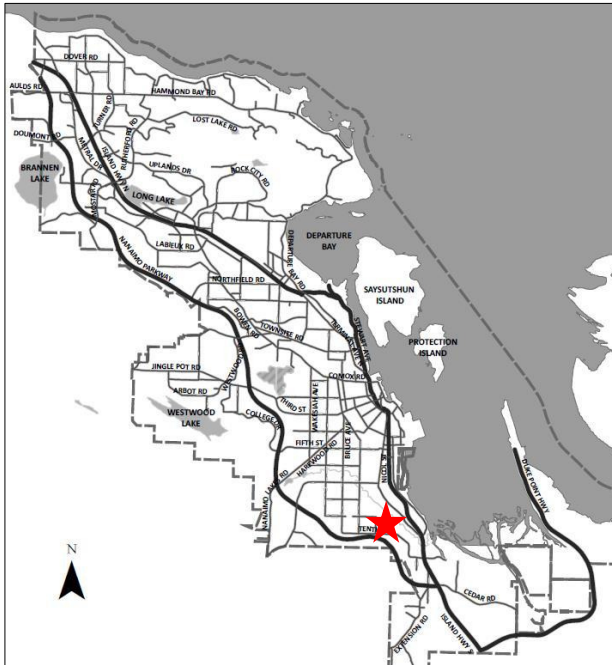


DATE OF MEETING | June 3, 2024

AUTHORED BY | CALEB HORN, PLANNER, CURRENT PLANNING

SUBJECT | DEVELOPMENT PERMIT APPLICATION NO. DP1189 – 200 TENTH STREET



**Proposal:**

An industrial development with watercourse setback variance

**Zoning:**

I2 – Light Industrial

**City Plan Land Use Designation:**

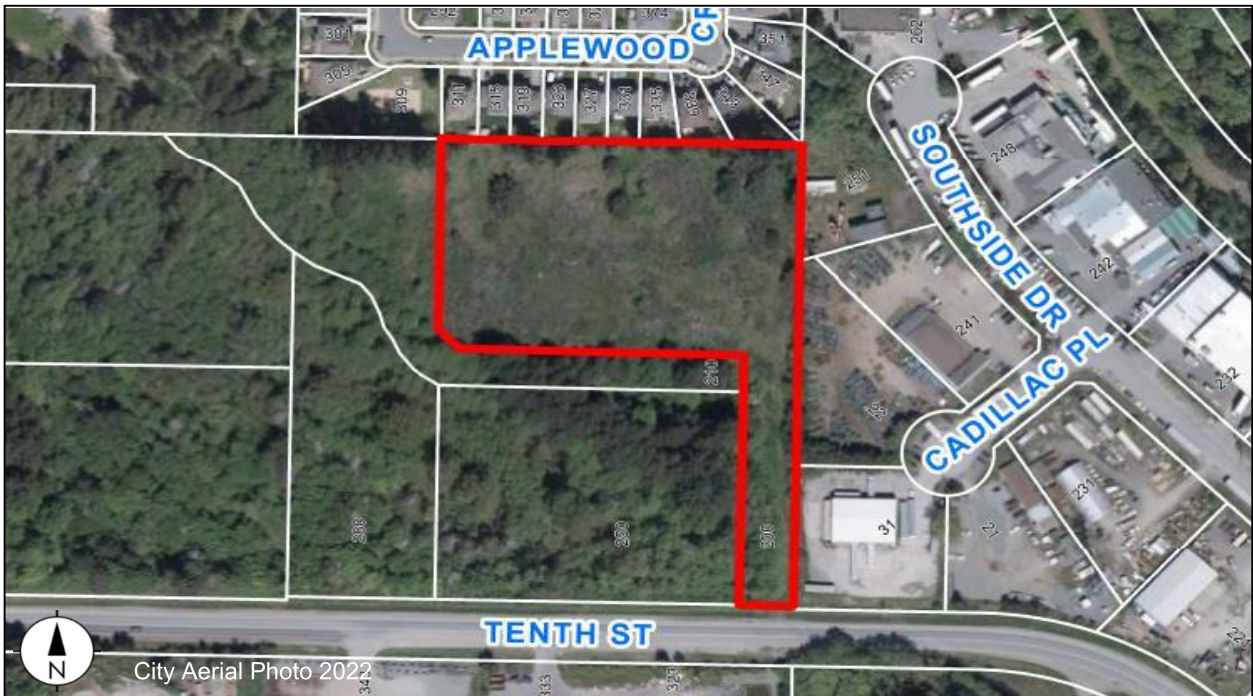
Suburban Neighbourhood

**Development Permit Areas:**

DPA1: Environmentally Sensitive Areas  
DPA8: Form and Character

**Lot Area:**

1.53ha



## **OVERVIEW**

### **Purpose of Report**

To present for Council's consideration a development permit application for a proposed industrial building, storage yard, and caretaker's suite with a watercourse setback variance at 200 Tenth Street.

### **Recommendation**

That Council issue Development Permit No. DP1189 for an industrial development at 200 Tenth Street with a variance as outlined in the "Proposed Variances" section of the Staff Report dated 2024-JUN-03.

## **BACKGROUND**

A development permit application, DP1189, was received from Island West Coast Developments Ltd., on behalf of Iceberg Projects Nominee Inc., to permit an industrial development at 200 Tenth Street.

### **Subject Property and Site Context**

The subject property is located in the Harewood neighbourhood and was created through subdivision in 2011 with a panhandle access to Tenth Street. The lot was previously cleared and is currently vacant. It slopes gradually to the southwest by approximately 6.0m in elevation. The surrounding neighbourhood consists of a variety of uses including established light industrial businesses to the south and east, a small lot single residential dwelling subdivision to the north, and Applegreen Park to the west.

The panhandle portion of the property abuts a City-owned parcel at 250 Tenth Street which contains a wetland reach of the north tributary of Wexford Creek. This watercourse crosses the southwest corner of the panhandle before passing through a culvert under Tenth Street. The panhandle is partially located within Development Permit Area DPA1: Environmentally Sensitive Areas, which extends 15m into the lot from the natural boundary of the wetland. Approximately 700m<sup>2</sup> of the subject property is located within DPA1. The panhandle is the only access to the property and an existing gravel driveway crosses the DPA within the watercourse setback.

## **DISCUSSION**

### **Proposed Development**

The applicant is proposing to construct an industrial building in addition to a storage yard and detached caretaker's suite. The industrial building will include a warehouse, equipment maintenance shop, fabrication shop, and office space with a gross floor area of 1,366m<sup>2</sup>. An accessory dwelling unit is permitted in the I2 zone and the 57m<sup>2</sup> caretaker's suite is proposed in the northeast corner of the site, adjacent to the existing residential neighbourhood. The total proposed gross floor area for the site is 1,423m<sup>2</sup> and total proposed lot coverage is 9%. There is no maximum floor area in the I2 zone, and the maximum permitted lot coverage is 40%.

### *Site Design*

The building is centrally sited on the lot to allow for vehicle circulation throughout the site and access to the equipment maintenance area of the building. The only access to the site will be via the existing panhandle connecting to Tenth Street. The 7.0m-wide drive aisle will narrow to the minimum required width of 6.0m where adjacent to the wetland. Parking is proposed along the east property line, and the refuse receptacle enclosure will be located in the northwest corner of the site with landscape screening. The caretaker's suite will be located in the northeast corner of the property to ensure clear sightlines across the site. A 3.0m-wide gravel public trail will be provided adjacent to the driveway, which will narrow to 1.5m closest to the wetland, to be protected by Statutory Right-of-Way as a condition of the development permit. The walkway will allow for a future public trail connection through Applegreen Park to the existing playground and residential neighbourhood on Applewood Crescent.

### *Building Design*

The building design portrays its industrial use with simple form and utilitarian character. The proposed building height is 8.23m with a partial second storey, below the maximum permitted height of 12m. The building façade will consist of concrete tilt-up panels and accent colours. Exposed steel joists and canopies will provide weather protection and visual interest. A contemporary flat roof is proposed with a number of canopies giving the appearance of a tiered roofline.

The caretaker's suite is a mobile home with an approximate size of 4.3m by 13.0m. The unit is finished with fiber cement panels complementary to the industrial building with reveals, and will have a low-slope roof pitch. At the rear of the mobile home is an attached patio and landscaped yard area.

### *Landscape Design*

A landscape buffer is proposed along all property lines, and includes a minimum 6.0m wide landscape buffer adjacent to Applegreen Park and a 5.0m buffer adjacent to the existing residential lots to the north. The property will be bordered by a 1.8m high chain link fence, which will be black-vinyl coated along the north property line, and a split rail fence will be located along the watercourse setback boundary. An onsite stormwater retention rock pit and swale is proposed. Native trees and shrubs are proposed within the wetland riparian area as a restoration and enhancement measure.

The proposed development substantially meets the intent of the General Development Permit Area Design Guidelines.

### **Design Advisory Panel**

The Design Advisory Panel (DAP), at its meeting held on 2020-AUG-13, accepted DP1189 as presented and provided the following recommendations:

- Consider enhancing landscape screening for the north and west property lines; and,
- Consider continuing the riparian planting on both sides of the walkway and along the parking landscape bump out.

The applicant subsequently submitted revised plans in response to the DAP recommendations, including the following key design revisions:

- Adding additional trees and shrubs in the landscape buffer next to the residential area to the north; and,
- Extended the riparian restoration planting on both sides of the public pathway leading to Applegreen Park.

### **Development Permit Area DPA1: Environmentally Sensitive Areas**

In order to provide access to the development, a driveway and walkway through the DPA1 portion of the panhandle are proposed. A previously-used gravel driveway exists through the panhandle; however, the proposed access will require the placement of fill with a retaining wall within the watercourse setback, triggering the DPA1 guidelines. While the application was originally submitted under the previous DPA guidelines (the application was received in 2020 and subsequently put on hold by the applicant), the applicant has since revised the environmental studies to address the current DPA1 guidelines as specified in City Plan and the “City of Nanaimo Zoning Bylaw 2011 No. 4500” (the “Zoning Bylaw”).

The following works are proposed within DPA1:

- a 6.0m-wide asphalt drive aisle required for vehicle access, sited as far from the wetland as possible;
- a 1.5m-wide gravel walkway for public access to Applegreen Park;
- a concrete block retaining wall up to 3.0m in height, where closest to the wetland; and,
- a fill slope to the north of the retaining wall.

At the closest point, the proposed works will be 5.0m from the natural boundary of the wetland. The total disturbed area within DPA1 is estimated to be 335m<sup>2</sup>.

A Qualified Environmental Professional (QEP) retained by the applicant has prepared a Biophysical Assessment and a Executive Summary of the proposed improvement (Attachment F). The Biophysical Assessment notes that the Wexford Creek channel is poorly defined and that the watercourse acts as a wildlife corridor for many animals. The wetland reach of Wexford Creek is vegetated with second-growth trees including Red alder, Bigleaf maples, and willows. Invasive species are also present, including Himalayan blackberry and Scotch broom.

The QEP has demonstrated that the DPA1 guidelines can be met and concluded that no negative impacts to the wetland and riparian habitat are anticipated, provided that the mitigation measures and recommendations are followed. Development within DPA1 has been avoided where possible and is concentrated in a previously disturbed area. Where encroachment is required for site access, impact on the Environmentally Sensitive Area will be mitigated in accordance with the DPA1 guidelines.

The recommendations of the Biophysical Assessment and riparian restoration will be secured as a condition of this development permit. The riparian restoration will be completed per a Riparian Compensation Plan prepared by the QEP (Attachment H), which includes vegetation remediation and maintenance. The Riparian Compensation Plan addresses the DPA1 net gain principle by proposing 335m<sup>2</sup> of restoration on the west side of the public walkway and an additional 340m<sup>2</sup> of planting on the east side of the walkway (greater than twice the area of encroachment). Riparian restoration vegetation will be installed with a planting density in accordance with the

Riparian Compensation Plan and the City of Nanaimo Manual of Engineering Standards and Specifications, as required by the DPA1 guidelines.

The proposed development meets the DPA1 guidelines and achieves the net gain principle by demonstrating that the proposed restoration and enhancement measures will increase the quality and quantity of functional habitat over existing conditions. The QEP has highlighted how:

- i. the planned works will result in habitat creation, enhancement, and restoration;
- ii. the restoration will create a functional riparian habitat within 20 years; and
- iii. the restoration area meets the target metric to compensate for the encroachment.

In addition to Nanaimo's DPA requirements, the proposed access (driveway, walkway, and associated works) is also subject to the Provincial Riparian Areas Protection Regulation (RAPR) as this reach of Wexford Creek is tributary to a fish-bearing stream and the access crosses through the riparian area. The QEP has submitted a RAPR report to the Province and received approval for the access improvements as proposed.

### **Proposed Variances**

#### *Minimum Watercourse Setback*

The Zoning Bylaw's minimum required watercourse setback is 15m as measured from the natural boundary of a waterbody or wetland. The proposed watercourse setback is 5m as recommended by the QEP, a requested variance of 10m. The setback variance has been requested to upgrade and formalize the existing access to the site that encroaches into the watercourse setback. No other point of access to the site is available, and the proposed variance will allow for functional site access and a secured public walkway to Applegreen Park. The impact within the watercourse setback will be minimized by reducing the widths of the drive aisle and public walkway to the minimum required widths (6.0m and 1.5m, respectively) and by addressing the DPA1 guidelines as outlined above.

#### *Maximum Retaining Wall Height*

The maximum permitted height of a fence or retaining wall in the front yard setback in the I2 zone is 2.4m. The applicant is proposing a concrete block retaining wall with a potential height up to 3.0m, a requested variance of 0.6m. A guardrail is proposed on top of the retaining wall and is exempt from the Zoning Bylaw height calculation. Given the fixed existing elevation of the roadway at Tenth Street and the inability to locate a fill slope in the wetland, a retaining wall is required to address the grade change between the site access and the wetland. The wall will face the wetland and will be located outside of the proposed setback line.

Staff support the proposed variances. |

### **SUMMARY POINTS**

- Development Permit Application No. DP1189 is for a proposed industrial building, storage yard and caretaker's suite with a watercourse setback variance at 200 Tenth Street.
- The proposed development substantially meets the intent of the General Development Permit Area Design Guidelines.
- In order to provide access to the development, a driveway and walkway through the DPA1 portion of the panhandle are proposed.
- The proposed development meets the DPA1 guidelines and achieves the net gain principle by demonstrating that the proposed restoration and enhancement measures will increase the quality and quantity of functional habitat over existing conditions.
- Variances are requested to reduce the minimum required watercourse setback from 15m to 5m and to increase the maximum permitted retaining wall height within a front yard setback from 2.4m to 3.0m.
- Staff support the proposed variances. |

### **ATTACHMENTS**

ATTACHMENT A:	Permit Terms and Conditions
ATTACHMENT B:	Subject Property Map
ATTACHMENT C:	Site and Lighting Plans
ATTACHMENT D:	Building Elevations and Details
ATTACHMENT E:	Landscape Plan and Details
ATTACHMENT F:	Retaining Wall Details
ATTACHMENT G:	Site Access Improvements Executive Summary
ATTACHMENT H:	Riparian Compensation Plan

#### **Submitted by:**

Lainya Rowett  
Manager, Current Planning |

#### **Concurrence by:**

Jeremy Holm  
Director, Planning & Development |

# ATTACHMENT A

## PERMIT TERMS AND CONDITIONS

### TERMS OF DEVELOPMENT PERMIT

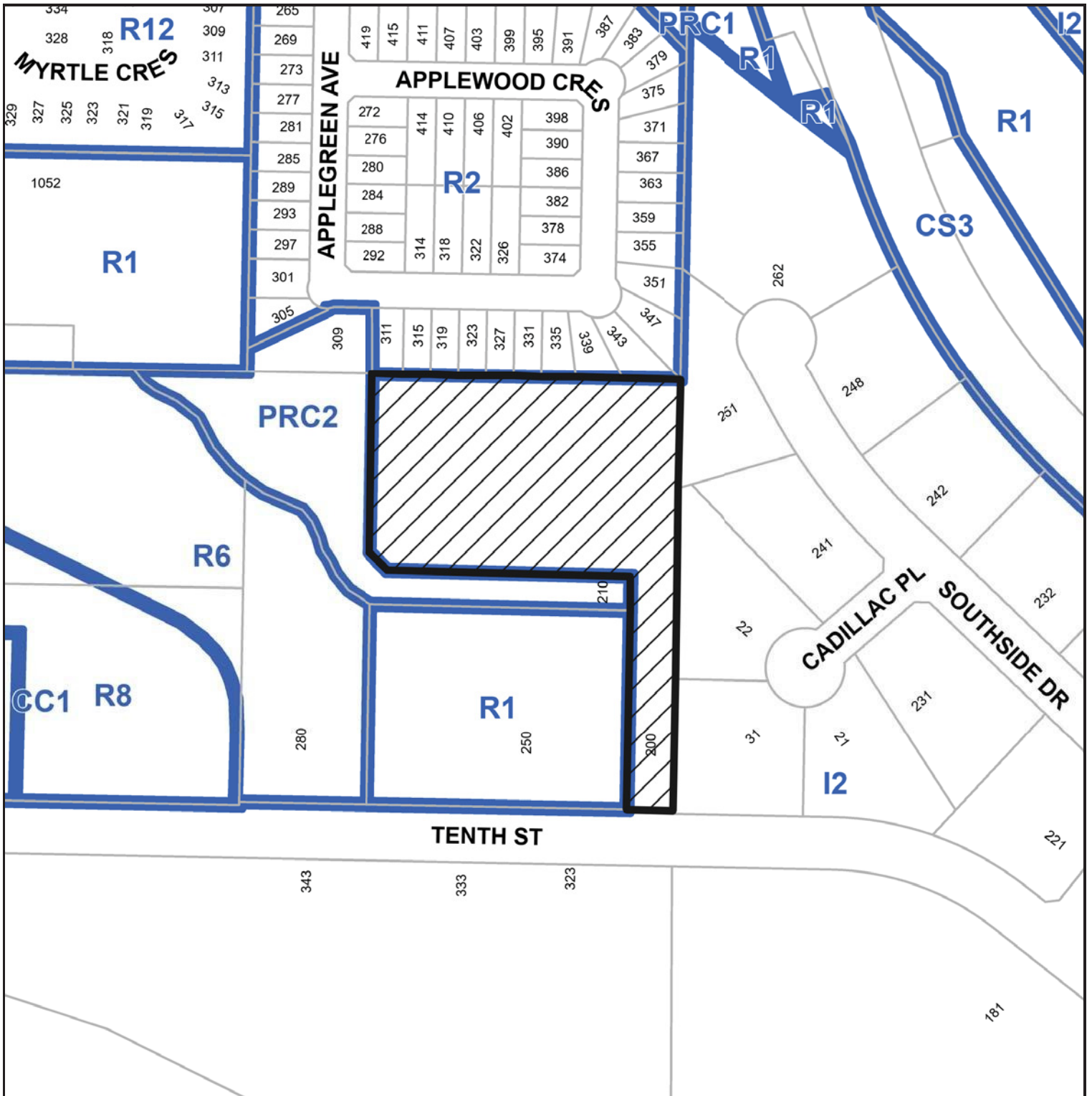
The “City of Nanaimo Bylaw 2011 No. 4500” is varied as follows:

1. *Section 6.3.1.1 Location and Siting of Buildings and Structures to Watercourses* – to reduce the minimum required watercourse setback from Wexford Creek from 15m to 5m, to allow the proposed improvements to an existing site access.
2. *Section 6.10.2 Fence Height* – to increase the maximum permitted fence height for a retaining wall in the front yard setback from 2.4m to 3.0m, as shown in Attachment F.

### CONDITIONS OF PERMIT

1. The subject property shall be developed in accordance with the Site and Lighting Plans prepared by Aplin Martin, received 2023-OCT-23 and 2024-JAN-24, as shown in Attachment C.
2. The development shall be in substantial compliance with the Building Elevations and Details prepared by Aplin Martin, received 2023-OCT-23, as shown in Attachment D.
3. The subject property shall be developed in accordance with the Landscape Plan and Details prepared by LADR Landscape Architects, dated 2024-JAN-23, as shown in Attachment E.
4. The proposed retaining wall shall be developed in accordance with the Retaining Wall Details prepared by Aplin Martin, received 2024-MAY-17, as shown in Attachment F.
5. The subject property shall be developed in accordance with the Biophysical Assessment prepared by Aquaparian Environmental Consulting Ltd., dated 2024-JAN-24, and its recommendations.
6. The riparian restoration shall be completed in accordance with:
  - i. the Riparian Compensation Plan prepared by Aquaparian Environmental Consulting Ltd., dated 2024-JAN-24; and
  - ii. the landscaping and maintenance requirements in Part 14 of the City of Nanaimo *Manual of Engineering Standards and Specifications*;and bonding equal to 100% of the value of the riparian compensation works to be provided prior to building permit issuance and retained for a 3-year maintenance period.
7. Installation of permanent split rail fencing and signage along the watercourse setback in accordance with the City of Nanaimo aquatic setback fence standards, except atop the retaining wall, prior to building permit occupancy.
8. Registration of a statutory right-of-way for a public walkway to connect Tenth Street and Applegreen Park with a width ranging from approximately 1.5m to 4.0m, generally as shown as the “Proposed Public Walkway SRW” on Attachment E, prior to building occupancy.

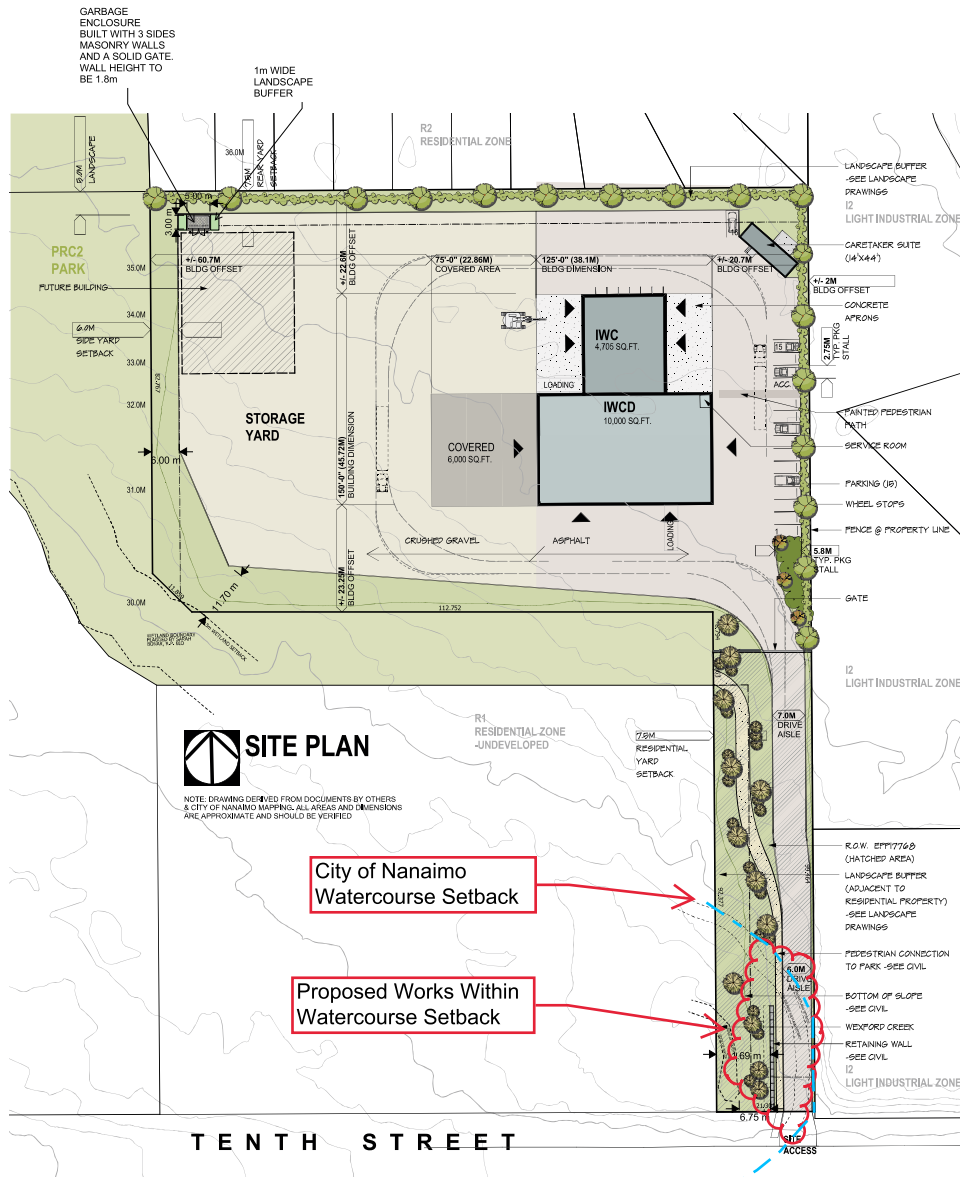
# ATTACHMENT B SUBJECT PROPERTY MAP



200 Tenth Street



# ATTACHMENT C SITE AND LIGHTING PLANS



PROPOSED NEW FACILITY FOR:  
**IWCD & IWC EXCAVATION**  
**200 - TENTH STREET**  
**NANAIMO B.C.**

DRAWN BY:  
B.B. / C.M.

NUMBER:  
d1515.26.18

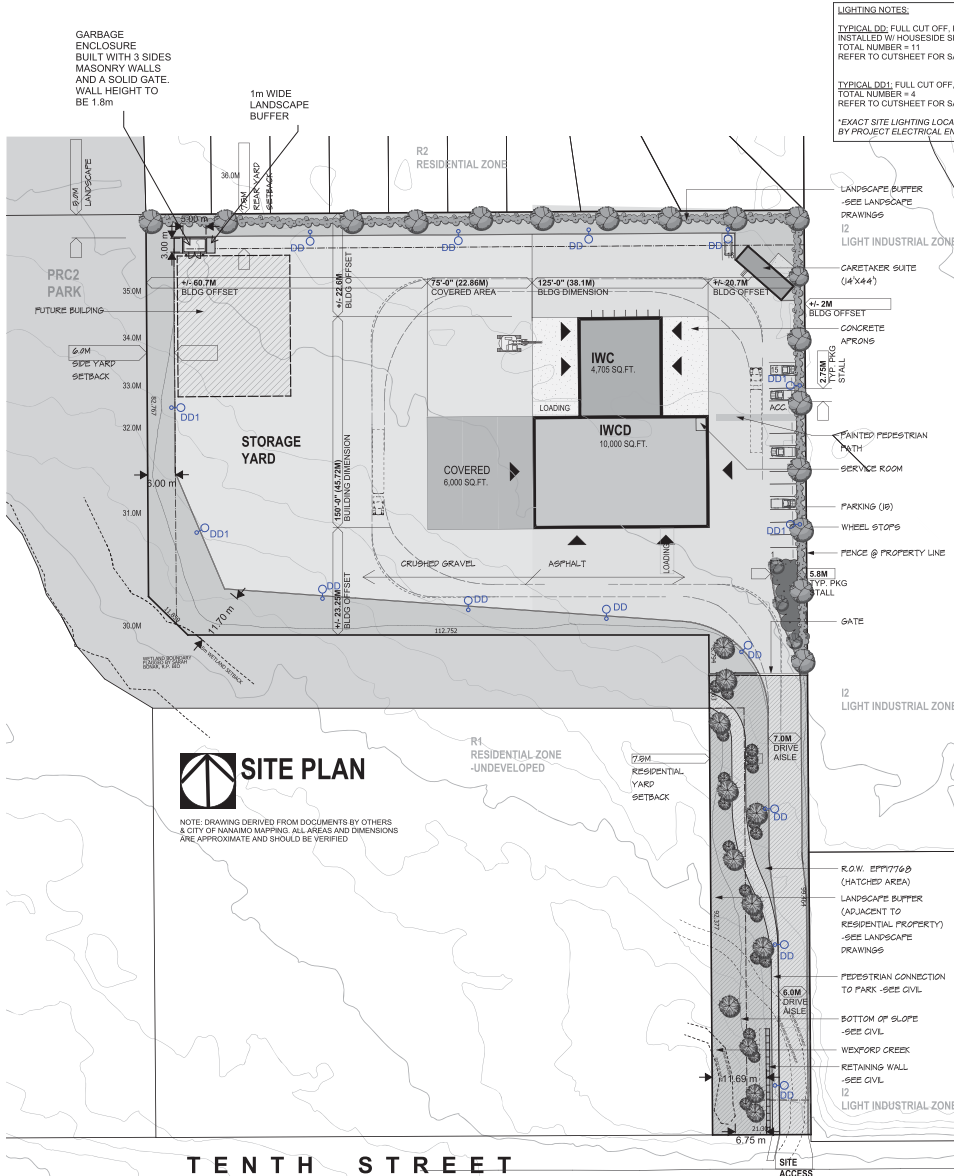
ISSUED:

ISSUED: 30 AUG 2018  
REVISED: 15 OCT 2018  
REVISED: 17 APR 2019  
REVISED: 11 JUNE 2019  
ISSUED: 24 JUNE 2019  
PRE DPA MEETING: 13 AUG 2019  
DPA: 10 OCT 2019  
REVISED: 16 DEC 2019  
REVISED: 3 OCT 2023

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORKS TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL REGULATIONS BY-LAWS. COPYRIGHT RESERVED. THESE PLANS ARE TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

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DP1169  
2023-OCT-23  
Current Planning

PR1

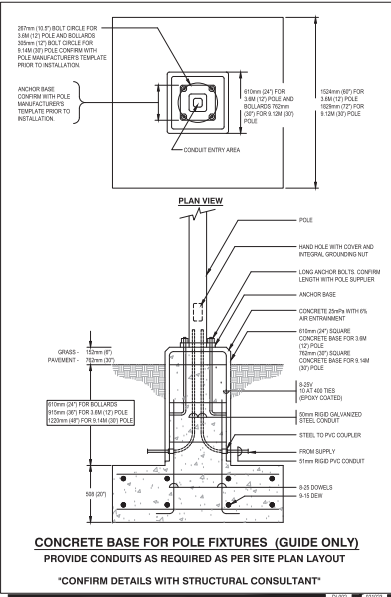


**LIGHTING NOTES:**

TYPICAL DD: FULL CUT OFF, FLAT HEAD, DARK-SKY COMPLIANT OVERHEAD PARKING LOT LIGHT, INSTALLED W/ HOUSESIDE SHIED/ EGSR SHED  
TOTAL NUMBER = 11  
REFER TO CUTSHEET FOR SAMPLE

TYPICAL DD1: FULL CUT OFF, FLAT HEAD, DARK-SKY COMPLIANT OVERHEAD PARKING LOT LIGHT, TOTAL NUMBER = 4  
REFER TO CUTSHEET FOR SAMPLE

\*EXACT SITE LIGHTING LOCATIONS, MODELS AND PHOTOMETRIC ANALYSIS SHALL BE BY PROJECT ELECTRICAL ENGINEER AT BP

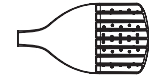


**D-Series Size 0 LED Area Luminaire**



**Specifications**

- EPA: 0.44 ft (0.84m)
- Length: 26.18" (66.5cm)
- Width: 14.06" (35.7cm)
- Height H1: 2.26" (5.7cm)
- Height H2: 7.46" (18.9cm)
- Weight: 23 lbs (10.4kg)



design select options indicated by this color background.

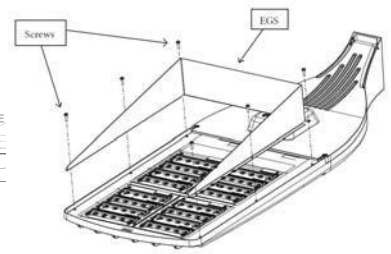
**Introduction**

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

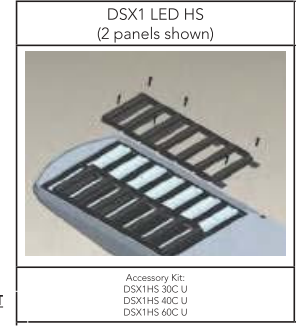
The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit [www.aqualybrands.com/designselect](http://www.aqualybrands.com/designselect)

\*See ordering tree for details



**PARKING LOT LIGHT, HOUSESIDE SHIED, & EGSR SHIELD CUTSHEET**



PROPOSED NEW FACILITY FOR:  
**IWCD & IWC EXCAVATION**  
200 - TENTH STREET  
NANAIMO B.C.

DRAWN BY: B.B. / C.M.

NUMBER: d1515.26.18

ISSUED:

ISSUED:	30 AUG 2018
REVISED:	15 OCT 2018
REVISED:	17 APR 2019
REVISED:	11 JUNE 2019
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PRE DPA MEETING:	13 AUG 2019
DPA:	10 OCT 2019
REVISED:	16 DEC 2019
REVISED:	3 OCT 2023

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**PR1**

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2024-JAN-24

# ATTACHMENT D BUILDING ELEVATIONS AND DETAILS



PROPOSED NEW FACILITY FOR:  
**IWCD & IWC EXCAVATION**  
200 - TENTH STREET  
NANAIMO B.C.

DRAWN BY:  
B.B. / C.M.

NUMBER:  
d1515.26.18

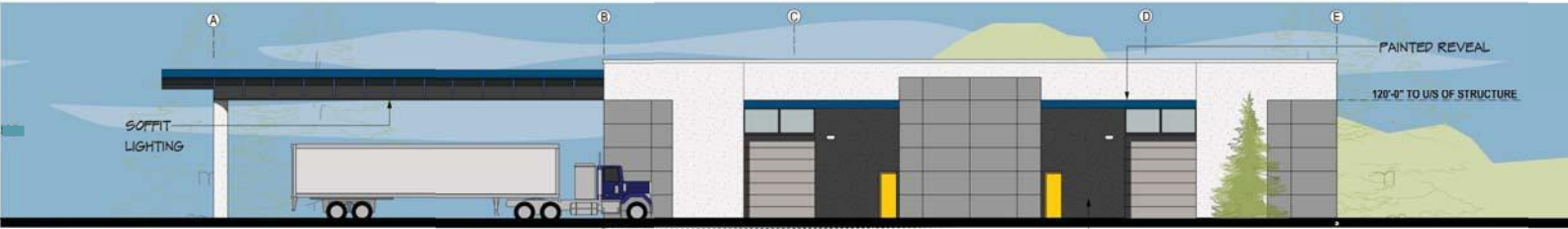
ISSUED:

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REVISED: 17 APR 2019  
REVISED: 11 JUNE 2019  
ISSUED: 24 JUNE 2019  
PRE DPA MEETING: 13 AUG 2019  
DPA: 10 OCT 2019  
REVISED: 16 DEC 2019  
REVISED: 3 OCT 2023

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2023-OCT-23  
CUTLER PLANNING

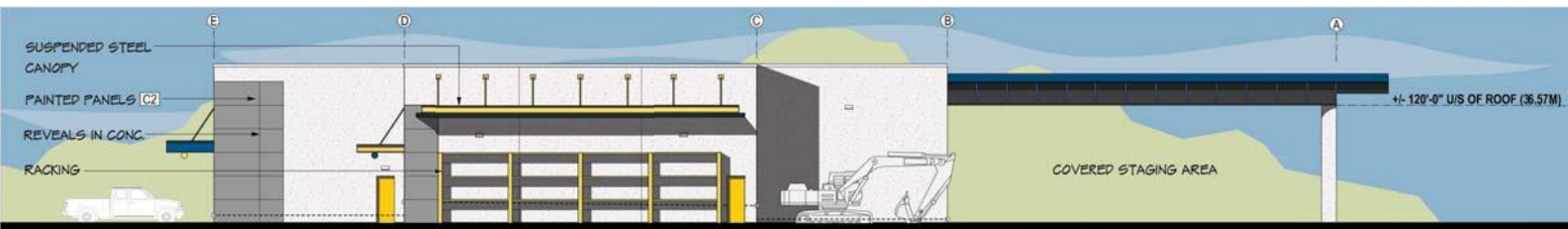
PR3



**SOUTH ELEVATION**



**EAST ELEVATION**



**NORTH ELEVATION**



**WEST ELEVATION**

PRELIMINARY EXTERIOR FINISHES & COLOURS			
<b>C1</b>	CONCRETE TILT UP NATURAL CLEAR SEALER FINISH OR CLOVERDALE PAINT POLYURETHANE		OVERHEAD DOORS GRAY
<b>C2</b>	PAINTED PANELS IN REVEALS CLOVERDALE PAINT PAVED PATH (502)		WINDOW FRAMES DARK CHARCOAL
<b>C3</b>	PAINTED PANELS CLOVERDALE PAINT TORNAVO (W6028)		GAP FLASHINGS AT PAINTED PANELS (SHAWCOL)
			CORPORATE COLOUR STEEL CANOPIES (ONSU)
			CORPORATE COLOUR STEEL CANOPIES (ONSU)

# CARETAKERS SUITE



**SOUTH/WEST ELEVATION**



**SOUTH/EAST ELEVATION**

SPATIAL SEPARATIONS - BCBC 2018 & 10.15.4	
LIMITING DISTANCE (CLOSEST POINT)	3.0M
AREA OF EXPOSED BUILDING FACE	10.4 SQ.M
AREA OF UNPROTECTED OPENINGS	2.30 SQ.M
% ALLOWABLE	22.1%
CONSTRUCTION RATING	COMB. OR NON COMB. N/A



**NORTH/EAST ELEVATION**

LIMITING DISTANCE (CLOSEST POINT)	3.0M
AREA OF EXPOSED BUILDING FACE	32.7 SQ.M
AREA OF UNPROTECTED OPENINGS	3.47 SQ.M
% ALLOWABLE	10.6%
CONSTRUCTION RATING	COMB. OR NON COMB. N/A



**NORTH/WEST ELEVATION**



PROPOSED NEW FACILITY FOR:  
**IWCD & IWC EXCAVATION**  
**200 - TENTH STREET**  
**NANAIMO B.C.**

DRAWING TITLE:  
**SCHEMATIC SECTION**  
**CARETAKERS SUITE**

DRAWN BY:  
 B.B. / C.M. / A.H.

NUMBER:  
 1515.26.18

ISSUED:  
 ISSUED FOR DEVELOPMENT: 01 APRIL 2020  
 APPLICATION PERMIT: 06 APRIL 2020

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**PR4**

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 2023-OCT-23  
DESIGN PLANNING

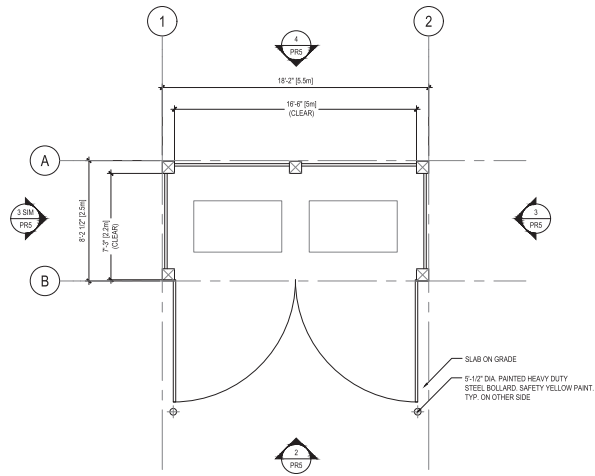


PROPOSED NEW FACILITY FOR:  
**IWCD & IWC EXCAVATION**  
 200 - TENTH STREET  
 NANAIMO B.C.

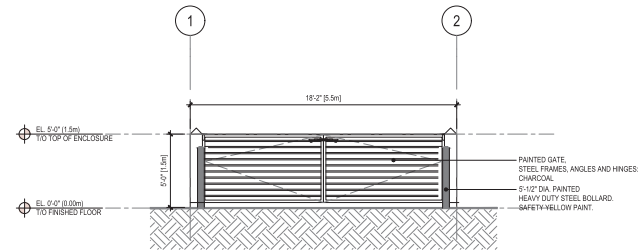
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 ISSUED:  
 ISSUED: 12.OCT.2023

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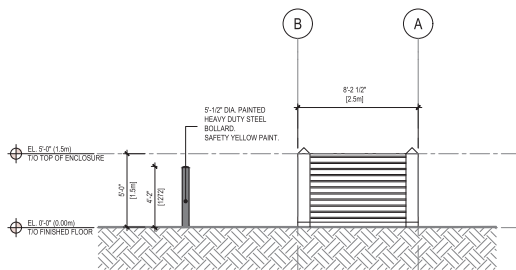
**PR5**



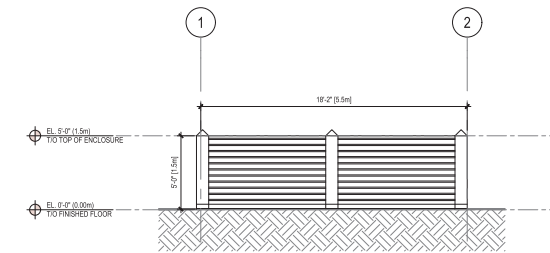
**1 WASTE ENCLOSURE - FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"



**2 WASTE ENCLOSURE - FRONT ELEVATION**  
 SCALE: 1/4" = 1'-0"



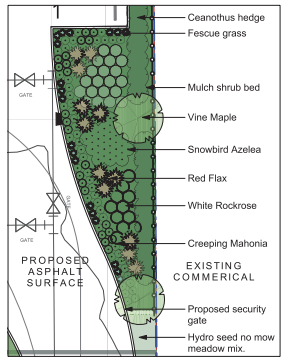
**3 WASTE ENCLOSURE - SIDE ELEVATION**  
 SCALE: 1/4" = 1'-0"



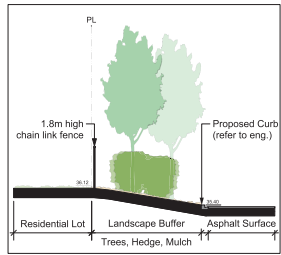
**4 WASTE ENCLOSURE - BACK ELEVATION**  
 SCALE: 1/4" = 1'-0"

RECEIVED  
 DP1189  
 2023-OCT-23

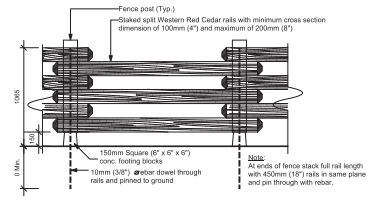
# ATTACHMENT E LANDSCAPE PLAN AND DETAILS



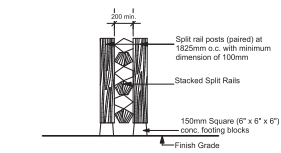
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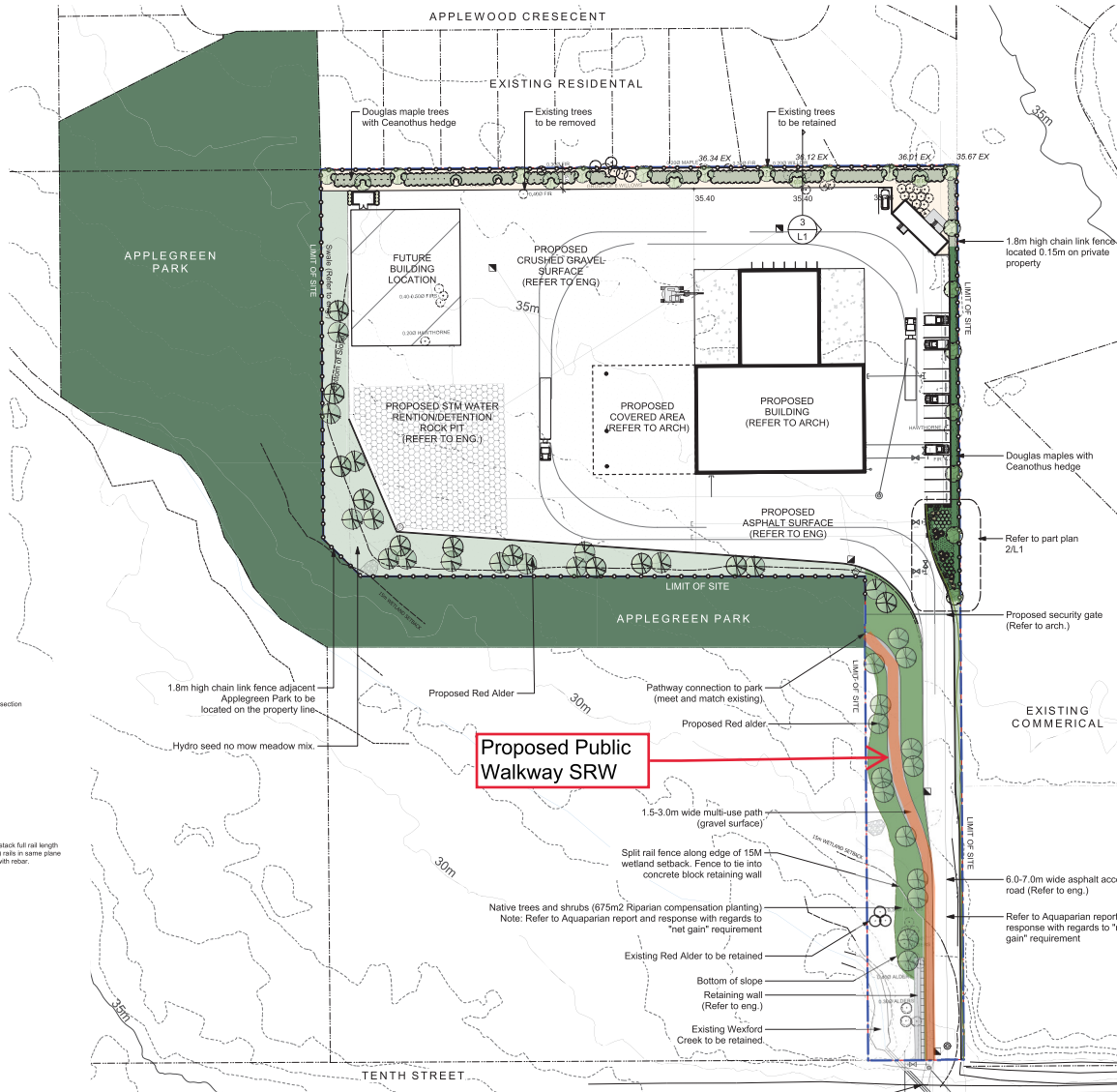
3 Section  
Scale: 1:100



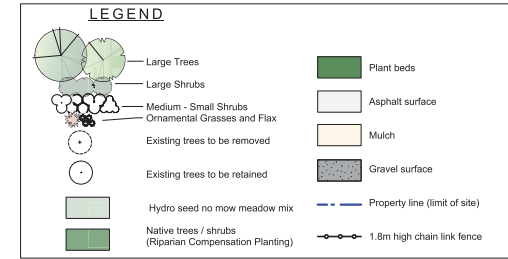
4 1.0M Ht. Split Rail Fence - Section  
Scale: 1:25



5 1.0M Ht. Split Rail Fence - Elevation  
Scale: 1:25



1 Landscape Concept Plan  
Scale: 1:500



## Recommended Nursery Stock

Trees	Botanical Name	Common Name	Size
Total : 62*	Acer glabrum Alnus rubra	Douglas Maple Red Alder	6cm cal. 6cm cal., 3m height min.
Large Shrubs	Botanical Name	Common Name	Size
Total : 223	Ceanothus thyrsiflorus "Victoria" Mahonia aquifolium	Victoria Ceanothus (California Lilac) Tall Oregon Grape	#5 pot #1 pot
Medium Shrubs	Botanical Name	Common Name	Size
Total : 46	Azalea "Snowbird" Cistus x hybridus Symphoricarpos albus	Snowbird Azalea White Rockrose Snowberry	#5 pot #5 pot #5 pot
Small Shrubs	Botanical Name	Common Name	Size
Total : 68	Mahonia repens	Creeping Oregon Grape	#1 pot
Perennials, Annuals and Ferns	Botanical Name	Common Name	Size
Total : 31	Festuca hibernica Phormium tenax 'Aotupureum Compactum' Red New Zealand Flax	Ishiko Fescue Red New Zealand Flax	#1 pot #3 pot

COMMON NAME	SPECIES	SPACING	SIZE	NO.	COST PER	TOTAL
<b>Trees Planting Area: west and south boundary of main portion of parcel (1235m²) to be hydro-seeded with meadow mix and planted with native trees</b>						
Red alder	Alnus rubra	3 m²	Min. 60mm DBH	24	\$18	\$432
Bigleaf maple	Acer macrophyllum	3 m²	Min. 60mm DBH	10	\$18	\$180
Native willow	Salix sp.	3 m²	Min. 60mm DBH	2	\$18	\$36
Sub-total				36		\$648
<b>Compensation Restoration Area: west side of pedestrian path (335m²) to be planted with native trees, shrubs and groundcover species</b>						
Red alder	Alnus rubra	3 m²	Min. 60mm DBH	14	\$18	\$252
Bigleaf maple	Acer macrophyllum	3 m²	Min. 60mm DBH	18	\$18	\$324
Douglas fir	Pseudotsuga menziesii	3 m²	Min. height 1.5m	30	\$18	\$540
Bitter cherry	Prunus emarginata	3 m²	Min. 60mm DBH	1	\$18	\$18
Black hawthorn	Crataegus douglasii	1 m²	1 Gallon	8	\$10	\$80
Nocika rose	Rosa nutkana	1 m²	1 Gallon	50	\$10	\$500
Snowberry	Symphoricarpos albus	1 m²	1 Gallon	50	\$10	\$500
Salmonberry	Rubus spectabilis	1 m²	1 Gallon	30	\$10	\$300
Sword fern	Polystichum munium	1 m²	1 Gallon	91	\$10	\$910
Dull Oregon grape	Mahonia nervosa	0.5 m²	1 Gallon	40	\$10	\$400
Satill	Gautheria shallon	0.5 m²	1 Gallon	40	\$100	\$4000
Sub-total				372		\$4224
<b>Compensation Restoration Area: east side of pedestrian path (346m²) to be planted with native shrubs, groundcover species and a few red alder trees</b>						
Red alder	Alnus rubra	3 m²	Min. 60mm DBH	6	\$18	\$108
Nocika rose	Rosa nutkana	1 m²	1 Gallon	90	\$10	\$900
Snowberry	Symphoricarpos albus	1 m²	1 Gallon	90	\$10	\$900
Sword fern	Polystichum munium	1 m²	1 Gallon	80	\$10	\$800
Oceanspray	Hobolodiscus discolor	1 m²	1 Gallon	14	\$10	\$140
Dull Oregon grape	Mahonia nervosa	0.5 m²	1 Gallon	60	\$10	\$600
Satill	Gautheria shallon	0.5 m²	1 Gallon	60	\$100	\$6000
Sub-total				498		\$4980
<b>TOTAL</b>				<b>808</b>		<b>\$8928</b>

## Notes:

- All work to be completed to current BCSLA Landscape Standards
- All soft landscape to be irrigated with an automatic irrigation system
- Existing tree removal list:
  - 118 Total Existing Trees
  - 18 Existing Trees Retained
  - 335m² Area Impacted in the 15m DPA
  - 675m² Total Riparian Compensation Planting
  - 11\* Significant Trees Removed (Red Alder + Willow)
  - 113 Proposed Trees (Includes seedlings and cal. species)
  - Recommended species composition is as follows: 30 Douglas Fir, 44 Red Alder, 28 Bigleaf Maple, 1 Bitter Cherry, 8 Black Hawthorn and 2 Native Willow (refer to the Riparian Compensation Plan).
  - Proposed Shrubs (Includes seedlings and potted species)
  - 695

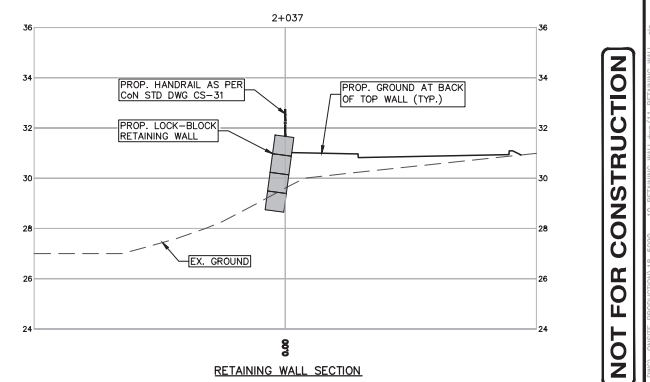
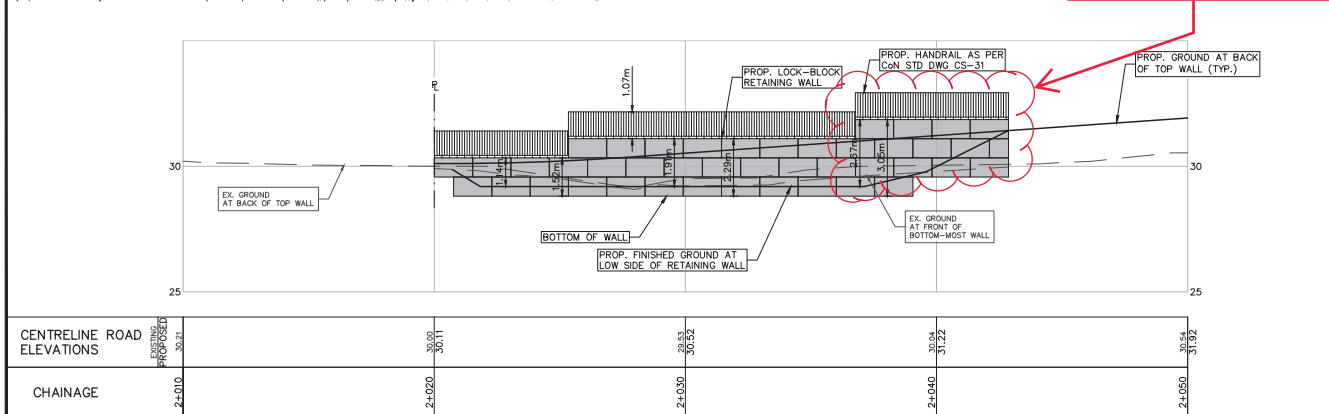
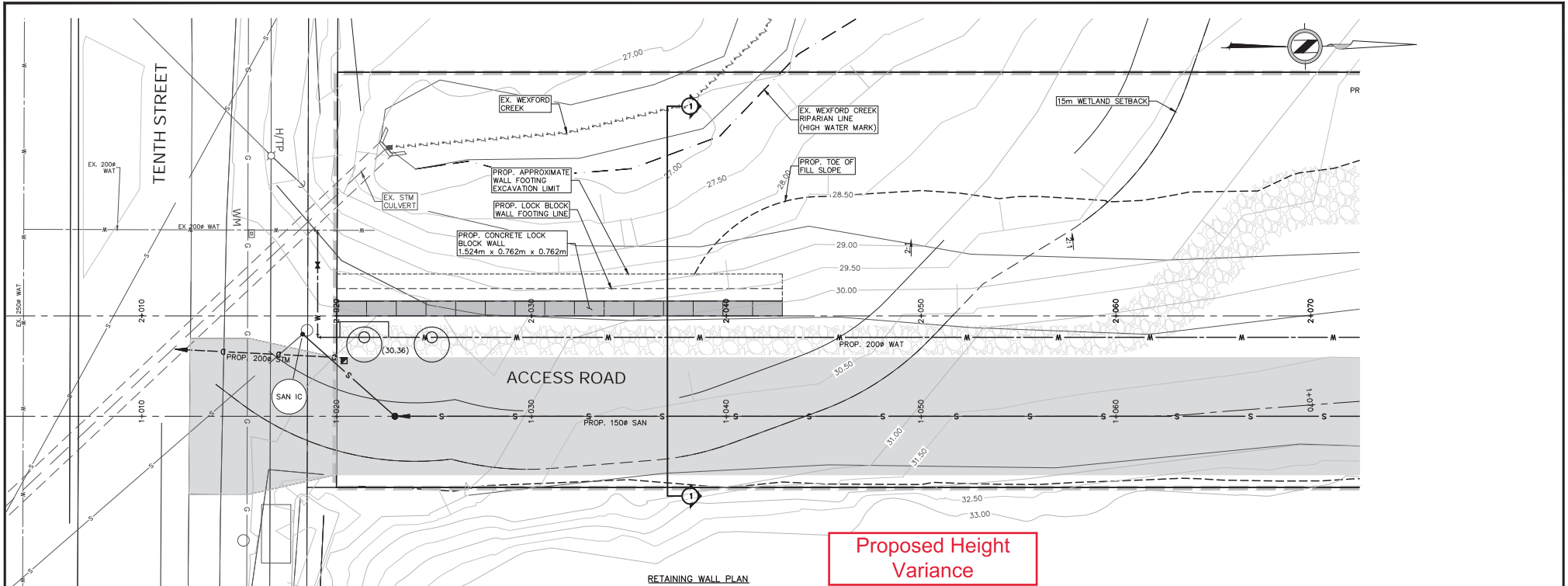
Revision 3: Jan 23, 2024  
Revision 2: Dec 5, 2023  
Revision 1: Sep 29, 2023

# Landscape Concept Plan - 200 Tenth St. Warehouse



Project No: 1928 Sep 10 - 19  
Sheet: L1  
#3-864 Queens Ave., Victoria B.C. V8T 1M5  
Phone: (250) 598-0105  
RECEIVED  
DP1185  
2024-JAN-24

# ATTACHMENT F RETAINING WALL DETAILS



CENTRELINE ROAD ELEVATIONS	CHAINAGE
30.21	2+000
30.11	2+020
30.52	2+030
31.22	2+040
30.54	2+050
31.32	2+060

RETAINING WALL PROFILE				
30.00	2+020	30.52	2+040	30.54
30.11	2+020	30.52	2+040	31.22
25.00	2+020	25.00	2+040	25.00

RECEIVED  
DP1189  
2024-MAY-17  
Curtis Planning

**NOTICE TO CONTRACTOR**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEER'S DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD

LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17767					
B.M. MONUMENT NO. 83H6010 & 83H6011 ELEVATION: 47.19m & 29.89m					
LOCATED AT STREET & AVENUE					
REV. NO.	DESCRIPTION	DR	CH	DATE	APP.
0	ISSUED FOR DISCUSSION	YG	SL	2019JUN09	SL
1	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2020APR08	SL
2	REVISED RETAINING WALL FOR REVIEW	CL	SL	2024MAY16	SL
3					
4					

**APLIN MARTIN**  
ENGINEERS ARCHITECTURE PLANNING SURVEYING

Aplin & Martin Consultants Ltd.  
#104 - 6596 Applecross Road, Nanaimo, BC, Canada V9V 0A4  
Tel: (779) 941-0464 Fax: (604) 593-9561 Email: general@aplinmartin.com

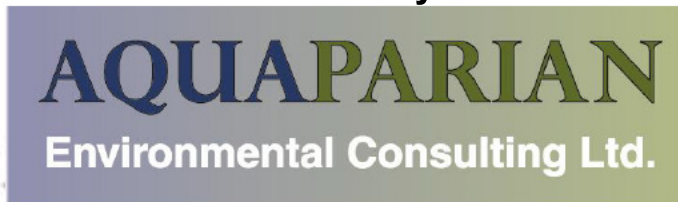
CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.  
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA  
PH. (250) 756-9665

PROJECT: SHOP, WAREHOUSE AND STORAGE  
200 TENTH STREET, NANAIMO BC

TITLE: RETAINING WALL		DESIGN: VG	CHECK: SL
PROJECT NO.		DRAWN: VG	APPR: SL
DRAWING NO.		A & M FILE: 18-5090	
SCALE: HORIZ: 1:100 VERT: 1:100		DRAWING DATE: JUNE, 2019	
A & M DRAWING NO. 18-509011		SHEET NO. 11 OF 12	REV. 02

**NOT FOR CONSTRUCTION**

**ATTACHMENT G**  
**Site Access Improvements Executive**  
**Summary**



January 11, 2024

Rhonda Greggain  
Island West Coast Developments Ltd.  
2214 McCullough Road  
Nanaimo, BC V9S 4M8

Via Email: [REDACTED]

**RE: 200 TENTH STREET NANAIMO, SITE ACCESS IMPROVEMENTS  
EXECUTIVE SUMMARY**

## **1.0 INTRODUCTION**

Aquaparian Environmental Consulting Ltd (Aquaparian) was retained to provide Environmental Services in association with the development of 200 Tenth Street in the City of Nanaimo, BC. A proposed storage facility is planned for the site.

The subject parcel is a panhandle lot with the driveway on the north side of 10th Street. The site was cleared in the past but is currently undeveloped. The driveway is located adjacent to a wetland reach of the north tributary of Wexford Creek which passes under Tenth Street next to the driveway. The reach upstream of the culvert is a wetland with a strip of Applegreen Park between the watercourse and the subject parcel. The City of Nanaimo's Environmentally Sensitive Areas Development Permit Area (DPA) extends 15m from the natural boundary of wetlands.

The driveway slopes down on the west side to the wetland boundary and the slope is vegetated predominantly with red alder trees and Himalayan blackberry. Because there is no other access to the property, the driveway must be located partially within the DPA. Clearing of riparian vegetation and soil disturbance / excavation will be required for this project.

Proposed driveway upgrades include paving the existing dirt driveway. Additionally, a gravel, multi-use pedestrian path on the west side of the driveway is required by the City of Nanaimo to provide public access to Applegreen Park. A 23m long retaining wall and addition of fill material will be required for construction of the pedestrian path. The retaining wall and addition of fill material will result in an encroachment into the 15m DPA setback to approximately 5m from the natural boundary of the wetland for approximately 23m of the road alignment starting near the entrance to the site.



A variance to the 15m DPA setback is required to accommodate the driveway improvements and the new pedestrian path. Since the subject property is a panhandle lot and the access improvements are planned as far to the east side of the panhandle as possible, no other placement is possible. The permanent impact area in the DPA is 232m<sup>2</sup> with an additional 103m<sup>2</sup> that will be disturbed and replanted for a total impact area of 335m<sup>2</sup>. A riparian compensation plan at a 2:1 ratio has been produced by Aquaparian to offset the proposed impact to the DPA and to meet the principle of "net gain" outlined in Section 18 of the City of Nanaimo Zoning Bylaw.

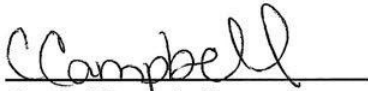
A Riparian Areas Regulation (RAR) Assessment was conducted by Aquaparian and approved by the province for this project on January 27, 2020.

Sincerely,

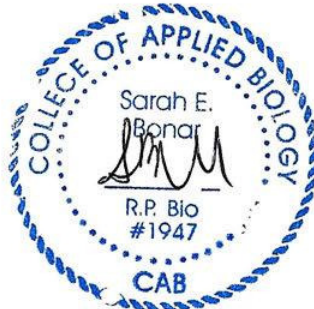
AQUAPARIAN ENVIRONMENTAL CONSULTING LTD

Prepared by:

Reviewed/Revised by:



Crystal Campbell  
Environmental Technician



Sarah Bonar B.Sc., R.P.Bio  
Biologist/Principal

<https://netorg5387218.sharepoint.com/sites/Shared/Shared Documents/Documents/Projects/Projects/N478 200-10th Street/DPA variance letter - Jan 2024.pdf.docx>



201-321 Wallace St, Nanaimo, BC V9R 5B6  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864



October 9, 2019  
Revised January 24, 2024

Patrick Brandreth  
Island West Coast Developments Ltd.  
2214 McCullough Road  
Nanaimo BC, V9S 4M8

Via Email: [REDACTED]

**RE: 200 TENTH STREET ACCESS IMPROVEMENTS, NANAIMO, BC  
RIPARIAN COMPENSATION PLAN**

**1.0 INTRODUCTION**

Aquaparian Environmental Consulting Ltd (Aquaparian) was retained by Island West Coast Developments Ltd (IWCD) to provide Environmental Services in association with the development of 200 Tenth Street in Nanaimo, BC. The subject parcel is an irregularly shaped 3.78-acre lot legally identified as Lot B, Section 1, Nanaimo District, Plan EPP17767. A site location map has been included as Figure 1 and a selection of site photographs have been included in Appendix A.

The subject parcel is a panhandle lot with the driveway on the north side of Tenth Street. The site was cleared in the past but is currently undeveloped. The driveway is located adjacent to a wetland reach of the north tributary of Wexford Creek which passes under Tenth Street next to the driveway. Figure 2 is a site plan produced by Aplin & Martin Consultants Ltd. The reach upstream of the culvert is a wetland with a strip of Apple Green Park between the watercourse and the subject parcel.

In July 2022, the City of Nanaimo adopted a new Official Community Plan (Bylaw No. 6600) which identifies an Environmentally Sensitive Areas Development Permit Area (DPA1) which extends 15m from the natural boundary of wetlands. Because there is no other access to the property, the first section of the driveway must be located within the DPA. A Riparian Areas Regulation (RAR) Assessment was submitted and reviewed as compliant by the province January 27, 2000. This regulation has since been replaced by the Riparian Areas Protection Regulation (RAPR) which is an approval process.

As understood, the property will be undergoing a development permit application to construct an access driveway and a proposed storage facility on the site. Driveway upgrades are required to improve access to the subject parcel and to provide public access to Applegreen Park. As

understood, the first phase of development includes paving the existing dirt driveway and constructing a new gravel, multi-use public path along the west side of the road. Fill material will need to be imported to the site to build the path and a 23m long concrete lock-block retaining wall will be required to support a portion of the fill. The retaining wall and addition of fill material will result in an encroachment into the riparian setback to approximately 5m from the natural boundary of the wetland for approximately 23m of the road alignment starting near the entrance to the site.

The driveway slopes down on the west side to the wetland boundary and the slope is vegetated predominantly with Himalayan blackberry with a red alder canopy. Existing trees and understory vegetation will be removed for the access improvements.

Aquaparian recommends planting native trees and shrubs to replace disturbance areas outside the road, path and retaining wall and to offset the proposed development within the Environmentally Sensitive Areas DPA1. Development Permit Area Guidelines within Section 18 of the City of Nanaimo Zoning Bylaw states the following:

“The principle of net gain will be followed, and a *Qualified Registered Professional* must demonstrate how an increase in the quality and quantity of functional habitat within the *ESA* and *ESA leave strip* will be achieved once the proposed development is complete, such that any areas restored shall be of better ecological value and shall be contiguous with the original *ESA* and *ESA leave strip*. The following principles will apply to establishing net gain:

- i. Outcomes through habitat creation, enhancement, and/or restoration;
- ii. Target condition (functional habitat in 20 years); and,
- iii. Target metric (twice the area of encroachment into the leave strip).”

The proposed development is subject to the City’s Management and Protection of Trees Bylaw 2013 No. 7126 (amended Nov 21, 2022) and will require a Tree Management Plan as part of a tree removal permit application for the proposed development. Based on the revised City of Nanaimo Tree Replacement Guidelines (Schedule G of the Bylaw for the Management and Protection of Trees within the City of Nanaimo Bylaw No. 7126.01), replacement trees will be required for all living trees removed with a diameter of 6cm or more and is capable of reaching a mature height of 4.5m or greater within its natural range. This bylaw requires at least 20% of the trees to be retained exclusive of any area set aside for park dedication when the parcel is > than 1.0 ha in size.

The following Riparian Revegetation Plan has been provided to reinstate and offset riparian habitat impacts in the DPA, to achieve the principles of net gain and to meet the replacement requirements of the Management and Protection of Trees Bylaw. A survey of trees within the site produced by Williamson & Associates Professional Surveyors is included as Figure 3. A

landscape plan by LADR Landscape Architects has been included as Figure 4 which identifies all of the required compensation plantings and other landscape planting for the project.

## 2.0 VEGETATION REMEDIATION PLAN

The following planting plan is recommended to remediate and offset the loss of riparian vegetation within the 15m DPA. Within the panhandle, the re-establishment of native tree and shrub vegetation is proposed along the newly constructed fill slopes on both sides of the gravel path to help restore impacted riparian habitat.

In addition to the riparian vegetation compensation, replacement trees are required for the removal of trees within the property including 11 'Significant Trees' (as defined in Schedule C of the Bylaw for the Management and Protection of Trees within the City of Nanaimo Bylaw No. 7126). The tree inventory and tree replacement requirement table is included as Appendix B. Tree replacement criteria are included in Schedule G of the Bylaw. The total number of tree replacements required for the trees to be removed within the panhandle and main portion of the property is 113 trees. The riparian offsetting planting plan below incorporates the 113 replacement trees. Replacement plantings are to be with the same species if possible and the replacement species composition would be as follows: 59 Douglas fir, 34 red alder, 7 bigleaf maple, 1 bitter cherry, 8 black hawthorn, 2 native willow and 2 oak trees. Based on the moisture regime and site conditions of the proposed planting areas, the following species composition is recommended for the 113 trees: 30 Douglas fir, 44 red alder, 28 bigleaf maple, 1 bitter cherry, 8 black hawthorn and 2 native willow.

The permanent impact area of the project in the DPA is 232m<sup>2</sup> with an additional 103m<sup>2</sup> area that will be disturbed and replanted for a total impact area of 335m<sup>2</sup>. The net gain required by the new DPA is calculated at a 2:1 ratio which is 670m<sup>2</sup> for this project. Replacement trees and shrubs will be located within the identified planting areas of the property as shown in the landscape plan.

**Table 1. Riparian Restoration / Compensation Area Calculation**

AREA DESCRIPTION	CALCULATION	AREA
DPA / SPEA Area within parcel	15m setback on east side of the wetland	~700m <sup>2</sup>
Development footprint within the DPA	Includes the paved driveway, multi-use path, fill placement and retaining wall 232m <sup>2</sup> and an area of fill 103m <sup>2</sup>	~335m <sup>2</sup>
Restoration Area on west side of multi-use path	Compensation planting to offset impact of road, path, retaining wall and fill area in riparian area	~335m <sup>2</sup>
Additional Restoration Area on east side of multi-use path	Additional restoration area along fill slope on the east side of the path (between path and road) to achieve "net gain"	~340m <sup>2</sup>

<b>Total Restoration Area</b>	<b>675m<sup>2</sup></b>
-------------------------------	-------------------------

Native species were selected based on existing native shrubs and tree species present and suitability to the site conditions (see Table 2). Overall planting density to be achieved is a minimum of one shrub per m<sup>2</sup>, and one tree per 3m<sup>2</sup> with the goal of 100% cover within 2-3 years. Riparian plantings should be installed in either early spring or fall when rains begin (October) for optimal planting success. The following cost estimate for plants has been provided for planning purposes.

**Table 2. Riparian Planting Plan**

COMMON NAME	SPECIES	SPACING	SIZE	NO.	COST PER	TOTAL
<b>Tree Planting Area: west and south boundary of main portion of parcel (1335m<sup>2</sup>) to be hydro-seeded with meadow mix and planted with native trees</b>						
Red alder	<i>Alnus rubra</i>	3 m <sup>2</sup>	Min. 60mm DBH	24	\$18	\$432
Bigleaf maple	<i>Acer macrophyllum</i>	3 m <sup>2</sup>	Min. 60mm DBH	10	\$18	\$180
Native willow	<i>Salix</i> sp.	3 m <sup>2</sup>	Min. 60mm DBH	2	\$18	\$36
<b>Sub-total</b>				<b>36</b>		<b>\$648</b>
<b>Compensation Restoration Area: west side of pedestrian path (335m<sup>2</sup>) to be planted with native trees, shrubs and groundcover species</b>						
Red alder	<i>Alnus rubra</i>	3 m <sup>2</sup>	Min. 60mm DBH	14	\$18	\$252
Bigleaf maple	<i>Acer macrophyllum</i>	3 m <sup>2</sup>	Min. 60mm DBH	18	\$18	\$324
Douglas fir	<i>Pseudotsuga menziesii</i>	3 m <sup>2</sup>	Min. height 1.5m	30	\$18	\$540
Bitter cherry	<i>Prunus emarginata</i>	3 m <sup>2</sup>	Min. 60mm DBH	1	\$18	\$18
Black hawthorn	<i>Crataegus douglasii</i>	1 m <sup>2</sup>	1 Gallon	8	\$10	\$80
Nootka rose	<i>Rosa nutkana</i>	1 m <sup>2</sup>	1 Gallon	50	\$10	\$500
Snowberry	<i>Symphoricarpos albus</i>	1 m <sup>2</sup>	1 Gallon	50	\$10	\$500
Salmonberry	<i>Rubus spectabilis</i>	1 m <sup>2</sup>	1 Gallon	30	\$10	\$300
Sword fern	<i>Polystichum munitum</i>	1 m <sup>2</sup>	1 Gallon	91	\$10	\$910
Dull Oregon grape	<i>Mahonia nervosa</i>	0.5 m <sup>2</sup>	1 Gallon	40	\$10	\$400
Salal	<i>Gaultheria shallon</i>	0.5 m <sup>2</sup>	1 Gallon	40	\$100	\$400
<b>Sub-total</b>				<b>372</b>		<b>\$4224</b>
<b>Compensation Restoration Area: east side of pedestrian path (340m<sup>2</sup>) to be planted with native shrubs, groundcover species and a few red alder trees</b>						
Red alder	<i>Alnus rubra</i>	3 m <sup>2</sup>	Min. 60mm DBH	6	\$18	\$108
Nootka rose	<i>Rosa nutkana</i>	1 m <sup>2</sup>	1 Gallon	90	\$10	\$900
Snowberry	<i>Symphoricarpos albus</i>	1 m <sup>2</sup>	1 Gallon	90	\$10	\$900
Sword fern	<i>Polystichum munitum</i>	1 m <sup>2</sup>	1 Gallon	80	\$10	\$800
Oceanspray	<i>Holodiscus discolor</i>	1 m <sup>2</sup>	1 Gallon	14	\$10	\$140
Dull Oregon grape	<i>Mahonia nervosa</i>	0.5 m <sup>2</sup>	1 Gallon	60	\$10	\$600

Salal	<i>Gaultheria shallon</i>	0.5 m <sup>2</sup>	1 Gallon	60	\$10	\$600
<b>Sub-total</b>				<b>400</b>		<b>\$4048</b>
<b>TOTAL</b>				<b>808</b>		<b>\$8920</b>

\*Note: cost estimates are based on the current Streamside Native Plants Wholesale Price Guide. Cost will vary depending on supplier.

The restoration area of 335m<sup>2</sup> proposed on the west side of the pedestrian path is intended to offset the proposed encroachment within the DPA. The additional 340m<sup>2</sup> planting area on the east side of the path is intended to achieve the net gain target metric of “twice the area of encroachment into the leave strip” (CON Zoning Bylaw). The restoration area is contiguous with the existing intact riparian forest to the west of the panhandle. The species selected for the riparian compensation area are expected to naturally infill over time with the goal of 100% cover in 2-3 years.

The total area of encroachment in the DPA leave strip is 335m<sup>2</sup> and the total restoration area is 675m<sup>2</sup>. This represents a net gain of just over 2:1 in habitat restoration. The native tree and shrub species selected are expected to spread and naturally infill to create functional habitat within 20 years. The tree planting area along the west and south boundary of the main portion of the parcel that is planned to be hydro-seeded with a meadow seed mix is an additional tree planting area for replacement trees that is currently devoid of trees.

## 2.1 Maintenance and Bond Estimate

As understood, the City of Nanaimo requires an assurance bond to be posted for the value of the plants, mulch, labour and maintenance (including irrigation) of plants to ensure the restoration plan is carried out as planned. The standard calculation to include labour is based on two times the cost of the plants and materials. For release of the bond, a completion inspection report is required following planting to release a portion of the bond with a second inspection report submitted after the end of the maintenance period.

A layer of topsoil (6” deep) will be required for the fill slope planting area which may be reused from excavated topsoil on site if available, and the entire restoration area should be covered with a layer of organic composted mulch (5cm deep) which is estimated to require approximately 44 yards (33m<sup>3</sup>) of mulch. The recommended mulch for native plantings is 50% composted large organic woody debris and 50% organic composted soils. The cost will vary by the supplier but a conservative estimate of \$30/yrd has been used in the calculation.

### **BOND CALCULATION:**

Plants cost	\$8920
Mulch cost (44 cubic yards x \$30/yard)	\$1320
Bone meal cost	<u>\$200</u>
<b>Total</b>	<b>\$10,440 (not including irrigation)</b>
<b>Bond Estimate: \$20,880 plus irrigation</b>	

The cost of irrigation will need to be determined by the type of system proposed to be installed by IWCD and added to the above bond calculation.

## **2.2 Plant Sources**

Green Thumb Nurseries  
 6261 Hammond Bay Road  
 Nanaimo BC V9T 5M4  
 250-758-0808  
 E-mail: grnthumb@shaw.ca

Streamside Native Plants  
 7455 Island Highway West, Bowser, BC  
 Phone/Fax: 250-757-9999 / Toll Free: 877-570-3138  
<http://www.streamsidenativeplants.com/>  
 E-mail: orderdesk@streamsidenativeplants.com

## **3.0 INSTALLATION & MAINTENANCE RECOMMENDATIONS**

- Installation of vegetation should be completed in the fall (October) and/or early spring and must be maintained and irrigated as necessary through at least three summer seasons to optimize survival. Planting in cool wet weather will reduce transplant shock and allow the plants to establish root systems without drought stress. Installing a temporary irrigation system for the first two years (at least) is recommended to ensure plants become established.
- For restoration area: a layer of topsoil is to be placed on the top of the fill slope as a planting medium overlaid with organic composted bark mulch (~5cm deep) to help retain moisture and reduce weeds. Excavate a hole twice as big as the pot and place topsoil in the hole with the plant and a handful of bone meal (reduces transplant shock).
- Overall shrub density should be a minimum of one shrub per m<sup>2</sup> and one tree per 3m<sup>2</sup>. Plant placement should mimic a natural growth pattern i.e. clusters of same species.

Concentrate sword fern plantings under trees as this species is shade tolerant.  
Concentrate wet tolerant plants closer to the wetland (salmonberry, alder, willow).

- A fence appropriate to the site that delineates the edge of the restoration areas on both sides of the trail should be installed to prevent trampling by users of the public access trail. The restoration area should be considered a No-Go zone and left to naturally infill.
- Every year the site will need to be inspected for invasive species growth and dead plants. Invasives are to be removed as often as necessary.
- A maintenance period of three years is recommended to determine planting success. Dead plants are to be replaced until 100% cover is achieved. Infill is expected to occur from the selected species.
- No sedimentation of the wetland is to be allowed. Applying mulch to the surface of the exposed soils immediately after planting or over any exposed soil surfaces will help prevent runoff and migration of fines if a heavy rain event occurs.
- Install silt fencing at the edge of the restoration area adjacent to the wetland; leave in place until the site is stable.

#### **4.0 CLOSURE**

If all mitigation measures are implemented as recommended in this report and the RAR report, the risk of negative impacts to the wetland and riparian habitat will be minimized and impacted conditions will be mitigated with the intent of restoring a naturally functioning riparian buffer zone in the long term.

This report has been based on site assessments, past project experience and in accordance with generally accepted biological practices. No other warranty is made, either expressed or implied. Aquaparian trusts that the information provided in this report meets your requirements. If there are any questions regarding information provided in this document, please contact the undersigned at (250) 591-2258.



200 TENTH STREET NANAIMO  
RIPARIAN REVEGETATION PLAN  
JANUARY 2024

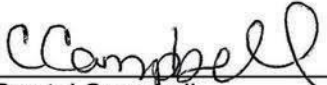
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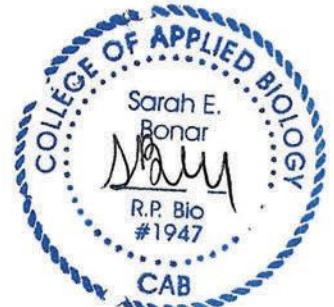
Sincerely,

**AQUAPARIAN ENVIRONMENTAL CONSULTING LTD**

Prepared by:

Reviewed/Revised by:

  
Crystal Campbell  
Environmental Technician



Sarah Bonar B.Sc., R.P.Bio  
Biologist/Principal

<https://netorg5387218.sharepoint.com/sites/Shared/Shared Documents/Documents/Projects/Projects/N478 200-10th Street/Reports/Tenth Street Revegetation Plan - Revised January 2024.docx>



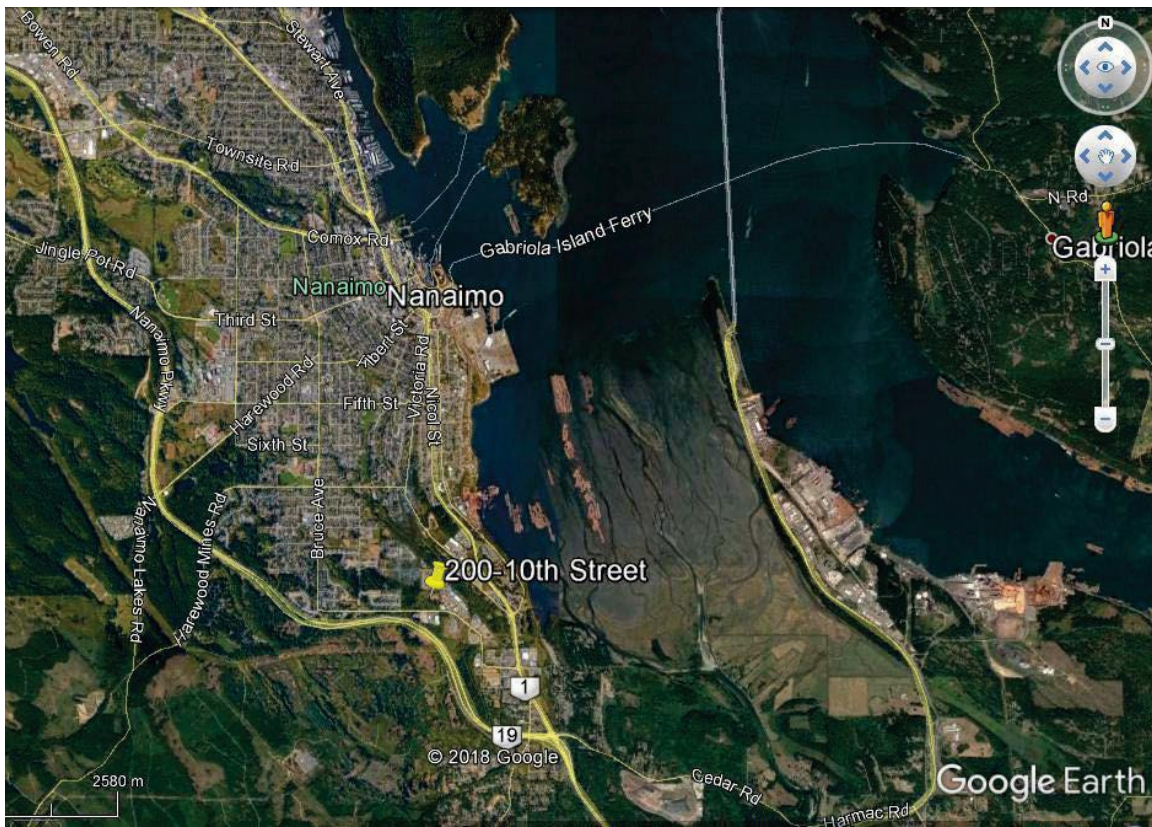
203-321 WALLACE ST, NANAIMO, BC V9R 5B6  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864

**FIGURE 1**  
**SITE LOCATION MAP**



203-321 WALLACE ST, NANAIMO, BC V9R 5B6  
SARAH BONAR 250-714-8446 CHRIS ZAMORA 250-714-8864

**FIGURE 1**  
**SITE LOCATION MAP**



**FIGURE 2**  
**SITE PLAN**  
**APLIN MARTIN CONSULTANTS**





GENERAL NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH CITY OF HANAMOU ENGINEERING STANDARDS AND SPECIFICATIONS.
2. ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED BY USE OF A PIPE LOCATOR AND MANUAL DIGGING. ALL OR ANY STRUCTURES NOT NECESSARILY SHOWN.
3. COORDINATES ARE GROUND LEVEL (LTM HAS 83 WITH COMBINED SCALE FACTOR OF 1/0.999985) AND ALL ELEVATIONS ARE TO GEODETIC DATUM.
4. LOCATION OF SERVICE CONNECTIONS TO BE DETERMINED ON SITE UNLESS SHOWN OTHERWISE.
5. ANY ALTERNATIVES TO SPECIFIED MATERIALS OR APPURTENANCES TO BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF EXISTING SERVICES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. EXISTING AND PROPOSED SERVICES MAY REQUIRE ADJUSTMENT WHERE A CONFLICT OCCURS. THE ENGINEER SHALL BE NOTIFIED OF ANY CONFLICT.
7. TRENCHING DETAIL TO BE AS CITY OF HANAMOU STANDARD DWG T-1. TRAVELED AREA BACKFILL TO BE IMPORTED GRANULAR MATERIAL COMPACTED TO MINIMUM 90% MODIFIED PROCTOR, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
8. ASPHALT RESTORATION TO BE AS CITY OF HANAMOU STANDARD DWG T-4 OR T-4A PERMANENT PAVEMENT RESTORATION.
9. ALL DISTURBED SURFACES TO BE RESTORED TO EXISTING CONDITION OR BETTER.

SANITARY SEWER NOTES:

1. ALL MAINS SHALL BE PVC SDR35, AND HAVE A MINIMUM 1.5m OF COVER IN ROAD RIGHT-OF-WAYS AND 1.0m IN UNTRAVELED AREAS, UNLESS APPROVED BY ENGINEER.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING USERS DURING CONSTRUCTION THROUGH BYPASS PUMPING. THE CONTRACTOR IS TO PROVIDE A BYPASS PUMPING PLAN PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL ENSURE THAT THE PUMPING EQUIPMENT IS KEPT IN GOOD WORKING CONDITION DURING THE PROJECT.
3. ALL AERATED TRENCH PILING DISCOUNTED WITHIN THE TRENCHLINE SHALL BE REMOVED AND REPOSED IN ACCORDANCE WITH WORKSAFE BC AND CITY OF HANAMOU REQUIREMENTS.
4. ALL SANITARY SERVICES SHALL BE 150M PVC SDR35 UNLESS NOTED OTHERWISE.
5. ALL SANITARY SERVICE BOXES SHALL BE IN ACCORDANCE WITH CITY OF HANAMOU STD S-7, S-8 AND S-8A.
6. ALL PIPING AND RELATED APPURTENANCES TO BE INSPECTED PRIOR TO BACKFILLING OF TRENCH.
7. THE CONTRACTOR IS TO FLUSH AND PROVIDE TO THE CITY OF HANAMOU CITY INSPECTION OF ALL MAINS PRIOR TO ASPHALT RESTORATION.
8. ALL TESTING TO CITY OF HANAMOU STANDARDS AND SPECIFICATIONS.
9. ALL SANITARY GRAVITY PIPES TO BE PVC SDR 35 AND SANITARY FORCE MAINS HDPE DR12 PIPES.

STORM DRAINAGE NOTES:

1. ALL MAINS SHALL BE PVC SDR35, AND HAVE A MINIMUM 1.5m OF COVER IN ROAD RIGHT-OF-WAYS AND 1.0m IN UNTRAVELED AREAS, UNLESS APPROVED BY ENGINEER.
2. ALL CATCH BASINS TO BE CITY OF HANAMOU TYPE 1 AS PER STD S-1, UNLESS NOTED OTHERWISE.
3. ALL CATCH BASIN & LAWN BASIN LEADS TO BE 200M PVC SDR35, UNLESS NOTED OTHERWISE.
4. DO NOT PLAG OR ABANDON AN EXISTING STORM DRAINAGE CONNECTION WITHOUT WRITTEN APPROVAL FROM THE CITY OF HANAMOU CONSTRUCTION REPRESENTATIVE.
5. ALL STORM DRAINAGE SERVICE CONNECTIONS TO BUILDINGS SHALL BE 150M PVC SDR35, UNLESS NOTED OTHERWISE.
6. ALL PERFORATED DRAIN PIPES TO BE PVC SDR35, UNLESS NOTED OTHERWISE.
7. ALL STORM DRAINAGE SERVICE BOXES SHALL BE IN ACCORDANCE WITH CITY OF HANAMOU STD SM-22, SM-23 AND SM-24.
8. PROPOSED STORM DRAINAGE SERVICES ARE TO BE INSTALLED BELOW EXISTING BASEMENT ELEVATION OR AT THE SAME HEIGHT AS THE SANITARY SERVICES WHERE POSSIBLE, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. NOT ALL STORM CONNECTIONS ARE SHOWN. SOME PROPERTIES MAY HAVE MORE THAN ONE CONNECTION TO THE EXISTING STORM OR ADJACENT COLLECTOR.
10. ALL EXISTING COLLECTORS AND STORM DRAIN SYSTEMS THAT ARE TO BE ABANDONED SHALL BE INSPECTED FOR EXISTING STORM SERVICE LEADS. ALL EXISTING LEADS ARE TO BE CONNECTED TO THE NEW STORM SEWER SYSTEM.
11. ALL PIPING AND RELATED APPURTENANCES TO BE INSPECTED AND APPROVED PRIOR TO BACKFILLING OF TRENCH.
12. THE CONTRACTOR IS TO FLUSH AND PROVIDE THE CITY OF HANAMOU CITY INSPECTION OF ALL MAINS PRIOR TO ASPHALT RESTORATION.

WATERMAIN NOTES:

1. MINIMUM COVER OVER WATERMAIN TO BE 1.20 METERS.
2. EXISTING PIPE TO BE REMOVED ONCE EXISTING WATERMAIN IS DECOMMISSIONED OR AS APPROVED BY THE ENGINEER.
3. ALL WATERMAIN JOINTS WITHIN 3.0m HORIZONTAL OR 0.45m VERTICAL OF SANITARY OR STORM DRAIN MAINS TO BE PROTECTED BY SHIMM WRAP OR PETROLEUM TAPE.
4. PRESSURE TESTS, CHLORINATION AND BACTERIOLOGICAL TESTING TO CITY OF HANAMOU STANDARD SPECIFICATIONS.
5. ALL WATERMAINS TO BE PVC DR18.
6. ALL WATERMAIN JOINTS TO BE FULLY RESTRAINED.

EROSION & SEDIMENT CONTROL NOTES:

1. UNDER THIS PLAN, ALL PERSONS INCLUDING BUT NOT LIMITED TO THE DEVELOPER, OWNER OF THE LAND, THE ENGINEER OF RECORD, EDC SUPERVISOR, CIVIL CONTRACTOR, CIVIL SUB-CONTRACTOR, BUILDER & BUILDING SUB-TRADER, HEREIN ARE REFERRED TO AS THE OWNER/DEVELOPER/PERSON RESPONSIBLE. DETAILED ON SITE SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS SPECIFIED BY REGIONAL, PROVINCIAL, AND MUNICIPAL AUTHORITIES PERTAINING TO ON SITE MANAGEMENT AND DISCHARGE ASSOCIATED WITH EROSION AND SEDIMENT CONTROL REGULATIONS.
2. ALL WORK ASSOCIATED WITH THE SUBJECT PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF THE FERRIERES ACT, AND ALL OTHER APPLICABLE LAWS, REGULATION AND BEST MANAGEMENT PRACTICES. NOTE THAT SECTION 3(2) OF THE FERRIERES ACT PROHIBITS THE DISCHARGE OF POLYNUCLEAR SUBSTANCES TO WATER. PREVENTED BY FISH EITHER DIRECTLY OR INDIRECTLY AS BY STORM SEWER. DUE DILIGENCE IS REQUIRED AT ALL TIMES TO PREVENT SUCH DISCHARGES AND ADHERENCE TO THESE CONDITIONS DOES NOT PRELUDE RELIANT FROM OWNERS RESPONSIBILITIES IN THIS REGARDING EROSION AND SEDIMENT CONTROL MEASURES SHOULD MEET OR SURPASS THE STANDARDS OUTLINED IN THE RESOURCES AND OCEANS CANADA LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT.
3. THE DEVELOPER/PERSON RESPONSIBLE SHALL ENSURE THAT ALL CONSTRUCTION ACTIVITIES ARE UNDERTAKEN IN A MANNER THAT ENSURES THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED TO PREVENT AND CONTROL ON-SITE SILT LAUNCH RUNOFF THAT EXCEEDS 75% TSS, FROM EXISTING DOMESTIC/INDUSTRIAL INFRASTRUCTURE AND AQUATIC SYSTEMS.
4. THE EDC SUPERVISOR IS RESPONSIBLE TO MONITOR, INSPECT AND REPORT TO THE DEVELOPER AND CONTRACTOR ON EROSION AND SEDIMENT FACILITIES & SITE EROSION PERFORMANCE IN ACCORDANCE WITH THE BEST SEDIMENT CONTROL MANAGEMENT PRACTICES.
5. THE DEVELOPER/OWNER/PERSONS RESPONSIBLE MUST COMPLY WITH THE EDC PLAN WITHIN THE SPECIFIED TIMEFRAME, AND COMPLY WITH ALL INSTRUCTIONS ISSUED BY THE EDC SUPERVISOR TO RECTIFY DEFICIENCIES.
6. CONTRACTOR SHALL UNDERTAKE MEASURES TO LIMIT THE TRANSPORT OF SEDIMENT ONTO CITY ROADWAYS.

MAINTENANCE ALL STAGES (AS APPLICABLE):

1. UPON INSTRUCTION/NOTIFICATION BY THE ENGINEER OF RECORD OR EDC SUPERVISOR PERSONS RESPONSIBLE ARE REQUIRED TO UNDERTAKE MAINTENANCE ACTIVITIES AS DEMAND SPECIFIED TO MONITOR OR MAINTAIN EDC FACILITIES.
2. ALL CATCH BASIN FILTER SOCKS ARE TO BE INSPECTED REGULARLY FOLLOWING STORM EVENTS, FILTER SOCKS ARE TO BE REMOVED AND CLEANED AT 50% CAPACITY.
3. DEVELOPER OR BUILDER MUST REGULARLY CLEAN PAVED ROAD SURFACES OF ACCUMULATED SEDIMENTS AT THE END OF EACH DAY OR AS REQUIRED, NO SOIL, SAND OR OTHER MATERIAL, IN ANY SEDIMENT CONTAINMENT SHALL BE DEPOSITED OR PILED OUTSIDE OF THE PROPERTY BOUNDARIES, PARTICULARLY ON PAVED ROAD SURFACES.
4. SIFT MESSAGES WILL BE REDUCED BY USE OF WATER SPRAYED ON THE EXPOSED SOURCE OF THE DUST. PRESENCE OF THE SUPERVISOR WILL BE AS REQUIRED OR AS DIRECTED BY THE ENGINEER.
5. SEDIMENT FENCES/BARRIERS TO BE INSPECTED AND REPAIRED PRIOR TO EXISTING RAIN EVENTS AND FOLLOWING ALL SIGNIFICANT STORM EVENTS OR PERIODS OF EXTENDED RAIN, ACCUMULATED SEDIMENTS GREATER THAN 30% OF THE FENCE CAPACITY OR OTHERWISE SHOULD BE REPAIRED WITH ACCORDANCE.
6. ALL SEDIMENT FROM EDC CONTROL FACILITIES TO BE DISPOSED OF IN A MANNER AS NOT TO COMPOUND OR COMPROMISE THE SEDIMENT LOADINGS OF OTHER CONTROL MEASURES.
7. ROUTINE INSPECTION AND MAINTENANCE OF THE SITE WORKS WILL BE THE RESPONSIBILITY OF THE EDC SUPERVISOR. THE SUPERVISOR IS RESPONSIBLE FOR DAY-TO-DAY MAINTENANCE OF THE EDC WORKS AT A MINIMUM INSPECT ALL BARRIERS REGULARLY TO ENSURE PROPER FUNCTION WITH INSPECTION REPORTS PROVIDED TO THE ENGINEER AND THE CITY OF HANAMOU FOR REVIEW.
8. AN INSPECTION OF THE EDC WORKS IS TO BE CONDUCTED PRIOR TO ANY PREDICTED SIGNIFICANT RAINFALL EVENTS AND MAINTENANCE OR IMPROVEMENTS TO ENSURE THAT THE EDC WORKS ARE ADEQUATE TO ACCOMMODATE THE COMPLETION OF THE ANTICIPATED RAINFALL EVENT. A REPORT IDENTIFYING THE CONDITION OF THE EDC WORKS AND ANY MAINTENANCE OR IMPROVEMENT UNDERSTAKES BEFORE THE RAINFALL EVENT IS TO BE PROVIDED TO THE ENGINEER AND THE CITY OF HANAMOU FOR REVIEW.

CLEARING, ROAD STRIPPING, GRAVELLING AND ROUGH GRADING STAGE:

1. CONTRACTOR TO NOTIFY THE ENGINEER OF RECORD THAT CLEARING AND GRUBBING HAS COMMENCED.
2. POWERED EDC MEASURES TO BE INSTALLED PRIOR TO INITIATING ON-SITE CLEARING AND GRUBBING.
3. INSTALL PROTECTIVE MEASURES AT OR WITHIN EXISTING CUTCH/LAWN BASINS AS APPLICABLE.
4. PRIOR TO LEAVING THE SITE, OFF-SITE CLEARING AND GRUBBING CONTRACTOR TO OBTAIN SIGN OFF BY THE ENGINEER OF RECORD.
5. GENERAL CONTRACTOR TO HAVE A COPY OF THE EDC PLAN ON-SITE AT ALL TIMES, AND ENSURE STORAGE IS IN PLACE.
6. ANY STOCKPILED MATERIAL TO BE COVERED AND ENCLOSED BY SEDIMENT FENCE AS SPECIFIED.
7. THE ENGINEER OF RECORD WILL BE RESPONSIBLE TO ENSURE THAT THE EXISTING ROADS ARE REVIEWED DAILY AND SLOTT BARRIERS, FLAGGING OF SUBWAYS IS PREPARED.

UTILITY AND ROADWORKS INSTALLATION STAGE:

1. CONTRACTOR TO INSTALL TEMPORARY SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE EDC PLAN AND AS DIRECTED BY ENGINEER OF RECORD.
2. AFTER A MONTH MAY CONDUCT MONITORING.
3. CONTRACTOR TO ENSURE THAT EDC FACILITIES ARE WELL MAINTAINED, CLEANED, REPAIRED, OR REPLACED AS REQUIRED.
4. CATCH/LAWN BASINS COMPLETE WITH PROTECTIVE MEASURES ARE TO BE INSTALLED BY THE CONTRACTOR AT THE FIRST OPPORTUNITY.
5. CONTRACTOR TO CO-ORDINATE THE ELIMINATION OF TEMPORARY EDC FACILITIES IF THEY ARE NO LONGER REQUIRED OR TO FACILITATE SITE OPERATIONS WITH THE ENGINEER OF RECORD. ADDITIONAL EDC FACILITIES MAY NEED TO BE INSTALLED AS FOR THE DIRECTION OF THE ENGINEER OF RECORD.
6. DURING CONSTRUCTION THE CONTRACTOR MAY NEED TO EMPLOY ADDITIONAL MEASURES BUT NOT LIMITED TO, INTERCEPT SOCKS, SIFT SOCKS, PORTABLE TREATMENT FACILITIES, FLOCCULANTS, ETC., TO PREVENT RELEASE OF SILT AND SEDIMENT LOADS INTO TO EXISTING STORM SYSTEM.
7. ANY IRREGULARITIES SHALL BE REPORTED TO THE ENGINEER-OF-RECORD IMMEDIATELY.

FINAL STAGE THROUGH TO COMPLETION:

1. GENERAL CONTRACTOR TO ENSURE THAT STORMWATER CONVEYANCE CHANNELS AND DISCHARGE POINTS TO ADJACENT STREAMS, DITCHES, OR ENTRY POINTS TO PIPED NETWORKS ARE ADEQUATELY PROTECTED.
2. CONTRACTOR TO ENSURE THAT EDC FACILITIES SPECIFIED IN THE EDC PLAN OR ANY ADDENDUMS ARE IMPLEMENTED ACCORDINGLY.
3. CONTRACTOR TO CO-ORDINATE THE ELIMINATION OF TEMPORARY FACILITIES AS THEY ARE NO LONGER REQUIRED WITH THE ENGINEER OF RECORD. ADDITIONAL EDC FACILITIES MAY NEED TO BE INSTALLED AS FOR THE DIRECTION OF THE ENGINEER OF RECORD.
4. ALL SEDIMENT CONTROL FACILITIES SHOWN SHALL REMAIN IN PLACE UNTIL SIGN OFF OF ON-SITE CONSTRUCTION IS COMPLETE.

POWER, COMMUNICATIONS AND GAS:

1. THE CONTRACTOR SHALL CONTACT BC ONE CALL A MINIMUM OF THREE WORKING DAYS PRIOR TO START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL CONDUCT UNDERGROUND BC HYDRO, TELUS, SHAW CABLE AND PORTS BC IN ACCORDANCE WITH THE APPLICABLE UTILITY COMPANY'S CURRENT SPECIFICATIONS.
3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS BEFORE PRIOR TO THE START OF CONSTRUCTION TO ARRANGE INSPECTION AND APPROVALS.
4. THE CONTRACTOR SHALL CONTACT BC HYDRO AND TELUS TO INSTALL METERS ON EXISTING JUNCTION BOXES TO BRING LID ELEVATIONS FLUSH TO GRADE.
5. CONNECTION TO, OR ALTERATION OF, EXISTING TOWN OF VUE ROYAL OWNED UTILITIES REQUIRES AUTHORIZATION BY THE TOWN'S REPRESENTATIVE.
6. ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHALL BE CONFIRMED BY THE USE OF A PIPE LOCATOR AND MANUAL DIGGING. ALL OR ANY STRUCTURES NOT NECESSARILY SHOWN.
7. ALL SURFACE RESTORATION (ROADS, CURBS, SIDEWALKS, ETC) SHALL BE ORIGINAL CONDITION OR BETTER.
8. THE CONTRACTOR SHALL NOTIFY ALL RESIDENCES AND/OR BUSINESSES AFFECTED BY THE CONSTRUCTION FIVE DAYS PRIOR TO STARTING THE CONSTRUCTION. THE CONTRACTOR SHALL ALSO EACH DAY INDIVIDUALLY NOTIFY EACH RESIDENCE OR BUSINESS WHICH WILL BE AFFECTED BY THE NEXT DAY'S WORK.
9. THE DRAWINGS MAY NOT SHOW ALL INDIVIDUAL UNDERGROUND HOME SERVICE CONNECTIONS. THE CONTRACTOR SHALL EXPOSE ALL EXISTING UNDERGROUND FACILITIES BY HAND DIGGING BEFORE USING MECHANICAL EXCAVATING EQUIPMENT.

NOTICE TO CONTRACTOR

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE DRAWINGS CORRESPOND WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD.

LEGAL DESCRIPTION: LOT 8, SECTION 1, HANAMOU DISTRICT, PLAN E911797	M.M. LOCATION: 635610 & 635611 ELEVATION: 47.10m & 29.89m	
LOCATED AT: STREET & AVENUE	APLN MARTIN	
REV. NO. DESCRIPTION	BY	DATE
01 FOR ENFORCEMENT	VC SL	2018/06/14 SL
02 ISSUES FOR DEVELOPMENT PERMIT	CL SL	2018/09/23 SL

**APLN MARTIN**  
 CONSULTANTS & ENGINEERS  
 201 - 10466 St. Jean, St. John's, N.B., Canada A1B 3X8 & 8  
 Tel: 496 367-2666 Fax: 496 367-2667 Email: g.parker@aplmartin.com

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.  
 324 McCOLLUM ROAD, HANAMOU NO BC V8S 4M6 CANADA  
 PH: 250 736-4668

PROJECT: SHOP, WAREHOUSE AND STORAGE  
 300 THIRTY STREET, HANAMOU BC

THE NUMBER OF SHEETS OF THIS DRAWING IS 02. THE TOTAL NUMBER OF SHEETS IS 02. THIS DRAWING IS ONE OF 02 SHEETS. THE SHEET NUMBER IS 13 OF 02. THE DRAWING IS ONE OF 02 SHEETS. THE SHEET NUMBER IS 13 OF 02.

TITLE: GENERAL NOTES

DESIGN: VC  
 DRAWN: VC  
 CHECKED: SL  
 APPROVED: SL

SCALE: 1:1000

PROJECT NO.: 18-5090-02

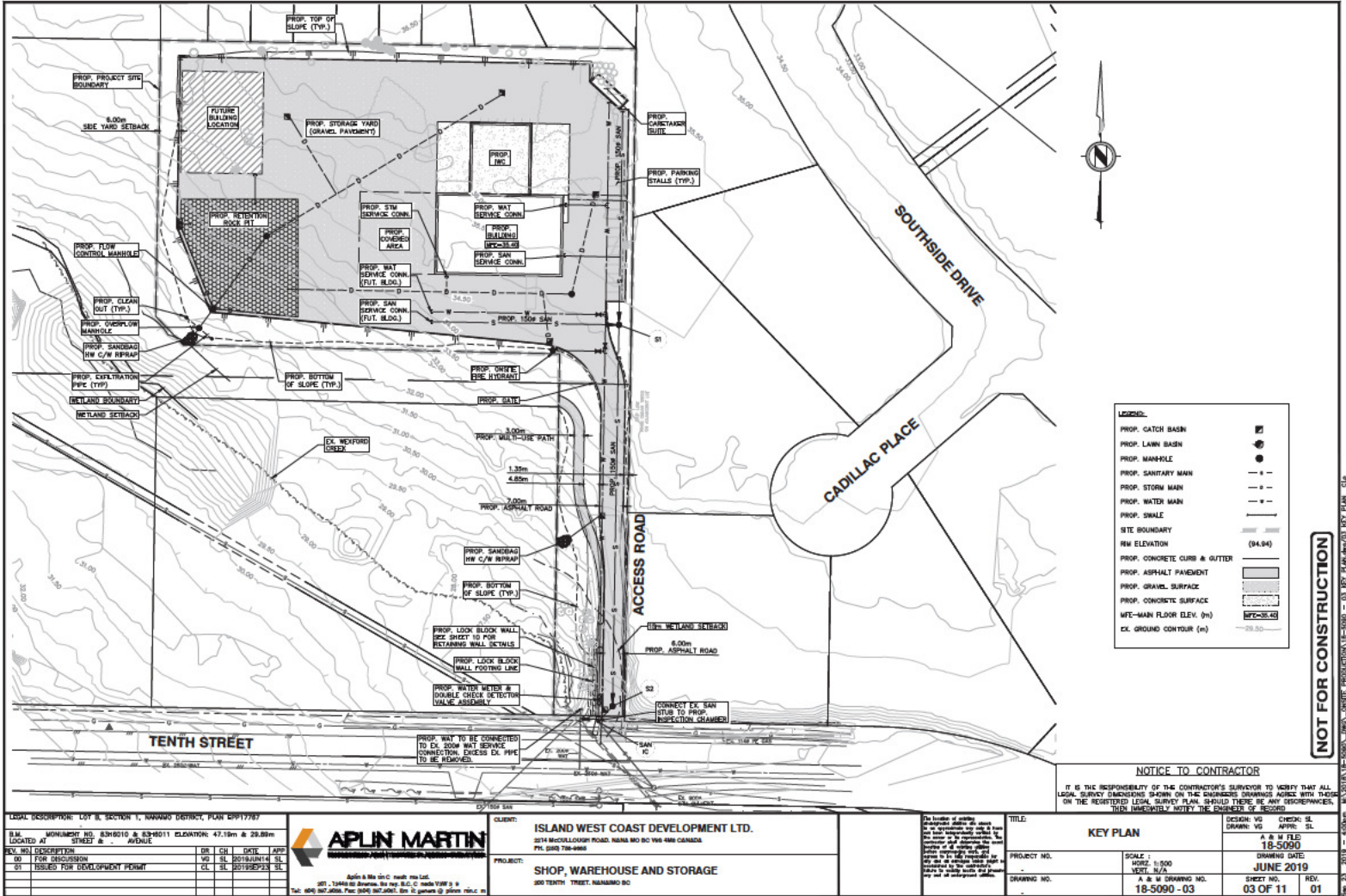
DRAWING NO.: 18-5090-02

DRAWING DATE: JUNE 2019

SHEET NO.: 02 OF 11

REV: 01

NOT FOR CONSTRUCTION



NOT FOR CONSTRUCTION

18-5090-03 KEY PLAN (REVISED) 18-5090-03 KEY PLAN (REVISED) 18-5090-03 KEY PLAN (REVISED)

**LEGEND:**

PROP. CATCH BASIN	
PROP. LAWN BASIN	
PROP. MANHOLE	
PROP. SANITARY MAIN	
PROP. STORM MAIN	
PROP. WATER MAIN	
PROP. SWALE	
SITE BOUNDARY	
NW ELEVATION (94.94)	
PROP. CONCRETE CURB & GUTTER	
PROP. ASPHALT PAVEMENT	
PROP. GRAVEL SURFACE	
PROP. CONCRETE SURFACE	
MEAN FLOOR ELEV. (m)	
EX. GROUND CONTOUR (m)	

**NOTICE TO CONTRACTOR**  
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEER'S DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEY IMMEDIATELY NOTIFY THE ENGINEER OF RECORD.

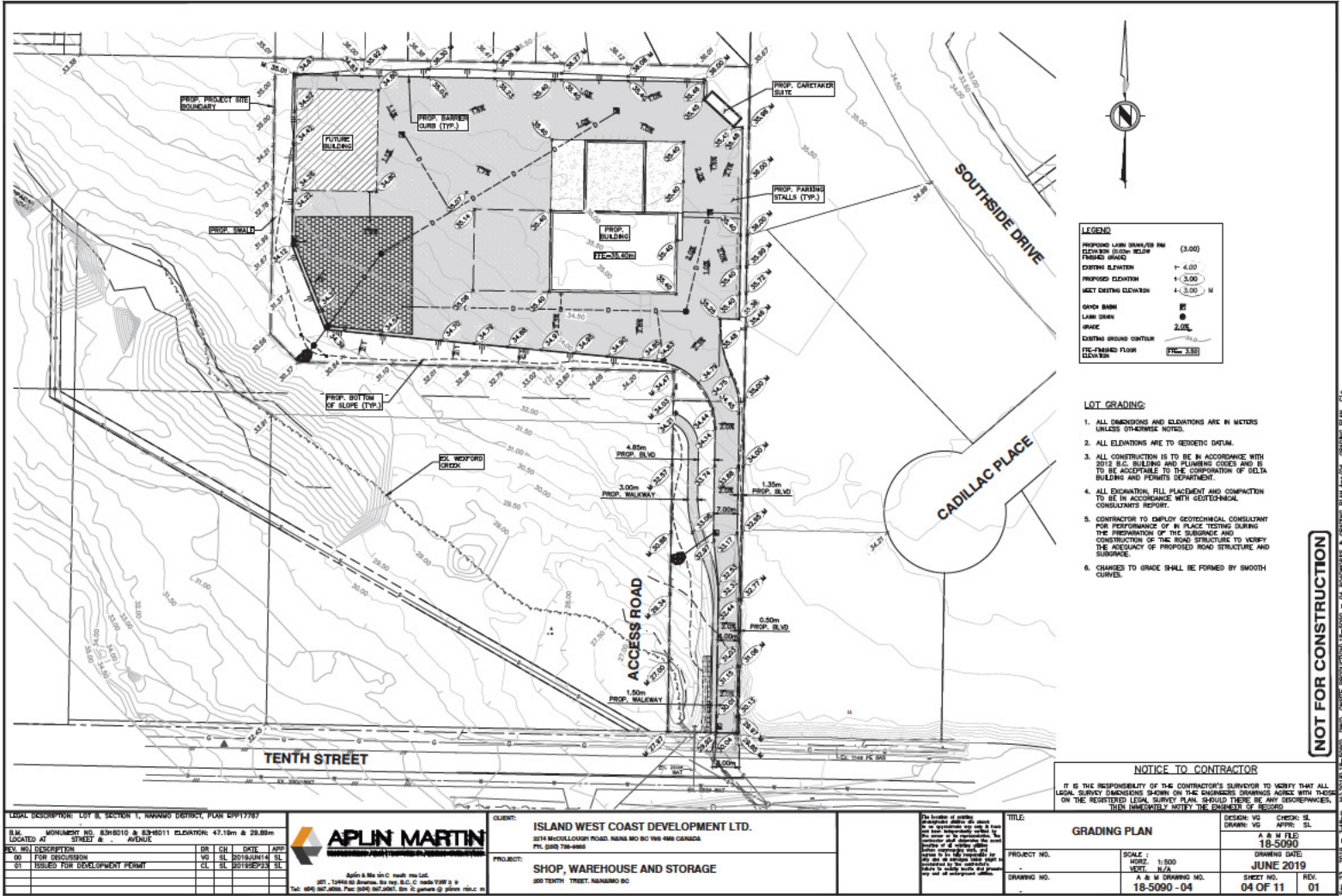
LEGAL DESCRIPTION: LOT 8, SECTION 1, NANAIMO DISTRICT, PLAN E0117787			
B.M. MONUMENT NO. 836010 & 836011 ELEVATION: 47.10m & 29.89m	LOCATED AT STREET & AVENUE		
REV. NO.	DESCRIPTION	DR. I.C.H.	DATE
00	FOR ENGINEERING	V.C.I. S.L.	2018JUN14 S.L.
01	ISSUES FOR DEVELOPMENT PERMIT	C.L. S.L.	2018SEP23 S.L.

**APLIN MARTIN**  
 307 - 1346th St. Victoria, BC V8W 2G2, Canada  
 Tel: 250-367-2666, Fax: 250-367-2667, Email: g.peters@aplincanada.com

CLIENT:	ISLAND WEST COAST DEVELOPMENT LTD. 3214 MACCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA PH: 250-758-0888
PROJECT:	SHOP, WAREHOUSE AND STORAGE 300 TENTH STREET, NANAIMO BC

**TITLE:** KEY PLAN  
 PROJECT NO. 18-5090-03  
 DRAWING NO. A & M DRAWING NO. 18-5090-03

DESIGN: V.G.	CHECK: S.L.	DATE: 18-5090
DRAWN: V.G.	APPRO: S.L.	A & M FILED 18-5090
DRAWING DATE: JUNE 2019		SHEET NO. 03 OF 11
SCALE: 1:500		REV. 01



**LEGEND**

PROPOSED LAWN GRAVEL PER FIN	(3.00)
EXISTING GROUND ELEVATION	(3.00)
FINISHED GRADE	+ 4.00
EXISTING ELEVATION	+ 3.00
PROPOSED ELEVATION	+ 3.00
NEET DISTING ELEVATION	+ 3.00 M
SHOW BARR	■
LAWN GRAVE	●
GRADE	2.0%
EXISTING GROUND CONTOUR	—
FINISHED FLOOR ELEVATION	(FIN-3.00)

- LOT GRADING:**
1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE TO BENCHMARK DATUM.
  3. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH 2012 S.C. BUILDING AND PLUMBING CODES AND IS TO BE ACCEPTABLE TO THE CORPORATION OF GILFA BUILDING AND PERMITS DEPARTMENT.
  4. ALL EXCAVATION, FILL PLACEMENT AND COMPACTION TO BE IN ACCORDANCE WITH GEOTECHNICAL CONSULTANT'S REPORT.
  5. CONTRACTOR TO EMPLOY GEOTECHNICAL CONSULTANT FOR PERFORMANCE OF IN PLACE TESTING DURING THE PREPARATION OF THE SUBGRADE AND CONSTRUCTION OF THE ROAD STRUCTURE TO VERIFY THE ADEQUACY OF PROPOSED ROAD STRUCTURE AND SUBGRADE.
  6. CHANGES TO GRADE SHALL BE FORMED BY SMOOTH CURVES.

**NOTICE TO CONTRACTOR**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEER'S DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEY IMMEDIATELY NOTIFY THE ENGINEER OF RECORD.

LEGAL DESCRIPTION: LOT 8, SECTION 1, TOWNSHIP 1, RANGE 1, PLAN 18-5090

REV. NO.	DESCRIPTION	BY	CHK	DATE	APP
00	FOR PROVISION	VCJ	SL	2018/04/14	SL
01	ISSUES FOR DEVELOPMENT PERMIT	CL	SL	2018/09/23	SL

**APLIN MARTIN**  
 APLIN & MARTIN INC. 10446 St. Lawrence, St. John's, N.S., Canada B1A 1K8  
 Tel: 902 367-2888, Fax: 902 367-2887, Email: info@aplinc.com

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.  
 2014 MACCOLLOUGH ROAD, NAINA NS B0C 1V6 CANADA  
 P/E: 2018 758-0888

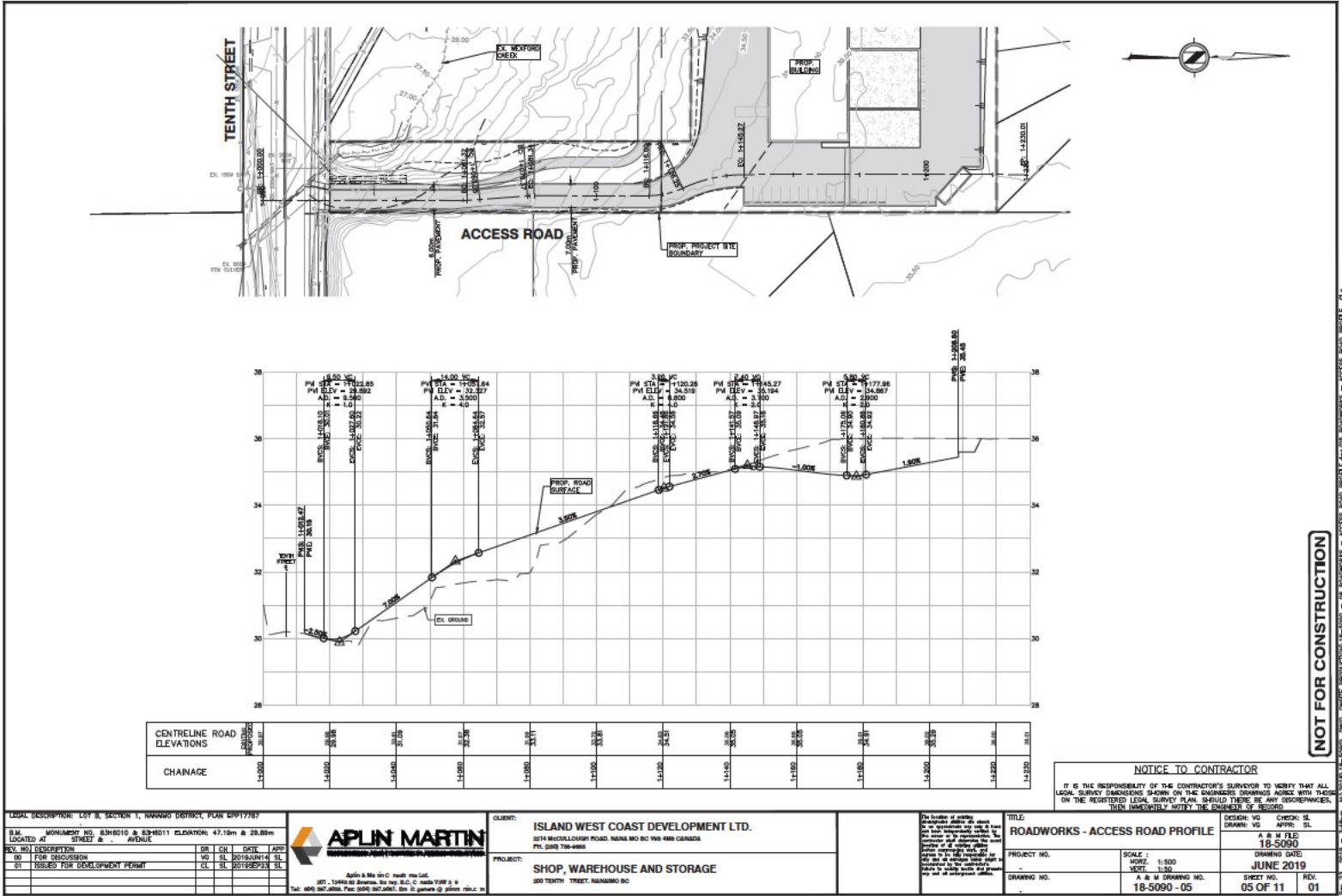
PROJECT: SHOP, WAREHOUSE AND STORAGE  
 300 TENTH STREET, NAINA NS B0C

PROJECT NO. 18-5090-04  
 DRAWING NO. A & M DRAWING NO. 18-5090-04

**TITLE: GRADING PLAN**

DESIGN: VCJ	CHECK: SL
DRAWN: VG	APPR: SL
A & M FILE: 18-5090	
DRAWING DATE: JUNE 2019	
SHEET NO. 04 OF 11	REV. 01





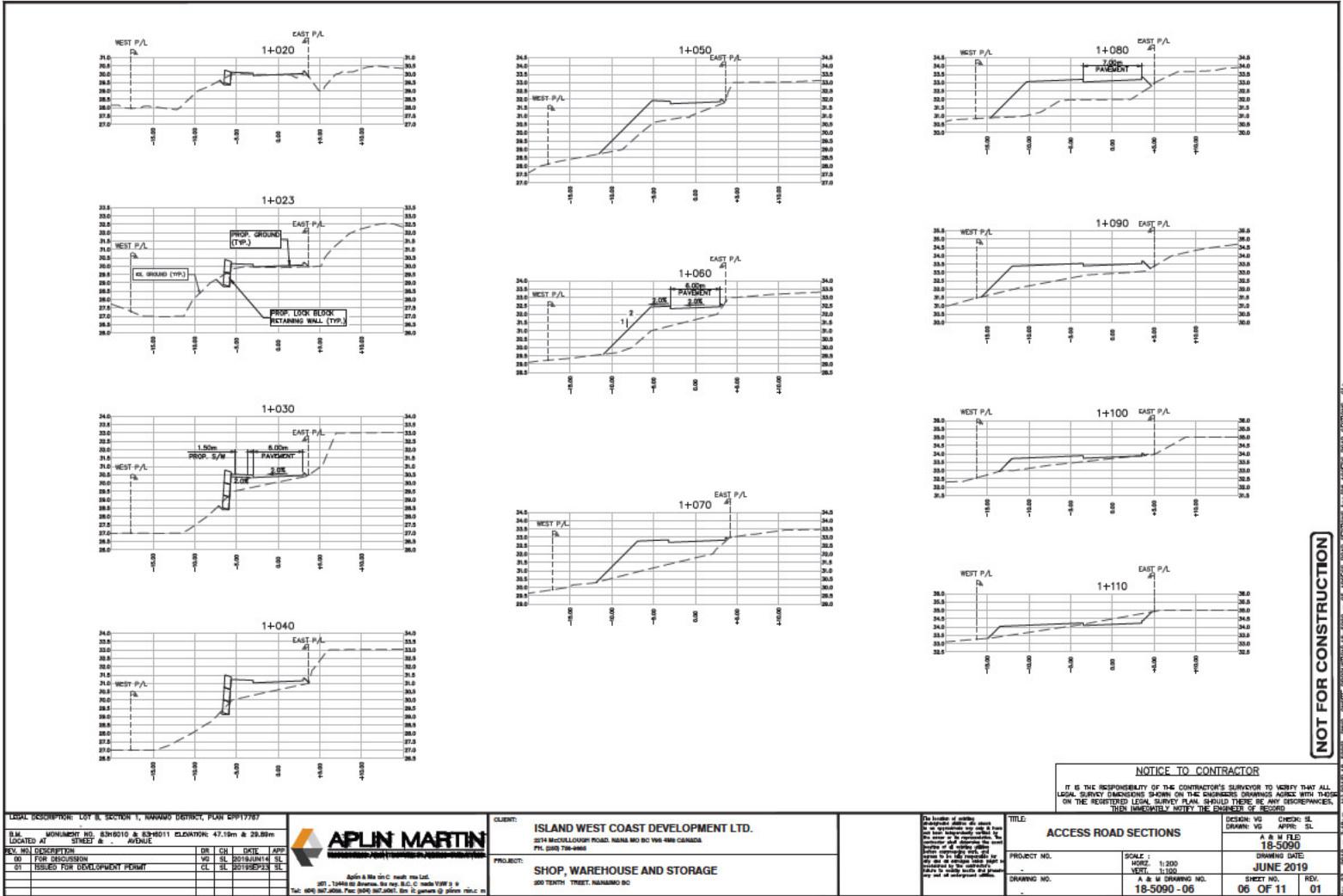
LEGAL DESCRIPTION: LOT 8, SECTION 1, NANAIMO DISTRICT, PLAN E917787  
 S.M. MONUMENT NO. 63M510 & 63M511 ELEVATION 47.15m & 29.89m  
 LOCATED AT STREET & AVENUE  
 REV. NO. DESCRIPTION DR. CH. DATE APP.  
 00 FOR PROVISION VC 1 SL 2018JUN14 SL  
 01 ISSUES FOR DEVELOPMENT PERMIT CL 3L 2018SEP23 3L

**APLIN MARTIN**  
 307 - 1346th St. Nanaimo, BC V9S 1Y8  
 Tel: 250-257-2666 Fax: 250-257-2667

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.  
 3214 MACCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA  
 P/N 2018 758-0588  
 PROJECT: SHOP, WAREHOUSE AND STORAGE  
 300 TENTH STREET, NANAIMO BC

DESIGN: VG  
 CHECK: SL  
 DRAWN: VG  
 APPR: SL  
 A & M FILE: 18-5090

TITLE: ROADWORKS - ACCESS ROAD PROFILE  
 PROJECT NO.:  
 DRAWING NO.:  
 SCALE: HORIZ: 1:500  
 VERT: 1:50  
 DRAWING DATE: JUNE 2019  
 SHEET NO.: 05 OF 11  
 REV: 01



NOT FOR CONSTRUCTION

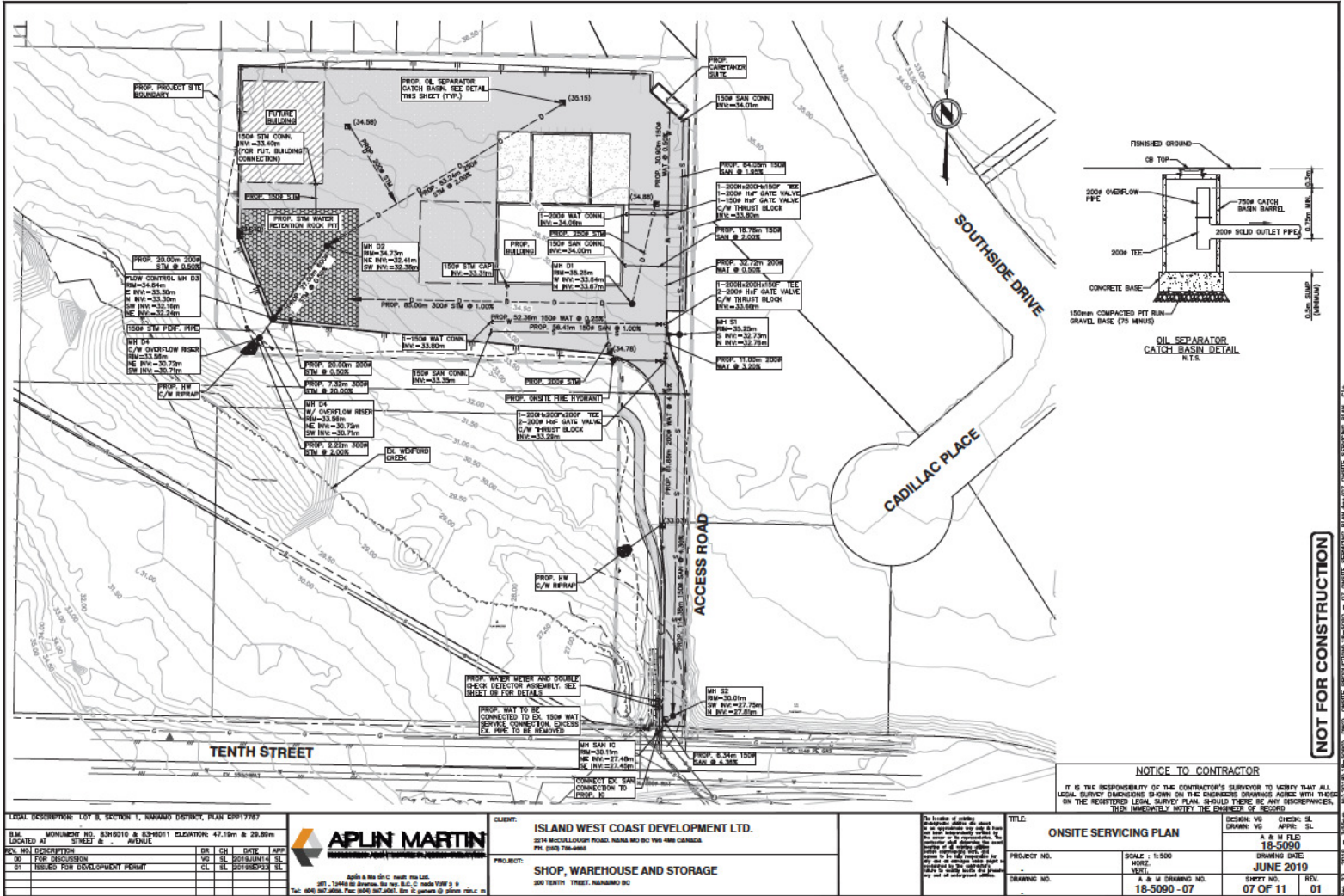
**NOTICE TO CONTRACTOR**  
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERVISOR TO VERIFY THAT ALL LEGAL DIMENSIONS SHOWN ON THE ENGINEER'S DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD.

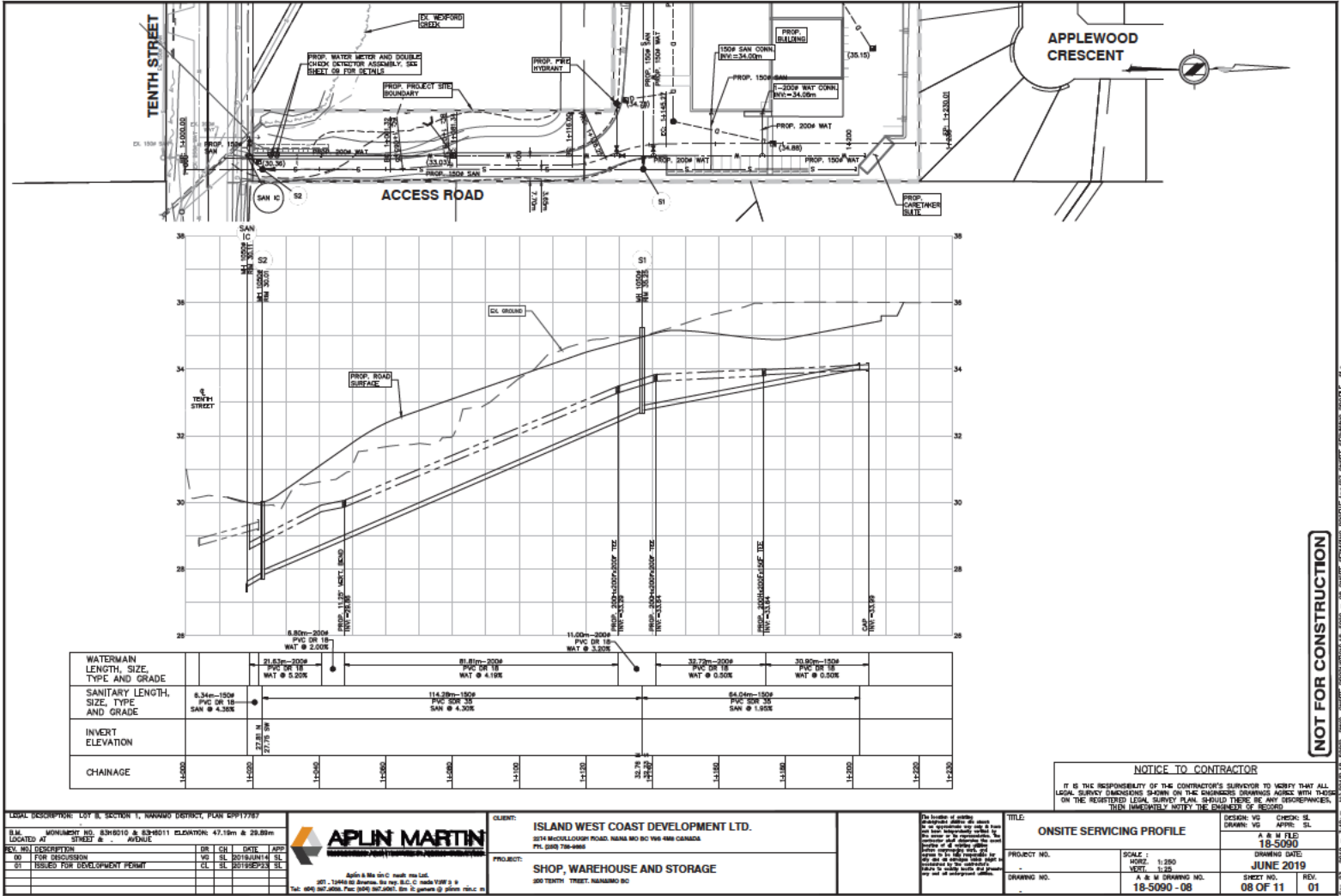
LEGAL DESCRIPTION: LOT 18 SECTION 1, NANAIMO DISTRICT, PLAN E0117187			
E.M. MONUMENT NO. E3M010 & E3M011 ELEVATION 47.10m & 29.89m			
LOCATED AT STREET & AVENUE			
REV. NO.	DESCRIPTION	DR. CH.	DATE
00	FOR ENGINEERING	VEI SL	2018/04/14 SL
01	ISSUES FOR DEVELOPMENT PERMIT	CL SL	2018/09/13 SL

**APLIN MARTIN**  
 ENGINEERS ARCHITECTS PLANNERS  
 207 - 1346 82 Avenue, 8th Fl., S.E. Co. Suite 1000 & B  
 TEL: 604 267-2666 Fax: 604 267-2667 Email: g.parker@aplinmartin.ca

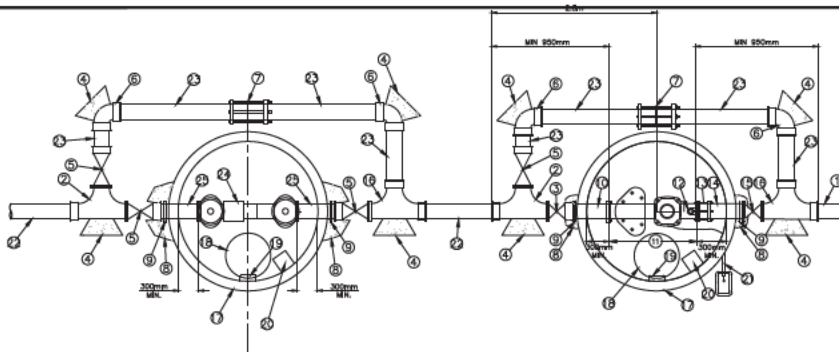
CLIENT:	ISLAND WEST COAST DEVELOPMENT LTD. 2074 MACCULLOUGH ROAD, NANAIMO BC V9S 4M6 CANADA P.O. BOX 758-0888
PROJECT:	SHOP, WAREHOUSE AND STORAGE 300 TENTH STREET, NANAIMO BC

DESIGN: VG	CHECK: SL
DRAWN: VG	APPR: SL
A & M FILED 18-5090	
DRAWING DATE: JUNE 2019	
PROJECT NO.	SCALE: 1:300
DRAWING NO.	WEST: 1:300
A & M DRAWING NO. 18-5090-06	
SHEET NO. 06	REV. 01





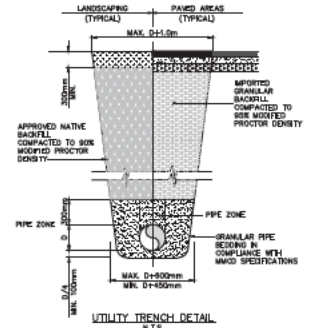
NOT FOR CONSTRUCTION



- ① 150mm PVC DR18 WATER SERVICE
- ② 150mmH x 150mmH x 150mmH TEE
- ③ 150mmH FRI GATE VALVE
- ④ CONCRETE THRUST BLOCK SEE MANHOLE SPECS. 5.09.3.7
- ⑤ 150mmH FRI GATE VALVE (CLOSED/LOCKED)
- ⑥ 150mmH HAT 90° BEND
- ⑦ 150mmH COUPLING
- ⑧ MASS CONCRETE THRUST BLOCK
- ⑨ 200mmH EPDMY COATED STEEL THURST RING
- ⑩ 150mmH FRI EPDMY COATED STEEL SPOOL PIECE C/W THRUST RING (750mm MINIMUM)
- ⑪ SENSUS 150R OMNI P3 PWC/DOMESTIC METER ASSEMBLY WITH RADIO READ TRANSMITTER
- ⑫ TEST PORT FOR LOCKING VALVE
- ⑬ 150mmH FLANGE COUPLING ADAPTER
- ⑭ 150mmH R.P.P. EPDMY COATED STEEL SPOOL PIECE C/W THRUST RING (500mm MINIMUM)
- ⑮ 150mmH FRI GATE VALVE
- ⑯ 150mmH x 150mmH x 150mmH TEE
- ⑰ 150mmH STANDARD PRECAST MANHOLE AS PER CITY OF NANAIMO STANDARD DRAWING 18-11A BUT WITH 300mm THICK CONCRETE BASE TROWEL FINISHED AND SLOPED TO SUMP @ MINIMUM 2%
- ⑱ 180mmH CONCRETE LID (400) DESIGNED TO SUPPORT HIGHWAY LOADING TO SUIT 3 PIECE MANHOLE FRAME & COVER
- ⑲ 20mmH GALVANIZED STEEL LADDER RUNGS @ 300mm O/C CAST IN WALL
- ⑳ 300mm x 300mm x 200mm DEEP SUMP
- ㉑ 50mmH R.P.P.V.C. ELECTRICAL DUCT
- ㉒ 150mmH PVC DR18 MANHOLE
- ㉓ 150mmH PVC DR18 BYPASS PIPE
- ㉔ 150mmH (8") MATTS 757 SOV DOUBLE CHECK VALVE ASSEMBLY
- ㉕ 150mmH PVC DR18 MANHOLE C/W FLANGE COUPLING

- NOTES:**
1. ONLY PRODUCTS APPROVED BY THE OFFICER OF ENGINEERING AND THE CITY OF NANAIMO APPROVED PRODUCTS LIST ARE TO BE USED IN THE CITY OF NANAIMO AND NO APPROVED PRODUCTS APPROVED FOR THE LAC MOWIC.
  2. METER AND DOUBLE CHECK ASSEMBLIES SUPPORTED BY BRASS WALLS, USE STEEL PIP SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  3. CONCRETE THRUST BLOCKING AND JOINT REQUIREMENTS PRELAYS AS NOTED IN ACCORDANCE WITH THE CITY OF NANAIMO STANDARD DRAWING 5.09.3.7.
  4. EXTERIOR WALLS OF CONCRETE AND INTERIOR WALLS SHALL BE FINISHED TO THE GRADE OF WORK (SHALL CONCRETE PAPER MANUFACTURED FOR THE PURPOSE OF SEALING CONCRETE).
  5. METER SET SHALL BEING SLOPE LEVEL AND SUPPORTED WITH GALVANIZED STEEL PVC SUPPORTS.
  6. LID, LID INTERIOR HEADROOM (FLOOR TO CEILING OF COVER)
  7. THE DOUBLE CHECK VALVE TO BE LOCATED INSIDE THE MECHANICAL ROOMS OF THE PROVIDED BUILDING, PLEASE SEE MECHANICAL DRAWINGS FOR DETAILS.

DETAILS OF FRIE DOMESTIC WATER METER SYSTEM & DOUBLE CHECK VALVE ASSEMBLY. N.T.S.



**NOTICE TO CONTRACTOR**  
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LEGAL DESCRIPTION: LOT 8, SECTION 1, NANAIMO DISTRICT, PLAN E911797					
S.I.M. MONUMENT NO. E316210 & E316211 ELEVATION: 47.15m & 29.85m LOCATED AT STREET & AVENUE					
REV. NO.   DESCRIPTION   DR.   CH.   DATE   APPR.					
00	FOR ENGROSSMENT	VC	SL	2018/04/14	SL
01	ISSUES FOR DEVELOPMENT PERMIT	CL	SL	2018/09/23	SL

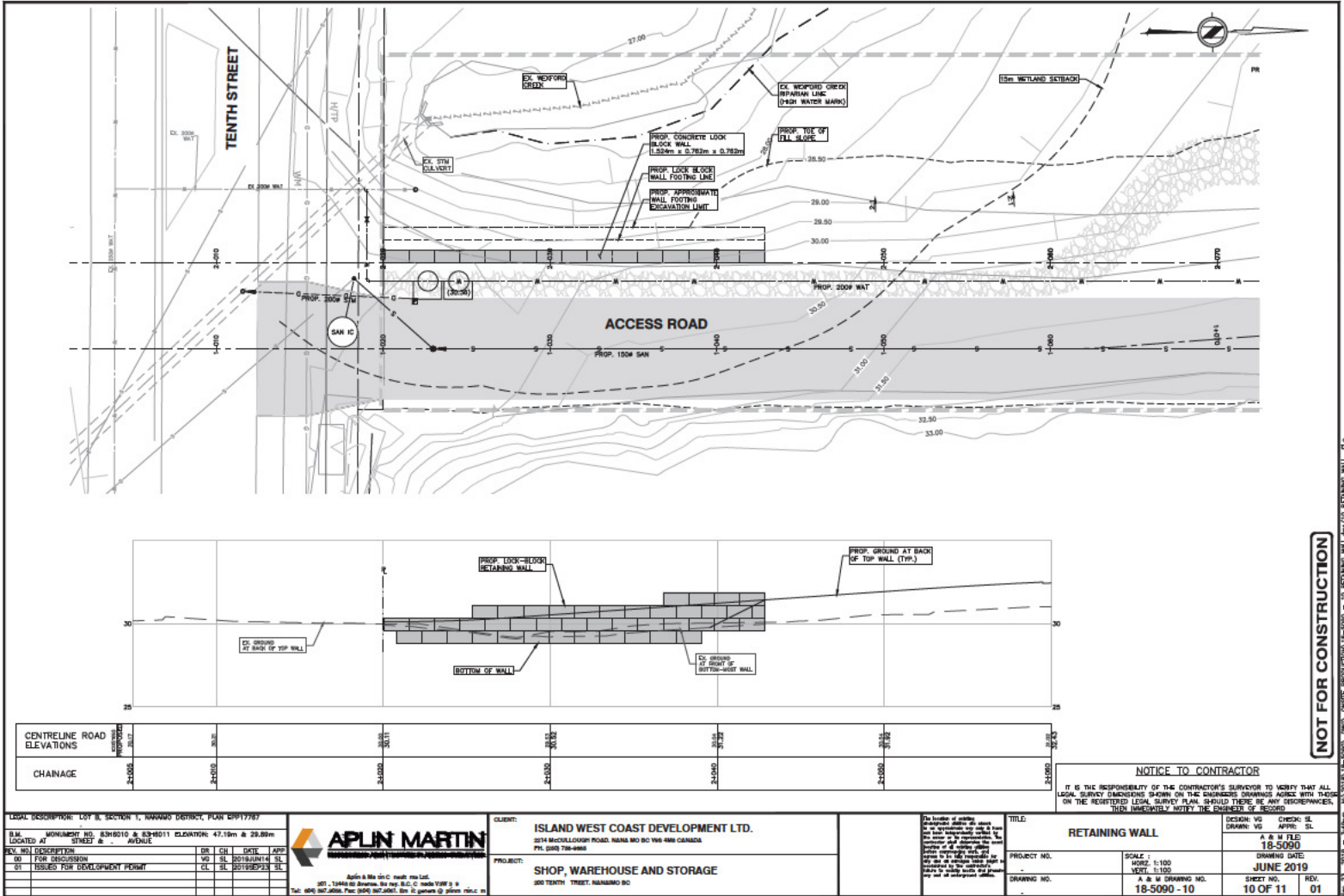
**APLIN MARTIN**  
 ENGINEERS ARCHITECTS INTERIORS  
 307 - 104th St. Nanaimo, BC V9R 4G2, Canada  
 TEL: 250-257-2666, Fax: 250-257-2667, Email: info@aplincan.com

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD. 2014 MACCULLOUGH ROAD, NANAIMO BC V9S 4M6 CANADA PH: 250-758-0888
PROJECT: SHOP, WAREHOUSE AND STORAGE 300 TENTH STREET, NANAIMO BC

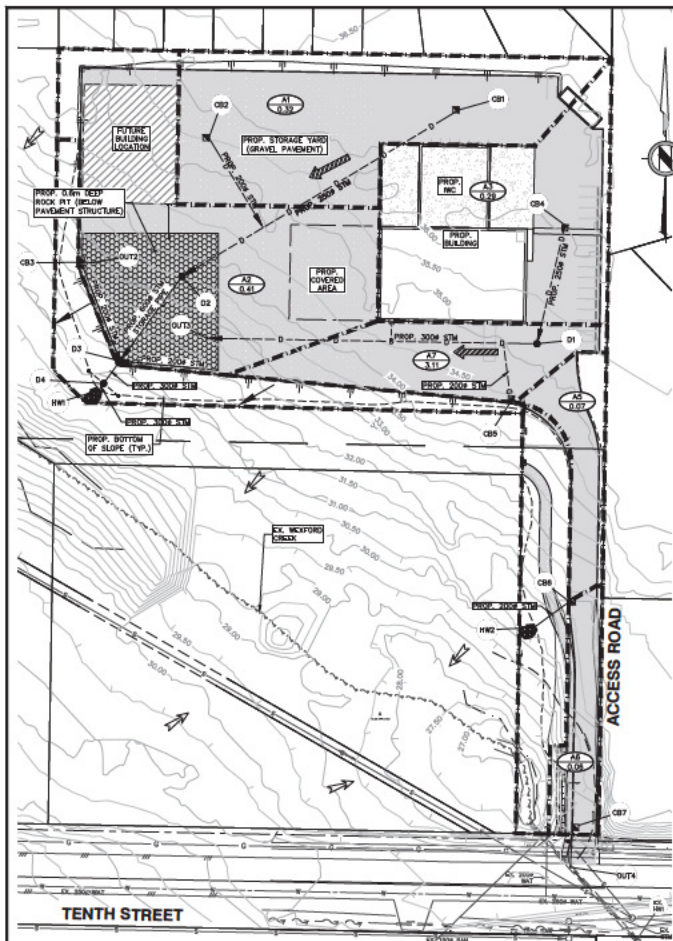
TITLE: ONSITE SERVICING DETAILS
PROJECT NO.:
DRAWING NO.:

DESIGN: VG	CHECK: SL
DRAWN: VG	APPR: SL
A & M FILED 18-5090	
DRAWING DATE: JUNE 2019	
SCALE: AS SHOWN	
A & M DRAWING NO. 18-5090 - 09	SHEET NO. 09 OF 11
REV. 01	REV. 01

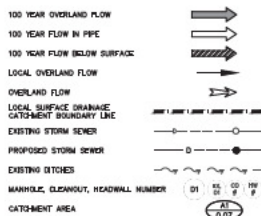
NOT FOR CONSTRUCTION



NOT FOR CONSTRUCTION



LEGEND



**FIVE STOREY RENTAL APARTMENT DEVELOPMENT**  
107 DUNDAS STREET, N. MISSISSAUGA, ONT.

**2 Year Peak Flow Calculations**

Area	To	Roof	Roof	Area	Roof	Q
Area	Roof	Roof	Roof	Area	Roof	Q
100	0.08	0.08	0.08	100	0.08	0.08
100	0.08	0.08	0.08	100	0.08	0.08
100	0.08	0.08	0.08	100	0.08	0.08

Storage Volume Required (Modified Rational Method)

Storage Volume = T x (Q<sub>1</sub> - Q<sub>2</sub>) + 0.5 x T x (Q<sub>1</sub> + Q<sub>2</sub>) - 1.0 x Q<sub>2</sub>

Q<sub>1</sub> = Design storm intensity  
 T<sub>1</sub> = Time to concentration, normally  
 Q<sub>2</sub> = Peak flow for storm 2, T<sub>2</sub> min  
 Q<sub>3</sub> = Peak flow for storm equalled size  
 Q<sub>4</sub> = Maximum observed flow

Minimum Storage Required = 7.6 m<sup>3</sup>

Manhole Number	Manhole	Peak Flow	Peak Flow	Required
Manhole	Manhole	Peak Flow	Peak Flow	Required
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08

**2 YEAR DETENTION REQUIREMENTS**

Manhole Number	Manhole	Peak Flow	Peak Flow	Required
Manhole	Manhole	Peak Flow	Peak Flow	Required
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08

DETENTION PROVIDED.

**SHOP, WAREHOUSE & STORAGE**  
107 DUNDAS STREET, N. MISSISSAUGA, ONT.

**3 Year Peak Flow Calculations**

Area	To	Roof	Roof	Area	Roof	Q
Area	Roof	Roof	Roof	Area	Roof	Q
100	0.08	0.08	0.08	100	0.08	0.08
100	0.08	0.08	0.08	100	0.08	0.08
100	0.08	0.08	0.08	100	0.08	0.08

Storage Volume Required (Modified Rational Method)

Storage Volume = T x (Q<sub>1</sub> - Q<sub>2</sub>) + 0.5 x T x (Q<sub>1</sub> + Q<sub>2</sub>) - 1.0 x Q<sub>2</sub>

Q<sub>1</sub> = Design storm intensity  
 T<sub>1</sub> = Time to concentration, normally  
 Q<sub>2</sub> = Peak flow for storm 2, T<sub>2</sub> min  
 Q<sub>3</sub> = Peak flow for storm equalled size  
 Q<sub>4</sub> = Maximum observed flow

Minimum Storage Required = 7.6 m<sup>3</sup>

Manhole Number	Manhole	Peak Flow	Peak Flow	Required
Manhole	Manhole	Peak Flow	Peak Flow	Required
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08

**3 YEAR DETENTION REQUIREMENTS**

Manhole Number	Manhole	Peak Flow	Peak Flow	Required
Manhole	Manhole	Peak Flow	Peak Flow	Required
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08
100	0	0.08	0.08	0.08

DETENTION PROVIDED.

**5 YEAR RATIONAL METHOD**

**100 YEAR RATIONAL METHOD**

**RETENTION REQUIREMENTS**

Retention Volume	Retention Volume
1000 m <sup>3</sup>	1000 m <sup>3</sup>
2000 m <sup>3</sup>	2000 m <sup>3</sup>
3000 m <sup>3</sup>	3000 m <sup>3</sup>

**NOTICE TO CONTRACTOR**

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LEGAL DESCRIPTION: LOT 18, SECTION 1, NANANAO DISTRICT, PLAN E917787

BLM MONUMENT NO. 6346210 & 6346211 ELEVATION 47.10m & 29.89m LOCATED AT STREET & AVENUE

REV.	NO.	DESCRIPTION	BY	CHK	DATE	APP
01	1	FOR ENCLOSURE	VCJ	SL	2018/04/14	SL
02	2	ISSUES FOR DEVELOPMENT PERMIT	CL	SL	2018/05/23	SL

**APLIN MARTIN**  
Professional Engineers and Geoscientists

Applin & Ma G.P.C. Inc. 107 - 10440 St. Lawrence, St. John's, N.S. Canada B1A 4K6  
Tel: 902 367-2888 Fax: 902 367-2887 Email: g.p.c. @ apmlin.com

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.  
3214 MACCULLOUGH ROAD, MISSISSAUGA, ONT. L4X 1L6 CANADA  
P.O. BOX 708-088

PROJECT: SHOP, WAREHOUSE AND STORAGE  
300 TENTH STREET, MISSISSAUGA, ONT.

TITLE: STORM WATER MANAGEMENT PLAN

PROJECT NO. 18-5090-11

DRAWING NO. A & M DRAWING NO. 18-5090-11

DESIGN: VG CHECKED: SL  
DRAWN: VG APPROVED: SL

A & M FILED: 18-5090

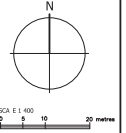
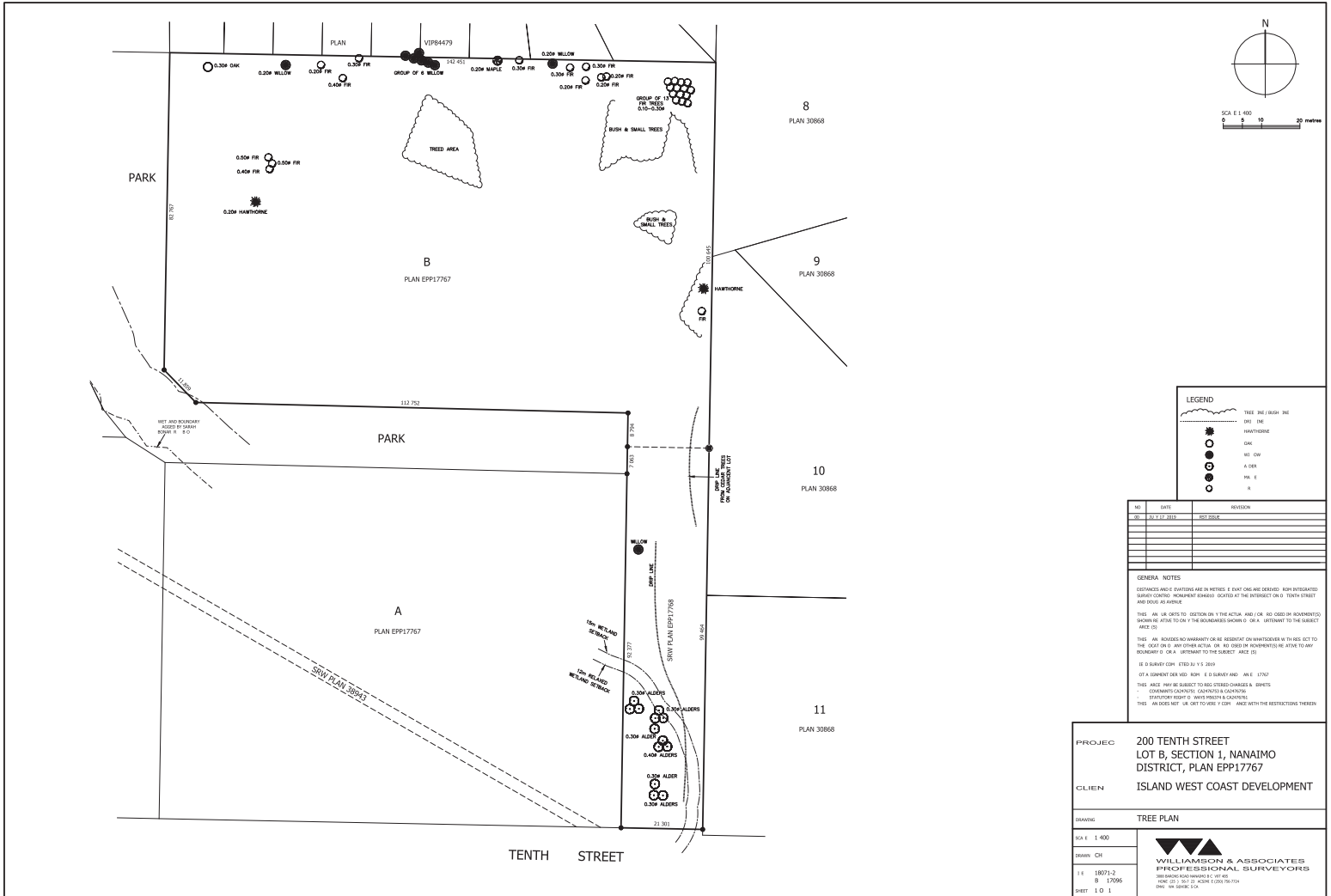
DRAWING DATE: JUNE 2019

SHEET NO. 11 OF 11 REV. 01

**FIGURE 3**  
**TREE PLAN**  
**WILLIAMSON & ASSOCIATES PROFESSIONAL SURVEYORS**







**LEGEND**

	TREE (P&G) INC
	FRS
	HAWTHORNE
	OAK
	MAPLE
	ALDER
	WILLOW

NO.	DATE	REVISION
01	21.12.2010	ADD 200M

**GENERAL NOTES**

1. CONFIRMED TREE LOCATIONS ARE SHOWN IN RED. 2. EXISTING TREE TAGS (TAGS) SHALL BE INSTALLED BY THE CONTRACTOR AT THE INTERSECTION OF TENTH STREET AND THIS SUB-LOT.

3. THIS PLAN IS ONLY TO BE USED TO IDENTIFY THE ACTUAL AND/or EXISTING TREES. IT DOES NOT GUARANTEE THE EXISTENCE OF TREES AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE OF TREES AT THE TIME OF CONSTRUCTION.

4. THIS PLAN IS ONLY TO BE USED TO IDENTIFY THE ACTUAL AND/or EXISTING TREES. IT DOES NOT GUARANTEE THE EXISTENCE OF TREES AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE OF TREES AT THE TIME OF CONSTRUCTION.

5. THIS PLAN IS ONLY TO BE USED TO IDENTIFY THE ACTUAL AND/or EXISTING TREES. IT DOES NOT GUARANTEE THE EXISTENCE OF TREES AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE OF TREES AT THE TIME OF CONSTRUCTION.

PROJEC:	200 TENTH STREET LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17767
CLIENT:	ISLAND WEST COAST DEVELOPMENT
DRAWING:	TREE PLAN
SCALE:	1:400
DRAWN:	CH
DATE:	18/07/2010
SHEET:	1 OF 1

**WILLIAMSON & ASSOCIATES**  
PROFESSIONAL SURVEYORS  
2111 BROADVIEW AVENUE, SUITE 101  
VANCOUVER, BC V6K 2R1  
TEL: 604-271-1111  
WWW.WA-SURVEYORS.COM

**FIGURE 4**  
**LANDSCAPE PLAN**  
**LADR LANDSAPE ARCHITECTS LTD.**





**APPENDIX A  
SITE PHOTOGRAPHS**



PHOTO SHEET 1



Photo 1. Looking toward the driveway entrance on Tenth Street. (January 2019)



Photo 2. View from the entrance of the riparian area of Wexford Creek (wetland reach). (June 2019)



Photo 3. Facing south from the driveway showing the riparian area of the wetland with a tree canopy of mostly red alder.



Photo 4. Looking across the Wexford Creek wetland located on the west side of the driveway into the property.



Photo 5. The wetland is dominated by a stand of red alder trees with salmonberry in the understory.

PHOTO SHEET 2



Photo 6. Panoramic view from the middle of the driveway showing the red alder stand where the Significant trees are located (red alders DBH  $\geq$ 30cm) and the location of the proposed fill and retaining wall.



Photo 7. Panoramic view from the north end of the driveway showing the location of the Significant Sitka willow tree (multi-stemmed with DBH 26cm).

PHOTO SHEET 3



Photo 8. Most of the parcel was previously cleared of vegetation and topsoil.



Photo 9. Several piles of waste and topsoil are found within the site.



Photo 10. Wexford Creek wetland next to the southwest end of the parcel has a poorly defined flow of water but saturated soils and aquatic vegetation extending south.



Photo 11. The area appears to have once been used for farming evidenced by old fence posts and barbed wire. The saturated soils of the wetland southwest of the subject parcel appear to have been driven over by off-road vehicles forming ruts where water is ponding.

**APPENDIX B**  
**TREE INVENTORY &**  
**TREE REPLACEMENT REQUIREMENTS**





200 Tenth Street Tree Inventory				Total Replacement Requirement
Species (Coniferous)	# & Size DBH (cm)			
	6 to 30cm	30.1 to 79.9cm	80cm+	
Douglas fir	55 Remove / 5 Retain	2 Remove	0	59 (min height 1.5m)
Species (Deciduous)	# & Size DBH (cm)			
	6 to 30cm	30.1 to 60cm	>60.1cm	
Red alder	14 Remove	10 Remove / 3 Retain		34 (min 60mm DBH)
Bigleaf maple	7 Remove / 2 Retain		1 Retain	7 (min 60mm DBH)
Bitter cherry	1 Remove / 5 Retain			1 (min 60mm DBH)
English hawthorn	8 Remove			8 (min 60mm DBH)
Native willow	2 Remove / 2 Retain			2 (min 60mm DBH)
Non-native oak		1 Remove		2 (min 60mm DBH)
<b>Total number trees cut</b>	<b>100</b>			
<b>Total Significant trees cut</b>	<b>11</b>			
<b>Tree Replacement Requirement</b>	113 trees: 59 Douglas fir, 34 red alder, 7 bigleaf maple, 1 bitter cherry, 8 black hawthorn, 2 native willow, 2 oak			