



**City of Richmond**  
Planning and Development Department

**Report to Committee**

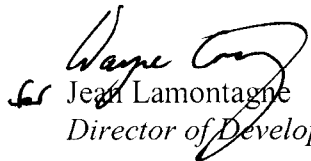
**To:** Planning Committee  
**From:** Jean Lamontagne  
Director of Development

**Date:** January 02, 2007  
**File:** RZ 05-313124

**Re:** **Application by Simon Development Ltd. for Rezoning at 7791 and 7931 No. 4 Road from Single-Family Housing District, Subdivision Area F (R1/F) to Townhouse District (R2 – 0.6)**

**Staff Recommendation**

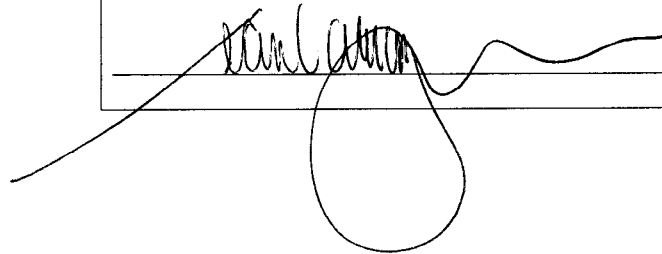
That Bylaw No. 8147, for the rezoning of 7791 and 7931 No. 4 Road from “Single-Family Housing District, Subdivision Area F (R1/F)” to “Townhouse District (R2 – 0.6)”, be introduced and given first reading.

  
Jean Lamontagne  
Director of Development

SB:blg  
Att.

**FOR ORIGINATING DEPARTMENT USE ONLY**

**CONCURRENCE OF GENERAL MANAGER**



## Staff Report

### Origin

Simon Development Ltd. has applied to the City of Richmond to rezone 7791 and 7931 No. 4 Road (**Attachment 1**) from "Single-Family Housing District, Subdivision Area F (R1/F)" to "Townhouse District (R2 – 0.6)" in order to permit the development of 12 townhouse units.

The development will dedicate lands and complete Keefer Avenue out to its ultimate width from No. 4 Road to future Lechow Street.

### Findings of Fact

Please refer to the attached Development Application Data Sheet (**Attachment 2**) for a comparison of the proposed development data with the relevant Bylaw requirements.

### Surrounding Development

The consolidated development site is in the City Centre McLennan South Sub-Area Character Area 'C2', which is characterized as residential, 2 ½ storey (three-storey maximum), 0.55 base floor area ratio (F.A.R.) and a mix of townhouses, triplexes, duplexes and single-family. The following development surrounds the site:

- To the north, across Keefer Avenue in the character area 'C1', is a 42-unit townhouse development with a mix of two and three-storey units by Polygon (DP 04-276421), zoned "Comprehensive Development District (CD/35)" with a permitted maximum density of 0.6 F.A.R.;
- To the east, across No. 4 Road and outside of City Centre, are single-family homes in the Agricultural Land Reserve (ALR), zoned "Agricultural District (AG1);
- To the south, are single-family lots fronting onto No. 4 Road and Blundell Road, zoned "Single-Family Housing District, Subdivision Area F (R1/F)"; and
- To the west, a development application is under consideration for the continuation of Keefer Avenue through to Bridge Street and a 32-unit townhouse development with a mix of 2 ½ and three-storey units (RZ 05-296361 and DP 06-349392) under "Comprehensive Development District (CD/128)" with a proposed density of 0.79 F.A.R.

### Related Policies & Studies

- Official Community Plan (OCP) designation: McLennan South Sub-Area Plan, Schedule 2.10D.
- OCP McLennan South Sub-Area Land Use Map (**Attachment 3**): Residential, 2 ½ storeys typical (three-storeys maximum), Predominantly Triplex, Duplex, Single-Family, 0.55 base F.A.R.

- Roads: The plan intends that developers will build a number of new roads, with the final alignments “subject to development” (e.g. their locations may vary as a result of opportunities and/or constraints that arise as residential development proceeds). Land dedication and construction for completion of Keefer Avenue are required to be completed with this development.
- Development Permit Guidelines: The main objectives are to achieve an adapted version of the rural estate character through building form and character, landscape treatment to maximize the sense of openness and the integration of buildings into a treed landscape.

The proposal to develop townhouses and construct portions of the road network is consistent with the objectives of the McLennan South Sub-Area Plan in terms of land use, character, density, and road network.

### **Staff Comments**

No significant concerns have been identified through the technical review. A preliminary site plan, streetscape elevations, and floor plans are enclosed for reference (**Attachment 4**). Separate from the rezoning process, the applicant is required to submit separate applications for Development Permit, Servicing Agreement (Keefer Avenue road widening) and Building Permit.

### **Analysis**

#### Density and Form

A design rationale and appropriate public benefit contributions from the developer are required to support a density increase above the base 0.55 F.A.R. to 0.6 F.A.R., as proposed. The increased density is justified as follows:

- The proposed dedication of lands and construction for the completion of Keefer Avenue warrants support of the density increase to F.A.R. 0.6;
- Additionally, the applicant proposes a \$0.60 per buildable ft<sup>2</sup> cash contribution (e.g., \$9,211) towards Affordable Housing, consistent with the City Interim Affordable Housing Policy;
- The proposed townhouse layout provides for an attractive pedestrian oriented streetscape of duplex units along No. 4 Road and a mix of duplex, four-plex and end units fronting onto Keefer Avenue facing recently constructed triplex and duplex townhouse units across the street.

#### Road and Vehicle Access

The applicant will be responsible for the construction of frontage improvements on the south side of Keefer Avenue, including road widening, curb and gutter, grass boulevard with street trees, lighting and sidewalks, to City standards. Development Cost Charge (DCC) credits are available for the Keefer Avenue road works.

Access to the site from Keefer Avenue is consistent with the Transportation Plan for the Sub-Area. Vehicular access to this new townhouse project is to be through two driveways from Keefer Avenue only. No covenants are required, as this will be controlled with the forthcoming Development Permit.

The locations of the proposed driveways will facilitate future vehicle access to the adjacent lots to the south. Access easements in favour of 9711 & 9731 Blundell Road and 7951 No. 4 Road are required as a condition of Rezoning adoption. This includes any future assembly with 9951

& 9991 No. 4 Road. The developer has provided a development concept to demonstrate the development potential of these adjacent lands.

Prior to future issuance of Building Permit, a Servicing Agreement is required for design and construction of Keefer Avenue completion and No. 4 Road frontage improvements. Works include, but are not limited to, completing the travel portion of Keefer Avenue to make it 11.2m wide (curb to curb), a 0.15 m wide barrier curb, a 1.1 m grass boulevard with street trees (trees to be 8 cm. Persian Ironwood) and Zed street lighting, with a 1.75 m sidewalk at the new property line. If the spacing works out along No. 4 Road, where the existing driveways are being eliminated, they can be replaced with 8 cm. Persian Ironwood trees (both streets). Keefer Avenue land cost and road construction are on the Development Cost Charge (DCC) program so credits apply.

### Trees

An Arborist report and tree survey (**Attachment 5**) has been submitted and reviewed by City staff, with recommendations for tree retention within the net site after the required road dedications. Trees located within the future Keefer Avenue widening will not be addressed, as the construction of the road will necessitate their removal. Compensation for trees within this road right-of-way is not being sought as Keefer Avenue is identified in the Area Plan.

The following Table summarizes the findings of the Arborist Report. The proposed plan for the tree relocation and retention and replacement will be further refined as part of the Development Permit process.

**Tree Summary Table**

Item	Number of Trees	Compensation Rate	Compensation Required	Comments
<b>Total on site bylaw trees</b>	36	-	-	
<b>Bylaw trees within building envelopes or internal driveways to be removed</b>	33	2:1	66	To be removed, due to conflicts with proposed building locations, internal roadways and driveways, or poor health of the tree.
<b>Trees to be retained, based on current site plan</b>	3	-	-	To be further assessed during the DP. If retention is not possible, 2:1 replacement is required.
<b>Trees adjacent to the site within Bridge Street and future Keefer Avenue Right-of-Way</b>	11	-	-	Located within excavation and construction zones for road works. These trees to be further assessed as part of the DP and SA processes.

### Amenity Space

The applicant has agreed on a payment-in-lieu for onsite indoor amenity space in the amount of \$12,000 towards the development of the McLennan South neighbourhood parks. An outdoor amenity area that exceeds the minimum area requirements of the OCP is being proposed in a central location. The outdoor amenity area location incorporates the three trees proposed for retention and the detailed design will be refined as part of the future Development Permit.

### Affordable Housing

The applicant has agreed to the payment of a contribution of \$0.60 per buildable ft<sup>2</sup> (e.g., \$9,211) towards the City's Affordable Housing Reserve Fund, in accordance with the Interim Affordable Housing Strategy.

### Aircraft Noise

The subject site is outside the boundary of the Aircraft Noise Sensitive Development Policy Area. A noise covenant, therefore, is not required.

### Servicing Capacity

An independent review of servicing requirements (storm and sanitary) has concluded that no upgrades to the existing systems are required to support the proposed development.

The subject development parcel is located outside of the boundary for the McLennan South Development Area Catchment for which the City has identified required storm and sewer upgrades to accommodate on-going development within the area in the near future.

### Flood Indemnity Covenant

In accordance with the City's Interim Flood Management Strategy, a Flood Indemnity Covenant is required as a condition of rezoning.

### Future Development Permit Application

The applicant has worked with staff and revised the design to respond to comments made by staff, the Advisory Design Panel and the project arborist. The following items will be further investigated at the Development Permit stage:

- The project was presented on a preliminary basis to the Advisory Design Panel on October 18, 2006. The rezoning was supported by the Panel and comments were provided for the applicant to address prior to the forthcoming formal presentation through the Development Permit process;
- Detailed review of building form and character including pedestrian frontage along Keefer Avenue and No. 4 Road;
- **Variances** have been requested by the applicant for the following and would require further consideration through the forthcoming Development Permit process:
  - **Tandem Parking:** 16 tandem parking spaces in 8 of the 12 townhouse units;
  - **Garbage and recycling enclosures:** reduced front yard setback due to road dedication requirements;
  - **Keefer Avenue Porch Projections and Reduced Side Yard Setback:** 1.5 m open porch projections and reduced 4.5 m Keefer Avenue setback for 6 of the 7 units fronting onto Keefer Avenue. A further reduced 4.3 m setback is required

for the unit adjacent to the outdoor amenity area for the adequate protection of the proposed cedar retention tree #5519. The zoning district permits 0.6 m bay window projections into the side yard setback. A 4.5 m Keefer Avenue setback with 0.6 m projections is also proposed through the adjacent development application to the west (RZ 05-296361); and

These variances can be considered through the forthcoming Development Permit process if integrated into a high quality streetscape design with appropriate screening and buffering;

- Review of units providing opportunities for conversion to accommodate wheelchair accessibility; and
- Landscaping design, including the retention and replacement of existing trees, in accordance with the Official Community Plan (OCP) and preliminary site plan (**Attachment 4**).

### **Financial Impact**

Contributions of both land and construction costs for Keefer Avenue widening to its full width along the north frontage, and land dedication for future No. 4 Road road works to the east will provide improvements to the neighbourhood, and are a significant public benefit.

Keefer Avenue is identified in the Implementation Strategy for McLennan South, and has been included in the Area Development Cost Charge (DCC) Program for land and construction cost. Credits will be a maximum of the full assessment of the Roads Component of the Development Cost Charge (DCC) Assessment for the proposed 12 townhouses.

### **Conclusion**

Staff recommend support for this application. The proposed widening of Keefer Avenue will complete access from No. 4 Road to Lechow Street, and improve opportunities for single-family development of the back lands of properties fronting Bridge Street and backing onto Lechow Street.

Rezoning of the subject site as proposed conforms to City-wide, City Centre, and McLennan South objectives for residential growth and development and merits favourable consideration.

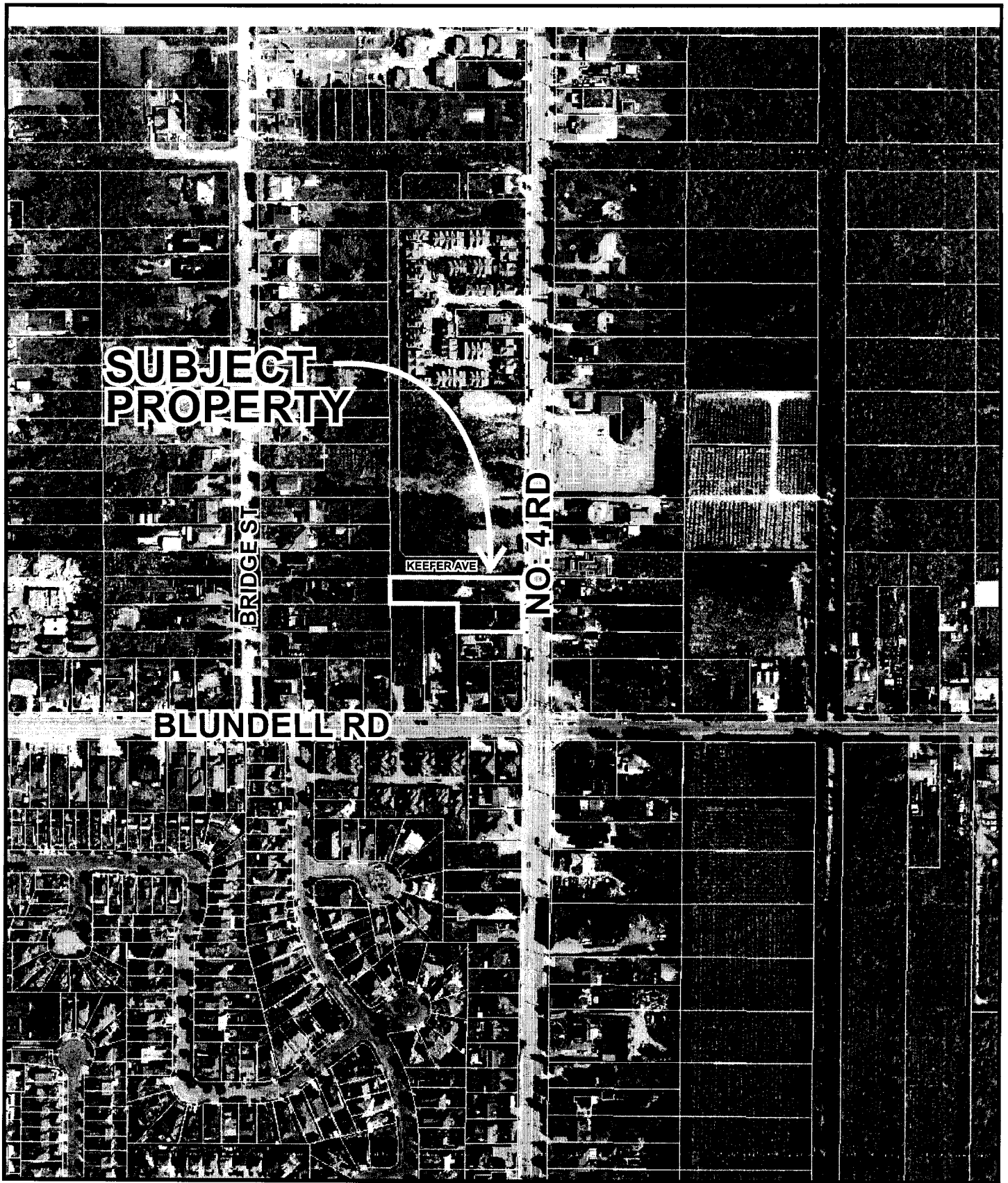


Sara Badyal, M.Arch.  
*Planner 1*  
(Local 4282)

SB:blg

- Attachment 1: Location Map and Site Context – GIS 2005 Aerial Photo
- Attachment 2: Development Application Data Sheet
- Attachment 3: McLennan South Sub-Area Site Context
- Attachment 4: Conceptual Development Plans
- Attachment 5: Arborist Report Tree Survey
- Attachment 6: Conditional Rezoning Requirements Concurrence





RZ 05-313124

Original Date: 12/11/06

Amended Date:

Note: Dimensions are in METRES





## City of Richmond

6911 No. 3 Road  
Richmond, BC V6Y 2C1  
www.richmond.ca  
604-276-4000

## Development Application Data Sheet

**RZ 05-313124**

**Attachment 2**

Address: 7791 and 7931 No. 4 Road

Applicant: Simon Development Ltd.

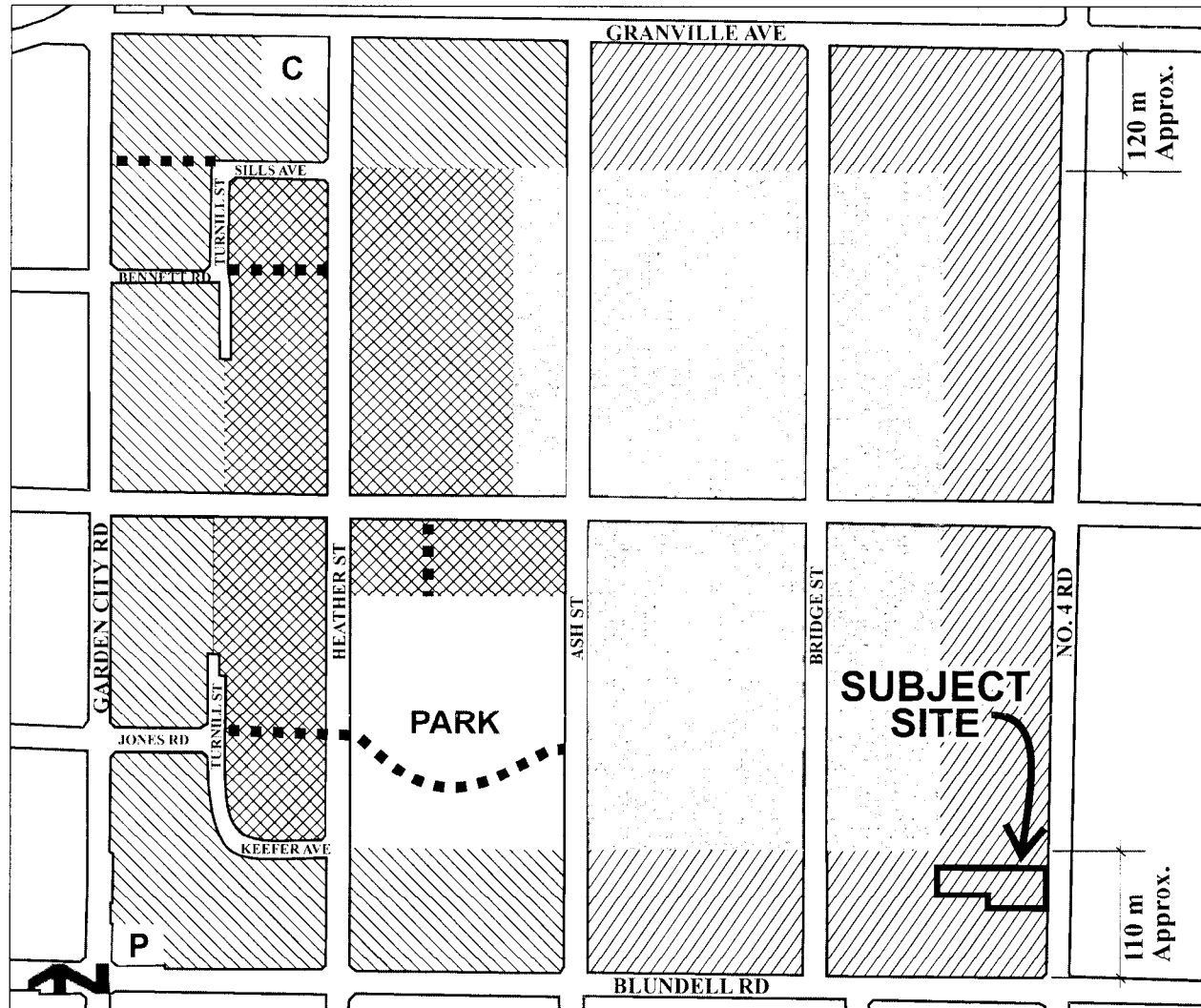
Owner: Siu H. Chu


Planning Area(s): McLennan South Sub-Area, City Centre Area


	Existing	Proposed	
Site Size (m²):	2,790 m²	2,377 m²	
Land Uses:	Single-Family	Multi-Family	
OCP Designation:	Neighbourhood Residential	No change	
Area Plan Designation:	A mix of townhouses, triplexes, duplexes and single-family, 2 ½ storey (3 storey max.) 0.55 base FAR	No change	
Zoning:	R1/F	R2 – 0.6 ,	
Number of Units:	2	12	
On Future Subdivided Lots	Bylaw Requirement	Proposed	Variance
Density (units/acre):	N/A	21 upa	none permitted
Floor Area Ratio:	Max. 0.6	0.6	none permitted
Lot Coverage – Building:	Max. 40%	37%	none
Lot Size:	Min. 30 m width Min. 35 m depth	31.8 m frontage 89.4 m depth	none
Setback – No. 4 Rd Front Yard:	Min. 6 m	6 m	none
Setback – Keefer Ave Side Yard:	Min. 6 m	4.3 m to 4.6 m	1.4 m to 1.7 m & projections
Setback – Side Yard (South):	Min. 3 m	3 m	None
Setback – Rear Yard (West):	Min. 3 m	3 m	None
Height (m):	Max. 11 m & 3-storey	11 m Max.	None
Off-street Parking Spaces – Resident and Visitor:	24 and 3	24 and 3	None
Off-street Parking Spaces – Accessible:	1	1	None
Off-street Parking Spaces – Total:	27	27	None
Tandem Parking Spaces:	not permitted	16 in 8 units	16 spaces
Amenity Space – Indoor:	Min. 70 m²	\$ 12,000 cash-in-lieu	none
Amenity Space – Outdoor:	72 m²	144 m²	none


# Land Use Map


Bylaw 7892  
2005/04/18



 **Residential, Townhouse up to 3 storeys** over 1 parking level, Triplex, Duplex, Single-Family  
**0.75 base F.A.R.**

 **Residential, 2 1/2 storeys** typical (3 storeys maximum) Townhouse, Triplex, Duplex, Single-Family  
**0.60 base F.A.R.**

 **Residential, 2 1/2 storeys** typical (3 storeys maximum), predominantly Triplex, Duplex, Single-Family  
**0.55 base F.A.R.**

 **Residential, Historic** Single-Family, **2 1/2 storeys** maximum **0.55 base F.A.R.**, Lot size along Bridge and Ash Streets:

- Large-sized lots (e.g. 18 m/59 ft. min. frontage and 550 m<sup>2</sup>/ 5,920 ft<sup>2</sup> min. area)

Elsewhere:

- Medium-sized lots (e.g. 11.3 m/ 37 ft. min. frontage and 320 m<sup>2</sup>/ 3,444 ft<sup>2</sup> min. area), with access from new roads and General Currie Road;

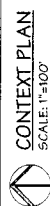
Provided that the corner lot shall be considered to front the shorter of its two boundaries regardless of the orientation of the dwelling.

■■■■ Trail/Walkway

**C** Church

**P** Neighbourhood Pub

**Note:** Sills Avenue, Le Chow Street, Keefer Avenue, and Turnill Street are commonly referred to as the "ring road".



SITE AREA GROSS: 30,030 sq.ft.  
SITE AREA NET: 25,587 sq.ft.

### PROPOSED DEVELOPMENT

UNIT-A: 1,265 SF X 3 = 3,795 SF  
UNIT-A1: 1,265 SF X 1 = 1,265 SF  
UNIT-B: 1,275 SF X 2 = 2,550 SF  
UNIT-C: 1,310 SF X 3 = 3,930 SF  
UNIT-D: 1,270 SF X 3 = 3,810 SF  
TOTAL 12 UNITS: 15,350 SF

SITE COVERAGE: MAX. PROPOSED: 39.0%

PARKING PROVIDED:

12 UNITS X 2 CAR GARAGES = 24 CARS  
VISITORS 3 CARS

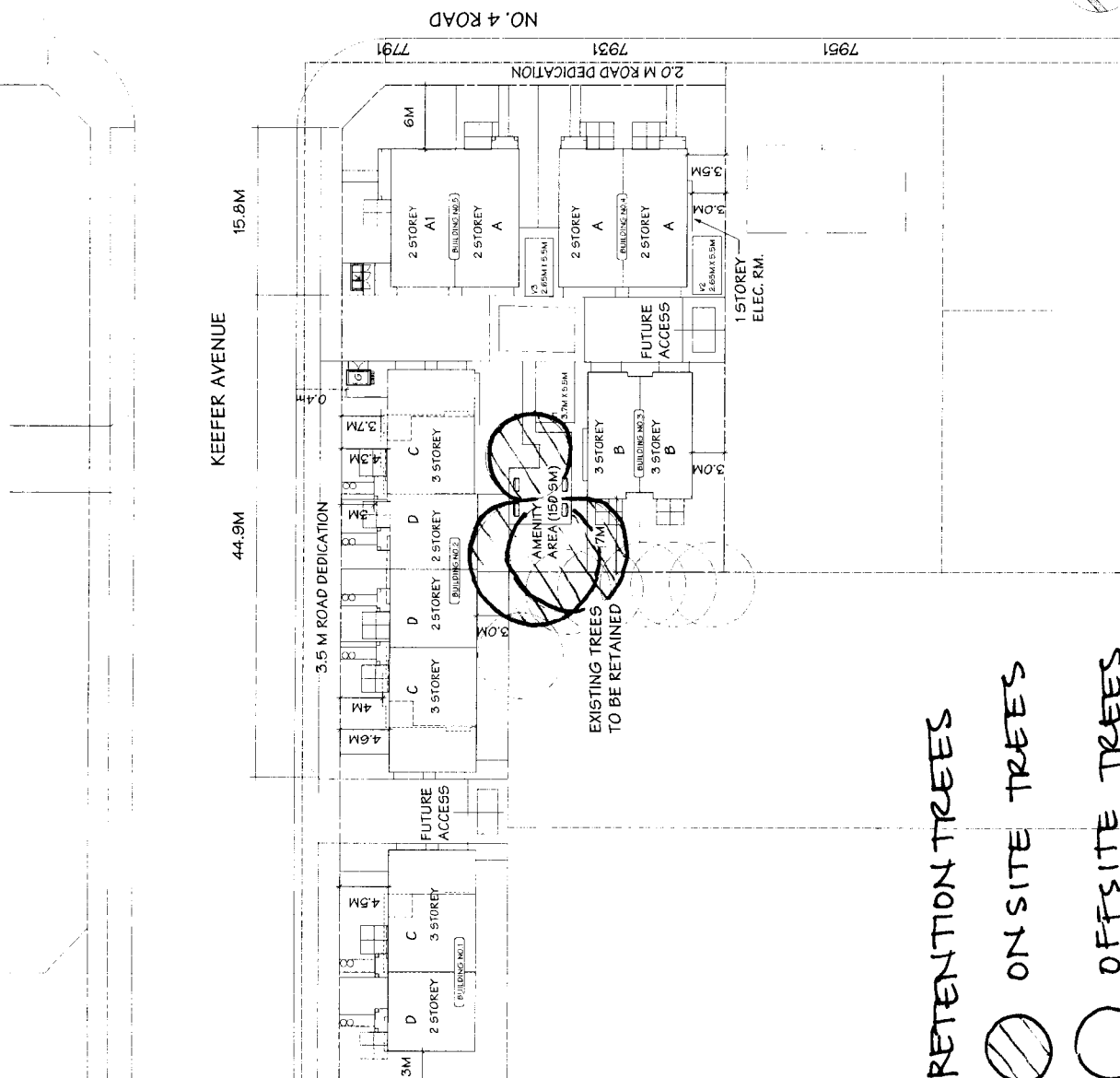
AMENITY AREA

REQUIRED: 12 X 6 sq.m. = 72 sq.m. (775 sq.ft.)  
PROVIDED: 150 sq.m. (1,615 sq.ft.)

FOR REFERENCE  
PRELIMINARY

SITE PLAN  
SCALE: 1/16" = 1'-0"

SCALE: 1/16" = 1'-0"



## RETENTION TREES

# ON SITE TREES

## OFFSITE TREES

ATTACHMENT 4

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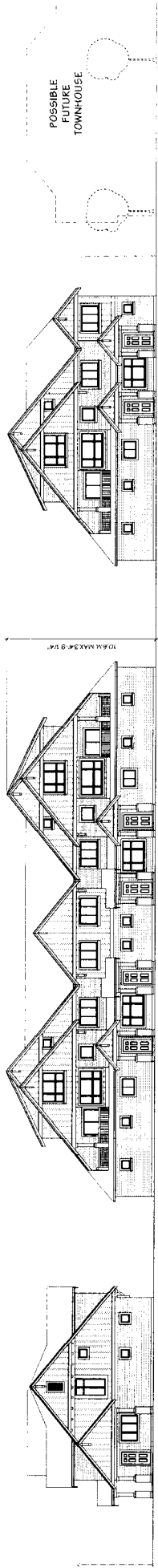
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**PROJECT**  
**12 UNIT TOWNHOUSE**  
**DEVELOPMENT**  
7781 & 7921 NO. 4 ROAD  
RICHMOND, B. C.

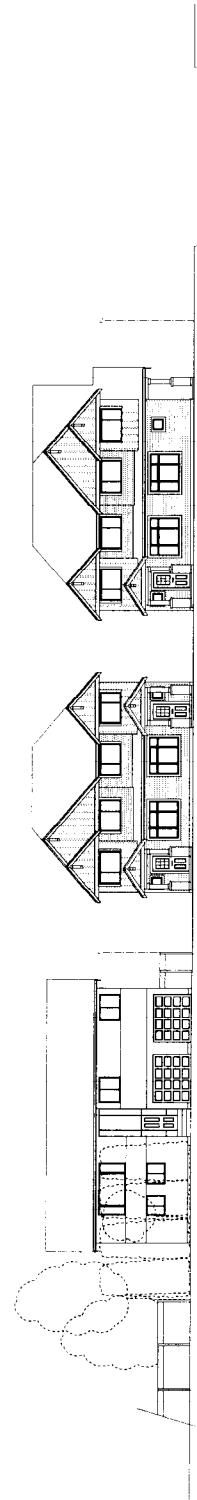
tomizo  
yamamoto  
architect inc.

1306 Oak Street, Vancouver, B.C.  
V6H 4J1 Tel: 604-731-1127 Fax: 604-731-1327

SCALE	1/16" = 1'-0"	1	SHEET NO.
DATE	NOV 28, 2006		
DRAWN	TYLJR		
CHECKED			PROJ NO. 2515



KEEFER AVENUE ELEVATION



KEEFER AVENUE

NO. 4 ROAD ELEVATION

FOR REFERENCE  
PRELIMINARY

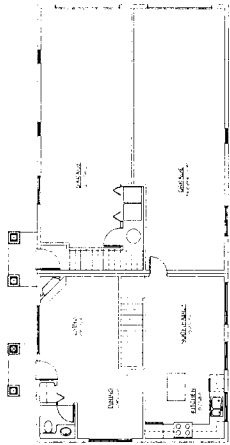
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CONSULTANT		

PROJECT  
12 UNIT TOWNHOUSE  
DEVELOPMENT  
7711 E 1ST AVE. #100  
DENVER, CO

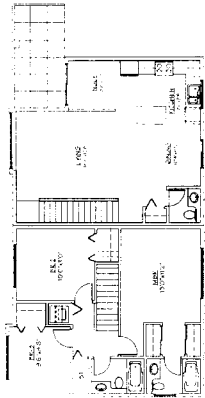
tomizo  
yamamoto  
architect inc.

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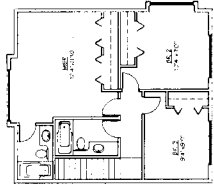
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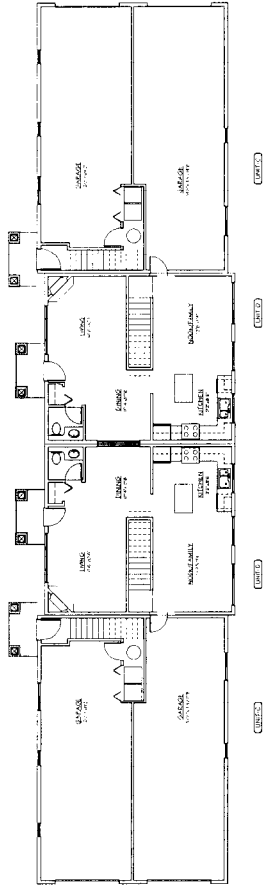
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SCALE: 1/8" = 1'-0"  
BUILDING NO. 1



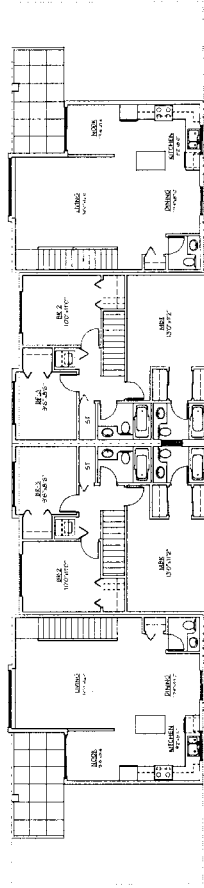
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BUILDING NO. 1



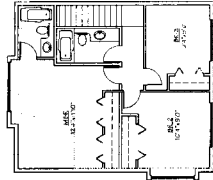
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BUILDING NO. 1



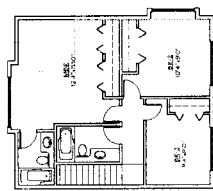
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BUILDING NO. 2



SECOND FLOOR PLAN  
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BUILDING NO. 2



THIRD FLOOR PLAN  
SCALE: 1/8" = 1'-0"  
BUILDING NO. 2

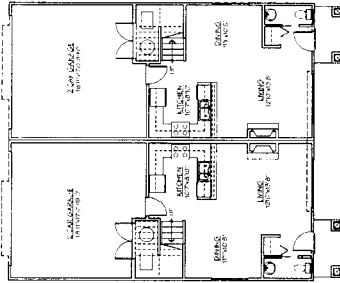


UNIT 20

UNIT 21

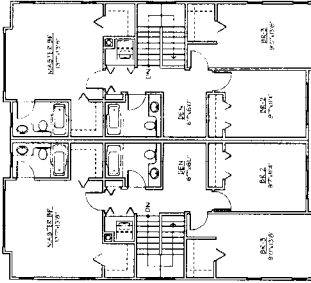
FOR REFERENCE  
PRELIMINARY

NO.	DATE	REVISIONS
1	10/15/2016	
CONTRACT UNIT		
PROJECT		
DEVELOPMENT		
12 UNIT TOWNHOUSE		
770 & 753 RUI ROAD		
PUEBLO, CO		
tomizo yamamoto architect inc.		
2000 LAM TOWN, PUEBLO, CO 81001		
DRAWING TITLE		
FLOOR PLANS		
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DESIGN	TOWNHOUSE	
CHECKED		PROJ. NO. 0015



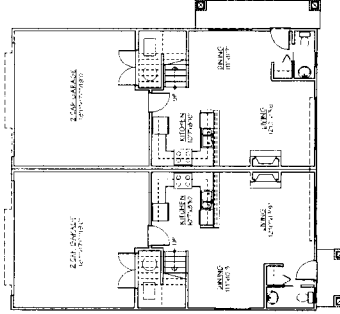
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BUILDING NO. 4



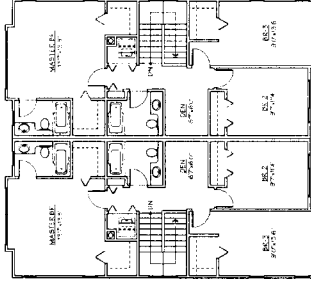
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BUILDING NO. 4



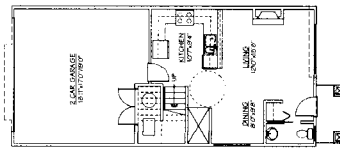
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BUILDING NO. 5



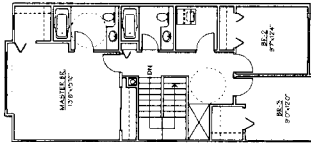
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SCALE 1/8" = 1'-0"

BUILDING NO. 5

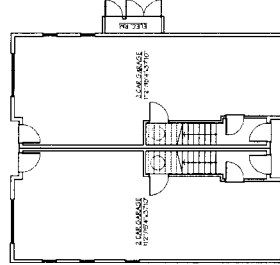


UNIT A. POSSIBLE ACCESSIBLE UNIT CONVERSION

GROUND FLOOR PLAN  
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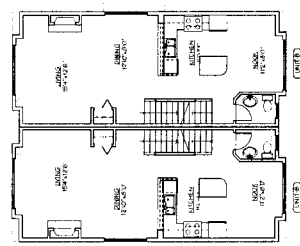


SECOND FLOOR PLAN  
SCALE 1/8" = 1'-0"



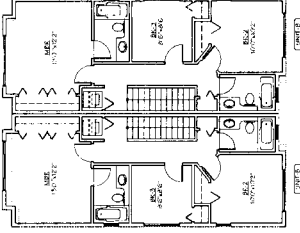
GROUND FLOOR PLAN  
SCALE 1/8" = 1'-0"

BUILDING NO. 3



SECOND FLOOR PLAN  
SCALE 1/8" = 1'-0"

BUILDING NO. 3



THIRD FLOOR PLAN  
SCALE 1/8" = 1'-0"

BUILDING NO. 3

NO.	DATE	REVISIONS

PROJECT  
12 UNIT TOWNHOUSE  
DEVELOPMENT  
779 E. 19TH AVE. ROAD  
ALBANY, N.Y.

tomizo  
yamamoto  
architect inc.

2385 Oak Street, Albany, N.Y.  
518-431-1411 Fax 518-431-1377  
DRAWING TITLE  
FLOOR PLANS

SCALE	1/8" = 1'-0"	SHEET NO.	5
DATE	DEC 14, 2004	DRAWN BY	TYNIA/JR
CHECKED		PROJECT NO.	5915

FOR REFERENCE  
PRELIMINARY



VanArbor Vegetation Consulting Ltd.  
Consulting Arborist & Urban Forest Resources

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### Arboriculture Report (REV 4.0)

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Date of Report: December 21, 2006

Project Address: 7791, 7931 No. 4 Road, Richmond, BC

Arborist: Ken Bell, P.Ag., CAC, ISA Certified Arborist

Distribution: Simon Development Ltd.  
T. Yamamoto Architect Inc.  
City of Richmond: File No. RZ 05-31324

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### Introduction

Simon Development Ltd. has applied to the City of Richmond for permission to rezone 7791 and 7931 No. 4 Road from single-family housing District, Subdivision Area F (R1/F) to Comprehensive Development District (CD) in order to permit the development of 12 townhome units. File No. RZ 05-31324. There are significant sized trees on the two building lots, on neighbouring lot near the property line and along Municipal roadway allowances. The purpose of this Arborist report is to provide a ***Preliminary Tree Preservation Plan***. The report include site map drawings with tree survey, tree evaluation report, a proposed tree protection plan and a tree replacement calculation to help enable the proposed subdivision approval. Arborist construction drawings are to be issued after the issuance of the development permit. Providing a tree replacement strategy is beyond the scope of this report; the tree replacement strategy is to be provided by the project Landscape Architect. This *Preliminary Tree Preservation Plan* report endeavours to provide compliance with the City of Richmond Tree Protection By-law No. 8057.

### Tree Survey

VanArbor conducted the field work to review site conditions and trees on August 12, 2006 and was last field reviewed on November 23, 2006. Significant sized trees, selected undersized trees and conifer hedgerows associated with the proposed subdivision are numerically field identified with a survey tag attached to the lower tree trunk(s). The tree survey evaluated a total of 50 on-site trees / conifer hedgerows and 11 off-site trees / hedgerows. The following appendixes are associated with this Arborist report:

- Appendix 1 Site Map shows the locations of the trees and hedgerows, proposed building envelopes, interior roadway system and landscape areas
- Appendix 2A and 2B Tree Survey / Evaluation report documents the *on-site* and *off-site* trees / hedgerows respectfully. The Tree Survey / Evaluation report lists: tree number, species, diameter-breast-height (DBH) size, condition rating, observations and tree preservation recommendations. There are several undersized (< 20 cm DBH) trees documented in this report
- Appendix 3 provides:
  - A tree preservation strategy that summarizes *on-site* trees proposed for retention, removal, transplant
  - Calculation and number of replacement trees required in accordance to City of Richmond Tree Protection Bylaw No. 8057, Schedule A
- Appendix 4 provides tree preservation recommendations
- Appendix 5 contains mechanical tree transplant specifications



Photograph 1 shows a panorama view of the two building lots along No. 4 Road proposed for a 12 townhome subdivision.

### Tree Evaluation

There are two existing residential dwellings at 7791 and 7931 No. 4 Road. The existing homes are scheduled for demolition to enable the proposed development. The ground is relatively flat and there are no significant environmental features (including rapture nests) to report. The yards are landscaped with varying mixes of trees and shrubs around the existing homes. The over all health condition of the trees and shrubs on the building lots is moderate – good. However, there is a small stand of native Lodgepole pine and Birch trees at the rear (West side) of the proposed development property at 7791 No. 4 Road; these tree are in relatively poor condition and are not considered for preservation. It is to be noted that the native Birch trees at the rear of 7791 No. 4 Road were not numerically field-identified, however their locations are shown on the Appendix 1 Site Map.

The tree survey identified 61 protected and undersized trees / hedgerows in and around the proposed subdivision site. These trees are located both on-site and off-site site. There are 50 on-



site trees [(50) = 49 trees + 1 hedgerow] and 11 off-site trees [(11) = 8 trees + 3 hedgerows]. Table 1 tallies the trees and hedgerows in accordance to their condition rating.

Table 1.

Poor	Poor-moderate	Moderate	Moderate – good	Good	Total
37 <sup>1</sup>	1	4	13	6	61

The majority of trees (60%) on the proposed subdivision lots are in poor condition.

The **on-site** foundation trees and shrubs around the existing houses have been poorly pruned and are not considered good candidates for retention or transplant. However, there are four (4) good quality specimen trees and shrubs in the landscape that considered good candidates for transplant. The transplant candidates that are located on-site include: Two mature Japanese maple (#5493, 5511), a relatively large Photinia tree-shrub (# 5494) and a Portuguese laurel tree-shrub (# 5495). The viability of the tree spade transplant is to be verified by the tree spade operator prior to sit demolition. The proposed transplant trees/shrubs may be dug-up and stored at an off-site location until they are relocated back in to the project site during the landscape installation phase of development. The re-location sites for the subject tree/shrubs should be determined by the project Landscape Architect and form part of the tree replacement strategy. Alternatively, the tree/shrubs may be used as replacement trees on alternate development sites.

There are 3 specimen on-site trees > 20 cm DBH (# 5519, 5520 and 5521) at 7931 No. 4 Road building lot that are in good condition. The subdivision and proposed building layout configuration has been altered to permit the on-site retention of these trees.

The conifer hedgerow (# 5527) is growing along the property line that separates the two building lots. The hedgerow conflicts with the proposed building scheme and are not proposed for preservation.

There is a stand of Birch and Lodgepole pine trees in the rear half of 7791 No. 4 Road; these trees are in relatively poor condition and are not considered for preservation.

There are eight (8) **off-site** trees + 3 conifer hedgerows that are associated with the proposed subdivision. The off-site trees and hedgerows are documented in Appendix 2B. Off-site trees are located on the neighbouring properties in close proximity to the proposed development. The off-site trees are included in the tree preservation plan; otherwise off-site trees intended for retention may be severely injured due to poor planning and construction impacts. The subject off-site trees and hedgerows are in moderate-good condition. Off-site trees and hedgerows include:

1. No. 4 Road boulevard:
  - a. Two (2) Dogwood trees (# 5489, 5490) + 2 conifer hedgerows (5487, 5492) are located on the municipal boulevard along No. 4 Road. It is reported the Dogwood trees and hedgerows conflict with a 2.0 meter roadway dedication along No. 4 Road for street widening and a left turn lane. It is proposed that the 2 Western red

cedar hedgerows be removed and the 2 Dogwood trees either be mechanically transplanted or removed.

2. Keefer Avenue:

- a. The conifer hedgerow (# 5488) is growing along Keefer Avenue. It is reported that Keefer Avenue shall be upgraded to enable the proposed development and the conifer hedgerow will conflict with new infrastructure.

3. 9731 Blundell Road

- a. Six (6) large conifer trees (# 5497, 5522 – 5526) located in the neighbouring rear yard, adjacent to the building lot at 7931 No. 4 Road. These trees are in moderate – good condition and are scheduled for preservation.

### Preliminary Tree Preservation Plan

This report has classified the preservation plan into four (4) categories:

- 1) Off-site trees and conifers hedgerows located on Municipal easements
- 2) Off-site specimen trees located on the neighbouring property
- 3) On-site trees located on the proposed building lots
- 4) Tree replacement calculation
- 5) Planning considerations

1) Off-site trees and conifers hedgerows located on municipal easements:

- a. Dogwood trees # 5489, 5499 planted in the boulevard sidewalk in front of 7931 No. 4 Road conflict with the proposed 2.0 meter roadway dedication along No. 4 Road. The trees may either be mechanically dug-up with a tree spade and transplanted to another municipal site or alternatively, the trees may be cut-off at base.
  - i. The City of Richmond owns the Dogwood trees # 5489, 5499 and any decision regarding these trees are considered a City of Richmond responsibility.
    - 1. This report assumes the two Dogwood trees shall be transplanted
- b. Conifer hedgerows # 5487, 5492 are planted along No. 4 Road next to the front street sidewalk. The hedgerow conflicts with the 2.0 meter roadway dedication. Transplanting the hedgerow trees is not considered a viable option. It is proposed the hedgerow trees be removed to enable the new roadway dedication and the proposed development.
- c. Conifer hedgerow # 5488 along Keefer Avenue is proposed to be removed to enable Keefer Avenue sidewalk and infrastructure upgrade. Transplanting the hedgerow trees is not considered a viable option.
- d. Tree replacements are not considered for trees removed on Municipal properties.

- e. The removal of the conifer hedgerows may be expedited by the excavator during site demolition. The debris should be removed off-site in accordance to standard disposal practices.

2) Off-site specimen trees on the neighbouring property

It is considered a requirement to preserve the large off-site trees # 5497, 5522, 5523, 5524, 5525 and 5526 located in the rear yard at 9731 Blundell Road and immediately adjacent to the proposed subdivision development. The large trees are to be protected from proposed development activities.

Off-site Trees # 5522 – 5526: It is proposed that the TPZ fence is to be placed 3.0 meters East of the property line fence (on the development side) and run the entire length of the rear fence line bordering 9731 Blundell Road, immediately adjacent to the subject trees. It is proposed that a layer of landscape fabric be placed inside the TPZ fence; thereafter a 4" inch layer of "standard bark mulch" be placed in the TPZ over the landscape fabric. The purpose of the landscape fabric and the addition of bark mulch will help conserve soil moisture and help prevent soil compaction in the root zone of the neighbouring off-site preservation trees. The concrete pre-load blocks are to be placed next to the TPZ fences. As construction progresses and the rear patio areas behind the building are installed/developed, the TPZ fence can be dismantled and moved. The bark mulch can also be easily lifted-off the landscape fabric and removed to enable rear patio / landscape installation. The bark mulch may be salvaged and used in the finished landscape during the landscape installation phase of development. Mechanical soil-cuts into the parent soils in the TPZ are to be avoided.

Site demolition and building envelope excavations immediately adjacent to the off-site preservation trees are to be actively monitored by the Project Arborist. Excavator digging  $\geq 1.0$  meters outside the foundation walls of the buildings is to be avoided so that the root mass of the off-site trees can be preserved and not dug-up by the excavator. Digging inside the TPZ shall not be permitted. The demolition and excavation monitoring by the Project Arborist will help ensure the roots of the off-site trees are not excessively removed and tree roots treated in accordance to best management practices. The trees will also require minor crown pruning to avoid building conflicts during and after development; tree pruning is to be supervised by the Project Arborist.

Tree # 5493: An old shed is located on the subdivision property at the base of Cypress Tree # 5493. The shed will require careful removal. The excavator hoe operator has to exercise caution and care to not damage the crown of Cypress tree and not dig into the ground and disturb the tree roots. The approximate location of the TPZ fence surrounding the Cypress tree is shown in Appendix 1 Site Map Drawing. The TPZ is to be placed 1.5 meters from the property line around the North side of the tree after the shed is demolished. Landscape fabric and a 4" inch layer of bark mulch is to be placed inside the TPZ fence. The Project Arborist should monitor the demolition of the shed. The concrete pre-load blocks are to be placed next to the TPZ fences.

3) On-site trees located on the proposed development property

- a. It is proposed that four (4) trees (# 5493, 5494, 5495 and 5511) be transplanted with a tree spade immediately after house demolition. The trees may either be:
- i. Transported to a holding nursery and replanted back into the landscape during the landscape installation phase of development or
  - ii. Used as replacement trees at alternate development sites.

The feasibility of the mechanical transplant is to be verified by the mechanical tree mover operator prior to house demolition. Tree digging and post digging maintenance care is to be done in accordance to best management practices. Appendix 5 contains mechanical tree spade transplant specifications. Tree spade digging is to occur after demolition of homes and before demolition of on-site trees proposed for removal

If the proposed transplant trees are relocated back to proposed development site, then the Project Landscape Architect should specify the relocation sites and included in the tree replacement strategy.

- b. It is proposed Trees # 5519, 5520 and 5521 be on-site preserved. It is proposed that the TPZ fence be placed at/near the drip line of the trees. The TPZ fence is to join the TPZ fence that protects the off-site trees # 5522 – 5526. Appendix 1 Site Plan shows the relative location and dimensions of the TPZ fence.

It is proposed that a layer of landscape fabric be place inside the TPZ fence; thereafter a 4" inch layer of "standard bark mulch" be placed in the TPZ to cover the landscape fabric. Mechanical soil-cuts into the parent soils within the TPZ are to be avoided. The concrete pre-load blocks are to be placed next to the TPZ fences to contain the pre-load sand

- c. It is proposed that the remaining 43 on-site trees on the subdivision site be removed. Appendix 2A and Appendix 3 provides a listing of trees proposed to be removed. The trees proposed for removal either conflict with proposed building envelopes / roadway layout or are in poor condition and not worthy of preservation. The poor condition trees will not likely withstand construction impacts and/or may be a hazard risk to the proposed subdivision site if not removed.

The removal of Trees # 5516, 5517 and 5518 are to be cut at base and the stumps stump-ground; the roots of these trees are to be preserved. The removal of the remaining on-site trees and conifer hedgerows may be expedited by the excavator during site demolition. The debris should be removed off-site in accordance to standard disposal practices

4. Tree Replacements

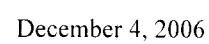
Appendix 3 provides a listing of 42 on-site trees  $\geq 20$  cm DBH that are proposed for removal, transplant and retention. Appendix 3 also contains a calculation and summary of required replacement trees and their respective replacement tree sizes. It is to be noted

that the replacement tree sizes are based on “caliper” size in accordance to Canadian Standards for Nursery Stock, Seventh Edition.

35 replacement trees are calculated for the proposed subdivision in accordance to City of Richmond Tree Protection Bylaw No. 8057, Schedule A.

## 5. Planning Considerations

- It is recommended the construction site be monitored by the Project Arborist during critical phases of development. Monitoring includes:
  - a. Actively monitor the demolition activities by excavator to ensure compliance and apply best management practices to repair trees, as may be required
    - i. TPZ fences are to be installed around preservation trees after site demolition
  - b. The installation of TPZ fences around preservation trees
  - c. The installation of the landscape fabrics and standard bark mulch in proposed TPZ's
  - d. Tree pruning
  - e. The mechanical transplant of the selected trees
- City of Richmond to make a decision regarding off-site Dogwood trees # 5489, 5499; either mechanical transplant the trees to a desired location or cut at base
- Preservation trees to be reviewed and vetted by project civil engineers to determine if there are design conflicts with infrastructure and final grades.
  - No underground utilities, drainage systems, buildings or roadways may be permitted inside proposed TPZ's
- Water/sanitary, underground utilities mainlines originate from Keefer Avenue
- Trees and TPZ barrier zones are to be plotted on civil and landscape drawings with tree preservation notes
- Total number of replacement trees be subject to City of Richmond landscape design standards
- Adopt Appendix 4 Tree Preservation Specifications
- Project Arborist to provide a final tree preservation plan based on Civil Engineering considerations and subdivision approvals by the City of Richmond
  - Arborist Construction drawings to be issued prior to construction/development



## Appendix 2A

Tree Survey / Evaluation (**On-site trees**)

7791, 7931 No. 4 Road  
Richmond, BC

August 12, 2006

Tree #	Species	DBH (cm)	Condition rating	On-site Preserve	Transplant	Remove	Observations and Recommendations
5485	Japanese maple	13.1+12.4 +8.4	Moderate			1	<ul style="list-style-type: none"> <li>• 3 trunks from base</li> <li>• Not an exceptional specimen</li> </ul>
5486	Smoke bush	17.2 cm caliper <sup>1</sup>	Moderate			1	<ul style="list-style-type: none"> <li>• <b>Undersized tree in accordance to Bylaw</b></li> <li>• Head-back pruned in past</li> <li>• Not an exceptional specimen</li> </ul>
5491	Malus spp.	17.0	Moderate			1	<ul style="list-style-type: none"> <li>• <b>Undersized tree in accordance to Bylaw</b></li> <li>• Tree head-back pruned in past; not an exceptional specimen;</li> <li>• not worthy of preservation</li> <li>• Infested with crown gall disease</li> </ul>
5493	Japanese maple	16.5 cm caliper	Good		1		<ul style="list-style-type: none"> <li>• <b>Undersized tree in accordance to Bylaw</b></li> <li>• Tree has 4 meter radius crown spread</li> <li>• Tree worthy of transplant</li> </ul>
5494	Photinia shrub	≈ 11 + 11 caliper	Good		1		<ul style="list-style-type: none"> <li>• Multi-trunk tree/shrub with trunks originating from base</li> <li>• Tree/shrub worthy of transplant</li> </ul>
5495	Portuguese laurel	15.2 + 15.7	Good		1		<ul style="list-style-type: none"> <li>• Tree / shrub worthy of transplant</li> </ul>
5496	Birch	38.0	Moderate			1	<ul style="list-style-type: none"> <li>• Mature tree with 6 meter radius crown spread</li> </ul>
5498	Lodgepole Pine	26.5	Poor			1	<ul style="list-style-type: none"> <li>• Mature Lodgepole pines # 5498 – 5510 planted at rear of building lot at 7791 No. 4 Road</li> <li>• Trees planted with native Birch trees</li> <li>• Trees in relatively poor condition and not worthy of on-site preservation</li> </ul>

<sup>1</sup> Trees measured for caliper size 30 cm above base

Tree #	Species	DBH (cm)	Condition rating	On-site Preserve	Transplant	Remove	Observations and Recommendations
5499	Pine	18.5	Poor			1	<ul style="list-style-type: none"> <li>Undersized Pine trees include: # 5499, 5504, 5509,</li> </ul>
5500	Pine	34.1	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5501	Pine	24.2	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5502	Pine	32.5	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5503	Pine	36.0	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5504	Pine	19.0	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5505	Pine	38.8	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5506	Pine	27.8	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5507	Pine	24.5	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5508	Pine	23.8	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5509	Pine	16.5	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
5510	Pine	29.7	Poor			1	<ul style="list-style-type: none"> <li></li> </ul>
	≈ 18 Birch	> 20	Poor			18	<ul style="list-style-type: none"> <li>≈ 18 Mature Birch trees planted at rear of building lot at 7791 No. 4 Road</li> <li>Trees not numerically identified</li> <li>Trees in relatively poor condition and not considered for on-site preservation</li> <li>Tree survey assumes Birch trees are &gt; 20 cm DBH</li> </ul>
5511	Japanese maple	33.4 cm caliper	Good		1		<ul style="list-style-type: none"> <li>Located in rear yard at 7931 No. 4 Road</li> <li>Good specimen tree with 4 meter radius crown spread</li> </ul>
5512	Birch	20.6	Poor			1	
5513	Clump Birch	28+26.2	Poor - moderate			1	
5514	Clump Birch	22.5+24.6 +25.5	Poor			1	<ul style="list-style-type: none"> <li>Birch trees 5512 – 5515 in relatively poor condition and not considered for on-site preservation</li> </ul>
5515	Clump Birch	16+19 +24.5	Poor			1	
5516	Cypress	15.1	Poor			1	<ul style="list-style-type: none"> <li>Undersized tree in accordance to Bylaw</li> <li>Tree has major asymmetry</li> <li>Codominant leader branches</li> </ul>
5517	Scotch pine	18.0	Poor			1	<ul style="list-style-type: none"> <li>Undersized tree in accordance to Bylaw</li> <li>Suppressed crown; poor specimen</li> </ul>



Tree #	Species	DBH (cm)	Condition rating	On-site Preserve	Transplant	Remove	Observations and Recommendations
5518	Cypress	20.4	Poor			1	<ul style="list-style-type: none"> <li>Major asymmetry, suppressed crown; poor specimen</li> </ul>
5519	Western red cedar	64.8	Good	1			<ul style="list-style-type: none"> <li>Good specimen tree</li> <li>4 meter radius crown spread</li> <li><b>Provide 4 meter radius TPZ</b></li> </ul>
5520	Hemlock	65.2	Moderate – good	1			<ul style="list-style-type: none"> <li>Tree located ≈ 2 meters from property line</li> <li>5 meter radius crown spread</li> <li><b>Install TPZ fence 3 meters from property line</b></li> </ul>
5521	Western red cedar	47.5	Moderate – good	1			<ul style="list-style-type: none"> <li>Tree located ≈ 2 meters from property line</li> <li>5 meter radius crown spread</li> <li>Tree has ≈ 5° phototropic lean facing East</li> <li><b>Install TPZ fence 3 meters from property line</b></li> </ul>
5527	Cedar hedgerow	2 meters tall	Good			1	<ul style="list-style-type: none"> <li><b>Undersized tree in accordance to Bylaw</b></li> <li>Hedgerow separates the two building lots;</li> <li>Hedgerow conflicts with proposed subdivision layout</li> </ul>
		Total on-site trees = 50		3	4	43	<ul style="list-style-type: none"> <li></li> </ul>

There are 9 undersized trees < 20 cm DBH that were documented in Appendix 2A and included in the tree inventory

## Appendix 2B

### Tree Survey / Evaluation (**Off-site trees**)

7791, 7931 No. 4 Road  
Richmond, BC

August 12, 2006

Tree #	Species	DBH (cm)	Condition rating	On-site Preserve	Transplant	Remove	Observations
5487	Hedgerow: 12 Western red cedar	≈ 2.5 meters tall	Moderate - good			1	<ul style="list-style-type: none"> <li>Located on municipal easement along No. 4 Road:</li> <li>Hedgerow 12 meters long planted on 1.0 meter centres next to front sidewalk</li> <li>Hedgerow conflicts with 2.0 meter wide roadway dedication</li> </ul>
5488	Hedgerow: 22 Cypress	≈ 4.5 meters tall	Moderate - good			1	<ul style="list-style-type: none"> <li>Located on municipal easement along Keefer Avenue</li> <li>Hedgerow ≈ 23 meters long along North side of lot</li> <li>Trees topped in past</li> <li>Recent road works has damaged and exposed roots on North side of some trees</li> <li>It is reported hedgerow will conflict with Keefer Avenue utility relocation and street upgrade</li> </ul>
5489	Dogwood <sup>2</sup>	11 cm caliper	Moderate - good		1		<ul style="list-style-type: none"> <li>Located on municipal easement along No. 4 Road</li> <li>Weed eater damage to base of tree</li> </ul>
5490	Dogwood	10.6 cm caliper	Moderate - good		1		<ul style="list-style-type: none"> <li>Trees assumed to be transplanted by tree spade; City of Richmond to confirm</li> </ul>
5492	Hedgerow Western red cedar	2.5 meters tall	Good			1	<ul style="list-style-type: none"> <li>Located on municipal easement along No. 4 Road</li> <li>Hedgerow ≈ 13 meters long planted next to front sidewalk</li> <li>Hedgerow conflicts with 2.0 meter wide roadway dedication</li> </ul>
5497	Cypress	≈ 32.0	Moderate - good	1			<ul style="list-style-type: none"> <li>Tree located on neighbouring lot near property line: 9731 Blundell Road</li> <li>Tree crown overhangs proposed development property by 3 meters</li> <li>Shed located at property line next to the tree on proposed</li> </ul>

<sup>2</sup> Dogwood trees # 5489, 5490 may either be removed or mechanically transplanted. The Appendix 2B spreadsheet indicates removal at this time

Tree #	Species	DBH (cm)	Condition rating	On-site Preserve	Transplant	Remove	Observations
							development property to be demolition at base of tree <b>Recommend: Tree requires protection at least 1.5 meters inside property line; perimeter drainage adjacent to tree not permitted</b>
5522	Western red cedar	≈ 30	Moderate - good	1			<ul style="list-style-type: none"> <li>• <b>Off-site tree</b> located near property line on neighbouring lot 9731 Blundell Road</li> <li>• Tree tag attached to fence</li> <li>• Tree growing on neighbouring lot within 1 .0 meters of property line</li> <li>• Suppressed crown</li> </ul>
5523	Western red cedar	≈ 40	Moderate - good	1			<ul style="list-style-type: none"> <li>• <b>Off-site tree</b> located near property line on neighbouring lot 9731 Blundell Road</li> <li>• Tree ID tag attached to fence adjacent to tree</li> <li>• Tree growing on neighbouring lot within 0.5 meters of property line</li> <li>• Tree crown overhangs subject development by 3 meters</li> </ul>
5524	Douglas fir	≈ 50	Moderate - good	1			<ul style="list-style-type: none"> <li>• <b>Off-site tree</b> located near property line on neighbouring lot 9731 Blundell Road</li> <li>• Tree growing on neighbouring lot at property line</li> <li>• Tree crown overhangs subject development by 6 meters</li> <li>• Tree has bow-sweep root crown that self-corrects</li> </ul>
5525	Western red cedar	≈ 30	Moderate - good	1			<ul style="list-style-type: none"> <li>• <b>Off-site tree</b> located near property line on neighbouring lot 9731 Blundell Road</li> <li>• Tree tag attached to fence</li> <li>• Tree growing on neighbouring lot within 1 .0 meters of property line</li> <li>• Tree crown overhangs subject development by 3 meters</li> <li>• Suppressed crown</li> </ul>
5526	Western red cedar	≈ 25	Moderate - good	1			<ul style="list-style-type: none"> <li>• <b>Off-site tree</b> located near property line on neighbouring lot 9731 Blundell Road</li> <li>• Tree tag attached to fence</li> <li>• Tree growing on neighbouring lot within 1 .0 meters of property line</li> <li>• Tree crown overhangs subject development by 3 meters</li> </ul>
		Total off-site trees = 11		6	2	3	

### Appendix 3

#### Tree Replacement Strategy for On-site Trees $\geq 20$ cm DBH

In Accordance to Tree Protection Bylaw No. 8057, Schedule A

(On-site trees  $< 20$  cm DBH proposed for removal are not subject to tree replacement)

Tree #	Species	DBH (cm)	Condition rating	On-site Preserve	Transplant	Remove	Tree Replacement Size (caliper)
5485	Japanese maple	25.58	Moderate			1	6 cm Deciduous
5493 <sup>3</sup>	Japanese maple	16.5 cm caliper	Good		1		
5494	Photinia shrub	$\approx 11 + 11$ caliper	Good		1		
5495	Portuguese laurel	15.2 + 15.7	Good		1		
5496	Birch	38.0	Moderate			1	8 cm Deciduous
5498	Lodgepole Pine	26.5	Poor			1	3.5 meter tall conifer
5500	Pine	34.1	Poor			1	4.0 meter tall conifer
5501	Pine	24.2	Poor			1	3.5 meter tall conifer
5502	Pine	32.5	Poor			1	4.0 meter tall conifer
5503	Pine	36.0	Poor			1	4.0 meter tall conifer
5505	Pine	38.8	Poor			1	4.0 meter tall conifer
5506	Pine	27.8	Poor			1	3.5 meter tall conifer
5507	Pine	24.5	Poor			1	3.5 meter tall conifer
5508	Pine	23.8	Poor			1	3.5 meter tall conifer
5510	Pine	29.7	Poor			1	3.5 meter tall conifer
	$\approx 18$ Birch	$> 20 - 30$	Poor			18	18 - 6 cm deciduous
5511	Japanese maple	33.4 cm caliper	Good		1		
5512	Birch	20.6	Poor			1	6 cm Deciduous
5513	Clump Birch	43.72	Poor - moderate			1	9 cm Deciduous
5514	Clump Birch	53.76	Poor			1	10 cm Deciduous
5515	Clump Birch	45.5	Poor			1	9 cm Deciduous
5518	Cypress	20.4	Poor			1	3.5 meter tall
5519	Western red cedar	64.8	Good	1			
5520	Hemlock	65.2	Moderate – good	1			
5521	Western red cedar	47.5	Moderate – good	1			
Total = 42 trees				3	4	35	

<sup>3</sup> Japanese maple # 5493 is an undersized tree ( $< 20$  cm DBH) and has been included in the Tree Replacement Strategy

## Summary of Replacement trees in accordance to Tree Protection Bylaw No. 8057, Schedule A:

Size of replacement trees	Number of replacement trees
6 cm Deciduous	20
8 cm Deciduous	1
9 cm Deciduous	2
10 cm Deciduous	1
3.5 meter tall Conifer	7
4.0 meter tall Conifer	4
Total Replacement Trees	35

Number of <b>On-site Protected (&gt; 20 cm DBH)</b> Trees Identified (Appendix 3)	<b>42</b>
Number of protected trees (> 20 cm DBH) in poor condition due to natural causes Appendix 2A)	<b>32</b>
Number of Protected (> 20 cm DBH) sized trees to be removed	<b>35</b>
Number of Protected Trees(> 20 cm DBH) to be on-site retained	<b>3</b>
Number of trees to be transplanted and counted as a protected tree	<b>4</b>
Number of replacement Trees in accordance to Bylaw 8057, Schedule A	<b>35</b>
Total number of retained trees + replacement trees + transplant	<b>42</b>
Number of units proposed in the project	<b>12</b>
Average number of trees per unit	<b>3.5</b>

## Note:

- Total number of replacement trees may be adjusted to conform to City of Richmond Landscape design standards
- Tree replacement calculations are not considered for off-site trees proposed for removal

## Appendix 4

### Tree Preservation Specifications

- 
1. Trees and TPZ barrier zones are to be plotted on civil and landscape drawings. All planning professionals and on-site construction workers are to be aware of the TPZ's and know that the TPZ are no encroachment areas.
  2. Temporary TPZ fencing must be installed at alignments specified by the Project Arborist before any land clearing, demolition or construction commencement.
  3. The fence must be sturdily constructed of suitable materials. A wood post and a top rail frame with 1.2 meter snow fence is the common standard. Signs stating: "TREE PROTECTION AREA - NO ENTRY" must be affixed every 10 meters or suitable frequency. The TPZ fence is to be maintained in good order until the infrastructure and buildings are substantially complete. The fence must be removed within 2 weeks of construction completion.
  4. The TPZ fencing must be inspected and approved by the Project Arborist prior to work commencement and should be checked on a regular monitoring frequency during the course of construction. The frequency will be determined based on the level of construction activity in the vicinity of preserved trees and conformance results.
  5. If encroachment into TPZ is required for any reason, it should be authorized in advance by the Project Arborist. Special measures may need to be implemented to allow access and some activities will not be permitted.
  6. Soil, debris and building materials etc. are to be piled or stored outside the TPZ. Specific dumping, liquid waste disposal and wash-out areas shall be provided, well away from trees.
  7. There shall be no direct discharge of storm or site drainage waters through or into the TPZ
  8. All pruning and site rehabilitation work to trees within the TPZ is to be performed under the supervision of the Project Arborist
  9. All machinery (excavators, bulldozers, bobcats, cars, trucks, etc.) are to be kept out of the TPZ, unless approved in writing by the Project Arborist
  10. Excavators and any other machinery are to dig the earth outside the TPZ with the bucket digging towards the tree, and not digging with the bucket across the radiant of tree roots. Tree roots shall be cut cleanly by hand and under the direction of the Project Arborist. Excavation wall at the building envelope is to be covered with a black plastic tarp to protect any exposed tree roots. Irrigating the exposed roots under the tarp maybe necessary to prevent the roots from drying-out, depending upon the season

11. Underground services, drainage and finished grading shall not cause any grade changes (excavation & fill) within the TPZ's, or grade changes of surrounding lands that would result in storm water accumulation or depletion within the TPZ's
12. Activities within and access to the TPZ's are restricted so that no one may cause or allow the deposit of any soil, spoil, aggregate, construction supplies/materials or waste materials. Vehicles and equipment may not pass within these zones. The preserved trees must not be used to affix signs, lights, cables or any device. Pruning, root pruning or any other treatment to preserved trees must be performed by a qualified Arborist and under the direction of the Project Arborist
13. Preservation trees and tree protection areas are to be inspected by the Project Arborist prior to occupation of site, and whenever the site superintendent or owner as deemed necessary
14. Trees being retained in close proximity to any excavation require monitoring and inspection during the excavation process. Roots that encountered are to be pruned at the excavation limits, in order to protect roots from being damaged at a point closer to the tree.
15. Supplemental watering of retained trees during the growing season may be required and must be undertaken by the Developer at their cost as recommended by the Project Arborist
16. Penalties and compensation rules are to be established to help prevent contractors and sub-contractors to cause damage to trees. Penalties to be included in all standard contracts. Compensation rules shall include tree replacements consistent with City of Richmond Tree Preservation By-law No. 8014

## Appendix 5

### Tree Spade / Tree relocation Specifications

Tree digging, tree relocation work and tree maintenance are to be performed in accordance to best management practices. The following publications are recognized as references for best management practices:

1. BC Landscape Standards (BCLS), 6<sup>th</sup> Edition
2. ANSI A300 (Parts 1 – 6) – 2005; including Best Management Practices special companion publications

#### Tree digging:

- 1.1.1 Tree tags attached to the trees are to be maintained and remain attached to the tree for the duration of the project
- 1.1.2 Size of root ball shall conform with root ball standards: (BCLS - 9.2.2)
  - 1.1.2.1 Minimum root ball diameters are listed in BCLS, Tables 9-1, 9-2
- 1.1.3 Planting accessories: (BCLS - 9.2.3)
- 1.1.4 Execution: - digging of trees: (BCLS - 9.3.1.3; ANSI A300)
  - 1.1.4.1 Broken and extended roots to be pruned (cut cleanly)
  - 1.1.4.2 Tree bark to be protected with thick cardboard or burlap and care to be taken to avoid damage to tree bark
  - 1.1.4.3 Tie-back limbs as necessary to avoid mechanical damage to healthy structural branches; pruning healthy structural branches is to be avoided
- 1.2 Public safety is to be maintained at all times
  - 1.2.1 Contractor to confirm locations of underground utilities before mechanical digging of trees
    - 1.2.1.1 Tree spade to dig trees if there are no underground utility conflicts
    - 1.2.1.2 Hand dig trees if there are utility conflict
  - 1.2.2 Contractor to provide traffic control in accordance to applicable standards
  - 1.2.3 Tree holes are to filled or covered if left unattended

#### 2 Transporting trees to site

- 2.1 Transporting trees: (BCSL - 9.1.4.1; ANSI A300)
- 2.2 Unloading procedures: (BCSL - 9.1.4.3; ANSI A300)
- 2.3 Handling and storage: (BCSL - 9.1.5; ANSI A300)
- 2.4 Planting time: (BCSL - 9.1.6; ANSI A300)



**Option A:**    Planting directly into permanent boulevard / planting bed locations

- 2.5 Tree relocation sites are to be preparation for planting in accordance to best management practices: (BCSL - 9.3.3; ANSI A300)
- 2.6 Final locations of trees planted in the boulevards or designate planting sites to be specified in advance by the Landscape Architect and / or The City of Richmond
  - 2.6.1 City of Richmond trees to be planted in boulevards, medians, park sites or as specified
    - 2.6.1.1 Subcontractors to confirm locations of underground utilities before tree spade dig
    - 2.6.1.2 Tree holes are to be covered if left unattended – public safety is a primary concern
    - 2.6.1.3 Subcontractors to provide traffic control
    - 2.6.1.4 Subcontractors to protect turf grass areas from compaction and damage
      - 2.6.1.4.1 Surrounding landscape where trees are relocated to be in an acceptable “as was” or better condition, immediately after transplanting
      - 2.6.1.4.2 Damaged turf grass areas to be re-landscaped using horticulture soil-fill and reseeded to best management practices
        - 2.6.1.4.2.1 Subcontractor to provide and spread “Park Mix” grass seed obtained from Evergro Ltd., Vancouver, BC
- 2.7 **Planting:** Relocated trees to be planted in accordance to best management practices (BCSL - 9.3.4; ANSI A300)
  - 2.7.1 Mechanical digging of a planting hole can result in glazed planting hole walls
    - 2.7.1.1 Planting hole walls to be broken-up with hand tools before planting
  - 2.7.2 Buttress roots often grow into the upper horizontal wires of the basket and become partially girdled over many years
    - 2.7.2.1 Contractors to consider using low-profile baskets or cut wire baskets off at 6” inches (15 cm) below the shoulder of the root ball before backfilling
  - 2.7.3 Cut off and remove burlap and ties from the top and upper sides of the root ball after the tree has been placed in the hole
  - 2.7.4 Upper soil horizons consisting of sandy loam soils are to be used for back fill
    - 2.7.4.1 Remaining soils from digging tree holes are to be removed from site
    - 2.7.4.2 Soils should be backfilled into planting holes in layers up to 15 cm deep, with minimal soil compaction for each layer; upon completion of backfilling the tree is to be watered but not fertilized.
    - 2.7.4.3 Subcontractor to form a water well by forming an 8 cm berm that directs water into the root ball
- 2.8 **Watering:** Relocated trees to be watered in accordance to best management practices (BCSL - 9.3.6; ANSI A300)
  - 2.8.1 Documentation of watering and / or tension meter readings to be maintained
  - 2.8.2 Trees to receive at
- 2.9 **Pruning:** Relocated trees to be pruned in accordance to best management practices (BCSL - 9.3.7 and 13.3.1.6; ANSI A300)

- 2.10 Mulching: Relocated trees to be mulched in accordance to best management practices (BCSL - 9.3.8, 10.3.5; ANSI A300)
  - 2.10.1.1 The water well is to be covered with 5 cm layer of standard bark mulch
  - 2.10.1.2 Subcontractor to use standard bark mulch: (BCSL - 10.2.1)
  - 2.10.1.3 Subcontractor to apply mulch in accordance to best management practices: Application: (BCSL - 10.3.1; ANSI A300)
- 2.11 Stabilizing trees: Relocated trees to be stabilized in accordance to best management practices (BCSL - 9.3.8, 13.3.1.5; ANSI A300)
  - 2.11.1 Stabilizing trees may be site specific and not all tree may require stabilization
- 2.12 Maintenance: Relocated trees to be maintained in accordance to best management practices (BCSL - 13.3.1; ANSI A300) for one (1) year.
- 2.13 Weed control: Relocated trees to have weeds controlled in accordance to best management practices (CSL - 13.3.1.3; ANSI A300)
  - 2.13.1 Weed control to be maintained to maintenance level 2 (BCSL)
- 2.14 Pest control: Relocated trees to have insect and pathogens controlled in accordance to best management practices (BCSL - 13.3.1.4; ANSI A300)
- 2.15 Fertilization: Relocated trees to be fertilized in accordance to best management practices (BCSL - 13.3.1.7; ANSI A300)

### 3 **Option B: Planting into temporary nursery / storage area**

- 3.1 Tree relocation sites are to be preparation for planting in accordance to best management practices: (BCSL - 9.3.3; ANSI A300)
- 3.2 Planting: Relocated trees to be planted in accordance to best management practices (BCSL - 9.3.4; ANSI A300)
  - 3.2.1 Tree spacing in nursery: trees to be planted in rows and adequately spaced to ensure 1 meter clearance between each tree crown
- 3.3 Watering: Relocated trees to be watered in accordance to best management practices (BCSL - 9.3.6; ANSI A300)
  - 3.3.1 Documentation of watering and / or tension meter readings to be maintained
- 3.4 Pruning: Relocated trees to be pruned in accordance to best management practices (BCSL - 9.3.7, 13.3.1.6; ANSI A300)
- 3.5 Watering: Relocated trees to be watered in accordance to best management practices (BCSL - 9.3.6; ANSI A300)
  - 3.5.1 Documentation of watering and / or tension meter readings to be maintained
- 3.6 Mulching: Relocated trees to be mulched in accordance to best management practices (BCSL - 9.3.8, 10.3.5; ANSI A300)
  - 3.6.1 Subcontractor to use standard bark mulch: (BCSL - 10.2.1)
  - 3.6.2 Subcontractor to apply mulch in accordance to best management practices: Application: (BCSL - 10.3.1; ANSI A300)
- 3.7 Maintenance: Relocated trees to be maintained in accordance to best management practices (BCSL - 13.3.1) for one (1) year.
- 3.8 Weed control: Relocated trees to have weeds controlled in accordance to best management practices (CSL - 13.3.1.3; ANSI A300)
  - 3.8.1 Weed control to be maintained to maintenance level 2 (BCSL)

- 3.9 Pest control: Relocated trees to have insect and pathogens controlled in accordance to best management practices (BCSL - 13.3.1.4; ANSI A300)
- 3.10 Fertilization: Relocated trees to be fertilized in accordance to best management practices (BCSL - 13.3.1.7; ANSI A300)

### **Assumptions and Limiting Conditions**

1. Except as expressly set out in this report and in these Assumptions and Limiting Conditions, VanArbor Vegetation Consulting Ltd. (“**VanArbor**”) makes no guarantee, representation or warranty (express or implied) with regard to: this report; the findings, conclusions and recommendations contained herein; or the work referred to herein. This report has been prepared, and the work undertaken in connection herewith has been conducted, by VanArbor for Simon Development Ltd. (the “**Client**”). It is intended for the sole and exclusive use by the Client for the purpose(s) set out in this report. Any use of, reliance on or decisions made based on this report by any person other than the Client, or by the Client for any purpose other than the purpose(s) set out in this report, is the sole responsibility of, and at the sole risk of, such other person or the Client, as the case may be. VanArbor accepts no liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm (including without limitation financial or consequential effects on transactions or property values, and economic loss) that may be suffered or incurred by any person other than the Client as a result of the use of or reliance on this report or the work referred to herein. The copying, distribution or publication of this report (except for the internal use of the Client) without the express written permission of VanArbor (which consent may be withheld in VanArbor's sole discretion) is prohibited. VanArbor retains ownership of this report and all documents related thereto both generally and as instruments of professional service.
  
2. The findings, conclusions and recommendations made in this report reflect VanArbor's best professional judgement in light of the information available at the time of preparation. This report has been prepared in a manner consistent with the level of care and skill normally exercised by arborists currently practicing under similar conditions in a similar geographic area and for specific application to the trees subject to this report as at the date of this report. Except as expressly stated in this report, the findings, conclusions and recommendations set out in this report are only valid for the day on which the assessment leading to such findings, conclusions and recommendations was conducted. If generally accepted assessment techniques or prevailing professional standards and best practices change at a future date (which they are likely to do), modifications to the findings, conclusions, and recommendations in this report may be necessary. VanArbor expressly excludes any duty to provide any such modification if generally accepted assessment techniques and prevailing professional standards and best practices change.
  
3. Conditions affecting the trees subject to this report (the “**Conditions**”, including without limitation structural defects, scars, decay, fungal fruiting bodies, evidence of insect attack, discoloured foliage, condition of root structures, the degree and direction of lean, the general condition of the tree(s) and the surrounding site, and the proximity of property and people) other than those expressly addressed in this report may exist. Unless otherwise expressed: information contained in this report covers only those Conditions and trees that are expressly stated to be subject to this report and only reflects such Conditions and trees at the time of inspection; and the inspection is limited to visual examination of such Conditions and trees without dissection, excavation, probing, or

coring. While every effort has been made to ensure that the trees recommended for retention are both healthy and safe, no guarantees, representations or warranties are made (express or implied) that those trees will remain standing or will not fail. The Client acknowledges that it is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree, or group of trees, in all given circumstances. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure and this risk can only be eliminated if the risk is removed. If Conditions change or if additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary. VanArbor expressly excludes any duty to provide any such modification if Conditions change or additional information becomes available.

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8. Loss or alteration of any part of this report invalidates the entire report.

## Qualifications of Author

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- WCB Certified Wildlife / Danger Tree Assessor: Parks and Recreation Module
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- Bachelor of Science in Agriculture, University of Alberta, 1986
- Consulting Arborist and Landscape Consultant: April 1992 – Present
- Member:       International Society of Arboriculture  
                      British Columbia Institute of Agrologists  
                      Canadian Consulting Agrologist Association
- Over 25 years of professional employment in Landscape Horticulture and Arboriculture

2:15

## Conditional Rezoning Requirements

### 7791 & 7931 No. 4 Road RZ 05-313124

Prior to final adoption of Zoning Amendment Bylaw 8147, the developer is required to complete the following requirements:

1. Consolidation of the two lots into one development parcel (which will require the demolition of the existing dwellings).
2. Dedication of 3.5 m along the entire north edge for Keefer Avenue completion.
3. Dedication of 2 m across the entire No 4 Road frontage including a 4m x 4m corner cut at Keefer.
4. Registration of cross access easements on the drive aisles allowing access to/from the future development sites to the south at 9711 & 9731 Blundell Road and 7951 No. 4 Road, including any future assembly with 9951 & 9991 Blundell Road.
5. Registration of a flood indemnity covenant (minimum 0.9 m geodetic).
6. Registration of a restrictive covenant prohibiting the conversion of tandem parking area into habitable area.
7. Contribution of \$1,000 per dwelling unit (e.g. \$12,000) in-lieu of on-site indoor amenity space to go towards development of the Paulik Garden Neighbourhood Park.
8. Contribution of \$0.60 per buildable square foot (e.g. \$9,211) towards the City's affordable housing fund.
9. Proof of a contract with a registered arborist (with a minimum of four (4) site visits through construction) to ensure proper protection of existing onsite and neighbouring trees.
10. Installation of protective tree fencing and periodic inspection during construction to the satisfaction of a registered arborist for the protection of onsite and neighbouring trees.
11. The submission and processing of a Development Permit\* completed to a level deemed acceptable by the Director of Development.

Prior to future Building Permit issuance, the developer is required to complete the following requirements:

1. Receipt of a construction parking and traffic management plan to the satisfaction of the Transportation Department (<http://www.richmond.ca/services/ttp/special.htm>); and
2. Incorporation of accessibility measures for aging in place in Building Permit drawings for all units including lever handles for doors and faucets and blocking in all washroom walls to facilitate future potential installation of grab bars/handrails.
3. Enter into a Servicing Agreement\* for the design and construction of the Keefer Ave completion. Works include, but are not limited to, completing the travel portion of Keefer to make it 11.2m wide (curb to curb), a 0.15 m wide barrier curb, a 1.1 m grass boulevard with trees (trees to be 8 cm Persian Ironwood) and Zed street lighting, and a 1.75 m sidewalk at the new property line. If the spacing works out along No. 4 Road, where the existing driveways are being eliminated, they can be replaced with 8 cm Persian Ironwood trees (both streets). Keefer Avenue land cost & road construction are on the DCC program so credits apply.

\* Note: This requires a separate application.

Signed

Date



**Richmond Zoning and Development Bylaw 5300  
Amendment Bylaw 8147 (RZ 05-313124)  
7791 & 7931 NO. 4 ROAD**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. The Zoning Map of the City of Richmond, which accompanies and forms part of Richmond Zoning and Development Bylaw 5300, is amended by repealing the existing zoning designation of the following area and by designating it **TOWNHOUSE DISTRICT (R2 – 0.6)**.

P.I.D. 003-851-672

Parcel “B” (J104778E) Lot 13 Block “E” Section 15 Block 4 North Range 6 West New Westminster District Plan 1207

P.I.D. 003-689-727

Lot 62 Section 15 Block 4 North Range 6 West New Westminster District Plan 40580

2. This Bylaw may be cited as **“Richmond Zoning and Development Bylaw 5300, Amendment Bylaw 8147”**.

FIRST READING



A PUBLIC HEARING WAS HELD ON

SECOND READING

THIRD READING

OTHER REQUIREMENTS SATISFIED

ADOPTED

CITY OF RICHMOND
APPROVED by

APPROVED by Director or Solicitor


\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
CORPORATE OFFICER