

**HALIFAX REGIONAL MUNICIPALITY  
BY-LAW L-400  
RESPECTING LOT GRADING**

**Short Title**

1. This By-law shall be known as By-law L-400 and may be cited as the “Lot Grading By-law”.

**Interpretation**

2. In this By-law:

(a) “Approved Subdivision Grading Plan” means a grading plan in a form acceptable to the Engineer, which is approved at the time of final subdivision approval and as may be amended from time to time by the Municipality which illustrates the drainage systems and patterns common to two or more lots in a subdivision;

(b) “building area” means the greatest horizontal area of a building above grade within the outside surface of exterior walls;

(c) “building height” means the number of storeys contained between the roof and the floor of the first storey;

(d) “Committee” means the Appeals Committee established pursuant to By-law A-100, the *Appeals Committee By-law*;

(e) “Council” means the Regional Council of the Municipality;

(f) "deficiency report" means a report prepared by a Nova Scotia Land Surveyor, a Landscape Architect, or a Professional Engineer describing the uncompleted construction requirements, as related to the grading and drainage works shown on the Lot Grading Plan;

(g) "development" means the definition found in the *Halifax Regional Municipality Charter* as amended from time to time;

(h) "drainage" means a system of natural or artificial drains;

(j) "Engineer" means the definition found in the *Halifax Regional Municipality Charter* as amended from time to time;

(k) "first storey" means the upper most storey having its floor level not more than two (2) metres above grade;

(l) "grade" means, as applied to the determination of building height, the lowest of the average levels of finished ground adjoining each exterior wall of a building but does not include localised depressions for vehicle or pedestrian entrances;

(m) "grading" means the alteration of land levels, including the addition or removal of topsoil or other material of any kind;

(n) "Landscape Architect" means a person who is a member in good standing in the Canadian Society of Landscape Architects;

(o) "Lot Grading and Drainage General Specification" means the latest edition of the specifications contained in Schedule A to this By-law;

(p) "Lot Grading Certificate" means a plan or report, prepared in accordance with the Lot Grading and Drainage General Specification and in a form acceptable to the Engineer, depicting the recorded grading and drainage works on a lot of land as proposed on the Lot Grading Plan;

(q) "Lot Grading Permit" means a permit issued under the provisions of this By-law;

(r) "Lot Grading Plan" means a plan of final grading of land for an individual lot of land prepared in accordance with the Lot Grading and Drainage General Specification;

(s) "Municipality" means Halifax Regional Municipality;

(t) "Nova Scotia Land Surveyor" means a registered or licensed member, in good standing, of the Association of Nova Scotia Land Surveyors;

(u) "owner" includes as it refers to the owner of property:

(i) a part owner, joint owner, tenant in common or joint tenant of the whole or any part of land or a building,

(ii) in the case of the absence or incapacity of the person having title to the land or building, a trustee, an executor, a guardian, an agent, a

mortgagee in possession or a person having the care or control of the land or building,

(iii) a person who occupies shores, beaches or shoals, and

(iv) in the absence of proof to the contrary, the person assessed for the property;

(v) "person" means a natural person, corporation, partnership, an association, society, firm, agent, trustee, or registered Canadian charitable organization as defined in section 3(bc) of the *Charter*, and includes the heirs, executors or other legal representatives of a person, or owner;

(w) "Professional Engineer" means a registered or licensed member in good standing of the Association of Professional Engineers of Nova Scotia;

(x) "residential building" means any structure used or intended to be used for supporting a principally or majority residential use but excludes commercial residential uses such as a hotel, motel or hostel;

(xa) "retaining wall" means a rigid wall that is structurally designed and constructed to support fill materials between areas of land of different elevations;

(y) "sanitary sewerage system" means a system which is publicly owned and maintained and which consists of pipes or conduits receiving or carrying water-borne wastes and includes any trunk sewers, pumping stations and treatment plants; and

(z) "subdivision" means the division of any area of land into two or more parcels, and includes a resubdivision and a consolidation of two or more parcels.

### **Application and Administration**

3. This By-law shall apply to the development of all lots located within an area where a sanitary sewage system is provided or is to be provided in the Municipality where the structure is:

(a) a residential building;

(i) 600 square metres or less in building area; and

(ii) three (3) or fewer storeys in building height;

(b) a swimming pool;

- (c) an accessory building associated with a residential use;
  - (d) a retaining wall over 1 metre in height.
4. Notwithstanding section 3, this By-law shall not apply to the following:
- (a) a addition of an existing building that does not involve changes to the building footprint or changes to the lot grading and drainage patterns;
  - (b) new building construction where lot grading is regulated by a Development Agreement; and
  - (c) a building designed to be situated on a site conforming with CSA Z240.10.1, Site Preparation, Foundation, and Anchorage of Manufactured Homes.

### **General Requirements**

5. Nothing in this By-law shall exempt any person from complying with any other by-law or requirement of the Municipality, or from obtaining any license, permission, permit, authority or approval required by any other by-law of the Municipality or statute or regulation of the Province of Nova Scotia.

6. Where the provisions of this By-law conflict with those of any other By-law of the Municipality or any statute or regulation of the Province of Nova Scotia, the more stringent requirements shall prevail.

### **Lot Grading Permit Application Procedure**

7. Subject to section 3, no lot shall be developed unless a Lot Grading Permit has been issued by the Municipality.

8. An application for a Lot Grading Permit shall be made at the time of application for a construction permit for works as set out in section 3.

9. An application for a Lot Grading Permit shall include a Lot Grading Plan prepared in accordance with the Lot Grading and Drainage General Specification as follows:

- (a) where an Approved Subdivision Grading Plan exists, and the drainage patterns depicted on the approved Subdivision Grading Plan are to be preserved, the Lot Grading Plan is to be prepared by a Nova Scotia Land Surveyor, a Landscape Architect, or a Professional Engineer; or

(b) where an Approved Subdivision Grading Plan does not exist, or the drainage patterns depicted on the Approved Subdivision Grading Plan are to be varied, the Lot Grading Plan is to be prepared by a Professional Engineer.

10. Where an Approved Subdivision Grading Plan exists, the Lot Grading Plan shall be consistent with the Approved Subdivision Grading Plan, subject to variations approved by the Municipality.

11. A Lot Grading Plan is deemed to be approved when it meets the requirements of this By-law and a Lot Grading Permit has been issued by the Municipality.

### **Lot Grading Certificate**

12. (1) No person shall occupy a building as set out in clause 3(a) unless a Lot Grading Certificate has been submitted to the Municipality.

(2) The Lot Grading Certificate shall confirm that the lot has been constructed in accordance with the Lot Grading Plan and shall be prepared by a Nova Scotia Land Surveyor, a Landscape Architect, or a Professional Engineer.

(3) Final inspection for:

(i) a pool as set out in clause 3(b), or

(ii) a structure as set out in clause 3(c),

shall not be completed unless a Lot Grading Certificate has been submitted to the Municipality.

13. Where variations depicted on the Lot Grading Plan exist the Lot Grading Plan shall be subject to review and approval by the Municipality.

14. Notwithstanding section 12, a residential building may be occupied prior to receipt of a Lot Grading Certificate where the following is filed with the Municipality:

(a) a deficiency report prepared by a Nova Scotia Land Surveyor, a Landscape Architect, or a Professional Engineer, in a form acceptable to the Engineer, setting forth details of the work to be completed; and

(b) an undertaking by the owner stating that:

(i) the uncompleted work required by the Lot Grading Plan and the deficiency report will be completed, and

(ii) the Lot Grading Certificate shall be submitted

within a period of nine (9) months.

### **Orders by the Engineer**

15. (1) When the owner fails to comply with this By-law the Engineer may issue an Order to the owner and the owner shall, at the owner's sole expense, bring the lot into compliance with the by-law.

(2) An Order issued pursuant to subsection (1) of this section shall specify the date on which the lot is to be brought into compliance.

(3) (a) An owner may, within fourteen (14) calendar days of being served with an Order that was issued pursuant to subsection (1) of this section, appeal the Order of the Engineer to the Committee.

(b) The day an owner receives a notice shall not be counted in determining the fourteen (14) calendar day period.

(c) Where the fourteenth calendar day falls on a day that the Municipal Clerk's office is not open, the final appeal date is the next business day.

(4) An appeal pursuant to subsection (3) shall be commenced by filing a written notice with the Municipal Clerk which clearly states the grounds for the appeal.

(5) If the owner files an appeal, but the Committee is not scheduled to meet before the date on which the lot is to be brought into compliance, the Order shall be held in abeyance until the Committee has rendered its decision on appeal.

(6) After hearing an appeal pursuant to subsection (3) of this section the Committee may:

(a) deny the appeal,

(b) allow the appeal and reverse the decision of the Engineer, or

(c) make any decision the Engineer could have made under this By-law.

(7) The Engineer may cause the lot to be brought into compliance if the owner does not comply with an Order to bring the lot into compliance on the date specified in the Order

16. Where the Municipality lawfully causes work to be done pursuant to this By-law, the cost of the work, with interest at the rate determined by the Council, by policy, from the date of the completion of the work until the date of payment, is a first lien on the property upon which, or for the benefit of which, the work was done.

### **Permit Fees**

17. An application for a Lot Grading Permit shall be accompanied by a payment of the prescribed fee as set out in Administrative Order 15.

18. Notwithstanding the provision of section 17, no Lot Grading Permit fee shall be required where the Lot Grading Permit is for lands owned by the Municipality.

### **Offence and Penalty**

19.

(1) A person who

(a) violates a provision of this By-law, Lot Grading Permit, undertaking or an order in force in accordance with this By-law;

(b) fails to do anything required by a Lot Grading Permit, undertaking or order in force in accordance with this By-law;

(c) permits anything to be done in violation of this By-law, Lot Grading Permit, undertaking or order in force in accordance with this By-law; or

(d) obstructs or hinders any person in the performance of their duties under this By-law, Lot Grading Permit, undertaking or order in force in accordance with this By-law,

is guilty of an offence.

(2) A person who commits an offence is liable, upon summary conviction, to a penalty of not less than one hundred dollars and not more than ten thousand dollars and in default of payment, to imprisonment for a term of not more than two months.

(3) Every day during which an offence pursuant to subsection (1) continues is a separate offence.

(4) In addition to any other remedy provided for by this By-law, Council may authorize an action or other legal proceeding to be brought in the Supreme Court of Nova Scotia for any or all of the remedies provided by this Section.

(5) In addition to a fine imposed for contravening a provision of this By-law, a judge may order the person to comply with the provision or order, under which the person was convicted, within the time specified in the order.

**Repeal of By-Law**

20. The following By-law is hereby repealed:

Halifax Regional Municipality By-law L-300

Done and passed in Council this 31<sup>st</sup> day of May, 2016.

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MAYOR

\_\_\_\_\_  
MUNICIPAL CLERK

I, Kevin Arjoon, Municipal Clerk for the Halifax Regional Municipality, hereby certify that the above-noted by-law was passed at a meeting of the Halifax Regional Council held on May 31, 2016.

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Kevin Arjoon  
Municipal Clerk



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| Notice of Motion:  | August 4, 2015 |
| First Reading:   | April 26, 2016 |
| Notice of Public Hearing Publication:                    | May 14, 2016   |
| Second Reading:  | May 31, 2016   |
| Approval by Service Nova Scotia and Municipal Relations: | N/A            |
| Effective Date:  | July 2, 2016   |

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Amendment # 1 – By-law L-401

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| Notice of Motion:  | February 21, 2017 |
| First Reading:   | March 7, 2017     |
| Notice of Public Hearing Publication:                    | March 11, 2017    |
| Second Reading:  | March 28, 2017    |
| Approval by Service Nova Scotia and Municipal Relations: | N/A               |
| Effective Date:  | April 1, 2017     |

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Amendment # 2 – By-law L-402

Amending sections 2, 3, 4, 8 and 12

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| Notice of Motion:                                      | July 21, 2020      |
| First Reading:   | August 18, 2020    |
| Notice of Second Reading Publication:                  | September 5, 2020  |
| Second Reading:  | September 22, 2020 |
| Approval by Minister of Municipal Affairs and Housing: | N/A                |
| Effective Date:  | September 26, 2020 |

**SCHEDULE A**  
**LOT GRADING GENERAL SPECIFICATION**

## 1. INTRODUCTION

### 1.1. General

A storm drainage system is as a group of interacting, interrelated, and interdependent elements carrying discharges in response to rain and snow. These discharges include overland flow, subsurface flow, and snowmelt.

A complete and properly functioning Storm Drainage System includes a variety of components which may be grouped into two categories:

“Community Systems” being those elements which serve two or more lots. For example, roadside ditches, culverts, roadways, curbs and gutters, street and backyard catchbasins, pipes or conduits, retention ponds, watercourses, floodplains, and drainage swales and ground elevations along common lot lines or in easements.

“Individual Lot Systems” being those elements which serve a single lot and are contained within its limits. For example, swales contained within lot limits, gently graded lot areas, slopes, roof downspouts, individual seepage pits, French Drains, building lateral, parking lot catchbasins and conduits.

### 1.2. Objectives

The Storm Drainage Systems, be they Community Systems or Individual Lot Systems, designed within the context of the Lot Grading By-law, and the siting and grading of the house, shall achieve the following objectives:

- (a) To prevent loss of life and to protect structures and property from significant damage and expense, including that which is expected to be experienced during the 1 in 100 year storm event.
- (b) To provide for convenient and reasonable use of lot areas during and following rain and snow events and from subsurface or groundwater flow, e.g. continuously saturated backyard, significant continuous icing.
- (c) To provide for safe use of lot and street areas, e.g. excessive depth of flow or water storage, significant continuous icing.
- (d) To avoid drainage problems or other conditions that result in unreasonable maintenance obligations on the Owner or Municipality, e.g. significant or regular de-icing operations.
- (e) To provide protection from erosion from surface flow, subsurface flow, or groundwater, e.g. slope stabilization.

- (f) To direct water away from buildings in order to especially prevent basement flooding and damage to the foundation drain.
- (g) To prevent standing water and soil saturation detrimental to buildings, driveways, walkways, landscaped areas and other use of the lot within the developed area.

In addition to the foregoing, and with particular relevance in areas where an Approved Subdivision Grading Plan does not exist, the Municipality may require information to demonstrate that the overall Storm Drainage System Objectives are achieved:

- (a) To adequately convey flow from upstream sources.
- (b) To prevent and/or mitigate the adverse effects of stormwater flow on downstream or adjacent properties, such as erosion, or flooding due to inadequate downstream capacity or grading.
- (c) To preserve natural watercourses.
- (d) To minimize the long term effect of development of receiving watercourses and groundwater.
- (e) To maintain pre-development drainage patterns unless some motivating factor to change the pattern exists, e.g. conflict with other objectives (capacity).

In the case where an Approved Subdivision Grading Plan exists and Community Systems have been designed and/or constructed, it shall be an objective that the Individual Lot Systems conform to the Community Systems. Grades established at the lot limits by the Approved Subdivision Grading Plan are to be maintained, subject to variations permitted under Section 4.0.

In the preparation of a design that meets the above objectives, an attractive living environment is important and consideration should be given to the following factors:

- (a) Aesthetic conditions relating to lot grading, e.g. creating space on the lot that is convenient as a play area, usually in the back yard.
- (b) The preservation of desirable site features where practical, e.g. minimizing disturbance, retaining trees.
- (c) Providing for variance in front yard setbacks along a street and for establishing a roof profile which is aesthetically pleasing.
- (d) Locating slopes and boundary lines such that tops and bottoms of slopes are at property boundaries.
- (e) Avoiding excessive deep swales.
- (f) Placing easements on one side of boundary line.
- (g) Where swales and French Drains are contemplated at the base of a significant slope, it is recommended that the swale be located at the toe of the slope.
- (h) Locating driveways to allow convenient and safe ingress and egress.

- (i) Creating consistent grading lot to lot.

Those above items are desirable but not addressing these factors fully will not lead to rejection or approval of a Lot Grading Plan.

## **2. DESIGN CRITERIA – LOT GRADING**

The Design Criteria for lot grading are to cover the more common aspects of design encountered in lot grading and drainage development. Local conditions may influence the Design Criteria and design requirements, for example, circumstances where soils are not free draining may require a flatter maximum permissible slope. In cases where these Criteria need to be expanded or additional criteria are required, the Recommendations and Stormwater Policy manual prepared by Halifax County Storm Drainage Task Force and the latest edition of Municipal Design Guidelines, and the latest edition of the Halifax Regional Water Commission Design and Construction Specifications shall be used as appropriate. Additional requirements affecting design are contained in other relevant documents, such as the National Building Code.

The Design Criteria reflect the experience of Halifax Regional Municipality as related to typical design requirements. The Criteria are provided for information and will serve as the benchmark for review of Lot Grading Plans in typical circumstances. However, the Design Criteria are not considered rigid. To better meet the objectives, alternate design approaches may be proposed. This will not be discouraged by the municipality.

The purpose of the Design Criteria is to provide guidance in the provision of drainage systems offering acceptable service which is consistent with the lowest possible initial construction and ongoing maintenance costs and effort.

The Design Criteria as outlined herein, are not intended to eliminate the necessity for detailed design, rather they are intended to standardize the approaches, design criteria, and methods of construction to be utilized in the installation of drainage systems. Further, it is not the intention of the Municipality to stifle innovation. Where variations from this document are justified or required and where alternate approaches can produce the desired results, such approaches will be considered for approval. In considering requests for variations from these design criteria, the Engineer shall take into consideration such factors as safety, nuisance, system maintenance, life cycle costs, environmental issues, natural topography, etc. Designs shall be accompanied by statements of certification to the effect that designs have been completed in accordance with these guidelines. Where standards other than those outlined in this document are used, all appropriate documents and plans shall clearly indicate those areas of difference. The acceptance by the Municipality of the design of the proposed drainage systems shall not relieve the designer of the responsibility of proper design. The designer retains full responsibility and liability for his/her work.

### **2.1. Community Systems**

In most instances where an Approved Subdivision Grading Plan exists, the design of Community Systems will not be required as they will have been established by the Approved Subdivision Grading Plan. However, in certain instances, most likely in the case of new building construction on previously approved or in-fill lots, the design of Community Systems may be required in order to meet the objectives of the Lot Grading By-law.

In designing Community Systems, the focus is on those drainage elements which affect more than one property, e.g. common backyard swales/catchbasins, grading along common property boundaries. **It is critical that the designer ensure that sufficient Community Systems are in place and/or contemplated and depicted such that individual Lot Systems can be designed and constructed in a fashion that allows for a properly functioning overall Storm Drainage System for the Owner while striving for an attractive living environment. It is intended that Community Systems will not have to be altered as a consequence of design of detailed Individual Lot Systems (although this is provided for in Section 4.0). Therefore, it is strongly recommended to carry out preliminary design of the Individual Lot Systems serving the lots in accordance with the requirements of the Lot Grading By-law.**

Community Systems are to be designed in accordance with the Municipal Design Guidelines and in accordance with the following criteria:

#### Ground Surface

- The area between the street right of way and the curb shall slope towards the curb at a maximum slope of 2% but not greater than 4%.
- The maximum slope shall be 3:1 (H:V) unless constructed on in situ rock or unless otherwise approved by the Engineer (certification of slope stability by a geotechnical engineer may be required for approval). The top and bottom of banks shall be rounded for convenient maintenance. Notwithstanding the foregoing, a suitably graded slope is required with appropriate surface treatment to provide for long term stability.
- Where required, retaining walls shall be designed with due consideration given to soundness of material, stability, safety (including provision for a handrail or safety fencing), maintenance, and other relevant factors. Retaining walls with a height greater than 1 metre shall be designed by and the construction certified by a Professional Engineer, and shall be located completely on private property including footings.
- Where a cut intercepts the groundwater table creating potential drainage and icing problems, special measures will be required to address potential drainage problems.

- Where areas are disturbed, stabilization is to be provided to prevent erosion.

#### Swales Applied to Residential Dwellings

- Swales shall be blended into the landscape to the greatest extent possible in order to provide a natural appearance (See Figure 1a: Swale Cross Section).
- The minimum grade along any swale shall be 2%. The minimum grade may be reduced to 1% where underdrains are incorporated (See Figure 1b: Swale and Underdrain Cross Section). Grades are encouraged to be, where possible, steeper than the minimum.
- Where the swale intercepts subsurface water, the swale shall incorporate underdrains, regardless of slope (See Figure 1b: Swale and Underdrain Cross Section).
- The side slope for any swale shall be flatter than 33% (3 horizontal: 1 vertical).
- The maximum depth of flow in any swale shall be 250 mm in the 1 in 100 year storm.
- All swales shall be designed to accommodate the 1 in 100 year stormwater flow.
- An overflow route shall be provided to direct overflow to major drainage systems. The 1 in 100 year water level along such route shall be lower than the lowest opening to the adjacent buildings.
- Sharp corners shall be avoided in swale design.
- Steeply sloping swales shall have appropriate surface treatment to prevent erosion.

#### Underdrains

- Underdrains, as detailed in Figure 1b: Swale and Underdrain Cross Section, are to be used to remove surface and subsurface water to drain wet areas and other areas of poor drainage, or where minimum slopes with respect to lot surface or swales cannot be achieved.
- Underdrains are not permitted to discharge onto street surfaces, walkways, private properties, or any other location where there would be an impact inconsistent with the objectives of the Lot Grading By-law.
- Underdrains shall be located a sufficient distance from any part of the building foundation to avoid impacts to building foundations and/or adjacent structures when the underdrain is replaced.

## Easements

- Easements shall be provided for all swales which in the opinion of the Engineer require such legal conveyances. Generally, easements will be required when a significant number of lots depend on the swale.
- Public easements shall be provided for all catchbasins and associated stormwater pipes constructed in conformance with the HRM and Halifax Water standards.
- A minimum easement width of 6 metres is required for public easements as per HRM and Halifax Water requirements.
- A minimum easement width of 4.5 metres is required for private easements.

## 2.2. Individual Lot Systems

During design of Individual Lot Systems, the focus is on the lot and house grading and house locations inside the lot boundaries. It is intended that there be no change to the grading along the exterior boundary (Community System) or other Community System located within the lot, subject to the provisions of Section 4.0 – Variances.

Individual Lot Systems are to be designed in accordance with the Design Criteria for Community Systems with the following additions:

### Buildings

- Building and site design should respect the topography and natural drainage of the site in order to reduce the magnitude of lot grading required, the need for retaining walls, and the need for piped drainage systems.
- To promote groundwater recharge and to minimize the increase in peak runoff, roof downspouts are not to be connected to the piped storm sewer system subject to variation approved by Halifax Regional Municipality.
- Roof downspouts are to be positioned such that, where possible, discharge onto driveways or adjoining property is avoided. It is recommended that roof downspouts are discharged to splash pads.
- The interrelationship of the house location and the Storm Drainage Systems is important in achieving the objectives of the Lot Grading By-law. Strategically locating the house can allow for Storm Drainage Systems to be constructed which are relatively inexpensive and require a low level of maintenance. On the other hand, a poorly selected house location may require that elaborate systems be constructed which will require significant on-going maintenance. With this in mind, and within the context of the Lot Grading By-law, the house location will be examined with a view of addressing the objectives of the Lot Grading By-law.



- Entrance elevation to building openings, e.g. windows, doors, stairwells, garage entrances, shall be set such that the objectives of the Lot Grading By-law are met.

#### Ground Surface

- The ground elevation adjacent to the foundation wall must be at least 150 mm below the top of the foundation wall.
- All surfaces must slope away from the building as follows:
  - Front yard – the front yard shall be continuously graded to drain away from the building towards the street.
  - Back yard – the back yard shall be graded to drain away from the building for a minimum distance of 3 metres with a minimum drop of 150 mm.
  - Side yard – where permitted by applicable land use by-law and/or by development agreement, the side yards shall be graded to drain away from the building a minimum distance of 1.2 metres with a minimum drop of 150 mm.
- All landscaped lot surfaces shall have a minimum slope of 2%, unless otherwise provided for in this Schedule. Grades are encouraged to be, where possible, steeper than the minimum.
- The maximum slope on any lot surface shall be 3:1 (H:V) unless constructed on in situ rock or unless otherwise approved by the Engineer. Certification of slope stability by a geotechnical engineer may be required for approval as well as consideration of other issues such as maintenance and erosion. The top and bottom of banks shall be rounded for convenient maintenance. Notwithstanding the foregoing, a suitably graded slope is required with surface treatment to provide for long term stability.
- Where areas are disturbed, stabilization is to be provided to prevent erosion.

#### Driveways/parking/Open Areas

- The portion of the driveway within the front yard shall be graded to drain away from the building towards the street and to prevent the direct discharge of water onto adjacent property.
- Driveway slopes shall not be less than 2%.
- For paved or impervious areas greater than 100 square metres, additional information and design requirements with respect to grading and drainage may be required.

## 2.3 Repeal

### 3. INFORMATION REQUIREMENTS

Several documents are to be prepared during the process outlined in the Lot Grading By-law: Lot Grading Plan; Lot Grading Certificate; Deficiency Report; and, Owner Undertaking for Completion. Indicative samples of each of these documents are found under Figure 2 through Figure 5.

#### 3.1. Lot Grading Plan (See Figure 2 for sample)

The Lot Grading Plan illustrates the Individual Lot Systems for a lot of land and its relationship to the Community Systems surrounding and within the lot of land. The Lot Grading Plan generally illustrates a specific building type for the lot and how the grading fits into the Approved Lot Grading Plan when one exists, and/or the adjacent existing topography.

##### General

- The Lot Grading Plan shall be drawn at a scale of 1:250 (1 inch = 20 feet) and is to be displayed on ledger paper (280 mm x 430 mm)(11" x 17"). One lot is to be shown on each Lot Grading Plan. The layout of the information on the Lot Grading Plan shall conform to that shown on Figure 2.
- A Title Block shall be used indicating the following:
  - The name of the Subdivision, Approved Lot Number, Street, and the community.
  - The name of the Building Permit Owner.
  - The name, firm, and address of the professional preparing the plan.
  - Scale
  - Date (original and revisions)
- A grid north arrow shall be shown.
- Existing and proposed elevations are to be related to geodetic datum or the datum of the Approved Subdivision Grading Plan, if not geodetic.
- A legend giving an explanation of symbology is to be provided. The standard Legend depicted on Figure 2 is to be used.
- Appropriate notes relative to construction requirements are to be provided.

- Distances along the exterior boundary of the lot are to be shown.
- PID number is to be shown.

#### Existing Conditions

- Existing Information, to be field collected and representative of conditions at the time of Lot Grading Permit Application, is to be expressed as spot elevations and contours at maximum 750 mm intervals on the specific lot and adjacent lots to adequately illustrate the drainage interrelation between properties with common property lines and the existing topography.
- Centreline street elevations and related to the chainage on the profile record drawings where such drawings exist.
- Top of curb elevations at sideline extensions and driveway cuts.
- Existing Storm Drainage System Elements, e.g. catchbasins, swales.
- Public or private easements or rights-of-way.
- Utility poles, fire hydrants, traffic signs, or other surface features adjacent to the lot.
- Where a lot is adjacent to a watercourse or a major drain system exits on the lot, the normal water elevation in the 1 in 100 year water levels.
- Where buildings exist on adjacent lots, the elevation at the adjoining corners of the building if located within 10 metres of the lot limit.
- Any other items affecting stormwater drainage. As a minimum, existing elevation information is to extend 6 metres onto adjacent properties.

#### Proposed Grading

- The proposed elevations for all lot corners as well as intermediate points of grade change on all lot lines and sloped surfaces. The frequency of proposed elevations shall depend upon the degree of development (with developed areas requiring more detailed information) and also upon the topography. Where an Approved Subdivision Grading Plan exists, the proposed elevations along the lot limits are to conform to the Approved Subdivision Grading Plan, subject to Section 6.0 – Variances.
- All swales along the proposed elevations at all lot lines or changes in direction of slope of the swale.

- All catchbasins, or other drainage structures, within and adjacent to the lot along with the grade elevation of the catchbasins and the invert of all inlet and outlet pipes.
- All areas that are to be left in an undisturbed condition.
- Significant proposed slopes greater than 4:1 (H:V).
- Proposed surface treatment of disturbed areas is to be indicated.
- Direction of surface flow to be indicated by arrows so that the proposed drainage patterns on all areas of the lot are clearly indicated.
- Split in drainage direction is to be shown.

#### Proposed Building and Appurtenances

- The exact outline of the building, walkways, driveways, and external appendages (decks).
- The horizontal relationship of the main building to the lot limits.
- The proposed basement floor elevation(s) together with the floor elevation(s) of garages (if any).
- The elevation and configuration of basement walls.
- Where openings in the basement are proposed e.g. windows, doors, information is to be included on the Lot Grading Plan relating to the location and construction of the opening to ensure the requirements of the Lot Grading By-law are met.
- Roof downspout locations and direction.
- The proposed ground elevations at the building corners and other appropriate points of grade change along the building walls.
- Proposed grading and design details of any retaining walls.
- The location of the lateral trench accessing the building and the existing lateral or mainline elevations at the point of service connection.

- Design details and location information for any other drainage appurtenance.

### 3.2. **Repeal**

### 3.3. Lot Grading Certificate (See Figures 3a and 3b)

The Lot Grading Certificate shall provide certification that the Storm Drainage Systems on the lot have been constructed in accordance with the Approved Lot Grading Plan and is to be prepared as presented in either Figure 3a or 3b. The Certificate is to be issued only when the works have been completed and deficiency items do not exist.

#### Tolerances

Proposed grading and slope information is to be confirmed as being constructed on the Lot Grading Certificate as follows:

- Where the as-built design elevation or slope is within the indicated tolerance, a graphical or written confirmation is acceptable. All changes of elevations on the approved Lot Grading Plan shall be identified in red adjacent to the original elevation.
- Where the as-built design elevation or slope is not within the indicated tolerance, the as-built result is to be specifically shown.
  - Constructed elevation at lot lines shall match the proposed elevation as indicated on the Approved Lot Grading Plan within 5 cm.
  - Grades along sloped surfaces or swales that are at the minimum or maximum allowable grades shall match the grades indicated on the Approved Lot Grading Plan, or deviate to the permitted side of the minimum or maximum.
  - Additional elevations or slopes not covered above must meet the intent of the Approved Lot Grading Plan.

### 3.4. Deficiency Report (See Figure 4)

A Deficiency Report, prepared as presented in Figure 4, is to be shown when construction has not been fully completed in accordance with the Approved Lot Grading Plan and Occupancy is being sought. The Deficiency Report must itemize the work not completed.

The Deficiency Report is to also include statements to the effect that, although full construction is not completed, the condition of the lot relative to lot grading and drainage does not create an unsafe situation for the occupant of the lot of adjoining owners.

### 3.5. Owner Undertaking for Completion (See Figure 5)

The Owner Undertaking for Completion, prepared as presented in Figure 5, is to accompany the Deficiency Report when an Occupancy is being sought.

This document is to provide a statement by the Owner confirming the following:

- a) That they will cause to completion of the construction to take place within a nine (9) month period from the date of occupancy; and,
- b) In the event that completions do not occur, The Owner agrees that the Municipality may construct the deficient works.

## 4. VARIANCES

It is anticipated that site conditions and/or innovative building techniques may justify variations to the Individual Lot Systems and possibly the Community System to enable a lot to be developed in a specific manner. In considering variances to Community Systems of previously approve Individual Lot Systems, the objectives outline in Section 3.0 of the Specification must be met and be demonstrated as proven to be met by the Owner.

In addition to the overall objectives of the Lot Grading By-law, specific requests for variances to the Individual Lot Systems and Community Systems must address the following points:

1. What aspect or component of the existing Individual Lot System or Community System is being requested to be modified in order to achieve the owner's desired development?
2. Will any main or accessory buildings on adjoining properties be affected with respect to any flood risk damage as a result of the requested variance?
3. Will any municipal infrastructure be placed in a greater flood risk potential as a result of the requested variance?
4. Where appropriate, calculations must be provided indicating the design capacity of the receiving systems with and without the requested variance.
5. Information must be provided with respect to major and minor watersheds contributing to the specific site of the variance.
6. Where required by the Municipality, proof/acknowledgement that abutting property owners have been informed about the variance request (include names of contact persons and telephone numbers).

Following receipt of this information, the Engineer will review all of the information provided and determine if the variance to the Individual Lot System or Community Systems will be permitted.

It should be understood that the review process associated with a Lot Grading Permit, in cases where variances have been applied for, will be in excess of the normal review time for those owner requesting approval that confirm with the Community Systems and Individual Lot Systems established.

FIGURE 1a: SWALE CROSS SECTION

N.T.S

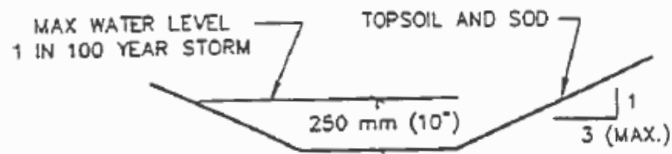
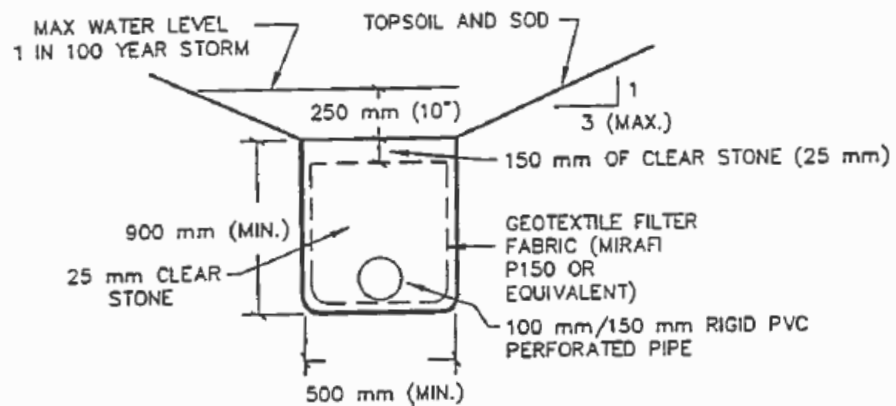


FIGURE 1b: SWALE AND UNDERDRAIN CROSS SECTION

N.T.S





**FIGURE 2**

**NOTES:**

|                                   |       |        |
|-----------------------------------|-------|--------|
| PROPOSED ELEVATION                | ..... | 100.0' |
| PROPOSED ELEVATION                | ..... | 100.0' |
| FOUNDATION WALL HEIGHT            | ..... | 100.0' |
| TOP OF WALL ELEVATION             | ..... | 100.0' |
| PROPOSED BASEMENT FLOOR ELEVATION | ..... | 100.0' |
| FURNISH OPENING FOR ELEVATION     | ..... | 100.0' |
| ELEVATION OF DRAINAGE             | ..... | 100.0' |
| SHALL OF PROPERTY LINE            | ..... | 100.0' |
| WATER TABLE                       | ..... | 100.0' |
| PROPOSED LATERAL FORM             | ..... | 100.0' |
| EXISTING CONDUIT                  | ..... | 100.0' |
| PROPOSED FOUNDATION               | ..... | 100.0' |
| UNSATURATED AREA                  | ..... | 100.0' |

- NOTES:**
1. FOUNDATION WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE OF NOVA SCOTIA.
  2. FOUNDATION WALLS SHALL BE CONSTRUCTED WITH A MINIMUM OF 12" REINFORCING BARS WITH BENDING PLANS PER TO CONSTRUCTION.
  3. FOUNDATION WALLS SHALL BE CONSTRUCTED WITH A MINIMUM OF 12" REINFORCING BARS WITH BENDING PLANS PER TO CONSTRUCTION.
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  8. FOUNDATION WALLS SHALL BE CONSTRUCTED WITH A MINIMUM OF 12" REINFORCING BARS WITH BENDING PLANS PER TO CONSTRUCTION.
  9. FOUNDATION WALLS SHALL BE CONSTRUCTED WITH A MINIMUM OF 12" REINFORCING BARS WITH BENDING PLANS PER TO CONSTRUCTION.
  10. FOUNDATION WALLS SHALL BE CONSTRUCTED WITH A MINIMUM OF 12" REINFORCING BARS WITH BENDING PLANS PER TO CONSTRUCTION.

**VICTORIA ESTATES - PHASE 2**

LOT GRADING PLAN SHOWING PROPOSED DWELLING LOCATION ON LOTS 224A and 224B VICTORIA CRESCENT TIMBERLEA, HALIFAX COUNTY PROVINCE OF NOVA SCOTIA

123 PROJECT CONSULTANTS  
 2307 WIDE VIEW  
 DARTMOUTH, NOVA SCOTIA  
 B3T 4Y3  
 TEL: (902) 555-1234  
 FAX: (902) 555-4321



SCALE: 1 INCH = 20 FEET  
 1998

DATE: OCTOBER 5, 1998

**MUNICIPALITY USE ONLY:**

1. APPLICATION FOR LOT GRADING PERMIT TO BE SUBMITTED TO THE MUNICIPALITY WITH THIS PLAN AND THE CITY GRADING BY-LAW.

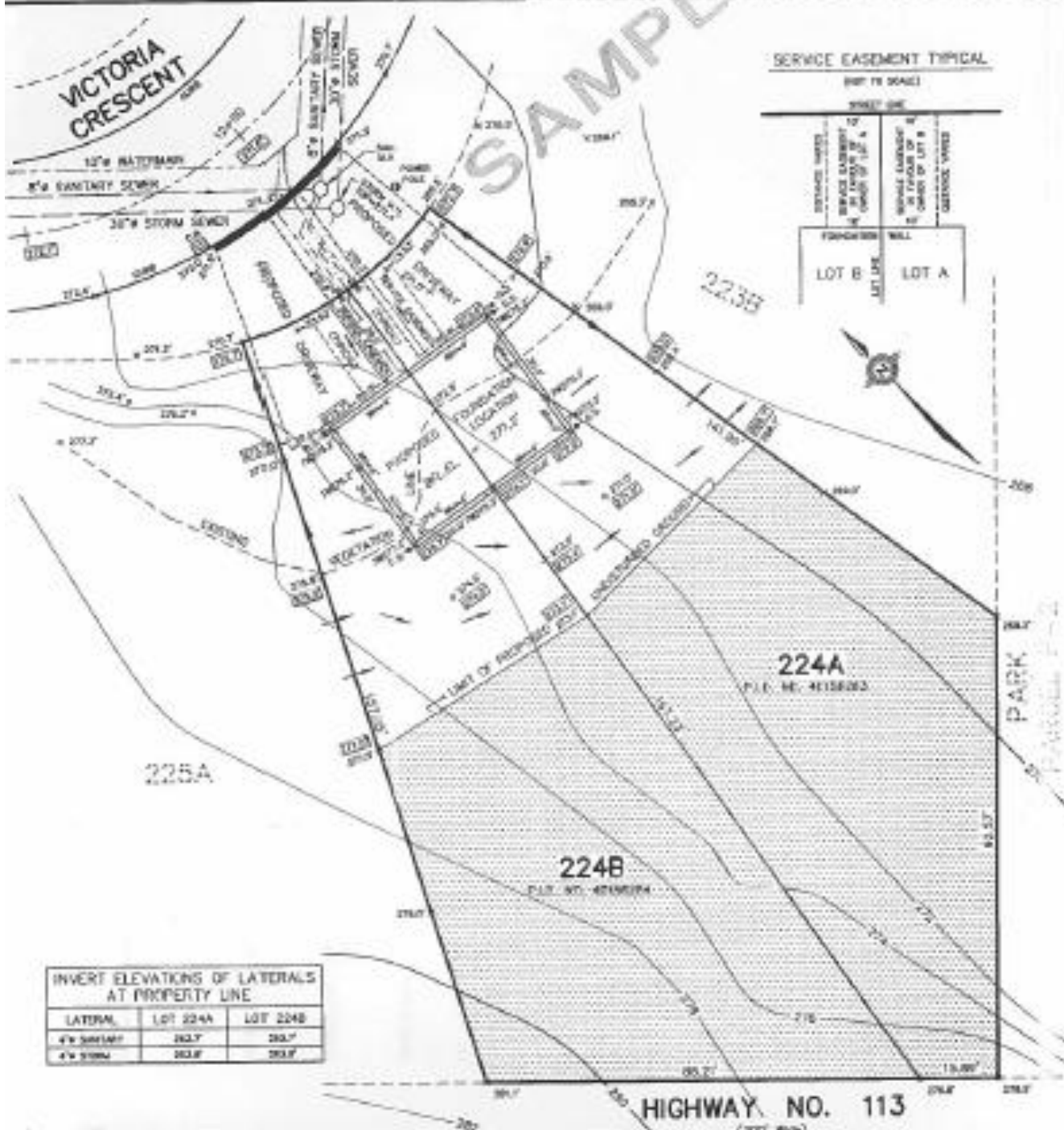
2. FOUNDATION TO BE GRANTED TO CONFORM WITH THE LOT GRADING AND DRAINAGE CODES IN COMPLIANCE WITH THE PLAN AND THE CITY GRADING BY-LAW.

DATE: \_\_\_\_\_

BY: \_\_\_\_\_

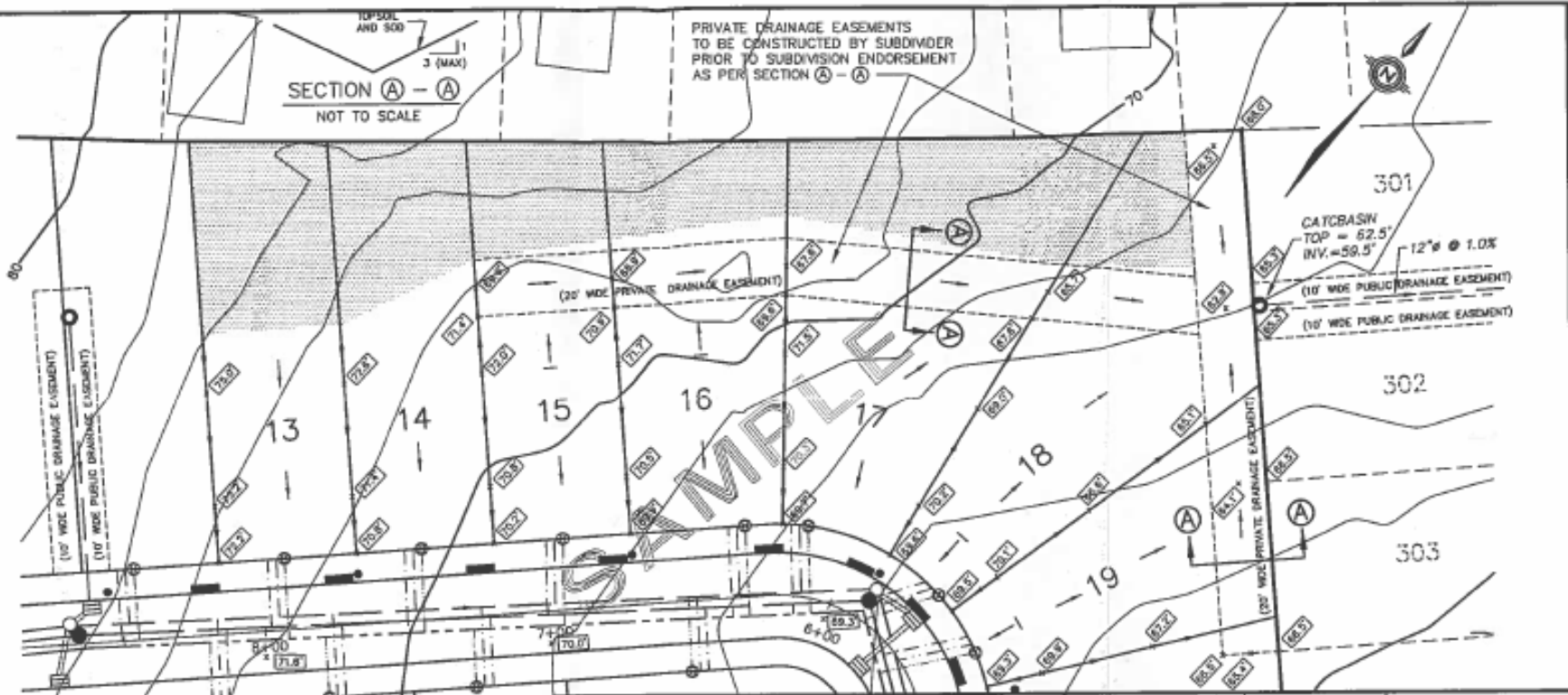
FOR: \_\_\_\_\_

ARC BUILDER LTD.  
 1234 APPLE STREET  
 HALIFAX, NOVA SCOTIA  
 B3L 0G4  
 TEL: (902) 555-8888



TOP SOIL  
AND SOO  
3 (MAX)  
**SECTION (A) - (A)**  
NOT TO SCALE

PRIVATE DRAINAGE EASEMENTS  
TO BE CONSTRUCTED BY SUBDIVIDER  
PRIOR TO SUBDIVISION ENDORSEMENT  
AS PER SECTION (A) - (A)



VICTORIA CRESCENT

**LEGEND**

| DESCRIPTION                                     | SYMBOL |
|---|--------|
| DRIVEWAY CUT (10'SNGL, 16'DBL.)                 |        |
| EXISTING GRADE CONTOUR                          |        |
| DIRECTION OF SURFACE DRAINAGE                   |        |
| SWALE ON PROPERTY LINE                          |        |
| EXISTING ELEV., DESIGN ELEV.                    |        |
| APPROXIMATE LIMIT OF PROPOSED UNDISTURBED AREAS |        |
| SELECTED SLOPES STEEPER THAN 4H:1V              |        |

CONTOURS ARE BASED ON FIELD SURVEY AND REPRESENT PRE-CONSTRUCTION EXISTING GRADE.  
CONTOUR INTERVAL = 2 FEET

| NO. | REVISION          | APP'D | DATE     |
|-----|-------------------|-------|----------|
| 0   | ISSUED FOR REVIEW |       | 04/28/96 |

**123 PROJECT CONSULTANTS**  
QUINCY PLACE, SUITE 1289 /  
2387 WYSE ROAD  
DARTMOUTH, NOVA SCOTIA  
B5T 6Y3  
Ph: (902) 555-1234  
FAX: (902) 555-4321



**PROJECT**

VICTORIA ESTATES - PHASE 2  
TIMBERLEA, HALIFAX COUNTY  
REGAL DEVELOPMENTS LIMITED

**SHEET DESCRIPTION**

**SUBDIVISION GRADING PLAN**  
LOTS 11-19

DATE APRIL 28, 1996  
HORIZ. SCALE 1"=40'  
VERT. SCALE 2' INT.  
DRAWN T.L.M.  
CHECKED R.A.H.  
DWG. # 95073-G1

**FIGURE 2**

SHEET  
**1**  
OF  
**1**

LOT GRADING CERTIFICATE

**<LOCATION OF PROPERTY INCLUDING LOT NUMBER AND SUBDIVISION NAME IF APPLICABLE>**

Relating to the Lot Grading Plan dated <DATE>, and prepared by < NAME OF PROFESSIONAL ENGINEER, NS LAND SURVEYOR, OR LANDSCAPE ARCHIECT>

With respect to the foregoing, I provide herein the following statements:

- (1) That I have performed sufficient site inspections, including a final inspection on \_\_\_\_\_, 20\_\_\_\_, to confirm that the lot grading and drainage works for the subject lots have been substantially constructed in accordance with the above referenced Lot Grading Plan.
- (2) That I have reviewed the design depicted on the Lot Grading Plan, and confirm that the intent of this design has been met.
- (3) That sufficient field measurements have been taken such that I can state that substantive deviations from the Lot Grading pan, and described in the "Tolerances" section of the Lot Grading and Drainage General Specification do not exist.

\_\_\_\_\_  
Signature

**STAMP**

Name:

Date:

LOT GRADING CERTIFICATE

**<LOCATION OF PROPERTY INCLUDING LOT NUMBER AND SUBDIVISION NAME IF APPLICABLE>**

Relating to the Lot Grading Plan dated <DATE>, and prepared by <NAME OF PROFESSIONAL ENGINEER, NS LAND SURVEYOR, OR LANDSCAPE ARCHIECT>

With respect to the foregoing, I provide herein the following statements:

- (1) That I have performed sufficient site inspections, including a final inspection on \_\_\_\_\_, 20\_\_\_\_, to confirm that the lot grading and drainage works for the subject lots have been substantially constructed in accordance with the above referenced Lot Grading Plan.
- (2) That I have reviewed the design depicted on the Lot Grading Plan, and confirm that the intent of this design has been met.
- (3) That, based on field measurements taken, deviations from the Lot Grading Plan, beyond those described in the "Tolerances" section of the Lot Grading and Drainage General Specifications exist. It is my professional opinion that the deviations are not substantive in nature as related to the performance of the works in meeting the objectives of the Lot Grading By-law. In making this statement, I accept responsibility for the impact of the deviations only and report that I have advised the <NAME OF PROFESSIONAL ENGINEER, NS LAND SURVEYOR, OR LANDSCAPE ARCHIECT> of the deviations. Responsibility for the Lot Grading Plan resides with the <NAME OF PROFESSIONAL ENGINEER, NS LAND SURVEYOR, OR LANDSCAPE ARCHIECT>. For clarity, the deviations as related to the Community Systems are depicted on the attached copy of the Lot Grading Plan.

\_\_\_\_\_  
Signature

Name:

Date:

**STAMP**

DEFICIENCY REPORT

**<LOCATION OF PROPERTY INCLUDING LOT NUMBER AND SUBDIVISION NAME IF APPLICABLE>**

Relating to the Lot Grading Plan dated <DATE>, and prepared by <NAME OF PROFESSIONAL ENGINEER, NS LAND SURVEYOR, OR LANDSCAPE ARCHIECT>

I, \_\_\_\_\_, hereby confirm that I have performed site inspections at the subject lots to state that the following items are not completed as of \_\_\_\_\_, 20 \_\_\_\_ as related to required construction in accordance with the Lot Grading Plan.

[PROVIDE LISTING OF UNCOMPLETED WORKS]

[ESTIMATED COSTS ARE NOT REQUIRED]

I further confirm that it is my professional opinion that the conditions of the site relative to lot grading and drainage do not represent an undue hazard to the occupants of the dwellings on these or adjoining lots.

\_\_\_\_\_  
Signature

**STAMP**

Name:

Date:

OWNER UNDERTAKING FOR COMPLETION

**<LOCATION OF PROPERTY INCLUDING LOT NUMBER AND SUBDIVISION NAME IF APPLICABLE>**

Relating to: (a) Lot Grading Plan dated <DATE>, and prepared by <NAME OF PROFESSIONAL ENGINEER, NS LAND SURVEYOR, OR LANDSCAPE ARCHIECT>  
(c) Deficiency Report dated \_\_\_\_\_, 20\_\_\_\_\_.

I, \_\_\_\_\_, hereby confirm that I am the Owner for the above indicated Lot and provide herein the following statements:

- a) That I have reviewed the aforementioned Deficiency Report and undertake to cause the identified construction to be completed within nine (9) months from the date of this document.
- b) That at the completion of construction, I shall cause a Lot Grading Certificate to be prepared and forwarded to the Municipality in accordance with the requirements of the Lot Grading By-law.
- c) That I undertake that I shall provide a copy of this Undertaking:
  - a. to any person who obtains an interest in the property, and
  - b. to their legal representative, if applicable

if the lot is conveyed or transferred prior to the issuance of a Lot Grading Certificate.

\_\_\_\_\_  
Signature

Name:

**STAMP**