

**HALDIMAND COUNTY**  
**DESIGN CRITERIA**

**SECTION R**

**MULTIPLE UNIT DWELLINGS,  
COMMERCIAL, INDUSTRIAL  
OR INSTITUTIONAL LANDS**

Revised 2015

**R 1.00 SITE PLAN AGREEMENT**

In cases where a subject property is affected by site plan control in the applicable zoning by-law, Developers of all multiple unit dwellings, commercial or institutional lands may be required to enter into Site Plan Agreement with Haldimand County prior to the commencement of construction of any building or service within the parcel of land. Refer to Section E. for additional information regarding agreements.

The Developer shall contact the Senior Development Planner for information concerning site plan agreements.

**R 2.00 PROFESSIONAL ENGINEER**

The Developer shall retain a qualified Professional Engineer to prepare all engineering drawings and to supervise the construction of all engineering services. The Engineer shall act as the Developer's representative in all matters pertaining to the design and construction of the services in the development.

**R 3.00 HALDIMAND COUNTY'S RESPONSIBILITY**

Haldimand County is responsible for all roads, storm sewers, sanitary sewers and watermains that are constructed or proposed for construction on all public road allowances and within registered easements within Haldimand County.

Connection to any of those services or utilities requires Haldimand County approval.

Engineering Drawings shall be prepared for the site indicating the location, size, grade, invert elevations, material and bedding requirements for all sanitary and watermain servicing and connections, and submitted to Haldimand County for approval. Engineering drawings shall also be prepared for all sanitary sewers and watermains that are required to be constructed within road allowances or Registered easements to service the subject property. These drawings are to be prepared to Haldimand County's standards in accordance with this criteria.

Haldimand County is also responsible for the collection of revenue for water consumption. Therefore, the metering arrangement for the subject property shall also require County approval.

**R 4.00 ENGINEERING DRAWINGS**

**R 4.01 REQUIREMENTS**

Engineering drawings will be required for each development and shall include, but not be limited to:

- a) Site Grading Plan, siltation and erosion control
- b) Site Services Plan & Profile
- c) Landscaping Plan
- d) Electrical Services Plan
- e) Any servicing external to the site that may be required

Additional engineering drawings shall be prepared where required, or when requested, by the Manager of Engineering or designate.

All engineering drawings shall be prepared from one base plan, prepared at a scale of 1:200, and shall contain the following information:

- a) A key plan at a scale of 1:10000 showing the site location
- b) A north arrow
- c) The street names, lot and Registered Plan numbers, and property dimensions
- d) The outline of all buildings with the building numbers indicated and garage locations within the unit
- e) The roadway and driveways
- f) Adjacent lands
- g) Existing land features (trees, watermains, etc.)
- h) The reference bench mark (geodetic) used to establish vertical control and the site bench marks to be used for construction.

**R 4.02 SITE GRADING PLAN**

The site grading plan shall show the following information:

- a) Centreline grades at 20m intervals along all existing streets bounding the property and existing grades
- b) A legend indicating existing and proposed elevations
- c) Contours at maximum 0.5m intervals to indicate the existing elevations of the site. These contours are to extend to a

minimum distance of 30m beyond the property limits to indicate the grading and drainage patterns of the adjacent lands.

- d) Cross sections, as required, to clarify the proposed grading, particularly in relation to adjacent lands
- e) Proposed elevations on paved areas, around proposed buildings, along swales, along roadways, parking areas, driveways, catchbasin rim elevations, and any other elevations necessary to establish the grading and drainage patterns for the development. Arrow to be used to indicate direction of the surface drainage. Large heavy arrows are to be used to indicate overland flow routes.
- f) All manholes, catchbasins, hydrants and valves to be shown by a symbol with a legend provided.
- g) All sidewalks and walkways.
- h) All building elevations to be established and referenced to a Finished First Floor top of foundation wall, and a Finished Basement Floor elevations.
- i) A typical roadway cross section to indicate the pavement structure and granular base design.
- j) Roadway-driveway dimensions and curb radii.
- k) The location and detail of all curbs adjacent to roadways.
- l) The location of embankments, retaining walls, stairs.
- m) All proposed and existing trees, shrubs adjacent to roadways.

#### **R4.03 SITE SERVICES PLAN & PROFILE**

The Site Services Plan & Profile **must** include the following information:

- a) All existing underground services on the streets and easements adjacent to the property.
- b) The location, size, grade, invert elevations of all storm and sanitary service connections to the property.

- c) The location and size of all watermain connections to this property.
- d) The basement floor elevations of all buildings to be constructed.
- e) The location, size, length, grade, for all sanitary, storm and water services to be constructed within the development.
- h) The location, invert elevation and rim elevations for all sanitary and storm manholes and catchbasins to be constructed.
- i) The location of all hydrants, valves and water meters within the development.
- j) The location and size of all sanitary, storm and water service connections to the individual units.
- k) The location of all roof water leaders that are to be connected to the storm sewer. There will be no direct connection of Foundation Drains to the Storm Sewer System.
- l) All construction notes required describing the construction details or requirements.
- m) Profiles indicating water service, storm service, sanitary service and utilities for all internal streets in multiple unit dwelling developments ; profiles and/or cross-sections to clearly identify service & utility crossings for all commercial, industrial or institutional lands.

**R 4.04 LANDSCAPING PLAN**

The Landscaping Plan shall be prepared by a qualified Landscape Architect. The Landscaping Plan shall show all landscaping details as required by the Site Plan Agreement.

All manholes, catchbasins, hydrants, valves, streetlights and other servicing features that appear above grade shall also be shown on the Landscaping Plan.

**R4.05 ELECTRICAL SERVICES PLAN**

A qualified Electrical Consulting Engineer shall prepare the Electrical Services Plan. The Electrical Services Plan shall show all details of the electrical distribution system and the street lighting system.

The Electrical Services Plan shall be submitted concurrently to Haldimand County Hydro Inc. & Haldimand County Engineering & Infrastructure for approval.

**R 5.00 DESIGN REQUIREMENTS**

**R 5.01 SITE GRADING DESIGN**

- a) The stormwater management of the site is to be self-contained, where it is not feasible to manage stormwater within the site, drainage agreements/ easements (registered on title) with neighbouring landowners may be an option. These exceptional cases may be considered by the Manager of Engineering.
- b) The grading of the site is to be compatible with the elevation of the surrounding lands and in conformity with sections L and M of this criteria.
- c) **The maximum lot surface grade for landscape areas shall be 8%.** A slope of 3:1 (3 parts horizontal to 1 part vertical) shall be used to take up any additional grade difference. The minimum slope for all landscape areas shall be 2%.e). **Swales shall have a minimum slope of 1.5%. Maximum depth or all swales shall be 0.5m. Maximum side slope on any swale shall be 3:1.**

**Slopes for swales for infill lots or stormwater quality swales, less than the minimum standard of 1.5%, may be deemed acceptable by the Manager of Engineering or designate, in exceptional cases only.**

All drainage swales shall be located on one side of the common lot line between adjacent lots and not along the property line.

**Driveways shall not be used as outlets for any swales.**

- d) The maximum length for any drainage swale shall be 90m.)
- e) All driveways shall have positive drainage toward the roadway from the property line only and a break in grade is required at the property line.

**R 5.02 INTERNAL ROADWAY DESIGN**

- a) The minimum pavement design for all multiple unit development roadways shall be:

50mm of HL3, 50mm of HL8, 150mm of Granular A 300mm Granular "B". All urban road cross-sections shall have sub-drains located lower than the lowest elevation of granular material in the road base.

- b) All driveways in multiple unit development projects shall be paved with asphalt from the edge of the roadway to the garage. The minimum pavement design for all driveways, parking and non-truck lanes

Asphalt                    -    50 mm HL3 surface course  
   -  
   -    Granular base 150mm of Granular 'A'

- c) The minimum pavement width of a multiple unit development roadway for two-way traffic with no street parking shall be 7.30m.

- d) All roadways serving multiple unit development projects shall be designed to facilitate passage of emergency and service vehicles. Road bends/curves must have an inside radius of 7.62m and outside radius of 15.24m minimum. On dead-end streets, provisions shall be provided for vehicle turning.

- e) The minimum grade for any multiple unit development roadway shall be 0.5% and the maximum grade shall be 6%.

- f) The minimum grade for any driveway in a multiple unit development project shall be 2% and the maximum grade shall be 8%. This maximum grade is not recommended and should be employed only in exceptional cases where physical conditions prohibit the use of lesser grades.

**R 5.03 SITE SERVICES DESIGN**

- a) All storm sewers shall be designed in accordance with the requirements of the Ontario Plumbing Code and Sections H and I.
- b) All storm sewers shall be located within the limits of the roadway with storm service connections being provided as required.

Residential Roof leaders shall not be connected to the storm sewer; they must be surface discharged via a splashpad. Commercial, Industrial & Institutional Roof Water Leaders may only be connected to the storm sewer if a comprehensive stormwater management plan for the site is approved by the Manager of Engineering. There shall be no direct connection of weeping tiles or foundation drains to the storm sewer system.

- c) All storm sewer connections shall be sized according to the requirements of the Ontario Plumbing Code and shall be installed on a minimum grade of 0.5%.
- d) Yard catchbasins shall be provided, where required, for drainage of landscaped areas.
- e) Catchbasin manholes may be used for roadway drainage.
- f) Maximum spacing of catchbasins for roadway drainage shall be 61m. Maximum 800m<sup>2</sup> (at slope up to 5%) and max 600m<sup>2</sup> (at slope over 5%) of paved drainage area is allowable to catch by single catchbasin. (?)
- g) All watermains shall be designed in accordance with the requirements of the Ontario Plumbing Code. The watermain design shall be submitted to the Haldimand County Physical Services Department for approval of the watermain layout and the hydrant locations.

**R 5.04 LANDSCAPING DESIGN**

The landscaping requirements shall be detailed in the Site Plan Agreement.

**R 5.05 ELECTRICAL DESIGN REQUIREMENTS**

The requirements for the design of the electrical distribution system and the street lighting shall be agreed upon with Haldimand County Hydro Inc. prior to commencement of the design.

**R 6.00 AS CONSTRUCTED DRAWINGS**

Once all construction is complete, the design drawings shall be amended to incorporate all changes/alterations made during construction, to properly represent the final as-constructed conditions. As-constructed drawings shall be submitted in both digital and mylar formats.

**R 7.00 CERTIFICATION**

Upon completion of construction the Consulting Engineers shall provide certification to Haldimand County that all works have been constructed in accordance with the approved plans and specifications and in accordance with good engineering practices. [as perL 5.00]

**R 8.00 FINAL INSPECTION**

The Developer's Engineer shall carry out a final inspection of the works, upon completion of all construction. All deficiencies found during final inspection shall be immediately corrected by the Developer. This final inspection is carried out for the benefit of Haldimand County, and shall in no way relieve the Developer of his/her obligations under the applicable Agreement.

The Developer's Engineer shall provide a certificate indicating that all site works have been constructed in accordance with the approved plans.