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Planning Rationale Ironwood Subdivision Riverside South Community Ottawa



IRONWOOD SUBDIVISION

**PLANNING RATIONALE FOR
PLAN OF SUBDIVISION AND
ZONING BY-LAW AMENDMENT**

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IRONWOOD SUBDIVISION**PLANNING RATIONALE****- TABLE OF CONTENTS -**

	<u>PAGE</u>
1.0 INTRODUCTION	1
1.1 Purpose	1
1.2 Background.....	1
1.2.1 Location and Site Description	1
1.2.2 Community Context	3
2.0 THE PROPOSAL.....	3
2.1 Draft Plan of Subdivision	3
2.2 Zoning By-law Amendment	4
2.3 Parkland Dedication Requirements	6
3.0 POLICY CONTEXT	6
3.1 Planning Act, R.S.O. 1990, CHAPTER P.13	6
3.2 Provincial Policy Statement (2014).....	6
3.3 The City of Ottawa Official Plan.....	9
3.4 Riverside South Community Design Plan.....	11
3.4.1 Road Network.....	13
3.4.2 Range of Densities and Unit Types.....	13
4.0 Background Studies	15
4.0 INTEGRATED ENVIRONMENTAL REVIEW	15
5.0 CONCLUSION.....	22

- LIST OF APPENDICES -

- APPENDIX 'A' - Draft Plan of Subdivision
- APPENDIX 'B' - Muncaster Environmental Planning Inc. – Tree Conservation
Report and Environmental Impact Statement
Impact Assessment and Recommendations
- APPENDIX 'C' - Paterson Group - Preliminary Geotechnical Investigation -
Discussion / Design and Construction Precautions /
Recommendations

IRONWOOD SUBDIVISION

PLANNING RATIONALE

1.0 INTRODUCTION

The following Report has been prepared in support of the Ironwood Subdivision. Located at 673 Rideau Road in the Former Township (City) of Gloucester, City of Ottawa, this area will add approximately 494 residential units north of Rideau Road, east of River Road and west of Spratt Road as shown on Figure 1. In order to develop this plan, Cardel Homes (Cardel) is filing the following concurrent applications with the City of Ottawa (City):

- Plan of Subdivision, and
- Zoning By-law Amendment.

1.1 Purpose

This Report will demonstrate how the development will be consistent with the Provincial Policy Statement 2014, and be in conformity with the City of Ottawa Official Plan as implemented by the Riverside South CDP. The layout will ensure a range of new housing that meets the needs of both this growing community and the City as a whole.

A Planning Rationale is required by the City of Ottawa to provide planning support for all applications for a Zoning By-law Amendment and Draft Plan of Subdivision Approval.

1.2 Background

1.2.1 Location and Site Description

The legal description of the Subject Property is Part of Lot 25, Concession B, Rideau Front, in the Former Township (City) of Gloucester, now the City of Ottawa. The Subject Lands are situated to the north of Rideau Road and is approximately 24 ha in size.

As shown in Figure 1, the lands included within the Draft Plan Approval are currently within the urban boundary and consist of undeveloped rural farm lands.

The land immediately south of the Subject Lands, extending to Rideau Road on both side of the proposed north south Collector is also currently owned by the applicant.



Figure 1 – Aerial view of the future community of Riverside South: Ironwood

1.2.2 Community Context

The Subject Property is located approximately 200 metres north of Rideau Road and approximately 70 metres east of River Road. The area surrounding the Subject Property consists of future residential development to the north, existing residential homes along River Road to the west, existing farm lands to the south and future residential development to the east across Spratt Road.

These subdivision lands forms the southern edge of the City of Ottawa Urban Boundary as well as the southern limit of the Riverside South Community Design Plan (CDP). Figure 2 shows the Draft Plan in relation to the surrounding proposed and existing development.

The Subject Property includes Collector Road 'A' as defined by the Official Plan and CDP. Collector 'A', shown as Street 8 on the Draft Plan, (see Appendix 'A') is the extension of Brian Good Avenue. The existing portion of Brian Good intersects Earl Armstrong Road and is proposed through this development to extend down to Rideau Road.

The subdivision is to be developed in a manner that implements the Community Design Plan, the City's Official Plan, Transportation Master Plan, Infrastructure Master Plan and the Provincial Policy Statement 2014.

It is anticipated that the extension of the existing bus routes along Spratt Road and Brian Good Ave, will feed the Rapid Transit Stations within the Riverside South Community. The subdivision includes blocks for parkland and to provide pedestrian connectivity within the community.

2.0 THE PROPOSAL

2.1 Draft Plan of Subdivision

Appendix 'A' is the Draft Plan of Subdivision for the proposed development. Figure 2 shows the plan in relation to the abutting development. Ironwood includes 234 single units and 260 townhome units, totaling approximately 494 units. The Ironwood Subdivision will also include:

- 11 local and collector streets as per the Draft Plan;

- 1 open space block which will serve as part of the City owned park to the north (Block 257); and
- 2 multi-use pathway blocks (Blocks 238 and 262).



Figure 2 – Surrounding Context: Ironwood

The site will be accessed via the extension of Brian Good Ave (Collector 'A') to Rideau Road which will travel through the middle of the site. Once the lands of the north are developed there will be access to the site via Spratt and River Road as well. The proposed street pattern will link to the Local and Minor Collector Roads of the lands to the north thus implementing the CDP. This will also allow for links to Earl Armstrong, Spratt, and River Roads.

Public streets will vary between 18 metre, 20 metre, and 26 metre rights of way. Streets will be paved and will be designed using City of Ottawa Standards for new roads, including water, sanitary sewers and stormwater management for drainage. The total road area inside the Subject Property is approximately 6.8 ha.

For detached dwellings, the minimum lot area will be 240 m², and the minimum lot width will be 9 metres. Townhouse lots will be 6.0 metres wide and 150 m² in area. Lots for detached and townhouse dwellings will conform to the R3 Zone standard for minimum lot areas and frontage.

2.2 Zoning By-law Amendment

The Subject Property is currently zoned Development Reserve Zone (DR) under the City of Ottawa Zoning By-law (2008-250 Consolidation).

The purpose of the DR Zone is to *“recognize lands intended for future urban development in areas designated as General Urban Area and Developing Communities in the Official Plan”*.

Permitted uses in the DR Zone are limited to agricultural use, community garden, emergency service, environmental preserve and education area, forestry operation, group home, home-based business, marine facility, detached dwelling accessory to a permitted use, park and a secondary dwelling unit.

A zoning by-law amendment is required in order to proceed with the development of these lands in accordance with the land use designations established in the CDP and as shown on the Draft Plan of Subdivision.

The Zoning By-law Amendment seeks to change the current zoning of Development Reserve Zone to Residential Third Density Subzone Z (R3Z) and Open Space (O1).

The proposed Residential Third Density Zone will allow for the development of a mix of residential building forms from single detached dwellings to townhouse dwellings. The Z subzone is used for residential development primarily within Developing Communities throughout the City to *“promote efficient land use and compact form while showcasing newer design approaches.”*

The Open Space One (O1) zone is proposed for the block which will be used for parkland dedication purposes.

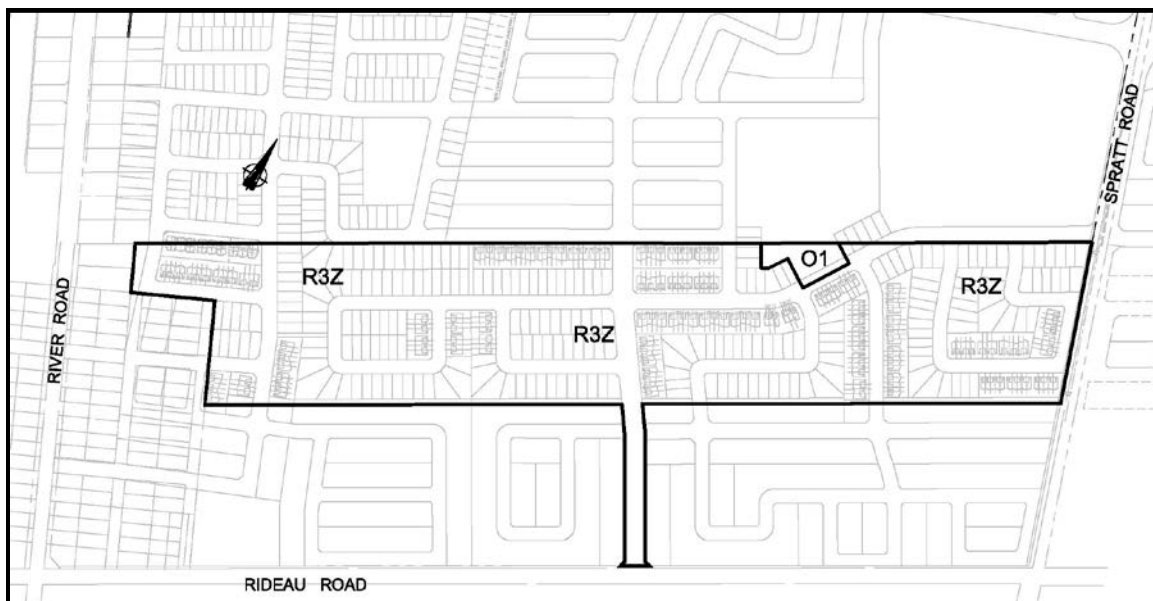


Figure 3 – Proposed Zoning By-law Schedule: Ironwood

2.5 Parkland Dedication Requirements

As per the City's Parkland Dedication By-law (2009-95), the minimum parkland conveyance requirement for the proposed Draft Plan is as follows:

1. 1.0 ha (2.5 acres) for every 300 dwelling units in the development [or 1.65 ha for the proposed 494 dwelling units].

Based on the above, the total minimum parkland conveyance requirement for the proposed Draft Plan is 0.33 ha. The proposed Draft Plan identifies one park block which will make up part of a larger park dedication of the development lands to the north. This is an alteration to the CDP as it represents a park that will be shared development. We have assumed that the adjacent owner will develop the park at the time those lands are approved for development. The landowners group will make arrangements for the finalization of the park development and the associated compensation.

3.0 POLICY CONTEXT

3.1 Planning Act (R.S.O. 1990, CHAPTER P.13)

Section 51 (24) of the Planning Act provides details regarding the criteria to be considered with a Draft Plan of Subdivision application. The proposed Draft Plan of Subdivision for Ironwood has addressed all of the criteria identified in the Act, clauses "a" to "l" as noted on the Draft Plan. This rationale confirms our opinion that the subdivision has had regard to the criteria identified in the Act and is appropriate for development.

3.2 Provincial Policy Statement (2014)

This Subdivision Proposal is consistent with the vision and principles of the Provincial Policy Statement 2014 (PPS) as issued under Section 3 of the *Planning Act*.

Section 1.1.3.1 states:

'Settlement Areas shall be the focus of growth and their vitality and regeneration shall be promoted.'

The Ironwood Subdivision promotes growth within the Community of Riverside South by adding approximately 494 units. The proposed residential subdivision is a logical and

anticipated extension (as per the OP and CDP) of the surrounding neighbourhood and will foster fluid connections within the community of Riverside South.

Section 1.1.3.2 of the Provincial Policy Statement states:

'Land use patterns within settlement areas shall be based on:

- a) densities and a mix of land uses which:*
 - 1. efficiently use land and resources;*
 - 2. are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for unjustified and/or uneconomical expansion;'*

The Ironwood Subdivision of the Community of Riverside South efficiently uses land and resources by providing a natural extension of the surrounding neighbourhoods. The road network has been designed to provide links with major arterial roads, the transit system, the community core area and adjacent neighbourhoods, based upon the original approach used in the development of the Community. As such, Ironwood prevents unjustified and uneconomical expansion of roads.

Section 1.1.3.6 of the Provincial Policy Statement states:

'New development taking place in designated growth areas should occur adjacent to the existing built-up area and shall have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities'.

The proposed Ironwood Subdivision will be developed adjacent to other built-up areas and will include a mix of residential densities as permitted in the R3Z zone. Of the approximately 494 units in the Draft Plan of Subdivision, 234 will be of varying sizes for single dwelling units and 260 will be for townhome units.

Section 1.6.6.1 of the PPS provides policies relating to the servicing of new developments in Settlement Areas. Section 1.6.6.1 states:

Planning for sewage and water services shall:

- b) ensure that these systems are provided in a manner that:*
 - 1) can be sustained by the water resources upon which such services rely;*
 - 2) is financially viable and complies with all regulatory requirements; and*

- 3) *protects human health and the natural environment;*
- d) *integrate servicing and land use considerations at all stages of the planning process.*

Section 1.6.4.2 states that:

Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas.

The Community of Riverside South has been designed to use municipal sewage services and municipal water services.

The availability of a water supply with adequate quality and quantity has been determined through extensive background studies completed as a pre-condition of the Community Design Plan process, and confirmed with the Servicing Brief which supports this application.

The Master Servicing Report also indicates that the Community of Riverside South was designed to direct all sanitary flows westward to the existing West Rideau Collector. As such, the development proposal for the Subject Property is consistent with the PPS by using existing infrastructure to service development efficiently. The phasing of the Riverside South Community was designed with consideration to integrate servicing and land use throughout all stages of the planning process.

Section 2.0 of the PPS provides policies related to the use and management of resources. The Riverside South Community Development is consistent with these provisions and there are no resources identified in the OP.

Section 2.1 (Natural Heritage): no Significant Natural Heritage features have been identified on the Subject Property, as confirmed by the EIS and Tree Conservation Reports.

Section 2.2 (Water): the Subject Property does not include any other surface or groundwater features identified as ecologically significant.

Section 2.3 (Agriculture): The Subject Property is located within the Urban Boundary therefore it does not contain any areas identified as prime agricultural area.

Section 2.4 (Minerals and Petroleum): the Subject Property has no known areas of mineral or petroleum potential.

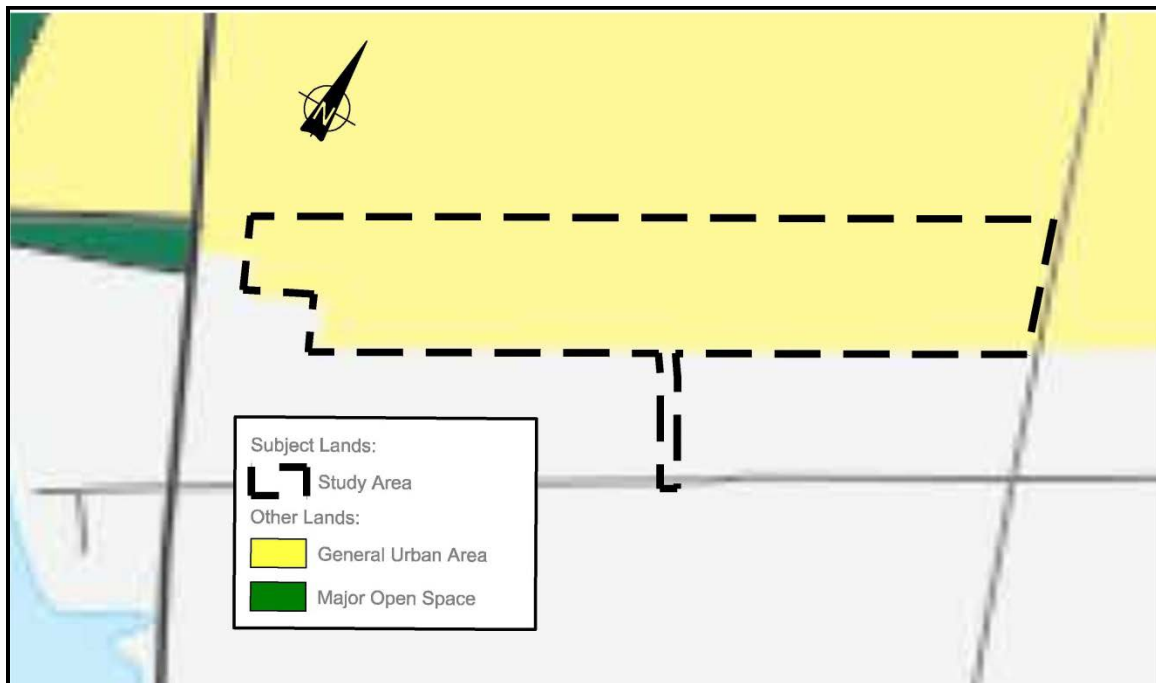
Section 2.5 (Mineral Aggregate Resources): the Subject Property has no mineral aggregate potential identified by the City's Official Plan.

Section 2.6 (Cultural Heritage and Archaeology): the Subject Property has no built heritage nor has it been identified as being an area of archaeological potential or any significant cultural heritage landscapes.

3.3 The City of Ottawa Official Plan

The City of Ottawa Official Plan, adopted by City Council in May 2003, has been updated and amended numerous times by both Council and the Ontario Municipal Board. For the purposes of this planning rationale, the on-line consolidated version of the Official Plan, including Amendment # 180, was used as reference.

The Subject Property is located within the urban boundary of the City of Ottawa and is part of the settlement area for the City. Schedule 'B' of the Official Plan shows the site location in the south part of the City of Ottawa designated as a General Urban Area (refer to Figure 4) within the Urban Area.



**Figure 4 – Existing City of Ottawa Official Plan Schedule B:
'General Urban Area'**

Section 3.6.1 of the Official Plan provides a framework for the General Urban Area. The Plan states that:

“The General Urban Area designation permits the development of a full range and choice of housing types to meet the needs of all ages, incomes and life circumstances, in combination with conveniently located employment, retail, service, cultural, leisure, entertainment and institutional uses. This will facilitate the development of complete and sustainable communities. A broad scale of uses is found within this designation, from ground-oriented single-purpose to multi-storey mixed-use; from corner store to shopping centre.

While the City is supportive of the establishment of a broad mix of uses in Ottawa's neighbourhoods, this is not meant to imply that all uses will be permitted everywhere within areas that are designated General Urban Area. The zoning by-law will continue to regulate the location, scale and type of land use in accordance with the provisions of this Plan. Within neighbourhoods, the zoning by-law will allow those uses that provide for the local, everyday needs of the residents, including shopping, schools, recreation and services. Uses that also serve wider parts of the city will be located at the edges of neighbourhoods on roads where the needs of these land uses (such as transit, car and truck access, and parking) can be more easily met and impacts controlled. Subject to the policies below, the City supports infill development and other intensification within the General Urban Area in a manner that enhances and complements the desirable characteristics and ensures the long-term vitality of the many existing communities that make up the city.”

The Strategic Directions of the Official Plan, particularly Section 2.5.1 Urban Design and Compatibility, also affect this development. The Draft approval of these lands will reflect the intent of the Official Plan by implementing the CDP and its articulation of Urban Design, Compatibility, Design Objectives and the Ottawa By Design policies of this section of the Official Plan.

The proposed Draft Plan of Subdivision for this site was subsequently created with special consideration for the policies of the General Urban Area, Strategic Directions in the Official Plan and based upon the required technical studies. The proposed subdivision plan and implementing zones are the proper reflection of these policies as refined in the supporting studies. The layout has also been developed using the guideline from the City entitled “Urban Design Guidelines for Greenfield Neighbourhoods” (2007).

3.4 Riverside South Community Design Plan (CDP)

The Riverside South CDP was approved by City of Ottawa Council in June 2005. The CDP was amended in 2010 and in 2016. The guiding principle for the CDP is:

‘The Community Design Plan for Riverside South is guided by transit-oriented development principles that seek to achieve efficient land use patterns, while creating a community where residents have access to open spaces, shops, schools, community services, and choices in dwelling types in a high quality urban environment. Job opportunities in designated employment lands and throughout the community will help to achieve a balance between jobs and households in the new community.’

These policies were developed in keeping with the Urban Design Guidelines for Greenfield Neighbourhoods. The CDP was analyzed to determine the most appropriate way to design the subdivision to implement the objectives of the Guideline and the CDP.

The primary objectives of the CDP are to:

- *support transit-oriented development focused on the rapid transit corridor;*
- *create land use and road patterns that support various modes of transportation;*
- *maximize the benefits from existing natural features;*
- *create a network of open spaces accessible to residents and visitors;*
- *establish a range of residential densities and foster a mix of unit types;*
- *ensure consistent treatment of buildings, street edges, boulevards, landscape areas and open spaces; and*
- *encourage the development of an attractive, mixed use Community Core area.*

The Ironwood Subdivision plan is consistent with and maintains the primary objectives of the Official Plan as noted below:

- the Subject Property does not contain any lands identified in the CDP as rapid transit corridor. The Draft Plan supports transit-oriented development by focusing low density residential development far from the transit corridor;
- the road network shown on the Draft Plan matches the intent of the Land Use schedule of the CDP and are of a sufficient width at 18 metres, 20 metres and 26 metres wide to support various modes of transportation;

- the subdivision provides for pedestrian connectivity to the open space and transportation networks;
- the Subject Property does not contain any lands identified as natural features;
- the Draft Plan fosters a mix of unit types, within the low density area, by allowing for the development of a variety of uses from detached dwellings to townhouse units;
- the Draft Plan implements the CDP's policies with regard to ensuring consistent treatment of buildings, street edges, boulevards, landscape areas and open spaces;
- the use of window streets will reduce the need for noise barriers, and
- the Subject Property does not contain any lands identified in the CDP as Community Core Area.

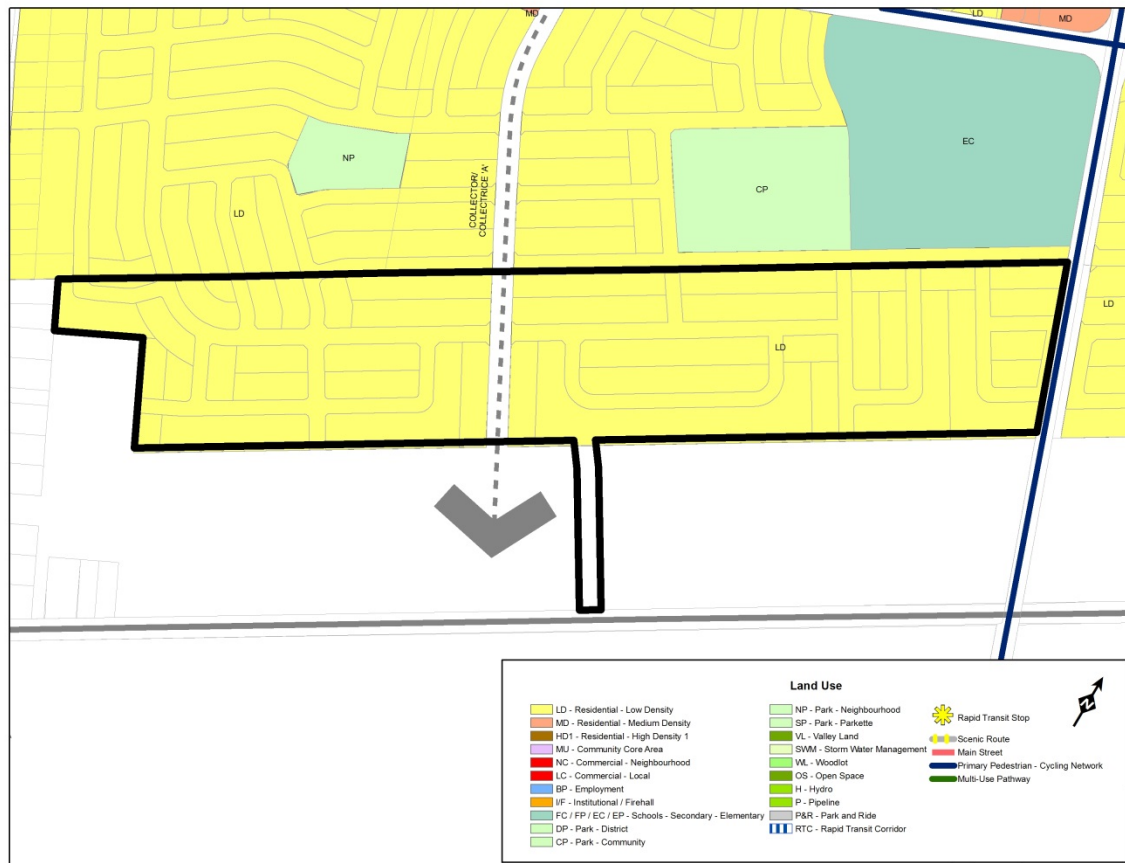


Figure 5 – Existing Riverside South CDP Land Use Schedule: Ironwood

3.4.1 Road Network

Prepared in support of the CDP, the Riverside South Transportation Update provides a framework of the improvements needed to the existing road network, both within and external to Riverside South. The road network for the community is based on a grid of east-west and north-south collector roads. The primary axis for the community's road system is via three future Collector Roads. A comprehensive road hierarchy, as set out in the CDP, includes collector and local roads for transportation. Other future major and minor collectors within the new community will extend into adjacent neighbourhoods to provide links to the arterial road system.

Ironwood has been designed in accordance with the road policies of the CDP and includes local and collector roads.

3.4.2 Range of Densities and Unit Types

As outlined in the City of Ottawa Official Plan, the Riverside South Community's overall residential density must achieve two density and housing mix objectives. Firstly, Section 2.3.1 of the CDP calls for a maximum of 60 percent single and semi-detached dwellings, a minimum 30 percent for multiple dwellings and a minimum of 10 percent apartments. Secondly, an average density of 29 units per net hectare for ground-oriented units must also be attained. This distribution of densities is designed to support intensification in residential areas with close proximity to transit and other transportation corridors.

It should be noted that the proposed Draft Plan for Ironwood has a mix of lower residential densities, as per the Land Use Plan. The gross area of Ironwood is 24 ha. The net ground-oriented residential area in accordance with the CDP is approximately 16.8 ha. With a minimum of 494 ground-oriented units proposed, Ironwood represents an approximate minimum density of 29.4 units per net hectare while respecting the distribution of unit types (Table 1).

The CDP identifies target average densities for Low and Medium Density areas, 22 units per net ha for Low Density Areas (single and semi-detached units) and 38 units per net ha for Medium Density Areas (multiple attached and stacked units) (Table 1). The Subject Property is identified in the CDP as a Low Density Area low density development. The proposed density of 29.4 units per net hectare meets the target average density for the Low Density Area. Minor revisions to the lotting and unit counts prior to draft approval and site plan approval may occur.

The CDP also identifies average percentage density distribution targets for the Community: a maximum of 60% singles and semi-detached units, a minimum of 30% multiple units (multiple attached and stacked) and a minimum of 10% apartments units (Table 2).

Table 1: Density Targets

Density Required in CDP (pages 12-16)	Density Proposed
494 Residential Units Proposed in Total	
Low Density Areas (singles and semis) = average of 22 units/net hectare	Low Density Areas (234 units on 11.05 net ha) = 21 units/net hectare
Medium Density Areas (multiple attached and stacked) = average of 38 units/net hectare	Medium Density Areas (260 units on 5.82 net ha) = 45 units/net hectare
29 units/net hectare of ground-oriented residential units	494 ground-oriented units proposed = 29.4 units/net hectare

Table 2: Density Distribution

Unit Type Density Distribution Required in CDP (pages 12-16)	Density Proposed
494 Residential Units Proposed in Total	
Maximum 60% singles and semi-detached units of 494 = 296 units	234 single and semi-detached units proposed = 47.4%
Minimum 30% multiple units (multiple attached and stacked) of 494 = 148 units	260 multiple attached units and stacked proposed = 52.6%
Minimum 10% apartment units of 494 = 49 units	0 apartment units proposed = 0%

All of the lots for single detached dwellings and townhouse units have been designed to meet the development standards of the R3Z zone and the urban design guidelines for this community.

3.5 Background Studies

The following detailed background studies have been completed in support of the draft approval and this application:

- Servicing Brief (2017);
- Transportation Impact Assessment (2017);
- Phase 1 ESA (2017);
- Noise Impact Assessment (2017);
- Geotechnical Investigation (2013); and
- Tree Conservation Report and Environmental Impact Statement (2017).

4.0 Integrated Environmental Review

Section 4.7 of City's Official Plan outlines direction for providing an Integrated Environmental Review (IER) as part of the subdivision approval process. The integrated environmental review ensures that development design complies with the environmental policies contained in Section 4, and that the principles of design with nature have been applied.

The IER is a tool used as part of the subdivision approval process in order to help design a layout which integrates existing environmental features. This tool is typically utilized where a Community Design Plan is not already in place which specific dictates a City approved land uses and layout. This proposal is subject to an existing CDP which details areas of environmental protection and specific land uses. The Riverside South CDP identifies the entire subject property for low density residential development with no identified environmental features. For the purposes of this application we have provided a brief overview of the supporting documentation which meets all the required information to be provided as part of an IER.

Section 4.7.1 – *"Integrated Environmental Review to Assess Development Applications"* identifies the information to be included in the IER:

- a. A brief overview of the results of individual technical studies and other relevant environmental background material;

- b. A graphic illustration, such as an air photo, summarizing the spatial features and functions (e.g. natural vegetation, watercourses, significant slopes or landform features, recharge/infiltration areas) as identified in the individual studies;
- c. A summary of the potential environmental concerns raised, the scope of environmental interactions between studies, and the total package of mitigation measures, including any required development conditions and monitoring, as recommended in individual studies;
- d. A statement with respect to how the recommendations of the support studies and the design with nature approach have influenced the design of the development;
- e. An indication that the statement has been reviewed and concurred with by the individual sub consultants involved in the design team and technical studies.
- f. A description of how the proposed development principles of Design Objective 7 (Section 2.5.1) to maximize maximizes the energy-efficiency of development and to promote sustainable design that reduces consumption, energy use and carbon footprint of the built environment have been considered. A sustainable design checklist will be prepared to assist in this description.

A. Environmental Background Material

Tree Conservation Report and Environmental Impact Statement

A Tree Conservation Report and Environmental Impact Statement was prepared by Muncaster Environmental Planning Inc. on May 26, 2017.

The report concludes that there are no natural heritage constraints on the Subject Property:

“The site is dominated by cultivated soybean fields and, beyond the potential aquatic habitat in the agricultural drains, contains no natural environment features of note. No Species at Risk are expected to have the potential to be on or adjacent to the site other than butternut, which was not observed on or adjacent to the site, and barn swallow, which may utilize the smaller structures further south of the site but there was no evidence of activity and these structures and adjacent lands will not be disturbed.”

In terms of the agricultural drains the report identifies the management recommendations will be determined following the Headwater Features Assessment protocol but that 'Mitigation' is the most likely outcome:

"Based on flow, fish utilization, and riparian corridor characteristics, a management recommendation for the drains will be developed following the Headwater Features Assessment protocol. The potential management recommendations in the protocol are 'No Management Required,' 'Mitigation,' 'Conservation,' and 'Protection.' Based on the aerial photography, lack of features in the riparian corridor, and our local experience, it is anticipated that a management recommendation of 'Mitigation' will be common."

In terms of Tree Conservation the report concludes that the existing trees and hedgerow cannot be retained and that plantings of native trees and shrubs are recommended:

"Due to urban servicing requirements and associated grade changes, it is anticipated that the intermittent trees along the north site boundary, the north-south deciduous hedgerow in the central-west portion of the site, and the few other on-site trees cannot be retained. These features are dominated by species generally susceptible to disease, poor form, and/or short lifespan, including ash, white elm, Manitoba maple, and poplar."

To assist in mitigating a minor amount of tree removal, plantings of native trees and shrubs are recommended for the site."

Geotechnical Investigation

A Preliminary Geotechnical Investigation, 673 Rideau Road, was prepared by Paterson Group, dated April 16, 2013. The results of the investigations indicate that brown stiff to very stiff clay exists as well as glacial till consisting of silty clay to silty sand with gravel, cobbles and boulders. The report concludes that"

"From a geotechnical perspective, the subject site is adequate for the proposed development. It is expected that the proposed buildings will be founded on conventional shallow footings placed on an undisturbed, stiff silty clay or compact glacial till bearing surface."

B. Existing Features

The site is dominated by agricultural fields which have been cultivated fields for an extended period.

A north-south deciduous hedgerow is in the central-west portion of the site. Mature white ash dominant in the hedgerow, with smaller slender willow in the north portion. The white ash are in poor condition with bark damage, including evidence of emerald ash borer.

Segments of deciduous hedgerows are also along the north side boundary. Most of the tree trunks are immediately to the north of the site, north of a page fence. White ash is dominant in the west portion of the north site boundary. Red-osier dogwood, red raspberry, and common buckthorn shrubs are among the ash trees. The deciduous hedgerow is more intermittent in the central portion of the north boundary, with white birch, white elm, white spruce, as well as smaller green ash, grey birch, and Manitoba maple. Many of the white elm had damaged trunks. Common buckthorn, willow, and nannyberry shrubs are among the trees in the hedgerow.

The intermittent deciduous hedgerow along the east portion of the north site boundary is dominated by white birch and trembling aspen. The larger white birch had a fair bit of trunk damage. Similar sized white elm and smaller green ash, grey birch, white elm and bur oak are also present along with a white pine. White elm and coppice Manitoba maple up are at the east end of the intermittent hedgerow, west of Spratt Road. These trees were in poorer condition with trunk damage, broken limbs and fungus.

Tent caterpillar activity was extensive on many of the shrubs and smaller trees, along with some grape vine coverage. Broad-leaved cattail, sensitive fern, wild grape and reed canary grass were common vegetation in the drains.

The only other trees observed on the site outside of the deciduous hedgerows described above were a coppice crack willow and smaller Manitoba maple and white ash along the north-south agricultural drain in the east portion of the site, and a couple of mature white ash along the south edge of the site east of Spratt Road. A thick, short, north-south coniferous hedgerow of white spruce is just to the north of the site, approximately 50 metres west of Spratt Road. The closest trunk is approximately 4 metres north of the property line. Thus the critical root zones of the white spruce would not extend onto the site.

There are no forests adjacent to the site, with the closest cultural woodland representation about 100 metres north of the site, west of Spratt Road.



C. Potential Effects and Mitigation

Tree Conservation Report and Environmental Impact Statement

Muncaster's EIS and Tree Conservation Report did not raise and potential environmental concerns from the proposed development.

An excerpt of all design and construction recommendations proposed in Muncaster's Report can be found in Appendix 'B'.

Geotechnical Investigation

Paterson's Preliminary Geotechnical Investigation did not raise and potential environmental concerns from the proposed development.

An excerpt of all design and construction recommendations proposed in Paterson's Preliminary Geotechnical Investigation can be found in Appendix 'C'.

D. Incorporation of Design-With-Nature Principles

Section 4.7 – Environmental Protection of the City of Ottawa Official Plan identifies planning objectives to support natural features and functions in the development of lands within the City. The stated objectives are:

- Increasing forest cover across the city;
- Maintaining and improving water quality;
- Maintaining base flows and reducing peak flows in surface water;
- Protecting and improving the habitat for fish and wildlife in stream corridors;
- Protecting springs, recharge areas, headwater wetlands and other hydrological areas; and
- Managing resources by using low-maintenance, natural solutions.

The City of Ottawa desires that land developments achieve these objectives through design with nature. The purpose of this section is to demonstrate the compliance with the design with nature principles.

In support of the development, various studies have been completed to identify any significant natural resources that may be present on the site. No significant features have been identified on the Subject Property.

The report also concluded that none of the trees onsite or within the existing hedgerows are significant or healthy enough to require protection.

Moreover, the development application supports environmental initiatives identified by the City of Ottawa, as demonstrated above. Additional measures are:

- The Subject Property currently has limited trees on site. The tree conservation report concluded that none of the trees onsite or within the existing hedgerows are significant or healthy enough to require protection.
- Surface water drainage will be routed through City approved stormwater management systems so that objectives for stormwater quality will be met during

and post construction;

- The proposed project is being carried out in an area that does not and has not contained significant wetland habitat, or significant habitat for species considered rare, threatened or endangered.

E. Concurrence Sub Consultants

This application is at the Draft Approval stage of the process. This report has integrated the conclusions and recommendations directly from the technical studies undertaken on the Subject Property. These technical studies are also being submitted with the application package and have been signed by the consultants who have prepared them.

F. Integration of Energy Efficiency and Sustainable Design

Section 4.7 – Environmental Protection of the City of Ottawa Official Plan requires the incorporation of energy efficient and sustainable design principles into new developments following a Sustainable Design Checklist (now known as the Green Checklist) as follows:

Table 2: City of Ottawa Site Plan Control Approval Green Checklist

ID	Question	Response
1a	Does the project proponent intent to seek LEED certification for this project?	No
1b	If yes, which level of LEED certification is the project intended or designed to meet?	None
1c	Will this project be seeking certification under another third-party green building rating system?	No
2	Will this project include renewable energy facilities and pursue a FIT or MicroFIT contract under the Ontario Power Authority's Feed-in Tariff program?	No
3	Which features is the project designed to incorporate?	None

5.0 CONCLUSION

This Report has been prepared in support of a Zoning By-law Amendment and Draft Plan Approvals for a proposed residential subdivision development. This represents a natural extension of the adjacent Riverside South community.

The proposed Draft Plan and Zoning By-law Amendment are consistent with the 2014 Provincial Policy, the amended Official Plan and the City's latest review of the Riverside South Community Design Plan. The proposed residential development reflects the intended form of the community. The proposed development also supports Provincial Interests (i.e., natural heritage, agricultural, mineral or cultural heritage).

The proposed Draft Plan and Zoning By-law Amendment represents good land use planning.

Prepared by:



Katie Morphet, MCIP, RPP

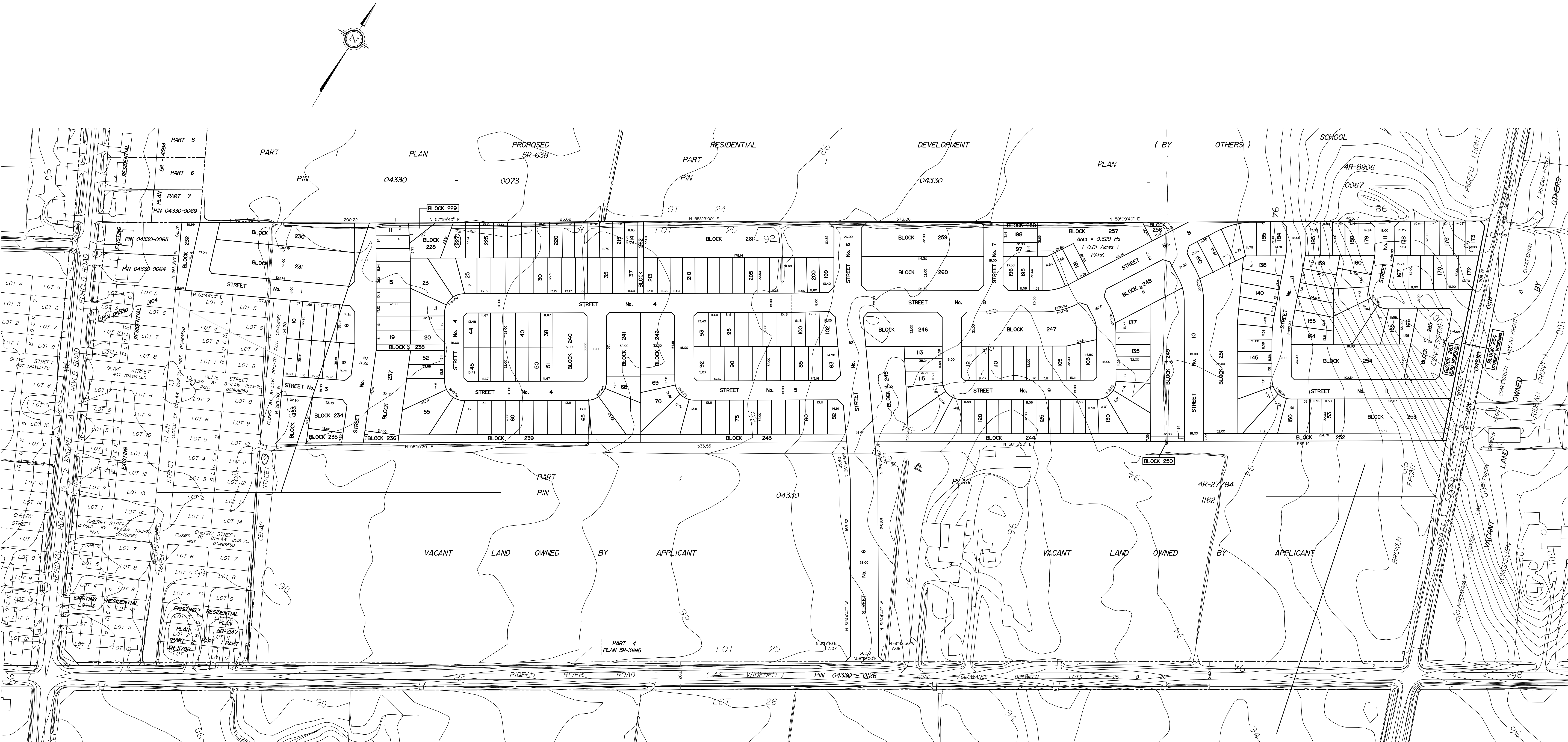
Reviewed by:



Timothy F. Chadder, MCIP, RPP

APPENDIX A

Draft Approved Plan of Subdivision



APPENDIX B

Muncaster Environmental Planning Inc. – Tree Conservation Report and Environmental Impact Statement Impact Assessment and Recommendations



Photo 10 – Barn immediately to the south of the site. Bird access to the inside did not appear feasible no barn swallow activity was observed during the morning of May 24th

Impact Assessment and Recommendations

The site is dominated by cultivated soybean fields and, beyond the potential aquatic habitat in the agricultural drains, contains no natural environment features of note. No Species at Risk are expected to have the potential to be on or adjacent to the site other than butternut, which was not observed on or adjacent to the site, and barn swallow, which may utilize the smaller structures further south of the site but there was no evidence of activity and these structures and adjacent lands will not be disturbed.

Agricultural drains are mapped along the north edge of the site and in the east and west portions. A Headwater Features Assessment is underway in the spring and summer of 2017 on these drains. Based on flow, fish utilization, and riparian corridor characteristics, a management recommendation for the drains will be developed following the Headwater Features Assessment protocol. The potential management recommendations in the protocol are ‘No Management Required,’ ‘Mitigation,’ ‘Conservation,’ and ‘Protection.’ Based on the aerial photography, lack of features in the riparian corridor, and our local experience, it is anticipated that a management recommendation of ‘Mitigation’ will be common. The management implications and options of this recommendation are that the channels may be maintained, relocated, or enhanced. No natural channel design is required and the habitat can be replaced by well-vegetated swales or constructed wetland features. Alternatively, the on-site flow can be replicated, with outlet flows at the upstream end of the downstream system to be maintained. The management recommendations will of course be confirmed with the spring and summer assessment.

Due to urban servicing requirements and associated grade changes, it is anticipated that the intermittent trees along the north site boundary, the north-south deciduous hedgerow in the central-west portion of the site, and the few other on-site trees cannot be retained. These features are dominated by species generally susceptible to disease, poor form, and/or short lifespan, including ash, white elm, Manitoba maple, and poplar.

Once the detailed design is completed, any trees that can be retained are to be protected with sturdy construction fencing at least 1.3 metres in height along the tree's critical root zones (defined as ten times the trunk diameter). Signs, notices, or posters are not to be attached to any tree. No grading, heavy machinery traffic, stockpiling of material, machine maintenance and refueling, or other activities that may cause soil compaction are to occur within three metres of the critical root zone of the trees to be retained and protected. The root system, trunk, and branches of the trees to be retained are to be protected from damage. If roots of retained trees are exposed during site alterations, the roots shall be immediately reburied with soil or covered with filter cloth, burlap, or woodchips and kept moist until the roots can be buried permanently. A covering of plastic should be used to retain moisture during an extended period when watering may not be possible. Any roots that must be cut are to be cut cleanly to facilitate healing and as far from the tree as possible. Exhaust fumes from all equipment during construction will not be directed towards the canopy of adjacent retained trees.

All of the supports and bracing for the protective fencing should be placed outside of the protected area and should be installed in such a way as to minimize root damage. Also, since the desired effect of the barrier is to prevent construction traffic from entering the tree's critical root zone, the barrier should be kept in place until all site servicing and house construction has been completed.

A generous planting of native trees and shrubs is recommended for the site landscape plans. In terms of planting sensitivities, tree and shrub species that have a high water demand are not recommended for the site due to the clay soils. These species include willows, poplars, and elm. It is important that native trees from a local seed stock be used whenever possible. Recommended species for planting include a mix of coniferous and deciduous trees such as sugar maple, red maple, basswood, bur oak, red oak, tamarack, and white spruce, along with nannyberry, elderberry, and dogwood shrubs.

The following additional mitigation measures are recommended:

1. Woody vegetation that must be removed is to be cut outside of the breeding bird period of April 15th to August 15th unless a breeding bird survey identifies no nesting activity within five days of the proposed vegetation removal;
2. The contractor is to be aware of potential Species at Risk in the vicinity of the study corridor including butternut and barn swallow. Appendix 1 of City of Ottawa (2015) describes these species. Appendix 1 should be modified for this construction project to include the contact information of the project biologist. Any Species at Risk sightings are to be immediately reported to the project biologist and the Ministry of Natural Resources and Forestry and activities modified to avoid impacts until further direction by the Ministry;

3. Stone piles were observed along the north site boundary. Disturbances to stone piles are to occur outside of the winter and spring periods to protect wildlife.
4. The work areas are to be isolated with properly installed and maintained silt fencing;
5. As recommended in City of Ottawa (2015), prior to beginning work each day, potential wildlife is to be checked by conducting a thorough visual inspection of the work space and immediate surroundings. See Section 2.5 of the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2015) for additional recommendations on construction site management. Any turtles and snakes in the work areas are to be relocated towards the Rideau River corridor to the west of the site. Animals should be moved only far enough to ensure their immediate safety. See Appendix 1 and the links in Section 4 of City of Ottawa (2015) for suggestions on how to effectively relocate turtles and snakes;
6. Proper sediment and erosion control is important for general environmental protection. Seepage barriers such as silt fencing, straw bale check dams, and other sediment and erosion control measures will be installed as required to OPSD requirements in any temporary drainage ditches and around areas disturbed during construction and stockpiles of fine material. These control measures must be properly maintained to maximize their function during construction. These measures are to be described in an erosion and sediment control plan and must be monitored and properly implemented;
7. Plantings of native trees and shrubs of local origin are recommended to help offset the loss of existing trees and improve the aesthetic and local wildlife habitat features of the site;
8. Municipal by-laws and provincial regulations for noise will be followed and utilities will be located as required in the vicinity of the site prior to construction; and,
9. Waste will be managed in accordance with provincial regulations. The contractor will have a spill kit on-hand at all times in case of spills or other accidents.

As the agricultural drains are abandoned, the following mitigation measures are recommended:

1. The existing channels should be closed during drier periods such as between July 1st and September 15th or when the channels are dry during the growing season. The summer period is recommended due to generally reduced flow, decreased potential for sediment input, and the greater growing season afforded for re-vegetation of disturbed areas. If the proposed timing of the work is to take place between October 15th and March 15th, it will be necessary to have all exposed areas along the banks to be covered with erosion control blankets to keep the soil in place and prevent erosion from occurring during the spring freshet time period;
2. re-direction of existing flows will not be initiated when flows are elevated from local rains, storm events or seasonal floods, or when significant rains are forecasted;
3. any fish trapped within the channels to be abandoned must be safely relocated to downstream of Rideau Road in a tributary of the Rideau River. Fish collection will require a permit from MNRF;
4. erosion and sediment control measures are critical components of the channel closures. Effective sediment and erosion control measures are to be maintained until complete re-vegetation of disturbed areas is achieved. Prior to filling of the swales, a rock flow

check dam, with a sediment trap immediately upstream of the flow check, must be installed downstream of the work areas.

5. additional mitigation measures to minimize the potential for inputs of sediments and other contaminants into the watercourse and the environment in general include proper maintenance on construction equipment with respect to refuelling, washing, and fluid changes, and proper disposal of fluids, filters, and other waste materials; and,
6. monitoring is to be completed at all times and any water quality issues such as elevated turbidity levels be addressed immediately with cessation of work until proper sediment and erosion controls are in place.

Schedule of Proposed Works

It is proposed to remove the woody vegetation later in 2017 or in 2018, outside of the breeding bird season from April 15th to August 15th. City forestry staff is to be contacted at least two business days before the start of construction to ensure any required protective fencing is properly installed.

Conclusion

A combination of detached and multi-unit residences, with a total unit count of 474, is proposed for the approximately 24 hectare site in the north portion, the parcel in the urban area, of 673 Rideau Road. Outside of the potential habitat in the agricultural drains there are no natural heritage features of note on or adjacent to the site, including no Species at Risk utilization.

To assist in mitigating a minor amount of tree removal, plantings of native trees and shrubs are recommended for the site.

References

Brownell, V. R. and C. S. Blaney. 1997. Summary: Natural Area Reports for Natural Areas East of the Rideau River. Prepared for the Regional Municipality of Ottawa-Carleton, Planning and Development Approvals Department. Report #28-08a. 164 pp.

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Ontario Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. January, 2015. 38 pp.

Stantec Consulting Ltd. 2008. The Riverside South Community Master Drainage Plan Update. Report No. 60400176/83 September 30, 2008. 102 pp & append.

Please call if you have any questions regarding this Tree Conservation Report and Environmental Impact Statement.

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.



Bernie Muncaster, MSc.
Principal

\\cardelrideautcreis



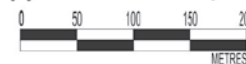
Legend

- Site
- Mapped agricultural channel

Vegetation Communities

- ① Agricultural field
- ② Deciduous hedgerow

Approx. Scale 1: 6,400



Map 1

FILE: 16-20

February 16, 2017

Prepared for:

Cardel Homes

Prepared by:



Muncaster
Environmental
Planning Inc.

EXISTING VEGETATION

**673 Rideau Road (Urban Area)
Riverside South, City of Ottawa**

APPENDIX C

Paterson Group - Preliminary Geotechnical Investigation

Discussion / Design and Construction Precautions / Recommendations

Geotechnical
Engineering

Environmental
Engineering

Hydrogeology

Geological
Engineering

Materials Testing

Building Science

Archaeological Studies

Preliminary Geotechnical Investigation

Proposed Residential Development
673 Rideau Road
Ottawa, Ontario

Prepared For

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Paterson Group Inc.

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April 16, 2013

Report: PG2852-1

5.0 DISCUSSION

5.1 Geotechnical Assessment

From a geotechnical perspective, the subject site is adequate for the proposed development. It is expected that the proposed buildings will be founded on conventional shallow footings placed on an undisturbed, stiff silty clay or compact glacial till bearing surface.

A permissible grade raise restriction is required for the proposed buildings where a silty clay layer is noted below underside of footing.

The above and other considerations are discussed in the following paragraphs.

5.2 Site Grading and Preparation

Stripping Depth

Topsoil, and any deleterious fill, such as those containing organic materials, should be stripped from under any buildings and other settlement sensitive structures. Settlement sensitive structures include, but are not limited to, underground services and paved areas.

Existing foundation walls and other construction debris should be entirely removed from within the proposed building perimeter. Under paved areas, existing construction remnants such as foundation walls should be excavated to a minimum of 1 m below final grade.

Bedrock Removal

Bedrock removal can be accomplished by hoe ramming where only a small quantity of the bedrock needs to be removed. Sound bedrock may be removed by line drilling and controlled blasting and/or hoe ramming.

Fill Placement

Fill used for grading beneath the building areas should consist, unless otherwise specified, of clean imported granular fill, such as Ontario Provincial Standard Specifications (OPSS) Granular A or Granular B Type II material. This material should be tested and approved prior to delivery to the site. The fill should be placed in lifts no greater than 300 mm thick and compacted using suitable compaction equipment for the lift thickness. Fill placed beneath the buildings should be compacted to at least 98% of its standard Proctor maximum dry density (SPMDD).

Non-specified existing fill along with site-excavated soil can be used as general landscaping fill where settlement of the ground surface is of minor concern. These materials should be spread in thin lifts and at least compacted by the tracks of the spreading equipment to minimize voids. If excavated stiff brown silty clay, free of organics and deleterious materials, is to be used to build up the subgrade level for areas to be paved, the silty clay, under dry conditions, should be compacted in thin lifts to a minimum density of 95% of their respective SPMDD. Non-specified existing fill and site-excavated soils are not suitable for use as backfill against foundation walls unless a composite drainage blanket connected to a perimeter drainage system is provided.

5.3 Foundation Design

Shallow Foundation

Strip footings, up to 2 m wide, and pad footings, up to 4 m wide, placed on an undisturbed, stiff silty clay bearing surface can be designed using a bearing resistance value at serviceability limit states (SLS) of **150 kPa** and a factored bearing resistance value at ultimate limit states (ULS) of **225 kPa**.

Footings placed on an undisturbed, compact glacial till bearing surface can be designed using a bearing resistance value at SLS of **150 kPa** and a factored bearing resistance value at ULS of **250 kPa**.

Footings designed using the above noted bearing resistance value at SLS given above will be subjected to potential post construction total and differential settlements of 25 and 20 mm, respectively.

A geotechnical resistance factor of 0.5 was applied to the above noted bearing resistance values at ULS.

An undisturbed soil bearing surface consists of a surface from which all topsoil and deleterious materials, such as loose, frozen or disturbed soil, whether in situ or not, have been removed, in the dry, prior to the placement of concrete for footings.

A preliminary permissible grade raise restriction of **2 to 3 m** is recommended for the proposed buildings where footings are to be placed over a stiff, silty clay bearing surface. Footings bearing on a dense glacial till or bedrock are not subjected to permissible grade raise restrictions.

Lateral Support

The bearing medium under footing-supported structures is required to be provided with adequate lateral support. Adequate lateral support is provided to a silty clay bearing medium when a plane extending down and out from the bottom edge of the footing, at a minimum of 1.5H:1V.

5.4 Design for Earthquakes

The site class for seismic site response can be taken as **Class C** for the foundations considered at this site. Soils underlying the subject site are not susceptible to liquefaction. Reference should be made to the latest revision of the 2006 Ontario Building Code for a full discussion of the earthquake design requirements.

5.5 Pavement Structure

For design purposes, the pavement structure presented in the following tables could be used for the design of car only parking areas and local roadways.

Table 2 - Recommended Pavement Structure - Car Only Parking Areas/Driveways	
Thickness (mm)	Material Description
50	Wear Course - HL-3 or Superpave 12.5 Asphaltic Concrete
150	BASE - OPSS Granular A Crushed Stone
300	SUBBASE - OPSS Granular B Type II
SUBGRADE - Either in situ soils or OPSS Granular B Type I or II material placed over in situ soil	

Table 3 - Recommended Pavement Structure - Local Roadways	
Thickness (mm)	Material Description
40	Wear Course - HL-3 or Superpave 12.5 Asphaltic Concrete
50	Binder Course - HL-8 or Superpave 19.0 Asphaltic Concrete
150	BASE - OPSS Granular A Crushed Stone
400	SUBBASE - OPSS Granular B Type II
SUBGRADE - Either in situ soils or OPSS Granular B Type I or II material placed over in situ soil	

Minimum Performance Graded (PG) 58-34 asphalt cement should be used for this project.

If soft spots develop in the subgrade during compaction or due to construction traffic, the affected areas should be excavated and replaced with OPSS Granular B Type I or II material.

The pavement granular base and subbase should be placed in maximum 300 mm thick lifts and compacted to a minimum of 100% of the material's SPMDD using suitable vibratory equipment.

Pavement Structure Drainage

Satisfactory performance of the pavement structure is largely dependent on keeping the contact zone between the subgrade material and the base stone in a dry condition. Failure to provide adequate drainage under conditions of heavy wheel loading can result in the fine subgrade soil being pumped into the voids in the stone subbase, thereby reducing its load carrying capacity.

Where silty clay is anticipated at subgrade level, consideration should be given to installing subdrains during the pavement construction. The sub-drain inverts should be approximately 300 mm below subgrade level and run longitudinal along the curblines. The subgrade surface should be crowned to promote water flow to the drainage lines.

6.0 DESIGN AND CONSTRUCTION PRECAUTIONS

6.1 Foundation Drainage and Backfill

It is recommended that a perimeter foundation drainage system be provided for the proposed structures. The system should consist of a 100 to 150 mm diameter perforated corrugated plastic pipe, surrounded on all sides by 150 mm of 10 mm clear crushed stone, placed at the footing level around the exterior perimeter of the structure. The pipe should have a positive outlet, such as a gravity connection to the storm sewer.

Backfill against the exterior sides of the foundation walls should consist of free-draining non frost susceptible granular materials. The greater part of the site excavated materials will be frost susceptible and, as such, are not recommended for re-use as backfill against the foundation walls, unless used in conjunction with a drainage geocomposite, such as Miradrain G100N or Delta Drain 6000, connected to the perimeter foundation drainage system. Otherwise, imported granular materials, such as clean sand or OPSS Granular B Type I granular material, should otherwise be used for this purpose.

6.2 Protection of Footings Against Frost Action

Perimeter footings of heated structures are required to be insulated against the deleterious effect of frost action. A minimum of 1.5 m thick soil cover (or equivalent) should be provided in this regard.

Exterior unheated footings, such as those for isolated exterior piers, are more prone to deleterious movement associated with frost action than the exterior walls of the structure proper and require additional protection, such as soil cover of 2.1 m or a combination of soil cover and foundation insulation.

6.3 Excavation Side Slopes

The side slopes of excavations in the soil and fill overburden materials should either be cut back at acceptable slopes or should be retained by shoring systems from the start of the excavation until the structure is backfilled. It is assumed that sufficient room will be available for the greater part of the excavations to be undertaken by open-cut methods (i.e. unsupported excavations).

The excavation side slopes above the groundwater level extending to a maximum depth of 3 m should be cut back at 1H:1V or flatter. The flatter slope is required for excavation below groundwater level. The subsoil at this site is considered to be mainly a Type 2 and 3 soil according to the Occupational Health and Safety Act and Regulations for Construction Projects.

Excavated soil should not be stockpiled directly at the top of excavations and heavy equipment should be kept away from the excavation sides.

Slopes in excess of 3 m in height should be periodically inspected by the geotechnical consultant in order to detect if the slopes are exhibiting signs of distress.

It is recommended that a trench box be used at all times to protect personnel working in trenches with steep or vertical sides. It is expected that services will be installed by "cut and cover" methods and excavations will not be left open for extended periods of time.

6.4 Groundwater Control

The contractor should be prepared to direct water away from all bearing surfaces and subgrades, regardless of the source, to prevent disturbance to the founding medium.

It is anticipated that pumping from open sumps will be sufficient to control the groundwater influx through the sides of the excavations.

Pumping of more than 50,000 L/day to an off site receptor requires a temporary Ontario Ministry of Environment (MOE) permit to take water (PTTW). At least 4 to 5 months should be allowed for completion of the application and issuance of the permit by the MOE.

6.5 Winter Construction

Precautions must be taken if winter construction is considered for this project. The subsoil conditions at this site consist of frost susceptible materials. In the presence of water and freezing conditions, ice could form within the soil mass. Heaving and settlement upon thawing could occur.

In the event of construction during below zero temperatures, the founding stratum should be protected from freezing temperatures by the use of straw, propane heaters and tarpaulins or other suitable means. In this regard, the base of the excavations should be insulated from sub-zero temperatures immediately upon exposure and until such time as heat is adequately supplied to the building and the footings are protected with sufficient soil cover to prevent freezing at founding level.

Trench excavations and pavement construction are also difficult activities to complete during freezing conditions without introducing frost in the subgrade or in the excavation walls and bottoms. Precautions should be taken if such activities are to be carried out during freezing conditions.

6.6 Corrosion Potential and Sulphate

The results of analytical testing show that the sulphate content is less than 0.1%. These results are indicative that Type 10 Portland cement (General Use - normal cement) would be appropriate for this site. The results of the chloride content, pH and resistivity indicate the presence of a moderately aggressive environment for exposed ferrous metals at this site.

7.0 RECOMMENDATIONS

It is a requirement for the foundation design data provided herein to be applicable that a materials testing and observation services program including the following aspects be performed by the geotechnical consultant.

- ☐ Observation of all bearing surfaces prior to the placement of concrete.
- ☐ Sampling and testing of the concrete and fill materials used.
- ☐ Periodic observation of the condition of unsupported excavation side slopes in excess of 3 m in height, if applicable.
- ☐ Observation of all subgrades prior to backfilling.
- ☐ Field density tests to determine the level of compaction achieved.
- ☐ Sampling and testing of the bituminous concrete including mix design reviews.

A report confirming that these works have been conducted in general accordance with our recommendations could be issued, upon request, following the completion of a satisfactory materials testing and observation program by the geotechnical consultant.

8.0 STATEMENT OF LIMITATIONS

The recommendations made in this report are in accordance with our present understanding of the project. The client should be aware that any information pertaining to soils and all test hole logs are furnished as a matter of general information only and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those of the test holes.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than 2356349 Ontario Inc. or their agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

Paterson Group Inc.



Stephanie Boisvenue, B.Eng.

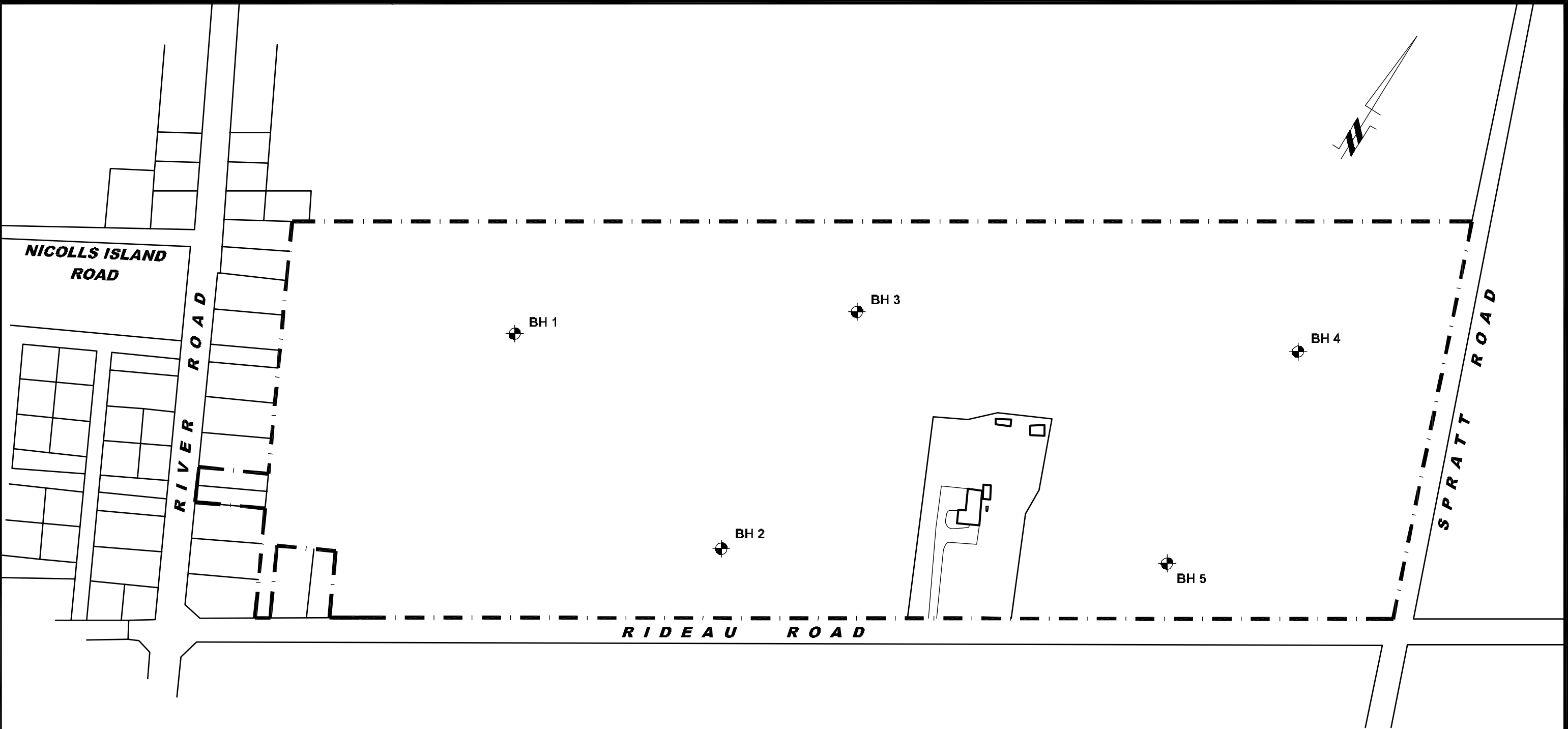


David J. Gilbert, P.Eng.

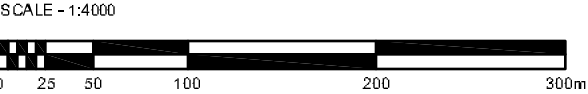


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LEGEND:
BOREHOLE LOCATION



patersongroup

consulting engineers
154 Colonnade Road South, Ottawa, Ontario K2E 7J5

Scale:	1:4000
Des.:	SB
Dwn:	MPG
Chkd:	DG

2356349 ONTARIO INC.	
PRELIMINARY GEOTECHNICAL INVESTIGATION PROPOSED DEVELOPMENT - 673 RIDEAU ROAD	
OTTAWA,	ONTARIO

TEST HOLE LOCATION PLAN

Dwg. No.	PG2852-1
Report No.:	PG2852-1
Date:	04/2013