. Minimum width of 40 feet for private roads.
3. Private underground utilities to be located on easements beyond right-of-way limit.

All dead-end streets shall be constructed to the property line and have either: a cul-de-sac or a hammerhead turnaround designed in accordance with the standards in the Appendix of this manual. Selection of the type of dead-end shall be at the discretion of the Planning Board and Superintendent of Public Works.

B. Horizontal Alignment

The following factors shall be incorporated into the design of each road type:

1. Sight distance must conform to minimum safe stopping sight distance per "Geometric Design of Highways and Streets" AASHTO Latest Edition.
2. Clear sight at intersections
3. No centerline intersection angles less than 75 degrees.
4. Minimum centerline radius of 150 feet.
5. Road pavement intersections shall have a minimum of 35-foot radius.
6. Cul-de-sacs shall not exceed 1,000 feet in length and end with either a cul-de-sac or a hammerhead turnaround (See Appendices for design and radius requirements).
7. Access to future developments will be provided to property lines. Tangent sections shall be used between curves to maintain the proper flow of traffic at design speeds.

C. Vertical Alignment

The minimum length of vertical curves shall be based upon current AASHTO distance, passing sight distance, riding comfort, and headlight sight distance. Vertical curves are required whenever changes in grade exceed 1 percent.

D. Sight Distance Requirements

Refer to the most current edition of AASHTO, *A Policy on Geometric Design of Highways and Streets*, for sight distance and stopping distance requirements.

E. Road Grades

1. Minimum - 0.7 percent with shoulders; 0.5 percent with gutters.
2. Maximum - 8 percent - Maximum grade may exceed 8 percent for short distances with engineering justification.

F. Leveling Areas

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

Leveling areas for driveways shall be a minimum distance of thirty (30) feet from the edge of highway right-of-way and the grade shall not exceed three percent (3%).

G. Road Widths (Refer to Appendices H-3.0)

H. Special Considerations

1. Roadside Swale - Where grades exceed 5 percent and/or unstable soil conditions warrant, the swales shall be designed to control flow velocities.
2. Underdrains / Stone Weeps – Will be required on all Village Collector, Local, and Industrial roads, unless proven to be unnecessary. The method used shall be subject to the review of the Village Superintendent of Public Works. All pipe shall be perforated and shall be a minimum of four inches (4") in diameter.
3. 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 sketch plan submittal.

2.9 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 (see Appendix H-4.0)

1. Local/Subdivision

- a. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Superintendent of Public Works.
- b. Two 6-inch lifts of Type 2 crusher-run stone equally mixed.
- c. Asphaltic concrete courses shall be 3-inches compacted of Type 3 binder and 1-inch compacted of Type 7F top.
- d. Concrete gutters, and curbs refer per Appendices.

2. Collector/Industrial Road

- a. Geotextile fabric shall be used in all areas of unstable sub-base per discretion of the Superintendent of Public Works.
- b. Two 6-inch lifts of Type 2 crusher-run stone equally mixed.
- c. Asphaltic concrete courses shall be 3-inches compacted of Type 1 Base, 3-inches compacted of Type 3 binder and 1-inch compacted of Type 7F top.
- d. Concrete gutters, and curbs refer per Appendices.

3. Private

- a. A minimum of 6-inch lifts of No. 2 crusher-run stone mixed equally. Driveways shall be paved within the right-of-way. Refer to Appendices H-1.0 and H-2.0.
- b. Fabric shall be used in all areas of unstable sub-base.
- c. A private drive off a dedicated road shall:
 - i) Be designed to keep surface water flows from entering the travel way of the dedicated street.
 - ii) Provide soil erosion measures on the site as it is being developed.
 - iii) Provide an adequately sized culvert with end sections or headwall treatment.
 - iv) Finish grade and seed the area immediately upon completion of the private drive base.

- v) Provide a hard surface from the edge of the existing pavement at least 30 feet toward the developed site.
- vi) 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 to provide a leveling area.
- vii) Maximum grade within the development site shall be 10 percent.

NOTE: All depths are compacted thicknesses.

2.10 Concrete Gutters, Concrete or Stone Curbs

All local roads and Industrial/Collector roads to be dedicated to the Village of Churchville shall include gutter or curbs. Refer to the Appendices.

2.11 Sidewalks

Where required by the Planning Board, sidewalks shall be concrete and installed in accordance with design standards contained in Appendix SW-1.0 through SW-4.0. All sidewalk surfaces are to be continuous in accordance with the Americans with Disabilities Act. Where sidewalks are to cross driveways, the driveways are to be saw cut for the concrete sidewalk.

2.12 Monuments

Monuments per Appendix G-2.0 shall be located at:

- A. P.C. and P.T. of all horizontal curves along one side of the right-of-way.
- B. Maximum of 1,000 feet along one side of right-of-way line.

2.13 Reserved Land for Future Use

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

SECTION 3 **Material Specifications**

3.1 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 Village. 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 Village, they shall be removed and replaced with those herein called for at no expense to the Municipality.

3.2 Sanitary Sewers

A. Polyvinyl Chloride (PVC) Pipe for Gravity Sewer

Shall meet the requirements of ASTM D-3034 for Sewer Pipe and Fittings, minimum wall thickness SDR-35. The joints shall be bell and spigot conforming to ASTM D-3212 with elastomeric gasket conforming to ASTM F477. All pipe and fittings shall be made from PVC components as defined and described in ASTM D-1784. Pipe shall be new enough to have manufacturer's specifications still painted on the length of pipe and consist of glossy finish.

B. Polyvinyl Chloride (PVC) Pipe for Sewage Force Mains

Shall meet the requirements of ASTM D-2241 for PVC plastic pipe. Pipe and fittings shall be 160 psi, minimum SDR-21 extruded from clean, virgin, resin compound conforming to ASTM D-1784. Bell and spigot joints are required with elastomeric gaskets conforming to ASTM D-3139. Metallic tracer tape shall be placed over the center of all mains on top of the 18-inch minimum safety cover. Pipe shall be new enough to have manufacturer's specifications still painted on the length of pipe and consist of glossy finish.

C. Ductile Iron (DIP) Pipe for Sewage Force Mains

Shall conform to AWWA C-151, minimum allowable thickness shall be Class 51. Rubber gasket push on joints shall be used in accordance to AWWA C-111. All ductile iron pipe shall be cement-mortar lined in accordance with AWWA C-104.

D. High Density Polyethylene (HDPE) Pipe for Sewage Force Mains

Shall be DR 17, PPI designation PE 3408, and conform to AWWA C906. All joints shall be fuse welded mechanical joints with compression couplings

and stainless-steel inserts. No glued joints allowed underground. Metallic tracer tape shall be placed over the center of all mains on top of the 18-inch minimum safety cover.

E. Sewer Connections for Gravity Sewer

Sewer connections on new sewer main installations shall be made with wye fabricated or injection molded fittings. The minimum strength classifications of these fittings shall be equal to that of the pipe and the fitting shall be compatible with the pipe. Connections to an existing sewer shall be made with GENCO cast iron super "o"-ring gasket, with single-wide stainless-steel band and stainless steel or bronze bolts for sewers up to 14 inches in diameter and GENCO bolt-on saddles for sewers greater than 14 inches in diameter. Connections to mains must be separated by a minimum of 10 feet.

F. Sewer Lateral Pipe for Gravity Sewer

1. Cast iron sewer pipe shall be extra heavy class with rubber gasket joints and maximum lengths equal to 5'-0" per ASTM A-74.
2. PVC pipe shall be of a minimum 4-inch diameter and wall thickness SDR-21 with elastomeric gasket joints, supplied in standard lengths and conform to ASTM D-3034. All SDR-21 pipe will be bedded in stone as indicated in these specifications.
3. No glued joints will be allowed underground, elastomeric or mechanical joints only will be allowed.
4. All tee connections to be Geneco "T" wye saddle model UH.
*All commercial applications within building walls shall be SCH. 40. Consult with Code Enforcement Officer for further limitations.

G. Sewer Pressure Pipe for Forcemain

1. Polyvinyl chloride (PVC) pipe and fittings shall meet the same requirements as PVC force mains.
2. Polyethylene (PE) pressure pipe and fittings shall conform to ASTM D-2737 with pressure class PE 2305.
3. High Density Polyethylene (HDPE) 3408

3.3 Storm Drain

A. Reinforced Concrete Pipe

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 C443.

B. Polyvinyl Chloride (PVC) Pipe

Shall meet the requirements of ASTM D-3034 or ASTM F679, minimum wall thickness SDR 35 with elastomeric gasket joint, ASTM D-3212.

C. High Density Polyethylene (HDPE)

All pipes shall be N12 smooth interior and shall conform to AASHTO M-294. All fittings shall conform to ASTM D1248.

D. Storm Laterals

PVC conforming to ASTM D-3034, with a wall thickness of SDR-35 and a minimum pipe diameter of 6 inches.

E. Catch Basin Leads

Shall be a minimum of 12 inches in diameter (see Appendix ST-2.0); cross-over pipes are to be 12 inch perforated.

1. Reinforced Concrete Pipe.
2. Polyvinyl Chloride Pipe (PVC).
3. High Density Polyethylene (HDPE)

F. Underdrains

Shall be a minimum of 4 inches in diameter, perforated polyethylene. Required on all Village Collector, Local and Industrial Roads unless proven to be unnecessary by the Superintendent of Public Works.

3.4 Manholes and Manhole Ladders

A. Manholes (see Appendix S-1.0 and S-2.0)

Precast reinforced concrete sections shall be manufactured in accordance with ASTM Specification 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 loading 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 (rubber boots/A lok) cast directly into the base walls may be used with compatible pipe material.

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.

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.

1. Shallow Sanitary Sewer Manholes (less than 8' deep)
 - Refer to Appendix S-1.0 for detail
 - Apply epoxy in vicinity of any forcemain connection at the discretion of the Superintendent of Public Works.
 - Step alignment less than 1" (vertical) alignment tolerance
2. Deep Sanitary Sewer Manholes (greater than 8' deep)
 - Refer to Appendix S-1.0 for detail.
 - Apply epoxy in vicinity of any forcemain connection at the discretion of the Superintendent of Public Works.
 - Step alignment less than 1" (vertical) alignment tolerance
 - Eccentric cone riser sections can be used when manhole depth is greater than eight (8) feet
 - Safety platform required when manhole depth is over 14' deep. Fiberglass platform by Access Industrial or approved equal.

B. Manhole Ladders and Steps

Manhole ladders or steps shall be provided in all sanitary and storm manholes and shall be constructed of one of the following materials.

1. Non-corrodible, aluminum magnesium alloy ladders, with intermediate supports at 5-foot intervals.
2. Forged aluminum with drop front design and grooved tread surface.
3. Nylon/Co-Polymer Polypropylene with steel reinforcement manhole steps.
4. Cast iron steps shall not be used.

Steps shall be cast into the 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. The first step shall be a maximum of 32 inches from the manhole cover. Step alignment less than 1" (vertical) alignment tolerance in all manholes.

3.5 Frames and Covers

A. Sanitary Manhole Frames and Covers (see Appendix S-1.0)

Shall be East Jordan Casting Compression water tight manhole frame and cover assembly. The word "Sanitary" in letters not less than two (2) inches high shall be stamped or cast into all sanitary sewer manhole covers. The inside diameter for clearance shall be a minimum of 24 inches.

B. Storm Manhole Frames and Covers

Shall be Neenah R-1723 or East Jordan Casting No. 1203 with a vented cover or other approved equal. The inside diameter for clearance shall be a minimum of 24 inches.

C. Catch Basin Frames and Grates

Shall be rectangular, galvanized (ASTM A-123) and sized to fit gutter inlets or field inlets. The gutter grates shall be NYSDOT size no. 9 to fit the catch basin inside dimensions of 24" x 24". The minimum field inlet shall be NYSDOT size no. 9 to fit a field inlet of 24" x 24" inside dimension.

Catch basin manholes shall be set to allow a NYSDOT size no. 9 grate to be installed.

Frames and grates shall be as specified in NYSDOT Specification Drawing 655-6R1 and Section 655 of the NYSDOT Standard Specification Manual. All grates shall be bolted to the frames.

3.6 Water Mains

All water supply appurtenances shall meet the requirements of the Monroe County Water Authority.

3.7 Concrete Curbs, Gutters and Sidewalks

A. Concrete

1. Shall be a minimum of 5" thick and 4000 psi (28-day strength) Class A concrete conforming to NYSDOT Specification 609.
2. Air entraining admixture conforming to ASTM Specification C-260.
3. Bituminous expansion material 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.
5. Testing is required by the Village as outlined in Section 4.16, C.

3.8 Road Materials (see Appendix H-2.0)

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. Crushed Stone for Underdrain. NYSDOT 703-0201, Crushed Stone, consisting of equal parts of Size 1 and 2 washed crushed stone.

B. Bituminous Pavement

1. Base course shall conform to NYSDOT Specification Section 401, Type 1 (Base Asphalt).
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 Bituminous Joint Filler

Shall conform to NYSDOT Specification Section 705-07.

E. Underdrains

Shall be 4-inch perforated SDR-35 PVC per NYSDOT 706-15 or High-Density Polyethylene Tubing per AASHTO M-252.

Geotextile stabilization fabric is required to be provided under roadways unless determined otherwise by the Village Superintendent of Public Works.

3.9 Monuments

- A. Monuments shall consist of one-half inch (1/2") diameter reinforcing rod embedded in concrete four inches (4") in diameter by thirty inches (30")

deep as shown in Appendix G-2.0. Manufacturer shall be Berntsen, ¾"x3" rod, cap marked Village of Churchville R.O.W.

- B. All monuments shall be shown on finished plans.
- C. Monuments shall be set as a minimum at all exterior corners of the subdivision, on one side of each street and at all changes of direction in the right-of-way.
- D. Maximum of 1,000 feet at one side of the right-of-way.
- E. Monuments shall be set by a licensed land surveyor before the final Letter of Credit Release.

3.10 Street/ Site Lights (see Appendix H-10.0)

All lighting is to be American Revolution Series 247L LED Downlight fixture with a 15' tapered, black pole. Fixture to be ordered with the refractive lens panel option.

3.11 Equivalents

The mention of apparatus, articles or materials by name and such specific description of same as is made herein are intended to convey to the Developer and his Contractor an understanding of the degree of excellence required. The Village 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.

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 Village of Churchville prior to any use in the development, the names and complete description of each article which he proposes to substitute for approval by the Village Board of Churchville. Any costs incurred by the Village or its representatives associated with the verification of substitute equipment and materials will be the responsibility of the Developer.

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SECTION 4 Installation

4.1 General Information

A. Pre-Construction Meeting / Site Construction Activity

A pre-construction meeting is required and scheduled through the Village Office prior to the start of construction of a development. The Developer, site Contractor and Design Engineer shall meet with all utility representatives, Village Department Heads, Village Engineer and project observers to discuss the overall project, its impacts and schedules. A project construction sequence shall be presented in writing and discussed at this meeting.

The following are required to be completed prior to the scheduling of a preconstruction meeting and/or site construction activity taking place:

1. Final Subdivision / Site Plans approved and signed, copies and PDF provided to the Village.
2. Final SWPPP approved and acceptance form signed by the Village MS4 Official.
3. NOI and SWPPP Acceptance Form submitted to NYSDEC. NYSDEC acknowledgement letter provided to Village Office.
4. Village of Churchville Stormwater Maintenance Agreement completed and forwarded to Village Office, CEO, Village Construction Inspector, and Village Engineer.
5. The Easement Package as outlined within this manual (section 5.07) is to be provided to the Village Construction Inspector for review. The Easement Package is to be forwarded to the Village Attorney for review.
6. All agency approvals and/or permits required have been forwarded to the Village Office.

A Surety Estimate has been approved by the Construction Inspector and Village Engineer, recommended by the Planning Board, approved by the Village Board, and provided to the Village Clerk. Letter of Credit is established and evidence provided.

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.

C. Protection of Property and Work

1. The Contractor shall conduct his operations to prevent damage to trees, garden plots, shrubbery, pipelines, 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 Village 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 preconstruction meeting. The schedule shall be reviewed at the preconstruction meeting and revised if necessary. No work will begin until an acceptable schedule is on file with the Village. Hours of Operation within the Village of Churchville are the following:

1. Weekdays from 7:00 am to 7:00 pm.
2. Saturdays – No work is permitted (without 3-days advance notice and approval).
3. Sundays – No work is permitted.

4. No work is permitted on Holidays observed by the Village.
5. The Applicant / Contractor shall provide notification for work being conducted on other Village Holidays with the Village Construction Inspector and Village CEO not less than 48 hours prior to permit scheduling.

E. Permits

The Developer shall secure all necessary permits from the Village including the Code Enforcement Officer, Superintendent of Public Works and any other agency who may have control over any work prior to the start of construction.

F. Existing Utilities or Structures

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.

The Contractor shall maintain site as needed to prevent entry of mud, debris, etc. into existing utilities or onto streets near the site as required under Section 4.09 (e).

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

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. The Village of Churchville may stop work when the Contractor has no responsible agent on the project or if the Village feels that the Contractor is not performing the work in the best interests of the Municipality.

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. 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 which have been previously overlooked by the Village 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 Village.

4.2 Erosion and Sediment Control

- A. Follow all requirements of the Stormwater Pollution Prevention Plan.
- B. Prevent direct discharge from dewatering pumps and surface runoff from the construction sites to storm sewers, culverts, streams or ditches. Intercept and conduct surface runoff and discharge from dewatering pumps to siltation ponds before discharging to natural drainage channels.
- C. Maintain temporary erosion and siltation control facilities during the construction period until final grading, landscaping and permanent erosion control are completed. At that time, remove the temporary facilities, after obtaining authorization from the Engineer for the Village, and complete the site work as specified.
- D. Effective implementation of erosion and sediment controls requires good construction management. Proper management can reduce the need for maintenance of structural controls, regrading of severely eroded areas, and reconstruction of controls that were improperly implemented. Good site management results in efficient use of manpower and financial savings.
- E. Site management for effective implementation of erosion and sediment controls involves the following:
 - 1. Clear only what is required for immediate construction activity. Large projects should be cleared and graded as construction

progresses. Mass clearing and grading of the entire site should be avoided.

2. Restabilize disturbed areas as soon as possible after construction is completed. Certain sections of large construction projects may be completed before others and be ready for stabilization before the total project is completed. Waiting until the end of the project to commence all site stabilization may leave areas exposed for an unnecessarily long duration.
3. Divert offsite runoff from highly erodible soils and steep slopes and convey to stable areas.
4. Physically mark off limits of land disturbance on the site with tape, signs, or other methods, so the workers can see areas to be protected.
5. Make sure that all workers understand the major provisions of the erosion and sediment control plan.
6. Designate responsibility for implementing the erosion and sediment control plan to one individual.
7. Implement a daily inspection program to determine when erosion and sediment control measures need maintenance or repair. Pay particular attention to the inspection following rainfall events.

4.3 CLEARING & GRUBBING

- A. GENERAL - Site preparation consists of clearing and grubbing, topsoil removal and stockpiling, protection of existing facilities, providing temporary access, erosion and siltation control, and related work.
- B. CLEARING AND GRUBBING
 1. Clear and grub all areas of excavations, trenches, embankments, and areas to be graded by removing all trees, stumps, roots, brush and debris within the limits indicated on the drawings. All trees, shrubs and vegetation that are not to be removed shall be protected and preserved.
 2. Arrange for disposal of clearing and grubbing materials satisfactory to the New York State Department of Environmental Conservation and the Village. Burning of debris in the work areas is not permitted.
 3. All work shall be in accordance with applicable requirements of NYSDOT 201 - Clearing and Grubbing.

- C. TOPSOIL REMOVAL AND STOCKPILING - Remove and stockpile topsoil from areas to be excavated and graded. Topsoil shall not be removed from the project site, but shall be retained until it is used in landscaping of project sites. Excess topsoil may be removed and used following applicable regulatory guidelines.
- D. TEMPORARY ACCESS
 - 1. Provide and maintain temporary parking areas and access roads to project sites for use by all Contractors on this project, and for delivery of materials.
 - 2. Maintain the temporary roads and parking areas in serviceable condition until the permanent roads are completed.
 - 3. Mud pads shall be constructed at all construction entrances where deleterious material may be tracked onto public highways.
 - 4. Material used for mud pads shall not be used as road subgrade or subbase.

4.4 EARTHWORK

- A. SITE CONDITIONS - The Developer shall generally maintain his development or construction site in a neat and nuisance-free condition. Cellar excavations and trenches shall not be left open for prolonged periods or be allowed to fill with water and thereby create a hazard.
- B. SIDE SLOPES - Where open storm drainage ditches or swales are constructed, the side slopes and bottom shall be neatly graded and left in a clean condition. Side slopes shall be topsoiled and seeded with perennial rye grass.
- C. STOCKPILING - Vacant, unsold lots shall not be used as a depository for scrap lumber, excess earth, or trash. Earthen material may be stockpiled if properly graded and seeded.
- D. GRADING
 - 1. Site grading shall be completed to within one (1) foot of finished grades and contours shown on the grading plan before starting any trench excavation, and shall include grading of lots, drainage channels, detention ponds, temporary siltation ponds, and roadways.

2. Graded areas shall be relatively smooth and free of ruts, depressions or mounds, and shall be graded for proper drainage.
- E. SEPARATION OF BACKFILL MATERIAL - Excavated material which is suitable for backfill shall be separated from earth excavation which is unsuitable for backfill and rock, boulders, frozen earth, paving materials, concrete, and stones larger than 8 inches in their greatest dimension. These materials which are not to be used for backfill shall be hauled away and properly disposed of at a site to be arranged for by the Contractor.
- F. EXCAVATED MATERIAL, SELECT - Dry material excavated on site, from which all pavement, concrete, cinders, ashes, refuse, organic matter, topsoil, sod, roots, frozen material, boulders, rock, or stones larger than 2 inches in the greatest dimension, or other material which in the opinion of the Engineer is not suitable, has been removed.
- G. EXCAVATED MATERIAL, SUITABLE - Dry material excavated on site, from which all pavement, cinders, ashes, refuse, organic matter, topsoil, sod, roots, frozen material, stones larger than 6 inches in the greatest dimension, or other material which in the opinion of the Engineer is not suitable, has been removed.
- H. GRANULAR FILL - Fill material conforming to NYS DOT 203-2.02C, with all particles passing a 4-inch square sieve.
- I. DEWATERING - Excavations shall be dewatered so that structures are not installed in water. The Contractor shall provide pumping equipment and other methods for dewatering. The discharge from dewatering equipment shall be conducted to sedimentation basins and silt traps before discharging to natural drainage channels, gutters, drains, or storm sewers. Surface water shall be diverted or otherwise prevented from entering excavations and to prevent damage to adjacent property.

Water shall not be allowed to soften the bottom of the excavation. If the bottom becomes soft due to failure to keep the excavation dry, the softened material shall be removed and replaced with crushed stone.

J. EMBANKMENTS

1. Backfill and embankments consist of placing and compacting backfill material in trenches and around structures, and construction of embankments and fills, including maintenance of backfilled surfaces, disposal of excess excavated material, and related work, and shall generally conform to applicable requirements of NYSDOT 203.

2. Embankments and fills shall be completed before installation of piping and appurtenances is started.
3. In general, install fills and backfill trenches with excavated material provided that the excavated material is suitable in the opinion of the Engineer. Where there is a deficiency of excavated material due to the rejection of a part thereof, excess excavated material from other portions of the project may be used if acceptable.
4. Granular fill shall be used for backfill, where directed by the Engineer or where there is a deficiency of suitable or select excavated material on the project.
5. Construct fills and embankments using select excavated material within 2 feet of finished grade, and suitable excavated material below depths of 2 feet within finished grade. Place and compact fill material in layers not to exceed 12 inches and as specified under compaction requirements.
6. Rework embankment and fill that does not conform to these specifications to meet the requirements, or remove and replace the material with acceptable fill. Compact all fill material placed before the end of each work day. Grade the final layer placed each day for proper drainage to prevent ponding of surface run-off on the fill.

4.5 Grading

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 situation basins, etc.

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.

4.6 Trench Excavation

A. Excavation

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 Village or its representative.

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.

B. 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.

C. Depth of Trenches

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.

Any extra excavated depth by the Contractor shall be filled with compacted crushed stone to the proper grade required.

The trenches for water pipe shall be per Monroe County Water Authority and Department of Health requirements.

D. Tunneling/Boring

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

E. 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.

F. 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. No discharge to the sanitary sewer system is allowed.

G. Bottom of Trench

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. 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. See Appendix S-5.0 for specific material bedding requirements.

It is the intention of this specification to achieve not less than Class "B" pipe bedding.

H. Suitable Bedding and Safety Backfill Material

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 Village.

Additional twelve (12) inches of crushed stone or concrete cradle when the trench bottom does not provide sufficient bearing capacity or when specification requires specific bedding for certain utilities.

Sand encasement shall be ordered by the Village 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.

4.7 Pipe Installation

A. 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. Saddle connections on sanitary sewer shall be concrete cradled. Wye connections may be stone encased with the approval of the Village of Churchville.

B. Laying Pipe and Castings

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. All PVC pipe shall be glossy with the manufacturer's marks legible. 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 except during the actual pipe laying.

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.

After the pipe has been placed and adjusted to line and grade, the bed shall be shimmed 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.

C. Cutting Pipe

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

4.8 Manhole Construction

A. General

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.

The manhole bed shall be excavated level and include a minimum of 6 inches of crushed stone.

Manhole risers and flat slab covers shall be precast reinforced units. Manhole bases may be precast "Monobase" or field poured with 4,000 concrete psi.

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.

Interior and exterior concrete surfaces shall be sealed by the supplier and touched up or recoated by the Contractor with like material.

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.

All openings and joints in the manhole sections shall be completely filled once the sections are set, with approved caulk and enhanced with Xypex Admix, sealed with 2 coats of approved bitumastic coal tar sealer.

*NOTE: When PVC is used all openings around pipes shall be completely filled with 100 percent epoxy non-shrink grout.

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 a maximum of 32 inches below finished grade and continue to the top of the bench wall.

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. Manholes with 2 or more inverts shall have a smooth transition of flow.

D. Drop Manholes (see Appendix S-6.0)

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 stone encasement extending not less than 2 feet along the main sewer.

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. Sealing of Manholes

All manholes shall be sealed with two (2) coats of approved bitumastic coal tar 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.

4.9 Catch Basins

Catch basins shall be constructed as shown in the Appendix ST-2.0 or as shown on the plans for special conditions. Catch basins shall be constructed of precast concrete. Adjustments to finished elevation shall be made with cast-in-place concrete; bricks, blocks and grout are not allowed.

All catch basins shall be coated inside and outside with two coats of heavy-duty coal tar sealer.

4.10 Sewer Laterals (see Appendix S-3.0)

Sewer laterals shall be installed to the right-of-way (or easement) line for all lots. Each service shall be located with a two-inch by four-inch (2"x 4") hardwood or pressure-treated stake extending a minimum of three feet (3') above finished grade. The stakes shall be color coded in conformance with Industrial Code 53 to denote the type of service they represent.

Sanitary Sewer connections on new sewer main installations shall be made with wye fittings only. Connections to an existing sewer mains and HDPE storm sewers shall be made with approved saddles.

Select backfill shall be provided for all service trenches. Bedding and backfill quality shall be at the discretion of the Village representatives at the site.

4.11 Backfilling and Finishing

A. General

Trenches shall be immediately backfilled following the installation of utilities unless specifically changed in writing by the Design Engineer. 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

Utilities shall have a minimum of six (6) inches crushed stone bedding and a minimum of twelve (12) inches of crushed stone on each side and over top. Crushed stone shall be NYSDOT 703.02 #1 & #2 or #1 & #1A. The material must not be thrown down from above faster than the workmen below can properly distribute and compact it.

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

All utility lines or laterals that cross existing or proposed streets shall be backfilled with crusher run stone conforming to NYSDOT 304-2.02

Gradation Type 2. Crushed or screened gravel may be used with the approval of the Village.

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.

In no instance shall spare native material be used for backfill to be excavated at a later date for crusher run stone backfill.

Backfill shall be compacted in accordance with 4.11.

E. Cleaning Up

All roadways, intersections, gutters, and sidewalks shall be routinely cleaned of accumulated debris, sediment and tools throughout the construction process.

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.

Rough clean up along the route shall immediately follow installation procedures. Large spoil banks will not be permitted in developed areas.

Final clean up and landscaping shall proceed immediately after the installation, testing and approval of the facility.

Erosion control measures must be maintained throughout the construction process and removed only upon the approval of the Village.

In all cases, the project site shall be restored to a condition equal to or better than that, which previously existed.

4.12 Compaction

Compaction densities specified herein shall be the percentage of the maximum density obtainable at optimum moisture content as determined and controlled, in accordance with ASTM D1557. Field density tests shall be made in accordance with ASTM D6938.

Each layer of backfill shall be moistened or dried as required and shall be compacted to the following densities, unless otherwise specified.

A. Select Fill

Under all existing or proposed roads, driveways, parking areas 95%.

All other areas 85%.

B. Methods and Equipment

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

C. Testing

1. Field density tests may be ordered by the Village 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 Village to issue a stop work order on a project.

4.13 Testing of Underground Utilities

A. General Information

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. These tests shall be conducted in the presence of the Village. No test will be accepted unless witnessed by the Village. Records and date of these tests shall be submitted to the Municipality as part of the record drawing information.

Water used by the Developer during any testing procedures will be paid for by the Developer - all hydrants for water supply or testing use shall be operated by the Monroe County Water Authority.

B. Sanitary Gravity Sewers

1. All sewers shall be flushed clean by the Contractor.
2. All flexible pipe shall be tested for deflection. The deflection test shall be conducted after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system.
 - a. No pipe shall exceed a deflection of 5 percent. If deflection exceeds 5 percent, replacement of the defective sewer will be required.
 - b. The required mandrel test for deflection will be supplemented with a new required videotaping.
 - c. The contractor shall flush all new sewer mains and video tape all mains. Digital copy of each section clearly labeling manhole to manhole with digital references showing the exact location of each sanitary wye. Digital media shall be provided in MJPEG or AVI format.
 - d. The test shall be conducted after the final backfill has been in place at least 30 days. After testing, the Engineer will make a complete visual inspection of the system. The Contractor shall remove and replace manhole covers and furnish lights to assist the Engineer in making this inspection. The visual inspection (lamp test) is to verify that the pipes are straight and true in line and grade and to verify that settlement has not occurred. A full-unobstructed view shall be visible from manhole to manhole. The Contractor shall promptly repair all defects.
3. Each manhole shall be subjected to an infiltration or exfiltration test as determined by the Village.
 - a. Water Testing - Each manhole shall be filled with a maximum of 10 feet of water, subjected to a 24-hour test and show a loss of water not to exceed 15 gallons/24 hours for a 4-foot IDMH. Infiltration tests shall adhere to the same limits.
 - b. Vacuum Testing - Each manhole shall be subjected to a vacuum of 10 inches of Hg for one minute with an allowable loss of 1 inch of Hg.

Manhole Depth	Diameter	Time to Drop 1" Hg
10' or less	4'	60 Seconds
10' to 15'	4'	75 Seconds
15' to 25'	4'	90 Seconds

- c. For manholes 5' in diameter, add an additional 15 seconds, and for manholes 6' in diameter, add an additional 30 seconds to the time requirements listed in the above table.9. Conduct all "final" tests in the presence of the Engineer, and in accordance with ASTM Standards. Engineer shall be notified 24 hours in advance.

C. Sanitary Gravity Sewer

Building sewers shall be tested with the main sewer and the following procedure shall be used:

1. The test shall be conducted between two (2) consecutive manholes.
2. The test section of the sewer line shall be plugged at each end. One of the plugs used at the manhole must be tapped and equipped with air inlet connection for filling the line from the air compressor.
3. Ends of building sewers, cleanouts, stubs and fittings into the sewer test section shall be properly capped or plugged, and carefully braced against the internal pressure to prevent air leakage.
4. An air hose shall be connected to tapped plug from the portable air control equipment which shall include valves and pressure gauges to control the air entry rate, and to monitor the air pressure in the pipeline.
5. A second air hose shall be connected between the air compressor and the air control equipment.
6. Supply air to the test section slowly, filling the pipeline until a constant pressure of 3.5 psig is maintained. The air pressure shall be regulated to prevent the pressure inside the pipe from exceeding 5.0 psig.
7. When constant pressure of 3.5 psig is reached, throttle the air supply to maintain the internal pressure above 3.0 psig for at least five minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall.
8. After the stabilization period, the air pressure shall be adjusted to 3.5 psig and the air supply disconnected. Observe the gauge until the air pressure reaches 3.0 psig. At 3.0 psig, commence timing with a stop watch which is allowed to run until the line pressure drops to 2.5 psig, at which time the stop watch shall be stopped.

The time required, as shown on the stop watch, for a pressure loss of 0.5 psig shall not be less than the time shown in the following table:

Pipe Diameter	Minutes
4	2.0
6	3.0
8	4.0
10	5.0
12	5.5
15	7.5
18	8.5
21	10.0
24	11.5

9. A test air pressure correction shall be required when the prevailing groundwater is above the sewer line being tested. Under this condition, the air test pressure shall be increased to 0.433 psig for each foot the groundwater level is above the invert of the pipe.
10. When building sewers are tested with the main sewers, the time requirement shall be determined by averaging the time for each diameter in proportion to the length of each size of pipe tested.
11. If the length of the sewer being tested is less than 200 feet, an adjustment shall be made for the length and diameter of pipe in determining the allowable length of time for the loss of air at the average rate of 0.0011 cubic feet per minute per square foot of internal pipe surface under test from 3.0 psig to 2.5 psig.

D. Sanitary Pressure Sewer

Pressure tests shall be made only after the completion of backfilling operations and at least 36 hours after the concrete thrust blocks have been cast.

The duration of pressure tests shall be one hour, unless otherwise directed by the Village. Test pressure shall be 100-psi minimum or a pressure of 2-1/2 times the maximum system operating pressure, whichever is greater. All tests are to be conducted in the presence of the Village. Allowable leakage shall be as specified in shall be AWWA standards for water main pipe.

The pipeline shall be slowly filled with water. The specified pressure, measured at the lowest point of elevation, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Village.

During the filling of the pipe and before applying the specified pressure, all air shall be expelled from the pipeline by making taps at the point of highest elevation. After completion of the test, the taps shall be tightly plugged at the main.

E. Storm Drains

All storm sewers shall be flushed clean by the Contractor and in the presence of the Village of Churchville Construction Inspector or Approved Designee the lines shall be lamped.

F. Defective Areas

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.

That portion of the system shall then be retested until satisfactory results are obtained. Use of repair clamps will not be permitted by the Village.

4.14 Surface Improvements

A. General Information

The Contractor shall not proceed to construct any surface improvements, including roads, gutters and/or sidewalks until the underground system has been installed, tested and approved by the Village.

Careful attention shall be given by the Contractor to obtain the necessary compaction densities as specified. In general, the soils in Churchville preclude ultimate compaction in a short period of time due to the high clay content in the soil. Therefore, paving of the top road surface may be delayed by order of the Village of Churchville for a period of one (1) year or at least until a winter season has passed since the completion of the road binder course.

4.15 Roads/Streets

A. Subgrade

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.

Proof-rolling shall be completed in the presence of the Village Inspector and Superintendent of Public Works. Replacement unsatisfactory subbase materials maybe needed based upon the judgement of the Village.

Geotextile shall be required by the Village to stabilize the base or subbase before the Contractor proceeds with installation. This requirement may be waived by the Village Superintendent of Public Works upon submission of appropriate subsurface soil test results to prove that this fabric is unnecessary.

No movement shall be observed in the subgrade material as the roller passes.

When the subgrade is completed, the Contractor shall notify the Superintendent of Public Works and the Village Engineer for a base determination. Upon the review and written approval of the subgrade by the Superintendent of Public Works and the Village Engineer, the base material may be placed.

B. Base Material

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 straightedge 16 feet in length, any bump or depression over 1/4 inch from the theoretical grade line shall be satisfactorily eliminated. When the base has been prepared to the satisfaction of the Superintendent of Public Works, the Developer may place the binder course. If base conditions are changed as determined by the Superintendent of Public Works 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 Section 702-10 or 702-11 with 0.5 gallons per square yard as determined by the conditions and not more than 24 hours prior to placement of binder asphalt.

C. Bituminous Pavement

1. Binder shall be placed and compacted to a minimum finished layer thickness of as indicated in above with a self-propelled asphalt spreader and rolled according to NYSDOT Specifications 401-3.06 and 401-3.12. Before applying the upper course, any irregularities in the base or binder course shall be eliminated but at

no time will "cold patch" or "winter mix" be allowed on the base or binder for repair work.

2. Before the surface course is placed, the binder will be cleaned by the installer and inspected by the Superintendent of Public Works to determine the condition of the pavement. It shall be necessary to apply a tack coat at the rate of 0.1-gallon/square yard before placing the surface unless this requirement is waived by the Superintendent of Public Works.
3. Surface Course shall be placed and compacted to a minimum finished layer thickness of 1 inches with a self-propelled asphalt spreader and rolled in accordance with NYSDOT Specifications 401-3.06 and 401.3.12.

D. Temporary Road Construction

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.

This temporary road shall be reviewed by the Superintendent of Public Works and approved in writing prior to the issuance of any Certificate of Occupancy. The Village may accept dedication of the road if sufficient monies remain in the financial guarantee to top the road the next year.

E. Continuation of Existing Village Roads

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.

All pavement joints shall receive a tack coat before placing the binder or top course.

Village Roads within approved subdivisions are to be constructed to the furthest extent possible, whether it be the property line or phase boundary, and shall terminate with an approved Village Turnaround.

F. Underdrains

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

underdrain shall be laid on four inches (4") of compacted stone and require six inches (6") of stone above and around the pipe.

4.16 Concrete Gutters and Sidewalks

A. Concrete Gutters

1. Concrete gutters shall be a minimum of 6 inches in depth at the invert 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 formwork.
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.

Prior to final paving, the gutters 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 Public Works, they shall be removed and replaced. They shall also be backed up with select fill (no cobbles greater than 3 inches) to help prevent any movement during paving.

7. Gutter replacements shall conform to the existing gutter regarding finish and color.

B. Concrete Sidewalks

1. Shall be designed to meet the Americans with Disabilities Act (ADA) requirements.

2. Minimum 5 inches in depth and constructed true to shape, line and grade. Sidewalks installed through driveways shall be 5 inches thick and be reinforced with 6" x 6" wire mesh (10 gauge). Concrete shall be minimum 4000 psi, Class A, air entrained.
3. Minimum width shall be 5-feet.
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 toward street level.
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 50 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.
9. A 10-foot sidewalk easement may be required.
10. Crosswalks and signage shall be provided as per the ASHTO and NYSDOT standards and in accordance with ADA requirements.

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 Public Works.

4.17 Monuments

The monuments shall be installed at those locations shown on the approved final plan 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 Village by a Licensed Land Surveyor as to their accuracy.

4.18 Final Grading

Upon satisfactory completion of the utilities and roads, the entire area within the right-of-way shall be raked, graded and hydroseeded according to the approved plans.

The site Contractor shall be responsible for all work within the right-of-way while also maintaining the erosion control. In those areas where home building has started, clean up and site maintenance will then become the responsibility of the builder.

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.

4.19 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.

4.20 Signs

Street and traffic signs shall be supplied by the Developer and installed by the Village in accordance with standards outlined in the Manual of Uniform Traffic Control Devices (State of New York, Department of Transportation, Division of Traffic and Safety).

Signs and posts shall be ordered by the Superintendent of Public Works for consistency throughout the Village. Upon receipt of signs, they shall be placed in the field by the Department of Public Works with sign post and installation cost the responsibility of the Developer.

4.21 Crosswalk Requirements

Are to comply with the Manual Uniform Traffic Control Devices (MUTCD) requirements. And the Appendices SW – 2.0 through SW-4.0.

SECTION 5 Requirements for Dedication and Project Acceptance

5.1 General

All construction within the right-of-way or on lands to be dedicated to the Village shall be complete with a final site inspection and written approvals of the construction by the following:

- Superintendent of Public Works
- Code Enforcement Officer
- Village Engineer

5.2 Monuments

Monuments shall have been set in their required locations and certified by the applicants licensed Land Surveyor.

5.3 Grading

Final grading and hydroseeding and mulching to achieve full stabilization shall be completed within the right-of-way and all spoil removed from the site.

5.4 Landscaping

All landscaping is to be completed as per the approved subdivision and site plans and inspected by the Superintendent of Public Works, Code Enforcement Officer, Construction Inspector, and Village Engineer when applicable.

5.5 Lighting

All lighting is to be LED, Dark Sky Compliant, and in accordance with the Village Code.

5.6 Street Signs

All street and traffic signs, including street identification numbers, shall be properly set in their designated locations.

5.7 Road and Easement Dedications

The Dedication process requires many documents, which have to be prepared and checked by many departments within the Village of Churchville. Therefore, we recommend you start the process right after the binder is laid in the road. This would give sufficient time for you to prepare documents, review them, and obtain the necessary Resolution(s) at Village Board meeting(s) well before you

require a Certificate of Occupancy (C of O) for a completed dwelling.

The developer and/or the developer's engineer(s) contacts the Churchville Department of Public Works for the necessary Road and/or Easement Dedication packet of forms.

A. Documents for the granting of easements

1. Easement(s) with Legal Description(s);
2. Easement Area Survey Map(s);
3. Form TP-584.2 for the Easements (only one is needed for all easements);
4. Bill of Sale;
5. Survey Map;
6. Attorney's Certification of Title (must show the Grantor's ownership interest in the property and show that the subject property is free and clear of all liens and encumbrances that would affect the granting of said easement(s). If there are any liens or encumbrances that would affect the granting of said easement(s), they must all be cleared, discharged or satisfied to the Village's satisfaction prior to the Village accepting the easements);
7. If Developer is a corporation or limited liability company:
 - a. a copy of the corporation's Articles of Incorporation or LLC's Articles of Organization,
 - b. Filing Receipt with the New York State Department of State,
 - c. Certificate of Good Standing,
 - d. Franchise Tax Report,
 - e. LLC's Operating Agreement and
 - f. Resolution of the corporation's Board of Directors/LLC's Members authorizing the transfer of the easements and authorizing the officer who will be signing the documents to sign them;
8. Payment by Grantor of all Recording and Filing Fees

B. Documents needed for conveying title to the roadbed

1. Warranty Deed with Legal Description (for dedication of road(s));
2. TP-584;
3. RP-5217;
4. Release;
5. Bill of Sale;
6. Survey Map;
7. An Abstract of Title to be retained by the Village;
8. Preliminary Fee Title Insurance Policy or Attorney's Certification of Title (Policy or Attorney's Certification of Title must show the Grantor's ownership interest in the property and show that the subject property is free and clear of all liens and encumbrances. If

there are any liens or encumbrances, they must all be cleared, discharged or satisfied to the Village's satisfaction prior to the Village accepting the deed and/or easements);

9. If Developer is a corporation or limited liability company:
 - a. a copy of the corporation's Articles of Incorporation or LLC's Articles of Organization,
 - b. Filing Receipt with the New York State Department of State,
 - c. Certificate of Good Standing,
 - d. Franchise Tax Report,
 - e. LLC's Operating Agreement and
 - f. Resolution of the corporation's Board of Directors/LLC's Members authorizing the transfer of the easements and authorizing the officer who will be signing the documents to sign them;
 10. Payment by Grantor of all Recording and Filing Fees
- C. After the documents, survey descriptions and maps have been prepared, they are returned to the Department of Public Works for review. If there are no changes, the Superintendent of Public Works forwards to the Village's Attorney.
 - D. The Village's Attorney reviews the documents for accuracy. If the documents are in order, Counsel will forward them to the Village Board along with Board Resolutions for the Village Board to adopt and an Order for acceptance of dedication.
 - E. Once the Village Board has adopted the Board Resolution(s), the Village Mayor will sign all approved documents. The developer or the developer's agent will need to arrange with the Village for pickup of the signed documents and arrange to have them recorded in the Monroe County Clerk's Office. Immediately after the documents have been recorded, the developer or the developer's agent must send to the Village Clerk, the Village Building Department, the Village Department of Public Works and the Attorney for the Village a copy of the recording receipt from the County Clerk showing the recording date and liber and page of each document that has been recorded. The Village Code Enforcement Officer will not issue a Certificate of Occupancy until it has this written proof of recording or there is sufficient surety to complete the dedicated facilities.
 - F. The developer must satisfy all requirements for dedication and project acceptance as outlined in this document.

5.8 Record Drawing Requirements

A. General Process Requirements

1. Two prints of the record drawings and one digital copy of the information in compliance with the list of requirements below, shall be submitted to the Village Engineer and Superintendent of Public Works.
2. Once approved by the Village Engineer, two (2) copies of the record drawings and two (2) CD's containing the digital information is to be provided to the Superintendent of Public Works.

B. Specific Requirements

The following requirements are to be provided to insure compliance of any future as-built drawings submitted to the Village of Churchville:

1. All survey data to be in NAD 83 coordinates. NY Central projection units – US Feet.
2. All elevations to be based on NAVD 88 Orthometric Heights.
3. A minimum of one site bench mark will be established.
4. All infrastructure dedicated to the Village of Churchville is to include but not limited to: monuments and pins delineating dedicated Village of Churchville properties, storm & sanitary manholes, catch basins, sewer cleanouts, light poles and stormwater management facilities.
5. Delivered to the Village of Churchville in CADD, TIF and PDF format that include the following attributes with each structure:
 - Northing
 - Easting
 - Ortho Height
 - Point Code
 - Point I.D.
 - Material
 - Manufacturer
6. All required points and attributes are to be included in separate files in either csv, txt or ascii format so that they can be administered and uploaded onto the Village of Churchville's GIS System.

7. Sanitary sewer lines to be delivered in CADD, TIF and PDF format with attribute data to include length of line, material, size, inlet line, outlet line, slope line, and flow direction arrows.
8. Storm sewer lines to be delivered in CADD, TIF and PDF format with attribute data to include length of line, material, size, inlet line, outlet line, slope line, and flow direction arrows.
9. All data is to be delivered to the Village of Churchville on a readily accessible digital file format.

C. Drawing Information

The following Record Drawing information shall be provided as described:

1. Locations and Elevations of all sanitary/storm manholes, catch basins, culvers, this includes invert and top elevations of Sanitary sewers, watermain, storm sewers, slopes, size and lengths.
2. Locations and Elevations of all water system valves, curb boxes, fire hydrants, sanitary sewer lateral and main connection at wyes, Sanitary sewer clean-outs, storm lateral, water service line and curb box, street signs.
3. Finished Elevations and slopes of road surfaces and gutters, including road name and curve table.
4. Locations and finished elevations of all dedicated stormwater management facilities and outfall structures.
5. Locations of all light poles and sidewalks.
6. Liber/page number of any easements or right-of-way and including floodplain numbers.
7. Any other significant details affecting the operation or maintenance of any system by the Village or districts.
8. All record data and test results shall be supplied to the Village/Districts and are subjected to review and approval at least 15 days prior to any dedication procedure.
9. If the developer cannot provide the record information as detailed above the Village may elect to complete the record information at the Developer/owners expense.

5.9 Letter of Credit Approval Procedure

The following is the require procedure for review and approval of letters of credit:

- A. Developer submits the following to the Village Construction Inspector:
1. Cover letter identifying the project and requested letter of credit amount.
 2. Completed "Engineers Estimate".

- B. Village Construction Inspector reviews the Letter of Credit Estimate for accuracy.
- C. Village Construction Inspector submits to Village Engineer the following:
 - 1. Copy of developer's submittal package
 - 2. Transmittal Letter
- D. Village Engineer compares Letter of Credit to plans and prepares a review letter to be submitted to the Planning Board.
- E. Planning Board reviews Village Engineer's Letter and recommends acceptance of the surety and refers the matter to the Village Board for approval.
- F. Village Board accepts by resolution the surety and copies of the resolution are sent to the Village Engineer, Department Heads, Village Clerk, Planning Board Chairperson, Village Mayor, and the applicant and a copy filed with the Village.

5.10 Letter of Credit Release Procedure

The following is the required procedure for review and approval of both partial and final letters of credit releases:

- A. Developer submits the following to the Village Engineer:
 - 1. Cover letter identifying the project and requested letter of credit to be released.
 - 2. Completed Letter of Credit Release Form.
 - 3. Completed "Engineer's Estimate".
- B. Village Engineer reviews the Letter of Credit Release request and reviews work completed with the Inspector.

Once quantities are verified, Village Engineer submits a letter of recommendation to the Mayor, Village Clerk and Superintendent of Public Works.
- C. Village Board adopts resolution to release requested letter of credit amounts.
- D. Partial release from the Letter of Credit may be granted by the Village Board as individual components of the subdivision and/or site development are completed. This shall not be construed as final acceptance of the work by the Village.

5.11 Maintenance Guarantee

The submission and acceptance of a two (2) year Maintenance Bond or the use of 10 percent of the value of the dedicated items in the established Letter of Credit (LOC) for the project, for all improvements to be offered to the Village for dedication. Maintenance sureties 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 dedicated items. [The Maintenance surety shall be approved as to form and content by the Municipal Attorney prior to any dedication procedure and final release of funds.]

5.12 Final Release of Funds

Prior to the authorizing of the final release from the Letter of Credit, a final site inspection and approval is to be provided by the Village Department Heads and Village Engineer (upon request by the Village). The Village Board, upon recommendation from the Village Engineer, receipt of the General Site Improvements Offered for Dedication Forms signed by the appropriate Department Heads and/or Staff, receipt of a two (2) year Maintenance Guarantee, and certified record (As-Built) drawings approved by the Superintendent of Public Works, shall then authorize the final release of monies retained in the Letter of Credit.

A minimum of 60 days prior to the Maintenance Guarantee expiring, a final inspection completed by the Village Department Heads and submission of the Final Inspection Form for Expiring Maintenance Bonds is to be provided to the Village.

If the required improvements are not completely installed within the period fixed, or extended by the Village Board, or the submitted Final Inspection Form for Expiring Maintenance Bonds identifies deficiencies, the Village Board may declare the Letter of Credit/ Maintenance Guarantee in default and collect the amount payable thereunder. Upon receipt of such amount, the Village shall install such improvements as were covered by the Letter of Credit/ Maintenance Guarantee and are commensurate with the extent of building development which has taken place in the subdivision, not exceeding in cost, however, the amount collected upon the Letter of Credit/ Maintenance Guarantee.

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Appendices

DATE SUBMITTED

Village of Churchville
Planning Board Secretary
23 East Buffalo Street
Churchville, New York 14428

Attn: Planning Board Secretary

APPLICATION

RE:

PROJECT NAME

PROJECT LOCATION

Board Members:

Pursuant to Chapter 92 (Subdivisions), Chapter 250 Article 17 (Special Use Permits) and/or Chapter 250 Article 18 (Site Plan Review) of the Code of the Village of Churchville applicants below hereby apply for:

- ☐ Subdivision plat approval
- ☐ Site plan approval
- ☐ A Special permit

for the following proposed:

- ☐ One lot single family home
- ☐ One lot, 2 family home
- ☐ Minor subdivision (1 lot into 4 or less lots)
- ☐ Major subdivision (1 lot into 5 or more lots)
- ☐ Subdivision (combining lots into larger ones or redividing lots)
- ☐ Development
- ☐ Redevelopment/change in use
- ☐

(Describe use that requires Special Permit)

INSTRUCTIONS to Applicants:

Fill in pertinent information on pages 1-5
Type or clearly print all required information
Check the items on pages 2 and 3 that are being submitted as part of this Application
Get appropriate signatures on the certification page
Submit with 12 copies of each document or drawing
Applications and plans/reports should be submitted **10 days** prior to being placed on agenda. Applications requiring Village Engineer reviews should be submitted **3 weeks** prior to meeting date.

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

The proposed project involves _____

Tax map parcel #'s _____

Acreage of Project _____ Current Zoning _____

Acreage of total parcel _____ Present use of property _____

Ownership intentions (i.e. purchase, options, lease) _____

describe any easements or restrictions on the property: _____

In support of this application, the following information is submitted:

		Do Not Write Below	
		<u>For Town Use</u>	
		Date	Initials
_____	Application fee in the amount of \$ _____	_____	_____
_____	Preliminary Plat Map	_____	_____
_____	Area Map	_____	_____
_____	Topographic Map	_____	_____
_____	Site Plan	_____	_____
_____	Soil Overlay	_____	_____
_____	SEQRA - Full EAF	_____	_____
_____	R.O.W. Naming Act Application	_____	_____

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

_____	Grading Plan	_____	_____
_____	Preliminary Engineering Report	_____	_____
_____	Preliminary Drainage Plan	_____	_____
_____	Final Plat Map	_____	_____
_____	Grading and Drainage Plan	_____	_____
_____	Utility Plan	_____	_____
_____	Landscape Plan	_____	_____
_____	Street Lighting Plan	_____	_____
_____	Final Engineering Report	_____	_____
_____	Final Drainage Report	_____	_____
_____	Stormwater Pollution Prevention Plan	_____	_____
_____	Easement descriptions	_____	_____
_____	Easement maps	_____	_____
_____	Easement documents	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

DESIGN PROFESSIONALS:

The following design professionals or attorneys may be involved with this project. The lead professional is indicated by an asterisk (*)

COMPANY NAME

ADDRESS

CITY STATE ZIP

PROFESSION

CONTACT NAME

() -
TELEPHONE

EMAIL

COMPANY NAME

ADDRESS

CITY STATE ZIP

PROFESSION

CONTACT NAME

() -
TELEPHONE

EMAIL

COMPANY NAME

ADDRESS

CITY STATE ZIP

PROFESSION

CONTACT NAME

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TELEPHONE

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CITY STATE ZIP

PROFESSION

CONTACT NAME

() -
TELEPHONE

EMAIL

COMPANY NAME

ADDRESS

CITY STATE ZIP

PROFESSION

CONTACT NAME

() -
TELEPHONE

EMAIL

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

CERTIFICATION OF STATEMENTS

The applicant(s) hereby affirms that the above information is accurate and complete, to the best of his/her knowledge and information, and that he/she/they is/are the title owner(s) of the property or has/have been authorized by the title owner(s) to make this application.

DEVELOPER's SIGNATURE

NAME

FIRM

TAX PAYER ID or SOCIAL SECURITY #

ADDRESS

CITY STATE ZIP

()
TELEPHONE

EMAIL

DEVELOPER's SIGNATURE

NAME

FIRM

TAX PAYER ID or SOCIAL SECURITY #

ADDRESS

CITY STATE ZIP

()
TELEPHONE

EMAIL

I/We hereby certify that I/WE am/are title owner(s) of the property identified in the above application and that applicant(s) named above is/are authorized to make the application described herein.

SIGNATURE

NAME

TITLE

SIGNATURE

NAME

TITLE

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

The following pages are for the Village's use. **Do Not write on them!**

<u>ACTION OR ITEM</u>	<u>DATE</u>	<u>BY</u>	<u>INITIALS</u>
<u>CONCEPT phase</u>			
Concept plan presentation	_____	Applicant	_____
Concept Review	_____	Planing Board	_____
<u>PRELIMINARY PLAN phase</u>			
Application	_____	Applicant	_____
Fees Paid	_____	Applicant	_____
Agricultural Data Statement	_____	Design Professional	_____
Notice of Complete Application issued	_____	P.B. Secretary	_____
239 m or n Review Submitted to County Planning	_____	P.B. Secretary	_____
SEQRA			
Full EAF	_____	Applicant	_____
Resolution Classifying Type of Action	_____	Planning Board	_____
Review Notice	_____	P.B. Secretary	_____
Notice of Intent to be Lead Agency	_____	Planning Board	_____
Resolution Declaring Lead Agency	_____	Planning Board	_____
Resolution Determining Environmental Significance	_____	Lead Agency	_____
Notice of Determination	_____	P.B. Secretary	_____
PUBLIC HEARING			
Public Hearing Scheduled	_____	P.B Secretary	_____
Public Hearing Notice published in official paper	_____	P.B. Secretary	_____
Notice of Public Hearing sent to residents within 500'	_____	P.B. Secretary	_____
Public Hearing Held	_____	Planning Board	_____

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

<u>ACTION OR ITEM</u>	<u>DATE</u>	<u>BY</u>	<u>INITIALS</u>
ZBA			
Zoning Variance (if required) applied for	_____	Applicant	_____
Zoning Board of Appeals decision	_____	ZBA	_____
Village Engineer's review	_____	Village Engineer	_____
County Planning 239 m or n review	_____	Monroe County Planning	_____
Resolution of Preliminary Approval	_____	Planning Board	_____
Notice of Preliminary Approval filed by Village Clerk	_____	P.B. Secretary	_____
Notice of Preliminary Approval given to applicant	_____	P.B. Secretary	_____
<u>FINAL PLAN phase</u>			
Final plans submitted	_____	Design Professional	_____
Village Engineer's review	_____	Village Engineer	_____
<u>STREET NAME</u>			
R.O.W. Naming Act Application	_____	Design Professional	_____
911 Name Approval	_____	911 Board	_____
Names formally adopted	_____	Village Board	_____
<u>SANITARY FACILITIES</u>			
BSP – 5	_____	Design Professional	_____
San form 65	_____	Design Professional	_____
DOH - 348	_____	Village Mayor	_____
Approval of sewer facilities	_____	MCDOH	_____
Approval of sewer connection	_____	Village Board	_____

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

<u>ACTION OR ITEM</u>	<u>DATE</u>	<u>BY</u>	<u>INITIALS</u>
<u>WATER FACILITIES</u>			
Approval of Water Facilities	_____	MCDOH	_____
Approval of Water Facilities	_____	MCWA	_____
<u>DRAINAGE FACILITIES</u>			
Stormwater Management Facility Maintenance Agreement (SWMFA)	_____	Design Professional	_____
	_____	Village Engineer	_____
	_____	Village Superintendent and	_____
	_____	Village Attorney and	_____
	_____	Village Planning Board	_____
<u>STREET LIGHTING</u>			
Approval of Plans	_____	Design Professional	_____
	_____	Village Engineer	_____
	_____	Village Superintendent and	_____
	_____	Village Planning Board	_____
<u>SIDEWALKS</u>			
Approval of Plans	_____	Design Professional	_____
	_____	Village Engineer	_____
	_____	Village Superintendent and	_____
	_____	Village Planning Board	_____
Easement documents submitted	_____	Design Professional	_____
Easement Documents approved	_____	Village Engineer and	_____
	_____	Village Attorney	_____
Deeds of Dedication tendered	_____	Developer	_____
Recording fees submitted	_____	Developer	_____
Resolution of Final Approval Include any conditions of approval	_____	Planning Board	_____

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

<u>ACTION OR ITEM</u>	<u>DATE</u>	<u>BY</u>	<u>INITIALS</u>
Resolution of Final Approval filed with Village Clerk	_____	P.B. Secretary	_____
Resolution of Final Approval given to Applicant	_____	P.B. Secretary	_____
Related fees paid	_____	Developer	_____
Final Plans signed	_____	Village Dept. Heads	_____
Form MCPC 1947 prepared and Certified	_____	Developer	_____
	_____	Village Clerk	_____
Final Maps filed in County Clerk's office	_____	Developer	_____
Proof of Filing to Village Clerk	_____	Developer	_____
Final, signed plans filed with Village Clerk	_____	Applicant	_____
<u>CONSTRUCTION Phase</u>			
Preconstruction meeting	_____	Village Engineer	_____
Estimate for Financial Security reviewed	_____	Village Engineer	_____
Form of Financial Security reviewed	_____	Village Engineer	_____
Financial Security posted	_____	Developer	_____
Road cut permits -			
State (NYS Highway Law 56)	_____	NYS DOT	_____
County (NYS Highway Law 136)	_____	County Highways	_____
Village (NYS Highway Law 149)	_____	Village Superintendent	_____
Notice to Proceed Issued	_____	Village Engineer	_____
<u>DEDICATION Phase</u>			
Construction completed	_____	Developer	_____
All utilities testing completed and certified	_____	Design Professional	_____
Water sample analysis reviewed	_____	Village Engineer	_____
MCDOH "Completed Works" Certificate issued	_____	MCDOH	_____
Easements filed	_____	Developer	_____
Monuments and property markers set	_____	Design Professional	_____
Street and traffic signs installed	_____	Developer	_____

DEVELOPMENT APPLICATION AND CHECKLIST

Project: _____

<u>ACTION OR ITEM</u>	<u>DATE</u>	<u>BY</u>	<u>INITIALS</u>
Street and traffic signs approved	_____	Highway Superintendent	_____
Record Drawings prepared	_____	Design Professional	_____
Record Drawings reviewed	_____	Village Engineer	_____
Maintenance Bond posted	_____	Developer	_____
Resolution accepting Dedicated Facilities	_____	Village Board	_____
Acceptance of Highways	_____	Highway Superintendent	_____
Concurrence	_____	Village Board	_____
Section 171 Order filed	_____	Highway Superintendent	_____
Final Release of Financial Security	_____	Village Board	_____

INSTRUCTION to Town: As each item is received, the date of receipt is to be placed in first column. Official placing document or item in the official file should initial in column 3.

Any item that is not required should be indicated by N. A. in date column. Individual making a N. A. Determination should initial in column 3.

Use blank space to the right of columns for any comments or notes.

FORMS

Copies of the following forms are available for the applicant's information and use:

Village of Churchville Fee Schedule

Schedule of various Village Board meetings

Development Review Referral form (239 m or n review)

VILLAGE OF CHURCHVILLE

23 East Buffalo Street
Churchville, NY 14428
(585) 293-3720

APPENDIX: **G - 1.0**

DATE: 2019

SCALE: N.T.S.

MRB | *group*

STANDARD NOTES

1. THE CONTRACTOR SHALL LOCATE, MARK, SAFEGUARD AND PRESERVE ALL SURVEY CONTROL MONUMENTS AND RIGHT-OF-WAY MONUMENTS IN THE AREAS OF CONSTRUCTION.
2. THE APPLICANT'S AND CONTRACTOR'S ATTENTION IS DIRECTED TO MONROE COUNTY LOCAL LAW #6 OF 1971, REGARDING LIABILITY INCURRED THROUGH DISTURBANCE OR DESTRUCTION OF GEODETIC SURVEY MONUMENTS.
3. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO ALLOW REVISIONS AS REQUIRED TO MEET EXISTING CONDITIONS.
4. NOTIFY DIG SAFELY NEW YORK TWO (2) WORKING DAYS PRIOR TO DIGGING, DRILLING OR BLASTING AT 1-800-962-7962 OR 811 FOR A UTILITY STAKEOUT.
5. CONSTRUCTION SEQUENCE - ALL PLANS ARE TO BE PROVIDED WITH A DETAILED CONSTRUCTION SEQUENCE. THE CONTRACTOR SHALL COMPLETE CONSTRUCTION AND INSTALL EROSION CONTROL MEASURES IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SEQUENCE UNLESS SPECIFIED OTHERWISE ON THE APPROVED DESIGN PLANS OR AT THE PRE -CONSTRUCTION MEETING.
6. DUST SHALL BE CONTROLLED DURING CONSTRUCTION BY THE CONTRACTOR TO MINIMIZE EFFECT ON THE ADJACENT PROPERTIES. THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL MEASURES AS NEEDED AND/OR AS DIRECTED BY THE VILLAGE OF CHURCHVILLE.
7. THE OWNER'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT, MAINTENANCE, CLEANING, REPAIR AND REPLACEMENT OF EROSION CONTROL MEASURES DURING SITE CONSTRUCTION AND UNTIL THE SITE IS FULLY STABILIZED, INSPECTED BY THE VILLAGE OF CHURCHVILLE.
8. ROOF LEADERS SHOULD BE CONNECTED TO STORM SEWERS WHERE POSSIBLE, UNLESS OTHERWISE SPECIFIED ON THE APPROVED PLANS AND WITHIN THE PROJECT SWPPP.
9. NO SITE PREPARATION SHALL COMMENCE UNTIL A VISUAL INSPECTION BY THE VILLAGE OF CHURCHVILLE, CONFIRMS THE INSTALLATION OF PERIMETER SEDIMENT CONTROLS AND THE STABILIZED CONSTRUCTION ENTRANCE.
10. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF VEGETATION, THE STORM WATER MANAGEMENT FACILITIES SHALL BE CLEANED OF ACCUMULATED SILT.
11. ALL SITE STABILIZATION IS TO BE IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NYSDEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AND THE NYSDEC GENERAL PERMIT REQUIREMENTS (WHERE APPLICABLE).
12. THE HOMEBUILDER WILL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING INDIVIDUAL LOT EROSION & SEDIMENT CONTROL MEASURES, DURING HOUSE CONSTRUCTION. MEASURES TO BE MAINTAINED UNTIL FINAL LOT LAWN GRADING AND SITE IS FULLY STABILIZED AND INSPECTED BY THE VILLAGE OF CHURCHVILLE.
13. ANY ADDITIONAL EROSION OR SEDIMENT CONTROL MEASURES DEEMED NECESSARY BY THE VILLAGE OF CHURCHVILLE OR A REPRESENTATIVE THEREOF SHALL BE PROVIDED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.
14. SEDIMENT CONTROL MEASURES ARE TO BE ESTABLISHED PRIOR TO COMMENCING EARTHWORK. SEDIMENT CONTROL MEASURES ARE TO BE MAINTAINED BY THE CONTRACTOR UNTIL UPSTREAM GROUND COVER HAS BEEN ESTABLISHED AND REMOVAL IS APPROVED BY THE VILLAGE OF CHURCHVILLE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ADJOINING PROPERTIES, ROADWAYS, DRAINAGE WAYS AND SINKS OF SILT ACCUMULATION AS NEEDED AND AS DETERMINED/REQUESTED BY THE VILLAGE OF CHURCHVILLE.

VILLAGE OF CHURCHVILLE

23 East Buffalo Street
Churchville, NY 14428
(585) 293-3720

APPENDIX: **G - 1.1**

DATE: 2019

SCALE: N.T.S.

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STANDARD NOTES (CONTINUED)

16. ADDITIONAL TEMPORARY AND PERMANENT SEEDING AND SITE STABILIZATION REQUIREMENTS:

A. ALL DISTURBED AREAS INCLUDING TOPSOIL STOCKPILES AND STORMWATER MANAGEMENT FACILITIES ARE TO BE STABILIZED WITHIN SEVEN (7) DAYS AFTER COMPLETION.

B. TEMPORARY SEEDING OF DISTURBED AREAS SHALL BE PROVIDED AS FOLLOWS:

- THE SURFACE TWO INCHES OF SOIL SHOULD BE LOOSENEED BY DISKING, RAKING, OR BACK-BLADING WITH A BULLDOZER.
- FERTILIZE WITH 300 POUNDS PER ACRE (OR 7 POUNDS PER 1,000 SQUARE FEET).
- THE FOLLOWING SEED MIX SHALL BE USED:

<u>SPRING/SUMMER/EARLY FALL</u>	<u>LBS/ACRE</u>	<u>LBS/1,000 SQ. ACRE</u>
ANNUAL RYE GRASS	30	0.7
PERENNIAL RYEGRASS	30	0.7
<u>LATE FALL/EARLY WINTER</u>		
CEREAL RYE	100	2.5

- SEED SHOULD HAVE A GERMINATION RATE OF AT LEAST 85 PERCENT AND MINIMAL INERT MATERIAL.

C. DISTURBED AREAS SHALL BE STABILIZED USING PERMANENT LAWN SEEDING MIX UPON COMPLETION OF GRADING AND CONSTRUCTION:

	<u>LBS/ACRE</u>	<u>LBS/1,000 SQ. ACRE</u>
BIRDSFOOT TREFOIL OR COMMON WHITE CLOVER	8 OR 8	0.20 OR 0.20
TALL FESCUE	20	0.45
REDTOP OR RYEGRASS (PERENNIAL)	2 OR 5	0.05 OR 0.10

- SEEDING RATE: 6.0 POUNDS PER 1,000 SQUARE FEET
- MULCH: STRAW OR WOOD FIBER MULCH USED WITH HYRDO SEEDING METHOD AT TWO TONS PER ACRE WITH TACKIFIER.
- FOR FALL OR EARLY WINTER, SEED WITH CERTIFIED "AROOSTOCK" WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE.
- PERMANENT STABILIZATION FOR STEEP SLOPES GREATER THAN 3:1 SHALL INCLUDE JUTE MESH BLANKET AND CROWN VETCH SEED WITH PERENNIAL RYEGRASS.

VILLAGE OF CHURCHVILLE

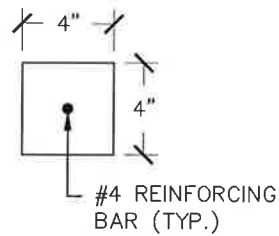
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APPENDIX: **G - 2.0**

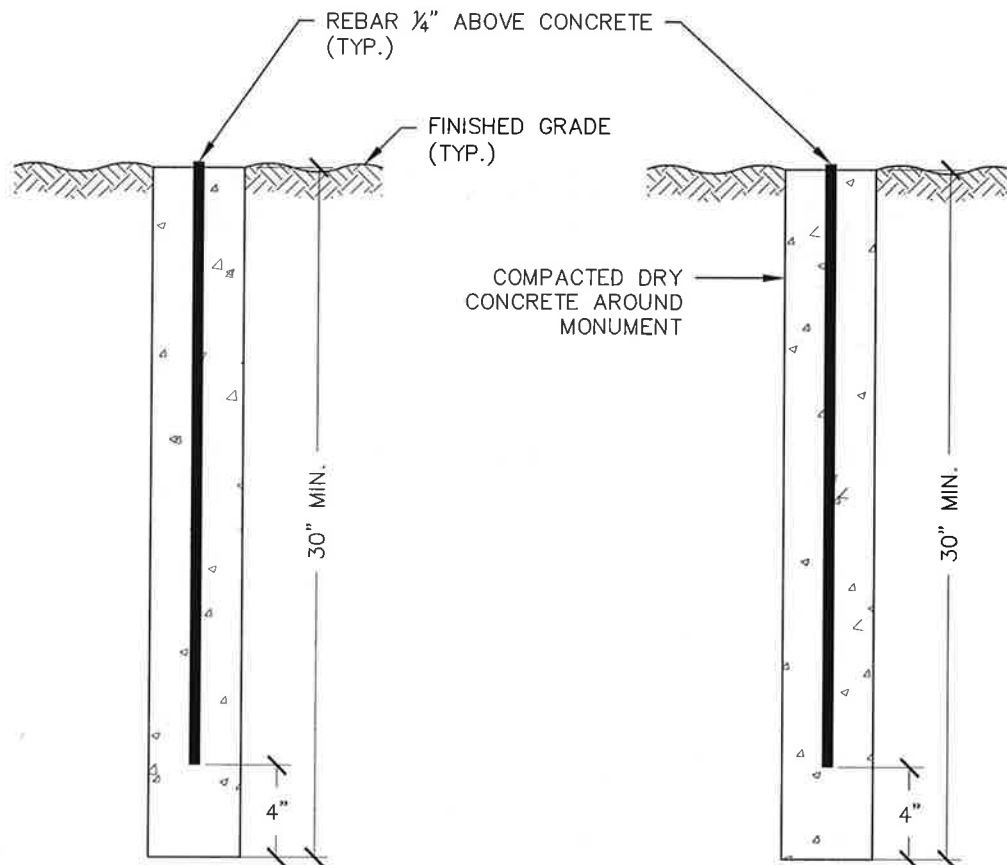
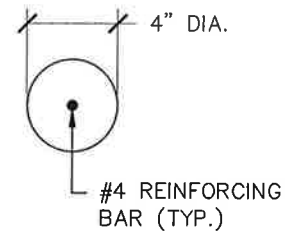
DATE: 2019

SCALE: N.T.S.

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PLAN



SECTION

NOTE:

1. REBAR PROJECTION SHALL MARK EXACT POINT DENOTED ON THE PLAN.
2. FINAL RECORD DRAWINGS SHALL INCLUDE STATION AND OFFSET, NYS PLANE COORDINATES, AND ELEVATION IN NAVD-88.

MONUMENT

VILLAGE OF CHURCHVILLE

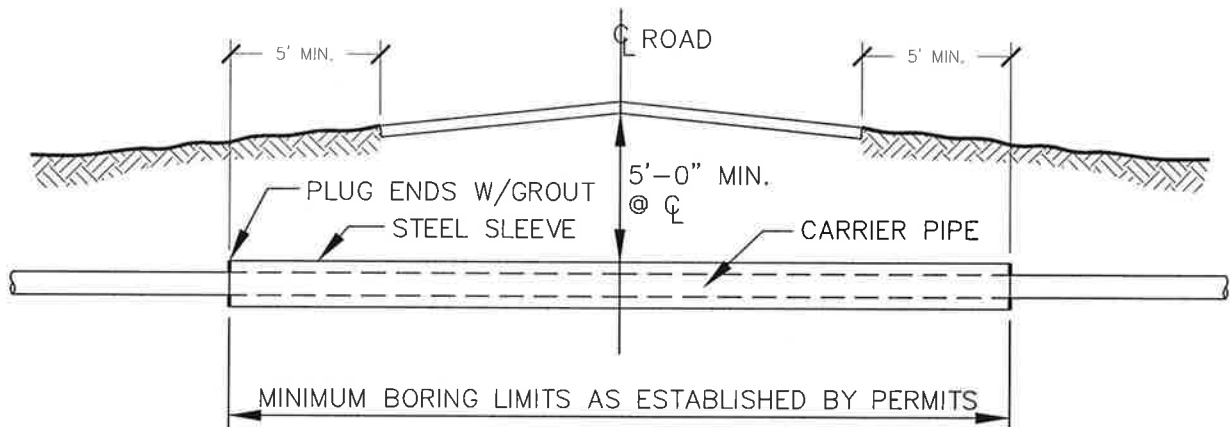
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APPENDIX: **G - 3.0**

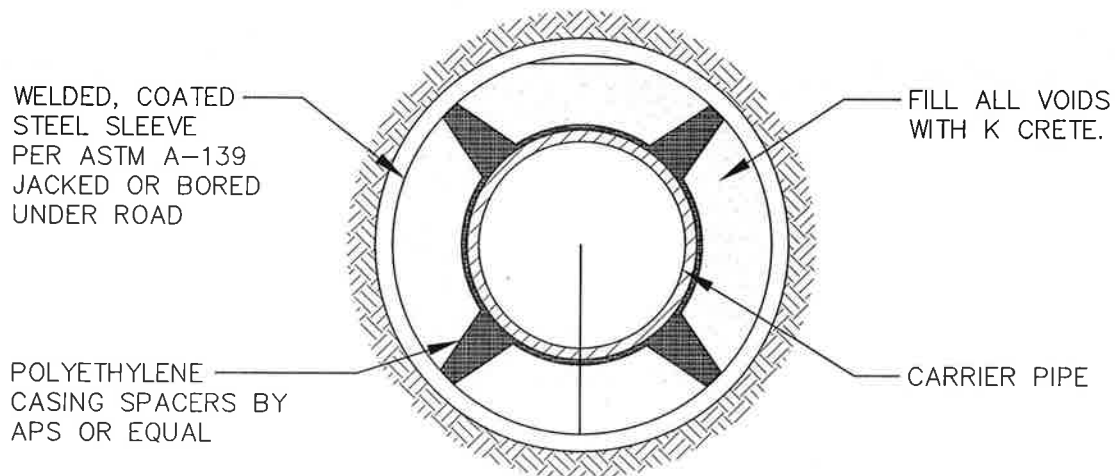
DATE: 2019

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ELEVATION



CROSS SECTION

CARRIER PIPE SIZE	MINIMUM CASING O.D.	MIN. WALL THICKNESS FOR STEEL CASING
8"	24"	0.375"

ROAD BORING FOR UTILITIES

VILLAGE OF CHURCHVILLE

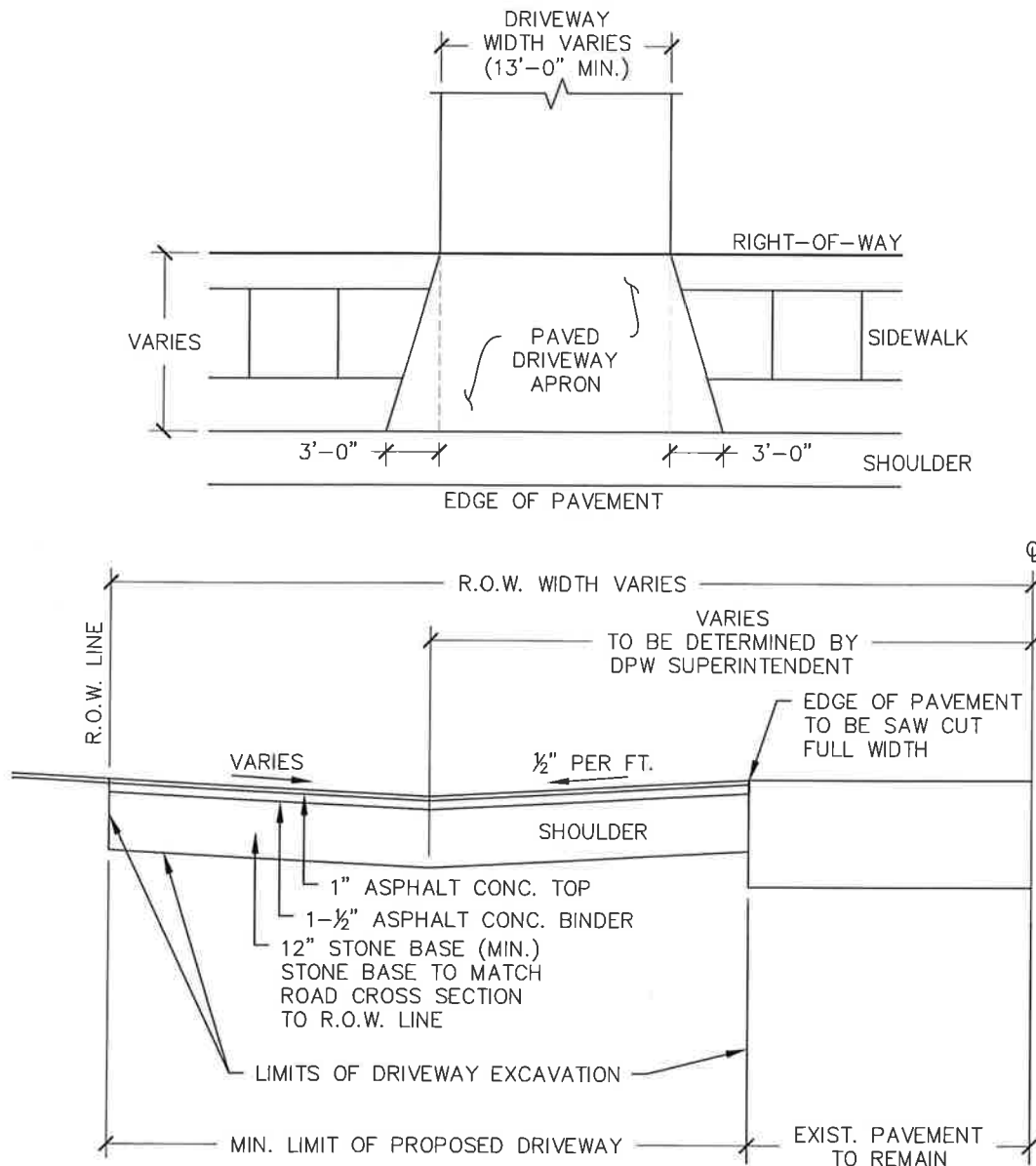
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APPENDIX: **H - 1.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. DRIVEWAYS FRONTING ON VILLAGE ROADS SHALL BE PAVED A MINIMUM OF 30 FEET EXTENDING FROM THE EDGE OF PAVEMENT TO R.O.W. UNLESS OTHERWISE INDICATED BY THE VILLAGE.
2. THE APPLICANT SHALL NOTIFY THE DPW SUPERINTENDENT AT LEAST 48 HOURS PRIOR TO PERFORMING THE WORK TO SCHEDULE A FIELD INSPECTION.
3. A MAXIMUM 3% LEVELING AREA TO BE PROVIDED FOR THE FIRST 30 FEET FROM THE EDGE OF PAVEMENT.

TYPICAL DRIVEWAY APRON DETAIL

23 East Buffalo Street
Churchville, NY 14428
(585) 293-3720

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1. CULVERT PIPE TO BE SUPPLIED AND INSTALLED AT THE DISCRETION OF THE VILLAGE DPW SUPERINTENDENT.
2. CULVERT PIPE TO BE INSTALLED WITH A MINIMUM LENGTH TO EXTEND AT LEAST THREE (3) FEET BEYOND THE OUTER EDGES OF THE NEW PROPOSED DRIVEWAY AT THE DITCH LINE OR AS DIRECTED BY THE DPW SUPERINTENDENT.
3. PROPOSED DRIVEWAY CULVERT SHALL BE PLACED AT A LINE, GRADE AND OFFSET DETERMINED BY THE EXISTING DITCH LINE, GRADE AND OFFSET OF THE ADJACENT PROPERTIES ON EITHER SIDE OF THE NEW PROPOSED DRIVEWAY TO FLOW PROPERLY
4. END SECTIONS TO BE INSTALLED ON EACH END OF THE NEW PROPOSED DRIVEWAY CULVERT. ENERGY DISSIPATING MATERIAL OR RIP RAP SHOULD BE USED AT EITHER END SECTION
5. THE APPLICANT SHALL NOTIFY THE DPW SUPERINTENDENT AT LEAST 48 HOURS PRIOR TO PERFORMING THE WORK TO SCHEDULE FIELD INSPECTION.

TYPICAL DRIVEWAY CULVERT DETAIL

VILLAGE OF CHURCHVILLE

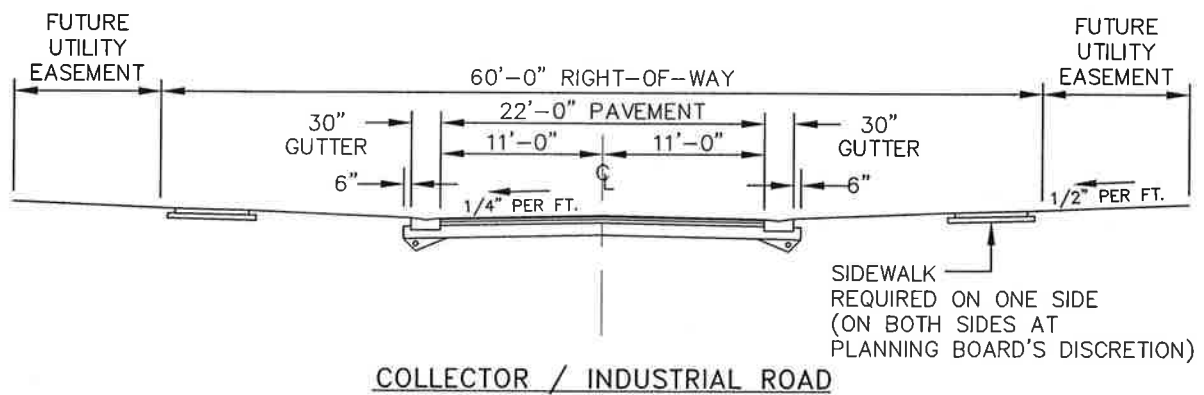
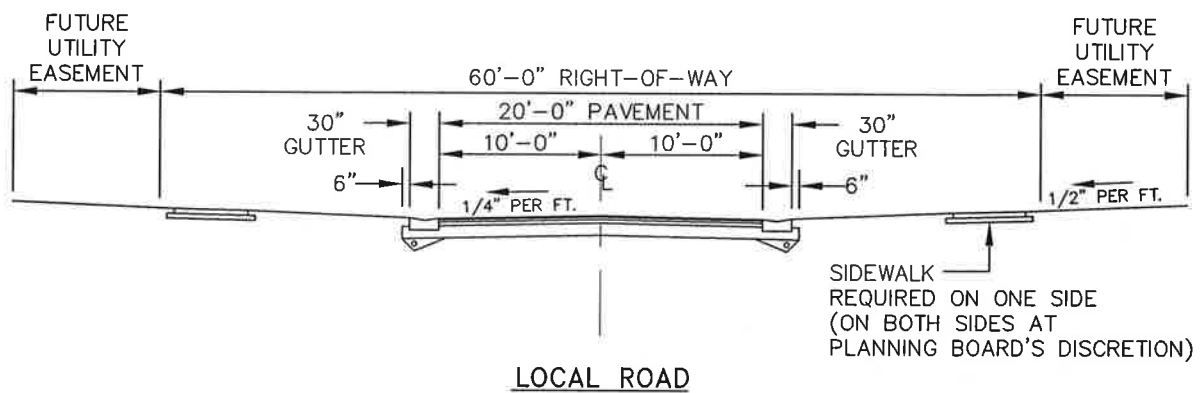
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APPENDIX: **H - 3.0**

DATE: 2019

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TYPICAL ROAD CROSS SECTIONS

VILLAGE OF CHURCHVILLE

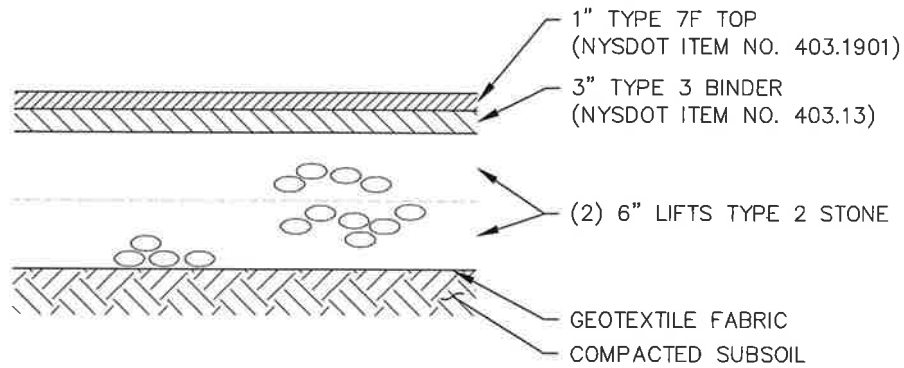
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APPENDIX: **H - 4.0**

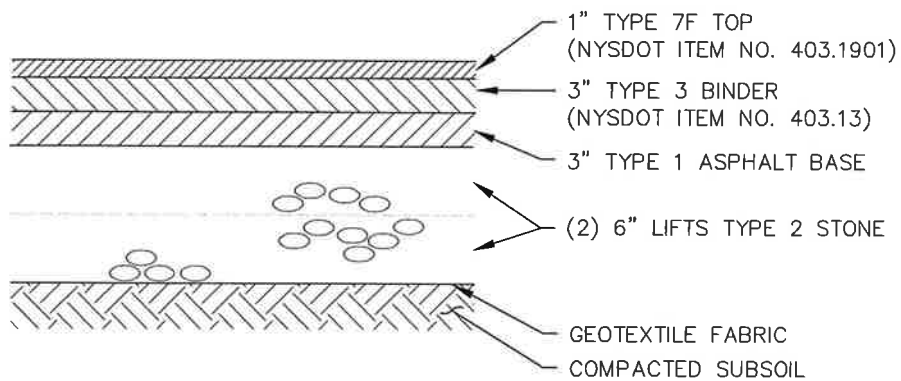
DATE: 2019

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LOCAL ROAD



COLLECTOR / INDUSTRIAL ROAD

TYPICAL PAVEMENT CROSS SECTIONS (LOCAL / COLLECTOR)

VILLAGE OF CHURCHVILLE

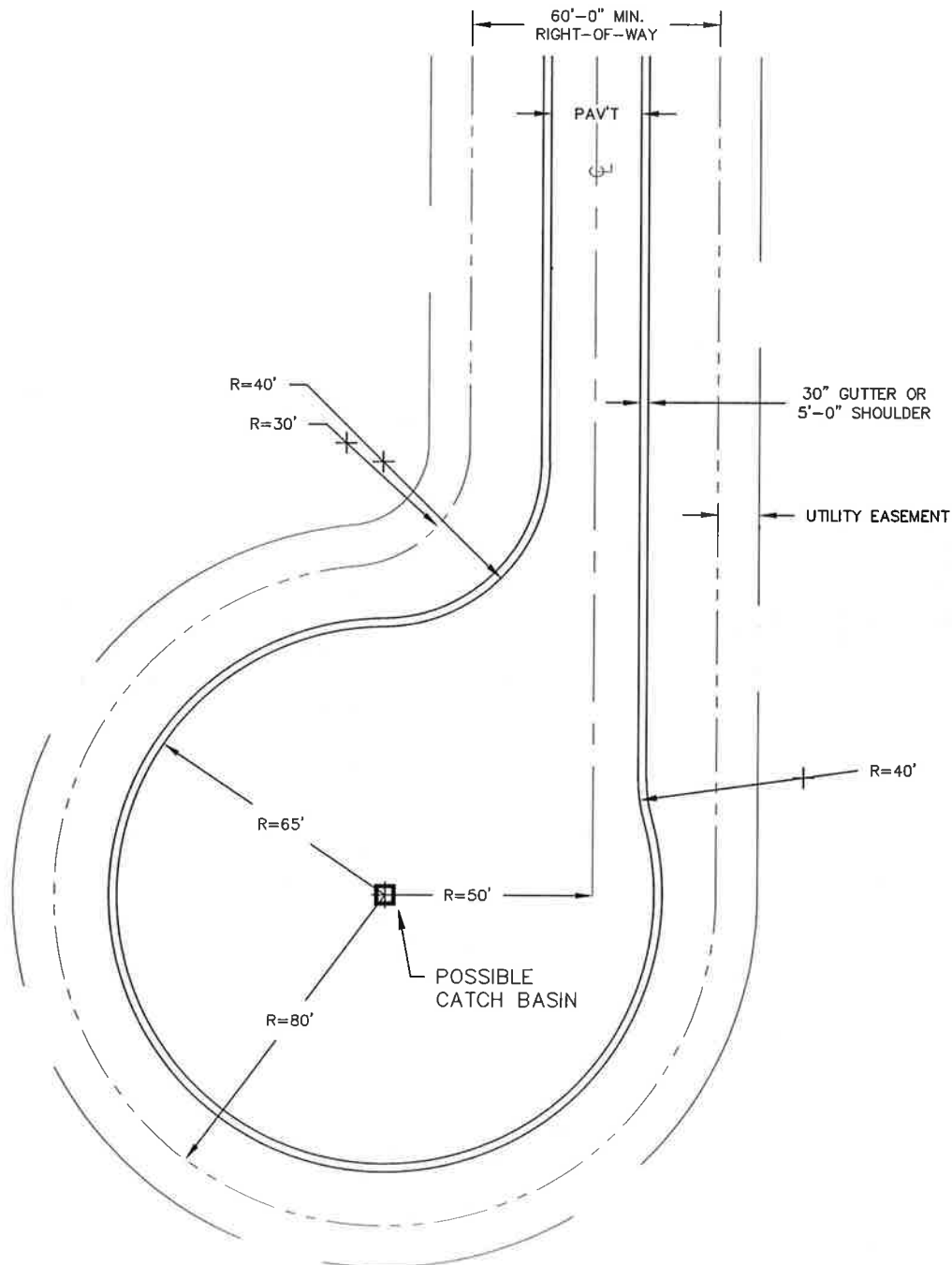
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APPENDIX: **H - 5.0**

DATE: 2019

SCALE: N.T.S.

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OFFSET CUL-DE-SAC PLAN

VILLAGE OF CHURCHVILLE

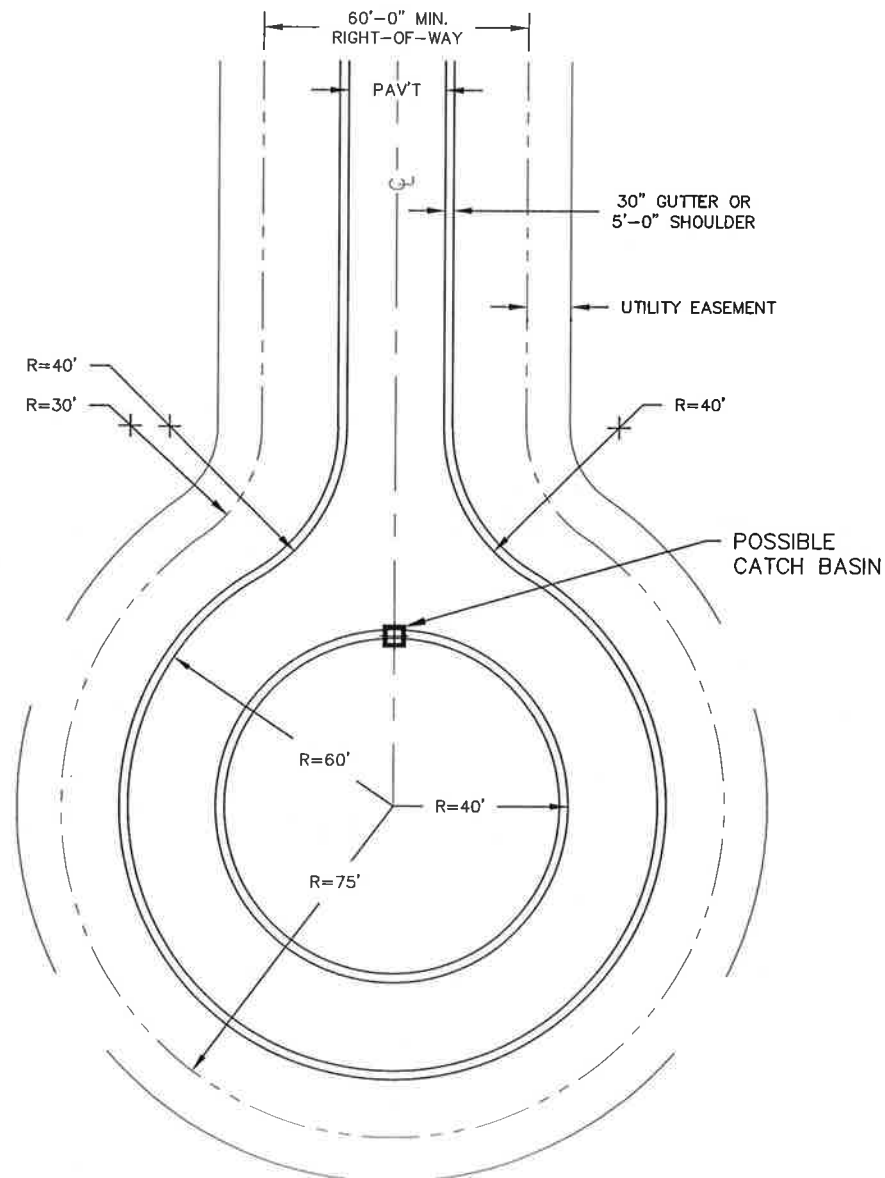
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(585) 293-3720

APPENDIX: **H - 6.0**

DATE: 2019

SCALE: N.T.S.

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CUL-DE-SAC PLAN

VILLAGE OF CHURCHVILLE

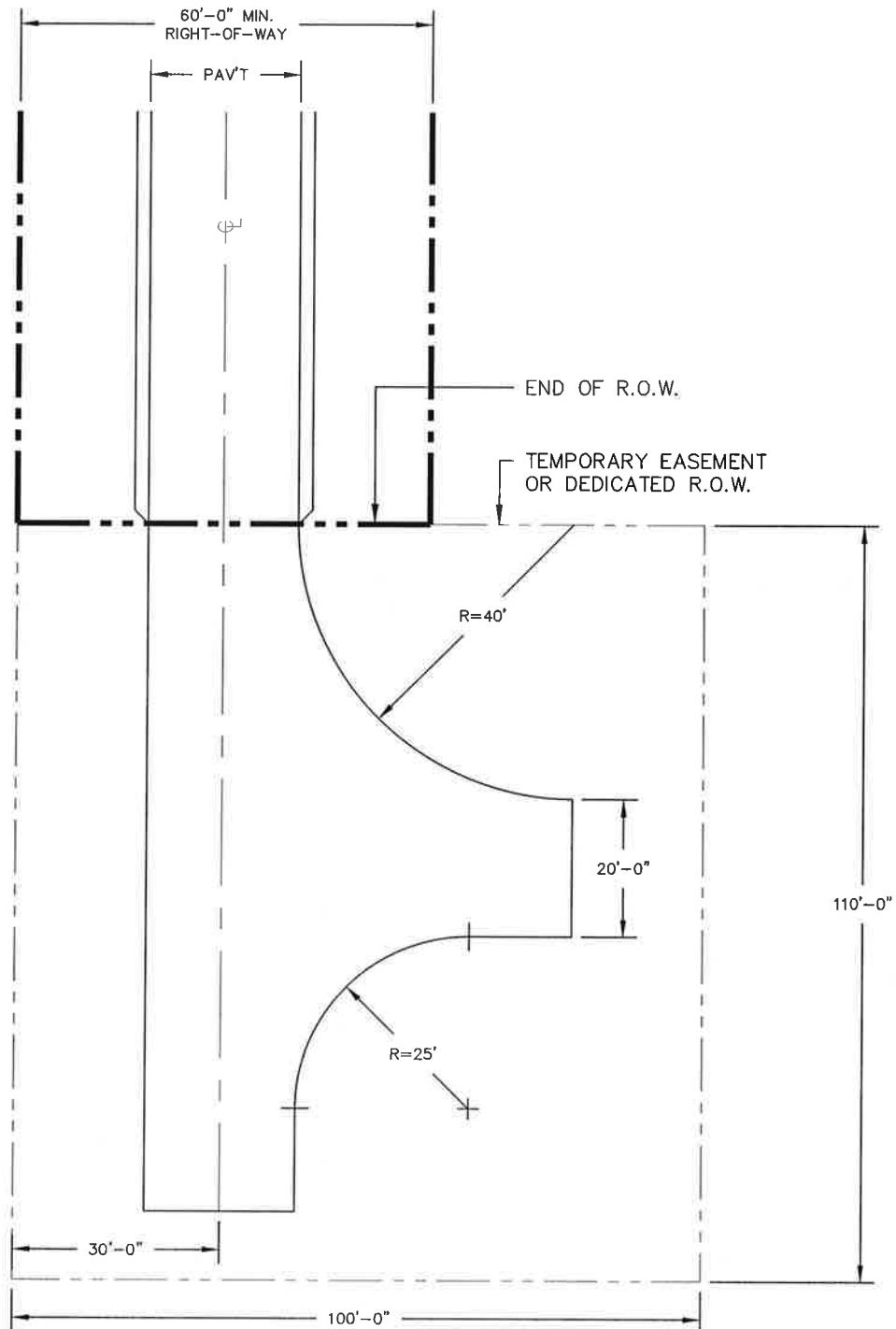
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(585) 293-3720

APPENDIX: **H - 7.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. LARGER AREAS MAY BE REQUIRED FOR SNOW STORAGE OR TOPOGRAPHICAL CONSIDERATIONS.
2. WHEN IN USE FOR MORE THAN 1 YEAR, TEMPORARY TURN-AROUND SHALL BE PAVED WITH MIN. 3" TYPE 3 BINDER.

TEMPORARY TURN AROUND

VILLAGE OF CHURCHVILLE

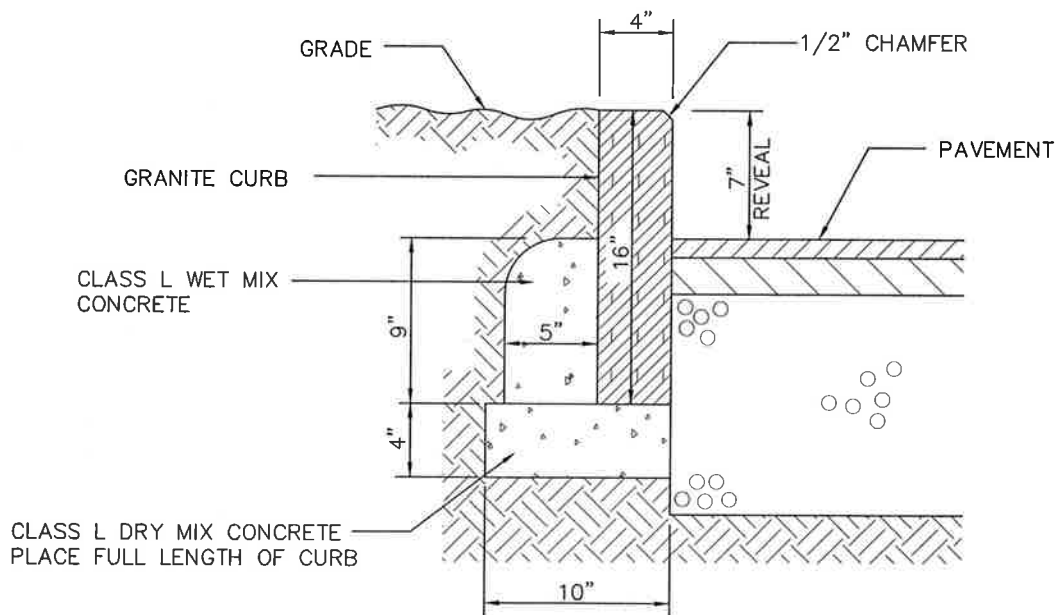
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Churchville, NY 14428
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APPENDIX: **H - 8.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. SIDEWALK ACCESS RAMP HEADER CURB IS TO BE FLUSH WITH PAVEMENT SURFACE.
2. DRIVEWAY HEADER CURB IS TO HAVE CURB REVEAL OF 1-1/2 INCHES.
3. ONLY TRANSITION AND HEADER CURB PIECES USED FOR DRIVEWAYS ARE TO BE ROUNDED.
4. MINIMUM TRANSITION CURB SHALL BE 3 FEET LONG.

GRANITE CURB DETAIL

VILLAGE OF CHURCHVILLE

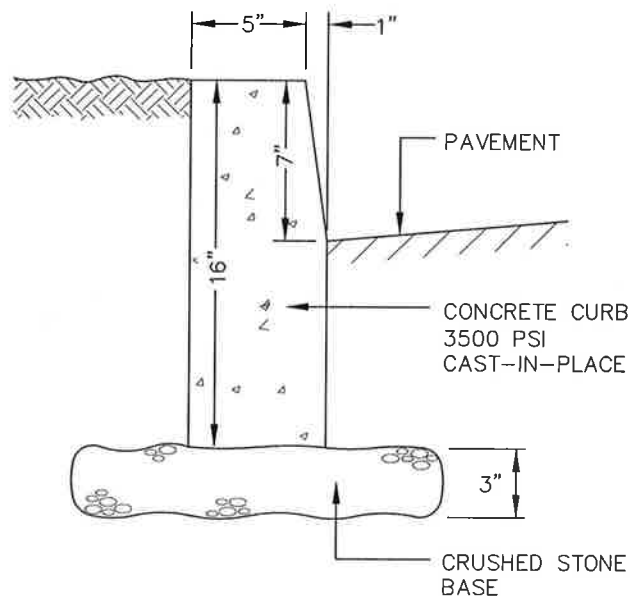
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APPENDIX: **H - 9.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. USE CLASS K CONCRETE FOR CONVENTIONALLY FORMED CONCRETE CURB – CLASS J CONCRETE FOR MACHINE FORMED CONCRETE CURB.
2. EXPANSION JOINTS TO BE 3/4 INCH WIDE SPACED EVERY 20 FEET AND AT ALL IMMOVABLE OBJECTS. FILL JOINTS WITH PREMOLDED RESILIENT JOINT FILLER MATERIAL.
3. CURB REVEAL FOR HEADER CURB AT DRIVEWAY APRONS IS 1-1/2 INCHES, AT SIDEWALK ACCESS RAMPS 0 INCHES.
4. TACK COAT TO BE APPLIED BETWEEN ALL LIFTS OF HMA COURSES AND ON TOP OF CONCRETE BASE.
5. PAVEMENT SEAMS TO BE SEALED WITH BITUMINOUS SEALER IN ACCORDANCE WITH NYSDOT MATERIAL DESIGNATION 702-0700.

CONCRETE CURB DETAIL

VILLAGE OF CHURCHVILLE

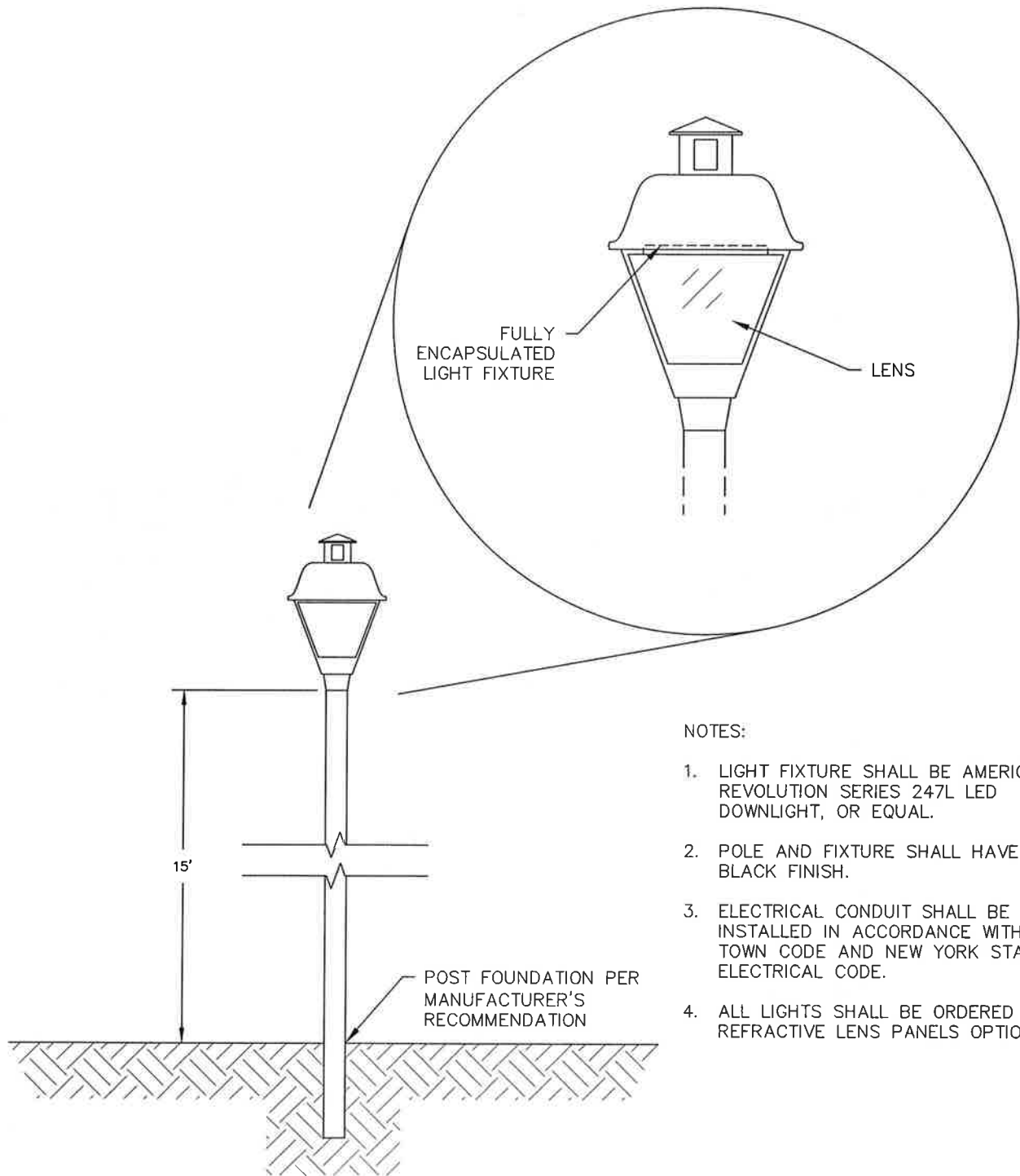
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APPENDIX: **H - 10.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. LIGHT FIXTURE SHALL BE AMERICAN REVOLUTION SERIES 247L LED DOWNLIGHT, OR EQUAL.
2. POLE AND FIXTURE SHALL HAVE A BLACK FINISH.
3. ELECTRICAL CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH TOWN CODE AND NEW YORK STATE ELECTRICAL CODE.
4. ALL LIGHTS SHALL BE ORDERED WITH REFRACTIVE LENS PANELS OPTION.

STREET LIGHTING DETAIL

VILLAGE OF CHURCHVILLE

23 East Buffalo Street
Churchville, NY 14428
(585) 293-3720

APPENDIX: **L - 1.0**

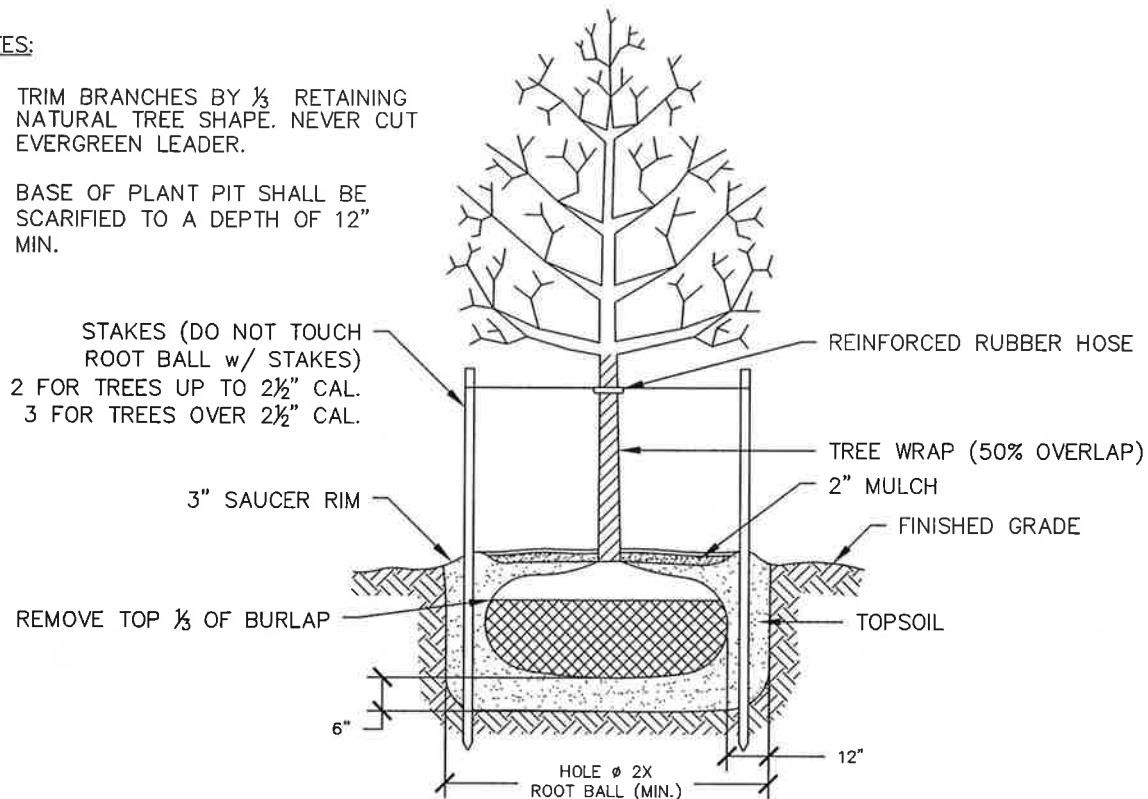
DATE: 2019

SCALE: N.T.S.

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NOTES:

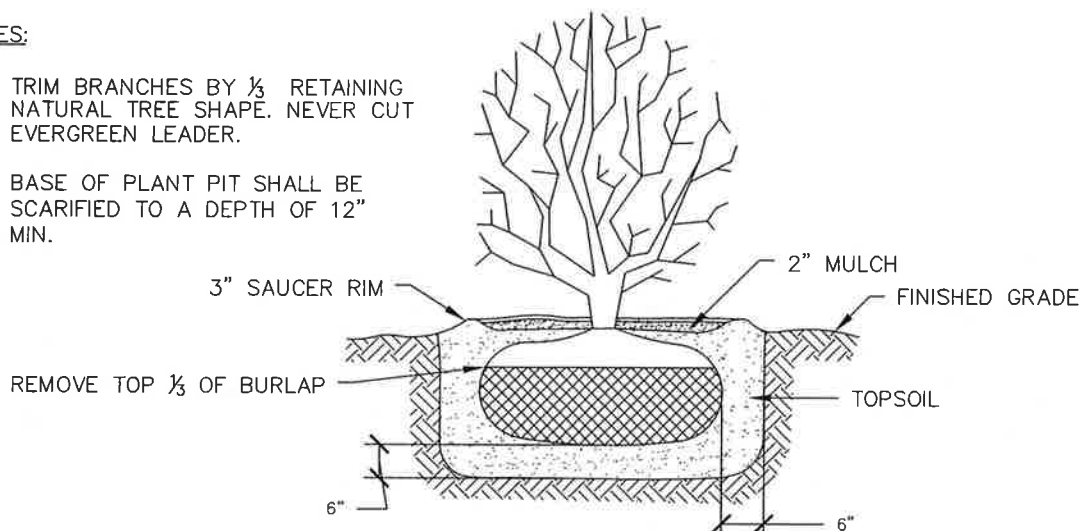
1. TRIM BRANCHES BY $\frac{1}{3}$ RETAINING NATURAL TREE SHAPE. NEVER CUT EVERGREEN LEADER.
2. BASE OF PLANT PIT SHALL BE SCARIFIED TO A DEPTH OF 12" MIN.



TYPICAL TREE PLANTING DETAIL

NOTES:

1. TRIM BRANCHES BY $\frac{1}{3}$ RETAINING NATURAL TREE SHAPE. NEVER CUT EVERGREEN LEADER.
2. BASE OF PLANT PIT SHALL BE SCARIFIED TO A DEPTH OF 12" MIN.



TYPICAL SHRUB PLANTING DETAIL

VILLAGE OF CHURCHVILLE

23 East Buffalo Street
Churchville, NY 14428
(585) 293-3720

APPENDIX: **L - 2.0**

DATE: 2019

SCALE: N.T.S.

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LANDSCAPING / PLANTING NOTES

1. PLANT MATERIALS SHALL CONFORM TO CURRENT STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANT MATERIALS SHALL BE TRUE TO NAME AND SHALL BE IN ACCORDANCE WITH THOSE ADOPTED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.
2. PREPARED TOPSOIL FOR ALL PLANTS, ONE PART TOP SOIL TO ONE PART NATIVE SOIL (50/50 MIX).
3. LAWN SEED MIX.

<u>BLEND</u>	<u>PARTS</u>	<u>LBS/1000</u> <u>SQ. FT.</u>
KENTUCKY BLUEGRASS	65%	2.0-2.6
PERENNIAL RYEGRASS	20%	0.6-0.8
FINE FESCUE	15%	<u>0.4-0.6</u> 3.0-4.0
4. FINAL LOCATION OF TREES AND OTHER LANDSCAPING SHALL BE DETERMINED IN THE FIELD BASED ON UTILITY STAKE OUT.
5. LANDSCAPING SHALL BE PLACED SO AS NOT TO CONFLICT WITH UTILITIES.
6. ALL DISTURBED AREAS SHALL BE RE-SEEDED WITHIN 7 DAYS OF THE COMPLETED GRADING.

MAINTENANCE SCHEDULES

1. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 3 YEARS FROM THE DATE OF INITIAL PLANTING.
2. FLOOD PLANTS TWICE WITHIN THE FIRST 24 HOURS.
3. PRUNING MAY BE DONE OVER A PERIOD OF TIME (3-4 YEARS) AND THEN REPEAT THE CYCLE. SOME COMPANIES OFFER REDUCED RATES FOR TREE PRUNING DURING THE WINTER MONTHS.
4. FERTILIZATION MAY ALSO BE DONE OVER A PERIOD OF TIME WITH REPEATING CYCLES.
5. SPRAY PROGRAMS SHOULD BE DONE YEARLY. PESTICIDES USED IN PROGRAMS TODAY ONLY HAVE A TEN DAY EFFECTIVE LIFE.

SPECIFICATIONS

SPRAY PROGRAM

EARLY SPRING: DORMANT SPRAY - OIL SOMETIMES IN COMBINATION WITH ETHION.
APRIL - MAY: BIRCH TREES - SYSTEMIC FOR LEAF MINER (DI SYSTON)
MAY - AUGUST: LEAF SPRAYS - SHOULD CONTAIN COMBINATIONS OF THE FOLLOWING:
MALATHION, SEVIN, METHOXYCHLOR AND A FUNGICIDE. KELTHANE
SHOULD ALSO BE INCLUDED FOR MITE CONTROL.

PRUNING

TO BE DONE BY A PROFESSIONAL TREE COMPANY. OBJECTIVE IS TO SANITIZE,
THIN AND SHAPE.

GUYING

PRIMARILY FOR BIRCH TREES, HOWEVER, OTHER TREES SHOULD BE CHECKED FOR
WEAK LIMB STRUCTURE. PURPOSE OF GUYING IS TO PREVENT SPLITTING OF
TRUNKS AND LIMBS UNDER SNOW AND ICE LOADS AND DURING STRONG WINDS.

FERTILIZATION

INJECT TRUNK OF TREES WITH STEMIX. EVERGREEN TREES TO BE INJECTED
WITH STEMIX AND ZINC. TREATMENT IS GOOD FOR 2 YEARS. DO NOT INJECT
IN JULY, AUGUST OR SEPTEMBER.

LANDSCAPING NOTES

VILLAGE OF CHURCHVILLE

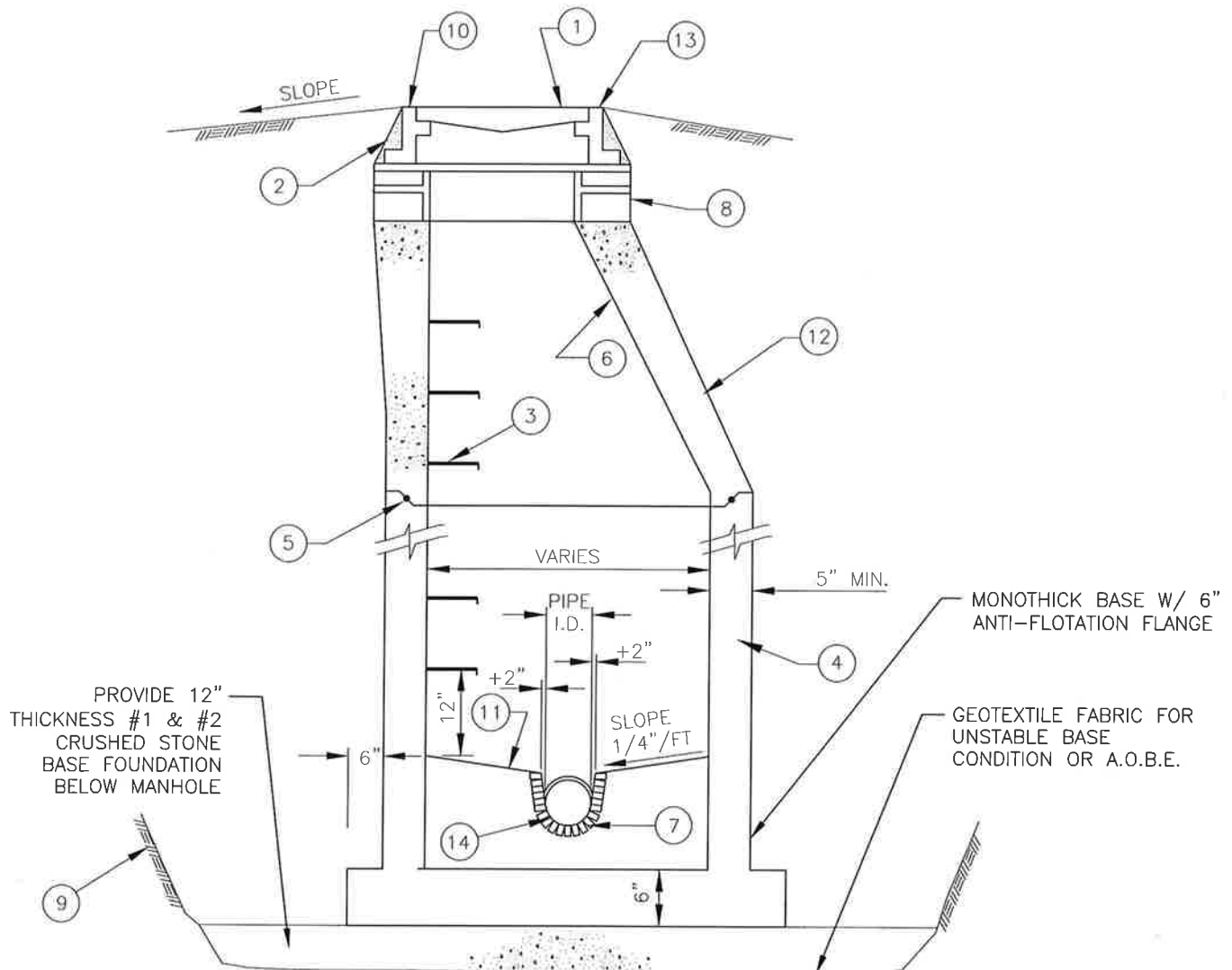
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APPENDIX: **S - 1.0**

DATE: 2019

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1. CAST IRON FRAME AND COVER, SEAL WITH ASPHALT BASE CEMENT (USE WATERTIGHT WHERE DIRECTED)
2. CONCRETE OR MORTAR OUTSIDE OF FRAME ALL THE WAY AROUND
3. MANHOLE STEPS SHALL BE CAST IN PLACE 12" O.C. POLYPROPYLENE PLASTIC COATED 1/2" GRADE 60 STEEL
4. STANDARD REINFORCED CONCRETE RISER SECTIONS CONFORMING ASTM C-78-64 T SPECIFICATION
5. TONGUE AND GROOVE JOINTS WITH "O" RING SEAL
6. PAINT INTERIOR AND EXTERIOR WALLS WITH 2 COATS OF KOPPERS 300M BITUMASTIC COATING OR APPROVED EQUAL.
7. INVERT TO BE OF SEWER BRICK MEETING ASTM C-32 GRADE MA SPECIFICATION LAID IN CEMENT MORTAR.
INVERT SHALL BE TRUE TO LINE & GRADE. HALF PIECE SECTIONS OF PIPE MAY BE USED FOR BOTTOM HALF OF
INVERT IN STRAIGHT THROUGH MANHOLES (SANITARY ONLY).
8. PRECAST CONCRETE GRADE RINGS OR BRICK. MAXIMUM BUILD-UP 8". PLASTER ALL EXPOSED SURFACE WITH MORTAR
INSIDE & OUTSIDE COAT INSIDE WITH 2 COATS OF KOPPERS 300M BITUMASTIC COATING OR APPROVED EQUAL.
9. ALL SLOPES ARE TO CONFORM TO OSHA STANDARDS.
10. FINISH GRADE (F.G.) FOR TOPS OF MANHOLE FRAMES & COVERS. PROVIDE POSITIVE SLOPE AWAY FROM MANHOLE COVER.
11. BENCH WORK AND TO TOP OF HIGHEST PIPE SHALL BE PROTECTED WITH 2 COATS OF SIKAGARD HI-BUILD 667 DURALKOTE
OR APPROVED EQUAL. COATS SHALL BE DIFFERENT COLORS. SECOND COAT ON BENCH SURFACES TO CONTAIN ANTI-SLIP
NODULES. 3000 PSI CONCRETE BENCH (SANITARY ONLY).
12. ECCENTRIC TAPER TOP FOR MANHOLE HEIGHT GREATER THAN 8 FEET. FLAT SLAB TOP FOR MANHOLE HEIGHT LESS THAN 8 FEET.
13. FINISH GRADE IS APPROXIMATE ONLY. CONTRATOR TO VERIFY IN THE FIELD PRIOR TO ORDERING MANHOLES.
14. PIPE TO MANHOLE CONNECTION SHALL BE WATER TIGHT, NEOPRENE RUBBER BOOT.

SANITARY AND STORM MANHOLE DETAIL

VILLAGE OF CHURCHVILLE

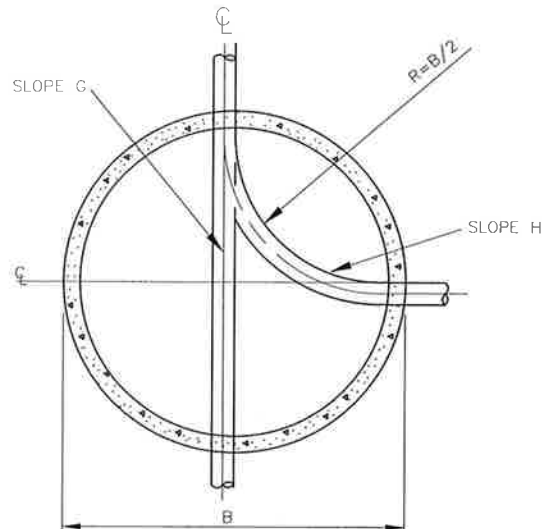
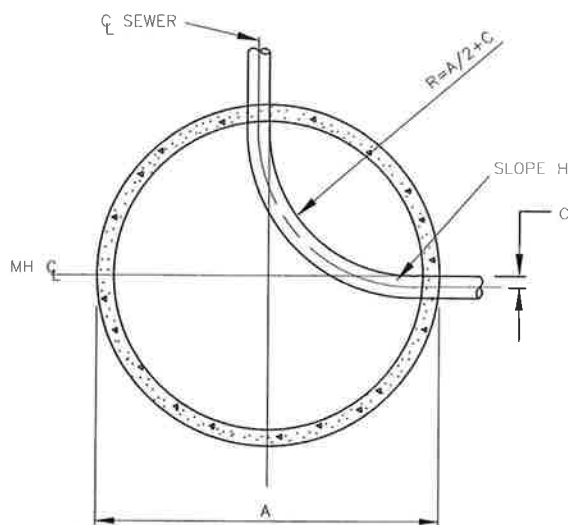
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APPENDIX: **S - 2.0**

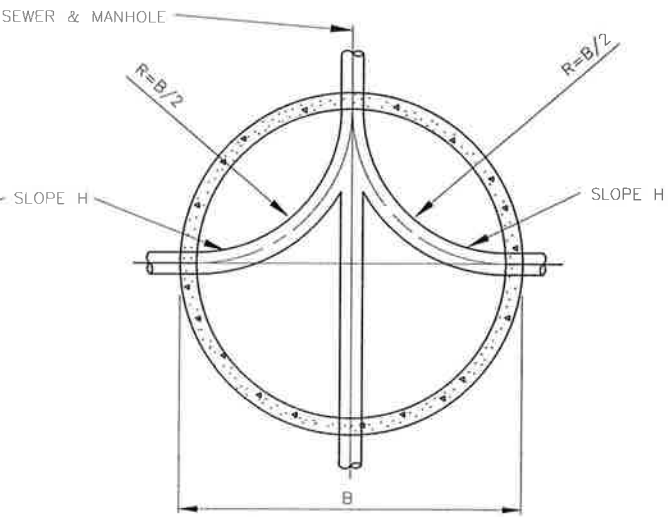
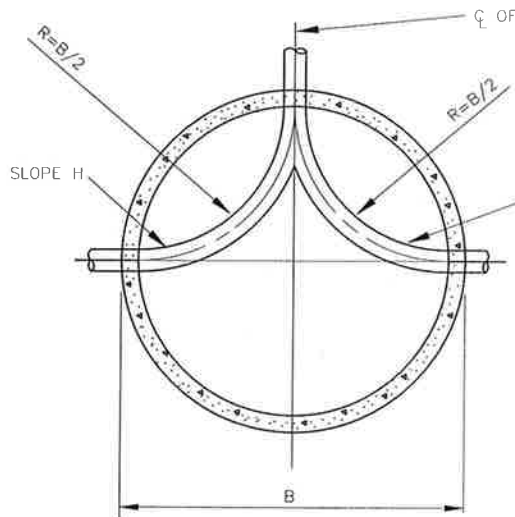
DATE: 2019

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WHEN A SMALLER SEWER JOINS A LARGER ONE,
THE TOP OF PIPE SHALL BE MATCHED AT THE
SAME ELEVATION



MAX. PIPE DIA.	8"	10"	12"	14"	16"	18"	20"	24"	27"	30"	36"
A	4'-0"	4'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	6'-0"	6'-0"
B	4'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	6'-0"	8'-0"
C	4"	5"	6"	7"	8"	9"	10"	12"	13.5"	15"	18"
G	0.05'	0.05'	0.05'	0.04'	0.02'	0.02'	0.02'	0.02'	0.02'	0.02'	0.02'
H	0.10'	0.10'	0.10'	0.07'	0.05'	0.05'	0.05'	0.05'	0.05'	0.05'	0.05'

STANDARD MANHOLE DIMENSIONS

VILLAGE OF CHURCHVILLE

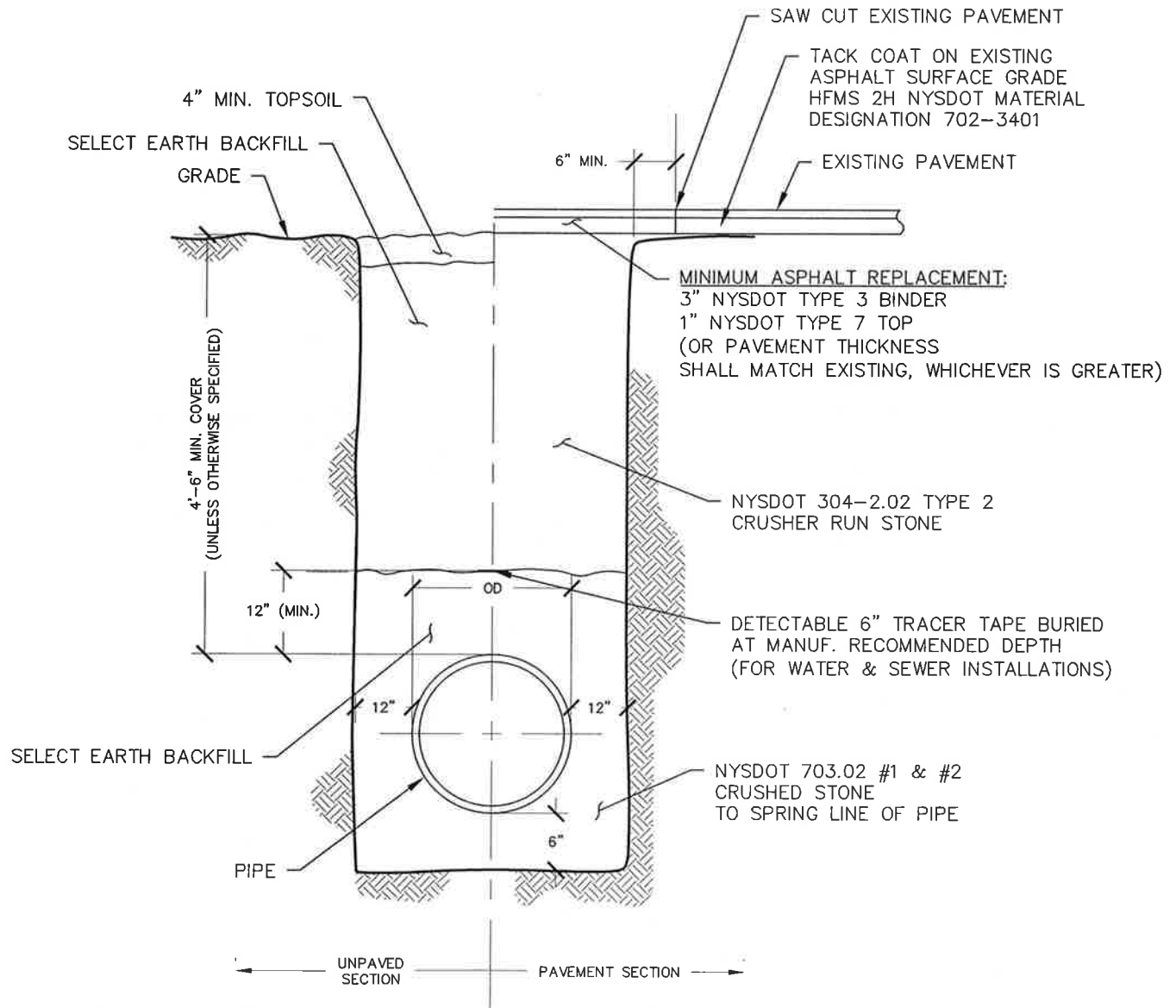
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FLEXIBLE PIPE TRENCH DETAIL

VILLAGE OF CHURCHVILLE

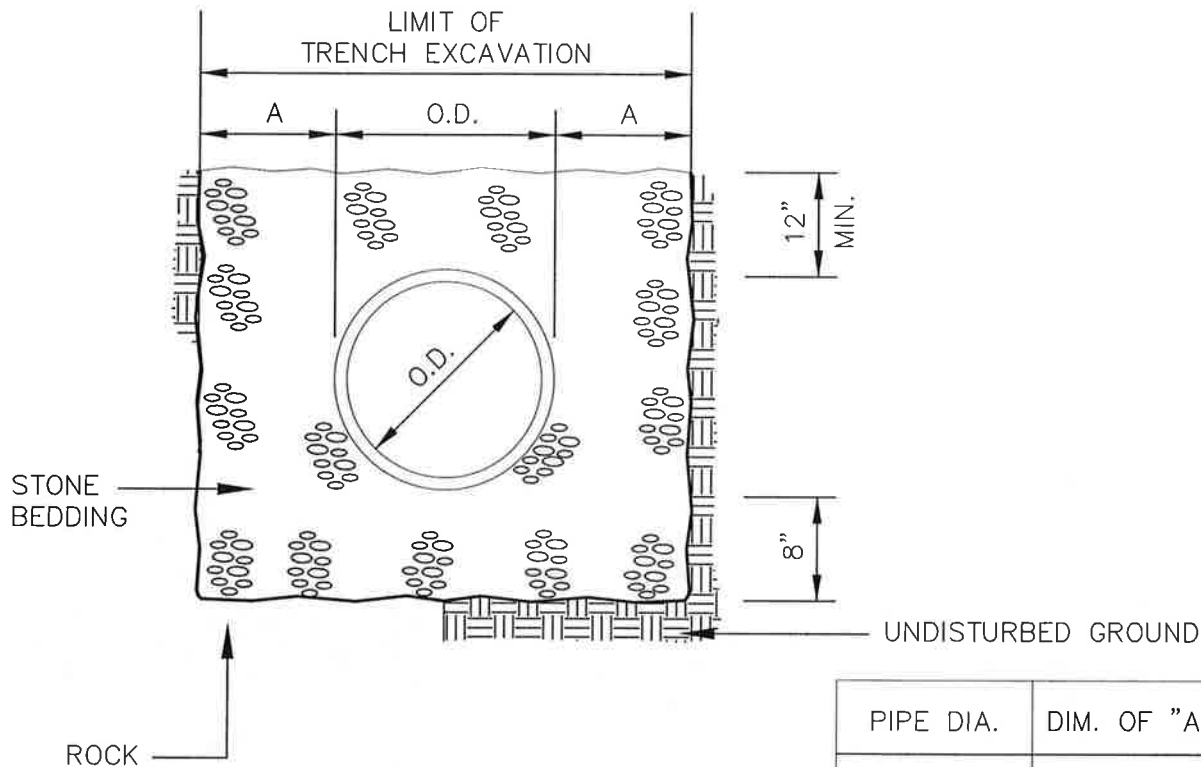
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APPENDIX: **S - 5.0**

DATE: 2019

SCALE: N.T.S.

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PIPE BEDDING

N.T.S. CLASS "B"

PIPE DIA.	DIM. OF "A"	"B"
UP TO 18"	1.0'	6"
21" TO 36"	1.5'	9"
OVER 36"	1.5'	12"

NOTES:

1. TRENCH BACKFILL SHALL BE AS REQUIRED BY THE HIGHWAY OWNER.
2. SELECT FILL SHALL BE SAND, GRAVEL AND SIMILAR MATERIAL WHICH SHALL BE FREE FROM CLAY, LOAM, ORGANIC MATERIAL, DEBRIS, FROZEN MATERIAL AND SHALL CONTAIN ONLY SMALL AMOUNTS OF STONE, PEBBLES OR LUMPS OVER ONE INCH IN GREATEST DIMENSION BUT NONE OVER TWO INCHES IN GREATEST DIMENSION.
3. STONE BEDDING SHALL MEAN APPROVED IMPORTED AGGREGATE MEETING THE REQUIREMENTS OF THE N.Y.S.D.O.T., STANDARD SPECIFICATION, JAN. 2, 1985 EDITION PAGES 7-14, SUBSECTION 703-0201 "CRUSHED STONE", PRIMARY SIZE 1 OR A MIXTURE OF PRIMARY SIZES 1 AND 2.
4. COARSE AGGREGATE SHALL MEAN APPROVED IMPORTED AGGREGATE MEETING THE REQUIREMENTS OF THE N.Y.S.D.O.T., STANDARD SPECIFICATION, JAN. 2, 1985 EDITION, PAGES 7-14, SUBSECTION 703-0201 "CRUSHED STONE", PRIMARY SIZE 3 AND/OR 4.

PIPE BEDDING DETAIL

VILLAGE OF CHURCHVILLE

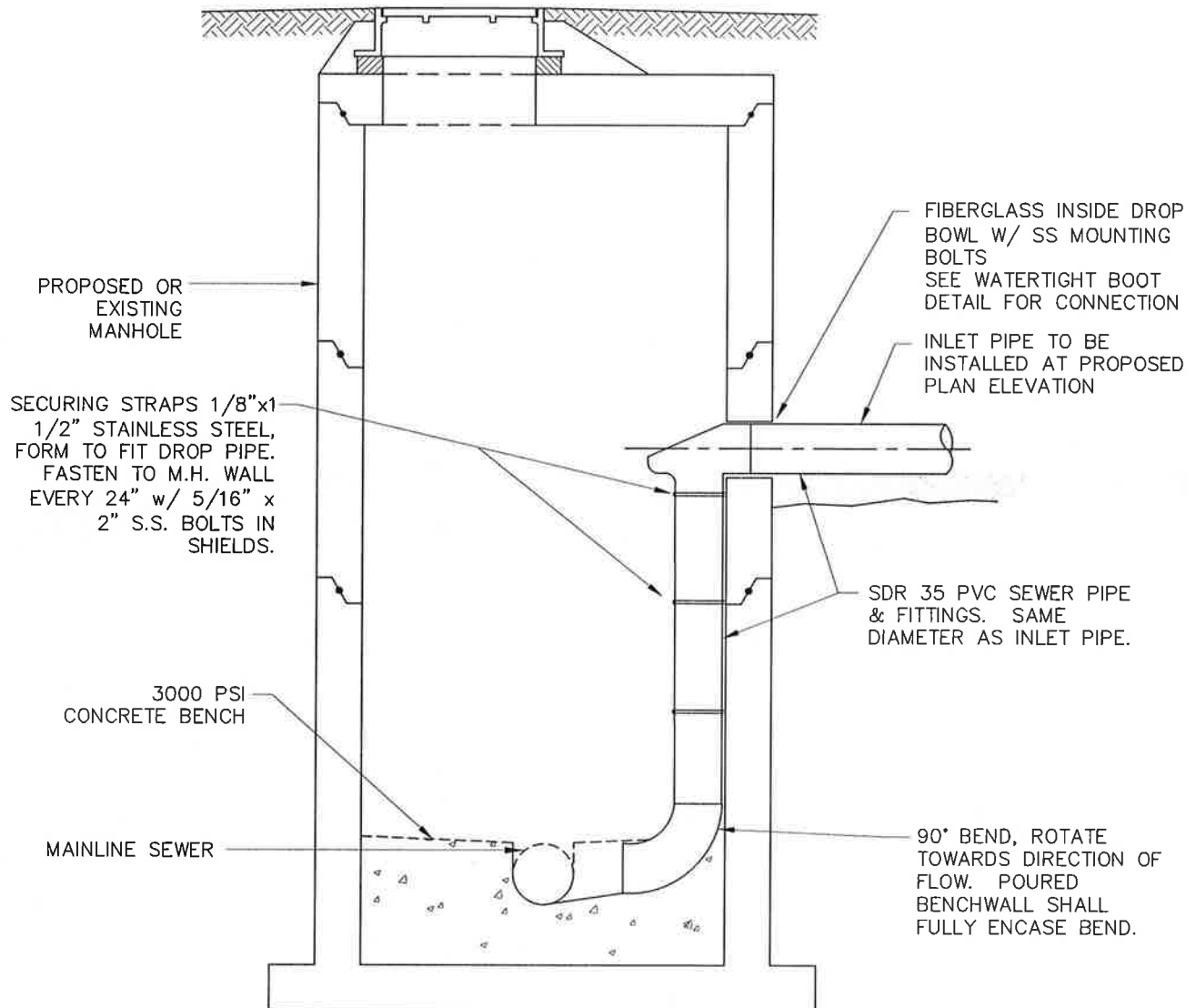
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APPENDIX: **S - 6.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. MIN. 5' DIAMETER MANHOLE REQUIRED FOR INSIDE DROP CONNECTIONS.
2. REFER TO TYPICAL SANITARY MANHOLE DETAIL FOR OTHER REQUIREMENTS.

SANITARY SEWER INSIDE DROP MANHOLE

VILLAGE OF CHURCHVILLE

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APPENDIX: **S - 7.0**

DATE: 2019

SCALE: N.T.S.

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CONDITION	SCHEMATIC	REQUIREMENTS
I WATER LINE ABOVE SEWER LINE		<p>A) WATER LINE AND SEWER LINE PIPE LENGTHS TO BE CENTERED AT CROSSING. EACH LENGTH OF PIPE TO BE 10 FT. MINIMUM.</p> <p>B) BACKFILL WITH COMPACTED CRUSHER RUN STONE.</p>
II WATER LINE ABOVE SEWER LINE		<p>A) WATER LINE AND SEWER LINE PIPE LENGTHS TO BE CENTERED AT CROSSING. EACH LENGTH OF PIPE TO BE 10 FT. MINIMUM.</p> <p>B) WHEN BOTH WATER LINE AND SEWER LINE ARE NEW, SLEEVE SEWER LINE WITH STEEL CASING FOR 10 FT. EACH SIDE OF CROSSING.</p> <p>C) WHEN ONE LINE IS EXISTING, SLEEVE PIPE BEING INSTALLED WITH STEEL CASING FOR 10 FT. EACH SIDE OF CROSSING.</p> <p>D) BACKFILL WITH COMPACTED CRUSHER RUN STONE.</p>
III SEWER LINE ABOVE WATER LINE		<p>A) WATER LINE AND SEWER LINE PIPE LENGTHS TO BE CENTERED AT CROSSING. EACH LENGTH OF PIPE TO BE 10 FT. MINIMUM.</p> <p>B) SLEEVE SEWER LINE WITH STEEL CASING FOR 10 FT. EACH SIDE OF CROSSING.</p> <p>C) PROVIDE CRADLE OF CONCRETE OR CRUSHER RUN STONE (SEE TRENCH DETAIL BELOW) FOR WATER LINE AND SEWER LINE FOR 10 FT. EACH SIDE OF CROSSING.</p>
<p>NOTES</p> <p>WL (WATER LINE) SL (SEWER LINE) D (OUTSIDE DIAMETER OF PIPE)</p> <p>IN NO CASE SHALL PIPES BE CLOSER THAN 18" APART. DISTANCES ARE MEASURED BETWEEN OUTSIDES OF PIPE.</p>		

WATERMAIN / SEWER CROSSING DETAIL

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CATCH BASIN DETAIL

VILLAGE OF CHURCHVILLE

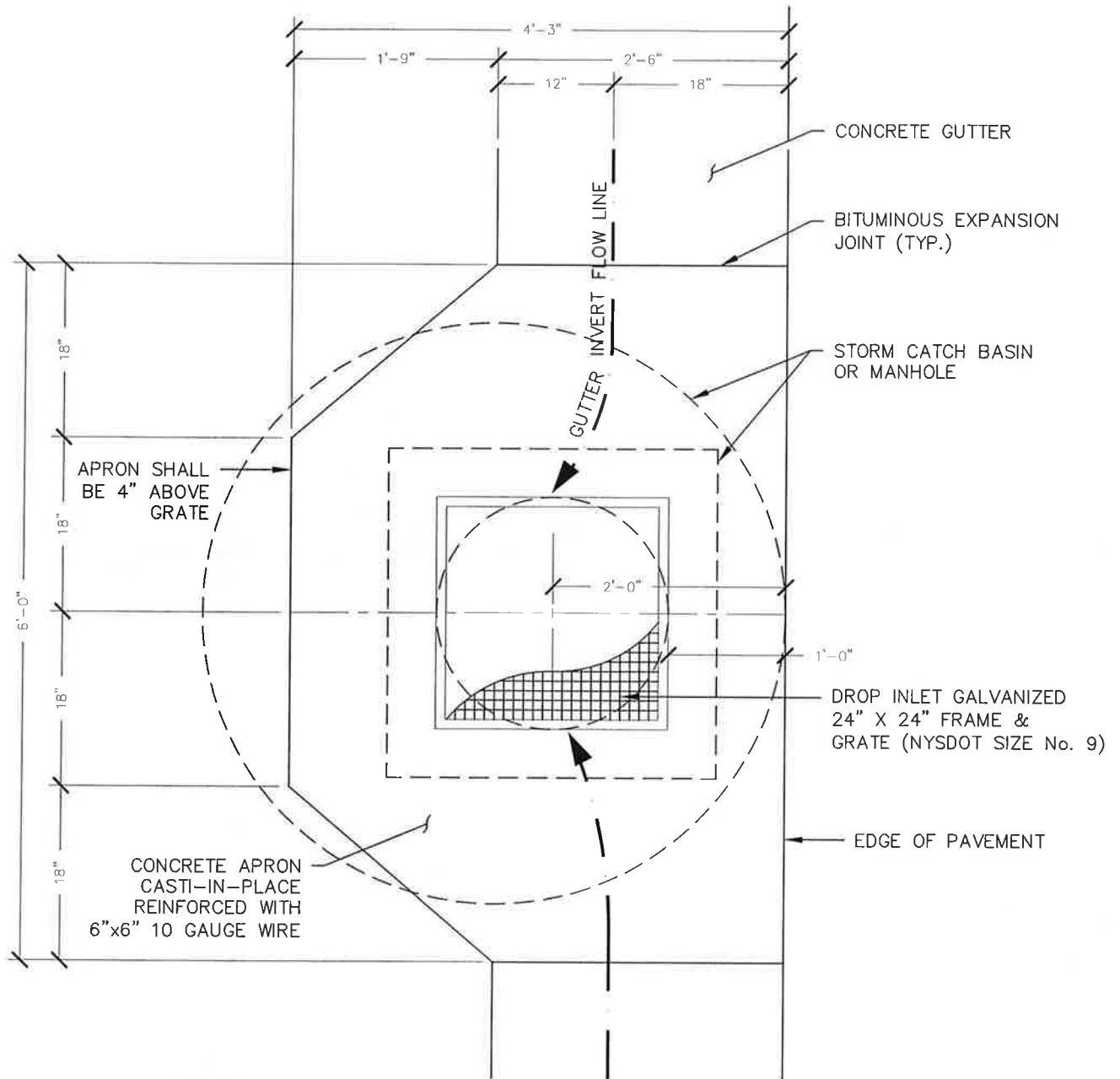
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APPENDIX: **ST - 3.0**

DATE: 2019

SCALE: N.T.S.

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NOTES:

1. CATCH BASINS SHOULD NOT BE PLACED IN DRIVEWAY AREAS.
2. SPECIAL DESIGN MAY BE REQUIRED FOR STEEP GRADE SECTIONS.

GUTTER AND CATCH BASIN APRON DETAIL

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THE INSIDE & OUTSIDE WALLS OF DROP INLET SHALL BE COATED WITH KOPPERS BITUMASTIC 300-M, FARBERTITE (C) AS MANUFACTURED BY BRIGGS BITUMINOUS COMPOSITION CO., OR APPROVED EQUIVALENT.



VILLAGE OF CHURCHVILLE

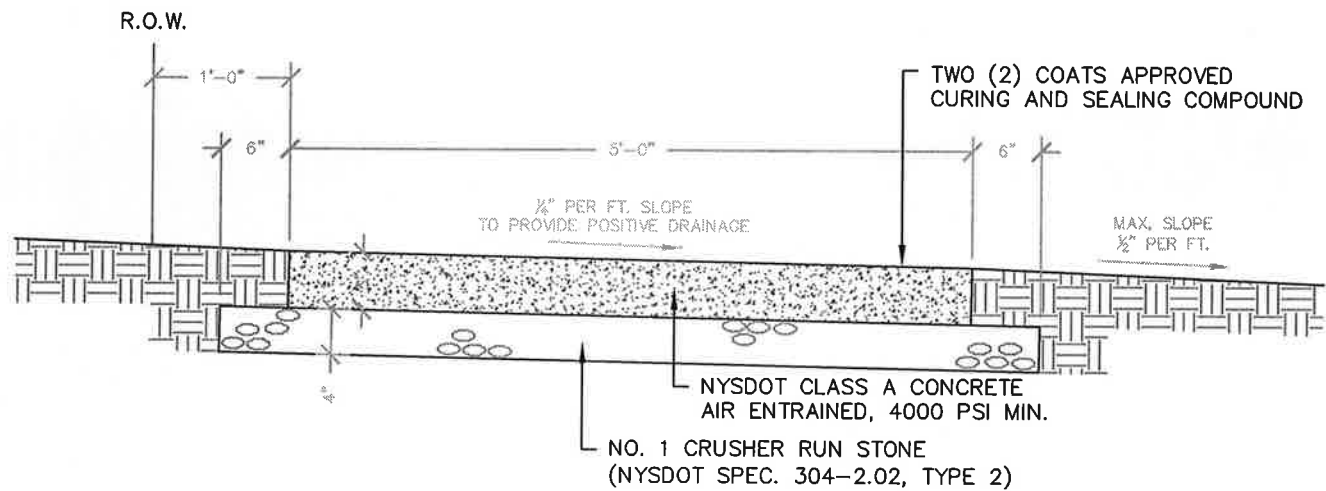
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APPENDIX: **SW - 1.0**

DATE: 2019

SCALE: N.T.S.

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NOTE:

1. CONCRETE SIDEWALKS THROUGH DRIVEWAYS SHALL INCLUDE 6"x6" WIRE MESH (10 GAUGE) FOR REINFORCEMENT.
2. CONTROL JOINTS SHALL BE SPACED 5' O.C.
3. EXPANSION JOINTS SHALL BE 50' O.C.

SIDEWALK DETAIL

VILLAGE OF CHURCHVILLE

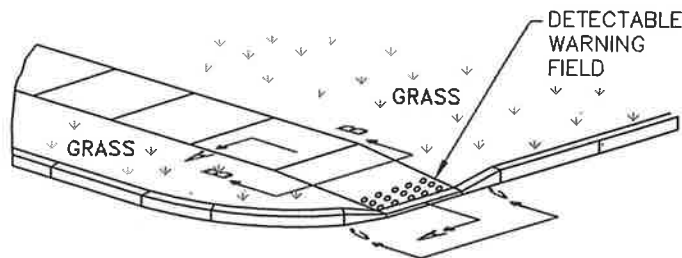
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APPENDIX: **SW - 2.0**

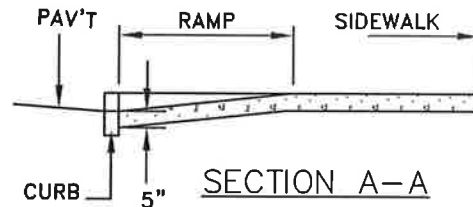
DATE: 2019

SCALE: N.T.S.

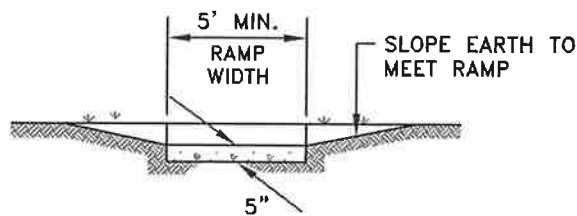
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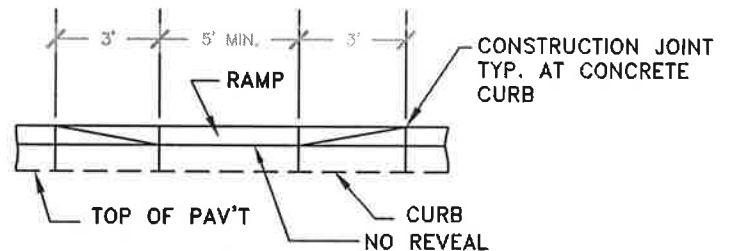
TYPE 1 RAMP ISOMETRIC



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

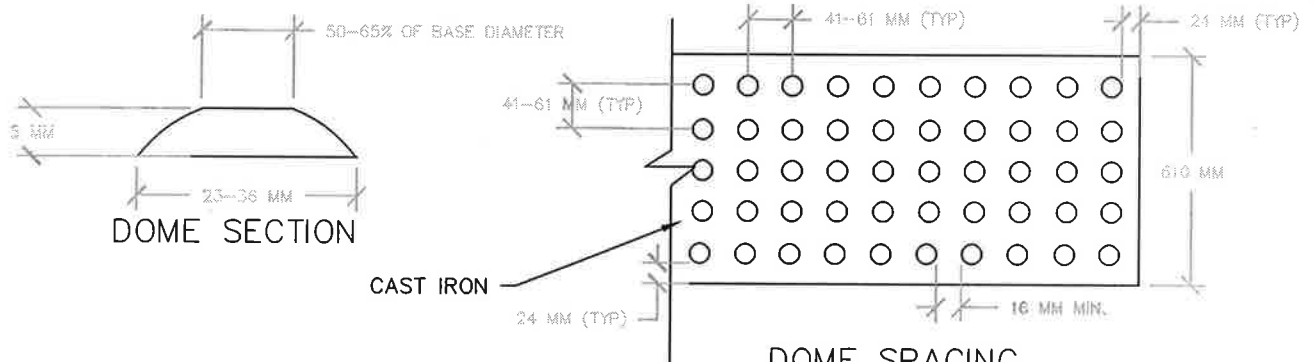
1. TYPE 1 RAMPS MAY BE PROVIDED IN BOTH DIRECTIONS.
2. AT CONCRETE CURB, ROUND EDGE OF CURB WITH A RADIUS APPROX. EQUAL TO HEIGHT OF LIP RAMPS.
3. MAXIMUM 1:12 SLOPE.

SIDEWALK CURB RAMP TYPE 1 DETAIL

GENERAL NOTES:

N.T.S.

1. DETECTABLE WARNING FIELDS SHALL MEET ADA REQUIREMENTS AND BE CONSTRUCTED OF CAST IRON.
2. LOCATION OF DETECTABLE WARNINGS. DETECTABLE WARNINGS SHALL BE LOCATED SO THAT THE EDGE OF THE WARNING FIELD NEAREST TO THE ROADWAY OR STREET SURFACE IS 150 mm TO 225 mm (305 WHERE TRANSVERSABLE CURB IS USED) FROM THE EDGE OF THE ROADWAY/STREET, OR FROM THE FACE OF THE DROPPED CURB, WHERE A DROPPED CURB CONTINUES ACROSS THE BOTTOM OF THE SIDEWALK CURB RAMP. THE DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE.
3. DOME ALIGNMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL.



SIDEWALK CURB RAMP TYPE 1 AND DETECTABLE WARNING FIELDS

VILLAGE OF CHURCHVILLE

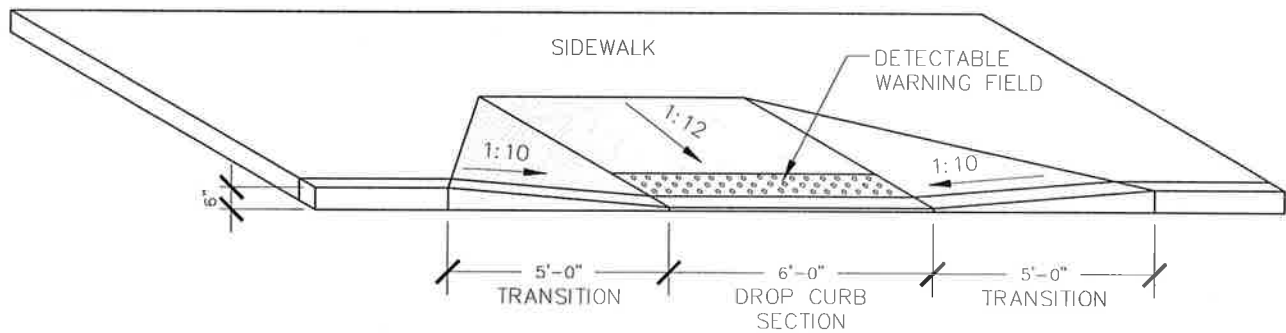
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APPENDIX: **SW - 3.0**

DATE: 2019

SCALE: N.T.S.

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SIDEWALK CURB RAMP TYPE 2

VILLAGE OF CHURCHVILLE

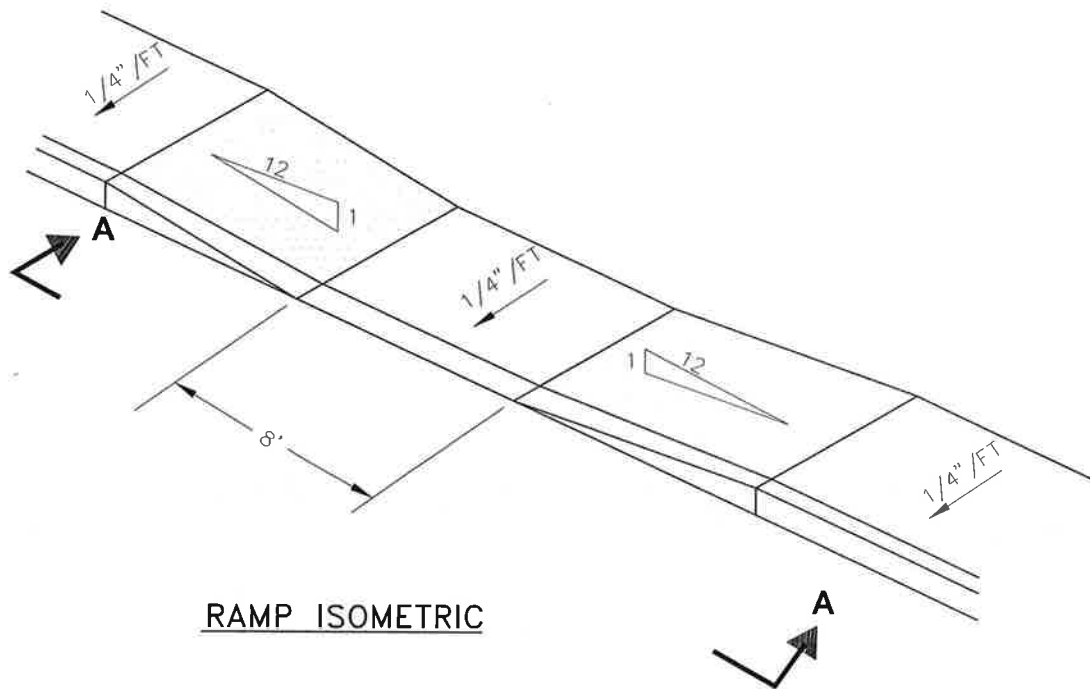
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APPENDIX: **SW - 4.0**

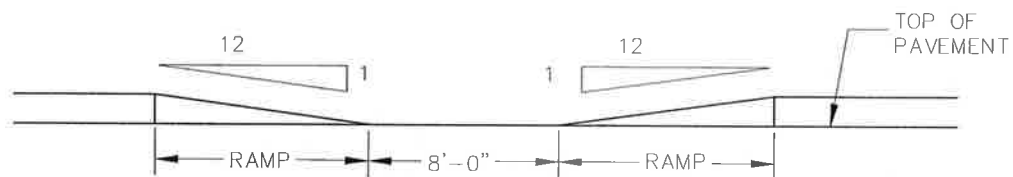
DATE: 2019

SCALE: N.T.S.

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RAMP ISOMETRIC



VIEW A - A

SIDEWALK CURB RAMP TYPE 1