



CORPORATION OF THE TOWNSHIP OF ESQUIMALT

**DESIGN REVIEW COMMITTEE
AGENDA**

**WEDNESDAY, November 13, 2019
2:30 P.M.
ESQUIMALT COUNCIL CHAMBERS**

- I. CALL TO ORDER**
- II. LATE ITEMS**
- III. ADOPTION OF AGENDA**
- IV. ADOPTION OF MINUTES – September 11, 2019**
- V. COMMITTEE ORIENTATION CHECK – IN**
- VI. STAFF REPORT**

(1) REZONING APPLICATION

1100 Esquimalt Road

[PID 005-988-292 Lot 1, Section 11, Esquimalt District, Plan 4618]

1104 Esquimalt Road

[PID 005-988-331 Lot 2, Section 11, Esquimalt District, Plan 4618]

1108 Esquimalt Road

[PID 005-988-381 Lot 3, Section 11, Esquimalt District, Plan 4618]

610 Lampson Street

[PID 024-548-782 Strata Lot 2 Section 11 Esquimalt District Plan VIS4828]

and 612 Lampson Street

[PID 024-548-774 Strata Lot 1 Section 11 Esquimalt District Plan VIS4828]

PURPOSE OF APPLICATION:

The applicant is requesting a change in zoning from the current mix of RM-1 [Multiple Family Residential] and a Comprehensive Development District No. 22 [CD-22] to another Comprehensive Development District zone [CD]. This change is required to accommodate the proposed 6-storey, 102-unit multiple family residential building including a 102-space parking garage.

Evaluation of this application should focus on issues related to zoning such as the proposed height, density, massing, proposed unit sizes, siting, setbacks, lot coverage, usable open space, parking, uses, fit with the neighbourhood, and consistency with the overall direction contained within the Official Community Plan.

This site is located within Development Permit Area No. 1 - Natural Environment, No. 6 - Multi-Family Residential, No. 7 - Energy Conservation and Greenhouse Gas Reduction and No. 8 - Water Conservation of the Township's Official Community Plan. Should the rezoning

be approved, the form and character of the buildings, landscaping, and consistency with guidelines relating to natural environment protection, energy conservation, greenhouse gas reduction, and water conservation would be controlled by a Development Permit that would be considered by Council at a future date.

RECOMMENDATION:

That the Esquimalt Design Review Committee recommends that the rezoning application, authorizing a 20-metre [6 storeys], 102-unit, multiple family residential building, incorporating height and massing consistent with the architectural plans provided by Praxis Architects Inc., stamped “Received November 5, 2019”, detailing the development proposed to be located at 1100 Esquimalt Road [PID 005-988-292 Lot 1, Section 11, Esquimalt District, Plan 4618], 1104 Esquimalt Road [PID 005-988-331 Lot 2, Section 11, Esquimalt District, Plan 4618], 1108 Esquimalt Road [PID 005-988-381 Lot 3, Section 11, Esquimalt District, Plan 4618], 610 Lampson Street [PID 024-548-782 Strata Lot 2 Section 11 Esquimalt District Plan VIS4828], and 612 Lampson Street [PID 024-548-774 Strata Lot 1 Section 11 Esquimalt District Plan VIS4828] be forwarded to Council with a recommendation **to either approve, approve with conditions, or deny the application including reasons for the chosen recommendation.**

VII. NEXT REGULAR MEETING

Wednesday, December 11, 2019

VIII. ADJOURNMENT



CORPORATION OF THE TOWNSHIP OF ESQUIMALT

ADVISORY DESIGN REVIEW COMMITTEE MINUTES OF SEPTEMBER 11, 2019 ESQUIMALT COUNCIL CHAMBERS

PRESENT:	Ally Dewji Roger Wheelock	Robert Schindelka Graeme Verhulst
ABSENT:	Tim Cottrell, David Van Stolk, Bev Windjack, Cst. Greg Shaw (non-voting)	
STAFF:	Bill Brown, Director of Development Services, Staff Liaison Janany Nagulan, Planner/Recording Secretary	
COUNCIL LIAISON:	Councillor Meagan Brame Councillor Jacob Helliwell (regrets)	

I. CALL TO ORDER

Roger Wheelock, Chair, called the Design Review Committee meeting to order at 3:05 p.m.

II. LATE ITEMS

No late items

III. APPROVAL OF AGENDA

Moved by Ally Dewji, seconded by Robert Schindelka: That the agenda be approved as printed.
Carried Unanimously

IV. ADOPTION OF MINUTES – July 10, 2019

Moved by Ally Dewji, seconded by Graeme Verhulst: That the minutes of July 10, 2019, be adopted as circulated. **Carried Unanimously**

V. STAFF REPORTS

(1) REZONING APPLICATION

**874 Fleming Street
[PID 000-546-437, Lot B (DD 237133I), of Lots 79 and 89, Suburban Lot 44, Esquimalt District, Plan 2854]**

James Munro, Director of Real Estate Development, and Carly Abrahams, Development Manager for Greater Victoria Housing Society [GVHS], Paul Hammond, Architect from Low Hammond Rowe Architects, and Olivia Lyne, Landscape architect from Ladr Landscape Architects presented an overview of the Rezoning Application for 874 Flemming Street with a PowerPoint presentation and responded to questions from the Committee. The presentation introduced the Greater Victoria Housing Society and described the property location and context of the building within the neighbourhood. Also, discussed were site features, including the positioning of the building and protection of a significant arbutus tree. Building features were clarified including density, height and type of units proposed in the building and landscaping.

Committee comments included (*summarized response in italics*):

- What will Flemming Street be like when the development is completed? *Staff answer that the Engineering department will work with Greater Victoria Housing Society to develop Flemming Street.*
- The frontage rendered represents of what we will likely see? *Yes*

- Clarification was asked in regards to the pedestrian circulation. *There are direct pathways that are paved with direct bus access. There is access in out of the parkade and bicycle racks available for visitors.*
- Is the parking located at the front intended for visitors? *Yes*
- Is the pathway on your property? *No, it is a registered laneway that belongs to the municipality.*
- Is the pathway lit at night? *Currently there is lighting on a portion of the pathway.*
- There currently is a community garden on the property. Are there any plans to maintain the garden in the new building? *Intention is to have stand alone planters on the two south west patios to be available for residents.*
- Is Greater Victoria Housing Society targeting a particular group? *Yes, a mix of families and seniors.*
- Is there a transition plan for the current residence of the building? *Yes, will be moving residents to other GHVS buildings.*
- Will there be a covenant put in place for the proposed amenity bonusing? *Yes, we are expecting to entre a covenant with the municipality.*
- What standard is being used for the accessible units? *BC Housing Standards.*

RECOMMENDATION

Moved by Graeme Verhulst, seconded by Robert Schindelka: That the Esquimalt Design Review Committee recommends that the application for Rezoning, authorizing a 21 metre [6 storey], 137 unit, multiple family residential, affordable rental, building sited in accordance with the Site Plan provided by Low Hammond Rowe Architects and incorporating height and massing consistent with the architectural plans provided by Low Hammond Rowe Architects both stamped “Received June 17, 2019”, detailing the development proposed to be located at 874 Fleming Street [PID 002-900-246, Lot B, Section 10, Esquimalt District Plan 25267] **be forwarded to Council with a recommendation for approval** because it provides a valuable amenity in affordable housing and follows the design guidelines. **Carried Unanimously.**

(2) DEVELOPMENT PERMIT APPLICATION

880 A Esquimalt Road

[PID:013-004-247, Lot 2 Section 11, Esquimalt District, Plan 47946]

Andrea Scott of Lovick Scott Architects provided an overview of the Development Permit Application for 880 A Esquimalt Road with a PowerPoint presentation and responded to questions from the Committee. The presentation described the proposed changes to the exterior façade of the existing Tim Horton Building on the property.

Committee comments included (*summarized response in italics*):

- Are there any changes to the landscape plans? *No, nothing is being changes outside of the building envelope.*
- Landscaping of the area would help with the beautification process of Esquimalt Road.
- Esquimalt Road needs to be more pedestrian friendly.

RECOMMENDATION

Moved by Ally Dewji, seconded by Robert Schindelka: That the Esquimalt Design Review Committee [DRC] recommends to Council that the application for a Development Permit authorizing the change to the form and character of the existing commercial building as per colour elevations provided by Lovick Scott Architects stamped “Received July 26, 2019”, located at 880 A Esquimalt Road [PID: 013-004-247; Lot 2 Section 11, Esquimalt District, Plan 47946] be

forwarded to Council with a recommendation for approval with the conditions: That the applicant work with staff to review the landscaping in front of the building and to enhance the pedestrian environment so the it meets the current and future needs of Esquimalt road. **Carried Unanimously.**

VI. NEXT REGULAR MEETING

Wednesday, October 9th, 2019

VII. ADJOURNMENT

The meeting adjourned at approximately 3:53 p.m.

CERTIFIED CORRECT

CHAIR, DESIGN REVIEW COMMITTEE
THIS 9th DAY OF OCTOBER, 2019

CORPORATE OFFICER

DRAFT



CORPORATION OF THE TOWNSHIP OF ESQUIMALT

Municipal Hall, 1229 Esquimalt Road, Esquimalt, B.C. V9A 3P1
Telephone (250) 414-7100 Fax (250) 414-7111

DRC Meeting: November 13, 2019

STAFF REPORT

DATE: November 8, 2019

TO: Chair and Members of the Design Review Committee

FROM: Alex Tang, Planner
Bill Brown, Director of Development Services

SUBJECT: **Rezoning Application**
1100 Esquimalt Road
[PID 005-988-292 Lot 1, Section 11, Esquimalt District, Plan 4618]
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and 612 Lampson Street
[PID 024-548-774 Strata Lot 1 Section 11 Esquimalt District Plan VIS4828]

RECOMMENDATION:

That the Esquimalt Design Review Committee recommends that the rezoning application, authorizing a 20-metre [6 storeys], 102-unit, multiple family residential building, incorporating height and massing consistent with the architectural plans provided by Praxis Architects Inc., stamped "Received November 5, 2019", detailing the development proposed to be located at 1100 Esquimalt Road [PID 005-988-292 Lot 1, Section 11, Esquimalt District, Plan 4618], 1104 Esquimalt Road [PID 005-988-331 Lot 2, Section 11, Esquimalt District, Plan 4618], 1108 Esquimalt Road [PID 005-988-381 Lot 3, Section 11, Esquimalt District, Plan 4618], 610 Lampson Street [PID 024-548-782 Strata Lot 2 Section 11 Esquimalt District Plan VIS4828], and 612 Lampson Street [PID 024-548-774 Strata Lot 1 Section 11 Esquimalt District Plan VIS4828] be forwarded to Council with a recommendation **to either approve, approve with conditions, or deny the application including reasons for the chosen recommendation.**

BACKGROUND:

Purpose of the Application:

The applicant is requesting a change in zoning from the current mix of RM-1 [Multiple Family Residential] and a Comprehensive Development District No. 22 [CD-22] to another Comprehensive Development District zone [CD]. This change is required to accommodate the proposed 6-storey, 102-unit multiple family residential building including a 102-space parking garage.

Evaluation of this application should focus on issues related to zoning such as the proposed height, density, massing, proposed unit sizes, siting, setbacks, lot coverage, usable open space, parking, uses, fit with the neighbourhood, and consistency with the overall direction contained within the Official Community Plan.

This site is located within Development Permit Area No. 1 - Natural Environment, No. 6 - Multi-Family Residential, No. 7 - Energy Conservation and Greenhouse Gas Reduction and No. 8 - Water Conservation of the Township's Official Community Plan. Should the rezoning be approved, the form and character of the buildings, landscaping, and consistency with guidelines relating to natural environment protection, energy conservation, greenhouse gas reduction, and water conservation would be controlled by a Development Permit that would be considered by Council at a future date.

Context

Applicant: Praxis Architects Inc. [Heather Spinney]

Owners: Lampson Corner Nominee Ltd., Inc.No. BC1159146

Property Size: Metric: 2627 m² Imperial: 28277 ft²

Existing Land Use: Single Family Residential

Surrounding Land Uses:

North: Multiple Family Residential Townhouses [3 storeys]
South: Single Family Residential
Multiple Family Residential Townhouses [3 storeys]
West: Single Family Residential
East: Single Family Residential

OCP Proposed Land Use Designation: Medium Density Residential [no change required]

Existing Zoning: RM-1 [Multiple Family Residential]
CD No. 22 [Comprehensive Development District]
for 2 strata lot single family dwellings

Proposed Zoning: CD [Comprehensive Development District]

Official Community Plan

The proposed development is consistent with the Proposed Land Use Designation of 'Medium Density Residential'. The proposed development consists of 6 storeys, 102 residential units and a Floor Area Ratio of 1.9. Hence, this proposal is consistent with the acceptable density prescribed in the Official Community Plan.

OCP Section 3.3 Housing and Community identifies the Esquimalt Road corridor as an area for residential densification.

OCP Section 5.1 states a policy to 'support the development of a variety of housing types and designs to meet the anticipated housing needs of residents. This may include non-market and market housing options that are designed to accommodate young and multi-generational families, the local workforce, as well as middle and high income households.'

OCP Section 5.3 Medium and High Density Residential Development states an objective to

support compact, efficient medium density and high density residential development that integrates with existing proposed adjacent uses.

Supporting policies in this section consistent with the proposed development include:

- Encourage new medium density and high density residential development with high quality design standards for building and landscaping and which enhance existing neighbourhoods.
- Prioritize medium density and high density residential development in proposed land use designated areas that:
 1. reduce single occupancy vehicle use;
 2. support transit service;
 3. are located within close proximity to employment centres; and
 4. accommodate young families.
- Consider new medium density residential development proposals with a Floor Area Ratio of up to 2.0, and up to six storeys in height, in areas designated on the “Proposed Land Use Designation Map.”
- A mix of dwelling unit sizes should be provided in medium density and high density residential land use designated areas in order to meet the varying housing needs of Esquimalt residents.
- Encourage the incorporation of spaces designed to foster social interaction.
- Encourage the installation of electric vehicle charging infrastructure in medium and high density residential developments.

Section 5.5 Age Friendly Housing states an objective to expand and protect seniors housing in Esquimalt to enable citizens to “age in place”.

Supporting policies in this section relevant with the proposed development include:

- Support and facilitate development of multi-generational housing, including in medium and high density residential developments.
- Encourage child friendly developments that provide appropriate amenities such as outdoor play areas for young children that are well-separated from traffic circulation and parking areas.
- Encourage adaptable design for all dwellings created through rezoning.
- Encourage more accessible housing for people with mobility limitations on the ground floor of medium and high density residential buildings.

Section 5.6 Family and Child-friendly Housing states an objective to address the shortage of family and child friendly housing in Esquimalt. The proposed development has a mixture of dwelling unit sizes, including 11 3-bedroom apartment dwelling units and 6 3-bedroom townhouse dwelling units, along with a commercial space labelled ‘Daycare’ proposed for Group Children’s Day Care Centre Use which would be consistent with the following policy:

- Encourage the provision of medium and high density commercial mixed-use developments designed for families with children.

Section 11.3.1 Public Cycling Infrastructure states the following policy:

- Encourage end-of-trip facilities including secure lockup and shower facilities

Section 11.3.2 New Development states the following policy:

- Encourage developers to provide a variety of end of trip facilities for active transportation.
- Encourage bike lockers in multi-unit residential and commercial/commercial mixed-use developments.

Section 13.3.3 Building Energy Efficiency states the following policy:

- Adopt best practices based on evolving building technologies and materials.
- Encourage the adoption of passive, efficient, and renewable energy systems in new buildings and during building retrofits
- Investigate options for encouraging developers to achieve high energy performance in new developments through such tools as density bonusing, expedited permit approval process, rebate of development fees, revitalization tax exemption, and other incentives.
- Pursue higher energy-efficiency performance in new developments, through the achievement of higher steps in the BC Energy Step Code as an amenity associated with rezoning.

Under Section 13.3.6 Passenger Vehicle Alternatives, the following policies are listed:

- Encourage the installation of electric vehicle charging infrastructure in all new multi-unit developments.
- Pursue the installation of electric vehicle charging capacity in new developments during the rezoning process.
- Encourage the inclusion of car share in new multi-unit residential developments.

The applicant is proposing a car share service for the residents of this residential development.

Relevant Development Permit Area Guidelines to consider as it relates to the rezoning application include:

- Avoid disturbing, compacting and removing areas of natural soil as this can lead to invasion by unwanted plant species, poor water absorption and poor establishment of new plantings. Use of local natural soil in disturbed and restored areas will support re-establishment of ecosystem functions.
- Buildings should be designed and sited to minimize the creation of shadows on public spaces.
- Off-street parking areas should be located either at the rear of commercial buildings or underground. Surface parking should be screened with landscaping. Large parking areas should contain additional islands of landscaping.
- The size and siting of buildings that abut existing single- and two-unit and townhouse dwelling should reflect the size and scale of adjacent development and complement the surround uses. To achieve this, height and setback restrictions may be imposed as a condition of the development permit.
- New buildings should be designed and sited to minimize visual intrusion on to the privacy of surround homes and minimize the casting of shadows on to the private outdoor space of adjacent residential units.
- Underground parking should be encouraged for any multi-unit residential buildings exceeding four storeys.
- Orient buildings to take advantage of site specific climate conditions, in terms of solar access and wind flow; design massing and solar orientation for optimum passive performance.
- Build new developments compactly, considering the solar penetration and passive performance provided for neighbouring sites, and avoid shading adjacent to usable outdoor open spaces.
- In commercial, residential or commercial mixed-use designated areas with taller developments, vary building heights to strategically reduce the shading on to adjacent buildings.

Zoning

Density, Lot Coverage, Height and Setbacks: The following chart compares the floor area ratios, lot coverage, setbacks, height, parking and usable open space of this proposal. Zoning Bylaw, 1992, No. 2050 does not currently contain a zone that can accommodate this proposed development.

	Proposed Comprehensive Development Zone
Residential Units	102
Residential Floor Area Ratio	1.9
Lot Coverage	89%
Lot Coverage at or above the First Storey	65%
Setbacks	
<ul style="list-style-type: none"> • Front [Esquimalt Road] • Rear [North] • Interior Side [West] • Exterior Side [East] 	3.0 m 3.2 m 4.0 m 4.0 m
Building Height	19.25 m [6 storeys]
Off Street Parking	102 spaces
Usable Open Space	375 m ² [10.8%]
Bicycle Parking	150 resident + 6 visitor

Floor Area Ratio: The FAR of this proposal is 1.9, compared to the acceptable amount of 2.0 in a medium density residential designated parcel.

Lot Coverage: The lot coverage at or above the First Storey of 65% is a significant change and increase from the currently allowed 40% within a RM-1 zone that accommodates low density townhouse development and the allowed 30% for RM-4/RM-5 zones that accommodate medium density apartment developments.

Usable Open Space: Our zones that accommodate apartment developments generally require usable open space in the amount of not less than 7.5% of the area of the parcel. This development allows for an usable open space north of the Principal Building in the amount of 375 m² [10.8% of the consolidated parcels].

Parking: Parking Bylaw, 1992, No. 2011 requires 1.3 parking spaces per unit to be provided for multiple family developments. Parking areas are required to be constructed to meet the standards for manoeuvring aisle dimensions and associated parking stall dimensions detailed in Part 14, Table 2, of the Bylaw.

This proposal incorporates 102 parking spaces to serve 102 residential dwelling units. Hence,

the parking ratio of 1.0 is less than the required amount of 133 parking spaces as required by the parking bylaw. The applicant has submitted a parking study prepared by Watt Consulting Group indicating that the expected parking demand is 93 spaces for this 102-unit residential development. As the location's Walkscore is 78, most errands can be accomplished by walking. The applicant is also proposing to provide car shares for the residents via a car share service with a car on site.

Green Building Features

The applicant has completed the Esquimalt Green Building Checklist [attached].

Questions for Consideration

Is the massing of the proposed development compatible with the surroundings?

How well does the proposed development interface with adjacent parcels?

How well does this proposal interface with the public realm on Head Street and Esquimalt Road?

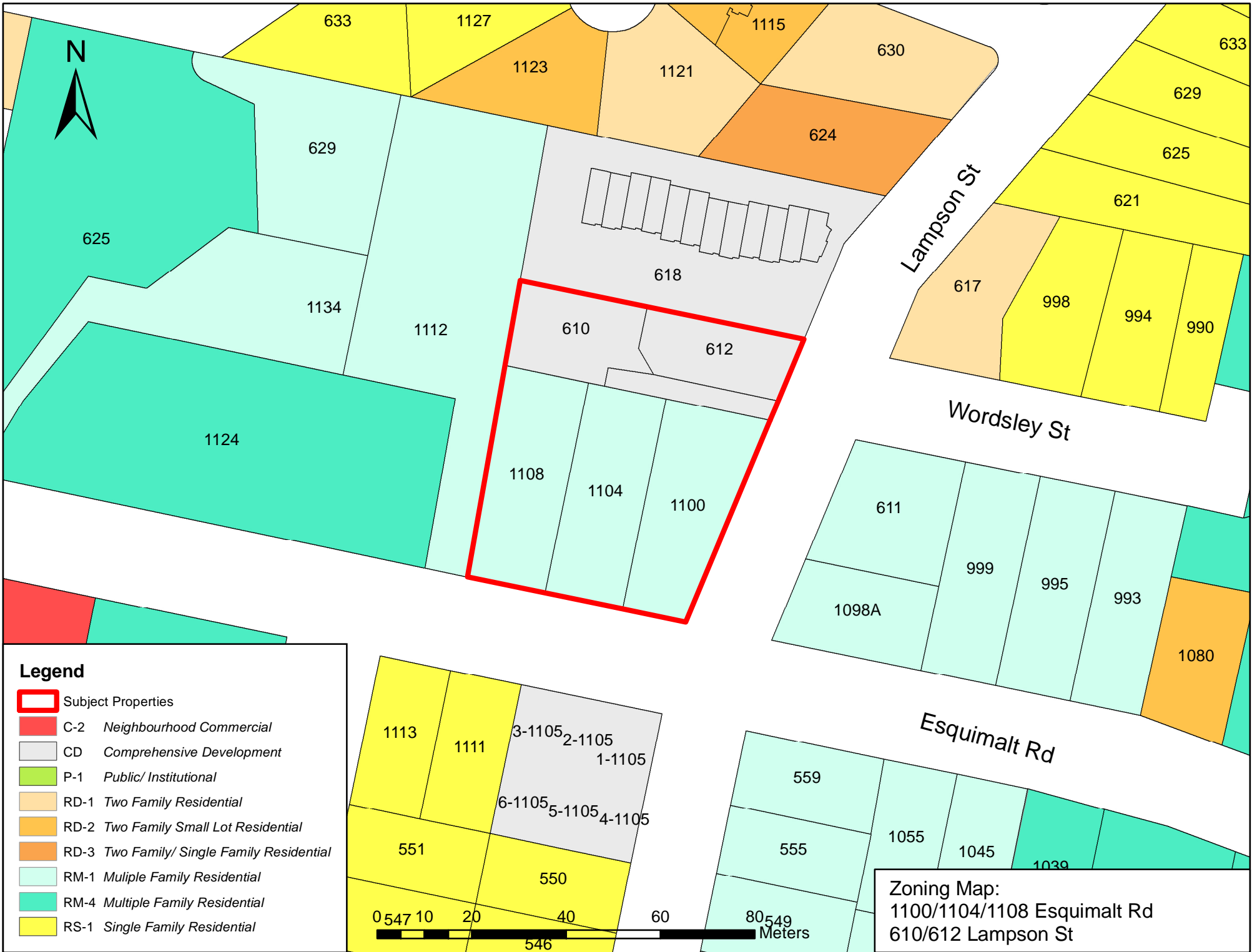
Is there adequate open space for landscaping?

According to the Watts Consulting Group Parking study, the anticipated parking demand is 93 parking spaces. As there is also a car sharing service provided, do you feel the proposed parking provision is justified for this proposed development?

ALTERNATIVES:

1. Forward the rezoning application to Council with a **recommendation of approval including reasons for the recommendation.**
2. Forward the rezoning application to Council with a **recommendation of approval including specific conditions and including reasons for the recommendation.**
3. Forward the rezoning application to Council with a **recommendation of denial including reasons for the recommendation.**





LAMPSON & ESQUIMALT

2019.09.26 - REVISED PER PLANNING



VIEW FROM ESQUIMALT AT LAMPSON



CONTEXT PLAN



ESQUIMALT ROAD

LAMPSON STREET

① SITE PLAN
1:200

PROPOSED PROJECT INFORMATION

LEGAL ADDRESS LOTS 1, 2 AND 3, SECTION 11, ESQUIMALT DISTRICT, PLAN 4618
PID 005-988-922, 005-988-331, 005-988-381
AND
STRATA LOTS 1 AND 2, SECTION 11, ESQUIMALT DISTRICT,
STRATA PLAN VIS4828, PID 024-548-774, 024-548-782

CIVIC ADDRESS 1100, 1104 & 1108 ESQUIMALT ROAD
610 & 612 LAMPSON STREET

EXISTING ZONING 1108, 1104, 1100 = RM-1
(MULTIPLE FAMILY RESIDENTIAL)
610, 612 = CD-22
(COMPREHENSIVE DEVELOPMENT)

REZONE TO NEW COMPREHENSIVE ZONE

SITE AREA 0.35 Ha / 0.86 Ac / 3,465 m² / 37,297 ft²

NO. UNITS 93 SUITES
9 TOWNHOUSES
102 TOTAL

UNIT TYPES

JR 1BR	9
1 BR	52
1 BR + DEN	4
2 BR	16
2 BR + DEN	7
3 BR	5
TH 2BR	3
TH 2BR + DEN	6

PARKING PROVIDED 102

BIKE PARKING 150 + RACK FOR 6 AT ENTRANCE

HEIGHT 5 / 6 STOREYS OVER PARKING

UNIT AREA (±) SUITES: 36 m² (388 ft²) - 93 m² (996 ft²) / TH: 89 m² (958 ft²)

TOTAL FLOOR AREA 6,731 m² (72,452 ft²)

BUILDING AREA 1,948 m² (20,968 ft²)

FLOOR AREA RATIO 1.96 : 1

COVERAGE 56.2%

SETBACKS

FRONT (ESQUIMALT RD.)	3.0m (9.8')
REAR	4.6m (15')
REAR (TH CORNER)	3.2m (10.5')
INTERIOR SIDE S	4.0m (13.1')
INTERIOR SIDE N	9.1m (29.9')
EXTERIOR SIDE (LAMPSON ST.)	4.0m (13.1')

DRAWING LIST

- A00 COVER PAGE
- A01 SITE PLAN
- A02 PARKADE/ LEVEL 0
- A03 LEVEL 1
- A04 LEVEL 2
- A05 LEVEL 3
- A06 LEVEL 4
- A07 LEVEL 5
- A08 LEVEL 6
- A09 ELEVATIONS
- A10 SECTIONS
- A11 STREET VIEWS
- A12 SHADOW STUDIES
- A13 STREET ELEVATIONS
- L1 LANDSCAPE PLAN



1 SITE PLAN
1:100


ESQUIMALT ROAD

LAMPSON STREET








 ① LEVEL 2
 1 : 100



① LEVEL 3
1 : 100



① LEVEL 4
1 : 100



① LEVEL 5
1 : 100

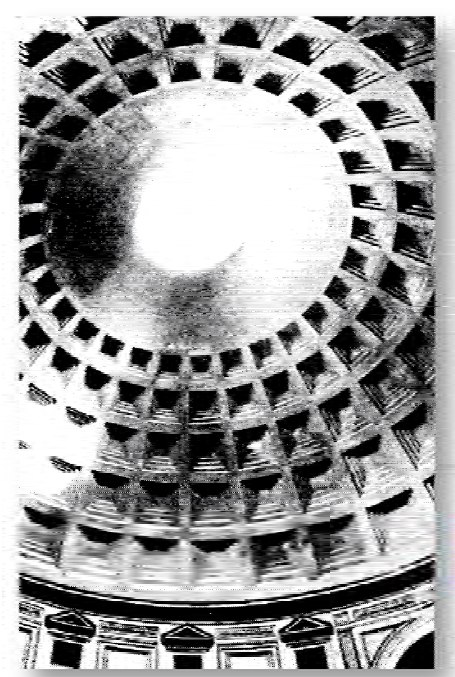


① LEVEL 6
1:100



MATERIAL FINISH LEGEND

- ① FIBRE CEMENT PANEL - LIGHT / WHITE
- ② FIBRE CEMENT PANEL - DARK GRAY
- ③ METAL PANEL - DARK GRAY
- ④ WOOD GRAIN - PREFINISHED METAL
- ⑤ SBS MEMBRANE ROOF
- ⑥ GLASS AND ALUMINUM RAILING
- ⑦ VINYL WINDOWS
- ⑧ ALUMINUM SOFFIT
- ⑨ CONCRETE - SMOOTH FINISH
- ⑩ FASCIA - PREFIN. METAL TO MATCH
- ⑪ PRIVACY SCREEN (WOOD GRAIN)

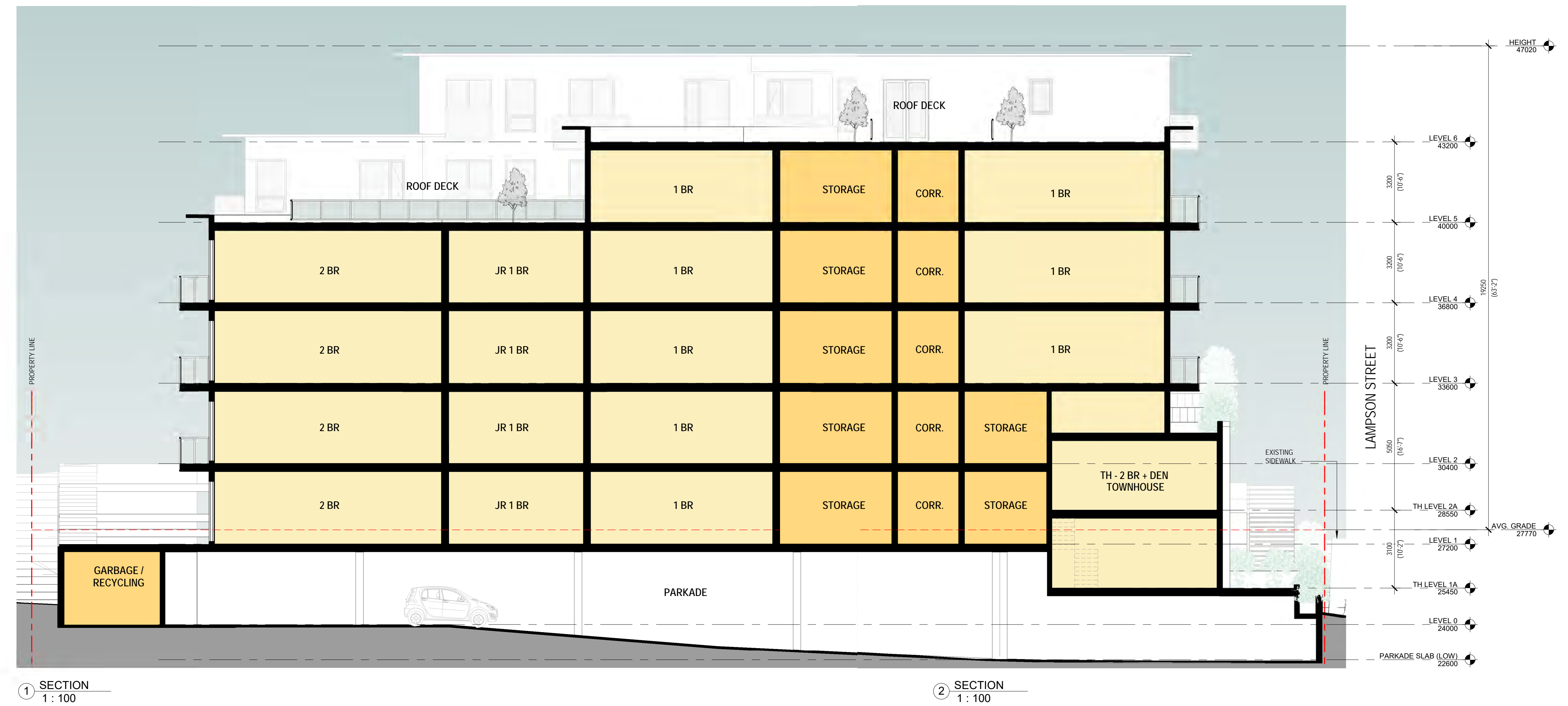


PRAXIS
architects inc.

LAMPSON & ESQUIMALT
VICTORIA BC
PROJECT NO.17-023

ELEVATIONS
2019.09.26 - REVISED PER PLANNING

A09





1. SOUTHEAST PERSPECTIVE



6. NORTHEAST PERSPECTIVE



3. SOUTHWEST PERSPECTIVE



4. NORTHWEST PERSPECTIVE



1 SUMMER 6:42AM
1: 1250



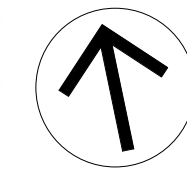
2 SUMMER 11:30AM
1: 1250



3 SUMMER 3:30PM
1: 1250



4 SUMMER 7:49PM
1: 1250



SUMMER SOLSTICE - JUNE 21



5 SPRING / FALL 8:38AM
1: 1250



6 SPRING / FALL 12:00PM
1: 1250



7 SPRING / FALL 3:00PM
1: 1250



8 SPRING / FALL 5:37PM
1: 1250

SPRING/FALL EQUINOX - MARCH 21 / SEPTEMBER 21



9 WINTER 10:00AM
1: 1250



10 WINTER 11:30AM
1: 1250



11 WINTER 1:30PM
1: 1250



12 WINTER 2:51PM
1: 1250

WINTER SOLSTICE - DECEMBER 21

NOTE: SHADOWS ARE ILLUSTRATED AS THEY WILL APPEAR 1.5 HOURS AFTER SUNRISE AND 1.5 HOURS BEFORE SUNSET



① EAST ELEVATION - STREET
1:150



② SOUTH ELEVATION - STREET
1:150



- DETAILED CONSTRUCTION NOTES:**
- (A) CITY OF VICTORIA TO CAP EXISTING WATER SERVICES AT DEVELOPERS EXPENSE.
 - (B) CITY OF VICTORIA TO INSTALL 150mm FIRE AND 150mm DOMESTIC WATER SERVICES AT DEVELOPERS EXPENSE.
 - (C) TOWNSHIP OF ESQUIMALT TO INSTALL 150mm SEWER SERVICE AT DEVELOPERS EXPENSE.
 - (D) CONTRACTOR TO CAP EXISTING SEWER AND DRAIN SERVICES AT PROPERTY LINE.
 - (E) CONTRACTOR TO REINSTATE SIDEWALK AND CONSTRUCT DRIVEWAY TO TOWNSHIP OF ESQUIMALT SPECIFICATIONS.
 - (F) TOWNSHIP OF ESQUIMALT TO EXTEND DRAIN MAIN AND INSTALL 150mm DRAIN SERVICE AT DEVELOPERS EXPENSE.
 - (G) ALL ONSITE TREES TO BE REMOVED UNLESS OTHERWISE NOTED.



KEY PLAN
NTS

PLAN - SITE SERVICING
H 1:250

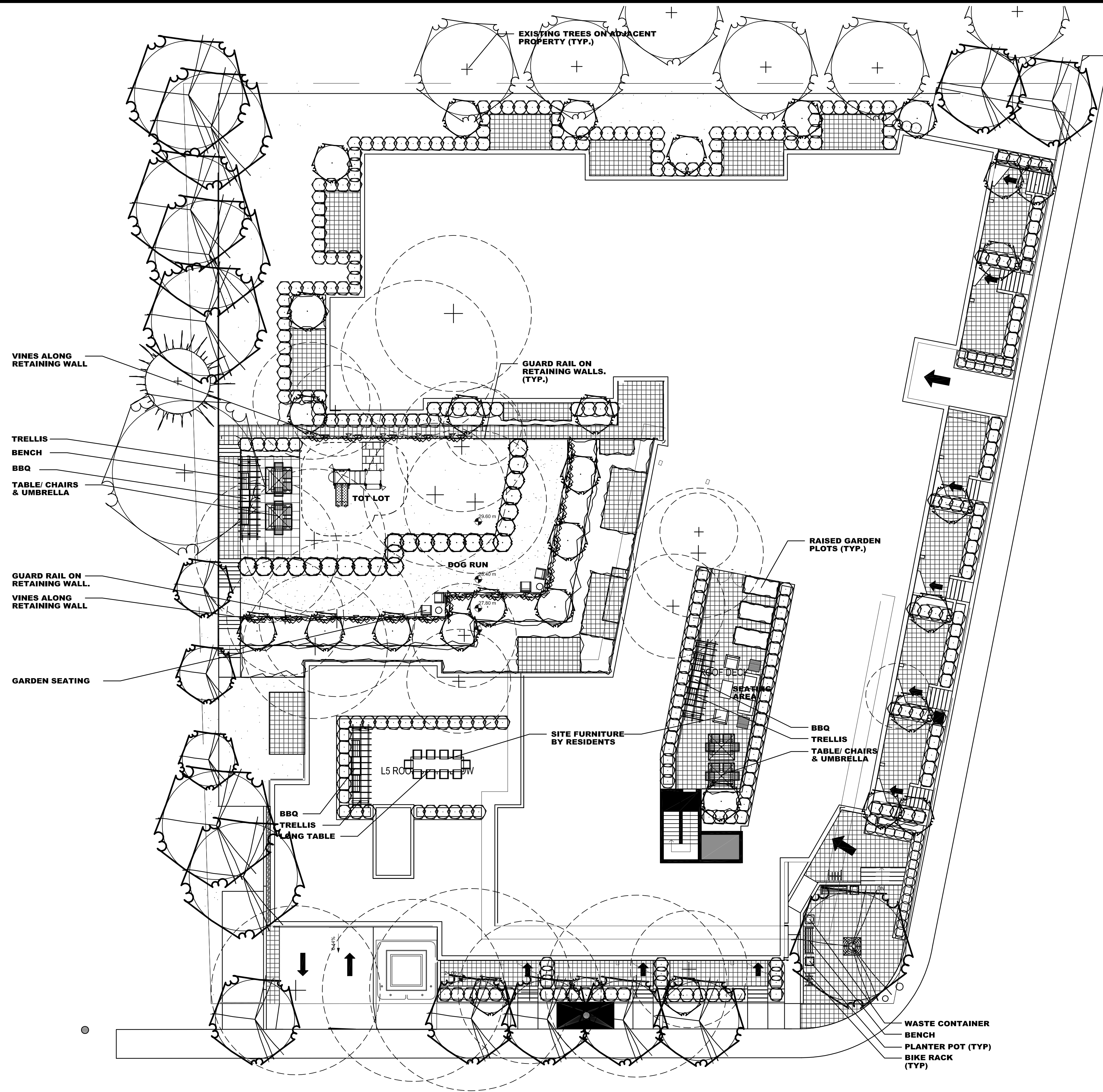
**GT MANN
ESQUIMALT & LAMPSON
PRELIMINARY SITE
SERVICE**

Scale
horiz. 1:250
Sheet 1 of 1
Eng. Project No. 31073

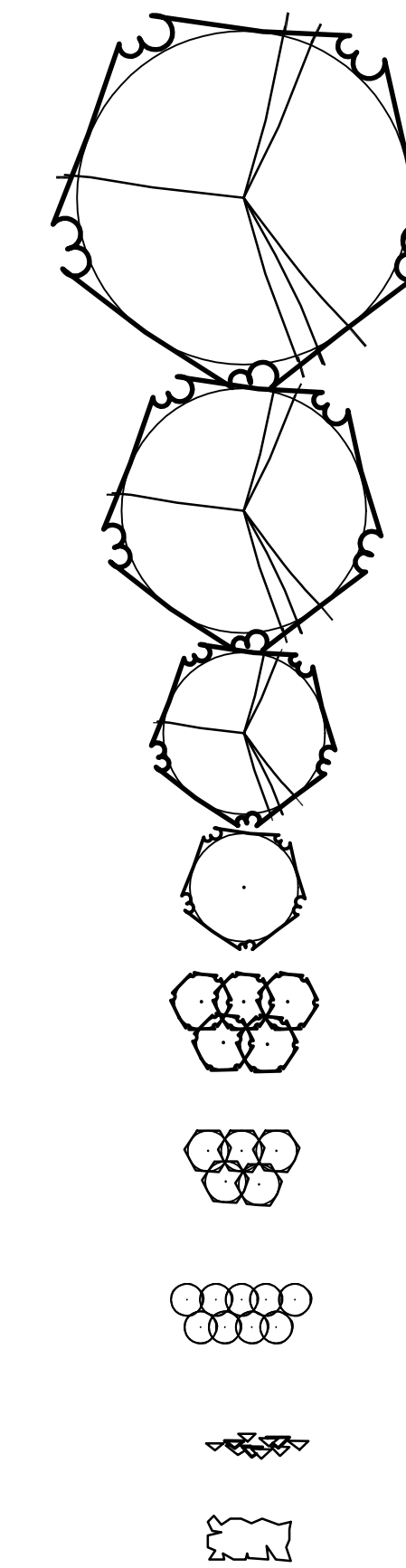
JEA J E ANDERSON & ASSOCIATES
SURVEYORS - ENGINEERS
VICTORIA NANAIMO PARKSVILLE
PHONE: 250-727-2214 FAX: 250-727-3395



DISCUSSION/COORDINATION



LEGEND



LARGE DECIDUOUS TREE TO BE A SELECTION OF:
GARRY OAK;
SIZE 5.0 CM CAL.; APPROXIMATE NO. - 08

MEDIUM DECIDUOUS TREE TO BE A SELECTION OF:
RED MAPLE, KATSURA TREE, HEDGE MAPLE, FRISIA
LOCUST, LITTLE LEAF LINDEN;
SIZE 6.0 CM CAL.; APPROXIMATE NO. - 07

COLUMNAR DECIDUOUS TREE TO BE:
COLUMNAR RED MAPLE;
SIZE 6.0 CM CAL.; APPROXIMATE NO. - 03

MULTISTEM TO BE A SELECTION OF: STAR MAGNOLIA (DEC),
STAGHORN SUMAC (DEC), VIBURNUM (DEC),
JAPANESE MAPLE (DEC), MOCK ORANGE (DEC), LILAC (DEC);
SIZE 1.2 M HT.; APPROXIMATE NO. - 30

LARGE SHRUB TO BE A SELECTION OF: NOOTKA
ROSE (DEC), PIERIS (BL), RHODODENDRON (BL),
MEXICAN ORANGE (BL), DECIDUOUS AZALEA (DEC),
COTONEASTER (BL), PORTUGUESE LAUREL (BL),
RED TWIG DOGWOOD (DEC), HYDRANGEA (DEC);
SIZE 27 CM POT; APPROXIMATE NO. - 10

MEDIUM SHRUB TO BE A SELECTION OF: MAHONIA (BL),
RHODODENDRON (BL), JAPANESE AZALEA (BL), PINK
ESCALLONIA (BL), BARBERRY (BL), BUXUS (BL), FERNS (BL);
SIZE 27 CM POT; APPROXIMATE NO. - 165

SMALL SHRUB TO BE A SELECTION OF: DWARF
RHODODENDRON (BL), EDWARD GOUCHER ABELIA (BL),
LAVENDER (BL), GOLDFLAME SPIREA (DEC), DWARF
JAPANESE AZALEA (BL), NEWPORT DWARF ESCALLONIA (BL),
LONG LEAF MAHONIA (BL), FERNS (BL);
SIZE 21 CM POT; APPROXIMATE NO. - 26

VINES TO BE A SELECTION OF: HONEYSUCKLE (DEC),
ENGELMANN IVY (DEC), CLEMATIS (DEC);
SIZE 21 CM POT; APPROXIMATE NO. - 13

GROUNDCOVER TO BE A SELECTION OF:
KINNIKINNICK (BL), WINTERGREEN (BL),
LIRIOPE (BL), BLUE OAT GRASS (DEC);
SIZE 15 CM POT; PLANT 45 CM O.C.

NOTES

- LANDSCAPE AREAS ARE TO BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
- THIS DRAWING IS CONCEPTUAL ONLY AND NOT INTENDED FOR CONSTRUCTION PURPOSES.
- THIS DRAWING IS FOR SOFT LANDSCAPE ONLY.

NO.	DATE	BY	REVISION
01	NOV.05/19	S.P.	PLANNING COMMENTS

DESIGN	S.P.
CHECKED	J.P.
DATE	DECEMBER 13, 2018
DRAWING	L&E-P1R6R.DWG
FILE	253 18 01



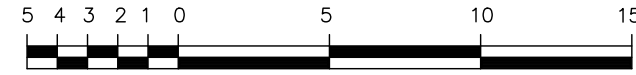
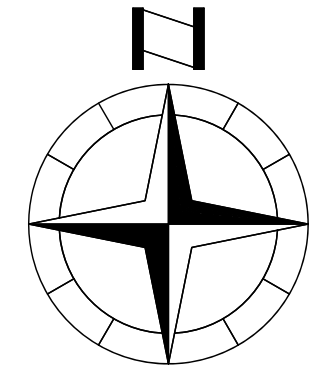
LAMPSON & ESQUIMALT
VICTORIA, B.C.

CONSULTANT



Topographic Site Plan Of:
Lots 1, 2, And 3, Section 11,
Esquimalt District, Plan 4618.
P.I.D.: 005-988-292,
005-988-331, 005-988-381.

And
Strata Lots 1 And 2, Section 11,
Esquimalt District, Strata Plan VIS4828.
P.I.D.: 024-548-774, 024-548-782.



Scale = 1:250

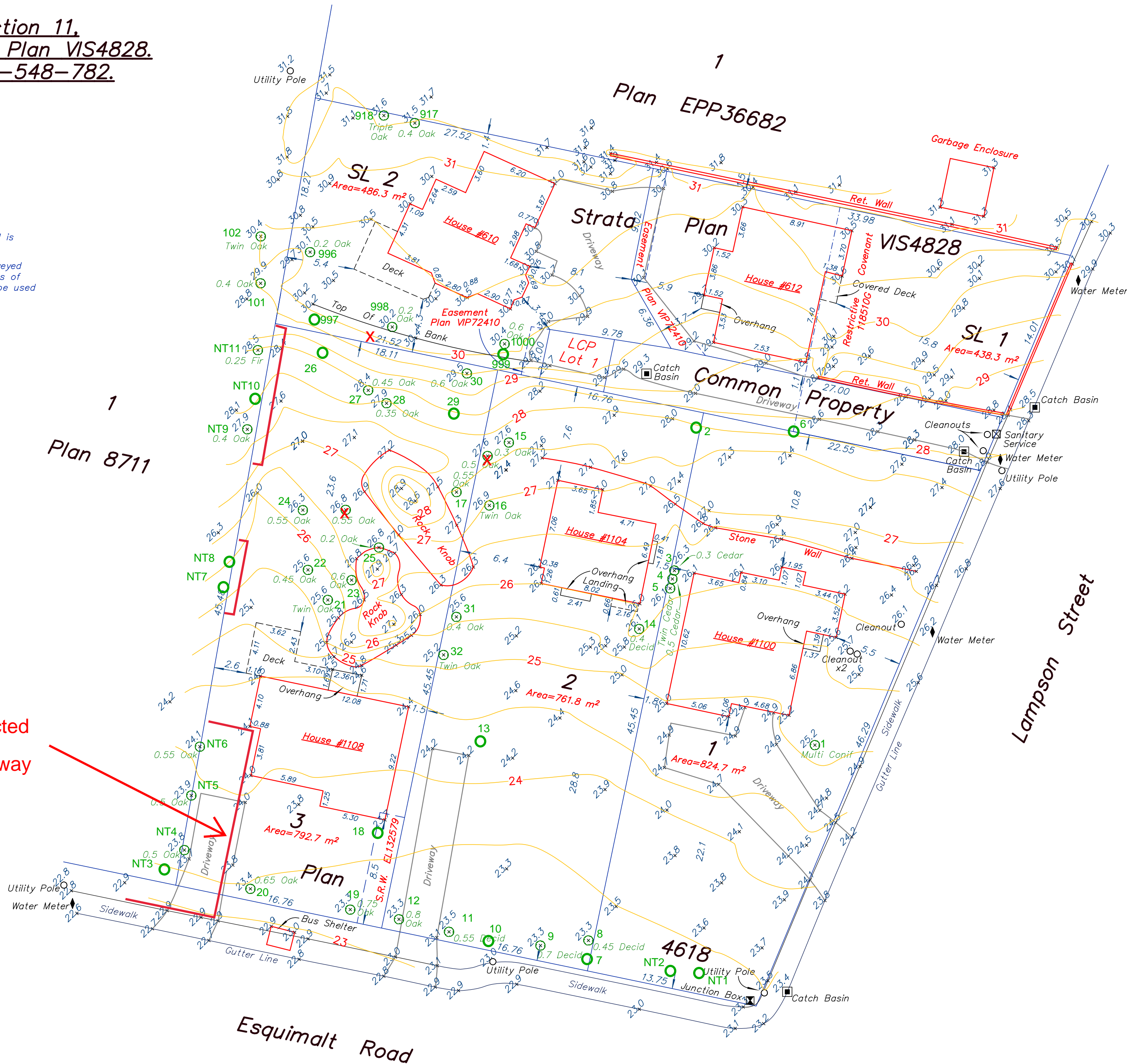
Dated this 12th day of May, 2018.

Distances and elevations shown are in metres.

Elevations are based on geodetic datum CVD28BC and derived from OCM 84H0209.

This site plan is for building and design purposes and is for the exclusive use of our client.

This document shows the relative location of the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners.



Barrier Fencing to be erected following removal of driveway

The subject properties are affected by the following registered documents:
97995G, EL132579, 118510G, EN9659, ES44265.

Wey Mayenburg Land Surveying Inc.

www.weysurveys.com

#4-2227 James White Boulevard

Sidney, BC VBL 1Z5

Telephone (250) 656-5155

File: 170395A\SIT\GH



Lampson & Esquimalt Road Parking Study

Prepared for: **GT Mann Contracting**

Prepared by: **Watt Consulting Group**

Our File: **2357.B01**

Date: **October 22, 2019**

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APPENDIX A. ON-STREET PARKING ASSESSMENT

1.0 INTRODUCTION

Watt Consulting Group was retained by GT Mann Contracting to conduct a parking study for the proposed development at Lampson Street and Esquimalt Road in the Township of Esquimalt. The purpose of this study is to determine the parking demand for the site.

1.1 SUBJECT SITE

The proposed redevelopment site is 1108-1104-1100 Esquimalt Road / 610 & 612 Lampson Street in the Township of Esquimalt. See **Figure 1**. The site is zoned as RM-1(Multi-Family Residential) and CD-22 (Comprehensive Development).

FIGURE 1. SUBJECT SITE



1.2 SITE CHARACTERISTICS

The following provides information regarding services and transportation options in proximity to the subject site.



SERVICES

The site is located less than 100m from Esquimalt Village, which is Esquimalt's main commercial area, containing the Esquimalt Plaza shopping centre, civic centre, Municipal Hall, Library and the Recreation Centre. Residential uses in this neighbourhood are mainly multi-family buildings located on Esquimalt Road or on adjacent side streets. The site is also located 500m from the intersection of Esquimalt Road and Head Street that has various retail stores, small scale restaurants, and medical services.



TRANSIT

The closest bus stop to the site is directly in front on Esquimalt Road and serves Route 15 | Esquimalt/Uvic, which is a regional route with a service frequency of 15 to 60 minutes with limited stops. This route provides direct service between the DND Esquimalt base and the University of Victoria, via downtown Victoria. Route 26 | Dockyard/UVic also serves the bus stop on Esquimalt Road with service from DND Esquimalt and the University of Victoria, via Uptown Mall.

BC Transit's Transit Future Plan identifies Esquimalt Road as a "Frequent Transit Corridor"¹ that will provide frequent service (15 minutes or better between 7am and 10pm, 7 days per week) with improved transit travel times achieved by fewer stops, transit priority measures and enhanced bus stop infrastructure. The subject site will benefit from frequent, reliable and convenient transit service.



WALKING

Esquimalt Road provides for a pleasant pedestrian environment—the result of a streetscape revitalization initiative in 2010. Sidewalks are provided on both sides of Esquimalt Road with crosswalks at major intersections and various mid-block crosswalks. The site has a Walkscore² of 78, which indicates that most errands can be accomplished on foot.

¹ More information on the Victoria Transit Future Plan is available online at: <http://bctransit.com/victoria/transit-future/victoria-transit-future-plan>

² More information about the site's Walk Score is available online at: <https://www.walkscore.com/score/1104-esquimalt-rd-victoria-bc-canada>



CYCLING

Bike lanes are provided on Esquimalt Road with direct connection to downtown Victoria and the Galloping Goose Regional Trail. The site is less than 1km from the Esquimalt + Nanaimo (E+N) Rail Trail, which provides a direct off-road cycling route to View Royal and the West Shore.



CARSHARING

The Modo Car Cooperative (“Modo”) is the most popular carsharing service in Greater Victoria. In 2015, there were 23 cars and 800 members; as of September 2018, there are 79 Modo vehicles and 2,565 members across the Greater Victoria region, suggesting that Modo is growing in popularity.³ The subject site is a 6-minute walk to a Modo vehicle, which is located at Esquimalt Road and Carlton Terrace. Another carsharing vehicle will be included in the multi-family residential development under construction at 826 Esquimalt Road, which is about a 10-minute walk from the subject site.⁴

2.0 PROPOSED DEVELOPMENT

The proposal is for 102 multi-family residential units comprising 93 condominium units and 9 townhouses. The site will be condominium subject to strata ownership and will consist of a combination of junior one-bedroom, one-bedroom, one-bedroom plus den, two-bedroom, two-bedroom plus den, and three-bedroom units. See **Table 1**. The unit area ranges from 388 sq.ft. to 1087 sq.ft.

TABLE 1. SUMMARY OF PROPOSED DEVELOPMENT

Unit Type		Quantity	Approx. Floor Area
Condominium	Junior One-Bedroom	9	388-420 sq.ft.
	One-Bedroom	52	484-603 sq.ft.
	One-Bedroom + Den	4	732 sq.ft.
	Two-Bedroom	16	635-958 sq.ft.
	Two-Bedroom + Den	7	807-958 sq.ft.
	Three-Bedroom	5	1001 sq.ft.
Townhouses	Two-Bedroom	3	969 sq.ft.
	Two-Bedroom + Den	6	1087 sq.ft.
TOTAL		102	

³ Email correspondence with Modo’s Business Development Manager on November 14, 2018.

⁴ Staff report can be found online at: <https://esquimalt.ca.legistar.com/LegislationDetail.aspx?ID=3663&GUID=B883D3FE-6D24-4C02-9550-0339E2D847A4>. Staff Report-DEV-16-002.

According to Schedule B of the Official Community Plan (OCP)⁵, the proposed land use designation for the site is Medium-Residential, which would allow a Floor Area Ratio of up to 2.0, and up to six storeys in height.

2.1 PROPOSED PARKING SUPPLY

The proposed parking supply is 102 spaces—a parking supply rate of 1.00 space per unit. The proposal also includes the provision of 150 long-term bike parking spaces (1.47 bike parking spaces per unit) and a six-space bike rack at the building entrance.

3.0 PARKING REQUIREMENT

The Township of Esquimalt Parking Bylaw No. 2011⁶ identifies a minimum parking supply rate of 1.3 spaces per unit for Medium and High Density Apartment uses and 2 spaces per townhouse unit. Applied to the subject site, this results in a requirement of 121 parking spaces for the condominium units, and 18 for the townhouse units. The Bylaw also requires that 1 of every 4 required spaces are reserved for visitors, which results in 35 parking spaces. Therefore, the total required parking for the site is 174 parking spaces.

4.0 EXPECTED PARKING DEMAND

Expected parking demand is estimated in the following sections based on observations of representative sites, vehicle ownership data from past studies, and parking supply rates approved by Council in recently constructed condominium buildings in Esquimalt.

4.1 RESIDENT PARKING, CONDOMINIUM

4.1.1 OBSERVATIONS

Observations of parked vehicles were completed for seven representative sites within Esquimalt to determine an appropriate parking demand rate for the subject site. Study sites are generally located in central Esquimalt with similar walkability, access to public transit, and cycling routes as the proposed site. All study sites are condominium buildings.

Observations were conducted on Tuesday February 26, 2019 and Wednesday February 27 2019 between 9:00pm and 10:00pm. All representative sites have surface parking, which allowed for access to complete counts of parked vehicles.

Results indicate an average peak parking demand of 0.80 vehicles per unit (rounded) with rates ranging from 0.66 to 0.91 vehicles per unit. See **Table 2**.

⁵ Township of Esquimalt. (2018). Township of Esquimalt Official Community Plan. Available online at: https://www.esquimalt.ca/sites/default/files/docs/business-development/OCP/2018/toe_adopted_official_community_plan_2018_0.pdf

⁶ The Township's Zoning Bylaw is available online at: www.esquimalt.ca/sites/default/files/docs/municipal-hall/bylaws/parking_bylaw_2011_july.pdf

TABLE 2. SUMMARY OF OBSERVATIONS AT REPRESENTATIVE SITES

Location	Number of Units	Tues, Feb 26 2018 @ 9:30pm		Wed, Feb 27 2018 @ 9:30pm	
		Vehicles	Rate	Vehicles	Rate
885 Ellery Street	21	18	0.86	17	0.81
848 Esquimalt Road	51	37	0.73	33	0.65
830 Esquimalt Road	22	19	0.91	20	0.91
614 Fernhill Place	22	19	0.86	18	0.82
1124 Esquimalt Road	29	19	0.66	16	0.55
726 Lampson Street	33	26	0.79	23	0.70
1121 Esquimalt Road	20	13	0.70	14	0.70
		Average	0.80		0.73

4.1.2 ADJUSTMENT FACTORS

Observations are a useful method of assessing parking demand rates; however, there are limitations. One such limitation is the fact that an observation may not “catch” all residents while they are home with their parked car on-site. On a typical weeknight, it can be expected that some residents return home very late at night or in the next morning or have driven out of town for business or vacation.

A large scale apartment parking study commissioned by Metro Vancouver reported that observations of parking occupancy (percent of stalls occupied by a car or truck) increased later in the night.⁷ One study specifically reported that peak resident parking demand typically reaches 100% between 12am and 5am.⁸

Based on the available research, a conservative 10% adjustment factor is considered appropriate for the observations.

Table 3 shows the difference between the observed parking demand⁹ and the adjusted parking demand rate, reflecting the 10% increase for “missed vehicles”. The average observed demand rate increased from 0.80 to 0.90 vehicles per unit (rounded).

⁷ Metro Vancouver. (2012). The Metro Vancouver Apartment Parking Study, Technical Report. Available online at: http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

⁸ Cervero, R., Adkins, A & Sullivan, C. (2010). *Are Suburban TODs Over-Parked?* Journal of Public Transportation, 13(2), 47-70.

⁹ Note: the observed parking demand rate shown in the table reflects the peak demand from the two observation periods.

TABLE 3. ADJUSTED PARKING DEMAND AT REPRESENTATIVE SITES

Address	Number of Units	Parking Demand Rate (vehicles per unit)	Adjusted Parking Demand Rate (vehicles per unit)
885 Ellery Street	21	0.86	0.94
848 Esquimalt Road	51	0.73	0.80
830 Esquimalt Road	22	0.91	1.00
614 Fernhill Place	22	0.86	0.95
1124 Esquimalt Road	29	0.66	0.72
726 Lampson Street	33	0.79	0.87
1121 Esquimalt Road	20	0.70	0.77
	Average	0.80	0.90

4.1.3 PRECEDENT SITES

826 Esquimalt Road

An adjusted parking demand rate of 0.90 vehicles per unit is in line with a recently (2018) constructed condominium building in the Township located at 826 Esquimalt Road. The building was approved by the Township to provide 24 parking spaces, or 0.80 spaces per unit (30 unit building).¹⁰ 826 Esquimalt Road shares a number of similar land use characteristics as the subject site including its walkability and location on a Frequent Transit Corridor.

Esquimalt Town Center

A 2016 parking study was completed for the Esquimalt Town Centre, which is a large scale mixed use urban centre currently under construction. The parking study included vehicle ownership data for a number of condominium sites in proximity to the subject site. The study reported and ultimately recommended a parking demand rate of 0.96 vehicles per unit for the proposed condominium units.¹¹

The parking / vehicle ownership data from both 826 Esquimalt Road and the Esquimalt Town Centre indicate that a rate 0.90 resident vehicles per unit is generally appropriate for condominium buildings located in this part of Esquimalt.

¹⁰ Staff report can be found online at: <https://esquimalt.ca.legistar.com/LegislationDetail.aspx?ID=3663&GUID=B883D3FE-6D24-4C02-9550-0339E2D847A4>. Staff Report-DEV-16-002.

¹¹ Boulevard Transportation Group. (2016). Esquimalt Town Centre Parking Study. Available online at: https://www.esquimalt.ca/sites/default/files/docs/municipal-hall/EVP/schedule_m_parking_study.pdf

4.1.4 PARKING DEMAND BY UNIT TYPE

There is a significant amount of research concluding that parking demand varies based on unit size, that is, the greater the number of bedrooms, the higher the parking demand.¹² For each representative site, the total parking demand can be further assessed by unit size (i.e., number of bedrooms). Parking demand by unit size was calculated using:

1. Adjusted peak parking demand at each site;
2. The floor area of each unit, organized by unit type (e.g., one-bedroom, two-bedroom, etc.)^{13,14}; and
3. The assumed “ratio differences” in parking demand between each unit type based on the King County Metro¹⁵ study, which recommends one-bedroom units have a 20% higher parking demand than bachelor units; two-bedroom units have a 60% higher parking demand than one-bedroom units; and three-bedroom units have a 15% higher parking demand than two-bedroom units.

Only one of the representative sites (1124 Esquimalt Road) had units of comparable size to the three-bedroom units proposed (i.e., greater than 1,000 square feet). However, with only one representative site having three-bedroom units, the three-bedroom demand rate could not be reliably derived from the data.

To estimate the three-bedroom demand rate, the assumed ratio from the King County Metro study was applied. The study indicates that three-bedroom units have 15% higher parking demand than two-bedrooms. Therefore, a 15% adjustment factor results in a rate of 1.15 per unit, or 6 vehicles for the three-bedroom units.

Results indicate average parking demand among these sites, by unit type, as follows:

- Bachelor Units (9) = 0.60 vehicles per unit, 5 vehicles
- One-Bedroom Units (56) = 0.70 vehicles per unit, 39 vehicles
- Two-Bedroom Units (23) = 1.00 vehicle per unit, 23 vehicles
- Three-Bedroom Units (5) = 1.15 vehicle per unit, 6 vehicles

¹² Metro Vancouver. (2018). 2018 Regional Parking Study Technical Report, pg. 18. Available online at: http://www.metrovancouver.org/boards/RegionalPlanning/RPL_2019-Mar-8_AGE.pdf

¹³ The unit size for the seven representative sites was obtained from BC Assessment's e-valueBC tool, which presents current floor area, property value and recent sales for over 2 million provinces in the province. More information is available online: <https://evaluatebc.bcassessment.ca/Default.aspx>

¹⁴ Note: The proposed development includes a variety of unit types such as junior one-bedroom, one-bedrooms, one-bedroom plus den, etc. For the purposes of the parking demand analysis by unit type, each unit type was classified into four distinct categories based on their floor areas, as follows: [a] bachelor; [b] one-bedroom; [c] two-bedroom; and [d] three-bedroom. This allowed the project team to organize the representative units into unit size thresholds, which allows a more accurate demand rate to be inferred. Further, once the data were organized by unit size thresholds, the assumed ratio differences from the King County Metro study could be directly applied.

¹⁵ King County Metro. (2013). Right Size Parking Model Code. Table 2, page 21. Available online at: <http://metro.kingcounty.gov/programs-projects/right-size-parking/pdf/140110-rsp-model-code.pdf>

The results of this analysis conclude that resident parking demand for the condominium units will be 73 vehicles. See **Table 4**.

TABLE 4. PARKING DEMAND AT REPRESENTATIVE SITES, BY UNIT SIZE

Site	Vehicle Ownership Rate (vehicles / unit)			
	Parking Demand (vehicles / unit)	Bachelor	One-Bedroom	Two-Bedroom
885 Ellery Street	0.94	0.57	--	1.09
848 Esquimalt Road	0.80	0.58	0.70	1.11
830 Esquimalt Road	1.00	0.61	0.73	1.18
614 Fernhill Place	0.95	--	--	1.00
1124 Esquimalt Road	0.72	--	--	0.65
726 Lampson Street	0.87	0.52	--	1.00
1121 Esquimalt Road	0.77	--	0.54	0.86
Average	0.90	0.60	0.70	1.00

4.2 RESIDENT PARKING, TOWNHOUSES

There are 9 two-bedroom townhouse units proposed for the site, ranging from 969 to 1087 sq.ft. Based on the latest ITE Parking Generation Manual condo units and townhouses are considered to have similar parking demand rates. Therefore, by taking into consideration the floor areas of the proposed townhouse units, it is expected that the two-bedroom townhouse units will have comparable parking demand to the three-bedroom condo units at 1.15 spaces per unit.

In summary, parking demand for the townhouse units is as follows:

- Two-Bedroom Units (9) = 1.15 vehicle per unit, 10 vehicles

The results of this analysis conclude that resident parking demand for the townhouse units will be 10 vehicles.

4.3 VISITOR PARKING

Observations were conducted as part of a study by Metro Vancouver¹⁶ that concluded typical visitor parking demand is less than 0.1 vehicles per unit. This is similar to observations that were conducted for parking studies in the City of Langford and the City of Victoria, and indicates that visitor parking demand is not strongly influenced by location.

¹⁶ Metro Vancouver Apartment Parking Study, Technical Report, 2012. Available online at: http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

As such, it is estimated that visitor parking demand will be no more than 0.1 vehicles per unit, or 10 vehicles.

4.4 SUMMARY OF EXPECTED PARKING DEMAND

Expected parking demand is 93 vehicles, which is nine less than what is proposed. See **Table 5**.

TABLE 5. SUMMARY OF EXPECTED PARKING DEMAND

Land Use		Units	Expected Parking Demand	
			Rate	Total
Resident, Condos	Bachelor (i.e., junior one-bedroom)	9	0.60	5
	One-Bedroom	56	0.70	39
	Two-Bedroom	23	1.00	23
	Three-Bedroom	5	1.15	6
Resident, Townhouses	Two-Bedroom	9	1.15	10
Visitor		102	0.1	10
Total Expected Parking Demand				93

5.0 ON-STREET PARKING

On-street parking conditions were observed surrounding the site on Esquimalt Road (from Fraser Street to Head Street) and Lampson Street (from Fernhill Road to Lyall Street). Parking restrictions on these road segments are either unrestricted, no parking 7am-9am or there is no parking available. See **Appendix A** for a summary of the on-street parking results.

Observations were completed during weekday evenings to reflect the anticipated “peak” periods. Observations were conducted during the following time periods:

- Tuesday February 26, 2019 at 9:00pm
- Wednesday February 27, 2019 at 9:00pm

Peak occupancy was observed on Tuesday when available parking was 47% occupied, with 31 parking spaces still available. This demonstrates there is sufficient availability of parking in case, for example, visitors to the subject site decide to park on-street and not in the designated visitor parking spaces.

6.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management (TDM) is the application of strategies and policies to influence individual travel choice, most commonly to reduce single-occupant vehicle travel. TDM measures can be pursued to encourage sustainable travel, enhance travel options and decrease parking demand.

Even though the site's proposed parking supply is anticipated to accommodate demand, there are at least two TDM strategies that the applicant can pursue to discourage vehicle ownership at the site and align with policy in the Township's OCP. These include a carsharing program and transit passes, discussed below.

6.1 CARSHARING

The Modo Car Cooperative ("Modo") is the most popular carsharing service in Greater Victoria and currently operates in the Township of Esquimalt. As indicated in **Section 1.2**, there is currently one Modo vehicle located in the Skyline Residences at 924 Carlton Terrace (Esquimalt Road/Head Street) and a second vehicle will be included in the multi-family residential development under construction at 826 Esquimalt Road.¹⁷ According to Section 3.8 of Esquimalt's OCP, carsharing is specifically identified as a transportation best practice that can help the Township achieve GHG emissions reductions.¹⁸ Moreover, Section 13.3.6 specifically includes a policy to "encourage the inclusion of carshare in new multi-family residential developments".¹⁹

The applicant is committing to a carsharing program at the site. Specifically, they are supportive of providing a carshare membership for each unit, which would allow residents to access nearby carshare vehicles without paying the up-front membership cost (the resident would only pay for usage fees). The cost to the applicant would be approximately \$49,000 (98 units X \$500 non-refundable membership). The applicant is also willing to provide a carshare vehicle at the site and would need to work with Modo and Township staff to determine where a designated carsharing parking space could be located.

Research has shown that carsharing programs have a significant impact on reducing vehicle ownership and thereby lowering parking demand. Below is a summary of key findings:

- One of the most comprehensive North American studies to date surveyed 6,281 households in carsharing organizations across the continent. The study found a statistically significant decrease in average vehicle ownership from 0.47 to 0.24 vehicles

¹⁷ Staff report can be found online at: <https://esquimalt.ca.legistar.com/LegislationDetail.aspx?ID=3663&GUID=B883D3FE-6D24-4C02-9550-0339E2D847A4>. Staff Report-DEV-16-002.

¹⁸ Township of Esquimalt. (2018). Township of Esquimalt Official Community Plan. Available online at: https://www.esquimalt.ca/sites/default/files/docs/business-development/OCP/2018/toe_adopted_official_community_plan_2018_0.pdf

¹⁹ Ibid.

per household among households that joined carshare services, an approximately 50% reduction in vehicle ownership.²⁰

- A study of carshare programs in the City of Toronto found that vehicle ownership rates at condominium sites without carshare vehicles was 1.07 vehicles per unit, whereas buildings with one or more carshare vehicles had significantly lower rates at 0.53 vehicles per unit, which represents a 50% reduction in vehicle ownership rates.²¹
- A 2013 study from the City of Toronto looked at the relationship between the presence of carsharing in a residential building and its impact on vehicle ownership. This was one of the first studies to examine this relationship at the building level as previous research explored impacts at the neighbourhood or city level. The study surveyed residents of buildings with and without dedicated carshare vehicles. According to the author's regression model, the presence of dedicated carshare vehicles had a statistically significant impact on reduced vehicle ownership and parking demand.²²
- Two studies from Metro Vancouver explored the impact of carsharing on vehicle ownership. Over 3,400 carshare households participated in the study. The key findings are as follows:
 - On average, up to 3 private personal vehicles were shed per carshare vehicle.
 - A regression analysis found that those living in rental housing and in a smaller household size are statistically more likely to give up vehicle ownership compared to the reference case.²³
 - The number of carshare vehicles within walking distance has a small but statistically significant relationship with apartment household vehicle holdings.²⁴

Some municipalities use their development regulations and off-street parking requirements to provide a parking reduction in exchange for a carsharing program. The City of Vancouver, as an example, allows for a reduction of five spaces for each carshare vehicle purchased and parked on-site²⁵, where a model regulation for King County (Seattle) suggests a reduction of four spaces.²⁶

²⁰ Martin & Shaheen. (2011). The Impact of Carsharing on Household Vehicle Ownership. Access Magazine, Spring 2011. Available online at: http://sfpark.org/wp-content/uploads/carshare/access38_carsharing_ownership.pdf

²¹ City of Toronto. (2009). Parking Standards Review: Examination of Potential Options and Impacts of Car Share Programs on Parking Standards. Available online at: https://www1.toronto.ca/city_of_toronto/city_planning/zoning_environment/files/pdf/car_share_2009-04-02.pdf

²² Engel-Yan, D., & D. Passmore. (2013). Carsharing and Car Ownership at the Building Scale. *Journal of the American Planning Association*, 79(1), 82-91.

²³ Ibid, pg. 54.

²⁴ Metro Vancouver. (2014). The Metro Vancouver Car Share Study: Technical Report. Available online at: <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/MetroVancouverCarShareStudyTechnicalReport.pdf>

²⁵ Refer to City of Vancouver Bylaw no.6059, Section 3.2.2, available at: <http://vancouver.ca/your-government/parking-bylaw.aspx>

²⁶ King County Metro, Right Size Parking Model Code, December 2013, pg21, available at: <http://metro.kingcounty.gov/programs-projects/right-size-parking/pdf/140110-rsp-model-code.pdf>

Overall, the research cited above confirms that proximate access to a carshare vehicle and the provision of memberships is associated with reduced vehicle ownership and parking demand and is therefore appropriate as a TDM measure for the site. With the provision of carshare memberships (\$500 per unit), a 10% reduction in resident parking demand is supported. If the applicant also provides a carsharing vehicle on-site, a total 15% reduction in resident parking demand is supported. A 15% reduction would lower resident parking demand by approximately 12 vehicles lowering demand from 83 to 71 vehicles.

6.2 TRANSIT PASSES

As discussed in **Section 1.2**, the site has excellent transit access and as the Transit Future Plan becomes implemented, transit service is anticipated to improve significantly, which will make transit more appealing to future residents. In addition, Section 11.4 of the Township's OCP outlines a number of policies that support transit including "support densification along frequent and regional transit routes".²⁷

Consideration may be given to providing a subsidized transit pass program for residents. BC Transit offers monthly transit passes for regular customers. Residents of each residential unit would be provided with monthly transit passes upon move-in for a defined time period (i.e., one to three years). The developer contribution could be a full subsidy or a fund set aside for 50-50 matching (the latter helps ensure that contributions are used to subsidize transit among only those that use it).

BC Transit previously offered a program called the "EcoPASS", which was transit pass program for multi-family residential buildings to incentivize transit use. However, this program is no longer active. The applicant could consider approaching BC Transit to learn about whether a similar program will be implemented in the future and/or how best to support the provision of monthly transit passes for residents.

Research on the impact of a transit pass on parking demand in condominium buildings is limited; however, other jurisdictions have implemented transit pass programs similar to EcoPASS. The ORCA Multifamily Development Passport in King County, Washington is an annual transportation pass that property managers can offer to residents where the costs are either covered in full by the property manager or through a 50% subsidy. This pass gives residents comprehensive access to transit services in the Puget Sound Region, including local and express bus service, Link light rail, and Sounder commuter rail, among others.²⁸

Developers / property managers such as Sustainable Kirkland LLC are actively participating in the program. One of their properties offers the passport to all 290 residential units at a cost of

²⁷ Township of Esquimalt. (2018). Township of Esquimalt Official Community Plan. Available online at: https://www.esquimalt.ca/sites/default/files/docs/business-development/OCP/2018/toe_adopted_official_community_plan_2018_0.pdf

²⁸ King County Metro. (2018). ORCA Multifamily Development Passport. Available online at: <https://kingcounty.gov/depts/transportation/metro/fares-orca/orca-cards/multifamily-passport.aspx>

\$24,000 USD (~\$83 USD per unit). Since the program was introduced at the property, transit ridership has increased by 150% among residents.²⁹ It was reported that the ORCA program is generally successful once initially adopted by a property manager; however, where the program has had challenges is the inability for property managers to secure ongoing funding to continue the program for its tenants.³⁰

If the applicant is able to secure and administer a transit pass program, it is anticipated that parking demand will be lower at the site. However, a parking demand reduction cannot be calculated at this time until the specifics of such a program are known.

7.0 SUMMARY

The proposed development is for 102 units and 102 off-street parking spaces—a parking supply rate of 1.00 space per unit. The Township’s Parking Bylaw identifies a required minimum parking supply of 174 parking spaces, which is 72 spaces more than what is proposed.

Parking demand was estimated for the site based on observations of representative sites, vehicle ownership data from past studies, and parking supply rates approved by Council in recently constructed condominium buildings in Esquimalt. Results indicate an expected parking demand of 83 resident vehicles and 10 visitor vehicles—a total site parking demand of 93 vehicles. Site parking demand is expected to be accommodated within the proposed off-street parking supply and without impacting the surrounding neighbourhood.

Both carsharing (memberships + vehicle) and transit passes were identified as TDM strategies that the applicant could pursue to discourage vehicle ownership at the site and thereby lower the need for parking as well as to align with policy in the Township’s OCP. The applicant is committing to a carsharing program, which could reduce resident parking demand by as much as 12 vehicles.

7.1 RECOMMENDATION

Based on the results in this study, it is recommended that the Township grant the requested variance to the minimum parking supply to allow for the provision of 102 parking spaces (1.00 space per unit).

²⁹ Email correspondence with King County Senior Transportation Planner on November 26, 2018.

³⁰ Ibid.

Esquimalt Rd/Lampson St Parking Study
On-Street Parking Observations

Road Segment		Side	Parking Supply	Parking Restriction	Tuesday February 26, 2019 9:00pm		Wednesday February 27, 2019 9:00pm	
					Observed Vehicles	Occupancy	Observed Vehicles	Occupancy
Esquimalt Rd	Fernhill Rd - Lampson St	N	No Parking					
	Fraser St - Joffre St	S	4	Unrestricted	3	75%	2	50%
	Joffre St - Lampson St	S	No Parking					
	Lampson St - Head St	N	6	No Parking, 7am-9am	2	33%	0	0%
	Lampson St - Macaulay St	S	19	Unrestricted	17	89%	15	79%
	Macaulay St - Head St	S	No Parking					
Lampson St	Lampson Pl - Wordsley St	E	No Parking					
	Wordsley St - Esquimalt Rd	E	No Parking					
	Fernhill Rd - Norma Ct	W	No Parking					
	Norma Ct - Esquimalt Rd	W	8	Unrestricted	2	25%	1	13%
	Esquimalt Road - Lyall St	E	No Parking					
	Esquimalt Road - Lyall St	W	21	Unrestricted	3	14%	8	38%
			58		27	47%	26	45%



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Tree Resource Spreadsheet Methodology and Definitions

Tag: Tree identification number on a metal tag attached to tree with nail or wire, generally at eye level. Trees on municipal or neighboring properties are not tagged.

NT: No tag due to inaccessibility or ownership by municipality or neighbour.

DBH: Diameter at breast height – diameter of trunk, measured in centimetres at 1.4m above ground level. For trees on a slope, it is taken at the average point between the high and low side of the slope.

* Measured over ivy

~ Approximate due to inaccessibility or on neighbouring property

Crown Spread: Indicates the diameter of the crown spread measured in metres to the dripline of the longest limbs.

Relative Tolerance Rating: Relative tolerance of the tree species to construction related impacts such as root pruning, crown pruning, soil compaction, hydrology changes, grade changes, and other soil disturbance. This rating does not take into account individual tree characteristics, such as health and vigour. Three ratings are assigned based on our knowledge and experience with the tree species: Poor (P), Moderate (M) or Good (G).

Critical Root Zone: A calculated radial measurement in metres from the trunk of the tree. It is the optimal size of tree protection zone and is calculated by multiplying the DBH of the tree by 10, 12 or 15 depending on the tree's Relative Tolerance Rating. This methodology is based on the methodology used by Nelda Matheny and James R. Clark in their book "Trees and Development: A Technical Guide to Preservation of Trees During Land Development."

- 15 x DBH = Poor Tolerance of Construction
- 12 x DBH = Moderate
- 10 x DBH = Good

To calculate the critical root zone, the DBH of multiple stems is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. It should be noted that these measures are solely mathematical calculations that do not consider factors such as restricted root growth, limited soil volumes, age, crown spread, health, or structure (such as a lean).

Health Condition:

- Poor - significant signs of visible stress and/or decline that threaten the long-term survival of the specimen
- Fair - signs of stress
- Good - no visible signs of significant stress and/or only minor aesthetic issues

Structural Condition:

- Poor - Structural defects that have been in place for a long period of time to the point that mitigation measures are limited
- Fair - Structural concerns that are possible to mitigate through pruning
- Good - No visible or only minor structural flaws that require no to very little pruning

Retention Status:

- X - Not possible to retain given proposed construction plans
- Retain - It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our **recommended mitigation measures are followed**
- Retain * - See report for more information regarding potential impacts
- TBD (To Be Determined) - The impacts on the tree could be significant. However, in the absence of exploratory excavations and in an effort to retain as many trees as possible, we recommend that the final determination be made by the supervising project arborist at the time of excavation. The tree might be possible to retain depending on the location of roots and the resulting impacts, but concerned parties should be aware that the tree may require removal.
- NS - Not suitable to retain due to health or structural concerns



Talbot Mackenzie & Associates

Consulting Arborists

**1100-1108 Esquimalt Road and
610-612 Lampson Street, Esquimalt**
Construction Impact Assessment &
Tree Preservation Plan

PREPARED FOR: GT Mann Contracting Ltd.
1551 Broadmead Ave.
Victoria, BC
V8P 2V1

PREPARED BY: Talbot, Mackenzie & Associates

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ISA Certified # PN-8409A
TRAQ – Qualified

DATE OF ISSUANCE: February 21, 2019
Updated: November 1, 2019

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Talbot Mackenzie & Associates

Consulting Arborists

Jobsite Property: 1100-1108 Esquimalt Rd and 610-612 Lampson St, Esquimalt
Date of Site Visit: January 1-15 and July 4, 2018
Site Conditions: Five lots. No ongoing construction activity. Gradually increasing in elevation from south to north, with exposed rock outcrops at the north end.

Summary: All trees on the subject property are within or immediately adjacent to the proposed building or parkade footprints and will require removal (NT1-2, #1-32, #917-918, and #996-1000).

Trees NT3-NT11 are either under the ownership of the west neighbour or shared. Trees NT3-NT5 are likely to be at least moderately impacted and we anticipate NT6 will likely be significantly impacted. It is our understanding the applicant would like to make an effort to retain these trees. There is also the potential for trees NT7-NT11 to be significantly impacted during construction of the proposed building and underground parkade. We recommend the project arborist supervise all excavation within the CRZs of these trees and determine at the time of excavation whether they remain suitable for long-term retention based on the number and size of roots encountered. We further recommend shoring techniques be used to minimize the extent of excavation outside the underground parkade footprint to limit root impacts to NT6-NT11. The project arborist must supervise any construction-related activity within their critical root zones, including demolition of the existing building and removal of the driveway slab at 1108 Esquimalt Rd.

Scope of Assignment:

- To inventory the existing bylaw protected trees and any trees on neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line
- Review the proposal to demolish the existing buildings and construct a housing complex with underground parking
- 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. All by-law protected trees on the five lots had numeric metal tags attached to their lower trunks; trees on municipal and adjacent properties were given identification numbers with a “NT” (No Tag) prefix. Information such as tree species, diameter at breast height (DBH, measured at 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 site and floor plans from Praxis Architects Inc. (dated 2019.02.15).

Limitations: No exploratory excavations have been requested and thus the conclusions reached are based solely on critical root zone calculations and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.

Summary of Tree Resource: 52 trees were inventoried. There are several large English Elms and European Ash trees along the south property boundary near Esquimalt Rd, as well as a grove of Garry Oaks in the backyards of the properties on Esquimalt Road growing among rock outcrops. Many of the trees have significant proportions of their trunks covered with ivy preventing a thorough examination of their trunks.

Trees to be Removed: 41 trees will require removal due to construction-related impacts:

- **Trees NT1-2, #1-32, #917-918, and #996-1000** are located within or immediately adjacent to the footprint of the proposed building and/or parkade

Trees with Retention Status “To be Determined”:

- **Elms NT3 (~70cm DBH) and NT5 (~55cm DBH):** Numerous large roots from these trees are likely to be encountered during excavation for construction of the ramp to the underground parkade, the surrounding retaining wall, and the footing for the support beam. The retaining wall is located approximately 5-5.5m from NT3 and 3.5m from NT5. We anticipate the health of NT5 is likely to be, at least, moderately impacted. Depending on the extent of excavation required west of the retaining wall to construct a footing, and the number and size of roots encountered, the health and possibly structural stability of these trees may be significantly impacted and they may require removal. It is our understanding that the applicant would like to attempt to retain these trees. Therefore, we recommend an arborist be on site to supervise all excavation within the trees’ CRZs, including removal of the existing driveway slab, and determine at the time of excavation whether they remain suitable for long-term retention. We recommend an effort be made to minimize the extent of excavation outside the footprint of the retaining wall.

Elm trees have extensive root systems and we anticipate a large number of roots to be encountered. They typically exhibit moderate to good tolerance to root disturbance, however. Root growth may be somewhat limited by the presence of the existing driveway to the east, depending on its permeability.

A parking space is also proposed to be constructed in the same location as the existing driveway adjacent to these trees. We recommend the existing base layers be used where possible to limit root disturbance. It will likely not be possible to excavate any farther without impacting the health and structure of the trees. To construct the new parking space, we recommend the methods in the “Paved Surfaces Above Tree Roots” section below are followed.

- **Garry Oak NT4** (~60cm DBH) is located approximately 3.5m from the proposed building and retaining wall to be constructed west of the ramp to the underground parkade. Depending on the extent of excavation required west of the wall, the extent of excavation required to construct the footing for the support beam, and the number and size of roots encountered, the health and possibly structural stability of the tree may be significantly impacted and it may require removal. We recommend an effort be made to limit the excavation towards the tree. The health of this tree is also likely to be significantly impacted by the crown pruning required to attain building clearance. Two ~15cm and one ~10cm limb, in addition to several smaller branches, will have to be pruned. We estimate at least one-third of the tree's crown will be removed. We recommend the pruning be conducted in two stages. The tree should first be pruned to provide only the necessary working room for building construction. Once framing is complete and interfering branches can be identified more definitively, overhanging branches should be pruned back to suitable laterals where possible. All pruning should be performed by an ISA Certified Arborist to ANSI A300 pruning standards.

It is our understanding that the applicant would like to attempt to retain this tree. We anticipate the health of this tree will be at least moderately impacted. We recommend the project arborist evaluate the cumulative impacts (crown and root pruning) and determine at the time of excavation whether the tree remains suitable for long-term retention.

A parking space is also proposed to be constructed in the same location as the existing driveway adjacent to this tree. We recommend the existing base layers be used where possible to limit root disturbance. It will likely not be possible to excavate any farther without impacting the health and structure of the tree. To construct the new parking space, we recommend the methods in the "Paved Surfaces Above Tree Roots" section below are followed.

- **Garry Oak NT6** (56cm DBH): The underground parkade footprint is proposed to be constructed approximately 2m to the northeast of this tree. A retaining wall along the west side of the parkade ramp is also located approximately 3.5m to the east. It is our understanding the applicant would like to attempt to retain this tree. We anticipate, however, that both the health and structural stability of this tree will be significantly impacted, and it will probably have to be removed. If an effort will be made to retain this tree, shoring techniques will need to be used to limit the extent of excavation at the southeast corner of the underground parkade and west of the ramp down to the parkade, as large structural roots are likely to be encountered in these areas. We anticipate several metres of excavation will be required within the ramp footprint and do not anticipate retaining any roots in this direction. We recommend an arborist be on site to supervise all excavation within the tree's critical root zone and determine at the time of excavation whether the tree is viable for long-term retention.
- **Trees NT7-NT11:** These trees are located west of the property boundary at the following distances from the underground parkade footprint:
 - **Elms NT07 and NT08** (both 8cm DBH): approximately 1.25m away
 - **Garry Oak NT09** (42cm DBH): approximately 2.25m away
 - **Douglas-fir NT10** (14cm DBH): approximately 3m away
 - **Douglas-fir NT11** (28cm DBH): approximately 3.5m away

If these trees are to be retained, particularly NT09 and NT11, excavation cannot occur up to the property line. If the trees are to be retained, shoring techniques will need to be used for construction of the underground parkade. Large structural roots are likely to be encountered and depending on the number and size of roots lost, the trees may not be suitable for long-term retention.

We recommend the project arborist be on site to supervise any excavation within the critical root zone of these trees. The neighbour should be notified of the proposed impacts to their trees. It should be noted that Douglas-firs NT10 and NT11 are in poor structural condition.

Potential Impacts on Trees to be Retained and Mitigation Measures

- **Garry Oaks #101** (36cm DBH) and **#102** (30, 20cm DBH) are located approximately 2m from the property line. The attached plans show the edge of the underground parkade will be constructed approximately 3-3.5m to the east. Health impacts could be significant if excavation occurs up to the property boundary, and we therefore recommend shoring techniques be used to limit the extent of excavation within their CRZs and that the project arborist supervise all excavation within their CRZs. The neighbour should be notified of the proposed impacts to their trees.
- **Service Connections:** Based on discussions with the applicant, it is our understanding that the underground water, storm, and sewer connections may be shifted slightly from where they are shown on the attached preliminary site servicing plan. We do not anticipate any of the trees to be retained will be impacted as long as no excavation occurs west of the driveway entrance ramp off Esquimalt Road. We were not provided any plans showing underground hydro connections.
 - **Water:** According to the preliminary servicing plans, the proposed water lateral will be located at the east side of the property off Lampson Street and should not impact any trees to be retained.
 - **Storm and Sewer:** According to the preliminary servicing plans provided, the storm drain and sanitary sewer laterals will be installed east of the entrance to the underground parkade, outside the critical root zones of any trees to be retained.
- **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. 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.

- Barrier fencing must be erected around trees NT3-NT11 as shown on the attached site survey following removal of the existing driveway slab to minimize soil compaction and to avoid damaging critical roots. The existing shrubbery at the base of the trees will provide a natural barrier to construction equipment accidentally damaging their trunks until the fencing is erected.
- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any severed or severely damaged roots 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:
 - Excavation for construction of the ramp, support beam, and underground parkade within the CRZs of trees NT3-NT11 and Garry Oaks #101 and #102.
 - Removal of the existing building and driveway slab at 1108 Esquimalt Road, which will occur within the CRZs of trees NT3-NT6
- **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.
- **Demolition of the Existing Buildings:** The demolition of the existing houses, driveways, and any services that must be removed or abandoned, must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision and direction of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.
- **Paved Surfaces Above Tree Roots:**

If the new paved surfaces within the CRZ of tree to be retained require excavation down to bearing soil and roots are encountered in this area, this could impact their health and structural stability. If tree retention is desired, a raised and permeable paved surface should be constructed in the areas within the critical root zone of the trees. The “paved surfaces above root systems” diagram and specifications is attached.

The objective is to avoid root loss and to instead raise the paved surface and its base layer above the roots. This may result in the grade of the paved surface being raised above the existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account. This may also result in soils which are high in organic content being left intact below the paved area.

To allow water to drain into the root systems below, we also recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilized by Grasspave, Gravelpave, Grasscrete and open-grid systems.

- **Mulching:** Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.
- **Blasting:** Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibration, and overall impact on the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used. Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.
- **Scaffolding:** This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see “Minimizing Soil Compaction” section).
- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. 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

- 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 site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

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

Yours truly,



Noah Borges
ISA Certified: #PN-8409A
TRAQ – Qualified

Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Encl. 4-page tree resource spreadsheet, 1-page site survey with trees, 9-page site plans, 1-page preliminary servicing plans, 1-page specification for constructing paved surfaces above tree roots, 1-page barrier fencing specifications, 2-page tree resource spreadsheet methodology and definitions

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.

Tree ID	Common Name	Latin Name	DBH (cm) *over ivy ~ approximate	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	By-Law Protected	Retention Status
1	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	42, 32, 22...	9.0	5	Good	Fair/poor	Moderate	Codominant union at base. Previously topped	Y	X
2	European Ash	<i>Fraxinus excelsior</i>	~15, 15, 12, 12	3.5	6	Good	Fair/poor	Moderate	Codominant union at base	Y	X
3	Western Red Cedar	<i>Thuja plicata</i>	28	4.0	4	Fair/poor	Fair	Poor	Asymmetric and sparse crown. Codominant union at 2m with included bark	Y	X
4	Western Red Cedar	<i>Thuja plicata</i>	40	6.0	6	Fair/poor	Fair	Poor	Sparse crown. Codominant union at 2m with included bark	Y	X
5	Western Red Cedar	<i>Thuja plicata</i>	34, 16	6.5	5	Fair/poor	Fair	Poor	Asymmetric and sparse crown. Codominant union at base. Crossing limbs	Y	X
6	Garry Oak	<i>Quercus garryana</i>	17	1.5	4	Fair	Fair	Good		Y	X
7	European Ash	<i>Fraxinus excelsior</i>	~50	6.0	10	Fair	Poor	Moderate	Ivy covering most of tree. Acute trunk bend, likely topped at 5m	Y	X
8	English Elm	<i>Ulmus minor</i>	~35	4.0	10	Fair	Fair	Moderate	Ivy covering most of tree. Leaning towards subject property. Secondary stem at base	Y	X
9	English Elm	<i>Ulmus minor</i>	~80	9.5	12	Fair	Poor	Moderate	Ivy covering most of tree. Leaning towards subject property. Previously topped at 2m	Y	X
10	European Ash	<i>Fraxinus excelsior</i>	43	5.0	3	Fair	Poor	Moderate	Ivy covering most of tree. Previously topped	Y	X
11	English Elm	<i>Ulmus minor</i>	66	8.0	10	Fair	Poor	Moderate	Previously topped at 3m. Cavities and poor limb attachments	Y	X
12	European Ash	<i>Fraxinus excelsior</i>	79*	9.5	12	Fair	Poor	Moderate	Ivy covering most of tree. Codominant union at 3m. One stem significantly decayed. Damaged surface roots	Y	X
13	European Ash	<i>Fraxinus excelsior</i>	16, 16, 15, 15	4.0	10	Good	Fair/poor	Moderate	Codominant union at base	Y	X

Tree ID	Common Name	Latin Name	DBH (cm) *over ivy ~ approximate	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	By-Law Protected	Retention Status
14	European Ash	<i>Fraxinus excelsior</i>	39	4.5	10	Fair	Fair	Moderate	Asymmetric crown. Deadwood. Minor trunk wounds	Y	X
15	Garry Oak	<i>Quercus garryana</i>	28*	3.0	8	Fair	Fair/poor	Good	Ivy covering most of tree leaning east	Y	X
16	Garry Oak	<i>Quercus garryana</i>	57, 48*	8.5	12	Fair	Fair/poor	Good	Ivy covering most of tree. Codominant union at base. 48cm stem nearly dead. Large deadwood. Leaning east over shed	Y	X
17	Garry Oak	<i>Quercus garryana</i>	69*	7.0	12	Fair	Fair	Good	Ivy covering most of tree. Codominant union at 3m. Growing next to rock outcrop	Y	X
18	Plum	<i>Prunus spp.</i>	25, 24*	4.5	6	Fair/poor	Fair/poor	Moderate	Ivy covering most of tree. Deadwood.	Y	X
19	English Elm	<i>Ulmus minor</i>	84*	10.0	12	Fair	Fair/poor	Moderate	Codominant union at 3m. Previously topped at 6m. Large cavity at 6m. Epicormic growth. Poor limb attachments. Ivy at base	Y	X
20	English Elm	<i>Ulmus minor</i>	75	9.0	10	Fair	Fair/poor	Moderate	Previously topped at 5m. Competing with oak. Large deadwood. Epicormic growth	Y	X
21	Garry Oak	<i>Quercus garryana</i>	33, 32	5.0	5	Good	Fair	Good	Clothesline in 32cm trunk. Leaning south. Small deadwood. Competing with oak	Y	X
22	Garry Oak	<i>Quercus garryana</i>	42	4.0	6	Good	Fair	Good	Few branches in lower crown. Slight lean	Y	X
23	Garry Oak	<i>Quercus garryana</i>	65	6.5	8	Fair	Fair	Good	Growing next to rock outcrop. Codominant union at 8m. Surface rooted. Cracks on branches in upper crown	Y	X
24	Garry Oak	<i>Quercus garryana</i>	67*	6.5	10	Fair/poor	Fair/poor	Good	Ivy covering most of tree. Deadwood and dieback. Slight lean west	Y	X
25	Garry Oak	<i>Quercus garryana</i>	24	2.5	4	Poor	Fair/poor	Good	Dieback. Leaning south	Y	X
26	Garry Oak	<i>Quercus garryana</i>	14	1.5	2	Fair/poor	Fair/poor	Good	Nearly dead. Leaning southwest	Y	X

Tree ID	Common Name	Latin Name	DBH (cm) *over ivy ~ approximate	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	By-Law Protected	Retention Status
27	Garry Oak	<i>Quercus garryana</i>	43	4.5	8	Fair	Fair	Good	Leaning west slightly. Branch stub at 7m	Y	X
28	Garry Oak	<i>Quercus garryana</i>	36	3.5	6	Good	Fair	Good	Small deadwood. Surface rooted	Y	X
29	Garry Oak	<i>Quercus garryana</i>	48*	5.0	6	Fair	Fair	Good	Ivy covering half of tree. Leaning slightly southwest. Deadwood. Competing with oak. Growing on rock outcrop	Y	X
30	Garry Oak	<i>Quercus garryana</i>	64*	6.5	14	Good	Fair	Good	Ivy covering most of trunk. Growing on rock outcrop	Y	X
31	Garry Oak	<i>Quercus garryana</i>	42	4.0	4	Fair/poor	Poor	Good	Severe trunk bend. Deadwood	Y	X
32	Garry Oak	<i>Quercus garryana</i>	33, 26	5.0	8	Fair/poor	Fair/poor	Good	Codominant union at base. Large deadwood. Acute trunk bends	Y	X
101	Garry Oak	<i>Quercus garryana</i>	36	3.5	8	Fair	Fair	Good	Neighbour's. 2m from fence	Y	Retain
102	Garry Oak	<i>Quercus garryana</i>	~30, 20	4.0	8	Fair	Fair	Good	Neighbour's. 2m from fence	Y	Retain
917	Garry Oak	<i>Quercus garryana</i>	39	4.0	8	Fair/poor	Fair	Good	Small deadwood. Large pruning wounds on main stem	Y	X
918	Garry Oak	<i>Quercus garryana</i>	33, 25, 18	6.0	8	Fair/poor	Fair/poor	Good	Tridominant union at base. Small deadwood. Damage to buttress root	Y	X
996	Garry Oak	<i>Quercus garryana</i>	22	2.0	6	Fair	Fair	Good	Some dieback. Codominant union at 3m	Y	X
997	Garry Oak	<i>Quercus garryana</i>	16	1.5	4	Fair/poor	Poor	Good	Large deadwood. Growing on a slope	Y	X
998	Garry Oak	<i>Quercus garryana</i>	21	2.0	5	Fair	Fair	Good	Leaning north. Growing at the top of slope	Y	X

Tree ID	Common Name	Latin Name	DBH (cm) *over ivy ~ approximate	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	By-Law Protected	Retention Status
999	Garry Oak	<i>Quercus garryana</i>	16	1.5	6	Fair	Fair	Good	Growing on slope	Y	X
1000	Garry Oak	<i>Quercus garryana</i>	60	6.0	12	Fair	Good	Good	Growing at top of slope	Y	X
NT1	European Ash	<i>Fraxinus excelsior</i>	~60	7.0	4	Fair	Poor	Moderate	Ivy covering most of tree. Deadwood. Previously topped	Y	X
NT2	English Elm	<i>Ulmus minor</i>	~100	12.0	8	Fair	Poor	Moderate	Ivy covering most of tree. Codominant union at 2m. Previously topped	Y	X
NT3	English Elm	<i>Ulmus minor</i>	~70	8.5	14	Fair	Fair	Moderate	Neighbour's. 2m from property line. Codominant union at 5m. Epicormic growth. Ivy at base	Y	TBD
NT4	Garry Oak	<i>Quercus garryana</i>	~60	6.0	12	Fair	Fair	Good	Shared. Codominant union at 3m. Ivy covers most of main stems. Competing with adjacent trees. Branch stubs. Minor dieback	Y	TBD
NT5	English Elm	<i>Ulmus minor</i>	55	6.5	10	Fair	Fair/poor	Moderate	Shared. Trunk bend at 2m, correcting. Competing with oak	Y	TBD
NT6	Garry Oak	<i>Quercus garryana</i>	56	5.5	8	Fair	Fair/poor	Good	Shared. Suppressed by elm. Deadwood. 1m X 20cm cavity at 6m. Large stub on main stem	Y	TBD
NT7	English Elm	<i>Ulmus minor</i>	8	1.0	2	Good	Fair	Moderate	Neighbour's. Adjacent to property line	N	TBD
NT8	English Elm	<i>Ulmus minor</i>	8	1.0	2	Good	Fair	Moderate	Neighbour's. Adjacent to property line. Ivy at base	N	TBD
NT9	Garry Oak	<i>Quercus garryana</i>	42	4.0	8	Fair/poor	Fair	Good	Neighbour's. 1m from fence line. Sparse crown. Deadwood	Y	TBD
NT10	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	2.0	3	Fair	Poor	Poor	Neighbour's. 1m from fence line. Failed top	Y	TBD
NT11	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	4.0	5	Good	Fair	Poor	Neighbour's. 1m from fence line	Y	TBD