



Talbot Mackenzie & Associates

Consulting Arborists

## **953 Balmoral Rd, Victoria**

### **Construction Impact Assessment & Tree Preservation Plan**

**PREPARED FOR:**

Method Built Homes Inc.  
The Garage  
4566 Cordova Bay Road  
Victoria BC  
V8X 3V5

**PREPARED BY:**

Talbot, Mackenzie & Associates  
Tom Talbot – Consulting Arborist  
ISA Certified # PN-0211A  
TRAQ – Qualified

Noah Borges – Consulting Arborist  
ISA Certified # PN-8409A

**DATE OF ISSUANCE:** January 29, 2018

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Jobsite Property: 953 Balmoral Rd, Victoria

Date of Site Visit: January 19, 2018

Site Conditions: Empty residential lot. No construction activity present.

**Summary:** One (1) Horse chestnut (*Aesculus hippocastanum*) tree on the east neighbour's property may be impacted by the proposed construction. The impacts to the tree's health will be minor if our recommended mitigation measures are followed, namely that a floating driveway be constructed where the proposed parking stalls overlap with the tree's critical root zone. Small roots are expected to be encountered during excavation at the southeast corner of the building. Pruning will also be required to lift the lower canopy above the nearest parking stall and may be required for clearance for building construction.

**Scope of Assignment:** To inventory the existing bylaw protected trees and any trees on neighbouring properties that could be potentially impacted by construction or that are within 3 meters of the property line. Review the proposal to construct an 11 unit building with 5 parking stalls, and comment on how construction activity may impact existing trees. Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts.

**Methodology:** We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet. Each by-law protected tree was identified using a numeric metal tag attached to its lower trunk. Municipal trees and neighbours' trees were not tagged. Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory. The by-law protected trees with their identification numbers were labelled on the attached Site Plan. The conclusions reached were based on the information provided within the attached plans from Coast + Beam.

**Limitations:** No exploratory excavations have been requested and thus the conclusions reached are based solely on our visual examination, critical root zone calculations and our best judgement using our experience and expertise. However, the location, size and density of roots are often difficult to predict without exploratory excavations and thus root growth larger than anticipate may be encountered. The tree is however located a sufficient distance from the tree that roots that are encountered within the building footprint can be pruned without having a detrimental impact on the tree. It will be necessary to raise the parking grade to avoid the loss of critical root structures.

**Summary of Tree Resource:** One tree was inventoried, a 52/99 cm Horse chestnut (*Aesculus hippocastanum*) on the east neighbouring property (959 Balmoral Rd). The tree is in good health but has a number of structural deficiencies (e.g. previously topped, weak and narrow unions, decay in its scaffold limbs).

**Trees to be Removed:** No trees will require removal as a result of the proposed construction.

**Potential Impacts on Trees to be Retained and Mitigation Measures**

- **Building Footprint:** The Horse chestnut is approximately 6.5m from the southeast corner of the proposed building. Provided 1m of additional working room, excavation will occur in only one quadrant of the tree's root zone about 5.5m from the base of the tree. At this distance, we anticipate there are likely to be roots encountered, but the health impacts should be minor, as the roots are likely to be small and the majority of the tree's critical root zone will remain undisturbed.
- **Parking Stalls:** We estimate the nearest parking stall will be located approximately 3m from the base of the Horse chestnut tree. In order to preserve the tree's critical roots, a portion of the parking area will have to be elevated. Where the parking stalls overlap with the tree's CRZ, we recommend constructing a floating parking area. If the parking area is not elevated, several large structural roots are likely to be damaged resulting in a significant decline in the tree's health. The "floating parking area" specifications are attached. The objective is to avoid any excavation resulting in root loss and to instead raise the base layer of the paved surface above the roots to be preserved. This may result in the grade of the parking stalls being 15-30cm above the existing grade (depending on how close roots are to the surface of the existing grade). It may also mean that some of the A horizon soil layer (rich in organic material and roots) will be left intact below the driveway.

To allow sufficient water to drain into the root systems below, we would also recommend that the parking stalls not be made of solid concrete or asphalt. Instead the surface should be made of a permeable material such as permeable asphalt, paving stones, Gravelpave, Grasscrete, or Grasspave. An arborist should be on site to supervise any excavation within the tree's CRZ.

- **Landscaping:** According to the landscape plans provided, pavers are to be installed in the area between the proposed building and parking stalls. If the area within the tree's critical root zone cannot be retained as is or designed with 'softscape' elements, we recommend the pavers be permeable to maximize water percolation to the tree's roots. The grade of these pavers must also be installed in a manner that limits excavation below the existing site grade.
- **Pruning:** The tree's canopy extends 4-5m over the property line and approximately 7m north towards the proposed building. The tree's crown extends nearly to ground level. Pruning will be required for clearance above the parking lot and may be required for clearance for the building construction, but such pruning should not significantly impact the tree's health or stability.

- **Barrier fencing:** The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones. On this site, the entire designate critical root zone area that is outside the building footprint should be protected by erecting barrier fencing including the area designate for parking. This fencing can be relocated at the direction of the project arborist at the time the floating parking area is constructed. The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.
- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any roots encountered must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. In particular, the following activities should be completed under the direction of the project arborist:
  - Any excavation within the critical root zone of horsechestnut NT1.
- **Methods to avoid soil compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:
  - Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
  - Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
  - Placing two layers of 19mm plywood.
  - Placing steel plates.
- **Irrigation Systems:** The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.
- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
  - Locating the barrier fencing

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- Reviewing the report with the project foreman or site supervisor
  - Locating work zones, where required
  - Supervising any excavation within the critical root zones of trees to be retained
  - Reviewing and advising of any pruning requirements for machine clearances
- **Review and site meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any demolition, site clearing or other construction activity occurs.

Please do not hesitate to call us at (250) 479-8733 should you have any further questions. Thank you.

Yours truly,  
Talbot Mackenzie & Associates  
ISA Certified Consulting Arborists

Encl. 1-page tree resource spreadsheet, 1-page site plan with trees, 4-page building plans, 1-page landscape plans, 1-page floating driveway specifications, 1-page barrier fencing specifications

**Disclosure Statement**

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

January 19, 2018

953 Balmoral Rd  
Tree Resource

Tag	Common Name	Latin Name	DBH (cm)	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations
NT1	Horse chestnut	<i>Aesculus hippocastanum</i>	99, 52	13	13	Good	Fair/poor	Good	Neighbour's tree. 1m from root collar to property line. Topped. Weak and narrow unions. Decay in scaffold limbs.

Prepared by:  
Talbot Mackenzie & Associates  
ISA Certified, and Consulting Arborists  
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email: Treehelp@telus.net

**Site Plan Of:**  
**Lot 15, Suburban Lot 9, Victoria City,**  
**Except That Part In Parcel A (DD 209667i).**



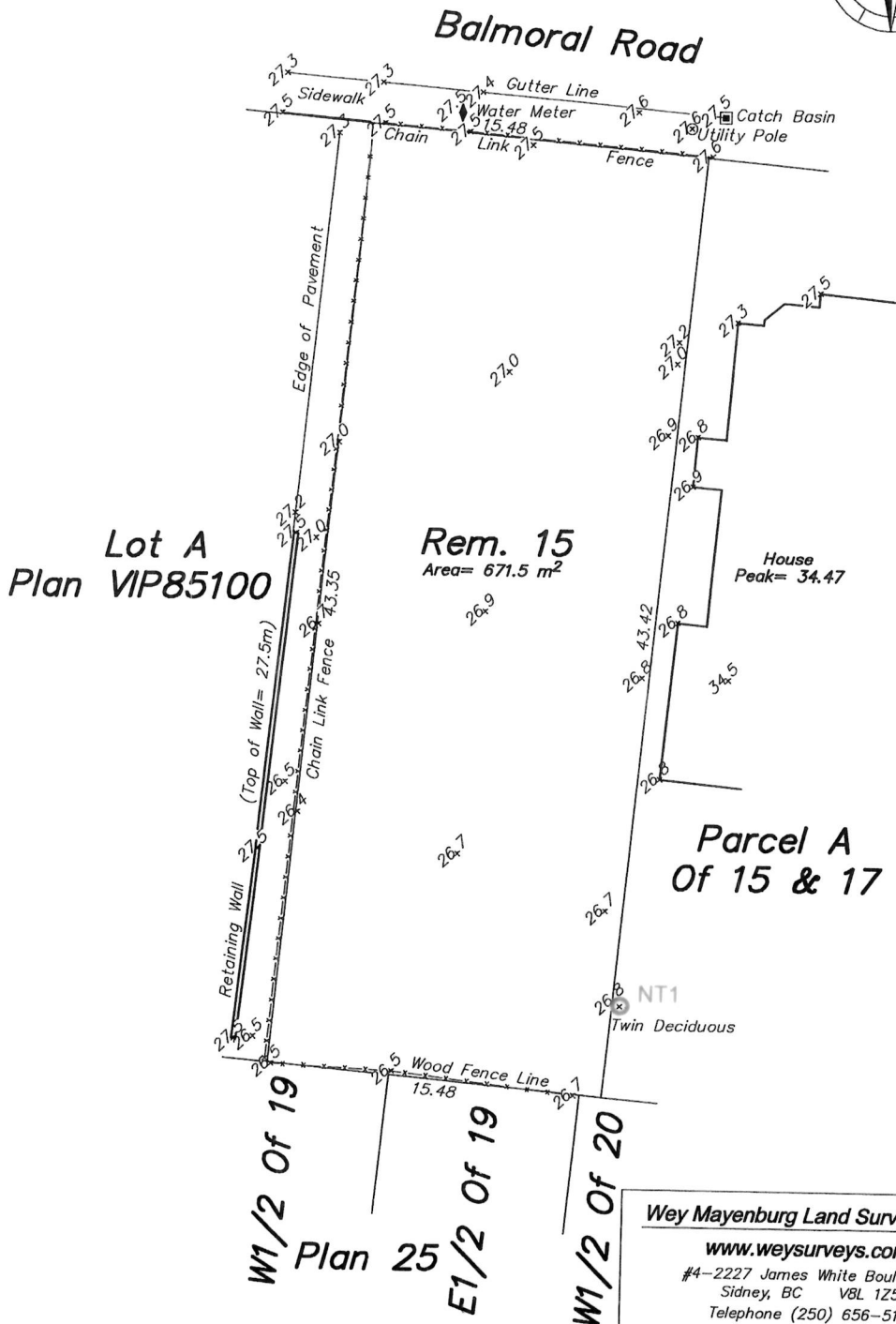
Scale = 1:250

This document is prepared for municipal purposes only.

Dated this 3rd day of March, 2015.

Distances and elevations shown are in metres.

Elevations are geodetic and referenced from OCM 16-138.



**Wey Mayenburg Land Surveying Inc.**

[www.weysurveys.com](http://www.weysurveys.com)

#4-2227 James White Boulevard

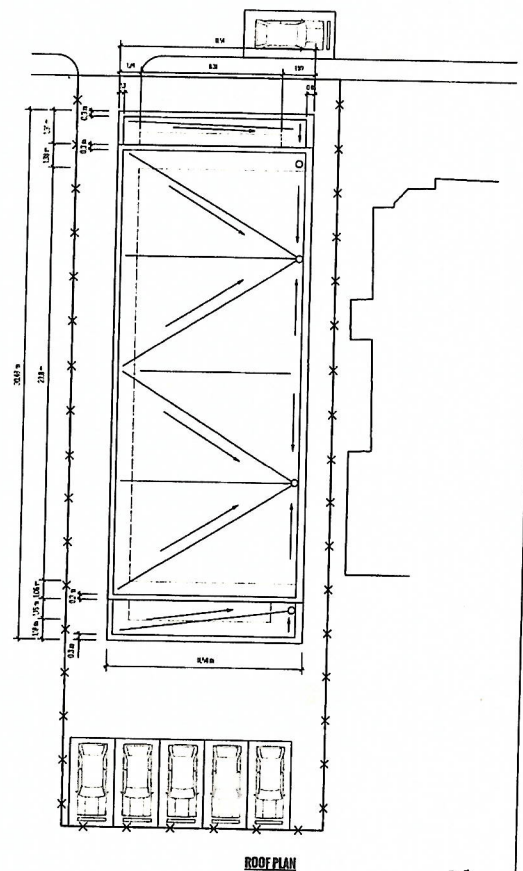
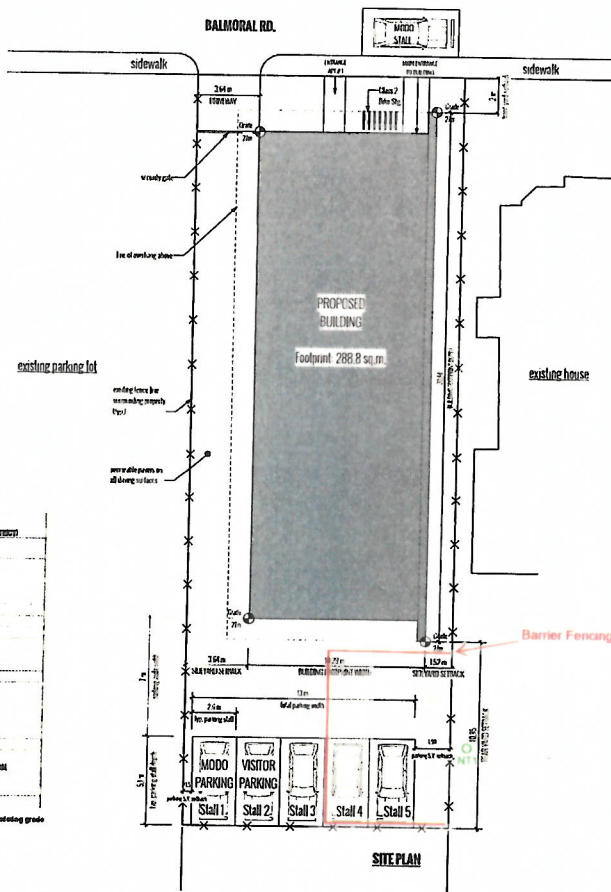
Sidney, BC V8L 1Z5

Telephone (250) 656-5155

File: 150053\SIT\BM

PROJECT INFORMATION TABLE	
Zone (existing)	52 FIVE FAMILY BUILDING DISTRICT
Proposed use or site description	ROW ZONE
Site area (sq ft)	476.8 sq ft
Buildable area (sq ft)	425.5 sq ft
Commercial floor area (sq ft)	2200
Floor space ratio	4.25/1000 = 4.25:1
Site coverage (%)	70.8/476.8 = 42%
Open area ratio (%)	30.1/476.8 = 6.3%
Height of building (ft)	12.5 ft
Number of stories	4
Parking ratio (four cars per lot)	0
Sample parking spaces (Class 1 and Class 2)	Class 1-10, 1 Class 2-8
Building setbacks (ft)	
Front yard	2.0 ft
Side yard (indicate which side)	5.0 ft
Side yard (indicate which side)	5.0 ft
Conditional use permits	None
Residential use density	11
Unit number of units	9-ONE BEDROOM, 3-TWO BEDROOM
Unit type, e.g., 1 bedroom	2
Ground covered area	476.8 sq ft
Minimum and floor area (sq ft)	500.0 sq ft

Average Existing Grade Calculation: 27.5 + 27.5 + 28.5 + 28.7 + 106.3 / 4 = 27.8 average existing grade  
Proposed Average Grade: 27 + 27 + 27 + 106.14 = 27.8 average proposed grade

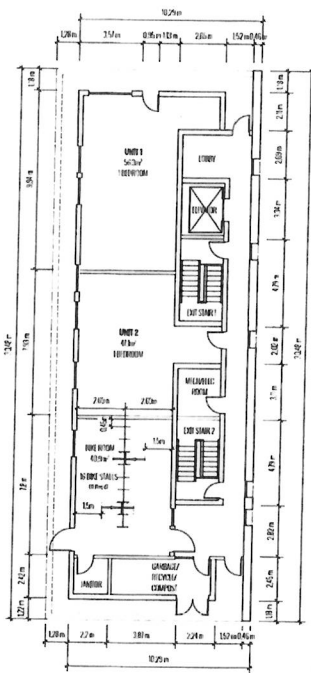


**COAST  
+ BEAM**

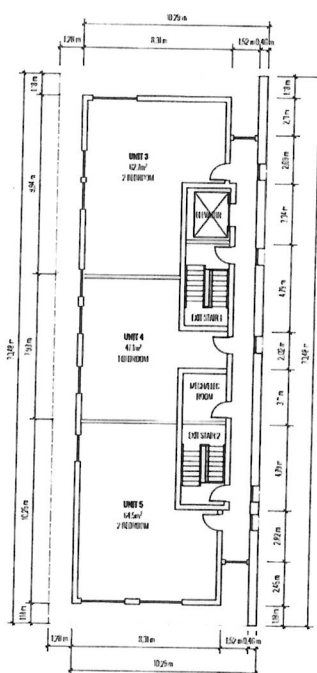
SITE PLAN & ROOF PLAN | APARTMENTS @ 953 BALMORAL | SCHEMATIC DESIGN FOR DEVELOPMENT PERMIT & REZONING APPLICATION | SEPTEMBER 2017 | SCALE 1:100



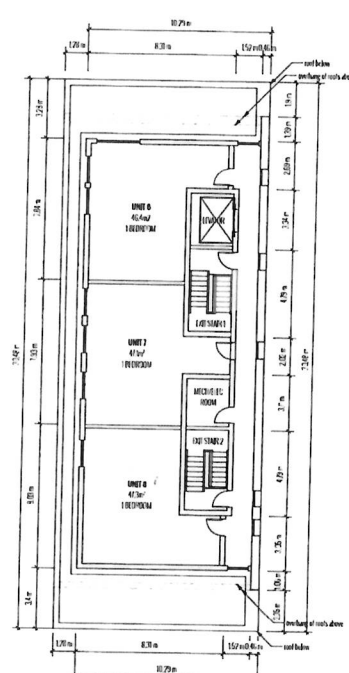




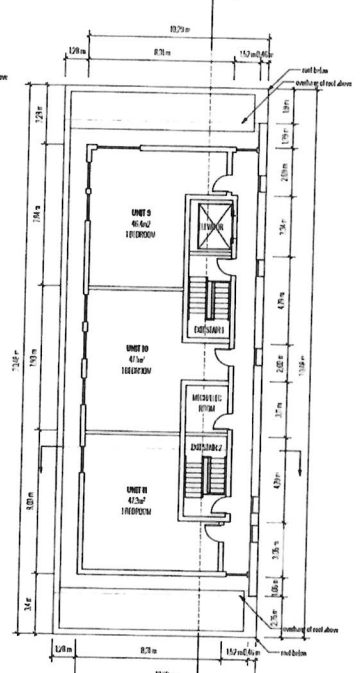
GROUND FLOOR PLAN



SECOND FLOOR PLAN

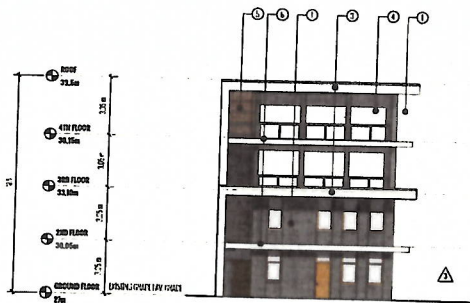


THIRD FLOOR PLAN

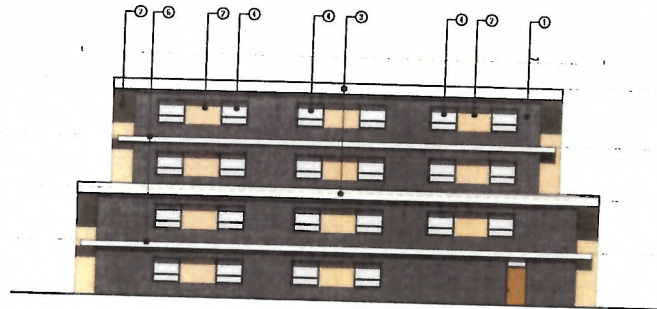


FOURTH FLOOR PLAN

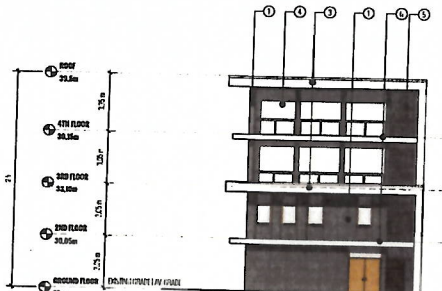




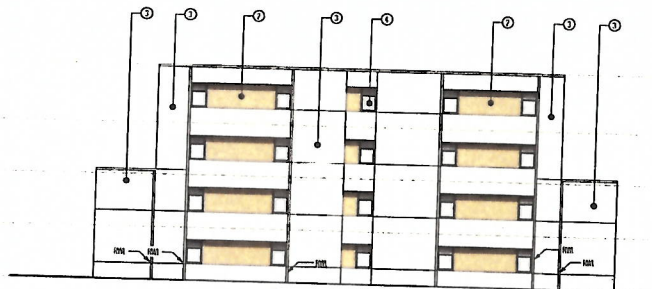
NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION

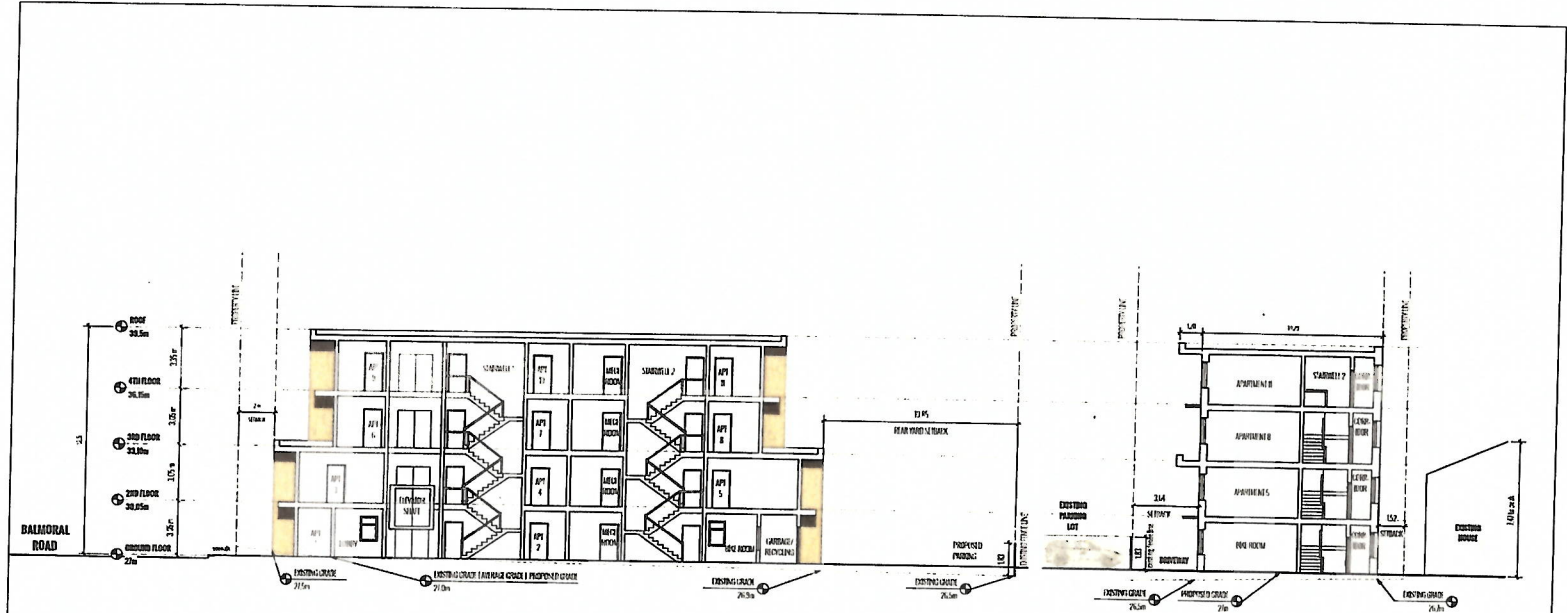
**MATERIALS**

- ① Variable Charcoal Brick
- ② Stained Wood Siding
- ③ Stucco
- ④ Glazing
- ⑤ Screen
- ⑥ Brise Soleil



**COAST  
+ BEAM**

ELEVATIONS | APARTMENTS @ 953 BALMORAL | SCHEMATIC DESIGN FOR DEVELOPMENT PERMIT & REZONING APPLICATION | SEPTEMBER 2017 | SCALE 1:100

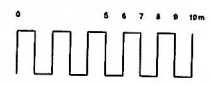


LONG SECTION

SHORT SECTION

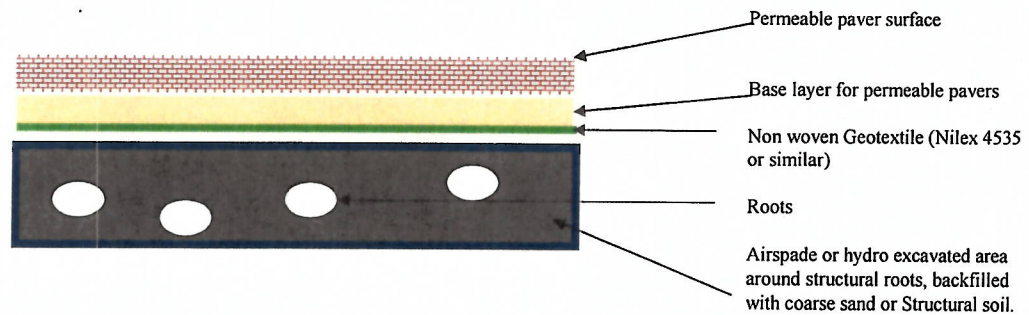
**COAST  
+ BEAM**

SECTIONS | APARTMENTS @ 953 BALMORAL | SCHEMATIC DESIGN FOR DEVELOPMENT PERMIT & REZONING APPLICATION | SEPTEMBER 2017 | SCALE 1:100



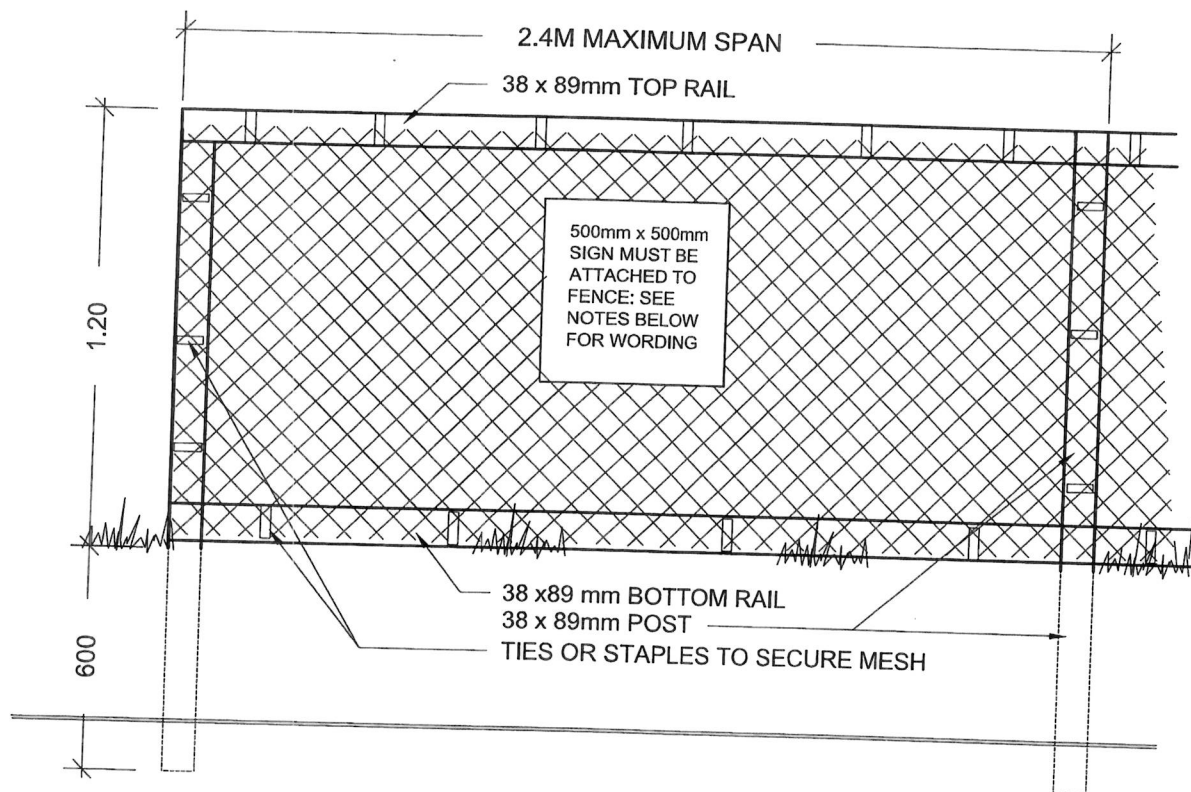


**Diagram –Permeable paver driveway crossing over Critical Root Zone**



**Specifications for permeable paver driveway crossing over critical root zone**

1. Excavate to a 6-8 inch depth, for the required permeable driveway surface, under the supervision of an ISA Certified Arborist.
2. Excavation for area around structural roots with an Airspade or by Hydro Excavation to bearing layer of soil if required.
3. Backfill area around roots with coarse sand or a structural soil mix
4. A layer of medium weight non woven Geotextile (Nilex 4535 or similar) is to be installed over the backfilled area of the driveway.
5. Construct base layer and permeable surface over Geotextile layer to required grade.



### TREE PROTECTION FENCING

#### NOTES:

1. FENCE WILL BE CONTRUCTED USING 38 X 89 mm (2"X4") WOOD FRAME: TOP, BOTTOM AND POSTS. \*  
USE ORANGE SNOW-FENCING MESH AND SECURE TO THE WOOD FRAME WITH "ZIP" TIES OR GALVANIZED STAPLES.
2. ATTACH A 500mm x 500mm SIGN WITH THE FOLLOWING WORDING:  
**WARNING-HABITAT PROTECTION AREA.** THIS SIGN MUST BE AFFIXED ON EVERY FENCE FACE OR AT LEAST EVERY 10 LINEAR METRES.

\* IN ROCKY AREAS, METAL POSTS (T-BAR OR REBAR) DRILLED INTO ROCK WILL BE ACCEPTED



DETAIL NAME:

## TREE PROTECTION FENCING

H:\shared\parks\Tree Protection Fencing.pdf

DATE: March/08  
DRAWN: DM  
APP'D: RR  
SCALE: N.T.S.