Committee of the Whole Report
For the Meeting of November 26, 2020

To:	Committee of the Whole	**Date:**	November 12, 2020
From:	Karen Hoese, Director, Sustainable Planning and Community Development		
Subject:	**Development Permit with Variances Application No. 00130 for 1150 Cook Street**		

RECOMMENDATION

That, subject to plan revisions to address the following:

a. Further consideration for the location of the gas meter on Cook Street and provision of additional detail for the design of the metal fence enclosure, to the satisfaction of the Director of Planning.

b. Clarification of the proposed architectural and landscape materials as it relates to the creation of a positive pedestrian experience, to the satisfaction of the Director of Planning.

c. Further consideration for access to the BC Hydro specifications and further consideration of future BC Hydro underground infrastructure to ensure that it does not negatively impact the street trees, to the satisfaction of the Director of Engineering and Public Works and Director of Parks, Recreation and Culture.

d. Corrections to satisfy Parks requirements and to resolve inconsistencies with the site plan, landscape plan and building cross sections as they relate to landscaping and street trees, to the satisfaction of the Director of Parks, Recreation and Culture.

e. Design revisions to reduce the impacts on the street trees along Cook Street, including reducing the pruning within the canopy and within the critical root zone to ensure the successful retention of these trees, to the satisfaction of the Director of Parks, Recreation and Culture.

And, subject to the preparation and execution of the following legal agreements in a form satisfactory to the City Solicitor to secure:

a. A future strata cannot restrict the rental of units, to the satisfaction of the Director of Sustainable Planning and Community Development.

b. Public realm streetscape improvements consistent with the Downtown Public Realm Plan and Streetscape Standard (DPRP) specifications, to the satisfaction of the Director of Engineering and Public Works.

c. Provision of a minimum of four electric vehicle charging stations to the satisfaction of the Director of Sustainable Planning and Community Development.

And that subject to receipt of a letter from the Ministry of Environment confirming that the landowner has met the requirements of Section 557(2) of the *Local Government Act* with respect to contaminated sites, Council, after giving notice and allowing an opportunity for public comment at a meeting of Council, consider the following motion:

"That Council authorize the issuance of Development Permit with Variance Application No. 00130 for 1150 Cook Street in accordance with:

1. Plans date stamped September 30, 2020.
2. Development meeting all *Zoning Regulation Bylaw* requirements, except for the following variances:
   i. Increase the height from 30m to 47.57m;
   ii. increase the number of storeys from 10 storeys to 16 storeys.
3. Final plans to be generally in accordance with plans date stamped September 30, 2020.
4. The Development Permit lapsing two years from the date of this resolution."

LEGISLATIVE AUTHORITY

In accordance with Section 489 of the *Local Government Act*, Council may issue a Development Permit in accordance with the applicable guidelines specified in the *Community Plan*. A Development Permit may vary or supplement the *Zoning Regulation Bylaw* but may not vary the use or density of the land from that specified in the Bylaw.

Pursuant to Section 491 of the *Local Government Act*, where the purpose of the designation is the revitalization of an area in which a commercial use is permitted, a Development Permit may include requirements respecting the character of the development, including landscaping, and the siting, form, exterior design and finish of buildings and other structures.

EXECUTIVE SUMMARY

The purpose of this report is to present Council with information, analysis and recommendations for a Development Permit Application with Variances for the property located at 1150 Cook Street. The proposal is to construct a 16-storey, mixed-use building with ground-floor retail and residential above, including approximately 129 dwelling units. The overall proposed density is 7.78:1 floor space ratio (FSR). Variances related to height, number of storeys and short-term bicycle parking are also proposed as part of the Development Permit Application. The matters under consideration for Council are the supportability of the variances and the consistency with the relevant design guidelines.

The following points were considered in assessing this application.

- The proposed building is subject to regulation under Development Permit Area 3 (HC) and is generally consistent with the applicable Design Guidelines in the *Official Community Plan, 2012* (OCP) and the *Downtown Core Area Plan* (DCAP).
- The application was reviewed by the Advisory Design Panel with specific reference to building separation distances, relationship to the street, building setback and street trees and overall architectural expression.
- The proposed increase in building height and number of storeys is considered to be appropriate as the maximum floor area permitted under the R-48 Zone (Harris Green District) is not being exceeded and the proposal is consistent with the height limits of the DCAP. In addition, the location of the proposed tower would be offset from other recently approved developments within the same neighbourhood block.

BACKGROUND

Description of Proposal

The proposal is to construct a high-rise mixed-use building at approximately 16 storeys with one commercial unit on the ground floor and approximately 129 residential units above. The proposed height is 47.57m.

Major design components include:

- commercial unit at the corner of View Street and Cook Street
- outdoor shared residential amenity space located on level four
- main residential building lobby entrance on View Street
- publicly accessible short-term bike parking located near the residential entrance on View Street
- secure long-term bike parking located on the main floor, with an exit door facing Cook Street
- vehicle parking and servicing located within the building
- public realm streetscape improvements on View and Cook Streets.
- removal of one existing street tree and planting of three new street trees on View Street and retention of two existing street trees on Cook Street.
- exterior building materials consisting of:
    - a mixture of composite metal cladding in black, white and silver and phenolic wood textured panels for the podium level
    - metal windows
    - glass guardrails
    - custom designed metal gate for the gas meter enclosure along Cook Street.

The proposed variances are related to:

- an increase in the building height from 30m to 47.57m
- an increase in the number of storeys from 10 to 16.

Affordable Housing

The applicant proposes the creation of 129 new residential units which would increase the overall supply of housing in the area. A Housing Agreement is being proposed, which would ensure that future Strata Bylaws could not prohibit the rental of units. The applicant has indicated their commitment to providing this agreement.

The proposed unit breakdown includes a total of four studio + den, 98 one-bedroom and 27 two-bedroom apartments.

Tenant Assistance Policy

The proposal is to demolish an existing commercial building and therefore the Tenant Assistance Policy does not apply to this proposal.

Sustainability

As noted in the applicants letter dated November 6, 2020 the proposal intends to align with green design principles and will include the following features:

- building position to maximise winter solar gain
- juliet balcony surrounds to reduce summer solar gain

- building envelope design with high performance materials to decrease overall energy consumption and heat loss
- energy efficient lighting and electrical systems
- low flow flush toilets and high efficiency plumbing fixtures
- high efficiency heat pump system for heating and cooling
- waste management during construction.

Active Transportation

The proposal will meet the minimum short-term bicycle standards and will exceed the minimum long-term bicycle standards by one stall (for a total of 144 stalls). In addition, the proposal includes a bicycle repair and maintenance station in the long-term bicycle storage area, which will support active transportation. In addition, the proposal will include a minimum of four electric vehicle charging stations, which will be secured through a legal agreement. The installation of the new traffic signal at the intersection of Cook Street and View Street will provide additional safe crossing opportunities for pedestrians and cyclists, which the applicant will be responsible for as a condition of building permit. The applicant has indicated a willingness to contribute to the installation of this signal.

Public Realm

The proposal includes frontage improvements above and beyond the Subdivision and Development Servicing Bylaw Standards, to be consistent with the 'New Town District' Downtown Public Realm Plan and Streetscape Standard (DPRP) specifications and layout, including trees, furnishings, materials sidewalk treatment and pedestrian lights along the Cook Street and View Street frontages. The applicant has committed to working with the City to achieve these improvements, which will be secured through a legal agreement.

Accessibility

The British Columbia Building Code regulates accessibility as it pertains to buildings. The main floor entrance, lobby and commercial retail unit are at grade and the upper floor amenity areas are accessible via elevators.

Existing Site Development and Development Potential

The site is presently a vacant commercial unit, formerly occupied by a restaurant use.

Under the current R-48 Zone (Harris Green District), the property could be developed at a height of ten storeys to accommodate a range of uses, including but not limited to retail, office, restaurant, theatres or daycares. The current zone does not prescribe a maximum density or floor area, but when these numbers are calculated based on the maximum floor area that could be achieved given the required setbacks and maximum number of storeys, the prescribed density would be 9.68:1 FSR or a maximum floor area of 9,769m². The OCP anticipates buildings up to 20 storeys in this location and the DCAP envisions buildings up to 15 storeys.

Data Table

The following data table compares the proposal with the existing R-48 Zone, Harris Green District. An asterisk is used to identify where the proposal varies from the existing zone. Additionally, the key City policy that pertains to the area has been included in this table.

Zoning Criteria	Proposal	Zone Standard R-48	OCP Policy	DCAP
Site area (m^2) – minimum	1009.20	N/A	-	-
Density (Floor Space Ratio) – maximum	7.78:1	N/A	-	5.5:1
Total floor area (m^2) – maximum	7602.56	N/A	-	-
Height (m) – maximum	**47.57***	30	-	45
Storeys – maximum	**16***	10	20	15 (residential) 11 (commercial)
Site coverage (%) – maximum	86	N/A	-	-
Open site space (%) – minimum	14	N/A	-	-
Setbacks (m) – minimum				
Front (Cook Street)	0.5	0.5	-	-
Rear	0.0	0.0		See Building Separation Guidelines
Side (S)	0.0	0.0		See Building Separation Guidelines
Side (N)	0.0	0.0		-
Vehicle parking – minimum	41	0	-	-
Visitor vehicle parking - minimum	0	0	-	-
Bicycle parking stalls – minimum				
Short term	14	14	-	-
Long term	144	143	-	-

Community Consultation

Consistent with the *Community Association Land Use Committee (CALUC) Procedures for Processing Rezoning and Variances Applications*, on November 14, 2019, the application was referred for a 30-day comment period to the Downtown Residents Association CALUC (subsequent plan revisions were also referred to the CALUC). At the time of writing this report a letter had not been received.

This application proposes variances, therefore, in accordance with the City's *Land Use Procedures Bylaw,* it requires notice, sign posting and a meeting of Council to consider the variances.

ANALYSIS

The property is situated in Development Permit Area 3 (HC): Core Mixed-Use Residential and the following documents were considered in assessing this application:

- *Official Community Plan, 2012* (OCP)
- *Downtown Core Area Plan* (2011)
- *Advisory Design Guidelines for Buildings, Signs and Awnings* (2006)
- *Guidelines for Fences, Gates and Shutters* (2010).

The matters under consideration are the supportability of the variances and the consistency with the relevant design guidelines.

Proposed Variances

Two variances to the *Zoning Regulation Bylaw* are being proposed as part of this application.

An increase in the height from 30m to 47.57m and an increase in the number of storeys from 10 to 16 is being requested. The R-48 Zone does not prescribe a maximum density through a FSR calculation. In the case of a height variance in this Zone, standard practice is to determine the "theoretical" FSR based on the height and setback regulations as they relate to the subject property. This determines the building envelope that can be achieved. The theoretical maximum density for the subject property is 9.68:1 FSR and the proposal is for a building within this limit at 7.78:1 FSR.

As the building complies with the recommended height guidelines in the DCAP (excluding the mechanical roof access) and appropriate measures have been taken to set the building back from Cook Street, staff recommend for Council's consideration that the height variance is supported.

Official Community Plan

The subject site is designated Core Residential in the *Official Community Plan, 2012* (OCP), which envisions multi-unit residential, commercial and mixed-use buildings from three storeys up to approximately 20 storeys. In terms of place character features, the OCP envisions three- to five-storey building façades that define the street wall, with upper storeys set back above.

The main objectives of the Development Permit Area 3 (HC): Core Mixed-Use Residential that are relevant to this proposal are:

- to transform the function, form and character of the Core Residential area through mid-

to-high rise residential mixed-use and commercial buildings, with greatest heights along Yates and Blanshard Street

- to conserve heritage value, special character and the significant historic buildings, features and characteristics of this area
- to enhance the area through a high quality of architecture, landscape and urban design that reflects the function of a major residential centre on the edge of a central business district in scale, massing and character while responding to its context of a skyline with prominent heritage landmark buildings.

Staff consider that the proposal is generally consistent with the use, density and height envisioned in the OCP.

Development Permit Area and Design Guidelines

Downtown Core Area Plan

The subject site is designated Residential Mixed-Use District in the *Downtown Core Area Plan* (DCAP, 2011), which envisions multi-residential development up to a height of 45m. The base density for a mixed-use development is a floor space ratio of 3:1 and a maximum of 5.5:1. The proposed height is 47.57m and the density is 7.78:1 FSR.

With respect to local area plans, the *Downtown Core Area Plan, 2011* (DCAP) applies to the subject site. Within the DCAP, the Residential Mixed District (RMD) includes the 1100-block of Cook Street, which is noted as a transitional zone from high-to-medium density, in the "Cross Town Concept". In this location height transitions from high-rise to mid-rise buildings in the "Urban Amphitheatre Concept" with the concentration of tall buildings along Yates Street, east of Douglas Street. Yates Street is identified as the preferred location for taller buildings, and the maximum height identified for Cook Street is 45m. The application does exceed this maximum height by 2.57m, although this only relates to the roof top mechanical room.

Multi-unit residential development is encouraged in the RMD with higher density focussed along Yates Street. The RMD encourages multi-residential development appropriate to the context, respecting the allowable building heights in the neighbourhood. Active commercial street-level uses are encouraged to help increase pedestrian activity. The current proposal is generally consistent with these objectives as it contributes new street-level commercial space in the RMD, which is further supported by residential uses above.

The DCAP provides both broad urban design objectives for the Downtown Core and more detailed design guidelines for specific districts. The DCAP also includes policies related to the design of buildings. Overall, staff consider that the proposal is generally consistent with these policies, however, some discrepancies with the design policies are discussed below.

<u>Built Form and Massing</u>

The DCAP includes a number of design guidelines related to built form which include reducing the building bulk of upper storeys to minimize the effects of shading and wind vortices, to maintain views to the open sky and to avoid the presence of bulky upper building mass. Cook Street also has views to the Olympic Mountains to the south, which the guidelines seek to protect. Minor deviations to the guidelines are proposed. The proposed secondary street wall (tower) along Cook Street is 2.8m (0.2m below the recommended 3m) from the property line. In addition, the upper storeys on levels 11-15 encroach into the 1:5 building setback ratio along Cook Street and View Street. The applicant has provided a view analysis demonstrating the

impacts of this encroachment onto the views of the Olympic Mountains. The massing permitted under current zoning would allow for a much bulkier building, set closer to the property line, so although the upper portions of the proposed tower do encroach into the 1:5 setback, the visual impact is deemed less as this does not directly affect the views of the Olympic Mountains.

Building Separation Distances

To address privacy issues and open-up views between buildings, the street wall guidelines in the DCAP require a 3m side and rear yard setback to the exterior wall for portions of the building up to 30m in height (excluding the podium), and a 6m side yard setback for portions of the building above 30m (levels 11 – 15). For balconies, the setback should be 3.5m up to 30m and 5.5m above 30m. The guidelines also state that additional clearances for windows are encouraged to enhance livability for residential uses where feasible. The proposal does not fully meet the requirements because for levels 11-15 on the west side (rear) the setbacks for exterior walls and balconies are approximately 1.2m below recommended standard.

The applicant notes that the primary reason for this is that there are no habitable windows from the adjacent ten storey building facing the subject site (1039 View Street). While staff would have preferred to see the minimum setbacks being met, the adjacent building to the west is located approximately 7m from the property line with a drive aisle separating the building from the proposed development. This results in a total separation distance of approximately 12m between the existing building and the tower potion of the proposed development. Given these site conditions, this deviation from the guidelines is considered acceptable.

Relationship to the Street

New buildings should be designed to relate well to public streets and sidewalks and have quality architectural materials and detailing in building bases and street walls. Staff have noted the limited and inconsistent detail provided on the architectural elevations, renders and material sheet, and recommend that these items be corrected prior to the application being considered for an Opportunity for Public Comment. In particular, the site plan indicates a gas meter that occupies a prominent location on the Cook Street frontage, with “decorative metal gates” but insufficient detail has been included on the elevations to fully review this aspect of the design. Staff recommend the location of the gas meter be revaluated to ensure a positive street relationship along Cook Street.

Staff have concerns that the proposed access to the BC Hydro Pad Mounted Transformer (PMT) may not be compliant with current specifications, and if revisions are required this could potentially affect the building design and would likely exacerbate the negative impacts on the Cook Street frontage. In addition, the future underground ducting requirements for BC hydro may impact the successful retention of the mature trees along Cook Street. Appropriate wording is included in the recommendation to clarify these details.

Advisory Design Panel

The application was referred to the Advisory Design Panel (ADP) on July 22, 2020 (minutes attached) where the following motion was carried:

> *It was moved … that the Development Permit with Variances Application No. 00130 for 1150 Cook Street be approved with the following changes:*
>
> - *give further consideration and refinement to the detailing of the parapet railing, overall brightness and better integration to the overall building design*

- *consideration for safety of ground floor and design of bike rooms*
- *reconsideration of amenity space and locating it to help animate the Cook street frontage*
- *consider the addition of trees in planters on the amenity room patio*
- *consider revisions to paving to help enhance entrance*
- *the applicant to ensure the accuracy of the street trees to ensure their successful retention*
- *further review and relaxation of setbacks to the south to improve livability of the south facing units to give them a balcony or an oblique view*
- *additional consideration for mechanical room to be integrated into overall building design and materiality*
- *regulate or standardize the size and pattern and colour of the metal panels*

The applicant has submitted revised plans that incorporate the design changes requested by the panel, and with the exception of the issues previously mentioned in this report, staff are satisfied that these recommendations have been addressed. A brief summary of the changes that have been made include:

- simplification of the roof termination by insetting the railings from the building edge and removing the illumination
- adding a bicycle repair station in the ground floor bike room
- relocating the amenity space from the rear of the building on level two, to the front of the building facing Cook Street on level four (above the podium)
- revisions to the façade to standardize and simplify the size and colour of metal panels.

Other revisions that have been made that are not directly in response to ADP comments include:

- provision of a custom metal garage door on View Street
- increasing the south setback distance on levels 11-15 by approximately 0.1m.

A letter from the architect dated September 28, 2020 provides further detail on the design changes.

Tree Preservation Bylaw and Urban Forest Master Plan

The goals of the *Urban Forest Master Plan* include protecting, enhancing, and expanding Victoria's urban forest and optimizing community benefits from the urban forest in all neighbourhoods. In 2019, Council increased funding to expedite the implementation of the *Urban Forest Master Plan* (UFMP). The goals of the UFMP include maximizing community benefits from the urban forest in all neighbourhoods, including a focus on protecting large, healthy trees on public and private property. Based on 2013 LiDAR data, Harris Green is an area of low canopy cover at 16%. The City-wide canopy cover average is 26%.

This application was received after October 24, 2019, so Tree Preservation Bylaw No. 05-106 (consolidated November 22, 2019) applies, protecting trees larger than 30cm diameter at breast height (DBH).

There are two mature horse chestnuts on the Cook Street boulevard proposed for retention. The proposal, as currently shown, would require substantial pruning to the canopy of one large (70cm DBH) healthy horse chestnut tree growing on the Cook Street boulevard to construct the proposed building. The above-ground portion of the building is planned to have a setback of

60cm from the property line with an underground parkade extending to the property line. Cook Street has historically been lined with horse chestnut trees from Dallas Road to Pandora Avenue. Planted in approximately 1960, this significant tree has grown rapidly and now measures 70cm DBH, with a crown spread of 17m. The centre of the tree has been pruned for utility clearance (BC Hydro) but has good vitality and provides valuable ecosystem benefits to the community; such as shading and cooling for the block, windspeed reduction, mitigation of stormwater runoff, increased air quality, as well as health benefits for residents.

Given the recent success with protecting other mature trees on the Cook Street boulevard, such as next to the new development at Johnson Street, as well as the approved development at the corner of Cook/Yates, staff are hopeful that a design solution can be found to preserve this tree canopy. The developer has been asked to explore opportunities to limit the amount pruning to this important public tree as part of the overall project. The recommendation includes the appropriate language to ensure this further exploration takes place, including the accurate depiction of the location and critical root zone of the mature horse chestnut trees. The proposed works within the critical root zones of the trees will require arborist supervision to mitigate potential impacts. The arborist report outlines specific activities when this will be required.

Cook Street is identified as a commercial street in the DCAP. The general design criteria for these streets encourages a single row of trees on both sides of the right-of-way to enhance the pedestrian realm. The canopy from the continuous row of mature horse chestnut trees along Cook Street is seen as a valuable asset to the overall pedestrian experience. Staff have concerns that insufficient building and balcony setbacks have been provided along Cook Street with decks and balconies for levels 2-4 approximately 0.5m from the property line. Although these setbacks are technically within the DCAP guidelines, the proposal may impact the future growth of the trees.

Staff also have concerns regarding unconfirmed BC Hydro requirements including underground infrastructure that could have significant negative health impacts on the Cook Street horse chestnuts, possibly resulting in their removal; however, the decision of the location of the servicing, at times, appears to be non-negotiable with limited opportunity for City influence. Staff are working on establishing protocols with BC Hydro separately in order to overcome these challenges.

Tree Impact Summary

One 44cm DBH municipal flowering plum tree on the View Street boulevard and one 47cm DBH elm tree protected by the *Tree Preservation Bylaw* are proposed for removal. Removal of the plum is required to accommodate the proposed driveway entrance and the elm is located within the proposed building footprint.

The applicant is proposing to plant three municipal trees in grates (consistent with standard practice) on the View Street frontage and one new tree on Cook Street boulevard. The new boulevard tree has not been shown on the drawings but has been included in the Tree Impact Summary table below.

At the required 2:1 replacement ratio for bylaw-protected trees, 2 replacement trees are required. The proposed development is built to property lines and will not accommodate new tree plantings; $4,000 cash-in-lieu towards the City's Tree Reserve Fund would be required ($2,000 x 2 trees).

Tree Status	Total # of Trees	Trees to be REMOVED	NEW Trees	NET CHANGE (new trees minus total to be removed)
Subject property trees, protected	1	1	0	-1
Subject property trees, unprotected	0	0	0	0
City trees	3	1	4	+3
Neighbouring trees, protected	0	0	0	0
Neighbouring trees, unprotected	0	0	0	0
Total	**4**	**2**	**4**	**+2**

Increased Inventory	Annual Maintenance Cost
Street Trees – 3 net new	$180
Irrigation System	$400

CONCLUSIONS

The proposed high-rise mixed-use development at 1150 Cook Street would support the planning objectives for the Downtown found in the OCP and the DCAP. The proposal is generally consistent with the design guidelines contained within the DCAP and includes high-quality building materials and landscape finishes. The proposed increase in height and number of storeys is recommended as supportable given the general consistency with guidelines and the design measures that have been taken to integrate the building into the surrounding context. However, the application would benefit from further clarification in the treatment of the ground floor to achieve a positive pedestrian experience and further design revisions to ensure the retention of the mature street trees on Cook Street.

ALTERNATE MOTION

That Council decline Development Permit with Variances Application No. 00130 for the property located at 1150 Cook Street.

Respectfully submitted,

C. R. Wain

Charlotte Wain
Senior Planner – Urban Design
Development Services Division

K Hoese

Karen Hoese, Director
Sustainable Planning and Community
Development Department

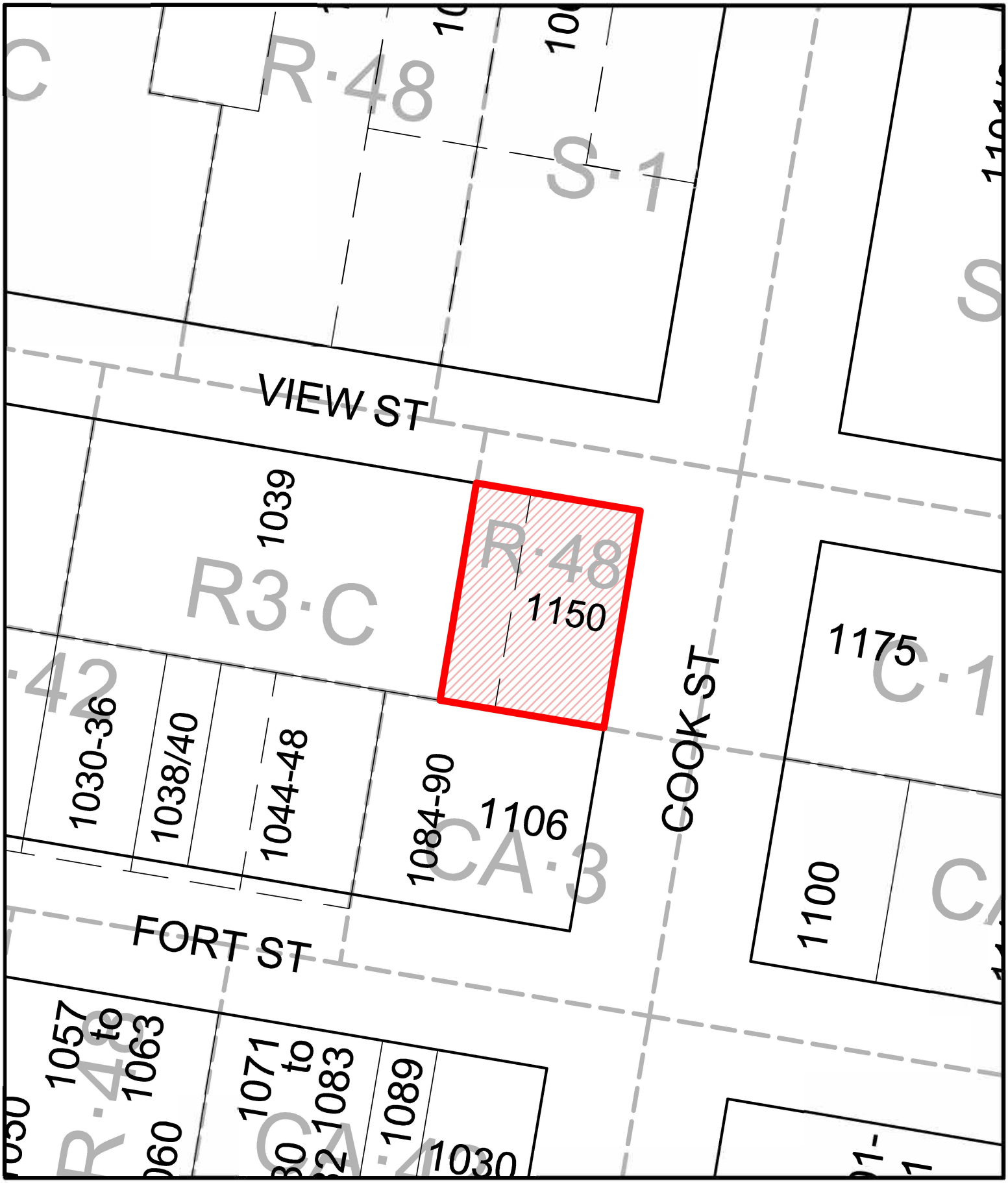
Report accepted and recommended by the City Manager:

Date: November 19, 2020

List of Attachments

- Attachment A: Subject Map
- Attachment B: Aerial Map
- Attachment C: Plans dated/date stamped September 30, 2020
- Attachment D: Letter from applicant to Mayor and Council dated November 6, 2020
- Attachment E: Letter from applicant in response to ADP dated September 28, 2020
- Attachment F: ADP staff report dated July 8, 2020
- Attachment G: ADP minutes from the meeting of July 22, 2020
- Attachment H: Arborist Report dated May 12, 2020
- Attachment I: Transportation Impact Assessment dated February 19, 2020
- Attachment J: Transportation Impact Assessment Memorandum, dated April 22, 2020
- Attachment K: Correspondence (Letters received from residents).

ATTACHMENT A



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1150 Cook Street
Development Permit with Variances #00130

CITY OF VICTORIA

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1150 Cook Street
Development Permit with Variances #00130

CITY OF VICTORIA

Consultants **ATTACHMENT C**

Commercial / Residential Development - 1150 Cook Street, Victoria BC

Context Plan Sc.1:750

Proposed Development - View from intersection of View & Cook Street

Project Statistics

Street Address	1150 Cook Street, Victoria, BC, V8V 3Z9
Legal Description	PID 009-388-257 Lot 996 & East Part of Lot 997, Victoria
Development Permit Area	DPA 3(HC) - Core Mixed-use residential
Existing Zoning	R-48
Proposed Zoning	R-48
Existing Use	Restaurant
Proposed Use	Retail & Residential
Site Area	1,009.20 sm
Proposed FSR	7.78

Parking	Required	Proposed
Residential	0	41
Commercial	0	0
Total		41

Bicycle Parking (long-term)	Required	Proposed
1 space/ Units < 45m2	83	
1.25 space/ Units > 45m2	60	
Total	143	143

Bicycle Parking (short-term)		
0.1 / dwelling unit	14	14

Physical Form	Permitted in R-48 zone	Proposed as per DCAP
Height of Building	30 m	47.57 m
Number of Storeys	10 storeys	16 storeys

Building Setbacks	Permitted	Proposed			
		Level 01	L 02 & 03	L 04	L 05 - 15
Front Yard (Cook Street)	0.5 m	1.7 m	0.5 m	3.4 m	2.8 m
Rear Yard	-	0.1 m	0 m	4.8 m	4.8 m
Side Yard North	-	1.9 m	0 m	3.7 m	2.1 m
Side Yard South	-	0.1 m	0 m	6 m	6 m
Combined Side Yards	-	2 m	0 m	9.6 m	8 m

Use	
Total Commercial Floor Area	168.58 sm
Total Residential Floor Area	7,433.98 sm
Total Number of Residential Units	129

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

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Revisions

Received Date: September 30, 2020

Seal

Project Team

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Drawing List

Architectural

A-00	Cover Sheet	**A-101**	P2 & P1 Parking Plan
A-01	Context Images	**A-102**	Proposed Site / Main Floor Plan
A-02	Street View Renderings	**A-103**	2nd & 3rd Floor Plan
A-02a	Olympic Mountain View Study	**A-104a**	Level 04 & Typical Floor Level 05
A-02b	Olympic Mountain View Study	**A-105**	Typical Floor Level 10 & 11
A-03a	Artistic renderings	**A-105**	15 Floor & Roof Plan
A-03b	Precedent Images	**A-106**	Average Grade Calculation
A-04	Streetscapes & Aerial View of Proposed Development		& Theoretical Density
		A-301	East & North Elevation
A-05	Shadow Analysis	**A-302**	South & West Elevation
A-100a	Existing Site Survey	**A-303**	Podium Elevations
		A-311	Section A, B & C

Civil

C-01	Preliminary Site Servicing

Landscape

L-01	Landscape Plan

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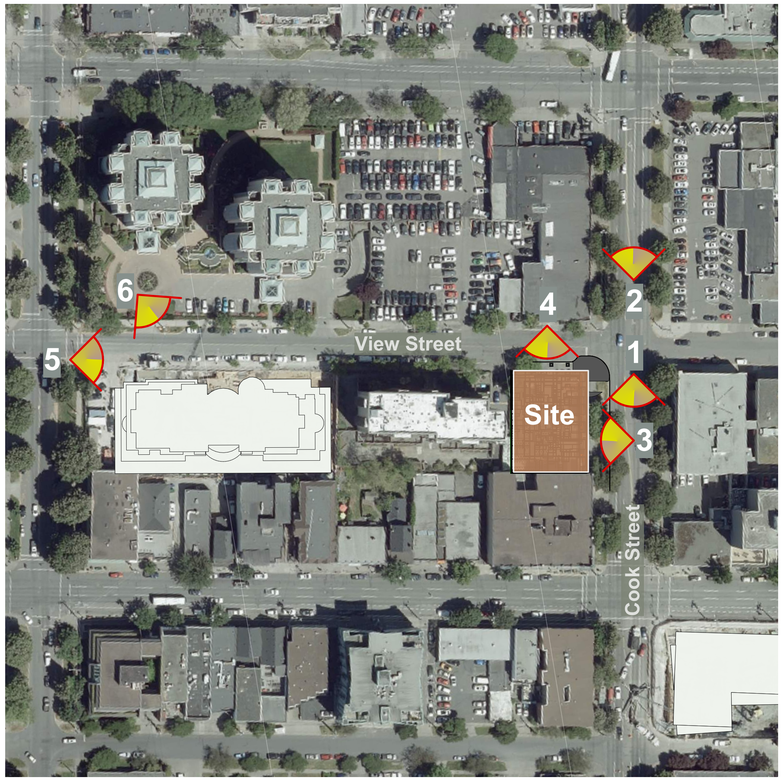
Project
Commercial / Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Cover Sheet

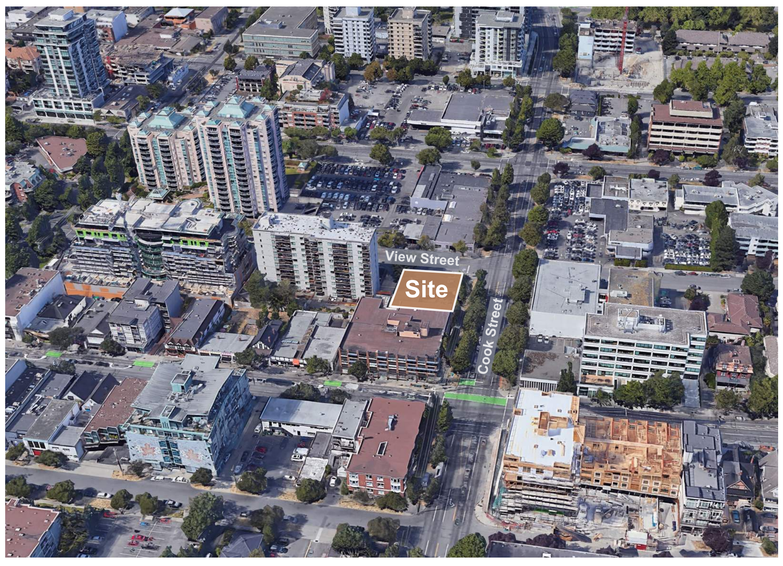
Project Number
19004

Scale
1:500

Sheet Number
A-00



Key Plan Sc.1:1000



Site Aerial View

1. Cook Street Looking South

2. Cook Street Looking North

3. Site along Cook Street

4. Site along View Street

5. View Street looking East

6. View Street looking South East

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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Project
Commercial / Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Context Images

Project Number
19004

Scale
1:500

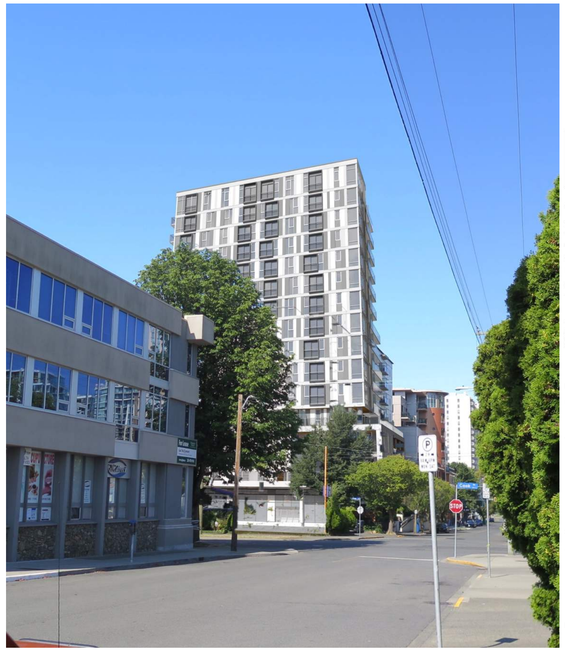
Sheet Number
A-01

Key Plan Sc.1:1000

A Cook Street Looking North

B View Street Looking East

C Cook Street Looking South



D View Street Looking West

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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Project
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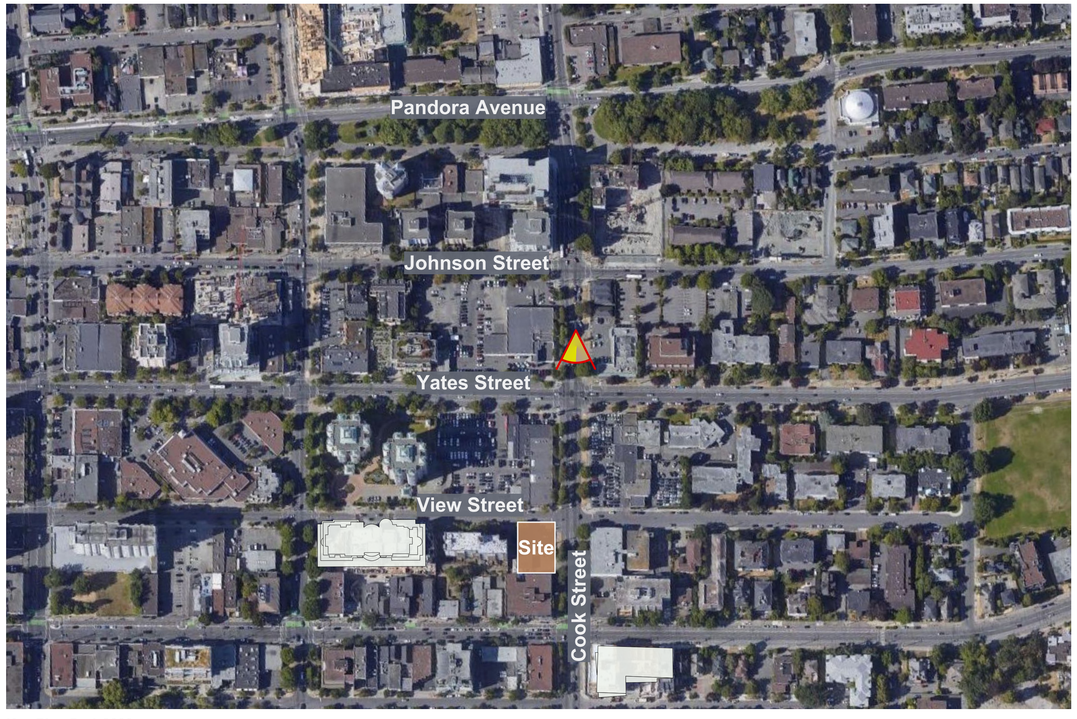
1150 Cook Street
Victoria, BC

Sheet Title
Street View Renderings

Project Number
19004

Scale

Sheet Number
A-02



Key Plan Sc.1:2000

Cook & Yates Street Looking South - Proposed tower

Cook & Yates Street Looking South - Proposed tower & R-48 10 storey massing

Cook & Yates Street Looking South - Proposed tower & 10 storey massing comparison

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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1150 Cook Street
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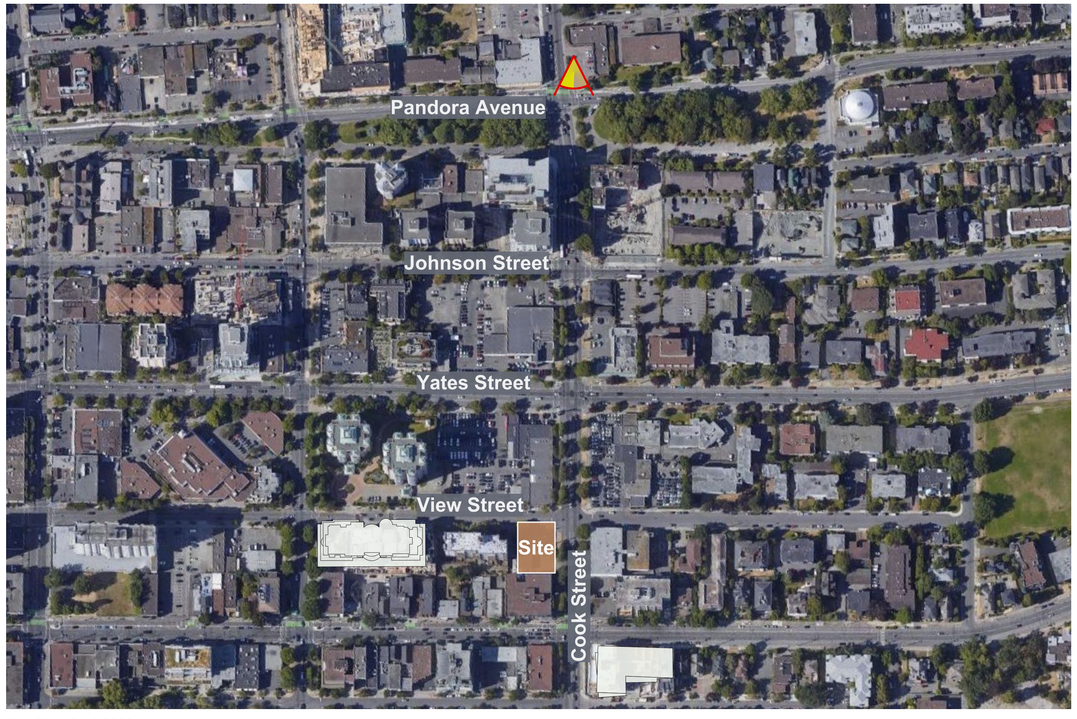
Sheet Title
Olympic Mountains View Study

Project Number
19004

Scale

Sheet Number
A-02a



Key Plan Sc.1:2000

Cook Street & Pandora Avenue Looking South - Proposed tower

Cook Street & Pandora Avenue Looking South - Proposed tower & R-48 10 storey massing

Cook Street & Pandora Avenue Looking South - Proposed tower & 10 storey massing comparison

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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1150 Cook Street
Victoria, BC

Sheet Title
Olympic Mountains View Study

Project Number
19004

Scale

Sheet Number
A-02b

Perspective looking SW from View Street

Cook Street perspective looking SW - Daytime rendering

Street level view along Cook Street

Street level view from intersection of View & Cook Street

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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Project
Commercial / Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Artistic renderings

Project Number
19004

Scale

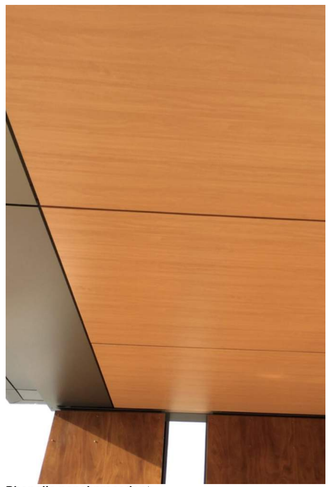
Sheet Number
A-03a

Aluminum and phenolic wood panels precedent

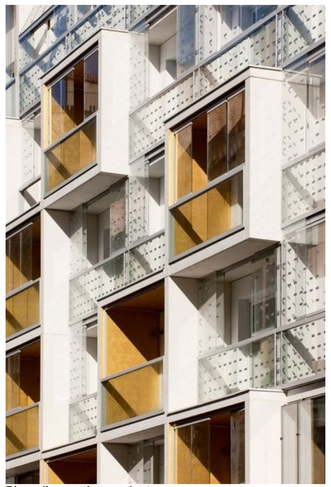
Floating monoblock over commercial precedent

Boxed out juliet balcony precedent

Aluminum composite panel precedent
Product proposed: Stac Bond or similar
Colors: Signal white, Light grey, Silver metallic, Titanium metallic, Carbon
Finishes: Matte - Acabado and Metallic



Phenolic panel precedent
Product proposed: Gentas or similar
Reference: 4600 Velur
Texture: Wood
Finish: Smooth



Phenolic panel precedent

Boxed out juliet balcony precedent

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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Project
Commercial / Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Precedent Images

Project Number
19004

Scale

Sheet Number
A-03b

Cook Street / East Elevation - Sc.1:500

View Street / North Elevation - Sc.1:500

Consultants

Date	Issue / Revisions
2020 Sep 29	DP resubmission
2020 Sep 29	DP resubmission

Seal

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Project
Mixed-use Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Streetscapes
& Aerial View of
Proposed Development

Project Number
19004

Scale
As Shown

Sheet Number
A-04

20 March/September - 10 AM

20 March/September - 12 PM

20 March/September - 2 PM

20 June - 10 AM

20 June - 12 PM

20 June - 2 PM

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 July 08	ADP meeting
2020 Sep 29	DP resubmission

Seal

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Project
Commercial / Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Shadow Analysis

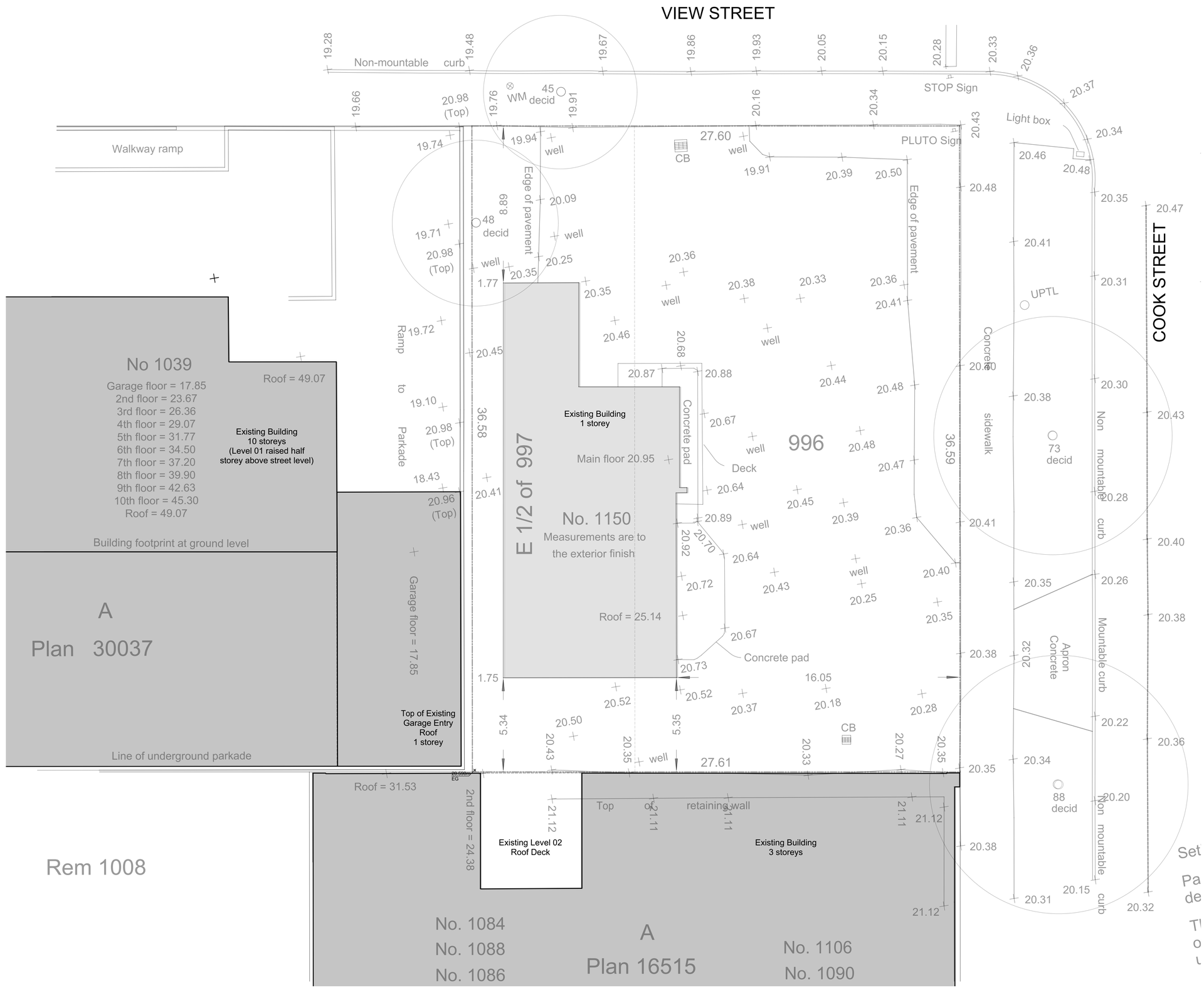
Project Number
19004

Scale
1:1250

Sheet Number
A-05

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission



Seal

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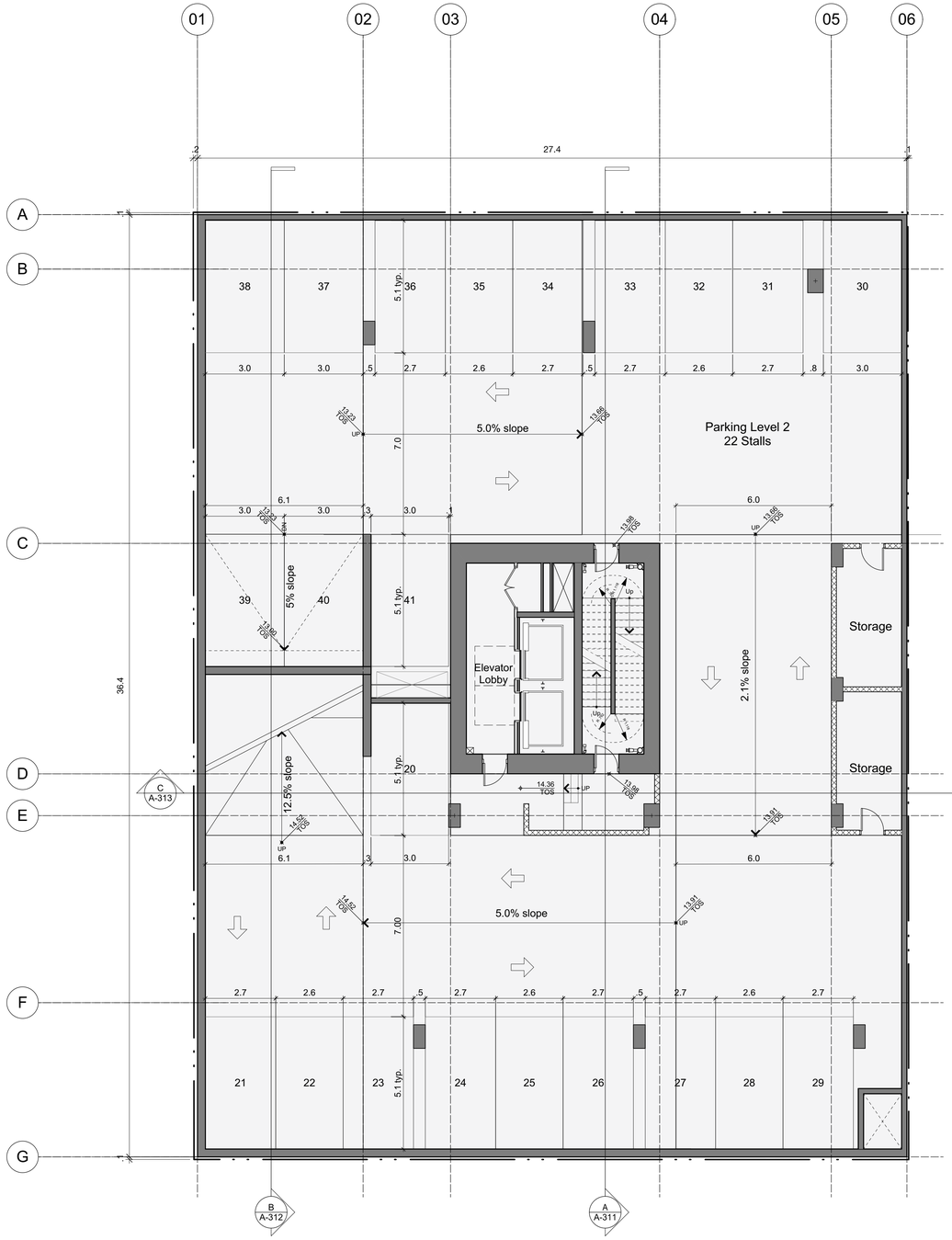
Project
Commercial/Residential Development
1150 Cook Street
Victoria, BC

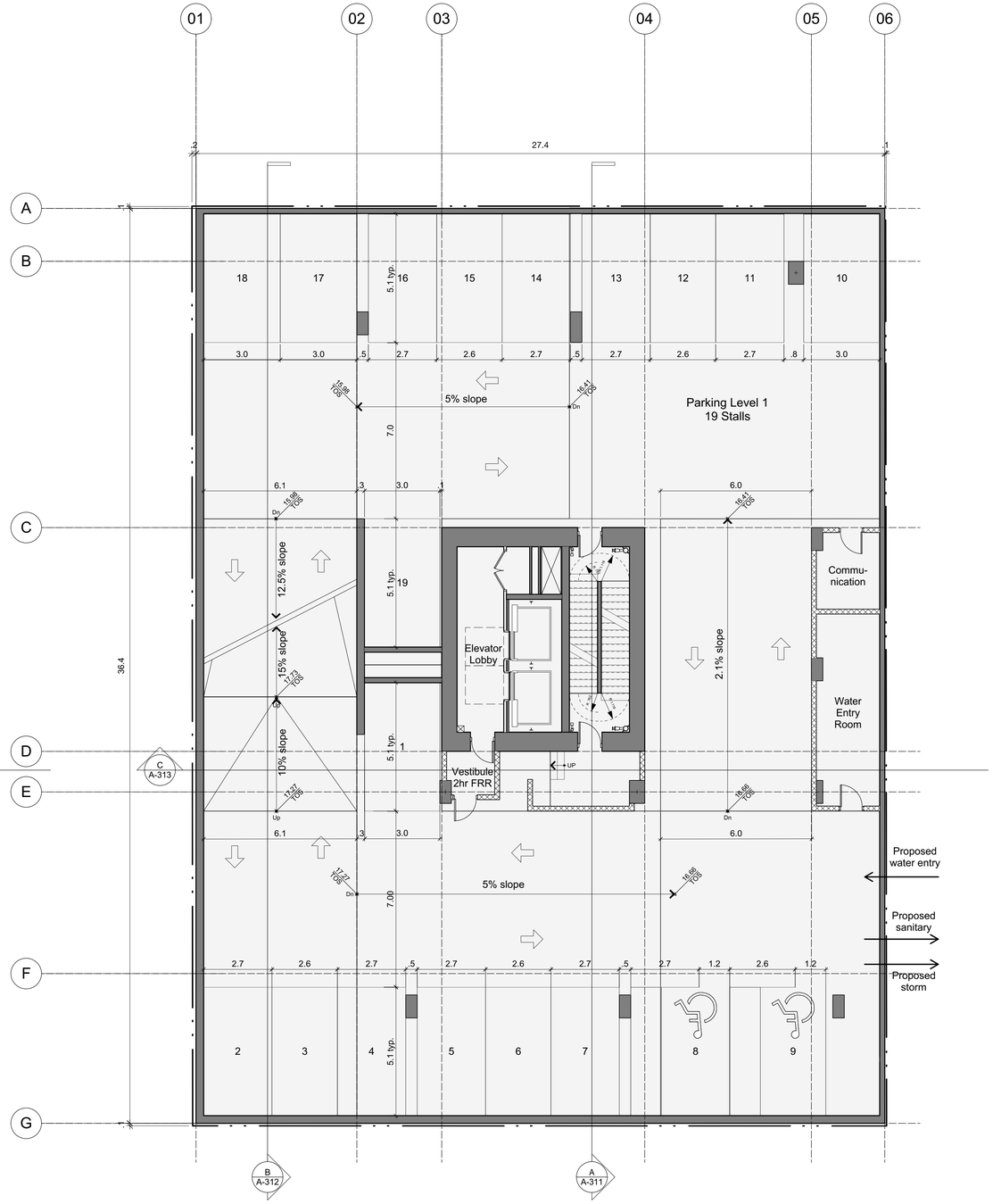
Sheet Title
Existing Site Survey

Project Number
19004

Scale
1:100

Sheet Number
A-100a





P2 Level areas

Parking	866.23
Services	55.11
Circulation	43.90
Total	**965.24**

P1 Level areas

Parking	869.73
Services	51.59
Circulation	43.90
Total	**965.22**

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Legend

- Parking
- Services & shafts
- Circulation
- Bicycle storage
- Commercial
- Waste room
- Amenity
- Studio+Den
- 1 Bedroom
- 1 Bedroom+Den
- 2 Bedroom
- Open to below

Seal

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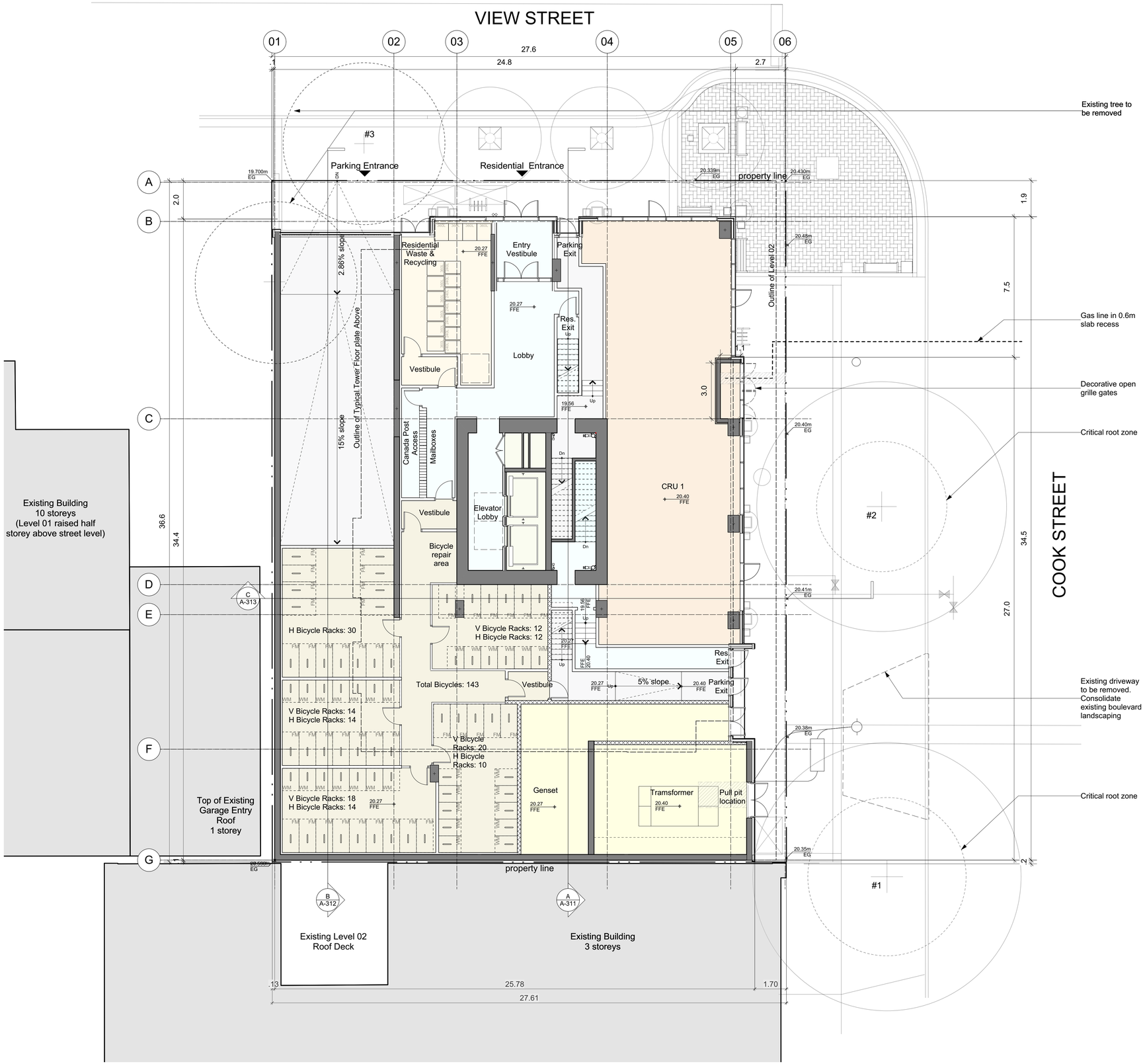
Project
Commercial/Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
P2 P1 Parking

Project Number
19004

Scale
1:100

Sheet Number
A-101



Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Project Information Table

Zone	R-48	
Site Area	1,009.20 sm	
Total Floor Area	7,855.45 sm	
Commercial Floor Area	168.58 sm	
Floor Space Ratio	7.78	
Site Coverage	86%	
Open Site Space	146.11 sm	14%
Height of Building	47.57 m	
	45 m	Tower height
	2.57 m	Elevator overrun
Number of Storeys	16	
Parking Stalls (number) on Site	41	
Bicycle Storage	143 residential	

Building Setbacks

Front Yard (Cook Street)	1.70 m
Rear Yard	0.10 m
Side Yard North	1.90 m
Side Yard South	0.10 m
Combined Side Yards	2.00 m

Residential Use Details

Ground Oriented Units	N/A	
Unit Type	Min. Unit Floor Area	No. of Units
Studio+Den	53.6 sm	4
1BR	40.2 sm	98
2BR	54.6 sm	27
Total Number of Units	129	
Total Residential Floor Area	7,433.98 sm	

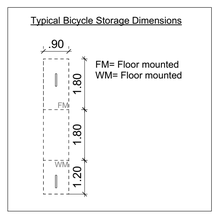
Legend

- Parking
- Services & shafts
- Residential Circulation
- Bicycle storage
- Commercial
- Waste room
- Genset & Transformer
- Amenity
- Studio+Den
- 1 Bedroom
- 1 Bedroom+Den
- 2 Bedroom
- Open to below

Seal

N

Typical Bicycle Storage Dimensions



Level 01 areas

OTB	Parking Ramp
Commercial	168.58
Services	18.30
Waste & Recycling	43.80
Genset & Transformer	97.60
Residential Circulation	117.51
Parking Ramp & Exits	154.67
Bicycle Storage	226.27
Total	**826.73**

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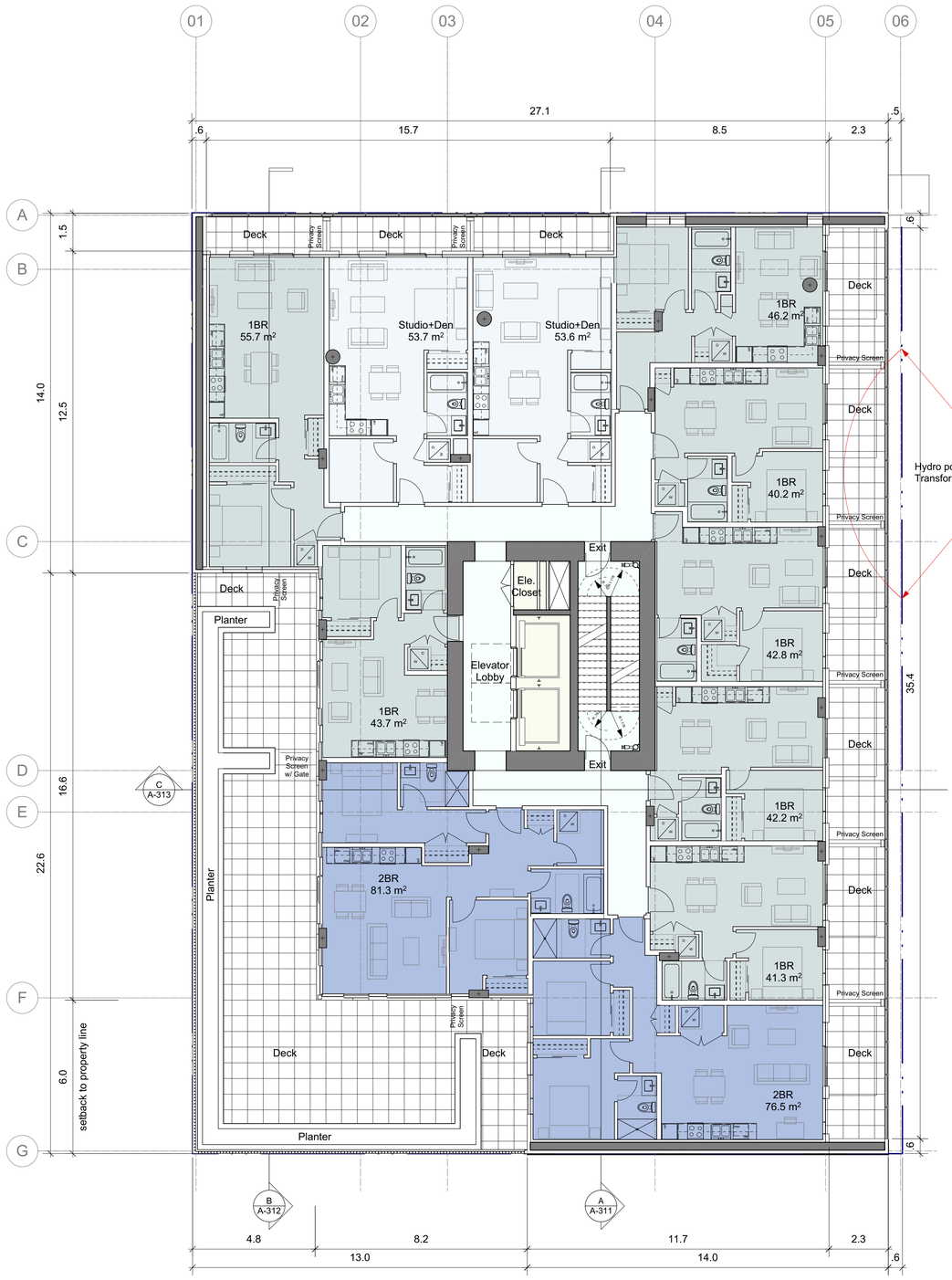
Project
Commercial/Residential Development
1150 Cook Street
Victoria, BC

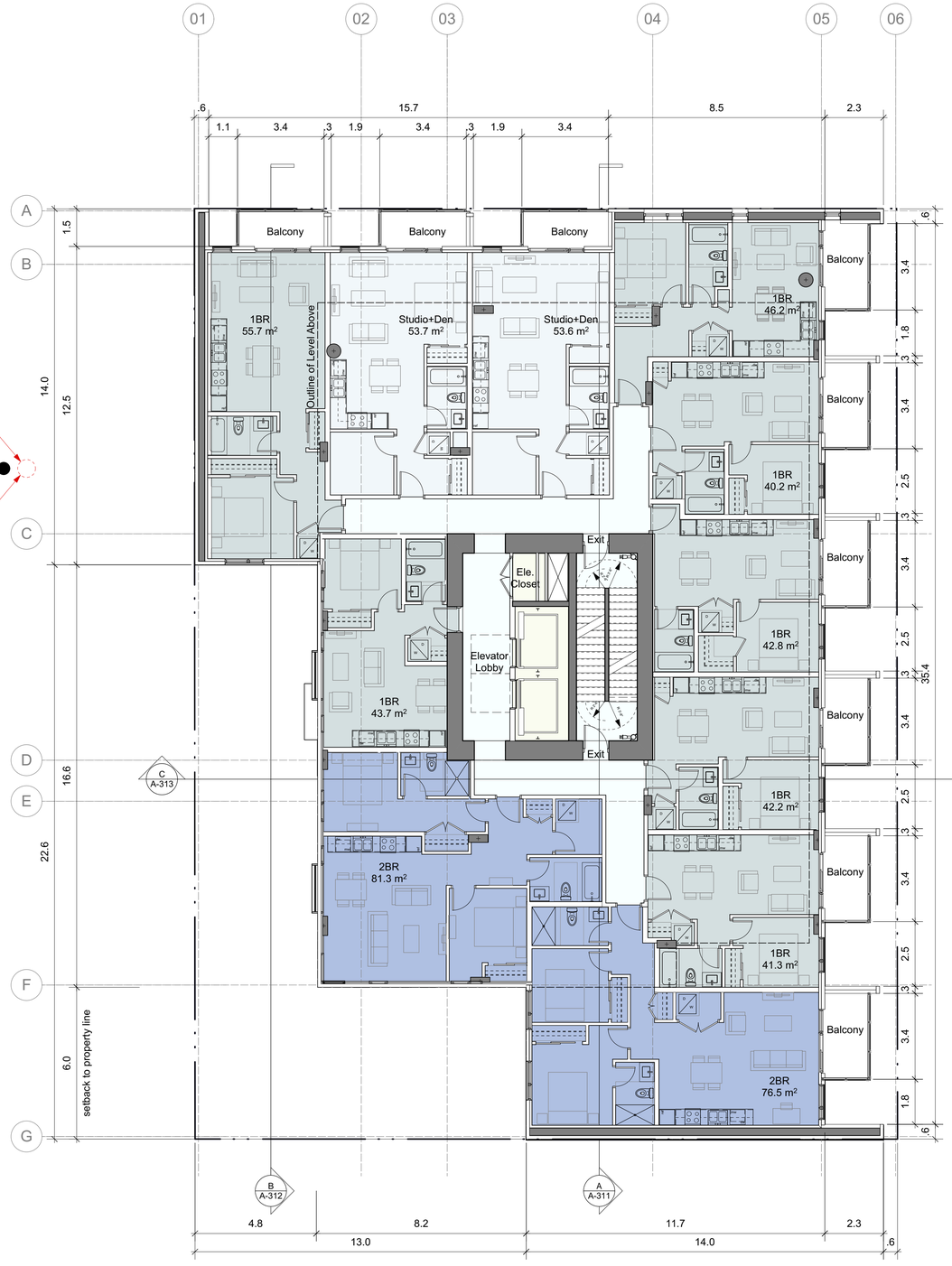
Sheet Title
Proposed Site / Main Floor Plan

Project Number
19004

Scale
1:100

Sheet Number
A-102





Level 02 areas

Residential Units	577.38
Services	18.33
Circulation	88.41
Total	**684.11**

Level 03 areas

OTB	0.00
Residential Units	577.38
Services	18.33
Circulation	88.41
Total	**684.11**

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Legend

- Parking
- Services & shafts
- Residential Circulation
- Bicycle storage
- Commercial
- Waste room
- Genset & Transformer
- Amenity
- Studio+Den
- 1 Bedroom
- 1 Bedroom+Den
- 2 Bedroom
- Open to below

Seal

N

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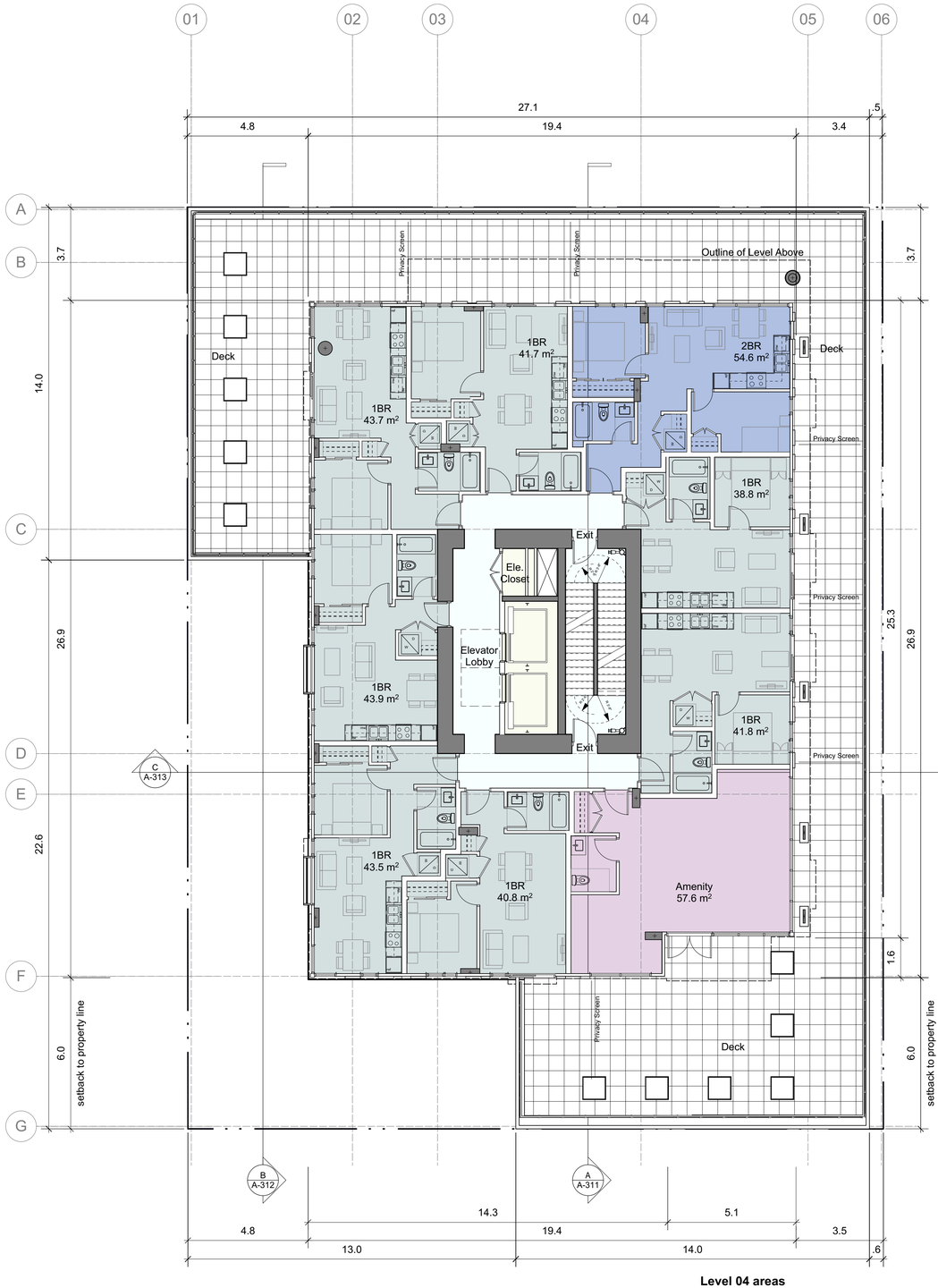
Project
Commercial/Residential Development
1150 Cook Street
Victoria, BC

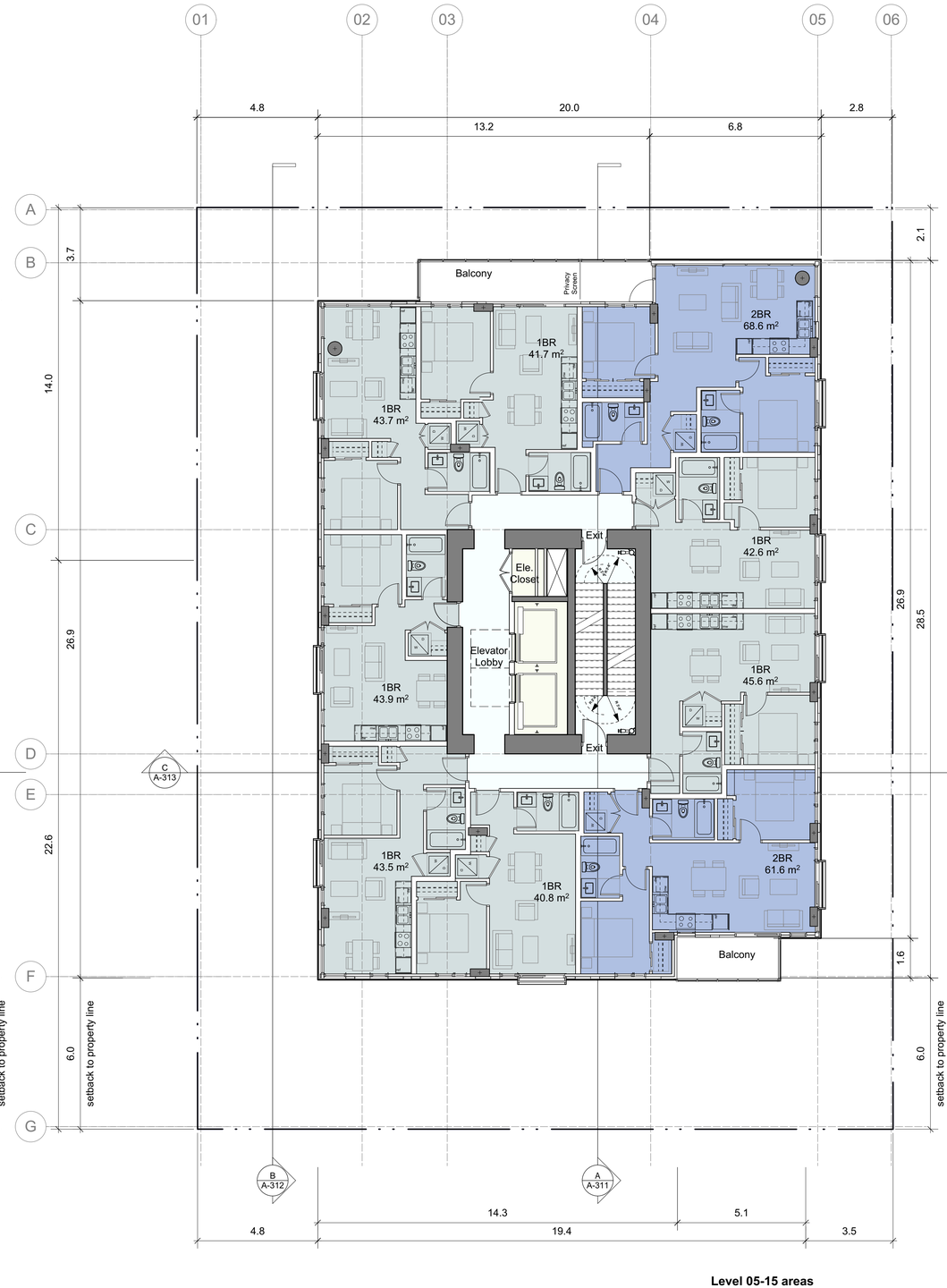
Sheet Title
2nd Floor & 3rd Floor

Project Number
19004

Scale
1:100

Sheet Number
A-103





Level 04 areas

Residential Units	348.78
Amenity	57.57
Services	18.33
Circulation	67.38
Total	**492.05**

Level 05-15 areas

Residential Units	431.86
Services	18.33
Circulation	67.38
Total	**517.56**

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Legend

- Parking
- Services & shafts
- Residential Circulation
- Bicycle storage
- Commercial
- Waste room
- Genset & Transformer
- Amenity
- Studio+Den
- 1 Bedroom
- 1 Bedroom+Den
- 2 Bedroom
- Open to below

Seal

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Project
Commercial/Residential Development
1150 Cook Street
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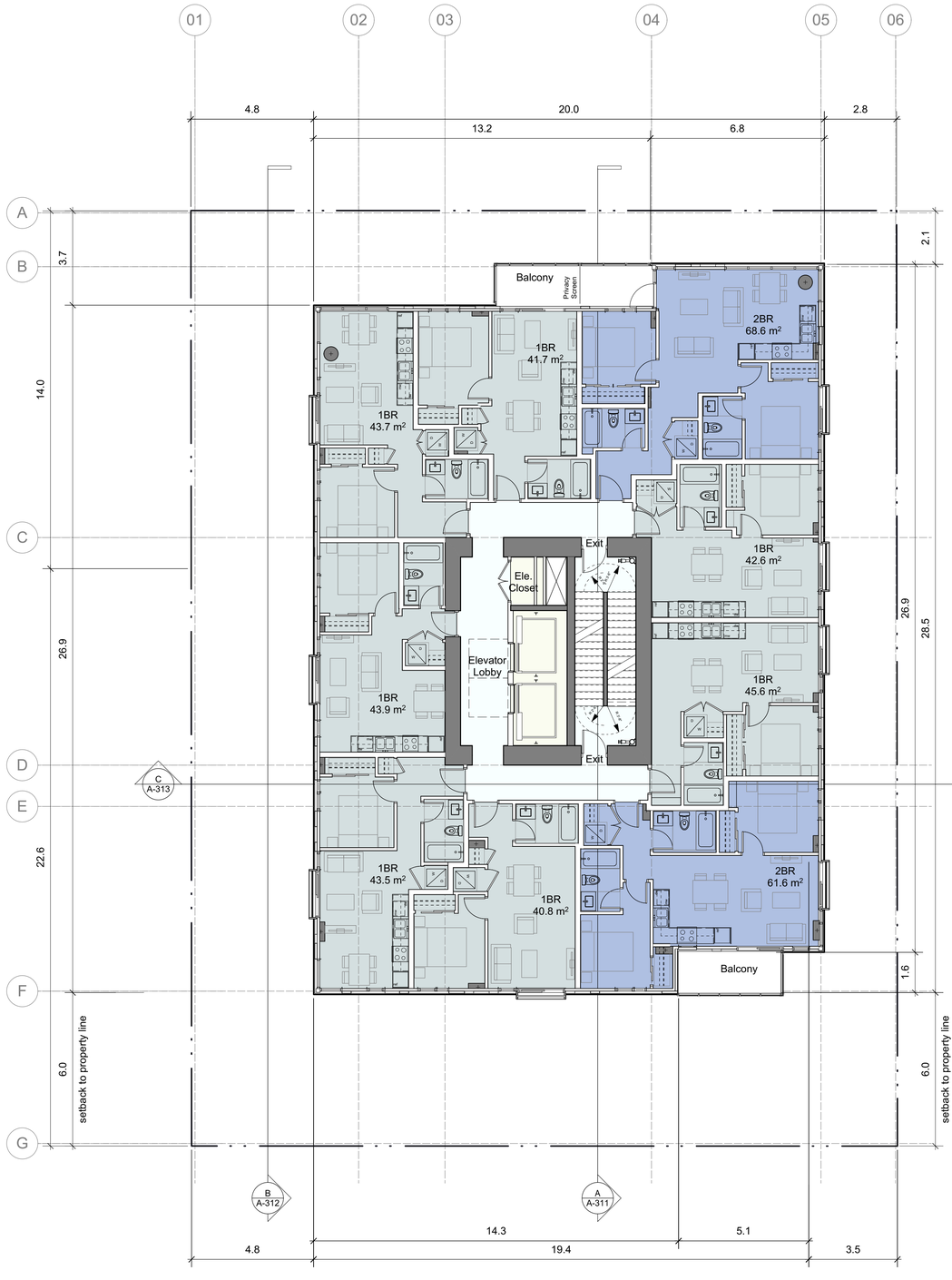
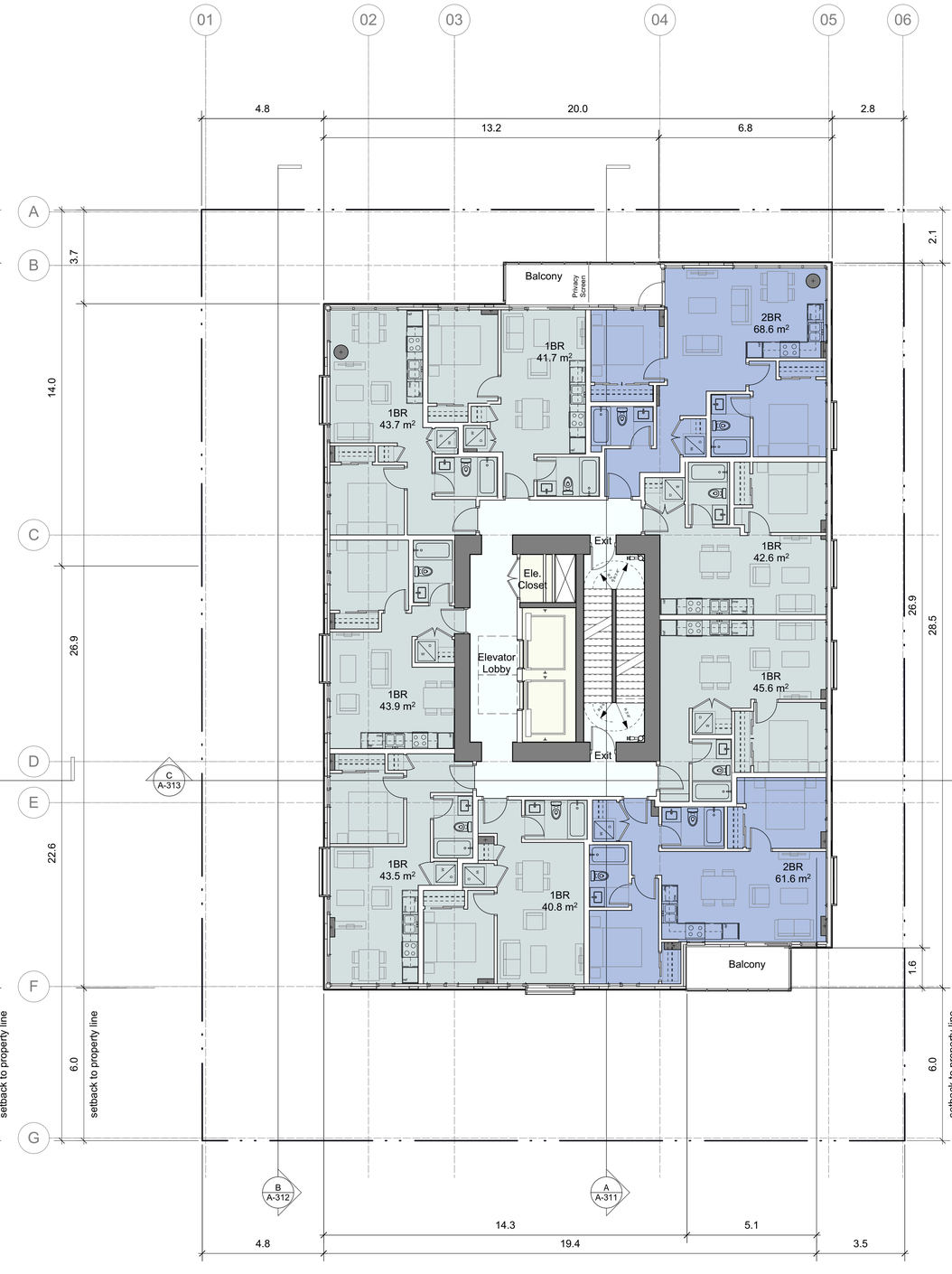
Sheet Title
Level 04 & Tyical Floor Level 05

Project Number
19004

Scale
1:100

Sheet Number
A-104





Level 05-15 areas

Residential Units	431.86
Services	18.33
Circulation	67.38
Total	**517.56**

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Legend

- Parking
- Services & shafts
- Residential Circulation
- Bicycle storage
- Commercial
- Waste room
- Genset & Transformer
- Amenity
- Studio+Den
- 1 Bedroom
- 1 Bedroom+Den
- 2 Bedroom
- Open to below

Seal

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Project
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1150 Cook Street
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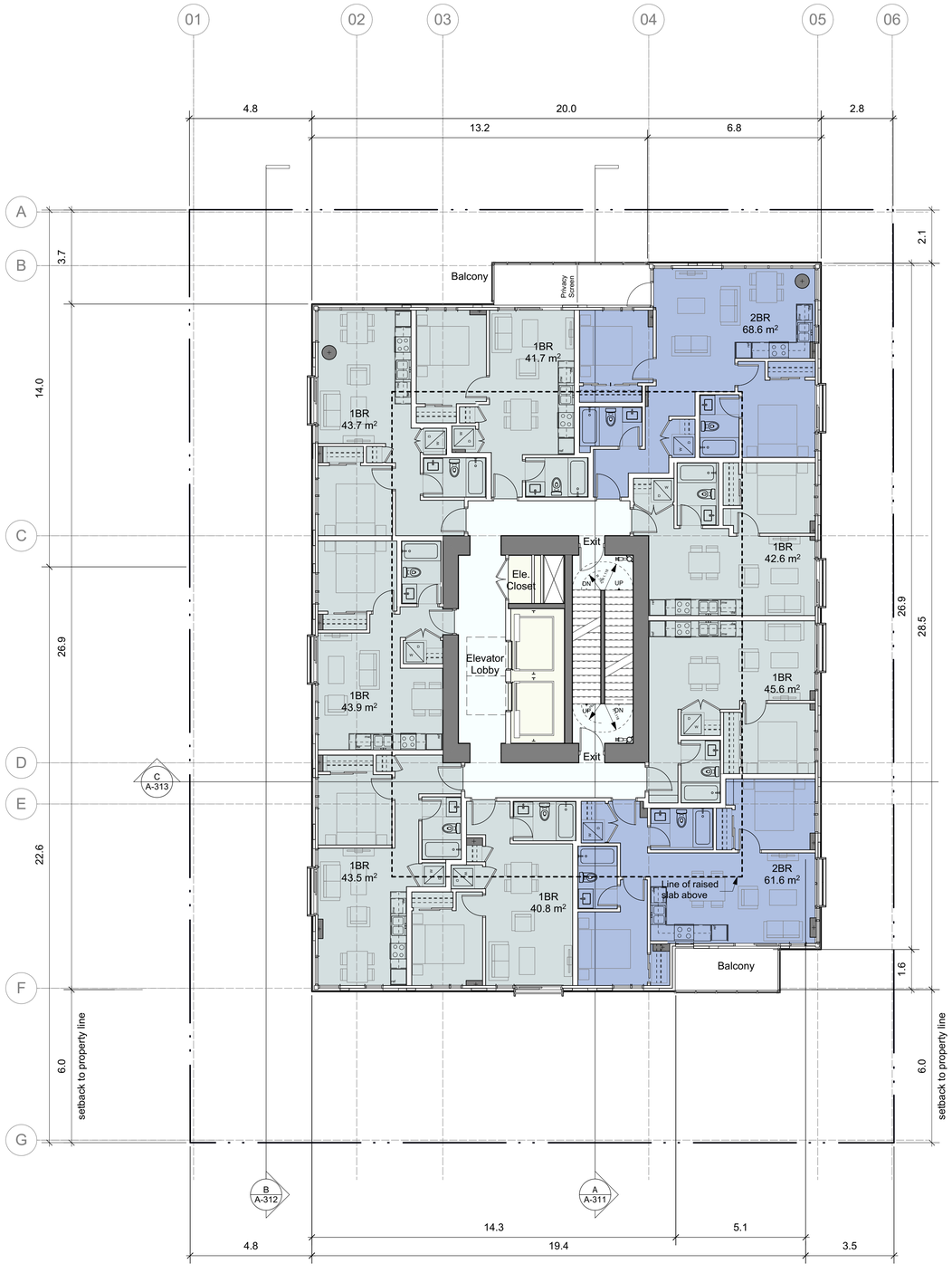
Sheet Title
Typical Floor Level 10 & 11

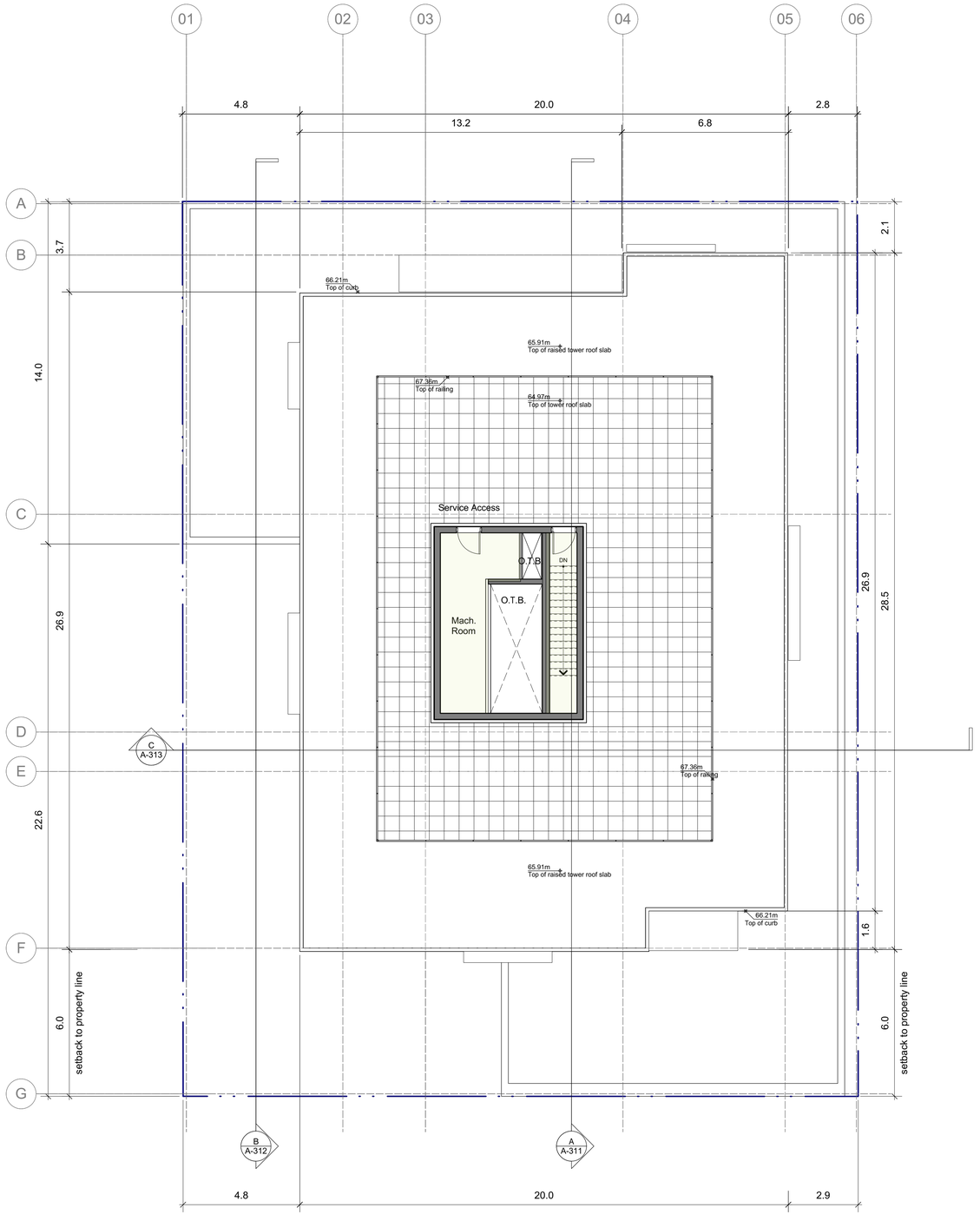
Project Number
19004

Scale
1:100

Sheet Number
A-104a



1 15th Floor Plan
1:100



2 Tower Roof Plan
1:100

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Legend

Service Area = 26.4 m²

Seal

N

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Project
Commercial/Residential Development
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Sheet Title
15th Floor & Roof Plan

Project Number
19004

Scale
1:100

Sheet Number
A-105

Average Grade Calculation

(as per City of Victoria Zoning Regulation Bylaw No. 80-159 Schedule A)

Grade Points:

A	19.86
B	20.14
C	20.11
D	20.50
E	20.37
F	20.39
G	20.37
H	20.35
I	20.35
J	20.51

Grade Points	Average of Points	Distance Between Points	Totals
A & B	20	8.44	168.80
B & C	20.125	0.85	17.11
C & D	20.305	16.41	333.21
D & E	20.435	23.19	473.89
E & F	20.38	1.16	23.64
F & G	20.38	4.83	98.44
G & H	20.36	1.16	23.62
H & I	20.35	6.53	132.89
I & J	20.43	24.85	507.69
		87.42	1779.26

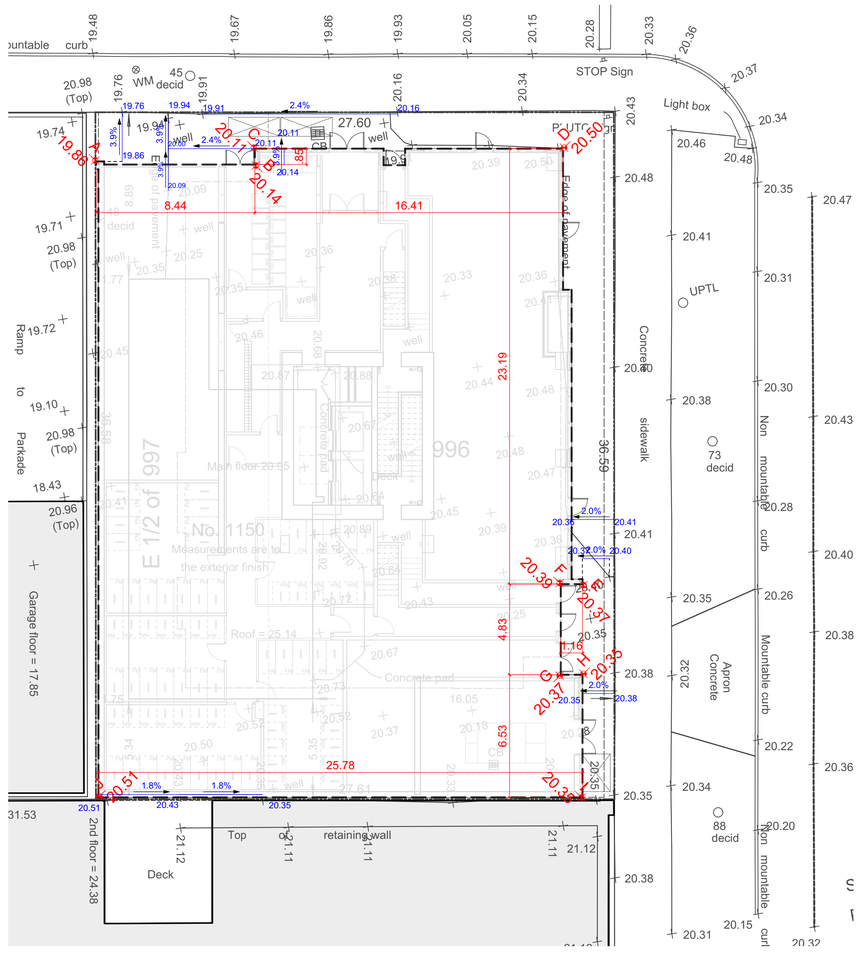
Average Grade a.p. above: **20.35**

Legend

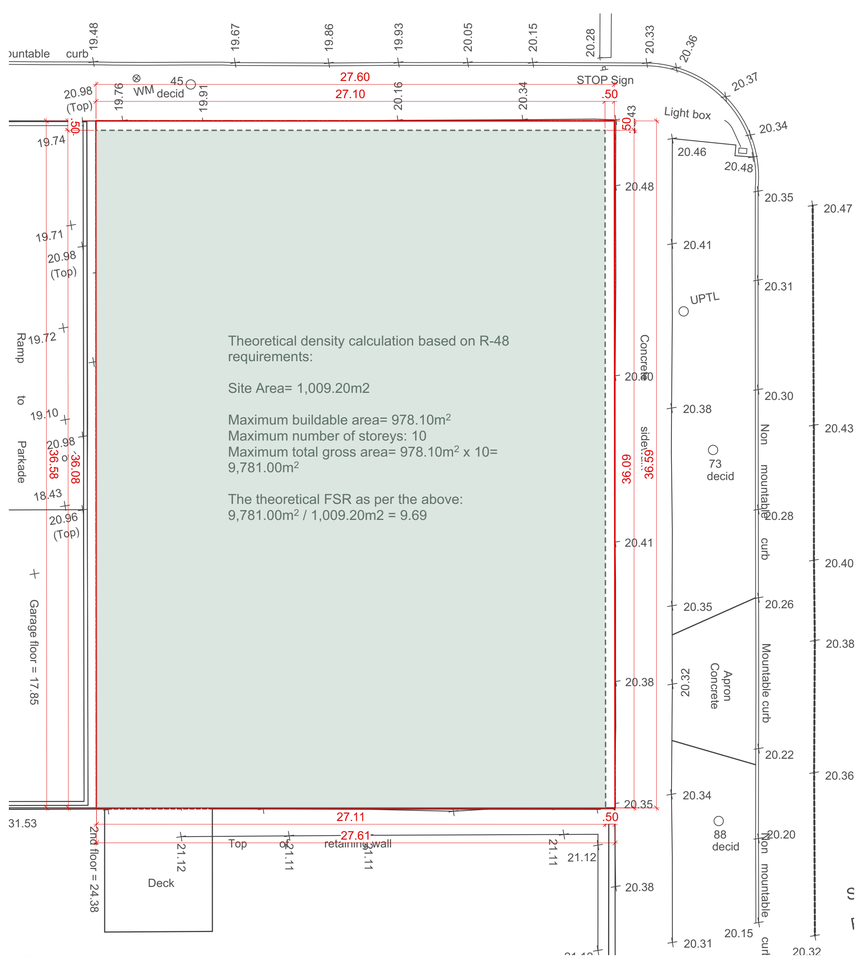
Proposed Building Outline

Grade Point Elevation — Existing Grades

Interpolated Grades



1 Acerage Grade Calculation
1:150



2 Theoretical Density
1:150

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
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Seal

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Project
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Sheet Title
Average Grade Calculation
& Theoretical Density

Project Number
19004

Scale
As shown

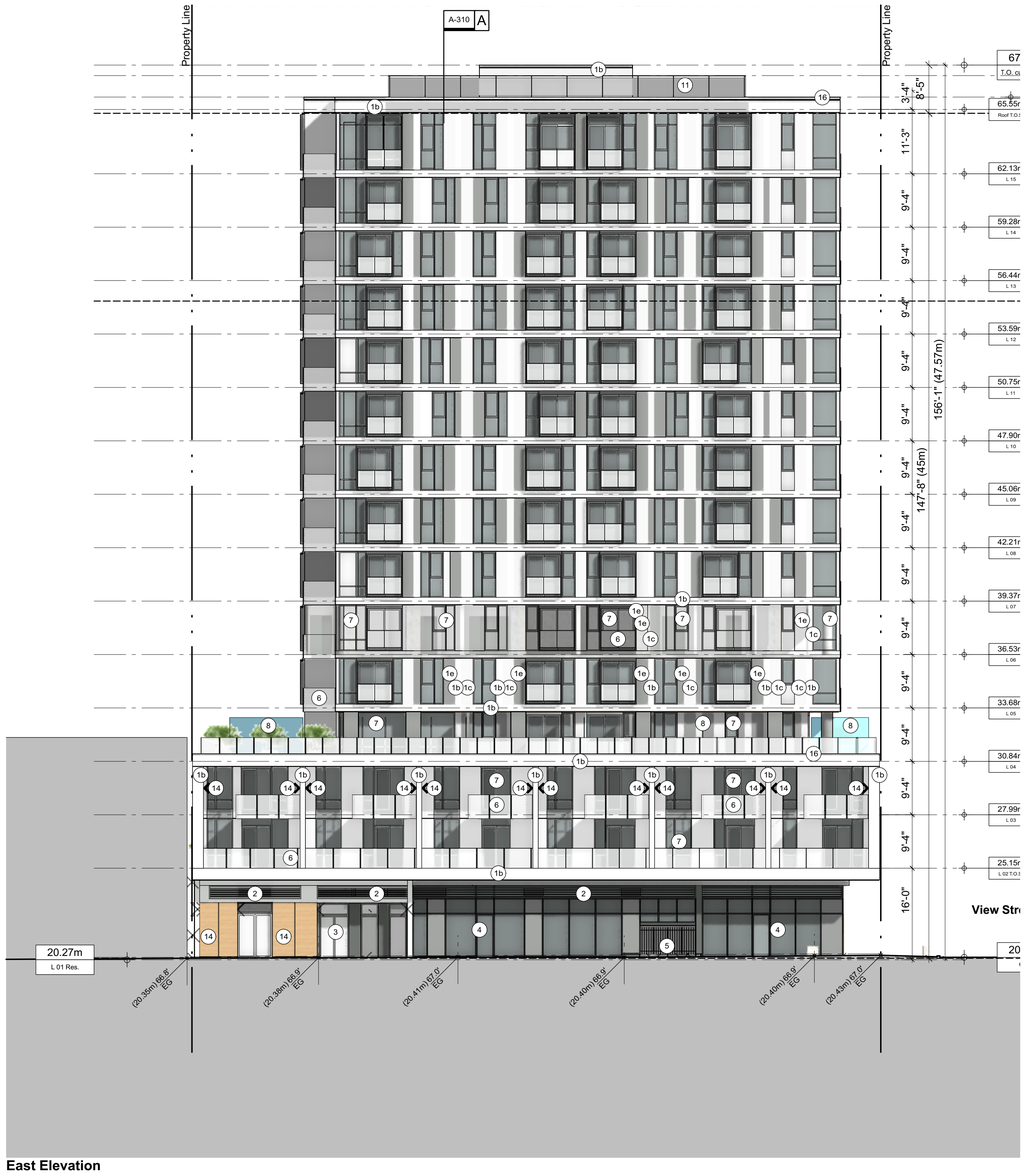
Sheet Number
A-106

Consultants

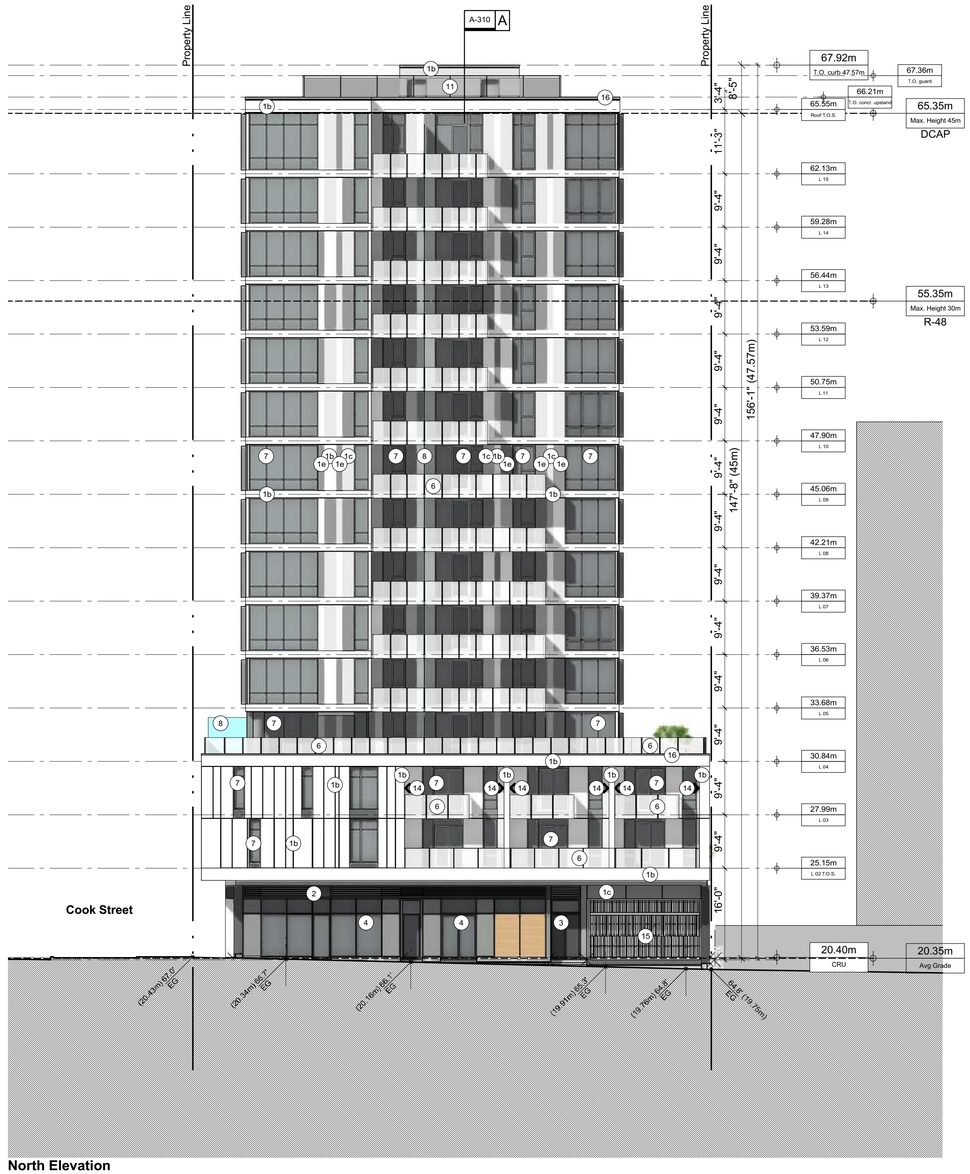
Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Materials & Finishes

1a	Composite metal cladding - black	7	Window wall
1b	Composite metal cladding - white	8	Privacy screen
1c	Composite metal cladding - silver - light	9	Metal grille Juliet balcony
1e	Composite metal cladding - silver - dark	10	Composite metal panel
2	Wall and window louvres	11	Translucent glass railing
3	Metal door to match cladding	12	Flat bar fence
4	Curtain wall	13	Painted concrete
5	Open grille gasmeter enclosure	14	Phenolic composite panels - wood plank texture
6	Glass railing	15	Custom metal grille door
		16	Dark grey cap flashing



East Elevation



North Elevation

Seal

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Project
Mixed-use Residential Development
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Sheet Title
East & North Elevation

Project Number
19004

Scale
1:150

Sheet Number
A-301

Consultants

Materials & Finishes

1a	Composite metal cladding - black	7	Window wall
1b	Composite metal cladding - white	8	Privacy screen
1c	Composite metal cladding - silver - light	9	Metal grille Juliet balcony
1e	Composite metal cladding - silver - dark	10	Composite metal panel
2	Wall and window louvres	11	Translucent glass railing
3	Metal door to match cladding	12	Flat bar fence
4	Curtain wall	13	Painted concrete
5	Open grille gasmeter enclosure	14	Phenolic composite panels - wood plank texture
6	Glass railing	15	Custom metal grille door
		16	Dark grey cap flashing

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Seal

NSDA ARCHITECTS

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Project
Mixed-use Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
South & West Elevation

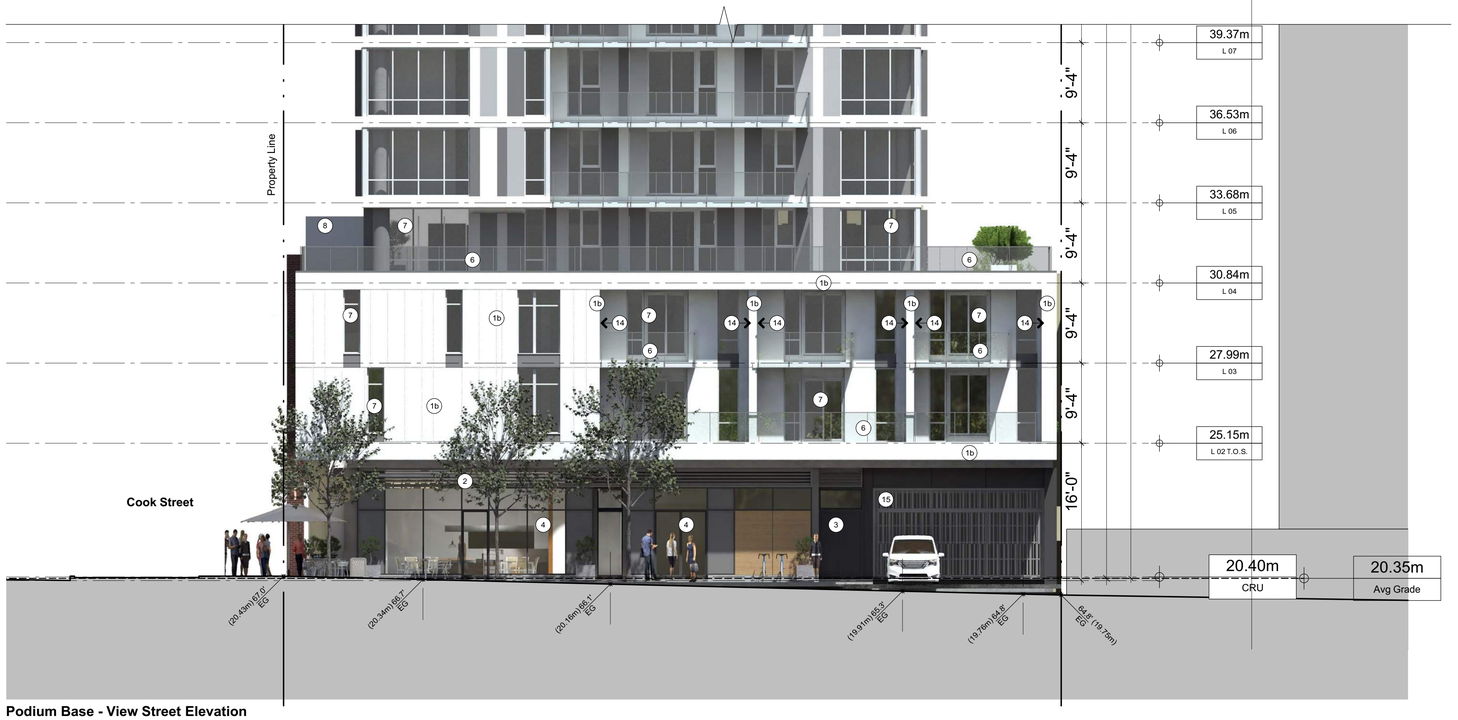
Project Number
19004

Scale
1:150

Sheet Number
A-302

View Street

Podium Base - Cook Street Elevation



Podium Base - View Street Elevation

Materials & Finishes

1a	Composite metal cladding - black	7	Window wall
1b	Composite metal cladding - white	8	Privacy screen
1c	Composite metal cladding - silver - light	9	Metal grille Juliet balcony
1e	Composite metal cladding - silver - dark	10	Composite metal panel
2	Wall and window louvres	11	Translucent glass railing
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6	Glass railing	15	Custom metal grille door
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Consultants

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2020 May 4	DP resubmission
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Seal

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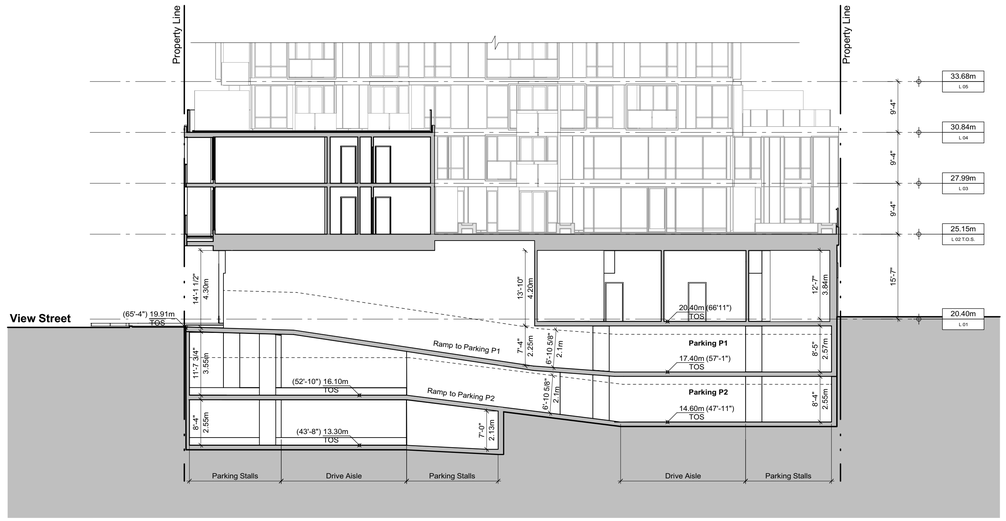
Project
Mixed-use Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Podium Elevation

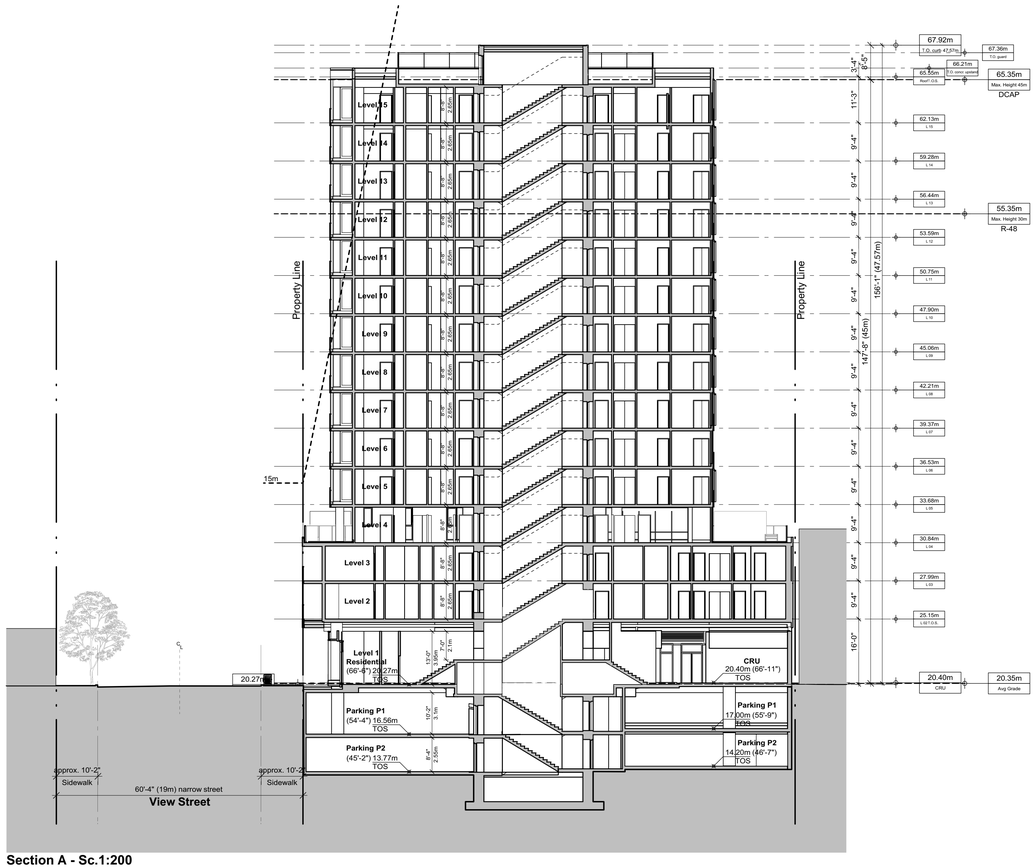
Project Number
19004

Scale
1:100

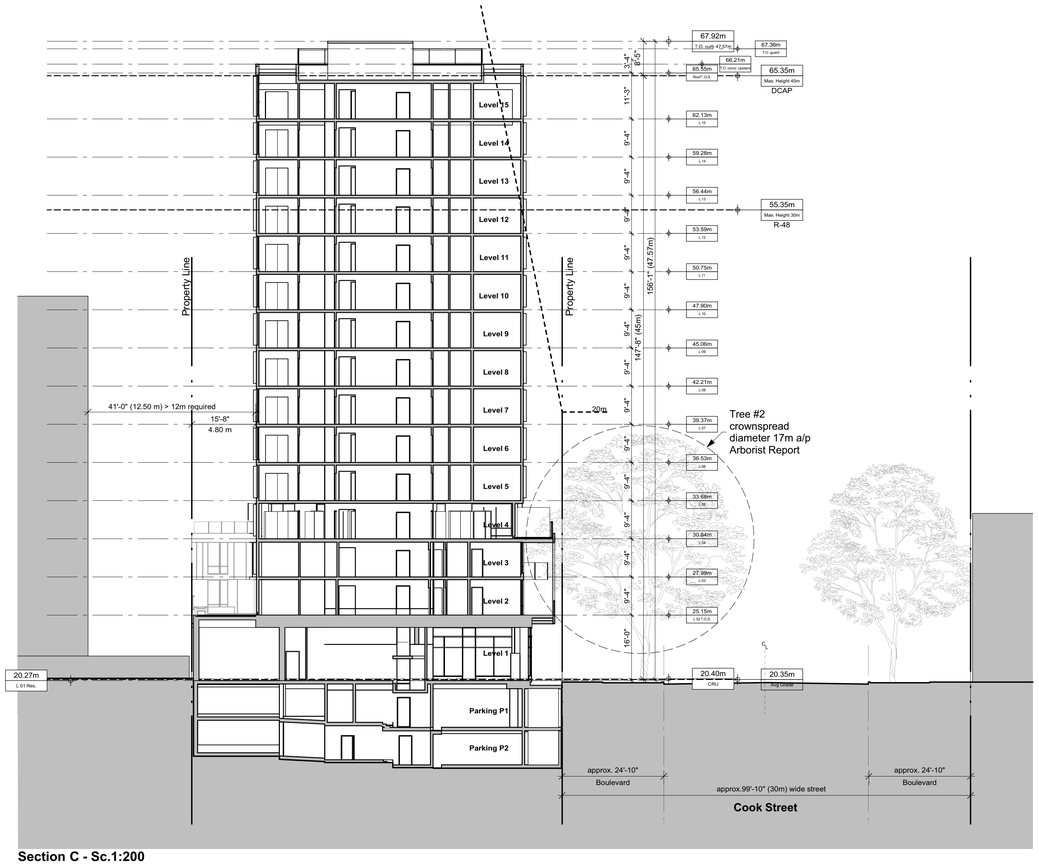
Sheet Number
A-303



Section B - Section through parking access ramp Sc. 1:150



Section A - Sc.1:200



Section C - Sc.1:200

Consultants

Date	Issue / Revisions
2020 May 4	DP resubmission
2020 Sep 29	DP resubmission

Seal

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Project
Mixed-use Residential Development
1150 Cook Street
Victoria, BC

Sheet Title
Section A, B & C

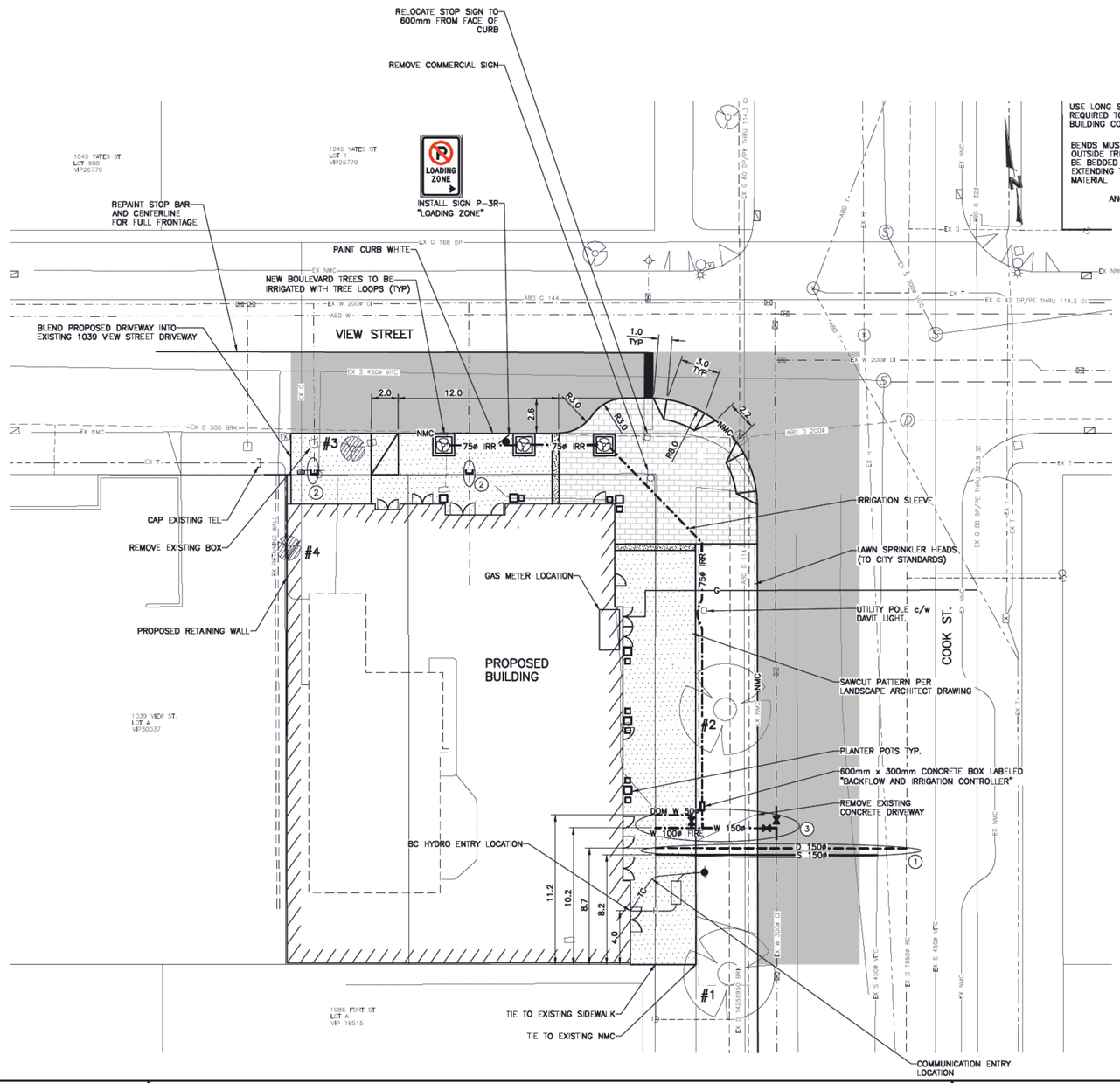
Project Number
19004

Scale
1:100

Sheet Number
A-311

LEGEND

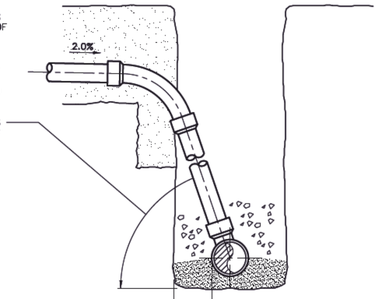
- – APPROXIMATE LIMIT OF ASPHALT
- – BASALT BAND, SEE LANDSCAPE FOR DETAILS
- – CONCRETE SIDEWALK, SEE LANDSCAPE FOR DETAILS
- – BRICK PAVERS, SEE LANDSCAPE FOR BRICK COLORS AND PAVERS
- – EXISTING TREE TO BE REMOVED
- – EXISTING STREET TREE TO BE PROTECTED
- – TREE TO BE PLANTED, SEE LANDSCAPE FOR DETAILS



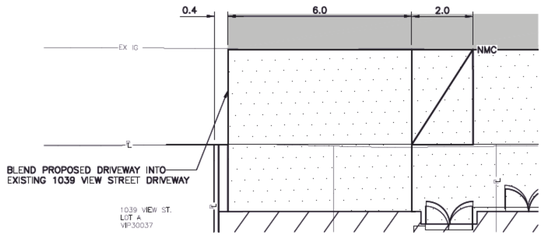
USE LONG SWEEP BENDS AS REQUIRED TO MEET GRADE OF BUILDING CONNECTION

BENDS MUST BE LOCATED OUTSIDE TRENCH AND MUST BE BEDDED IN GRAVEL EXTENDING TO UNDISTURBED MATERIAL

ANGLE TO BE LESS THAN 45°



DEEP TRENCH SERVICE CONNECTION DETAIL
NTS



DRIVEWAY DETAIL
SCALE 1:100

GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH MMCD, PLATINUM EDITION, AND THE CITY OF VICTORIA STANDARD SPECIFICATIONS AND DRAWINGS UNLESS OTHERWISE NOTED.
- WHEN A CONFLICT BETWEEN THE SPECIFICATIONS ARISES, THE MOST STRINGENT SHALL APPLY.
- OBTAIN A PERMIT TO CONSTRUCT WORKS ON A MUNICIPAL RIGHT OF WAY FROM THE CITY OF VICTORIA ENGINEERING DEPARTMENT TWO WORKING DAYS PRIOR TO THE START OF ANY CONSTRUCTION.
- OBTAIN A DEMO PERMIT PRIOR TO REMOVAL OF ANY NON-CONFORMING STRUCTURES.
- CONTACT BC HYDRO, TELUS, SHAW CABLE AND FORTISBC GAS TWO WORKING DAYS PRIOR TO THE START OF ANY EXCAVATION.
- EXPOSE ALL EXISTING SERVICES AT CONNECTION AND CROSSING POINTS TWO WORKING DAYS PRIOR STARTING CONSTRUCTION ON ANY SUCH SERVICES. ENSURE ENGINEER HAS CONFIRMED THE HORIZONTAL AND VERTICAL LOCATION.
- BED ALL PIPE USING CLASS 'B' BEDDING.
- WHERE A TRENCH IS UNDER OR WITHIN 1.0m OF THE EDGE OF A ROAD OR DRIVEWAY, USE PIT RUN GRAVEL BACKFILL FROM THE TOP OF THE PIPE BEDDING TO THE TOP OF THE ROAD, PARKING OR DRIVEWAY SUBGRADE.
- DO NOT START ANY BACKFILL OPERATION UNTIL THE WORKS HAVE BEEN INSPECTED BY THE ENGINEER.
- AFTER CONSTRUCTION, RESTORE WORK AREAS AND ALL EXISTING FEATURES TO THEIR ORIGINAL CONDITION OR BETTER.
- MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS ALONG VIEW STREET AND COOK STREET DURING CONSTRUCTION.
- COMPACT TRENCH BACKFILL, ROAD BASE AND DRIVEWAY BASE TO 95% MODIFIED PROCTOR DENSITY.
- ADJUST ALL PROPOSED AND EXISTING APPURTENANCES TO MEET THE FINAL DESIGN GRADES.
- ENSURE THAT ALL SERVICES TO THE EXISTING HOUSE REMAIN USABLE DURING CONSTRUCTION AND ARE CONNECTED TO ALL NEW SERVICES. ENSURE THESE SERVICES ARE INSPECTED BY THE CITY OF VICTORIA WORKS INSPECTOR.
- CONSTRUCT SEWER, DRAIN, WATER AND ROADS WITHIN PRIVATE PROPERTY IN ACCORDANCE WITH THE BC PLUMBING CODE AND BC BUILDING CODE. CONSTRUCTION SHALL BE INSPECTED AND APPROVED BY THE CITY OF VICTORIA INSPECTORS.
- DRIVEWAY TO BE TYPE B PER SCHEDULE B BYLAW 91-38; AND AS PER DRAWING SD-C7b.

SEWER AND DRAIN

- SEWER AND DRAIN SERVICE CONNECTIONS TO BE 150ø PVC DR28 AT A MINIMUM GRADE OF 2.0% COMPLETE WITH INSPECTION CHAMBERS. CATCH BASIN LEADS TO BE 150ø PVC DR28 UNLESS OTHERWISE NOTED. IF COVER IS LESS THAN 750mm, USE DUCTILE IRON PIPE.
- SEWER AND DRAIN PIPE UP TO AND INCLUDING 150mm DIAMETER TO BE PVC DR28 AND DR35 FOR 200mm DIAMETER AND OVER. PIPE TO BE C.S.A. APPROVED PVC.
- (1) THE CITY OF VICTORIA SHALL INSTALL THE SEWER AND DRAIN CONNECTIONS TO THE PROPERTY LINE AT THE DEVELOPER'S EXPENSE.
- CONNECT ALL ENCOUNTERED DRAINS TO THE PROPOSED SERVICE CONNECTION. CONTRACTOR TO RECORD THE LOCATION, ELEVATION, PIPE MATERIAL AND SIZE FOR THE AS CONSTRUCTED DRAWINGS.
- VIDEO INSPECT ALL INSTALLED SANITARY SEWER AND STORM DRAIN MAINS ON PUBLIC AND PRIVATE PROPERTY

WATER

- WATER MAIN PIPE TO BE PVC DR18 AWWA STANDARD C900 FOR ALL WATER MAINS 100mm TO 350mm DIAMETER AND PVC SERIES 200 FOR ALL WATER MAINS LESS THAN 100mm DIAMETER. PROVIDE 1.0m MINIMUM COVER.
- CONTRACTOR TO TEST, CHLORINATE, FLUSH AND CONNECT THE WATER MAINS UNDER THE DIRECTION OF THE ENGINEER. CHLORINATION AND DISINFECTION TO AWWA C651.
- CONTRACTOR TO ENSURE CHLORINE SOLUTIONS ARE NEUTRALIZED IN ACCORDANCE WITH THE MINISTRY OF ENVIRONMENT AND DEPARTMENT OF FISHERIES AND OCEANS CANADA REGULATIONS PRIOR TO DISCHARGING TO ANY DRAINAGE COURSE.
- (2) CITY OF VICTORIA FORCES SHALL CAP THE EXISTING SERVICES AND REMOVE THE WATER METER AT THE DEVELOPER'S EXPENSE.
- (3) THE CITY OF VICTORIA TO PROVIDE 100mm FIRE CONNECTION AND 50mm DOMESTIC WATER CONNECTION c/w 50mm METER TO PROPERTY LINE AT THE DEVELOPER'S EXPENSE.

ROAD

- CONSTRUCT ALL ROADWAYS AND CUL DE SACS IN ACCORDANCE WITH THE CITY OF VICTORIA STANDARD SPECIFICATIONS AND AS SHOWN ON THE TYPICAL SECTION AND DETAIL DRAWINGS.
- CONTRACTOR TO ENSURE EXISTING MONUMENTS ARE NOT DISTURBED DURING CONSTRUCTION. ANY MONUMENTS IN DANGER OF DISTURBANCE ARE TO BE REFERENCED BY AND, IF DISTURBED, BE REPLACED BY A B.C.L.S. AT THE CONTRACTOR'S EXPENSE.

PARKS

- OBTAIN A PARKS PERMIT FROM THE CITY OF VICTORIA PARKS DEPARTMENT PRIOR TO THE START OF ANY CONSTRUCTION.
- PROTECT ALL TREES EXCEPT THOSE TO BE REMOVED FROM DAMAGE DURING CONSTRUCTION.
- HAND DIG WHERE ROOTS OVER 50mm ARE ENCOUNTERED.
- OBTAIN PERMISSION FROM THE ENGINEER, DEVELOPER AND THE CITY OF VICTORIA PRIOR TO REMOVAL OF ANY TREES ON PRIVATE OR PUBLIC PROPERTY. A COPY OF THE TREE PERMIT SHALL BE PRESENTED TO THE CITY OF VICTORIA WORKS INSPECTOR PRIOR TO THE START OF ANY CONSTRUCTION.
- THE PROJECT ARBORIST TO BE RESPONSIBLE FOR SUPERVISING THE INSTALLATION OF BARRIER FENCING AT APPROPRIATE LOCATIONS.
- THE ARBORIST TO DIRECT THE REMOVAL OF TREES WITHIN THE SEWER AND DRAIN EASEMENTS AND RIGHT OF WAYS AND TO PRUNE ROOTS ENCOUNTERED DURING TRENCHING TO ENSURE THE PRESERVATION OF THE OAK TREES.
- THE ARBORIST TO DETERMINE THE SENSITIVE ROOT ZONES AREAS AND BE ONSITE TO SUPERVISE TRENCHING AND ROAD CONSTRUCTION.
- IRRIGATION SHOWN SCHEMATICALLY.

HYDRO, TELEPHONE, CABLE, STREET LIGHTING AND GAS

- CONTACT "B.C. ONE CALL" AT 1-800-474-6886 A MINIMUM OF THREE WORKING DAYS PRIOR TO START OF CONSTRUCTION.
- BC HYDRO, TELUS, SHAW CABLE AND FORTIS BC FACILITIES ARE SHOWN SCHEMATICALLY ON THIS DRAWING. REFER TO UTILITY COMPANY DRAWINGS FOR CONSTRUCTION DETAILS.
- CONSTRUCT HYDRO, TELEPHONE AND CABLEVISION AS SPECIFIED AND IN ACCORDANCE WITH BC HYDRO, TELUS AND SHAW CABLE STANDARD SPECIFICATIONS AND DRAWINGS.
- IF GAS IS REQUIRED, THE DEVELOPER IS TO CONTACT FORTIS BC AT 1-888-224-2710 A MINIMUM OF 90 DAYS PRIOR TO INSTALL.

WORKS AND SERVICES CHECK TABLE

	PLAN CHECKER	AUTHORIZED REPRESENTATIVE: COMPANY NAME	AUTHORIZED REPRESENTATIVE: SIGNATURE	DATE
UTILITY	HYDRO ELECTRIC CO.			
UTILITY	TELEPHONE CO.			
UTILITY	GAS CO.			
UTILITY	CABLE CO.			
UTILITY	FIBRE OPTIC CO.			
MUNICIPAL	UNDERGROUND UTILITIES			
MUNICIPAL	TRANSPORTATION DESIGN & INFRASTRUCTURE			
MUNICIPAL	LAND DEVELOPMENT			

LOCATION PLAN
N.T.S.

PROPOSED DEVELOPMENT OF LOT 996, VICTORIA CITY, AND THE EASTERLY 1/2 OF LOT 997 VICTORIA CITY.

1:200 0 4 12m

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND SERVICES ON THIS DRAWING MAY NOT BE ACCURATE OR COMPLETE. THE ACTUAL HORIZONTAL AND VERTICAL LOCATIONS MUST BE CONFIRMED BY UTILITY COMPANIES AND THE CONTRACTOR PRIOR TO THE TO THE START OF ANY EXCAVATIONS

LEGEND

WATER —W—	GAS —G—	EXISTING U/G UTL.	MANHOLE	HYDRANT	MONUMENT
SEWER —S—	CURB —C—	PROPOSED U/G UTL.	CLEANOUT	VALVE	LOT PIN
DRAIN —D—	SIDEWALK S/W	LIGHT STANDARD	CATCHBASIN	METER	LEAD PLUG
DITCH	EDGE PAVE.	POWER POLE	ROAD SIGN	REDUCER	
CULVERT	BUSHLINE	ANCHOR			
HEADWALL	TREE				

REVISIONS

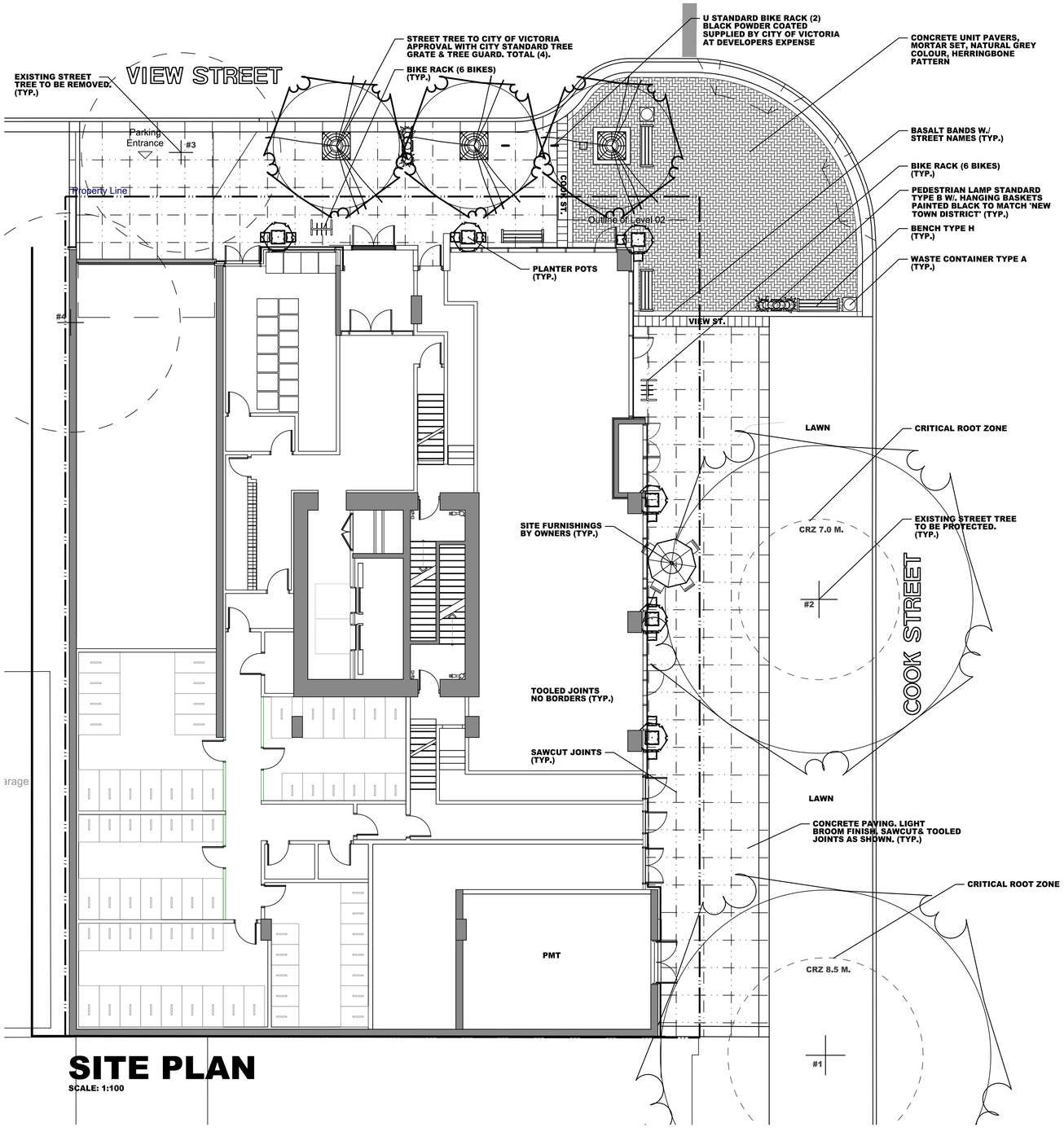
No.	DESCRIPTION	DATE	SIGN
4	ISSUED FOR DEVELOPMENT PERMIT	20.05.11	IY
3	REVISED DRIVEWAY, TRAFFIC SIGNALS ARMS, H/T/C	20.04.22	IY
2	REVISED DRIVEWAY, TRAFFIC SIGNAL ARMS	20.01.13	IY
1	REVISED DRIVEWAY	19.10.10	IY

DESIGNED	BC
DRAWN	IY
CHECKED	
DATE	AUGUST 2019
B.M.	9-1A
ELEV.	20.534
SCALE Horz.	1:250
Vert.	

WESTBROOK Consulting Ltd.
#115 - 866 Goldstream Ave., Victoria, BC V9B 0J3
Telephone: 250-391-8592 Facsimile: 250-391-8593

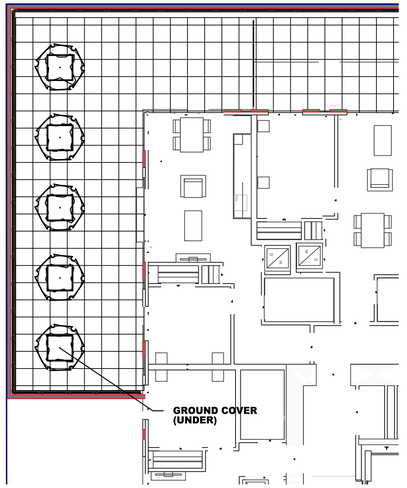
PROJECT
1150 COOK STREET
66 DEVELOPEMENT LTD
PRELIMINARY SITE SERVICING

WESTBROOK PROJECT No.	3426
GOVERNING AUTHORITY FILE No.	
SHEET	1 OF 1
REV.	4
WESTBROOK DRAWING No.	3426-01



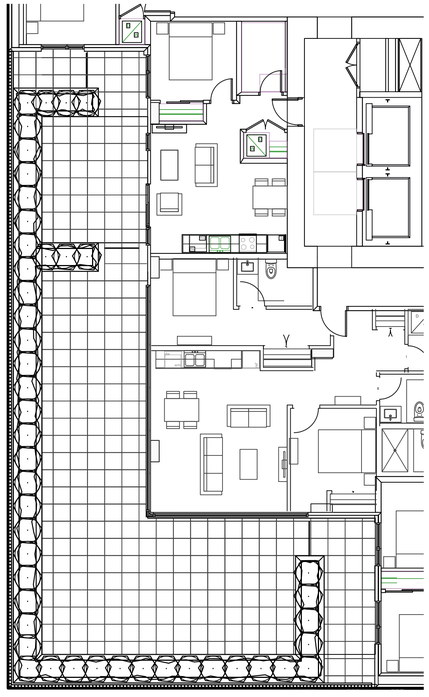
SITE PLAN

SCALE: 1:100



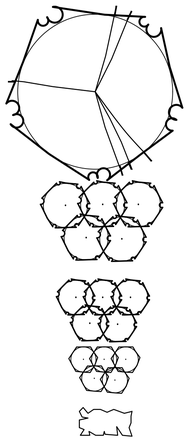
TERRACE PLAN L4

SCALE: 1:100



TERRACE PLAN L2

SCALE: 1:100



LEGEND

MEDIUM DECIDUOUS TREE TO BE A SELECTION OF: RED MAPLE, KATSURA TREE, HEDGE MAPLE, HONEY LOCUST, LITTLE LEAF LINDEN, TREMBLING ASPEN; SIZE 5 CM CAL.; APPROXIMATE NO. - 03

SPECIMEN SHRUB TO BE A SELECTION OF: RHODODENDRON (BL), VIBURNUM (BL), DECIDUOUS AZALEA (DEC), WILLOWLEAF COTONEASTER (BL), PORTUGESE LAUREL (BL), RUBRA ESCALLONIA (BL); SIZE 27 CM POT; APPROXIMATE NO. - 11

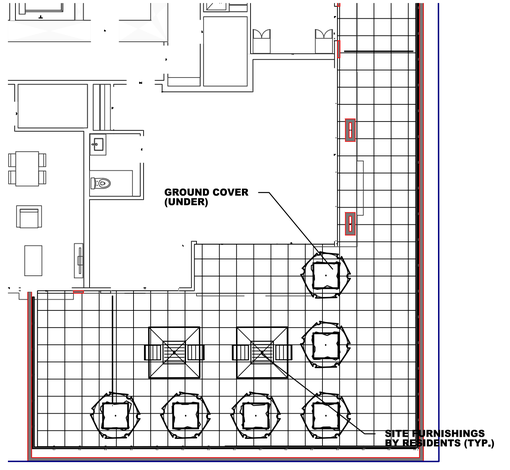
LARGE SHRUB TO BE A SELECTION OF: GLOSSY ABELIA (BL), PIERIS (BL), RHODODENDRON (BL), MEXICAN ORANGE (BL), DECIDUOUS AZALEA (DEC), COTONEASTER (BL), PORTUGESE LAUREL (BL), FIRETHORN (BL), HYDRANGEA (DEC); SIZE 27 CM POT; APPROXIMATE NO. - 06

MEDIUM SHRUB TO BE A SELECTION OF: RHODODENDRON (BL), JAPANESE AZALEA (BL), PINK ESCALLONIA (BL), BARBERRY (BL), BUXUS (BL), FERNS (BL); SIZE 21 CM POT; APPROXIMATE NO. - 47

GROUNDCOVER TO BE A SELECTION OF: PERIWINKLE PERIWINKLE (BL), KINNIKINNICK (BL), WINTERGREEN (BL), BEARBERRY (BL); SIZE 10 CM POT; APPROXIMATE NO. -

NOTES

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



AMENITY PLAN L4

SCALE: 1:100

NO.	DATE	BY	REVISION
01	JAN. 17/ 20	S.P.	PUBLIC REALM /LA
02	FEB. 19/ 20	S.P.	ARCHITECTURAL
03	APR. 29/ 20	S.P.	CITY COMMENTS
04	SEP. 28/ 20	S.P.	CITY COMMENTS

DRAWN: S.P.
CHECKED: J.P.
DATE: OCT. 23, 2019
DRAWING: 1150 CS - L1R10R3
FILE: 245 16 02

1:100

Lombard North Group
LOMBARD NORTH GROUP (BC) INC.
836 CORMORANT STREET,
VICTORIA, BRITISH COLUMBIA, V8W 1R1
TELEPHONE: (250) 386-3336
FAX: (250) 386-4132
EMAIL: lombard@shaw.ca

JOB NAME

1150 COOK STREET
VICTORIA, B.C.

CONSULTANT

LANDSCAPE PLAN

DRAWING NO. P1

NSDA
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A Corporate Partnership

November 6, 2020

Mayor Helps & Council
City of Victoria
City Hall
1 Centennial Square
Victoria, BC V8W 1P6

RE: 1150 Cook Street - Application for Development Permit
File: DVP No. 00130

Dear Mayor Helps and Council,

We are pleased to submit this letter on behalf of the project's developer, 66 Developments Ltd, to accompany their Application for a Development Permit for the above noted property.

Description of Proposal
The proposal is to develop the property within the existing zone of R-48 Harris Green District. The proposal also meets the goals and objectives for density and building height of the Core Residential designation within Victoria's Official Community Plan (OCP).

- Proposed Uses: A residential building with Ground Level commercial and bicycle parking uses
- Proposed Building Height: 47.57m and 16 storeys
- Proposed Setbacks

	Level 01	Level 02 & 03	Level 04	Level 05 -15
Front Yard (Cook Street)	1.7m	0.5m	3.4m	2.8m
Rear Yard	0.1m	0m	4.8m	4.8m
Side Yard North	1.9m	0m	3.7m	2.1m
Side Yard South	0.1m	0m	5.9m	5.9m

- Proposed Floor Space Ratio (Lot Area = 1,009m2): FSR = 7.78
- Type of Tenure Provided: Strata ownership
- Proposed Dwelling Units: 129 Units
- Parking provided: 41 stalls
- Bicycle Parking provided: 143 long-term spaces, 14 short-term spaces

Government Policies
1150 Cook Street is located in downtown Victoria within the Urban Core (Core Residential Designation) of the OCP. The development proposal aligns with Victoria's OCP values by ensuring an increase to the urban core housing stock, a strengthening of social resources and the public realm, and the reinforcement of downtown Victoria vibrancy through contemporary design and collaboration with city planners and community stakeholders.

The Core Residential Designation defines building forms of multi-unit residential buildings to be up to 20 storeys in height, with three- to five-storey podium facades to define the public realm. The theoretical density (R-48 has no defined FSR) calculated for the site is 9.69. As noted in the OCP, Harris Green is a key high-density residential neighbourhood in the Urban Core. With rising population growth and residents of Victoria looking for places to live and work, the proposed project for 1150 Cook Street will help to satisfy the burgeoning demand for medium to high residential densities within downtown Victoria.

Project Benefits and Amenities
Project benefits for this development will include an increase of the urban housing stock within the Core Residential Designation, streetscape upgrades to meet the transportation and pedestrian mobility requirements within the OCP and new commercial opportunities to better integrate and flourish with the local urban fabric.

Being able to accommodate the anticipated growth and density that the City of Victoria is projecting for the future allow the Harris Green Neighbourhood to benefit from an increase in a variety of residential housing stock.

Streetscape upgrades will be conducted to ensure continuous accessible design across the frontage as well as to meet Victoria's OCP and Victoria's Pedestrian Master Plan strategies. Commercial retail units at grade are proposed to offer amenities to the building residents as well as to better engage the local community. In addition, a social community gathering area is being suggested for the southwest corner of the intersection of Cook and View Streets.

Need and Demand
Development of the site is required to better reflect the growing urban landscape of downtown Victoria. In aligning with the OCP, the proposed mixed-use building will serve the needs of residents and the community. Planning guidelines and local demand will be met by providing a higher-density project, expanding local retail spaces, improving the vitality and livability of the public realm and offering a well-designed and contemporary built form within the Downtown Core Area.

Neighbourhood
1150 Cook Street is located at the southwest corner of Cook and View Streets. A long-time gas station brownfield site, it will be environmentally remediated as part of the proposed development. East of the subject property are multi-family buildings at 1020, 1039 and 1051 View Street. These buildings are 17, 11 and 9 levels, respectively. Immediately north of the site are car dealerships on both the east and west sides of Cook Street. There is currently a proposal with the City of Victoria for the car dealership across View Street to the North. That proposal contemplates over 400,000 sf of area and two towers of 17 and 19 storeys. To the south and west of the site are low rise office buildings.

The existing site warrants development based upon the dynamic status of the neighbourhood and the need to densify and improve the current streetscape and pedestrian realm. The proposed development will relate to the local neighbourhood by representing the visions and goals of the Harris Green Neighbourhood. A brownfield site will be re-invigorated with contemporary architecture and enhanced public realm.

City Staff and Community Consultation
The Developer has met with City staff on several occasions. Staff have been supportive of the project and collegial in assisting the development team in working through both functional building issues and aesthetic design. Given the relatively small size of the site, challenges exist. The collaborative manner in which staff have approached the project has been both refreshing and helpful. We are pleased that we have been able to maintain the initial design concept, while incorporating many of the functional necessities of such a building.

The Downtown Residents Association (DRA) was also consulted and provided valuable input. The increased landscaping on the podium and the community plaza at the corner of View and Cook Streets are, in part, responses to comments received from the DRA. Efforts from all stakeholders early in the process have generated an elegant building that is functional and community-facing.

Impacts
By engaging with the ground-orientated commercial retail units, benefiting from the increase in dwelling units for the area, utilizing the enhanced public realm and enjoying the contemporary streetscape and building design, the local community will experience a positive impact from the development. Neighbouring properties will experience an increase in activity and use and benefit from the positive impact to local commercial businesses.

Design and Development Permit Guidelines
1150 Cook falls within the DPA3(HC) Development Permit Area. The proposed development meets the stated purpose of revitalizing the area through a residential development with active commercial at street level. Multi-unit residential is encouraged in the form of mid-to-high-rise above ground-level commercial.

The proposal complies with these guidelines by helping to revitalize and animate Cook Street, enhancing appearance through high quality architecture responsive to the context, and enhancing the pedestrian experience through human scale urban design, compatible with street function.

Building Design
The building's mass is composed of three distinct elements: a ground level commercial base, a two-storey residential podium and a thirteen-storey residential tower above. The three lower levels combine to form the primary street wall along Cook Street, matching the height of the 3 storey office building to the South and the 3-storey apartment building across Fort Street.

The generous setback of the commercial frontage allows for additional public, weather-protected space along Cook Street. This space, in combination with proposed off-site improvements near the View Street corner will help achieve the enhanced pedestrian experience referred to in the above section.

Asymmetrically placed "Juliette" balconies framed by shadow boxes were used to add visual interest to East and West Facades. The design concept differentiates the top floor through the increase in the height of top floor windows, Juliette boxes and external room ceilings by 600 mm and the widening of the top horizontal band. The translucent glass railings located inboard will be attached to the inside of the step in the roof. The combined height of the raised outer roof and railing will now be approximately 1.8 m above the main roof, which will effectively screen most of the elevator mechanical penthouse and any roof mounted HVAC equipment.

With its slim floor plate, the tower component was configured as a vertical element, in contrast to the podium's horizontal character. A 1.7m shift in the tower's floor plate was introduced in order to further reinforce the vertical expression of North and South facades. The tower's strong presence at the corner of Cook and View streets serves as an important Downtown Core Area boundary marker.

Four fully developed building frontages are integral to the project. Natural light is abundant in every home and every home is extremely private. In addition to the luxury of two street frontages and a very wide Cook street boulevard, the view / light impact of the building to the West is limited due to its narrow profile and no inhabited room glazing oriented towards our project for the distance of approx. 100'. Further adding to the livability of our homes is that the building to the South is only 3 levels and it is unlikely to be developed in the near future, as it was recently fully renovated.

Unit orientation in four directions is fundamental to the project, given the small size of the site, point tower design, and the project's objective to create compact, efficient, livable and affordable units. The efficient central core is critical to the achievement of this goal through the reduction of common and internal unit circulation. Additionally, a centrally located core with wrap-around units is essential to the seismic design of the project.

Building Height and 1:5 Setback Ratio Line
The current R-48 zoning limits the maximum building height to 10 storeys and 30m. For this project, a height of 16 storeys and 47.57m is proposed, in conformance with applicable OCP Guidelines. Further, we believe this height is appropriate for the following reasons:

- The project's most immediate context includes existing buildings with heights ranging between 9 and 17 storeys and a proposed development with 17- and 19- storey towers
- The proposed height is reasonable in proportion to the 30m Cook Street width
- Additional height has little shadowing impact on Cook Street owing to its North-South alignment
- Helps reinforce the building's role as the Downtown Area gateway marker

We believe the above rationale also applies to the encroachment of upper storeys into the 1:5 setback ratio line. Stepping the building mass back at levels 11 – 12 would undermine the building's design intent and its role as an important urban marker along Cook Street. Additionally, our comprehensive analysis has shown that the adherence to the 1:5 setback would actually have a negative impact on Olympic Mountains views along Cook Street.

Safety and Security
Crime Prevention Through Environmental Design (CPTED) is important for this development as it will offer safety and security for residents and commercial users on-site. Strategies to reduce crime, the opportunity for crime, or the fear of crime which are to be implemented include:

- Dwelling units clustered together to create neighbour-to-neighbour surveillance
- Landscape design to allow clear, unobstructed views
- Walkway and entries are visible, well-lit and overlooked by windows
- Window constructed of clear glazing to overlook public/private spaces
- Glazed doors in stairwells and parkades lobbies, white or light colour paint schemes and elimination of dead ends and sharp corners
- Mixed use development to encourage the presence of people at all times
- Reduction of entrapment spots by the use of glazing in doors and windows
- Commercial units on the ground floor to create an active streetscape

Transportation
1150 Cook Street is located along the arterial of Cook Street. The project exceeds the R-48 zoning parking requirements and complies with requirements of the current Zoning Bylaw Schedule C-Off-Street Parking requirements for bicycles. Bicycle parking will be within a safe and secure facility, located at street level, making it easily accessible.

Increased bicycle usage by residents will be further facilitated through proximity to existing and future network of Greenways, including Fort Street bike lanes one block away and the soon-to-be-constructed bike lanes along Vancouver street.

Located on an arterial within the Urban Core of Downtown Victoria, public transportation opportunities are frequent. Although there are no vehicle parking requirements under the current zoning, and it is our hope that the primary modes of transportation for the future residents of the building will be foot and bike (given the proximity to the commercial core), approximately 40 parking stalls will be provided.

In summary, we believe this proposal offers significant benefits to residents of Victoria in terms of quality, livability and moderately priced accommodation. We also believe that, in its present form the project will, through its strong design make a significant contribution to the city's evolving urban fabric.

Design & Green Building Features

- Thoughtful and practical design of purpose-built rental and street level commercial
- Building design following the new BCBC 2018 Step Code
- Sensitive integration of the development at street level and positive definition of open space and landmark created at the upper levels.
- The podium encourages active retail use and reinforces the continuous street wall concept.
- High performance building envelope with durable and low maintenance cladding material. Reduced use of spandrel panels in favour of insulated metal panels.
- Minimized articulation of the exterior shell to reduce heat loss.
- Location of the taller section of the development closer to the outside perimeter of the site in order to increase sunlight penetration and enhanced privacy.
- Flexible outdoor common space on the podium roof designed to foster interaction within the community of the building.
- Landscape treatments to provide privacy for resident patios and buffer to the adjacent streets and neighbouring properties
- Site landscaping with use of low-flow, drip irrigation
- Site planting to utilize drought tolerant native or adaptive vegetation
- Energy-efficient lighting and electrical systems
- Low flush toilets and high efficiency plumbing fixtures
- High efficiency heat pump system for heating and cooling
- Construction waste management during construction

Yours truly,

NSDA Architects

Tom Staniszkis, Architect AIBC, AAA
Principal

cc. Dan Robbins, 66 Developments Ltd.

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A Corporate Partnership

Sept. 28, 2020

Charlotte Wain, Senior Planner
Development Services
City of Victoria
City Hall
1 Centennial Square
Victoria, BC V8W 1P6

RE: 1150 Cook Street
Application for Development Permit
File: DVP No. 00130

Dear Charlotte,

On behalf of our client, 66 Developments Ltd, we are pleased to submit this revision to our previous Development Permit Application for the above-noted property. This letter responds to the City of Victoria comments received July 16, 2020, the Advisory Design Panel meeting held July 22, 2020 and the Victoria Downtown Residents Association letter received Sept. 17, 2020.

With respect to the updated comments from the City of Victoria, we have had further discussions with BC Hydro and have received support for the hydro design as shown in our drawings. Parks' conditions prior to Committee of the Whole have been met.

Following is the motion made by Advisory Design Panel (see bold italics) and our response to each point.

Give further consideration and refinement to the detailing of the parapet railing, overall brightness and better integration to the overall building design.
To eliminate ADP's concern regarding the illuminated railing and to improve the building's top integration, the revised design concept differentiates the top floor through the increase in the height of top floor windows, Juliette boxes and external room ceilings by 600 mm and the widening of the top horizontal band. Further, following your suggestion we have added a top horizontal dark coloured band to accent the façade's termination.

The translucent glass railing has been moved inboard and will be attached to the inside of the step in the roof. The combined height of the raised outer roof and railing will now be approximately 1.8 m above the main roof, which will effectively screen most of the elevator mechanical penthouse and any roof mounted HVAC equipment.

Consideration for safety of ground floor and design of bike rooms.
Ground level safety has been thoroughly considered, including measures taken to ensure safety of bike rooms. A bike work bench has been added to the ground floor bike parking area.

Reconsideration of amenity space and locating it to help animate the Cook street frontage.
This was an excellent suggestion and one that has been achieved. The amenity space has been moved to the Cook Street frontage.

Consider the addition of trees in planters on the amenity room patio.
In conjunction with the revisions driven by the above suggestion, we have included planters on the amenity patio.

Consider revisions to paving to help enhance entrance.
Much collaboration and revisions have taken place in collaboration with City of Victoria staff regarding the streetscape and public realm. We remain flexible and look forward to working with staff to create a wonderful pedestrian experience.

The applicant to ensure the accuracy of the street trees to ensure their successful retention.
Accuracy has been ensured and successful retention is planned.

Further review and relaxation of setbacks to the south to improve livability of the south facing units to give them a balcony or an oblique view.
While an interesting idea with obvious benefits, further reduction of the setback to the south is at odds with recommendations from City of Victoria staff and the Downtown Residents Association wishes (see below). As such, the south setback has not been reduced.

Additional consideration for mechanical room to be integrated into overall building design and materiality.
This has been achieved in conjunction with the revisions to the termination of the building at the roof described above.

Regulate or standardize the size and pattern and colour of the metal panels.
Revisions to the façade have been made in order to further standardize the size and colour of the metal panels.

Lastly, in response to the Downtown Residents Association (DRA) letter a number of revisions and/or clarifications have been made. As suggested by the DRA, something other than a plain garage door is preferred. Please see the enlarged street level renderings. Similarly, as suggested by the DRA electric car charging stations make sense and are contemplated.

As for the west and south setbacks the building design has always met the required zoning setbacks and no setback variances are being requested. Further, the south setback over floors 11-15 has always been very close to 6m. By reducing the size of the south units by approximately 6 inches, the 6m building separation described in the DCAP guidelines is met. As such, the south units have been revised and the DRA-suggested 6m is achieved without significantly negatively impacting these homes.

With respect to the building separation to the west, while 6m is technically not achieved, separation and livability are considerable. The building to the west has no habitable glazing facing our building for

NSDA
ARCHITECTS

approximately 100 feet. Due to context and orientation, daylight penetration and privacy are not adversely affected. Because the building adjacent to the west has considerable life, this will be the case for decades to come. That is, now and for the foreseeable future, exceptional separation and livability are achieved.

We trust this letter adequately describes project revisions made since our last Development Permit re-submission dated May 4, 2020 and we look forward to the application proceeding to Council for its deliberation and approval.

Yours truly,

NSDA Architects

Tom Staniszkis, Architect AIBC, AAA

cc. Dan Robbins, 66 Developments Ltd

Advisory Design Panel Report
For the Meeting of July 22, 2020

To: Advisory Design Panel **Date:** July 8, 2020

From: Charlotte Wain, Senior Planner - Urban Design

Subject: **Development Permit with Variances Application No. 00130 for 1150 Cook Street**

EXECUTIVE SUMMARY

The Advisory Design Panel (ADP) is requested to review a Development Permit with Variances Application for 1150 Cook Street and provide advice to Council.

The proposal is to construct a 16-storey, mixed-use building with ground-floor retail and residential above, including approximately 129 dwelling units. The overall proposed density is 7.78:1 floor space ratio (FSR). Variances related to height, number of storeys and short-term bicycle parking are also proposed as part of the Development Permit Application.

Staff consider that the proposal is generally consistent with the use, density and height envisioned in the *Official Community Plan* and *Downtown Core Area Plan (DCAP)*.

The proposal is generally consistent with the applicable Design Guidelines outlined in the Development Permit Area, although some deviations from the guidelines are being proposed. Staff are looking for commentary from the Advisory Design Panel with regard to:

- building separation distances
- relationship to the street
- building setback and street trees
- overall expression of the building, with particular attention to the roof termination
- any other aspects of the proposal on which the ADP chooses to comment.

The Options section of this report provides guidance on possible recommendations that the Panel may make, or use as a basis to modify, in providing advice on this application.

BACKGROUND

Applicant: Mr. Dan Robbins
Sakura Developments

Architect: Mr. Tom Staniszkis, AIBC
NSDA Architects

Development Permit Area: Development Permit Area 3 (HC), Core Mixed Use Residential

Heritage Status: N/A

Description of Proposal

The proposal is to construct a high-rise mixed-use building at approximately 16 storeys with one commercial unit on the ground floor and approximately 129 residential units above. The proposed density of the development is 7.78:1 FSR. The proposed height is approximately 47.57m.

The proposal includes the following major design components:

- 129 multiple dwelling units, including studio, one-bedroom and two-bedroom units
- one commercial unit at the corner of View Street and Cook Street
- outdoor shared residential amenity space located on level two
- the main residential building lobby entrance on Johnson Street
- publicly accessible short-term bike parking located near the commercial entrance on Cook Street
- secure long-term bike parking located on the main floor, with an exit door facing Cook Street
- vehicle parking and servicing located within the building
- public realm streetscape improvements on View and Cook Streets.

The following data table compares the proposal with the existing R-48 Zone, Harris Green District. An asterisk is used to identify where the proposal is less stringent than the existing Zone. Additionally, the key City policy that pertains to the area has been included in this table.

Zoning Criteria	Proposal	Zone Standard R-48	OCP Policy	DCAP
Site area (m^2) – minimum	1009.20	N/A	-	-
Density (Floor Space Ratio) – maximum	7.78:1	N/A	-	5.5:1
Total floor area (m^2) – maximum	7855.45	N/A	-	-
Height (m) – maximum	**47.57***	30	-	45
Storeys – maximum	**16***	10	20	15 (residential) 11 (commercial)
Site coverage (%) – maximum	86	N/A	-	-
Open site space (%) – minimum	14	N/A	-	-
Setbacks (m) – minimum				

Zoning Criteria	Proposal	Zone Standard R-48	OCP Policy	DCAP
Front (Cook Street)	0.5	0.5	-	-
Rear	0.0	0.0		See Building Separation Guidelines
Side (S)	0.0	0.0		See Building Separation Guidelines
Side (N)	0.0	0.0		-
Vehicle parking – minimum	41	0	-	-
Visitor vehicle parking - minimum	0	0	-	-
Bicycle parking stalls – minimum				
Short Term	**6***	14	-	-
Long Term	143	143	-	-

Sustainability Features

No sustainability features have been identified in the applicant's letter.

Consistency with Policies and Design Guidelines

Official Community Plan

The subject site is designated Core Residential in the *Official Community Plan* (OCP, 2012), which envisions multi-unit residential, commercial and mixed-use buildings from three storeys up to approximately twenty storeys. In terms of place character features, the OCP envisions three to five-storey building façades that define the street wall, with upper storeys set back above.

The main objectives of the Development Permit Area 3 (HC): Core Mixed-Use Residential that are relevant to this proposal are:

- to transform the function, form and character of the Core Residential area through mid-to-high rise residential mixed-use and commercial buildings, with greatest heights along Yates and Blanshard Street…
- to conserve heritage value, special character and the significant historic buildings, features and characteristics of this area
- to enhance the area through a high quality of architecture, landscape and urban design that reflects the function of a major residential centre on the edge of a central business district in scale, massing and character while responding to its context of a skyline with prominent heritage landmark buildings.

Staff consider that the proposal is generally consistent with the use, density and height envisioned in the OCP.

Downtown Core Area Plan

The subject site is designated Residential Mixed-Use District in the *Downtown Core Area Plan* (DCAP, 2011), which envisions multi-residential development up to a height of 45m. The base density for a mixed-use development is a floor space ratio of 3:1 and a maximum of 5.5:1.

Staff consider that the proposal is generally consistent with the use, density and height envisioned in the DCAP.

Development Permit Area Design Guidelines

The property is situated in Development Permit Area 3 (HC): Core Mixed-Use Residential and the following documents were considered in assessing this application:

- *Official Community Plan* (OCP, 2012)
- *Downtown Core Area Plan* (2011)
- *Advisory Design Guidelines for Buildings, Signs and Awnings* (2006)
- *Guidelines for Fences, Gates and Shutters* (2010).

The Design Guidelines in the DCAP encourage multi-unit residential development appropriate to the context of the neighbourhood and reflects the differences in allowable building heights and densities. Staff consider that the proposal is generally consistent with the Design Guidelines.

ISSUES AND ANALYSIS

The following sections identify and provide a brief analysis of the areas where the Panel is requested to provide commentary. The Panel is being asked to comment on the impacts and potential design solutions regarding built form massing, separation distances, relationship to the street and overall expression of the building, with particular attention to the roof termination.

Built Form Massing

DCAP includes a number of design guidelines related to built form which includes reducing the building bulk of upper storeys to minimize the effects of shading, wind vortices, to maintain views to the open sky and to avoid the presence of bulky upper building mass. Cook Street also has views to the Olympic Mountains to the south, which the guidelines seek to protect. Minor deviations to the guidelines are proposed. The proposed secondary street wall (tower) along Cook Street is 2.8m (0.2m below the recommended 3m) from the property line. In addition, the upper storeys on levels 11-15 encroach into the 1:5 building setback ratio along Cook Street and View Street. ADP is invited to comment on the overall built form and massing, and the inconsistencies with the guidelines.

Building Separation Distances

To address privacy issues and open-up views between buildings, the street wall guidelines in the DCAP require a 3m side and rear yard setback to the exterior wall for portions of the building up to 30m in height (excluding the podium), and a 6m side yard setback for portions of the building above 30m (levels 11 – 15). For balconies, the setback should be 3.5m up to 30m and 5.5m above 30m. The guidelines also state that additional clearances for windows are encouraged to

enhance livability for residential uses where feasible. The proposal does not fully meet the requirements as follows:

- West (rear setbacks) for levels 11-15 are approximately 1m below the recommended setbacks for exterior walls and balconies.
- South (side setbacks) levels 11-15 are approximately 0.1m below the recommended setbacks for exterior walls the balconies.

Although these deviations may appear minor, the four fully developed frontages may limit the redevelopment potential of adjacent lots, in particular 1106 Cook Street to the south. Commentary from ADP is requested on the separation distances and whether further setbacks are warranted.

Relationship to the Street

As outlined in the design guidelines, new buildings should be designed to relate well to public streets and sidewalks. Buildings should also have quality architectural materials and detailing in building bases and street walls. The limited and inconsistent detail provided on the architectural elevations, renders and material sheet has impeded the staff review on whether a positive pedestrian experience would be achieved along View and Cook Streets. In addition, the site plan indicates a gas meter on Cook Street with "decorative metal gates" but insufficient detail has been included on the elevations to fully review this aspect of the design. No detail has been provided for the proposed soffit materials and since the building overhang above the ground floor is significant, this would likely play a key role in the creation of a pleasant streetscape.

Almost half of the frontage along View Street is dedicated to vehicle access and a garbage room, and a large portion of the frontage along Cook Street includes access to mechanical rooms and a gas meter enclosure. Staff have concerns that the configuration of the BC Hydro Pad Mounted Transformer (PMT) may not be compliant with current specifications, and if revisions are required this would likely exacerbate the negative impacts on the Cook Street frontage.

ADP is invited to comment on the overall design of the ground floor as it relates to the pedestrian experience, recognizing that further detail may be warranted.

Building Setback and Street Trees

Cook Street is identified as a commercial street in the DCAP. The general design criteria for these streets encourages a single row of trees on both sides of the right-of-way (ROW) to enhance the pedestrian realm. The canopy from the continuous row of mature horse chestnut trees along Cook Street is seen as a valuable asset to the overall pedestrian experience. Staff have concerns that insufficient building and balcony setbacks have been provided along Cook Street with decks and balconies for levels 2-4 approximately 0.5m from the property line. Although these setbacks are technically within the DCAP guidelines, the proposal may impact the future growth of the trees and create potential Crime Prevention Through Environmental Design (CPTED) challenges associated with the close proximity of branches to balconies. In addition, the current section drawings do not appear to show the street tree locations accurately, therefore the impact of the proposal on the street trees may be magnified. Design revisions are warranted that may include increased building and balcony setbacks or off-setting balconies to ensure the street trees can feasibly be maintained. Commentary from ADP is requested on the appropriateness of the proposed building setbacks along Cook Street.

Architectural Expression

The design guidelines encourage buildings to have clearly defined base, middle and top. While the podium is clearly distinguished and complimentary to the tower, the overall termination of the building appears unfinished. The applicant has responded to staff comments by included an illuminated glass guardrail that would create a "halo" effect at nighttime. Vegetation was originally proposed but has been removed in the latest design iteration, since the roof is not intended to be used as an amenity space. Staff are of the opinion that the termination of the building warrants further design refinement and ADP is invited to comment on this aspect.

OPTIONS

The following are three potential options that the Panel may consider using or modifying in formulating a recommendation to Council:

Option One

That the Advisory Design Panel recommend to Council that Development Permit with Variances Application No.00130 for 1150 Cook Street be approved as presented.

Option Two

That the Advisory Design Panel recommend to Council that Development Permit with Variances Application No.00130 for 1150 Cook Street be approved with the following changes:

- as listed by the ADP.

Option Three

That the Advisory Design Panel recommend to Council that Development Permit with Variances Application No.00130 for 1150 Cook Street does not sufficiently meet the applicable design guidelines and polices and should be declined (and that the key areas that should be revised include:)

- as listed by the ADP, if there is further advice on how the application could be improved.

ATTACHMENTS

- Subject Map
- Aerial Map
- Plans date stamped July 8, 2020
- Applicant's letter dated July 8, 2020.

cc: Dan Robbins, Sakura Developments, Applicant; Tom Staniszkis, NSDA Architects.

MINUTES OF THE ADVISORY DESIGN PANEL MEETING HELD WEDNESDAY JULY 22, 2020

1. THE CHAIR CALLED THE MEETING TO ORDER AT 12:00 PM

Present:	Marilyn Palmer (Chair), Brad Forth, Joseph Kardum, Devon Skinner, Sean Partlow, Ben Smith, Ruth Dollinger, Trish Piwowar
Absent:	Matty Jardine
Absent for Portion:	Marilyn Palmer, Trish Piwowar
Staff Present:	Charlotte Wain – Senior Planner, Urban Design Miko Betanzo – Senior Planner, Urban Design Chelsea Medd – Planner Alena Hickman – Secretary

2. APPLICATIONS

2.1 Development Permit with Variances Application No. 00130 for 1150 Cook Street

The City is considering a Development Permit with Variance Application for a 16-storey, mixed use building with ground-floor retail and residential above, including 129 dwelling units.

Applicant meeting attendees:

DANIEL ROBBBINS	SAKURA DEVELOPMENTS
TOM STANISZKIS	ARCHITECT
MICHAEL MARCUCCI	TALBOT MACKENZIE & ASSOCIATES

Sean Partlow recused himself from Application No.00130 for 1150 Cook Street

Charlotte Wain provided the Panel with a brief introduction of the application and the areas that Council is seeking advice on, including the following:

- building separation distances
- relationship to the street
- building setback and street trees
- overall expression of the building, with particular attention to the roof termination
- any other aspects of the proposal on which the ADP chooses to comment.

Tom Staniszis provided the Panel with a detailed presentation of the site and context of the proposal.

The Panel asked the following questions of clarification:

- Why do some of the smaller units have no balconies?
    - All units have Juliette style balconies, the two-bedroom units have balconies
- Did you considered planter boxes on some of the smaller roof decks to contain trees?
    - Yes, but there is very limited access for that to be maintained by the strata, there is no direct access to that level from the core.
- Are you adding new trees on View Street?
    - Yes
- Was it purposeful to have no colour incorporated into the building?
    - Yes, the colour pallet is deliberate
- What drove the decision for the amenity space to be on the south west corner?
    - That space was available. It was a good location because we have exposure to a lot of sunlight. This gives opportunity for planting options as well.
- Are you concerned about bird safety on the roof because of your choice of glass?
    - The glass is translucent not transparent so there should not be an issue.
- What thought was given to the treatment of soffit at street level?
    - We have the concrete curb and the painted white panels, the under side of the soffit there is about 15ft wide. The transformer needs to be accessible from the street. We will also have planters along the edge will also help break it up.
- Did you look at other types of materiality other than the glazing for the top of the roof and screening purposes?
    - We spent a lot of time dealing with this element. There is a roof behind it, we didn't want to step it back. There are only so many different types of materials to use, we could possibly extend the glazing, that is an option.
- Did you consider safety issues around the bike locker space on the ground floor?
    - Each room is separate which is typical, this limits the amount of people and bikes per space. There will also be surveillance cameras in all public spaces. We could glaze these walls for more privacy.
- Can you speak to any sustainability components?
    - We are using the Juliette balconies to limit concrete slabs. Other balconies are elevated and supported by steal brackets, so we are able to insulate building edges and add exterior insulation to walls.
- There are some direct interfaces, are there windows on that buildings east facing wall?
    - Yes, a couple small windows.
- Has there been any thought given to that south unit and that south interface, since there may be another development come up in time?
    - We would expect that they would require the same setbacks as we have, the space is not unreasonable.

- Have you looked at other ways of highlighting the termination of the building given that you are requesting the building be so much taller?
    - We did explore several options; the only other reasonable option would be to step it back.

Panel members discussed:

- Concern with termination at the top of the building
- Concern with extension of the building structure and the parapet
- Appreciation for the design of the building
- Concern with the colour pallet
- Satisfied with the streetscape
- Would like to see some tree planters on the amenity room patio
- Appreciation for the massing of the podium
- Would like to see the amenity room moved to Cook street side
- Lack of texture on the podium
- Like the corner with upgraded paving of the landscaping and would like to see to stretched further
- Better integration with neighbourhood
- Concern with the trees facing units on level two and three
- Consider the re-design of the bike area
- Further design refinement.

Motion:

It was moved by Brad Forth, seconded by Ruth Dollinger, that the Development Permit with Variances Application No. 00130 for 1150 Cook Street be approved with the following changes:

- give further consideration and refinement to the detailing of the parapet railing, overall brightness and better integration to the overall building design
- consideration for safety of ground floor and design of bike rooms
- reconsideration of amenity space and locating it to help animate the Cook street frontage
- consider the addition of trees in planters on the amenity room patio
- consider revisions to paving to help enhance entrance
- the applicant to ensure the accuracy of the street trees to ensure their successful retention
- further review and relaxation of setbacks to the south to improve livability of the south facing units to give them a balcony or an oblique view
- additional consideration for mechanical room to be integrated into overall building design and materiality
- regulate or standardize the size and pattern and colour of the metal panels

Carried Unanimously

Talbot Mackenzie & Associates
Consulting Arborists

1150 Cook St, Victoria

Construction Impact Assessment &

Tree Preservation Plan

Prepared For:	66 Developments Ltd.
Prepared By:	Talbot, Mackenzie & Associates Michael Marcucci ISA Certified # ON-1943A TRAQ – Qualified
Date of Issuance:	February 18, 2020 (for review) February 19, 2020
Reissued:	May 12, 2020 (revisions within the May 12, 2020 report are marked with a red asterisk *)

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Ph: (250) 479-8733
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Email: tmtreehelp@gmail.com

Talbot Mackenzie & Associates

Consulting Arborists

Jobsite Property: 1150 Cook St, Victoria, BC

Date of Site Visit(s): May 1, 2019 and January, 2020

Site Conditions: No ongoing construction activity.

Summary:

- *This May 12, 2020 report includes the following changes: the location of the water service has shifted 0.5m north towards Horse Chestnut #1 (as a result of CoV Engineering requirements), supplemental watering recommendations have been added and possible BC Hydro requirements have been commented on. If BC Hydro requires underground infrastructure throughout the entire frontage of the site, this could result in significant impacts to at least Chestnut #1.
- The proposal includes constructing a 15-storey condominium and retail tower with underground parking.
- One municipal boulevard flowering plum tree #3 (44cm DBH) and one bylaw protected Elm tree #4 (47cm DBH) are proposed for removal.
- Both Horse Chestnuts on the Cook St boulevard can be retained if our recommendations are followed. We do not anticipate that the canopy loss or root loss will result in either tree declining.
- Horse Chestnut #2 will require clearance pruning from the balconies resulting in approximately 15-20% of its remaining canopy being removed (the canopy has already been severely pruned into a V-shape due to the overhead hydro lines). The overall form will likely look similar to other chestnut trees along Cook St that have been pruned for building clearance and overhead hydro lines.

Scope of Assignment:

- Inventory the existing bylaw protected trees and any trees on municipal or neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line
- Review the proposal to demolish the existing building and construct a 15-storey condominium and retail tower with underground parking.
- Comment on how construction activity may impact existing trees
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts

Methodology:

- We visually examined the four trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet. Trees were assigned an identification number, but no trees were tagged.
- Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory.
- *The conclusions reached were based on the information provided within the attached plans from NSDA Architects (Issued for DP, dated May 4, 2020), the Preliminary Servicing Plan (Westbrook Consulting, 20.05.11) and Landscape Plan (Lombard North, April 29, 2020)
- A Tree Protection Site Plan was created using the Servicing Plan provided.

Limitations:

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

- * The proposed location of gas, hydro and telecommunications services has not been confirmed. It is our understanding, based on discussions with the applicant, that BC Hydro will likely install a new hydro pole between the canopies of the two Horse Chestnut trees on Cook St (it is shown on the civil drawings, but the final location is yet to be confirmed by BC Hydro). If BC Hydro requires a new underground duct be installed along the frontage on Cook St (to "future-proof" the frontage), this could have significant health impacts on the trees.

Summary of Tree Resource: There are 3 boulevard trees on the municipal frontage (two chestnuts on Cook St and one plum tree on View St) and one bylaw protected tree on private property (Elm #4).

Trees to be Removed

The following trees will require removal due to construction related impacts:

- #3 Purple Leaf Plum (44cm DBH) – This municipal boulevard tree is located within the proposed driveway entrance.

- #4 Elm (47cm DBH) – This bylaw protected tree is located within the proposed building.

Potential Impacts on Trees

#2 Horse Chestnut (70cm DBH)

This tree is located north of the existing driveway on the Cook St. boulevard. The underground parkade will extend to the property line, 5m west from the centre of the tree. The architect and geotechnical engineer have confirmed that shoring will take place on private property only and over-excavation into municipal property will not be necessary. The asphalt portion of the sidewalk is currently upheaving (likely due to roots) and these cracks extend into private property (Picture #1). Therefore, root loss is expected, especially as Horse Chestnut trees typically have widespread and aggressive root systems. However, considering the relatively small portion of the critical root zone affected (~15%), we anticipate the root loss will not cause a significant health impact (if significant root loss is avoided during curb and sidewalk replacement).

The canopy of the tree has been severely pruned into a V-shape due to the clearance pruning for the overhead hydro lines. As a result, a larger proportion of the remaining canopy is growing over private property. The balconies will extend to 60cm from the property line resulting in approximately 15-20% of the remaining canopy being removed (depending on the desired and allowed clearance distance from the building and final cut locations). All pruning wounds are likely to be less than 10cm in diameter. We recommend the pruning take place at the framing stage of the project and be completed by an ISA Certified Arborist.

We do not anticipate the tree will decline as a result of the pruning; the form will look similar to the form of the Horse Chestnut trees located south of Horse Chestnut #1 on Cook St (Picture #3). The approximate location of the balcony and expected pruning is shown in Picture #4.

* **Supplemental Watering:** The City of Victoria Parks department has requested supplemental watering of the horse chestnut trees within the boulevard due to the expected changes in site hydrology as a result of the underground parkade excavation. The project arborist should be consulted to determine the frequency of watering, which will be dependent on the time of year construction is taking place. Soil moisture levels should be checked periodically and the watering schedule adjusted accordingly. Supplemental watering will be particularly beneficial during periods of drought in the spring and summer months. If construction occurs during this time, watering once or twice a week would help the tree compensate for the changes in hydrology as well as root loss. Watering should continue until irrigation is installed and functioning. Generally, less frequent but deep and prolonged watering is better than frequent shallow watering in order for the water to penetrate deep into the soil horizons.

Curb Replacement

To minimize impacts to the Horse Chestnuts, if curb replacement is required, we recommend the project arborist supervise the removal of the existing curb and the excavation associated with constructing the new curb. The supervising arborist may recommend working room and curb excavation depths be minimized to preserve significant roots.

Removal of existing driveway – This should be supervised by the project arborist to ensure roots below are not damaged. Depending on when service installation is expected to take place, the project arborist may recommend that portions of the driveway be left in place until close to the end of construction to protect the roots underneath.

Sidewalk Replacement

The asphalt portion of the sidewalk on municipal property is currently cracking in places, indicating potential locations of surface roots from chestnut #2. If the sidewalk requires replacement in this area, to avoid significant root loss, we recommend the guidelines in our "Paved Surfaces Above Tree Roots" specifications be followed. If a greater depth of base material and concrete is desired, this may require the finished grade of the sidewalk be raised above existing grade. Final grading plans of the paved areas outside the retail spaces should take this into account (e.g. if a slope away from the building is desired, the ground floor elevation may have to be raised above the grade of the sidewalk).

*** Services**

All of the services shown on the plans (water, sanitary and storm) have been located outside the critical root zones of the horse chestnut trees with the exception of underground hydro and telecommunications services, which are shown north-west of Chestnut #1. BC hydro has not confirmed the exact location of the proposed pole; locating it as close to the other services while avoiding canopy pruning would be the least impact to the trees. According to the architect, the telecommunication ducts can run immediately west into the building and north to the communications room (instead of within the sidewalk north of the pole).

The water, storm and sanitary services have been located approximately halfway between each of the chestnuts to minimize impacts. Previous iterations of the servicing plan showed the water line 1m north from the storm and sanitary services. Victoria Engineering has requested the water line be located 1.5m from these other services and the current drawing has been revised to show this. With the closest services approximately 8m from each of the chestnut trees, we do not anticipate the root loss will have a significant health impact. The gas line is proposed 9m north of horse chestnut #2 (location to be confirmed by Fortis).

Even though some services are outside their critical root zones, we recommend the project arborist review the excavation prior to backfilling in order to prune any roots severed (as chestnuts typically have wide-spreading root systems).


Picture #1 (left) showing the cracks likely caused by roots of Horse Chestnut #2. All roots within private property will be removed due to the underground parkade excavation to the property line (the edge of the concrete sidewalk at the top and bottom of the photo).

Picture #2 (right) showing the overall V-shaped canopy of chestnut #2. The red line indicates the approximate location of the balconies and the blue line indicates the property line; pruning to the property line would provide 60cm of clearance from the balconies.

Picture #3 showing the Horse Chestnut tree south of the subject property (south of Horse Chestnut #1), on Cook St just north of Fort St. Like many of the chestnut trees along Cook St, this tree has been pruned back beyond the property line for building clearance. The overall form is representative of what Horse Chestnut #2 will likely look like in the future, if the development proceeds. However, in the case of the tree in this picture, the pruning cuts have been made even farther away from the property line then would be necessary for Horse Chestnut #2.

Picture #4: The red line indicates the location of the balconies and the minimum amount of canopy loss. 60cm of clearance from the building would result in pruning cuts made at or behind the property line (blue line).

#1 Horse Chestnut (84cm DBH) – No to minimal canopy pruning is anticipated for this tree. Root loss is expected to be minimal as a result of the underground parkade excavation on private property (less than 10% of the critical root zone will be impacted).

* Additional root loss will occur as a result of the underground hydro and telecommunications services, but we anticipate the tree will recover from this root loss (if they are located as shown on the preliminary servicing drawing).

Mitigation Measures

- **Arborist Supervision**: All excavation occurring within the critical root zones of protected trees should be completed under the direction or supervision of the project arborist. This includes (but is not limited to) the following activities within CRZs:

    - Underground parkade excavation
    - Removal of the existing driveway
    - Installation of the gas, sewer, storm, water, hydro, and telecommunications services
    - * Installation of the irrigation system
    - * Curb and road replacement

- **Pruning Roots:** Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Backfilling the excavated area around the roots should be done as soon as possible to keep the roots moist and aid in root regeneration. Ideally, the area surrounding exposed roots should be watered; this is particularly important if excavation occurs or the roots are exposed during a period of drought. This can be accomplished in a number of ways, including wrapping the roots in burlap or installing a root curtain of wire mesh lined with burlap, and watering the area periodically throughout the construction process.

- **Barrier fencing:** The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones.

  The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

- **Minimizing Soil Compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one or a combination of the following methods (depending on the size of machinery and the frequency of use):

    - Placing a layer of geogrid (such as Combigrid 30/30) over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top or a layer of hog fuel or

coarse wood chips at least 30 cm in depth and maintaining it in good condition until construction is complete.
- Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
- Placing two layers of 19mm plywood.
- Placing steel plates

- **Paved Surfaces Above Tree Roots (sidewalk):**

  If the new paved surfaces within the CRZ of retained trees require excavation down to bearing soil, this could impact the health or stability of the retained trees. If tree retention is desired, a raised paved surface should be constructed in the areas within the critical root zone of the trees.

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

  Within the CRZs, the project arborist should supervise any excavation associated with constructing these hard surfaces, including the removal of the existing paving. If an excavator machine is used, the project arborist may recommend this be completed in combination with hand-digging and using a flat-edged bucket to avoid accidental root damage.

  If significant roots are encountered, excavation should be stopped. Depending on the base material exposed and the desires of the municipality, a geogrid material (such as CombiGrid 30/30 or similar) could be placed over the area to reduce compaction and to disperse weight over soils high in organics and roots. The new base material for the paving should be placed above this material. Ultimately, a geotechnical engineer should be consulted and in consultation with the project arborist, may specify their own materials and methods that are specific to the site's grading, soil conditions and requirements, while also avoiding root loss and reducing compaction to the sub-grade.

- **Mulching**: Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.

- **Blasting:** Care must be taken to ensure that the area of blasting does not extend beyond the necessary footprints and into the critical root zones of surrounding trees. The use of small low-concussion charges and multiple small charges designed to pre-shear the rock face will reduce fracturing, ground vibration, and overall impact on the surrounding environment. Only explosives of low phytotoxicity and techniques that minimize tree damage should be used.

Provisions must be made to ensure that blasted rock and debris are stored away from the critical root zones of trees.

- **Scaffolding:** This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see "Minimizing Soil Compaction" section).

- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.

- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
    - Locating the barrier fencing
    - Reviewing the report with the project foreman or site supervisor
    - Locating work zones, where required
    - Supervising any excavation within the critical root zones of trees to be retained
    - Reviewing and advising of any pruning requirements for machine clearances

- **Review and site meeting**: Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

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

Thank you,

Michael Marcucci
ISA Certified # ON-1943A
TRAQ – Qualified

Talbot Mackenzie & Associates
ISA Certified Consulting Arborists

Attached:
1-page tree resource spreadsheet
1-page tree protection site plan
1-page Preliminary Servicing Plan
1-page architectural site plan
1-page Landscape Plan
1-page paved surfaces specification
1-page barrier fencing specification
2-page tree resource spreadsheet methodology and definitions

Disclosure Statement

The tree inventory attached to the Tree Preservation Plan can be characterized as a limited visual assessment from the ground and should not be interpreted as a "risk assessment" of the trees included.

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

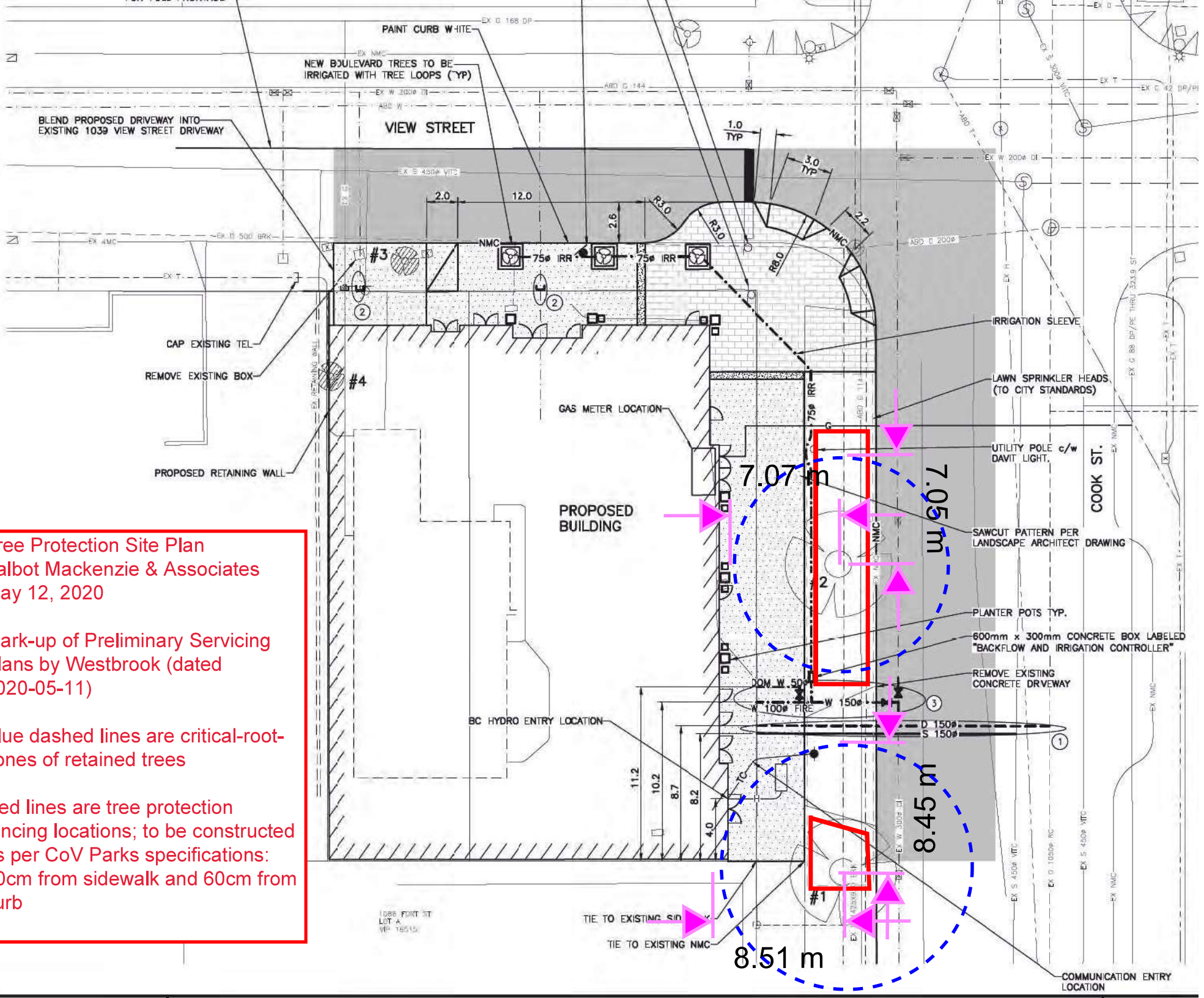
Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk. Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

Inventory date: May 1, 2019

1150 Cook St, Victoria
Tree Resource Spreadsheet

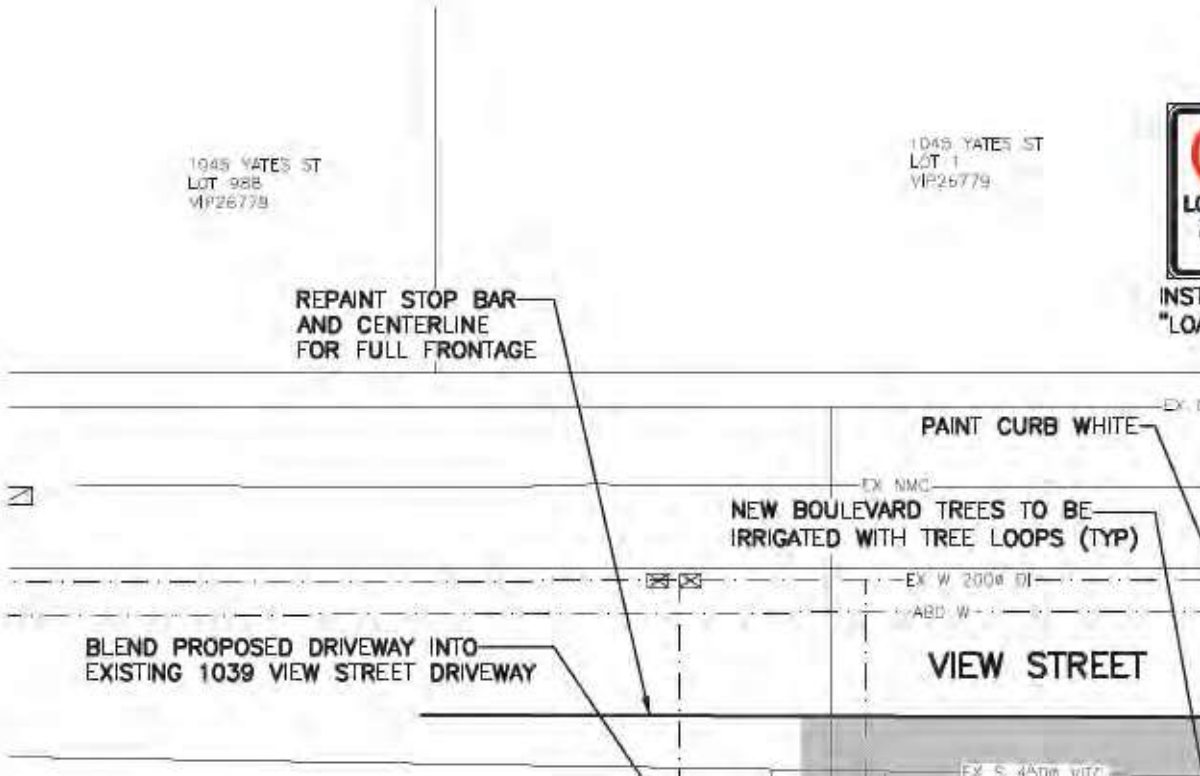
Tree ID (no tags)	Common Name	Latin Name	DBH (cm)	Crown Spread (diameter in metres)	CRZ (radius in metres)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Pro per 2
1	Horse Chestnut	*Aesculus hippocastanum*	84.0	16.0	8.5	G	Fair	Fair/poor	Municipal boulevard tree (ID#26194). South of existing driveway on Cook St. Codominant unions at 3m with extended limbs due to V-shaped canopy; significant clearance pruning for hydro lines above. Multiple cavities at old pruning wounds. Dead limb on east side and small amount of twig dieback throughout canopy.	Pr
2	Horse Chestnut	*Aesculus hippocastanum*	70.0	17.0	7.0	G	Fair	Fair/poor	Municipal boulevard tree (ID#26193) North of existing driveway on Cook St. Codominant unions at 3m. V-shaped canopy due to significant clearance pruning for hydro lines above. Large pruning wounds. Crossing limbs.	Pr
3	Ornamental Plum	*Prunus spp*	44.0	10.0	4.5	M	Fair	Fair	Municipal boulevard tree (ID #26195) on View St. Upheaving sidewalk against buttress roots. Some chlorosis of foliage.	Pr
4	Elm	*Ulmus spp*	47.0	11.0	5.0	G	Good	Fair	Girdling root. Base is 0.5m from 1.5m tall wall. Surface roots. Codominant union at 2m	Pr

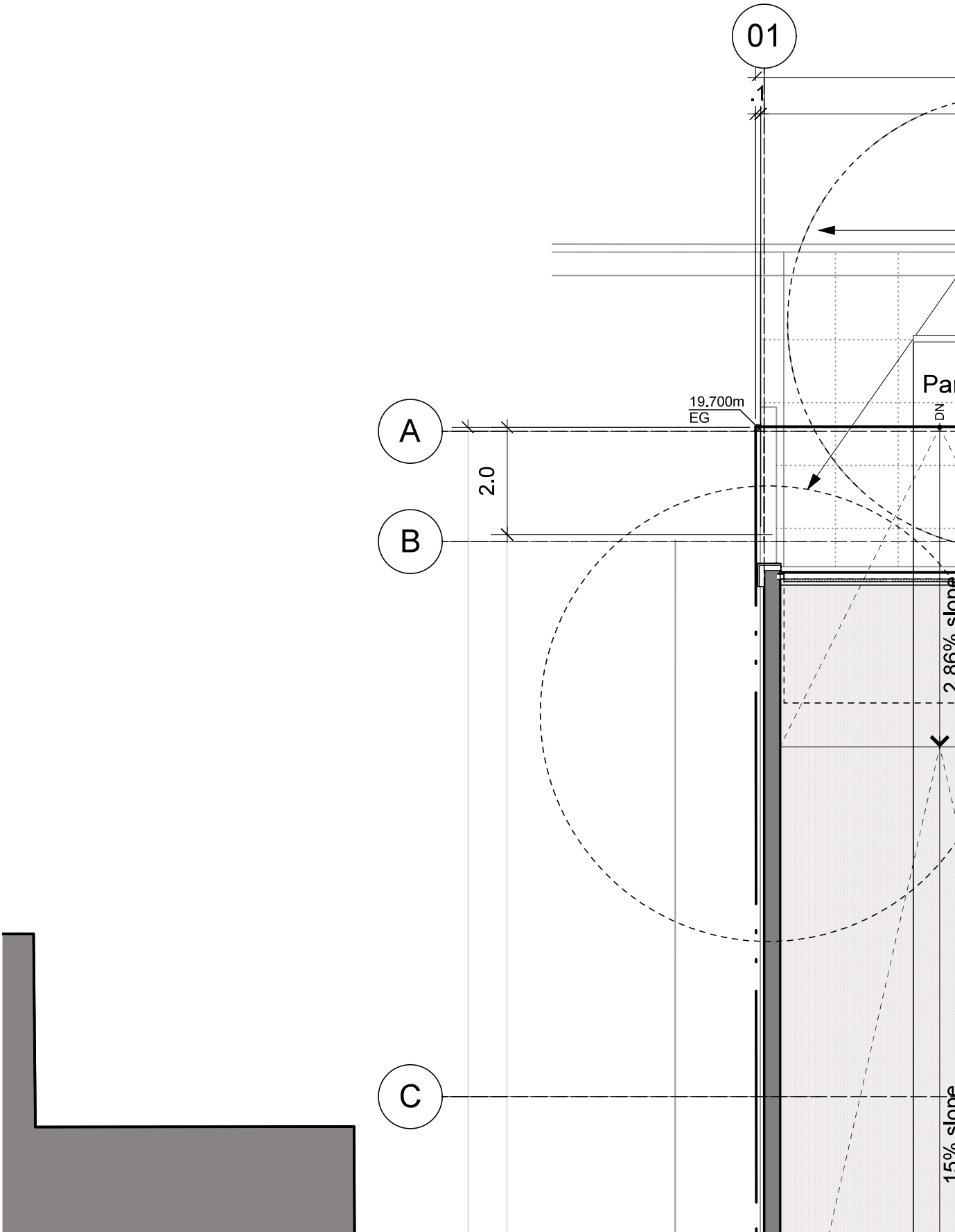
Prepared by:
Talbot Mackenzie & Associates
ISA Certified and Consulting Arborists
Phone: (250) 479-8733
Fax: (250) 479-7050
email: tmtreehelp@gmail.com


Tree Protection Site Plan
Talbot Mackenzie & Associates
May 12, 2020
Mark-up of Preliminary Servicing Plans by Westbrook (dated 2020-05-11)
Blue dashed lines are critical-root-zones of retained trees
Red lines are tree protection fencing locations; to be constructed as per CoV Parks specifications: 30cm from sidewalk and 60cm from curb
PAINT CURB WHITE
NEW BOULEVARD TREES TO BE IRRIGATED WITH TREE LOOPS (TYP)
BLEND PROPOSED DRIVEWAY INTO EXISTING 1039 VIEW STREET DRIVEWAY
VIEW STREET
CAP EXISTING TEL
REMOVE EXISTING BOX
PROPOSED RETAINING WALL
GAS METER LOCATION
PROPOSED BUILDING
BC HYDRO ENTRY LOCATION
TIE TO EXISTING SID
TIE TO EXISTING NMC
IRRIGATION SLEEVE
LAWN SPRINKLER HEADS (TO CITY STANDARDS)
UTILITY POLE c/w DAVIT LIGHT.
SAWCUT PATTERN PER LANDSCAPE ARCHITECT DRAWING
PLANTER POTS TYP.
600mm x 300mm CONCRETE BOX LABELED "BACKFLOW AND IRRIGATION CONTROLLER"
REMOVE EXISTING CONCRETE DRIVEWAY
COMMUNICATION ENTRY LOCATION
COOK ST.
7.07 m
7.05 m
8.45 m
8.51 m
#1
#2
#3
#4
1.0 TYP
3.0 TYP
2.0
12.0
2.6
R3.0
R8.0
2.2
11.2
10.2
8.7
8.2
4.0

LEGEND

- APPROXIMATE LIMIT OF ASPHALT
- BASALT BAND, SEE LANDSCAPE FOR DETAILS
- CONCRETE SIDEWALK, SEE LANDSCAPE FOR DETAILS
- BRICK PAVERS, SEE LANDSCAPE FOR BRICK COLORS AND PAVERS
- EXISTING TREE TO BE REMOVED
- EXISTING STREET TREE TO BE PROTECTED
- TREE TO BE PLANTED, SEE LANDSCAPE FOR DETAILS




01
.1
A
B
C
19.700m
EG
2.0
Par
DN
2.86% slope
15% slope

BC LAND SURVEYORS SITE PLAN OF:

Civic: 1150 Cook Street

Legal Lot 996, Victoria City
AND
The Easterly 1/2 of Lot 997,
Victoria City

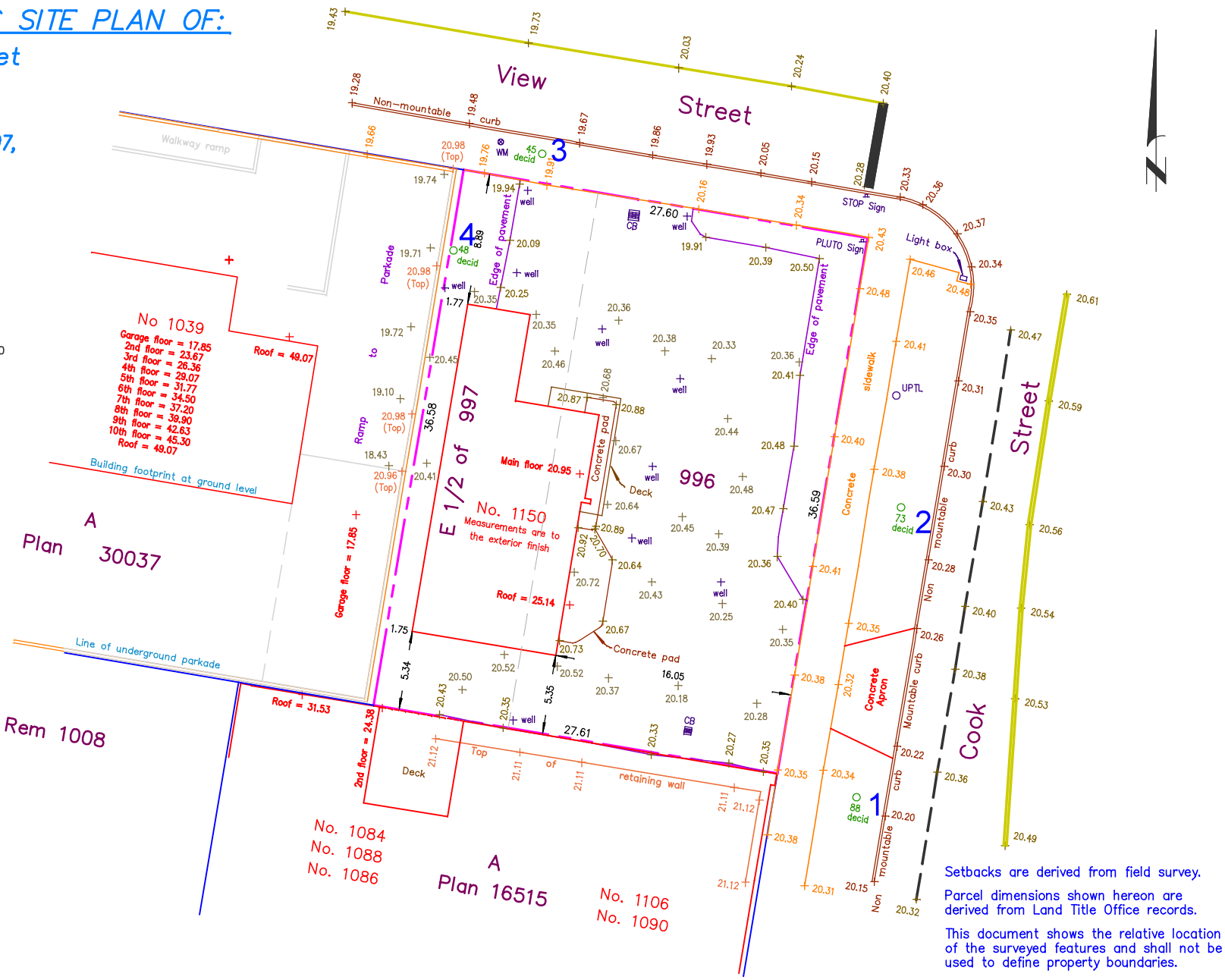
Parcel Identifier
009–388–257 (Lot 996) &
009–388–273 (E'ly 1/2 of Lot 997)
in the City of Victoria

Scale – 1 : 250

0 2 10 20

Distances are in metres.

The intended plot size
of this plan is 11' x 17'.



Date	April 23, 2019
Drawing	Site– 1150 Cook St
File	File : 12973 – 16

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

LEGEND

Elevations are to geodetic datum.

- + ###.## – denotes – Existing elevation
- CB – denotes – Catch Basin
- UPTL – denotes – Utility Pole with Lamp & Transformer
- WM – denotes – Water Meter

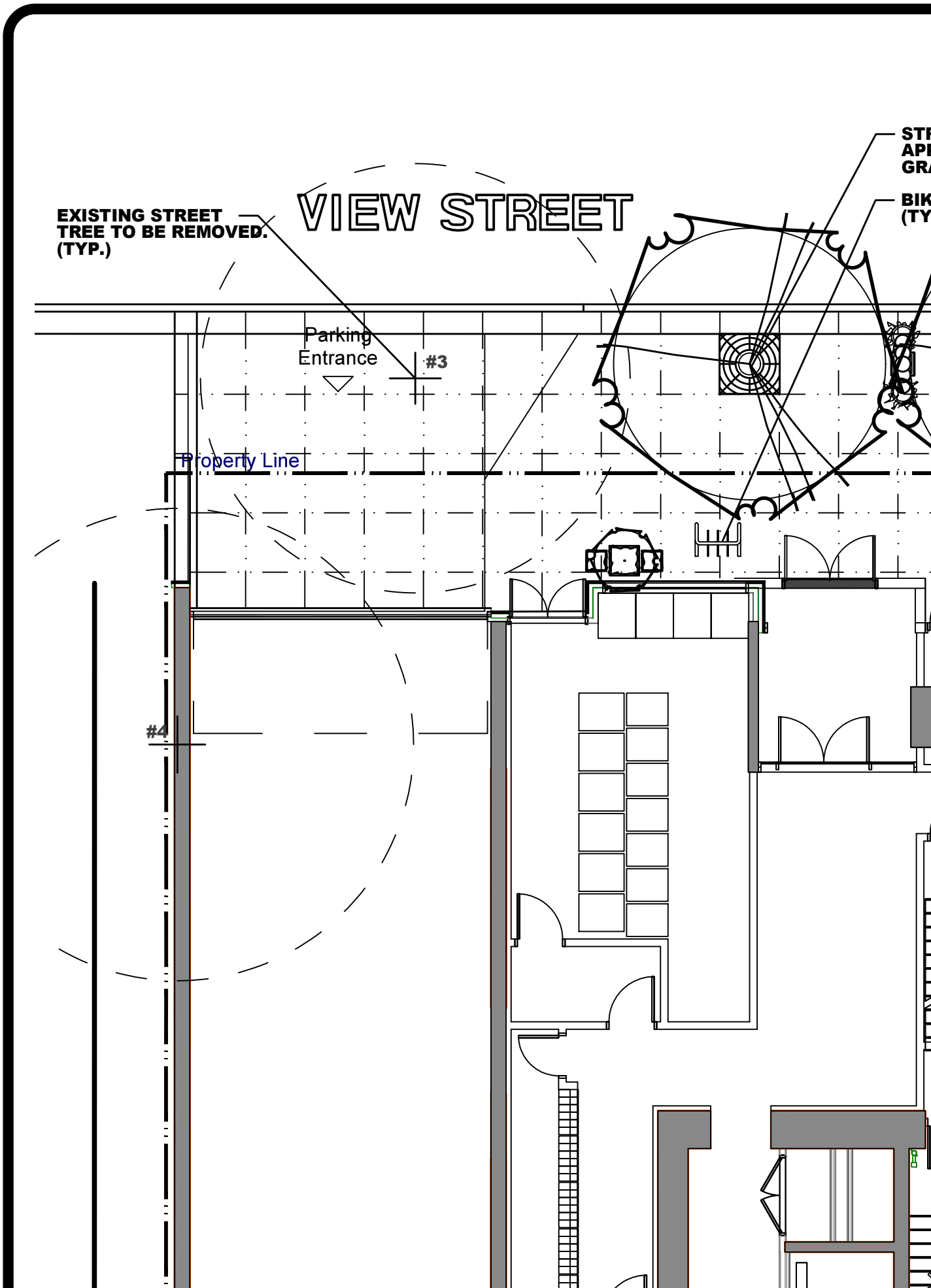
Tree diameters are in centimetres.

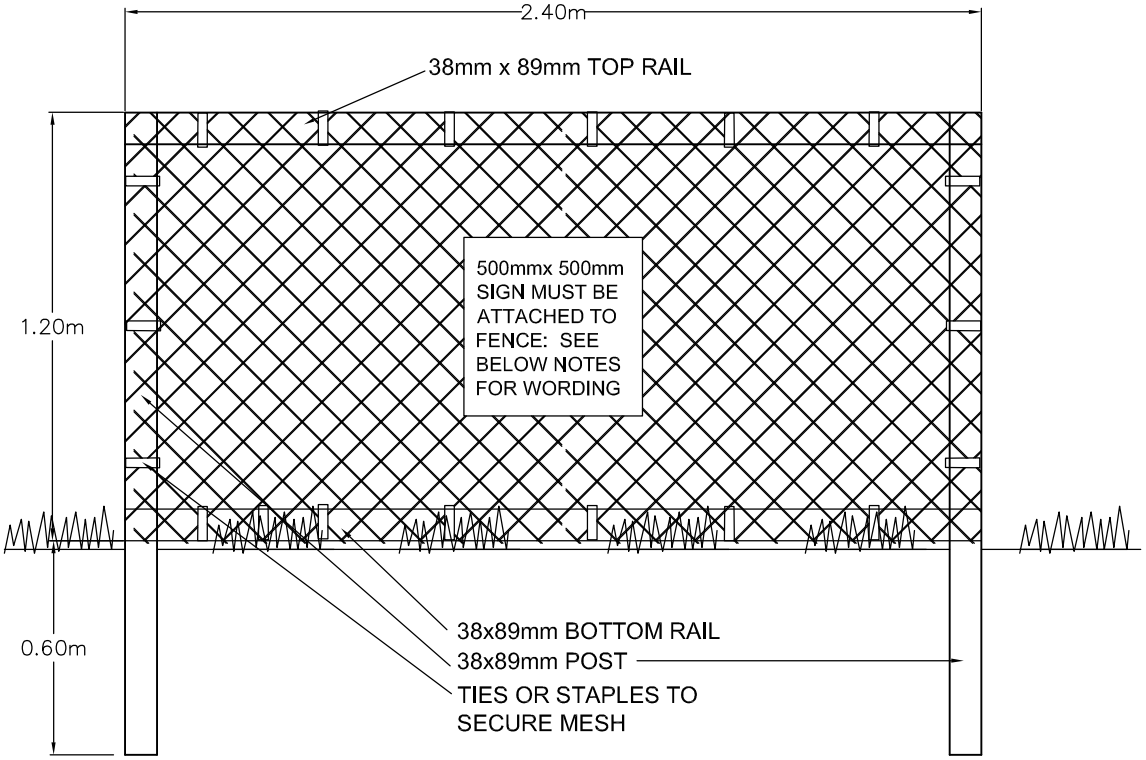
Lot Area = 1009.9 m2

Setbacks are derived from field survey.

Parcel dimensions shown hereon are derived from Land Title Office records.

This document shows the relative location of the surveyed features and shall not be used to define property boundaries.


VIEW STREET
EXISTING STREET TREE TO BE REMOVED. (TYP.)
Parking Entrance
#3
Property Line
#4



TREE PROTECTION FENCING

1. FENCE WILL BE CONSTRUCTED USING 38 mm X 89mm WOOD FRAME: TOP, BOTTOM AND POSTS * USE ORANGE SNOW-FENCING MESH AND SECURE THE WOOD FRAME WITH"ZIP" TIES OR GALVANIZED STAPLES.

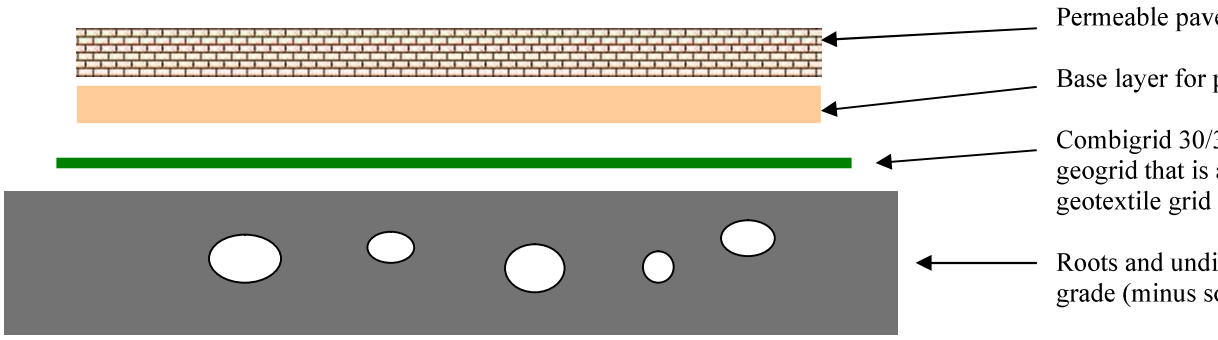
2. ATTACH A 500mm X 500mm SIGN WITH THE FOLLOWING WORDING: WARNING- TREE PROTECTION AREA. THIS SIGN MUST BE AFFIXED ON EVERY FENCE OR AT LEAST EVERY 10 LINEAR METERS.

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

Talbot Mackenzie & Associates

Consulting Arborists

Diagram – Permeable paver surface crossing over Critical Root Zone



Specification #1 for Paved Surfaces Over Critical Root Zones (driveway, parking or wa

1. Minimal excavation to remove turf, plant material and/or loose soil for the required permeable surface, under the supervis
   Excavation to be stopped prior to any significant root loss.

2. A layer of Combigrid 30/30 geotextile is to be installed over the area where the paved surface overlaps with the critical root z

3. Construct base layer of well-draining material and permeable surface over geogrid layer to required grade.

Talbot Mackenzie & Associates
Consulting Arborists

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6
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Email: tmtreehelp@gmail.com

Tree Resource Spreadsheet Methodology and Definitions

Revised November 28, 2019

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

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

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

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

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

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

This method is solely a mathematical calculation that does not consider factors such as restricted root growth, limited soil volumes, age, crown spread, health, or structure (such as a lean). To calculate the critical root zone of trees with multiple stems below 1.4m, the diameter is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. This however can result in multi-stem trees having exaggerated CRZs. Where noted, sometimes the CRZ for trees with multiple stems will be calculated using the diameter of the trunk below the unions. In specific cases, some CRZs will be approximate (~).

Note that in most cases, our inventories include a Level 1 Limited Visual Assessment, which only comprises a brief assessment to identify obvious defects and conditions. The inspection may have only been completed from one-side of the tree, depending on the defined scope of work, property lines and/or site conditions.

Health Condition:

- Poor – Tree is weak, under significant stress and/or declining
- Fair – Tree has average vigour for its species and site conditions
- Good – Tree is growing well and appears to be free of significant health stress

Structural Condition:

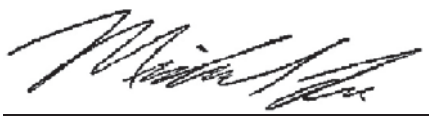
- Poor – Significant structural defects observed
- Fair – Moderate to minor structural concerns; mitigation measures likely feasible
- Good - No visible or only minor structural concerns

Retention Status:

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

1150 COOK STREET

Transportation Impact Assessment



Author: Michael Lee, ASCT

2020-02-19

Reviewer: Nadine King, P.Eng., PTOE

Prepared for: 66 Developments Ltd.

Our File: 2780.B01

Date: February 19, 2020

#501 – 740 Hillside Avenue
Victoria, BC V8T 1Z4

T 250.388.9877

wattconsultinggroup.com

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

Watt Consulting Group was retained by Sakura Developments to undertake a transportation impact assessment (TIA) for the proposed development at 1150 Cook Street in Victoria. The proposed development is a mixed-use, 15-storey, residential building.

This report examines the existing and long-term conditions within the study area, highlights any potential operational issues, and recommends mitigation measures to ensure accommodation of development traffic. A review of the transit, pedestrian, and cycling accommodations is provided.

This study incorporates traffic from other future developments within the region that the City of Victoria's staff identified as potentially impacting the study area. Including the concurrent developments in the assessment ensures that the long-term transportation needs are taken into account.

1.1 Study Area

The site for the proposed development is located on the southwest corner of the View Street / Cook Street intersection. The access is proposed to connect to View Street on the north side of the site. The following intersections are included in the study area:

- Yates Street / Cook Street;
- View Street / Cook Street;
- Fort Street / Cook Street.

See **Figure 1** for the study area and site location.

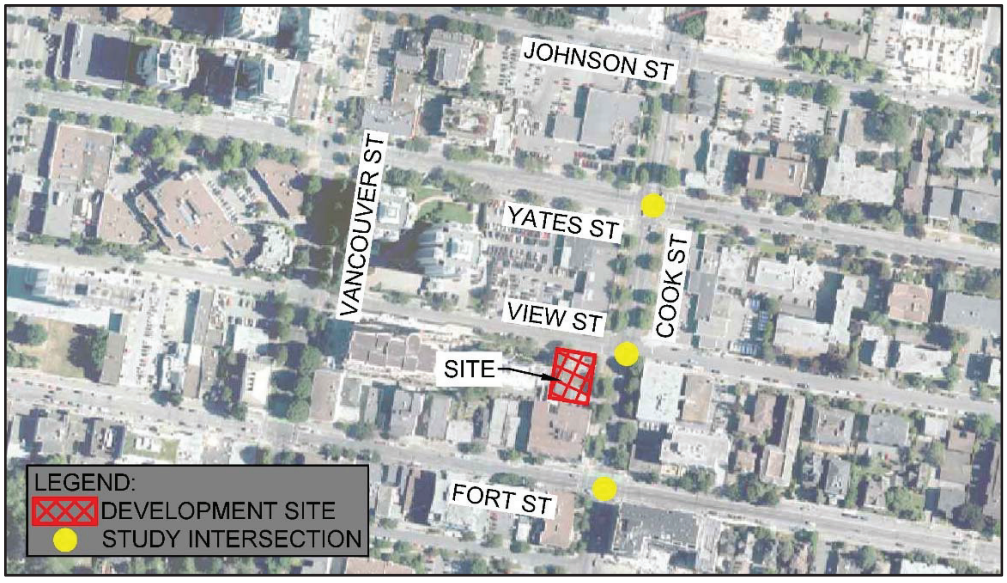


Figure 1: Study Area

2.0 EXISTING CONDITIONS

2.1 Land Use

A restaurant currently occupies the development site. The site is currently zoned as Harris Green District (R-48). The surrounding land use is comprised of a mix of multi-family, central dwelling, commercial, and business.

2.2 Road Network

There are four roadways within the study area as described below:

- **Cook Street** is a two-way, arterial road that runs north / south within the study area. Cook Street has two northbound lanes, two southbound lanes, and auxiliary left turn lanes at the intersections. There is limited on-street parking available along this portion of the road.
- **Yates Street** is a one-way (westbound) secondary arterial road. Yates Street has a bike lane on the north side of the road and two travel lanes transitioning into three travel lanes between Vancouver Street and Cook Street. There is a mix of parallel parking and angled parking on the street.
- **Fort Street** is a one-way (eastbound) secondary arterial road. There are bicycle facilities on the north side of the street. Fort Street has a two-way cycle track west of Cook Street and eastbound bike lane(s) east of Cook Street. There are two travel lanes and parallel parking on both sides of the road.
- **View Street** is two-way, two-lane, local road that runs east / west. There is some parallel parking on both sides of the road.

The posted speed limit is 50 km/h for all roads and there are three intersections within the study area:

- **Yates Street / Cook Street** is a signalized intersection with three approaches. There is a northbound left lane and a westbound right lane.
- **View Street / Cook Street** is a four-leg, unsignalized intersection with stop control on the eastbound and westbound approaches. There are left turn lanes for the northbound and southbound approaches.
- **Fort Street / Cook Street** is a signalized intersection with three approaches. There is a southbound left turn lane with protected / permitted phasing. There is an eastbound right turn lane and an eastbound left turn lane with a protected phase.

2.3 Traffic Modelling – Background Information

Analysis of the traffic conditions at the study intersections was undertaken using Synchro Studio (version 10). Synchro / SimTraffic is a two-part traffic modelling software that provides analysis of the traffic conditions based on the Highway Capacity Manual (2010) evaluation methodology. A detailed description is provided in **Appendix A.**

For unsignalized (stop-controlled) intersections, the level of service (LOS) is based on the computed delay on each of the critical movements. LOS A represents minimal delays for minor street traffic movements, and LOS F represents a scenario with an insufficient number of gaps on the major street for minor street motorists to complete their movements without significant delays.

For signalized intersections, the methodology considers the intersection geometry, traffic volumes, the traffic signal phasing / timing plan, and pedestrian volumes. The average delay for each lane group is calculated, as well as the delay for the overall intersection.

2.4 Existing Traffic Conditions

Turning movement counts were provided for the study intersections by the City of Victoria staff. An additional PM peak hour count was conducted at the View Street / Cook Street intersection on January 7, 2020 between 4:00pm and 5:00pm. This study focuses on the weekday PM peak hour of travel which typically accounts for the highest traffic volumes throughout the day; however, a sensitivity analysis was conducted to ensure that the results of the study reflect other peak travel times of the day. See **Figure 2** and **Table 2** for the existing PM peak hour conditions.

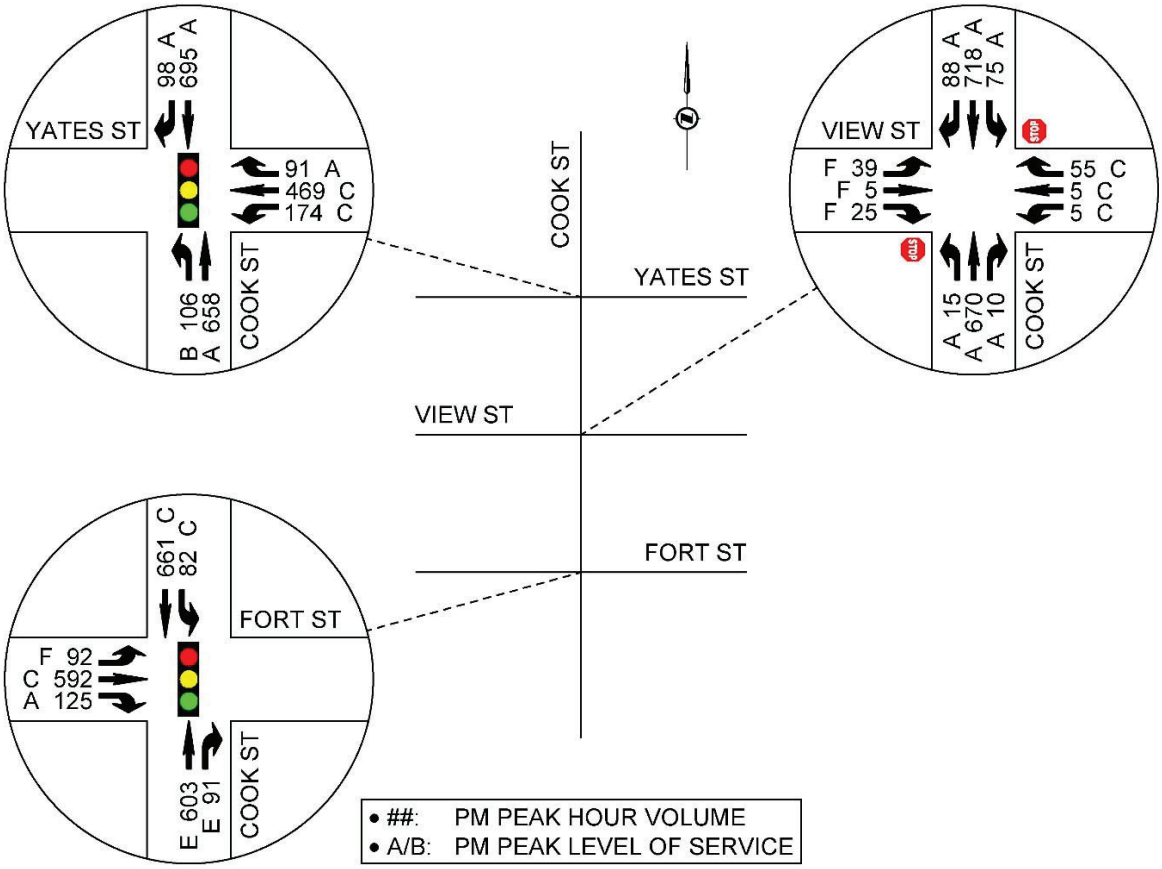


Figure 2: Existing 2019 PM Peak Hour Volumes / LOS

Table 1: 2019 Existing Conditions – PM

Intersection	Movement	LOS	Delay (s)	Queue (m) 95th
Yates St / Cook St	WBL	C	28.0	42.9
	WBT	C	25.5	46.3
	WBR	A	6.1	4.0
	NBL	B	13.8	20.6
	NBT	A	8.0	34.1
	SB T/R	A	8.7	42.4
View St / Cook St (Stop-Controlled)	EB	F	104.2	32.9
	WB	C	22.2	8.4
	NBL	A	9.7	0.7
	NB T/R	A	0.0	0.0
	SBL	A	9.5	2.1
	SB T/R	A	0.0	0.0
Fort St / Cook St	EBL	F	106.3	37.5
	EBT	C	23.5	57.2
	EBR	A	7.9	9.3
	NB T/R	E	65.5	101.4
	SBL	C	23.3	17.5
	SBT	C	21.3	61.7

The existing traffic during the PM peak hour at Yates Street / Cook Street operates at LOS C or better. The recent implementation of the Fort Street cycle-track has changed some of the traffic operations at Fort Street / Cook Street. The eastbound left and the northbound through / right movements operate at LOS F and LOS E respectively while all other movements operate at LOS C. The stop-controlled View Street / Cook Street intersection operates at LOS F for the eastbound, LOS C for the westbound, and LOS A for the northbound / southbound.

3.0 CONCURRENT AREA DEVELOPMENTS

3.1 Concurrent Development Locations

The City staff identified future developments that would potentially impact the study area for this assessment. The concurrent developments have been included into the background traffic conditions analysis. See **Figure 3** for the locations of the concurrent developments and **Table 2** for the trip generation during the PM peak hour.

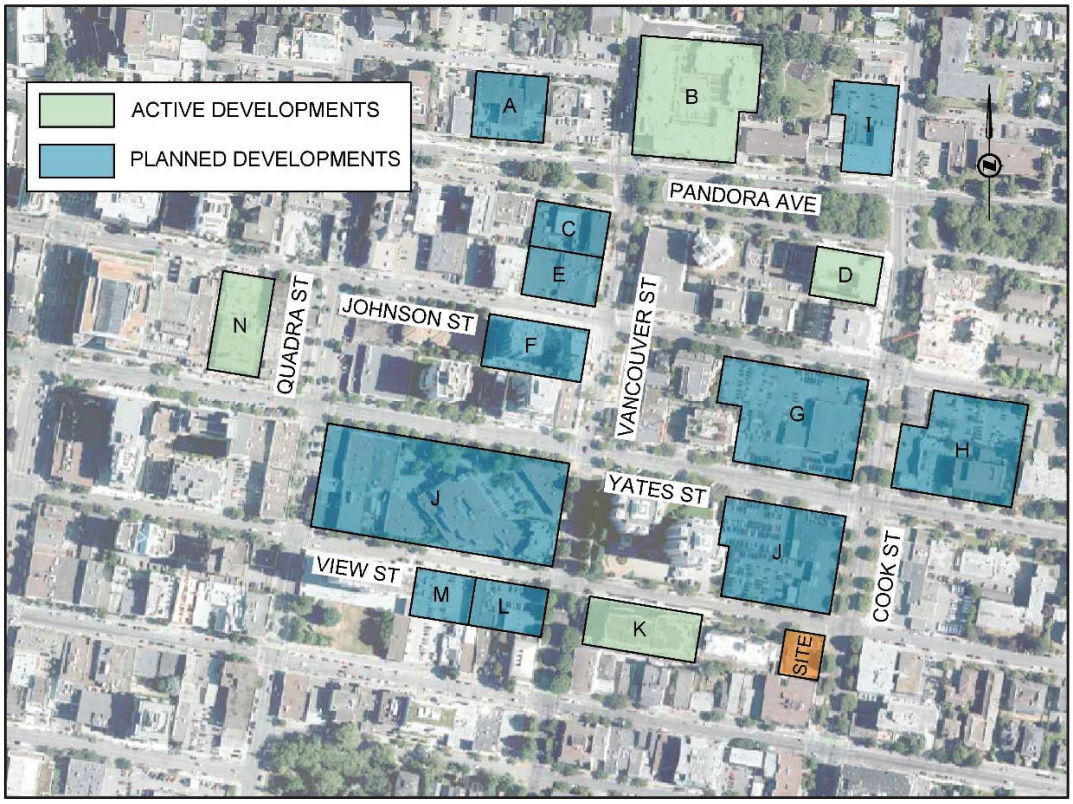


Figure 3: Concurrent Development Locations

3.2 Concurrent Development Trip Generation and Assignment

The concurrent trips were generated using the same methodology outline in **Section 4.3** using the Institute of Transportation Engineer's *Trip Generation Manual (10th Edition)*. The trip assignment was based on existing trip distributions for traffic in the area.

Table 2: Concurrent Development PM Peak Hour Background Net Trips

Development	Land Use	Units	Sq'	Trip Rate	In	Out
A	Proposed Condominium	145	-	0.44 / unit	39	25
	Proposed Retail	-	5700	2.71 / 1000 ft^2	7	8
	Existing Land Use - Empty	-	-	-	0	0
	Net Trips		**-**	**-**	**46**	**33**
B	Proposed Market Rental	195	-	0.44 / unit	52	34
	Proposed Supermarket	-	25000	9.24 /1000 ft^2	118	113
	Proposed Retail	-	25000	2.71 / 1000 ft^2	30	38
	Existing Land Use- In Construction	-	-	-	0	0
	Net Trips	**-**	**-**	**-**	**200**	**185**
C	Proposed Market Rental	166		0.36 / unit	37	23
	Proposed Retail	-	3300	2.71 / 1000 ft^2	4	5
	Existing Land Use - Church	-	2400	0.49 / 1000 ft^2	0	1
	Existing Land Use - General Office	-	5400	1.15 / 1000 ft^2	1	5
	Net Trips	**-**	**-**	**-**	**39**	**23**
D	Proposed Market Rental	134	-	0.36 / unit	29	19
	Proposed Retail	-	6800	2.71 / 1000 ft^2	8	10
	Existing Land Use - In Construction	-	-	-	0	0
	Net Trips	**-**	**-**	**-**	**37**	**29**
E	Proposed Market Rental	93	-	0.36 / unit	20	13
	Proposed Retail	-	6500	2.71 / 1000 ft^2	8	10
	Existing Land Use - Empty	-	-	-	0	0
	Net Trips	**-**	**-**	**-**	**28**	**23**
F	Proposed Condominium	120	-	0.36 / unit	26	17
	Proposed Retail	-	9000	2.71 / 1000 ft^2	11	13
	Existing - Empty	-	-	-	0	0
	Net Trips	**-**	**-**	**-**	**37**	**30**
G	Proposed Market Rental	130	-	0.36 / unit	29	18
	Existing - New Car Dealership	-	16000	2.43 / 1000 ft^2	16	23
	Net Trips	**-**	**-**	**-**	**13**	**-5**
H	Proposed Condominium	202	-	0.36 / unit	45	28
	Proposed Retail	-	14400	2.71 / 1000 ft^2	17	22
	Existing - Restaurant (Quality)	-	775	7.80 / 1000 ft^2	4	2
	Existing - medical office to remain	-	-	-	0	0
	Net Trips	**-**	**-**	**-**	**58**	**48**
I	Multi-Family (Mid Rise)	103	-	0.44 / unit	27	18
	High Turnover Sit Down Restaurant	-	2000	9.77 / 1000 ft^2	12	8
	Specialty Retail	-	9900	2.71 / 1000 ft^2	12	15
	Existing Supermarket	-	10000	9.24 /1000 ft^2	47	45
	Net Trips	**-**	**-**	**-**	**5**	**-5**
J	Proposed Apartment	500	-	0.44 / unit	135	86
	Proposed Apartment	1000		0.36 / unit	220	140
	Retail (trips reassigned to new accesses)	-	-	-	150	371
	Existing / Internal Capture Reduction	-	-	-	-122	-122
	Net Trips	**-**	**-**	**-**	**383**	**475**
K	Proposed Condominium	229	-	0.44 / unit	**62**	**39**
	Existing Land Use – Empty	-	-		0	0
L	Proposed Rental Apartment	154	-	0.44 / unit	41	27
	Existing – Restaurant	-	3500	7.80 / 1000 ft^2	18	9
	Net Trips	-	-	-	**23**	**18**
M	Proposed Rental Apartment	255	-	0.36 / unit	**56**	**36**
	Existing Land Use – Parking Lot	-	-	-	-	-
N	Proposed Affordable Housing Condominium	135	-	0.36 / unit	30	19
	Proposed Retail	-	5000	2.71 / 1000 ft^2	7	7
	Existing Land Use – Parking Lot	-	-	-	-	-
	Net Trips	**-**	**-**	**-**	**37**	**26**

4.0 POST DEVELOPMENT

4.1 Proposed Land Use and Site Access

The proposed development is a 15-storey, 129 unit, residential building with ground floor commercial (166.22m^2). See **Figure 4** for the development site plan.

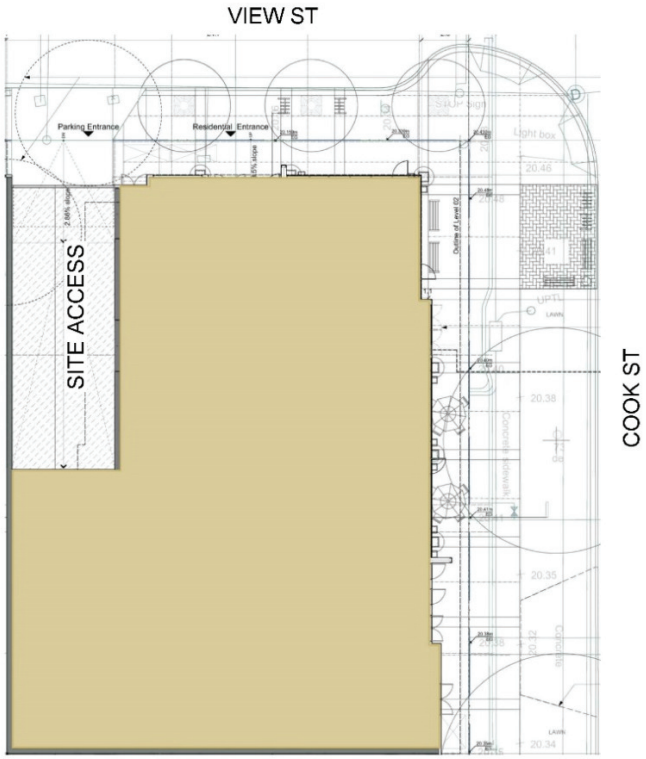


Figure 4: Site Plan.

The site access is located on View Street approximately 30m west of Cook Street. There are no sight distance deficiencies at the proposed access. There is over 150m of sight distance at the access exceeding the Transportation Association of Canada's (TAC) requirement of 105m for left turns and 95m for right turns / through movements.

The location of the access also meets the TAC minimum corner clearance requirements for local and collector roads of 15m and 20m respectively.

4.2 Trip Generation

Site trips were estimated from the Institute of Transportation Engineers' (ITE) *Trip Generation Manual (10th Edition)*. 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 proposed developments will generate 54 trips during PM peak hour of travel (32 trips in and 22 trips out).

Table 3 summarizes the trip generation for the proposed development during the PM peak hour of travel.

Table 3: Commercial Trip Generation for the Peak Hour of Travel

ITE Code	Land Use	Trip Rate	Total Trips	Trips In	Trips Out
222	Multi-Family – High Rise	0.36 trips / unit	47	29	18
820	Shopping Centre	3.81 / 1000 ft^2	7	3	4
		Total	**54**	**32**	**22**

4.3 Trip Assignment

The trip assignment was based on the existing trip distribution and popular destinations for traffic in the area. See **Figure 5** for the proposed development's PM peak hour trip assignment which are based on the following trip distribution pattern:

- 45% to / from the west;
- 30% to / from the east;
- 20% to / from the north;
- 5% to / from the south.

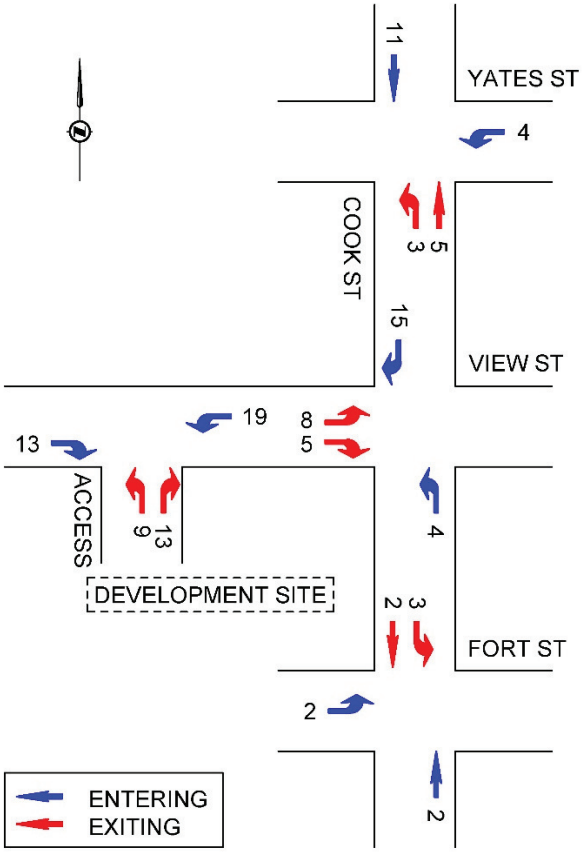


Figure 5: PM Trip Assignment

4.4 Post Development Analysis Results

4.4.1 Analysis Assumptions

No growth rate was applied to the background volumes as Victoria's traffic volumes have been static or had negative growth over the past decades. The concurrent development traffic has been included in the background traffic volumes. The existing land use traffic was maintained on the network for the background analysis. However, during the post development analysis the existing site's traffic was removed from the network.

After the completion of the Vancouver Street bike lane project traffic patterns will likely change in the area. Vehicle traffic travelling northbound and southbound on Vancouver Street will be discouraged / limited. Therefore, 75 percent of the Vancouver Street traffic was diverted to the adjacent north / south streets (Quadra Street and Cook Street) for the background analysis.

4.4.2 Background Analysis Results

The background traffic conditions were analyzed during the PM peak hour within the study area. **Figure 6** and **Table 4** show the background PM peak hour traffic conditions.

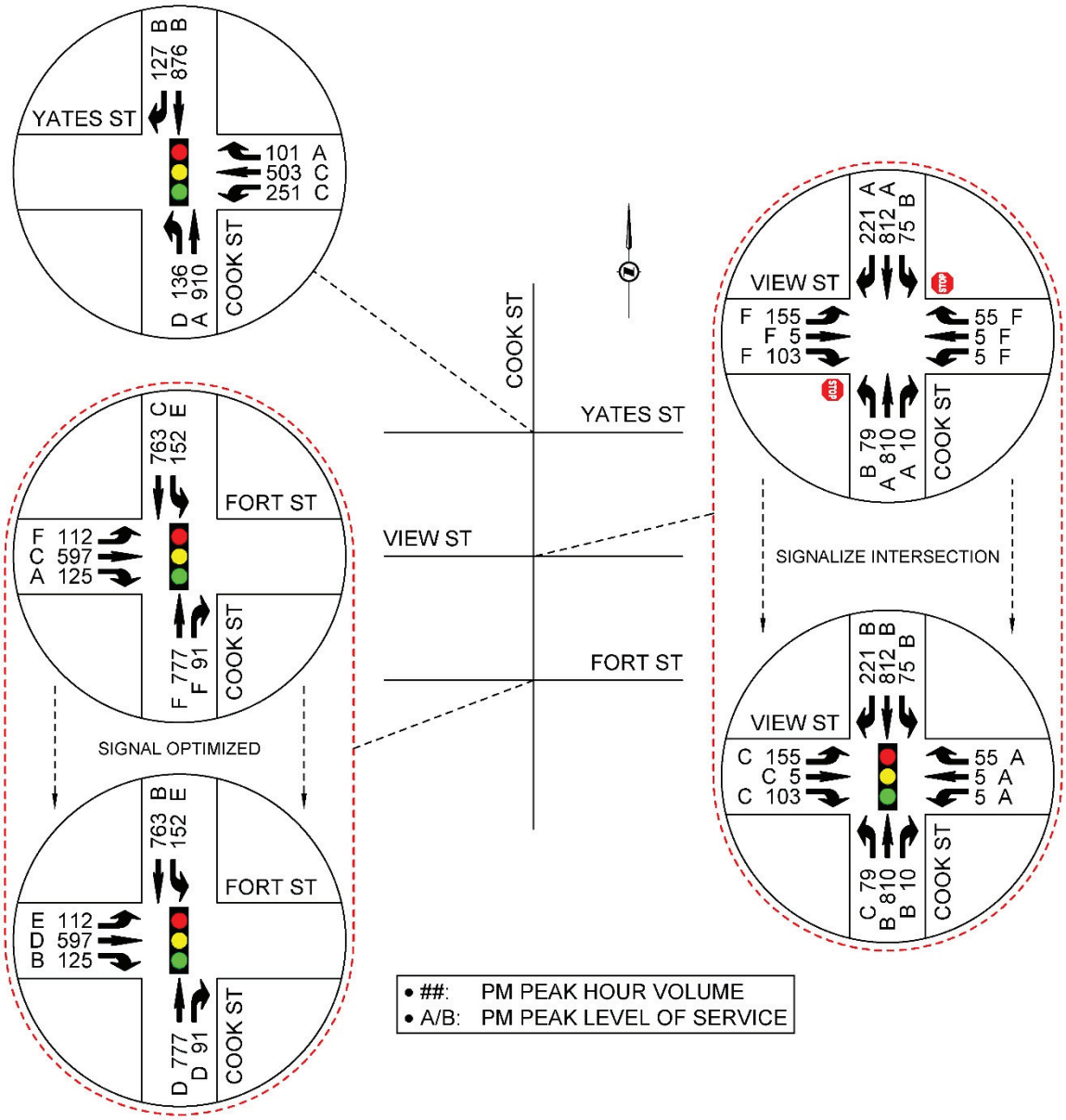


Figure 6: Background Traffic Conditions during the PM Peak Hour

Table 4: Background Traffic Conditions during the PM Peak Hour

Intersection	Movement	LOS	Delay (s)	Queue (m) 95th
Yates St / Cook St	WBL	C	34.8	62.8
	WBT	C	26.1	49.8
	WBR	A	8.4	6.8
	NBL	D	41.8	46.2
	NBT	A	7.3	31.3
	SB T/R	B	10.6	59.1
View St / Cook St (Stop-Controlled)	EB	F	3178.4	297.5
	WB	E	72.2	25.2
	NBL	B	11.9	4.2
	NB T/R	A	0.0	0.0
	SBL	B	10.1	2.1
	SB T/R	A	0.0	0.0
View St / Cook St (Signalized)	EB	C	28.9	43.0
	WB	A	7.2	5.3
	NBL	C	29.9	19.6
	NB T/R	B	13.5	51.1
	SBL	B	13.9	16.7
	SB T/R	B	14.7	88.6
Fort St / Cook St	EBL	F	162.7	47.2
	EBT	C	23.6	57.7
	EBR	A	7.9	9.3
	NB T/R	F	147.2	135.7
	SBL	E	60.7	45.6
	SBT	C	27.3	74.0
Fort St / Cook St (Optimized)	EBL	E	74.7	39.6
	EBT	D	51.6	81.7
	EBR	B	13.2	11.4
	NB T/R	D	38.6	111.3
	SBL	E	57.3	45.9
	SBT	B	17.2	59.7

With the background and concurrent development traffic on the road network during the PM peak hour at Yates Street / Cook Street the northbound left drops to LOS D while all other movements operate at LOS C or better. With the existing signal timing the Fort Street / Cook Street intersection has three movements with failing levels of service: the eastbound left (LOS F), the northbound movements (LOSF), and the southbound left (LOS E). The signal timing is likely configured this way to promote eastbound traffic while limiting the number of turning movements that cross the cycle track; however, if the traffic signal is optimized the overall traffic operations could improve slightly. If the signal timing at Fort Street / Cook Street is optimized the left turn movements at the intersection will remain at LOS E; however, the other movements will operate at LOS D or better.

The increased traffic on View Street due to the Vancouver Street bike lanes and the concurrent developments further deteriorates the traffic operations at the stop-controlled View Street / Cook Street intersection. The eastbound and westbound movements operate at LOS F and LOS E

respectively. It is recommended that the City signalize the View Street / Cook Street intersection prior to the implementation of the Vancouver Street bicycle facilities. If View Street / Cook Street is signalized all movements will operate at LOS C or better.

4.4.3 Post Development Analysis Results

The post development traffic conditions were analyzed during the PM peak hour within the study area. **Figure 7** and **Table 5** show the post development PM peak hour traffic conditions.

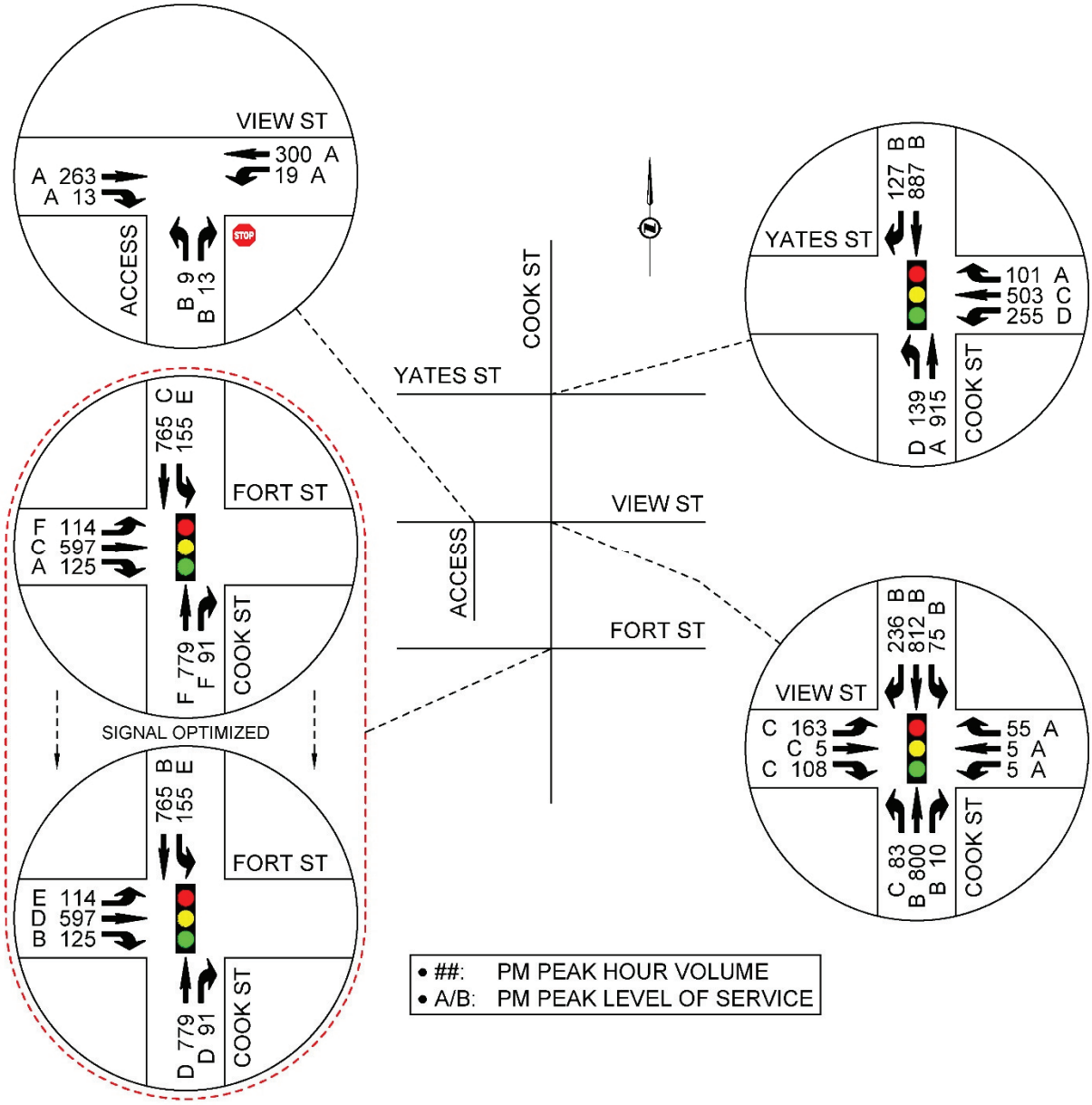


Figure 7: Post Development Conditions with Improvements – PM

Table 5: Post Development Conditions with Improvements – PM

Intersection	Movement	LOS	Delay (s)	Queue (m) 95th
Yates St / Cook St	WBL	D	35.4	65.1
	WBT	C	26.1	49.8
	WBR	A	8.6	7.0
	NBL	D	46.2	48.1
	NBT	A	7.3	31.4
	SB T/R	B	10.8	59.8
View St / Cook St (Signalized)	EB	C	30.8	45.4
	WB	A	7.2	5.3
	NBL	C	34.8	21.7
	NB T/R	B	13.5	51.1
	SBL	B	13.9	16.6
	SB T/R	B	14.9	90.1
Fort St / Cook St	EBL	F	170.1	48.2
	EBT	C	23.6	57.7
	EBR	A	7.9	9.3
	NB T/R	F	148.2	136.0
	SBL	E	63.5	46.9
	SBT	C	27.5	74.3
Fort St / Cook St (Optimized)	EBL	E	77.5	40.6
	EBT	D	51.6	81.7
	EBR	B	13.2	11.4
	NB T/R	D	38.7	111.6
	SBL	E	60.2	47.2
	SBT	B	17.3	60.1
Site Access / View St	EB	A	0.0	0.0
	WB	A	8.1	0.7
	NB	B	13.3	1.4

During the PM peak hour at Yates Street / Cook Street with the proposed development would add 4.4 seconds of delay for the northbound left and under one second for all other movements at the intersection. With the signalization of View Street / Cook Street there would be no change in the level of service with the addition of the proposed development. The proposed development will add 4.9 seconds to the northbound left and approximately two seconds for all other movements at View Street / Cook Street, but will remain at LOS C or better.

At Fort Street / Cook Street with the existing signal timing there will be no change in the level of service with the inclusion of the proposed development; the eastbound left will have 7.4 seconds of additional delay while all other movements will have approximately four seconds of additional delay. If the signal timing is optimized at Fort Street Cook Street the eastbound left will have 2.8 seconds of additional delay and all other movements will have about three seconds of additional delay.

The site access will operate at LOS B or better at full build out.

5.0 SENSITIVITY ANALYSIS

On most roads the PM peak hour contains the largest traffic volumes for any given time throughout the day. There are some locations that can have larger traffic impacts outside of the PM peak hour such as near schools and employment centres with shift changes. Further investigation was conducted to determine if the PM peak hour reflected the worst-case scenario for this study. When looking at the surrounding road network the PM peak hour had 23.6 percent more traffic than the AM peak hour and 15.2 percent more traffic than the midday peak hour (or off-peak time).

The distribution of traffic volumes for specific movements at each intersection were also review during the AM peak and midday peak timeframes. For example, a left turn movement that requires a protected phase during one timeframe due to higher volumes may not require the protected phase during another timeframe. Yates Street / Cook Street did not show significant variances beyond overall traffic volumes. View Street had a bit more variances for the AM peak hour compared to the midday and PM peak hours. During the AM peak hour the westbound volumes were higher that the eastbound volumes while during the midday and PM peak hours the eastbound volumes were higher than the westbound volumes. However, these variances do not have a significant impact on intersection operation. The only movement at Fort Street that has significant variation to the distribution is the eastbound left which has a protected phase 24 hours a day and therefore does not require addition of a left turn phase.

6.0 SUSTAINABLE TRANSPORTATION REVIEW

A sustainable transportation review was conducted to determine the pedestrian, cycling, electrical vehicle accommodation, and transit connection to the proposed development.

6.1 Pedestrian and Cycling Network

There are existing sidewalks on both sides of all roads in the study area. If the sidewalks are to be altered during this proposed redevelopment it is recommended that the pedestrian areas meet the current City of Victoria standards on both site frontages. Crosswalks at View Street / Cook Street are recommended for all approaches of the intersection if the City signalizes the intersection.

This development is well located to access the entire City of Victoria bicycle network with the existing Yates Street bike lane, the Fort Street cycle track, and the soon to be completed Vancouver Street bicycle facilities. No further on-street bicycle upgrades are recommended in the study area. Onsite bicycle storage should be considered a priority along with electrical charging capability.

6.2 Electrical Vehicle Parking

As the popularity of electrical vehicles increases the availability of electrical charging stations is becoming more and more important. While the City does not yet have a formal bylaw in place requiring electrical outlets at all parking stalls it is recommended that each residential parking stall onsite be equipped with the capability for electrical vehicles to charge. It is significantly less

expensive to proactively install the charging capabilities during design / construction rather than retrofit the infrastructure at a later time.

6.3 Transit Network

There are many transit options available in close proximity to the site. Yates Street provides multiple routes travelling west of the site. Cook Street provide routes travelling north or south. Fort Street provide bussing options travelling west of the site.

The closest bus stop on Yates Street is approximately 180m north of the site. The closest bus stops on Cook Street are about 30m and 85m south of the site. The closest Fort Street bus stop is located approximately 100m south of the site. No transit upgrades are recommended for this development.

7.0 CONCLUSIONS

The proposed development is located on the southwest corner of the View Street / Cook Street intersection. The site access is proposed to be located on View Street west of Cook Street. The City has bicycle facilities planned for Vancouver Street that will likely divert some traffic from Vancouver Street onto the surrounding road network. With the bicycle facilities on Vancouver Street and other concurrent developments there will be increased traffic on View Street. With this increase of traffic on View Street it is recommended that the City upgrade View Street / Cook Street from a stop-controlled intersection to a signalized intersection. The proposed development has minimal traffic impacts to the surrounding road network if the View Street / Cook Street intersection is signalized. No road upgrades are recommended due to this development.

Sidewalk along the site frontage is recommended to be maintained or reinstated after construction. If View Street / Cook Street is signalized all four approaches of the intersection should have crosswalks installed. No transit or bicycle upgrades are recommended for this development. As the number of electrical vehicles keeps increasing on-site residential electrical charging stations should be considered a priority for both vehicles and bicycles.

8.0 RECOMMENDATIONS

- For the City to signalize View Street / Cook Street, including crosswalks on all four approaches;
- Consider providing electrical charging capabilities for some residential vehicle parking stalls on-site;
- Consider providing electrical charging capabilities for some electrical bicycles on-site.

APPENDIX A: SYNCHRO BACKGROUND

SYNCHRO MODELLING SOFTWARE DESCRIPTION

The traffic analysis was completed using Synchro and SimTraffic traffic modelling software. Results were measured in delay, level of service (LOS), 95th percentile queue length and volume to capacity ratio. 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 ten times (ten 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. A LOS C or better is considered acceptable operations, while D is considered to be on the threshold between acceptable and unacceptable operations. Highway operations will typically need to operate at LOS C or better for through movements and LOS E or better for other traffic movements with lower order roads.

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 (LOS)	Unsignalized Intersection Average Vehicle Delay (sec/veh)	Signalized Intersection Average Vehicle Delay (sec/veh)
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

APPENDIX B: 2019 EXISTING PEAK HOUR TRAFFIC CONDITIONS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	174	469	91	106	658	0	0	695	98
Future Volume (vph)	0	0	0	174	469	91	106	658	0	0	695	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	12.0		30.0	35.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	1		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	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.82		0.81	0.97				0.98	
Frt						0.850					0.981	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	3539	1583	1770	3539	0	0	3413	0
Flt Permitted				0.950			0.257					
Satd. Flow (perm)	0	0	0	1452	3539	1289	466	3539	0	0	3413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						140					36	
Link Speed (k/h)		40			45			40			40	
Link Distance (m)		165.1			307.3			88.8			98.6	
Travel Time (s)		14.9			24.6			8.0			8.9	
Confl. Peds. (#/hr)				112		111	92					92
Peak Hour Factor	0.25	0.25	0.25	0.89	0.95	0.65	0.88	0.92	0.25	0.25	0.85	0.82
Adj. Flow (vph)	0	0	0	196	494	140	120	715	0	0	818	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	196	494	140	120	715	0	0	938	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			3.7			3.7	
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
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Minimum Split (s)				23.0	23.0	23.0	23.0	23.0			23.0	
Total Split (s)				27.0	27.0	27.0	53.0	53.0			53.0	
Total Split (%)				33.8%	33.8%	33.8%	66.3%	66.3%			66.3%	
Maximum Green (s)				22.0	22.0	22.0	48.0	48.0			48.0	
Yellow Time (s)				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	
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 Optimize?												
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				8.0	8.0	8.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				20	20	20	20	20			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				23.0	23.0	23.0	49.0	49.0			49.0	
Actuated g/C Ratio				0.29	0.29	0.29	0.61	0.61			0.61	
v/c Ratio				0.47	0.49	0.30	0.42	0.33			0.45	
Control Delay				28.0	25.5	6.1	13.8	8.0			8.7	
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay				28.0	25.5	6.1	13.8	8.0			8.7	
LOS				C	C	A	B	A			A	
Approach Delay					22.8			8.9			8.7	
Approach LOS					C			A			A	
Queue Length 50th (m)				24.4	32.5	0.0	8.5	24.8			34.2	
Queue Length 95th (m)				42.9	46.3	4.0	20.6	34.1			42.4	
Internal Link Dist (m)		141.1			283.3			64.8			74.6	
Turn Bay Length (m)				12.0		30.0	35.0					
Base Capacity (vph)				417	1017	470	285	2167			2104	
Starvation Cap Reductn				0	0	0	0	0			0	
Spillback Cap Reductn				0	0	0	0	0			0	
Storage Cap Reductn				0	0	0	0	0			0	
Reduced v/c Ratio				0.47	0.49	0.30	0.42	0.33			0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 56 (70%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

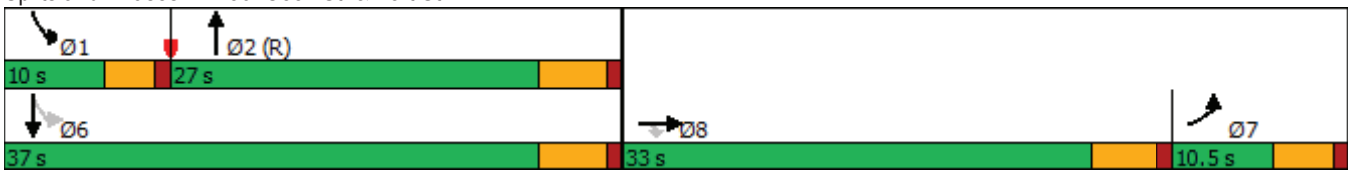
Splits and Phases: 754: Cook St. & Yates St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	592	125	0	0	0	0	603	91	82	661	0
Future Volume (vph)	92	592	125	0	0	0	0	603	91	82	661	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.0	3.7	3.0	3.0	3.7
Storage Length (m)	20.0		20.0	0.0		0.0	0.0		0.0	22.0		0.0
Storage Lanes	1		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.70		0.73					0.96				
Frt			0.850					0.975				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1516	3032	1357	0	0	0	0	2852	0	1516	3032	0
Flt Permitted	0.950									0.154		
Satd. Flow (perm)	1054	3032	995	0	0	0	0	2852	0	246	3032	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			142									
Link Speed (k/h)		40			48			40			40	
Link Distance (m)		219.6			205.1			192.6			93.4	
Travel Time (s)		19.8			15.4			17.3			8.4	
Confl. Peds. (#/hr)	94		161						133	133		
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.74	0.93	0.73	0.25	0.25	0.25	0.25	0.88	0.65	0.89	0.89	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	124	637	171	0	0	0	0	685	140	92	743	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	637	171	0	0	0	0	825	0	92	743	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)		3.0			3.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			4.8	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.13	1.13	1.13	1.13	1.25	1.13	1.25	1.25	1.13
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Prot	NA	Perm					NA		pm+pt	NA	
Protected Phases	7	8						2		1	6	
Permitted Phases			8							6		
Minimum Split (s)	10.5	20.0	20.0					21.0		10.0	21.0	
Total Split (s)	10.5	33.0	33.0					27.0		10.0	37.0	
Total Split (%)	13.0%	41.0%	41.0%					33.5%		12.4%	46.0%	
Maximum Green (s)	6.0	28.0	28.0					22.0		6.0	32.0	
Yellow Time (s)	3.5	4.0	4.0					4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0		0.0	-1.0	
Total Lost Time (s)	3.5	4.0	4.0					4.0		4.0	4.0	
Lead/Lag	Lag	Lead	Lead					Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes					Yes		Yes		
Walk Time (s)		7.0	7.0					7.0			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		8.0	8.0					9.0			9.0	
Pedestrian Calls (#/hr)		60	60					60			60	
Act Effct Green (s)	7.0	29.0	29.0					23.0		33.0	33.0	
Actuated g/C Ratio	0.09	0.36	0.36					0.29		0.41	0.41	
v/c Ratio	0.95	0.58	0.38					1.01		0.47	0.60	
Control Delay	106.3	23.5	7.9					65.5		23.3	21.0	
Queue Delay	0.0	0.0	0.0					0.0		0.0	0.0	
Total Delay	106.3	23.5	7.9					65.5		23.3	21.0	
LOS	F	C	A					E		C	C	
Approach Delay		31.6						65.5			21.3	
Approach LOS		C						E			C	
Queue Length 50th (m)	19.3	40.7	2.9					~67.6		8.6	45.4	
Queue Length 95th (m)	#37.5	57.2	9.3					#101.4		17.5	61.7	
Internal Link Dist (m)		195.6			181.1			168.6			69.4	
Turn Bay Length (m)	20.0		20.0							22.0		
Base Capacity (vph)	131	1092	449					814		195	1242	
Starvation Cap Reductn	0	0	0					0		0	0	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.95	0.58	0.38					1.01		0.47	0.60	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80.5			
Actuated Cycle Length: 80.5			
Offset: 63 (78%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 756: Cook St. & Fort St.



Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	5	25	5	5	55	15	670	10	75	718	88
Future Vol, veh/h	39	5	25	5	5	55	15	670	10	75	718	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	65	70	65	65	75	70	96	70	85	97	85
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	52	8	36	8	8	73	21	698	14	88	740	104

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1363	1722	422	1297	1767	356	844	0	0	712	0	0
Stage 1	968	968	-	747	747	-	-	-	-	-	-	-
Stage 2	395	754	-	550	1020	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	109	90	586	121	85	646	788	-	-	884	-	-
Stage 1	276	335	-	376	423	-	-	-	-	-	-	-
Stage 2	607	420	-	492	317	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	81	79	586	95	74	646	788	-	-	884	-	-
Mov Cap-2 Maneuver	81	79	-	95	74	-	-	-	-	-	-	-
Stage 1	269	302	-	366	412	-	-	-	-	-	-	-
Stage 2	514	409	-	405	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	104.2	22.2	0.3	0.9
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	788	-	-	119	297	884	-	-
HCM Lane V/C Ratio	0.027	-	-	0.802	0.299	0.1	-	-
HCM Control Delay (s)	9.7	-	-	104.2	22.2	9.5	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.7	1.2	0.3	-	-

APPENDIX C: BACKGROUND PEAK HOUR TRAFFIC CONDITIONS

Intersection	
Int Delay, s/veh	446.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	155	5	103	5	5	55	79	800	10	70	812	221
Future Vol, veh/h	155	5	103	5	5	55	79	800	10	70	812	221
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	65	70	65	65	75	70	96	70	85	97	85
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	207	8	147	8	8	73	113	833	14	82	837	260

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1778	2204	549	1653	2327	424	1097	0	0	847	0	0
Stage 1	1131	1131	-	1066	1066	-	-	-	-	-	-	-
Stage 2	647	1073	-	587	1261	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 53	45	485	66	38	584	632	-	-	786	-	-
Stage 1	220	281	-	241	301	-	-	-	-	-	-	-
Stage 2	431	299	-	468	244	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 29	33	485	30	28	584	632	-	-	786	-	-
Mov Cap-2 Maneuver	~ 29	33	-	30	28	-	-	-	-	-	-	-
Stage 1	~ 181	252	-	198	247	-	-	-	-	-	-	-
Stage 2	300	245	-	283	219	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	3178.4	72.2	1.4	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	632	-	-	47	135	786	-	-
HCM Lane V/C Ratio	0.179	-	-	7.692	0.657	0.105	-	-
HCM Control Delay (s)	11.9	-	-	$ 3178.4	72.2	10.1	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	42.5	3.6	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

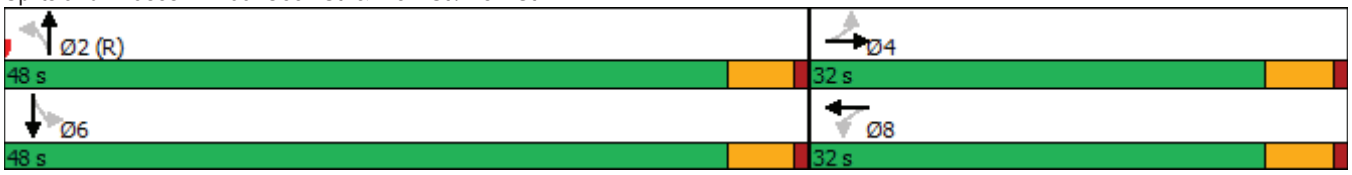
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	5	103	5	5	55	79	800	10	70	812	221
Future Volume (vph)	155	5	103	5	5	55	79	800	10	70	812	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.889			0.998			0.964	
Flt Protected		0.972			0.996		0.950			0.950		
Satd. Flow (prot)	0	1765	0	0	1701	0	1789	3571	0	1789	3450	0
Flt Permitted		0.788			0.964		0.185			0.278		
Satd. Flow (perm)	0	1431	0	0	1646	0	348	3571	0	524	3450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			73			3			80	
Link Speed (k/h)		50			48			40			40	
Link Distance (m)		223.8			209.0			93.4			88.8	
Travel Time (s)		16.1			15.7			8.4			8.0	
Peak Hour Factor	0.75	0.65	0.70	0.65	0.65	0.75	0.70	0.96	0.70	0.85	0.97	0.85
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	207	8	147	8	8	73	113	833	14	82	837	260
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	362	0	0	89	0	113	847	0	82	1097	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)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	32.0	32.0		32.0	32.0		48.0	48.0		48.0	48.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		43.0	43.0		43.0	43.0	
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)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		27.0			27.0		43.0	43.0		43.0	43.0	
Actuated g/C Ratio		0.34			0.34		0.54	0.54		0.54	0.54	

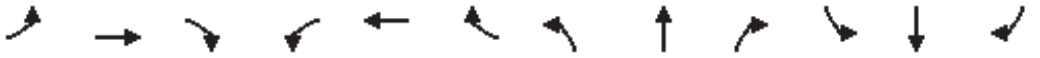
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.71			0.15		0.60	0.44		0.29	0.58	
Control Delay		28.9			7.2		29.9	12.1		13.9	13.4	
Queue Delay		0.0			0.0		0.0	1.4		0.0	1.3	
Total Delay		28.9			7.2		29.9	13.5		13.9	14.7	
LOS		C			A		C	B		B	B	
Approach Delay		28.9			7.2			15.4			14.7	
Approach LOS		C			A			B			B	
Queue Length 50th (m)		41.2			1.6		10.9	38.1		8.4	64.6	
Queue Length 95th (m)		43.0			5.3		19.6	51.1		m16.7	88.6	
Internal Link Dist (m)		199.8			185.0			69.4			64.8	
Turn Bay Length (m)							15.0			15.0		
Base Capacity (vph)		513			603		187	1920		281	1891	
Starvation Cap Reductn		0			0		0	821		0	542	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.71			0.15		0.60	0.77		0.29	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 166: Cook St. & View St./View St





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	251	503	101	136	910	0	0	876	127
Future Volume (vph)	0	0	0	251	503	101	136	910	0	0	876	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	12.0		30.0	35.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	1		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	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.82		0.81	0.98				0.98	
Frt						0.850					0.980	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	3539	1583	1770	3539	0	0	3408	0
Flt Permitted				0.950			0.178					
Satd. Flow (perm)	0	0	0	1452	3539	1289	326	3539	0	0	3408	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						130					30	
Link Speed (k/h)		40			45			40			40	
Link Distance (m)		165.1			307.3			88.8			98.6	
Travel Time (s)		14.9			24.6			8.0			8.9	
Confl. Peds. (#/hr)				112		111	92					92
Peak Hour Factor	0.25	0.25	0.25	0.89	0.95	0.65	0.88	0.92	0.25	0.25	0.85	0.82
Adj. Flow (vph)	0	0	0	282	529	155	155	989	0	0	1031	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	282	529	155	155	989	0	0	1186	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			3.7			3.7	
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
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Minimum Split (s)				23.0	23.0	23.0	23.0	23.0			23.0	
Total Split (s)				27.0	27.0	27.0	53.0	53.0			53.0	
Total Split (%)				33.8%	33.8%	33.8%	66.3%	66.3%			66.3%	
Maximum Green (s)				22.0	22.0	22.0	48.0	48.0			48.0	
Yellow Time (s)				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	
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 Optimize?												
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				8.0	8.0	8.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				20	20	20	20	20			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				23.0	23.0	23.0	49.0	49.0			49.0	
Actuated g/C Ratio				0.29	0.29	0.29	0.61	0.61			0.61	
v/c Ratio				0.68	0.52	0.33	0.78	0.46			0.57	
Control Delay				34.8	26.1	8.4	41.8	6.7			10.2	
Queue Delay				0.0	0.0	0.0	0.0	0.6			0.4	
Total Delay				34.8	26.1	8.4	41.8	7.3			10.6	
LOS				C	C	A	D	A			B	
Approach Delay					25.8			12.0			10.6	
Approach LOS					C			B			B	
Queue Length 50th (m)				37.7	35.3	2.8	12.2	25.5			49.0	
Queue Length 95th (m)				62.8	49.8	6.8	m#46.2	31.3			59.1	
Internal Link Dist (m)		141.1			283.3			64.8			74.6	
Turn Bay Length (m)				12.0		30.0	35.0					
Base Capacity (vph)				417	1017	463	199	2167			2099	
Starvation Cap Reductn				0	0	0	0	726			0	
Spillback Cap Reductn				0	0	0	0	0			406	
Storage Cap Reductn				0	0	0	0	0			0	
Reduced v/c Ratio				0.68	0.52	0.33	0.78	0.69			0.70	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 56 (70%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 60.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 754: Cook St. & Yates St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	597	125	0	0	0	0	777	91	152	763	0
Future Volume (vph)	112	597	125	0	0	0	0	777	91	152	763	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.0	3.7	3.0	3.0	3.7
Storage Length (m)	20.0		20.0	0.0		0.0	0.0		0.0	22.0		0.0
Storage Lanes	1		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.70		0.73					0.97				
Frt			0.850					0.979				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1516	3032	1357	0	0	0	0	2884	0	1516	3032	0
Flt Permitted	0.950									0.154		
Satd. Flow (perm)	1054	3032	995	0	0	0	0	2884	0	246	3032	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			142									
Link Speed (k/h)		40			48			40			40	
Link Distance (m)		219.6			205.1			192.6			93.4	
Travel Time (s)		19.8			15.4			17.3			8.4	
Confl. Peds. (#/hr)	94		161						133	133		
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.74	0.93	0.73	0.25	0.25	0.25	0.25	0.88	0.65	0.89	0.89	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	151	642	171	0	0	0	0	883	140	171	857	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	642	171	0	0	0	0	1023	0	171	857	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)		3.0			3.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			4.8	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.13	1.13	1.13	1.13	1.25	1.13	1.25	1.25	1.13
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Prot	NA	Perm					NA		pm+pt	NA	
Protected Phases	7	8						2		1	6	
Permitted Phases			8							6		
Minimum Split (s)	10.5	22.5	22.5					22.5		10.0	22.5	
Total Split (s)	10.5	33.0	33.0					27.0		10.0	37.0	
Total Split (%)	13.0%	41.0%	41.0%					33.5%		12.4%	46.0%	
Maximum Green (s)	6.0	28.0	28.0					22.0		6.0	32.0	
Yellow Time (s)	3.5	4.0	4.0					4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0		0.0	-1.0	
Total Lost Time (s)	3.5	4.0	4.0					4.0		4.0	4.0	
Lead/Lag	Lag	Lead	Lead					Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes					Yes		Yes		
Walk Time (s)		7.0	7.0					7.0			7.0	

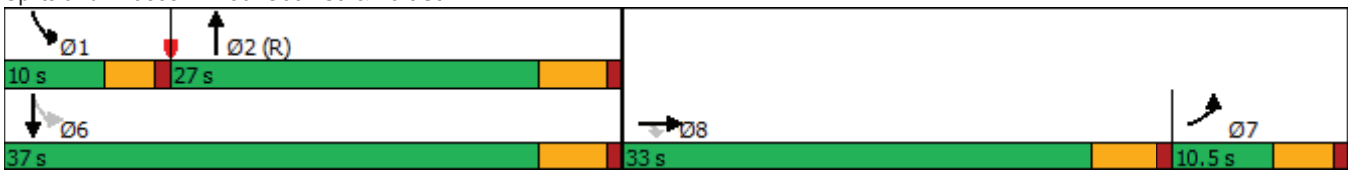
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		8.0	8.0					9.0			9.0	
Pedestrian Calls (#/hr)		60	60					60			60	
Act Effct Green (s)	7.0	29.0	29.0					23.0		33.0	33.0	
Actuated g/C Ratio	0.09	0.36	0.36					0.29		0.41	0.41	
v/c Ratio	1.15	0.59	0.38					1.24		0.88	0.69	
Control Delay	162.7	23.6	7.9					147.2		60.7	23.1	
Queue Delay	0.0	0.0	0.0					0.0		0.0	4.2	
Total Delay	162.7	23.6	7.9					147.2		60.7	27.3	
LOS	F	C	A					F		E	C	
Approach Delay		42.6						147.2			32.9	
Approach LOS		D						F			C	
Queue Length 50th (m)	~27.5	41.2	2.9					~103.9		16.9	55.1	
Queue Length 95th (m)	#47.2	57.7	9.3					#135.7		#45.6	74.0	
Internal Link Dist (m)		195.6			181.1			168.6			69.4	
Turn Bay Length (m)	20.0		20.0							22.0		
Base Capacity (vph)	131	1092	449					824		195	1242	
Starvation Cap Reductn	0	0	0					0		0	301	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.15	0.59	0.38					1.24		0.88	0.91	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80.5			
Actuated Cycle Length: 80.5			
Offset: 28 (35%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay: 74.8		Intersection LOS: E	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 756: Cook St. & Fort St.

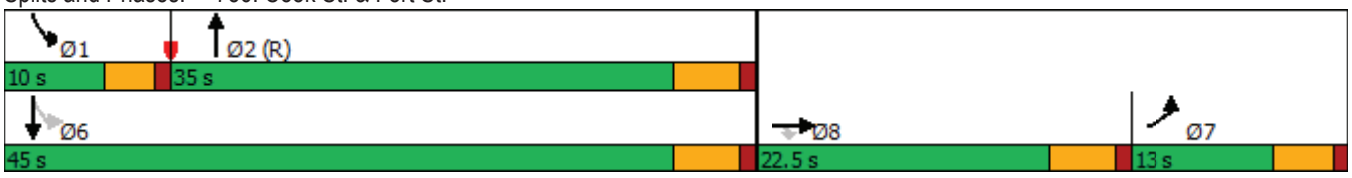


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	597	125	0	0	0	0	777	91	152	763	0
Future Volume (vph)	112	597	125	0	0	0	0	777	91	152	763	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.0	3.7	3.0	3.0	3.7
Storage Length (m)	20.0		20.0	0.0		0.0	0.0		0.0	22.0		0.0
Storage Lanes	1		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.76		0.73					0.97				
Frt			0.850					0.979				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1516	3032	1357	0	0	0	0	2884	0	1516	3032	0
Flt Permitted	0.950									0.118		
Satd. Flow (perm)	1154	3032	995	0	0	0	0	2884	0	188	3032	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			142									
Link Speed (k/h)		40			48			40			40	
Link Distance (m)		219.6			205.1			192.6			93.4	
Travel Time (s)		19.8			15.4			17.3			8.4	
Confl. Peds. (#/hr)	94		161						133	133		
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.74	0.93	0.73	0.25	0.25	0.25	0.25	0.88	0.65	0.89	0.89	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	151	642	171	0	0	0	0	883	140	171	857	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	642	171	0	0	0	0	1023	0	171	857	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)		3.0			3.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			4.8	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.13	1.13	1.13	1.13	1.25	1.13	1.25	1.25	1.13
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Prot	NA	Perm					NA		pm+pt	NA	
Protected Phases	7	8						2		1	6	
Permitted Phases			8							6		
Minimum Split (s)	10.5	22.5	22.5					22.5		10.0	22.5	
Total Split (s)	13.0	22.5	22.5					35.0		10.0	45.0	
Total Split (%)	16.1%	28.0%	28.0%					43.5%		12.4%	55.9%	
Maximum Green (s)	8.5	17.5	17.5					30.0		6.0	40.0	
Yellow Time (s)	3.5	4.0	4.0					4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0		0.0	-1.0	
Total Lost Time (s)	3.5	4.0	4.0					4.0		4.0	4.0	
Lead/Lag	Lag	Lead	Lead					Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes					Yes		Yes		
Walk Time (s)		7.0	7.0					7.0			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		8.0	8.0					9.0			9.0	
Pedestrian Calls (#/hr)		60	60					60			60	
Act Effct Green (s)	9.5	18.5	18.5					31.0		41.0	41.0	
Actuated g/C Ratio	0.12	0.23	0.23					0.39		0.51	0.51	
v/c Ratio	0.85	0.92	0.51					0.92		0.88	0.56	
Control Delay	74.7	51.6	13.2					38.6		57.3	15.2	
Queue Delay	0.0	0.0	0.0					0.0		0.0	2.0	
Total Delay	74.7	51.6	13.2					38.6		57.3	17.2	
LOS	E	D	B					D		E	B	
Approach Delay		48.4						38.6			23.9	
Approach LOS		D						D			C	
Queue Length 50th (m)	23.0	50.6	3.5					76.6		13.6	44.5	
Queue Length 95th (m)	#39.6	#81.7	11.4					#111.3		#45.9	59.7	
Internal Link Dist (m)		195.6			181.1			168.6			69.4	
Turn Bay Length (m)	20.0		20.0							22.0		
Base Capacity (vph)	178	696	338					1110		194	1544	
Starvation Cap Reductn	0	0	0					0		0	509	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.85	0.92	0.51					0.92		0.88	0.83	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80.5			
Actuated Cycle Length: 80.5			
Offset: 28 (35%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 36.7		Intersection LOS: D	
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 756: Cook St. & Fort St.



APPENDIX D: POST DEVELOPMENT PEAK HOUR TRAFFIC CONDITIONS

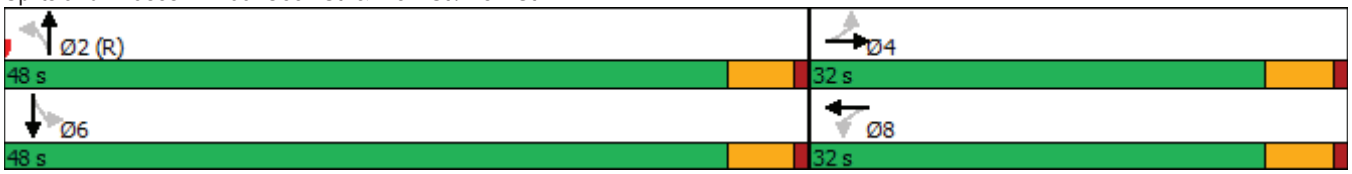
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	5	108	5	5	55	83	800	10	70	812	236
Future Volume (vph)	163	5	108	5	5	55	83	800	10	70	812	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	15.0		0.0	15.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.889			0.998			0.963	
Flt Protected		0.972			0.996		0.950			0.950		
Satd. Flow (prot)	0	1765	0	0	1701	0	1789	3571	0	1789	3446	0
Flt Permitted		0.788			0.963		0.179			0.278		
Satd. Flow (perm)	0	1431	0	0	1645	0	337	3571	0	524	3446	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			73			3			88	
Link Speed (k/h)		50			48			40			40	
Link Distance (m)		57.0			209.0			93.4			88.8	
Travel Time (s)		4.1			15.7			8.4			8.0	
Peak Hour Factor	0.75	0.65	0.70	0.65	0.65	0.75	0.70	0.96	0.70	0.85	0.97	0.85
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	217	8	154	8	8	73	119	833	14	82	837	278
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	379	0	0	89	0	119	847	0	82	1115	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)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	32.0	32.0		32.0	32.0		48.0	48.0		48.0	48.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		60.0%	60.0%		60.0%	60.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		43.0	43.0		43.0	43.0	
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)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		27.0			27.0		43.0	43.0		43.0	43.0	
Actuated g/C Ratio		0.34			0.34		0.54	0.54		0.54	0.54	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.74			0.15		0.66	0.44		0.29	0.59	
Control Delay		30.8			7.2		34.8	12.1		13.9	13.5	
Queue Delay		0.0			0.0		0.0	1.4		0.0	1.4	
Total Delay		30.8			7.2		34.8	13.5		13.9	14.9	
LOS		C			A		C	B		B	B	
Approach Delay		30.8			7.2			16.1			14.8	
Approach LOS		C			A			B			B	
Queue Length 50th (m)		44.2			1.6		12.0	38.1		8.4	66.0	
Queue Length 95th (m)		45.4			5.3		21.7	51.1		m16.6	90.1	
Internal Link Dist (m)		33.0			185.0			69.4			64.8	
Turn Bay Length (m)							15.0			15.0		
Base Capacity (vph)		513			603		181	1920		281	1892	
Starvation Cap Reductn		0			0		0	821		0	538	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.74			0.15		0.66	0.77		0.29	0.82	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 166: Cook St. & View St./View St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	255	503	101	139	915	0	0	887	127
Future Volume (vph)	0	0	0	255	503	101	139	915	0	0	887	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Storage Length (m)	0.0		0.0	12.0		30.0	35.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	1		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	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor				0.82		0.81	0.99				0.98	
Frt						0.850					0.981	
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	3539	1583	1770	3539	0	0	3413	0
Flt Permitted				0.950			0.174					
Satd. Flow (perm)	0	0	0	1452	3539	1289	319	3539	0	0	3413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						128					30	
Link Speed (k/h)		40			45			40			40	
Link Distance (m)		165.1			307.3			88.8			98.6	
Travel Time (s)		14.9			24.6			8.0			8.9	
Confl. Peds. (#/hr)				112		111	92					92
Peak Hour Factor	0.25	0.25	0.25	0.89	0.95	0.65	0.88	0.92	0.25	0.25	0.85	0.82
Adj. Flow (vph)	0	0	0	287	529	155	158	995	0	0	1044	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	287	529	155	158	995	0	0	1199	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			3.7			3.7	
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
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					8			2			6	
Permitted Phases				8		8	2					
Minimum Split (s)				23.0	23.0	23.0	23.0	23.0			23.0	
Total Split (s)				27.0	27.0	27.0	53.0	53.0			53.0	
Total Split (%)				33.8%	33.8%	33.8%	66.3%	66.3%			66.3%	
Maximum Green (s)				22.0	22.0	22.0	48.0	48.0			48.0	
Yellow Time (s)				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	
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 Optimize?												
Walk Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)				8.0	8.0	8.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)				20	20	20	20	20			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)				23.0	23.0	23.0	49.0	49.0			49.0	
Actuated g/C Ratio				0.29	0.29	0.29	0.61	0.61			0.61	
v/c Ratio				0.69	0.52	0.34	0.81	0.46			0.57	
Control Delay				35.4	26.1	8.6	46.2	6.7			10.3	
Queue Delay				0.0	0.0	0.0	0.0	0.6			0.5	
Total Delay				35.4	26.1	8.6	46.2	7.3			10.8	
LOS				D	C	A	D	A			B	
Approach Delay					26.1			12.6			10.8	
Approach LOS					C			B			B	
Queue Length 50th (m)				38.6	35.3	3.0	13.4	25.2			49.7	
Queue Length 95th (m)				#65.1	49.8	7.0	m#48.1	31.4			59.8	
Internal Link Dist (m)		141.1			283.3			64.8			74.6	
Turn Bay Length (m)				12.0		30.0	35.0					
Base Capacity (vph)				417	1017	461	195	2167			2102	
Starvation Cap Reductn				0	0	0	0	728			0	
Spillback Cap Reductn				0	0	0	0	0			435	
Storage Cap Reductn				0	0	0	0	0			0	
Reduced v/c Ratio				0.69	0.52	0.34	0.81	0.69			0.72	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 56 (70%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 61.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 754: Cook St. & Yates St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	597	125	0	0	0	0	779	91	155	765	0
Future Volume (vph)	114	597	125	0	0	0	0	779	91	155	765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.0	3.7	3.0	3.0	3.7
Storage Length (m)	20.0		20.0	0.0		0.0	0.0		0.0	22.0		0.0
Storage Lanes	1		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.70		0.73					0.97				
Frt			0.850					0.980				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1516	3032	1357	0	0	0	0	2887	0	1516	3032	0
Flt Permitted	0.950									0.154		
Satd. Flow (perm)	1054	3032	995	0	0	0	0	2887	0	246	3032	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			142									
Link Speed (k/h)		40			48			40			40	
Link Distance (m)		219.6			205.1			192.6			93.4	
Travel Time (s)		19.8			15.4			17.3			8.4	
Confl. Peds. (#/hr)	94		161						133	133		
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.74	0.93	0.73	0.25	0.25	0.25	0.25	0.88	0.65	0.89	0.89	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	154	642	171	0	0	0	0	885	140	174	860	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	642	171	0	0	0	0	1025	0	174	860	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)		3.0			3.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			4.8	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.13	1.13	1.13	1.13	1.25	1.13	1.25	1.25	1.13
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Prot	NA	Perm					NA		pm+pt	NA	
Protected Phases	7	8						2		1	6	
Permitted Phases			8							6		
Minimum Split (s)	10.5	22.5	22.5					22.5		10.0	22.5	
Total Split (s)	10.5	33.0	33.0					27.0		10.0	37.0	
Total Split (%)	13.0%	41.0%	41.0%					33.5%		12.4%	46.0%	
Maximum Green (s)	6.0	28.0	28.0					22.0		6.0	32.0	
Yellow Time (s)	3.5	4.0	4.0					4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0		0.0	-1.0	
Total Lost Time (s)	3.5	4.0	4.0					4.0		4.0	4.0	
Lead/Lag	Lag	Lead	Lead					Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes					Yes		Yes		
Walk Time (s)		7.0	7.0					7.0			7.0	

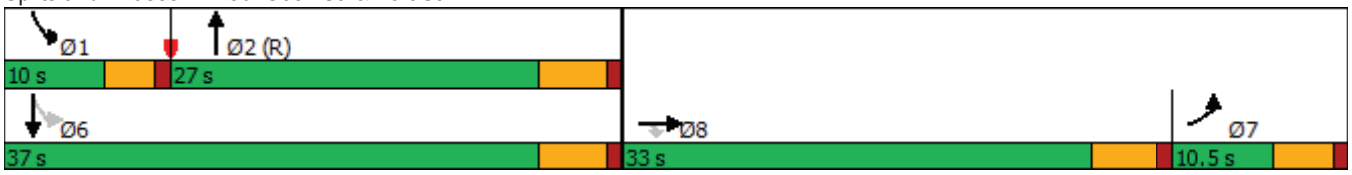
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		8.0	8.0					9.0			9.0	
Pedestrian Calls (#/hr)		60	60					60			60	
Act Effct Green (s)	7.0	29.0	29.0					23.0		33.0	33.0	
Actuated g/C Ratio	0.09	0.36	0.36					0.29		0.41	0.41	
v/c Ratio	1.18	0.59	0.38					1.24		0.89	0.69	
Control Delay	170.1	23.6	7.9					148.2		63.5	23.2	
Queue Delay	0.0	0.0	0.0					0.0		0.0	4.3	
Total Delay	170.1	23.6	7.9					148.2		63.5	27.5	
LOS	F	C	A					F		E	C	
Approach Delay		44.1						148.2			33.6	
Approach LOS		D						F			C	
Queue Length 50th (m)	~28.5	41.2	2.9					~104.2		17.3	55.4	
Queue Length 95th (m)	#48.2	57.7	9.3					#136.0		#46.9	74.3	
Internal Link Dist (m)		195.6			181.1			168.6			69.4	
Turn Bay Length (m)	20.0		20.0							22.0		
Base Capacity (vph)	131	1092	449					824		195	1242	
Starvation Cap Reductn	0	0	0					0		0	300	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	1.18	0.59	0.38					1.24		0.89	0.91	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80.5			
Actuated Cycle Length: 80.5			
Offset: 28 (35%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay: 75.8		Intersection LOS: E	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 756: Cook St. & Fort St.



Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	263	13	19	300	9	13
Future Vol, veh/h	263	13	19	300	9	13
Conflicting Peds, #/hr	0	30	30	0	30	30
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	70	70	85	70	70
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	309	19	27	353	13	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	358	0	786	379
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	437	-
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	-	-	1212	-	364	672
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1177	-	333	634
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	13.3
HCM LOS			B

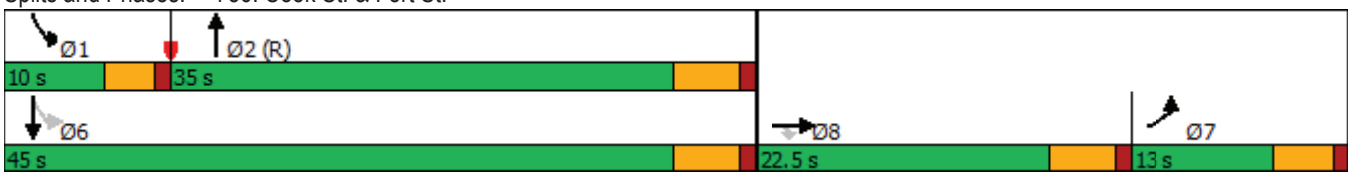
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	463	-	-	1177	-
HCM Lane V/C Ratio	0.068	-	-	0.023	-
HCM Control Delay (s)	13.3	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	597	125	0	0	0	0	779	91	155	765	0
Future Volume (vph)	114	597	125	0	0	0	0	779	91	155	765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.0	3.7	3.0	3.0	3.7
Storage Length (m)	20.0		20.0	0.0		0.0	0.0		0.0	22.0		0.0
Storage Lanes	1		1	0		0	0		0	1		0
Taper Length (m)	2.5			2.5			2.5			7.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.76		0.73					0.97				
Frt			0.850					0.980				
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1516	3032	1357	0	0	0	0	2887	0	1516	3032	0
Flt Permitted	0.950									0.118		
Satd. Flow (perm)	1154	3032	995	0	0	0	0	2887	0	188	3032	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			142									
Link Speed (k/h)		40			48			40			40	
Link Distance (m)		219.6			205.1			192.6			93.4	
Travel Time (s)		19.8			15.4			17.3			8.4	
Confl. Peds. (#/hr)	94		161						133	133		
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.74	0.93	0.73	0.25	0.25	0.25	0.25	0.88	0.65	0.89	0.89	0.25
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	154	642	171	0	0	0	0	885	140	174	860	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	642	171	0	0	0	0	1025	0	174	860	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)		3.0			3.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			4.8	
Two way Left Turn Lane												
Headway Factor	1.25	1.25	1.25	1.13	1.13	1.13	1.13	1.25	1.13	1.25	1.25	1.13
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Turn Type	Prot	NA	Perm					NA		pm+pt	NA	
Protected Phases	7	8						2		1	6	
Permitted Phases			8							6		
Minimum Split (s)	10.5	22.5	22.5					22.5		10.0	22.5	
Total Split (s)	13.0	22.5	22.5					35.0		10.0	45.0	
Total Split (%)	16.1%	28.0%	28.0%					43.5%		12.4%	55.9%	
Maximum Green (s)	8.5	17.5	17.5					30.0		6.0	40.0	
Yellow Time (s)	3.5	4.0	4.0					4.0		3.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0					-1.0		0.0	-1.0	
Total Lost Time (s)	3.5	4.0	4.0					4.0		4.0	4.0	
Lead/Lag	Lag	Lead	Lead					Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes					Yes		Yes		
Walk Time (s)		7.0	7.0					7.0			7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		8.0	8.0					9.0			9.0	
Pedestrian Calls (#/hr)		60	60					60			60	
Act Effct Green (s)	9.5	18.5	18.5					31.0		41.0	41.0	
Actuated g/C Ratio	0.12	0.23	0.23					0.39		0.51	0.51	
v/c Ratio	0.87	0.92	0.51					0.92		0.90	0.56	
Control Delay	77.5	51.6	13.2					38.7		60.2	15.3	
Queue Delay	0.0	0.0	0.0					0.0		0.0	2.0	
Total Delay	77.5	51.6	13.2					38.7		60.2	17.3	
LOS	E	D	B					D		E	B	
Approach Delay		48.9						38.7			24.5	
Approach LOS		D						D			C	
Queue Length 50th (m)	23.5	50.6	3.5					76.8		13.9	44.7	
Queue Length 95th (m)	#40.6	#81.7	11.4					#111.6		#47.2	60.1	
Internal Link Dist (m)		195.6			181.1			168.6			69.4	
Turn Bay Length (m)	20.0		20.0							22.0		
Base Capacity (vph)	178	696	338					1111		194	1544	
Starvation Cap Reductn	0	0	0					0		0	508	
Spillback Cap Reductn	0	0	0					0		0	0	
Storage Cap Reductn	0	0	0					0		0	0	
Reduced v/c Ratio	0.87	0.92	0.51					0.92		0.90	0.83	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 80.5			
Actuated Cycle Length: 80.5			
Offset: 28 (35%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Pretimed			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 37.1		Intersection LOS: D	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 756: Cook St. & Fort St.



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MEMORANDUM

To: Dan Robbins, PhD – 66 Developments Ltd.

From: Michael Lee, AScT and Nadine King, P.Eng., PTOE

Our File #: 2780.B01

Project: 1150 Cook Street TIA

Date: April 22, 2020

RE: Response to City of Victoria Review

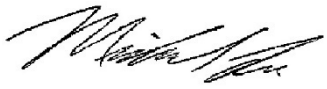
I understand the City of Victoria would like the 1150 Cook Street development to upgrade Cook Street / View Street from a two-way stop controlled intersection to a signalized intersection. Our traffic impact assessment did indicate that the proposed development would have minimal impact to a signalized intersection. However, if the intersection remained unsignalized the development would also have little impact. During the PM peak hour the proposed development will generate 19 trips entering the site and 13 trips exiting the site through the Cook Street / View Street intersection. The eastbound (side street) movement is the only direction that has an existing failing level of service as a left onto Cook Street in rush hour is difficult. Longer eastbound delay times will likely encourage the 13 trips assigned in this direction to use an alternative route which would further reduce the small impact at this intersection (i.e. head west and use the Vancouver/View traffic signal or Quadra/View to turn right to head north). The remaining movements at the intersection currently operate at LOS A and the 19 trips that are added to these movements will not significantly impact the operations.

TABLE 1: EXISTING PM PEAK HOUR TRAFFIC CONTROL CONDITIONS

Intersection	Movement	LOS	Delay (s)	Queue (m) 95th
View St / Cook St (Stop-Controlled)	EB	F	104.2	32.9
	WB	C	22.2	8.4
	NBL	A	9.7	0.7
	NB T/R	A	0.0	0.0
	SBL	A	9.5	2.1
	SB T/R	A	0.0	0.0

While this site is in close proximity to the intersection the size of the development does not have a significant impact on the traffic operations. Before undertaking the assessment for 1150 Cook Street the City staff helped to identify other active or planned developments in the area. Some of these other developments will also have an impact on the intersection to varying degrees. Our study found that the concurrent developments are estimated to generate over 400 trips through the Cook Street / View Street intersection during the PM peak hour. Of these 400 trips 208 are added to the eastbound movements. The amount of traffic this development is contributing to the intersection does not seem to be proportional to the associated costs for the installing a traffic signal.

Sincerely,
Watt Consulting Group



Michael Lee, AScT
Senior Transportation Technologist

Katie Lauriston

From: Charlotte Wain
Sent: November 13, 2019 9:55 AM
To: Katie Lauriston
Subject: FW: Project Type:Development Permit with Variance Folder Number:DPV00130

From: Deborah Yaffe [redacted]
Sent: November 11, 2019 6:07 PM
To: Charlotte Wain <CWain@victoria.ca>
Subject: Project Type:Development Permit with Variance Folder Number:DPV00130

Hello.
I notice that Sakura Developments has applied for a variance in connection with their proposal to build a condo tower at 1150 Cook Street.

Astonishingly, the requested variance would add an additional 50%, 5 stories, to the current zoning. One might be forgiven for wondering if they are trying to avoid the inclusionary housing policy that would accompany a rezoning.

Surely a change of this magnitude would warrant a rezoning application. I urge you do everything possible to steer them down this road.

Thank you for your attention and consideration.
Deborah Yaffe

Sent from Mail for Windows 10

Mayor Helps and Council
City of Victoria
No.1 Centennial Square
Victoria, BC V8W 1P6

September 14th, 2020

Re: 1150 Cook Street – Development Permit with Variance

Dear Mayor Helps and Council,

The DRA LUC met with the applicant in 2017 prior to application to discuss an earlier version of this application. The DRA has expressed ongoing concerns regarding the loopholes of the R48 Zoning Bylaw and Council's apparent lack of interest in closing them.

Comments and concerns regarding the application at 1150 Cook Street by the DRA LUC members are as follows:

- In the recent Staff report to ADP it states, *"Staff consider that the proposal is generally consistent with the use, density and height envisioned in the DCAP"*. This kind of Staff guidance to Advisory Design Panel is highly problematic as it appears factually incorrect. Density for this proposal is 40% greater than permitted by the OCP and DCAP; which is clearly "generally" not consistent with either the prescriptions or what was envisioned by the OCP.
- Built examples of R-48 zoned land that maintain the required 10-storey height limit have not achieved a density greater than 5:1. The Jukebox Condo is on land zoned R48 and was built a short distance away and achieved a density of 4.45:1 under the maximum 10-storey limit of the zoning. The proposed density for 1150 Cook is 7.78:1 while the OCP maximum is 5.5:1. The R-48 zone does not state a specific density entitlement and instead staff have adopted a highly debatable calculation to interpret and justify "as of right" densities. If the R48 zoning bylaw does not specifically state a density entitlement, why isn't an OCP amendment required for this proposal?
- West side yard setbacks of only 4.8m are proposed for floors 11-15 while DCAP requires 6.0m. DCAP specifications for building separation have been recently identified as grossly inadequate as the current rules impact liveability. At minimum, no variance should be granted under this circumstance.
- Rear yard setbacks of 5.9 m are proposed for floors 11-15 while DCAP requires 6.0m.

- Front setbacks do not comply with DCAP above the 10th floor. No variance should be granted.
- There are 41 parking spaces proposed for 129 market condo units. There are commercial units proposed within this project and yet no commercial parking spots are being provided. There is no parking for moving trucks, delivery vehicles or guest parking and both short term and long term street parking are typically at a premium already in our neighbourhood and with all the Covid deliveries, it is even worse.
- The evidence-based Schedule C requires over double this number of spaces. R-48 does not require parking however there is a height variance being sought that will permit a building approximately 42% larger than the existing 10-storey zoning limit, the OCP and DCAP would permit exacerbating the parking shortage downtown.
- There is no evidence to justify the provision of such a minimal amount of parking for this type of housing tenure, as the demand for onsite parking by tenants will surpass the parking supply. The outcome will be that these vehicles will be parked in the surrounding neighbourhoods effectively transferring the problem elsewhere.
- The parking garage exit/entry should be more that just a plain garage door - it (and all others in the downtown) should add some aesthetic appeal/value. And it should operate silently.
- The current pandemic has made it clear that privately owned vehicles will remain popular but electric cars may inevitably dominate. As reported by CTV News on November 28, 2019, "The province now boasts the highest per-capita sales of electric vehicles in North America". This application should provide the parking required by Schedule C as well as charging stations to support and incentivize the conversion from internal combustion engine (ICE) vehicles to electric vehicles.
- With due respect to the marketability of the proposed units, public feedback on other applications indicates that more consideration could be given for 2 and even 3 bedroom units as many millennials and others are looking for larger units, in order to share the space and the costs. This may be even more of a factor now with COVID, as people may not want to live in such isolation. Plus with more people working from home, and that may likely continue, they need space to do that, so even one bedroom + den units might be advisable..
- While the developer has provided 143 Bike parking spots, there appears to be no storage lockers proposed. It can be expected that the proposed bike parking will in all likelihood be utilized as storage.
- Bike parking has to be very secure. Recent thefts downtown illustrate there are substantial problems with theft from under ground garages.
- The shadow plans do not show December - the worst month of all. The building as proposed will create an unreasonable shadow over the neighbours. This is a residential neighbourhood and yet nowhere else in the city would this kind of shadowing of pre-existing homes be considered acceptable.
- The proposal appears to utilize attractive and high quality cladding materials.
- There are no public amenities proposed for this application. The original property owner has been able to extract the total value of the original R-48 rezoning entitlement without any corresponding contribution to the public good.

The DRA has long expressed concerns about how the R-48 zone has been egregiously gamed far beyond current OCP maximums and the original intent of the Council that created the zone. It is strongly felt that Council permitting R-48 applicants to cherry pick to their advantage the one OCP/DCAP policy that allows extra height and then ignore all of the other limiting policies of our

core planning bylaws has to stop. Existing DCAP policies have been identified as woefully inadequate to support liveability and proposed changes to correct these shortcomings are currently under review. R48 zoning produces buildings several orders of magnitude worse than our already inadequate DCAP prescriptions. The resulting buildings are overly bulky for their height and produce profoundly negative impacts on neighbouring properties. The City of Vancouver does not allow anything approaching these densities in urban residential areas and neither should Victoria. Council needs to decline any height variance that facilitates any configuration that doesn't comply 100% with DCAP policy for height, setbacks and floor plate sizes and OCP density maximums...period. The DRA would be happy to support this application under those circumstances.

This application facilitates the undermining of our core planning documents. It is high time for Council to support liveability Downtown and support the principles enshrined in the City's core planning documents.

Sincerely,

Ian Sutherland
Chair Land Use Committee Downtown Residents Association