CORPORATION OF THE TOWNSHIP OF ESQUIMALT

ADVISORY PLANNING COMMISSION
AGENDA
WEDNESDAY, MAY 18, 2016
7:00 P.M.
ESQUIMALT COUNCIL CHAMBERS

MEMBERS:	Nick Kovacs	David Schinbein
	Lorne Argyle	Amy Higginbotham
	Berdine Jonker	
REGRETS:	Graeme Dempster	
	Christina Hamer	
	Councillor Susan Low	
COUNCIL LIAISON:	Councillor Tim Morrison	
STAFF LIAISON:	Trevor Parkes, Senior Planner	
SECRETARY:	Simone Manchip	

I. CALL TO ORDER

II. LATE ITEMS

III. ADOPTION OF AGENDA

IV. ADOPTION OF MINUTES – APRIL 19, 2016

V. <u>STAFF REPORTS</u>

(1) DEVELOPMENT PERMIT and DEVELOPMENT VARIANCE PERMIT
925 Esquimalt Road
PID 003-329-127, Lot A, Section 11, Esquimalt District, Plan 22176

<u>Purpose of the Application</u>

The owner is proposing a new roof for the building which would include a new roof profile. The new roof is an alteration to the form and character of the subject Multi-Unit Residential Building therefore a Development Permit is required. The building is non-conforming to current Zoning Bylaw requirements for both height and siting. The new roof profile will further increase the height of the building; therefore the variance is required before a building permit can be issued

RECOMMENDATION:

That the Esquimalt Advisory Planning Commission [APC] provide Council with comments on the exterior alteration [new pitched roof] proposed for 925 Esquimalt Road as illustrated in the architectural drawings prepared by Keay Cecco Architecture Ltd., stamped "Received May 3, 2016", and including the following variances for the property at PID 003-329-127, Lot A, Section 11, Esquimalt District, Plan 22176 [925 Esquimalt Road] and make a recommendation **to either approve, or deny the application.**

Zoning Bylaw, 1992, No. 2050, Section 44 (4)(a) - Building Height: A 2.0 metre increase to the requirement that no principal building shall exceed a height of 11 metres. [ie. from 11 metres to 13.0 metres], specifically for a 3:12 pitch hip roof.

Zoning Bylaw, 1992, No. 2050, Section 44 (5)(a)(ii) – Siting Requirements – Principal Building: A 1.17 metre decrease to the requirement that no principal building shall be located within 6 metres of an Interior Side Lot Line. [ie. from 6 metres to 4.83 metres], specifically for existing balconies located on the east elevation and also for the north wall of the building.

(2) DEVELOPMENT PERMIT
741 Admirals Road
PID 004-338-596, Parcel B (DD139365I) of Lot 20, Section 10, Esquimalt District, Plan 913

Purpose of the Application

This application is for the removal of a restrictive covenant on the property, and for a development variance permit to legitimize the parking situation that has existed for several years. The current owner wishes to legalize a suite that was created by a previous owner, without the benefit of a building permit, and contrary to the covenant. The covenant must be removed and a variance permit issued before a building permit could be issued.

RECOMMENDATION:

That the Advisory Planning Commission recommends to Council that the application to discharge a restrictive Covenant from the property that would restrict development of additional suites within the building for the development located at PID 004-338-596, Parcel B (DD139365I) of Lot 20, Section 10, Esquimalt District, Plan 913 [741 Admirals Road], be forwarded to Council with a **recommendation to either approve, or deny the application**;

and

That the Advisory Planning Commission recommends to Council that the application for a Development Variance Permit authorizing the parking layout as shown on the site plan prepared by Robert G. Rocheleau, Praxis Architects Inc., stamped “Received May 4,2016 and including the following relaxations to Parking Bylaw, 1992, No. 2011, for the development located at PID 004-338-596, Parcel B (DD139365I) of Lot 20, Section 10, Esquimalt District, Plan 913 [741 Admirals Road], be forwarded to Council with a **recommendation to either approve, or deny the application**;

Parking Bylaw, 1992, No. 2011, Section 11 (1) - Visitor Parking – A reduction to the requirement that for land zoned multiple family residential 1 of every 4 spaces shall be clearly marked ‘Visitor’ and available for use by non-occupants of the Parcel at all times. [ie. from 1 of every 4, to 1 of every 12];

Parking Bylaw, 1992, No. 2011, Section 13(1)(a)(iv) – Parking Requirements – Number of Off-Street Parking Spaces – A reduction to the number of required off-street Parking Spaces, from 14 spaces to 12 spaces [ie. from 1.10 spaces per dwelling unit to 1.0 space per dwelling unit];

Parking Bylaw, 1992, No. 2011, Section 14(2)(a) Parking Requirements - Dimensions of Off–Street Parking – A change to the requirement that for multiple family residential land uses properties are permitted to dedicate up to 50% of parking spaces as small car spaces, allowing 60% of spaces to be small car spaces [ie. 8 of the 12 spaces would be small car sized spaces];

Parking Bylaw, 1992, No. 2011, Section 14 - Dimensions of Off–Street Parking Table 2 – A 0.2 metre reduction to the width of the maneuvering isle adjacent to 0º angle [parallel] parking from 3.7 metres to 3.5 metres for the maneuvering isle adjacent to the north property line;

Parking Bylaw, 1992, No. 2011, Section 14 - Dimensions of Off–Street Parking Table 2 – A 2.2 metre reduction to the width of the maneuvering isle adjacent to 90º angle parking from 7.9 metres to 5.7 metres for the maneuvering isle adjacent to the east property line

(3) DEVELOPMENT PERMIT
1038 Colville Road
Proposed Lot 1, 1038 Colville Road

Purpose of the Application

Comprehensive Development District No. 92 [CD-92] is located within Development Permit Area No. 5 – Enhance Design Control Residential. The Official Community Plan requires property owners with lands located within Development Permit Areas to obtain a Development Permit prior to a Building Permit being considered for the subject property. Accordingly, the applicant is seeking approval of Development Permit No. DP000067 for the form and character of the proposed single family infill home as well as the associated landscaping and hardscaping. The proposed design must be reviewed for compliance with the design guidelines contained in Section 9.9 of the Township's Official Community Plan [attached].

This application for Development Permit DP000067 will not move forward to Council until such time as the subdivision of 1038 Colville Road is complete and a new property title is registered for Proposed Lot 1. The subdivision application is pending approval at this time.

RECOMMENDATION:

The Advisory Planning Commission recommends to Council that the application for a Development Permit limiting the form and character of development to that shown on architectural plans and the landscape plan provided by Zebra Design, both stamped "Received April 27, 2016", and sited as detailed on the survey plan prepared by Powell and Associates BC Land Surveyors, stamped "Received April 27, 2016" and including exterior windows, cladding and colours consistent with the Colour Board provided by Zebra Design stamped "Received May 10, 2016" for the proposed development located at Proposed Lot 1, 1038 Colville Road, be forwarded to Council with a recommendation **to either approve, or deny the application.**

(4) DEVELOPMENT PERMIT
1040 Colville Road
Proposed Lot 2, 1038 Colville Road

Purpose of the Application

Comprehensive Development District No. 92 [CD-92] is located within Development Permit Area No. 5 – Enhance Design Control Residential. The Official Community Plan requires property owners with lands located within Development Permit Areas to obtain a Development Permit prior to a Building Permit being considered for the subject property. Accordingly, the applicant is seeking approval of Development Permit No. DP000068 for the form and character of the proposed single family infill home as well as the associated landscaping and hardscaping. The proposed design must be reviewed for compliance with the design guidelines contained in Section 9.9 of the Township's Official Community Plan [attached].

This application for Development Permit DP000068 will not move forward to Council until such time as the subdivision of 1038 Colville Road is complete and a new property title is registered for Proposed Lot 2. The subdivision application is pending approval at this time.

RECOMMENDATION:

The Advisory Planning Commission recommends to Council that the application for a Development Permit limiting the form and character of development to that shown on architectural plans and the landscape plan provided by Zebra Design, both stamped "Received April 27, 2016", and sited as detailed on the survey plan prepared by Powell and Associates BC Land Surveyors, stamped "Received April 27, 2016" and including exterior windows, cladding and colours consistent with the Colour Board provided by Zebra Design stamped "Received May 10, 2016" for the proposed development located at Proposed Lot 2, 1038 Colville Road, be forwarded to Council with a recommendation **to either approve, or deny the application.**

(5) OFFICIAL COMMUNITY PLAN AND REZONING APPLICATION
"Esquimalt Village Project"
1235 Esquimalt Road
Lot 1, Section 11, Plan EPP32782

Purpose of the Application

The purpose of the application is to amend the Official Community Plan and the Zoning Bylaw in order to allow for the development of the Esquimalt Village Project. The Esquimalt Village Project is a 12,795.1 m^2 mixed-use project proposed for an 8090 m^2 parcel located in the heart of the Township of Esquimalt adjacent to the existing Municipal Hall (Schedule "A"). The Esquimalt Village Project is envisioned as a model example of exemplary mixed-use design that will be the catalyst for the rejuvenation of Esquimalt's core.

RECOMMENDATION:

The Esquimalt Advisory Planning Commission recommends that the application to amend the Official Community Plan and to rezone the subject property to facilitate the development of the Esquimalt Village Project (EVP) be forwarded to Council with a recommendation to **approve, approve with conditions, or deny the application including reasons for the chosen recommendation.**

VI. PLANNER'S STATUS REPORT

VII. COUNCIL LIAISON

VIII. INPUT FROM APC TO STAFF

X. NEXT REGULAR MEETING

Tuesday, June 21, 2016

XI. ADJOURNMENT

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

ADVISORY PLANNING COMMISSION MEETING MINUTES
HELD ON
TUESDAY APRIL 19, 2016
ESQUIMALT COUNCIL CHAMBERS

MEMBERS PRESENT:	Nick Kovacs	Graeme Dempster
	Christina Hamer	Lorne Argyle
	Amy Higginbotham	David Schinbein
	Berdine Jonker	
REGRETS:		
STAFF LIAISON:	Trevor Parkes, Senior Planner	
COUNCIL LIAISON:	Councillor Susan Low	
	Councillor Tim Morrison	
SECRETARY:	Simone Manchip	

I. CALL TO ORDER

The meeting was called to order at 7:02 p.m. by the Chair.

II. LATE ITEMS

Introductions and Welcome New Member:
The Commission welcomed new member Berdine Jonker. Ms. Jonker introduced herself and provided an overview of her background and experience.

III. ADOPTION OF AGENDA

Trevor Parkes, Staff Liaison requested that the agenda be amended to add Introduction to new member Berdine Jonker under section II – Late Items.

Moved by Lorne Argyle seconded by Amy Higginbotham that the agenda be adopted as amended.
The Motion **CARRIED UNANIMOUSLY.**

IV. ADOPTION OF MINUTES – MARCH 15, 2016

Graeme Dempster requested that the minutes for the March 15, 2016 Advisory Planning Commission meeting be amended to reflect that he was not present for the meeting.

Moved by Lorne Argyle seconded by David Schinbein that the minutes of the Advisory Planning Commission held March 15, 2016 be adopted as amended.
The Motion **CARRIED UNANIMOUSLY.**

V. BUSINESS FROM MINUTES

There was no outstanding business from the Minutes.

VI. STAFF REPORTS

(1) DEVELOPMENT VARIANCE PERMIT
527 Fraser Street
Proposed Lot A, Section 11, Esquimalt District, Plan EPP60266 (Registration Pending)

Purpose of the Application

Trevor Parkes, Staff Liaison outlined that the Township of Esquimalt has, over a number of years, acquired three parcels on the east side of the 500 block of Fraser Street, abutting the Esquimalt Recreation Centre property. Parks and Recreation Services, with the approval of Council, plan to construct the "Fraser Street Adventure Park" on these three parcels and integrate the new facility into the Esquimalt Recreation Centre operations. Given the proposed use is institutional in nature as it represents an extension of the Recreation Centre and given Parks and Recreation Services desire to manage the Recreation Centre properties as one legal parcel, staff have coordinated required land surveys an undertaken consolidation of the three Fraser Street parcels with the Recreation Centre parcel to create one large property. Detailed design of the Fraser Street Adventure Park revealed the optimum location for the change room/ washroom building failed to comply with the P-1 Side setback regulation therefore a relaxation is required to be approval prior to the issuance of a Building Permit.

Analysis of the BCLS Site Plan and the titles of the four properties also revealed that a number of relaxations are required to legitimize the siting of existing buildings on the property therefore staff are including requests for these relaxations as part of this DVP application.

Scott Hartman, Director of Parks and Recreation presented the application.

APC Comments:

Members commented that they are excited about the project and feel that it is a positive addition to the Esquimalt community.

RECOMMENDATION:

Moved by David Schinbein, seconded by Lorne Argyle that the Advisory Planning Commission recommends to Council that the application for a Development Variance Permit authorizing the construction of the Fraser Street Adventure Park as shown on the site plan and landscape plan prepared by Craven/Huston/Powers Architects, stamped "Received April 4, 2016", and sited as detailed on the survey plan prepared by Powell and Associates, BC Land Surveyors stamped "Received April 4, 2016 and including the following relaxations to Zoning Bylaw, 1992, No. 2050, for the this development located at Proposed Lot A, Section 11, Esquimalt District, Plan EPP60266 (Registration Pending) [527 Fraser Street], be forwarded to Council with a recommendation **of approval.**

To accommodate the proposed new change room/ washroom building for the Fraser Street Adventure Park:

> **Zoning Bylaw, 1992, No. 2050, Section 58(4)(c) – Side Setback** a 2.2 metre relaxation to the requirement that no building shall be located within 4.5 metres of an Interior or Exterior Side Lot Line [i.e. from 4.5 metres to 2.3 metres]; and

To accommodate the existing Esquimalt Recreation Centre building and Lacrosse Box:

Zoning Bylaw, 1992, No. 2050, Section 58(4)(a) – Front Setback an exemption from the requirement that no building shall be located within 7.5 metres of a Front Lot Line [i.e. from 4.5 metres to 0.0 metres] to accommodate the Lacrosse Box; and

Zoning Bylaw, 1992, No. 2050, Section 58(4)(c) – Side Setback an exemption from the requirement that no building shall be located within 4.5 metres of an Interior or Exterior Side Lot Line [i.e. from 4.5 metres to 0.0 metres] to accommodate the Covered Bike Shelter; and

Zoning Bylaw, 1992, No. 2050, Section 58(4)(c) – Side Setback a 1.9 metre relaxation to the requirement that no building shall be located within 4.5 metres of an Interior or Exterior Side Lot Line [i.e. from 4.5 metres to 2.6 metres] to accommodate the Recreation Centre building; and

Zoning Bylaw, 1992, No. 2050, Section 58(5)(a) – Screening and Landscaping an exemption from the requirement that screening and landscaping shall be provided in accordance with Section 23, and

Zoning Bylaw, 1992, No. 2050, Section 58(5)(b) – Screening and Landscaping an exemption from the requirement that landscaping shall be provided along the entire Front Lot Line for a minimum width of 7.5 metres and along the Exterior Side Yard Setback for a minimum width of 4.5 metres except for points of ingress and egress.

The Motion **carried unanimously.**

VII. STAFF LIAISON

616/620 Lampson Street: APC recommended approval of the proposed changes to Zoning Bylaw, 1992, No. 2050 on November 17, 2015. The amendment Bylaw was presented to Council on January 18, 2016 and was granted 1st and 2nd reading. The Public Hearing occurred March 7, 2016 and Council read the bylaw a third time. Adoption of the amendment bylaw remains outstanding pending the registration of a S.219 covenant.

826 Esquimalt Road: APC recommended approval of the proposed changes to Zoning Bylaw, 1992, No. 2050 on December 15, 2015. The amendment Bylaw was presented to Council on January 4, 2016 and the amendment bylaw was granted 1st and 2nd reading. The Public Hearing occur on February 1, 2016 and Council read the bylaw a third time. Adoption of the amendment bylaw remains outstanding pending the registration of a S.219 covenant.

DRC reviewed the application for Development Permit on April 13, 2016. DRC requested the applicant amend the design and return the revised plan to DRC for review.

468 Head Street [West Bay Triangle]: [Rezoning for 6 Storey, 73 unit commercial mixed use] Presented to the APC on January 19, 2016 and forwarded to Council with a recommendation for approval. Application was presented to DRC on February 10, 2016. The DRC generally liked the application, but raised concerns relating to how the design would integrate with the future development to be located on the two properties to the southeast, adjacent to the Head St and Lyall St intersection. The DRC requested a siting and mass model for the future development of the southeast corner, as well as assurance that sufficient setbacks could be accommodated between this proposal and the future concept plan.

Esquimalt Village Project: A Memorandum of Understanding has signed with Aragon Investments to be the Township's development partner for the Esquimalt Village Plan. The EVP is proposed to consist of a 6 storey commercial mixed use building a five storey institutional building each located west of Town Hall and two 6 storey residential buildings located on the southern portion of the site. Upon completion of a detailed design an OCP amendment and rezoning application will be required.

Official Community Plan Review: Looking Forward Forum is scheduled for 7pm on May 4, 2016 at the Esquimalt Recreation Centre. The purpose of the ***Looking Forward Forum*** is to collect public input on the development of new policies in the following areas: Arts, Culture & Heritage / Community Health & Safety/ Economic Development/ Environment/ Parks, Trails & Recreation/ Planning & Development/ Transportation & Infrastructure.

VIII. COUNCIL LIAISON

Councilor Morrison commented that Council adopted a draft vision statement for the Official Community Plan.

Councilor Low commented that the CRD has asked Council to provide siting for two waste water treatment plant sites. Council will conduct two rounds of community engagement via Public Hearing and an online survey.

Councilor Morrison encouraged APC members to sign up for the Truth and Reconciliation Commission (TRC) Reading Challenge that will be taking place June 21, 2016.

Councilor Morrison commented that all of Council plan to attend the May 4, 2016 Official Community Plan Forum, and encourage APC members to attend.

IX. INPUT FROM APC TO STAFF

None

X. NEW BUSINESS

The Chair thanked staff for all of their hard work put into processing the Development applications.

XI. NEXT REGULAR MEETING

Wednesday, May 18, 2016

XII. ADJOURNMENT

On motion the meeting adjourned at 7:46 P.M.

CERTIFIED CORRECT:

_____ _____

VICE CHAIR, ADVISORY PLANNING COMMISSION ANJA NURVO,
CORPORATE OFFICER

THIS DAY OF , 2016

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

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

APC Meeting: May 18, 2016

STAFF REPORT

DATE: May 12, 2016

TO: Chair and Members of the Advisory Planning Commission

FROM: Karen Hay, Planner
Bill Brown, Director of Development Services

SUBJECT: **DEVELOPMENT PERMIT and DEVELOPMENT VARIANCE PERMIT**
925 Esquimalt Road
[PID 003-329-127, Lot A, Section 11, Esquimalt District, Plan 22176]

RECOMMENDATION:

That the Esquimalt Advisory Planning Commission [APC] provide Council with comments on the exterior alteration [new pitched roof] proposed for 925 Esquimalt Road as illustrated in the architectural drawings prepared by Keay Cecco Architecture Ltd., stamped "Received May 3, 2016", and including the following variances for the property at PID 003-329-127, Lot A, Section 11, Esquimalt District, Plan 22176 [925 Esquimalt Road] and make a recommendation **to either approve, or deny the application.**

Zoning Bylaw, 1992, No. 2050, Section 44 (4)(a) - Building Height: A 2.0 metre increase to the requirement that no principal building shall exceed a height of 11 metres. [ie. from 11 metres to 13.0 metres], specifically for a 3:12 pitch hip roof.

Zoning Bylaw, 1992, No. 2050, Section 44 (5)(a)(ii) – Siting Requirements – Principal Building: A 1.17 metre decrease to the requirement that no principal building shall be located within 6 metres of an Interior Side Lot Line. [ie. from 6 metres to 4.83 metres], specifically for existing balconies located on the east elevation and also for the north wall of the building.

BACKGROUND:

Purpose of the Application

The owner is proposing a new roof for the building which would include a new roof profile. The new roof is an alteration to the form and character of the subject Multi-Unit Residential Building therefore a Development Permit is required. The building is non-

conforming to current Zoning Bylaw requirements for both height and siting. The new roof profile will further increase the height of the building; therefore the variance is required before a building permit can be issued.

Context

Applicant: Matt Embury, Embury Steel Truss and Roof Supply

Architect: John Keay, Keay Cecco Architecture Ltd.

Owner: Michael Shore

Property Size: Metric: 3311.6 m^2 Imperial: 35645 ft^2

Existing Land Use: Multiple Family Apartment Residential

Surrounding Land Uses:

North: Commercial
South: Single and Two Family Residential
West: Multiple Family Apartment Residential
East: Commercial

Note: All projects are subject to compliance with the BC Building Code, Esquimalt Subdivision and Servicing Bylaw, Esquimalt Zoning Bylaw and other Regulations and Policies set by Council.

Development Permit Guidelines

The Official Community Plan Development Permit Area No. 1- Multi-Unit Residential Guidelines [attached] include the following guideline:

> The size and siting of buildings that abut existing single and two-unit and townhouse dwellings should reflect the size and scale of adjacent development and complement the surrounding uses. To achieve this, height and setback restrictions may be imposed as a condition of the development permit.

The subject property does abut an area of predominantly single and two-unit residential properties. Increasing the height and changing the roof line of an existing building could further emphasize the height difference between this building and smaller buildings in the area. The style of roof proposed should lessen any visual impact and the new roof should cause little increase to the shadowing from this building onto neighbouring properties.

Zoning

The existing building has a flat roof which is 11.89 metres above average grade and exceeds the 11.0 m maximum height currently allowed in the Multiple Family Residential [RM-4] zone [attached]. Adding the new pitched [hip] roof will further increase the height of the roof to 13.0 metres above average grade.

The building is also currently non-conforming with the east edge of the north wall and the balconies on the east side of the building projecting into the interior side setback. The setback variance simply removes the non-conformity for these features that have existed since 1969 and simplifies the process for future replacement of balcony materials. There is no work proposed for the balconies at this time.

Public Notification

As this is a development variance permit application, should it proceed to Council, a notice will be mailed to tenants and owners of properties within 50 metres (164 feet) of the subject property.

ALTERNATIVES:

1. Forward the application for a Development Variance Permit to Council with a **recommendation of approval.**

2. Forward the application for a Development Variance Permit to Council with a **recommendation of denial.**

925 Esquimalt Road

Development Permit Area No. 1 — Multi-Unit Residential

9.3.1 Scope

All land designated Multi-Unit Residential on Schedule "C" are part of DPA No. 1.

9.3.2 Category

Section 919(1)(f) of the *Local Government Act* — form and character, multi-family residential.

9.3.3 Justification

This Plan emphasizes the importance of protecting residential neighbourhoods and encouraging a high quality of construction for new development. It is essential that new multi-unit residential development not have a negative impact on, or be out of character with, existing residential neighbourhoods. The primary objective of Development Permit Area No. 1 is to ensure that the development of multi-unit residential sites is compatible with surrounding uses.

9.3.4 Requirements of Owners of Land within the Development Permit Area

a) Owners of land within Development Permit Area No. 1 must not do any of the following without first obtaining a development Permit in accordance with the guidelines for this Development Permit Area:

i) subdivide lands; or

ii) construct or alter a building or structure;

without first obtaining a Development Permit in accordance with the guidelines of this Development Permit Area.

b) Exemptions:

The following do not require a development permit:

i) construction of buildings or structures less than 10 square metres in area;

ii) minor additions to existing dwellings where the floor area of the addition does not exceed 10 percent of the ground floor area of the dwelling;

iii) emergency repairs to existing structures and public walkways where a potential safety hazard exists;

iv) fences;

v) the cutting of trees as permitted upon application under the municipal tree protection bylaw; and

vi) placement of signs less than 1.5 sq. metres in area.

9.3.5 Guidelines for Owners of Land within the Development Permit Area

a) The size and siting of buildings that abut existing single- and two-unit and townhouse dwellings should reflect the size and scale of adjacent development and complement the surrounding uses. To achieve this, height and setback restrictions may be imposed as a condition of the development permit.

b) New buildings should be designed and sited to minimize visual intrusion onto the privacy of surrounding homes and minimize the casting of shadows onto the private outdoor space of adjacent residential units.

c) High-density multi-unit residential buildings or mixed commercial/residential buildings in commercial areas with a zero front setback should be designed so that the upper storeys are stepped back from the building footprint, with lower building heights along the street front.

d) Landscaping of multi-unit residential sites should emphasize the creation of an attractive streetscape, as well as provide privacy between individual buildings and dwellings, screen parking areas and break up large expanses of paving.

e) Surface parking areas in multi-unit residential developments less than five storeys in height, will be situated away from the street and screened by berms, landscaping or solid fencing or a combination of these three.

f) Underground parking will be provided for any multi-unit residential buildings exceeding four storeys.

g) The retention of public view corridors particularly views to the water should be encouraged wherever possible.

h) To preserve view corridors and complement natural topography, stepped-down building designs are encouraged for sloping sites.

i) Retention and protection of trees and the natural habitat is encouraged wherever possible.

j) Townhouses will be designed such that the habitable space of one dwelling unit abuts the habitable space of another unit and the common wall overlap between adjoining dwellings shall be at least 50 percent.

k) Site lighting in multi-unit residential developments should provide personal safety for residents and visitors and be of the type that reduces glare and does not cause the spill over of light onto adjacent residential sites.

l) Garbage receptacle areas and utility kiosks should be screened by solid fencing or landscaping or a combination of the two.

m) For waterfront sites, retention of natural features and existing trees should be a priority in site planning considerations.

n) When any existing single-unit residence or duplex residence is being redeveloped to a multi-unit residential use by adding on of one or more dwelling units, such addition will be designed so that all of the units form a cohesive whole. In order to achieve cohesiveness:

   i) both, the existing and proposed structures will be in the same architectural style;

   ii) variations between the roofline of the existing building and any proposed addition(s) will be no greater than 1.5 metres;

iii) roof styles and pitches must be complementary;

iv) architectural features such as sloping roofs and dormers should be incorporated into the design to unite the various parts of the structure; and

v) the existing and proposed structure will be constructed using the same or complimentary exterior finishes including roofing materials, window treatments, door styles and other finishing details.

o) Within the area bounded by Tillicum, Craigflower, Lampson and Transfer Streets, redevelopment to multi-unit residential use will require that vehicular access to these sites be off Lampson Street rather than Tillicum, in recognition of the high levels of traffic currently using Tillicum Road.

p) To create a more aesthetic and functional design that links each multi-unit residential project with the streetscape, the following guidelines are recommend:

i) Avoid long, narrow parcels with minimal road frontage (consolidate one or more parcels where necessary);

ii) Place parking areas away from the street; and

iii) Design porches and windows overlooking the street to increase personal interaction and safety.

44. MULTIPLE FAMILY RESIDENTIAL [RM-4]

The intent of this Zone is to accommodate medium density Apartment development.

(1) **Permitted Uses**

The following Uses and no others shall be permitted:

(a) Apartment Residential
(b) Home Occupation

(2) **Floor Area Ratio**

The Floor Area Ratio shall not exceed 1.0.

(3) **Building Height**

(a) No Principal Building shall exceed a Height of 11 metres.

(b) No Accessory Building shall exceed a Height of 4 metres.

(4) **Lot Coverage**

(a) All Principal Buildings, Accessory Buildings and Structures combined shall not cover more than 30% of the Area of a Parcel.

(b) Accessory Buildings and Structures combined shall not exceed 10% of the Area of a Parcel.

(5) **Siting Requirements**

(a) **Principal Building**

(i) Front Setback: No Building shall be located within 7.5 metres of the Front Lot Line.

(ii) Side Setback: No Building shall be located within 6 metres of an Interior Side Lot Line nor 3.6 metres of an Exterior Side Lot Line.

(iii) Rear Setback: No Building shall be located within 7.5 metres of a Rear Lot Line.

(b) **Accessory Building**

(i) Front Setback: No Accessory Building shall be located in front of the front face of the Principal Building.

(ii) Side Setback: No Accessory Building shall be located within 1.5 metres of an Interior Side Lot Line nor 3.6 metres of an Exterior Side Lot Line.

(iii) Rear Setback: No Accessory Building shall be located within 1.5 metres of a Rear Lot Line.

(iv) Building Separation: No Accessory Building shall be located within 2.5 metres of a Principal Building.

(6) **Usable Open Space**

Usable Open Space shall be provided in an amount of not less than 7.5% of the Area of the Parcel.

(7) **Fencing**

Subject to Section 22, no fence shall exceed a Height of 1.2 metres in front of the front face of the Principal Building and 2 metres behind the front face of the Principal Building.

(8) **Off Street Parking**

Off street parking shall be provided in accordance with the requirements of Parking Bylaw, 1992, No. 2011 (as amended).

KEAY CECCO ARCHITECTURE LTD

JOHN KEAY, ARCHITECT AIBC
LARRY CECCO, IA, AIBC, RAIC
1124 FORT STREET,
VICTORIA, V8V 3K8

April 28, 2016

Mayor and Council
Township of Esquimalt
1229 Esquimalt Road
Esquimalt, V9A 3P1

Your Worship and Council

re: 925 Esquimalt Road, Development Permit

You will find enclosed an application for a Development Permit, per our discussions with the Planning Department. The intent of the work is to provide a new metal pitched roof system to replace the existing built up asphalt roof which is at the end of its service life. The new roof will add a design element to the building which we think is attractive. Also, it will avoid the expense and environmental consequences of stripping and disposing of the existing roofing materials.

The roof as shown has a height of 13M to the mid point of the roof, requiring a variance of 1.1M over the existing building height.

I trust this is the information you require, please contact me if you have any questions

Yours truly,

John Keay, Architect

cc: Matt Embury

Tel: 250 382 3823
Email: john@kcarchitecture.ca

B. C. LAND SURVEYOR'S SITE PLAN OF:

LOT A, SECTION 11, ESQUIMALT DISTRICT, PLAN 22176

SCALE 1 : 300

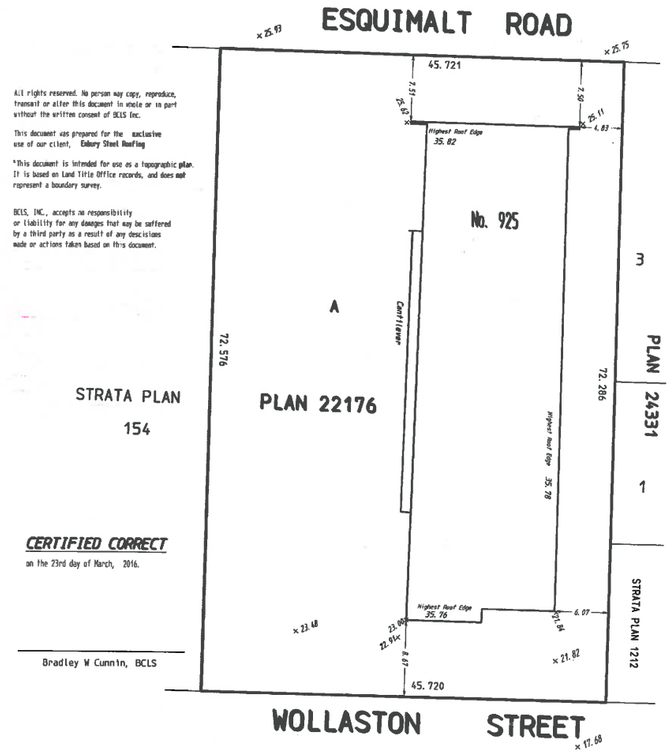
All distances are in metres.

FILE: 11267 - 22
DWG/DATE: 11267sp/ 2015-05-26
Brad Cunnin Land Surveyor
101 - 2610 Douglas Street
Victoria, BC V8T 4M1
ph. 381-BCLS(2257) fx. 381-2289
brad@bcsurveyor.ca

LEGEND

Elevations are geodetic based on District of Esquimalt Integrated Survey Monument 87H3783 (elev. = 25.495m). Contours are descriptive, and only accurate to +/- 1/2 interval. Grade shot are taken at the point marked x, grade shots at a curb line are in gutter.

MUNICIPALITY	PID No.
Esquimalt	003-329-127
ZONING	**SITE AREA**
RM-4	3311.6 m² / 35645 s. f.



CERTIFIED CORRECT

on the 23rd day of March, 2016.

Bradley W Cunnin, BCLS

1 SURVEY
Scale: 1:300

ZONE DATA SHEET

CIVIC ADDRESS: 925 ESQUIMALT ROAD
LEGAL DESCRIPTION: LOT A, SECTION 11, ESQUIMALT DISTRICT, PLAN 22176
ARCHITECT: KEAY CECCO ARCHITECTURE LTD.
2ND FLOOR, 1124 FORT STREET, VICTORIA, BC (250) 382-3823

FLOOR AREA RATIO: UNCHANGED (ALLOWED 1.0)
BUILDING HEIGHT: EXISTING 11.89M PROPOSED ????? (ALLOWED 11M)
LOT COVERAGE: UNCHANGED (ALLOWED 30%)
SETBACKS: UNCHANGED
FRONT: 7.5M (ALLOWED 7.5M)
REAR: 8.67M (ALLOWED 7.5M)
SIDE (EAST): 4.83M (ALLOWED 3.6M)
SIDE (WEST): 22.1M (ALLOWED 6.0M)
PARKING: UNCHANGED

2 CONTEXT SITE PLAN
Scale: NTS

3 CONTEXT PHOTOS
Scale: 1/4" = 1'-0"

KEAY CECCO
ARCHITECTURE LTD.
1124 Fort Street Victoria, BC Canada V8V 3K9
office 2 5 0 382 -3823 fax 2 5 0 382 -3413
email: info@keaycecco.ca

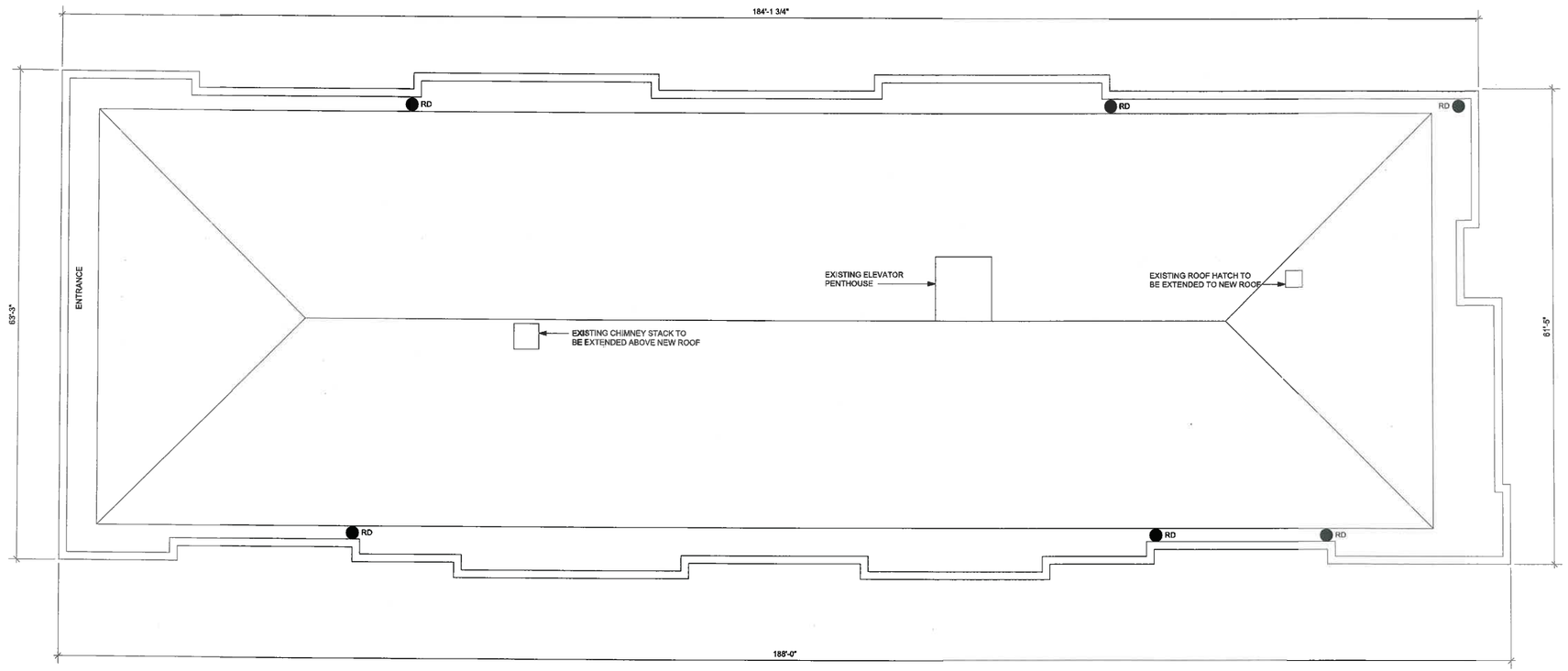
COMMENTS

No.	DESCRIPTION	DATE	BY
1.	DEVELOPMENT PERMIT SUBMISSION	APR 29/16	

925 ESQUIMALT ROAD
VICTORIA, BC

SHEET TITLE
SURVEY & CONTEXT PHOTOS

SCALE	JOB No.
AS NOTED	1124 - 1610
DATE PLOTTED	
APRIL 29, 2016	
DRAWN BY	A 1.0
NP	



1 ROOF PLAN
Scale: 1/8" = 1'-0"

RECEIVED
MAY 03 2016
CORP. OF TOWNSHIP OF ESQUIMALT
DEVELOPMENT SERVICES

KEAY CECCO
ARCHITECTURE LTD.
1124 Fort Street Victoria, B.C. Canada V8V 3K8
office 250 382-3823 fax 250 382-0413
email: info@kcarchitecture.ca

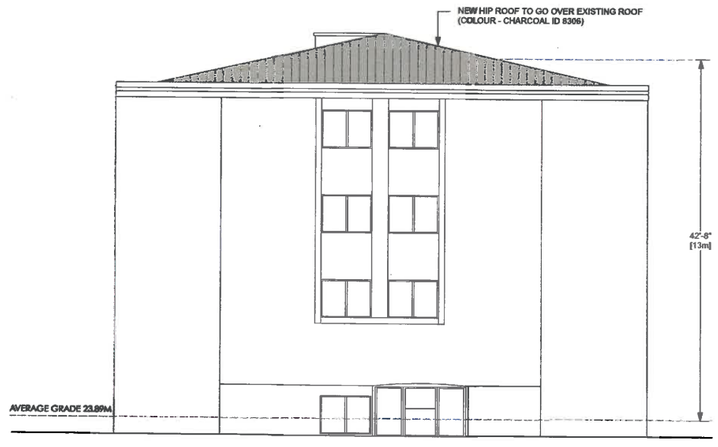
COMMENTS

No.	DESCRIPTION	DATE	BY
1.	DEVELOPMENT PERMIT SUBMISSION	APR 29, 16	

925 ESQUIMALT ROAD
VICTORIA, BC

SHEET TITLE
ROOF PLAN

SCALE	JOB No.
AS NOTED	1124 - 1610
DATE PLOTTED	
APRIL 29, 2016	
DRAWN BY	A 2.0
NP	



1 NORTH ELEVATION
Scale: 1/8" = 1'-0"

2 SOUTH ELEVATION
Scale: 1/8" = 1'-0"

KEAY CECCO
ARCHITECTURE LTD.

1124 Fort Street Victoria, B.C. Canada V8V 3K8
office 250 382-3823 fax 250 382-0413
email: info@kcarchitecture.ca

COMMENTS

No.	DESCRIPTION	DATE	BY
1.	DEVELOPMENT PERMIT SUBMISSION	APR 29/16	

925 ESQUIMALT ROAD
VICTORIA, BC

SHEET TITLE
NORTH & SOUTH ELEVATIONS

SCALE	JOB No.
AS NOTED	1124 - 1610
DATE PLOTTED	
APRIL 29, 2016	A 3.0
DRAWN BY	
NP	

1 EAST ELEVATION
Scale: 1/8" = 1'-0"

2 WEST ELEVATION
Scale: 1/8" = 1'-0"

RECEIVED
MAY 03 2016
CORP. OF TOWNSHIP OF ESQUIMALT
DEVELOPMENT SERVICES

KEAY CECCO
ARCHITECTURE LTD.

1124 Fort Street Victoria, B.C. Canada V8V3K8
office 250 382-3823 fax 250 382-0413
email: info@kcarchitecture.ca

COMMENTS

No.	DESCRIPTION	DATE	BY
1.	DEVELOPMENT PERMIT SUBMISSION	APR 28/16	

925 ESQUIMALT ROAD
VICTORIA, BC

SHEET TITLE
EAST & WEST ELEVATIONS

SCALE: AS NOTED	JOB No.: 1124 - 1610
DATE PLOTTED: APRIL 29, 2016	
DRAWN BY: NP	A 3.1

B. C. LAND SURVEYOR'S SITE PLAN OF:

LOT A, SECTION 11, ESQUIMALT DISTRICT, PLAN 22176

SCALE 1 : 300

5 0 5 10 15 20

All distances are in metres.

FILE: 11267 - 22
DWG/DATE: 11267sp/ 2015-05-28
Brad Cunnin Land Surveyor
101 - 2610 Douglas Street
Victoria, BC V8T 4M1
ph. 381-BCLS (2257) fx. 381-2289
brad@bcsurveyor.ca

NORTH

LEGEND

Elevations are geodetic based on District of Esquimalt Integrated Survey Monument 87H3783 (elev. = 25.495m)
Contours are descriptive, and only accurate to +/- 1/2 interval.
Grade shot are taken at the point marked x,
grade shots at a curb line are in gutter.

MUNICIPALITY
Esquimalt

PID No.
003-329-127

ZONING
RM-4

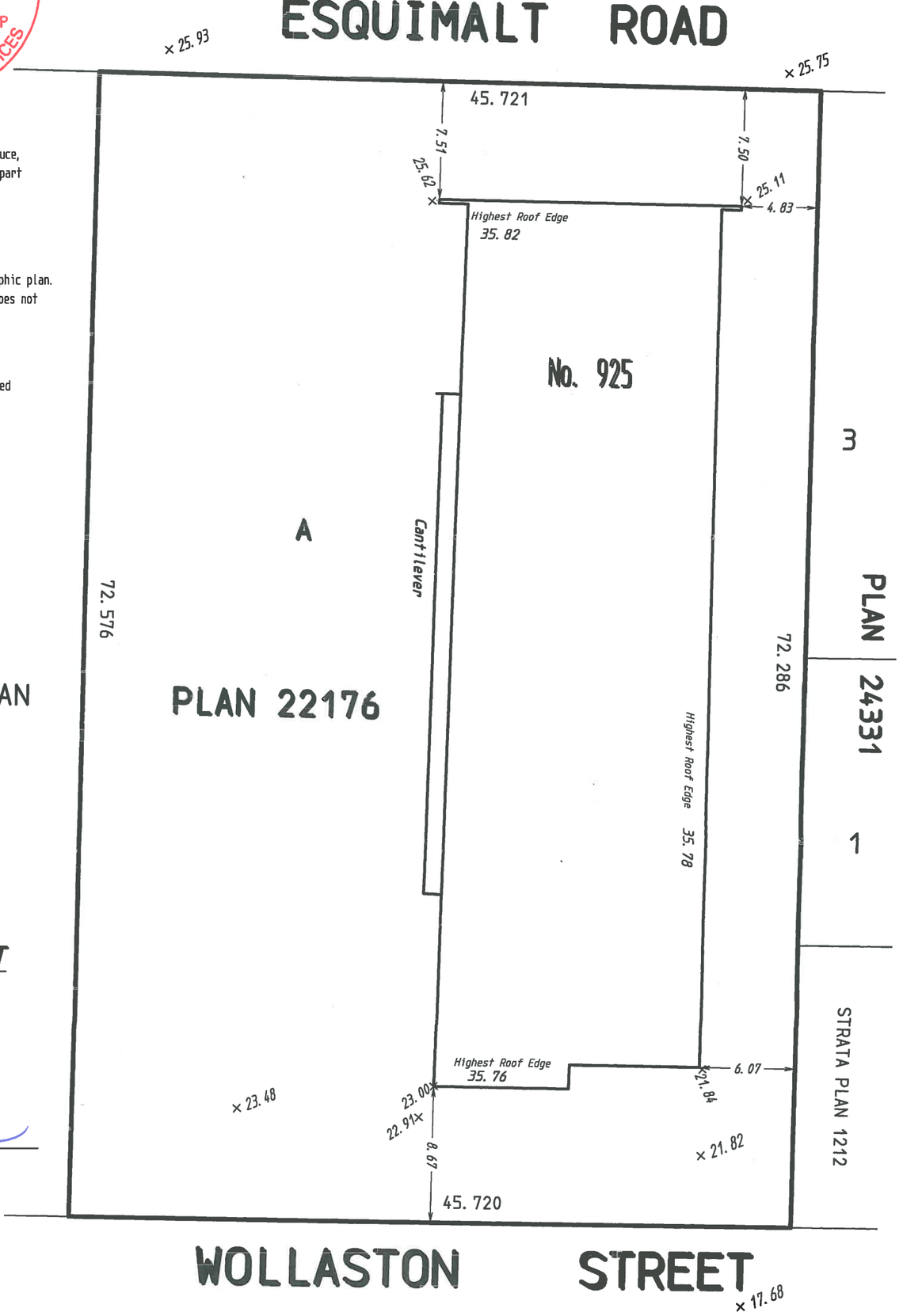
SITE AREA
3311.6 m²
35645 s. f.

RECEIVED
MAR 29 2016
CORP. OF TOWNSHIP OF ESQUIMALT
DEVELOPMENT SERVICES

This document was prepared for the **exclusive** use of our client, **Embury Steel Roofing**

*This document is intended for use as a topographic plan. It is based on Land Title Office records, and does not represent a boundary survey.

BCLS, INC., accepts no responsibility or liability for any damages that may be suffered by a third party as a result of any descisions made or actions taken based on this document.



STRATA PLAN 154

CERTIFIED CORRECT

on the 23rd day of March, 2016.

Bradley W Cunnin, BCLS

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

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

APC Meeting: May 18, 2016

STAFF REPORT

DATE: May 13, 2016

TO: Chair and Members of the Advisory Planning Commission

FROM: Karen Hay, Planner
Bill Brown, Director of Development Services

SUBJECT: **COVENANT DISCHARGE and DEVELOPMENT VARIANCE PERMIT**
741 Admirals Road
[PID 004-338-596, Parcel B (DD139365I) of Lot 20, Section 10, Esquimalt District, Plan 913]

RECOMMENDATION:

That the Advisory Planning Commission recommends to Council that the application to discharge a restrictive Covenant from the property that would restrict development of additional suites within the building for the development located at PID 004-338-596, Parcel B (DD139365I) of Lot 20, Section 10, Esquimalt District, Plan 913 [741 Admirals Road], be forwarded to Council with a **recommendation to either approve, or deny the application**;

and

That the Advisory Planning Commission recommends to Council that the application for a Development Variance Permit authorizing the parking layout as shown on the site plan prepared by Robert G. Rocheleau, Praxis Architects Inc., stamped "Received May 4,2016 and including the following relaxations to Parking Bylaw, 1992, No. 2011, for the development located at PID 004-338-596, Parcel B (DD139365I) of Lot 20, Section 10, Esquimalt District, Plan 913 [741 Admirals Road], be forwarded to Council with a **recommendation to either approve, or deny the application**;

Parking Bylaw, 1992, No. 2011, Section 11 (1) - Visitor Parking – A reduction to the requirement that for land zoned multiple family residential 1 of every 4 spaces shall be clearly marked 'Visitor' and available for use by non-occupants of the Parcel at all times. [ie. from 1 of every 4, to 1 of every 12];

Parking Bylaw, 1992, No. 2011, Section 13(1)(a)(iv) – Parking Requirements – Number of Off-Street Parking Spaces – A reduction to the number of required off-

street Parking Spaces, from 14 spaces to 12 spaces [ie. from 1.10 spaces per dwelling unit to 1.0 space per dwelling unit];

Parking Bylaw, 1992, No. 2011, Section 14(2)(a) Parking Requirements - Dimensions of Off–Street Parking – A change to the requirement that for multiple family residential land uses properties are permitted to dedicate up to 50% of parking spaces as small car spaces, allowing 60% of spaces to be small car spaces [ie. 8 of the 12 spaces would be small car sized spaces];

Parking Bylaw, 1992, No. 2011, Section 14 - Dimensions of Off–Street Parking Table 2 – A 0.2 metre reduction to the width of the maneuvering isle adjacent to 0º angle [parallel] parking from 3.7 metres to 3.5 metres for the maneuvering isle adjacent to the north property line;

Parking Bylaw, 1992, No. 2011, Section 14 - Dimensions of Off–Street Parking Table 2 – A 2.2 metre reduction to the width of the maneuvering isle adjacent to 90º angle parking from 7.9 metres to 5.7 metres for the maneuvering isle adjacent to the east property line.

BACKGROUND:

Purpose of the Application

This application is for the removal of a restrictive covenant on the property, and for a development variance permit to legitimize the parking situation that has existed for several years. The current owner wishes to legalize a suite that was created by a previous owner, without the benefit of a building permit, and contrary to the covenant. The covenant must be removed and a variance permit issued before a building permit could be issued.

Context

Applicant/Owner: Mike La Roy

Architect: Robert G. Rocheleau, Praxis Architects Inc.,

Property Size: Metric: 669 m^2 **Imperial:** 7201 ft^2

Existing Land Use: Multiple Family Residence (Apartment)

Surrounding Land Uses:

North: DND parking lot
South: Townhouse Residential
East: Townhouse Residential
West: DND

Existing Zoning: RM-4 [Multiple Family Residential] [No change required]

Zoning

The building currently contains eleven suites that were built with the benefit of a building permit and a twelfth suite that was not. A previous owner of the building created the additional suite by dividing one large suite into two, without the benefit of a building permit, and contrary to the covenant on the property title that restricts the building of additional suites. The covenant on the property dates to 1995 when the building was in very poor condition and was being used for a use not permitted by the zoning. As the additional suite was created by dividing an existing unit there are no impacts to other zoning regulations and the floor area ratio of the property does not change.

A variance permit is required in order to legitimize the parking situation without altering the landscaping and providing for the maximum number of legitimate spaces. The property has an existing variance allowing a reduction in the number of spaces required from 1.3 spaces per dwelling unit to 1.1 spaces per dwelling unit. The requested variance permit would further reduce the ratio of required spaces to 1 space per dwelling unit. The following table summarizes the parking variances.

	Required	**Proposed**
Total Spaces	1.1 spaces/unit 14 spaces	1 space/unit 12 spaces
Visitor Spaces	require 1 of every 4 (4 of 14) / (3 of 12)	 1
Ratio full size to small car	50% full size/ 50% small car	40% full size/ 60% small car
Manuevering Isle (north)	3.7 metres wide	3.5 metres wide
Manuevering Isle (east)	7.9 metres wide	5.7 metres wide

The lack of required parking spaces has not been an issue for this rental apartment building and the parking lot has been functional for many years in its current configuration.

The owner has indicated there is space for the storage for bicycles in the suites and short term parking allowed in the common areas of the building. This area of Esquimalt is well served by bicycle lanes, the E & N trail and transit.

Public Notification

As this is a development variance permit application, should it proceed to Council, a notice will be mailed to tenants and owners of properties within 50 metres (164 feet) of the subject property.

ALTERNATIVES:

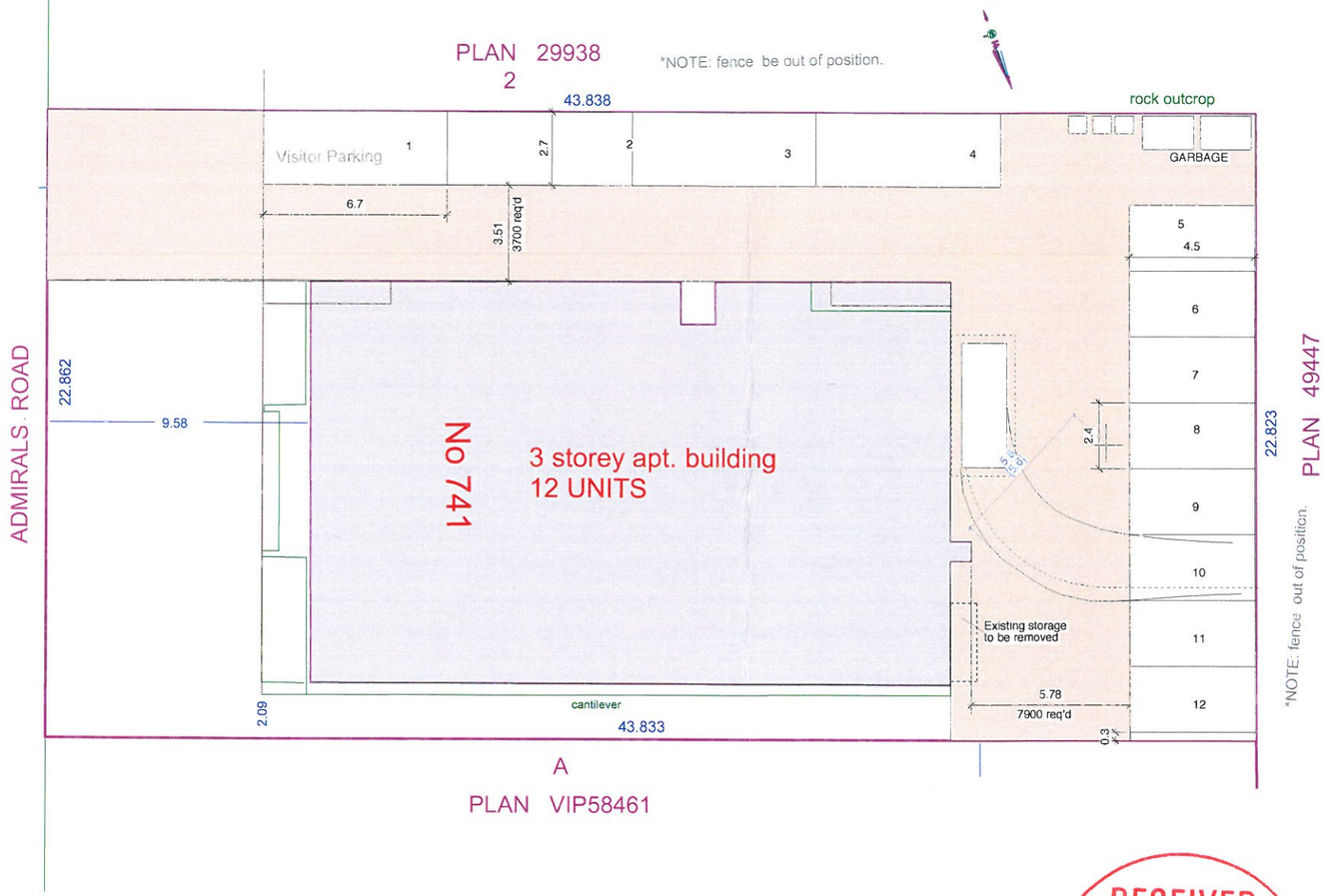
1. Forward the application for c ovenant discharge and a Development Variance Permit to Council with a **recommendation of approval.**

2. Forward the application for covenant discharge and a Development Variance Permit to Council with a **recommendation of denial.**

741 Admirals Road

741 Admirals Road


Admirals Rd



NOT FOR CONSTRUCTION

NO.	DATE:	REVISION:
1	May 01/16	Parking as requested

NO.	DATE:	ISSUED:

SEAL:

PRAXIS architects inc.
William D. Lewis, Architect AIBC
Robert Rocheleau, Architect AIBC
#401 - 1245 Esquimalt Road, Victoria, B.C. V9A 3P2
Tel. (250) 475-7530 • Fax (250) 475-7531
praxis@telus.net

PROJECT TITLE:
APARTMENT BUILDING
741 ADMIRALS ROAD
VICTORIA, BC

SHEET TITLE:
SITE PLAN & PARKING LAYOUT

SCALE:	DRAWN:	SHEET NO.
AS SHOWN	EF	A1.0
DATE:	PROJECT NO.	REVISION NO.
MARCH 22 2016	15-044	1

RECEIVED
MAY 04 2016
CORP. OF TOWNSHIP OF ESQUIMALT
BUILDING DEPARTMENT - COMMUNITY SAFETY SERVICES

REGISTERED ARCHITECT
ROBERT G. ROCHELEAU
BRITISH COLUMBIA

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

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

APC Meeting: May 18, 2016

STAFF REPORT

DATE: May 13, 2016

TO: Chair and Members of the Advisory Planning Commission

FROM: Trevor Parkes, Senior Planner

SUBJECT: **DEVELOPMENT PERMIT**
1038 Colville Road
[Proposed Lot 1, 1038 Colville Road]

RECOMMENDATION:

The Advisory Planning Commission recommends to Council that the application for a Development Permit limiting the form and character of development to that shown on architectural plans and the landscape plan provided by Zebra Design, both stamped "Received April 27, 2016", and sited as detailed on the survey plan prepared by Powell and Associates BC Land Surveyors, stamped "Received April 27, 2016" and including exterior windows, cladding and colours consistent with the Colour Board provided by Zebra Design stamped "Received May 10, 2016" for the proposed development located at Proposed Lot 1, 1038 Colville Road, be forwarded to Council with a recommendation **to either approve, or deny the application.**

BACKGROUND:

Context

Applicant: Zebra Design [Rus Collins]

Owner: Phil Aitkin

Property Size: Metric: 333.8 m^2 Imperial: 3593 ft^2

Existing Land Use: Vacant Lot

Surrounding Land Uses:
North: Gorge Vale Golf Course
South: Multiple Family Residential [Non-conforming 3 units]
West: Single Family Residential
East: Single Family Residential

Existing Zoning: CD- 92 [Comprehensive Development District No. 92]

Existing OCP Designation: Single and Two Unit Residential [No change required]

Purpose of the Application

Comprehensive Development District No. 92 [CD-92] is located within Development Permit Area No. 5 – Enhance Design Control Residential. The Official Community Plan requires property owners with lands located within Development Permit Areas to obtain a Development Permit prior to a Building Permit being considered for the subject property. Accordingly, the applicant is seeking approval of Development Permit No. DP000067 for the form and character of the proposed single family infill home as well as the associated landscaping and hardscaping. The proposed design must be reviewed for compliance with the design guidelines contained in Section 9.9 of the Township's Official Community Plan [attached].

This application for Development Permit DP000067 will not move forward to Council until such time as the subdivision of 1038 Colville Road is complete and a new property title is registered for Proposed Lot 1. The subdivision application is pending approval at this time.

ISSUES:

Zoning

CD-92 zoning was specifically tailored to accommodate this home design when the rezoning application was approved in September, 2015. As the applicant has proposed no design changes, the proposal satisfies all of the CD-92 zone regulations [attached].

Official Community Plan Design Guidelines

Building Design: The building design is a two storey single family dwelling complete with a full basement. The home incorporates modern design elements when viewed from Colville Road including a tiered, flat roof assembly, a mix of horizontal wood siding, cement board paneling and stucco. The rectangular design theme is further highlighted through the use of tall, narrow and short, wide windows on the front and sides of the building. Windows facing north are more generous affording a view of the Gorge Vale Golf Course and allowing passive light to enter the building. The use of varied heights of flat roofing and varied cladding materials, glazing and natural material accents combine to create visual interest while breaking up the massing of the building.

The owner has registered a Section 219 covenant on the titles of the property to ensure future purchasers are notified that a secondary suite is prohibited within this home.

The proposal is consistent with the Single-Unit Infill Housing Guidelines [attached] contained in the Township of Esquimalt Official Community Plan as the proposed home is complimentary in scale, size, siting, and height to homes in the immediate area. The proposed cladding materials blend well into the neighbourhood, and the design is considerate of the privacy of adjacent home owners. The proposed flat roof design is a departure from the traditional gabled and hipped rooflines in the area and the rectilinear building form which carries the full mass of the building onto the second floor fails to address OCP Sections 9.9.4.2(a) and 9.9.4.2(b). Noting this, staff are of the opinion that this proposal enhances the neighbourhood by adding a new focal point into the streetscape.

Landscaping: The applicant is proposing a mix of plantings in a varied, compact landscape treatment in the front yard in addition to a turf lawn. The contrasting asphalt driveway and concrete pedestrian path serves to break up the mass of the hard surfacing at the front of the

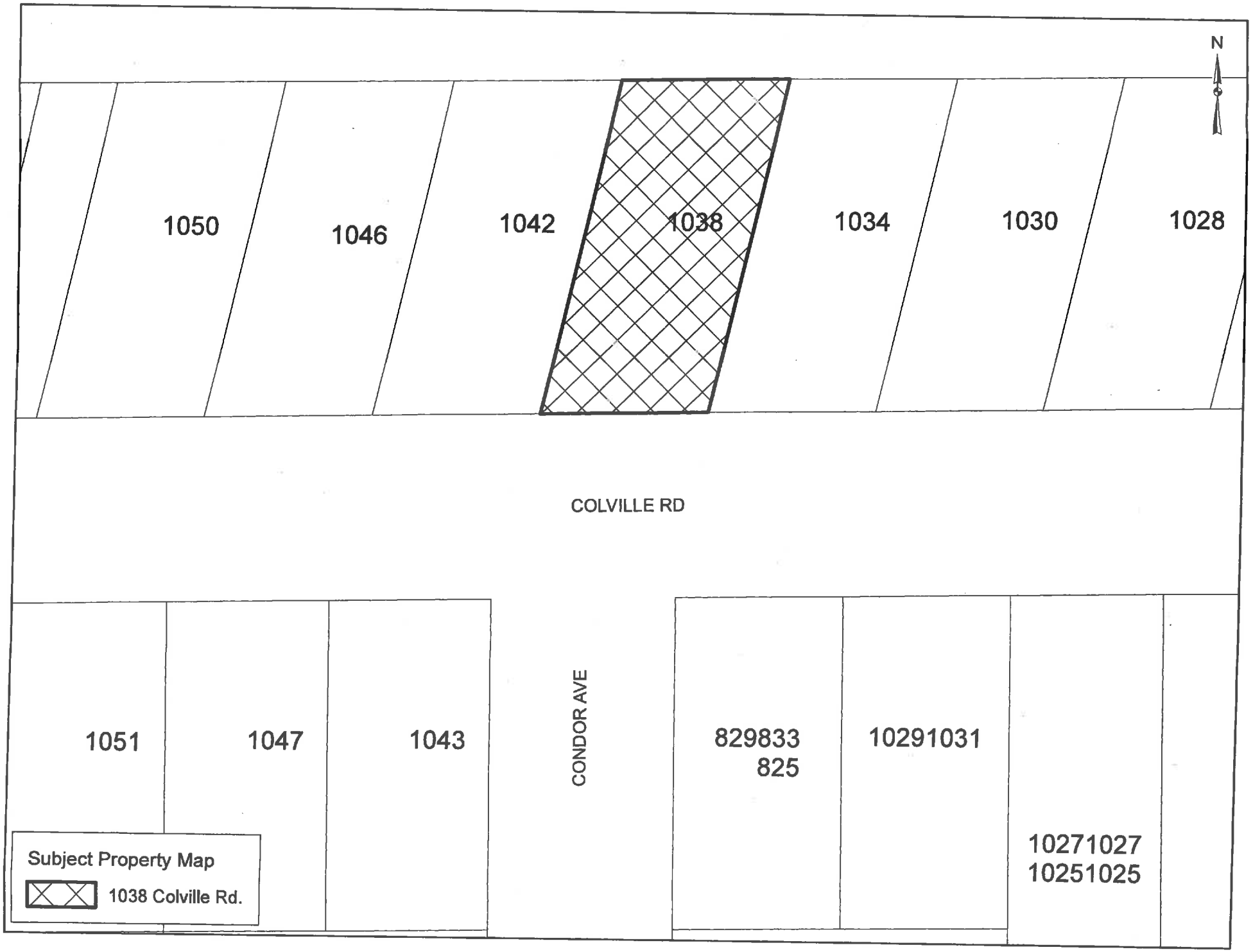
building. The rear yard is generous for a lot of this size and can be accessed directly from the basement media room of the home or from the main living area of the first storey creating desirable indoor/ outdoor transitions for residents. A generous rear yard patio complimented by an adequate lawn area combines to create desirable and inviting rear yard environment.

ALTERNATIVES:

1. Forward the application for Development Permit to Council with a **recommendation of approval**.

2. Forward the application for Development Permit to Council with a **recommendation of approval** with conditions as determined by the Commission.

3. Forward the application for Development Permit to Council with a **recommendation of denial**.


N
1050
1046
1042
1038
1034
1030
1028
COLVILLE RD
1051
1047
1043
CONDOR AVE
829833
825
10291031
10271027
10251025
Subject Property Map
1038 Colville Rd.

1038 Colville Road

Subject Property Boundary: ——————

N

9.9 Guidelines for Single-unit Infill Housing

9.9.1 Definition

Single-unit infill housing is development that provides for new single-unit homes on land that is surplus to the needs of existing housing. This could be in the form of separate dwellings on one lot (strata-titled or otherwise), or dwellings on separate small lots created through subdivision of larger lots.

9.9.2 Purpose

The purpose of these guidelines is provide guidance for proponents, the public, municipal staff, Advisory Committees and Council for the evaluation of applications for rezoning to permit the construction of single-unit Infill Housing.

9.9.3 Guidelines

9.9.3.1 Preferred Locations/Site Characteristics

The following characteristics define the general suitability of a property for Single-unit Infill Housing:

a) Lots currently zoned RD-1 (Two-unit Residential) and RD-3 (Two-unit / Single-unit Residential), especially those with extra width and lot area;

b) Lots with a frontage on more than one street (including corner lots);

c) Properties that are transitional between lower density and higher density housing or other land uses;

d) The demolition of existing housing is discouraged (unless in exceptional circumstances) however moving of houses is considered acceptable; and

e) These criteria are general in nature. Each project will be considered on its own merit.

9.9.4 Design

9.9.4.1 Context

a) Where an existing single-unit residence is to be retained and a second residence placed on the parcel, the existing dwelling is to be upgraded and made to blend with the new construction.

b) Where two or more new separate dwellings are situated within a comprehensive development zone, the buildings shall be designed as part of a comprehensive scheme with all buildings being finished in complementary materials and incorporating similar architectural details.

c) Where new infill single houses are proposed, the design of the new houses should be complementary in scale, size, exterior finishes, rooflines, and colours to the predominant styles of housing in the neighbourhood. It is important to ensure that the new construction fits with the overall scale and character of existing houses.

d) The intent of this guideline is not to encourage the replication or imitation of surrounding buildings but rather the design of structures that complement the streetscape.

9.9.4.2 Massing

e) New structures should be designed so that the overall massing is in keeping with other single-unit residences in the immediate area. New structures for lots other than corner or double frontage lots should be limited to one and one half storeys.

f) New structures, which are two storeys in height, should be designed so that the second storey is partially concealed within the slope of the roof to minimize the height of the building. The use of dormers set into the roof is preferred to a flat roof or a peaked roof set over the second storey.

9.9.4.3 Privacy/Screening/Shadowing

g) Proposed infill dwellings should have only a minimal impact on adjacent homes and be separated from neighbouring residences by vegetation, screening, natural elevation differences, or a combination of these features.

h) Windows, decks and patios should be located so as to minimize intrusion onto the privacy of adjacent properties.

i) Infill dwellings should be sited to minimize the casting of shadows onto the private outdoor space of adjacent residential dwellings.

9.9.4.4 Landscaping

j) Proposals for single-unit infill housing must include a landscape plan showing hard landscaping (i.e., parking areas, fences, and patios) as well as lawns, trees, shrubs, planting areas and proposed plant species.

k) Retention and protection of trees and the natural habitat is encouraged wherever possible.

9.9.4.5 Private Open/Yard Space

l) Any proposal for single-unit infill housing should provide for useable, private outdoor areas for each dwelling, at grade.

9.9.5 Process

9.9.5.1 Rezoning

a) Single-unit infill housing will only be permitted through a rezoning process. Each application will be considered on its own merit.

b) As well as the typical rezoning information, an application for a single-unit infill housing should include:

   i) a summary of the proposal (prepared by the applicant) showing how it differs from the regular zoning requirements in terms of site coverage, floor area ratio, building envelope, number of parking spaces, amount of useable open space and common areas; and

   ii) an illustration of the streetscape (to scale) showing the relationship of the proposed building to the five (5) adjacent buildings on either side of it and of the same buildings from the rear is required. For corner lots, the streetscape drawing must be provided for both street frontages.

67.79 COMPREHENSIVE DEVELOPMENT DISTRICT NO. 92 [CD NO. 92]

In that Zone designated as CD No. 92 [Comprehensive Development District No. 92] no Building or Structure or part thereof shall be erected, constructed, placed, maintained or used and no land shall be used except in accordance with and subject to the regulations contained in or incorporated by reference into this Part.

(1) **Permitted Uses**

The following Uses and no others shall be permitted:

(a) Single Family Residential
(b) Home Occupation

(2) **Parcel Size**

The minimum Parcel Size of Parcels created by subdivision shall be 330 square metres.

(3) **Lot Width**

The width of parcels created by subdivision shall not be less than 9.0 metres measured at the Front Lot Line.

(4) **Density**

The number of Dwelling Units permitted in this CD-92 Zone shall be limited to two [2] for a density of one [1] unit per 330 square metres.

(5) **Number of Principal Buildings**

Not more than one (1) Principal Building shall be located on a parcel.

(6) **Floor Area**

(a) The Floor Area of the First Storey of a Principal Building shall not exceed 77 square metres.

(b) The total Floor Area of a Principal Building shall not exceed 154 square metres.

(c) Notwithstanding Section 6(a), the Floor Area of the First Storey of a Principal Building, not including a Private Garage, shall not exceed 58 square metres.

(d) In this zone, Floor Area located in any Basement, or portion thereof, within a Principal Building, where the ceiling is less than 1.2 metres above the natural Grade at any point, shall be exempt from the requirements of Section 6(b).

(7) **Building Height**

(a) No Principal Building shall exceed a Height of 7.3 metres.

(b) No Accessory Building shall exceed a Height of 3.6 metres.

(8) **Building Width**

The maximum width for a Principal Building shall be 5.6 metres

(9) **Lot Coverage**

(a) All Principal Buildings, Accessory Buildings and Structures combined shall not cover more than 29% of a parcel.

(b) Notwithstanding Section 9(a) Principal Buildings shall not cover more than 27% of the Area of a parcel

(10) **Siting Requirements**

(a) **Principal Buildings:** Where lands in this CD-92 zone have been subdivided into two parcels:

(i) No Principal Building shall be located within 7.5 metres of a Front Lot Line.

(ii) No Principal Building shall be located within 1.5 metres of any Side Lot Line with the total setback of all Side Yards not to be less than 3.3 metres.

(iii) The westernmost Principal Building shall not be located within 12 metres of the Rear Lot Line.

(iv) The easternmost Principal Building shall not be located within 10.7 metres of the Rear Lot Line.

(v) The separation between Principal Buildings within Comprehensive Development District No. 92 [CD No. 92] shall not be less than 3.6 metres.

Where lands in this zone have not been subdivided, the most restrictive of the above requirements are applicable.

(b) **Accessory Buildings:**

(i) Front Setback: No Accessory Building shall be located in front of the front face of the Principal Building.

(ii) Side Setbacks: No Accessory Building shall be located within 1.5 metres of any Interior Side Lot Line.

(iii) Rear Setback: No Accessory Building shall be located within 1.5 metres of any Rear Lot Line.

(iv) Building Separation: No Accessory Building shall be located within 7.0 metres of any Principal Building.

(11) **Fencing**

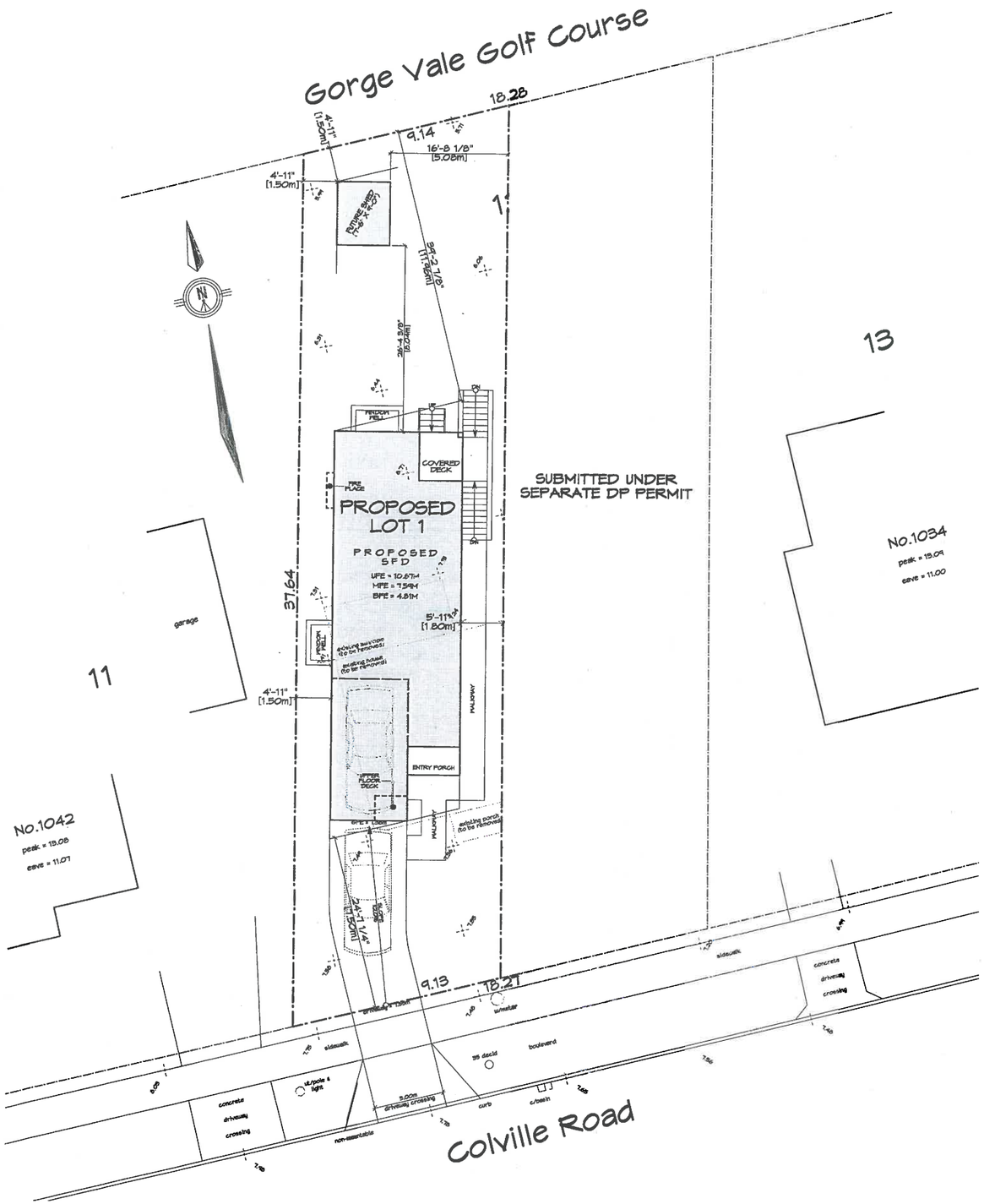
Subject to Part 4, Section 22, no fence shall exceed a Height of 1.2 metres in front of the front face of any Principal Building and 2 metres behind the front face of the Principal Building.

(12) **Landscaping and Open Space**

Landscaping and Open Space shall be as shown on the landscape plan approved as part of the active Development Permit.

(13) **Off-Street Parking**

Off-street parking shall be provided in accordance with the requirements of Parking Bylaw, 1992, No. 2011(as amended).



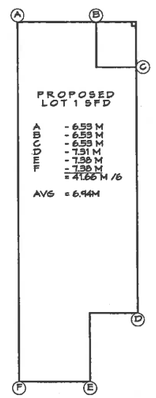
Proposed Site Plan
Scale: 1:100

SITE DATA - Proposed Lot 1 - 1038 Colville Road

LEGAL DESCRIPTION - LOT 12, BLOCK 13, SECTION 10, ESQUIMALT DISTRICT, PLAN 2546
CURRENT ZONING - RD-3
PROPOSED ZONING - CCD

	PROPOSED HOUSE
LOT AREA	383.77 M² (3542.66 FT²)
LOT WIDTH	9.13 M (29.95')
LOT DEPTH	37.64 M (123.49')
BUILDING WIDTH	5.54 M (18.18')
SETBACKS	
FRONT	7.50 M (24.61')
REAR	11.96 M (39.24')
SIDE (NORTHWEST)	1.50 M (4.92')
SIDE (SOUTHEAST)	1.80 M (5.91')
AVG. GRADE	6.94 M (22.76')
BUILDING HEIGHT	7.25 M (23.79')
FLOOR AREA	
UPPER FLOOR	76.91 M² (827.90 FT²)
MAIN FLOOR	56.41 M² (607.23 FT²)
GARAGE (EXCLUDED)	18.00 M² (193.76 FT²) EXCLUDED
LOWER FLOOR (BSMT)	51.29 M² (552.04 FT²)
NON-BASMENT, TOTAL	133.33 M² (1435.13 FT²)
ALL FLOORS, TOTAL	184.61 M² (1987.16 FT²)
FLOOR AREA RATIO EXCLUDES BSMT AREA	0.349
SITE COVERAGE INCLUDES FUTURE ACCESSORY BLDG	28.82 %
PARKING	2 SPACES

SETBACKS	PROPOSED SHED (FUTURE)
FRONT	31.82 M (104.40')
REAR	1.50 M (4.92')
SIDE (NORTHWEST)	1.50 M (4.92')
SIDE (SOUTHEAST)	5.08 M (16.67')
TO PRINCIPAL BLDG	8.04 M (26.38')
AVG. GRADE	5.99 M (19.65')
BUILDING HEIGHT	3.60 M (11.81') - MAX
FLOOR AREA	4.72 M² (50.80 FT²)
SITE COVERAGE	1.88 %



DRAWING LIST:

DP0	SITE PLAN & SITE DATA
DP1	FLOOR PLANS & ELEVATIONS
DP2	STREETSCAPE
DP3	LANDSCAPE PLAN

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DEVELOPMENT SERVICES

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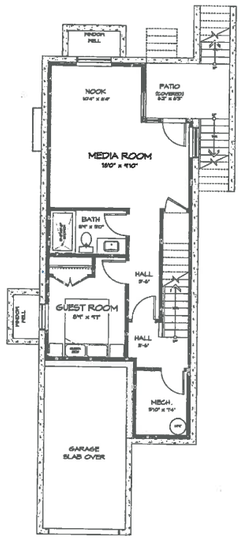
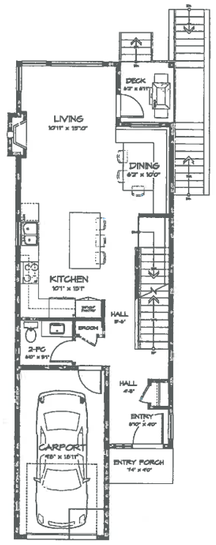
APR. 27, 2016

ZEBRADESIGN
1161 NEWPORT AVE
Victoria, B.C. V8S 5E6
Phone: (250) 360-2144
Fax: (250) 360-2115

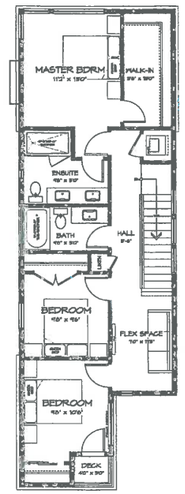
Drawn By: K. KOSHMAN
Date: APR. 27, 2016
Scale: AS NOTED
Project:
Proposed Lot 1
1038 Colville Rd
Infill Housing SFD
Title:
SITE PLAN &
SITE DATA
Revision:
1ST SUBMISSION APR. 27/16
Sheet:
DP0
Proj.No. TBD



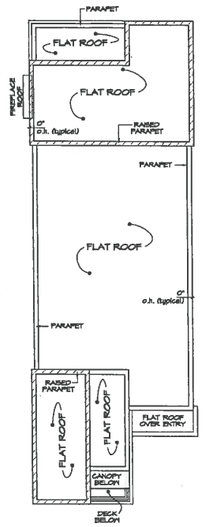
Lower Floor Plan - Lot 1
Scale: 1/8" = 1'-0"



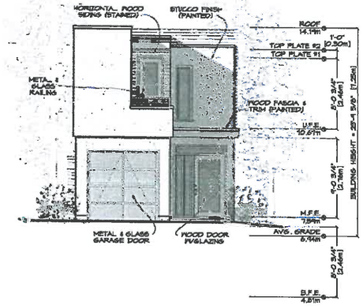
Main Floor Plan - Lot 1
Scale: 1/8" = 1'-0"



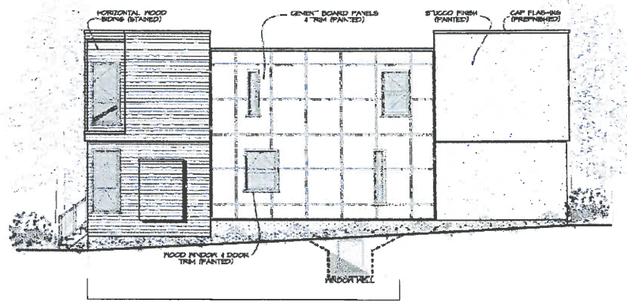
Upper Floor Plan - Lot 1
Scale: 1/8" = 1'-0"



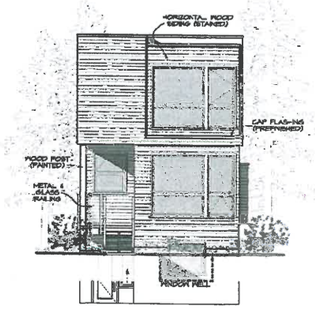
Roof Plan - Lot 1
Scale: 1/8" = 1'-0"



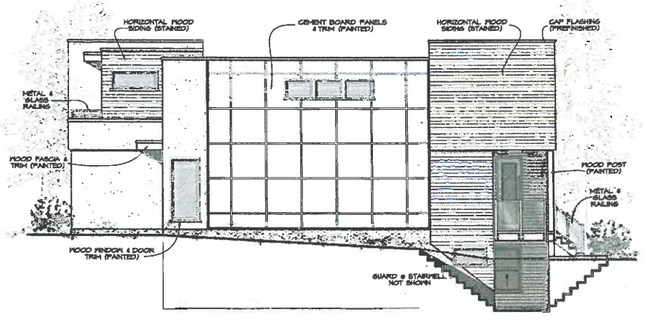
FRONT



WEST SIDE



REAR



EAST SIDE

Elevations - Lot 1
Scale: 1/8" = 1'-0"

LOT 1 MAXIMUM GLAZING CALCULATION - SIDE ELEVATION (WEST)	
DISTANCE TO PROPERTY LINE	1.50 M (4.92')
EXPOSED BUILDING FACE AREA	106.13 M2 (1142.39 SF)
GLAZING AREA	5.98 M2 (64.38 SF)
PERCENTAGE	5.64% (ALLOWED 7.00%)

LOT 1 MAXIMUM GLAZING CALCULATION - SIDE ELEVATION (EAST)	
DISTANCE TO PROPERTY LINE	1.80 M (5.91')
EXPOSED BUILDING FACE AREA	104.70 M2 (1126.94 SF)
GLAZING AREA	4.79 M2 (51.52 SF)
PERCENTAGE	4.57% (ALLOWED 7.60%)

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ZEBRADESIGN

1161 NEWPORT AVE
Victoria, B.C. V8S 5E6
Phone: (250) 360-2144
Fax: (250) 360-2115

Drawn By: K. KOSHMAN

Date: APR. 27, 2016

Scale: AS NOTED

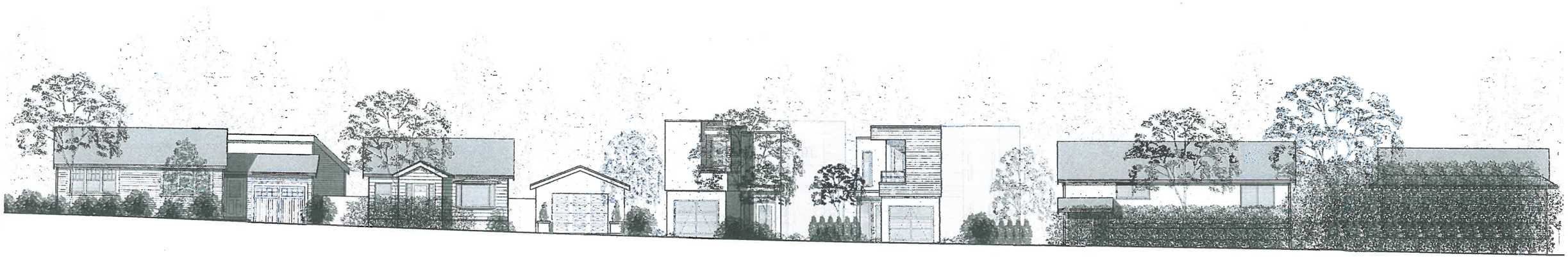
Project:
Proposed Lot 1
1038 Colville Rd
Infill Housing SFD

Title:
LOT 1 PLANS & ELEVATIONS

Revision:
1ST SUBMISSION APR. 27/16

Sheet:
DP1

Proj.No. TBD



CIVIC #1046 | CIVIC #1042 | PROPOSED LOT 1 (PROJECT LOCATION) | PROPOSED LOT 2 | CIVIC #1034 | CIVIC #1030

Proposed Streetscape
Scale: 1/8" = 1'-0"

ISSUED FOR DP
APR. 27, 2016

ZEBRADESIGN
1161 NEWPORT AVE
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Phone: (250) 360-2144
Fax: (250) 360-2115

Drawn By: K. KOSHMAN

Date: APR. 27, 2016

Scale: AS NOTED

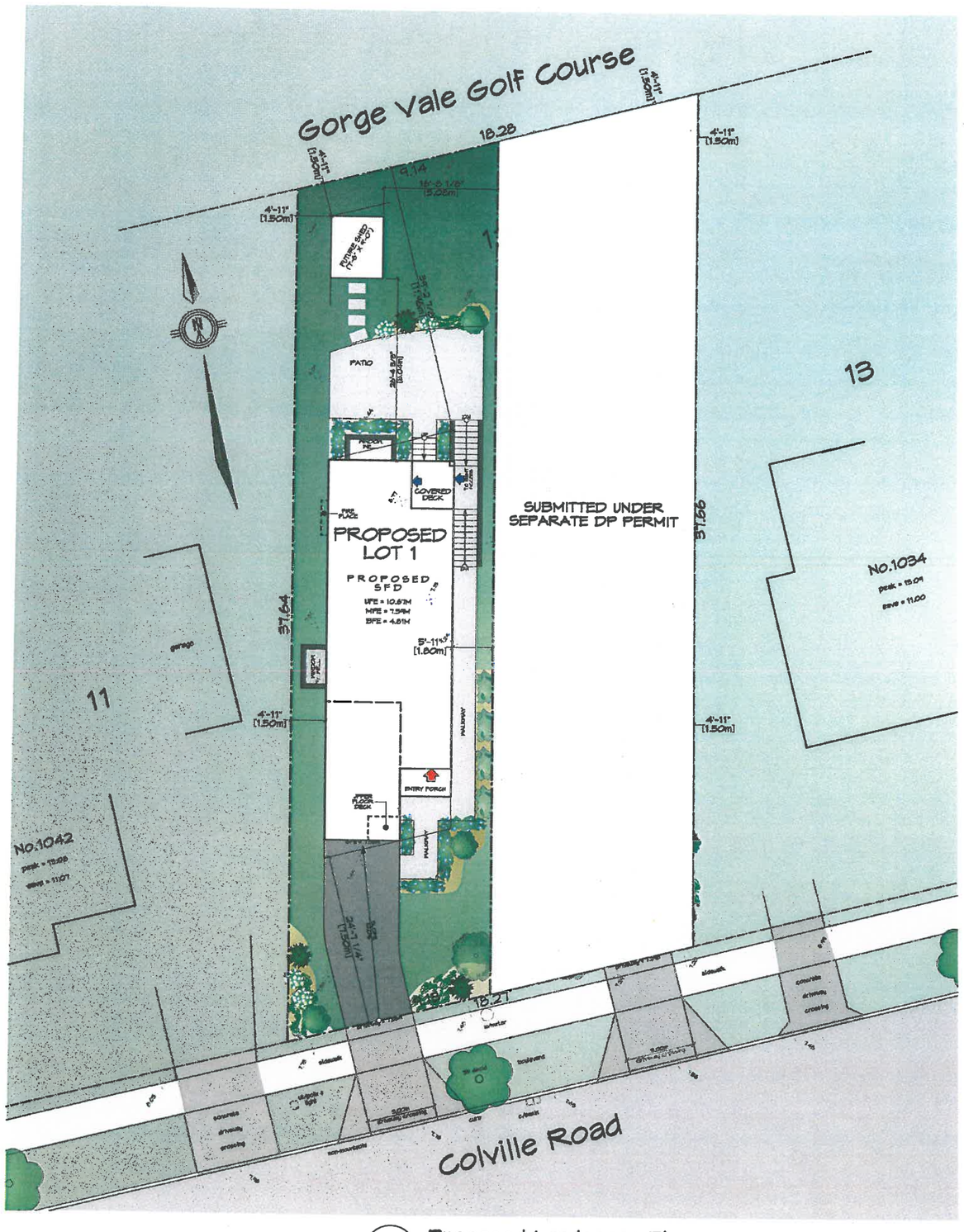
Project:
Proposed Lot 1
1038 Colville Rd
Infill Housing SFD

Title:
STREETSCAPE

Revision:
1ST SUBMISSION APR. 27/16

Sheet:
DP2

Proj.No. TBD



Proposed Landscape Plan
Scale: 1:100

LANDSCAPE PLAN LEGEND

TREES/SHRUBS

EXISTING TREE | NEW TREE | NEW SHRUBS

GROUNDCOVER

LAWN | PLANTED AREA | GROUNDCOVER PLANTS

HARD LANDSCAPING

ASPHALT DRIVEWAY | CONCRETE STAIRS/WALKWAYS & PATIOS | PAVED SIDEWALK

RETAINING WALL | CEDAR PRIVACY FENCE | BRUSHED CONCRETE DRIVEWAY CROSSING

EGRESS

MAIN ENTRY | SECONDARY ENTRY | WINDOW WELL GRATE COVER (SEE NOTE #5)

NOTES:

1. LANDSCAPING INDICATED IS CONCEPTUAL ONLY AND REQUIRES INSTALLATION BY A QUALIFIED LANDSCAPING CONTRACTOR.
2. CONTRACTOR TO IDENTIFY UTILITIES PROVIDED THROUGH UNDERGROUND WIRING AND AVOID CONFLICT WITH EXCAVATIONS.
3. ALL LANDSCAPING SHALL BE PERFORMED TO BCSLA, BCLNA STANDARDS.
4. ALL EXISTING TREES TO REMAIN, UNLESS NOTED OTHERWISE
5. INSTALL GRATE OVER WINDOW WELL TO ALLOW PASSAGE OVER (WALKWAY); WINDOW WELL GRATE TO BE OPENABLE FROM BELOW FOR EGRESS

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Suggested Plant List

	Botanical Name	Common Name	Size
Trees			
	Cornus Venus	Flowering Dogwood	2.5m height, B&B
	Camelia Japonica specimen	Evergreen Camelia	3.0m height, B&B
	His Majesty Cultivar	Cork Tree	2.5m height, B&B
Shrubs			
	Arbutus Unedo Compacta	Strauberry Tree	#5
	Berberis Thunbergii Atropurpurea	Barberry	#2
	Buxus Microphylla	Dwarf Boxwood	#2
	Camelia Japonica	Red Camelia	#5
	Cistus Ladanifer	Crimson Rock Rose	#3
	Ceanothus Gloriosus Incrabre	Prostrate Mountain Lilac	#1
	Erica Carnea Springwood	White Heather	#1
	Erica x Darleynsis Furzey	Pink Heather	#1
	Escallonia Newport Dwarf	Dwarf Escallonia	#2
	Hebe "Patty's Purple"	Hebe	#2
	Lavendula Angustifolia Hidcote	Hidcote Lavender	#1
	Ribes Sanguineaum King Edward	Pink Flowering Current	#5
	Rhododendron	White Rhododendron	#5
	Spirea Prunifolia	Bridal Wreath Spirea	#5
	Viburnum Davidii	Evergreen Viburnum	#3
Groundcovers			
	Parthenocissus Quinquefolia	Virgin Creeper	#1
	Thymus Pink Rippie	Creeping Thyme	Sp3, 30cm o.c.

ISSUED FOR DP
APR. 27, 2016

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LANDSCAPE PLAN
Revision:
1ST SUBMISSION APR. 27/16
Sheet:
DP3
Proj.No. TBD

BC LAND SURVEYORS SITE PLAN OF:

Civic: 1038 Colville Road

Legal – Lot 12, Block 13, Section 10,
Esquimalt District, Plan 2546

Parcel Identifier: 006–326–617 in the Township of Esquimalt

Scale – 1 : 150 Distances are in metres.

0 2 5 10 15

The intended print size is 11" by 17".

Geodetic elevations shown +##.## (in Metres)

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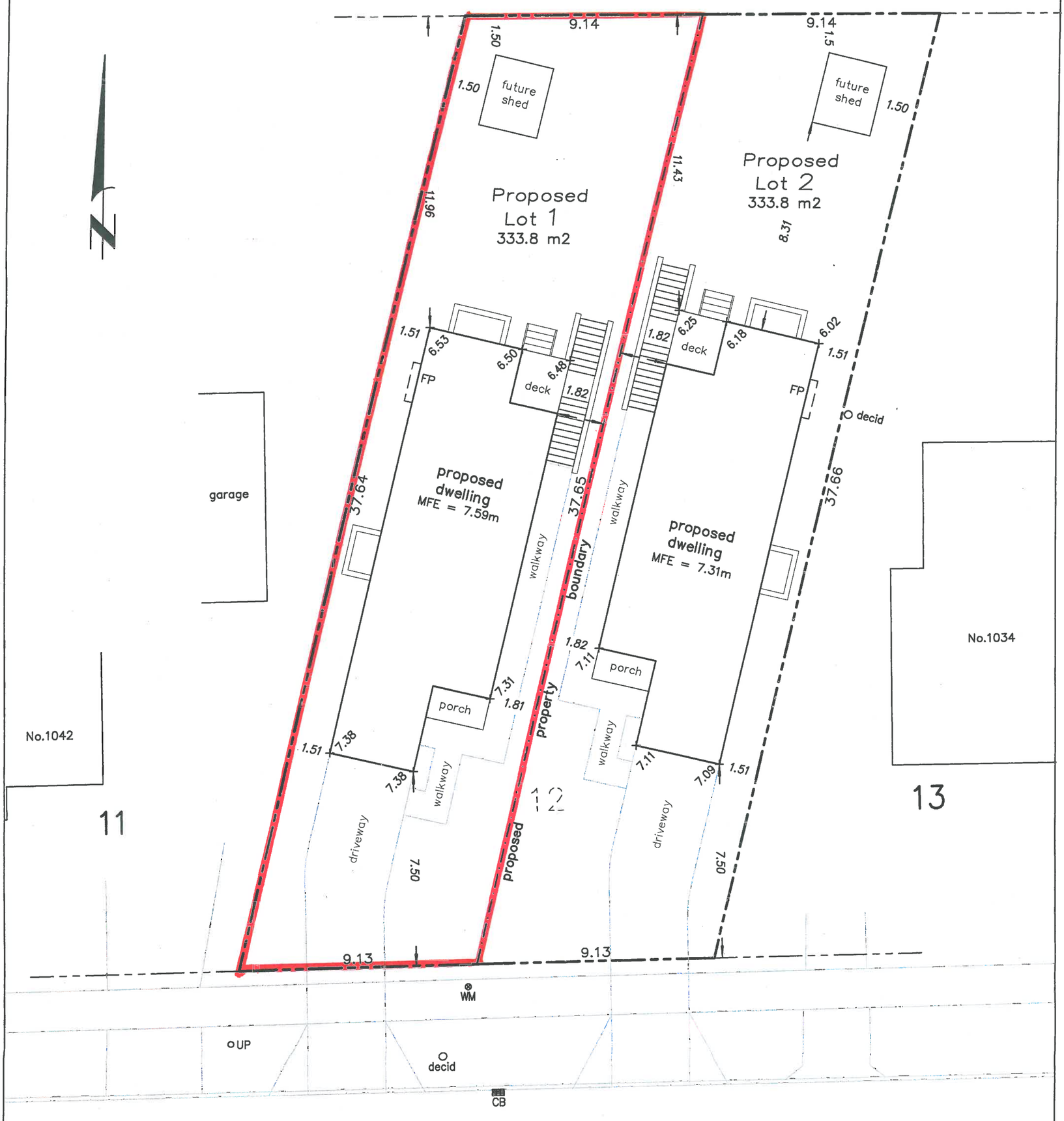
DEVELOPMENT SERVICES

A

Gorge Vale Golf Course



File : 11889–22
POWELL & ASSOCIATES B C Land Surveyors 250–2950 Douglas Street Victoria, BC V8T 4N4 phone (250) 382–8855

ALAN M. POWELL BRITISH COLUMBIA SEAL LAND SURVEYOR COMMISSION No 599

Certified correct
this 5th day of February, 2015
Alan Powell
CNP7B5
Alan M. Powell, B.C.L.S.

Digitally signed by Alan Powell CNP7B5
DN: c=CA, cn=Alan Powell CNP7B5, o=BC Land Surveyor, ou=Verify ID at www.juricert.com/LKUP.cfm?id=CNP7B5
Date: 2015.02.05 14:47:44 -08'00'

"CRYSTAL WHITE"
IMASCO MINERALS INC.

STUCCO FINISH

"CINDER"
OLYMPIC SEMI-TRANSPARENT STAIN

HORIZONTAL WOOD SIDING
(STAINED)

"WHITE"
WESTECK WINDOWS

VINYL WINDOWS

Windows changed to black.

"WHITE"

METAL GARAGE DOOR, WITH GLAZING

PREFINISHED METAL & GLASS RAILINGS

"DESIGNER WHITE"
PRATT & LAMBERT PAINTS

CEMENT BOARD PANELS & TRIM (PAINTED)

WOOD FASCIA, POSTS & TRIM (PAINTED)

WOOD FRONT DOOR (PAINTED), WITH GLAZING

ZEBRADESIGN
1101 NEWPORT AVE
Victoria, B.C. V9S 3S4
Phone: (250) 590-0144
Fax: (250) 590-2115

Proposed Lot 1 SFD

1059 Colville Rd., Esquimalt — Dec. 02, 2014

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

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

APC Meeting: May 18, 2016

STAFF REPORT

DATE: May 13, 2016

TO: Chair and Members of the Advisory Planning Commission

FROM: Trevor Parkes, Senior Planner

SUBJECT: **DEVELOPMENT PERMIT**
1040 Colville Road
[Proposed Lot 2, 1038 Colville Road]

RECOMMENDATION:

The Advisory Planning Commission recommends to Council that the application for a Development Permit limiting the form and character of development to that shown on architectural plans and the landscape plan provided by Zebra Design, both stamped "Received April 27, 2016", and sited as detailed on the survey plan prepared by Powell and Associates BC Land Surveyors, stamped "Received April 27, 2016" and including exterior windows, cladding and colours consistent with the Colour Board provided by Zebra Design stamped "Received May 10, 2016" for the proposed development located at Proposed Lot 2, 1038 Colville Road, be forwarded to Council with a recommendation **to either approve, or deny the application.**

BACKGROUND:

Context

Applicant: Zebra Design [Rus Collins]

Owner: Phil Aitkin

Property Size: Metric: 333.8 m^2 Imperial: 3593 ft^2

Existing Land Use: Vacant Lot

Surrounding Land Uses:
North: Gorge Vale Golf Course
South: Multiple Family Residential [Non-conforming 3 units]
West: Single Family Residential
East: Single Family Residential

Existing Zoning: CD- 92 [Comprehensive Development District No. 92]

Existing OCP Designation: Single and Two Unit Residential [No change required]

Purpose of the Application

Comprehensive Development District No. 92 [CD-92] is located within Development Permit Area No. 5 – Enhance Design Control Residential. The Official Community Plan requires property owners with lands located within Development Permit Areas to obtain a Development Permit prior to a Building Permit being considered for the subject property. Accordingly, the applicant is seeking approval of Development Permit No. DP000068 for the form and character of the proposed single family infill home as well as the associated landscaping and hardscaping. The proposed design must be reviewed for compliance with the design guidelines contained in Section 9.9 of the Township's Official Community Plan [attached].

This application for Development Permit DP000068 will not move forward to Council until such time as the subdivision of 1038 Colville Road is complete and a new property title is registered for Proposed Lot 2. The subdivision application is pending approval at this time.

ISSUES:

Zoning

CD-92 zoning was specifically tailored to accommodate this home design when the rezoning application was approved in September, 2015. As the applicant has proposed no design changes, the proposal satisfies all of the CD-92 zone regulations [attached].

Official Community Plan Design Guidelines

Building Design: The building design is a two storey single family dwelling complete with a full basement. The home incorporates modern design elements when viewed from Colville Road including a flat roof, a mix of horizontal wood siding, cement board paneling and stucco. The rectangular design theme is further highlighted through the use of tall, narrow and short, wide windows on the front and sides of the building. Windows facing north are more generous affording a view of the Gorge Vale Golf Course and allowing passive light to enter the building. The use of varied cladding materials combine to create visual interest while breaking up the massing of the building.

The owner has registered a Section 219 covenant on the titles of the property to ensure future purchasers are notified that a secondary suite is prohibited within this home.

The proposal is consistent with the Single-Unit Infill Housing Guidelines [attached] contained in the Township of Esquimalt Official Community Plan as the proposed home is complimentary in scale, size, siting, and height to homes in the immediate area. The proposed cladding materials blend well into the neighbourhood, and the design is considerate of the privacy of adjacent home owners. The proposed flat roof design is a departure from the traditional gabled and hipped rooflines in the area and the rectilinear building form which carries the full mass of the building onto the second floor fails to address OCP Sections 9.9.4.2(a) and 9.9.4.2(b). Noting this, staff are of the opinion that this proposal enhances the neighbourhood by adding a new focal point into the streetscape.

Landscaping: The applicant is proposing a mix of plantings in a varied, compact landscape treatment in the front yard in addition to a turf lawn. The contrasting asphalt driveway and concrete pedestrian path serves to break up the mass of the hard surfacing at the front of the building. The rear yard is generous for a lot of this size and can be accessed directly from the

basement media room of the home or from the main living area of the first storey creating desirable indoor/ outdoor transitions for residents. A generous rear yard patio complimented by an adequate lawn area combines to create desirable and inviting rear yard environment.

ALTERNATIVES:

1. Forward the application for Development Permit to Council with a **recommendation of approval**.

2. Forward the application for Development Permit to Council with a **recommendation of approval** with conditions as determined by the Commission.

3. Forward the application for Development Permit to Council with a **recommendation of denial**.


N
1050
1046
1042
1038
1034
1030
1028
COLVILLE RD
1051
1047
1043
CONDOR AVE
829833
825
10291031
10271027
10251025
Subject Property Map
1038 Colville Rd.

1038 Colville Road

Subject Property Boundary:

9.9 Guidelines for Single-unit Infill Housing

9.9.1 Definition

Single-unit infill housing is development that provides for new single-unit homes on land that is surplus to the needs of existing housing. This could be in the form of separate dwellings on one lot (strata-titled or otherwise), or dwellings on separate small lots created through subdivision of larger lots.

9.9.2 Purpose

The purpose of these guidelines is provide guidance for proponents, the public, municipal staff, Advisory Committees and Council for the evaluation of applications for rezoning to permit the construction of single-unit Infill Housing.

9.9.3 Guidelines

9.9.3.1 Preferred Locations/Site Characteristics

The following characteristics define the general suitability of a property for Single-unit Infill Housing:

a) Lots currently zoned RD-1 (Two-unit Residential) and RD-3 (Two-unit / Single-unit Residential), especially those with extra width and lot area;

b) Lots with a frontage on more than one street (including corner lots);

c) Properties that are transitional between lower density and higher density housing or other land uses;

d) The demolition of existing housing is discouraged (unless in exceptional circumstances) however moving of houses is considered acceptable; and

e) These criteria are general in nature. Each project will be considered on its own merit.

9.9.4 Design

9.9.4.1 Context

a) Where an existing single-unit residence is to be retained and a second residence placed on the parcel, the existing dwelling is to be upgraded and made to blend with the new construction.

b) Where two or more new separate dwellings are situated within a comprehensive development zone, the buildings shall be designed as part of a comprehensive scheme with all buildings being finished in complementary materials and incorporating similar architectural details.

c) Where new infill single houses are proposed, the design of the new houses should be complementary in scale, size, exterior finishes, rooflines, and colours to the predominant styles of housing in the neighbourhood. It is important to ensure that the new construction fits with the overall scale and character of existing houses.

d) The intent of this guideline is not to encourage the replication or imitation of surrounding buildings but rather the design of structures that complement the streetscape.

9.9.4.2 Massing

e) New structures should be designed so that the overall massing is in keeping with other single-unit residences in the immediate area. New structures for lots other than corner or double frontage lots should be limited to one and one half storeys.

f) New structures, which are two storeys in height, should be designed so that the second storey is partially concealed within the slope of the roof to minimize the height of the building. The use of dormers set into the roof is preferred to a flat roof or a peaked roof set over the second storey.

9.9.4.3 Privacy/Screening/Shadowing

g) Proposed infill dwellings should have only a minimal impact on adjacent homes and be separated from neighbouring residences by vegetation, screening, natural elevation differences, or a combination of these features.

h) Windows, decks and patios should be located so as to minimize intrusion onto the privacy of adjacent properties.

i) Infill dwellings should be sited to minimize the casting of shadows onto the private outdoor space of adjacent residential dwellings.

9.9.4.4 Landscaping

j) Proposals for single-unit infill housing must include a landscape plan showing hard landscaping (i.e., parking areas, fences, and patios) as well as lawns, trees, shrubs, planting areas and proposed plant species.

k) Retention and protection of trees and the natural habitat is encouraged wherever possible.

9.9.4.5 Private Open/Yard Space

l) Any proposal for single-unit infill housing should provide for useable, private outdoor areas for each dwelling, at grade.

9.9.5 Process

9.9.5.1 Rezoning

a) Single-unit infill housing will only be permitted through a rezoning process. Each application will be considered on its own merit.

b) As well as the typical rezoning information, an application for a single-unit infill housing should include:

   i) a summary of the proposal (prepared by the applicant) showing how it differs from the regular zoning requirements in terms of site coverage, floor area ratio, building envelope, number of parking spaces, amount of useable open space and common areas; and

   ii) an illustration of the streetscape (to scale) showing the relationship of the proposed building to the five (5) adjacent buildings on either side of it and of the same buildings from the rear is required. For corner lots, the streetscape drawing must be provided for both street frontages.

67.79 COMPREHENSIVE DEVELOPMENT DISTRICT NO. 92 [CD NO. 92]

In that Zone designated as CD No. 92 [Comprehensive Development District No. 92] no Building or Structure or part thereof shall be erected, constructed, placed, maintained or used and no land shall be used except in accordance with and subject to the regulations contained in or incorporated by reference into this Part.

(1) **Permitted Uses**

The following Uses and no others shall be permitted:

(a) Single Family Residential
(b) Home Occupation

(2) **Parcel Size**

The minimum Parcel Size of Parcels created by subdivision shall be 330 square metres.

(3) **Lot Width**

The width of parcels created by subdivision shall not be less than 9.0 metres measured at the Front Lot Line.

(4) **Density**

The number of Dwelling Units permitted in this CD-92 Zone shall be limited to two [2] for a density of one [1] unit per 330 square metres.

(5) **Number of Principal Buildings**

Not more than one (1) Principal Building shall be located on a parcel.

(6) **Floor Area**

(a) The Floor Area of the First Storey of a Principal Building shall not exceed 77 square metres.

(b) The total Floor Area of a Principal Building shall not exceed 154 square metres.

(c) Notwithstanding Section 6(a), the Floor Area of the First Storey of a Principal Building, not including a Private Garage, shall not exceed 58 square metres.

(d) In this zone, Floor Area located in any Basement, or portion thereof, within a Principal Building, where the ceiling is less than 1.2 metres above the natural Grade at any point, shall be exempt from the requirements of Section 6(b).

(7) **Building Height**

(a) No Principal Building shall exceed a Height of 7.3 metres.

(b) No Accessory Building shall exceed a Height of 3.6 metres.

(8) **Building Width**

The maximum width for a Principal Building shall be 5.6 metres

(9) **Lot Coverage**

(a) All Principal Buildings, Accessory Buildings and Structures combined shall not cover more than 29% of a parcel.

(b) Notwithstanding Section 9(a) Principal Buildings shall not cover more than 27% of the Area of a parcel

(10) **Siting Requirements**

(a) **Principal Buildings:** Where lands in this CD-92 zone have been subdivided into two parcels:

(i) No Principal Building shall be located within 7.5 metres of a Front Lot Line.

(ii) No Principal Building shall be located within 1.5 metres of any Side Lot Line with the total setback of all Side Yards not to be less than 3.3 metres.

(iii) The westernmost Principal Building shall not be located within 12 metres of the Rear Lot Line.

(iv) The easternmost Principal Building shall not be located within 10.7 metres of the Rear Lot Line.

(v) The separation between Principal Buildings within Comprehensive Development District No. 92 [CD No. 92] shall not be less than 3.6 metres.

Where lands in this zone have not been subdivided, the most restrictive of the above requirements are applicable.

(b) **Accessory Buildings:**

(i) Front Setback: No Accessory Building shall be located in front of the front face of the Principal Building.

(ii) Side Setbacks: No Accessory Building shall be located within 1.5 metres of any Interior Side Lot Line.

(iii) Rear Setback: No Accessory Building shall be located within 1.5 metres of any Rear Lot Line.

(iv) Building Separation: No Accessory Building shall be located within 7.0 metres of any Principal Building.

(11) **Fencing**

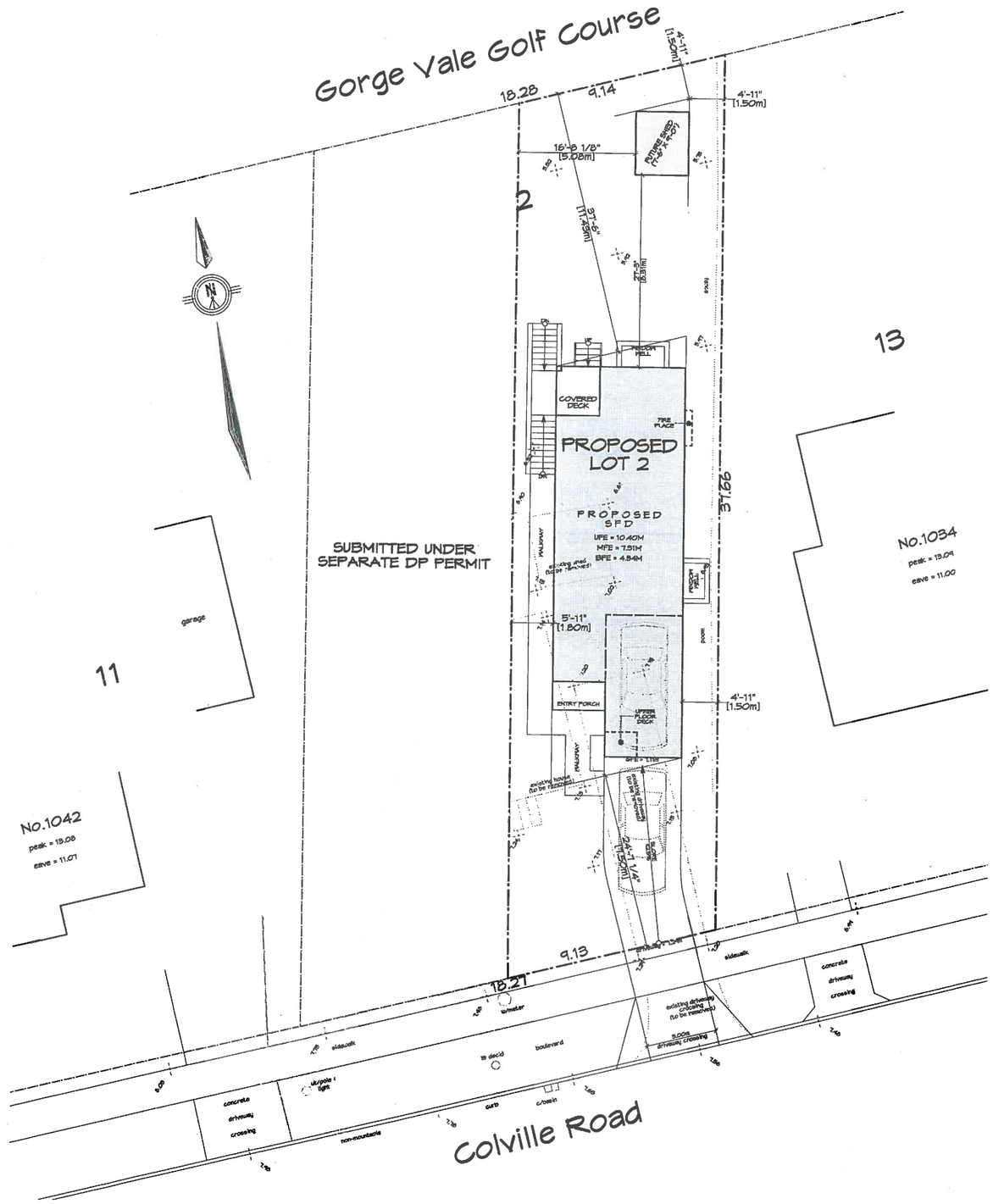
Subject to Part 4, Section 22, no fence shall exceed a Height of 1.2 metres in front of the front face of any Principal Building and 2 metres behind the front face of the Principal Building.

(12) **Landscaping and Open Space**

Landscaping and Open Space shall be as shown on the landscape plan approved as part of the active Development Permit.

(13) **Off-Street Parking**

Off-street parking shall be provided in accordance with the requirements of Parking Bylaw, 1992, No. 2011(as amended).



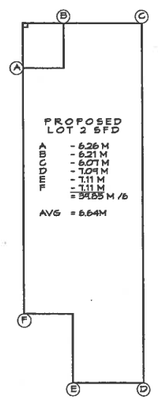
Proposed Site Plan
Scale: 1:100

SITE DATA - Proposed Lot 2 - 1038 Colville Road

LEGAL DESCRIPTION - LOT 12, BLOCK 13, SECTION 10, ESQUIMALT DISTRICT, PLAN 2546
CURRENT ZONING - RD-3
PROPOSED ZONING - CCD

	PROPOSED HOUSE
LOT AREA	333.84 M² (3593.41 FT²)
LOT WIDTH	9.13 M (29.95')
LOT DEPTH	37.66 M (123.56')
BUILDING WIDTH	5.54 M (18.18')
SETBACKS	
FRONT	7.50 M (24.61')
REAR	11.43 M (37.50')
SIDE (NORTHWEST)	1.80 M (5.91')
SIDE (SOUTHEAST)	1.50 M (4.92')
AVG. GRADE	6.64 M (21.79')
BUILDING HEIGHT	7.28 M (23.88')
FLOOR AREA	
UPPER FLOOR	76.91 M² (827.90 FT²)
MAIN FLOOR	56.41 M² (607.23 FT²)
GARAGE (EXCLUDED)	18.00 M² (193.76 FT²) EXCLUDED
LOWER FLOOR (BSMT)	51.29 M² (552.04 FT²)
NON-BASMENT, TOTAL	133.33 M² (1435.13 FT²)
ALL FLOORS, TOTAL	184.61 M² (1987.16 FT²)
FLOOR AREA RATIO EXCLUDES BSMT AREA	0.399
SITE COVERAGE INCLUDES FUTURE ACCESSORY BLDG	28.82 %
PARKING	2 SPACES

	PROPOSED SHED (FUTURE)
SETBACKS	
FRONT	31.83 M (104.43')
REAR	1.50 M (4.92')
SIDE (NORTHWEST)	5.08 M (16.67')
SIDE (SOUTHEAST)	1.50 M (4.92')
TO PRINCIPAL BLDG	8.31 M (27.26')
AVG. GRADE	5.75 M (18.86')
BUILDING HEIGHT	3.60 M (11.81') - MAX
FLOOR AREA	4.72 M² (50.80 FT²)
SITE COVERAGE	1.88 %



DRAWING LIST:

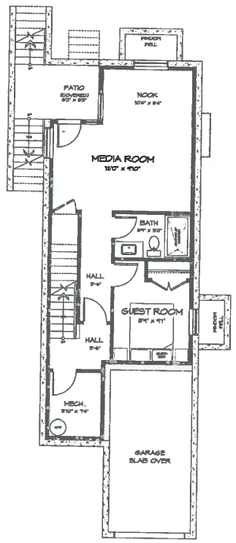
DP0	SITE PLAN & SITE DATA
DP1	FLOOR PLANS & ELEVATIONS
DP2	STREETSCAPE
DP3	LANDSCAPE PLAN

RECEIVED
APR 27 2016
CORP. OF TOWNSHIP OF ESQUIMALT
DEVELOPMENT SERVICES

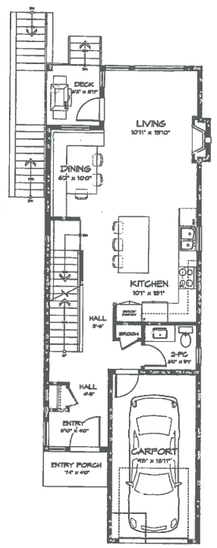
ISSUED FOR DP
APR. 27, 2016

ZEBRADESIGN
1161 NEWPORT AVE
Victoria, B.C. V8S 5E6
Phone: (250) 360-2144
Fax: (250) 360-2115

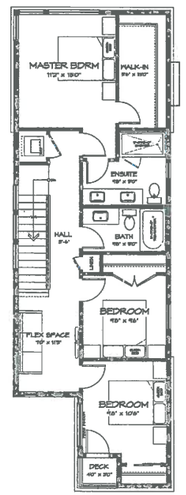
Drawn By: K. KOSHMAN
Date: APR. 27, 2016
Scale: AS NOTED
Project: Proposed Lot 2 1038 Colville Rd Infill Housing SFD
Title: SITE PLAN & SITE DATA
Revision: 1ST SUBMISSION APR. 27/16
Sheet: DP0
Proj.No. TBD



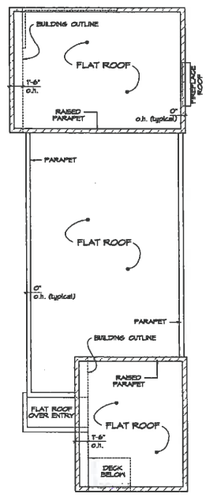
Lower Floor Plan - Lot 2
Scale: 1/8" = 1'-0"



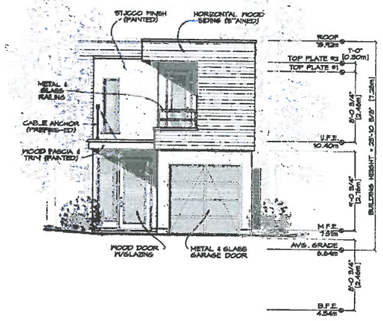
Main Floor Plan - Lot 2
Scale: 1/8" = 1'-0"



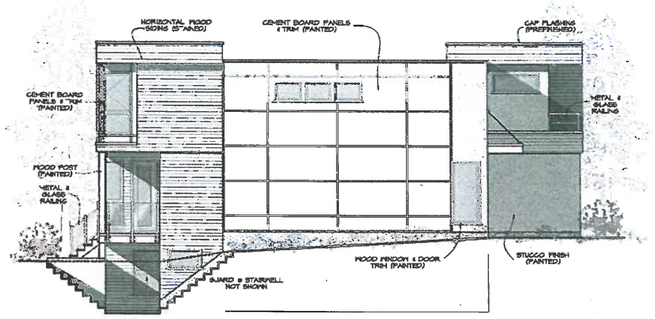
Upper Floor Plan - Lot 2
Scale: 1/8" = 1'-0"



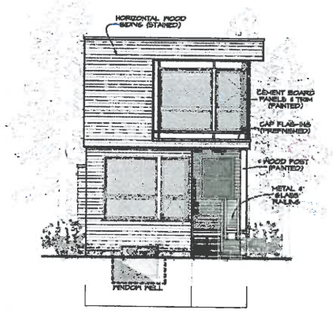
Roof Plan - Lot 2
Scale: 1/8" = 1'-0"



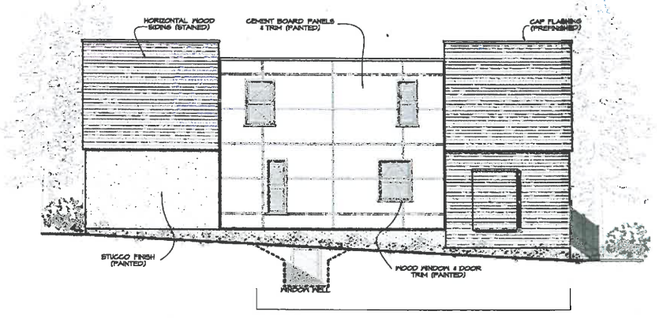
FRONT



WEST SIDE



REAR



EAST SIDE

Elevations - Lot 2
Scale: 1/8" = 1'-0"

LOT 2 MAXIMUM GLAZING CALCULATION - SIDE ELEVATION (WEST)	
DISTANCE TO PROPERTY LINE	1.80 M (5.91')
EXPOSED BUILDING FACE AREA	104.69 M2 (1126.84 SF)
GLAZING AREA	7.33 M2 (78.92 SF)
PERCENTAGE	7.00% (ALLOWED 7.60%)

LOT 2 MAXIMUM GLAZING CALCULATION - SIDE ELEVATION (EAST)	
DISTANCE TO PROPERTY LINE	1.50 M (4.92')
EXPOSED BUILDING FACE AREA	106.13 M2 (1142.39 SF)
GLAZING AREA	3.77 M2 (40.59 SF)
PERCENTAGE	3.55% (ALLOWED 7.00%)

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ZEBRADESIGN

1161 NEWPORT AVE
Victoria, B.C. V8S 5E6
Phone: (250) 360-2144
Fax: (250) 360-2115

Drawn By: K. KOSHMAN

Date: APR. 27, 2016

Scale: AS NOTED

Project:
Proposed Lot 2
1038 Colville Rd
Infill Housing SFD

Title:
LOT 1 PLANS & ELEVATIONS

Revision:
1ST SUBMISSION, APR. 27/16

Sheet:
DP1

Proj.No. TBD

CIVIC #1046

CIVIC #1042

PROPOSED LOT 1

PROPOSED LOT 2
(PROJECT LOCATION)

CIVIC #1034

CIVIC #1030

Proposed Streetscape

Scale: 1/8" = 1'-0"

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APR. 27, 2016

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1161 NEWPORT AVE
Victoria, B.C. V8S 5E6
Phone: (250) 360-2144
Fax: (250) 360-2115

Drawn By: K. KOSHMAN

Date: APR. 27, 2016

Scale: AS NOTED

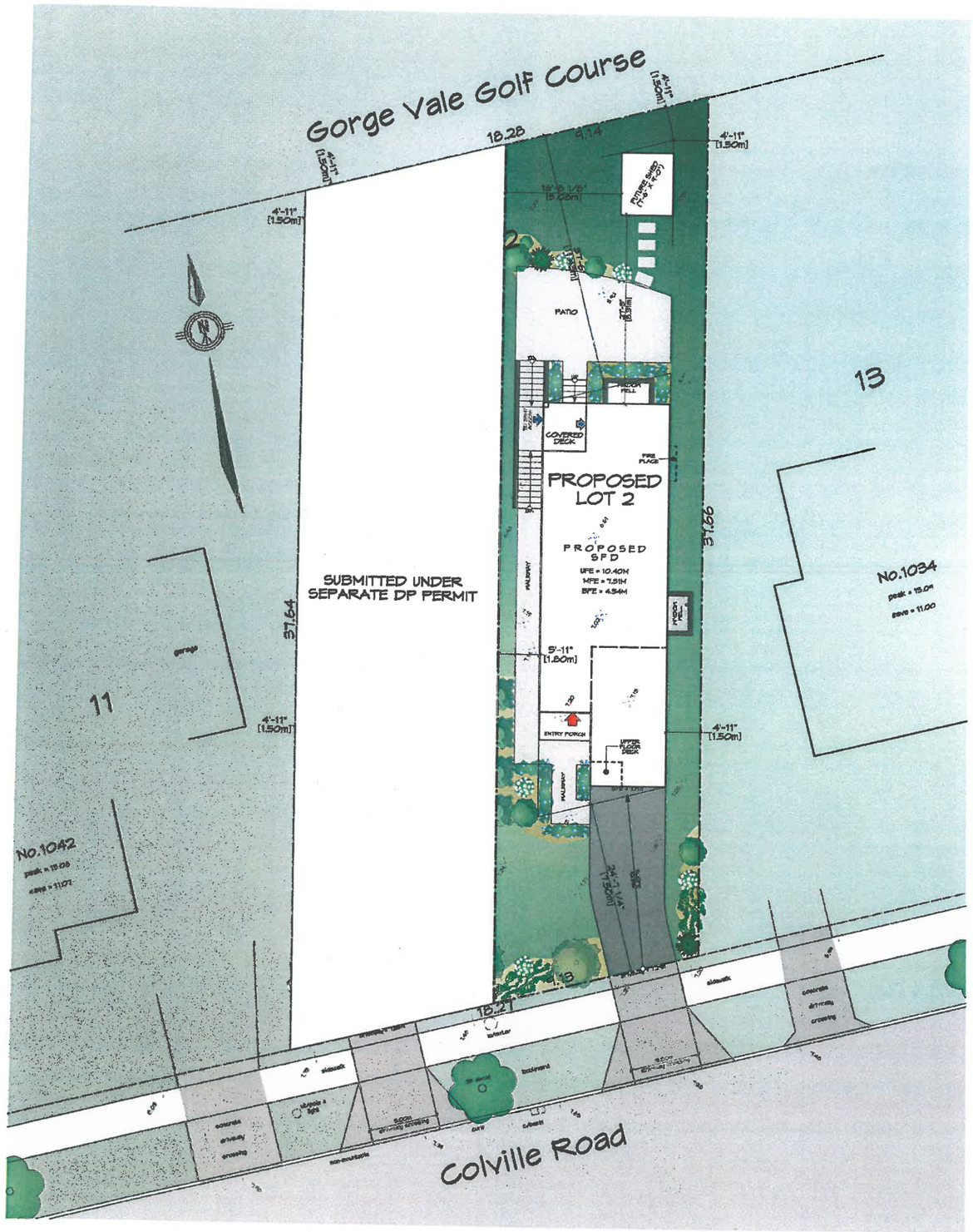
Project:
Proposed Lot 2
1038 Colville Rd
Infill Housing SFD

Title:
STREETSCAPE

Revision:
1ST SUBMISSION
APR. 27/16

Sheet:
DP2

Proj.No. TBD



Proposed Landscape Plan
Scale: 1:100

LANDSCAPE PLAN LEGEND

TREES/SHRUBS

EXISTING TREE
NEW TREE
NEW SHRUBS

GROUNDCOVER

LAWN
PLANTED AREA
GROUNDCOVER PLANTS

HARD LANDSCAPING

ASPHALT DRIVEWAY
CONCRETE STAIRS/WALKWAYS & PATIOS
PAVED SIDEWALK
RETAINING WALL
CEDAR PRIVACY FENCE
BRUSHED CONCRETE DRIVEWAY CROSSING

EGRESS

MAIN ENTRY
SECONDARY ENTRY
WINDOW WELL GRATE COVER (SEE NOTE #5)

NOTES:

1. LANDSCAPING INDICATED IS CONCEPTUAL ONLY AND REQUIRES INSTALLATION BY A QUALIFIED LANDSCAPING CONTRACTOR.
2. CONTRACTOR TO IDENTIFY UTILITIES PROVIDED THROUGH UNDERGROUND WIRING AND AVOID CONFLICT WITH EXCAVATIONS.
3. ALL LANDSCAPING SHALL BE PERFORMED TO BCSLA, BCLNA STANDARDS.
4. ALL EXISTING TREES TO REMAIN, UNLESS NOTED OTHERWISE
5. INSTALL GRATE OVER WINDOW WELL TO ALLOW PASSAGE OVER (WALKWAY); WINDOW WELL GRATE TO BE OPENABLE FROM BELOW FOR EGRESS

Suggested Plant List

	Botanical Name	Common Name	Size
Trees			
	Cornus Venus	Flowering Dogwood	2.5m height, B&B
	Camelia Japonica specimen	Evergreen Camelia	3.0m height, B&B
	His Majesty Cultivar	Cork Tree	2.5m height, B&B
Shrubs			
	Arbutus Unedo Compacta	Strawberry Tree	#5
	Berberis Thunbergii Atropurpurea	Barberry	#2
	Buxus Microphylla	Dwarf Boxwood	#2
	Camelia Japonica	Red Camelia	#5
	Cistus Ladanifer	Crimson Rock Rose	#3
	Ceanothus Gloriosus Incrabre	Prostrate Mountain Lilac	#1
	Erica Carnea Springwood	White Heather	#1
	Erica x Darleynsis Furzey	Pink Heather	#1
	Escallonia Newport Dwarf	Dwarf Escallonia	#2
	Hebe "Patty's Purple"	Hebe	#2
	Lavendula Angustifolia Hidcote	Hidcote Lavender	#1
	Ribes Sanguineaum King Edward	Pink Flowering Current	#5
	Rhododendron	White Rhododendron	#5
	Spirea Prunifolia	Bridal Wreath Spirea	#5
	Viburnum Davidii	Evergreen Viburnum	#3
Groundcovers			
	Parthenocissus Quinquefolia	Virgin Creeper	#1
	Thymus Pink Ripple	Creeping Thyme	Sp3, 30cm o.c.

ISSUED FOR DP
APR. 27, 2016

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Infill Housing SFD
Title:
LANDSCAPE PLAN
Revision: 1ST SUBMISSION APR. 27/16
Sheet: DP3
Proj.No. TBD

BC LAND SURVEYORS SITE PLAN OF:

Civic: 1038 Colville Road

Legal – Lot 12, Block 13, Section 10,
Esquimalt District, Plan 2546

Parcel Identifier: 006–326–617 in the Township of Esquimalt

Scale – 1 : 150 Distances are in metres.

0 2 5 10 15

The intended print size is 11" by 17".

Geodetic elevations shown + ##.## (in Metres)

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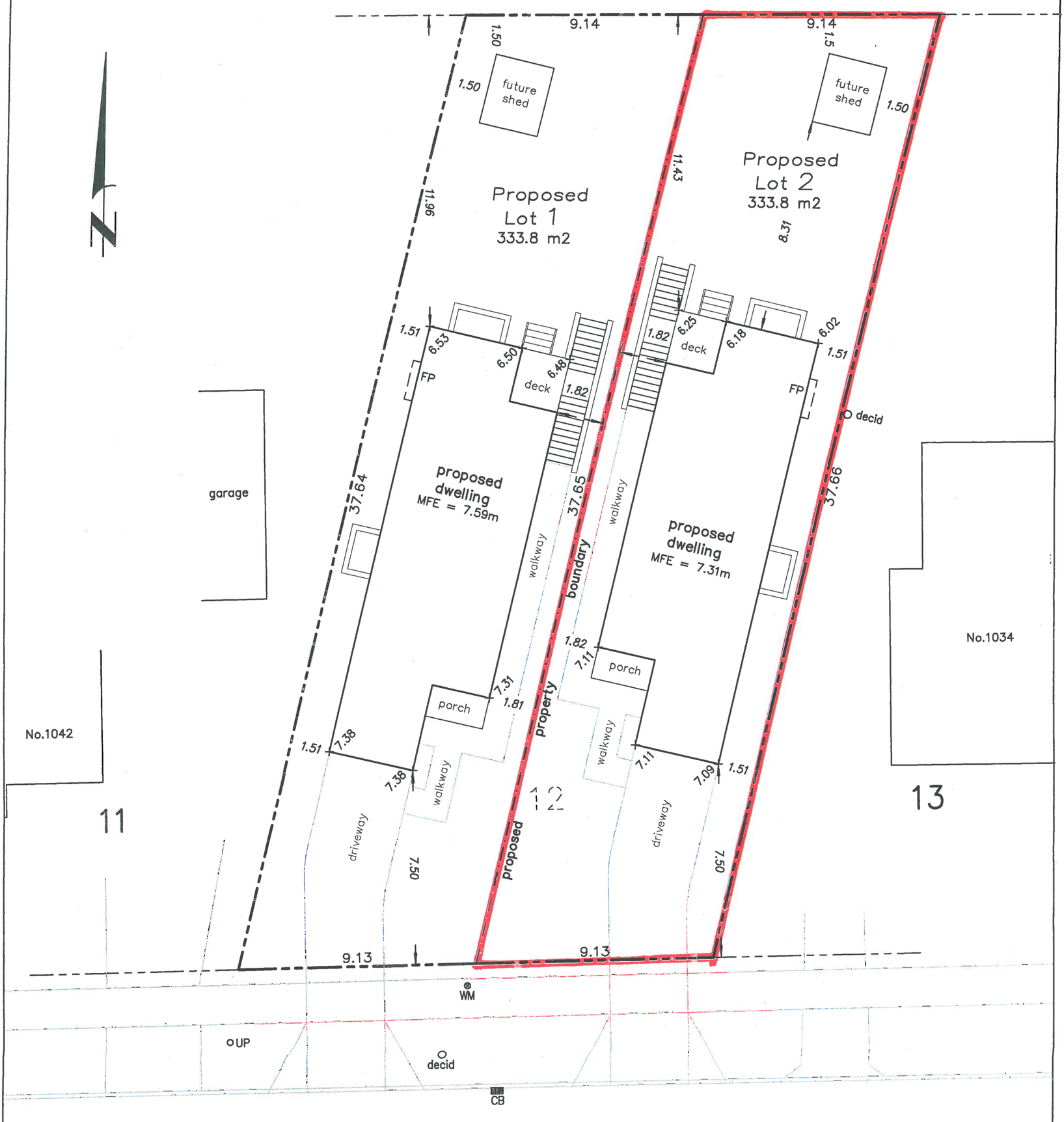
A

Gorge Vale Golf Course



Colville Road

File : 11889–22
POWELL & ASSOCIATES
B C Land Surveyors
250–2950 Douglas Street
Victoria, BC V8T 4N4
phone (250) 382–8855

ALAN M. POWELL BRITISH COLUMBIA SEAL LAND SURVEYOR COMMISSION No. 599

Certified correct
this 5th day of February, 2015
Alan Powell
CNP7B5

Digitally signed by Alan Powell CNP7B5
DN: c=CA, cn=Alan Powell CNP7B5, o=BC Land Surveyor, ou=Verify ID at www.juricert.com/LKUP.cfm?id=CNP7B5
Date: 2015.02.05 14:47:44 -08'00'

Alan M. Powell, B.C.L.S.

"BLACK"
WESTECK WINDOWS

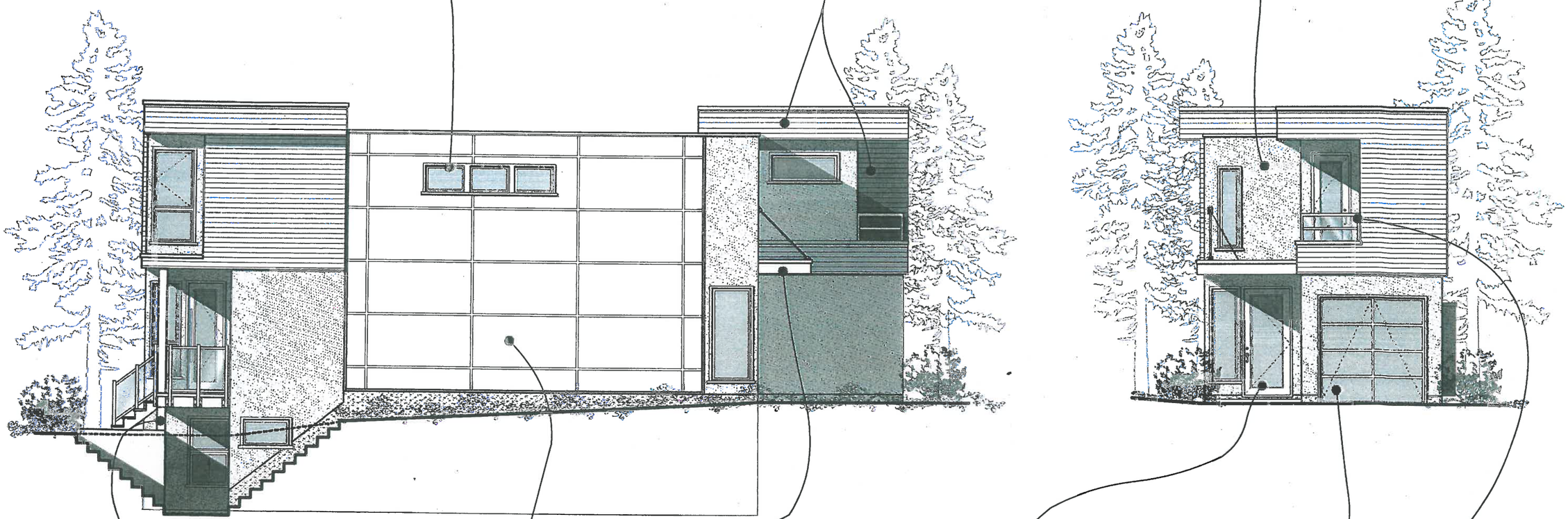
VINYL WINDOWS

"BIRCH"
SICO SEMI-TRANSPARENT STAIN

HORIZONTAL WOOD SIDING
(STAINED)

"CRYSTAL WHITE"
IMASCO MINERALS INC.

STUCCO FINISH



"DESIGNER WHITE"
PRATT & LAMBERT PAINTS

WOOD FRONT DOOR (PAINTED), WITH GLAZING

WOOD FASCIA, POSTS & TRIM (PAINTED)

CEMENT BOARD PANELS & TRIM (PAINTED)

"BLACK"

METAL GARAGE DOOR, WITH GLAZING

PREFINISHED METAL & GLASS RAILINGS

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DEVELOPMENT SERVICES

ZEBRADESIGN
1101 NEWPORT AVE
Victoria, B.C. V8S 5E6

Proposed Lot 2 SFD

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

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

APC Meeting: May 18, 2016

STAFF REPORT

DATE: May 13, 2016

TO: Chair and Members of the Advisory Planning Commission

FROM: Bill Brown, Director of Development Services

SUBJECT: **OFFICIAL COMMUNITY PLAN AND REZONING APPLICATION**
"Esquimalt Village Project"
1235 Esquimalt Road
Lot 1, Section 11, Plan EPP32782

RECOMMENDATION:

The Esquimalt Advisory Planning Commission recommends that the application to amend the Official Community Plan and to rezone the subject property to facilitate the development of the Esquimalt Village Project (EVP) be forwarded to Council with a recommendation to **approve, approve with conditions, or deny the application including reasons for the chosen recommendation.**

BACKGROUND:

Purpose of the Application

The purpose of the application is to amend the Official Community Plan and the Zoning Bylaw in order to allow for the development of the Esquimalt Village Project. The Esquimalt Village Project is a 12,795.1 m^2 mixed-use project proposed for an 8090 m^2 parcel located in the heart of the Township of Esquimalt adjacent to the existing Municipal Hall (Schedule "A"). The Esquimalt Village Project is envisioned as a model example of exemplary mixed-use design that will be the catalyst for the rejuvenation of Esquimalt's core.

Schedules

Schedule "A" Drawing Package
Schedule "B" Building Data Summary
Schedule "C" Traffic Impact Assessment
Schedule "D" Parking Study
Schedule "E" Summary of green building strategies
Schedule "F" Draft Design Guidelines

Context

Applicant/Owner: Township of Esquimalt

Architect: D'Ambrosio Architecture + Urbanism (Franc D'Ambrosio)

Property Size: Metric: 8090 m^2 Imperial: 87,085 ft^2

Existing Land Uses: Parking lots, playground, fire truck bay, and pubic open space.

Surrounding Land Uses:
North: Commercial and park.
South: Residential (detached and duplex dwellings).
West: Commercial and institutional (public safety building)
East: Public health unit, day care, and future water park.

Existing Zoning: TC [Town Centre]
P-2 [Parks and Open Space]

Proposed Zoning: CD [Esquimalt Village Project Comprehensive Development District]

Existing OCP Designation: Commercial Mixed-Use [Institutional]

Proposed OCP Designation: Esquimalt Village

Zoning

Density, Site Coverage, and Building Height

The following chart details the setbacks, lot coverage and floor area ratio and parking requirements of this proposal (see also Schedule "B" "Building Data Summary").

Parameter	**Building A** **Residential**	**Building B** **Residential**	**Building C** **Institutional/ Commercial Office**	**Building D** **Mixed use residential rental/ commercial**	**Total**
Gross Floor Area (m^2)	2,582.7	3,036.1	4,506.4	2669.9	12,795.1
Site Area (m^2)					8090
Floor Area Ratio					+/- 1.6
Building Height (m)	21.38	21.47	22.05	22.79	N/A
Number of Residential Units	32	37	0	32	101
Site Coverage					52%

Setbacks

Lot Line	**Setback (m)**
Esquimalt Road	0.75
Carlisle Avenue	0.0
Park Place	0.0
Interior Side	0.5

Parking

The applicant has provided a Parking Study (Schedule "D"). The proposed development will include 200 parking stalls for cars (176 of the stalls will be under ground and 39 on the surface). The proposed development will also include 206 bicycle parking stalls (182 underground and 24 on the surface). The Parking Study concluded in part that, "the proposed parking supply (200 spaces) is appropriate for the site if parking is managed as suggested and the majority of identified TDM measures are adopted. Assuming all TDM measures are adopted, the expected parking demand will be 179

vehicles, which will provide the proponent with some buffer".

Permitted Uses

The Esquimalt Village Project is designed as a mix-use project featuring multi-family market strata units, multi-family market rental units, commercial food and beverage, office, and institutional (library and the Justice Institute of BC).

a) Accessory Uses
b) Business and Professional Office
c) Dwelling – Multi-Family
d) Open air markets
e) Financial Institution
f) Government Office
g) Home Occupation
h) Library
i) Personal Service Establishment
j) Retail Store
k) Restaurant
l) Schools including post-secondary institutions

Official Community Plan

The current Esquimalt Official Community Plan contains policies and statements relevant to the West Bay Triangle proposal under the following broad categories:

General Land Use and Development Objectives

The Township encourages a mix of land uses that facilitate multiple modes of transportation and reduce non-essential trips by private motor vehicles.

Public Art

The Township encourages the private sector to include artworks in new and existing developments. The proposed development will include a public art walk.

Smart Design and Construction

The Township encourages the use of sustainable technology in the design of all new buildings, encourages design teams to achieve LEED or equivalent rating and encourages the incorporation of Crime Prevention through Environmental Design [CPTED] principles and measures in new projects.

Keep Urban Settlement Compact – Regional Growth Strategy [RGS]

The RGS encourages densification through a combination of infill and redevelopment to higher densities particularly for areas near transit corridors.

Green Building Features

The architect has taken an "ecological urbanism approach" to the proposed development. This means that, "community planning and urban design issues have been considered comprehensively, from the level of the watershed catchment area through to the macro and micro-climate aspect of the Esquimalt Town Square site" (Schedule "D").

Traffic Study

The applicant has provided a Traffic Impact Assessment (Schedule "C"). The Report recommends that, "No mitigation measures are required or recommended for the adjacent roadways for traffic operations. Pedestrian frontage improvements should be incorporated as required".

Alternatives

1. Forward the application for Rezoning to Council with a **recommendation of approval including reasons for the recommendation**.

2. Forward the application for Rezoning to Council with a **recommendation of approval including specific conditions and including reasons for the recommendation.**

3. Forward the application for Rezoning to Council with a **recommendation of denial including reasons for the recommendation**.

_____
Bill Brown

Director of Development Services




Esquimalt Town Square

1235 Esquimalt Road, Esquimalt BC

OCP/ Rezoning Application

D'AMBROSIO architecture + urbanism 1536

2960 Jutland Road
Victoria BC Canada V8T5K2

tel 250 384 2400

eml mail@fdarc.ca
web www.fdarc.ca

Plans Issued **4 May 2016**

Contacts

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Corporation of the Township of Esquimalt
1229 Esquimalt Road
Esquimalt, B.C.,
V9A 3P1
tel: 250.414.7133

Developer
ARAGON
201-1628 West 1st Avenue
Vancouver, BC
V6J 1G1
Lenny May
tel: 604.732.6170
fax: 604.732.6178

Architect
D'Ambrosio architecture + urbanism
2960 Jutland Road,
Victoria, BC
V8T 5K2
Franc D'Ambrosio
tel: 250.384.2400

Landscape Architect
Murdoch de Greeff Inc.
200 - 524 Culduthel Road
Victoria, BC
V8Z 1G1
Scott Murdoch
tel: 250.412-2891

Civil Consultant
McElhanney Consulting Services Ltd.
Suite 500, 3960 Quadra Street
Victoria, BC
V8X 4A3
Peter Ferguson
tel: 778.746.7422

Transportation
Boulevard Transportation
201-791 Goldstream Avenue
Victoria, BC
V9B 2X5
Dan Casey/ Mitchell Jacobson
tel: 250 388-9877

Surveyor
McElhanney Consulting Services Ltd.
Suite 500, 3960 Quadra Street
Victoria, BC
V8X 4A3
Glen Quarmby
tel: 778.746.7521

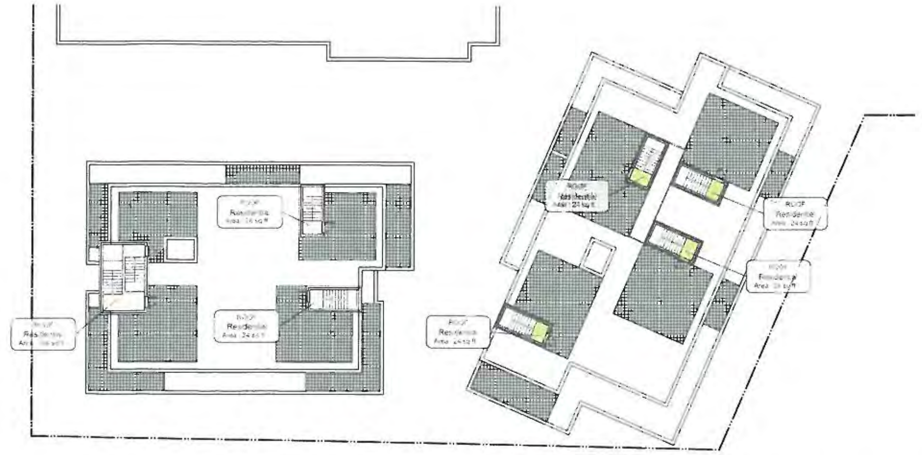
List of Drawings

Architectural

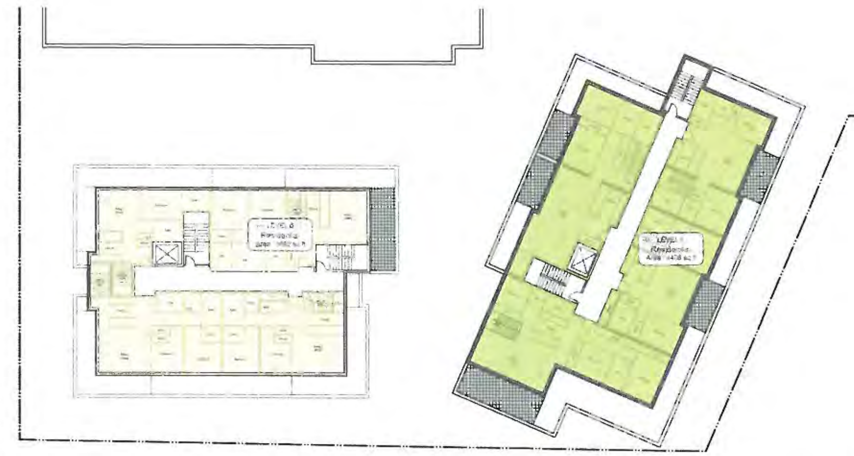
Landscape

Survey

D'AMBROSIO
architecture + urbanism



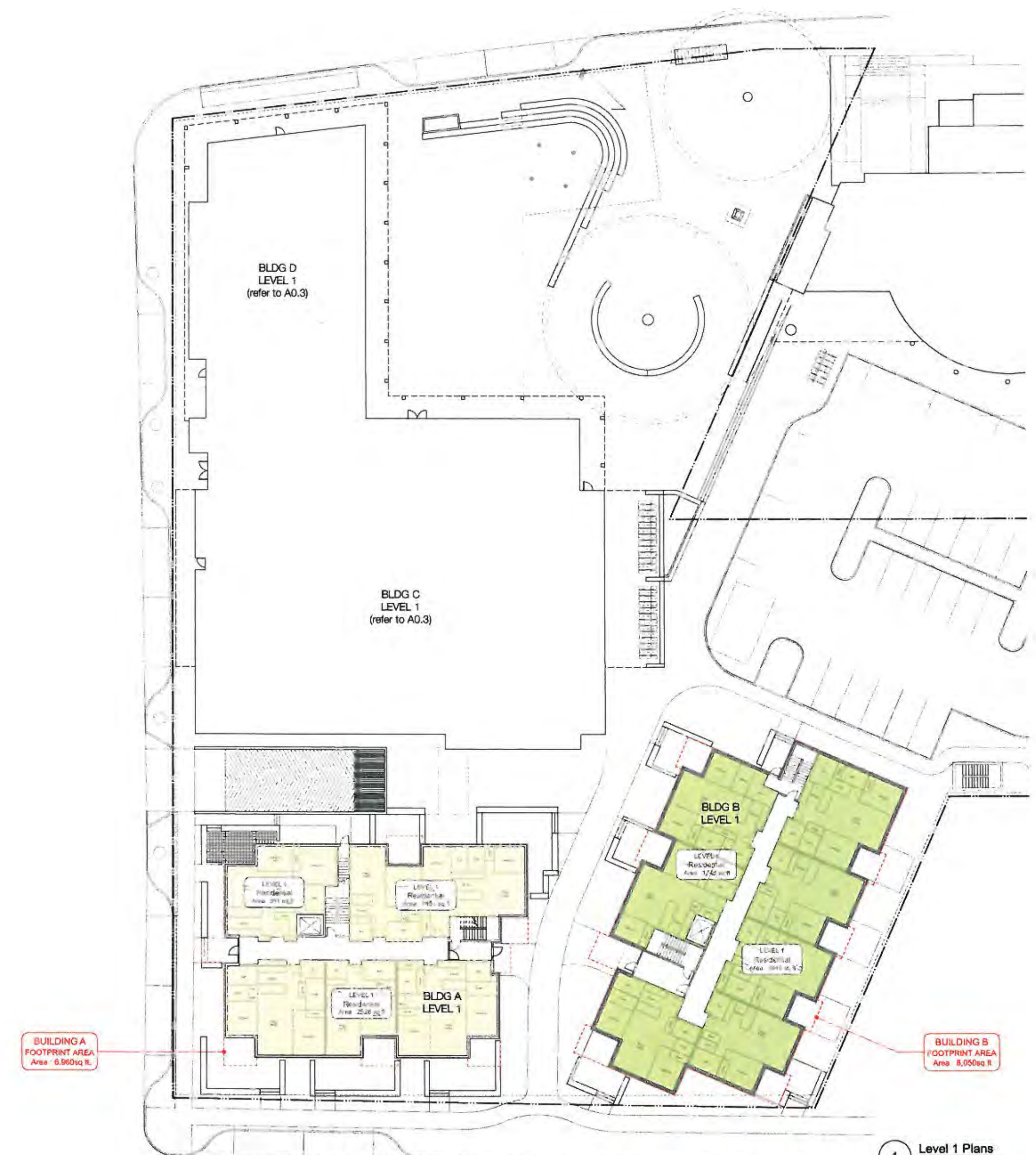
6 Roof Deck Plans
Scale: 1:250



5 Level 6 Plans
Scale: 1:250

4 Level 5 Plans
Scale: 1:250

3 Levels 3-4 Plans
Scale: 1:250



1 Level 1 Plans
Scale: 1:250

2 Level 2 Plans
Scale: 1:250

Esquimalt Town Square (#1536)
Floor Area Calculations

Building A

	Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
	LEVEL 1	4,932	458.2
	LEVEL 2	5,128	476.4
	LEVEL 3	5,128	476.4
	LEVEL 4	5,128	476.4
	LEVEL 5	3,679	341.8
	LEVEL 6	3,652	339.3
	ROOF	154	14.3
SUBTOTAL BUILDING A		**27,801**	**2,582.7**

Building B

	Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
	LEVEL 1	5,697	529.3
	LEVEL 2	6,024	559.6
	LEVEL 3	6,024	559.6
	LEVEL 4	6,024	559.6
	LEVEL 5	4,408	409.5
	LEVEL 6	4,408	409.5
	ROOF	96	8.9
SUBTOTAL BUILDING B		**32,681**	**3,036.1**

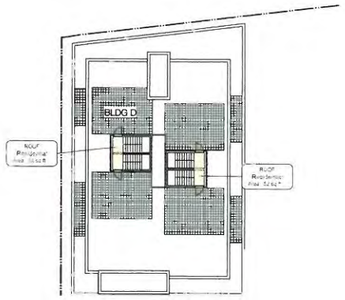
N

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

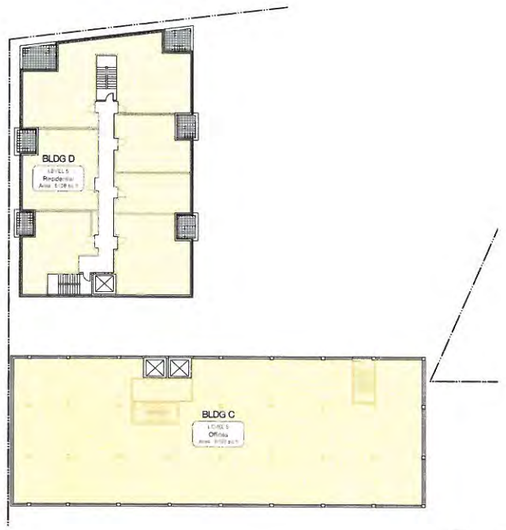
sheet title
Floor Area Diagrams
Buildings A + B

project no.	1536
drawing file	
date	May 4, 2016
scale	1:250
drawn by	ES
checked by	FDA
revision no	sheet no. A0.2

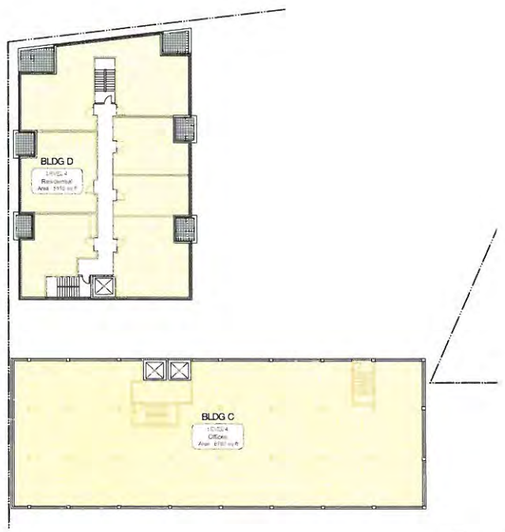


7 Roof Plan
Scale: 1:250

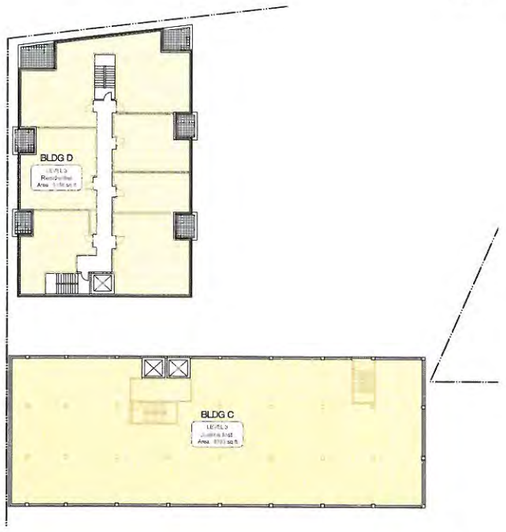
6 Level 6 Plan
Scale: 1:250



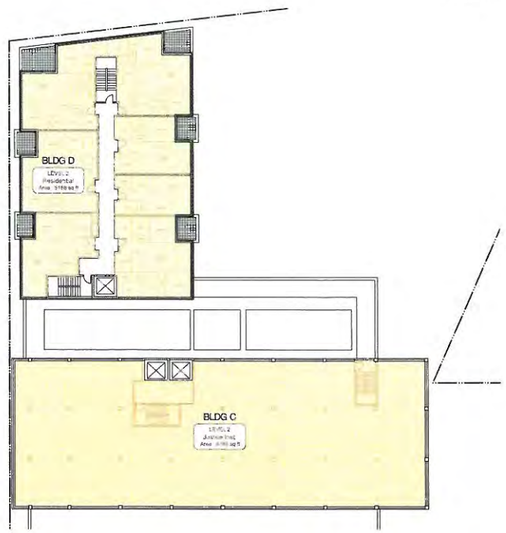
5 Level 5 Plans
Scale: 1:250



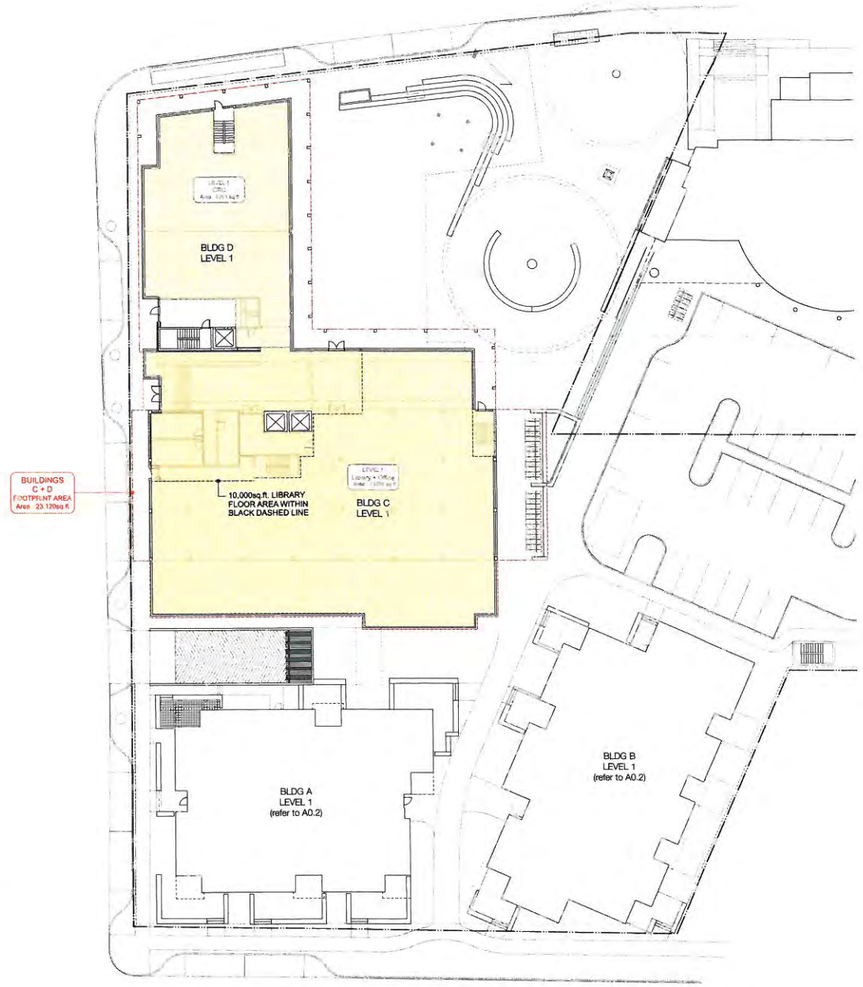
4 Level 4 Plans
Scale: 1:250



3 Level 3 Plans
Scale: 1:250



2 Level 2 Plans
Scale: 1:250



1 Level 1 Plans
Scale: 1:250

Esquimalt Town Square (#1536)
Gross Floor Area Calculations

Building C

Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
LEVEL 1	13,376	1242.6
LEVEL 2	8,783	815.9
LEVEL 3	8,783	815.9
LEVEL 4	8,783	815.9
LEVEL 5	8,783	815.9
Total Building C	**48,508**	**4508.4**

Building D

Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
LEVEL 1	4,261	395.8
LEVEL 2	5,158	479.2
LEVEL 3	5,158	479.2
LEVEL 4	5,158	479.2
LEVEL 5	5,158	479.2
LEVEL 6	3,743	347.7
ROOF	104	9.7
Total Building D	**28,740**	**2669.9**

N

0 1:200 5 10 15m
scale in metres

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Floor Area Diagrams
Buildings C + D

project no.	1536
drawing file	
date	May 4, 2016
scale	1:250
drawn by	ES
checked by	FDA
revision no.	sheet no. A0.3

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rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Site Plan (overall)

project no.	1536
drawing file	
date	May 4, 2016
scale	1:200
drawn by	JB/JH/ES/DR
checked by	FDA
revision no.	sheet no. A1.1

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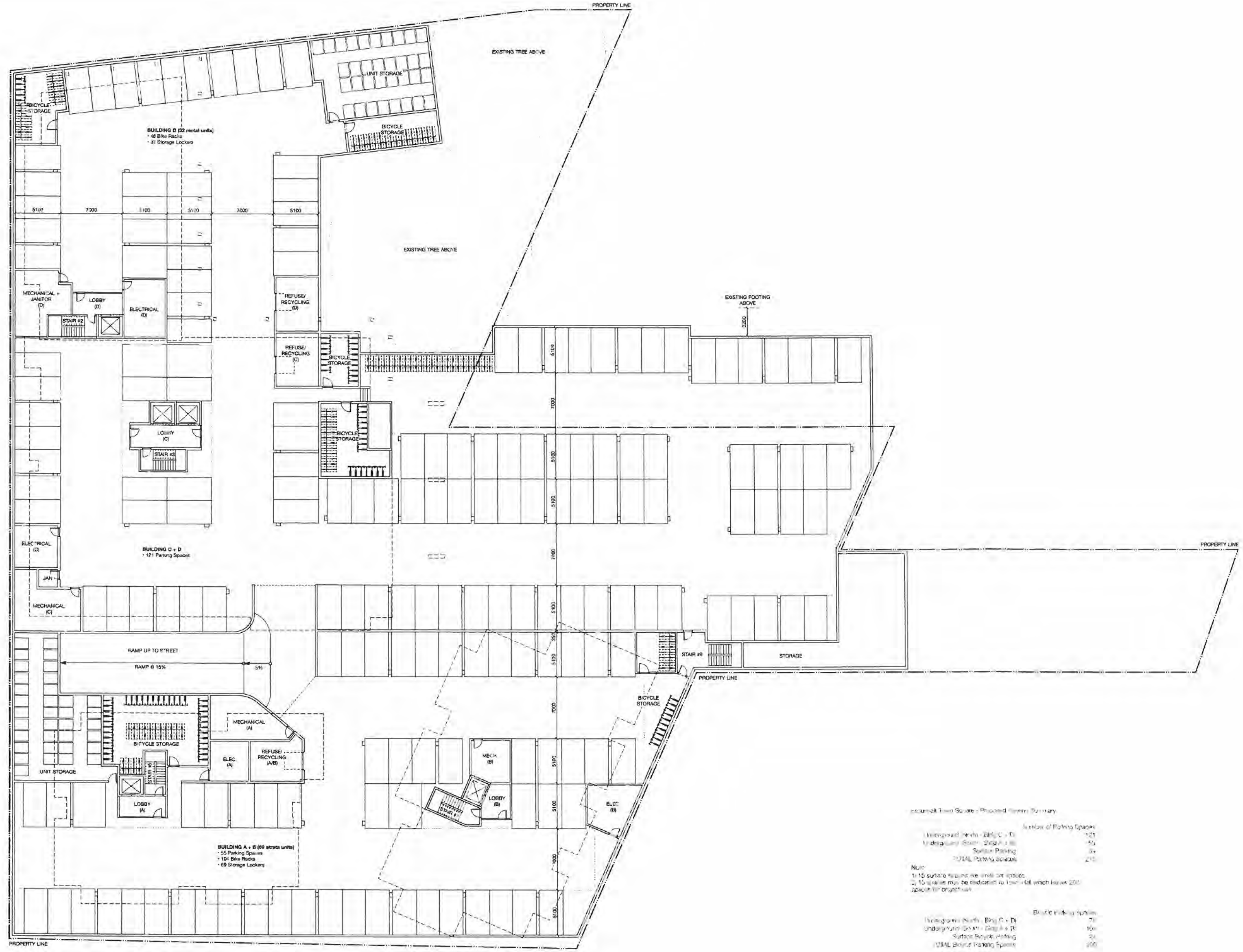

Esquimalt Town Square - Proposed Parking Summary

	Number of Parking Spaces
Underground North - Bldg C + D	121
Underground South - Bldg A + B	55
Surface Parking	[illegible]
TOTAL Parking Spaces	[illegible]

Note:
1) 15 surface spaces are small car spaces
2) 15 spaces may be dedicated to Town Hall which leaves 200 spaces for project use

	Bicycle Parking Spaces
Underground North - Bldg C + D	[illegible]
Underground South - Bldg A + B	[illegible]
Surface Bicycle Parking	[illegible]
TOTAL Bicycle Parking Spaces	200

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
P1 Parking Plan (Overall)

project no	1536
drawing file	
date	May 4, 2016
scale	1:200
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A1.2

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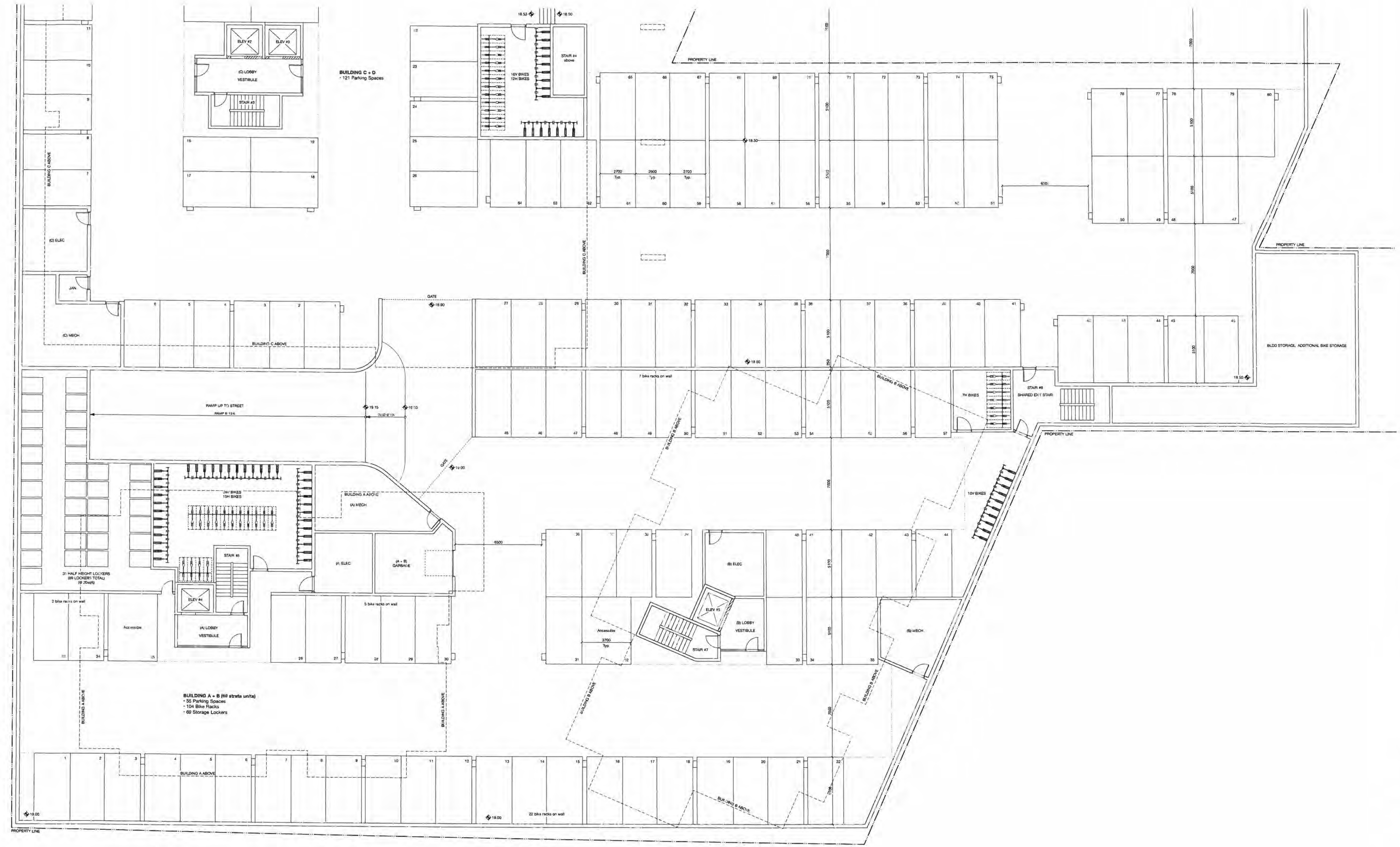

	OCP / Rezoning	05/04/2016
rev no	description	date

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
P1 Parking Plan (South)

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A2.1

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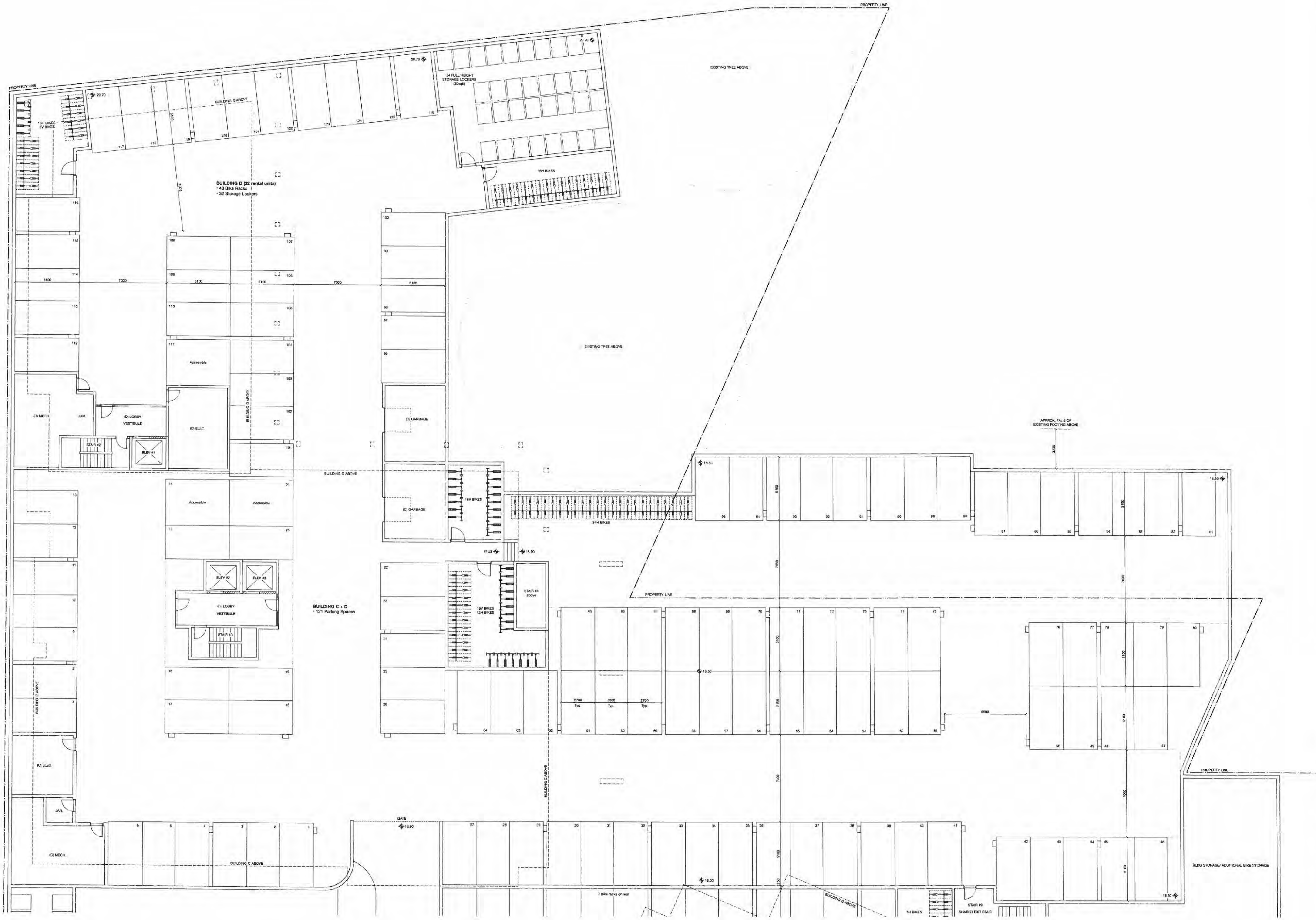
PROPERTY LINE
EXISTING TREE ABOVE
34 FULL HEIGHT STORAGE LOCKERS (20sqft)
16H BIKES
13H BIKES
8V BIKES
BUILDING D ABOVE
BUILDING D (32 rental units)
• 48 Bike Racks
• 32 Storage Lockers
Accessible
(D) MECH.
JAN.
(D) LOBBY VESTIBULE
(D) ELEC.
STAIR #2
ELEV #1
(D) GARBAGE
(C) GARBAGE
16V BIKES
24H BIKES
BUILDING C ABOVE
APPROX. FACE OF EXISTING FOOTING ABOVE
ELEV #2
ELEV #3
(C) LOBBY VESTIBULE
STAIR #3
BUILDING C + D
• 121 Parking Spaces
16V BIKES
12H BIKES
STAIR #4 above
(C) ELEC.
(C) MECH.
GATE
7 bike racks on wall
BUILDING B ABOVE
7H BIKES
STAIR #5 SHARED EXIT STAIR
BLDG STORAGE/ ADDITIONAL BIKE STORAGE
N

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
P1 Parking Plan (North)

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	
sheet no.	A2.10

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ESQUIMALT ROAD

PARK PLACE

BUILDING D
(Commercial / 32 rental unit/s)

COMMERCIAL RETAIL UNIT(S)

RESIDENTIAL LOBBY

BUILDING C
(Library / Commercial)

LIBRARY

GALLERY/ FLEXIBLE SPACE

LIBRARY READING ROOM

PLAZA

LANDSCAPING

EXISTING TOWN HALL

EXISTING COLUMN

HMCS MEMORIAL

PER ARBORIST / PER SURVEY

BUS SHELTER

SEATING

SEATING WALL

PATHWAY

RAMP DOWN 15%

RAMP TO LEVEL P1

SCREENED REFUSE / RECYCLING AREA

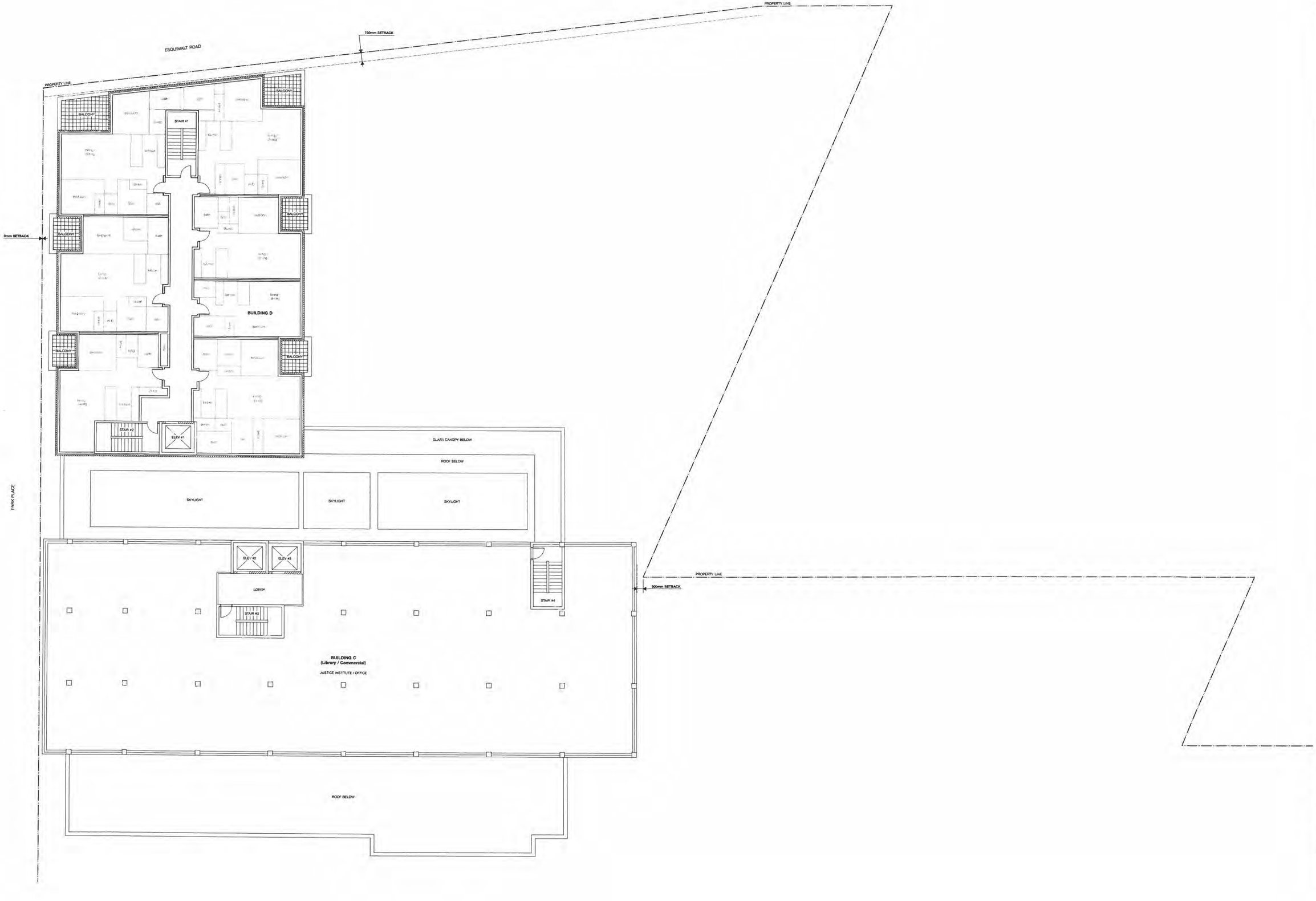
PROPERTY LINE

	DCP / Rezoning	05/04/2016
rev no	description	date

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Level 1 Floor Plan
Building C and D

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no.
△	A2.11



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N

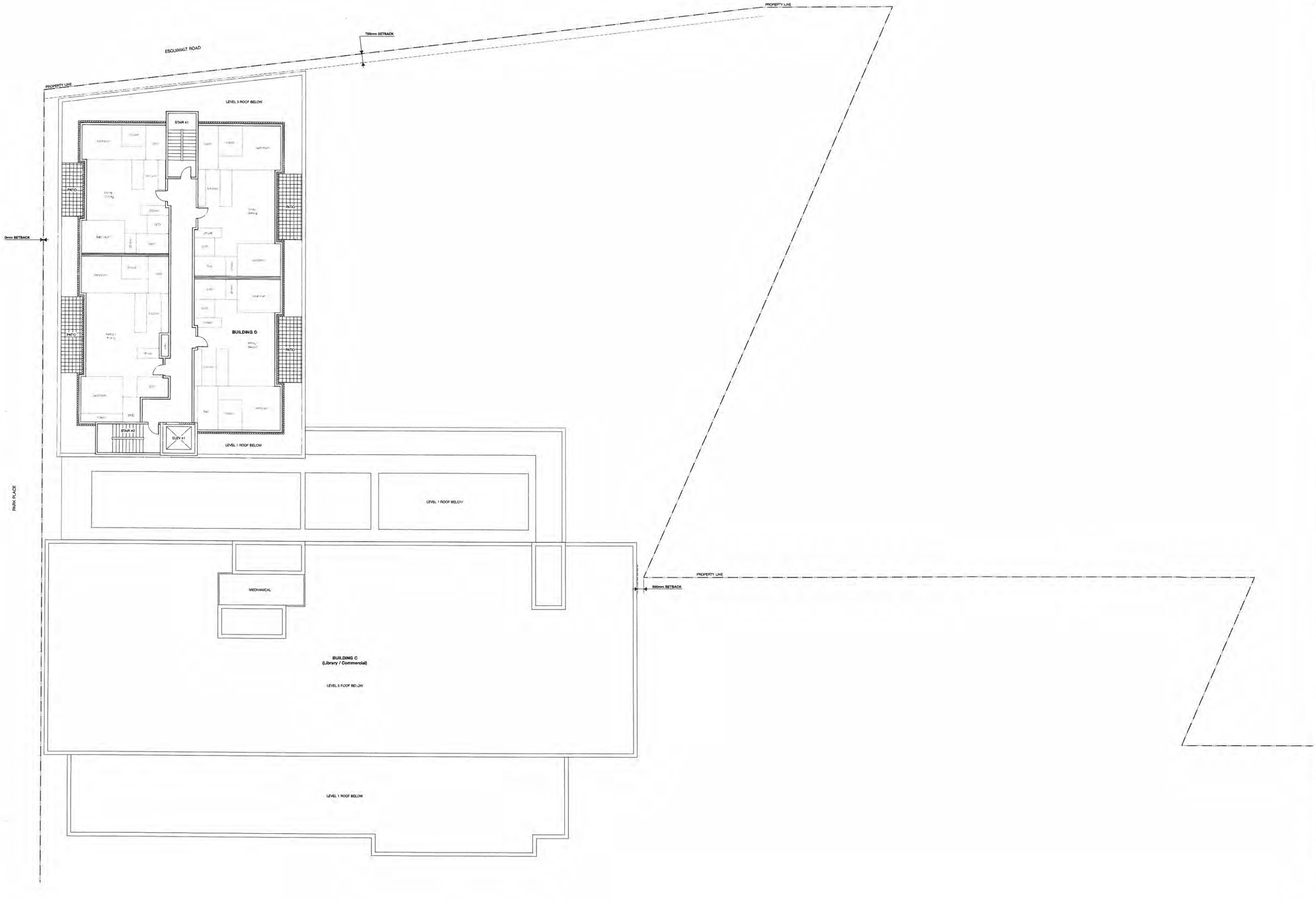
0 1m
1:100 in metres

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Levels 2 - 5 Floor Plan
Building C and D

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A2.12



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N

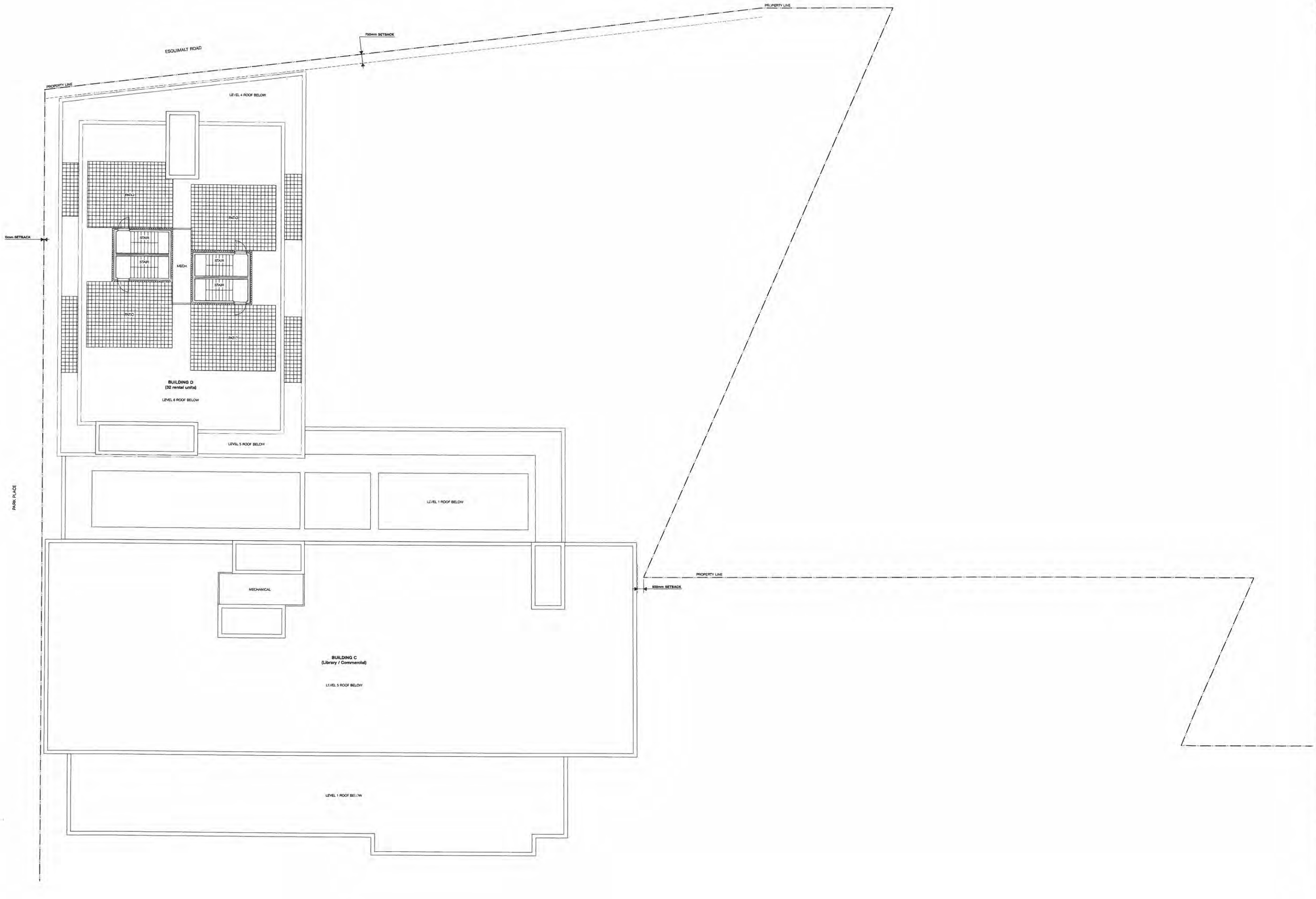
0 1m
1:100 scale in metres

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Level 6 Floor Plan
Building D

project no	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A2.13



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N

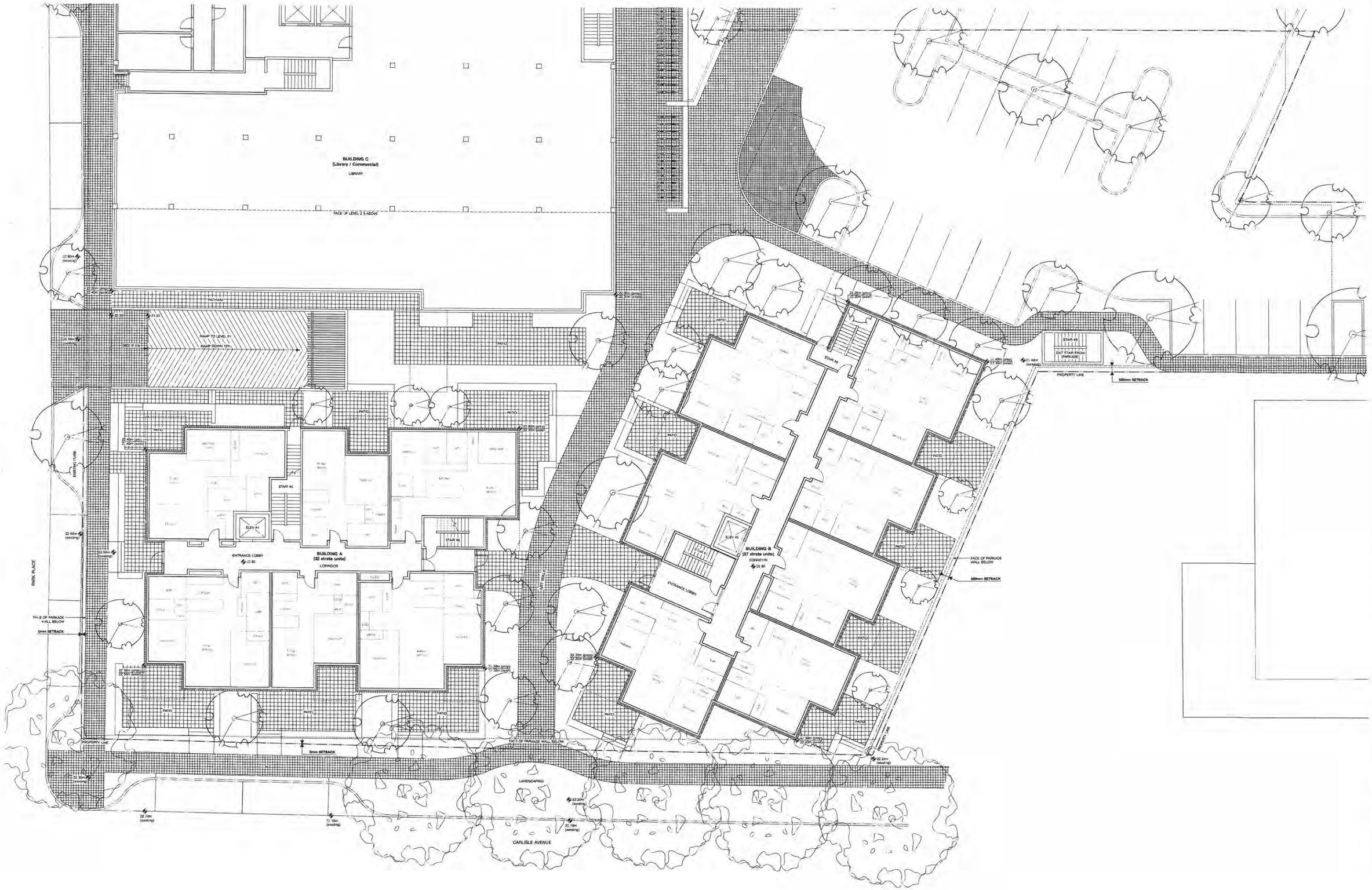
1m
scale in metres

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Roof Plan
Building D

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A2.14



rev no.	description	date
	OCP / Rezoning	05/04/2018

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Level 1 Floor Plan
Building A and B

project no:	1536
drawing file	
date	May 4, 2018
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no	sheet no.
△	A2.2

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BUILDING C

STAIR #3

BALCONY

PROPERTY LINE

600mm SETBACK

PARK PLACE

STAIR #5

STAIR #6

BUILDING A
CORRIDOR

BALCONY

0mm SETBACK

BUILDING B
CORRIDOR

ELEV #5

STAIR #7

500mm SETBACK

PROPERTY LINE

0mm SETBACK

CARLISLE AVENUE

N

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Level 2 Floor Plan
Building A and B

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A2.3

D'AMBROSIO
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N

0 1m
SCALE: 1:100

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Levels 3 - 4 Floor Plan
Building A and B

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no.
1	A2.4

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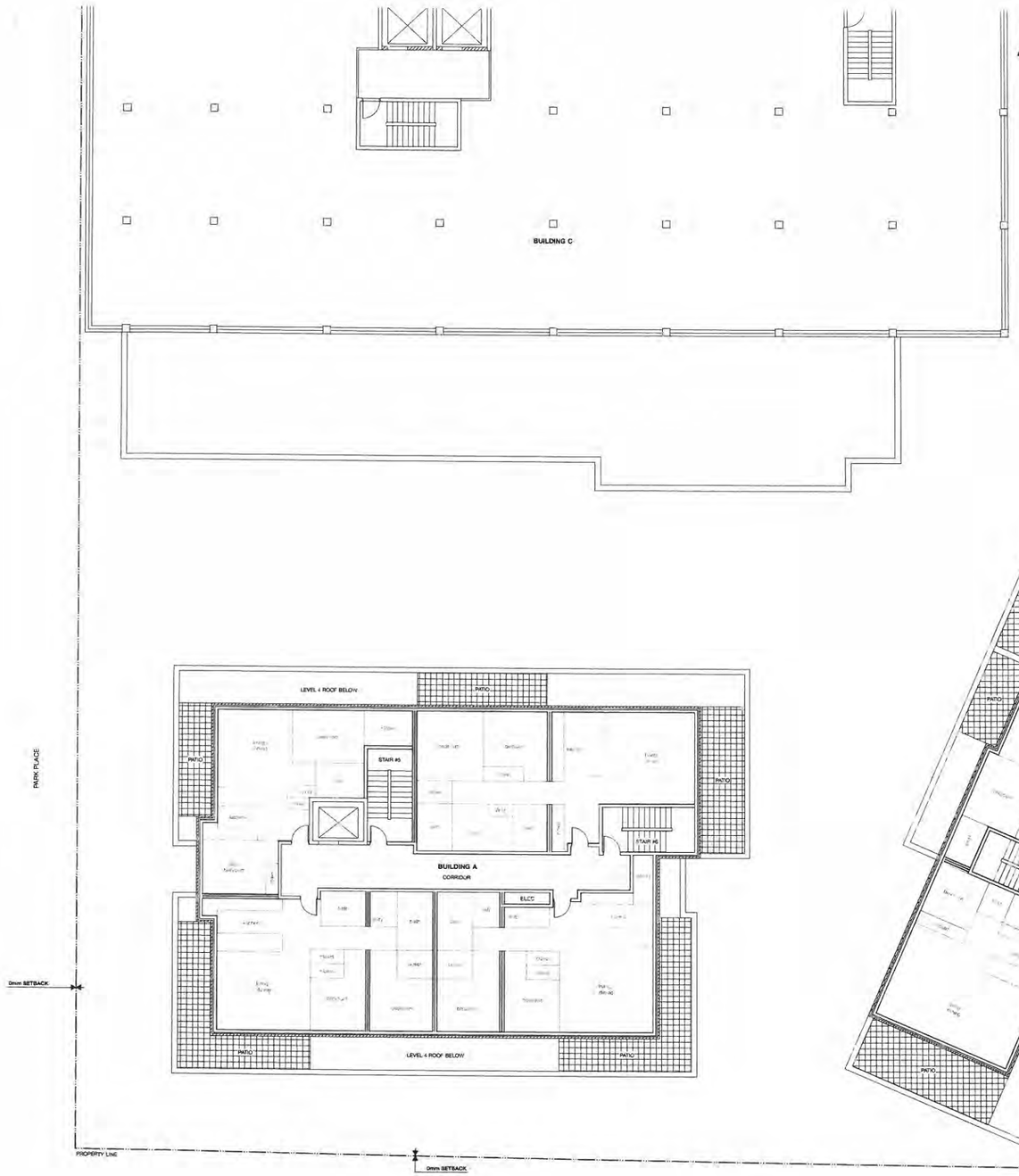

N

rev no	description	date
	/CP / Rezoning	01/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Level 5 Floor Plan
Building A and B

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no.
1	A2.5

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BUILDING C

LEVEL 4 ROOF BELOW

STAIR #5

BUILDING A
CORRIDOR

ELEC

STAIR #5

LEVEL 4 ROOF BELOW

LEVEL 4 ROOF BELOW

STAIR #5

ELEV #5

BUILDING B
CORRIDOR

LEVEL 4 ROOF BELOW

PROPERTY LINE

500mm SETBACK

0mm SETBACK

500mm SETBACK

PARK PLACE

PROPERTY LINE

0mm SETBACK

CARLISLE AVENUE

PROPERTY LINE

N

1:50

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Level 6 Floor Plan
Building A and B

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no.
△	A2.6

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BUILDING C

LEVEL 4 ROOF BELOW

PATIO

STAIR

MECH

BUILDING A
(32 strata units)

LEVEL 5 ROOF BELOW

BUILDING B
(37 strata units)

PROPERTY LINE

500mm SETBACK

0mm SETBACK

PARK PLACE

CARLISLE AVENUE

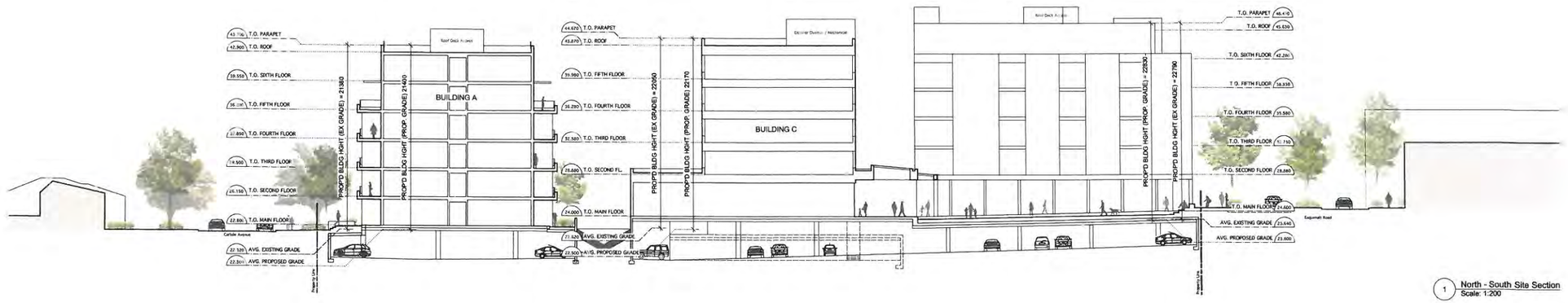
N

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

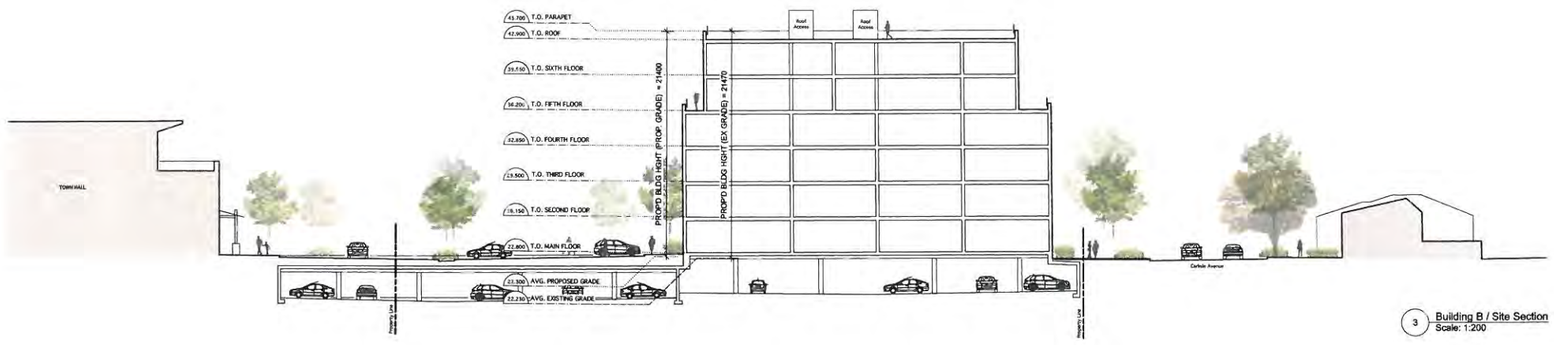
sheet title
Roof Plan
Building A and B

project no.	1536
drawing file	
date	May 4, 2016
scale	1:100
drawn by	JB/JH/ES
checked by	FDA
revision no.	sheet no. A2.7

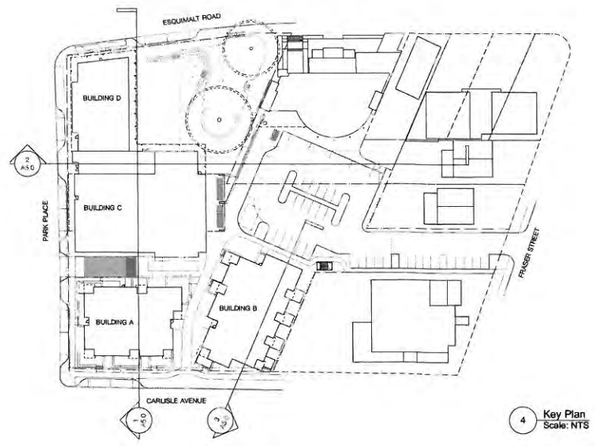


1 North - South Site Section
Scale: 1:200

2 East - West Site Section
Scale: 1:200



3 Building B / Site Section
Scale: 1:200



4 Key Plan
Scale: NTS

N

0 5 10m
1:100 scale in metres

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Site Sections

project no.	1536
drawing file	
date	May 4, 2016
scale	1:200
drawn by	JH/DR/ES
checked by	FDA
revision no.	sheet no. A5.0

Shadow Studies

May 21st 10:00 am

August 21st 10:00 am

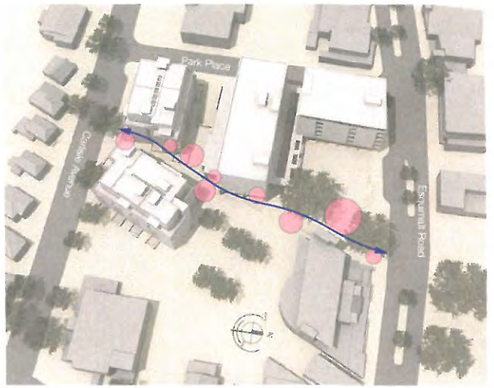
May 21st 12:00 pm

August 21st 12:00 pm

May 21st 3:00 pm

August 21st 3:00 pm

Massing & Circulation Diagrams



Legend

- Town Square
- Residential
- Library
- Retail/Restaurant Ground Floor (Residential Above)
- Pedestrian Movement
- Vehicle Movement
- Art Walk Sculpture Locations

rev no	description	date
	OCP / Rezoning	05/04/2016

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Shadow Studies / Massing & Circulation Diagrams

project no.	1536
drawing file	
date	May 4 2016
scale	NTS
drawn by	PM/NF
checked by	FDA
revision no.	sheet no. A6.0

LEGEND

- PROPERTY LINE
- EXTENT OF UNDERGROUND PARKING
- SIDEWALK PAVING
- INTERIOR SITE PAVING
- RESIDENTIAL PAVING
- PARKING AREA PAVING
  ASPHALT / SPECIALTY PAVING
- LAWN AREA
- SHRUB/TREE PLANTING AREA
- RAIN GARDEN ON GRADE
- RAIN PLANTER ON SLAB
- EXISTING TREE
  SEE ARBORIST'S REPORT FOR TREE RETENTION INFORMATION
- PROPOSED MEDIUM - LARGE TREE
- PROPOSED MEDIUM - LARGE TREE
- PROPOSED SMALL - MEDIUM TREE

DRAWING NOTES

1. DO NOT SCALE DRAWING: Verify all property lines and existing structures/vegetation to remain, prior to commencing work.
2. All plan dimensions in metres and all detail dimensions in millimetres.
3. Contractor to confirm location and elevation of all existing services and utilities prior to start of construction.
4. Provide layout of all work for approval by Landscape Architect prior to proceeding with work.
5. Contractor to provide irrigation system for all planters to current BABC Standards and Contract Specification.
6. Plant material, installation and maintenance to conform to the current edition of the BCSLA/BCLNA Landscape Standards.
7. General Contractor and/or sub-contractors are responsible for all costs related to production and submission to consultant of all landscape as-built information including irrigation.
8. Tree protection fencing, for existing trees, to be installed prior to commencement of all site work.

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architecture + urbanism

Murdoch deGreeff Inc.
Landscape Planning & Design

NOT FOR CONSTRUCTION

N

rev no	description	date
1	REZONING	12.05.04

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Concept Landscape Plan

project no.	116.07
drawing file	
date	
scale	1:200
drawn by	ML
checked by	SM/PdG
revision no.	sheet no. L1.1

LEGEND

- PROPERTY LINE
- EXTENT OF UNDERGROUND PARKING
- LAWN AREA
- SHRUB/TREE PLANTING AREA
- RAIN GARDEN ON GRADE
- RAIN PLANTER ON SLAB
- DIRECTION OF FLOW

PRELIMINARY RAINWATER MANAGEMENT CALCULATIONS

Catchment Area	Contributing Impervious Area	Design Storm Runoff Volume Contributing to Rain Garden	Stormwater Treatment Capacity per sq. m. of Rain Garden	Preliminary Rain Garden Area Required
	(sq. m.)	(cu. m./day)	(cu. m./day)	(sq.m.)
A	942	44.9	0.9	51.6
B	1641	78.3	0.9	90.0
C	1746	83.3	0.9	95.8
D	562	26.8	0.9	30.8
E	3319	-	-	-
total	16421			433.1

Assumptions

1 The design storm is a two-year, 24 hour rain event. In the Township of Esquimalt, this equals about 53 mm of rain.
2 The rain garden calculations are based on 150 mm live ponding, plus 20% of the sand/ compost growing medium volume at 600 mm depth (assuming growing medium has 20% void space) with a minimum infiltration rate of 2.5 cm/hour (or 48 cm per day), via perforated underdrain.
3 Catchment E will drain to Esquimalt's stormdrain system.

DRAWING NOTES

1. DO NOT SCALE DRAWING. Verify all property lines and existing structures/vegetation to remain, prior to commencing work.
2. All plan dimensions in metres and all detail dimensions in millimetres.
3. Contractor to confirm location and elevation of all existing services and utilities prior to start of construction.
4. Provide layout of all work for approval by Landscape Architect prior to proceeding with work.
5. Contractor to provide irrigation system for all planters to current IIABC Standards and Contract Specifications.
6. Plant material, installation and maintenance to conform to the current edition of the BCSLA/BCLNA Landscape Standards.
7. General Contractor and/or sub-contractors are responsible for all costs related to production and submission to consultant of all landscape as-built information including irrigation.
8. Tree protection fencing, for existing trees, to be installed prior to commencement of all site work

D'AMBROSIO
architecture + urbanism

Murdoch de Greeff INC
Landscape Planning & Design

NOT FOR CONSTRUCTION

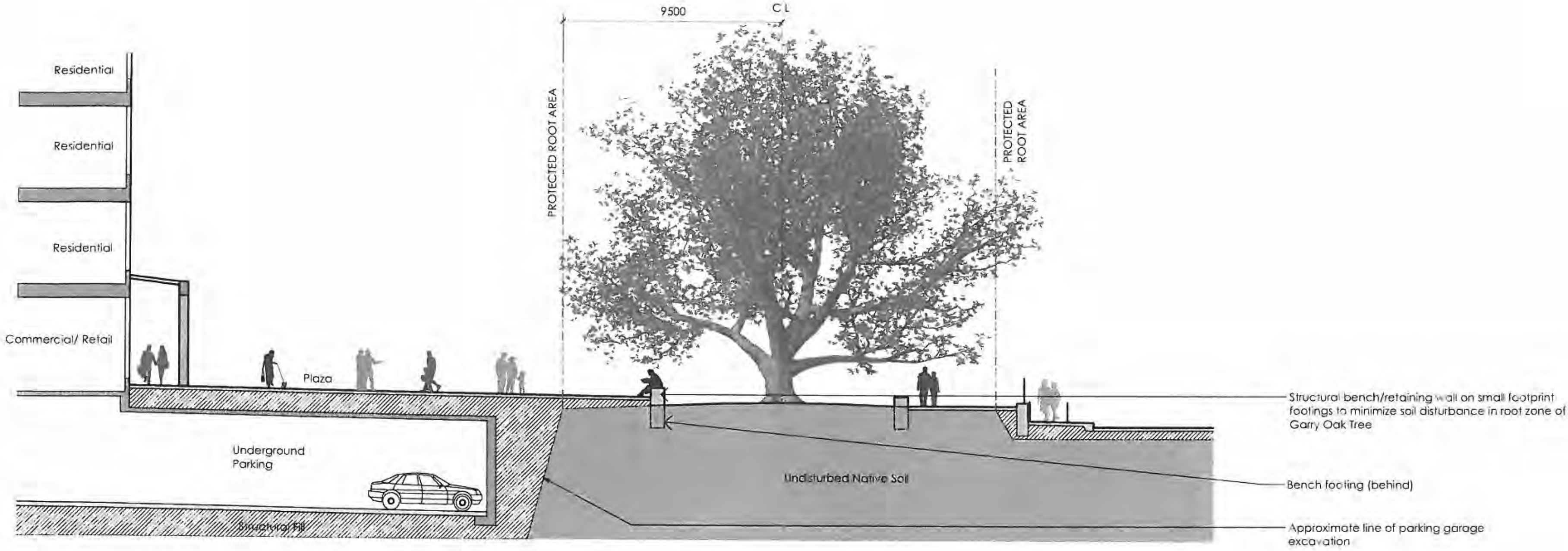
N

rev no	description	date
1	REZONING	16.05.04

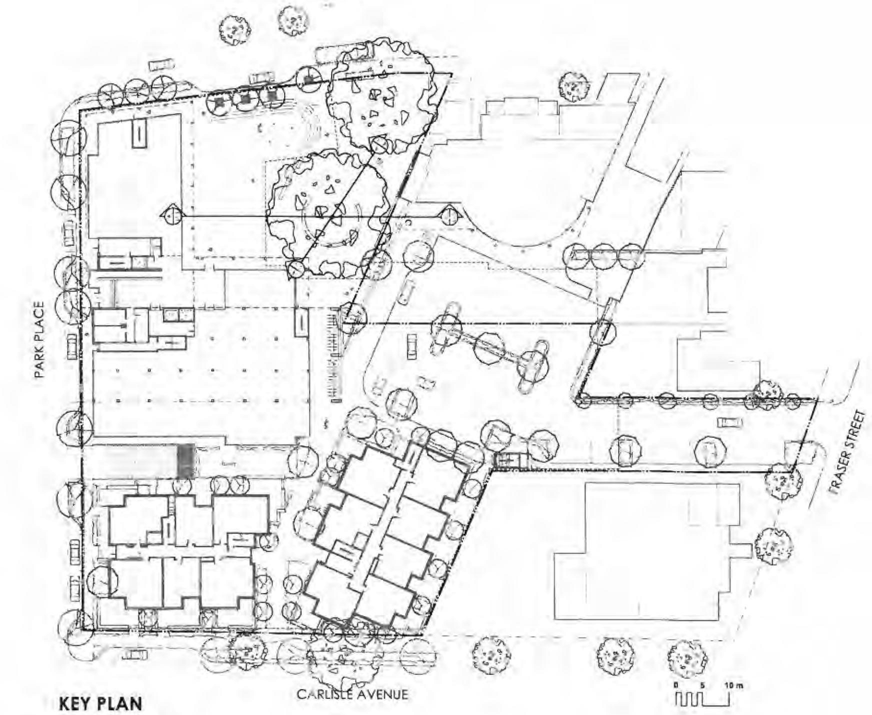
project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Stormwater Management Plan

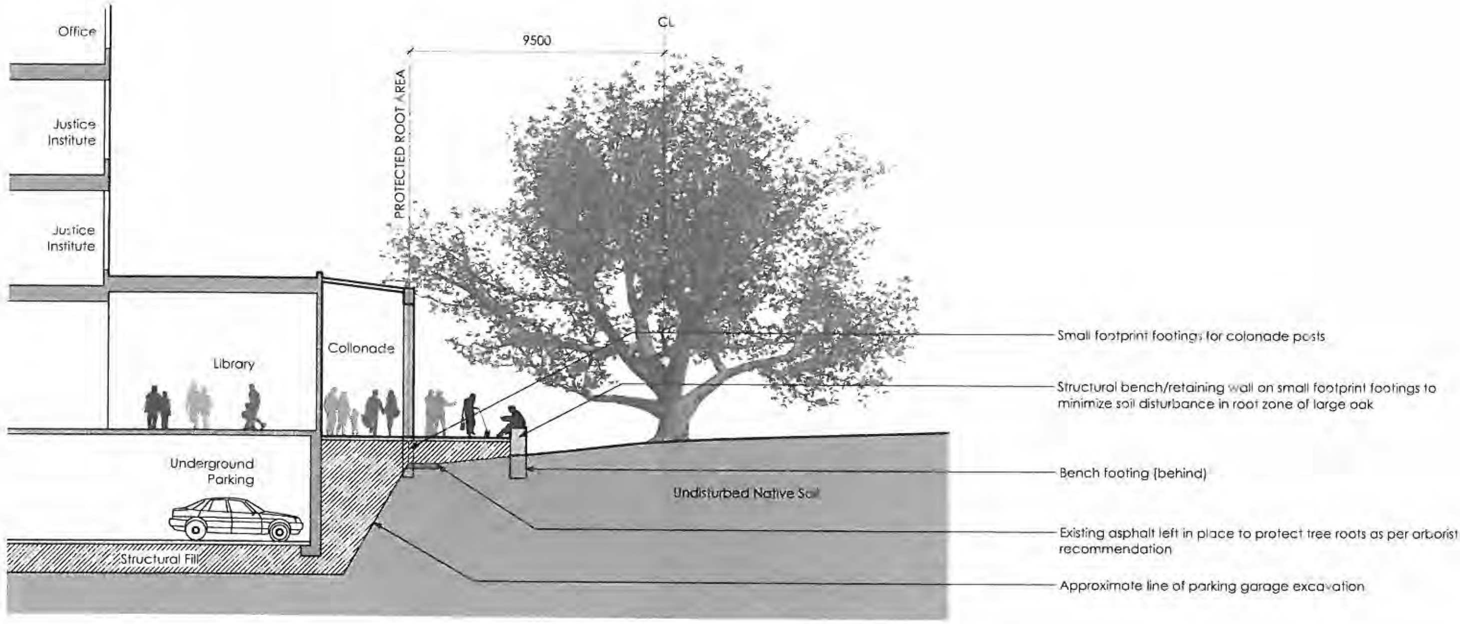
project no.	116.07
drawing file	
date	
scale	1:200
drawn by	ML
checked by	SM/PdG
revision no.	sheet no. L1.2



AA L1.3 SECTION THROUGH EXISTING GARRY OAK
SCALE: 1:100



KEY PLAN



BB L1.3 SECTION THROUGH EXISTING GARRY OAK
SCALE: 1:100

TREE NOTES

1. All work within dripline of tree will be reviewed by project arborist. Footings for bench will be sited and designed with input from arborist to avoid damage to tree root system. Hardscape surface material and structural base buildup within drip line of tree to be review with arborist. Arborist will supervise and review operations related to soil removal within 9.5 m protected root area (eg. for small footing locations). The grading strategy within the protected root area is to fill rather than cut as recommended by arborist.

2. Bench footings to be located with assistance of arborist to avoid damaging tree roots. Footings within the 9.5m protected root area will be pier footings (not a continuous footing). The bench structure itself would span the space between footings and not disturb existing roots.

DRAWING NOTES

1. DO NOT SCALE DRAWING: Verify all property lines and existing structures/vegetation to remain, prior to commencing work.
2. All plan dimensions in metres and all detail dimensions in millimetres.
3. Contractor to confirm location and elevation of all existing services and utilities prior to start of construction.
4. Provide layout of all work for approval by Landscape Architect prior to proceeding with work.
5. Contractor to provide irrigation system for all planters to current IIABC Standards and Contract Specifications.
6. Plant material, installation and maintenance to conform to the current edition of the BCSLA/BCLNA Landscape Standards.
7. General Contractor and/or sub-contractors are responsible for all costs related to production and submission to consultant of all landscape as-built information including irrigation.
8. Tree protection fencing, for existing trees, to be installed prior to commencement of all site work.

D'AMBROSIO
architecture + urbanism

Murdoch deGreeff inc.
Landscape Planning & Design

NOT FOR CONSTRUCTION

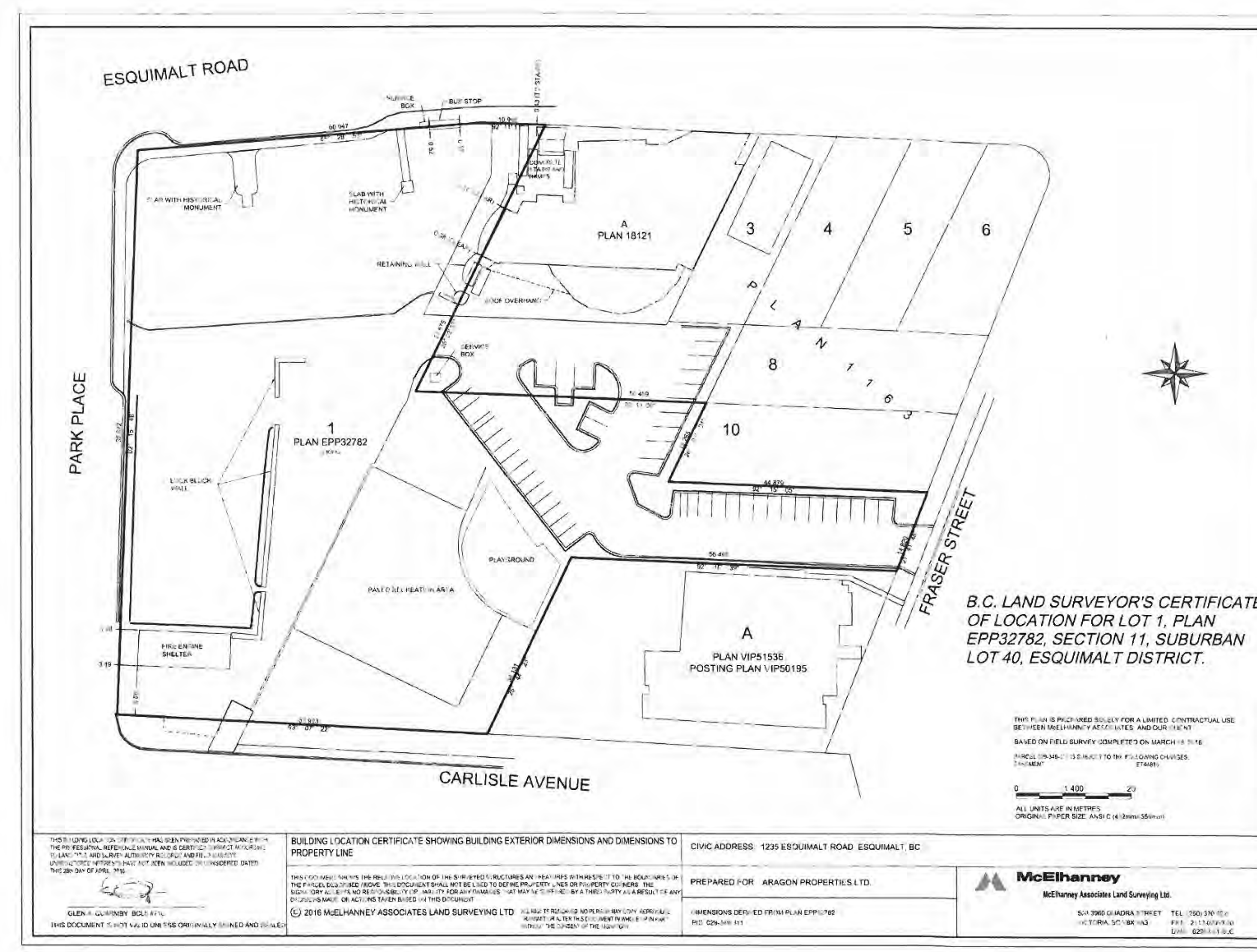
N

rev no	description	date
1	REZONING	16.0?.04

project name
Esquimalt Town Square
Esquimalt, BC

sheet title
Landscape Sections

project no.	116.07
drawing file	
date	
scale	NTS
drawn by	ML
checked by	SM/PdG
revision no.	sheet no. L1.3


ESQUIMALT ROAD
PARK PLACE
CARLISLE AVENUE
FRASER STREET
A
PLAN 18121
3
4
5
6
8
10
P L A N 1 1 6 3
1
PLAN EPP32782
PLAYGROUND
A
PLAN VIP51536
POSTING PLAN VIP50195
B.C. LAND SURVEYOR'S CERTIFICATE OF LOCATION FOR LOT 1, PLAN EPP32782, SECTION 11, SUBURBAN LOT 40, ESQUIMALT DISTRICT.
ALL UNITS ARE IN METRES
BUILDING LOCATION CERTIFICATE SHOWING BUILDING EXTERIOR DIMENSIONS AND DIMENSIONS TO PROPERTY LINE
CIVIC ADDRESS: 1235 ESQUIMALT ROAD ESQUIMALT, BC
PREPARED FOR ARAGON PROPERTIES LTD.
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McElhanney
McElhanney Associates Land Surveying Ltd.

Esquimalt Town Square
#1536

Building Data Summary

Submitted for OCP/ Rezoning Application • May 4, 2016

Legal Address	Lot 1, Plan EPP32782, Section 11, Suburban Lot 40, Esquimalt District
Civic Address	1235 Esquimalt Road
Site Area	87,085 ft²

PROPOSED DATA

Zone	Esquimalt Town Square Comprehensive Development Zone
Setbacks	Esquimalt Road: 0.75 m Carlisle Avenue: 0 m Park Place: 0 m Interior Side Lot: 0.5 m Refer to drawing A1.1
Floor Area	See following page and refer to drawings A0.2, A0.3
Height	Building A 21.38 m Building B 21.47 m Building C 22.05 m Building D 22.79 m Refer to drawing A5.0
# Residential Units	Building A 32 Building B 37 Building C none Building D 32 TOTAL 101
Parking Provided	200 spaces (176 underground, 39 surface, minus 15 for Town Hall) Refer to drawing A1.2
Bicycle Parking Provided	206 spaces (182 underground, 24 surface) Refer to drawings A2.1, A2.10

Building A

Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
LEVEL 1	4,932	458.2
LEVEL 2	5,128	476.4
LEVEL 3	5,128	476.4
LEVEL 4	5,128	476.4
LEVEL 5	3,679	341.8
LEVEL 6	3,652	339.3
ROOF	154	14.3
SUBTOTAL BUILDING A	**27,801**	**2,582.7**

Building B

Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
LEVEL 1	5,697	529.3
LEVEL 2	6,024	559.6
LEVEL 3	6,024	559.6
LEVEL 4	6,024	559.6
LEVEL 5	4,408	409.5
LEVEL 6	4,408	409.5
ROOF	96	8.9
SUBTOTAL BUILDING B	**32,681**	**3,036.1**

Building C

Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
LEVEL 1	13,376	1242.6
LEVEL 2	8,783	815.9
LEVEL 3	8,783	815.9
LEVEL 4	8,783	815.9
LEVEL 5	8,783	815.9
Total Building C	**48,508**	**4506.4**

Building D

Floors	Gross Area (sq.ft.)	Gross Area (sq.m)
LEVEL 1	4,261	395.8
LEVEL 2	5,158	479.2
LEVEL 3	5,158	479.2
LEVEL 4	5,158	479.2
LEVEL 5	5,158	479.2
LEVEL 6	3,743	347.7
ROOF	104	9.7
Total Building D	**28,740**	**2669.9**

Boulevard
TRANSPORTATION
a division of Watt Consulting Group

ESQUIMALT TOWN CENTRE

Traffic Impact Assessment

Prepared for: **Aragon Properties Ltd.**

Prepared by: **Boulevard Transportation, a division of Watt Consulting Group**

Our File: **1958**

Date: **May 2, 2016**

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WATT
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1.0 INTRODUCTION

Boulevard Transportation Group, a division of Watt Consulting Group, was retained by Aragon Properties Ltd. to conduct a traffic impact assessment for the proposed Esquimalt Town Centre development in Esquimalt, BC.

An analysis of post-development conditions was undertaken in order to provide a clear view of the impacts on the adjacent roadways after full build-out and occupancy. The study assessed traffic impacts of the development, reviewed the site access roads, and assessed the need for any mitigation measures. Study recommendations and conclusions are to provide safe and efficient movement of pedestrians, bicycles and vehicular traffic for the proposed development while minimizing the impact to non-site trips.

The development site is located in the Township of Esquimalt, in the heart of the Esquimalt Village. The study area includes Esquimalt Road, Admirals Road, Park Place, Fraser Street, Lampson Street, Lyall Street and the existing and proposed site accesses. Key intersections in the study area from a traffic conditions / capacity perspective are the following four intersections: Esquimalt Road / Admirals Road, Esquimalt Road / Park Place, Esquimalt Road / Fraser Street and Esquimalt Road / Lampson Street. See **Figure 1** for the study area and site location.

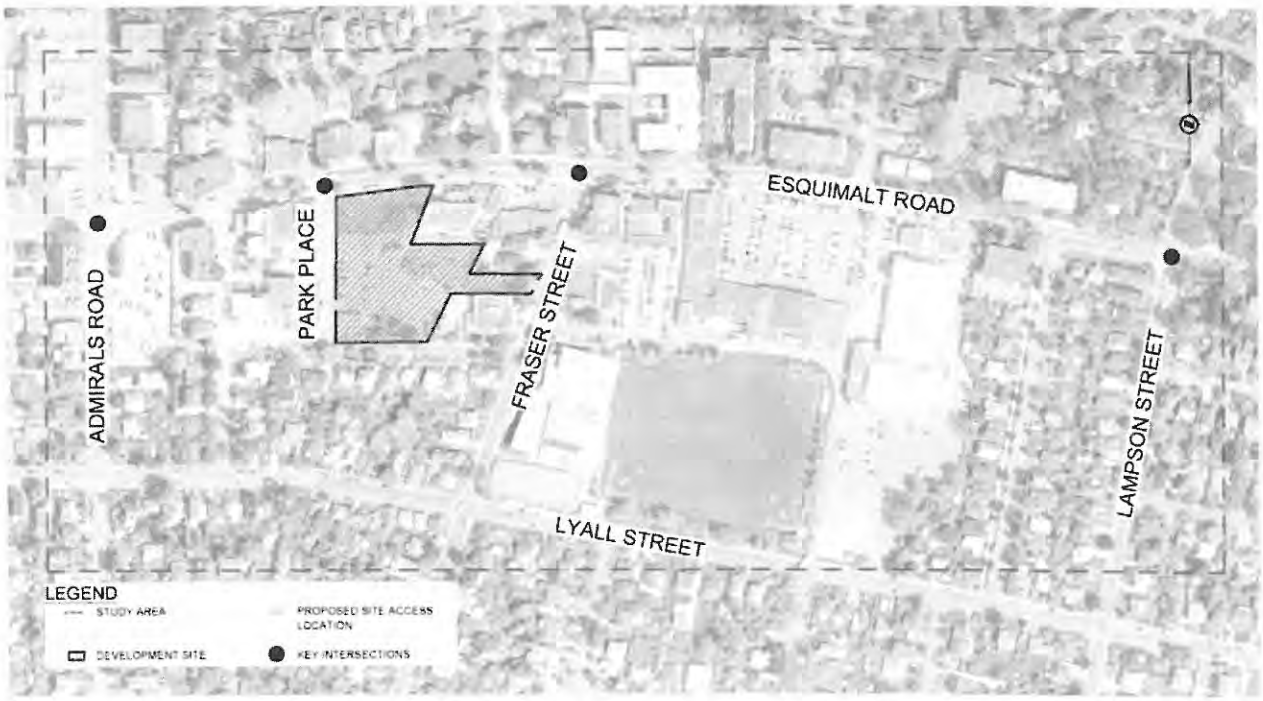


Figure 1: Study Area and Site Location

2.0 EXISTING CONDITIONS

2.1 Road Network

Fraser Street and Park Place are the access roads to the development parking areas. Fraser Street is a two lane collector road with no on street parking along the site frontage. Between Esquimalt Road and Lyall Street, there is "Playground" warning signage with a 30 km/h speed limit. Park Place and Carlisle Avenue are two lane local roads, with on street parking on both sides. Site traffic will also be impacting Esquimalt Road, Admirals Road and Lampson Street which are all major roads in the network.

Esquimalt Road is designated as a Major road and is an important east–west connector for through traffic in the township, as well traffic to/from the Town Centre area. In the study area, it has one motor vehicle lane in each direction, along with left turn lanes or medians, as well bike lanes and parking bays. The posted speed limit on Esquimalt Road through the study area is 40km/hr. Lampson Street and Admirals Road are north–south major roads, and both roads connect several residential neighborhoods.

The intersection of Esquimalt Road & Admirals Road is signalized. At the intersection, there are separate left turn lanes on Esquimalt Road (westbound and eastbound). Admirals Road is a four-lane road at Esquimalt Road. The intersection of Esquimalt Road & Lampson Street is signalized. At the intersection, there are separate right turn lanes on Esquimalt Road and Lampson Street. The posted speed limits on Esquimalt Road and Lampson Street is 40km/hr.

The intersection of Esquimalt Road & Park Place is currently stop controlled on Park Place. At the intersection, there is a westbound left turn lane on Esquimalt Road. The intersection of Esquimalt Road & Fraser Street is currently stop controlled on Fraser Street. At the intersection, there is a westbound left turn lane on Esquimalt Road and a northbound left turn lane on Fraser Street.

2.2 Traffic Volumes

Manual counts were undertaken at the four intersections of Esquimalt Road / Admirals Road, Esquimalt Road / Park Place, Esquimalt Road / Fraser Street, Esquimalt Road / Lampson Street and the two existing accesses to the surface parking lot on Park Place and Fraser Street. The counts for Esquimalt Road / Park Place and Esquimalt Road / Fraser Street were conducted during the AM and PM peak hours on March 22nd, 2016. The counts at the two existing accesses were completed for the PM peak hour on the following day, March 23rd, 2016. The counts for Esquimalt Road / Admirals Road and Esquimalt Road / Lampson Street were conducted previously for the AM and PM peak hours on October 31st, 2012 and October 17th, 2012 respectively. As the 2012 traffic volumes along Esquimalt Road are greater than the 2016 traffic volumes, a growth rate was not applied to the 2012 volumes, which were used as background

volumes without adjustment. See **Figures 2 and 3** for existing AM and PM peak hour turning movement counts.

According to Esquimalt's Official Community Plan, the 2004 population was listed as 17,038 and the 2026 projected population[1] as 21,100. Utilizing the two values, a 1.0% annual growth rate was calculated and used for the long term background traffic projections in this study.

2.3 Existing Site Trips

Currently, there are two site accesses for the existing surface parking lot: one on Park Place and the other on Fraser Street. The existing site trips (total of the two driveways) were measured to be 82 vehicles (34 trips in, 48 trips out) during the PM peak hour.

2.4 Traffic Modelling – Background Information

Analysis of the traffic conditions at the intersections within the study area were undertaken using Synchro software and SimTraffic.

Synchro / SimTraffic is a two-part traffic modelling software that provides analysis of traffic conditions based on traffic control, geometry, volumes and traffic operations. Synchro software (Synchro 9) is used because of its ability to provide analysis using the Highway Capacity Manual (2010) methodology, while SimTraffic integrates established driver behaviours and characteristics to simulate actual conditions by randomly "seeding" or positioning vehicles travelling throughout the network. Synchro uses measures of effectiveness to return the results of the analysis. These measures of effectiveness include level of service (LOS), delay and 95th percentile queue length. The delays and type of traffic control are used to determine the level of service. The level of services are broken down into six letter grades with LOS A being excellent operations and LOS F being unstable/failure operations. Level of service C is generally considered to be an acceptable LOS by most municipalities. Level of service D is generally considered to be on the threshold between acceptable and unacceptable operations.

2.5 Existing Traffic - Results

Existing traffic conditions were analyzed during the AM peak hours and PM peak hours for the four intersections on Esquimalt Road, and the PM peak hours for the two existing parking lot accesses on Fraser Street and Park Place. Existing traffic conditions provide a base point for comparison with post-development conditions. See **Figures 2 and 3** for existing AM and PM peak levels of service.

At the intersection of Esquimalt Road / Admirals Road, all movements are operating at LOS C or better during the AM and PM peak hours.

[1] 2026 projected population from the Capital Regional District's Regional Growth Strategy document

At the intersection of Esquimalt Road / Park Place, all movements are operating at LOS A, except for the northbound movements on Park Place which operate at LOS B during the AM peak hours and at LOS C during the PM peak hours.

At the intersection of Esquimalt Road / Fraser Street, all movements are operating at LOS A, except for the northbound left turn and right turn on Fraser Street. The northbound left turn operates at LOS C during the AM peak hours and at LOS D during the PM peak hours. The northbound right turn operates at LOS B during the AM peak hours and at LOS C during the PM peak hours.

At the intersection of Esquimalt Road / Lampson Street, all movements are operating at LOS C or better during the AM peak hour. During the PM peak hour, the westbound through and left turn movements and the northbound through and left turn movements drop to LOS D from LOS C.

At both site accesses, all movements operate at a LOS A during the PM peak hour.

Overall, the PM peak hour is the worst-case time period for traffic operations in the study area.

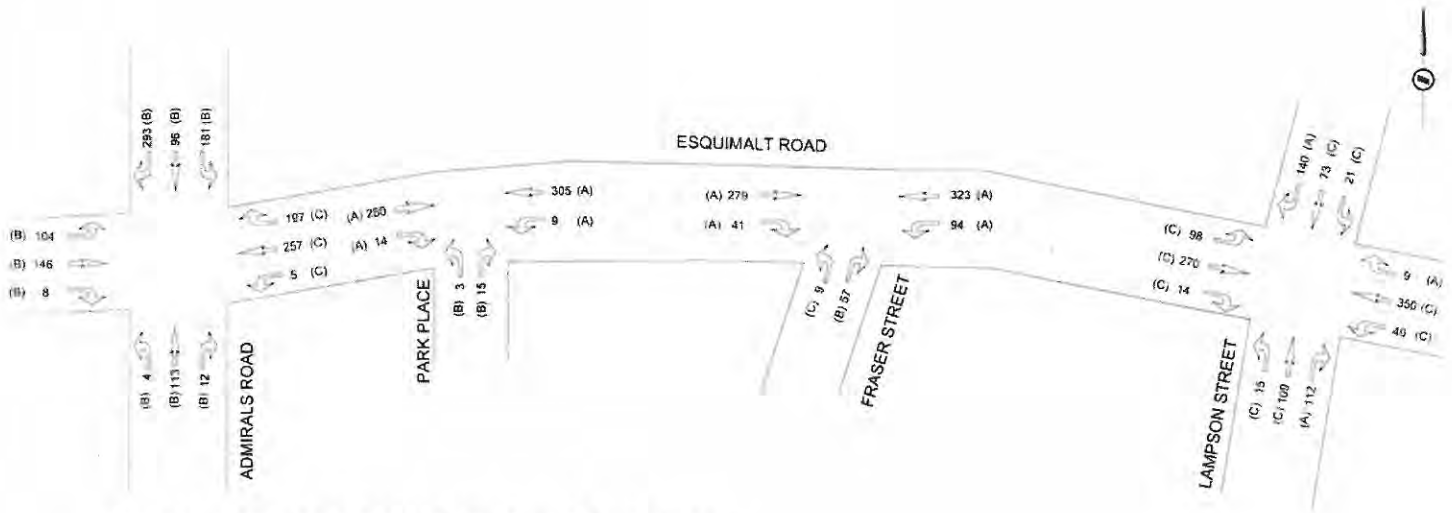


Figure 2: Existing AM Peak Hour Conditions

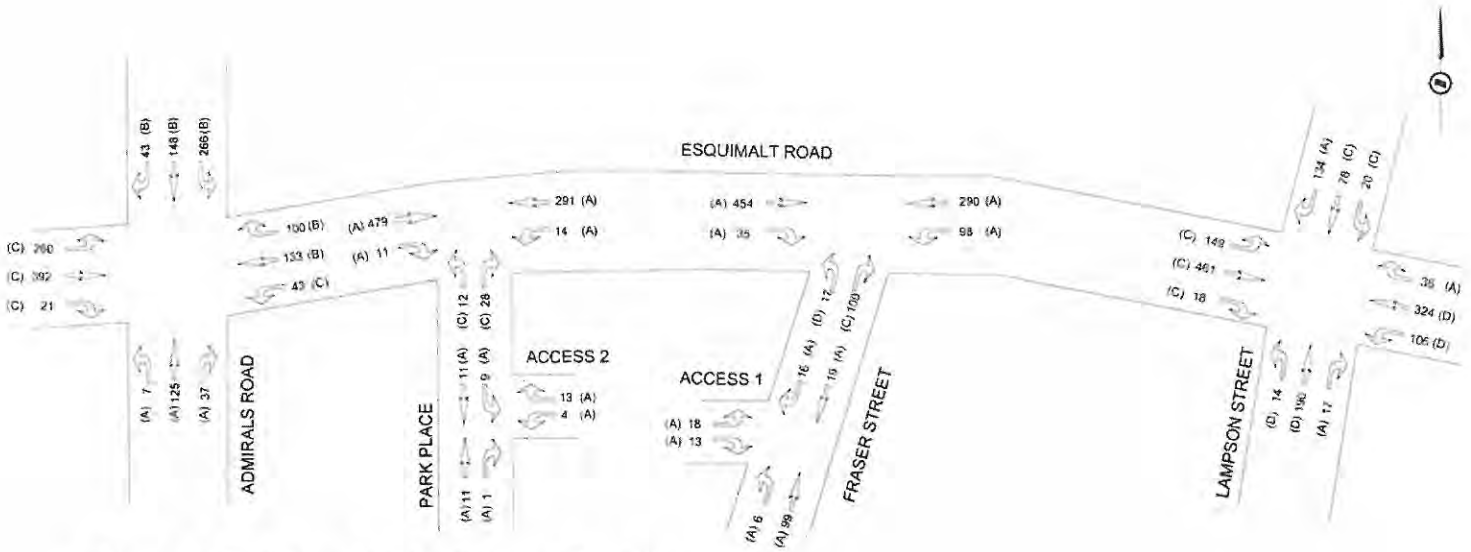


Figure 3: Existing PM Peak Hour Conditions

3.0 POST DEVELOPMENT

3.1 Land Use

At the time of technical analysis, the following land use data was used: 88 condominium units, 47 rental apartment units, 5,300 sq.ft. of specialty retail, a 15,000 sq.ft. library, 9,200 sq.ft. of office space, and a 18,000 sq.ft. Justice Institute. To account for potential changes to final residential unit numbers, this included an additional buffer of 25 residential units (of which 17 were condominium, and 8 were apartments).

At the time of this report production date (May 2, 2016), the site characteristics have been revised to consist of a 10,000 sq.ft. library, 18,000 sq.ft. of office space, 18,000 sq.ft. of Justice Institute, and 4,460 sq.ft. of specialty retail (or potential café), along with 69 condominium and 32 rental apartment units. This represents an increase in combined office/library area of 3,800 sq.ft. and a decrease in the specialty retail space of 840 sq.ft. and decrease of two (2) condominium and seven (7) rental apartment units from what was proposed (and a decrease of 19 condominium and 15 apartment units from what was analyzed). This variation is not anticipated to materially impact the traffic impacts associated with this site, as the traffic analysis buffer of additional residential units that was analyzed (over what is proposed) along with the decrease in retail space more than offsets the increased trips due to an increase of 3,800 sq.ft. of office/library space. See Section 3.3 for trip generation rates by land use.

Note that the existing Municipal Hall building adjacent to the redevelopment area will continue to be used in the future, albeit with a shift in some land uses (e.g. the library will be moving, with that space repurposed to office / Municipal Hall needs). For this study, the existing site vehicle trips associated with this building were assumed to remain in the post-development period.

3.2 Site Access

There are two site accesses proposed for the development. One site access is located on Park Place and leads to an underground parking facility that serves a large majority of the development. The second site access is located on Fraser Street and a surface parking lot. This access will also accommodate the existing Town Hall building, and is assumed to be the primary access and parking lot for library visitors. See **Figure 4** for the proposed site plan and site access locations. Note that the site plan was not finalized at the time of this report's production, however all key elements are reflected in the analysis.

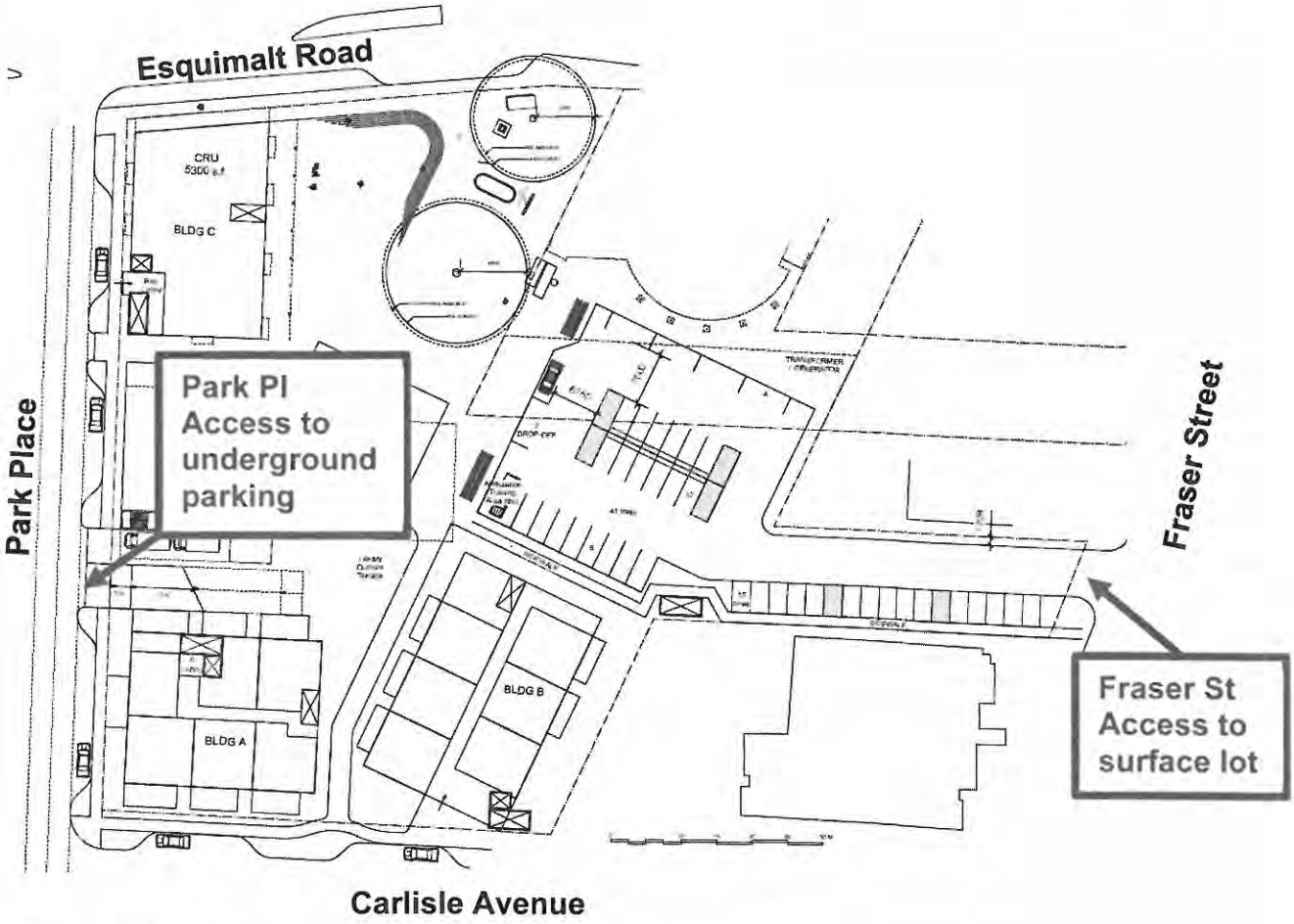


Figure 4: Site Plan and Site Accesses[2]

[2] Site Plan Concept, D'ambrosio Architecture, April 4, 2016

3.3 Trip Generation

Site trips were estimated from the *ITE Trip Generation Manual (9th Edition)* for all trips except for the PM peak Library / Office trips. The *Trip Generation Manual* provides trip rates for a wide variety of land uses gathered from actual sites across North America over the past 35 years.

The Library / Office trips were calculated by taking the existing trips in and out of the parking lots (which are primarily for Municipal Hall / Library) and generating a trip rate by dividing by the size of the complex (20,000 sq.ft.). The trip rate was calculated to be 4.1 / 1000 sq.ft. As a conservative estimate, it is assumed that the existing site trips will persist in the future to account for the Municipal Hall site trips. **Tables 1** and **2** summarize the trip generation rates and estimated site trips by land use during the AM and PM peak hours.

TABLE 1: AM PEAK HOUR TRIP GENERATION

Land Use	ITE Code	Size / Unit	Rate	%In	%Out	In	Out	Total Trips
Retail	826 (820)	5,300 sq.ft	**0.96 / 1000 sq.ft**	62%	38%	3	2	5
Library	590	15,000 sq.ft	**1.04 / 1000 sq.ft**	71%	29%	11	5	16
Office	710	9,200 sq.ft	**1.56 / 1000 sq.ft**	88%	12%	9	1	10
Justice Institute	540	18,000 sq.ft	**2.99 / 1000 sq.ft**	74%	26%	40	14	54
Apartment	220	47 units	**.51 / unit**	20%	80%	5	19	24
Condominiums	230	88 units	**.44 / unit**	17%	83%	7	32	39
Total						**75**	**73**	**148**

TABLE 2: PM PEAK HOUR TRIP GENERATION

Land Use	ITE Code	Size / Unit	Rate	%In	%Out	In	Out	Total Trips
Retail	826	5,300 sq.ft	**2.71 / 1000 sq.ft**	44%	56%	6	8	14
Library / Office	N/A	24,200 sq.ft	**4.1 / 1000 sq.ft**	41%	59%	41	58	99
Justice Institute	540	18,000 sq.ft	**2.54 / 1000 sq.ft**	58%	42%	27	19	46
Apartment	220	47 units	**.62 / unit**	65%	35%	19	10	29
Condominiums	230	88 units	**.52 / unit**	67%	33%	31	15	46
Total						**124**	**110**	**234**

The site generates the most trips in the PM peak hour (1.6 times the AM peak hour). The peak hour volumes along Esquimalt Road between Park Place and Fraser Road are also 25% greater than the AM peak hour. In addition, overall, the LOS during the PM peak hour is worse than the

AM peak hour. Therefore, the analysis is focused on the weekday PM peak hour as it is the worst case recurring time period.

3.3.1 Internal and Pass-by Trips

As the proposed site is a multi-use development, there will be internal trips which are between on-site land uses. Internal trips can be made either by walking or by vehicles using internal roadways without using external streets. An internal capture rate can be generally defined as a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. The internal trips should be subtracted out before pass-by trip reductions are applied.

It is estimated that the number of internal trips will be 4 vehicles (2 In, 2 Out) during the PM peak hour. Therefore, the external trips are 230 vehicles (122 In, 108 Out) during the PM peak hour. Also, it is assumed that there are no internal trips to/from the library and the Justice Institute, as while they may occur, they are anticipated to be a low number. For the AM peak hour, it is assumed that there are no internal trips because the retail/office may not be open yet. See **Appendix B** for the internal trip calculation chart.

Though the proposed development includes a commercial component (retail), it is assumed to not generate any pass-by trips from and to nearby roads because it is small in size and is surrounded by several stores and a shopping centre.

3.4 Trip Assignment

The generated site trips were assigned based on the existing trip distributions at the existing site accesses. The trip assignment differs slightly at the accesses between Residential / Commercial and the Office / Library / Justice Institute land uses. For Residential / Commercial, the trip assignment at the access was based on the Fraser Street / Parking Access traffic split as that distribution better reflects the residential neighborhood. For Office / Library / Justice Institute, the trip assignment at the access was based on the sum of the trips in and out of the accesses at Fraser Street and Park Place. Also, the trip assignment for all land uses calculated at Esquimalt Road / Admirals Road was based on the traffic split from the last 15 minutes of the count, as the traffic in the first 45 minutes of the count is observed to be influenced by the Canadian Force Base traffic which does not leave the base in the PM Peak hour anymore. It should be noted that all development traffic, except for the traffic generated by the additional library space, is assumed to exit out of the Park Place access. The library traffic is assumed to use the surface lot, largely because library trips are short duration. The directional splits for the site trips at the accesses are as follows:

Residential / Commercial – PM Peak Hour

Site Trips at Access (Park Place)

Trips In

- 73% of the trip totals are from Esquimalt Road
- 27% of the trip totals are from the south

Trips Out

- 79% of the trip totals are to Esquimalt Road
- 21% of the trip totals are to the South

Office / Library / Justice Institute – PM Peak Hour

Site Trips at Access (Park Place / Fraser Street)

Trips In

- 79% of the trip totals are from Esquimalt Road
- 21% of the trip totals are from the south

Trips Out

- 65% of the trip totals are to Esquimalt Road
- 35% of the trip totals are to the South

The trip distribution for the following intersections are the same for all land uses. The directional splits for the site trips at the intersections are as follows:

All Land uses – PM Peak Hour

Site Trips at Esquimalt Road / Fraser Street and Esquimalt Road / Park Place

Trips In

- 71% of the total trips are from Lampson Street
- 29% of the total trips are from Admirals Road

Trips Out

- 82% of the total trips are to Lampson Street
- 18% of the total trips are to Admirals Road

Site Trips at Esquimalt Road / Lampson Street

Trips In

- 77% are from Esquimalt Road east of Lampson Street
- 23% are from Lampson Street north of Esquimalt Road

Trips out

- 75% are to Esquimalt Road east of Lampson Street
- 25% are from Lampson Street north of Esquimalt Road

Site Trips at Esquimalt Road / Admirals Road

Trips In

- 63% from Admirals Road north of Esquimalt Road
- 37% from Esquimalt Road west of Admirals Road

Trips out

- 59% from Admirals Road north of Esquimalt Road
- 41% from Esquimalt Road west of Admirals Road

Figure 5 outlines the site trips assigned during the PM peak hour at the key intersections.

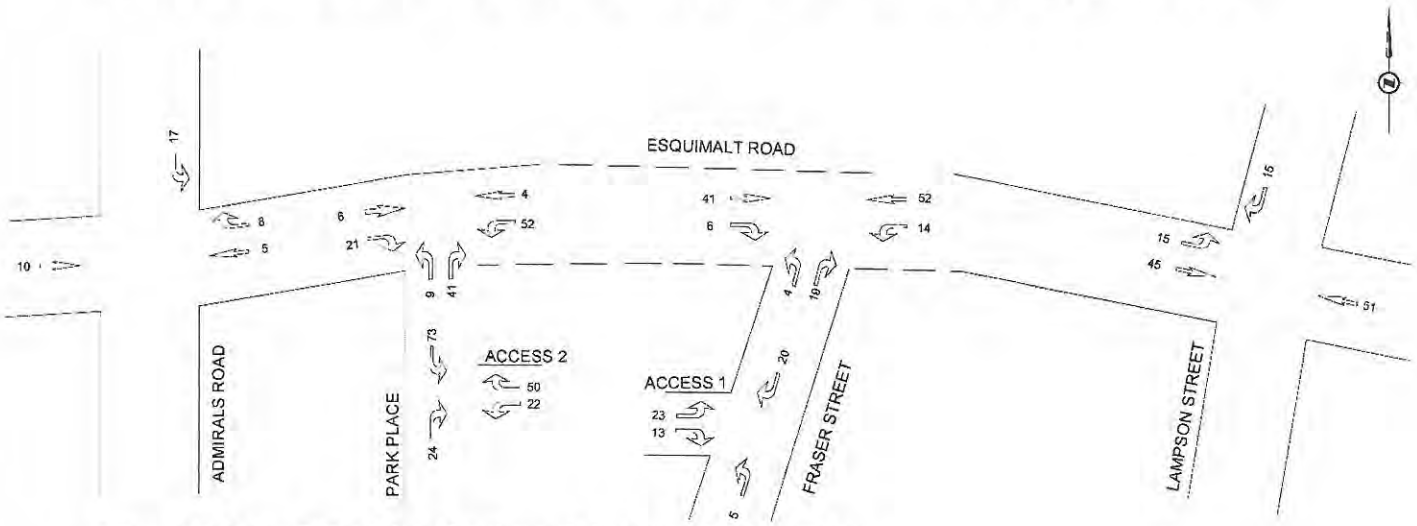


Figure 5: New Site Trips Assigned during PM Peak Hour

3.5 Post Development Roadway Volumes

Though the development is represents a significant increase in land usage for the site, the number of vehicles added to the network is relatively low by comparison to existing traffic volumes, and the adjacent roads will continue to operate within their classification (e.g. local roads will continue to operate as local roads). For example, there are 41 vehicles added to the eastbound through movement along Esquimalt Road at Fraser Street, which is approximately a 9% increase in traffic when compared to the existing eastbound through volume of 454 vehicles. Along Fraser Street, south of the site access, there are 18 vehicles added (two-way total), and spread out over an hour, that is equivalent to approximately one additional vehicle every three minutes. On Park Place, there are 46 additional vehicles going to and from the south via Carlisle Avenue, which is

equivalent to approximately one additional vehicle every 90 seconds. Carlisle Avenue is a local road, and the addition of 46 vehicles will not change that.

3.6 Post Development Traffic Analysis Results

Figure 6 shows the level of service and traffic volumes for the PM peak hour in the post development period, and **Table 3** shows a comparison of post development and existing traffic LOS and delay at key study area intersections.

All intersections and movements, except for the intersections of Esquimalt Road / Lampson Street, Esquimalt Road / Park Place, Esquimalt Road / Fraser Street and the site accesses, continue to operate at the same levels of service as existing conditions. At Esquimalt Road / Park Place, the northbound left / right turn drops from LOS C to LOS D, based on Synchro/HCM 2010 modelling results (and LOS D is generally an acceptable level of service in peak hours). At Esquimalt Road / Fraser Street the northbound left turn drops from LOS D to LOS E, based on Synchro/HCM 2010 results. The average vehicle delay based on SimTraffic, however, is 19.3s which is equivalent to a LOS C. It should be noted that although there was a drop in level of service for Synchro, traffic volumes for the northbound left turn on Fraser Street differ by only four vehicles when compared to existing conditions, and on Park Place by nine vehicles. At Esquimalt Road / Lampson Street the eastbound movements drop from LOS C to LOS D.

At the access on Park Place, the eastbound left and right turn movements drop to LOS B from LOS A, but are still operating at a good level of service. At the access on Fraser Street, the westbound left and right turn movements also drop to LOS B from LOS A. See Section 5.0 for a review of mitigation considerations.

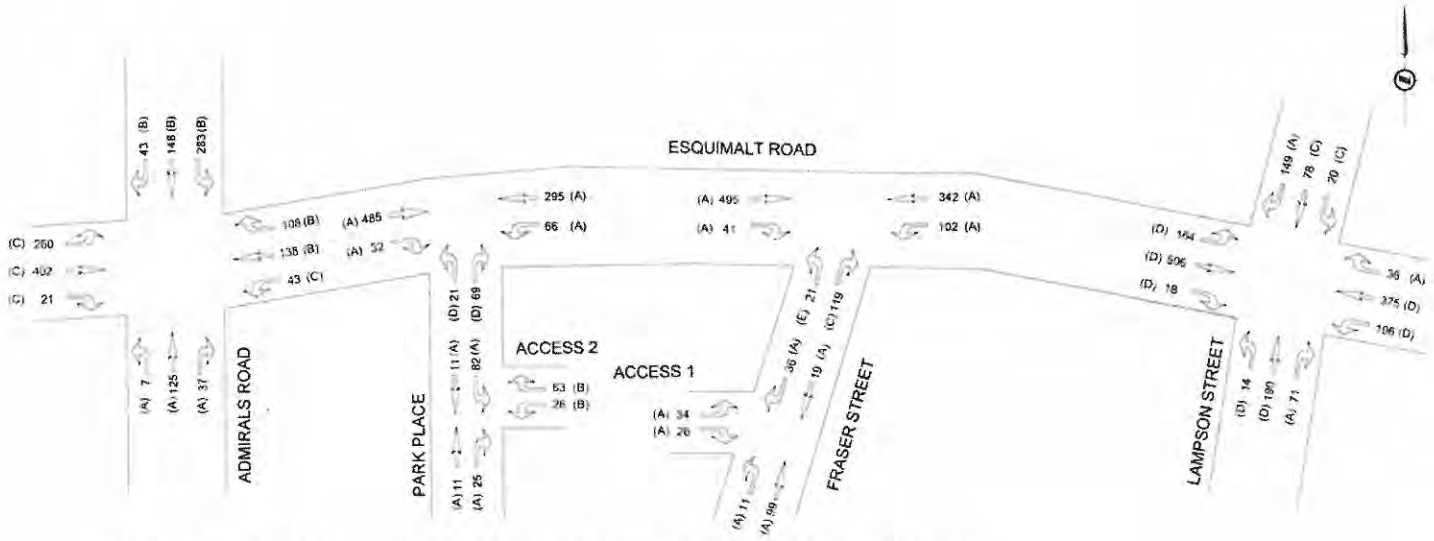


Figure 6: Post Development Conditions during PM Peak Hour

TABLE 3: BACKGROUND AND 2016 POST DEVELOPMENT LOS AND DELAY

Intersection	Movement	LOS		Delay (s)	
		Background	Post Dev	Background	Post Dev
Esquimalt Road / Lampson Street	EB L/T	C	D	32.5	36.2
	EB T/R	C	D	32.5	36.2
	WB L/T	D	D	41.5	51.7
	WBR	A	A	1.7	1.6
	NB L/T	D	D	37.4	39.2
	NBR	A	A	6.8	6.7
	SB L/T	C	C	28.4	29.3
	SBR	A	A	6.7	6.8
Esquimalt Road / Admirals Road	EBL	C	C	26.1	26.9
	EB T/R	C	C	23.4	24.0
	WBL	C	C	34.3	34.3
	WBT	B	B	15.5	15.3
	WB T/R	B	B	15.5	15.3
	NB L/T	A	A	9.0	9.1
	NB T/R	A	A	9.0	9.1
	SB L/T	B	B	17.5	18.2
	SB T/R	B	B	17.5	18.2
Esquimalt Road / Fraser Street	EB T/R	A	A	0	0
	WBL	A	A	9.6	9.9
	WBT	A	A	0	0
	NBL	D	E	30.9	38.1
	NBR	C	C	16.6	18.8
Esquimalt Road / Park Place	EB T/R	A	A	0	0
	WBL	A	A	9.0	9.7
	WBT	A	A	0	0
	NB L/R	C	D	19.9	25.1

3.7 Long Term Conditions (2026 Horizon Year, full buildout)

A long-term analysis for the 10-year horizon (2026) was conducted. To obtain 2026 background traffic volumes, a growth rate of 1.0% was applied to the background volumes. The proposed development traffic was then added to the 2026 background traffic to obtain the 2026 post development conditions. The long term conditions were analyzed in Synchro software. The long term PM peak hour conditions are shown in **Figure 7**.

In the long term, the intersection of Esquimalt Road / Admirals Road, and the two accesses on Park Place and Fraser Street will operate with good or acceptable levels of service in the PM peak hour (all movements at LOS D or better).

The remaining intersections, Esquimalt Road / Lampson Street, Esquimalt Road / Park Place and Esquimalt Road / Fraser Street, will not be operating at a good or acceptable level of services on some approaches in the PM peak hour.

The intersection of Esquimalt Road / Lampson Street has a reduction in level of service along Esquimalt Road, where the westbound through and left turn movements drop from LOS D to LOS E.

At the intersection of Esquimalt Road / Park Place, the northbound left / right turn movement remains at LOS D (same as current-year post development conditions).

At the intersection of Esquimalt Road / Fraser Street, the northbound left turn remains at LOS E. The SimTraffic results yields a delay of 20.7s which is equivalent to LOS C.

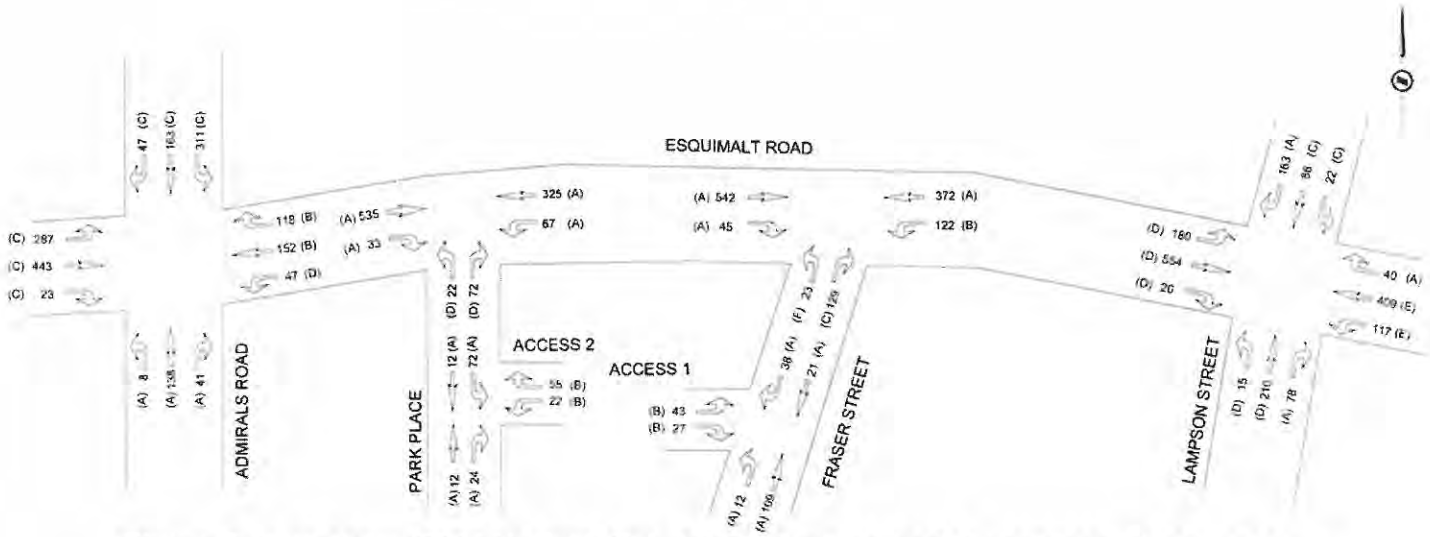


Figure 7: Long-term (2026 Horizon Year) Post-Development Conditions, PM Peak Hour

3.8 Mitigation Review

The two intersections where there are very poor or failing levels of service in the PM peak hour are Fraser Street (northbound left at Esquimalt Road) and Lampson Street (westbound through). These are therefore locations where mitigation for traffic operations is a consideration.

Esquimalt Road / Fraser Street

The northbound left turn movement at Esquimalt Road / Fraser Street is LOS E on opening day and LOS F in the long term (although this assumes continued traffic growth on Esquimalt Road, which may not occur at the assumed rate, as in recent years peak hour volumes have actually

decreased). This is not due to the volume of left turns, which is comparatively low (17 currently, 21 in the near term post development period, and 23 in the long term post development period), but rather due to high volumes on Esquimalt Road that can make finding suitable gaps difficult.

Installing a signal would improve the northbound movement to a good/acceptable LOS B. A signal is not, however, warranted, based on TAC's signal warrant review[3] for existing or post development volumes (near or long term). This is because of the comparatively low volumes that a signal will actually benefit (effectively only the northbound left turns really benefit).

Another option that would improve the northbound left turn level of service is converting the median on the west leg of Esquimalt Road into a two-way left turn lane, which would allow for staged left turns. This would improve the northbound left level of service to LOS C. There is, however, an existing signed and marked crosswalk that would need to be moved so that this option is feasible, and this existing crosswalk is an important crossing for access to/from the Municipal Hall as well as the Esquimalt Rec Centre (and was observed to be well-used).

In consideration that the northbound left turn traffic volume in 2026 on Fraser Street is relatively low and similar to existing day conditions, and that conditions are only an issue in the peak hour, it is reasonable and appropriate to leave the existing traffic operations unchanged (in terms of traffic control and geometry).

Esquimalt Road / Lampson Street
In the 10-year horizon at Esquimalt Road / Lampson Street, the movements on Esquimalt Road drop to LOS E. Signal timing adjustments were investigated in order to see if improvements to the level of service could be realized.

The option of removing the split phasing at Esquimalt Road / Lampson Street was reviewed, with all left turn movements being permissive. The eastbound movement improved from LOS D to LOS B, the westbound through and left turn movement improved from LOS E to LOS C and the northbound through and left turn movement improved from LOS D to LOS C. Therefore, in the longer term, the Township may consider signal timing and phasing changes at this intersection if traffic volumes increase and operational issues are observed.

4.0 OTHER MODES

6.1 Pedestrian Facilities

Currently, there are sidewalks on all adjacent frontage roads and there is an existing path on the southwest end of the site that leads to the existing Esquimalt square. The sidewalks will be retained as part as the development plan, and there will be a "Public Artwalk" that will replace the

[3] Transportation Association of Canada Signal Warrant Handbook, March 2007

existing path. The existing Esquimalt square is to be replaced by the proposed Village Square. The current and proposed facilities provide pedestrians with safe and accessible sidewalks.

There are several marked and signed crosswalks in the vicinity of the site, to facilitate pedestrian movements in the area. There are crosswalks across Esquimalt Road at Park Place and at Fraser Street. There is also a crosswalk across Fraser Street at Carlisle Avenue, which connects the Municipal Hall with the Esquimalt Recreation Centre. These crosswalks are ideally positioned near the outer quadrants of the Town Centre area.

6.2 Bicycle Facilities

Esquimalt Road is designated as a commuter cycling route, and there are bike lanes in both directions from Park Place to the east (up to the border with the City of Victoria), with the exception of a short section in front of the Municipal Hall (where the bike lane ends for the width of six on-street parking stalls due to limited curb-to-curb width) and at the intersections with Lampson Street and Head Street. This is suitable and appropriate for confident commuter cyclists.

Both Fraser Street and Lyall Street are designated as commuter + recreational cycling routes. Fraser Street provides a north-south alignment into residential areas, while Lyall Street provides east-west connectivity for both local residents and commuter traffic. Both streets have shared lanes, which is an appropriate design for lower volume collector roads. These routes provide an alternative for accessing the site from Esquimalt Road on quieter neighbourhood roads.

6.2 Transit

Esquimalt Road is served by two BC Transit routes: #15 and #26. Route 15, which is a regional route connects Esquimalt Village to the University of Victoria via downtown Victoria and Oak Bay. Route #26 also connects Esquimalt Village to the University of Victoria, via Tillicum Centre, Uptown Centre and McKenzie Avenue. In the opposite direction, both routes connect to the HMC Dockyard. There is an existing bus stop in the eastbound direction in front of the proposed site and in the westbound direction just west of Fraser Street, which are easily accessible. In addition to these routes, within 250m, on Admirals Road, there is a stop serviced by Route #25 which connects Esquimalt Village to the Admirals Walk Shopping Centre as well as the Colwood exchange. This route also connects to downtown Victoria and the Quadra/McKenzie area of Saanich, with the nearest stops being at the intersection of Fraser Street and Lyall Street. This site is therefore well-served by transit, which can lessen the dependence on private vehicle trips to/from the site.

5.0 CONCLUSIONS

The following conclusions are made regarding the traffic impact assessment for the proposed Esquimalt Town Centre development.

The proposed development will see an increase in employment, service, and residential uses for the area, which can contribute to creating a more vibrant core area for the Township. The increase in land usage will result in the most acute traffic increases in the PM peak hour, which is also the current busiest time period for the adjacent streets, and thus was the time period used for traffic analysis. The land use analyzed for the traffic models represents a worst case over that which is ultimately proposed (to ensure the ongoing changes to the site plan were accounted for).

The site will result in an estimated 230 additional vehicle trips (combined in and out). Despite the increase in trips, the adjacent roads will all continue to operate within their current functional designations (Esquimalt Road as a major road, Fraser Street as a collector road, and Park Place and Carlisle Avenue as local roads).

In terms of operations at specific intersections, in the near term post-development timeframe, the levels of service will remain the same for most intersections and movements except for northbound left on Fraser Street (drops to LOS E from D), northbound Park Place (drops to LOS D from C), and eastbound through on Esquimalt Rd at Lampson Street (drops to LOS D from C). LOS D is generally considered acceptable in peak hours in urban locations. Note that the LOS E for the northbound left turns is due primarily to the high volume of traffic on Esquimalt Road and not site traffic (with the site, only four additional northbound left turn vehicles are anticipated in the peak hour, up to 21 from 17).

In the longer term (10-year horizon), all movements will remain at LOS D or better except the northbound left on Fraser Street at Esquimalt road will remain at LOS E, and the westbound through movement on Esquimalt Road at Lampson St will drop to LOS E.

In terms of mitigation at Fraser Street and Esquimalt Road, while there are measures that could improve the level of service for the northbound left turn movement, specifically signalization or the conversion of the median into a two-way left turn (to facilitate staged left turns), those measures have drawbacks which make them less desirable than the status quo. A signal is not warranted based on the TAC signal warrant, and a two-way left turn lane would adversely impact the crosswalk across Esquimalt Road at Fraser St. In the longer term at Esquimalt Road and Lampson Street, signal timing changes could be implemented to improve the level of service if needed.

Pedestrians are well served in the area by sidewalks along all site frontage roads, as well as marked and signed crosswalks across Esquimalt Road at Fraser St and Park Place, and across Fraser Street at Carlisle Avenue. Commuter cyclists are accommodated on Esquimalt Road (generally in bike lanes), and both commuter and recreational cyclists are accommodated on Fraser Street and Lyall Street in shared lanes. The site is well served by three transit routes that provide connections throughout the Township and to adjacent municipalities and key destinations.

6.0 RECOMMENDATIONS

No mitigation measures are required or recommended for the adjacent roadways for traffic operations. Pedestrian frontage improvements should be incorporated as required.

APPENDIX A: SYNCHRO BACKGROUND

SYNCHRO MODELLING SOFTWARE DESCRIPTION

The traffic analysis was completed using Synchro and SimTraffic traffic modeling software. Results were measured in delay, level of service (LOS) and 95th percentile queue length. Synchro is based on the Highway Capacity Manual (HCM) methodology. SimTraffic integrates established driver behaviours and characteristics to simulate actual conditions by randomly "seeding" or positioning vehicles travelling throughout the network. The simulation is run five times (five different random seedings of vehicle types, behaviours and arrivals) to obtain statistical significance of the results.

Levels of Service

Traffic operations are typically described in terms of levels of service, which rates the amount of delay per vehicle for each movement and the entire intersection. Levels of service range from LOS A (representing best operations) to LOS E/F (LOS E being poor operations and LOS F being unpredictable/disruptive operations). LOS E/F are generally unacceptable levels of service under normal everyday conditions.

The hierarchy of criteria for grading an intersection or movement not only includes delay times, but also takes into account traffic control type (stop signs or traffic signal). For example, if a vehicle is delayed for 19 seconds at an unsignalized intersection, it is considered to have an average operation, and would therefore be graded as an LOS C. However, at a signalized intersection, a 19 second delay would be considered a good operation and therefore it would be given an LOS B. The table below indicates the range of delay for LOS for signalized and unsignalized intersections.

Table A1: LOS Criteria, by Intersection Traffic Control

Level of Service	Unsignalized Intersection Average Vehicle Delay (sec/veh)	Signalized Intersection Average Vehicle Delay (sec/veh)
A	Less than 10	Less than 10
B	10 to 15	11 to 20
C	15 to 25	20 to 35
D	25 to 35	35 to 55
E	35 to 50	55 to 80
F	More than 50	More than 80

APPENDIX B: 2016 Existing Conditions

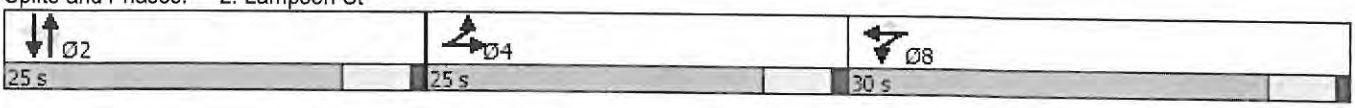
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	270	14	40	350	9	15	109	112	21	73	140
Future Volume (vph)	98	270	14	40	350	9	15	109	112	21	73	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			5%			8%	
Storage Length (m)	30.0		0.0	0.0		70.0	0.0		70.0	0.0		40.0
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00	0.97		1.00	0.94		0.99	0.92
Frt		0.992				0.850			0.850			0.850
Flt Protected		0.987			0.993			0.994			0.988	
Satd. Flow (prot)	0	3288	0	0	1782	1591	0	1809	1575	0	1720	1463
Flt Permitted		0.987			0.993			0.952			0.895	
Satd. Flow (perm)	0	3282	0	0	1778	1537	0	1726	1481	0	1548	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				95			115			184
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.6			80.0			135.2			109.8	
Travel Time (s)		9.8			5.8			9.7			7.9	
Confl. Peds. (#/hr)	7		13	13		7	18		28	28		18
Confl. Bikes (#/hr)									18			18
Peak Hour Factor	0.82	0.84	0.58	0.56	0.80	0.75	0.75	0.80	0.97	0.66	0.76	0.76
Heavy Vehicles (%)	12%	6%	0%	0%	5%	0%	7%	1%	0%	10%	3%	6%
Adj. Flow (vph)	120	321	24	71	438	12	20	136	115	32	96	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	465	0	0	509	12	0	156	115	0	128	184
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.02	1.02	1.02	1.03	1.03	1.03	1.05	1.05	1.05
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			2	
Permitted Phases						8	2		2	2		2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	31.3%	31.3%		37.5%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	20.0		25.0	25.0	25.0	20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None	None	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)		16.1			23.6	23.6		14.3	14.3		14.3	14.3
Actuated g/C Ratio		0.24			0.36	0.36		0.22	0.22		0.22	0.22
v/c Ratio		0.58			0.81	0.02		0.42	0.28		0.39	0.42
Control Delay		26.1			33.5	0.1		27.5	7.2		27.4	7.5
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		26.1			33.5	0.1		27.5	7.2		27.4	7.5
LOS		C			C	A		C	A		C	A
Approach Delay		26.1			32.7			18.9			15.7	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 66.4
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 58.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Lampson St



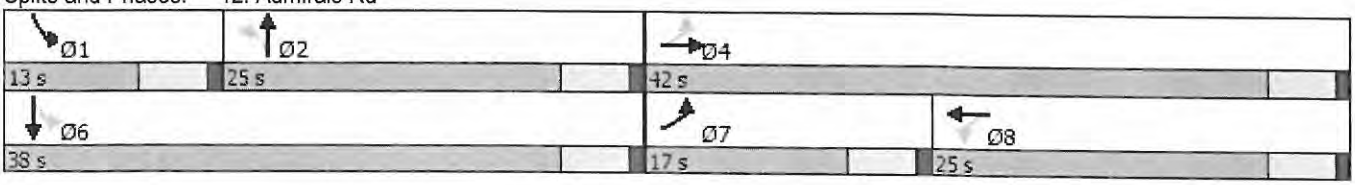
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	146	8	5	257	197	4	113	12	181	96	293
Future Volume (vph)	104	146	8	5	257	197	4	113	12	181	96	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99	1.00		0.99	0.98			0.99			0.96	
Frt		0.991			0.944			0.986			0.915	
Flt Protected	0.950			0.950				0.998			0.986	
Satd. Flow (prot)	1736	1628	0	1805	3135	0	0	3407	0	0	3071	0
Flt Permitted	0.186			0.633				0.918			0.799	
Satd. Flow (perm)	337	1628	0	1188	3135	0	0	3133	0	0	2456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			145			13			478	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.1			80.9			126.6			151.2	
Travel Time (s)		6.8			5.8			9.1			10.9	
Confl. Peds. (#/hr)	22		11	11		22	17		27	27		17
Confl. Bikes (#/hr)			4			1						8
Peak Hour Factor	0.90	0.78	0.67	0.42	0.63	0.82	0.50	0.74	0.75	0.67	0.67	0.54
Heavy Vehicles (%)	4%	14%	38%	0%	8%	5%	0%	4%	0%	2%	5%	4%
Adj. Flow (vph)	116	187	12	12	408	240	8	153	16	270	143	543
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	199	0	12	648	0	0	177	0	0	956	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	25.0		25.0	25.0		25.0	25.0		13.0	25.0	
Total Split (s)	17.0	42.0		25.0	25.0		25.0	25.0		13.0	38.0	
Total Split (%)	21.3%	52.5%		31.3%	31.3%		31.3%	31.3%		16.3%	47.5%	
Maximum Green (s)	12.0	37.0		20.0	20.0		20.0	20.0		8.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	29.1	29.1		17.5	17.5			34.8			34.8	
Actuated g/C Ratio	0.40	0.40		0.24	0.24			0.48			0.48	
v/c Ratio	0.33	0.30		0.04	0.74			0.12			0.67	
Control Delay	15.0	14.3		22.4	25.8			12.1			10.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	15.0	14.3		22.4	25.8			12.1			10.7	
LOS	B	B		C	C			B			B	
Approach Delay		14.5			25.7			12.1			10.7	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 72.1
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 65.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Admirals Rd



Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	280	14	9	305	3	15
Future Vol, veh/h	280	14	9	305	3	15
Conflicting Peds, #/hr	0	0	22	0	28	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	58	45	66	38	63
Heavy Vehicles, %	9	14	0	5	0	0
Mvmt Flow	301	24	20	462	8	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	353	0	843	363
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	502	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1217	-	337	686
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	612	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1194	-	323	657
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	602	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	522	-	-	1194	-
HCM Lane V/C Ratio	0.061	-	-	0.017	-
HCM Control Delay (s)	12.3	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	279	41	94	323	9	57
Future Vol, veh/h	279	41	94	323	9	57
Conflicting Peds, #/hr	0	13	13	0	24	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	79	81	71	56	79
Heavy Vehicles, %	9	2	2	4	0	2
Mvmt Flow	291	52	116	455	16	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	367	0	1028	354
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	687	-
Critical Hdwy	-	-	4.12	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	1192	-	262	690
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1179	-	229	669
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	669	-	-	1179	-
HCM Lane V/C Ratio	0.07	0.108	-	-	0.098	-
HCM Control Delay (s)	21.9	11	-	-	8.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.3	-

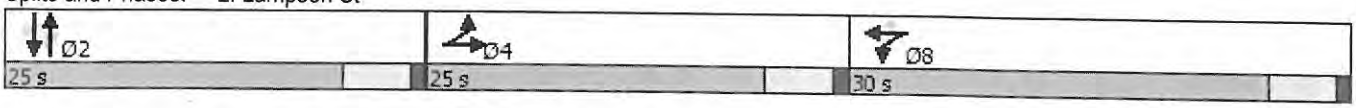
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	461	18	106	324	36	14	190	71	20	78	134
Future Volume (vph)	149	461	18	106	324	36	14	190	71	20	78	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			5%			8%	
Storage Length (m)	30.0		0.0	0.0		70.0	0.0		70.0	0.0		40.0
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99	0.92		1.00	0.95		1.00	0.91
Frt		0.992				0.850			0.850			0.850
Flt Protected		0.987			0.988			0.998			0.987	
Satd. Flow (prot)	0	3405	0	0	1791	1544	0	1831	1529	0	1777	1505
Flt Permitted		0.987			0.988			0.984			0.705	
Satd. Flow (perm)	0	3378	0	0	1777	1420	0	1802	1446	0	1265	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				95			120			189
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.6			80.0			135.2			109.8	
Travel Time (s)		9.8			5.8			9.7			7.9	
Confl. Peds. (#/hr)	31		39	39		31	28		19	19		28
Confl. Bikes (#/hr)									24			12
Peak Hour Factor	0.85	0.99	0.50	0.85	0.84	0.69	0.88	0.61	0.59	0.63	0.89	0.71
Heavy Vehicles (%)	2%	4%	0%	1%	4%	3%	0%	1%	3%	5%	0%	3%
Adj. Flow (vph)	175	466	36	125	386	52	16	311	120	32	88	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	677	0	0	511	52	0	327	120	0	120	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.02	1.02	1.02	1.03	1.03	1.03	1.05	1.05	1.05
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			2	
Permitted Phases						8	2		2	2		2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	31.3%	31.3%		37.5%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	20.0		25.0	25.0	25.0	20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None	None	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)		19.0			24.4	24.4		18.2	18.2		18.2	18.2
Actuated g/C Ratio		0.26			0.33	0.33		0.25	0.25		0.25	0.25
v/c Ratio		0.77			0.86	0.10		0.73	0.27		0.38	0.39
Control Delay		32.5			41.5	1.7		37.4	6.8		28.4	6.7
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		32.5			41.5	1.7		37.4	6.8		28.4	6.7
LOS		C			D	A		D	A		C	A
Approach Delay		32.5			37.8			29.1			15.1	
Approach LOS		C			D			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 73.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 30.6 Intersection LOS: C
Intersection Capacity Utilization 72.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Lampson St



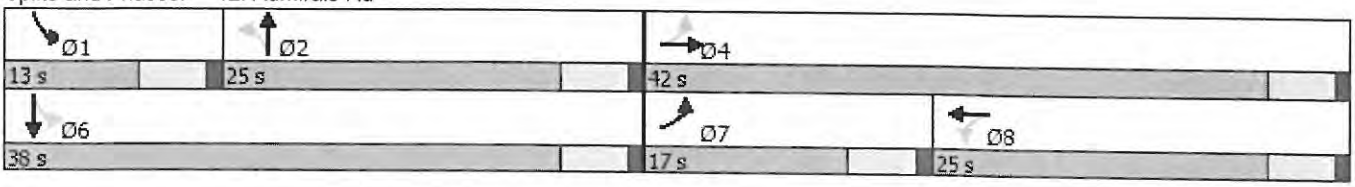
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	392	21	43	133	100	7	125	37	266	148	43
Future Volume (vph)	260	392	21	43	133	100	7	125	37	266	148	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.97	1.00		0.98	0.96			0.96			0.95	
Frt		0.991			0.925			0.962			0.986	
Flt Protected	0.950			0.950				0.997			0.975	
Satd. Flow (prot)	1805	1772	0	1805	3019	0	0	3268	0	0	3359	0
Flt Permitted	0.327			0.471				0.915			0.714	
Satd. Flow (perm)	602	1772	0	877	3019	0	0	2994	0	0	2363	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			172			52			18	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.1			80.9			126.6			151.2	
Travel Time (s)		6.8			5.8			9.1			10.9	
Confl. Peds. (#/hr)	42		27	27		42	55		46	46		55
Confl. Bikes (#/hr)			4			1			11			1
Peak Hour Factor	0.76	0.80	0.66	0.67	0.77	0.58	0.58	0.87	0.71	0.72	0.55	0.63
Heavy Vehicles (%)	0%	6%	5%	0%	12%	1%	0%	3%	0%	2%	3%	2%
Adj. Flow (vph)	342	490	32	64	173	172	12	144	52	369	269	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	522	0	64	345	0	0	208	0	0	706	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	25.0		25.0	25.0		25.0	25.0		13.0	25.0	
Total Split (s)	17.0	42.0		25.0	25.0		25.0	25.0		13.0	38.0	
Total Split (%)	21.3%	52.5%		31.3%	31.3%		31.3%	31.3%		16.3%	47.5%	
Maximum Green (s)	12.0	37.0		20.0	20.0		20.0	20.0		8.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	29.5	29.5		12.6	12.6			34.1			34.1	
Actuated g/C Ratio	0.41	0.41		0.18	0.18			0.48			0.48	
v/c Ratio	0.74	0.71		0.42	0.51			0.14			0.62	
Control Delay	26.1	23.4		34.3	15.5			9.0			17.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	26.1	23.4		34.3	15.5			9.0			17.5	
LOS	C	C		C	B			A			B	
Approach Delay		24.5			18.4			9.0			17.5	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 71.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 19.6 — Intersection LOS: B
Intersection Capacity Utilization 70.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Admirals Rd



Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	4	13	11	1	9	11
Future Vol, veh/h	4	13	11	1	9	11
Conflicting Peds, #/hr	4	2	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	81	55	25	45	69
Heavy Vehicles, %	0	15	0	0	11	0
Mvmt Flow	8	16	20	4	20	16

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	82	36	0	0	28	0
Stage 1	26	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.4	6.35	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.435	-	-	2.299	-
Pot Cap-1 Maneuver	925	1001	-	-	1529	-
Stage 1	1002	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	902	989	-	-	1516	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	4.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	958	1516	-
HCM Lane V/C Ratio	-	-	0.025	0.013	-
HCM Control Delay (s)	-	-	8.9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	479	11	14	291	12	28
Future Vol, veh/h	479	11	14	291	12	28
Conflicting Peds, #/hr	0	51	51	0	57	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	55	58	80	43	47
Heavy Vehicles, %	2	9	0	4	0	7
Mvmt Flow	551	20	24	364	28	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	628	0	1030	669
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	412	-
Critical Hdwy	-	-	4.1	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.363
Pot Cap-1 Maneuver	-	-	964	-	261	449
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	922	-	231	409
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	19.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	328	-	-	922	-
HCM Lane V/C Ratio	0.267	-	-	0.026	-
HCM Control Delay (s)	19.9	-	-	9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	454	35	98	290	17	100
Future Vol, veh/h	454	35	98	290	17	100
Conflicting Peds, #/hr	0	71	71	0	47	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	73	70	83	85	83
Heavy Vehicles, %	4	0	2	4	0	4
Mvmt Flow	493	48	140	349	20	120

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	588	0	1193	635
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	629	-
Critical Hdwy	-	-	4.12	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.336
Pot Cap-1 Maneuver	-	-	987	-	208	475
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	928	-	159	429
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	427	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	429	-	-	928	-
HCM Lane V/C Ratio	0.126	0.281	-	-	0.151	-
HCM Control Delay (s)	30.9	16.6	-	-	9.6	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	1.1	-	-	0.5	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	18	13	6	99	19	16
Future Vol, veh/h	18	13	6	99	19	16
Conflicting Peds, #/hr	0	0	27	0	0	27
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	65	50	83	73	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	20	12	119	26	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	179	63	46	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	143	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	811	1002	1562	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	805	979	1526	-	-	-
Mov Cap-2 Maneuver	805	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1526	-	864	-	-
HCM Lane V/C Ratio	0.008	-	0.06	-	-
HCM Control Delay (s)	7.4	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX C: 2016 Post Development Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	506	18	106	375	36	14	190	71	20	78	149
Future Volume (vph)	164	506	18	106	375	36	14	190	71	20	78	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			5%			8%	
Storage Length (m)	30.0		0.0	0.0		70.0	0.0		70.0	0.0		40.0
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99	0.92		1.00	0.95		1.00	0.91
Frt		0.993				0.850			0.850			0.850
Flt Protected		0.987			0.989			0.998			0.987	
Satd. Flow (prot)	0	3410	0	0	1791	1544	0	1831	1529	0	1777	1505
Flt Permitted		0.987			0.989			0.984			0.681	
Satd. Flow (perm)	0	3385	0	0	1780	1420	0	1802	1446	0	1222	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				95			120			210
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.6			80.0			135.2			109.8	
Travel Time (s)		9.8			5.8			9.7			7.9	
Confl. Peds. (#/hr)	31		39	39		31	28		19	19		28
Confl. Bikes (#/hr)									24			12
Peak Hour Factor	0.85	0.99	0.50	0.85	0.84	0.69	0.88	0.61	0.59	0.63	0.89	0.71
Heavy Vehicles (%)	2%	4%	0%	1%	4%	3%	0%	1%	3%	5%	0%	3%
Adj. Flow (vph)	193	511	36	125	446	52	16	311	120	32	88	210
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	740	0	0	571	52	0	327	120	0	120	210
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.02	1.02	1.02	1.03	1.03	1.03	1.05	1.05	1.05
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			2	
Permitted Phases						8	2		2	2		2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	31.3%	31.3%		37.5%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	20.0		25.0	25.0	25.0	20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None	None	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)		20.0			26.1	26.1		18.5	18.5		18.5	18.5
Actuated g/C Ratio		0.26			0.34	0.34		0.24	0.24		0.24	0.24
v/c Ratio		0.83			0.94	0.10		0.75	0.27		0.41	0.43
Control Delay		36.2			51.7	1.6		39.2	6.7		29.3	6.8
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		36.2			51.7	1.6		39.2	6.7		29.3	6.8
LOS		D			D	A		D	A		C	A
Approach Delay		36.2			47.5			30.5			15.0	
Approach LOS		D			D			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 76.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 35.0 Intersection LOS: D
Intersection Capacity Utilization 76.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Lampson St

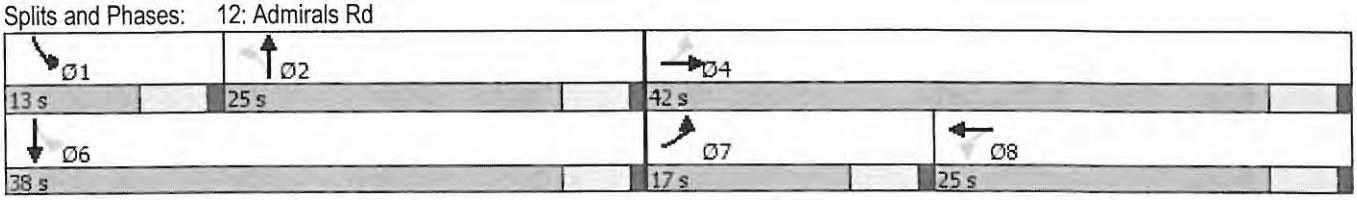
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	402	21	43	138	108	7	125	37	283	148	43
Future Volume (vph)	260	402	21	43	138	108	7	125	37	283	148	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.97	1.00		0.98	0.96			0.96			0.95	
Frt		0.991			0.924			0.962			0.986	
Flt Protected	0.950			0.950				0.997			0.974	
Satd. Flow (prot)	1805	1772	0	1805	3016	0	0	3268	0	0	3357	0
Flt Permitted	0.310			0.465				0.914			0.711	
Satd. Flow (perm)	572	1772	0	866	3016	0	0	2991	0	0	2351	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			186			52			17	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.1			80.9			126.6			151.2	
Travel Time (s)		6.8			5.8			9.1			10.9	
Confl. Peds. (#/hr)	42		27	27		42	55		46	46		55
Confl. Bikes (#/hr)			4			1			11			1
Peak Hour Factor	0.76	0.80	0.66	0.67	0.77	0.58	0.58	0.87	0.71	0.72	0.55	0.63
Heavy Vehicles (%)	0%	6%	5%	0%	12%	1%	0%	3%	0%	2%	3%	2%
Adj. Flow (vph)	342	503	32	64	179	186	12	144	52	393	269	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	535	0	64	365	0	0	208	0	0	730	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	25.0		25.0	25.0		25.0	25.0		13.0	25.0	
Total Split (s)	17.0	42.0		25.0	25.0		25.0	25.0		13.0	38.0	
Total Split (%)	21.3%	52.5%		31.3%	31.3%		31.3%	31.3%		16.3%	47.5%	
Maximum Green (s)	12.0	37.0		20.0	20.0		20.0	20.0		8.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	29.6	29.6		12.8	12.8			34.1			34.1	
Actuated g/C Ratio	0.41	0.41		0.18	0.18			0.47			0.47	
v/c Ratio	0.75	0.73		0.42	0.53			0.14			0.65	
Control Delay	26.9	24.0		34.3	15.3			9.1			18.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	26.9	24.0		34.3	15.3			9.1			18.2	
LOS	C	C		C	B			A			B	
Approach Delay		25.2			18.2			9.1			18.2	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 71.8
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 20.1 Intersection LOS: C
Intersection Capacity Utilization 71.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: Admirals Rd



Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	26	63	11	25	82	11
Future Vol, veh/h	26	63	11	25	82	11
Conflicting Peds, #/hr	4	2	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	81	55	25	45	69
Heavy Vehicles, %	0	15	0	0	11	0
Mvmt Flow	52	78	20	100	182	16

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	454	84	0	0	124	0
Stage 1	74	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.4	6.35	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.435	-	-	2.299	-
Pot Cap-1 Maneuver	568	940	-	-	1409	-
Stage 1	954	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	488	929	-	-	1397	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	7.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	682	1397	-
HCM Lane V/C Ratio	-	-	0.19	0.13	-
HCM Control Delay (s)	-	-	11.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.4	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	485	32	66	295	21	69
Future Vol, veh/h	485	32	66	295	21	69
Conflicting Peds, #/hr	0	51	51	0	57	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	55	58	80	80	80
Heavy Vehicles, %	2	9	0	4	0	7
Mvmt Flow	557	58	114	369	26	86

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	673	0	1240	695
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	596	-
Critical Hdwy	-	-	4.1	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.363
Pot Cap-1 Maneuver	-	-	927	-	195	434
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	887	-	155	395
Mov Cap-2 Maneuver	-	-	-	-	155	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	462	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	25.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	290	-	-	887	-
HCM Lane V/C Ratio	0.388	-	-	0.128	-
HCM Control Delay (s)	25.1	-	-	9.7	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	495	41	102	342	21	119
Future Vol, veh/h	495	41	102	342	21	119
Conflicting Peds, #/hr	0	71	71	0	47	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	73	70	83	85	83
Heavy Vehicles, %	4	0	2	4	0	4
Mvmt Flow	538	56	146	412	25	143

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	641	0	1316	684
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	703	-
Critical Hdwy	-	-	4.12	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.336
Pot Cap-1 Maneuver	-	-	943	-	176	445
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	886	-	133	402
Mov Cap-2 Maneuver	-	-	-	-	133	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	389	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	133	402	-	-	886	-
HCM Lane V/C Ratio	0.186	0.357	-	-	0.164	-
HCM Control Delay (s)	38.1	18.8	-	-	9.9	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.6	-	-	0.6	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	51	26	11	99	19	36
Future Vol, veh/h	51	26	11	99	19	36
Conflicting Peds, #/hr	0	0	27	0	0	27
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	65	50	83	73	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	91	40	22	119	26	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	212	76	71	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	776	985	1529	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	764	962	1494	-	-	-
Mov Cap-2 Maneuver	764	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1494	-	815	-	-
HCM Lane V/C Ratio	0.015	-	0.161	-	-
HCM Control Delay (s)	7.4	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

2: Lampson St Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.3	1.7	0.1	0.0	0.0	0.0	0.7	0.5	3.3	0.4	0.6	3.8
Total Del/Veh (s)	76.9	58.2	29.9	41.8	42.6	15.9	21.4	26.7	6.7	26.8	25.7	10.1

2: Lampson St Performance by movement

Movement	All
Denied Del/Veh (s)	1.6
Total Del/Veh (s)	42.5

7: Park Pl & Access 2 Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	4.7	2.5	0.7	0.1	1.2	0.6	1.7

11: Park Pl & Esquimalt Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Total Del/Veh (s)	1.2	0.5	6.8	1.8	11.4	0.9	6.6	2.1

12: Admirals Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.7	1.9	1.7	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.1	0.2
Total Del/Veh (s)	20.5	20.6	12.4	32.8	18.7	10.2	25.6	13.6	6.8	26.0	17.0	4.9

12: Admirals Rd Performance by movement

Movement	All
Denied Del/Veh (s)	1.1
Total Del/Veh (s)	19.3

18: Fraser St & Esquimalt Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.0	2.5	8.3	1.9	19.3	0.7	7.0	3.3

22: Fraser St & Access 1 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.0	0.0	0.1
Total Del/Veh (s)	3.4	2.5	1.3	0.8	0.6	0.8	1.3

Total Network Performance

Denied Del/Veh (s)	2.3
Total Del/Veh (s)	44.6

Intersection: 2: Lampson St

Movement	EB	EB	B1	WB	WB	B8	NB	NB	SB	SB
Directions Served	LT	TR	T	LT	R	T	LT	R	LT	R
Maximum Queue (m)	133.8	118.9	7.9	95.4	59.2	51.9	54.8	26.8	43.2	24.5
Average Queue (m)	89.7	66.1	0.3	76.5	12.8	24.0	27.8	10.2	16.8	11.8
95th Queue (m)	126.2	113.3	2.6	96.0	47.4	55.3	45.9	18.2	34.3	21.6
Link Distance (m)	115.7	115.7	252.1	59.3		36.9	122.9		94.8	
Upstream Blk Time (%)	3	1		40	0	16				
Queuing Penalty (veh)	9	2		0	0	0				
Storage Bay Dist (m)					70.0			70.0		40.0
Storage Blk Time (%)				40	0				1	
Queuing Penalty (veh)				14	1				1	

Intersection: 7: Park Pl & Access 2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	38.4	6.7	16.2
Average Queue (m)	12.9	0.2	2.0
95th Queue (m)	24.9	2.2	9.6
Link Distance (m)	23.3	48.4	22.9
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	0		
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Bend

Movement	EB	EB
Directions Served	T	
Maximum Queue (m)	76.7	66.3
Average Queue (m)	8.6	4.8
95th Queue (m)	44.2	30.3
Link Distance (m)	59.3	59.3
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	2	0
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Park Pl & Esquimalt Rd

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (m)	15.8	15.8	22.5	26.2
Average Queue (m)	3.6	7.8	4.4	12.6
95th Queue (m)	12.0	15.8	17.0	22.2
Link Distance (m)	59.1		158.6	22.9
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (m)		18.0		
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		1	0	

Intersection: 12: Admirals Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LT	TR	LT	TR
Maximum Queue (m)	37.4	91.6	27.3	46.6	52.5	21.4	14.5	71.7	56.7
Average Queue (m)	30.8	56.9	9.7	15.6	18.0	10.0	5.1	44.0	18.2
95th Queue (m)	46.0	91.5	21.8	32.8	36.0	20.5	11.8	69.1	48.4
Link Distance (m)		81.2		58.1	58.1	115.3	115.3	135.3	135.3
Upstream Blk Time (%)		5			0				
Queuing Penalty (veh)		0			0				
Storage Bay Dist (m)	30.0		20.0						
Storage Blk Time (%)	6	20	3	5					
Queuing Penalty (veh)	25	52	2	2					

Intersection: 18: Fraser St & Esquimalt Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (m)	22.4	21.9	26.9	6.5	24.4
Average Queue (m)	6.4	12.0	2.6	3.3	9.0
95th Queue (m)	19.9	22.7	12.6	8.3	18.5
Link Distance (m)	158.6		252.1		66.0
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		18.0		10.0	
Storage Blk Time (%)		2	0	0	6
Queuing Penalty (veh)		7	0	1	1

Intersection: 22: Fraser St & Access 1

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	22.3	9.0
Average Queue (m)	9.5	0.3
95th Queue (m)	16.4	3.0
Link Distance (m)	14.8	28.1
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 120

APPENDIX D: 2026 Post Development Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	554	20	117	409	40	15	210	78	22	86	163
Future Volume (vph)	180	554	20	117	409	40	15	210	78	22	86	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			3%			5%			8%	
Storage Length (m)	30.0		0.0	0.0		70.0	0.0		70.0	0.0		40.0
Storage Lanes	0		0	0		1	0		1	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99	0.92		1.00	0.95		1.00	0.91
Frt		0.993				0.850			0.850			0.850
Flt Protected		0.987			0.989			0.998			0.987	
Satd. Flow (prot)	0	3409	0	0	1791	1544	0	1831	1529	0	1777	1505
Flt Permitted		0.987			0.989			0.984			0.612	
Satd. Flow (perm)	0	3386	0	0	1781	1420	0	1802	1446	0	1099	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				95			132			230
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.6			80.0			135.2			109.8	
Travel Time (s)		9.8			5.8			9.7			7.9	
Confl. Peds. (#/hr)	31		39	39		31	28		19	19		28
Confl. Bikes (#/hr)									24			12
Peak Hour Factor	0.85	0.99	0.50	0.85	0.84	0.69	0.88	0.61	0.59	0.63	0.89	0.71
Heavy Vehicles (%)	2%	4%	0%	1%	4%	3%	0%	1%	3%	5%	0%	3%
Adj. Flow (vph)	212	560	40	138	487	58	17	344	132	35	97	230
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	812	0	0	625	58	0	361	132	0	132	230
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.02	1.02	1.02	1.03	1.03	1.03	1.05	1.05	1.05
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			2	
Permitted Phases						8	2		2	2		2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2	2	2	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	31.3%	31.3%		37.5%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	31.3%
Maximum Green (s)	20.0	20.0		25.0	25.0	25.0	20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		-1.0			-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)		4.0			4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min	Min	None	None	None	None	None	None
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Pedestrian Calls (#/hr)	30	30		30	30	30	30	30	30	30	30	30
Act Effct Green (s)		20.6			26.0	26.0		19.5	19.5		19.5	19.5
Actuated g/C Ratio		0.26			0.33	0.33		0.25	0.25		0.25	0.25
v/c Ratio		0.90			1.05	0.11		0.80	0.29		0.48	0.45
Control Delay		42.6			79.1	2.1		42.8	6.5		31.8	6.7
Queue Delay		0.0			0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		42.6			79.1	2.1		42.8	6.5		31.8	6.7
LOS		D			E	A		D	A		C	A
Approach Delay		42.6			72.6			33.1			15.8	
Approach LOS		D			E			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 78.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 45.2 Intersection LOS: D
Intersection Capacity Utilization 82.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Lampson St

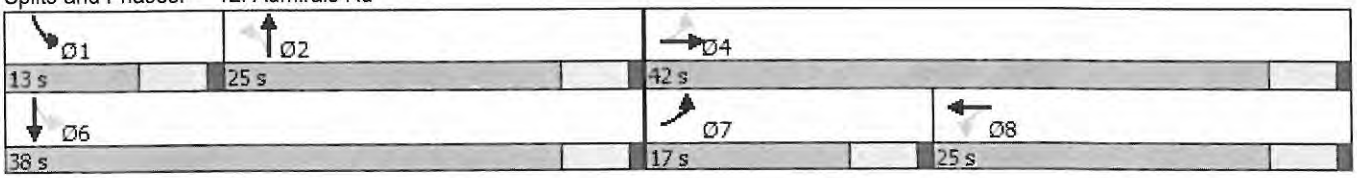
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	443	23	47	152	118	8	138	41	311	163	47
Future Volume (vph)	287	443	23	47	152	118	8	138	41	311	163	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		10.0	20.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.97	1.00		0.98	0.96			0.96			0.95	
Frt		0.991			0.924			0.962			0.986	
Flt Protected	0.950			0.950				0.997			0.974	
Satd. Flow (prot)	1805	1772	0	1805	3016	0	0	3268	0	0	3357	0
Flt Permitted	0.289			0.442				0.905			0.702	
Satd. Flow (perm)	534	1772	0	825	3016	0	0	2961	0	0	2326	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			203			55			17	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		94.1			80.9			126.6			151.2	
Travel Time (s)		6.8			5.8			9.1			10.9	
Confl. Peds. (#/hr)	42		27	27		42	55		46	46		55
Confl. Bikes (#/hr)			4			1			11			1
Peak Hour Factor	0.76	0.80	0.66	0.67	0.77	0.58	0.58	0.87	0.71	0.72	0.55	0.63
Heavy Vehicles (%)	0%	6%	5%	0%	12%	1%	0%	3%	0%	2%	3%	2%
Adj. Flow (vph)	378	554	35	70	197	203	14	159	58	432	296	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	378	589	0	70	400	0	0	231	0	0	803	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	15.0	15.0		15.0	15.0		2.0	15.0		2.0	15.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.0	25.0		25.0	25.0		25.0	25.0		13.0	25.0	
Total Split (s)	17.0	42.0		25.0	25.0		25.0	25.0		13.0	38.0	
Total Split (%)	21.3%	52.5%		31.3%	31.3%		31.3%	31.3%		16.3%	47.5%	
Maximum Green (s)	12.0	37.0		20.0	20.0		20.0	20.0		8.0	33.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		None	Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	30.8	30.8		13.8	13.8			34.1			34.1	
Actuated g/C Ratio	0.42	0.42		0.19	0.19			0.47			0.47	
v/c Ratio	0.83	0.78		0.45	0.55			0.16			0.73	
Control Delay	33.9	26.4		35.4	15.3			9.7			21.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	33.9	26.4		35.4	15.3			9.7			21.5	
LOS	C	C		D	B			A			C	
Approach Delay		29.3			18.3			9.7			21.5	
Approach LOS		C			B			A			C	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 73
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 22.9 Intersection LOS: C
Intersection Capacity Utilization 75.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 12: Admirals Rd



Intersection	
Int Delay, s/veh	6.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	26	64	12	25	83	12
Future Vol, veh/h	26	64	12	25	83	12
Conflicting Peds, #/hr	4	2	0	10	10	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	81	55	25	45	69
Heavy Vehicles, %	0	15	0	0	11	0
Mvmt Flow	52	79	22	100	184	17

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	462	86	0	0	126	0
Stage 1	76	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.4	6.35	-	-	4.21	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.435	-	-	2.299	-
Pot Cap-1 Maneuver	562	938	-	-	1406	-
Stage 1	952	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	481	927	-	-	1394	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	7.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	678	1394	-
HCM Lane V/C Ratio	-	-	0.193	0.132	-
HCM Control Delay (s)	-	-	11.6	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.5	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	535	33	67	325	22	72
Future Vol, veh/h	535	33	67	325	22	72
Conflicting Peds, #/hr	0	51	51	0	57	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	55	58	80	80	80
Heavy Vehicles, %	2	9	0	4	0	7
Mvmt Flow	615	60	116	406	28	90

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	732	0	1339	753
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	637	-
Critical Hdwy	-	-	4.1	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.363
Pot Cap-1 Maneuver	-	-	882	-	170	402
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	844	-	134	366
Mov Cap-2 Maneuver	-	-	-	-	134	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	438	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	29.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	260	-	-	844	-
HCM Lane V/C Ratio	0.452	-	-	0.137	-
HCM Control Delay (s)	29.8	-	-	9.9	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	2.2	-	-	0.5	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	542	45	122	372	23	129
Future Vol, veh/h	542	45	122	372	23	129
Conflicting Peds, #/hr	0	71	71	0	47	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	180	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	73	70	83	85	83
Heavy Vehicles, %	4	0	2	4	0	4
Mvmt Flow	589	62	174	448	27	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	698	0	1464	738
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	797	-
Critical Hdwy	-	-	4.12	-	6.4	6.24
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.218	-	3.5	3.336
Pot Cap-1 Maneuver	-	-	898	-	143	415
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	447	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	844	-	102	375
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	334	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	25.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	102	375	-	-	844	-
HCM Lane V/C Ratio	0.265	0.414	-	-	0.206	-
HCM Control Delay (s)	52.6	21.2	-	-	10.4	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1	2	-	-	0.8	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	43	27	12	109	21	38
Future Vol, veh/h	43	27	12	109	21	38
Conflicting Peds, #/hr	0	0	27	0	0	27
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	65	50	83	73	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	42	24	131	29	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	232	80	76	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	756	980	1523	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	743	958	1488	-	-	-
Mov Cap-2 Maneuver	743	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1488	-	807	-	-
HCM Lane V/C Ratio	0.016	-	0.147	-	-
HCM Control Delay (s)	7.5	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

2: Lampson St Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	52.1	34.9	8.9	0.0	0.0	0.0	0.1	0.6	3.1	0.9	0.8	3.6
Total Del/Veh (s)	109.7	85.6	61.2	45.6	48.8	20.0	38.9	28.1	7.2	41.1	29.8	11.7

2: Lampson St Performance by movement

Movement	All
Denied Del/Veh (s)	15.7
Total Del/Veh (s)	55.9

7: Park Pl & Access 2 Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	5.1	2.7	0.9	0.1	0.9	0.1	1.8

11: Park Pl & Esquimalt Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Total Del/Veh (s)	1.1	0.4	7.9	1.7	8.8	0.9	5.3	2.0

12: Admirals Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.2	2.5	1.7	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.1	0.1
Total Del/Veh (s)	21.9	20.8	14.1	43.6	19.8	9.2	15.3	14.0	8.2	40.0	29.1	5.0

12: Admirals Rd Performance by movement

Movement	All
Denied Del/Veh (s)	1.4
Total Del/Veh (s)	23.1

18: Fraser St & Esquimalt Rd Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.9	7.9	2.0	20.7	0.3	8.5	3.3

22: Fraser St & Access 1 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	3.2	2.1	1.6	0.8	0.6	0.6	1.1

Total Network Performance

Denied Del/Veh (s)	13.9
Total Del/Veh (s)	56.6

Intersection: 2: Lampson St

Movement	EB	EB	B1	WB	WB	B8	NB	NB	SB	SB
Directions Served	LT	TR	T	LT	R	T	LT	R	LT	R
Maximum Queue (m)	144.7	137.1	93.8	89.3	59.2	47.3	73.5	23.3	57.2	47.4
Average Queue (m)	113.0	103.2	13.7	78.1	22.3	31.9	32.4	10.5	17.1	15.5
95th Queue (m)	153.8	144.3	52.0	93.0	59.9	58.6	53.2	19.8	37.7	31.3
Link Distance (m)	115.7	115.7	252.1	59.3		36.9	122.9		94.8	
Upstream Blk Time (%)	21	5		48	0	31				
Queuing Penalty (veh)	71	16		0	0	0				
Storage Bay Dist (m)					70.0			70.0		40.0
Storage Blk Time (%)				48	0		0		1	0
Queuing Penalty (veh)				19	2		0		2	0

Intersection: 7: Park Pl & Access 2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	27.3	14.8
Average Queue (m)	12.1	2.8
95th Queue (m)	21.5	10.5
Link Distance (m)	31.3	5.7
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Bend

Movement	EB	EB
Directions Served	T	
Maximum Queue (m)	58.8	63.5
Average Queue (m)	3.7	2.1
95th Queue (m)	26.5	20.9
Link Distance (m)	59.3	59.3
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Park Pl & Esquimalt Rd

Movement	EB	WB	WB	NB	B6
Directions Served	TR	L	T	LR	T
Maximum Queue (m)	23.1	15.4	21.1	22.6	9.2
Average Queue (m)	4.0	6.1	3.1	10.3	0.5
95th Queue (m)	16.2	14.2	13.1	18.4	3.6
Link Distance (m)	59.5		158.3	0.9	5.7
Upstream Blk Time (%)				11	0
Queuing Penalty (veh)				9	0
Storage Bay Dist (m)		18.0			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Intersection: 12: Admirals Rd

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	TR	LT	TR	LT	TR
Maximum Queue (m)	37.4	91.6	27.2	39.1	40.0	33.9	20.3	112.4	86.3
Average Queue (m)	32.2	67.0	9.6	16.3	19.3	16.3	7.8	57.8	22.8
95th Queue (m)	47.1	102.4	21.3	34.0	32.4	28.9	17.1	84.8	60.4
Link Distance (m)		81.2		58.1	58.1	115.3	115.3	135.3	135.3
Upstream Blk Time (%)		9							
Queuing Penalty (veh)		0							
Storage Bay Dist (m)	30.0		20.0						
Storage Blk Time (%)	8	22	3	8					
Queuing Penalty (veh)	38	62	2	4					

Intersection: 18: Fraser St & Esquimalt Rd

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (m)	14.9	23.1	32.0	10.2	29.4
Average Queue (m)	0.9	11.9	4.0	4.0	9.3
95th Queue (m)	5.9	20.9	16.9	9.4	19.7
Link Distance (m)	158.3		252.1		66.0
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		18.0		10.0	
Storage Blk Time (%)		2	0	1	8
Queuing Penalty (veh)		7	0	1	2

Intersection: 22: Fraser St & Access 1

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (m)	16.7	9.0
Average Queue (m)	8.7	0.6
95th Queue (m)	12.2	4.2
Link Distance (m)	14.8	28.1
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 236

Boulevard
TRANSPORTATION
a division of Watt Consulting Group

ESQUIMALT TOWN CENTRE

Parking Study

Prepared for: **Aragon Properties Ltd.**

Prepared by: **Boulevard Transportation, a division of Watt Consulting Group**

Our File: **1958**

Date: **April 29, 2016**

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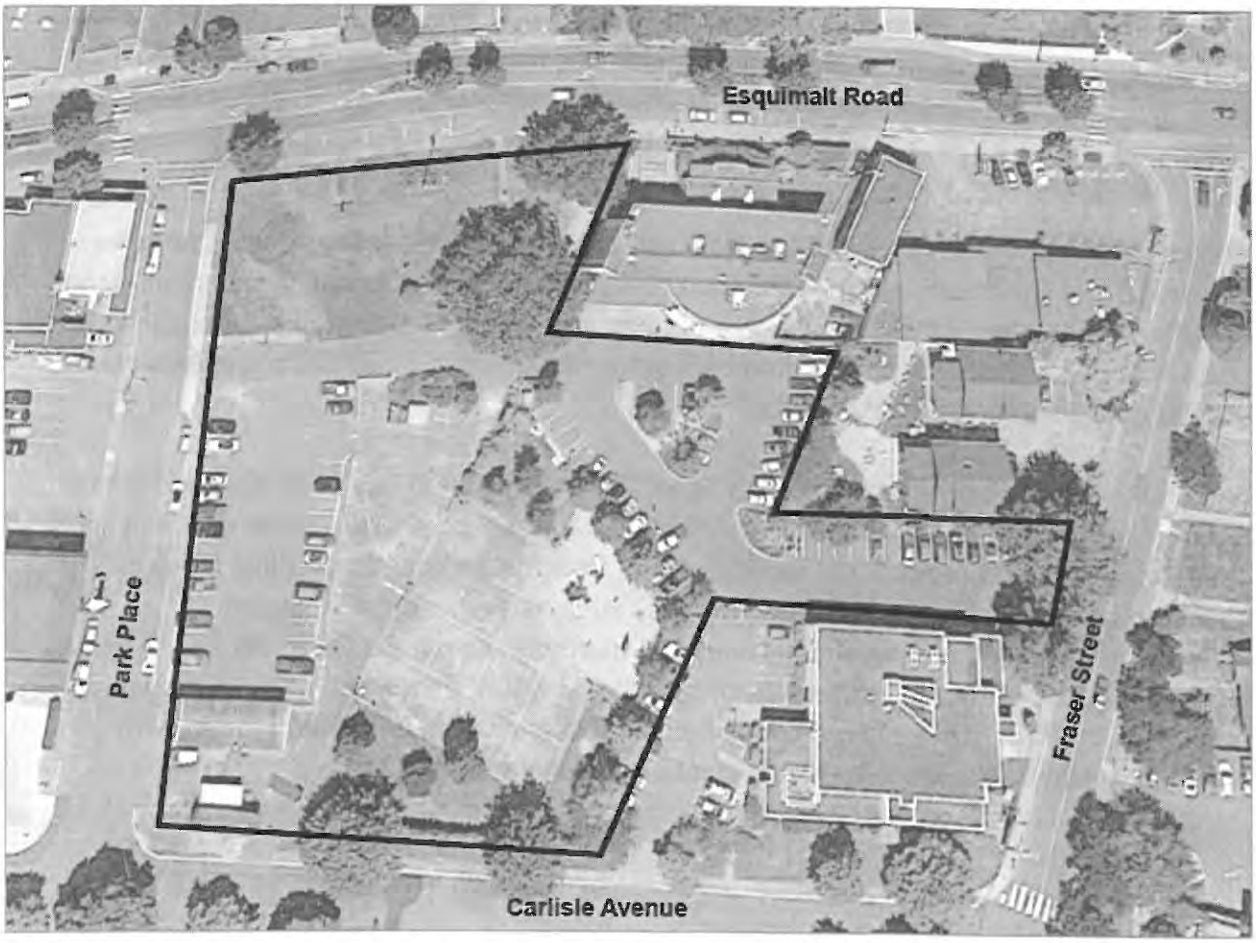
1.0 INTRODUCTION

Boulevard Transportation, a division of Watt Consulting Group was retained by Aragon Properties Ltd. to undertake a parking study for the proposed redevelopment of the Esquimalt Town Centre site in the Township of Esquimalt. The purpose of this study is to assess the adequacy of the proposed parking supply by considering parking demand at representative sites, parking management approaches (particularly the use of shared parking) and transportation demand management (TDM) options.

1.1 LOCATION

The subject site is located in the Esquimalt Town Centre (1235 Esquimalt Road) in the Township of Esquimalt (see **Figure 1**).

FIGURE 1. **SUBJECT SITE**



1.2 TRANSPORTATION OPTIONS

The subject site is located in a central area with access to a number of transportation options. A summary of the subject site's transportation options is provided below.

1.2.1 Public Transit

The subject site has immediate access to three bus routes: no.15 – UVic / Esquimalt, no.25 – Maplewood / Admirals Walk / Colwood Exchange, and the no. 26 – Dockyard / UVic, providing connections to/from View Royal, the Esquimalt dockyard, downtown Victoria, and the University of Victoria. The no.15 – Uvic / Esquimalt operates every day between approximately 6:00am and 1:00am, with 15-minute frequency in peak hours.

BC Transit's *Transit Future Plan* has identified Esquimalt Road as a "Frequent Transit Corridor" 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 and transit priority measures and enhanced bus stop infrastructure.[1] With the Frequent Transit Network projected to carry a large share of the future transit system's total ridership, the subject site will benefit from frequent, reliable, and convenient service.

1.2.2 Walking

Various commercial/retail, personal services, and professional offices are accessible in the Esquimalt Town Centre area which is located on Esquimalt Road between Constance Avenue and Joffre Street. Many of these uses are approximately 300m from the subject (less than a 5-minute walk). Sidewalks are provided on both sides of Esquimalt Road and a crosswalk is provided on the west side of Park Place.

The Esquimalt Village (where the existing Town Centre is located) has been identified in the Official Community Plan (OCP) as an important area that will continue to serve as the main commercial, civic, and recreational service centre. Designs are encouraged that focus on pedestrian orientation and many include features such as sidewalk cafés, attractive landscaping, public art, and other amenities.[2] Furthermore, as per the OCP, the Township has plans to create a clearly defined, well-landscaped, and well-lit pedestrian network throughout the Esquimalt Village. These future pedestrian improvements are anticipated to result in enhanced walkability for the subject site and surrounding area.

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

[2] The Township of Esquimalt's OCP is available online at: https://www.esquimalt.ca/sites/default/files/docs/business-_development/bylaw_2646_-_ocp_consolidation_-_no_maps_2014a.pdf

1.2.3 Cycling

Bike lanes are provided along much of Esquimalt Road providing for direct connectivity to downtown Victoria. The site is approximately 1.1 km from the Esquimalt + Nanaimo (E+N) Rail Trail, which provides a direct off-road cycling route to downtown Victoria (east) and to View Royal and the Westshore (west).

2.0 PROPOSED LAND USES

2.1 CONTEXT

The proposal is for a comprehensive development that will act as a mixed use urban centre for Esquimalt. The development will include a mix of retail, residential, and commercial uses in addition to accommodating the new Public Library and teaching and administration space for the Justice Institute of British Columbia (JIBC), a public post-secondary institution. The overall objectives of this site[3] are as follows:

- Create a lively and sustainable Esquimalt Town Centre, which incorporates a mix of uses and community recreation needs;
- Revitalize Esquimalt's town core and enhance community economic development, while providing residents with a wider range of amenities and services; and,
- Capitalize on and enhance the value of public and private assets in the core.

2.2 LAND USE

The proposed development includes four buildings (some contain a single land use and others containing multiple uses). The proposal includes 101 units of multi-family residential, 10,000 square feet (sq. ft.) gross floor area (GFA) for the new public library, 18,000 sq. ft. GFA for the Justice Institute, 17,800 sq. ft. GFA for office uses, and 4,460 sq. ft. GFA for commercial/retail uses. These data are summarized in **Table 1**.

TABLE 1. **SUMMARY OF PROPOSED LAND USES**

Land Use	Quantity (Units or Floor Area)***
Multi-Family Residential (Market Rental)*	32

[3] For more information about this project, see the Township of Esquimalt website at: https://www.esquimalt.ca/municipal-hall/esquimalt-village-project

Land Use	Quantity (Units or Floor Area)***
Multi-Family Residential (Condominium)*	69
Library**	10,000 sq. ft. (929 m²) GFA
Justice Institute	18,000 sq. ft. (1,672 m²) GFA
Office	17,800 sq. ft. (1,654 m²) GFA
Commercial/Retail Use (CRU)	4,460 sq. ft. (414 m²) GFA

*An email correspondence on Thursday April 28th with the proponent confirmed that the total residential units changed to 101 units.

**At the time of completing this study, the analysis on the library use was based on a floor area of 10,000 sq. ft. However, there is the potential for additional library area.

***The quantity (unit or floor area) of the proposed land uses are current as of April 29, 2016 and are considered final for the purposes of this study.

2.3 PROPOSED PARKING SUPPLY

The proposal includes a total of 200 parking spaces, comprised of 161 underground parking spaces and 39 surface parking spaces (see **Table 2**). See **Appendix A** for parking plan.

TABLE 2. **SUMMARY OF PROPOSED PARKING SUPPLY**

Building	Land Use	Underground Parking	Surface Parking
Building A & B	Multi-Family Residential (Condominium)	55	
	Library / Justice Institute / Office		39
Building C & D	CRU / Multi-Family Residential (Market Rental)	121	
Total Underground and Surface			**215***
Total (Excluding Town Hall Parking Spaces)			**200**

* Approximately 15 parking spaces will be assigned to the Town Hall, resulting in a total of 215 parking spaces. However, for the purposes of this study, which deals with the land uses in Table 2, the proposed parking supply of 200 is used.

3.0 PARKING REQUIREMENT

The Township's Parking Bylaw[4] defines the parking requirement for each of the proposed land uses. The total required parking supply for the site is 428 spaces, which is 228 spaces more than proposed (see **Table 3**).

The Library and Justice Institute requirements are based on the "Museum" requirement as neither are defined land use classifications. This classification has a significantly higher requirement than is typical of Library or post-secondary requirements in other communities. As per Section 11 "Visitor Parking" of the Parking Bylaw, in mixed residential/commercial development, visitor parking spaces may be assigned to commercial uses up to 15% of the space required for the commercial use component. In this case, the visitor parking supply would be shared with commercial uses and the overall requirement reduced by 35 spaces (428 total spaces required).

TABLE 3. **PARKING REQUIREMENT**

Land Use	Quantity	Requirement		Applied to Subject Site
Residential	101 units	Medium and High density apartment	1.3 / unit	131
Residential Visitor		1 of every 4 required spaces		
Library	10,000 sq. ft. GFA (929m^2)	Museum*	1 space per 10 m^2 GFA	93
Justice Institute	18,000 sq. ft. GFA (1,672 m^2)	Museum*	1 space per 10 m^2 GFA	167
Office	17,800 sq. ft. GFA (1,654 m^2)	Business and Professional Offices	1 space per 30 m^2 GFA	55
Commercial/Retail	4,460 sq. ft. GFA (414 m^2)	Retail Sales of goods and services	1 space per 25 m^2 GFA	17
			Total	**463**
			Subtract 35 for visitor sharing	**428**

[4] The Township of Esquimalt's Parking Bylaw is available online: https://www.esquimalt.ca/sites/default/files/zoning_parkingbylaw2008.pdf

Section 13.5 of the Parking Bylaw allows for a parking supply reduction of two spaces in commercial and industrial land uses where two or more secure bicycle parking spaces, shower and change rooms and six visitor bicycle parking spaces are provided, and if the building is located within 200 metres of a regional bus route. The subject site is located on a regional bus route (see Section 1.2) and bike parking and shower and change rooms are proposed for this site.

4.0 EXPECTED PARKING DEMAND

Expected parking demand is considered in the following sections based on vehicle ownership from comparable sites, observations, research, and results from previous studies.

4.1 RESIDENTIAL

4.1.1 Multi-Family Residential, Strata Owned

Buildings A and B are proposed to be strata ownership multi-family condominium comprising 69 units. Known vehicle ownership rates for strata ownership sites in proximity to the subject site are presented in **Table 4**. Unit configuration (i.e., proportion one- and two-bedroom units) is assumed to be representative of the subject site. Average vehicle ownership is 0.96 vehicles per unit. Accordingly, 0.95 vehicles per unit is suggested as an appropriate parking supply, resulting in demand of 66 vehicles.

TABLE 4. **VEHICLE OWNERSHIP AT REPRESENTATIVE SITES, STRATA OWNED CONDO**

Site	No. Units	Owned Vehicles	Vehicle Demand (vehicles/unit)
885 Ellery Street	21	24	1.14
830 Esquimalt Road	22	17	0.77
848 Esquimalt Road	51	40	0.78
924 Esquimalt Road	58	53	0.91
929 Esquimalt Road	31	31	1.00
1000 Esquimalt Road	30	32	1.07
1315 Esquimalt Road	78	79	1.01
614 Fernhill Place	22	19	0.86
331 Robert Street	10	11	1.10
		Average	**0.96**

4.1.2 Multi-Family Residential, Market Rental

Building D will contain 32 market rental multi-family residential units. Multi-family strata ownership units are known to exhibit higher parking demand rates as compared to rental apartment units. Comprehensive studies from Metro Vancouver[5] and the City of Toronto[6] conclude that parking demand is 33% to 41% lower among market rental than strata ownership condominium units. When the average vehicle ownership rate among the strata ownership condominium sites (0.95 vehicles per unit) is reduced by 35% to reflect the reduced rate among rental apartments, the expected demand rate is 0.60 vehicles per unit.

Table 5 presents the vehicle ownership rates at representative rental apartment sites for rental buildings. Many of these sites are in the City of Victoria but closely resemble the subject site based on proximity to the downtown area. These sites were obtained from an ICBC vehicle ownership data request for past parking studies.

TABLE 5. **VEHICLE OWNERSHIP AT REPRESENTATIVE SITES (RENTAL UNITS)**

Site	No. Units	Owned Vehicles*	Vehicle Demand (vehicles/unit)
1635 Cook Street	72	30	0.42
628 Head Street (Dagmar Apartments)	25	11	0.44
1130 Pandora Avenue	45	24	0.53
1020 Pembroke Street	109	75	0.69
2310 Quadra Street	19	14	0.74
1110 Queens Avenue	17	9	0.53
1017 Queens Avenue	27	11	0.41
2549 Dowler Place	32	25	0.78
2523 Wark Street	16	8	0.50
		Average	**0.56**

*Vehicle ownership information obtained from Insurance Corporation of British Columbia (ICBC). Information is current as of November 30, 2013.

The results from **Table 5** illustrate that parking demand for rental units is approximately 40% lower than strata ownership condominium units, which is consistent with the research from Toronto and Vancouver. Moreover, a recent parking study of 433 Boleskine Road in the City of

[5] Metro Vancouver. (2012). Metro Vancouver Apartment Parking Study. Page 44, Table 21; available online at: http://www.metrovancouver.org/services/regional-planning/PlanningPublications/Apartment_Parking_Study_TechnicalReport.pdf

[6] City of Toronto. (2007). Parking Standards Review – Phase Two Apartment Building / Multi-Unit Blocks Developments Component, New Zoning By-Law Project. Page 16, Figure 3.1; available online at: www1.toronto.ca/city_of_toronto/city_planning/zoning__environment/files/pdf/cansult_final_apart_stds.pdf

Victoria, considered to be a somewhat representative site, found that the expected parking demand rate for the rental apartments was 0.62 vehicles per unit.[7]

A similar parking study was completed in 2010 for the rental apartment development on the southeast corner of Tillicum Road / Burnside Road (3185 Tillicum Road). Eight market rental apartment sites were surveyed and found average parking demand to be 0.68 vehicles per unit. The site was ultimately approved and constructed with a parking supply rate of 0.59 vehicles per unit (61 resident spaces, 104 units).[8] Vehicle ownership was recently obtained for the 3185 Tillicum Road site and determined vehicle ownership rates to be 0.58 vehicles per unit.[9]

Given the results in Table 5 and the supporting evidence from the research and past parking studies, a rate of 0.60 per unit is suggested for site planning purposes, which results in a parking demand of 19 vehicles.

4.1.3 Visitors

Vehicle ownership data considers resident parking demand, but does not account for visitor parking. Visitor parking demand rates have been shown to be in the range of 0.05 to 0.07 vehicles per unit for multi-family residential.[10] A demand rate of 0.1 vehicles per unit is considered an appropriate representation of visitor parking demand among multi-family residential uses.[11] Applied to the site, the visitor parking demand is approximately 10 vehicles (approximately three for each of Building A, Building B, and Building D). This is significantly less than the visitor parking requirement per the Township's Parking Bylaw (35 spaces).

4.2 LIBRARY

The new Public Library will be approximately 10,000 sq. ft. (929 m^2) GFA. To determine the parking demand for the library site, conversations were held with the Greater Victoria Public Library (GVPL) Chief Executive Officer and Core District Coordinator.[12] These staff were able to

[7] Boulevard Transportation. (2016). 433 Boleskine Road Parking Study.

[8] A similar parking study was completed in 2010 for the rental apartment development on the southeast corner of Tillicum Road / Burnside Road (3185 Tillicum Road).

[9] Vehicle ownership rate based on the number of vehicles registered to this address. Information is provided by Insurance Corporation of British Columbia (ICBC) and current as of November 30, 2015.

[10] Based on observations of visitor parking conducted in 2015 for two studies of multi-family residential sites (one adjacent downtown Victoria, the other in Langford) and findings from the 2012 Metro Vancouver Apartment Parking Study available at: http://canadianparking.ca/the-metro-vancouver-apartment-parking-study/?

[11] City of Toronto. (2007). Parking Standards Review – Phase Two Apartment Building/Multi-Unit Block Developments Component, New Zoning By-law Project. Available online at: https://www1.toronto.ca/city_of_toronto/city_planning/zoning__environment/files/pdf/cansult_final_apart_stds.pdf

[12] Phone conversation was held on March 31, 2016 with the GVPL CEO, and on April 4, 2016 with the Core District Coordinator. Additional data were provided via email.

provide valuable statistics that informed the parking demand rate for the new library site. The data are summarized as follows:

- The current library is 8,600 sq. ft. (799 m^2) GFA
- On average, 560 patrons visit the library per day
- The branch is busiest from 10am to 12pm, and 2:30 to 6pm on weekdays and weekends
- It was estimated that about 65-75% of library patrons drive to the library

In addition to the statistics above, the library staff conducted a patron count on Tuesday April 5 to better understand the demographics of the patrons during peak times and approximately how many "eligible drivers" were at the library at any one time in order to determine peak parking demand. Three age groups were counted: youth (16 years and younger) adults / eligible drivers (17 to 80 years old) and non-eligible drivers (80 years and older). Observations were conducted at four distinct periods over the course of the day: 10am, 12pm, 3pm, and 5pm. The 3pm count reported 52 eligible drivers. Factored for an assumed 75% of patrons driving[13], an estimated 39 vehicles are parked on-site during the peak period.

Email correspondence with the library staff confirmed that the new library is anticipated to be busier with an approximate 25% increase in patrons and associated parking demand[14] as new staff may be hired, new programs offered, and new programming spaces provided. Therefore, applying this factor results in a parking demand of 49 vehicles during peak times, of which 7 are reported to be staff.[15]

4.3 JUSTICE INSTITUTE

The Justice Institute of BC (JIBC), located in Building C, will contain a mix of teaching and administration spaces consisting of a total of 18,000 sq. ft. (1,672 m^2) GFA.

To better understand how the Justice Institute functions, a phone conversation was held with a staff member at the Institute's existing Victoria campus.[16] The downtown campus building, approximately 21,175 sq.ft. (1,967 m^2) GFA, functions like a post-secondary institution offering several fee for services courses, much like the University of Victoria or Camosun College. However, the JIBC downtown Victoria campus has a much smaller student and staff population than the aforementioned post-secondary institutions.

[13] As confirmed through conversation with GVLP Core District Coordinator on April 6, 2016.

[14] Email correspondence with the GVPL Core District Coordinator on April 11, 2016.

[15] Email correspondence with GVPL Core District Coordinator on April 11, 2016.

[16] Phone conversation was held on March 31, 2016 with the Facilities Administrator at the JIBC's downtown Victoria campus.

During the JIBC's busiest times – typically March and October – they have a peak of 100 students per day; however, it was reported that this only occurs for three to five weeks of the year. Up to 15 staff (including instructors) may be on-site at one time during peak times. However, for the other approximately 45 weeks of the year (i.e., non-peak times), the JIBC downtown Victoria campus typically has 50 students per day with about seven staff, which is a more reliable estimate of expected parking demand for the subject site.[17]

It was reported that approximately 10% or less of students and staff drive to the site due to a lack of dedicated parking at the current location[18] - most rely on cycling, public transit or walking. It is assumed that parking demand will slightly increase at the new location due to increased parking availability and reduced access to nearby travel options as compared to the current downtown site.

Modal split figures were used to estimate parking demand for the JIBC on the subject site, as follows:

- 48% of students are assumed to drive[19]; and
- 78% of staff are assumed to drive.[20]

Using the above-mentioned modal split figures, it is expected that the JIBC will experience average parking demand of 29 vehicles - students will contribute 24 vehicles (50 students, 48% driver) and staff will contribute about 5 vehicles (7 staff, 78% driver).

As discussed above, the JIBC has about 100 students and 15 staff per day during peak times (about 3 to 5 weeks per year). Using the modal spilt numbers above, this results in approximately 60 vehicles, or 31 vehicles greater than the average. Therefore, it is expected that for 3 to 5 weeks per year, approximately 31 vehicles attributed to the JIBC will require additional parking and may need to be accommodated by on-street parking spaces surrounding and in proximity to subject site.

[17] Phone conversation was held on April 29, 2016 administrative staff at the JIBC's downtown Victoria campus.

[18] Numbers provided by the Facilities Administrator are approximate and should be used with caution.

[19] Assumption that 48% of students drive is consistent with Camosun College's Interurban campus, which as a community college with a variety of technical and vocational programs, has more similarities to the JIBC than the University of Victoria. The 2012 Camosun College Modal Split report is available online at: http://camosun.ca/documents/about/transportation/modal-split-camosun-2012.pdf

[20] Assumption that 78% of staff will drive is consistent with the modal split numbers in the 2011 CRD Origin-Destination Household Travel Survey Daily Travel Characteristics Report. During the AM peak period, 78% of trips to the Township of Esquimalt are reported to be by auto driver. The report is available online at: https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/transportation/crd-od-survey-dailytravelcharacteristicsreportfinal.pdf?sfvrsn=2

4.4 OFFICE

A total of 17,800 sq. ft. (1,654 m^2) GFA of office is proposed in Building C. Parking observations were conducted at nine office sites within, or in proximity to, downtown Victoria.[21] See **Table 6**. Each site was found to be similar to the subject site based on proximity to downtown, a regional trail or to one of BC Transit's frequent or rapid transit corridors. Observations were conducted during the weekday over two time periods representing peak periods for office land uses.[22]

Results found only moderate variation in parking demand between different times of day; for the 10am time period, average demand was approximately one vehicle per 62 m^2 of office floor space whereas in the 2pm time period, the demand was approximately one vehicle per 75 m^2 of office floor space. One vehicle per 60 m^2 of office floor space is appropriate as a generalized parking demand rate for site planning purposes, which results in 28 vehicles. Office parking demand is assumed to be 93% employees (26 vehicles) and 7% visitors (2 vehicles).[23]

TABLE 6. **SUMMARY OF PARKING DEMAND AT REPRESENTATIVE OFFICE SITES**

Site	Parking Supply	Floor Area, Estimated (m^2)	Observed Vehicles	Demand Rate (1 vehicle per m^2)
420 William Street BMS Integrated Services Inc.	17	920	16	1 / 58
2736 Quadra Street (Quadra Village) CUPE 50	13	448	5	1 / 90
Harbour Road Dockside Green Business Center	30	792	12	1 / 66
1708 Vancouver Street Hollis Wealth	6	224	5	1 / 45
1012 North Park Street Howe and Gramlich Wealth Management	4	330	4	1 / 83
125 Skinner Street Island Community Mental Health	19	1,094	16	1 / 68
2420 Douglas Street The Co-operators	10	280	5	1 / 56
1002 Wharf Street Turnham Woodland / Waddell Rapona	11	480	7	1 / 69
3035 Nanaimo Street	43	756	27	1 / 28

[21] The consultants who prepared this study are also completing a parking review for the City of Victoria

[22] Observations were conducted on Wednesday, March 9 at 10:00am and Wednesday March 9 at 2:00pm

[23] This assumes that approximately 7% of the total vehicles are for visitors. Ratio determined using the following publication: Urban Land Institute. (2005). Shared Parking, 2nd Edition, Table 3-2, pg. 33.

Site	Parking Supply	Floor Area, Estimated (m^2)	Observed Vehicles	Demand Rate (1 vehicle per m^2)
Victoria Real Estate Board				
			Average	**1 / 62**

4.5 COMMERCIAL / RETAIL

Building D contains 4,460 sq. ft. (414 m^2) GFA of commercial / retail space. An assumed 1,200 sq. ft. (111 m^2) GFA of the commercial/retail space is proposed to be a café or coffee shop, with the balance (303 m^2 GFA) as a restaurant or general retail.[24] Parking demand rates are known to vary significantly between restaurant / café and retail uses, and each have been considered in detail in the following section.

Restaurant

An on-going study being completed for the City of Victoria[25] has included observations at eight restaurant sites at the periphery of the downtown area over three separate time periods - Wednesday March 9 at 6pm, Friday March 11 at 6pm, and Saturday April 2 at 6pm. See **Table 7**. Results suggest that parking demand is one vehicle per 24 m^2, or 12 vehicles if applied to the retail/restaurant floor area.

TABLE 7. **SUMMARY OF OBSERVATIONS AT REPRESENTATIVE RESTAURANT SITES**

Site	Parking Supply	Floor Area, Estimated (m^2)*	Observed Vehicles	Demand Rate (1 vehicle per m^2)
1028 Hillside Avenue (Quadra Village) 5th Street Bar and Grill	31	542	31	1 /17
2900 Douglas Street ABC Country Restaurant	17	357	10	1/ 21
1739 Fort Street (Jubilee Village) Christie's Carriage House Pub	30	900	22	1 / 30
405 Craigflower Road Crown Palace Chinese Restaurant	8	182	3	1 / 23
607 Oswego Street Harbour House Restaurant	7	220	3	1 / 31
308 Catherine Street Spinnaker's Gastro Brewpub	39	1,008	36	1 / 26
1871 Fort Street White Spot	24	264	21	1 / 11

[24] Email correspondence with proponent on March 17, 2016 and April 4, 2016.

[25] The consultants who prepared this study are also completing a parking review for the City of Victoria.

Site	Parking Supply	Floor Area, Estimated (m^2)*	Observed Vehicles	Demand Rate (1 vehicle per m^2)
2706 Government Street (Humber Green Village) Chiba Sushi	24	741	12	1 / 31
			Average	**1 / 24**

* Restaurant floor area estimated using Google Maps

To confirm if one vehicle per 24 m^2 is an appropriate rate, a calculation was completed to convert floor area to number of patron seats. In order to do this, a total floor area per person needed to be determined. An online source recommends 1.11 m^2 per person[26] for the portion of the restaurant that represent the dining and seating area, about 60%. The other 40% typically makes up the kitchen, cooking area, storage etc. The rate of 1.11 m^2 was deemed to be too low and was therefore adjusted to 2 m^2 to better reflect a realistic seat density and configuration achievable given the requirements for hallways, aisles, entrances, etc.

Restaurant parking requirements are commonly based on the number of vehicles per seat – most commonly between one vehicle per three seats to one vehicle per five seats. For the purposes of this study, one vehicle per four seats was used. To determine the number of vehicles and number of seats for the subject site, the following equations were used:

(1) 303 m^2 (restaurant floor area) x 0.6 (occupied area) / 2 m^2 (floor area per person) = 91 persons
(2) 91 persons divided by 4 seats = 23 vehicles, or 1 vehicle per 4 seats

Based on the seat calculation above, it is expected that the restaurant will experience peak period demand of 23 vehicles, of which three vehicles are for employees.[27]

General Retail

As discussed, there is the potential for a portion of the commercial / retail space to be used as general retail. A parking study that was completed for Dockside Green collected observations at seven mixed commercial sites during a weekday (Wednesday August 6, 2014 at 1:00pm) and weekend mid-day (Saturday, August 9, 2014 at 12:00pm). The study found that peak demand occurred during the weekday mid-day observation period where average demand was approximately one per 45 m^2 of commercial floor space,[28] or 7 vehicles if applied to the

[26] Central Restaurant Products. (2016). Dining Room Space Planning. Available online at: http://www.centralrestaurant.com/learn/buying-guides/space-planning.html

[27] This assumes that approximately 15% of the total vehicles are for employees. Ratio determined using the following publication: Urban Land Institute. (2005). Shared Parking, 2nd Edition, Table 3-2, pg. 33.

[28] Dockside Green. (2015). Dockside Green Transportation Review Parking Study.

retail/restaurant floor area. A general retail use is expected to have lower parking demand than a restaurant use and therefore, if the CRU ends up being general retail, less parking will be required.

Café / Coffee Shop
It is assumed that the café / coffee shop land use will experience peak parking demand rates comparable to the restaurant uses described above (i.e., one vehicle per four seats), although the time-of-day characteristics will differ. Peak parking demand for the café / coffee shop is expected to be 8 vehicles (7 customers, 1 employee).

4.5.1 Mixed Use

The subject site contains six distinct land uses among four buildings. All building entrances are within close proximity of one another and considered "walkable". This creates a condition where individuals may park a vehicle on-site to access more than one land use. This is considered a "captive market" condition.

With this in mind, the customer portion of the Commercial / Retail parking demand has been reduced by 25% as it is assumed that one-quarter of customers will be either site employees, patrons/students or residents whose vehicles will already be attributed to these uses. Accordingly, the Commercial / Retail customer parking demand is reduced by seven vehicles, bringing the total to 21 vehicles.

4.6 SUMMARY OF EXPECTED PARKING DEMAND

The total site parking demand is expected to be 225 vehicles (see **Table 8**). This is 25 vehicles greater than the proposed parking supply and 203 spaces less than the parking requirement.

TABLE 8. **SUMMARY OF EXPECTED PARKING DEMAND**

Land Use	Quantity/Size	Expected Parking Demand Rate	Applied to Subject Site
Multi-Family Residential (Owned)	69 units	0.95 vehicles per unit	66
Multi-Family Residential (Rental)	32 units	0.60 vehicle per unit	19
Residential Visitor	101 units	0.10 vehicles per unit	10
Library	929 m^2	Patrons = 42 Employee = 7	49
Justice Institute	1,672 m^2	Students = 24 Employee = 5	29
Office	1,654 m^2	1 vehicle per 60 m^2	28
Commercial/Retail*	**Restaurant = 182 m^2	1 per 4 seats	18

Café/Coffee Shop = 111 m²	1 per 4 seats	6
Total Expected Parking Demand		**225**

*Note, the CRU expected parking demand has been reduced by seven vehicles as it assumed that one-quarter of customers will be either site employees, patrons/students or residents.

** Calculation based on 60% of the total restaurant space (303 m²)

5.0 SHARED PARKING & PARKING MANAGEMENT

"Shared parking" refers to a scenario where two or more land uses in close proximity share a supply of parking in order to reduce the overall parking supply for the site / area. The concept is successful where parking demand for different uses exhibit complementary patterns with peak demand experienced at different times of day. For example, an office building and multi-family residential are complementary land uses because office parking demand is typically highest during weekday working hours while residential demand is highest on weekday evenings and weekends. Parking must be shared (i.e., unreserved) for shared parking reductions to apply.

A time-of-day assessment was undertaken to identify the parking supply needed to accommodate the peak parking demand. The assessment is based on the un-factored expected parking demand values summarized in **Table 8** and focuses only on weekday conditions as it is assumed to represent the site's peak period (weekend demand associated with office and Justice Institute uses is limited on weekend).[29]

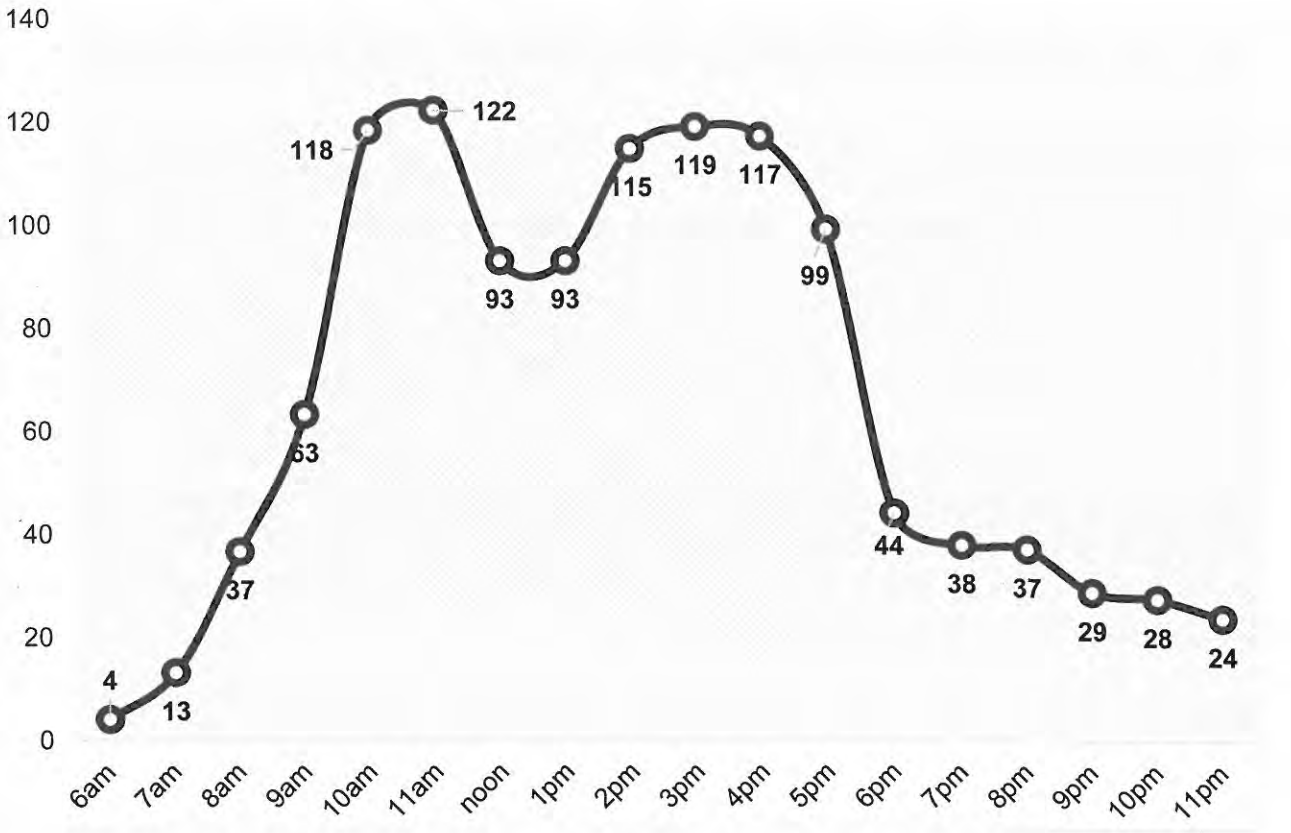
Only those parking supplies that are "shared" (i.e., unassigned) are included in the shared parking assessment. It is assumed that all resident parking will be accommodated in controlled access parking areas (i.e., behind a gate), eliminating 85 parking spaces from the pool of shared parking spaces. The remaining 115 parking spaces are assumed to be available to be shared among multi-family residential visitors, the Justice Institute, Library, Office, and Commercial/Retail uses. The reduction in parking supply achieved through sharing will decrease if portions of the on-site parking supply are made unavailable for sharing.

Results of the time-of-day assessment suggest that the site's peak demand is 122 vehicles among shared uses (i.e., excluding residents), an approximately 13% reduction from the un-factored expected parking demand of the shareable uses (141 vehicles). See **Figure 2**. Peak demand will be experienced on weekdays at 11:00am when efficiencies are gained due to residential, retail and restaurant parking demand at less than 100%. Conditions will remain within 10% of the peak period at 10:00am and between 2:00pm to 4:00pm. The detailed assessment is included in **Appendix B**.

[29] The shared parking analysis relied on the Urban Land Institute's Shared Parking publication. Peak demand factors for each land use were adjusted by the consultants when the rates were found to be a poor representation of local conditions.

The proponent may wish to consider designing the underground parking areas in a way that does not restrict the residential parking spaces behind gates. By removing or modifying the location of the gates, a significantly larger portion of spaces will be available for shared parking and could be utilized among the various land uses.

FIGURE 2. **SHARED PARKING DEMAND BY TIME-OF-DAY**



5.1 PARKING MANAGEMENT

The analysis above assumes that sharing will take place between the surface and underground parking areas and that all users may park wherever is most convenient. However, there may be a need to assign portions of the shared parking supply to ensure efficient management, as follows:

1. CRU employees, office employees, JIBC staff and students, and library staff should be encouraged to park in the underground facility. These users are familiar with the site and will park for long periods of time. Signage should be installed in the surface parking area to deter staff and student parking.

2. CRU customers, officer visitors, residential visitors, and library patrons should be encouraged to parking in the surface parking area. These users are generally less familiar with the site and will park for shorter periods of time. Signage on the surface parking area should deter staff and students, and confirm the area is intended for customers and residential visitors.

The shared parking figures were re-calculated to reflect the allocation of surface parking (approximately 32 spaces) to customers / visitors and the underground area (76 spaces) to staff and students.

The peak demand for surface parking is 61 vehicles, which considers sharing among CRU customers, officer visitors, residential visitors, and library patrons. This is a reduction of approximately 19% from the combined expected demand figures. The peak is experienced at 5:00pm and exceeds the surface parking supply by about 29 vehicles. These vehicles would presumably seek parking in the underground area.

The total peak demand for underground parking was determined by combining the peak demand of the CRU employees, office employees, JIBC staff and students, and library staff. There is no efficiency gained through shared parking because peak parking demand among staff and students is experienced simultaneously (i.e., 10:00am to 3:00pm). The expected parking demand among staff and students is 66 vehicles, about 10 vehicles under the proposed underground parking supply of 76 vehicles that will be available to JIBC staff / students, office staff, and CRU employees. This results in 10 shareable spaces.

Therefore, of the 29 vehicle spillover from the surface parking area, approximately 10 vehicles could utilize the available parking in the underground during the peak times. The development should consider the transportation demand management (TDM) measures identified in the following section (Section 6) to further reduce parking demand to a level that can be accommodated by the proposed parking supply.

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 should be pursued to encourage sustainable travel, enhance travel options and decrease parking demand.

The following summarizes the TDM options that may be pursued and the estimated impact of each in reducing parking demand.

6.1 CARSHARE

The current carshare program in Greater Victoria is managed by Modo (formerly the Victoria Carshare). As of July 2015, the coop had over 20 vehicles and 800 members in Greater Victoria. Monthly Modo members pay $5 per month, a $10 registration fee, $8 per hour (including gas, insurance, and maintenance) and receive the first 200 kilometers of their trip for free.[30,31] Member-owner memberships are $500 (refundable share purchase).

There is currently only one Modo vehicle in Esquimalt (located in the Skyline Residences at 924 Carlton Terrace, Esquimalt Rd / Head St) and no vehicles within walking distance of the subject site. To encourage carsharing, consideration may be given to the purchase of two carshare vehicle to be owned, operated, and maintained by the Modo carshare cooperative (cost assumed to be approximately $20,000-$25,000 each). Vehicles should be accommodated in assigned surface parking spaces, providing access to nearby off-site residents. Recent discussions as part of the Dockside Green planning, and parking regulations from Vancouver suggest that two vehicles is an appropriate allotment for a site up to 120 units.[32]

In the City of Toronto, buildings smaller than 30 units are entitled to a maximum parking reduction of one space if one carshare vehicle is provided; however, a 2009 study[33] suggested that buildings with 75 to 89 units could expect to see a reduction of five parking spaces if two carshare vehicles were provided. In light of these studies, two carshare vehicles for the subject site is suggested but should be confirmed with Modo to ensure they are supportive.

To further encourage carsharing among residents, consideration may be given to purchasing Modo carshare memberships for each of the multi-family residential units ($500 per unit). The Modo membership would be tied to the unit, and not the resident. Residents will be responsible for usage fees.

Municipal parking regulations provide insight on the anticipated decrease in parking demand associated with a carshare vehicles. The City of Vancouver, as an example, allows for a reduction of five spaces for each carshare vehicle purchased and parked on-site.[34] Similar regulations are in-place in New Westminster, Coquitlam, and Richmond allowing for a 5-15% reduction where carshare vehicles are accessible. Correspondence from Victoria Carshare

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[30] Wilson, C. (2015). Car-share firm offers new way to zip around Victoria. Available online at: http://www.timescolonist.com/business/car-share-firm-offers-new-way-to-zip-around-victoria-1.1986669

[31] More information about the Modo Car Cooperative is available online at: http://modo.coop/about/

[32] City of Toronto. (2009). Parking Standards Review: Examination of Potential Options and Impacts of Car Share Programs on Parking Standards. Exhibit 5, pg. 7, available online at: https://www1.toronto.ca/city_of_toronto/city_planning/zoning__environment/files/pdf/car_share_2009-04-02.pdf

[33] Ibid.

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

Cooperative (now Modo)[35] suggests a 5-10% reduction in parking demand where memberships are provided and a vehicle easily accessible, and a similar reduction of 5-10% is recommended in *Parking Management Best Practices.*[36]

Given the above discussion – and the unique characteristics of the subject site – a 15% reduction in resident parking demand is supported if residents have access to two carshare vehicles and are provided with free memberships. Lesser reductions are supported if only one of the vehicles or memberships are pursued.

6.2 BICYCLE PARKING

The Township of Esquimalt's Parking Bylaw does not contain bicycle parking requirements. However, the OCP includes policy supporting secure bicycle parking for both residential and office uses. Bicycle parking should be considered for many of the site's uses, as follows.

Office & Commercial/Retail

The OCP suggests one bicycle parking space per ten full-time employees with a minimum of one space for each new building. In addition, all new commercial buildings are encouraged to provide six bicycle parking spaces for temporary visitors.[37] The Township's Parking Bylaw permits a reduction of two vehicle parking spaces for every two or more secure bicycle parking spaces provided on site. A total of 44 secure bicycle parking spaces are proposed in the parkade where both the office and commercial/retail uses will be located. Given the generous supply of proposed bicycle parking spaces, a reduction in four vehicle parking spaces is supported.

JIBC & Library

Both the Parking Bylaw and OCP do not require or recommend any bicycle parking for institutional uses, such as the JIBC and library. However, both uses will have employees (and students in the case of the JIBC) that would benefit from the provision of long-term bicycle parking, similar to the Office and Commercial uses, and should be granted the same supply reduction. As such, a decrease in parking demand of four parking spaces is supported.

[35] Correspondence from Victoria Carshare Cooperative (now Modo), received August 2009

[36] Litman, T. (2007). Parking Management Best Practices, American Planning Association.

[37] The Township of Esquimalt's Official Community Plan is available online at: https://www.esquimalt.ca/sites/default/files/docs/business-development/bylaw_2646_-_ocp_consolidation_-_no_maps_2014a.pdf

Residential

The OCP suggests that all new multi-family residential development should provide secure bicycle storage for residents in the ratio of 1.5 storage spaces per dwelling unit,[38] and the development proposal includes a supply consistent with the OCP. This is higher than any other local municipality requiring bicycle parking, including the City of Victoria.

Available research is unclear on the decrease in parking demand that would result from the provision of secure bicycle parking. However, based on the generous amount of proposed bicycle parking, a 5% decrease in resident parking demand is supported for the provision of 1.5 secure bicycle parking spaces per unit.

6.3 BICYCLE END-POINT FACILITIES

Given the proximity of the site to the E&N Rail Trail, commuting by bicycle may be a practical option for employees and students at the JIBC, along with those who work in the offices, commercial/retail use, and the library. One way to encourage higher commuting by bicycle is through the provision of end of trip bicycle facilities such as lockers, showers, and changing rooms. The Township's OCP also encourages end-point bicycle facilities.

Based on the Township of Esquimalt Parking Bylaw, the subject site is entitled to a reduction for commercial uses (e.g., office, CRU) of two vehicle parking spaces if shower and change rooms are provided within the building.[39] However, proponents are only granted this reduction if they meet all of the criteria in Section 13(5) of the bylaw, which includes the provision of six visitor bicycle parking spaces, two or more secure bicycle parking spaces, and if the building is within 200 metres of a regional bus route.[40]

Notwithstanding the requirements of the parking bylaw, the provision of end-point facilities in and of themselves have the potential to reduce parking demand. Providing showers and clothing lockers at workplaces has been found to be effective at encouraging bicycle use, particularly among bicycle commuters who have a long commute or who require professional clothing attire.[41] Therefore, irrespective of the parking bylaw, assuming the office, CRU, JIBC and library uses provide their own shower / change facility, a parking supply reduction of 8 parking spaces may be achieved.

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[38] The Township of Esquimalt's Official Community Plan is available online at: https://www.esquimalt.ca/sites/default/files/docs/business-development/bylaw_2646_-_ocp_consolidation_-_no_maps_2014a.pdf

[39] Note, this parking reduction is subject to other criteria being met including the site being located within 200 metres of a regional bus route, for example.

[40] The Township of Esquimalt's Parking Bylaw is available online: https://www.esquimalt.ca/sites/default/files/zoning_parkingbylaw2008.pdf

[41] City of Victoria. (2011). Bicycle Parking Strategy. Available online at: http://www.victoria.ca/assets/Departments/Engineering~Public~Works/Documents/parking-bicycle-strategy.pdf

6.4 TRANSIT PROGRAMS

Transit Access

The site is located on Esquimalt Road, which is identified as a BC Transit Frequent Transit Corridor[42] and is expected to attract a high rate of transit ridership among residents. In addition, as stated in the Township of Esquimalt Parking Bylaw, commercial uses on the subject site are entitled to a reduction of two parking spaces given its location within 200m of a regional bus route; however, as discussed, this is subject to meeting all of the criteria.[43]

Notwithstanding the bylaw, with two commercial uses on the subject site (Office, CRU), a reduction of four parking spaces is supported. As discussed in Section 1, with the Frequent Transit Network projected to carry a large share of the future transit system's total ridership, the subject site will benefit from frequent, reliable, and convenient service. This is expected to result in a reduction in parking demand, irrespective of whether all of the criteria in the parking bylaw are met.

Transit Passes

Consideration may be given to providing a subsidized transit pass program for site 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., 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).

The reduction in parking demand will be dependent on the magnitude and length of the contribution, but could be up to a 10% reduction in parking demand among residents.[44] Some assurance that the pool of funds or the time period that the subsidy is offered is of importance if it is to be used as justification for reduced parking supply.

6.5 TDM SUMMARY

The TDM program options available to the subject site and the corresponding decrease in parking demand associated with each option is summarized in **Table 9**. The total reduction may

[42] A Frequent Transit Corridor is defined in BC Transit's long-range planning as providing frequent service (15 minutes or better between 7am and 10pm, 7 days per week) with improved transit travel times achieved by fewer stops and transit priority measures and enhanced bus stop infrastructure.

[43] The Township of Esquimalt's OCP is available online at: https://www.esquimalt.ca/sites/default/files/docs/business-_development/bylaw_2646_-_ocp_consolidation_-_no_maps_2014a.pdf

[44] City of Seattle. (2008). Best Practices in TDM. Available online at: http://www.seattle.gov/transportation/docs/ump/07%20SEATTLE%20Best%20Practices%20in%20Transportation%20Demand%20Management.pdf

be as high as approximately 21% of the total parking demand, resulting in a reduction of up to 46 parking spaces.[45]

TABLE 9. **SUMMARY OF TDM PROGRAMS + PARKING DEMAND REDUCTIONS**

TDM Option	Parking Reduction		
	Quantity / Rate	Applicable Users / Uses	Approx. Total Reduction (vehicles)
Two Carshare Vehicles + Memberships	15%	Residential (excluding visitors)	Condo = - 10 Apartment = - 3
Bicycle Parking			
Office / CRU	4 spaces	Office / CRU	- 4
JIBC / Library	4 spaces	JIBC / Library	- 4
Residential	5%	Residential	Condo = - 3 Aparment = - 1
Bicycle End-Point Facilities			
Shower, change rooms, lockers in office buildings	8 spaces	Office / CRU / JIBC / Library (employees + students)	- 8
Transit Programs			
Transit Access (Office + CRU)	4 spaces	Office / CRU (employes)	-4
Resident Transit Pass	10%	Residential (excluding visitors)	Condo = - 7 Apartment = - 2

[45] There is still some uncertainty on the extent to which the development proposal will include TDM and, as such, the total parking demand reduction due to TDM may vary.

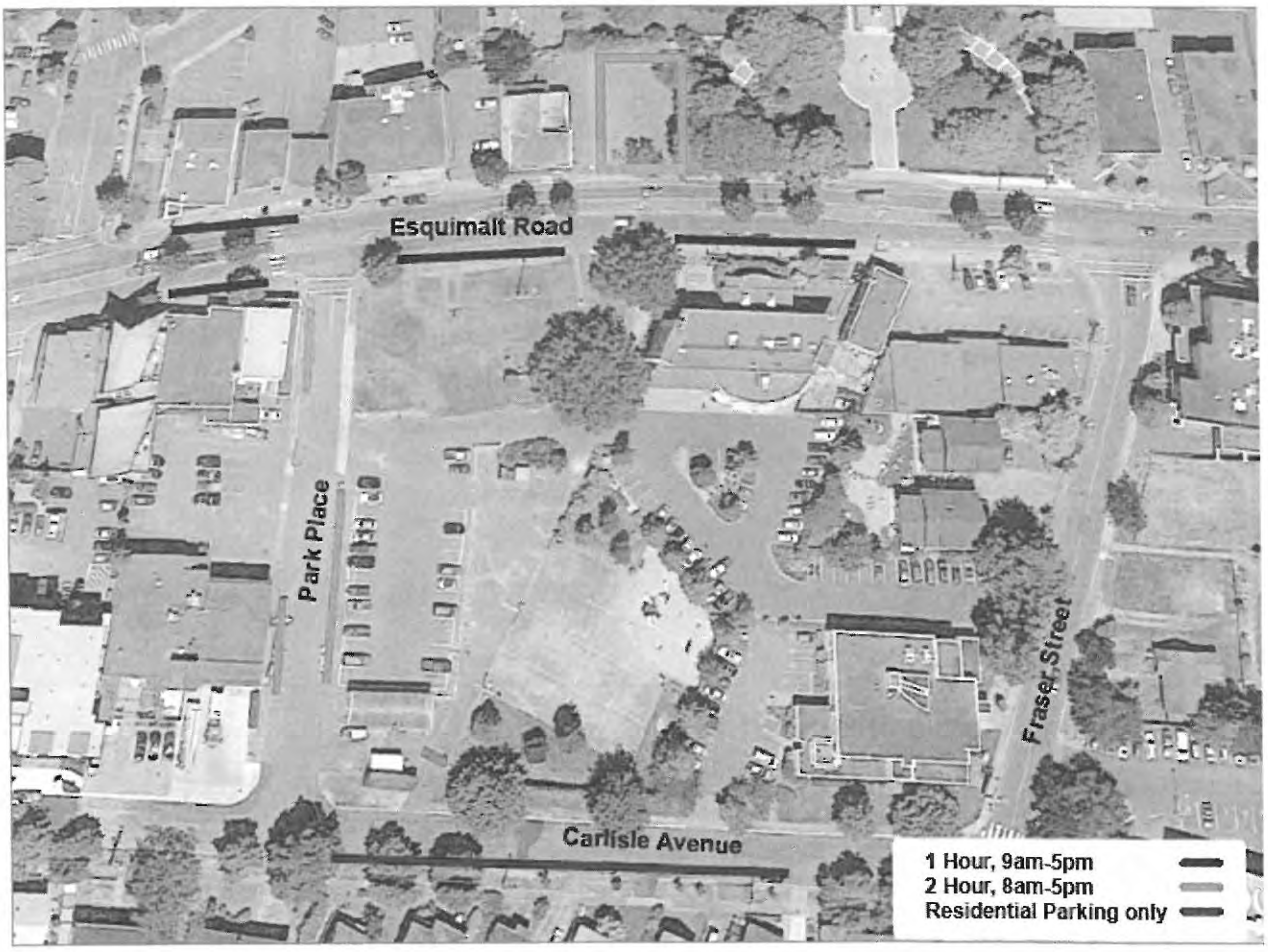
TABLE 10. **SUMMARY OF EXPECTED PARKING DEMAND FACTORED FOR TDM**

Land Use		Expected Parking Demand	
		Without TDM (per Table 8)	With TDM (per Table 9)
Multi-Family Residential	Resident, Strata Owned	66	46
	Resident, Market Rental	19	13
	Visitor	10	10
Library		49	45
Justice Institute		29	25
Office		28	22
Commercial/Retail	Restaurant	24	18
	Café		
	Total	**225**	**179**

7.0 ON-STREET PARKING

On-street parking observations were completed on Wednesday March 30 at 1:30pm and Tuesday April 5 at 3:00pm to determine parking availability nearby the subject site. A total of 59 public parking spaces were observed during the count, spread out over various streets surrounding the subject site including Park Place and Esquimalt Road. A public parking lot immediately adjacent of the Town Hall was also included in this count where about 15 parking spaces are available for public use (see **Figure 3**).

FIGURE 3. **ON-STREET PARKING & PUBLIC PARKING LOT SURROUNDING THE SITE**



The Tuesday April 5th exhibited higher parking utilization, with a total occupancy of 47% (25 vehicles). Below is a summary of key findings:

- Park Place – 9 observed vehicles, 71% peak occupancy
- Esquimalt Road – 12 observed vehicles, 67% peak occupancy
- Public Parking Lot across Esquimalt Town Centre – 11 observed vehicles, 73% peak occupancy

These results suggest that in the event that the subject site contributes spillover parking to nearby public parking, approximately 15 spaces would be available. Additional on-street parking is available beyond the blocks immediately adjacent the site.

Appendix C provides a full summary of the on-street parking and vehicle count.

8.0 PARKING DIMENSIONS & AISLE WIDTH ANALYSIS

A review of parking dimensions and aisle widths was also undertaken as part of this study. The proposed underground parking stall dimensions are 5.1m X 2.6m, with 7.0m wide aisle widths. This differs from the dimensions specified in Esquimalt's Parking Bylaw, which call for 5.5m X 2.6m stalls with 7.6m wide aisle widths, with up to 50% of stalls eligible for small-call dimensions at 4.5m X 2.6m.

Overall, for two rows of perpendicular stalls sharing the same aisle (with 50% as small-car), this results in a reduction of 0.4m from the Bylaw (17.2m vs. 17.6m). Despite the reduction, the proposed dimensions are functional and are used in similar parking lots in other urban jurisdictions. The proposed dimensions match those in the City of Victoria's Zoning Regulation Bylaw (No. 80-159), Schedule C. Therefore, there is precedent for the proposed dimensions within the Capital Regional District, in an area similarly urbanized to Esquimalt. The proposed dimensions are therefore considered suitable and appropriate. For the surface parking lot, Esquimalt's parking bylaw dimensions are being used.

9.0 SUMMARY

The proposal for the Esquimalt Town Centre redevelopment will act as a mixed use urban centre for Esquimalt. The development will include a mix of retail, residential, and commercial uses in addition to accommodating the new Public Library and teaching and administration space for the Justice Institute of British Columbia (JIBC), a public post-secondary institution. The proposed parking supply is 200 spaces, about 228 spaces less than the Township's parking requirement.

The expected peak parking demand rates were developed for each land use and calculated for a total site demand of 225 vehicles. This exceeds the proposed parking supply by 25 spaces.

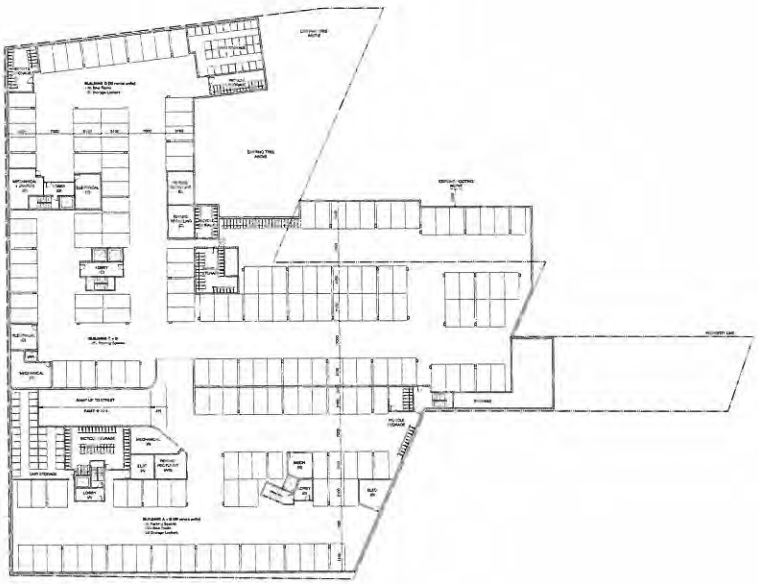
A shared parking assessment was undertaken to explore opportunities for efficiencies. The assessment assumed that all resident parking will occur in secured parking areas and cannot be shared, customer and visitors will be accommodated in the surface parking area, and staff and students will park in the underground area. The sharing assessment concluded that parking demand in the surface area will exceed supply by approximately 29 vehicles; however, it was found that the underground area would be able to accommodate approximately 10 vehicles from surface spillover.

Transportation demand management (TDM) approaches are outlined in Section 6 that include carsharing, bicycle parking, transit access, transit passes, and end-point bicycle facilities. These approaches may reduce parking demand by up to 46 vehicles (21%) if pursued in full, resulting in approximately 179 vehicles, which is well under the proposed parking supply.

9.1 RECOMMENDATIONS

1. The proposed parking supply (200 spaces) is appropriate for the site if parking is managed as suggested and the majority of identified TDM measures are adopted. Assuming all TDM measures are adopted, the expected parking demand will be 179 vehicles, which will provide the proponent with some buffer.
2. Resident parking will be access controlled and should only contain enough spaces to meet expected parking demand (final number dependent on TDM);
3. Surface parking spaces should be prioritized for customers, patrons and visitors. Employees and students should be directed to park in the underground parking area, along with spillover from the surface parking area; and
4. During the JIBC's busiest times (October and March), when approximately 100 students are in the building per day, the Institute may consider encouraging both its students and staff to use public transit, walk, or cycle to reduce pressure on on-street parking spaces.

APPENDIX A. Parking Plan



D'AMBROS
architecture +

Esquimalt Town Cer
Esquimalt BC

P1 Parking Plan
(Overall)

APPENDIX B. Shared Parking Analysis

Parking mand[2] user)	Time of Day																	
	6am	7am	8am	9am	10am	11am	noon	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
10	0%	10%	20%	20%	20%	20%	20%	20%	20%	20%	20%	40%	60%	100%	100%	100%	100%	100%
24	10%	10%	25%	100%	100%	100%	100%	100%	100%	100%	100%	50%	25%	25%	25%	0%	0%	0%
5	10%	10%	25%	100%	100%	100%	100%	100%	100%	100%	100%	50%	25%	25%	25%	0%	0%	0%
42	0%	0%	0%	0%	100%	100%	25%	25%	75%	100%	100%	100%	0%	0%	0%	0%	0%	0%
7	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	0%
15	0%	0%	0%	0%	15%	40%	75%	75%	65%	40%	50%	75%	95%	100%	100%	100%	95%	75%
3	0%	20%	50%	75%	90%	90%	90%	90%	90%	75%	75%	100%	100%	100%	100%	100%	100%	85%
6	5%	10%	100%	100%	100%	100%	100%	100%	90%	60%	55%	60%	0%	0%	0%	0%	0%	0%
1	15%	20%	30%	40%	75%	100%	100%	100%	90%	70%	60%	70%	0%	0%	0%	0%	0%	0%
26	3%	30%	75%	90%	100%	100%	90%	90%	100%	100%	90%	50%	25%	10%	7%	3%	1%	0%
2	0%	1%	20%	60%	100%	45%	15%	45%	100%	45%	15%	10%	5%	2%	1%	0%	0%	0%
	4	**13**	**37**	**63**	**118**	**122**	**93**	**93**	**115**	**119**	**117**	**99**	**44**	**38**	**37**	**29**	**28**	**24**

y factors from Urban Land Institute, *Shared Parking*, 2nd Edition; Page 16/17, Table 2-5.
ransportation Group (no relevant land use provided in ULI's *Shared Parking* or ULI rates considered poor representation of local conditions)
based on recommended base parking ratios from Urban Land Institute, *Shared Parking*, 2nd Edition, Page 11, Table 2-2.

Boulevard
a division of Watt Consulting Group

APPENDIX C. On-street Parking Summary

Neighbourhood On-Street Parking Conditions

Esquimalt Town Centre Parking Study

Location	Side	Parking Supply	Notes, Restrictions	Wed Mar 30, 2016 1:30PM		Tues Apr 5, 2016 3:00PM	
				Observed Vehicles	Occupancy	Observed Vehicles	Occupancy
Carlisle Avenue, Comerford to Park	N		No Paking	n/a	n/a	n/a	n/a
	S			n/a	n/a	n/a	n/a
Carlisle Avenue, Park to Fraser	N		No Parking	n/a	n/a	n/a	n/a
	S	12	Residents Only	3	25%	4	33%
Park Place, Carlisle to Esquimalt Road	E	6	2 hour parking only (Mon-Fri, 8am-5pm)	3	50%	4	67%
	W	7	2 hour parking only (Mon-Fri, 8am-5pm)	3	43%	5	71%
Fraser Street Carlisle to Esquimalt	E		No Parking				
	W						
Esquimalt Road, Park to Fraser	N	3	1 hour parking only (Mon-Fri, 9am-5pm)	2	67%	2	67%
	S	9	1 hour parking only (Mon-Fri, 9am-5pm)	5	56%	6	67%
Esquimalt Road, Grenville to Park	N	3	1 hour parking only (Mon-Fri, 9am-5pm)	3	100%	2	67%
Esquimalt Road, Comerford to Park	S	4	1 hour parking only (Mon-Fri, 9am-5pm)	2	50%	2	50%
Parking Lot on Esquimalt Road across Esquimalt Town Centre		15	2 hour parking only (Mon-Fri, 8am-5pm)	8	53%	11	73%
On-Street Total		**59**		**21**	**36%**	**25**	**42%**

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May 4, 2016

Esquimalt Town Square Project: Summary of Green Building Strategies

The DAU team has employed an ecological urbanism approach to the Esquimalt Town Square project. This approach draws upon our formal environmental design expertise and experience with numerous sustainable urban planning and architectural projects. Ecological urbanism means community planning and urban design issues have been considered comprehensively, from the level of the watershed catchment area through to the macro and micro-climate aspects of the Esquimalt Town Square site. Buildings, open spaces and infrastructure, as well as the user patterns of the community, are considered to be integrated parts of the ecology of the place and are treated accordingly.

For the Public Library and the building intended as the future home of the Justice Institute, a green building approach is being used but LEED Certification will not be sought. The green building strategies are mandated by the Developer and so, as an incentive program, the Canadian Green Building program is not deemed necessary for this project.

The design process for Esquimalt Town Square has given significant priority to energy performance, greenhouse gas production, daylighting, adaptability to change, and the long-term sustainability of the public open spaces and infrastructure. Material palettes and technical methods that adhere to green building principles are being incorporated into the architecture and site design.

Passive solutions have been given priority over mechanically dominant and highly consumptive systems for community recycling, heating, lighting, rainwater control, etc. The viability for geothermal energy exchange will be investigated for heating and cooling. On-site storm-water management will be explored and may include strategies such as rain gardens and cisterns. Environmental principles underlay the proposed zoning regulation that will guide the development. A consultative approach by a multi-disciplinary, integrated design team reflect a sustainable development approach to the project, from the outset.

This project is considered part of the urban regeneration and densification of Esquimalt's 'urban village'. Both of these are fundamental principles of resilient, sustainable community planning. Towards this end, the development planning principles of 'Complete Communities' underlay the Esquimalt Square proposal.

The design team includes professionals with Canadian Green Building Council LEED-accreditation enabling environmental responsibility as a natural priority throughout the design of this project. Sustainable design thinking is at the core of the design process. The following are specific strategies that are deployed in the architecture of Esquimalt Town Square project.

Green Mobility

i. Promote use of alternative methods of transportation including provision of bicycle storage that will exceed the minimum requirements of the Township of Esquimalt's bylaws.

ii. Electric vehicle charging stations will be provided for 20% of the total parking to promote the use of low emitting vehicles.

iii. Promote pedestrian movement throughout the site by incorporation of an "art walk" and connected pathways to all adjacent public streets at multiple locations.

Water Management

i. Low flow plumbing fixture and water efficient appliances will be specified in all buildings.

ii. Selection of native and adaptive planting and water efficient irrigation techniques to reduce demand on the Township's water service.

iii. Collection of rainwater for use in landscape features.

iv. Limit conventional turf for landscaping.

Enhanced Building Performance

i. Energy modelling has been commissioned to ensure high energy performance in all buildings.
ii. Enhanced wall insulation to exceed minimum building code requirements.
iii. Incorporate use of heat recovery units in residential suites for superior heating and cooling.
iv. Incorporate energy star rated appliances.
v. Incorporate no or low VOC emitting paints and finishes.
vi. Incorporate motion sensors in underground garage lighting to reduce energy consumption.
vii. Buildings are designed to manage solar heat gains.

Sincerely,

Franc D'Ambrosio, architect maibc mraic
D'AMBROSIO architecture + urbanism

Esquimalt Town Square

DRAFT

Proposed Design Guidelines for the Esquimalt Town Square

May 6, 2016

'Design Guidelines' defined:
A set of design parameters for development which apply within a specified area. The guidelines are adopted public statements of intent and are used to evaluate the acceptability of a project's design.

(1) and adding the following as Section 9.9:

"?.? Development Permit Area No. ----------?"

9.9.1 Scope

All lands designated "Esquimalt Town Square" on Schedule "C" are part of DPA No.----------?

9.9.2 Category

Section 919.1(1)(a) – natural environment, its ecosystems and biological diversity;

Section 919.1(1)(b) – protection of development from hazardous conditions;

Section 919.1(1)(d) – form and character, revitalization of area in which commercial, institutional and residential uses are permitted;

Section 919.1(1)(f) - form and character: commercial, institutional and multi-unit residential

Section 919.1(1)(h) – energy conservation;

Section 919.1(1)(i) – water conservation; and

Section 919.1(1)(j) – Greenhouse Gas (GHG) emissions minimization.

9.9.3 Justification

9.9.4 Requirements of Owners of Land within the Development Permit Area

a) Owners or land within Development Permit Area No.-----? must not do any of the following without first obtaining a Development Permit in accordance with the guidelines for this Development Permit Area:

i) Alter lands;
ii) Subdivide lands; or
iii) Construct or alter a building or structure

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1

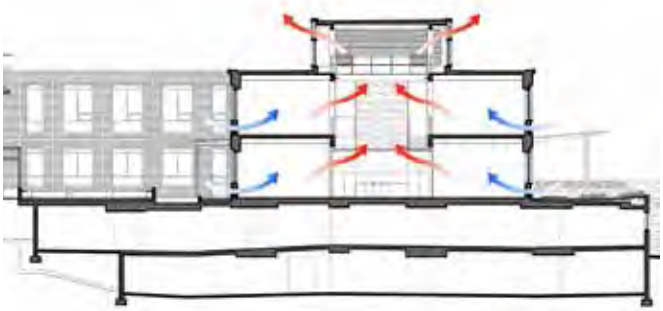
Buildings should be designed to capture passive solar energy.

2

Sun shading should be considered to control heat gain in the summer.

3

Design for on-site heat recovery, and plan for future, long-term neighbourhood heat-resource opportunities.



4

Manage rainwater on the site including reduction of burden on storm-water sewer infrastructure and cleaning for down-stream use.

5

Pollution management protocols (including sedimentation and oil- removal), as well as recycling programs should be followed during demolition, excavation and construction of the project.

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6

Prioritize use of high quality, regionally sourced products & materials.

7

Where appropriate, make building uses visible from the outside.

8

Avoid mirrored or tinted glazing at the street level.

9

Locate clearly identified and weather-protected entrances to be accessible from public streets and squares.

10

Integrate pedestrian-oriented signage with frontages and facades.

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11

Way-finding and commercial signage, lighting and weather protection (canopies, etc) should be part of the architectural design.

12

Orient upper-storey windows and balconies to overlook adjoining streets and public space.

13

Use architectural emphasis to define street-corners.

14

Locate on-street parking, where possible, in front of shops.

15

Maximize glazing at grade along commercial streets. Provide sight-lines from inside buildings to allow for casual surveillance of open public spaces, streets and sidewalks.

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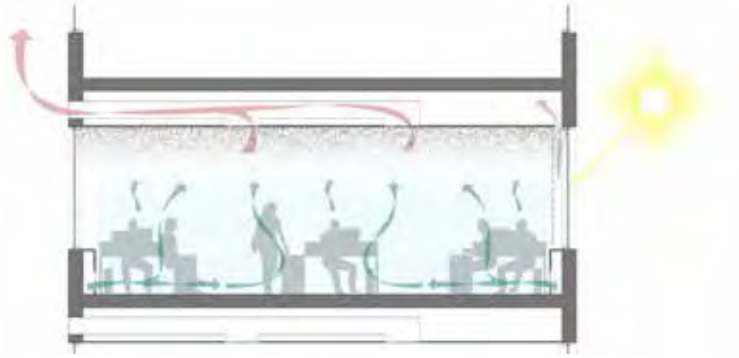
16

Avoid excessively long blank walls adjacent to public streets.

17

Follow green building practices in energy and water conservation, greenhouse gas production, indoor air quality and material durability in all aspects of building and site design.



18

Provide for building occupants to overlook public streets, parks, walkways and spaces, considering security and privacy of residents.

19

Provide for slightly raised entrances to ground floor residences along with private yards that are accessible from the fronting street or lane to encourage community interaction.

20

A landscaped transition zone between entryways and public sidewalk should be considered on streets with high traffic volumes.

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21

Use of indigenous plant species is encouraged.

22

Wherever possible, outdoor storage and parking areas should be screened from view.

23

All buildings should be bird-friendly.

24

All exterior lighting should avoid excessive stray light pollution and should meet international dark skies standards.