CITY OF COLWOOD
3300 Wishart Road | Colwood | BC V9C 1R1 | 250 294-8153
planning@colwood.ca | www.colwood.ca

File: DP000031 - Townhouse Development at 3494 Wishart Rd

DEVELOPMENT PERMIT DP000031

THIS PERMIT, issued **JANUARY** 20th**, 2025,** is,

ISSUED BY: **CITY OF COLWOOD**, a municipality incorporated under the *Local Government Act*, 3300 Wishart Road, Victoria, BC, V9C 1R1

(the "City")

PURSUANT TO: Section 490 of the *Local Government Act* , RSBC 2015, Chapter 1

ISSUED TO: CEDAR HILL LIVING LTD
800-1070 DOUGLAS ST
VICTORIA BC V8W 2C4

(the "Permittee")

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1. This Form and Character, Natural Hazards (Steeply Sloped) and Environmental (Hillside) Development Permit applies to those lands within the City of Colwood described below, and any and all buildings, structures, and other development thereon:

   LOT 3, SECTION 62, ESQUIMALT LAND DISTRICT, PLAN VIP10219
   3494 WISHART RD

   (the "Lands")

2. This Development Permit regulates the development and alterations of the Land, and supplements the *"Colwood Land Use Bylaw, 1989"* (Bylaw No. 151), to ensure the Form and Character, Natural Hazard, and Environmental considerations for the development to 50 townhomes and associated site improvements are consistent with the design and environmental guidelines for areas designated as "Neighbourhood – Intensive Residential" in the City of Colwood Official Community Plan (Bylaw No. 1700).

3. This Development Permit is **NOT** a Building Permit or a subdivision approval.

4. This Development Permit is issued subject to compliance with all of the bylaws of the City of Colwood that apply to the development of the Lands, except as specifically supplemented by this Permit.

5. The Director of Development Services or their delegate may approve minor variations to the schedules attached to and forming part of this Development Permit, provided that such minor variations are consistent with the overall intent of the original plans and do not alter the form and character of the development authorized by those plans.

6. If the Permittee does not substantially start the construction permitted by this Permit within 24 months of the date of this Permit, the Permit shall lapse and be of no further force and effect.

7. The development is to be constructed in accordance with the following plans and specifications, which are attached to and form as part of this permit:

Schedule 1	Architectural Drawings prepared by Walking Stick Drafting dated October 25, 2024
Schedule 2	Landscape Plan prepared by LADR Landscape Architects dated November 25, 2024
Schedule 3	Landscape Cost Estimate prepared by LADR Landscape Architects dated January 2, 2025
Schedule 4	Environmental Impact Assessment prepared by Corvidae Environmental Consulting Inc, dates May 2023
Schedule 5	Habitat Restoration and Enhancement Plan prepared by Corvidae Environmental Consulting Inc, dated August 19, 2024
Schedule 6	Tree Management Plan prepared by Talmack Urban Forestry Consultants Limited dated October 25, 2024
Schedule 7	Geotechnical Assessment prepared by Ryzuk Geotechnical, dated October 1, 2024
Schedule 8	Civil Design Drawings prepared by OnPoint Project Engineers Ltd, dated January 3, 2025
Schedule 9	Sediment and Erosion Control Plan prepared by Walking Stick Developments Inc.

8. This Development Permit authorizes the construction of 50 townhomes along with any associated site works. The Lands shall not be altered, nor any buildings or structures constructed, except in accordance with the following conditions:

GENERAL

8.1. This Permit shall not be construed as relieving the Permittee from compliance with any of the requirements contained within the Section 219 covenants registered as "CB1327234" as amended.

8.1.1. Irrespective of the issuance of this Development Permit, the Lands shall not be cleared, blasted or built upon until the City is in receipt of a Building Permit application for the site, and the City provides written authorization to proceed with land alterations.

8.2. This Permit does not authorize off-site works; additional permits are required.

FORM AND CHARACTER CONDITIONS

Building Features

8.3. The form and character of the buildings to be constructed on the Lands shall conform to the Architectural Drawings prepared by Walking Stick Drafting (**Schedule 1**).

8.4. Any future additions of telecommunications antennas or equipment to the exterior of the buildings and/or structures included in this Permit shall be architecturally integrated into the buildings and/or structures they are mounted on or screened from views so as not to be visually obtrusive, to the satisfaction of the Director of Development Services or their delegate.

8.5. All mechanical roof elements, including mechanical equipment, elevator housings, and vents shall be visually screened with sloped roofs or parapets, or other forms of solid screening to the satisfaction of the Director of Development Services or their delegate.

8.6. No future construction/installation of unenclosed or enclosed outdoor storage areas or recycling/refuse collection shall be undertaken without the issuance of a further Development Permit or amendment to this Permit.

Signage

8.7. This Development Permit does not include any signage approvals. A separate sign permit will be required for any marketing signage.

Landscaping

8.8. The design and construction of the proposed landscaping shall be in substantial compliance with the Landscape Plan prepared by LADR Landscape Architects (**Schedule 2**).

8.9. Prior to the issuance of a building permit, the Permittee shall provide the City with a written letter of engagement from a registered landscape architect agreeing to:

8.9.1. Supervise and install the landscape work in accordance with the approved Landscape Plan prepared by LADR Landscape Architects (Schedule 2); and

8.9.2. Perform a final inspection and submit an inspection report to the City confirming substantial compliance with the approved landscape plan.

8.10. Prior to the issuance of a Building Permit, the Permittee has provided to the City in the form of an irrevocable letter of credit or certified cheque, security in the amount of **$218,539.97** based on 110% of the Landscape Cost Estimate ($198,672.70) prepared by LADR Landscape Architects (**Schedule 3**), which amount, or a portion therefore, as the case may be, shall be returned, no sooner than 1 year from the date of planting, upon receipt of a signed statement of substantial completion from a registered landscape architect, to the satisfaction of the Director of Development Services.

8.11. Prior to returning the landscape deposit, the Permittee shall obtain a one-year warranty of the landscape works from the landscape contractor. This warranty shall be transferrable to subsequent owners of the property within the warranty period. The warranty must include provision for a further one-year warranty on materials.

ENVIRONMENTAL CONDITIONS

General

8.12. Where required, Federal and Provincial environmental approvals shall be obtained prior to any works occurring on the Lands.

8.13. Development on the Lands shall comply with the recommendations contained in the Environmental Impact Assessment prepared by Corvidae Environmental Consulting (**Schedule 4**).

8.14. A security deposit of **$13,943.60**, based on 110% of the Restoration Cost Estimate ($12,676) prepared by Corvidae Environmental Consulting Inc. (**Schedule 5**) has been accepted prior to the issuance of this Development Permit. The environmental security deposit will be held until a satisfactory final inspection report prepared by the project's biologist is submitted to the City, no sooner than one year from the date restoration work is completed, confirming that the restoration works remain in substantial compliance with the Habitat Restoration and Enhancement Plan (**Schedule 5**) and Landscape Plan (**Schedule 2**).

8.15. Invasive species removal should be completed outside of the migratory bird window (prior to March 15th or after August 31st; Government of Canada 2018). If invasive species removal is scheduled within the migratory bird window, a QEP should conduct nest search surveys a maximum of 2-3 days prior to the start of activities. If an active nest is discovered during nest search or clearing activities, the nest will be subject to site-specific mitigation measures until the young have naturally fledged/left the area. Multiple nest sweeps may be required.

8.16. All recommendations in the Habitat Restoration and Enhancement Plan (**Schedule 5**) must be followed including the placement of additional rocks or logs in sunny areas to add habitat features for reptiles as determined by the project biologist.

8.17. A QEP must be on-site to direct the invasive species removal, and all invasive vegetation removal must be done by hand and using hand-held equipment, or a mini excavator with a skilled operator.

8.18. No clearing or site preparation shall occur until all qualified professionals (registered biologist, qualified environmental professional, arborist, etc.), as applicable, have been retained to oversee impacts on the site and ensure compliance with the recommendations contained in **Schedules 4, 6 and 7**. Prior to the issuance of this Development Permit, the Permittee has provided the City with written letters of engagement from all qualified professionals, as applicable, agreeing to:

8.18.1. Oversee impacts on the site and ensure compliance with the recommendations contained in **Schedules 4, 6 and 7**; and

8.18.2. Perform a final inspection and submit an inspection report to the City confirming substantial compliance with **Schedules 4, 6 and 7**.

8.19. Signage identifying the environmentally sensitive and conservation areas is to be installed as per the Environmental Impact Assessment prepared by Corvidae Environmental Consulting Ltd (**Schedule 4).**

8.20. Environmental restoration and enhancement work shall be completed in substantial compliance with **Schedule 5** to the satisfaction of the Director of Development Services.

Erosion and Sediment Control

8.21. Erosion and sediment control shall be in accordance with the approved Erosion and Sediment

Contral Plan prepared by Walking Stick Developments Inc (**Schedule 9**).

Tree Management

8.22. Trees located on the Lands shall be retained in accordance with the approved Tree Management Plan prepared by Talmack Urban Foresty (**Schedule 6**) and only varied with written consent from the Director of Development Services.

8.23. If any replacement tree does not survive for 1 year after initial planting, the Permittee shall, within 6 months, replace the tree with a replacement tree in accordance with the Tree Management Plan prepared by Talmack Urban Forestry (**Schedule 6**) and the Landscape Plan prepared by LADR Landscape Architects (**Schedule 3**) and shall thereafter maintain the replacement tree for a period of 1 year.

8.24. The project Arborist must 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.

8.25. Tree fencing must be installed prior to any land alterations. A City of Colwood Development Services Planner must conduct a site visit prior to the issuance of a blasting permit or any other land alterations. The Director of Development Services, or their delegate, must provide written authorization to proceed with land alterations after tree fencing has been installed.

8.26. Protection fencing must be used around planned greenspaces to prevent soil compaction and preserve planting areas for trees.

8.27. Play structure must not be built directly beside tree #578.

8.28. Hydraulic rock breakers/excavators must be instead of blasting while building the road beside the private amenity area per the recommendations of the arborist report.

8.29. Arborist supervision is required while excavating within the critical root zone (CRZ) of any retained trees.

8.30. Rock blasting shall not be used within the influencing distance of any offsite trees. Hydraulic rocking breaker or excavators must be used under the supervision of the project arborist if within the CRZ.

8.31. No back-breaking beyond the building outlines of Area 2 while blasting. The use of line drilling and pre-shearing must be used.

Nesting and Migratory Birds

8.32. It is the property owner's responsibility to ensure that physical works are compliant with the federal Migratory Birds Convention Act, 1994 and the provincial Wildlife Act with respect to bird nests. Both of these acts prohibit the disturbance or destruction of active nests and eggs.

HAZARD LANDS

8.33. All works shall adhere to the assessment and recommendations contained in the Geotechnical Report prepared by Ryzuk Geotechnical (**Schedule 7**) and be in substantial compliance with the

Civil Works prepared OnPoint Project Engineers Ltd. (**Schedule 8**) and be completed under the guidance and approval of a Geotechnical Engineer.

8.34. This permit does not authorize any blasting on the site; additional permits are required.

8.35. No retaining walls over 1.2m in height are permitted.

VARIANCES

9.0. The Colwood Official Community Plan (Bylaw No. 1700) Policy 11.2.2.3 promotes the application of Site Adaptive Planning and design principles on all Hillside development sites. This approach emphasizes minimizing ecosystem disturbance, preserving habitat areas, and integrating existing natural features, such as rock outcrops, cliffs, and tree strands. It also aims to enhance pedestrian connections while safeguarding tree protection. Additionally, Section 18.4 reinforces the commitment to implementing a Site Adaptive Framework for new developments, with the primary goal of reducing landscape disruption in identified Hillside development areas. Hillside Objective (t) prioritizes minimizing blasting and re-contouring, while Section 22.1 Hillside Guideline (k) specifies the importance of avoiding unnecessary tree and vegetation removal during service installation for each development phase. Considering these policies and based on the authority in Section 490(1)(a) of the *Local Government Act*, the Subdivision and Development Servicing Bylaw (No. 2000) is hereby varied as follows:

- Vary SSD-R24 (Typical Cross Section Limited Local – 18m ROW) along Delora Drive to decrease the east sidewalk from 2.0m to 1.5m and permit the 2.0m sidewalk on the westside at curb instead of separated.

ISSUED ON THIS 20th DAY OF JANUARY, 2025

Yazmin Hernandez B.

YAZMIN HERNANDEZ, MCIPP RPP
DIRECTOR OF DEVELOPMENT SERVICES

3494 Wishart Townhouse Development

Project Statistics

Schedule 1

Zoning Analysis

	Permitted/ Required	Proposed
Minimum Site Area	11,500 Sq M	12,552 Sq M
Road Dedication Area		1,140 Sq M
Conservation Area	1,000 Sq M	1,002 Sq M
Attached Housing Units	50	50
Parking (2 spaces/dwelling)	100	100
Guest Parking (.1 per unit)	5	7(incl HC)
HC Parking	2	2
Regular Stall Dimension:	2.5 m x 5.5 m	
HC Stall Dimension:	4.1 m x 5.5 m	
Municipal Spaces (Delora Drive)	0	4
Standard Bike Stall Dimensions	.6 m x 1.8 m	
Oversized Bike Stall Dimensions	.9 m x 3 m	
Long Term Bike Stalls (Std)	42	42
Long Term Bike Stalls (Oversized)	5 (10% of units)	8
Oversized stalls located in all garages of buildings 14 and 15 (qty: 8).		
% of Long Term Stalls with 110V Access	50%	100%
Short Term Bike Stalls (Std)	5	5
Short Term Bike Stalls (Oversized)	1	1
Short Term Stalls with EV Access	2	2
Short term stalls include a 2.1 m overhead structure		
Amenity Area (3 Sq M/Bedroom)	534 Sq M	554 Sq M

Area 1

	Permitted/ Required	Proposed
Zone:	CD39	
Finished Area		6,665 Sq M
FAR:	0.7	.675
Height:	11.0 M	10.70 M
Minimum Lot Area	9,000 Sq M	9,879 Sq M
Lot Coverage		2717 Sq M
Maximum Lot Coverage	35%	27.5%
Minimum Lot Frontage	60 m	60.58 m
Setbacks		
Front - Wishart	6.0m	6.01 m
Front - Delora Dr	1.5 m	1.50 m
Interior Side (North)	1.5 m	1.51 m
Interior Side (South)	3.0 m	3.0 m

Area 2

	Permitted/ Required	Proposed
Zone:	CD39	
Finished Area		1447 Sq M
FAR:	0.7	.547
Height:	11.0	9.51
Minimum Lot Area	2,500 Sq M	2643 Sq M
Lot Coverage		544 Sq M
Maximum Lot Coverage	30%	20.6 %
Minimum Lot Frontage	60 m	60.58 m
Setbacks		
Front - Delora Dr	6.0 m	6.0 m
Interior Side (North)	1.5 m	1.5 m
Interior Side (South)	9.5 m	9.51 m
Rear	18.0 m	20.5 m

		Floor Area (Excluding Garage) - Square Feet						Building Lot		
Building #	Unit Description	Level 1	Level 2	Level 3	Building Total	Unit Total	Units/Building	Coverage Sq M	Bedrooms/Bldg	Area
1	3 Bedroom + Bonus, 2.5 Bath	860	1,298	1,296	3,454	1,727	2	120.6	6	2
2	3 Bedroom + Bonus, 2.5 Bath	1,720	2,596	2,592	6,908	1,727	4	241.2	12	2
3	3 Bedroom + Bonus, 2.5 Bath	1,299	1,958	1,953	5,210	1,737	3	182.0	9	2
4	3 Bedroom + Den, 2.5 Bath	926	1,073	1,287	3,286	1,643	2	137.8	6	1
5	3 Bedroom + Bonus, 2.5 Bath	1,708	2,578	2,558	6,844	1,711	4	239.6	12	1
6	4 Bedroom, 2.5 Bath	1,852	2,510	3,000	7,362	1,841	4	309.4	16	1
7	3 Bedroom + Bonus, 2.5 Bath	854	1,289	1,279	3,422	1,711	2	119.8	6	1
8	4 Bedroom, 2.5 Bath	926	1,255	1,500	3,681	1,841	2	154.7	6	1
9	3 Bedroom + Bonus, 2.5 Bath	1,281	1,934	1,918	5,133	1,711	3	179.8	9	1
10	4 Bedroom, 2.5 Bath	926	1,255	1,500	3,681	1,841	2	154.7	8	1
11	4 Bedroom, 2.5 Bath	926	1,255	1,500	3,681	1,841	2	154.7	8	1
12	4 Bedroom, 2.5 Bath	1,852	2,510	3,000	7,362	1,841	4	309.4	16	1
13	4 Bedroom, 3.5 Bath	847	1,287	1,278	3,412	1,706	2	119.9	8	1
14	4 Bedroom, 3.5 Bath	1,694	2,574	2,556	6,824	1,706	4	239.2	16	1
15	4 Bedroom, 3.5 Bath	1,694	2,574	2,556	6,824	1,706	4	239.2	16	1
16	4 Bedroom, 3.5 Bath	1,694	2,574	2,556	6,824	1,706	4	239.2	16	1
17	4 Bedroom, 3.5 Bath	847	1,287	1,278	3,412	1,706	2	119.9	8	1

Area 1 Finished Area Sq Ft	Area 1 Finished Area Sq M	Area 1 Gross Lot Coverage Sq M	Area 2 Finished Area Sq Ft	Area 2 Finished Area Sq M	Area 2 Gross Lot Coverage Sq M	Total Bedrooms
71,748	6,665.6	2,717.3	15,572	1,446.7	543.8	178

Drawing List

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A 0.0
Drawing Title:	Project Statistics
Scale:	

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Subdivision & Existing Site Plan

BC LAND SURVEYORS SITE PLAN OF:

Legal - Lot 3, Section 62
Esquimalt District, Plan 10219

Parcel identifier: [illegible] in the City of Colwood

LEGEND
Elevations are geodetic and referenced to the CVD28BC datum

+ - denotes - existing elevation

○ - denotes - Tree Tag Number

Contour interval = 0.50 metres

Contours have been derived by digital terrain modelling and any critical elevations must be verified by field survey

Lot Area = 1.36 Ha

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.

File: [illegible] March 13, 2023

POWELL & ASSOCIATES
BC LAND SURVEYORS
250-2950 DOUGLAS ST
VICTORIA, BC, V8T 4N4
250-382-8855

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
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Drawn by:

Walking Stick Drafting

Sheet No:	A 0.1
Drawing Title:	Subdivision Plan Existing Site Plan
Scale:	Scale 1:400

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Overall Site Plan

1 / A1.0 Site Concept Plan
Scale 1 : 300

Legend

- Private Green Space
- Private Amenity Space
- Municipal Road Dedication
- Wood Chip Trail
- Environmental Conservation Area

Refer to Landscape Plan for detailed tree planting quantity and species information.

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Drawn by:

Walking Stick Drafting

Sheet No:	A 1.0
Drawing Title:	Site Plan (Area 1 & 2)
Scale:	Scale 1:300

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Site Plan - Strata Road (Phase 2 & 3)

1 / A1.1 Site Concept Plan Area 1
Scale 1:225

PROFESSIONAL SEALS

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Drawn by:

Walking Stick Drafting

Sheet No:	A 1.1
Drawing Title:	Site Plan Area 1
Scale:	Scale 1:225

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Site Plan - Delora Drive (Phase 1)

1 / A1.2 Site Concept Plan Area 2
Scale 1:225

PROFESSIONAL SEALS

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1	08/07/2023	Rezoning
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4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A 1.2
Drawing Title:	Site Plan Area 2
Scale:	Scale 1:200

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Site Plan - Retaining Wall Layout

1 / A1.0 Site Concept Plan
Scale 1 : 300

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Drawn by:

Walking Stick Drafting

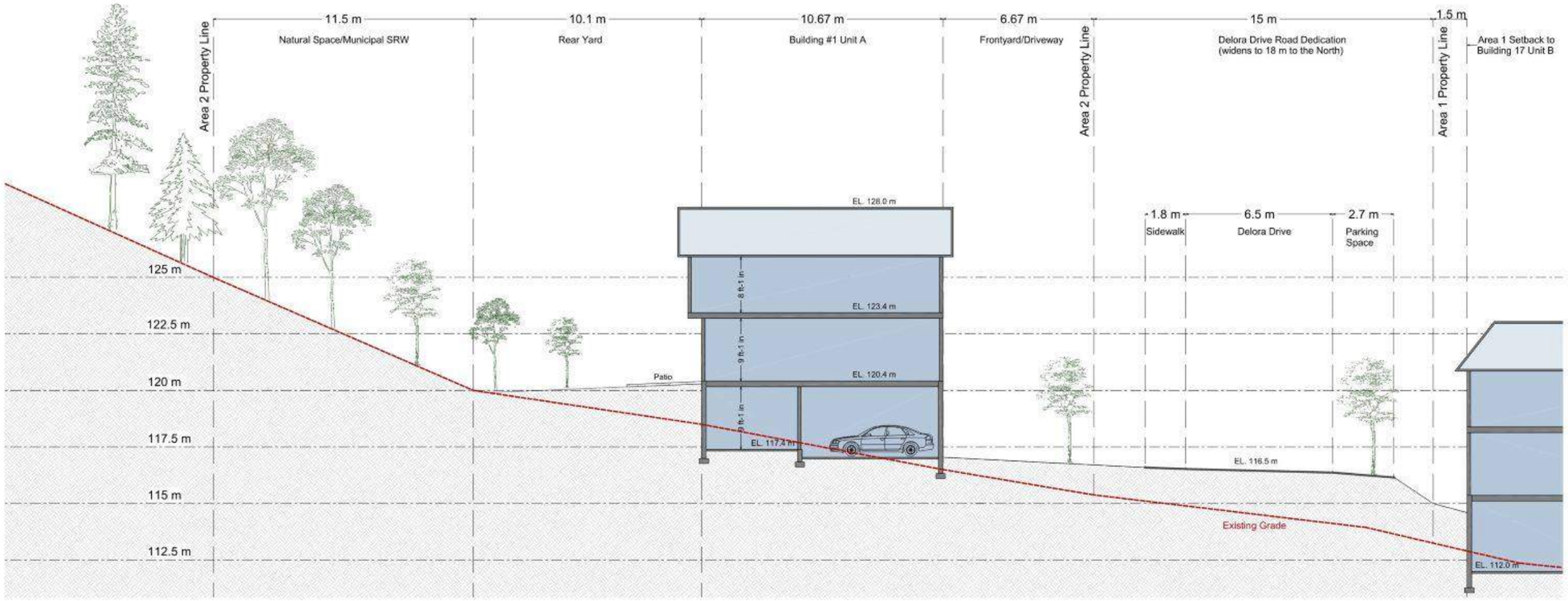
Sheet No:	A 1.3
Drawing Title:	Retaining Wall Layout
Scale:	Scale 1:300

Project:

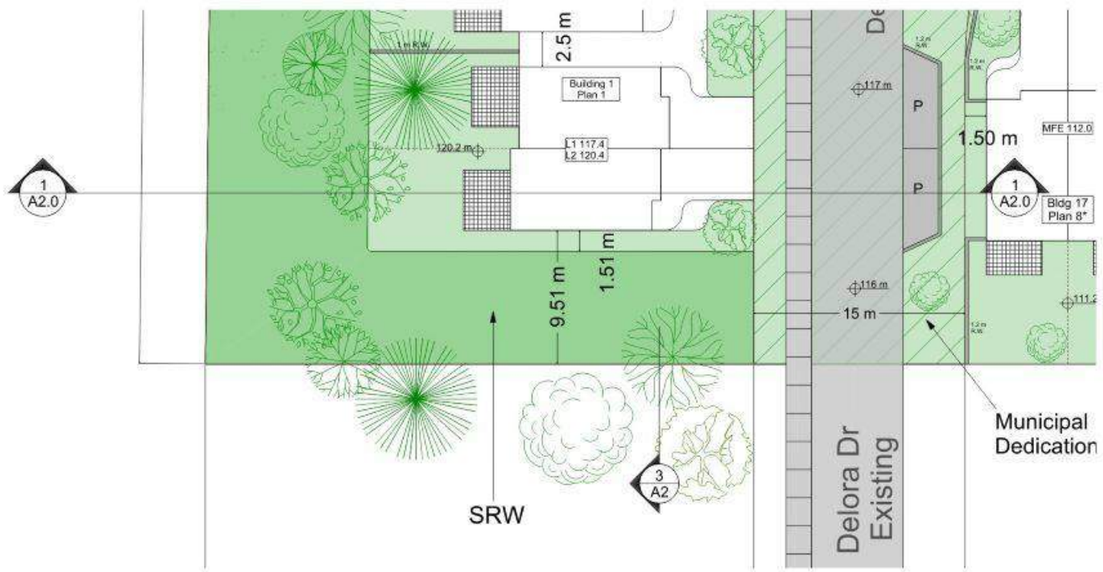
3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Delora Drive - North Section View



1 / A2.0 Delora Dr Section
Scale 1:100



2 / A2.0 Site Plan
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PROFESSIONAL SEALS

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Drawn by:

Walking Stick Drafting

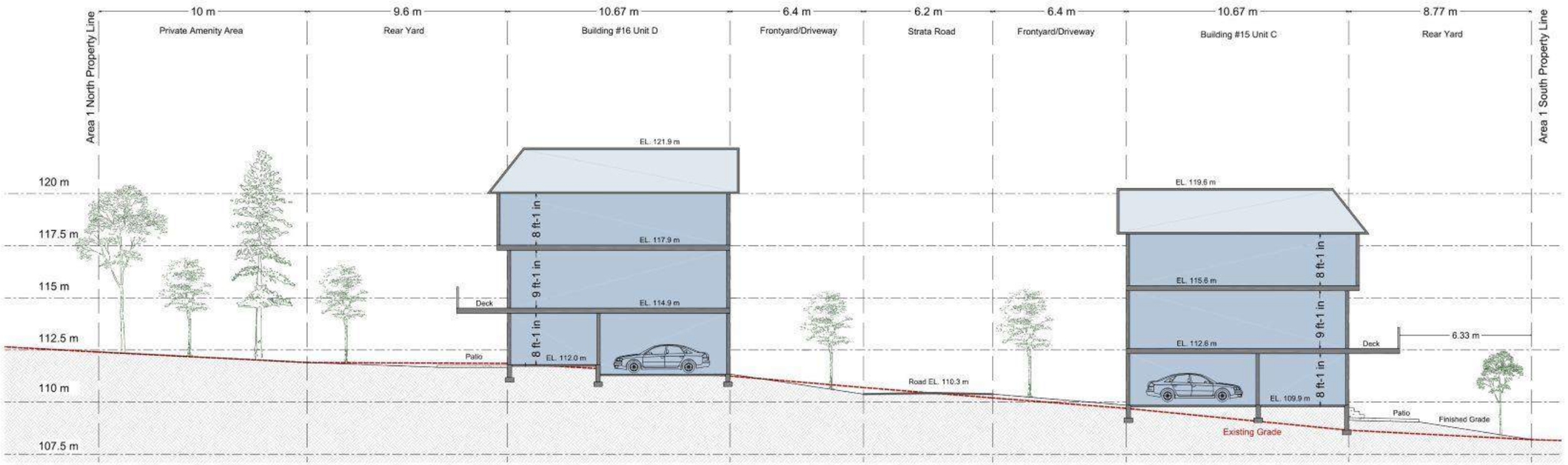
Sheet No:	A 2.0
Drawing Title:	North Section View - Delora Drive
Scale:	

Project:

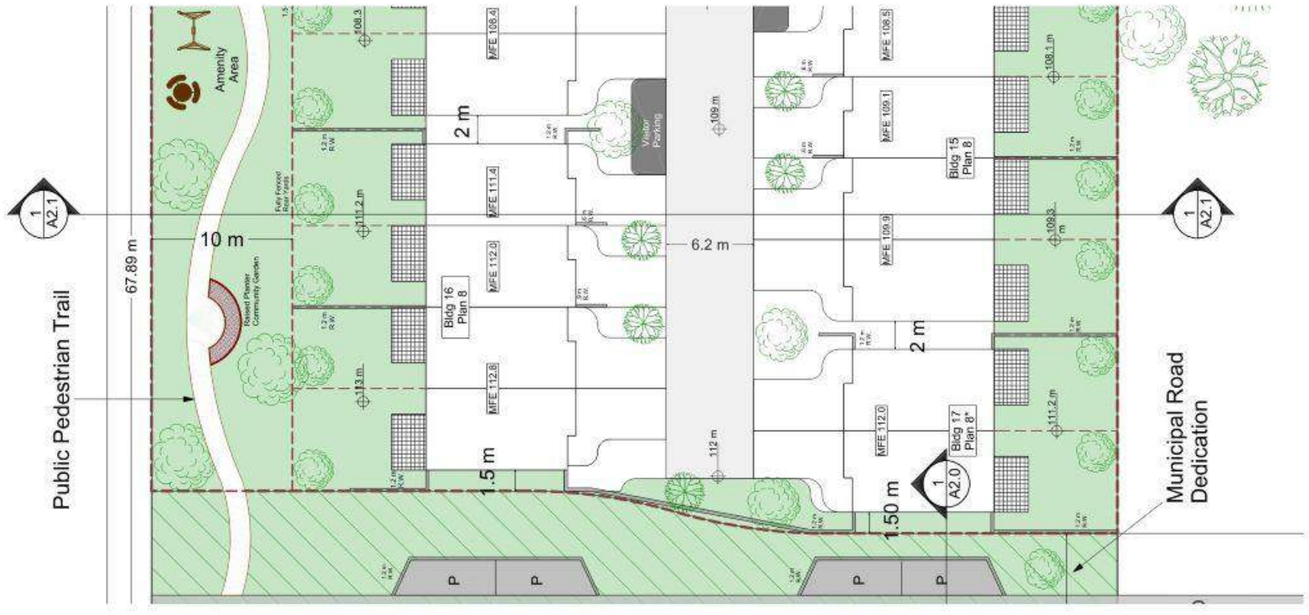
3494 Wishard Road
Colwood BC

50 Townhouse Unit
Development

Strata Road Phase 3 - East Section View



1 / A2.1 Strata Rd Phase 3
Scale 1:100



2 / A2.1 Site Plan
Scale 1:200

PROFESSIONAL SEALS

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Drawn by:

Walking Stick Drafting

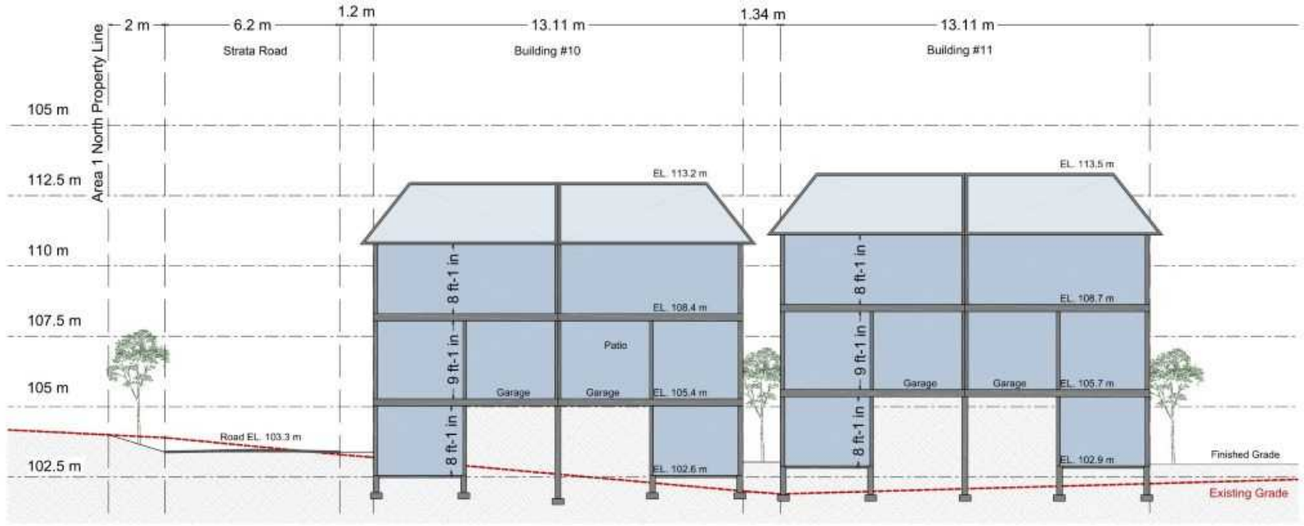
Sheet No:	A 2.1
Drawing Title:	East Section View - Strata Rd Phase 3
Scale:	

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Strata Road Phase 2/3 Transition- East Section View



1 / A2.2 Strata Rd Phase 2/3 Transition
Scale 1:100

2 / A2.2 Site Plan
Scale 1:200

PROFESSIONAL SEALS

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4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

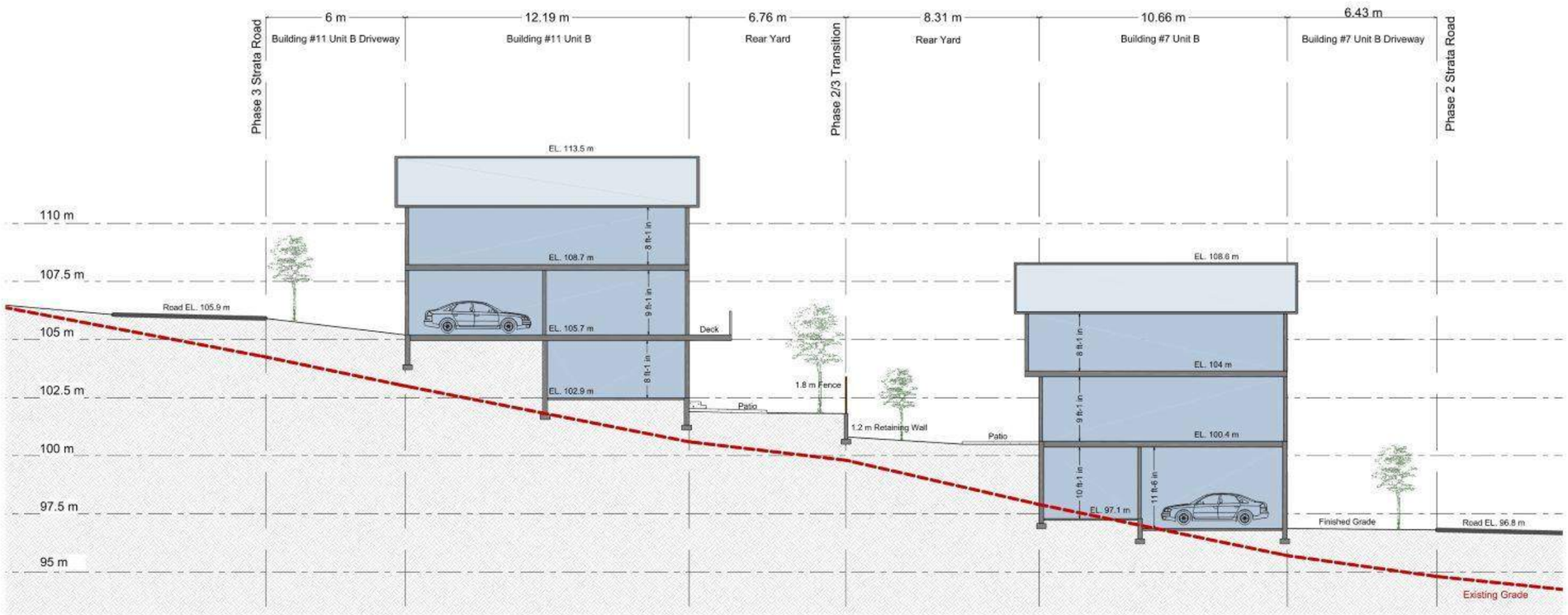
Sheet No:	A 2.2
Drawing Title:	East Section View - Phase 2/3 Strata Rd Transition
Scale:	

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Phase 2/3 Building Transition - North Section View



1 / A2.3 Phase 2/3 Building Transition
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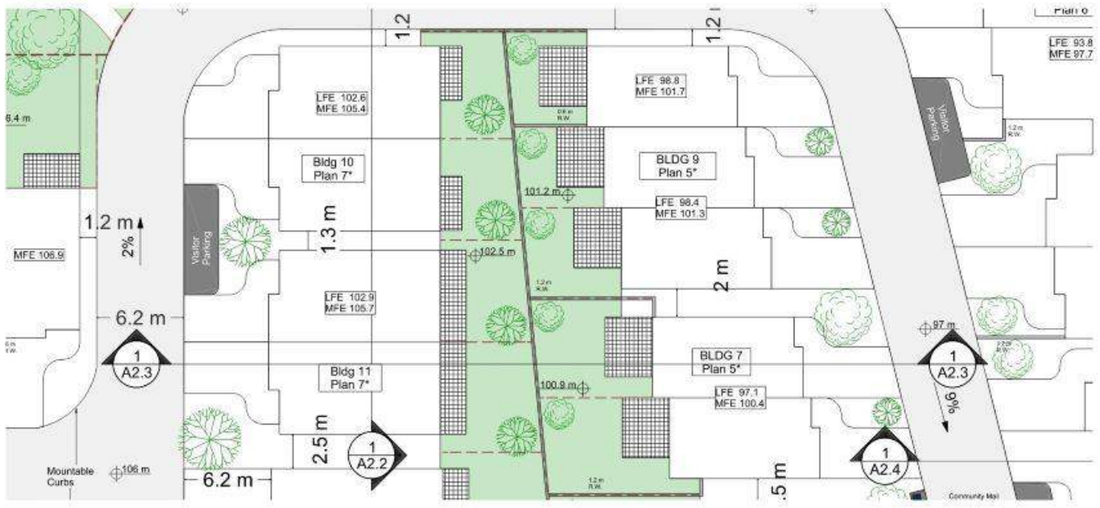

2 / A2.3 Site Plan
Scale 1:200

PROFESSIONAL SEALS

Issued/Revised

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Drawn by:

Walking Stick Drafting

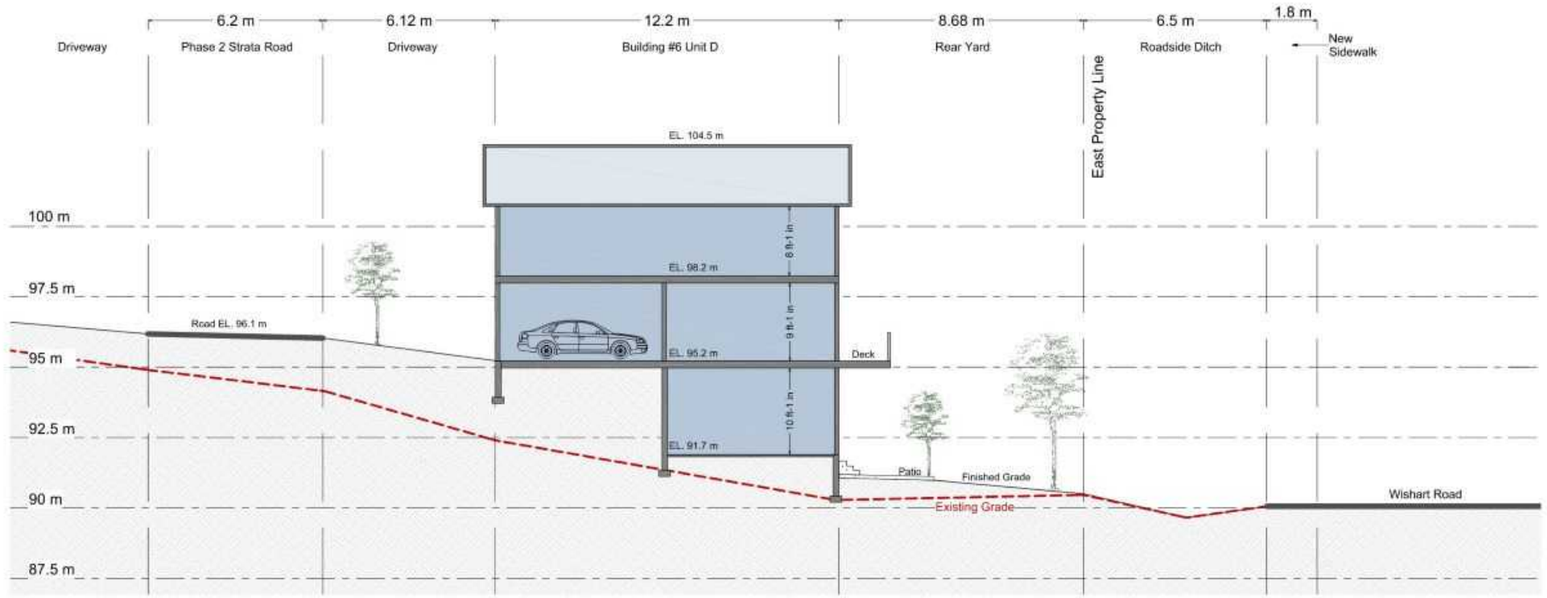
Sheet No:	A 2.3
Drawing Title:	North Section View - Phase 2/3 Building Transition
Scale:	

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Strata Road Phase 2 - North Section View



1 / A2.4 Strata Rd Phase 2
Scale 1:100

2 / A2.4 Site Plan
Scale 1:200

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

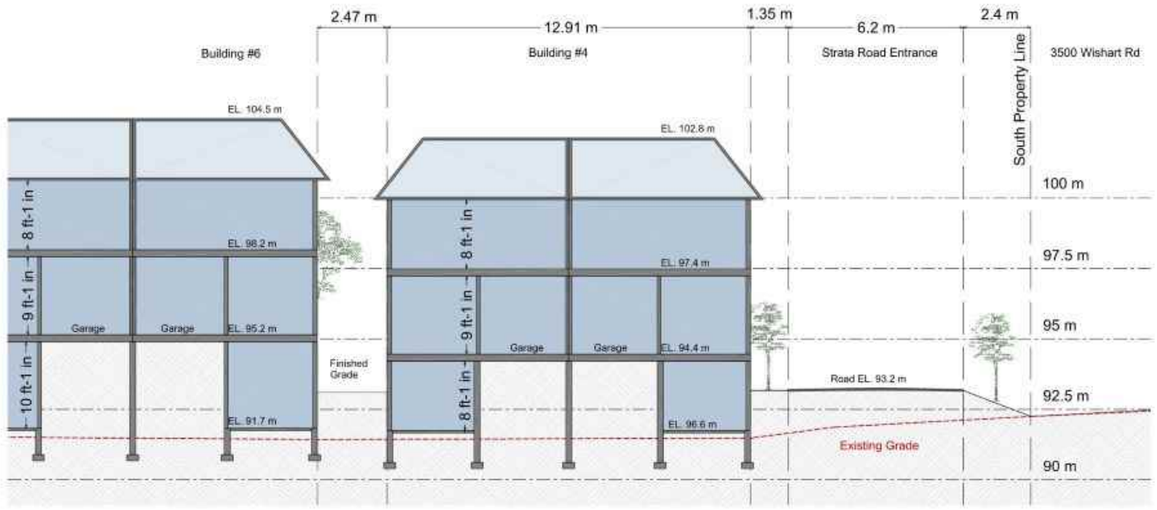
Sheet No:	A 2.4
Drawing Title:	North Section View - Strata Rd Phase 2
Scale:	

Project:

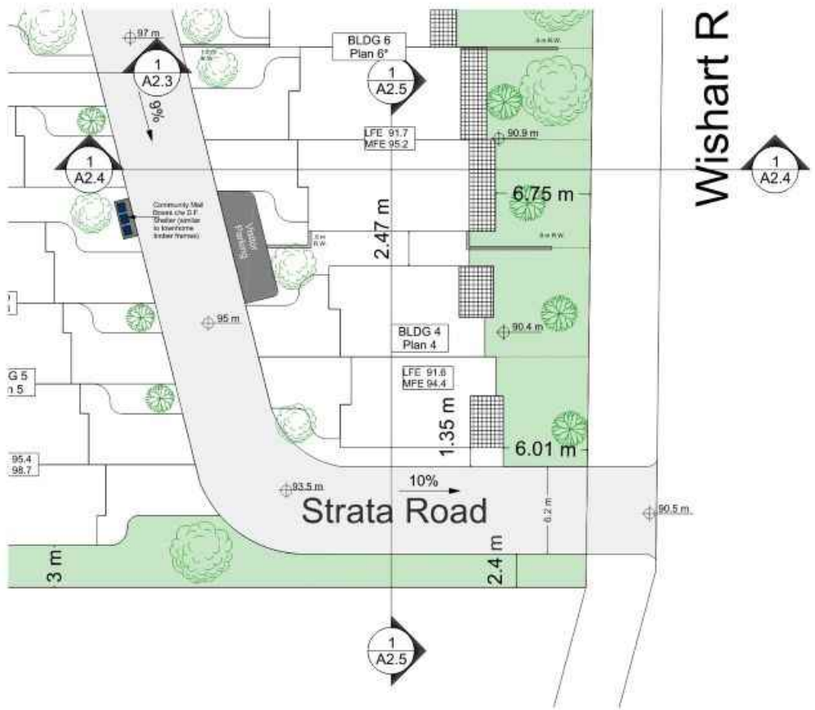
3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Strata Road Entrance - East Section View



1 / A2.5 Strata Rd Phase 1 Entrance
Scale 1:100



2 / A2.5 Site Plan
Scale 1:200

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A 2.5
Drawing Title:	East Section View - Strata Road Entrance
Scale:	

Project:

3494 Wishard Road
Colwood BC

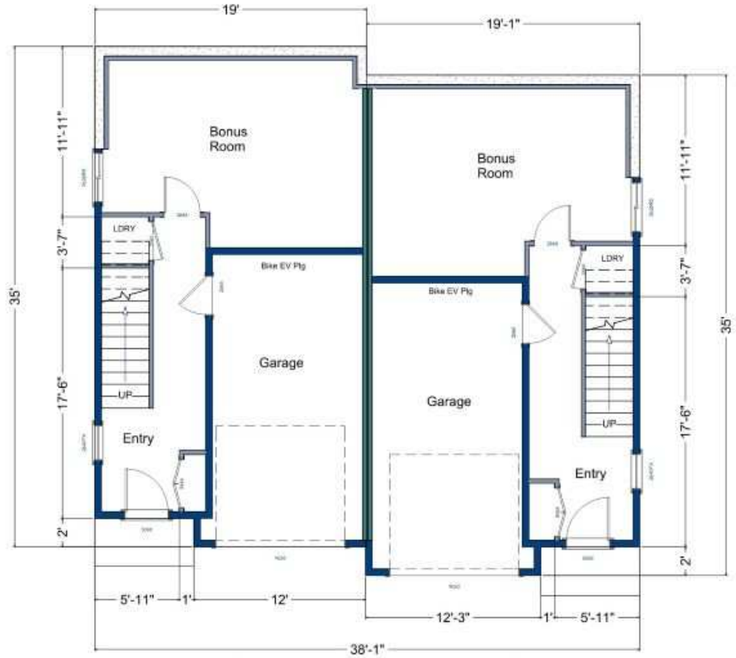
50 Townhouse Unit Development

Building 1 (Plan 1) - Floor Plan

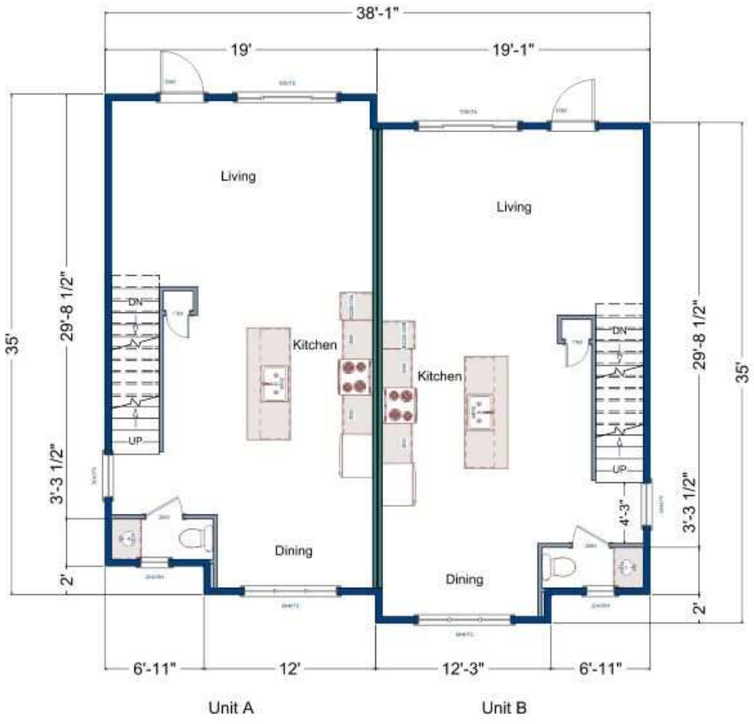
Unfinished Area	438 Sq ft / 40.7 Sq M
Level 1 Finished Area	860 Sq Ft / 79.9 Sq M
Level 2 Finished Area	1298 Sq Ft / 120.6 Sq M
Level 3 FInished Area	1296 Sq Ft / 120.4 Sq M
Total Finished Area	3454 Sq Ft / 320.9 Sq M
Average Existing Grade	(116.25+116.8+118.3+118.7)/4 = 117.51 m
Roof Midpoint Elevation	126.90 m
Building Height	9.39 M

Legend

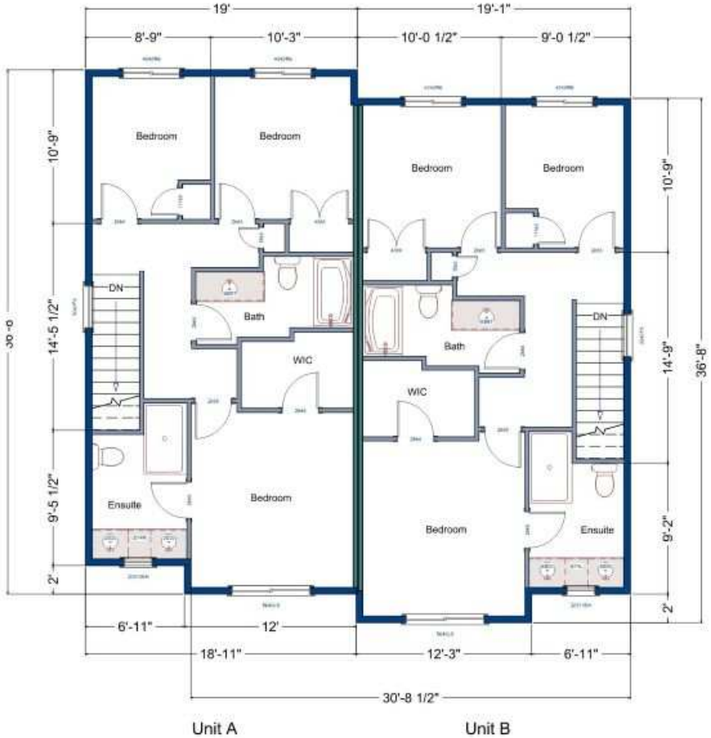
- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall



1 / A3.01 Level One 1/5" = 1' 0"



2 / A3.01 Level Two 1/5" = 1' 0"



3 / A3.01 Level Three 1/5" = 1' 0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.01
Drawing Title:	Building 1 Floor Plan 1
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

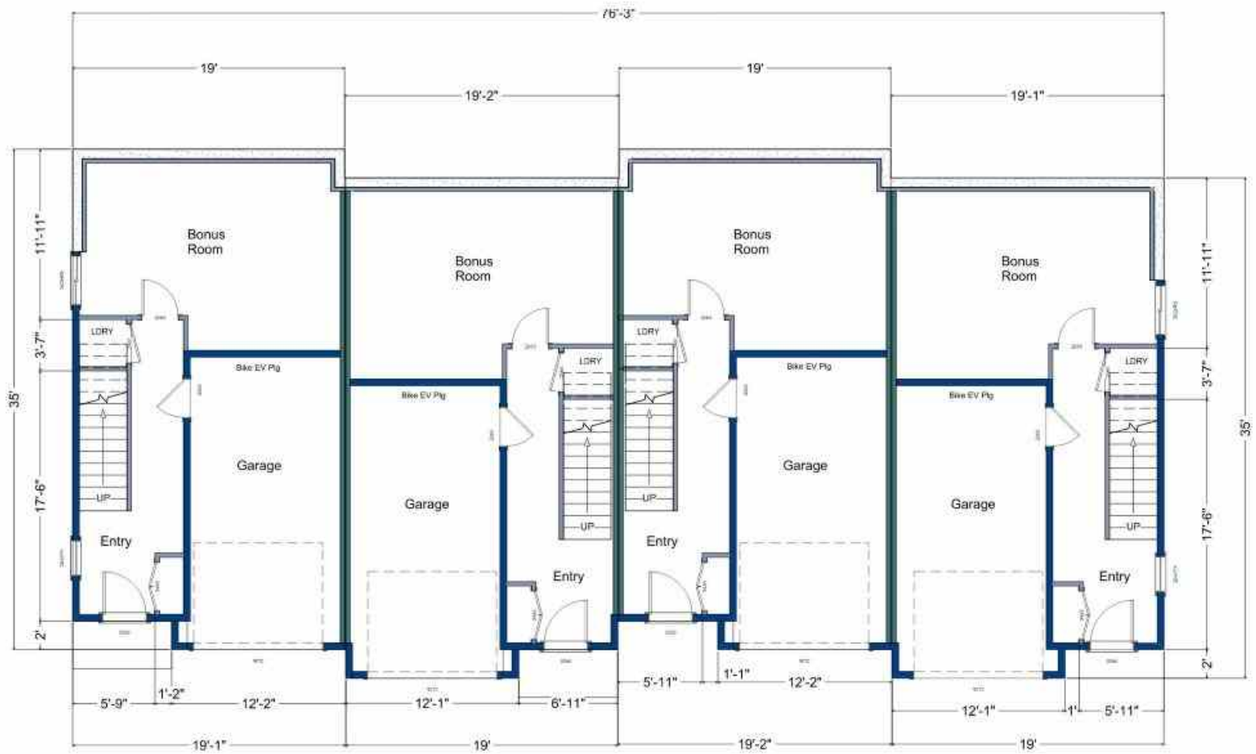
50 Townhouse Unit Development

Building 2 (Plan 2) - Floor Plan

Unfinished Area	876 Sq ft / 81.4 Sq M
Level 1 Finished Area	1720 Sq Ft / 159.8 Sq M
Level 2 Finished Area	2596 Sq Ft / 241.2 Sq M
Level 3 FInished Area	2592 Sq Ft / 240.8 Sq M
Total Finished Area	6908 Sq Ft / 641.8 Sq M
Average Existing Grade	(117.1+119.25+119.4+120.2)/4 =118.99 m
Roof Midpoint Elevation	128.40 m
Building Height	9.41 M

Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall



1 / A3.02 Level One
1/5" = 1' 0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.02
Drawing Title:	Building 2 Floor Plan 2 - Lvl 1
Scale:	1/5" = 1'0"

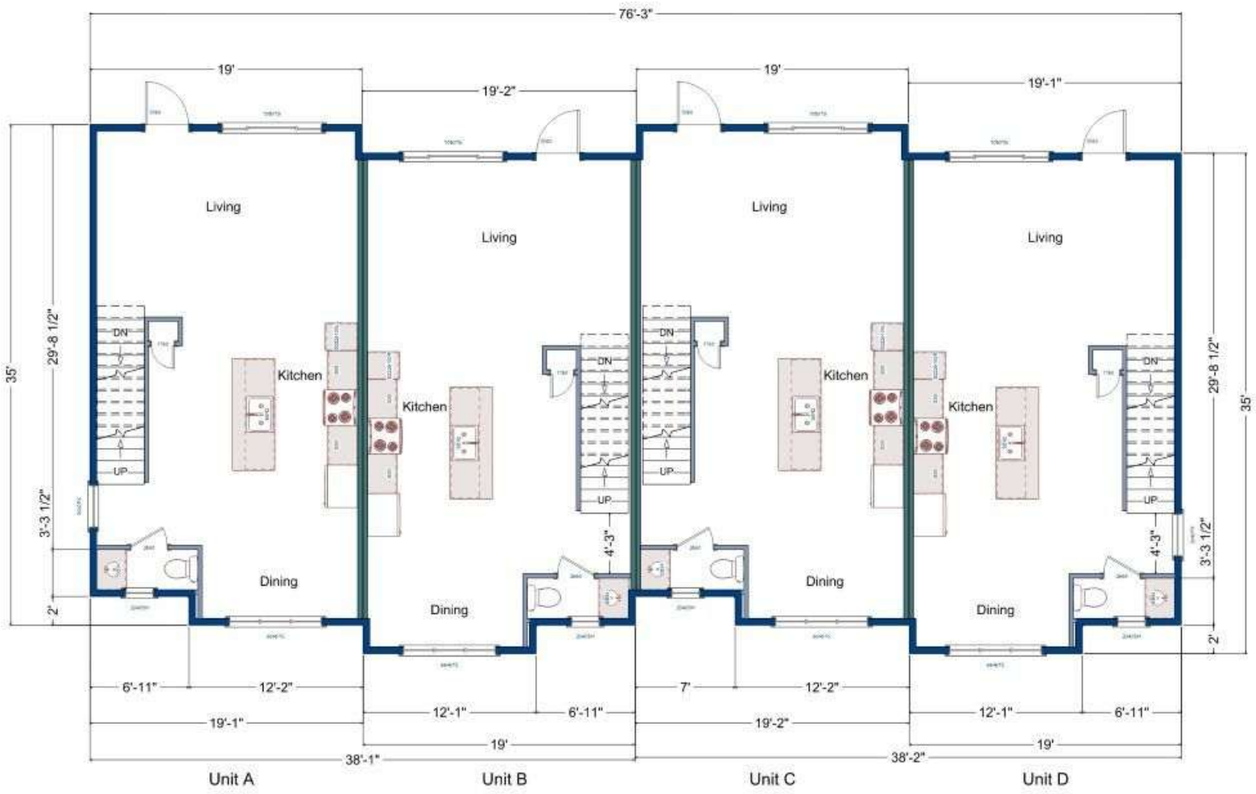
Project:

3494 Wishard Road
Colwood BC

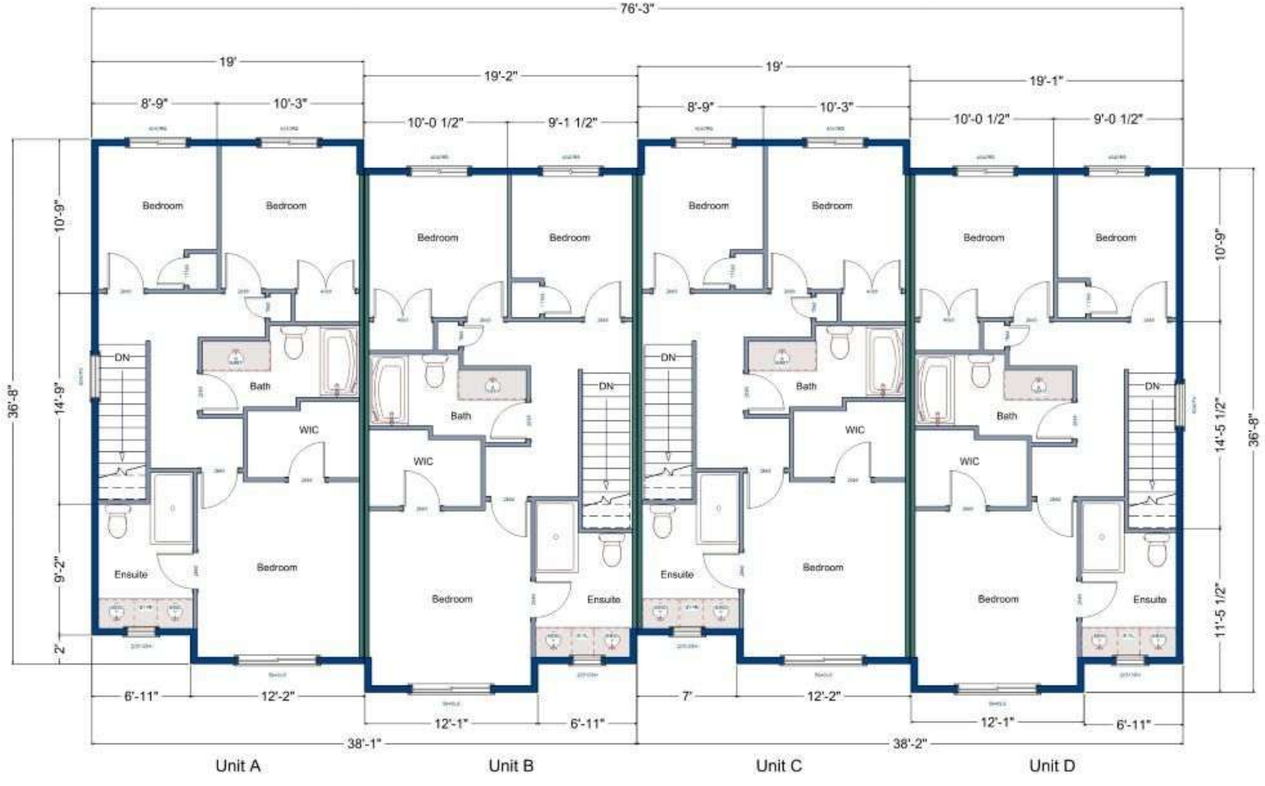
50 Townhouse Unit Development

Building 2 (Plan 2) - Floor Plan

1 / A3.03 Level Two
1/5" = 1' 0"



2 / A3.03 Level Three
1/5" = 1' 0"



PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.03
Drawing Title:	Building 2 Floor Plan 2 - Lvl 2 & 3
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

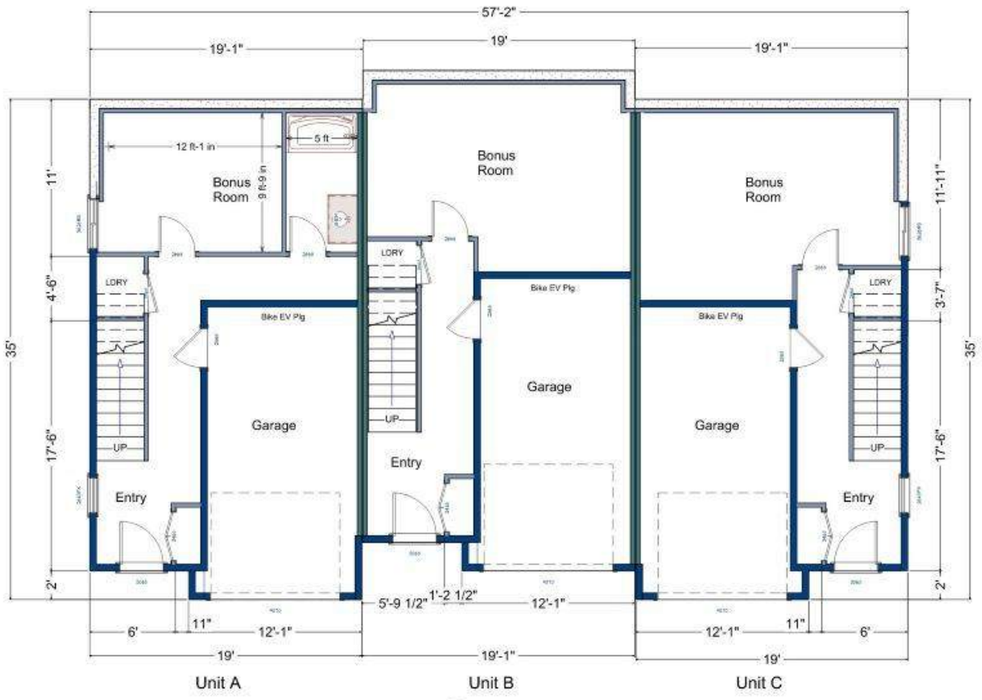
50 Townhouse Unit Development

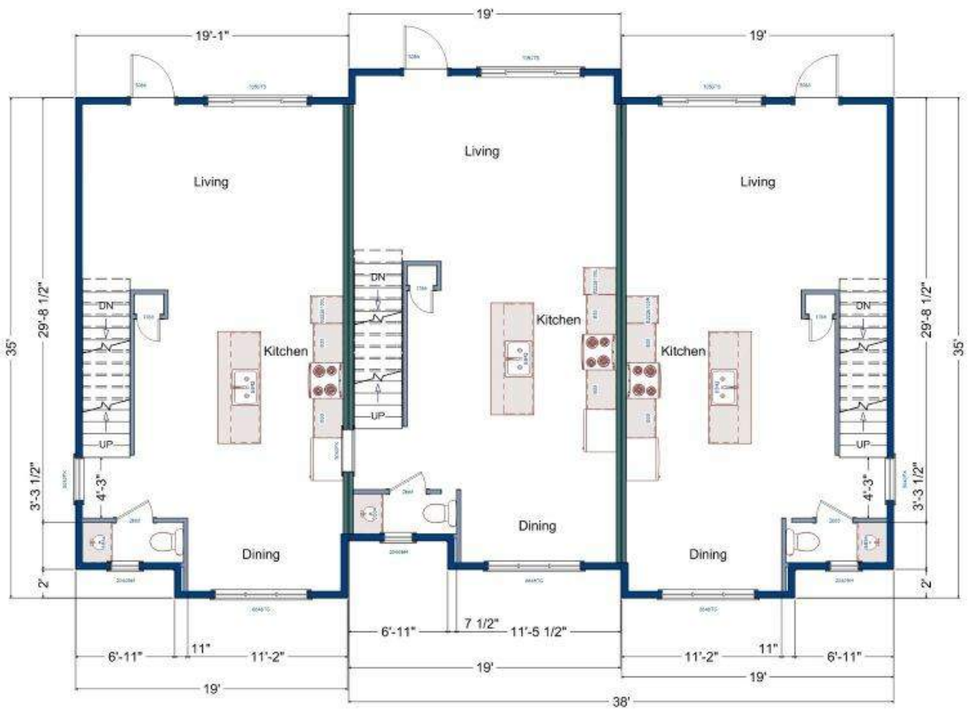
Building 3 (Plan 3) - Floor Plan

Unfinished Area	660 Sq ft / 61.3 Sq M
Level 1 Finished Area	1299 Sq Ft / 120.7 Sq M
Level 2 Finished Area	1958 Sq Ft / 181.9 Sq M
Level 3 Finished Area	1953 Sq Ft / 181.4 Sq M
Total Finished Area	5210 Sq Ft / 484.0 Sq M
Average Existing Grade	(119.7+120.15+120.8+121.3)/4 =120.49 m
Roof Midpoint Elevation	130.0 m
Building Height	9.51M

Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall





PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.04
Drawing Title:	Building 3 Floor Plan 3
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

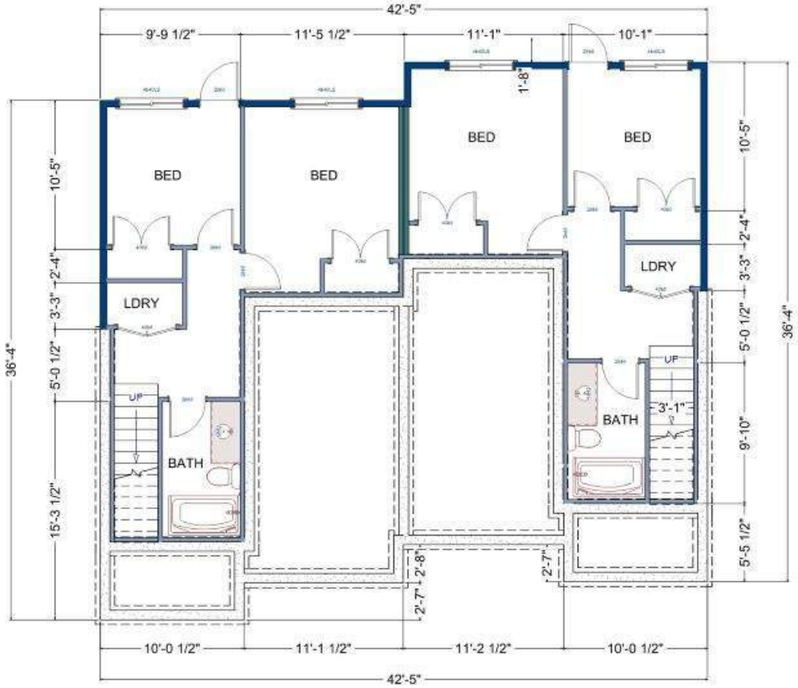
50 Townhouse Unit Development

Building 4 (Plan 4) - Floor Plan

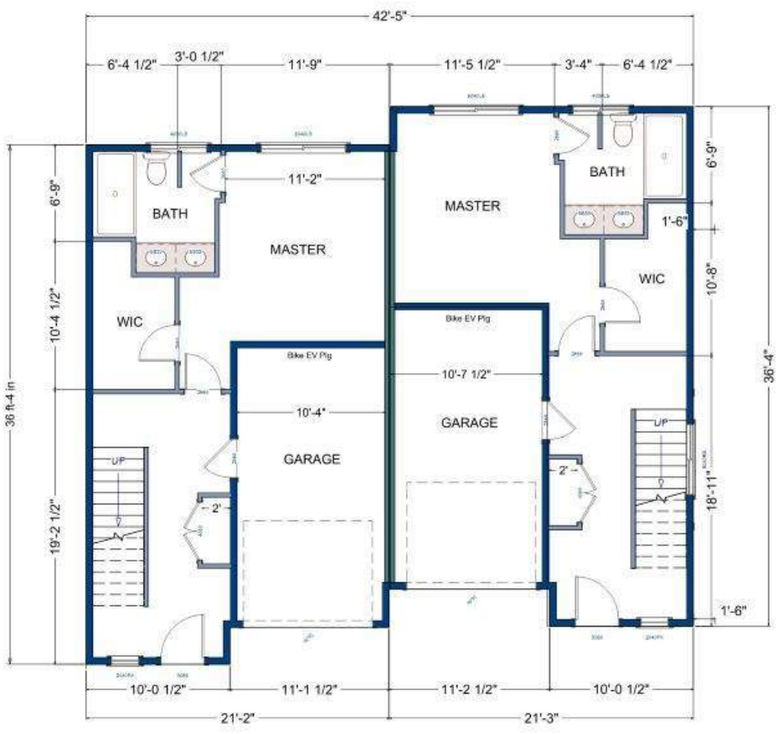
Unfinished Area	410 Sq ft / 38.1 Sq M
Level 1 Finished Area	926 Sq Ft / 86.0 Sq M
Level 2 Finished Area	1073 Sq Ft / 99.7 Sq M
Level 3 Finished Area	1287 Sq Ft / 119.6 Sq M
Total Finished Area	3286 Sq Ft / 305.4 Sq M
Average Existing Grade	(90.1+90.4+92.2+92.4)/4 =91.28 m
Roof Midpoint Elevation	101.90 m
Building Height	10.62 m

Legend

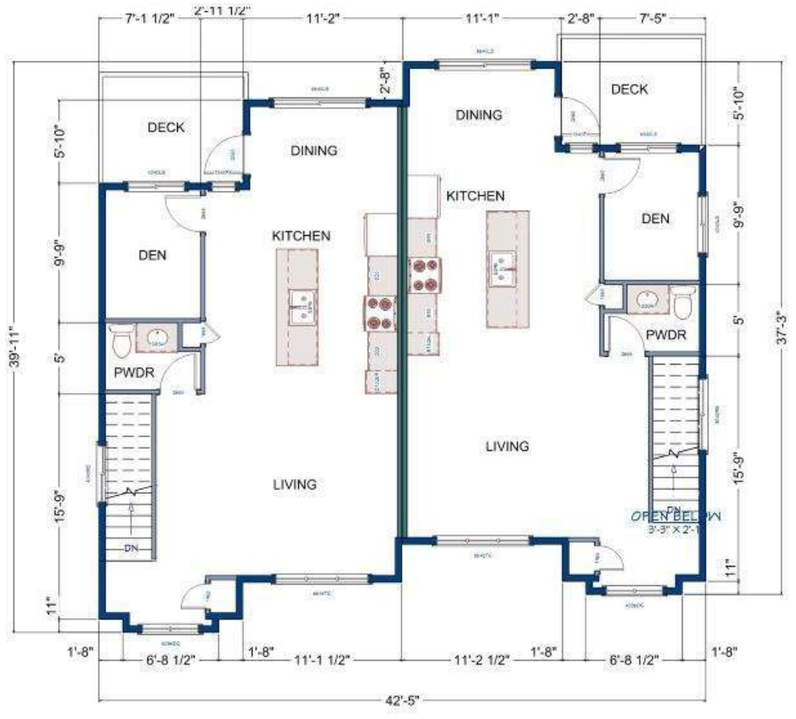
- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall



1 / A3.05 Level One
1/5" = 1' 0"



2 / A3.05 Level Two
1/5" = 1' 0"



3 / A3.05 Level Three
1/5" = 1' 0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.05
Drawing Title:	Building 4 Floor Plan 4
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 5 (Plan 5) - Floor Plan

Unfinished Area	872 Sq ft / 81.0 Sq M
Level 1 Finished Area	1708 Sq Ft / 158.6 Sq M
Level 2 Finished Area	2578 Sq Ft / 239.4 Sq M
Level 3 Finished Area	2558 Sq Ft / 237.6 Sq M
Total Finished Area	6844 Sq Ft / 635.8 Sq M
Average Existing Grade	(95.8+98.0+98.2+99.6)/4 =97.90 m
Roof Midpoint Elevation	105.80 m
Building Height	7.90 m

Legend

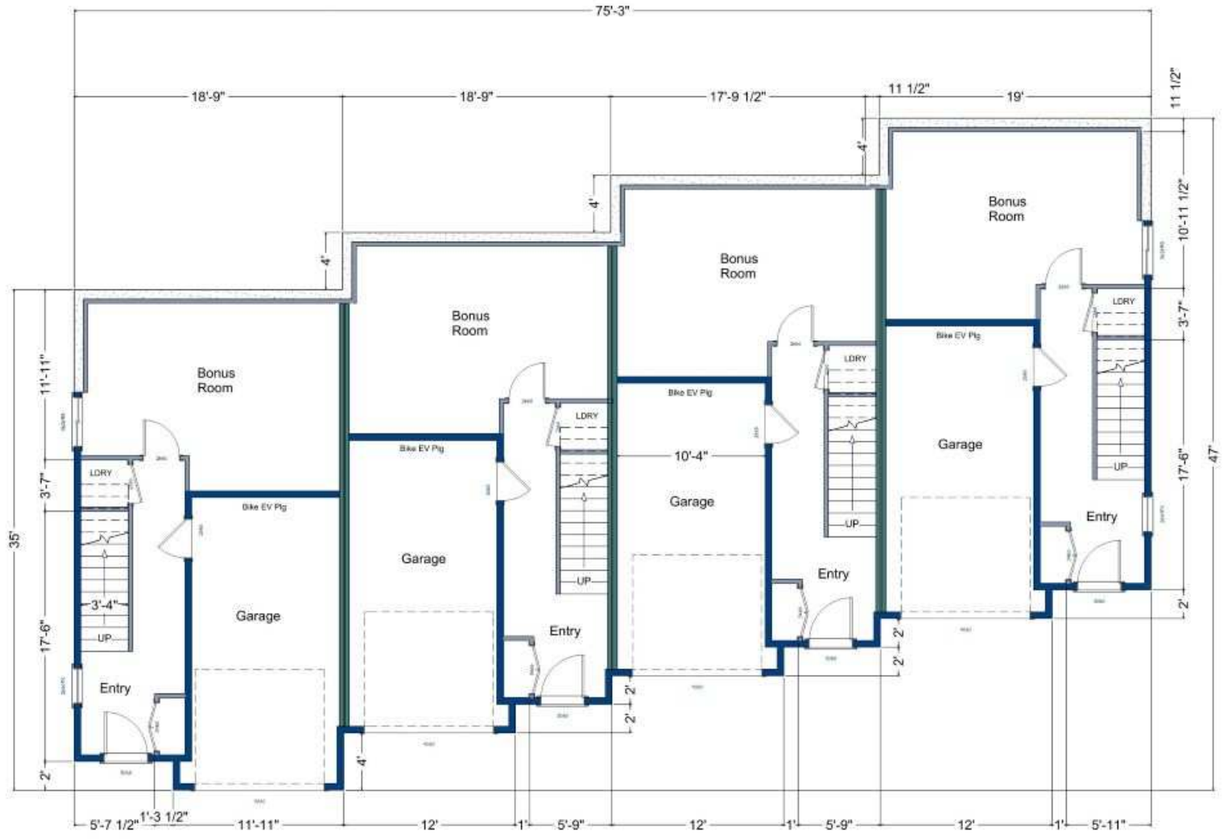
- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall

Building 7 (Plan 5*) - Composed of Units C & D from Building 5

Unfinished Area	436 Sq ft / 40.5 Sq M
Level 1 Finished Area	854 Sq Ft / 79.3 Sq M
Level 2 Finished Area	1289 Sq Ft / 119.7 Sq M
Level 3 FInished Area	1279 Sq Ft / 118.8 Sq M
Total Finished Area	3422 Sq Ft / 317.9 Sq M
Average Existing Grade	(95.6+95.85+97.5+98.4)/4 =96.84 m
Roof Midpoint Elevation	106.90 m
Building Height	10.06 m

Building 9 (Plan 5*) - Composed of Units B, C & D from Building 5

Unfinished Area	654 Sq ft / 60.8 Sq M
Level 1 Finished Area	1281 Sq Ft / 119.0 Sq M
Level 2 Finished Area	1934 Sq Ft / 179.6 Sq M
Level 3 Finished Area	1918 Sq Ft / 178.2 Sq M
Total Finished Area	5133 Sq Ft / 476.9 Sq M
Average Existing Grade	(95.85+96.9+98.1+99.8)/4 =97.66 m
Roof Midpoint Elevation	107.80 m
Building Height	10.14 m



1 A3.06 Level One 1/5" = 1' 0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

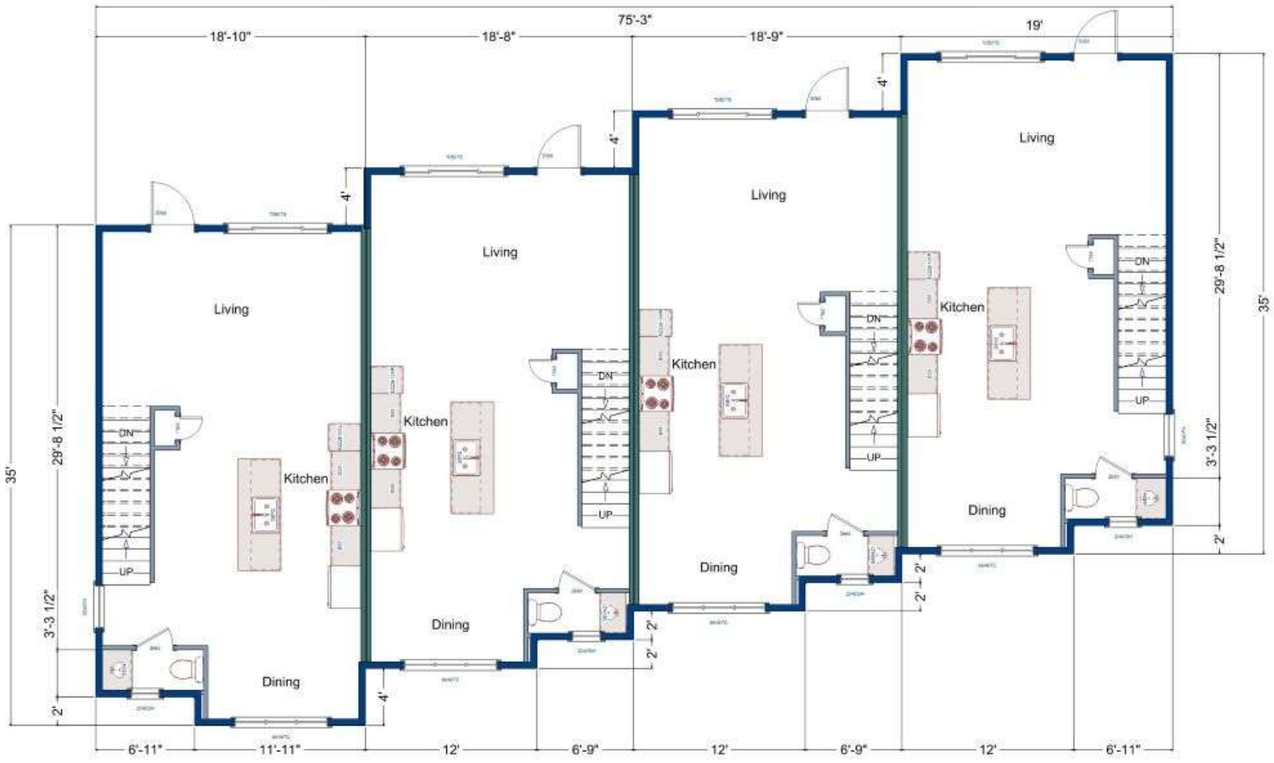
Sheet No:	A3.06
Drawing Title:	Building 5, 7 & 9, Lvl 1 Floor Plan 5 & 5*
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

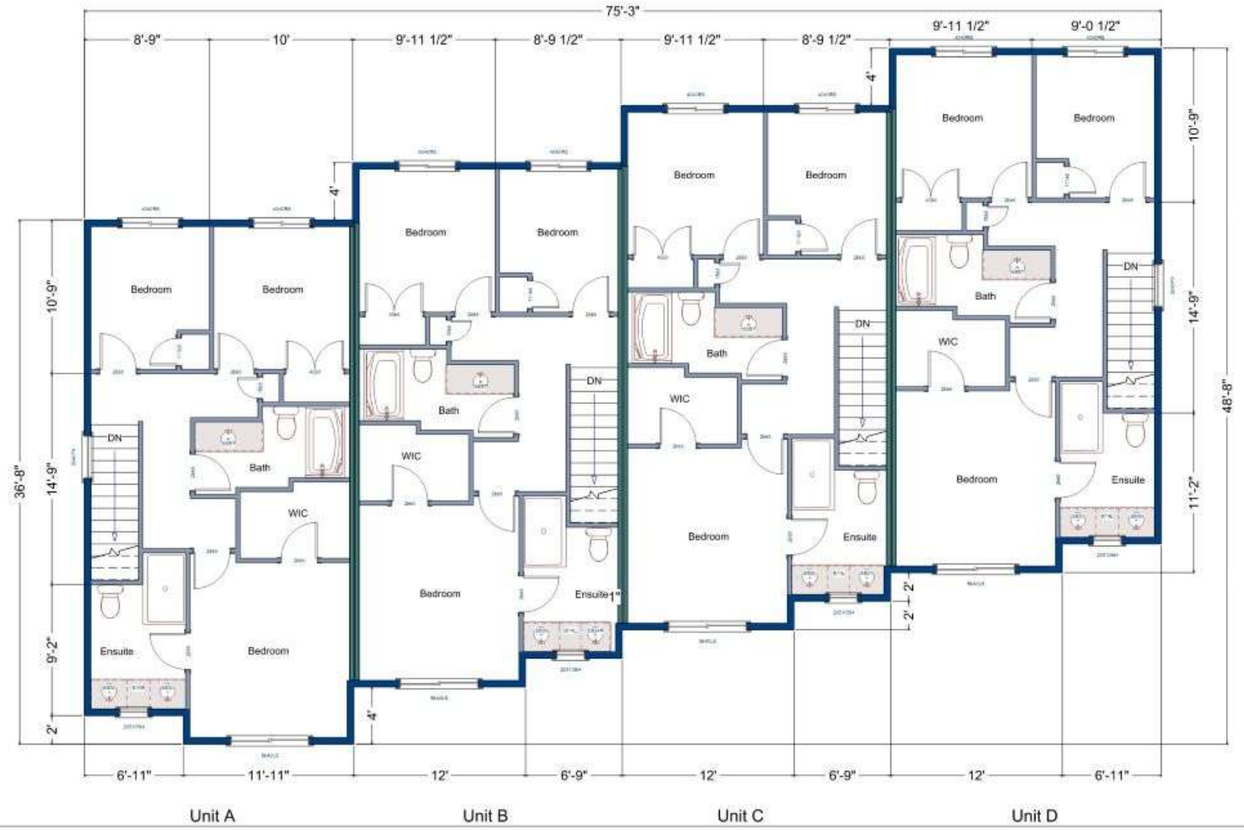
Building 5 (Plan 5) - Floor Plan



1 / A3.07 Level Two
1/5" = 1' 0"

Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall



2 / A3.07 Level Three
1/5" = 1' 0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.07
Drawing Title:	Building 5, 7 & 9, Lvl 2 Lv 3, Floor Plan 5 & 5*
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 8 (Plan 6) - Floor Plan

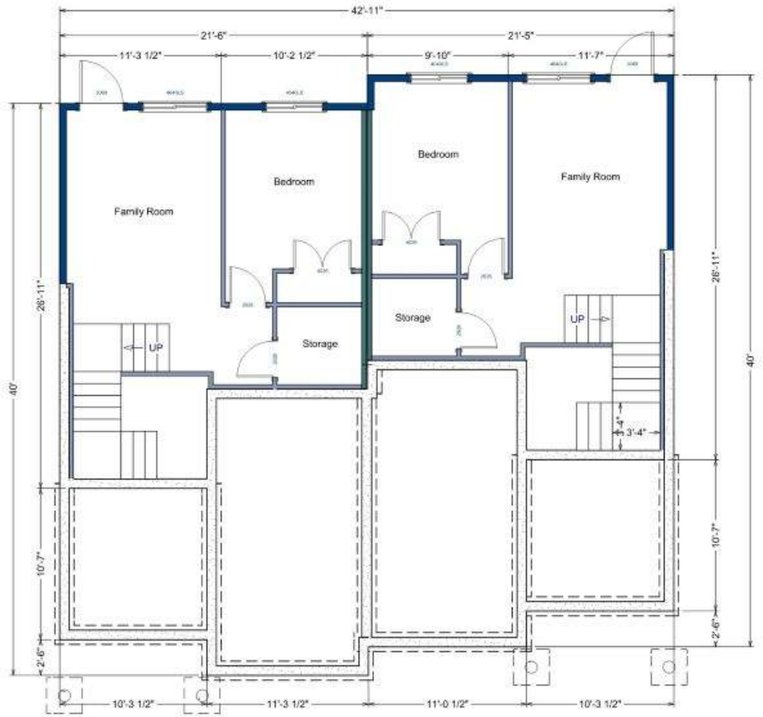
Unfinished Area	410 Sq ft / 38.1 Sq M
Level 1 Finished Area	926 Sq Ft / 86.0 Sq M
Level 2 Finished Area	1255 Sq Ft / 116.6 Sq M
Level 3 FInished Area	1500 Sq Ft / 139.4 Sq M
Total Finished Area	3681 Sq Ft / 342.0 Sq M
Average Existing Grade	(92.0+92.2+94.0+94.2)/4 =93.10 m
Roof Midpoint Elevation	103.80 m
Building Height	10.70 m

Legend

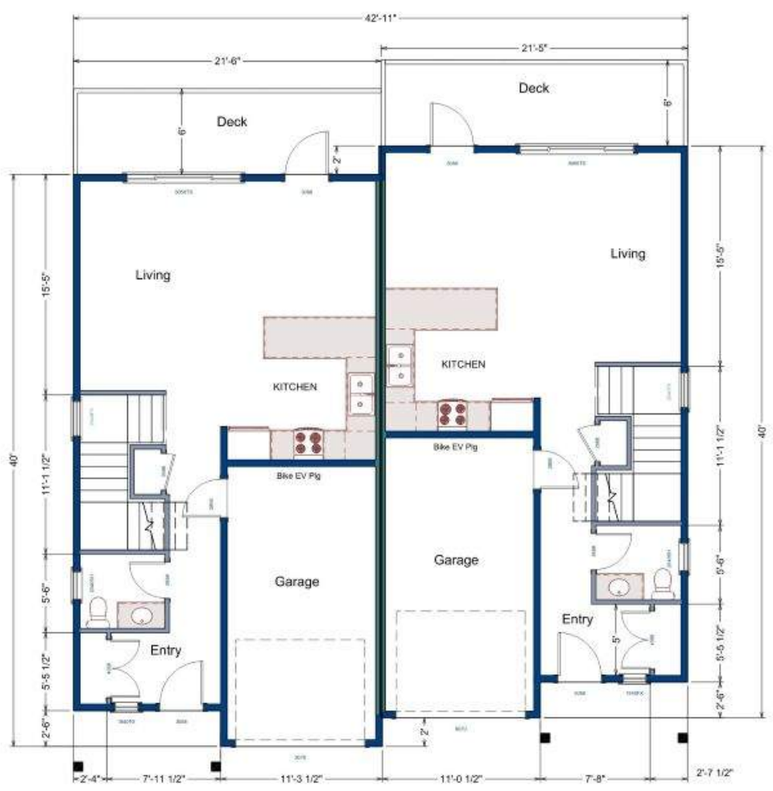
- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall

Building 6 (Plan 6*) - Composed of Units A, B, A, B (4 total) from Building 6

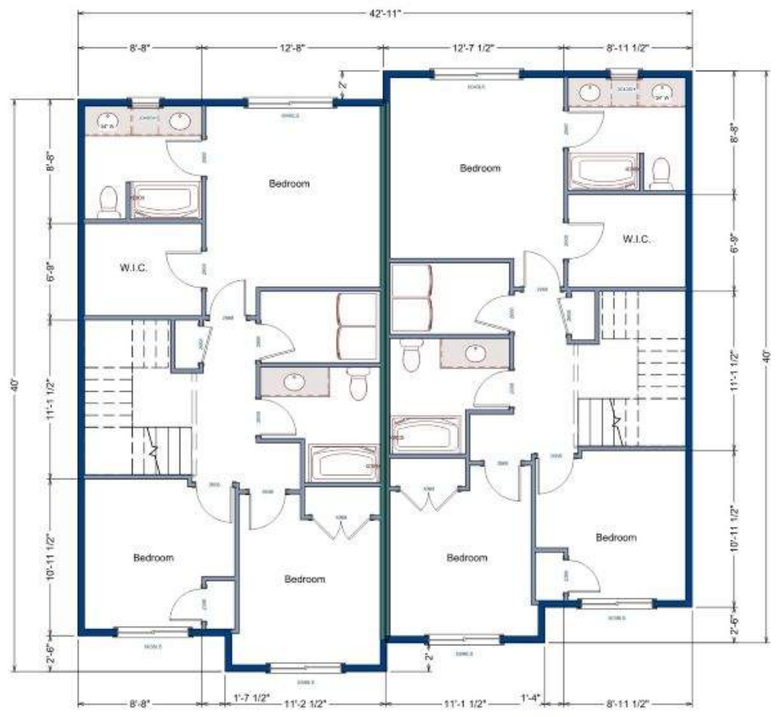
Unfinished Area	820 Sq ft / 76.2 Sq M
Level 1 Finished Area	1852 Sq Ft / 172.0 Sq M
Level 2 Finished Area	2510 Sq Ft / 233.2 Sq M
Level 3 FInished Area	3000 Sq Ft / 278.8 Sq M
Total Finished Area	7362 Sq Ft / 684.0 Sq M
Average Existing Grade	(89.6+89.7+93.4+94.2)/4 =91.73 m
Roof Midpoint Elevation	102.36 m
Building Height	10.63 m



1 A3.08 Level One 1/5" = 1' 0"



2 A3.08 Level Two 1/5" = 1' 0"



3 A3.08 Level Three 1/5" = 1' 0"

LIVING AREA 749 SQ FT

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.08
Drawing Title:	Building 6 & 8, Floor Plan 6 & 6*
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

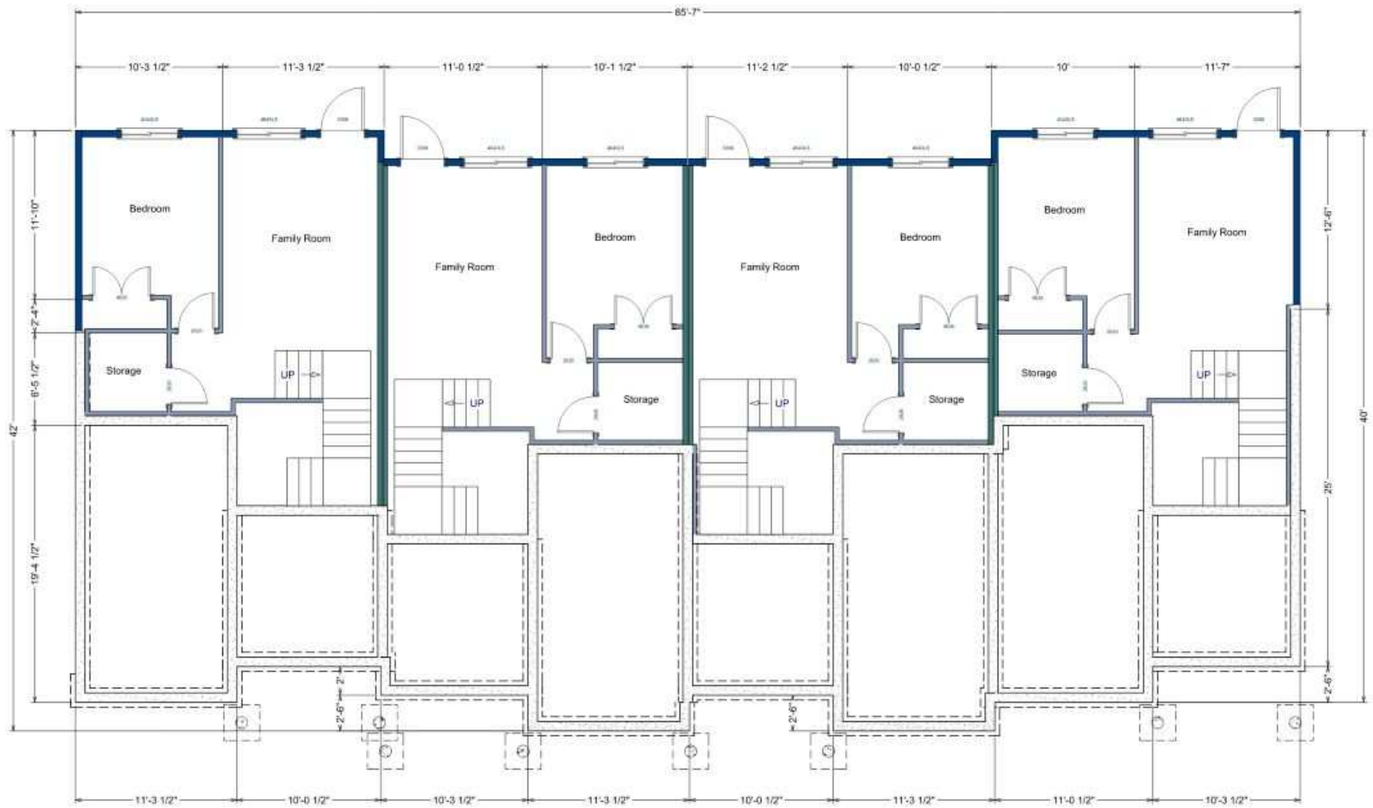
50 Townhouse Unit Development

Building 12 (Plan 7) - Floor Plan

Unfinished Area 820 Sq ft / 76.2 Sq M	
Level 1 Finished Area	1852 Sq Ft / 172.0 Sq M
Level 2 Finished Area	2510 Sq Ft / 233.2 Sq M
Level 3 FInished Area	3000 Sq Ft / 278.8 Sq M
Total Finished Area	7362 Sq Ft / 684.0 Sq M
Average Existing Grade	(101.3+102.5+103.4+103.8)/4 =102.75 m
Roof Midpoint Elevation	112.31 m
Building Height	9.56 m

Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall



1 A3.09 Level One 1/5" = 1' 0"

Building 10 & 11 (Plan 7*) - Composed of Units C & D from Building 12

Unfinished Area	410 Sq ft / 38.1 Sq M
Level 1 Finished Area	926 Sq Ft / 86.0 Sq M
Level 2 Finished Area	1255 Sq Ft / 116.6 Sq M
Level 3 FInished Area	1500 Sq Ft / 139.4 Sq M
Total Finished Area	3681 Sq Ft / 342.0 Sq M
Building 10	
Average Existing Grade	(100.8+102.1+103.4+104.5)/4 =102.70 m
Roof Midpoint Elevation	112.01 m
Building Height	9.31 m
Building 11	
Average Existing Grade	(100.7+101.0+103.2+103.4)/4 =102.08 m
Roof Midpoint Elevation	112.31 m
Building Height	10.23 m

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

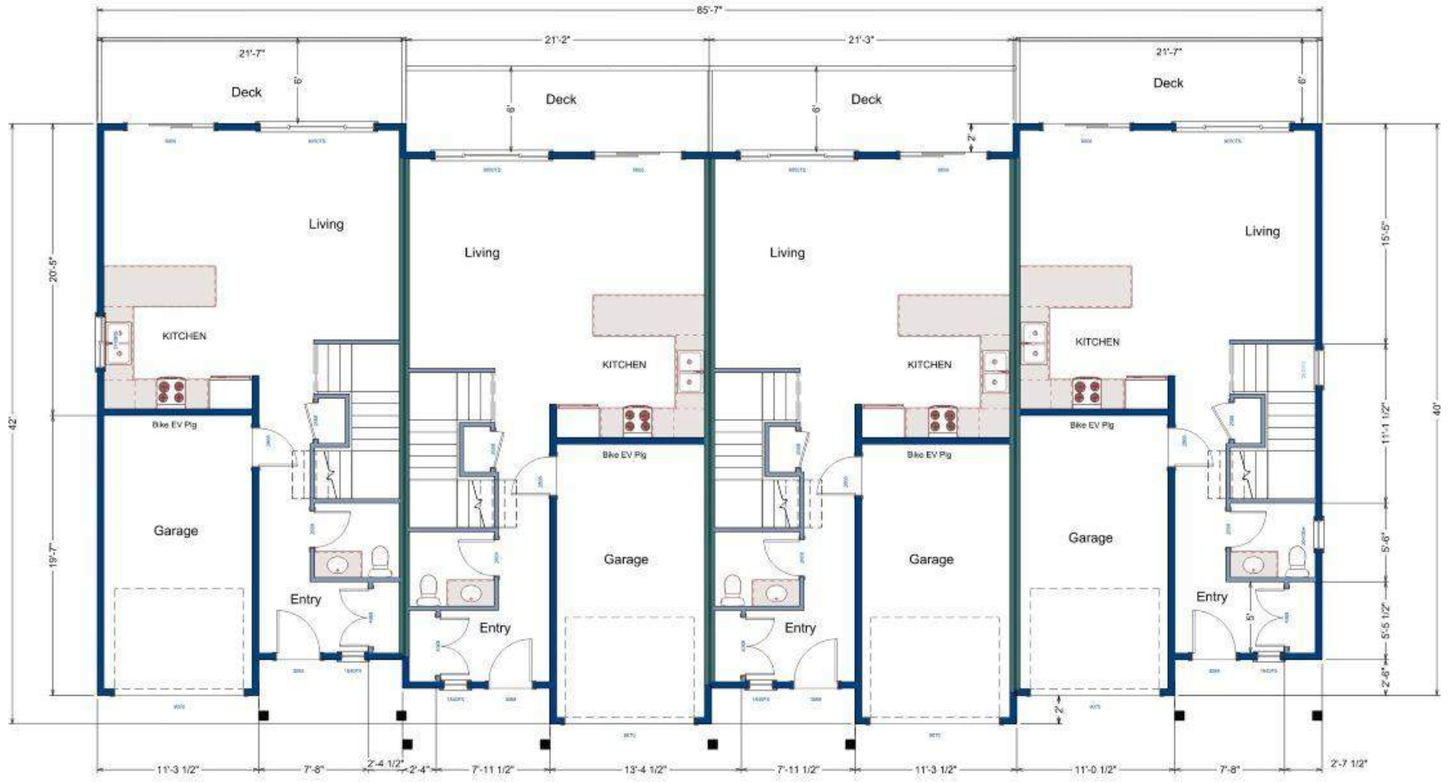
Sheet No:	A3.09
Drawing Title:	Building 10, 11 & 12 Lvl 1, Floor Plan 7 & 7*
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 12 (Plan 7) - Floor Plan



1 / A3.10 Level Two
1/5" = 1' 0"

Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall

2 / A3.10 Level Three
1/5" = 1' 0"

LIVING AREA
749 SQ FT

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.10
Drawing Title:	Building 10, 11 & 12 Lvl 2 &3, Floor Plan 7 & 7*
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 14, 15 & 16 (Plan 8) - Floor Plan

Unfinished Area	880 Sq ft / 81.8 Sq M
Level 1 Finished Area	1694 Sq Ft / 157.4 Sq M
Level 2 Finished Area	2574 Sq Ft / 239.2 Sq M
Level 3 Finished Area	2556 Sq Ft / 237.4 Sq M
Total Finished Area	6824 Sq Ft / 634.0 Sq M

Building 14 Height Calculations

Average Existing Grade	(105.7+106.3+109.6+110.3)/4 =107.98 m
Roof Midpoint Elevation	117.30 m
Building Height	9.32 m

Building 15 Height Calculations

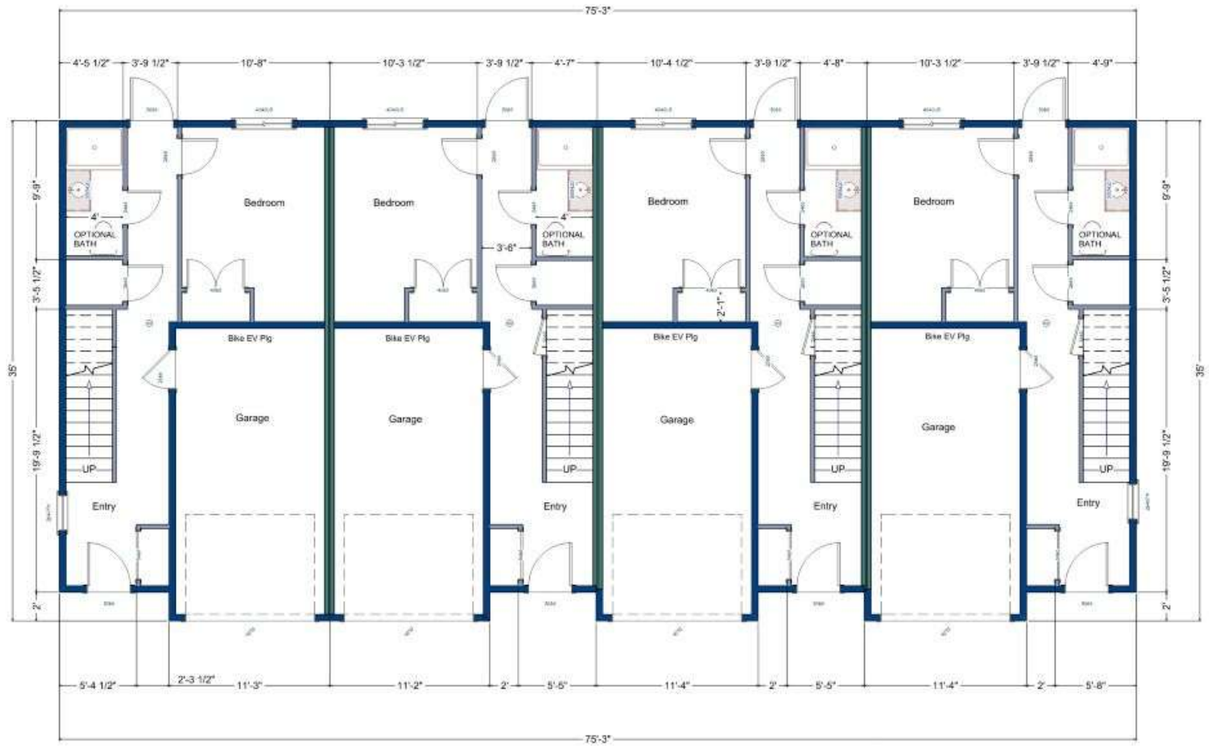
Average Existing Grade	(106.8+107.0+109.5+110.2)/4 =108.38 m
Roof Midpoint Elevation	118.80 m
Building Height	10.42 m

Building 16 Height Calculations

Average Existing Grade	(110.1+110.7+114.7+115.9)/4 =112.85 m
Roof Midpoint Elevation	121.70 m
Building Height	8.85 m

Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O. interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall



1 / A3.11 Level One
1/5" = 1' 0"

Building 13 & 17 (Plan 8*) - Composed of Units A & B from Building 14

Unfinished Area	440 Sq ft / 40.9 Sq M
Level 1 Finished Area	847 Sq Ft / 78.7 Sq M
Level 2 Finished Area	1287 Sq Ft / 119.6 Sq M
Level 3 FInished Area	1278 Sq Ft / 118.7 Sq M
Total Finished Area	3412 Sq Ft / 317.0 Sq M

Building 13 Height Calculations

Average Existing Grade	(105.2+105.3+106.5+106.7)/4 =105.93 m
Roof Midpoint Elevation	116.22 m
Building Height	10.29 m

Building 17 Height Calculations

Average Existing Grade	(109.4+111.0+112.2+113.3)/4 =111.48 m
Roof Midpoint Elevation	121.22 m
Building Height	9.74 m

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.11
Drawing Title:	Building 13-17 Lvl 1, Floor Plan 8 & 8*
Scale:	1/5" = 1'0"

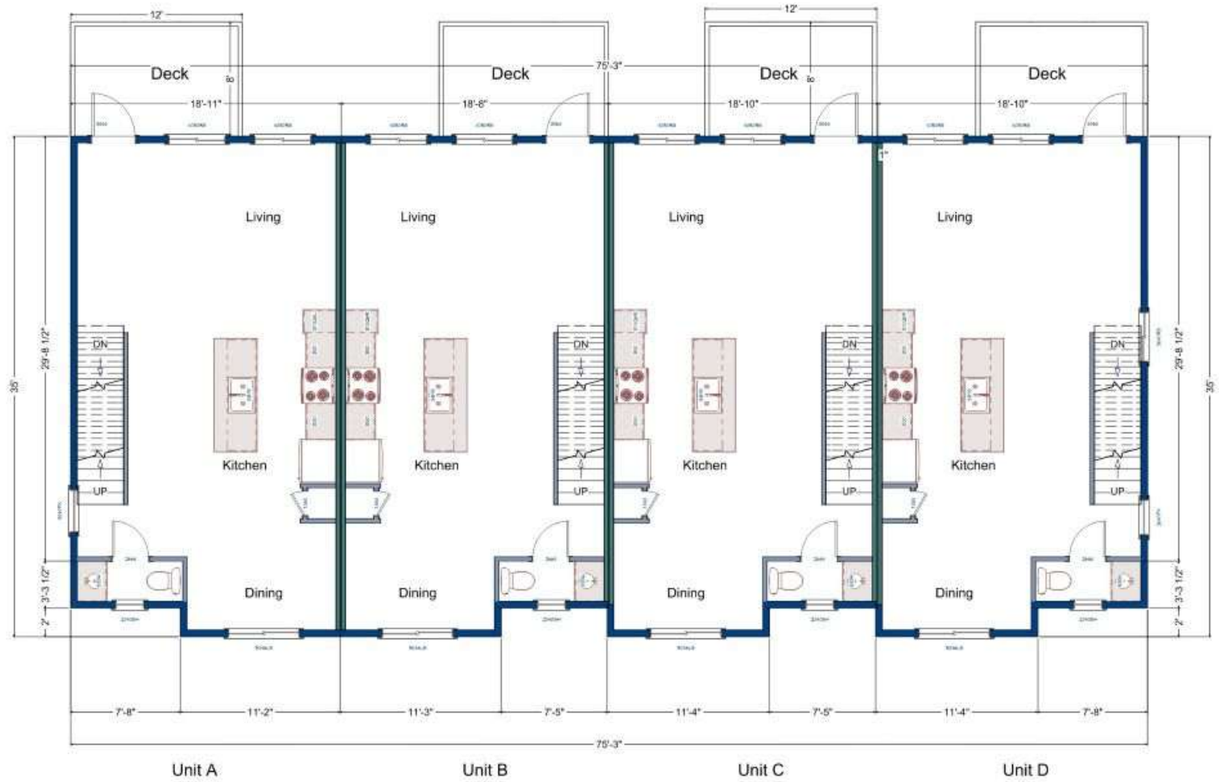
Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 14 (Plan 8) - Floor Plan

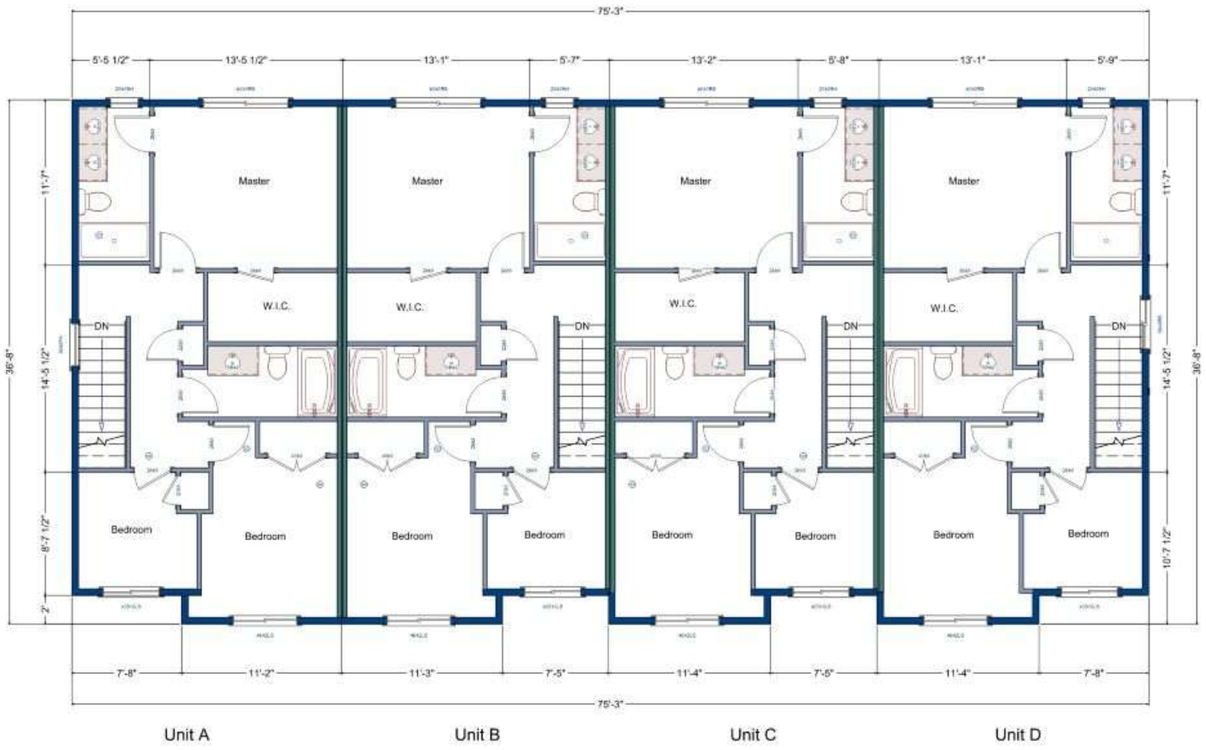
1 / A3.12 Level Two
1/5" = 1' 0"



Legend

- 2x6 stud at 16" o/c exterior wall (plan width 5.5")
- 2x4 stud at 24" o/c U.N.O interior wall (plan width 3.5")
- Double 2x4 stud at 24" o/c Dividing wall, 1" air gap Sound Absorptive Material 1 Side BCBC W13C STC 54, FR 1 HR
- 8" Concrete Foundation Wall

2 / A3.12 Level Three
1/5" = 1' 0"



PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A3.12
Drawing Title:	Building 13-17 Lvl 2 Lvl 3, Floor Plan 8 & 8*
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building Exterior Colour Scheme Layout

1 / A4.01 Site Plan - Exterior Colours
Scale 1 : 300

Colour Scheme #1

1	Trim	BM OC-65 Chantilly Lace
2	Unit A & C Hardi Plank	BM 1608 Ashland Slate
3	Unit A & C Hardi Shingles	BM 1608 Ashland Slate
4	Unit A & C Hardi Board and Batten	BM 1608 Ashland Slate
5	Unit B & D Hardi Plank	BM HC-169 Coventry Gray
6	Unit B & D Hardi Shingles	BM HC-169 Coventry Gray
7	Unit B & D Hardi Board and Batten	BM HC-169 Coventry Gra
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable	BM 1232 Fesh Brew
10	Vinyl Windows	White

Colour Scheme #2

1	Trim	BM OC-65 Chantilly Lace
2	Unit A & C Hardi Plank	BM HC-178 Charcoal Slate
3	Unit B & D Hardi Plank	BM OC-52 Gray Owl
4	Unit A & C Hardi Shingles	BM HC-178 Charcoal Slate
5	Unit B & D Hardi Shingles	BM OC-52 Gray Owl
6	Unit A & C Hardi Board and Batten	BM HC-178 Charcoal Slate
7	Unit B & D Hardi Board and Batten	BM OC-52 Gray Owl
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable	BM 1232 Fesh Brew
11	Vinyl Windows	White

Colour Scheme #3

1	Trim	BM OC-65 Chantilly Lace
2	Unit A & C Hardi Plank	BM HC-168 Chelsea Grey
3	Unit B & D Hardi Plank	SW 7069 Iron Ore
4	Unit A & C Hardi Shingles	BM HC-168 Chelsea Grey
5	Unit B & D Hardi Shingles	SW 7069 Iron Ore
6	Unit A & C Hardi Board and Batten	BM HC-168 Chelsea Grey
7	Unit B & D Hardi Board and Batten	SW 7069 Iron Ore
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable/Sideyard	BM 1232 Fresh Brew
11	Vinyl Windows	White

Colour Scheme #4

1	Trim	BM OC-65 Chantilly Lace
2	Unit A & C Hardi Plank	CD 8432 Garden Bench
3	Unit B & D Hardi Plank	CD 8434 Silver Spree
4	Unit A & C Hardi Shingles	CD 8432 Garden Bench
5	Unit B & D Hardi Shingles	CD 8434 Silver Spree
6	Unit A & C Hardi Board and Batten	CD 8434 Silver Spree
7	Unit B & D Hardi Board and Batten	CD 8432 Garden Bench
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shakes - Gable	BM 1232 Fresh Brew
11	Vinyl Windows	White

See exterior elevations A4.02-A4.09 for additional detail on building exteriors colours

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
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2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.01
Drawing Title:	Building Exterior Colour Schemes
Scale:	1 : 300

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

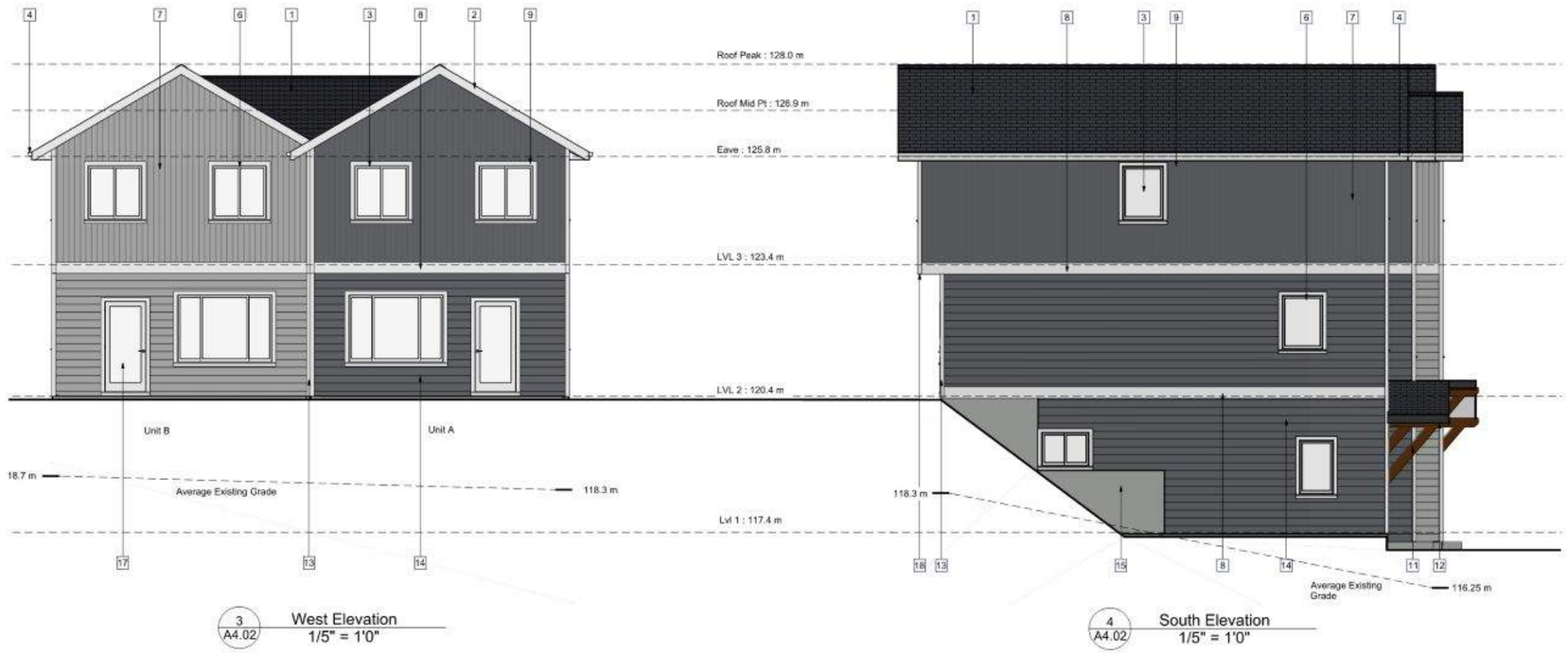
Building 1 (Plan 1) - Elevations

1 A4.02 East Elevation 1/5" = 1'0"

2 A4.02 North Elevation 1/5" = 1'0"

Average Existing Grade: 117.51 M

Building Height : 9.39 M



3 A4.02 West Elevation 1/5" = 1'0"

4 A4.02 South Elevation 1/5" = 1'0"

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	4x6 Doulgas Fir Timbers
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit

Colour Scheme #1

1	Trim	BM OC-65 Chantilly Lace
2	Unit A Hardi Plank	BM 1608 Ashland Slate
3	Unit A Hardi Shingles	BM 1608 Ashland Slate
4	Unit A Hardi Board and Batten	BM 1608 Ashland Slate
5	Unit B Hardi Plank	BM HC-169 Coventry Gray
6	Unit B Hardi Shingles	BM HC-169 Coventry Gray
7	Unit B Hardi Board and Batten	BM HC-169 Coventry Gra
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable	BM 1232 Fesh Brew
10	Vinyl Windows	White

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
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2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.02
Drawing Title:	Building 1 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 2 (Plan 2) - Elevations

1 / A4.03 East Elevation
1/5" = 1'0"

2 / A4.03 North Elevation
1/5" = 1'0"

Average Existing Grade: 118.99 M

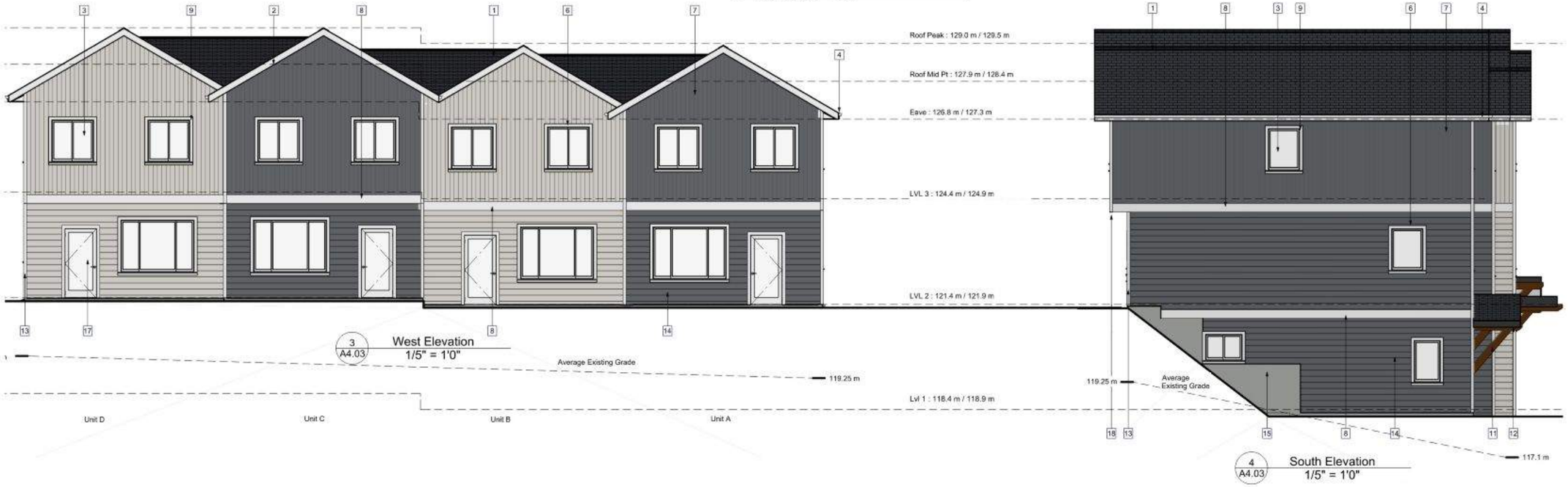
Building Height : 9.41 M

Colour Scheme #2

1	Trim	BM OC-65 Chantilly Lace
2	Hardi Plank Unit A & C	BM HC-178 Charcoal Slate
3	Hardi Plank Unit B & D	BM OC-52 Gray Owl
4	Hardi Shingles Unit A & C	BM HC-178 Charcoal Slate
5	Hardi Shingles Unit B & D	BM OC-52 Gray Owl
6	Hardi Board and Batten Unit A & C	BM HC-178 Charcoal Slate
7	Hardi Board and Batten Unit B & D	BM OC-52 Gray Owl
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable	BM 1232 Fesh Brew
11	Vinyl Windows	White

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	4x6 Doulgas Fir Timbers
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit



3 / A4.03 West Elevation
1/5" = 1'0"

4 / A4.03 South Elevation
1/5" = 1'0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.03
Drawing Title:	Building 2 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 3 (Plan 3) - Elevations

1 A4.04 East Elevation 1/5" = 1'0"

2 A4.04 North Elevation 1/5" = 1'0"

Average Existing Grade: 120.49 M

Building Height : 9.51 M

3 A4.04 West Elevation 1/5" = 1'0"

4 A4.04 South Elevation 1/5" = 1'0"

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Bbatten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	4x6 Doulgas Fir Timbers
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit

Colour Scheme #1

1	Trim	BM OC-65 Chantilly Lace
2	Unit A Hardi Plank	BM 1608 Ashland Slate
3	Unit A Hardi Shingles	BM 1608 Ashland Slate
4	Unit A Hardi Board and Batten	BM 1608 Ashland Slate
5	Unit B Hardi Plank	BM HC-169 Coventry Gray
6	Unit B Hardi Shingles	BM HC-169 Coventry Gray
7	Unit B Hardi Board and Batten	BM HC-169 Coventry Gra
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable	BM 1232 Fesh Brew
10	Vinyl Windows	White

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.04
Drawing Title:	Building 3 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 4 (Plan 4) - Elevations

1 A4.05 West Elevation 1/5" = 1'0"

2 A4.05 South Elevation 1/5" = 1'0"

Average Existing Grade: 91.28 M

Building Height : 10.62 M

3 A4.05 East Elevation 1/5" = 1'0"

4 A4.05 North Elevation 1/5" = 1'0"

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	6x6 Douglas Fir Timbers
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit
19	Aluminum & Glass Railing

Colour Scheme #2

1	Trim	BM OC-65 Chantilly Lace
2	Hardi Plank Unit A	BM HC-178 Charcoal Slate
3	Hardi Plank Unit B	BM OC-52 Gray Owl
4	Hardi Shingles Unit A & B	BM HC-169 Coventry Gray
5	Hardi Board and Batten Unit A	BM HC-178 Charcoal Slate
6	Hardi Board and Batten Unit B	BM OC-52 Gray Owl
7	Asphalt Shingles	Midnight Black
8	Fir Timbers & Front Door	Teak Stain
9	Vinyl Windows	White

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.05
Drawing Title:	Building 4 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 5 (Plan 5) - Elevations

1 A4.06 East Elevation 1/5" = 1'0"

2 A4.06 North Elevation 1/5" = 1'0"

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	4x6 Doulgas Fir Timbers
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit

Colour Scheme #1

1	Trim	BM OC-65 Chantilly Lace
2	Unit A Hardi Plank	BM 1608 Ashland Slate
3	Unit A Hardi Shingles	BM 1608 Ashland Slate
4	Unit A Hardi Board and Batten	BM 1608 Ashland Slate
5	Unit B Hardi Plank	BM HC-169 Coventry Gray
6	Unit B Hardi Shingles	BM HC-169 Coventry Gray
7	Unit B Hardi Board and Batten	BM HC-169 Coventry Gra
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable	BM 1232 Fesh Brew
10	Vinyl Windows	White

Average Existing Grade: 97.90 M

Building Height : 7.90 M

3 A4.06 West Elevation 1/5" = 1'0"

4 A4.06 South Elevation 1/5" = 1'0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

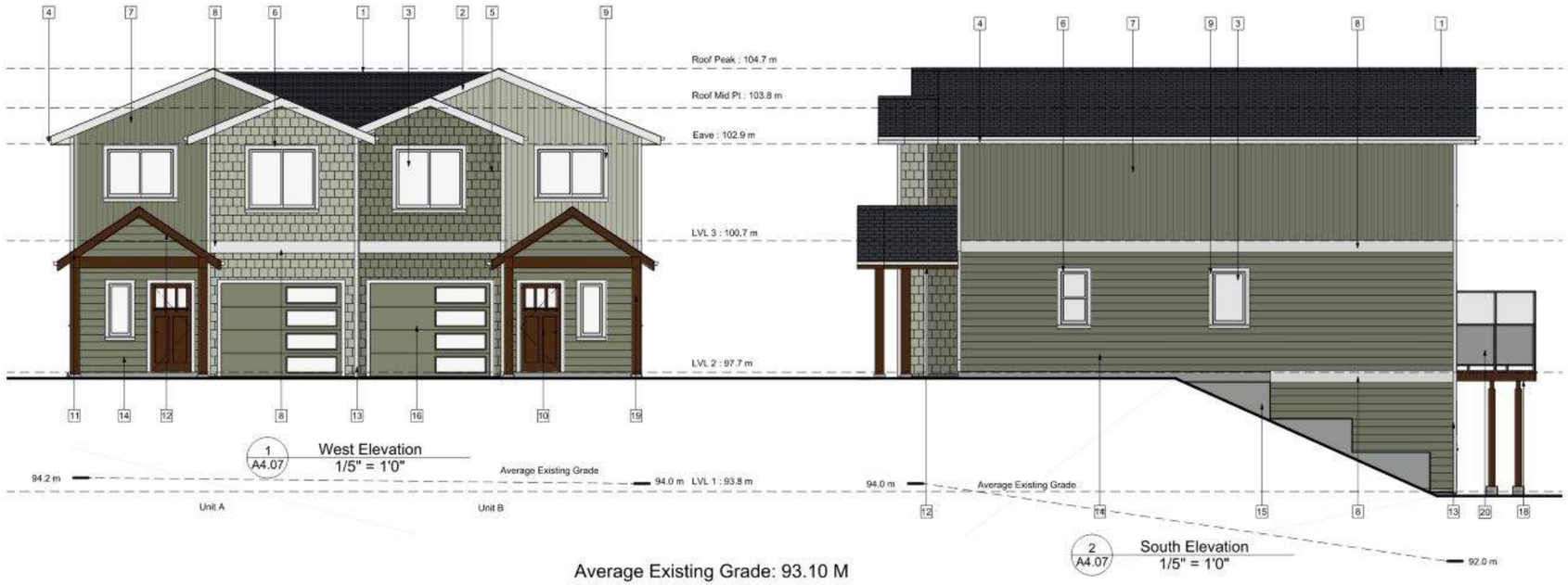
Sheet No:	A4.06
Drawing Title:	Building 5 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 8 (Plan 6) - Elevations



Average Existing Grade: 93.10 M

Building Height : 10.70 M

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	6x4 Douglas Fir Rafters
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit
19	8x8 Douglas Fir Post
20	Aluminum & Glass Railing

Colour Scheme #4

1	Trim	BM OC-65 Chantilly Lace
2	Unit A & B Hardi Plank	CD 8432 Garden Bench
3	Unit A Hardi Shingles	CD 8432 Garden Bench
4	Unit B Hardi Shingles	CD 8434 Silver Spree
5	Unit A Hardi Board and Batten	CD 8434 Silver Spree
6	Unit B Hardi Board and Batten	CD 8432 Garden Bench
7	Asphalt Shingles	Midnight Black
8	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
9	Vinyl Windows	White
10	Unit A & B Hardi Shingles - Gable	BM 1232 Fresh Brew

PROFESSIONAL SEALS

Issued/Revised

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3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

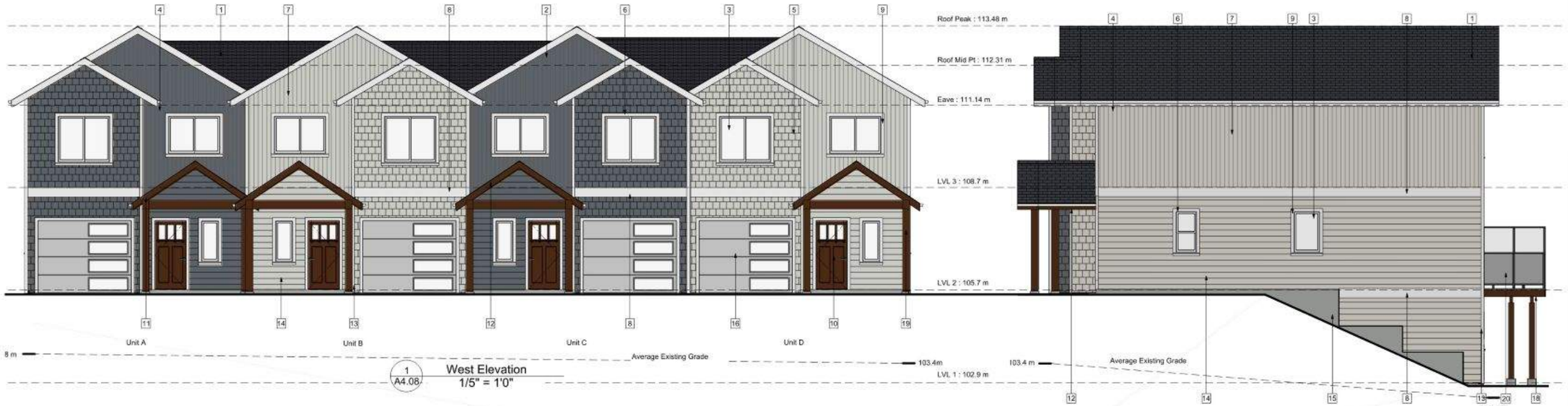
Sheet No:	A4.07
Drawing Title:	Building 8 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 12 (Plan 7) - Elevations



1 A4.08 West Elevation 1/5" = 1'0"

2 A4.08 South Elevation 1/5" = 1'0"

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	6x4 Douglas Fir Rafters
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit
19	8x8 Douglas Fir Post
20	Aluminum & Glass Railing

Colour Scheme #2

1	Trim	BM OC-65 Chantilly Lace
2	Hardi Plank Unit A & C	BM HC-178 Charcoal Slate
3	Hardi Plank Unit B & D	BM OC-52 Gray Owl
4	Hardi Shingles Unit A & C	BM HC-178 Charcoal Slate
5	Hardi Shingles Unit B & D	BM OC-52 Gray Owl
6	Hardi Board and Batten Unit A & C	BM HC-178 Charcoal Slate
7	Hardi Board and Batten Unit B & D	BM OC-52 Gray Owl
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Vinyl Windows	White

Average Existing Grade: 102.75 M

Building Height : 9.56 M

3 A4.08 East Elevation 1/5" = 1'0"

4 A4.08 North Elevation 1/5" = 1'0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/09/2024	Development Permit
4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.08
Drawing Title:	Building 12 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

Building 14 (Plan 8) - Elevations

1 A4.09 South Elevation
1/5" = 1'0"

2 A4.09 East Elevation
1/5" = 1'0"

Average Existing Grade: 107.98 M

Building Height : 9.32 M

Material Legend

1	Asphalt Shingles
2	2x8 Comb Face Fascia
3	Vinyl Window
4	Prefinished Aluminum Gutter
5	Hardi Shakes
6	Window Flashing
7	Hardi Board and Batten
8	2x10 Comb Face Belly Band
9	1x4 Window Trim
10	Insulated Fiberglass Door
11	4x6 Doulgas Fir Timbers
12	Wood T&G Soffit
13	Combface Corner Boards
14	Hardi Lap Siding, 7" Reveal
15	8" Concrete Foundation Wall
16	Insulated Steel Garage Door
17	French Door
18	Vented Aluminum Soffit
19	Aluminum and Glass Railing
20	6x6 Douglas Fir Post

Colour Scheme #3

1	Trim	BM OC-65 Chantilly Lace
2	Unit A & C Hardi Plank	BM HC-168 Chelsea Grey
3	Unit B & D Hardi Plank	SW 7069 Iron Ore
4	Unit A & C Hardi Shingles	BM HC-168 Chelsea Grey
5	Unit B & D Hardi Shingles	SW 7069 Iron Ore
6	Unit A & C Hardi Board and Batten	BM HC-168 Chelsea Grey
7	Unit B & D Hardi Board and Batten	SW 7069 Iron Ore
8	Asphalt Shingles	Midnight Black
9	Fir Timbers & Front Door	Teak Stain/BM 1232 Fresh Brew
10	Hardi Shingles - Gable/Sideyard	BM 1232 Fresh Brew
11	Vinyl Windows	White

3 A4.09 North Elevation
1/5" = 1'0"

4 A4.09 West Elevation
1/5" = 1'0"

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
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4	10/25/2024	Development Permit R1

Drawn by:

Walking Stick Drafting

Sheet No:	A4.09
Drawing Title:	Building 14 Exterior Elevations
Scale:	1/5" = 1'0"

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

1 Landscape Concept Plan
Scale: 1:250

BYLAW TREE NOTE

76 Bylaw trees to be removed

152 Replacement trees proposed (2:1) ratio achieved

CHARACTER IMAGES


1: Nature-themed play


1: Nature-themed play


2: Retaining Wall - Architectural Concrete

RECOMMENDED PLANT SPECIES LIST

Trees

Total: 152

Botanical Name	Common Name	Size
Acer rubrum	Red Maple	4cm cal.
Acer rubrum 'Karpick'	Karpick Maple	4cm cal.
Acer rubrum 'October Glory'	October Glory Red Maple	4cm cal.
Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	4cm cal.
Cercidiphyllum japonicum	Katsura Tree	4cm cal.
Cercis canadensis	Eastern Redbud	4cm cal.
Ginkgo biloba	Maidenhair Tree	4cm cal.
Parrotia persica	Persian Ironwood	4cm cal.
Quercus garryana	Garry Oak	4cm cal.

Large Shrubs

Total: 27

Botanical Name	Common Name	Size
Holodiscus discolor	Oceanspray	#5 pot
Pieris x 'Forest Flame'	Forest Flame Lily Of The Valley	#5 pot
Ribes sanguineum	Ribes sanguineum 'White Icicle'	#5 pot
Ribes sanguineum 'King Edward VII'	King Edward VII Flowering Currant	#7 pot

Medium Shrubs

Total: 356

Botanical Name	Common Name	Size
Arbutus unedo 'Compacta'	Compact Strawberry Bush	#10 pot
Cistus x hybridus	White Rockrose	#5 pot
Echinacea purpurea 'Magnus'	Purple Coneflower	#1 pot
Hydrangea macrophylla 'Ayesha'	Ayesha Hydrangea	#5 pot
Hydrangea macrophylla 'Lanarth White'	Lanarth White Hydrangea	#5 pot
Nandina domestica	Heavenly Bamboo	#5 pot
Pittosporum tobira 'Nanum'	Nanum Dwarf Mock Orange	#5 pot
R. (Kiskiki x R. racemosum)	Rhododendron Ginny Gee	#5 pot
Rhododendron 'Anah Kruschke'	Anah Kruschke Rhododendron	#5 pot
Rhododendron 'Hino-crimson'	Evergreen Azalea	#5 pot
Rhododendron Nancy Evans	Nancy Evans Rhododendron	#7 pot
Rhododendron 'Purple Gem'	Purple Gem Rhododendron	#5 pot
Rosa gymnocarpa	Baldhip Rose	#3 pot
Symphoricarpos albus	Snowberry	#3 pot
Vaccinium ovatum 'Thunderbird'	Thunderbird Evergreen Huckleberry	# 5 pot
Weigela florida 'Midnight Wine'	Midnight Wine Weigela	#5 pot

Small Shrubs

Total: 715

Botanical Name	Common Name	Size
Ajuga reptans 'Chocolate Truffles'	Bugleweed	SP4
Cornus stolonifera 'Kelseyi'	Kelsey Dogwood	#1 pot
Gaultheria shallon	Salal	#1 pot
Heuchera micrantha 'Chocolate Ruffles' P.P.	Chocolate Ruffles Coral Bells	#1 pot
Heuchera x 'Plum Pudding'	Plum Pudding Coral Bells	#1 pot
Lavandula angustifolia 'Hidcote Blue'	English Lavender	#1 pot
Lavandula x intermedia 'Provence'	Provence French Lavender	#1 pot
Mahonia repens	Creeping Oregon Grape	#1 pot
Nandina domestica 'Firepower'	'Firepower' Heavenly Bamboo	#1 pot

Perennials, Annuals and Ferns

Total: 220

Botanical Name	Common Name	Size
Allium cernuum	Nodding Onion	10cm pot
Blechnum spicant	Deer Fern	#1 pot
Calamagrostis brachytricha	Korean Feather Reed Grass	#1 pot
Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	#1 pot
Helictotrichon sempervirens	Blue Oat Grass	#1 pot
Perovskia atriplicifolia	Russian Sage	#1 pot
Polystichum munitum	Sword Fern	#1 pot
Rosmarinus officinalis 'Blue Spire'	Blue Spire Rosemary	#5 pot

Groundcovers

Total: 49

Botanical Name	Common Name	Size
Arctostaphylos uva ursi 'Vancouver Jade'	Vancouver Jade Kinnikinnick	#1 pot
Fragaria chiloensis	Coastal Strawberry	#1 pot
Thymus praecox arcticus	Wild Thyme	#1 pot

Notes:

1. All work to be completed to current BCSLA Landscape Standards
2. All soft landscape to be irrigated with an automatic irrigation system

Schedule 2

1:250

SCALE 1:250

0 5 10 20

Rev. E : Nov 25, 2024
Rev. D : Oct 22, 2024
Rev. C : Aug 9, 2024
Rev. B : July 11, 2024
Rev. A : April 29,2024

Landscape Concept Plan - 3494 Wishart Road

LADR LANDSCAPE ARCHITECTS

#3-864 Queens Ave. Victoria B.C. V8T 1M5
Phone: (250) 598-0105

Project No: 2310 16 May 2023

1 Tree Management Plan
Scale: 1:250

Existing Tree Legend:

Retained Tree
- Crown Spread
- Tree Tag #. See Tree Inventory for assessment.
- Critical Root Zone

Removed Tree
- Critical Root Zone
- Tree Tag #. See Tree Inventory for assessment.

1:250

SCALE 1:250

0 5 10 20

Tree Inventory Table

[illegible]

Tree Preservation Plan - 3494 Wishart Road

Rev. B : Aug 9, 2024
Rev. A : April 29, 2024

LADR LANDSCAPE ARCHITECTS

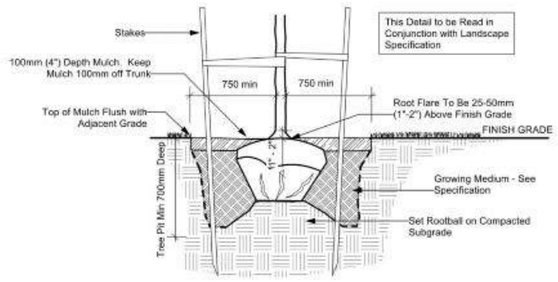
#3-864 Queens Ave. Victoria B.C. V8T 1M5
Phone: (250) 598-0105

Project No: 2310 16 May 2023

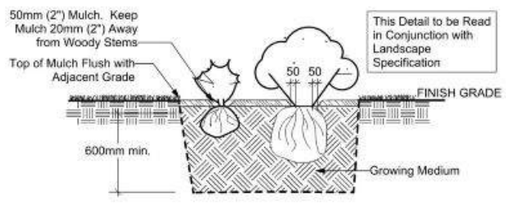
NOTE
Soil volumes provided assume a combination of imported growing medium + subgrade soils

Min. Required Soil Depth Legend

- 150mm Soil Depth Over Subgrade (Grass Lawn)
- 600mm Soil Depth Over Subgrade (Shrubs #3 or larger)
- 700mm Soil Depth Tree Pits (1.8m dia.)
- Meadow Mix over Existing Grade
- Limit Of Soil Volume Calculation Area



01 Typical Tree Planting Detail
Scale: 1:25



02 Typical Shrub Planting Detail
Scale: 1:25

1:250

SCALE 1:250
0 5 10 20

Rev. E : Nov 25, 2024
Rev. D : Oct 22, 2024
Rev. C : Aug 9, 2024
Rev. B : July 11, 2024
Rev. A : April 29,2024

Soil Volume Plan - 3494 Wishart Road

LADR LANDSCAPE ARCHITECTS
#3-864 Queens Ave. Victoria B.C. V8T 1M5
Phone: (250) 598-0105

Project No: 2310 16 May 2023

Schedule 3

LADR LANDSCAPE ARCHITECTS
#3-864 QUEENS AVE
VICTORIA, BC
V8T 1M5
P. 250.598.0105
ADMIN@LADRLA.CA
WWW.LADRLA.CA

3494 Wishart Road Landscape Bonding Budget

A. SOFT LANDSCAPE	Quantity	Units	Price	Extension
1. PLANTS				
Trees (4cm caliper)	141	each	$455.00	$64,155.00
Shrubs (#10 pot)	10	each	$142.50	$1,425.00
Shrubs (#7 pot)	30	each	$100.00	$3,000.00
Shrubs (#5 pot)	282	each	$70.00	$19,740.00
Shrubs (#3 pot)	32	each	$55.00	$1,760.00
Shrubs, Groundcovers and Perennials (#1 pot)	695	each	$16.50	$11,467.50
Shrubs, Groundcovers and Perennials (#SP4 pot)	216	each	$8.00	$1,728.00
SUB-TOTAL PLANTS				**$103,275.50**
3. GRASS				
Restoration Area Meadow Seed Mix	1164	m.sq.	$4.00	$4,656.00
Hydroseed	3839	m.sq.	$4.00	$15,356.00
SUB-TOTAL GRASS				**$20,012.00**
2. SOIL				
Soil (Trees & Planting Beds) 450-600mm depth	486	m.cu.	$32.00	$15,552.00
Soil (Lawn) 150mm depth	575	m.cu	$32.00	$18,400.00
Mulch (All Beds) 100mm depth	81	m.cu.	$40.00	$3,240.00
SUB-TOTAL SOIL				**$37,192.00**
SUBTOTAL SOFT LANDSCAPE				**$160,479.50**
B. HARD LANDSCAPE				
1. IRRIGATION ALLOWANCE				**$20,000.00**
2. WOOD FIBER				
Wood Chip Surface (300mm depth)	53	m.cu.	$60.00	$3,180.00
SUB-TOTAL WOOD FIBER				**$3,180.00**
3. AGGREGATE AND SURFACING				
River Rock (155mm depth)	36	m.cu.	$98.00	$3,528.00
1/4" Granite Fines (155m depth)	38	m.cu.	$65.40	$2,485.20
SUB-TOTAL AGGREGATE & SURFACING				**$6,013.20**
4. SITE FURNISHINGS AND AMENITIES				
Playground Allowance				$5,000.00
Community Garden Allowance				$2,000.00
Restoration Area Sign (By Others)				$2,000.00
SUB-TOTAL SITE FURNISHINGS				**$9,000.00**
SUBTOTAL HARD LANDSCAPE				**$38,193.20**
TOTAL LANDSCAPE BUDGET ESTIMATE				**$198,672.70**
				Exclusive of GST

Prices include labour and materials. For bonding purposes only; this is not a construction estimate.

Prepared by LADR Landscape Architects **02-Jan-25**

Schedule 4



ENVIRONMENTAL ASSESSMENT

FOR 3494 WISHART ROAD, COLWOOD BC

PREPARED FOR:
DAVID LUNN
WALKING STICK DEVELOPMENTS INC.
7401 VEYANESS ROAD
SAANICHTON, BC, V8M 1V9

AND

CITY OF COLWOOD
3300 WISHART ROAD
COLWOOD, BC, V9C 1R1

CORVIDAE PROJECT #2023-038
MAY 2023

CORVIDAE
ENVIRONMENTAL CONSULTING INC
6526 WATER STREET, SOOKE, BC

SOLUTION ORIENTED. PROTECTION OF THE ENVIRONMENT. ABSOLUTE INTEGRITY. OPEN COMMUNICATION. RESPECT.

TABLE OF CONTENTS

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CAVEAT

This Environmental Assessment (EA) has been prepared with the best information available at the time of writing, including the City of Colwood Official Community Plan, communications with the client, a site visit, review of site plans and design drawings and other documentation relevant to the project. This EA has been developed to assist the project in remaining in compliance with relevant environmental regulations, acts and laws pertaining to the project and to identify and mitigate the expected impacts of the project.

1 INTRODUCTION

Corvidae Environmental Consulting Inc. (Corvidae) is pleased to provide this Environmental Assessment (EA) for a rezoning application and proposed residential development at 3494 Wishart Road in Colwood, BC (the Site) (PID: 005-210-089; LOT 3, PLAN 10219). The Site is currently zoned as Rural 1 (A1). Site boundaries and environmental features are presented in Figure 1.

Currently on the Site is an existing dwelling, several accessory structures, and a horse paddock area. The Site has been cleared of natural vegetation in many areas and has been highly impacted by invasive species. The western extent remains forested, and several rocky outcrops occur throughout the Site. A polygon that represents potential habitat for sharp-tailed snake is mapped in the west (Figure 2). The potential for sharp-tailed snake to occur in this area is considered low based on habitat characteristics (see Section 4.6 of this report for further details). The Site occurs within two Development Permit Areas (DPA), the Hillside Environmental DPA and Natural Hazards DPA (Figure 2).

The landowner is proposing to rezone the Site to allow for a future 49-unit townhouse development. Several areas of green space will be retained as part of the development, particularly at the western boundary where habitat value is greater. An extension of Delora Drive, a public road, is planned in the western extent. The Site plan is presented in Figure 3.

This document addresses the requirements outlined in Part D of the City of Colwood Bylaw No. 1700, provides a detailed assessment on the environmental conditions on the Site, potential impacts of the proposed development, and recommendations for the protection of environmentally sensitive features and methods to minimize impacts of the proposed development.

:e Location and Environmental Features

Mature tree | Rock outcrop | Property Boundary
Ditch | Forested area

0 25 50 100 Meters

Project: 5494 Wishart Road | Sources: Capital Regional District

N

CORVIDAE
ENVIRONMENTAL CONSULTING INC

Corvidae Project No.
COR-2023-038

Rev. #	Date
0	April 10, 2023
1	April 30, 2023

Figure 1


evelopment Permit Areas
Potential Sharp Tailed Snake Habitat
Environmental DPA - Hillside
Natural Hazards DPA - Steeply Sloped Areas (>30%)
Form-Character DPA - Neighbourhood
Property Boundary
0
25
50
100
Meters
Project: 5494 Wishart Road | Sources: Capital Regional District
N
CORVIDAE
ENVIRONMENTAL CONSULTING INC
Rev. #
Date
0
April 30, 2023
Corvidae Project No.
COR-2023-038
Figure 2

roposed Development Site Plan

Mature tree | Road | Proposed Site Plan | Property Boundary
Ditch | Retaining Wall | Forested area
Rock Outcrop

0 25 50 100 Meters

Project: 5494 Wishart Road | Sources: Capital Regional District

N

CORVIDAE
ENVIRONMENTAL CONSULTING INC

Rev. #	Date
0	April 30, 2023

Corvidae Project No.
COR-2023-038

Figure 3

1.1 OBJECTIVES

The purpose of this EA is to assess the current terrestrial and riparian environments onsite, identifying terrestrial and aquatic habitat, sensitive ecosystems, and wildlife habitat, including wildlife trees, nests, and any other wildlife features. This EA also identifies the presence of threatened or endangered species on or around the Site, which includes a 2-kilometre (km) buffer around the Site boundaries. As part of the EA, Corvidae completed a detailed field assessment to document biophysical features, habitat and verify available ecosystem inventory data.

From this information potential impacts have been determined and mitigations provided to protect the natural environment, its ecosystems and associated biological diversity. This report and planning meet the environmental requirements in the City of Colwood Official Community Plan, zoning by-laws and addresses provincial and federal laws.

1.2 REGULATORY FRAMEWORK

This environmental assessment is designed to comply with the provisions set out in the City of Colwood Official Community Plan (OCP) for development permit areas and for compliance with the provisions for environmental protection contained in the following relevant legislation:

Municipal

- City of Colwood OCP, Bylaw No. 1700 (City of Colwood 2018)

Hillside DPA

Objectives

19.1.q. Protect wildlife habitat and corridors, and environmentally sensitive areas on hillsides

19.1.r. Identify significant features prior to development, and protect hillside character and natural features

19.1.s. Conserve unique natural features such as landforms, rock outcrops, mature trees and vegetation, hilltops, and ridge lines.

19.1.t. Minimize blasting and re-contouring of hillsides.

Guidelines

22.1.a. Open space and corridors between development areas or lots should be retained to provide continuous habitat linkages within the site and surrounding area. Significant features such as rock outcrops, streams, cliffs, and stands of trees should be incorporated into the open space and corridors as much as possible.

22.1.b. Windfirm treed buffers must be maintained between the subject parcel and adjacent lots, and should also be applied along major roads fronting the development.

22.1.c. Where trees are not present, and soils are suitable, new trees which are native to the Coastal Douglas-Fir Biogeoclimatic Zone must be planted.

22.1.g. Post-development, exposed soil on steep slopes subject to erosion shall be re-vegetated with vegetation native to the Coastal Douglas-Fir Biogeoclimatic zone or otherwise protected from run-off erosion.

22.1.h. Avoid using fast-growing non-native plants to retain soils. Temporary erosion control measures must be maintained during and post-construction until native vegetation is re-established and capable of protecting slopes from erosion.

22.1.i. Avoid tree removal on steep slopes. Trees intercept precipitation and reduce stormwater runoff volumes, protect soils from erosion, and protect the scenic quality of the community.

22.1.k. Do not clear more trees and vegetation than is necessary to install services for any given phase of the development.

22.1.l. Take advantage of topography and minimize disruption of rock outcroppings, sensitive ecosystems, mature trees and culturally significant features.

22.1.m. Design sites to incorporate, protect and enhance remnant riparian zones, watercourses, and urban forests and to optimize opportunities to establish new ecological connections through the site, such as urban forest corridors and watercourses.

Natural Hazards DPA

Objectives

19.1.u. Protect lives and property from hazardous conditions such as landslides and erosion by avoiding development on unstable or hazardous areas.

19.1.v. Protect people and development from flooding and erosional processes associated with extreme weather events and potential sea level rise in ways that do not lead to hardening of shorelines and loss of environmental and recreational values.

19.1.w. Protect lives and property from interface wildfire.

Guidelines

23.1.a. Development on lands with slopes greater than 30% must be avoided. Development may be considered on slopes greater than 30% only where it can be demonstrated that the proposed development will not create geotechnical, ecological, or visual impacts, can be sensitively integrated with terrain, and presents no hazards to people or property.

23.1.b. Grading or alteration of key topographic features such as knolls, ridgelines, rocky outcrops, cliffs, and ravines must be avoided.

The guiding principle for the use of Development Permits is found within the *Local Government Act*. Development Permit Areas can be designated for purposes such as, but not limited to: protecting, enhancing and restoring the biodiversity and ecological values and functions of environmentally sensitive areas; fostering compatibility between development, existing land uses and environmentally sensitive areas; maintaining connectivity between sensitive ecosystems; and protecting water quality and quantity.

Provincial

- *Wildlife Act* (1996)
- Invasive Species Council of BC
- *Weed Control Act* (1996, current as of October 2016)

Federal

- *Migratory Birds Convention Act* (1994)
- *Species at Risk Act* (SARA) (2002)

1.3 DEVELOPMENT PERMIT AREAS

As per Figure 18 and 19 of the City of Colwood OCP, the Site occurs within the Hillside Environmental DPA, and Natural Hazards DPA. Development Permit Area boundaries on the Site are presented in Figure 2.

The objectives of the Natural Hazards DPA include the protection of lives and property from hazardous conditions, potential erosion and flooding associated with extreme weather events and sea-level rise, and wildfire. Commentary regarding development requirements to ensure human safety and slope stability within the Natural Hazards DPA on the Site will not be included in this report. As plans progress, a geotechnical evaluation (submitted separately) prepared by a registered geotechnical professional is required to certify that the site is safe for its intended use.

2 SCOPE OF WORK

Corvidae completed an environmental assessment for the Site and documented the ecological features. Background information was reviewed, including applicable databases. The following features were documented and provided in this report:

- Areas of sensitivity, including mapped potential sharp-tailed snake habitat.
- Areas of habitat and biodiversity values, including rocky outcrops.
- Plant communities and plant species on site.
- Potential wildlife presence and wildlife habitat.
- Soil types and terrain.
- Surface water flow patterns.

Following the field assessment, the biophysical features were mapped, and buffer areas have been identified. Mitigations to minimize the impacts of the proposed residential development on the environment have been provided in Section 6.

3 METHODS

3.1 DESKTOP REVIEW

Baseline biophysical conditions were compiled by reviewing the best available data and information including existing reports for the area and conducting searches of online provincial and federal databases:

- BC Conservation Data Centre (BC CDC 2023a and 2023b).
- BC HabitatWizard (Province of BC 2023).
- Aerial photographs of the Site (Google Earth 2023).
- CRD mapping system and database (CRD 2023).
- City of Colwood GIS Mapping (City of Colwood n.d.)
- Colwood Official Community Plan Bylaw No. 1700 (City of Colwood 2018).

3.2 FIELD ASSESSMENT

A field assessment of the Site was completed by a Qualified Environmental Professional (QEP) from Corvidae. The assessment included characterization of vegetation and habitat types, wildlife sign and species observations, wildlife habitat, surface water flow patterns, and assessed the current conditions of the Site.

4 ENVIRONMENTAL SITE ASSESSMENT

Corvidae completed a site visit on April 4, 2023. Site photographs are included as Appendix A.

4.1 LAND USE

A primary residence and various accessory structures are present within the Site. Open areas (grass lawn), and a horse paddock area are located in the eastern portion, closest to Wishart Road. Surrounding land use is primarily rural residential and higher density residential. The Site is bound by residential properties to the north, and by Wishart Road to the east. To the south is a residential development undergoing construction, and to the west is a large rural property that borders Havenwood Park.

4.2 CLIMATE AND BIOGEOCLIMATIC ZONE

The project is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm) (BC CDC 2023b). The CDFmm occurs at low elevations (<150 m) along southeast Vancouver Island, the southern Gulf Islands, and part of the Sunshine Coast. The CDFmm has the mildest climate in Canada. This subzone has a long growing season with warm, dry summers and mild, wet winters.

4.3 TERRAIN AND SOILS

Soils in the CDF biogeoclimatic zone are generally derived from morainal, colluvial, and marine deposits, and are typically Brunisols, grading with increased precipitation to Humo-Ferric Podzols (Nuszdorfer *et. al.* 1991). Soils on the Site are described as rapidly drained, Orthic Dystric Brunisols (60%) underlain by undifferentiated bedrock (20%) and well-drained Duric Dystric Brunisols (20%) (BC SIFT 2018). The terrain slopes upward from Wishart Road to the west. The slope of the Site is approximately 15% on average, with some areas approximately 30% in grade. Areas of exposed bedrock (rocky outcrops) are identified in Figure 1. A geotechnical evaluation prepared by a registered geotechnical professional will be completed during ongoing development planning.

4.4 SURFACE WATER

Natural surface water features (e.g., watercourses, wetlands, etc.) were not observed during the field assessment. A shallow grassy ditch is located along the eastern property boundary. The ditch flows into the municipal stormwater management system and does not connect to fish-bearing waters. Therefore, it does not require protections under the *Riparian Areas Protection Regulation,* B.C. Reg. 178/2019.

4.5 VEGETATION

Dry forests in the CDFmm zone are typically dominated by Douglas-fir (*Pseudotsuga menziesii*), arbutus (*Arbutus menziesii*), and western redcedar (*Thuja plicata*). Grand fir (*Abies grandis*) and shore pine (*Pinus contorta* var. *contorta*) may also be present. Salal (*Gaultheria shallon*), dull Oregon-grape (*Mahonia nervosa*), ocean spray (*Holodiscus discolor*), baldhip rose (*Rosa gymnocarpa*), and red huckleberry (*Vaccinium parvifolium*) are common in the shrub layer. Bracken fern (*Pteridium aquilinum*), snowberry (*Symphoricarpos albus*), grasses, and pacific sanicle (*Sanicula crassicaulis*) are common in the herb layer. Oregon beaked-moss (*Eurhynchium oreganum*), step moss

(Hylocomium splendens), and electrified cat's-tail moss (*Rhytidiadelphus triquetrus*) dominate the well-developed moss layer (Nuszdorfer *et. al.* 1991).

Most of the Site has been cleared of most natural vegetation and has been modified through landscaping and the spread of invasive species. However, in the western extent, a young second-growth forest remains (Figure 1). During the field assessment this area was identified as having the highest habitat value of the areas on the Site, as it is adjacent to undeveloped land and has been less impacted than other areas. However, there is still a high concentration of invasive species in the forested area. The forest canopy layer is dominated by arbutus and Douglas-fir. The understory is composed of native species such as oceanspray, dull Oregon-grape, tall Oregon-grape, baldhip rose, and sword fern. Numerous invasive species were observed in the understory including spurge-laurel, Himalayan blackberry, Scotch broom, and English holly.

Throughout the rest of the Site, treed patches occur, however these areas have been disturbed and lack native understory vegetation. Rock outcrops occur throughout the property. Plant diversity within the rock outcrop areas is low due to impacts from invasive species. Grass fields dominate the eastern portion of the Site, and remaining trees include red alder, arbutus, and bigleaf maple. Some mature trees (>80 years) occur on the Site and are identified in Figure 1.

Five invasive plant species were observed on the Site: Cherry-laurel, English holly, Himalayan blackberry, Scotch broom, and spurge-laurel. These are listed as "Control" species as per the Coastal Invasive Species Committee (2023). It is recommended that efforts to control these species are focused within high value conservation areas and that the use of Biological Control, if available, is utilized on a landscape scale. Measures to remove and prevent invasive species are discussed in Section 6 of this report. All vegetation species noted during the April 4, 2023 field visit are included below in Table 1.

Table 1. Plant species observed on site during the April 4, 2023 field visit.

Common Name	Scientific Name	BC Provincial Status[1]	*SARA* Schedule 1 Status[2]
Arbutus	*Arbutus menziesii*	Yellow	--
Baldhip rose	*Rosa gymnocarpa*	Yellow	--
Bigleaf maple	*Acer macrophyllum*	Yellow	--
Broad-leaved stonecrop	*Sedum spathulifolium*	Yellow	--
Cherry-laurel	*Prunus laurocerasus*	**Invasive**; Exotic	--
Common dandelion	*Taraxacum officinale*	Exotic	--
Daffodil	*Narcissus pseudonarcissus*	Exotic	--
Douglas-fir	*Pseudotsuga menziesii*	Yellow	--
Dull Oregon-grape	*Mahonia nervosa*	Yellow	--
Electrified cat's-tail moss	*Rhytidiadelphus triquetrus*	Yellow	--
English holly	*Ilex aquifolium*	**Invasive**; Exotic	--
Garry oak	*Quercus garryana*	Yellow	--
Grass sp.	*Poa sp.*	--	--
Grassland saxifrage	*Micranthes integrifolia*	Yellow	--
Hairy honeysuckle	*Lonicera hispidula*	Yellow	--
Himalayan blackberry	*Rubus armeniacus*	**Invasive**; Exotic	--
Licorice fern	*Polypodium glycyrrhiza*	Yellow	--
Nootka rose	*Rosa nutkana*	Yellow	--

Common Name	Scientific Name	BC Provincial Status[1]	*SARA* Schedule 1 Status[2]
Oceanspray	*Holodiscus discolor var. discolor*	Yellow	--
Orchard grass	*Dactylis glomerata*	Exotic	--
Reed canarygrass	*Phalaris arundinacea*	Exotic	--
Red alder	*Alnus rubra*	Yellow	--
Rock cotoneaster	*Cotoneaster horizontalis*	Exotic	--
Scotch broom	*Cytisus scoparius*	**Invasive**; Exotic	--
Smooth hawksbeard	*Crepis capillaris*	Exotic	--
Snowberry	*Symphoricarpos sp.*	--	--
Spurge-laurel	*Daphne laureola*	**Invasive**; Exotic	--
Sword fern	*Polystichum munitum*	Yellow	--
Tall Oregon-grape	*Mahonia aquifolium*	Yellow	--
Thistle sp.	*Cirsium sp.*	--	
Wild carrot	*Daucus carota*	Exotic	--
Yarrow sp.	*Achillea sp.*	--	--

[1] BC CDC 2023a
[2] Government of Canada 2023

4.6 WILDLIFE

Trees on the Site may provide nesting and roosting habitat for birds, including migratory songbirds, year-round resident species, raptors, and owls. No nests were observed during the assessment. The Site is likely also to be utilized as a movement corridor and refuge for large mammals, including black bears, cougars, and deer. Two black-tailed deer were observed foraging in the forested area to the west.

The northwestern extent of the Site is overlapped by an area of mapped potential sharp-tailed snake habitat (CRD 2021) (Figure 2). Sharp-tailed snake is a red-listed species in BC and is designated as Endangered under Schedule 1 of SARA. Suitable habitat for Sharp-tailed Snake must provide sites for thermoregulation, egg laying, incubation, and inactive phases (overwintering/hibernation and summer inactivity/aestivation) as well as foraging opportunities. Sharp-tailed Snakes are generally found within open canopy forest, dominated by Douglas-fir, arbutus, and/or Garry oak, which provides the mosaic of shaded/cool/moist and open/warm patches required for the snakes to carry out their lifecycle. Critical habitat is identified whenever sparsely forested or treeless rocky openings (~10 m diameter and greater) with warm (southerly) aspects are found. Open habitats must be surrounded by open canopy forest habitat that support prey populations (slugs) and provide opportunities for thermoregulation. In both open habitats and adjacent forest, 3-dimesional features composed of rock or coarse woody debris that provide microhabitats must be present (Environment and Climate Change Canada [ECCC] 2020). No federally designated critical habitat is mapped in the area (ECCC 2020).

Potential for sharp-tailed snake to occupy this area on the Site is considered low. While some optimal biophysical features were observed, including rocky outcrops with southern exposure and an adjacent canopy comprised of the appropriate tree species (e.g., Douglas-fir and arbutus), the area is heavily impacted by invasive vegetation and the site overall lacks 3-dimensional features composed of rock (e.g., talus slopes or patches, or fissures in rock outcrops) and coarse woody debris (including la

decaying logs or stumps with sloughing bark). Habitat quality in this area can be improved through restoration of retained green space discussed below in Section 6.

The rocky outcrops that occur on the Site may provide suitable habitat for other reptiles, including garter snakes, as well other vertebrate (e.g., mammals and birds) and invertebrate species and are designated in the City of Colwood OCP as a key topographic feature (2018). During the site assessment the species in Table 2 were observed on or near the Site.

Table 2. Wildlife species observed on site during the April 4, 2023 field visit.

Common Name	Scientific Name	BC Provincial Status[1]	*SARA* Schedule 1 Status[2]
Black-tailed deer	*Odocoileus hemionus*	Yellow	--
American robin	*Turdus migratorius*	Yellow	--
Northern flicker	*Colaptes auratus*	Yellow	--
Ruby-crowned kinglet	*Corthylio calendula*	Yellow	--
Spotted towhee	*Pipilo maculatus*	Yellow	--
Turkey vulture	*Cathartes aura*	Yellow	--
White-crowned Sparrow	*Zonotrichia leucophrys*	Yellow	--
Yellow-rumped warbler	*Setophaga coronata*	Yellow	--

[1] BC CDC 2023a
[2] Government of Canada 2023

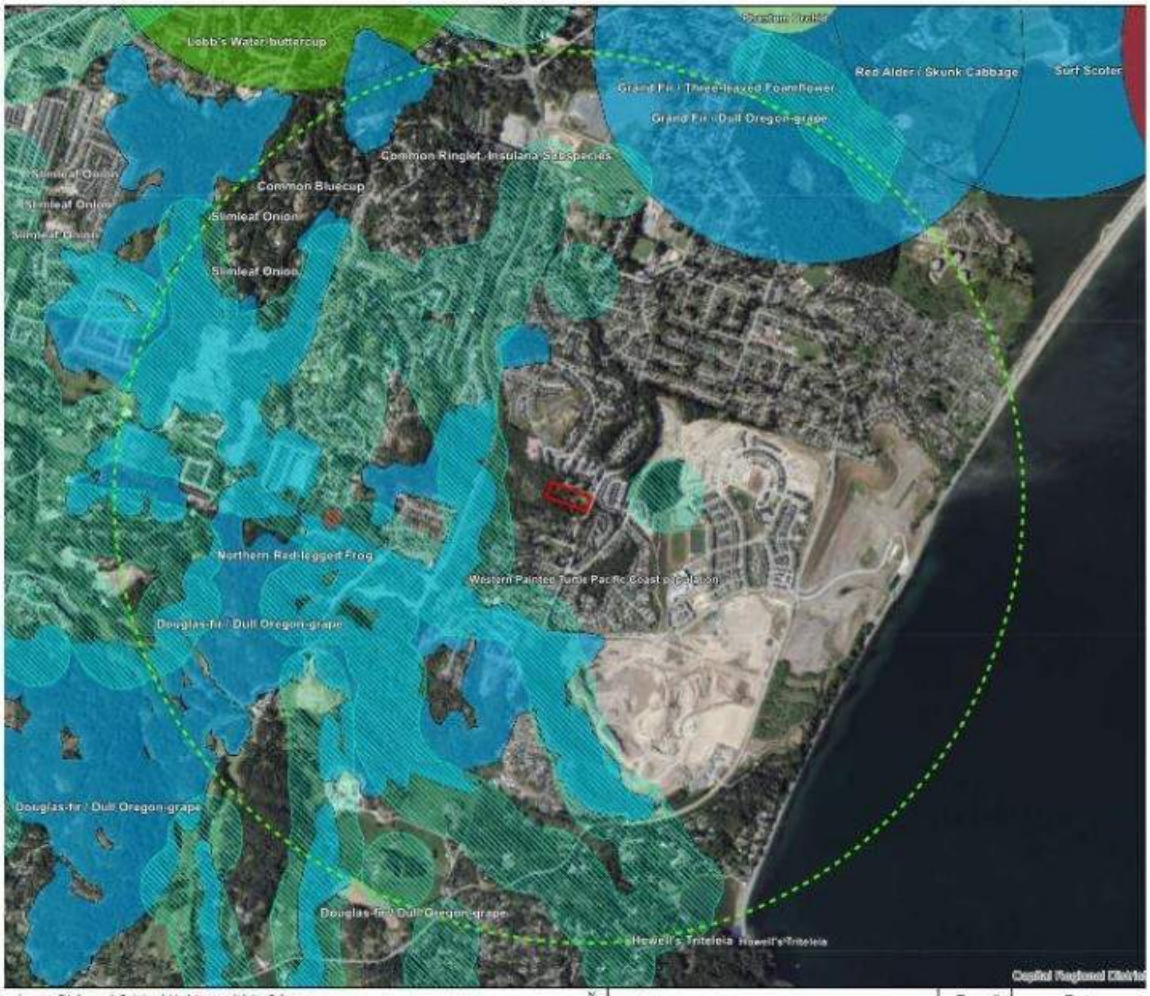
4.7 SPECIES AT RISK

A query of the BC CDC iMap tool yielded occurrences of 2 species and 3 ecosystems at risk within a two-kilometer radius of the Site, as well as one masked occurrence (BC CDC 2023b) (Table 3). No at-risk species or ecosystem occurrences are mapped on the Site. The locations of these occurrences in relation to the Site are provided in Figure 4. None of the species or ecosystems listed in Table 3 were detected during the site assessment, nor was suitable habitat identified on the Site for the species mentioned.

Table 3. Species at risk that may occur in the vicinity of 3494 Wishart Road, Colwood, BC.

Common Name	Scientific Name	BC Provincial Status[1]	*SARA* Schedule 1 Status[2]
Species			
Slimleaf Onion	*Allium amplectens*	Blue	n/a
Northern Red-legged Frog	*Rana aurora*	Blue	Special Concern
Ecosystems			
Douglas-fir / dull Oregon-grape	*Pseudotsuga menziesii / Mahonia nervosa*	Red	n/a
Grand fir / three-leaved foamflower	*Abies grandis / Tiarella trifoliata*	Red	n/a
Grand fir / dull Oregon-grape	*Abies grandis / Mahonia nervosa*	Red	n/a

[1] BC CDC 2023a
[2] Government of Canada 2023



ecies at Risk and Critical Habitat within 2 km

Critical Habitat

- Property Boundary
- 2 km area around property boundary
- Howell's Triteleia
- Phantom Orchid
- Western Painted Turtle Pacific Coast population

Species at Risk

- Ecological Community
- Invertebrate
- Vascular Plant
- Vertebrate

0 500 1,000 2,000 Meters

Project: 3494 Wishart Road | Source: Capital Regional District, DataBC

N

CORVIDAE ENVIRONMENTAL CONSULTING INC

Rev. #	Date
0	April 30, 2023

Corvidae Project No.
COR-2023-038

Figure 4

5 POTENTIAL ENVIRONMENTAL EFFECTS

The potential impacts of the proposed development of the Site on the environment are:

- Impacts on areas with potential habitat and biodiversity values (e.g., rocky outcrops)
- Loss of native vegetation and spread of invasive plant species.
- Change in wildlife habitat availability and wildlife mortality risk.
- Sediment movement in the project area.

The residual environmental impacts of the activities on the Site will be reduced by the implementation of the mitigation and restoration measures recommended in Section 6 of this report.

AREAS WITH POTENTIAL HABITAT & BIODIVERSITY VALUES (ROCKY OUTCROPS)

Intact, undisturbed rocky outcrops provide habitat for many at-risk species, and thus have high biodiversity value. The habitat and biodiversity value of the rocky outcrops on the Site has been significantly reduced by previous disturbance and the spread of invasive vegetation. However, if restored, these topographic features still have the potential to provide habitat and increased biodiversity.

VEGETATION

The effects of trees and vegetation removal may include loss of biodiversity of plant species and increased susceptibility to invasive plants not only in the cleared area but also in adjacent plant communities. Vegetation and plant communities immediately adjacent to cleared areas may experience changes due to windthrow and changes in microclimate (increased light and moisture penetration).

INVASIVE SPECIES

Invasive plants are particularly adept at colonizing degraded plant communities and disturbed soils. Invasive plants establish readily in disturbed areas as they have a wide ecological tolerance and grow and propagate quickly. The effects of invasive plant establishment may be the reduction or displacement of native species by capturing resources and occupying habitats.

WILDLIFE AND WILDLIFE HABITAT

Loss and alteration of terrestrial habitat can result in the loss of habitat for wildlife species. Tree and shrub clearing can directly alter or remove wildlife habitat. Noise from site preparation and construction may temporarily disturb and displace remaining wildlife.

EROSION AND SEDIMENT

Removal of vegetation during construction exposes soils to erosion and can result in the movement of sediment on the Site. Damage or degradation of soil surfaces during construction can include loss of soil structure, increased erosion, and soil compaction.

6 RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES

The mitigation measures provided in this report are designed to protect sensitive ecosystems and were developed in accordance with:

- The City of Colwood OCP (City of Colwood 2018),
- Procedures for Mitigating Impacts on Environmental Values (Environmental Mitigation Procedures) (BC Ministry of Environment [MOE] 2014a),
- Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia (Government of BC 2014), and
- Environmental Best Management Practices for Urban and Rural Land Development in British Columbia (BC Ministry of Water, Land and Air Protection 2004).

AREAS WITH POTENTIAL HABITAT & BIODIVERSITY VALUES (ROCKY OUTCROPS)

The rocky outcrops on the Site have been highly impacted by disturbance. Where possible, it is recommended that rocky outcrops be retained and restored through the removal of invasive species and seeded with a native seed blend. The following are recommended species to include in a native seed mix blend for application on rocky outcrops: Western fescue (*Festuca occidentalis)*, *Alaska oniongrass* (*Melica subulate*), blue wildrye (*Elymus glaucus*), California brome (*Bromus carinatus*), Columbia brome (*Bromus vulgaris*), western fescue (*Festuca occidentalis*) and Pacific sanicle (*Sanicula crassicaulis*).

VEGETATION

The forested area (Figure 1) provides the highest habitat value of the areas on the Site, as it is adjacent to undeveloped land and has been less impacted than other areas. It is recommended that the proposed development retain a portion of this forested area as green space. Tree protection fencing will be required around retained trees within the development to protect retained green space and the drip and root zones of trees near active construction areas. Enhancement of green space is also recommended through the removal of invasive species and subsequent installation of native plants. Table 4 details native plant species that are suitable for the area. Recommended plant density following invasive removal is 1 to 2 m^2 for shrubs and 3 m^2 for trees.

It is recommended that areas disturbed by project construction or activities that are not part of the permanent footprint also be replanted with native vegetation. Overall plant density should be approximately one plant per 1 to 2 m^2 of disturbed space. The purpose of using native species is to reduce irrigation maintenance in the future. The optimal time for revegetation is in the fall, prior to the wet winter season. However, planting at any time of the year (with irrigation as needed) is acceptable to prevent invasive species. A replacement ratio of 2:1 is recommended for all trees greater than 50 cm DBH (diameter breast height) on the Site that will need to be removed as part of the development proposal.

Table 4. Recommended native vegetation to plant in disturbed areas and within green space

Common Name	Species
TREES	
Arbutus	*Arbutus menziesii*
Douglas-fir	*Pseudotsuga menziesii*
SHRUBS AND FERNS	
Common snowberry	*Symphoricarpos albus*
Dull Oregon-grape	*Mahonia nervosa*
Oceanspray	*Holodiscus discolor*
Rose species	*Rosa nutkana / gymnocarpa*
Salal	*Gaultheria shallon*
Sword fern	*Polystichum munitum*

INVASIVE SPECIES

Any invasive species encountered on the Site will require removal. Invasive species should be removed using the most appropriate methods, at the correct time of year, and plant material must be disposed of correctly to avoid re-establishment or spread. Following removal, re-seed, or re-plant bare soil with desirable, competing vegetation. Details of removal methods for the invasive species onsite are provided below in Table 5.

There is a high concentration of invasive vegetation on the Site, particularly in the western extent. If needed, Corvidae recommends that a company specializing in invasive species removal to aid in weed removal. Corvidae recommends SHR Solutions (info@shrsolutions.ca) as they have helped with large scale invasive species management in the past.

Table 5. Removal and disposal methods for invasive species

Species	Removal Method	Removal Timing	Plant Disposal
Cherry laurel	Dig up or pull small plants. Cut large plants as close to the ground as possible and dig up stumps.	Remove in early spring before plants flower.	Bag all parts and dispose of properly in a landfill. Do not compost
Himalayan blackberry	Can be removed by pulling or cutting the canes from the ground. If possible, dig out the roots, paying careful attention not to damage nearby vegetation.	Removal should occur in the spring and early summer before they produce berries as canes that are cut as the plant is producing flowers are least likely to re-sprout.	Burned or bagged and disposed of properly in a landfill. Do not compost.
English holly	English holly can be removed by hand pulling small seedlings or cutting mature trees at ground level removing all plant material.	Removal is best done before flowering to eliminate seed production.	Holly does not root again once removed, so it can also be piled to desiccate on site. Can be bagged and disposed of properly in a landfill. Do not compost.

Species	Removal Method	Removal Timing	Plant Disposal
Scotch broom	Avoid disturbing the soil which can stimulate dormant broom seeds to sprout. Small broom plants can be pulled easily from the ground by hand without disturbing the soil. Larger plants should be cut below the root crown using loppers or a pruning saw.	Scotch broom removal should occur mid-April through early June, when in flower and before its seed pods begin to open.	Bagged and disposed of properly in a landfill or burning. Do not 'recycle' garden debris or compost.
Spurge-laurel	Spurge-laurel can be removed by pulling small plants or cutting larger plants just below the soil. Spurge laurel stems may re-sprout after cutting and numerous seedlings may germinate so repeated site visits are necessary. Always wear gloves when handling spurge laurel because it produces a noxious substance which can cause severe eye and skin irritation. Avoid spreading berries during removal.	Can be removed year-round.	Removed plants should be bagged and disposed of properly in a landfill. Do no transport inside an enclosed vehicle as the plants can cause respiratory irritation.

Mitigation measures to control and minimize the spread of invasive weeds on the site include:

- Clean all machinery before arrival onto the site to ensure that more weed seeds and other propagules (e.g., pieces of root) are not brought into the project area.
- If fill or topsoil is imported from external areas, ensure that it is from a weed-free source.

Any soil should not be left exposed until landscaping. Disturbed areas should be seeded with fast growing vegetation such as a mix with a native clover or seed mix to compete with weed species, fix nitrogen and provide soil stabilization right after clearing.

WILDLIFE AND WILDLIFE HABITAT

Mitigation measures to minimize impacts on wildlife and wildlife habitat include:

- Vegetation clearing should be completed outside of the migratory bird window (prior to March 15th or after August 31st; Government of Canada 2018). If vegetation clearing is scheduled within the sensitive time period for breeding birds, a QEP should conduct nest search surveys a maximum of 2-3 days prior to the start of activities. If an active nest is discovered during nest search or clearing activities, the nest will be subject to site-specific mitigation measures (e.g., protective buffer around the nest or unobtrusive monitoring) until the young have naturally fledged/left the area. Multiple nest sweeps may be required, particularly on large sites or in complex habitats such as mature trees. Nest search areas include both vegetation and onsite, man-made structures that are scheduled for removal.
- If clearing is scheduled between January 1 and August 15, a raptor nest survey should be completed by a QEP prior to clearing. Occupied or active nests would be subject to the actions described above. In addition, permits are required to remove eagle or osprey nests regardless of occupancy.

- Avoid additional removal of established trees or shrubs, where practical (outside of the project footprint), except for identified danger trees that cannot be avoided.

Restoration of the green space within the forested area is recommended to improve habitat value for sharp-tailed snake and other wildlife. Important restoration measures include the removal of invasive vegetation as described in Table 5, and replanting with native vegetation as described in Table 4. Further restoration measures include retaining natural cover like leaf litter, fallen logs, bark, and rocks. Placement of additional rocks or logs in sunny areas of the green space area is also recommended for resident reptiles, and to add habitat complexity.

EROSION AND SEDIMENT CONTROL

The primary focus of erosion and sediment control planning is erosion control; if there is no erosion then there is no sediment. Erosion control is far more cost effective to implement and manage than sediment control.

Mitigation options to minimize the potential effects of the project on the natural environment include:

- No soil should be left exposed for more than one growing season. Disturbed areas should be seeded with fast growing vegetation such as a mix with a native clover or seed mix to compete with weed species, fix nitrogen and provide soil stabilization right after vegetation removal.
- Heed weather advisories and scheduling initial clearing work to avoid excessively rainy periods (>10 cm in 24 hours) that may result in high flow volumes and/ or increase erosion and sedimentation.
- If movement of sediment or sediment laden water is detected during construction, particularly into the ditch along Wishart Road, flow should be captured, and sediment allowed to settle prior to entering the ditch and stormwater system. Possible mechanisms for prevention of sediment laden water entering the ditch directly include installation of sediment fencing or straw wattles, and/or use of a tiger floc system.
- Regularly inspect and maintain Erosion and Sediment Control measures for the duration of the project.

Measures must also be taken to prevent the risk of hazardous materials and contaminant spills, including oil, gas, and hydraulic fluid during construction. It is recommended that a large, labeled, mobile spill kit is kept onsite during construction works and that all construction equipment is kept in good working order without leaks.

7 CONCLUSION

The potential environmental impacts of the proposed development at 3494 Wishart Road have been presented in this report. The environmental impacts of the proposed development are reduced by concentrating the development plans in areas which have been historically disturbed and maintaining as much forest as possible in the west. As development plans progress, implementation of the mitigation and restoration measures recommended in this report, including invasive species removal, and native plant restoration within retained green space, will further minimize the residual impacts of the development on the environment resulting in relatively low overall environmental impact.

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APPENDIX A – SITE PHOTOGRAPHS

Photo 1. View west from driveway off Wishart Road. April 4, 2023.

Photo 2. Front of the Site along Wishart Road (view northeast) with rocky outcrop in the foreground. April 4, 2023.

Photo 3. Middle of the Site with forested area in background (view northwest). April 4, 2023.

Photo 4. Middle of the Site (view north). April 4, 2023.

Photo 5. Treed area near middle of Site at north boundary (view south). April 4, 2023

Photo 6. Western forested area with Scotch broom in understory (view west). April 4, 2023.

Photo 7. Edge of forested area (view south). April 4, 2023.

Photo 8. Open area east of forest (view south). April 4, 2023.

Photo 9. Rocky outcrop east of forest (view southwest). April 4, 2023.

Photo 10. Rocky outcrop at northwest corner (view north). April 4, 2023.

Photo 11. Typical view of understory within sharp-tailed snake polygon. April 4, 2023.

Photo 12. Typical view of understory within sharp-tailed snake polygon. April 4, 2023.

Photo 13. Small rocky outcrop near Delora Road (view north). April 4, 2023.

Photo 14. View of ditch from south boundary looking northeast. April 4, 2023.

Photo 15. View of ditch from north boundary looking southwest. April 4, 2023.

Schedule 5

HABITAT RESTORATION AND ENHANCEMENT PLAN

FOR 3494 WISHART ROAD

PREPARED FOR:

DAVID LUNN
WALKING STICK DEVELOPMENTS INC.
7401 VEYANESS ROAD
SAANICHTON, BC, V8M 1V9

AND

CITY OF COLWOOD
3300 WISHART RD
VICTORIA, BC V9C 1R1

CORVIDAE PROJECT #2023-038
AUGUST 19, 2024

CORVIDAE
ENVIRONMENTAL CONSULTING INC

6526 WATER STREET, SOOKE, BC

SOLUTION ORIENTED. PROTECTION OF THE ENVIRONMENT. ABSOLUTE INTEGRITY. OPEN COMMUNICATION. RESPECT.

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1 INTRODUCTION

Corvidae Environmental Consulting Inc. (Corvidae) is pleased to provide this Habitat Restoration and Enhancement Plan for 3494 Wishart Road (the Site; PID 005-210-089; LOT 3 SECTION 62 ESQUIMALT PLAN VIP10219) (Figure 1). Walking Stick Developments Inc. is proposing a multi-unit development on the Site. As part of the proposed development, a 0.1-hectare section of natural greenspace along the western edge of the Site will be retained and restored (see "Environmental Conservation Area" on Site Plan).

The Environmental Conservation Area is currently young second-growth forest with a high concentration of invasive species. The proposed restoration consists of invasive species removal and native species planting as recommended in the Environmental Assessment (EA) by Corvidae dated May 2023 ("the EA Report"). The restoration will improve the biodiversity and habitat value of the Environmental Conservation Area. This Habitat Restoration and Enhancement Plan has been requested by the City of Colwood and will be submitted as part of the development permit application for the Site.

1.1 SCOPE OF WORK

A Qualified Environmental Professional (QEP) from Corvidae completed an environmental assessment of the Site. The environmental assessment documented ecological features onsite and within adjacent areas where applicable, including forested areas, and disturbed areas. Following the field assessment, the proposed Environmental Conservation Area was selected because it has the highest habitat value on the Site. The following restoration plan was developed to further improve the area.

1.2 REGULATORY FRAMEWORK

The proposed works occur within the City of Colwood Hillside Environmental Development Permit Area (DPA). All works will be completed in accordance with the DPA guidelines and in accordance with relevant provincial and federal legislation[1].

[1] Please see the Environmental Assessment Report completed by Corvidae for further details.

Figure 1 Overall Site Plan

2 RESTORATION AND ENHANCEMENT

This plan is designed to protect sensitive ecosystems and was developed in accordance with:

- The City of Colwood OCP (City of Colwood 2022),
- Procedures for Mitigating Impacts on Environmental Values (Environmental Mitigation Procedures) (BC Ministry of Environment [MOE] 2014a),
- Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia (Government of BC 2014), and
- Environmental Best Management Practices for Urban and Rural Land Development in British Columbia (BC Ministry of Water, Land and Air Protection 2004).

INVASIVE SPECIES REMOVAL

The following invasive species were identified onsite during the assessment:

- Cherry-laurel (*Prunus laurocerasus*)
- English holly (*Ilex aquifolium*)
- Himalayan blackberry (*Rubus armeniacus)*
- Scotch broom (*Cytisus scoparius*)
- Spurge-laurel (*Daphne laureola*)
- Thistle (*Cirsium* sp.)

Other exotic weed species identified include reed canarygrass and orchard grass. Invasive species will be removed and disposed of appropriately, as directed by a QEP or another qualified professional. Bare areas that result will be re-vegetated with native species provided in Table 1.

NATIVE PLANT INSTALLATION

Corvidae recommends replanting the Environmental Conservation Area with native species typical of the Coastal Douglas-fir Moist Maritime (CDFmm) biogeoclimatic zone. Table 1 provides a list of recommended species that typically grow in this ecological community; and provides the estimated restoration cost. Information contained in Table 1 is subject to change based on plant availability and site conditions following invasive removal. Upon completion of invasive removal, the qualified professional will assess the quantity of plants required to revegetate bare areas. Installed plants will be spaced according to existing vegetation on site, with 1 to 2 m spacing and clustered planting to mimic natural habitats. The plant quantities in Table 1 were selected based on an assumption of 50% existing native vegetation for the 0.1-hectare area.

Table 1 - Plant List and Cost Estimate

Area (m2)	Species Common Name	Scientific Name	Pot Size	Plant Quantity	Price per plant	Total
1000	Arbutus	*Arbutus menziesii*	2 gal	10	*$45.00*	$450.00
	Garry oak	*Quercus garryana*	2 gal	10	*$45.00*	$450.00
	Bigleaf maple	*Acer macrophyllum*	2 gal	5	*$12.50*	$62.50
	Dull Oregon grape	*Mahonia nervosa*	10 cm	40	*$11.50*	$460.00
	Tall Oregon-grape	*Mahonia aquifolium*	1 gal	20	*$11.50*	$230.00
	Oceanspray	*Holodiscus discolor*	1 gal	20	*$11.50*	$230.00
	Nootka rose	*Rosa nutkana*	1 gal	20	*$11.50*	$230.00
	Indian plum	*Oelmeria cerasiformis*	1 gal	20	*$11.50*	$230.00
	Saskatoon	*Amelanchier alnifolia*	1 gal	20	*$11.50*	$230.00
	Salal	*Gaultheria shallon*	10 cm	50	*$8.00*	$400.00
	Sword fern	*Polystichum munitum*	10 cm	50	*$8.00*	$400.00
	Installation Costs					$5,000.00
	Irrigation system					$3,000.00
	Monitoring	2 site visits to oversee restoration works				$700.00
					Subtotal	$12,073
					GST	$604
					Total	$12,676

MITIGATION MEASURES

WILDLIFE

Invasive plant removal should be completed outside of the migratory bird window (prior to March 15th or after August 31st; Government of Canada 2018). If invasive removal is scheduled within the migratory bird window, a QEP should conduct nest search surveys a maximum of 2-3 days prior to the start of activities. If an active nest is discovered during nest search or clearing activities, the nest will be subject to site-specific mitigation measures until the young have naturally fledged/left the area. Multiple nest sweeps may be required.

Retain natural cover such as leaf litter, fallen logs, bark, and rocks. Placement of additional rocks or logs in sunny areas is also recommended to add habitat features for reptiles.

INVASIVE REMOVAL

All invasive vegetation removal will be done by hand and using hand-held equipment, or a mini-excavator with a skilled operator, to avoid disturbance to native vegetation. For the start and completion of clearing a QEP should be on site to direct the invasive removal. Additional mitigation measures for invasive species are provided in the EA report.

IRRIGATION

Following the native plant installation, the new plants should be irrigated for a two to three year period, until established. This involves weekly irrigation during dry periods.

EROSION AND SEDIMENT CONTROL

To reduce risk of erosion and sedimentation during restoration activities, schedule work to avoid periods of heavy rainfall (>20 mm in 24 hrs) and re-plant bare areas promptly after invasive removal.

3 CONCLUSION

Significant negative environmental impacts are not anticipated as a result of the invasive species removal within the Environmental Conservation Area at 3494 Wishart Road. Works will be overseen by a QEP. Enhancement of the area through invasive species removal and planting of native species characteristic of the area will improve biodiversity and increase wildlife and habitat value over time.

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5 APPENDIX A – SITE PHOTOGRAPHS

Photo 1. Invasive species within Environmental Conservation Area. April 4th, 2023.

Photo 2. Invasive species within Environmental Conservation Area. April 4th, 2023.

Photo 3. Invasive species within Environmental Conservation Area. April 4th, 2023.

Photo 4. Invasive species within Environmental Conservation Area. April 4th, 2023.

Photo 5. Invasive species within Environmental Conservation Area. April 4th, 2023.

Photo 6. Invasive species within Environmental Conservation Area. April 4th, 2023.

Schedule 6

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3494 Wishart Road, Colwood

Construction Impact Assessment &

Tree Management Plan

PREPARED FOR: David Lunn
Lunn Projects
7401 Veyaness Road,
Victoria, BC V8M 1V9

PREPARED BY: Talmack Urban Forestry Consultants Limited
Garrett Whelan
ISA Certified #ON-2772A
Tree Risk Assessment Qualified

DATE OF ISSUANCE: October 25th, 2024 (Original May 16, 2023)

CONTENTS

APPENDICES

REVISION RECORD

REVISION	DESCRIPTION	DATE (YYYY-MM-DD)	ISSUED BY
F0	Original TPP report	2023-05-11	GW
F1	Updated TPP report	2023-05-16	GW
F2	Updated TPP report to reflect changed development plan	2023-09-19	GW
F3	Updated TPP report to address use of greenspace areas for construction staging	2024-08-12	TT
F4	Updated TPP for Maple #35 removal for retaining wall construction	2024-08-15	TT
F5	Update TPP to reflect City Comments	2024-10-25	TT + CC

1. INTRODUCTION

David Lunn (Client) retained Talmack Urban Forestry Consultants Limited (Talmack) to complete a tree inventory, construction impact assessment and tree management plan for the following proposed project:

Site:	3494 Wishart Road, Victoria BC
Municipality:	City of Colwood
Client Name:	Lunn Projects
Dates of Site Visit(s):	April 5, 2023, & August 14th, 2024
Site Conditions:	Pre-Construction

The purpose of this report is to address requirements of the City of Colwood arborist report terms of reference, and Urban Forest Bylaw No. 1735. The findings of this report are based solely on the survey (Powell & Associates March 2023), civil plans by OnPoint Project Engineers LTD. (August 9th, 2024), architectural plan/site plan by Walking Stick Drafting (August 9th, 2024), Landscape plans by LADR Landscape Architects (October 17th, 2024), and civil grading plans by OnPoint Project Engineers LTD. (October 10th, 2024).

2. TREE INVENTORY METHODOLOGY

For this report, the size, health, and structural condition of trees and hedges within influencing distance of the proposed development were documented (*Appendix A*). Onsite, bylaw protected trees and hedges were labeled with metal numerated tags. Trees located on neighbouring properties were not tagged but identified as OS# in the inventory table. Trees located on municipal properties were not tagged but identified as M# in the inventory table. One tree in the inventory was changed from OS11 to a NT1 as the tree was thought to be on a neighbouring property at the time of the inventory (before survey was completed). Each onsite tree was visually examined on a limited visual assessment basis (level 1), in accordance with Tree Risk Assessment Qualification (TRAQ) methods (Dunster *et al.* 2017) and ISA Best Management Practices.

3. EXECUTIVE SUMMARY

The client has proposed the construction of fifty (50) dwellings, greenspace, and an access road at 3494 Wishart Road, Colwood BC. As part of the development process, Talmack was retained to complete a tree inventory, construction impact assessment and tree management plan. A total of one hundred and fourteen (114) trees were included in the inventory. Of these one hundred and fourteen (114) trees there were one hundred and ten (110) that were considered bylaw-protected by size/species. The tree inventory identified one hundred and three (103) onsite trees, and eleven (11) off-site trees within influencing distance of the proposed project.

Of the inventoried trees, seventy-nine (79) trees are proposed for removal, all of which are onsite trees. Sixteen (16) onsite trees and ten (10) offsite trees are to be retained. Eight (8) onsite trees and one (1) offsite tree have been given the status of “to be determined” (TBD).

As per City of Colwood requirements outlined in Bylaw No. 1735 one hundred and fifty-two (152) replacement trees will be required for the removal of seventy-six (76) bylaw protected trees. An additional eighteen (18) replacement trees may be required depending on the final retention status of the eight (8) onsite bylaw protected “TBD” trees, and the one (1) offsite bylaw protected “TBD” tree. The Landscape plan provided by LADR Landscape Architects (October

10th, 2024) indicates the planting of exactly one-hundred and fifty-two (152) trees. This meets the required 152 required replacement trees for the removal of seventy-six (76) on-site bylaw protected trees. Due to limited spacing and soil volume, the removal of any trees listed as "TBD" (if necessary) will likely be proposed as a cash in lieu payment to the city of Colwood. Any replacement planting shortfall will require a cash-in-lieu payment to the City of Colwood at a rate of $1000/tree.

4. TREE INVENTORY DEFINITIONS

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

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

DBH: Diameter at breast height – diameter of trunk, measured in centimeters at 1.4m above ground level. For multi-stemmed trees, the DBH is equal to the summation of the DBH of the three largest stems. For trees on a slope, it is taken at the average point between the high and low side of the slope. * Measured over ivy, ~ Approximate due to inaccessibility or on neighbouring property

Dripline: Indicates the radius of the crown spread measured in meters 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 consider individual tree characteristics, such as health and vigor. Three ratings are assigned based on our knowledge and experience with the tree species: Poor (P), Moderate (M) or Good (G).

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

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

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

Health Condition:

- Poor – significant signs of visible stress and/or decline that threaten the long-term survival

of the specimen

- Fair – signs of stress
- Good – no visible signs of significant stress and/or only minor aesthetic issues

Structural Condition:

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

Suitability ratings are described as follows:

Rating: Suitable.

- A tree with no visible or minor health or structural defects, is tolerant to changes to the growing environment and is a possible candidate for retention provided that the critical root zone can be adequately protected.

Rating: Conditional.

- A tree with good health but is a species with a poor tolerance to changes to its growing environment or has a structural defect(s) that would require that certain measures be implemented, in order to consider it suitable for retention (i.e., retain with other codominant tree(s), structural pruning, mulching, supplementary watering, etc.)

Rating: Unsuitable.

- A tree with poor health, a major structural defect (that cannot be mitigated using ANSI A300 standards), or a species with a poor tolerance to construction impacts, and unlikely to survive long term (in the context of the proposed land use changes).

Retention Status:

- Remove – 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
- 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.

5. SITE INFORMATION & PROJECT UNDERSTANDING

The project is proposed within the existing lot at 3494 Wishart Road, Colwood BC. It is understood that the following items will be completed under the proposal:

- Removal of selected onsite trees
- Demolition of existing onsite buildings
- Excavation for building foundations
- Grading of site
- Construction of road and new buildings
- Installation of new landscape features

6. FIELD OBSERVATIONS

The site contains an existing buildings, horse paddock, trees, and hardscaping. The tree resources within influencing distance of the project are predominantly in the forested area at the western side of the property.

Figure 1: Site context aerial photo. The approximate boundary of the proposed project at 3494 Wishart Road, Victoria BC is outlined in yellow.

7. TREE RISK ASSESSMENT

During our April 5, 2023 and August 14th, 2024, site visits and in conjunction with the tree inventory, onsite trees were assessed for risk, on a limited visual assessment basis (level 1), and in the context of the existing land uses. The time frame used for the purpose of our assessment is one year (from the date of the tree inventory). Unless otherwise noted herein, we did not conduct a detailed (level 2) or advanced (level 3) risk assessment, such as resistograph testing, increment core sampling, aerial examinations, or subsurface root/root collar examinations.

Existing Land Uses

We did not observe any trees that were deemed to be moderate, high, or extreme risk in the context of the existing land uses, that would require hazard abatement to eliminate present and/or future risks (within a 1-year timeframe). Targets considered during this TRAQ assessment included: existing structures (constant use), occupants of existing structures (constant use), vehicles within the onsite parking areas (frequent use), occupants of vehicles travelling on Wishart Road (frequent use), and pedestrians travelling along existing roadways/sidewalks (frequent use).

Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impact			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Figure 2: Likelihood and Risk Rating Matrices used to evaluate tree risk in the ISA Tree Risk Assessment Manual, Second Edition (Dunster et al. 2017).

8. CONSTRUCTION IMPACT ASSESSMENT

8.1. RETENTION AND REMOVAL OF ONSITE TREES

The following bylaw protected onsite trees (indicated by tag #) are located where they may be possible to retain, provided the mitigation measures outline in this report are followed.

Retain and Protect sixteen (16) bylaw protected onsite trees

- 576, 577-583, 619-621, 627, 629, 630, 648, 649

The following bylaw protected onsite trees (indicated by tag #) are located where they may be possible to retain depending on the impacts during construction and their final retention status will be determined during excavation by the project arborist. The tree's owner should be notified prior to the day of excavation that their tree may not be able to be retained.

Retention status of eight (8) bylaw protected onsite trees "to be determined"

- 585, 618, 622, 625, 626, 628, 641, 647

The following bylaw protected size onsite trees (indicated by tag/ID #) are located where they are likely to be impacted by proposed onsite construction and are proposed for removal (shown on the tree management plan in *Appendix B*):

Remove seventy-six (76) bylaw protected onsite trees

- 24-35, 563-575, 584, 586-617, 623, 624, 631-640, 642-646, NT1

The following non-bylaw protected size onsite trees (indicated by tag #) are located where they are likely to be impacted by proposed onsite construction and are proposed for removal (shown on the tree management plan in Appendix B):

Remove three (3) non-bylaw protected onsite trees

- 36, 37, 562

8.1.1. Additional Information and Mitigation Measures for Onsite Trees

Several mitigation techniques will be employed to retain the onsite trees identified in the Tree Management Plan (*Appendix B*). Every effort will be made to preserve the trees marked as "to be determined"; however, the final retention status of these trees will be determined onsite by the project arborist during excavation and blasting activities.

Tree protection fencing, as indicated in *Appendix B*, will be installed to safeguard the trees and their CRZs from mechanical damage and compaction. The fencing will also prevent materials or fill from being piled within the CRZs of trees to be retained. Additionally, three areas of the property have been designated for greenspace where replacement trees are to be planted. Where possible tree protection zones should encapsulate desired green space areas to preserve these areas for future replanting. However, on this site where locations for site and construction staging is limited, it is likely that these future greenspace areas will be required for this use. Therefore, following construction it will be necessary to aerate and amend the soils where required within these zones prior to commencing the landscape and replanting phase.

When walking equipment through the CRZs of trees to be retained, plywood (2 layers of 19mm) or another soil compaction mitigation technique (see Section 9) should be used.

All excavation within the CRZs or blasting activities onsite must be supervised by the project arborist. Line drilling and pre-shearing should be used as blasting operations approach retained trees or trees that are "TBD" to prevent back breaking of the rock and impacting the trees.

During our August 14th, 2024, site visit, we re-examined the health and structure of on-site bylaw protected tree **#**35 along with the potential impacts from the proposed construction. We observed numerous structural defects within the canopy that would be difficult to mitigate the risk to new targets that will be introduced from the proposed construction. Plans provided to date indicate significant grade changes within the CRZ of this tree that would be detrimental to the health and structure of the tree. Given its current condition (noted in the tree inventory), and impacts from the proposed construction, we believe retention is unlikely long term, even if certain mitigation measures are followed. This tree is selected for removal.

On-site bylaw protected tree **#618** is located where it may be impacted by the proposed construction and has been given the retention status "to be determined". Based on plans provided to date indicate grade changes ~5-6m from the trunk of this tree for the building foundation. Excavation for the building foundation is far enough away that retention should be possible, however critical rooting structures may be encountered during excavation that may influence the retention of this tree. Following excavation, supplemental irrigation is recommended during the hot summer months, along with mulch applications within the root zone will aid the tree in adapting to any root loss caused by construction.

On-site bylaw protected trees **585, 576, 577, 581, 582, 579, 580, 583,** & **584** are located where they may be impacted by the grade changes for the proposed re-landscaping. Project arborist is to review the possible grade changes at the time of landscape installation within the CRZ of these trees.

8.2. RETENTION AND REMOVAL OF PRIVATE OFFSITE TREES

The following bylaw-protected offsite trees (indicated by ID#) are located where they may be possible to retain, provided the mitigation measures outline in this report are followed.

Retain and Protect nine (9) bylaw protected off-site trees

- OS2-OS10

The following non-bylaw protected offsite tree (indicated by ID#) is located where it may be possible to retain, provided the mitigation measures outline in this report are followed.

Retain and Protect one (1) bylaw protected off-site tree

- OS1

The following bylaw protected offsite tree (indicated by ID #) is located where it may be possible to retain depending on the impacts during construction and the final retention status will be determined during excavation by the project arborist. The tree's owner should be notified prior to the day of excavation that their tree may not be able to be retained.

Retention status of one (1) bylaw protected off-site tree "to be determined"

- OS12

8.2.1. Additional Information and Mitigation Measures for Offsite Trees

Similar mitigation techniques will be employed to retain the offsite trees identified in the Tree Management Plan (*Appendix B*). Every effort will be made to preserve the trees marked as "to be determined"; however, the final retention status of these trees will be determined onsite by the project arborist during excavation and blasting activities.

Tree protection fencing around OS1-OS4, as indicated in *Appendix B*, will be installed to safeguard the trees and their CRZs from mechanical damage and compaction. The fencing will also prevent materials or fill from being piled within the CRZs of trees to be retained.

When walking equipment through the CRZs of trees to be retained, plywood (2 layers of 19mm) or another soil compaction mitigation technique (see Section 9) should be used.

All excavation within the CRZs or blasting activities onsite must be supervised by the project arborist. Line drilling and pre-shearing should be used as blasting operations approach retained trees or trees that are "TBD" to prevent back breaking of the rock and impacting the trees.

9. IMPACT MITIGATION

Tree Protection Barrier: The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing (see *Appendix B* for municipal barrier specifications). Where possible, fencing should be erected at the perimeter of the critical root zone. The barrier fencing to be erected 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 flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e., demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the

protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

Arborist Supervision: All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any severed or severely damaged roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. In particular, the following activities should be completed under the direction of the project arborist:

- All excavation with the critical root zones of retained bylaw protected trees
- Any pruning efforts of retained tree for access of equipment should be completed under the direction of the project arborist and fulfilled by an ISA certified arborist
- All blasting operations on the property

Methods to Avoid Soil Compaction: In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
- Placing two layers of 19mm plywood.
- Placing steel plates.

Demolition of the Existing Buildings: The demolition of the existing houses, driveways, and any services that must be removed or abandoned, must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision and direction of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.

Paved Surfaces Above Tree Roots:

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

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

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

Mulching: Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces

and be 5-8cm deep. No mulch should be touching the trunk of the tree. See "methods to avoid soil compaction" if the area is to have heavy traffic.

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

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

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

Arborist Role: It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:

- Locating the barrier fencing
- Reviewing the report with the project foreman or site supervisor
- Locating work zones, where required
- Supervising any excavation within the critical root zones of trees to be retained
- Reviewing and advising of any pruning requirements for machine clearances

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

10. DISCLOSURE STATEMENT

This arboricultural field review report was prepared by Talmack Urban Forestry Consultants Ltd. for the exclusive use of the Client and may not be reproduced, used, or relied upon, in whole or in part, by a party other than the Client without the prior written consent of Talmack Urban Forestry Consultants Ltd. Any unauthorized use of this report, or any part hereof, by a third party, or any reliance on or decisions to be made based on it, are at the sole risk of such third parties. Talmack Urban Forestry Consultants Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, in whole or in part.

Arborists are professionals who examine trees and use their training, knowledge, and experience to recommend techniques and procedures that will improve a tree's 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. The arborist's review is limited to a visual examination of tree health and structural condition, without excavation, probing, resistance drilling, increment coring, or aerial examination. There are inherent limitations to this type of investigation, including, without limitation, that some tree conditions will inadvertently go undetected. The arborist's review followed the standard of care expected of arborists undertaking similar work in British Columbia under similar conditions. No warranties, either express or implied, are made as to the services provided and included in this report.

The findings and opinions expressed in this report are based on the conditions that were observed on the noted date of the field review only. The Client recognizes that passage of time, natural occurrences, and direct or indirect human intervention at or near the trees may substantially alter discovered conditions and that Talmack Urban Forestry Consultants Ltd. cannot report on, or accurately predict, events that may change the condition of trees after the described investigation was completed.

It is not possible for an Arborist to identify every flaw or condition that could result in failure, nor can he/she guarantee that the tree will remain healthy and free of risk. The only way to eliminate tree risk entirely is to remove the entire tree. All trees retained should be monitored on a regular basis. 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.

Immediately following land clearing, grade changes or severe weather events, all trees retained should be reviewed for any evidence of soil heaving, cracking, lifting or other indicators of root plate instability. If new information is discovered in the future during such events or other activities, Talmack Urban Forestry Consultants Ltd. should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein.

11. IN CLOSING

We trust that this report meets your current needs. The civil, servicing, grading, landscape, and architectural plans have been reviewed and adjustments to the report have been made accordingly. Should there be any questions regarding the information within this report, please do not hesitate to contact the undersigned.

Yours truly,

Talmack Urban Forestry Consultants Ltd.

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The City of Colwood Urban Forest Bylaw No. 1735.

13. COMPANY INFORMATION

General Liability: Intact Insurance, Policy No. 5V2147122: $5,000,000

APPENDIX A - TREE INVENTORY TABLE

Table 2: Tree Inventory Table

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
562	Yes	Shared	**No**	Red alder	*Alnus rubra*	58		12	8.7	Poor	Poor	Poor	Unsuitable	Measured below union, decay in trunk, multiple large failures, surface rooting	Currently outside of striking distance of targets	**Remove**
037	Yes	On	**No**	English walnut	*Juglans regia*	30, 29, 25, 27	55.6	12	8.3	Poor	Good/fair	Fair	Unsuitable	Historical topping, sap sucker injury, active inclusions between scaffold limbs weakly attached epicormics		**Remove**
36	Yes	On	**No**	English walnut	*Juglans regia*	45		10	6.8	Poor	Good/fair	Fair	Unsuitable	Historically topped sapsucker damage, weakly attached epicormics		**Remove**
033	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	38		8	5.7	Poor	Fair	Fair	Unsuitable	Measured below union, asymmetrical crown, leans heavily to the east, twig dieback, rooted against stump		**Remove**
34	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	34, 34, 29, 21	60.0	10	7.2	Moderate	Good	Fair	Unsuitable	Lower trunk is enveloping metal, some deadwood, quadra dominance from base, included bark		**Remove**
035	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	126		17	15.1	Moderate	Fair	Fair/poor	Conditional	Decay on south side (former failed stem) response growth around it, codominant at ~2.5m, failed second stem with large end weighted lateral, large epicormics, large deadwood in primary leader	See section 8.1.1	**Remove**
563	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	150		13	18.0	Moderate	Fair	Poor	Unsuitable	Multiple stems, old stump with water sprout growth		**Remove**
564	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	44		8	6.6	Poor	Good	Good/fair	Unsuitable	Suppressed by grand fir, growing 1.5m north of neighbouring fence line, slightly asymmetrical		**Remove**

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				Common	Botanical						Health	Structural				
565	Yes	On	**Yes**	Grand fir	*Abies grandis*	45		7	6.8	Poor	Good	Good/fair	Unsuitable	Asymmetrical crown from alder, growing right beside neighbours fence (northside)		**Remove**
OS1	Yes	Off	**No**	Red alder	*Alnus rubra*	~22, ~9	23.8	10	3.6	Poor	Fair	Fair	Suitable	Previous stem failure, included bark in union, high crown, overhangs property by ~6m		**Retain**
OS2	Yes	Off	**Yes**	Douglas fir	*Pseudotsuga menziesii*	~55		10	8.3	Poor	Good	Good/fair	Suitable	Corrected lean,		**Retain**
OS3	Yes	Off	**Yes**	Western red cedar	*Thuja plicata*	~45		9	6.8	Poor	Good/fair	Good/fair	Suitable	Asymmetrical crown		**Retain**
OS4	Yes	Off	**Yes**	Western red cedar	*Thuja plicata*	~55		9	8.3	Poor	Good/fair	Good/fair	Suitable	Asymmetrical crown due to competition,		**Retain**
566	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	114		13	13.7	Moderate	Poor	Poor	Unsuitable	Main stem failure, extensive decay, large poorly attached epicormics, hollow trunk, severely end weighted scaffold limbs	Currently outside of striking distance of targets	**Remove**
567	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	53		9	8.0	Poor	Good/fair	Fair/poor	Unsuitable	Historically topped, shear planes and cracked limbs, deflections in upper trunk		**Remove**
568	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	41		7	6.2	Poor	Fair/poor	Fair/poor	Unsuitable	Deflection in upper trunk, suppressed, dead top,		**Remove**
569	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	65, 67	93.3	13	14.0	Poor	Good	Fair/poor	Unsuitable	Stems fused at base, multiple deflections, secondary leaders, very end weighted limbs, asymmetrical crowns		**Remove**
570	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	11		2	1.7	Poor	Poor	Poor	Unsuitable	Functionally dead	Currently outside of striking distance of targets, small size limits damage that could occur	**Remove**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
571	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	70		11	10.5	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, surface root to the south, irregular bark pattern on lower trunk		**Remove**
572	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	60		10	9.0	Poor	Fair/poor	Fair/poor	Unsuitable	Substantial cavity on lower trunk, signs of canker infection, canopy weighted to the north, fused with Douglas fir until around 2.5m		**Remove**
573	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	45		7	6.8	Poor	Fair	Fair/poor	Unsuitable	Suppressed, fused with arbutus, mechanical injury on trunk at ~9m, sparse canopy		**Remove**
574	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	45		5	6.8	Poor	Fair	Fair	Unsuitable	Narrow crown, epicormic on trunk, irregular bark pattern on lower trunk		**Remove**
575	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	51		5	7.7	Poor	Fair/poor	Fair/poor	Unsuitable	Irregular bark pattern in lower trunk, stressed, epicormics on trunk, missing top, lower deadwood		**Remove**
576	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	37		5	5.6	Poor	Fair/poor	Fair	Suitable	Sparse, stressed, narrow, epicormics on trunk, irregular bark pattern on lower trunk	Monitor health, assess prior to installation of playground	**Retain**
577	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	61		12	9.2	Poor	Fair	Fair	Suitable	Asymmetrical crown, quite stressed, deadwood,	Monitor health, assess prior to installation of playground	**Retain**
578	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	3x38, 25	70.4	16	8.4	Moderate	Good	Fair	Suitable	Seam in western most leader, included bark, hangers,		**Retain**
579	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	70		12	10.5	Poor	Good/fair	Fair	Suitable	Asymmetrical crown, lots of deadwood	Crown clean/deadwood if retaining	**Retain**
580	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	46		9	6.9	Poor	Fair	Fair	Suitable	Asymmetrical crown, suppressed by fir		**Retain**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
581	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	52		7	7.8	Poor	Fair	Fair	Suitable	Corrected lean, deadwood, sparse asymmetrical crown	Monitor health, assess prior to installation of playground, deadwood, and crown clean	**Retain**
582	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	47		7	7.1	Poor	Fair	Fair	Suitable	Suppressed, asymmetrical crown,	Monitor health, assess prior to installation of playground	**Retain**
583	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	34		6	5.1	Poor	Good	Good/fair	Suitable	Asymmetrical crown, highly vigorous, surface rooting,		**Retain**
584	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	40		11	6.0	Poor	Good/fair	Fair	Suitable	Measured at roughly 1.4m from germination point, heavy lean east		**Retain**
585	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	72		13	10.8	Poor	Good/fair	Good/fair	Conditional	Asymmetrical crown weighted to the west,	Arborist supervision while excavating within CRZ	**TBD**
586	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	36		6	5.4	Poor	Fair/poor	Fair	Unsuitable	Narrow asymmetrical crown, corrected leans, bends in trunk, health stress, epicormics on trunks		**Remove**
587	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	61		11	9.2	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, irregular bark pattern on lower trunk		**Remove**
588	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	30		6	4.5	Poor	Good/fair	Good/fair	Unsuitable	Rooted on edge of bank (fill), vigorous upper canopy		**Remove**
589	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	30		5	4.5	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, vigorous upper canopy, rooted on edge of bank (fill)		**Remove**
590	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	33		5	5.0	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, rooted on edge of bank (fill)		**Remove**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
591	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	38		7	5.7	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, rooted on edge of bank (fill)		**Remove**
592	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	38		8	5.7	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, rooted on edge of bank (fill)		**Remove**
593	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	31		7	4.7	Poor	Good/fair	Good/fair	Unsuitable	Corrected lean, quite vigorous,		**Remove**
594	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	31		8	4.7	Poor	Good/fair	Good/fair	Unsuitable	Quite vigorous, surface rooting		**Remove**
032	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	39, 18	43.0	8	6.4	Poor	Fair	Far/poor	Unsuitable	Hanger, cavity at base,		**Remove**
30	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	93		12	14.0	Poor	Good/fair	Fair/poor	Unsuitable	Big surface roots, codom @~1.5m, recent top failure, stump beside tree		**Remove**
031	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	49, 36	60.8	14	9.1	Poor	Fair	Fair	Unsuitable	Codom @ 0.5m attachment okay, balsam cavity on eastern side, twig dieback, some deadwood		**Remove**
595	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	43, 20, 12	48.9	12	7.3	Poor	Good/fair	Poor	Unsuitable	Growing on old stump, surface rooting,		**Remove**
596	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	20		4	3.0	Poor	Fair/poor	Poor	Unsuitable	Remnants of larger tree, substantial decay at base		**Remove**
597	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	30		7	4.5	Poor	Good/fair	Fair/poor	Unsuitable	Canopy weighted to the east, cavity at base		**Remove**
025	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	41, 34		11	8.0	Poor	Fair/poor	Fair	Unsuitable	Canopy weighted to the north, third stem removed, sparse brown foliage		**Remove**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
598	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	22		5	3.3	Poor	Fair/poor	Fair/poor	Unsuitable	Leans south, crown mostly epicormics		**Remove**
599	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	25		11	3.8	Poor	Fair/poor	Fair	Unsuitable	stressed, brown leaves, lots of epicormics		**Remove**
600	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	40		12	6.0	Poor	Fair/poor	Fair	Unsuitable	Stressed, brown leaves, lots of epicormics		**Remove**
27	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	70		14	10.5	Poor	Good	Fair/poor	Unsuitable	Corrected lean, codominant		**Remove**
601	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	38		4	5.7	Poor	Fair/poor	Poor	Unsuitable	Measured below union, sharp deflection with decay/cavity on underside, dead codom, large deadwood, twig dieback, small browning foliage		**Remove**
602	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	24		8	3.6	Poor	Fair	Good/fair	Unsuitable	Twig dieback, stunted		**Remove**
26	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	67		14	10.1	Poor	Good	Fair	Unsuitable	Asymmetrical due to historic tree to the east, end weighted limbs		**Remove**
603	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	27		7	4.1	Poor	Fair	Fair/poor	Unsuitable	Deflected leader, canopy weighted to the south		**Remove**
604	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	31		8	4.7	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical crown, surface roots, small deadwood in crown		**Remove**
605	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	9, 5, 4	11.0	6	1.7	Poor	Poor	Poor	Unsuitable	Water sprouts from removed tree		**Remove**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
606	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	14		3	2.1	Poor	Fair	Fair/poor	Unsuitable	Growing over slab of rock,		**Remove**
24	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	36, 32, 28, 15, 11, 5	58.9	13	8.8	Poor	Fair/poor	Fair/poor	Unsuitable	Couple of large stems that have failed/removed decay from these old wounds, twig dieback		**Remove**
607	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	~30		3	4.5	Poor	Poor	Poor	Unsuitable			**Remove**
608	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	27, 32	41.9	7	6.3	Poor	Fair	Fair	Unsuitable	Codom from 0.4m, tops are dead, branches trying to establish apical dominance, suppressed by arbutus		**Remove**
609	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	27		6	4.1	Poor	Fair	Fair/poor	Unsuitable	Lean to the northwest, canopy weighted to northwest, dead lateral, rooted next to large decaying stump,		**Remove**
610	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	12, 9, 3	15.3	5	2.3	Poor	Poor	Poor	Unsuitable	Growing from stump, leans heavily to south		**Remove**
611	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	31		7	4.7	Poor	Fair	Fair/poor	Unsuitable	Pronounced cavity, twig dieback,		**Remove**
612	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	12		4	1.8	Poor	Fair/poor	Fair/poor	Unsuitable	Cavity at base, lots of dieback		**Remove**
613	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	~20		4	3.0	Poor	Fair	Fair/poor	Unsuitable	Cavity at base, twig dieback,		**Remove**
615	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	26, 18	31.6	7	4.7	Poor	Fair	Fair	Unsuitable	Codom at 0.4m, twig dieback,		**Remove**
614	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	6, 3, 1	6.8	2	1.0	Poor	Poor	Poor	Unsuitable	Sprouts from decaying stump		**Remove**

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				Common	Botanical						Health	Structural				
616	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	10		1	1.5	Poor	Poor	Poor	Unsuitable	Measured 1.4m from germination point, mostly dead, previously topped		**Remove**
617	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	21		4	3.2	Poor	Fair	Poor	Unsuitable	Cavity at base, measured at ~1m, lower trunk nearly fused with small maple, some twig dieback, branch failure		**Remove**
028	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	75		13	11.3	Poor	Good	Fair	Unsuitable	Asymmetrical crown, small deadwood south side (canopy competition), very large exposed and damaged surface root to the east, newly exposed on south side		**Remove**
029	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	81		13	12.2	Poor	Good	Fair	Unsuitable	Pronounced root flare, asymmetrical crown, surface roots to the east, some deadwood, end weighted lower limbs, newly exposed south side		**Remove**
618	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	44		5	6.6	Poor	Fair	Fair	Conditional	Irregular bark pattern, very asymmetrical crown, some epicormics on trunk, newly exposed on south side	Arborist supervision while excavating within CRZ	**TBD**
619	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	31		9	4.7	Poor	Good	Good/fair	Suitable	Some chlorosis on south side (newly exposed), girdling roots,		**Retain**
OS5	Yes	Off	**Yes**	Arbutus	*Arbutus menziesii*	~15		8	2.3	Poor	Fair	Fair	Suitable	2.5m south of pl, most of crown on property, leaning, lower live crown ratio, newly exposed on south side		**Retain**
OS6	Yes	Off	**Yes**	Western red cedar	*Thuja plicata*	44		9	6.6	Poor	Good	Fair	Suitable	Newly exposed on south side, asymmetrical crown, multiple leaders		**Retain**
OS7	Yes	Off	**Yes**	Western red cedar	*Thuja plicata*	~20		5	1.7	Poor	Fair	Fair	Suitable	Asymmetrical crown, competing (suppressed), newly exposed on south side		**Retain**

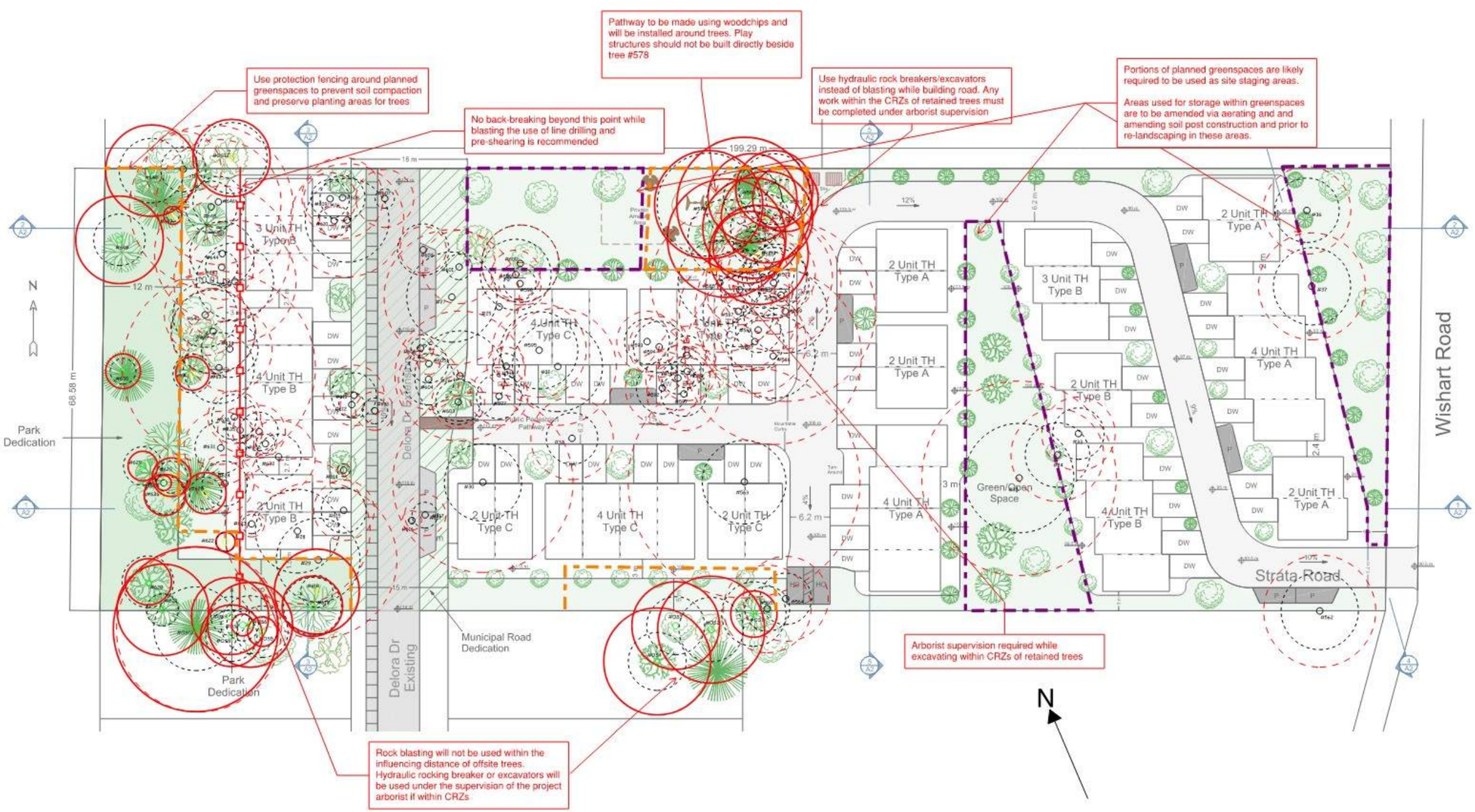
Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
OS8	Yes	Off	**Yes**	Arbutus	*Arbutus menziesii*	~32		8	4.8	Poor	Fair/poor	Fair/poor	Suitable	Weighted to east, newly exposed to south, 3.5m south of pl, high crown, branch failure, low live crown ratio		**Retain**
OS9	Yes	Off	**Yes**	Douglas fir	*Pseudotsuga menziesii*	40		6	6.0	Poor	Fair	Fair	Suitable	0.5m south of pl, asymmetrical crown, high narrow crown		**Retain**
OS10	Yes	Off	**Yes**	Douglas fir	*Pseudotsuga menziesii*	85		13	12.8	Poor	Good/fair	Fair	Suitable	~2.5m south of pl, large surface roots, deadwood, extended limbs		**Retain**
620	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	23, 19, 1	29.8	8	3.6	Moderate	Fair	Fair/poor	Suitable	Growing from stump		**Retain**
621	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	47		5	7.1	Poor	Fair	Poor	Suitable	Historical failure, asymmetrical narrow crown		**Retain**
622	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	10		3	1.5	Poor	Fair/poor	Fair/poor	Conditional	Cavity at base, twig dieback	Arborist supervision while excavating within CRZ	**TBD**
623	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	13		3	2.0	Poor	Fair	Poor	Unsuitable	Sprouting from old stump		**Remove**
624	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	25, 16	29.7	7	4.5	Poor	Fair/poor	Fair/poor	Unsuitable	Codom from base, cavity at base, twig dieback, branch failures		**Remove**
625	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	21, 4	21.4	5	3.2	Poor	Fair	Poor	Conditional	Large cavity, tearout injury,	Monitor health	**TBD**
626	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	20, 8	21.5	6	3.2	Poor	Fair	Fair/poor	Conditional	Third stem (decayed),		**TBD**
627	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	8		1	1.2	Poor	Fair/poor	Fair/poor	Suitable	Substantial decay at base (has holding wood good for size), stressed, low live crown ratio		**Retain**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
628	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	20		5	3.0	Poor	Fair	Fair/poor	Conditional	Some twig dies back, basal decay		**TBD**
629	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	15		6	2.3	Poor	Fair	Fair/poor	Suitable	Browning, twig dieback, cavity at base		**Retain**
630	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	18		4	2.7	Poor	Fair	Fair	Suitable	Twig dieback, codom, rooted beside stump, little bit of decay at base		**Retain**
631	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	38		8	5.7	Poor	Fair	Fair	Unsuitable	High narrow asymmetrical crown (due to presence of large trees historically), epicormics in trunk (stressed),		**Remove**
632	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	25, 22, 14, 12	38.1	7	5.7	Poor	Fair	Fair/poor	Unsuitable	Some decay at base, twig dieback		**Remove**
633	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	12		3	1.8	Poor	Fair/poor	Fair/poor	Unsuitable	Cavity at base, twig dieback		**Remove**
634	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	21, 18	27.7	6	4.1	Poor	Fair	Fair/poor	Unsuitable	Codom at base, small foliage, twig dieback, leaning to the east, cavity at base		**Remove**
635	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	23		4	3.5	Poor	Fair	Fair	Unsuitable	Small cavity at base, twig dieback, deflected leader (past leader failure), small lower trunk wound (compartmentalizing)		**Remove**
636	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	27		7	4.1	Poor	Fair	Fair/poor	Unsuitable	~3m long wound with decay in lower trunk (starting to seal), twig dieback in lower canopy		**Remove**
637	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	100		11	15.0	Poor	Fair	Poor	Unsuitable	Measured below unions, multiple leaders emerging from ~2m, cavity with decay near base, active inclusions in most unions, west side stem failure (35cm),		**Remove**

Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
638	Yes	On	**Yes**	Western red cedar	*Thuja plicata*	44		8	6.6	Poor	Good	Good/fair	Unsuitable	Codom tops (small),		**Remove**
639	Yes	On	**Yes**	Bigleaf maple	*Acer macrophyllum*	55		13	6.6	Moderate	Good/fair	Fair/poor	Unsuitable	Past stem failure (now cavity at base extensive decay no fruiting bodies), tri dominant leaders active seam, some deadwood, exposed roots on top side of slope		**Remove**
640	Yes	On	**Yes**	Grand fir	*Abies grandis*	42			6.3	Poor	Dead	Dead	Unsuitable	Fine twigs remaining	Unlikely to hit targets	**Remove**
641	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	17, 4	17.5	6	2.6	Poor	Fair	Fair/poor	Conditional	Decay at base larger stem historically removed, rooted on mound		**TBD**
642	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	63		12	9.5	Poor	Good	Good/fair	Unsuitable	Asymmetrical crown,		**Remove**
643	Yes	On	**Yes**	Grand fir	*Abies grandis*	33		5	5.0	Poor	Fair	Poor	Unsuitable	Highly irregular taper, lower trunk wounds, codom, deflected leader		**Remove**
644	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	70		10	10.5	Poor	Good/fair	Good/fair	Unsuitable	Asymmetrical high crown, some deadwood, epicormic growth on trunk		**Remove**
645	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	55, 60, 24	84.9	8	12.7	Poor	Good	Good/fair	Unsuitable	Larger stem has some deadwood		**Remove**
646	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	60, 24	64.6	8	9.7	Poor	Good	Good/fair	Unsuitable			**Remove**
647	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	9		2	1.4	Poor	Poor	Poor	Conditional	Growing on decayed stump		**TBD**

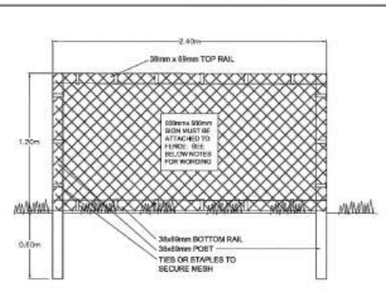
Tag or ID #	Surveyed? (Yes/No)	Location (On, Off, Shared, City)	Bylaw protected? (Yes/No)	Name		dbh (cm)	Calculated DBH	Dripline diameter (m)	Critical root zone radius (m)	Relative Tolerance	Condition		Retention Suitability (on-site trees)	General field observations/remarks	Tree retention / location comments	Retention status
				Common	Botanical						Health	Structural				
648	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	47		10	7.1	Poor	Fair	Fair/poor	Suitable	Surface roots, growing on rock, twig dieback, hangers, deadwood,		**Retain**
649	Yes	On	**Yes**	Douglas fir	*Pseudotsuga menziesii*	45		8	6.8	Poor	Good/fair	Good/fair	Suitable	Slight lean corrected,		**Retain**
NT1	Yes	On	**Yes**	Arbutus	*Arbutus menziesii*	~39		7	5.9	Poor	Fair/poor	Fair/poor	Unsuitable	Large tearouts on western stem, epicormic growth, browning, formerly OS11		**Remove**
OS12	No	Off	**Yes**	Bigleaf maple	*Acer macrophyllum*	~35, ~25, ~22, ~14	50.3	11	6.0	Moderate	Fair/poor	Fair/poor	Conditional	Surface roots, large failures, deadwood, epicormic growth, ~2.5m north of fence		**TBD**

APPENDIX B - TREE MANAGEMENT PLAN



LEGEND

- CRITICAL ROOT ZONE OF TREE TO BE REMOVED
- CRITICAL ROOT ZONE OF TREE TO BE RETAINED
- DRIPLINE OF TREE
- TREE TO BE REMOVED
- TREE TO BE RETAINED
- TREE RETENTION STATUS TO BE DETERMINED
- TREE PROTECTION FENCING
- TREE PROTECTION THAT MAY NEED TO BE ADJUSTED TO ALLOW STORAGE OF MATERIALS



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 600mm X 500mm SIGN WITH THE FOLLOWING WORDING: PROTECTED ROOT ZONE – NO ENTRY. 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

TREE PROTECTION NOTES

Tree protection barrier: 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 zone. The barrier fencing to be erected must be a minimum of 1200mm 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 flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

Arborist supervision: All excavation occurring within the critical root zones of protected trees must be completed under the supervision of the project arborist. Any severed or severely damaged roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound.

Demolition: The demolition of the existing houses, driveways, and any services that must be removed or abandoned must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.

Methods to avoid soil compation: In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15cm over top.
- Placing two layers of 19mm plywood.
- Placing steel plates.

Mulching: Mulching can be an important proactive step in maintaining the health or 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.

Pruning: We recommend that any pruning of bylaw-protected trees be performed to ANSI A300 standards and Best Management Practices.

Paved surfaces above tree roots: Where paved areas cannot avoid encroachment within critical root zones of trees to be retained, construction techniques, such as floating permeable paving, may be required. The "paved surfaces above tree roots" detail above offers a compromise to full depth excavation (which could impact the health or structural stability of the tree). The objective is to avoid root loss and to instead raise the paved surface above the existing grade (the amount depending on how close roots are to the surface and the depth of the paving material and base layers). Final grading plans should take this potential change into account. This may also result in soils which are high in organic content being left intact below the paved area. To allow water to drain into the root systems below, we also recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilitzed by Grasspave, Gravelpave, Grasscrete and open-grid systems.

Blasting and rock removal: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 vibrations and overall impact to 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 technical 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 the tree health and can lead to root and trunk decay.

Arborists 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 and machine access corridors where required.
- Supervising excavation for any areas within the critical root zones of trees to be retained including any proposed retaining wall footings and review any proposed fill areas near trees to be retained.

TREE MANAGEMENT PLAN

3494 Wishart Road

Colwood, BC

August 15, 2024

Prepared for: Lunn Projects

Scale: 1:700 @ 11" X 17"

Drawn By: GW

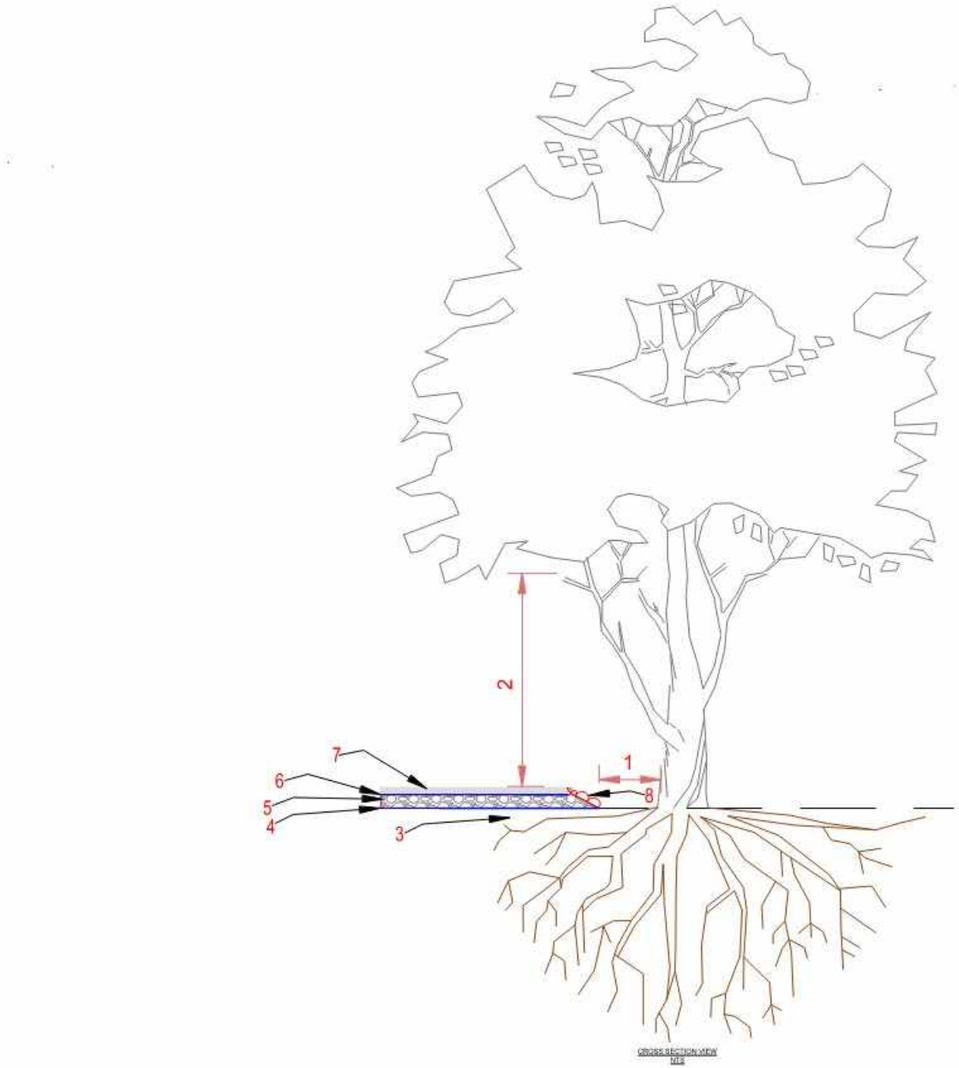
Reference Drawings: Concept Plan (Walking Stick Drafting, August 7 2023), Site Survey (Powell Associates, March 13 2023)

TALMACK URBAN FORESTRY Consultants Limited

Victoria, BC, V8Z 7H6
TEL: 250-479-8733
EMAIL: trees@talmack.ca
www.treehelp.ca

APPENDIX C – PAVED SURFACES ABOVE TREE ROOTS DIAGRAM

HARD SURFACE ABOVE TREE ROOTS DETAIL



CROSS SECTION VIEW
NTS

HARD SURFACE ABOVE TREE ROOTS NOTES

1. Maintain as large a setback between the fill encroachment and the root collar of the tree as possible.
2. Review any canopy clearance pruning requirements to accommodate vehicle or pedestrian clearances (Pruning to be performed to ANSI A300 standards).
3. Excavate the new footprint of the driveway or sidewalk under the supervision of the project arborist. Excavation will be limited to the removal of the existing sod layer. Excavation around root structures must be performed by hand, airspade, or hydroexcavation.
4. Install a two-dimensional (such as Combigrid $\frac{30}{50}$) or Three-dimensional geogrid reinforcement.
5. Install a 150mm depth layer of clear crushed gravel (no fines) using 20mm and/or 75mm diameter material or approved equivalent. *Note - the depth may be less than 150mm in some situations (dependant on grading constraints).
6. Install 4 oz non woven geotextile over the clear crushed gravel layer to prevent fine particles of sand from infiltrating this layer.
7. The bedding or base layer and new driveway or sidewalk surface can be installed directly on top of the felted filter fabric.
8. Fill slopes - where possible install loose stacked boulders to reduce the footprint of the fill slopes that encroach within the critical root zone. Fill slope materials must be permeable to air and water. Do not pile fill material directly against the trunk of a tree.

TALMACK
URBAN FORESTRY
Consultants Limited

Schedule 7

RYZUK GEOTECHNICAL
Engineering & Materials Testing
6-40 Cadillac Ave, Victoria, BC, V8Z 1T2 Tel: 250-475-3131 E-mail: mail@ryzuk.com www.ryzuk.com

October 1, 2024
File No: 11653-3

Walking Stick Developments Inc.
7401 Veyaness Road
Saanichton, BC
V8M 1V9

Attn: David Lunn (david@lunnprojects.ca)

Re: Geotechnical Assessment – Proposed Townhouse Development
3494 Wishart Road – Colwood, BC

As requested, we attended the referenced site on September 4th, 2024, to assess the existing geotechnical conditions pertaining to the proposed construction of a townhouse development. We understand the site is designated as being within the Natural Hazards Development Permit Area – Steep Slopes, as per the City of Colwood Official Community Plan, Bylaw 1700, amended September 26th, 2022, and requires a geotechnical evaluation prepared by a geotechnical professional. Our comments and recommendations pertaining to the proposed development are summarized herein. Our work has been completed in accordance with, and is subject to, the previously accepted Terms of Engagement.

The development site is rectangular shaped parcel approximately 1.36 Ha in area and bounded by Wishart Road to the east, and similar lots on all other sides. Based on the attached Site Survey, completed on March 13, 2023, the site slopes down from the west to Wishart Road on the east, with approximately 30 m of relief across the site. Terrain fluctuates between gentle and moderately sloped areas throughout the property with steeper sections occurring locally within bedrock outcrops. Level areas are present along the property frontage on Wishart Road and within the areas of the existing residence and shop buildings.

We understand the proposed development plans include the construction of 50 townhouse units, extending Delora Dr. through the western portion of the property as well as the construction of a strata road providing access into site from Wishart Road. The property is divided into Area 1 and Area 2 separated by the proposed Delora Drive extension. A retaining wall is proposed along the north property line to facilitate the construction of the strata road. The proposed building locations and associated infrastructure is shown on the attached Site Plan, dated August 9, 2024.

We understand that where terrain is sloping, the proposed buildings will be built into the slope, with the bottom level being a walkout onto the lower lawn or garage. The building is designed such that the existing grade of the slope will be retained once construction is completed.

During our site attendance, we noted that the site conditions generally matched that of the survey. Surface conditions comprised moderate to dense vegetation with sporadic grassy areas. Mature timbers were present further west near the proposed Delora Drive extension. Local bedrock outcrops were observed throughout with zones of soils between such that are anticipated to comprise local fills, and topsoil above dense mineral soils.

Given the shallow nature of the bedrock as well as the moderately sloping terrain, we consider that the slopes would not be subject to shallow or deep-seated instability. Accordingly, we believe that the proposed development can be carried out without negatively impacting slope stability and erosion conditions at the subject property as well as neighbouring properties.

Building pad preparation is anticipated to consist of removal of all vegetation, topsoil, disturbed native mineral soil, and other unsuitable material to expose a subgrade of glacial till or bedrock and excavation into bedrock (blasting) where required. Placement of 450 mm minus blast rock engineered fill may be carried out to establish grades where fills are required. This material is being placed in maximum 450 mm thick lifts and compacted with a 10-ton vibratory roller to 95% Standard Proctor Maximum Dry Density (SPMDD) or judged equivalent. For foundations atop bedrock, native mineral soil or engineered fill atop either, a bearing resistance of 150/225 kPa SLS/ULS is considered feasible for the proposed structures. If higher values are considered advantageous, such will be evaluated on a case-by-case basis.

Depending on the actual foundation subgrade conditions encountered during excavation, Site Classification 'C' is considered appropriate for all building locations. Improvement to Site Classification 'B' may be feasible where foundations are constructed atop bedrock or a thin veneer of engineered fill atop such. This would need to be assessed at the time of construction.

Based on the above and in accordance with Section 56 of the Community Charter, the Professional Practice Guidelines for Landslide Assessments in British Columbia (Appendix D: Landslide Assessment Assurance Statement is attached), and Bylaw 1700 of the City of Colwood Official Community Plan, we consider the site and proposed building locations as well as the driveway may be used safely for the use intended, that being the construction and use of a townhouse development. Our assessment considers a design seismic event with 2% probability of exceedance in 50 years.

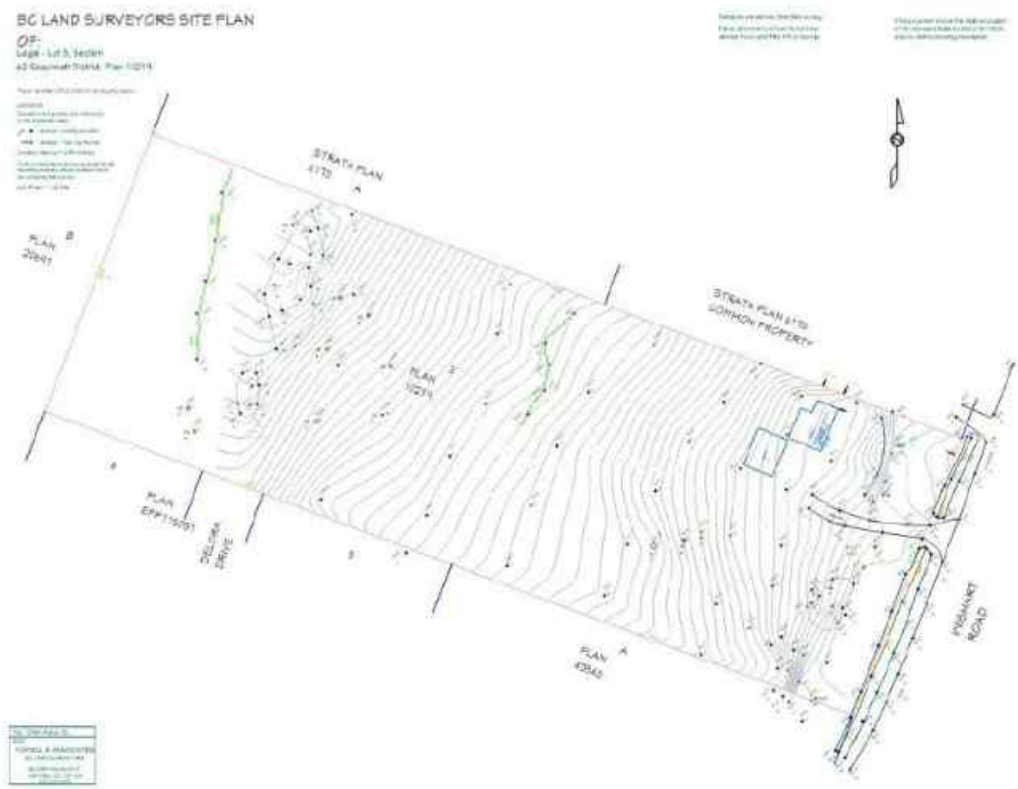
We trust the preceding is suitable for your purposes at present, however if you have any questions with respect to the above, please contact us.

Sincerely,
Ryzuk Geotechnical
PTPN: 1002996

Cam Schellenberg, P.Eng.
Lead Geotechnical Engineer

Attachments
Site Survey
Overall Development Site Plan
EGBC Landslide Hazard Assurance Statement

Subdivision & Existing Site Plan



PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
3	08/02/2024	Development Permit

Drawn by:

Walking Stick Drafting

Sheet No:	A 0.1
Drawing Title:	Subdivision Plan Existing Site Plan
Scale:	Scale 1:400

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit
Development

Overall Site Plan

Legend

- Private Green Space
- Private Amenity Space
- Municipal Road Dedication
- Wood Chip Trail
- Environmental Conservation Area

Refer to Landscape Plan for detailed tree planting quantity and species information.

PROFESSIONAL SEALS

Issued/Revised

	Date	Description
1	08/07/2023	Rezoning
2	09/19/2023	Rezoning R1
0	06/09/2024	Development Permit

Drawn by:

Walking Stick Drafting

Sheet No:	A 1.0
Drawing Title:	Site Plan (Area 1 & 2)
Scale:	Scale 1:300

Project:

3494 Wishard Road
Colwood BC

50 Townhouse Unit Development

APPENDIX D: *LANDSLIDE ASSESSMENT ASSURANCE STATEMENT*

Note: This Statement is to be read and completed in conjunction with the "*APEGBC Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia*", March 2006/Revised September 2008 ("*APEGBC* Guidelines") and the "2006 BC Building Code (BCBC 2006)" and is to be provided for *landslide assessments* (not floods or flood controls) for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the *APEGBC* Guidelines.

To: The *Approving Authority*
City of Colwood
3300 Wishart Rd, Victoria, BC V9C 1R1
Jurisdiction and address

Date: October 1, 2024

With reference to (check one):

- ☐ Land Title Act (Section 86) – Subdivision Approval
- ☑ Local Government Act (Sections 919.1 and 920) – Development Permit
- ☐ Community Charter (Section 56) – Building Permit
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Variance
- ☐ Local Government Act (Section 910) – Flood Plain Bylaw Exemption
- ☐ British Columbia Building Code 2006 sentences 4.1.8.16 (8) and 9.4 4.4.(2) (Refer to BC Building and Safety Policy Branch Information Bulletin B10-01 issued January 18, 2010)

For the Property: 3494 Wishart Road - Colwood, BC

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a *Qualified Professional* and is a *Professional Engineer* or *Professional Geoscientist*.

I have signed, sealed and dated, and thereby certified, the attached *landslide assessment* report on the Property in accordance with the *APEGBC Guidelines*. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

- ☑ 1. Collected and reviewed appropriate background information
- ☑ 2. Reviewed the proposed *residential development* on the Property
- ☑ 3. Conducted field work on and, if required, beyond the Property
- ☑ 4. Reported on the results of the field work on and, if required, beyond the Property
- ☑ 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a *landslide hazard analysis* or *landslide risk analysis* I have:
  - ☑ 6.1 reviewed and characterized, if appropriate, any *landslide* that may affect the Property
  - ☑ 6.2 estimated the *landslide hazard*
  - ☑ 6.3 identified existing and anticipated future *elements at risk* on and, if required, beyond the Property
  - ☑ 6.4 estimated the potential *consequences* to those *elements at risk*
- 7. Where the *Approving Authority* has adopted a *level of landslide safety* I have:
  - ___ 7.1 compared the *level of landslide safety* adopted by the *Approving Authority* with the findings of my investigation
  - ___ 7.2 made a finding on the *level of landslide safety* on the Property based on the comparison
  - ___ 7.3 made recommendations to reduce *landslide hazards* and/or *landslide risks*
- 8. Where the *Approving Authority* has **not** adopted a *level of landslide safety* I have:

☑ 8.1 described the method of *landslide hazard analysis* or *landslide risk analysis* used

☑ 8.2 referred to an appropriate and identified provincial, national or international guideline for *level of landslide safety*

☑ 8.3 compared this guideline with the findings of my investigation

☑ 8.4 made a finding on the *level of landslide safety* on the Property based on the comparison

☑ 8.5 made recommendations to reduce *landslide hazards* and/or *landslide risks*

___9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one

☐ the findings from the investigation and the adopted *level of landslide safety* (item 7.2 above)

☑ the appropriate and identified provincial, national or international guideline for *level of landslide safety* (item 8.4 above)

I hereby give my assurance that, based on the conditions[1] contained in the attached *landslide assessment* report,

Check one

☐ for subdivision approval, as required by the Land Title Act (Section 86), "that the land may be used safely for the use intended"

Check one

☐ with one or more recommended registered covenants.

☐ without any registered covenant.

☑ for a development permit, as required by the Local Government Act (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

☐ for a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended"

Check one

☐ with one or more recommended registered covenants.

☐ without any registered covenant.

☐ for flood plain bylaw variance, as required by the "Flood Hazard Area Land Use Management Guidelines" associated with the Local Government Act (Section 910), "the development may occur safely".

☐ for flood plain bylaw exemption, as required by the Local Government Act (Section 910), "the land may be used safely for the use intended".

Cam Schellenberg

Name (print)

2024-10-01

Date

Signature

[1] When seismic slope stability assessments are involved, *level of landslide safety* is considered to be a "life safety" criteria as described in the National Building Code of Canada (NBCC 2005), Commentary on Design for Seismic Effects in the User's Guide, Structural Commentaries, Part 4 of Division B. This states:

"The primary objective of seismic design is to provide an acceptable level of safety for building occupants and the general public as the building responds to strong ground motion; in other words, to minimize loss of life. This implies that, although there will likely be extensive structural and non-structural damage, during the DGM (design ground motion), there is a reasonable degree of confidence that the building will not collapse nor will its attachments break off and fall on people near the building. This performance level is termed 'extensive damage' because, although the structure may be heavily damaged and may have lost a substantial amount of its initial strength and stiffness, it retains some margin of resistance against collapse".

PTPN: 1002996

(Affix Professional seal here)

771 Vernon Avenue #100, Victoria, BC

Address

V8X 5A7

250-475-3131

Telephone

If the *Qualified Professional* is a member of a firm, complete the following.

I am a member of the firm Ryzuk Geotechnical
and I sign this letter on behalf of the firm. (Print name of firm)

Schedule 8

WALKING STICK DEVELOPMENT LTD.

3494 WISHART ROAD
COLWOOD, BC
ISSUED FOR DEVELOPMENT PERMIT

2025.01.03

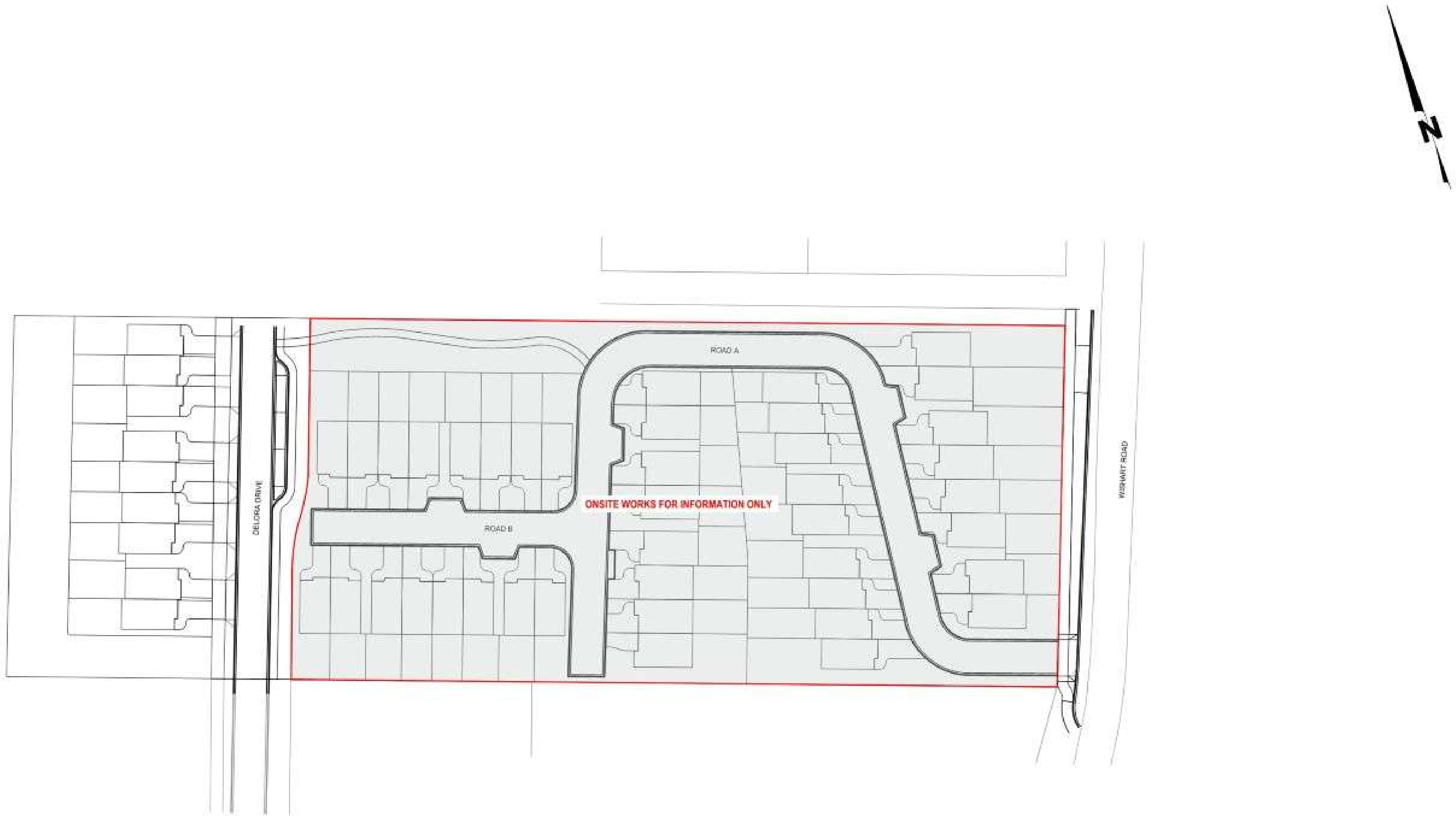
CITY OF COLWOOD PERMIT No:

ISLAND HEALTH PERMIT No.:

Sheet List Table

Sheet Number	SHEET TITLE	Drawing #
1	TITLE PAGE	C000
2	GENERAL NOTES	C100
3	PRIVATE ROAD - EARTHWORKS	C200
4	DELORA DRIVE - EARTHWORKS	C201
5	ROAD SECTIONS	C202
6	DELORA DRIVE UTILITIES	C300
7	ROAD A UTILTIES	C301
8	ROAD B UTILITIES	C302
9	WISHART FRONTAGE IMPROVEMENTS	C303

LOCATION PLAN
3494 WISHART ROAD
N.T.S



REVIEWED City of Colwood Engineering Dept. By dedon Jan-16-2025

RECEIVED City of Colwood Engineering Dept. By dedon Jan-07-2025

2024-01-03

ISSUED FOR OFF-SITE APPROVAL

ONPOINT PROJECT ENGINEERS LTD.

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

The copyrights to all designs and drawings are the property of On Point Project Engineers Ltd. Reproduction or use for any purpose other than that authorized by On Point Project Engineers Ltd. is forbidden.

ISSUED No.	DESCRIPTION	DATE	SIGN	REVISIONS No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC				
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JPH				
3.	ISSUED FOR OFF-SITE APPROVAL	2025-01-03	STR				

DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

SEAL PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
COVER PAGE

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 1 OF 9
REV:
ON POINT DRAWING No. 369-02-C000

GENERAL NOTES

1. A PERMIT TO CONSTRUCT WORKS WITHIN RIGHTS OF WAY, STREETS, LANES AND CITY PROPERTY AREAS ADJACENT TO THE DEVELOPMENT SITE WILL BE REQUIRED WHERE CONSTRUCTION IS TO BE UNDERTAKEN IN THESE AREAS.
2. PERMITS REQUIRED FOR WORKS WITHIN ANY PUBLIC AREA OR RIGHT OF WAY SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY WORKS COMMENCING WITHIN THOSE AREAS.
3. ALL WORK AND MATERIAL TO BE IN ACCORDANCE WITH CURRENT CITY OF COLWOOD BYLAWS, LATEST EDITION OF THE MMCD SPECIFICATIONS AND DRAWINGS, PROJECT SPECIFICATIONS, AND CONSTRUCTION DOCUMENTS.
   - 3.1. SPECIFICATIONS TAKE PRECEDENCE OVER DRAWINGS.
   - 3.2. ANY AND ALL DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH INSTALLATION.
4. CONTRACTOR RESPONSIBLE TO PLACE A BC 1 CALL AND GET ASBUILT DRAWINGS FROM UTILITIES AND MUNICIPALITIES PRIOR TO THE COMMENCEMENT OF ANY WORKS.
5. SITE MEETING REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION WITH CITY OF COLWOOD (COC), ENGINEER, AND CONTRACTOR.
6. CONTRACTOR TO MAINTAIN IN THE SITE OFFICE AT ALL TIMES FOR USE BY THE ENGINEER, CITY AND TRADES, A COPY OF THE LATEST APPROVED DRAWINGS, ON GOING REDLINE DRAWINGS, MMCD SPECIFICATIONS, CITY OF COLWOOD SPECIFICATIONS, BINDER OF ALL SITE INSTRUCTIONS, CLARIFICATIONS, CONTEMPLATED CHANGES NOTICES AND APPROVED CHANGE ORDERS.
7. ENGINEER TO HAVE REPRESENTATIVE ON SITE DURING THE ROAD CONSTRUCTION AND INSTALLATION OF UTILITIES. INSPECTOR TO PREPARE DAILY REPORTS AND SUBMIT WEEKLY TO CITY OF COLWOOD.
8. ALL ELEVATIONS BASED ON METRIC GEODETIC DATUM UNLESS OTHERWISE NOTED.
9. ALL EXISTING CONNECTION POINTS TO BE EXPOSED PRIOR TO CONSTRUCTION AND INVERTS CONFIRMED. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES IMMEDIATELY AND BEFORE PROCEEDING WITH CONSTRUCTION. ALLOW MINIMUM 48 HOURS FOR REVIEW.
10. CONTRACTOR TO VERIFY LOCATIONS OF SERVICES, EXISTING TIE POINTS, CROSSINGS AND OTHER FEATURES AND APPURTENANCES. ANY DISCREPANCIES TO BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER. ALLOW MINIMUM 48 HOURS FOR REVIEW.
11. NO CHANGE TO THE DESIGN IS PERMITTED WITHOUT A FORMAL INSTRUCTION FROM THE ENGINEER. REQUESTS FOR INFORMATION FROM THE CONTRACTOR ARE TO BE IN WRITING. RESPONSES TO RFI'S OR OTHER CONTRACT OR FIELD INSTRUCTIONS ARE TO BE ISSUED BY THE ENGINEER IN WRITING.
12. IN AREAS WHERE APPURTENANCES EXIST PRIOR TO CONSTRUCTION (SUCH AS MANHOLE CASTINGS, VALVE BOXES, HYDRANTS, SERVICE BOXES, H/T/C BOXES, ETC.), APPURTENANCES SHALL BE ADJUSTED TO SUIT NEW GRADES BY CONTRACTOR UNLESS NOTED OTHERWISE.
13. CONNECTION TO OR ALTERATION OF EXISTING CITY OWNED UTILITIES TO BE UNDERTAKEN BY RESPECTIVE UTILITY FORCES ONLY, AT THE DEVELOPERS EXPENSE UNLESS OTHERWISE NOTED.
14. BACKFILLING OF WORKS NOT TO COMMENCE UNTIL WORKS AND BEDDING HAVE BEEN APPROVED BY THE ENGINEER OF RECORD, OR THEIR REPRESENTATIVE.
15. ALL WORK AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER, AND TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING.
16. ALL EXTENDABLE UTILITIES AND SERVICE CONNECTIONS IN ROCK TRENCHES TO HAVE ROCK BLASTED & EXCAVATED MIN 2.0m BEYOND END OF SERVICE OR TO LENGTH EQUAL TO DEPTH OF STUB, WHICHEVER IS GREATER.
17. CONTRACTOR TO ENSURE ANY EXISTING MONUMENTS AND IRON PINS ARE NOT DISTURBED. ANY MONUMENTS OR IRON PINS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A BCLS AT THE CONTRACTORS EXPENSE.
18. CAUTION GAS MAIN - CALL BEFORE YOU DIG 1-800-474-6886. (*6886)
19. FOR BC HYDRO,TELUS, SHAW AND FORTIS BC WORKS REFER TO DWGS SUPPLIED BY UTILITY COMPANIES. INFORMATION ON UTILITIES SHOWN ON CIVIL DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION. REPORT CONFLICTS TO THE ENGINEER. OBTAIN PERMITS FOR UTILITIES AS APPLICABLE PRIOR TO STARTING. SERVICE BOXES WHICH ARE LOCATED IN THE SIDEWALK TO BE NON-SLIP TEXTURED SURFACE AND TO BE TRAFFIC RATED IF IN DRIVEWAYS.
20. ALL UTILITY BOXES TO HAVE EDGES PERPENDICULAR TO EDGE OF ROAD AND SIDEWALK.

PROPERTY LINES AND RIGHTS OF WAY

1. RIGHT OF WAY SHOWN REPRESENT GENERAL INTENT. REFER TO DRAWING PREPARED BY BCLS FOR FINAL LOCATIONS.
2. BCLS TO ESTABLISH LOCATIONS FOR UTILITY RIGHTS OF WAY AND PRIVATE EASEMENTS AS REQUIRED.
3. RIGHTS OF WAY AND EASEMENTS FOR UTILITIES, DRIVEWAYS ETC. ARE OMITTED FROM CONSTRUCTION DRAWINGS FOR CLARITY.
4. BCLS TO PROVIDE RIGHT OF WAY AND ROAD DEDICATION PLANS.

SURVEY

1. ALL SURVEY LAYOUT AND RECORD INFORMATION TO BE CARRIED OUT BY ON POINT PROJECT ENGINEERS LTD. CONTRACTOR TO PROVIDE AS MUCH NOTICE AS POSSIBLE, AT LEAST TWO (2) BUSINESS DAYS IS PREFERRED. CONTRACTOR SHALL MAKE ALL AND REASONABLE EFFORTS TO PROTECT THE SURVEY LAYOUT. COSTS TO RE-ESTABLISH DESTROYED LAYOUT STAKES WILL BE BORNE BY THE CONTRACTOR.

SANITARY AND DRAIN

1. MECHANICAL PLUG MUST BE INSTALLED IN MANHOLES PRIOR TO CONNECTING TO EXISTING MAINS TO ENSURE NO DEBRIS OR WATER ENTERS EXISTING SYSTEM DURING CONSTRUCTION. CONTRACT ADMINISTRATOR TO APPROVE REMOVAL. CONTRACTOR TO MONITOR FOR, AND REMOVE ANY BACKED UP DEBRIS PRIOR TO REMOVING PLUG.
2. ALL 100mm AND 150mm-DIAMETER SANITARY AND DRAIN SEWER SHALL BE SDR 28. ALL SANITARY AND DRAIN SEWER 200mm AND LARGER SHALL BE SDR 35 UNLESS OTHERWISE NOTED. MINIMUM COVER 1.0m UNLESS NOTED. DUCTILE IRON PIPE WHERE SHOWN TO PRESSURE CLASS 350.
3. SANITARY AND DRAIN SERVICES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF COLWOOD BYLAW 2000 SSD S7 AND SSD S8 COMPLETE WITH INSPECTION CHAMBER ON CITY SIDE OF PROPERTY LINE. INSPECTION CHAMBERS SHALL BE IN BROOKS #37 CONCRETE BOXES COMPLETE WITH CAST IRON LIDS.
4. ALL SANITARY AND DRAIN SERVICES TO BE PLACED AT MINIMUM 2% GRADE FROM OBVERT OF MAIN TO PROPERTY LINE/IC AND EXTEND A MINIMUM OF 2m INTO PROPERTY.
5. ALL SERVICE STUBS TO PROPERTIES TO BE STAKED WITH DEPTH TO INVERT NOTED.
6. CATCH BASIN LEADS TO BE 200Ø SDR 35 PVC AT 2.0% MIN UNLESS OTHERWISE NOTED. LONG RADIUS BENDS ARE REQUIRED.
7. COMPACTION TESTING TO BE IN ACCORDANCE WITH CITY OF COLWOOD BYLAWS.
8. ALL SANITARY SEWER MAINS TO BE LOW PRESSURE AIR TESTED IN ACCORDANCE WITH MMCD.
9. ALL SANITARY AND DRAIN MAINS TO BE CCTV INSPECTED IN ACCORDANCE WITH MMCD. POWER FLUSH & CCTV TO NEAREST DOWNSTREAM MANHOLE.
10. CCTV REPORTS ARE TO BE SUBMITTED TO THE ENGINEER AND CITY OF COLWOOD FOR REVIEW/ACCEPTANCE PRIOR TO HOT-MIX ASPHALT CONCRETE PAVING.

CONCRETE MANHOLES

1. MANHOLE LIDS TO BE INSTALLED TO MATCH ROAD GRADE. LID CASTINGS TO BE STAMPED "COLWOOD SANITARY SEWER" OR "COLWOOD STORM DRAIN". RIM ELEVATIONS ARE APPROXIMATE ONLY FOR ESTIMATING QUANTITIES AND ROUGH IN.
2. CASTING TO BE ENCASED IN CONCRETE WITH APPROPRIATE FILLET PER CITY OF COLWOOD BYLAW 2000.
3. ALL PRECAST OR CAST-IN-PLACE CONCRETE INCLUDING FRAMES AND GRATES TO BE HEAVY DUTY WITH H-20 LOADING UNLESS OTHERWISE NOTED.

WATER WORKS

1. CONSTRUCTION SHALL NOT PROCEED WITHOUT FIRST OBTAINING A CONSTRUCTION PERMIT FROM ISLAND HEALTH AND CRD WATER SERVICES ACCEPTANCE OF THE DESIGN DRAWINGS.
2. CONTRACTOR SHALL BE REGISTERED WITH WORKSAFE BC.
3. ALL WATERWORKS CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT CRD WATER SERVICES ENGINEERING SPECIFICATIONS AND STANDARD DRAWINGS.
4. WATER MAINS SHALL BE PVC DR 18 TO AWWA C900, UNLESS OTHERWISE NOTED. PIPES 300mm AND LARGER TO BE DUCTILE IRON (CLASS 350) WITH MJ CONNECTIONS. ALL JOINTS TO BE RESTRAINED TO PRESSURE CLASS OF PIPE ON 300mm DUCTILE IRON OR LARGER. TR FLEX IS THE PREFERRED OPTION. FLANGE CONNECTIONS TO BE USED WHERE CONNECTING FITTINGS TOGETHER OR VALVES TO FITTINGS.
5. PROVIDE A MINIMUM OF 0.9m AND A MAXIMUM OF 1.2m COVER FOR WATER MAINS, UNLESS OTHERWISE NOTED.
6. MARK WATER MAINS BELOW GRADE USING A METALLIC DETECTABLE REINFORCED UNDERGROUND UTILITY MARKING TAPE. THE TAPE SHALL BE MINIMUM 150mm WIDE, METALLIC BLUE IN COLOUR AND SHALL BE MARKED "CAUTION: WATER LINE BURIED BELOW". INSTALL TAPE ON TOP OF THE PIPE CUSHION 300mm ABOVE THE TOP OF THE PIPE. PROVIDE "THORTEC" MARKING TAPE OR APPROVED EQUAL.
7. MAINTAIN A MINIMUM OF 3m HORIZONTAL CLEAR SEPARATION AND 450mm CLEAR VERTICAL SEPARATION BETWEEN WATER MAINS AND ALL SANITARY SEWERS/SERVICES AND DRAIN SEWERS/SERVICES EXCEPT WHERE NOTED AND APPROVED BY CRD WATER SERVICES. SANITARY SEWER MAINS SHALL NOT CROSS OVER WATER MAINS.
8. MAINTAIN A MINIMUM OF 3m HORIZONTAL CLEAR SEPARATION AND 450mm CLEAR VERTICAL SEPARATION BETWEEN WATER SERVICES AND SEWER SERVICES, SANITARY OR STORM/DRAIN. IN SPECIAL CIRCUMSTANCES, WHERE A SANITARY SEWER OR STORM DRAIN SERVICE IS LOWER THAN A WATER SERVICE BY MORE THAN 450mm IN ELEVATION THE HORIZONTAL OFFSET MAY BE REDUCED TO NO LESS THAN 1.0 METRE EXCEPT WHERE NOTED AND APPROVED BY CRD WATER SERVICES.
9. WHERE NEW CATCHBASIN (CB) LEADS DO NOT HAVE A 450mm VERTICAL SEPARATION, WRAP WATERMAIN AND CB LEAD JOINTS WITH PETROLATUM TAPE WITHIN 3m OF CROSSING.
10. MAINTAIN A MINIMUM OF 1.5m HORIZONTAL CENTRE TO CENTRE AND 150mm CLEAR VERTICAL SEPARATION BETWEEN WATER MAINS AND ELECTRICAL CONDUITS, GAS MAINS, AND TELEPHONE CONDUITS EXCEPT WHERE NOTED AND APPROVED BY CRD WATER SERVICES.
11. MAINTAIN A MINIMUM OF 1.0m HORIZONTAL CENTRE TO CENTRE AND 150mm CLEAR VERTICAL SEPARATION BETWEEN WATER SERVICES AND ELECTRICAL, GAS, AND TELEPHONE SERVICES EXCEPT WHERE NOTED AND APPROVED BY CRD WATER SERVICES.
12. CONTRACTOR SHALL CONDUCT A PRESSURE AND LEAK TEST IN ACCORDANCE WITH CRD WATER SERVICES ENGINEERING SPECIFICATIONS AND IN PRESENCE OF ENGINEER.
13. CONTRACTOR SHALL FLUSH AND DISINFECT WATER MAINS IN ACCORDANCE WITH AWWA STANDARDS AND AS APPROVED BY CRD WATER SERVICES. WATER SAMPLES FOR HEALTH TESTS RESULTS TO BE SUBMITTED TO ENGINEER.
14. NEUTRALIZE CHLORINE SOLUTIONS IN ACCORDANCE WITH MINISTRY OF ENVIRONMENT AND FISHERIES AND OCEANS CANADA REGULATIONS PRIOR TO DISCHARGE TO ANY DRAINAGE COURSE OR GROUND.
15. CONTRACTOR TO PROVIDE 24 HOUR NOTICE TO CRD WATER SERVICES PRIOR TO PROCEEDING WITH ANY WATERWORKS.
16. CRD WATER SERVICES SHALL MAKE ALL CONNECTIONS TO EXISTING WATER MAINS AT THE DEVELOPMENTS EXPENSE. CONTRACTOR TO COORDINATE WITH CRD WATER SERVICES FOR WORK REQUIRED BY CRD WATER SERVICES FORCES.
17. WHERE PRACTICAL, SERVICE LINES AND METER BOXES SHALL BE INSTALLED TO FINISHED GRADE, OUTSIDE OF DRIVEWAYS OR PAVED AREAS.
18. ANY TEMPORARY OR PERMANENT CONNECTION TO THE JUAN DE FUCA WATER DISTRIBUTION SYSTEM OR THE CRD SUPPLY SYSTEM SHALL BE PERFORMED BY CRD WATER SERVICES PERSONNEL ONLY.
19. EXISTING VALVES, HYDRANTS, ETC. MUST BE OPERATED BY CRD WATER SERVICES PERSONNEL.

IRRIGATION

1. ALL IRRIGATION SLEEVES TO BE 150mm PVC SDR 28 AND ARE TO EXTEND A MIN 1.0m BEYOND ANY HARDSCAPE SURFACE SUCH AS CURBS, TRAILS, SIDEWALKS OR ROADS, UNLESS OTHERWISE NOTED.
2. IRRIGATION SLEEVES TO BE STAKED BY CONTRACTOR. CONTRACTOR TO COORDINATE SURVEY FOR RECORD DRAWINGS.

ROADS

1. ALL MATERIALS TO BE IN ACCORDANCE WITH CITY OF COLWOOD BYLAW 2000. WHERE MATERIALS STANDARDS ARE NOT SPECIFIED MASTER MUNICIPAL CONTRACT DOCUMENT STANDARDS SHALL BE USED. IN ALL OTHER CASES MATERIALS STANDARDS SHALL BE IN ACCORDANCE WITH THE ENGINEER OF RECORD'S SPECIFICATION.
2. PERMITS FOR WORKS WITHIN ANY PUBLIC AREA OR ROAD RIGHT OF WAY SHALL BE OBTAINED PRIOR TO ANY WORKS COMMENCING WITHIN THOSE AREAS.
3. ROAD CONSTRUCTION AND SECTIONS IN ACCORDANCE WITH THE DRAWINGS.

SIDEWALKS

1. ALL SIDEWALKS ARE BROOM FINISHED UNLESS NOTED OTHERWISE. ZIP-STRIP TYPE CONTROL JOINTS TO CITY OF COLWOOD BYLAW 2000.
2. CURB LET DOWNS FOR SIDEWALK AT CROSS WALKS ARE TO BE SMOOTH WITH NO RAISED "LIP".
3. CONCRETE SIDEWALKS SHALL BE 150mm THICK TO TOP OF CURB LET DOWN AT DRIVEWAY CROSSINGS AND WHERE MOUNTABLE CURBS ARE SPECIFIED, 100mm THICK WHERE NON MOUNTABLE CURBS ARE SPECIFIED AND 200mm THICK AT INDUSTRIAL AND COMMERCIAL DRIVEWAY CROSSINGS.

CONCRETE

1. HAND FORMED CURB AND GUTTER, SIDEWALKS AND STAIRWAYS
   SLUMP: 80mm
   AIR ENTRAINMENT: 5%-8%
   MAXIMUM AGGREGATE SIZE: 20mm
   MINIMUM CEMENT CONTENT: 335 KG/M3
   MINIMUM 28 DAY COMPRESSIVE STRENGTH: 32 MPA
2. EXTRUDED CURB AND GUTTER
   EXPOSURE CLASS: C-2
   SLUMP: 0-25mm
   AIR ENTRAINMENT: 6%-9%*
   FINENESS MODULUS: 2.1-2.4
   MAXIMUM AGGREGATE SIZE: 10mm*
   MINIMUM CEMENT CONTENT: 335 KG/M3
   MINIMUM 28 DAY COMPRESSIVE STRENGTH: 32 MPA

*AGGREGATE SIZE, AND AIR CAN VARY PER CSA

MATERIAL TESTING

1. THE CONTRACTOR IS RESPONSIBLE FOR HAVING THE MINIMUM REQUIRED MATERIAL TESTING UNDERTAKEN BY A THIRD PARTY AND ADVISE THE ENGINEER OF RECORD OF THE THIRD PARTY THAT WILL BE RESPONSIBLE FOR THIS TESTING.
2. GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN ACCEPTANCE OF FILL AND COMPACTION METHODOLOGY INCLUDING CERTIFICATION THAT TRENCH BEDDING, BACKFILL, SUBGRADE AND FILL HAVE MET THE MINIMUM COMPACTION REQUIREMENTS THROUGHOUT.
3. COPIES OF THE INSPECTION REPORTS ARE TO BE SENT DIRECTLY FROM THE LAB TO THE ENGINEER'S REPRESENTATIVE WITHIN 72 HOURS.
4. ANY MATERIAL TO BE FOUND DEFICIENT IS TO BE CORRECTED AND RETESTED WITH COPIES OF THE RE-INSPECTION REPORTS TO BE SENT DIRECTLY FROM THE LAB TO THE ENGINEER'S REPRESENTATIVE WITHIN 72 HOURS.
5. THE FOLLOWING ARE ADDITIONAL SPECIFICATIONS, REQUIRED TESTS AND FREQUENCIES:
   - 5.1 HOT-MIX ASPHALT CONCRETE PAVING TESTING INTERVALS:
     - 5.1.1 DOCUMENTATION FROM THE ASPHALT PLANT SHALL BE PROVIDED FOR ALL PROJECTS (THIS WILL INCLUDE REFERENCE TO THE MIX DESIGN TYPE FOR THE MATERIAL PROVIDED AND THE MOST RECENT APPLICABLE MIX TEST REPORT(S)).
     - 5.1.2 ASPHALT SAMPLING AT PAVER:
       - 5.1.2.1 ONE SAMPLE SHALL BE TAKEN EACH DAY OF OPERATION. IF THE AMOUNT OF ASPHALT CONCRETE MIX PLACED EXCEEDS 500 TONNES (METRIC), AN ADDITIONAL SAMPLE SHALL BE COLLECTED EACH TIME AFTER THAT LIMIT IS REACHED. THESE SAMPLING REQUIREMENTS SHALL BE ADHERED TO UNLESS SPECIFIED AND RECORDED OTHERWISE AT THE PROJECT PRE-CONSTRUCTION MEETING.
       - 5.1.2.2 A MARSHALL TEST REPORT SHALL BE PROVIDED FOR EACH SAMPLE TAKEN.
     - 5.1.3 CORE TESTING SHALL BE PERFORMED UPON PROJECT COMPLETION TO VERIFY ASPHALT THICKNESS AND DENSITY.
   - 5.2 CAST-IN-PLACE CONCRETE TESTING INTERVALS:
     - 5.2.1 DOCUMENTATION FROM THE CONCRETE PLANT SHALL BE PROVIDED FOR ALL PROJECTS (THIS WILL INCLUDE MIX DESIGN INFORMATION AND DAILY BATCH REPORTS FOR THE MATERIAL PROVIDED).
     - 5.2.2 CONCRETE SAMPLING AT PROJECT LOCATION:
       - 5.2.2.1 ONE SAMPLE SHALL BE TAKEN EACH DAY OF OPERATION. IF THE LENGTH OF CURB, GUTTER OR SIDEWALK INSTALLED WITHIN ONE DAY EXCEEDS 300m LINEAL OR 100m³ (WHICHEVER IS FIRST), AN ADDITIONAL SAMPLE SHALL BE COLLECTED EACH TIME AFTER THAT LIMIT IS REACHED. FOR ALL OTHER INSTALLATIONS, IF THE VOLUME OF CONCRETE CAST EXCEEDS 100m³, AN ADDITIONAL SAMPLE SHALL BE COLLECTED EACH TIME AFTER THAT LIMIT IS REACHED, UNLESS THE INSTALLATION IS A SPECIALIZED POURED-IN-PLACE STRUCTURE(S), IN WHICH CASE SAMPLING SHALL BE PERFORMED FOR EVERY DELIVERY.
       - 5.2.2.2 A CONCRETE TEST SUMMARY REPORT SHALL BE PROVIDED FOR EACH SAMPLE TAKEN.
       - 5.2.2.3 THESE SAMPLING REQUIREMENTS SHALL BE ADHERED TO UNLESS SPECIFIED AND RECORDED OTHERWISE AT THE PROJECT PRE-CONSTRUCTION MEETING. ADDITIONAL SAMPLING AND TESTING MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
   - 5.3 TRENCH COMPACTION (SEWER, DRAIN, WATER):
     - 5.3.1 MINIMUM QUALITY CONTROL TEST FREQUENCIES SPECIFIED ARE THE MINIMUM NUMBER REQUIRED TO DETERMINE SUFFICIENT TRENCH COMPACTION. THE CONTRACTOR SHALL PERFORM AS MANY TESTS AS ARE NECESSARY TO ENSURE THAT THE WORKS AND SERVICES CONFORM TO THE REQUIREMENTS OF THE CONTRACT REGARDLESS OF THE MINIMUM NUMBER REQUIRED AS FOLLOWS:
       - 5.3.1.1 TRENCH BEDDING (MAINLINE) - ONE TEST FOR EVERY 75m OF TRENCH. MINIMUM ONE BETWEEN ANY TWO MANHOLES FOR SEWER AND DRAIN.
       - 5.3.1.2 TRENCH BACKFILL (MAINLINE) - ONE TEST FOR EVERY 75m OF TRENCH AT EACH 1.0m FILL DEPTH. MINIMUM ONE BETWEEN ANY TWO MANHOLES FOR SEWER AND DRAIN.
       - 5.3.1.3 TRENCH BEDDING (SERVICE) - ONE PER ROAD CROSSING.
       - 5.3.1.4 TRENCH BACKFILL (SERVICE) - ONE PER ROAD CROSSING AT EACH 1.0m FILL DEPTH.
       - 5.3.1.5 ROAD BASE - ONE PER ROAD CROSSING.
       - 5.3.1.6 ROAD BASE - ONE FOR EVERY 75m OF TRENCH, WITH A MINIMUM OF ONE BETWEEN ANY TWO MANHOLES FOR SANITARY AND DRAIN.

SIGNAGE & PAVEMENT MARKINGS

1. PAVEMENT MARKINGS SUCH AS CROSSWALKS AND STOPBARS ARE TO BE THERMOPLASTIC WITH NON-SLIP SURFACE. LONG PAINT LINES SUCH AS CENTERLINES AND FOG LINES ARE TO BE PAINT IN ACCORDANCE WITH MMCD SPECIFICATIONS.
2. BIKE LANE PAVEMENT MARKINGS, WHERE APPLICABLE, TO CITY OF COLWOOD STANDARDS. IN ABSENCE OF STANDARDS USE MUTCDC.
3. SIGNAGE LOCATIONS SHOWN ARE FOR GENERAL INTENT ONLY. ALL SIGNS AND LOCATIONS ARE TO BE IN ACCORDANCE WITH MUTCDC.
4. CONTRACTOR TO PROVIDE 48 HOUR NOTICE TO ENGINEER TO COORDINATE WITH CITY TO REVIEW LINE PAINTING LAYOUT PRIOR TO INSTALLATION.

CLEARING AND GRUBBING

DEFINITIONS

1. CLEARING CONSISTS OF CUTTING OFF TREES AND BRUSH VEGETATIVE GROWTH TO NOT MORE THAN SPECIFIED HEIGHT ABOVE GROUND AND DISPOSING OF FELLED TREES, PREVIOUSLY UPROOTED TREES AND STUMPS, AND SURFACE DEBRIS.
2. CLOSE CUT CLEARING CONSISTS OF CUTTING OFF STANDING TREES, BRUSH, SCRUB, ROOTS, STUMPS AND EMBEDDED LOGS, REMOVING AT, OR CLOSE TO, EXISTING GRADE AND DISPOSING OF FALLEN TIMBER AND SURFACE DEBRIS.
3. CLEARING ISOLATED TREES CONSISTS OF CUTTING OFF TO NOT MORE THAN SPECIFIED HEIGHT ABOVE GROUND OF DESIGNATED TREES, AND DISPOSING OF FELLED TREES AND DEBRIS.
4. UNDERBRUSH CLEARING CONSISTS OF REMOVAL FROM TREED AREAS OF UNDERGROWTH, DEADWOOD, AND TREES SMALLER THAN 50mm TRUNK DIAMETER AND DISPOSING OF FALLEN TIMBER AND SURFACE DEBRIS.
5. GRUBBING CONSISTS OF EXCAVATION AND DISPOSAL OF STUMPS AND ROOTS, BOULDERS AND ROCK FRAGMENTS TO NOT LESS THAN SPECIFIED DEPTH BELOW EXISTING GROUND SURFACE.

PROTECTION

1. PREVENT DAMAGE TO TREES, HABITAT, NATURAL FEATURES, BENCH MARKS, WATER COURSES, AND ROOT SYSTEMS OF TREES WHICH ARE TO REMAIN.
2. PROTECT TREES DESIGNATED TO REMAIN BY ERECTING HOARDING AROUND THE DRIP LINE.
3. REPAIR DAMAGED ITEMS TO APPROVAL OF ENVIRONMENTAL MONITOR / ENGINEER.

PREPARATION

1. SURVEYORS TO STAKEOUT USING LABELLED COLOUR RIBBON AND STAKES; TOES (CUT / FILL), CREEKSIDE EDGE OF FOOTINGS.
2. INSPECT SITE AND VERIFY WITH BOTH ENVIRONMENTAL MONITOR / ENGINEER ITEMS DESIGNATED TO REMAIN AND LIMITS OF CONSTRUCTION.
3. INSTALL CONSTRUCTION FENCING AND SIGNAGE DELINEATING LIMITS OF CONSTRUCTION.
4. RECEIVE WRITTEN DIRECTION FROM PROJECT ENVIRONMENTAL MONITOR FOR WINDOW WHEN CLEARING MAY COMMENCE.
   - 4.1. FULL EROSION AND SEDIMENT CONTROL PROCEDURES ARE NOT EXPECTED FOR CLEARING ACTIVITIES.
5. RECEIVE WRITTEN DIRECTION FROM PROJECT ENVIRONMENTAL MONITOR FOR WINDOW WHEN GRUBBING MAY COMMENCE.
   - 5.1. EROSION AND SEDIMENT CONTROL PROCEDURES MUST BE INSTALLED AND INSPECTED PRIOR TO GRUBBING ACTIVITIES COMMENCING.

CLEARING

1. CLEARING INCLUDES FELLING, TRIMMING, AND CUTTING OF TREES INTO SECTIONS AND SATISFACTORY DISPOSAL OF TREES AND OTHER VEGETATION DESIGNATED FOR REMOVAL, INCLUDING DOWNED TIMBER, SNAGS, BRUSH, AND RUBBISH OCCURRING WITHIN CLEARED AREAS.
2. CLEAR AS DIRECTED BY CONSULTANT, BY CUTTING AT HEIGHT OF NOT MORE THAN 300mm ABOVE GROUND. IN AREAS TO BE SUBSEQUENTLY GRUBBED, HEIGHT OF STUMPS LEFT FROM CLEARING OPERATIONS TO BE NOT MORE THAN 1.0m ABOVE GROUND SURFACE.
3. CUT OFF BRANCHES AND CUT DOWN TREES OVERHANGING AREA CLEARED AS DIRECTED BY CONSULTANT.
4. CUT OFF UNSOUND BRANCHES ON TREES DESIGNATED TO REMAIN AS DIRECTED BY CONSULTANT.
5. REMOVAL OF WOODY DEBRIS FROM THE CREEK ONLY PERMITTED UNDER THE DIRECT, FULL TIME SUPERVISION OF THE ENVIRONMENTAL MONITOR.

CLOSE CUT CLEARING

1. CLOSE CUT CLEARING TO GROUND LEVEL TO WITHIN 100mm OF GROUND SURFACE.
2. CUT OFF BRANCHES OVERHANGING AREA CLEARED.
3. CUT OFF UNSOUND BRANCHES ON TREES DESIGNATED TO REMAIN.

ISOLATED TREES

1. CUT OFF ISOLATED TREE AT HEIGHT OF NOT MORE THAN 300mm ABOVE GROUND SURFACE.
2. GRUB OUT ISOLATED TREE STUMPS.
3. TRIM TREES DESIGNATED TO BE LEFT STANDING WITHIN CLEARED AREAS OF DEAD BRANCHES.

UNDERBRUSH CLEARING

1. CLEAR UNDERBRUSH FROM AREAS AS INDICATED AT GROUND LEVEL.

GRUBBING

1. REMOVE AND DISPOSE OF ROOTS LARGER THAN 75mm IN DIAMETER, MATTED ROOTS, AND DESIGNATED STUMPS FROM INDICATED GRUBBING AREAS.
2. GRUB OUT STUMPS AND ROOTS TO NOT LESS THAN 200mm BELOW GROUND SURFACE.
3. GRUB OUT VISIBLE ROCK FRAGMENTS AND BOULDERS, GREATER THAN 300mm IN GREATEST DIMENSION, BUT LESS THAN 0.15m³.
4. FILL DEPRESSIONS MADE BY GRUBBING WITH SUITABLE MATERIAL AND TO MAKE NEW SURFACE CONFORM WITH EXISTING ADJACENT SURFACE OF GROUND.

REMOVAL & DISPOSAL

1. REMOVE CLEARED AND GRUBBED MATERIALS TO DISPOSAL AREA.

FINISHED SURFACE

1. LEAVE GROUND SURFACE IN CONDITION SUITABLE FOR IMMEDIATE GRADING OPERATIONS TO APPROVAL OF ENGINEER.

EARTHWORKS, BLASTING AND GEOTECHNICAL

1. LOCAL AUTHORITY SHALL BE GIVEN NOTICE AS REQUIRED PRIOR TO ANY BLASTING TAKING PLACE.
2. EARTHWORKS PRODUCTS/ MATERIALS MAY REQUIRE A PERMIT PRIOR TO ANY REMOVAL OR DEPOSITING. CONTRACTOR TO ENSURE PERMITS ARE OBTAINED.
3. ALL RETAINING WALLS AND EARTHWORK STRUCTURES TO BE APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD.
4. ALL FILL TO BE COMPACTED TO MINIMUM 95% STANDARD MODIFIED PROCTOR DENSITY UNLESS OTHERWISE NOTED OR DIRECTED BY GEOTECHNICAL ENGINEER. FILL IN LANDSCAPE AREAS TO BE MINIMUM 85% STANDARD MODIFIED PROCTOR DENSITY. PLACEMENT AND DEPTH OF SOIL PER LANDSCAPE DRAWINGS. LANDSCAPE CONSULTANT TO PROVIDE WRITTEN ACCEPTANCE OF SUBGRADE PRIOR TO PLACING SOIL.
5. GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN ACCEPTANCE OF SUBGRADE PRIOR TO CONSTRUCTING STRUCTURAL WALLS.
6. GEOTECHNICAL ENGINEER TO REVIEW AND APPROVE ALL RETAINING WALLS AND EARTHWORK STRUCTURES AND PROVIDE WRITTEN APPROVAL TO THE GOVERNING AUTHORITIES.
7. GEOTECHNICAL CERTIFICATION IS REQUIRED ON ALL RETAINING WALLS GREATER THAN 1.2m IN HEIGHT.
8. GEOTECHNICAL ENGINEER TO PROVIDE WRITTEN ACCEPTANCE OF FILL AND COMPACTION METHODOLOGY, INCLUDING CERTIFICATION THAT TRENCH BEDDING, BACKFILL, SUBGRADE AND FILL HAVE MET MINIMUM COMPACTION REQUIREMENTS THROUGHOUT.
9. CONTRACTOR TO COORDINATE REQUIRED GEOTECHNICAL TESTING. ALL TESTING REPORTS TO BE FORWARDED TO THE ENGINEER WITHIN 72 HOURS.

ROUGH GRADING

PROTECTION

1. PROTECT CONSTRUCTION FENCING, TREES, EROSION AND SEDIMENT CONTROL FEATURES, NATURAL FEATURES AND BENCH MARKS WHICH ARE TO REMAIN AS DIRECTED BY CONSULTANT. IF DAMAGED, RESTORE TO ORIGINAL OR BETTER CONDITION UNLESS DIRECTED OTHERWISE.
2. MAINTAIN ACCESS ROADS TO PREVENT ACCUMULATION OF CONSTRUCTION RELATED DEBRIS ON ROADS.

MATERIALS

1. FILL MATERIALS IN ACCORDANCE WITH MMCD SPECIFICATIONS AND CONSTRUCTION DOCUMENTS.

STRIPPING OF TOPSOIL

1. DO NOT HANDLE TOPSOIL WHILE IN WET OR FROZEN CONDITION OR IN ANY MANNER IN WHICH SOIL STRUCTURE IS ADVERSELY AFFECTED AS DETERMINED BY CONSULTANT.
2. COMMENCE TOPSOIL STRIPPING OF AREAS AS INDICATED AFTER AREA HAS BEEN CLEARED OF BRUSH WEEDS AND GRASSES AND REMOVED FROM SITE.
3. STRIP TOPSOIL TO DEPTHS AS INDICATED.
4. STOCKPILE TOPSOIL AWAY FROM PROJECT SITE TO PREVENT MIGRATION OF FINES TO WATERCOURSE.

GRADING

1. ROUGH GRADE TO LEVELS, PROFILES, AND CONTOURS ALLOWING FOR SURFACE TREATMENT AS INDICATED ON CONSTRUCTION DOCUMENTS.

ENVIRONMENTAL PROTECTION

DUST CONTROL

1. EXCAVATIONS TO BE SPRINKLED UNTIL DAMP OR TO THE DISCRETION OF THE ENGINEER/EROSION AND SEDIMENT CONTROL SUPERVISOR. DO NOT OVER-WATER SO AS TO CREATE RUNOFF.
2. ALL SOIL PILES ARE TO BE SECURELY COVERED NIGHTLY WITH ANCHORED TARPAULINS OR WHEN NOT IN USE FOR EXTENDED PERIODS DURING THE DAY OR WHEN RAIN EVENTS ARE ANTICIPATED.
3. A BARRIER FENCE IS TO BE PROVIDED AROUND THE CONSTRUCTION SITE CONSISTING OF A CONSTRUCTION FENCE TO RESTRICT AREAS OF DISTURBANCE.

SPILL PREVENTION

1. THESE PRACTICES ARE USED TO REDUCE THE RISK ASSOCIATED WITH HAZARDOUS MATERIAL PRODUCTS THAT WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RE-SEALABLE.
2. ORIGINAL LABELS AND MATERIAL SAFETY DATA INFORMATION WILL BE RETAINED. THEY CONTAIN IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCTS MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND PROVINCIAL RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.
3. ALL ON-SITE VEHICLES TO BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.

PETROLEUM PRODUCTS

1. PETROLEUM PRODUCTS ARE TO BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS

1. FERTILIZERS ARE TO BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZERS ARE TO BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZERS ARE TO BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

1. ALL CONTAINERS ARE TO BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT IS NOT TO BE DISCHARGED TO THE STORM WATER SYSTEM, BUT PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR PROVINCIAL AND LOCAL REGULATIONS.

CONCRETE TRUCKS

1. CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE, UNLESS TO A DESIGNATED LOCATION SEPARATE FROM THE STORM WATER SEDIMENT BASIN.

GOOD HOUSEKEEPING

THE FOLLOWING HOUSEKEEPING PRACTICES ARE TO BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT:

1. AN EFFORT IS MADE TO STORE ONLY ENOUGH PRODUCT TO DO THE JOB.
2. ALL MATERIALS STORED ONSITE ARE TO BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
3. PRODUCTS ARE TO BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
4. SUBSTANCES ARE NOT TO BE MIXED WITH ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
5. WHENEVER POSSIBLE, ALL OF A PRODUCT ARE TO BE USED UP BEFORE DISPOSING OF THE CONTAINER.
6. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL ARE TO BE FOLLOWED.
7. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES, THE FOLLOWING PRACTICES ARE TO BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

1. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP ARE TO BE CLEARLY POSTED AND SITE PERSONNEL ARE TO BE MADE AWARE OF PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP ARE TO BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
3. ALL SPILLS ARE TO BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
4. THE SPILL AREA IS TO BE KEPT WELL VENTILATED AND PERSONNEL ARE TO WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
5. SPILLS OF HAZARDOUS OR TOXIC MATERIAL ARE TO BE REPORTED TO THE APPROPRIATE PROVINCIAL OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
6. AFTER A SPILL, THE SPILL PREVENTION PLAN IS TO BE ADJUSTED TO INCLUDE MEASURES TO PREVENT ANY TYPE OF SPILL FROM RE-OCCURING. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES ARE TO ALSO BE INCLUDED.
7. THE SITE SUPERINTENDENT IS RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS AND WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THIS PERSON WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL ARE TO BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

EROSION AND SEDIMENT CONTROL

1. CONTRACTOR TO CONSTRUCT EROSION AND SEDIMENT CONTROL MEASURES TO PREVENT ANY RUNOFF, IN ACCORDANCE WITH CITY OF COLWOOD BYLAWS AND DRAWING NOTES.
2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR CONTROLLING EROSION, SEDIMENT, DUST AND ALL POTENTIAL RELEASES FROM THE PROJECT SITE.
3. THE ENGINEER OR ENVIRONMENTAL MONITOR HAS THE RIGHT TO SHUT DOWN CONSTRUCTION ACTIVITIES IF EROSION AND SEDIMENT CONTROL MEASURES ARE NOT MEETING THEIR PURPOSE OR CAUSING POSSIBLE DETRIMENTAL EFFECTS TO PROTECTED RIPARIAN AREAS.
4. THE EROSION & SEDIMENT CONTROL WORKS NOTED ON THIS PLAN ARE TO BE CONSIDERED THE ABSOLUTE MINIMUM. CONSTRUCTION ACTIVITIES MAY REQUIRE ADDITIONAL MEASURES TO PREVENT SEDIMENT FROM ENTERING MUNICIPAL SYSTEMS OR ENVIRONMENTALLY PROTECTED AREAS.
5. EROSION AND SEDIMENT CONTROL IS AN ON-GOING PROCESS. DETAILS NOTED ON THESE PLANS ARE FOR EARTHWORKS AND GENERAL GUIDANCE ONLY. AS CONSTRUCTION PROCEEDS, VARIOUS EROSION AND SEDIMENT CONTROL TECHNIQUES WILL BE REQUIRED TO AVOID THE TRANSPORT OF SEDIMENTS.
6. EROSION AND SEDIMENT WORKS ARE TO BE INSTALLED WHERE POTENTIAL PROBLEMS CAN BE PREDICTED OR ARE LIKELY TO HAPPEN. DO NOT WAIT FOR AN EROSION AND SEDIMENT PROBLEM TO ARISE.
7. EQUIPMENT AND WORKMANSHIP IS TO BE OF BEST QUALITY. THE ENGINEER OR ENVIRONMENTAL MONITOR RESERVES THE RIGHT TO DISMISS ANY EQUIPMENT FROM THE SITE WHICH IS UNSUITABLE. (IE. HYDRAULIC LEAKS ETC.)
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING APPROPRIATE MEASURES TO KEEP SILTS AND OTHER DELETERIOUS MATERIAL FROM LEAVING THE SITE.
9. TO AVOID REACTIVE AND COSTLY APPLICATION OF SEDIMENT CONTROL PRACTICES, ENSURE THAT CONSTRUCTION ACTIVITIES ARE PHASED SO THAT EXPOSED SOILS ARE LIMITED TO A SMALL FOOTPRINT. SINCE THE ONLY FEASIBLE WAY TO REMOVE SEDIMENT FROM WATER IS TO SLOW THE WATER'S MOVEMENT AND ALLOW THE SEDIMENTS TO DROP OUT OF SUSPENSION, EROSION AND SEDIMENT WORKS ARE TO BE PREVENTATIVE, AVOIDING SUSPENDED SEDIMENT IN WATER.
10. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REMOVED WITHIN 30 DAYS OF FINAL SITE STABILIZATION OR AFTER THE TEMPORARY BEST MANAGEMENT PRACTICE (BMP) IS NO LONGER NEEDED. TRAPPED SEDIMENT SHOULD BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHOULD BE PERMANENTLY STABILIZED.
11. THE ENVIRONMENTAL MONITOR WILL PERFORM ROUTINE OBSERVATIONS AND MAKE RECOMMENDATIONS FOR EROSION AND SEDIMENT CONTROL METHODS.
12. EROSION AND SEDIMENT CONTROLS WILL BE INSPECTED DURING AND AFTER ALL MAJOR STORM EVENTS. THE ENVIRONMENTAL MONITOR WILL MEET WITH THE CONTRACTOR PERIODICALLY AS REQUIRED TO REVIEW THE PROJECT SCHEDULE AND RELATED EROSION CONTROL MEASURES.
13. EXCAVATION WORKS THAT ARE TO OCCUR CLOSE TO A RIPARIAN AREA SHOULD BE PLANNED TO COINCIDE WITH THE PROVINCIAL FISHERIES WINDOW FOR IN-STREAM WORKS. THE WINDOW IS JUNE 15 - SEPTEMBER 15. NO CONSTRUCTION ACTIVITY OR LAND DISTURBANCE IS TO OCCUR WITHIN A PROTECTED RIPARIAN ZONE WITHOUT PRIOR CONSULTATION AND WRITTEN DIRECTION FROM THE ENVIRONMENTAL MONITOR.
14. WHERE DISTURBED SOIL IS TO BE LEFT FOR A PERIOD OF AT LEAST 30 DAYS, HYDROSEEDING, TEMPORARY MULCHING OR COVERING THE EXPOSED SOIL WITH A TARPAULIN IS RECOMMENDED TO REDUCE EROSION DURING RAIN FALL EVENTS. EXPOSED SLOPES MAY BE TRACKED USING A BULLDOZER OR OTHER APPROPRIATE MACHINERY TO ENCOURAGE INFILTRATION AND DECREASE RUNOFF. IF STRAW OR HAY MULCH IS USED TO COVER EXPOSED SOIL, COVERAGE MUST BE APPLIED AT 25-30mm THICKNESS AND BE FREE OF NOXIOUS WEEDS.
15. CONTRACTOR TO HAVE ONSITE AT ALL TIMES, A MINIMUM OF:
    - 100m OF SILT FENCING
    - 200 STAKES

SILT/SEDIMENT FENCE BARRIER

1. PROVIDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS THAT COMPLIES WITH EPA 832/R-92-005 OR REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, WHICHEVER IS MORE STRINGENT.
2. THE CONTRACTOR SHALL SUPPLY, INSTALL, INSPECT AND MAINTAIN SILT FENCE BARRIERS, AS REQUIRED, AFTER CLEARING BUT PRIOR TO GRUBBING, STRIPPING AND EXCAVATION OPERATIONS, UNTIL PERMANENT MEASURES HAVE BEEN INSTALLED.
   THE SILT FENCE FABRIC SHALL MEET THE FOLLOWING MINIMUM MATERIAL PROPERTIES:
   1. FABRIC: WOVEN POLYPROPYLENE
   2. TENSILE STRENGTH: 423 MD
   3. ELONGATION: 15%
   4. MULLEN BURST: 1723 kPa
   5. PUNCTURE STRENGTH: 134 N
   6. A.O.S. 600 microns
   7. FLOW RATE: 20 L/sec/m^2
   8. U.V. RESISTANCE 80%

   THE STAKES SHALL BE OF SUFFICIENT STRENGTH TO SATISFY SILT FENCE BARRIER PERFORMANCE AND MAINTENANCE REQUIREMENTS. THE STAKES SHALL BE A MINIMUM OF 1.0m IN LENGTH, DRIVEN 300mm INTO THE GROUND, WITH A MAXIMUM SPACING OF 2.4m BETWEEN STAKES.
   THE CONTRACTOR SHALL INSTALL SILT FENCING IN ROAD DITCHES AND TOE OF SLOPES.
   MAINTENANCE:
   1. ALL SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER A RUNOFF EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
   2. THE SILT FENCE BARRIERS SHALL BE MAINTAINED IN PLACE, WITHOUT GAPS, AND WITHOUT UNDERMINING, SO AS TO PREVENT SEDIMENT PASSAGE THROUGH OR UNDER THE BARRIER.
   3. ACCUMULATED SEDIMENT SHALL BE REMOVED AT THE DIRECTION OF THE PROJECT ENVIRONMENTAL MONITOR OR ENGINEER.
   4. SILT FENCE BARRIERS SHALL BE REMOVED WHEN, IN THE OPINION OF THE ENVIRONMENTAL MONITOR OR ENGINEER, THE MEASURE IS NO LONGER REQUIRED.
   5. SILT FENCE BARRIERS SHALL BE REMOVED IN A MANNER THAT:
      - AVOIDS ENTRY OF EQUIPMENT, OTHER THAN HAND HELD EQUIPMENT, TO ANY WATER COURSE; AND
      - PREVENTS RELEASE OF SEDIMENT AND DEBRIS TO ANY WATER COURSE.

2.1 REMOVE EROSION AND SEDIMENTATION CONTROLS AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.

REVIEWED City of Colwood Engineering Dept.
By dedan Jan-16-2025

2025-01-03
ISSUED FOR OFF-SITE APPROVAL

ONPOINT PROJECT ENGINEERS LTD.
TEL: 250-479-1075 WWW.OPPEL.CA
SUITE 111 - 867 LANGFORD PKWY VICTORIA BC V9B 0N8

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.
DO NOT SCALE THE DRAWING
50mm

ISSUED

No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JPH
3.	ISSUED FOR OFF-SITE APPROVAL	2025-01-03	STR

REVISIONS

No.	DESCRIPTION	DATE	SIGN

DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

SEAL PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
NOTES

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 2 OF 9
REV.
ON POINT DRAWING No. 369-02-C100

DETAIL A C101 ROAD A AND ROAD B STANDARD CROSS-SECTION 1:50

DETAIL C C101 ROAD A CROSS-SECTION (STA 0+083 - 0+139) 1:50

DETAIL B C101 ROAD A CROSS-SECTION (STA 0+000 - 0+083) 1:50

CONSTRUCTION NOTES

1. BUILDING FOOTINGS TO SUPPORT FILL SLOPE FROM DELORA DRIVE TO BE COORDINATED WITH GEOTECHNICAL AND STRUCTURAL ENGINEER. FINAL DESIGN TO BE COMPLETED FOR ISSUED FOR APPROVAL DRAWING SET.
2. DROP FOOTING TO BE USED TO ENSURE TOE OF FILL SLOPE MEETS EXISTING GROUND AT PROPERTY LINE. FINAL PAD ELEVATION TO BE DETERMINED FOR ISSUED FOR APPROVAL DRAWING SET
3. ALL EARTHWORKS TO BE DONE UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER.
4. ALL RETAINING STRUCTURES OVER 1.2m HIGH, SLOPES OVER 30°, AND FILLS TO BE CERTIFIED BY GEOTECHNICAL ENGINEER.
5. PROPOSED WALL HEIGHT SUBJECT TO SITE CONDITIONS. WALL HEIGHT GREATER THAN 1.2m TO BE DESIGNED AND CERTIFIED BY GEOTECHNICAL ENGINEER.
6. CENTER LINE ROAD ELEVATION SHOWN ARE TO TOP OF ASPHALT.
7. CUT AND FILLS FOR LOTS ARE BASED ON PAD ELEVATIONS.
8. PRIVATE ROAD STRUCTURES SUBJECT TO APPROVAL BY GEOTECHNICAL ENGINEER.

LEGEND

MFE	MAIN FLOOR ELEVATION.
PAD	BUILDING PAD PREP ELEVATION (0.6m BELOW FLOOR SLAB).
STEP UP	REAR STEP UP. WALKOUT AT REAR ON UPPER FLOOR.
STEP DOWN	REAR STEP DOWN. WALKOUT AT REAR ON LOWER FLOOR.
LEVEL	REAR LEVEL. WALKOUT AT REAR AT SAME LEVEL.
205.38	PROPOSED GROUND SPOT ELEVATION.
	MAJOR STORM FLOW PATH.
	FILL SLOPE

1:250 0 5 15m

2025-01-03

FOR INFORMATION ONLY

PRIVATE SITE NOT INCLUDED IN APPROVAL SUBMISSION

ONPOINT PROJECT ENGINEERS LTD.
TEL: 250.479.7075 WWW.OPPCI.CA
SUITE 111 - 9871 ASHISHO PKWY VICTORIA BC V9B 0W5

No.	ISSUED DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC
2	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JFH
3.	ISSUED FOR INFORMATION ONLY	2025-01-03	STR

No.	REVISIONS DESCRIPTION	DATE	SIGN

DRAWN BY: SR
DESIGN: SR
ENGINEER: CV
SEAL PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
PRIVATE ROAD - EARTHWORKS

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 3 OF 9
REV:----
ON POINT DRAWING No. 369-02-C200

LEGEND

MFE	MAIN FLOOR ELEVATION.
PAD	BUILDING PAD PREP ELEVATION (0.6m BELOW FLOOR SLAB).
STEP UP	REAR STEP UP. WALKOUT AT REAR ON UPPER FLOOR.
STEP DOWN	REAR STEP DOWN. WALKOUT AT REAR ON LOWER FLOOR.
LEVEL	REAR LEVEL. WALKOUT AT REAR AT SAME LEVEL.
205.38	PROPOSED GROUND SPOT ELEVATION.
205.38	EXISTING GROUND SPOT ELEVATION.
	MAJOR STORM FLOW PATH.
	FILL SLOPE
	PROPOSED CONCRETE RETAINING WALL (TO BE DESIGNED BY GEOTECHNICAL ENGINEER) HEIGHT TO RANGE BETWEEN 1.0-2.0m
	PROPOSED LANDSCAPE AREA
	ONSITE LANDSCAPE / HARDSCAPE FINISHING TO BE IMPLEMENTED BY DEVELOPER

CONSTRUCTION NOTES

1. ALL EARTHWORKS TO BE COMPLETED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER.
2. ALL RETAINING STRUCTURES OVER 1.2m HIGH, SLOPES OVER 30°, AND FILLS TO BE CERTIFIED BY GEOTECHNICAL ENGINEER.
3. CENTER LINE ELEVATIONS SHOWN ARE TO TOP OF ASPHALT.
4. REFER TO DELORA DRIVE ROAD SECTIONS INCLUDED ON SHEET C201
5. DRIVEWAY LETDOWNS AT ALL DRIVEWAY LOCATIONS AS PER CITY OF COLWOOD BYLAW 2000 SSD C7A.

6. DEVELOPER TO COORDINATE ONSITE GRADING AND RETAINING WALLS (IF REQUIRED) WITH ONSITE CONTRACTOR AND GEOTECHNICAL ENGINEER (IF REQUIRED)

REVIEWED City of Colwood Engineering Dept. By deden Jan-16-2025

1:250 0 5 10m

2025-01-03

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SUITE 111 - 867 LANGFORD PKWY VICTORIA BC V9B 3K5

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

ISSUED No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC
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3.	ISSUED FOR OFFSITE APPROVAL	2025-01-03	STR

REVISIONS No.	DESCRIPTION	DATE	SIGN

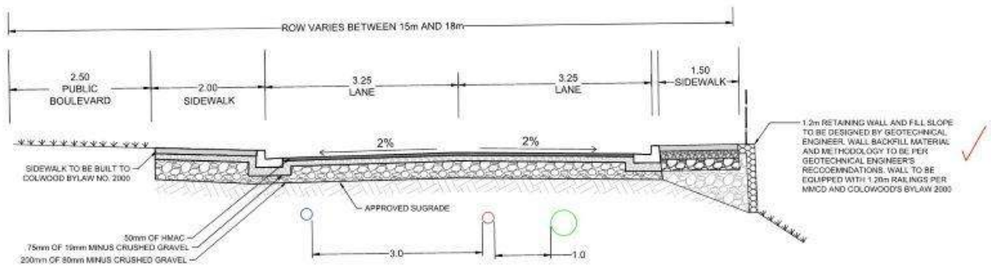
DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

SEAL PERMIT TO PRACTICE

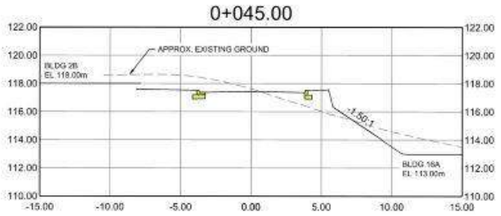
WALKING STICK DEVELOPMENTS LTD.

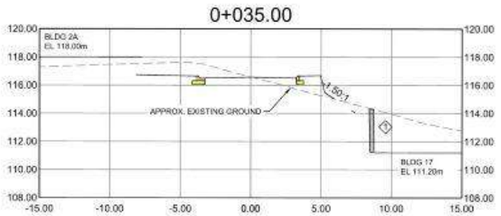
3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
DELORA DRIVE EARTHWORKS

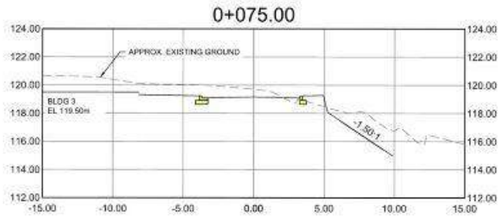
ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 4 OF 9
REV: ----
ON POINT DRAWING No. 369-02-C201

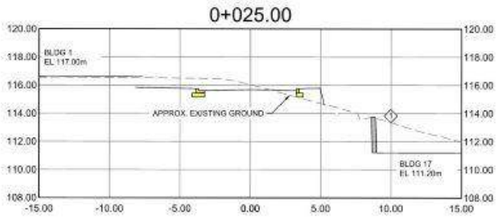


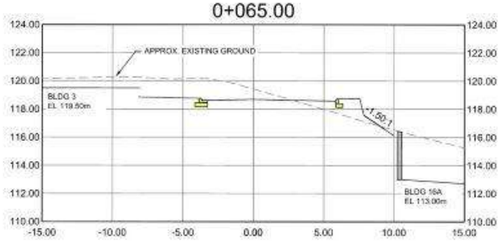
DETAIL (A / C200) DELORA DRIVE TYPCIAL CROSS SECTION
NTS

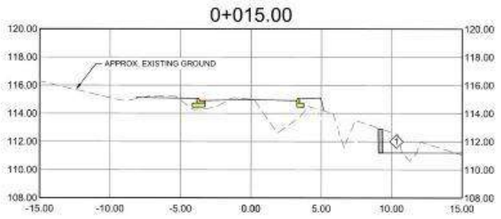


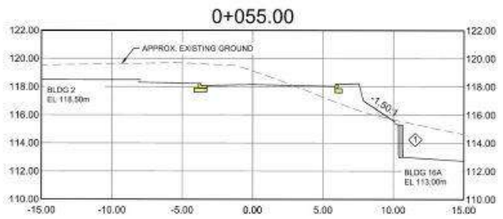




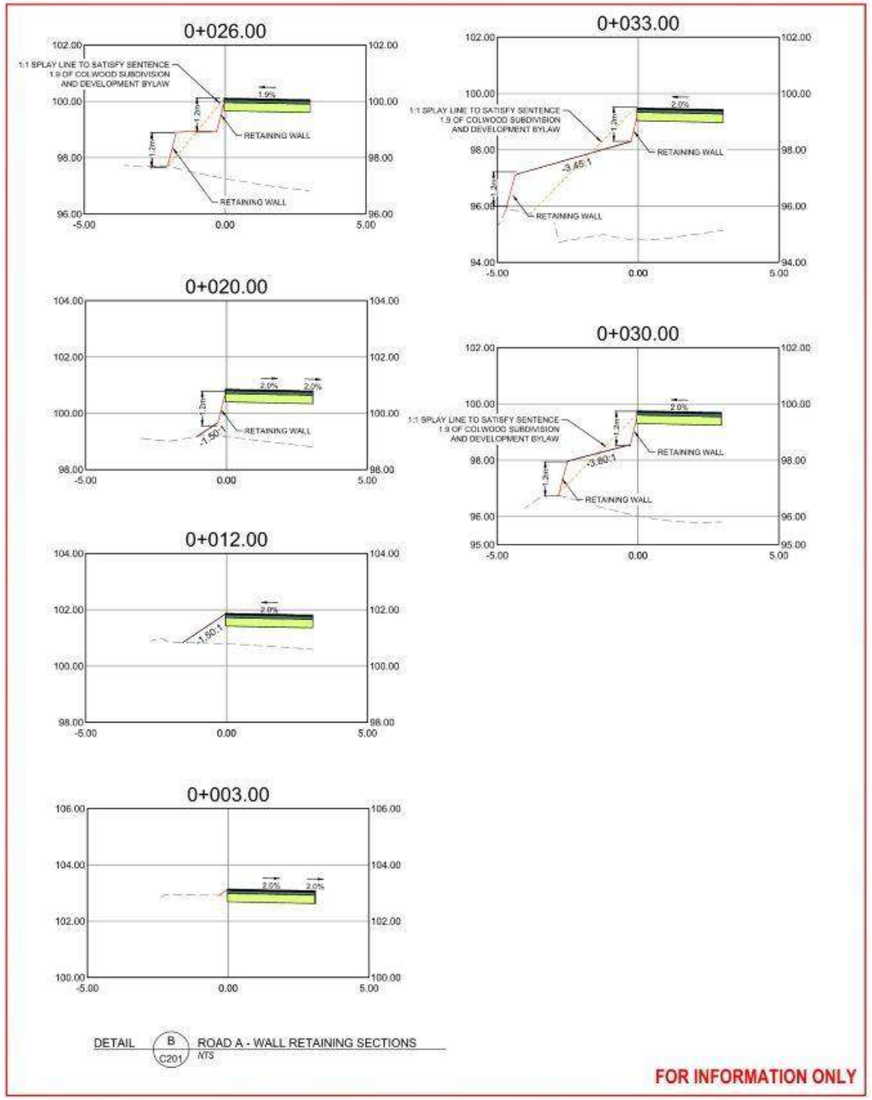








DETAIL (A / C200) DELORA DRIVE TYPCIAL CROSS SECTION
NTS



DETAIL (B / C201) ROAD A - WALL RETAINING SECTIONS
NTS

FOR INFORMATION ONLY

CONSTRUCTION NOTES

1. BUILDING FOOTINGS TO SUPPORT FILL SLOPE FROM DELORA DRIVE TO BE COORDINATED WITH GEOTECHNICAL AND STRUCTURAL ENGINEER. FINAL DESIGN TO BE COMPLETED FOR ISSUED FOR APPROVAL DRAWING SET.
2. ALL EARTHWORKS TO BE DONE UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER.
3. ALL RETAINING STRUCTURES OVER 1.2m HIGH, SLOPES OVER 30°, AND FILLS TO BE CERTIFIED BY GEOTECHNICAL ENGINEER.
4. CENTER LINE ELEVATIONS SHOWN ARE TO TOP OF ASPHALT.

REVIEWED City of Colwood Engineering Dept.
By deskm Jan-15-2025

1:250 0 5 10m

2025-01-03

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ONPOINT PROJECT ENGINEERS LTD.
TEL: 250 475-3705 WWW.OPEC.CA
SUITE 111 - 1671 DUNSMUIR POINT VICTORIA BC V9B 2W3

No.	ISSUED DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JPH
3.	ISSUED FOR OFFSITE APPROVAL	2025-01-03	STR

No.	REVISIONS DESCRIPTION	DATE	SIGN

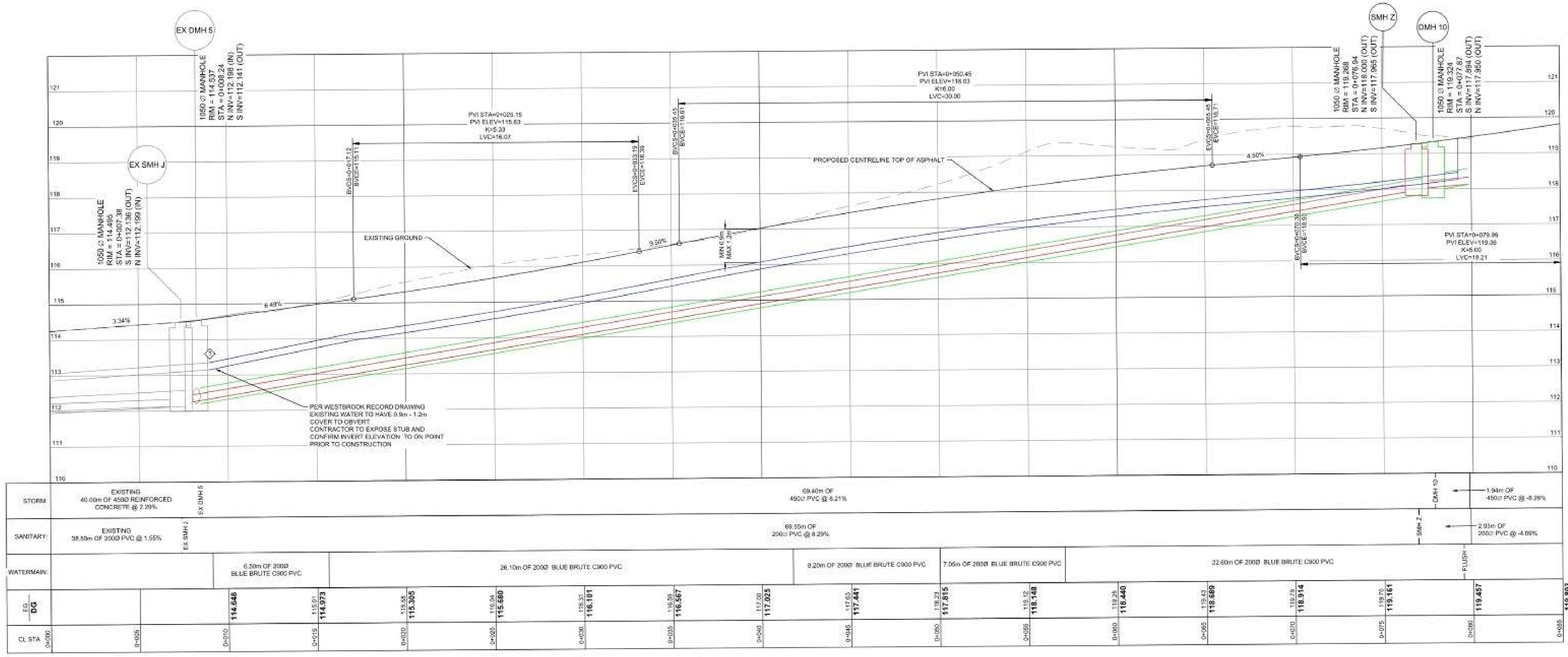
DRAWN BY: SR
DESIGN: SR
ENGINEER: CV
SEAL PERMIT TO PRACTICE

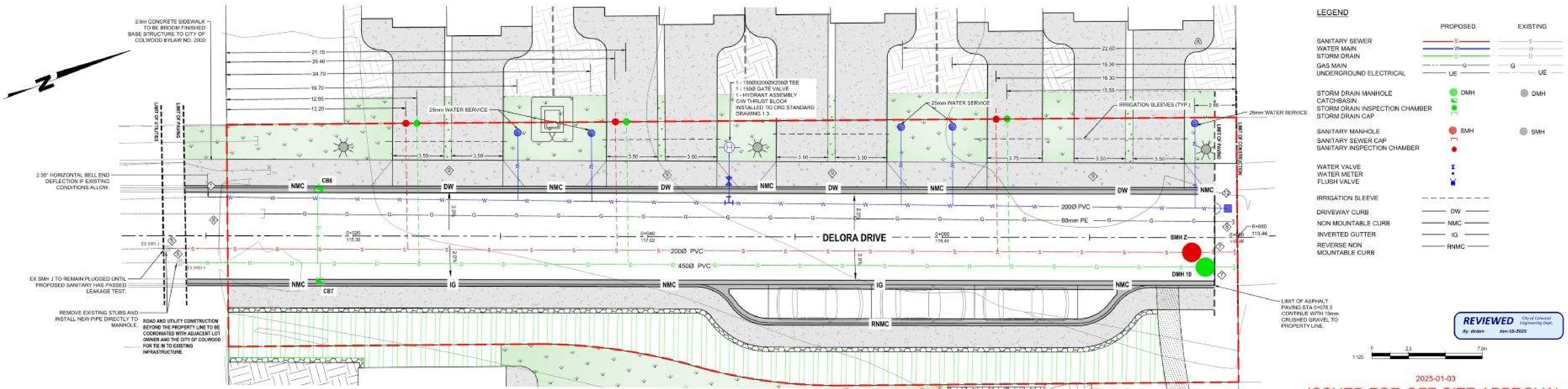
WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.

ROAD SECTIONS

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 5 OF 9
REV: ----
ON POINT DRAWING No. 369-02-C202





2025-01-03
ISSUED FOR OFF-SITE APPROVAL

CONSTRUCTION NOTES

1. CRD FORCES TO MAKE CONNECTION TO THE EXISTING WATERMAIN AT THE DEVELOPERS EXPENSE
2. FOR HYDRO, STREETLIGHTING, TELUS, ROGERS WORKS REFER TO PLANS SUPPLIED BY ELECTRICAL CONSULTANT. INFORMATION ON CIVIL DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION. SYNCHRONIZED PLANS TO BE ESTABLISHED PRIOR TO CONSTRUCTION.
3. GAS SERVICES BY FORTIS BC REFER TO PLANS BY FORTIS BC. ENSURE GAS SERVICES MEET CRD REQUIREMENTS FOR MINIMUM SEPARATION TO WATER. SERVICING CONTRACTOR TO COORDINATE FORTIS FOR INSTALLATION. WORKS ARE UNDER DEVELOPMENT AND ARE NOT INCLUDED ON THIS PLAN.
4. ON POINT TO PROVIDE ACCURATE RECORD AND PRODUCE RECORD DRAWING WHICH CAN BE PROVIDED TO THE CITY OF COLWOOD DEPICTING ALL BURIED UNDERGROUND PIPE.
5. CONTRACTOR RESPONSIBLE FOR CONFIRMING INVERT ELEVATION BEFORE CONSTRUCTION AND REPORT ANY DISCREPANCIES TO ON POINT.
6. INSTALL CATCH BASIN TO CITY OF COLWOOD BYLAW 2000 S11 CATCH BASIN LEAD TO BE 150mm SDR 28 PVC AND HAVE MINIMUM GRADE OF 1%.
7. INSTALL END OF LINE MANHOLE TO CITY OF COLWOOD BYLAW 2000 S1. EXTEND 1m BEYOND THE LIMIT OF PAVING
8. RELOCATE EXISTING END OF ROAD BARRIERS TO NEWLY ESTABLISHED END OF ROAD TO CITY OF COLWOOD BYLAW 2000 SSD R15. DAMAGE TO EXISTING BARRIERS TO BE REPLACED AT THE CONTRACTORS EXPENSE.
9. DRIVEWAY LETDOWNS AS PER CITY OF COLWOOD BYLAW 2000 SSD C7A.
10. INVERT GUTTER AND NON-MOUNTABLE CURB TO CITY OF COLWOOD BYLAW 2000 SSD C16.
11. SANITARY AND STORM SERVICE CONNECTIONS TO BE TO COLWOOD BYLAW 2000 STANDARD DRAWING SSD S7. INSPECTION CHAMBERS TO BE INSTALLED AT PROPERTY LINE TO BE TO CITY OF COLWOOD BYLAW 2000 SSD S9.
12. FLUSH VALVE TO BE INSTALLED TO CRD STANDARD DRAWING 1.6
13. WHERE WATERMAIN IS WITHIN 3m OF OTHER MAINLINE UTILITIES JOINTS TO BE WRAPPED IN PETROLATUM TAPE.
14. BOULEVARD LANDSCAPE DETAILS TO BE PROVIDED BY THE CITY OF COLWOOD. GRASS AND BOULEVARD TREES REQUIRED. EXACT SPECIES TO BE PROVIDED AT THE TIME OF BUILDING PERMIT.
15. 25mm MUNICIPEX WATER SERVICE PROVIDED TO EACH TOWNHOME BLOCK. INDIVIDUAL BLOCK WATER SERVICING TO BE INTERNALLY PLUMBED.

ONPOINT
PROJECT ENGINEERS LTD.
TEL: 250 479-7675 WWW.OPPCL.CA

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

ISSUED No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JFH
3.	ISSUED FOR OFFSITE APPROVAL	2025-01-03	STR

REVISIONS No.	DESCRIPTION	DATE	SIGN

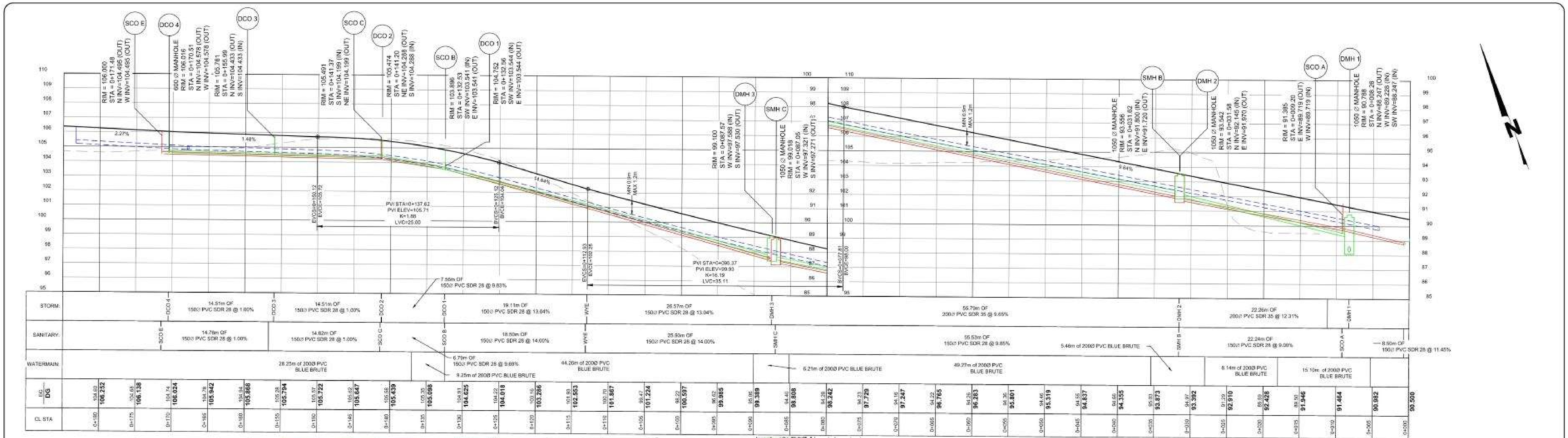
DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

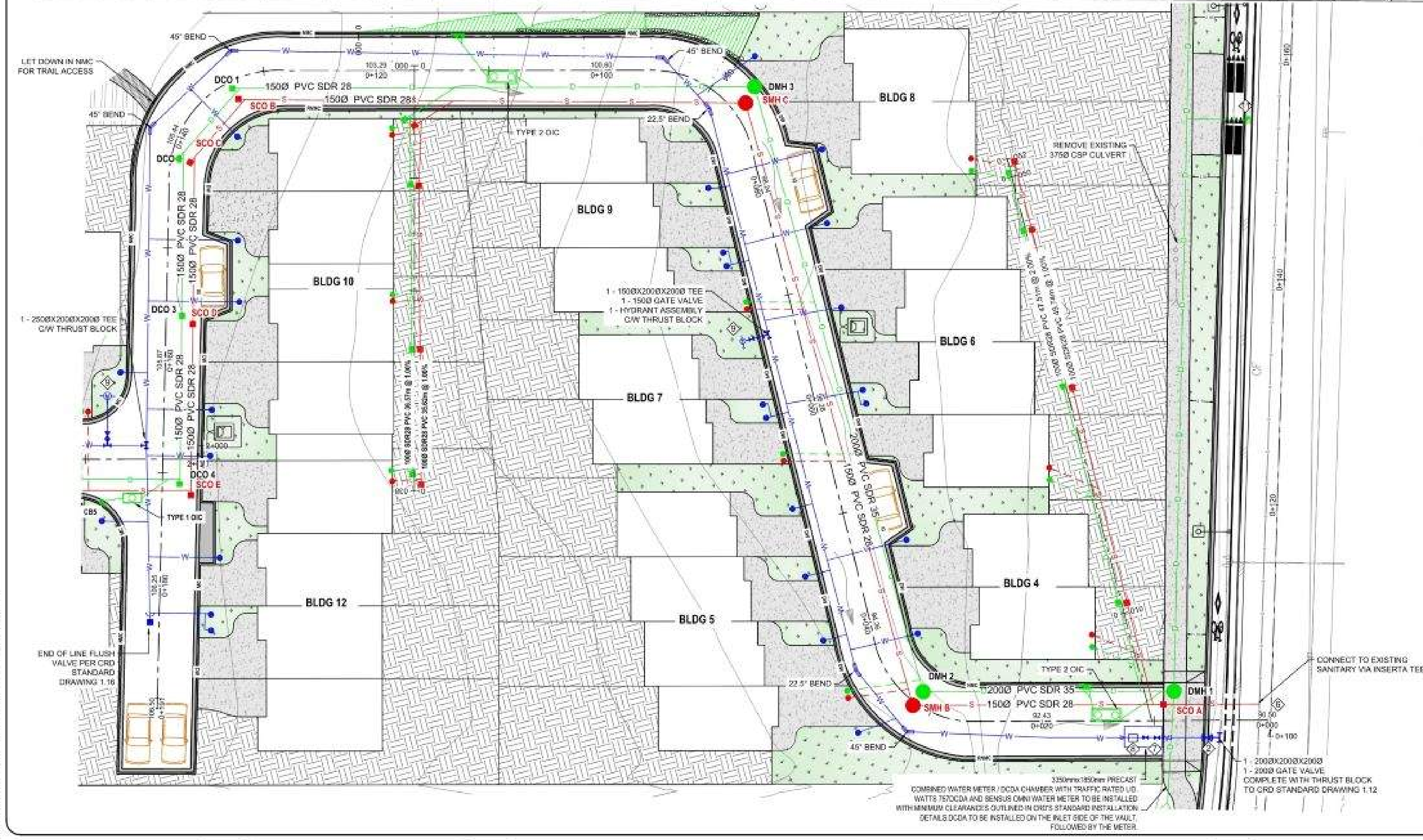
SEAL PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
DELORA DRIVE UTILITIES

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 6 OF 9
REV: ----
ON POINT DRAWING No. 369-01-C300





CONSTRUCTION NOTES

1. SANITARY AND DRAIN PIPES WITH GRADES GREATER THAN 15% REQUIRE PIPE ANCHORS SPACED 25m APART. PIPE ANCHORS TO BE SIZED ACCORDING TO MMCD DRAWING G8.
2. CRD FORCES TO MAKE CONNECTION TO THE EXISTING WATERMAIN AT THE DEVELOPERS EXPENSE
3. FOR HYDRO, STREETLIGHTING, TELUS, SHAW WORKS REFER TO PLANS SUPPLIED BY ELECTRICAL CONSULTANT. INFORMATION ON CIVIL DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION. SYNCHRONIZED PLANS TO BE ESTABLISHED PRIOR TO CONSTRUCTION
4. GAS SERVICES BY FORTIS BC REFER TO PLANS BY FORTIS BC. ENSURE GAS SERVICES MEET CRD REQUIREMENTS FOR MIN SEPARATION TO WATER SERVICING CONTRACTOR TO COORDINATE FORTIS FOR INSTALLATION.
5. ON POINT TO PROVIDE ACCURATE RECORD AND PRODUCE RECORD DRAWING WHICH CAN BE PROVIDED TO THE STRATA DEPICTING ALL BURIED UNDERGROUND PIPE.
6. CONTRACTOR RESPONSIBLE FOR CONFIRMING EXISTING SANITARY INVERT ELEVATION BEFORE CONSTRUCTION AND REPORT ANY DISCREPANCIES TO ON POINT.
7. INSTALL DOUBLE CHECK VALVE ASSEMBLY (DCVA) ON THE 200Ø DOMESTIC WATER LINE. CHAMBER AND LID TO BE H-20 TRAFFIC RATED. SIZING TO BE CONFIRMED PRIOR TO CONSTRUCTION.
8. INSTALL WATER METER ON THE DOMESTIC 200Ø WATER LINE. CHAMBER AND LID TO BE H-20 TRAFFIC RATED. 3350mmx1850mm PRECAST WATER METER CHAMBER OR APPROVED EQUIVALENT.
9. INSTALL FIRE HYDRANT ASSEMBLY TO CRD STANDARD DRAWING NO 1.3
10. ALL WATER SERVICES TO BE 25mm MUNICIPEX UNLESS OTHERWISE NOTED
11. INSTALL CATCH BASIN TO COLWOOD STANDARD BYLAW 2080 S11. CATCH BASIN LEAD TO BE 150mm AND HAVE MINIMUM GRADE OF 1%.
12. ALL WATER BENDS TO BE CONSTRUCTED WITH THRUST BLOCKS. THRUST BLOCKS TO BE CONSTRUCTED PER CRD ENGINEERING STANDARD DRAWING 1.8

LEGEND

	PROPOSED	EXISTING
SANITARY SEWER	S 150	S 200
WATER MAIN	W 200	W 200
STORM DRAIN	D 150	D 200
STORM DRAIN MANHOLE	DMH	
CATCHBASIN		
STORM DRAIN CLEANOUT		
STORM DRAIN INSPECTION CHAMBER		
SANITARY INSPECTION CHAMBER		
SANITARY SEWER CLEANOUT		
WATER VALVE		
WATER METER		
FLUSH VALVE		
IRRIGATION SLEEVE		
DRIVEWAY CURB	DW	DW
NON MOUNTABLE CURB	NMC	NMC
INVERTED GUTTER	IG	IG

REVIEW COMMENT FOR SWMP MEMO

Flow control or detention structures not shown as per SWMP memo - JA - 20250115

1:250

2025-01-03

FOR INFORMATION ONLY

PRIVATE SITE NOT INCLUDED IN APPROVAL SUBMISSION

ONPOINT PROJECT ENGINEERS LTD.
TEL: 250 479-7675 WWW.OPPEL.CA
SUITE 111 - 867 LANGFORD PKWY VICTORIA BC V9B 0A5

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

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1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC				
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JFH				
3.	ISSUED FOR INFORMATION ONLY	2025-01-03	STR				

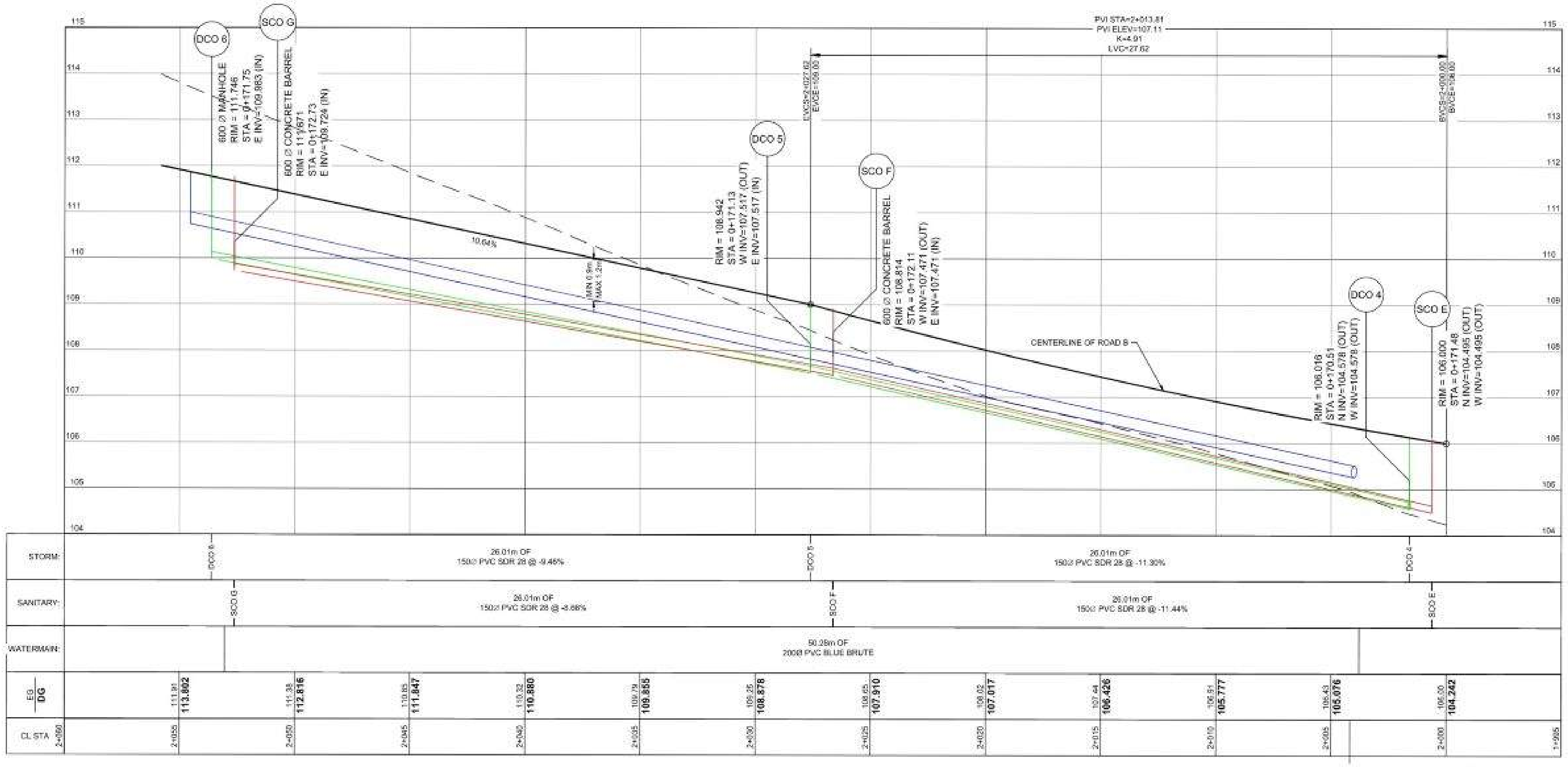
DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

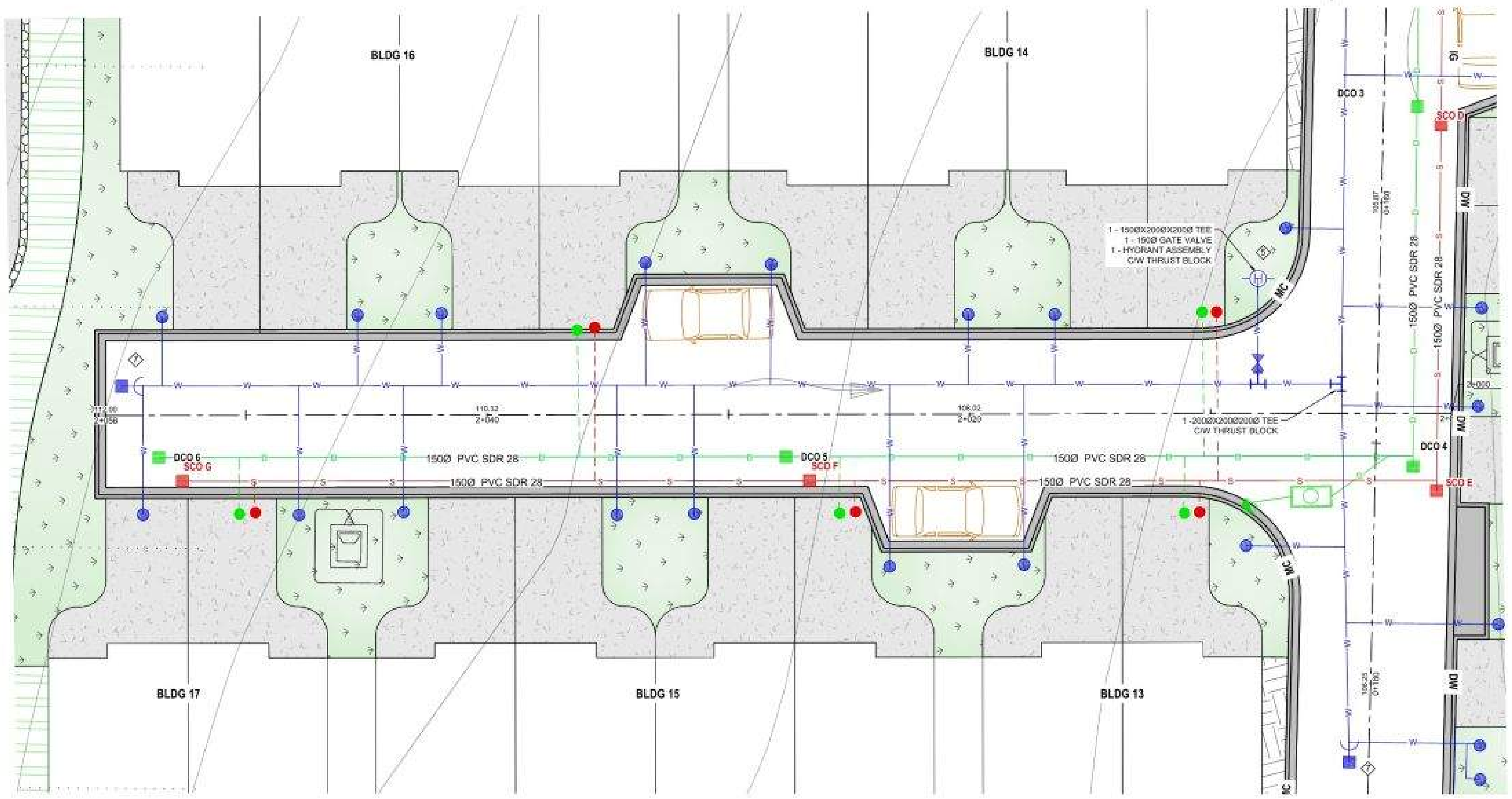
SEAL PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
ROAD A UTILITIES

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 7 OF 9
REV:
ON POINT DRAWING No. 369-01-C301





LEGEND

	PROPOSED	EXISTING
SANITARY SEWER	S 150	S 200
WATER MAIN	W 100	W 150
STORM DRAIN	D 150	D 200
STORM DRAIN MANHOLE	DMH	
CATCHBASIN		
STORM DRAIN CLEANOUT		
STORM DRAIN INSPECTION CHAMBER		
SANITARY INSPECTION CHAMBER		
SANITARY SEWER CLEANOUT		
WATER VALVE		
WATER METER		
FLUSH VALVE		
IRRIGATION SLEEVE		
DRIVEWAY CURB	DW	DW
NON MOUNTABLE CURB	NMC	NMC
INVERTED GUTTER	IG	IG

CONSTRUCTION NOTES

1. SANITARY AND DRAIN PIPES WITH GRADES GREATER THAN xxx REQUIRE PIPE ANCHORS SPACED 20m APART
2. FOR HYDRO, STREETLIGHTING, TELUS, SHAW WORKS REFER TO PLANS SUPPLIED BY ELECTRICAL CONSULTANT. INFORMATION ON CIVIL DRAWINGS ARE *NOT* TO BE USED FOR CONSTRUCTION. SYNCHRONIZED PLANS TO BE ESTABLISHED PRIOR TO CONSTRUCTION
3. GAS SERVICES BY FORTIS BC REFER TO PLANS BY FORTIS BC. ENSURE GAS SERVICES MEET CRD REQUIREMENTS FOR MIN SEPARATION TO WATER SERVICING CONTRACTOR TO COORDINATE FORTIS FOR INSTALLATION.
4. ON POINT TO PROVIDE ACCURATE RECORD AND PRODUCE RECORD DRAWING WHICH CAN BE PROVIDED TO THE STRATA DEPICTING ALL BURIED UNDERGROUND PIPE.
5. INSTALL FIRE HYDRANT ASSEMBLY TO CRD STANDARD DRAWING NO 1.3
6. ALL WATER SERVICES TO BE 25mm MUNICIPEX UNLESS OTHERWISE NOTED
7. INSTALL FLUSH VALVE TO CRD STANDARD DRAWING 1.16
8. THRUST BLOCKS TO BE CONSTRUCTED AT EACH BEND. THRUST BLOCKS TO BE CONSTRUCTED PER CRD ENGINEERING STANDARD DRAWING 1.8

1:250 0 5 15m

2025-01-03

FOR INFORMATION ONLY

PRIVATE SITE NOT INCLUDED IN APPROVAL SUBMISSION

ONPOINT PROJECT ENGINEERS LTD.

TEL: 250 479-7075 WWW.OPPEL.CA

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

ISSUED No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JFH
3.	ISSUED FOR INFORMATION ONLY	2025-01-03	STR

REVISIONS No.	DESCRIPTION	DATE	SIGN

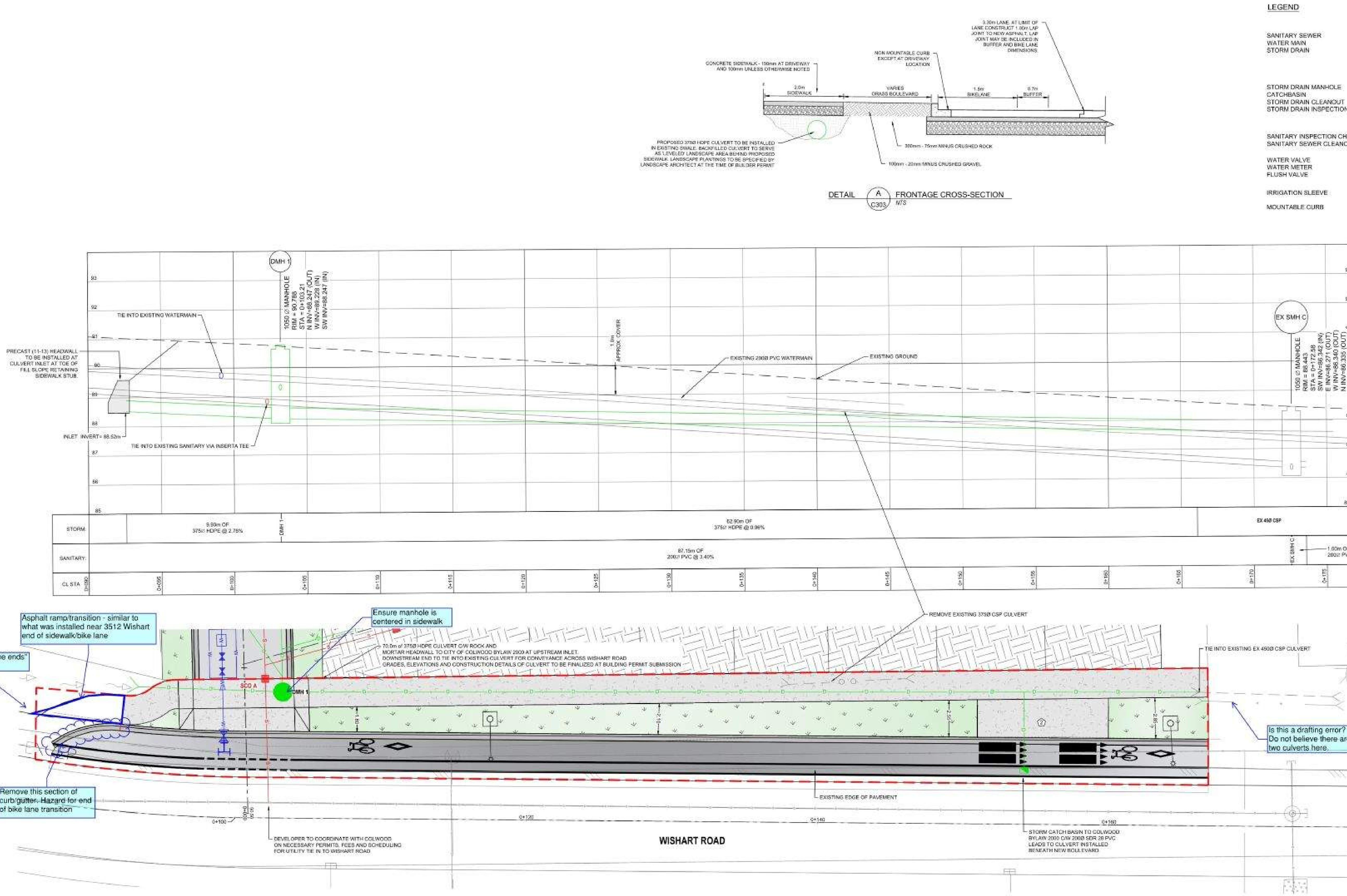
DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

SEAL PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
ROAD B UTILITIES

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 8 OF 9
REV: ----
ON POINT DRAWING No. 369-01-C302



LEGEND

	PROPOSED	EXISTING
SANITARY SEWER	S 150	S 200
WATER MAIN	W 100	W 150
STORM DRAIN	D 150	D 200

STORM DRAIN MANHOLE — DMH
CATCHBASIN
STORM DRAIN CLEANOUT
STORM DRAIN INSPECTION CHAMBER

SANITARY INSPECTION CHAMBER
SANITARY SEWER CLEANOUT

WATER VALVE
WATER METER
FLUSH VALVE

IRRIGATION SLEEVE
MOUNTABLE CURB — MC

CONSTRUCTION NOTES

1. PROFILE BASED ON EXISTING RECORD PROVIDED BY OTHERS. CONTRACTOR TO EXPOSE AND CONFIRM ELEVATIONS PRIOR TO CONSTRUCTION.

(2) BC TRANSIT BUS STOP PLATFORM AND PAVEMENT MARKINGS. BUS LANDING STRUCTURE PER DESIGN 4.4.6 IN THE BC MINISTRY OF TRANSPORTATION'S DESIGN GUIDE FOR BUS STOPS ADJACENT TO CYCLING INFRASTRUCTURE. PER CITY OF COLWOOD REQUIREMENTS. TACTILE WARNING MATS TO BE REPLACED WITH STAMPED ASPHALT. DIRECTION INDICATOR MATS NOT REQUIRED. BC TRANSIT TO INSTALL ALL NESSESARY BC TRANSIT INFRASTRUCTURE.

3. FOR HYDRO, STREETLIGHTING, TELUS, ROGERS WORKS REFER TO PLANS SUPPLIED BY ELECTRICAL CONSULTANT. INFORMATION ON CIVIL DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION. SYNCHRONIZED PLANS TO BE ESTABLISHED PRIOR TO CONSTRUCTION.

REVIEWED City of Colwood Engineering Dept. By dedev Jan-16-2025

1:125

2025-01-03
ISSUED FOR OFF-SITE APPROVAL

ONPOINT PROJECT ENGINEERS LTD.

Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

ISSUED				REVISIONS			
No.	DESCRIPTION	DATE	SIGN	No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 75% APPROVAL	2024-08-09	NOC				
2.	ISSUED FOR DEVELOPMENT PERMIT	2024-10-25	JFH				
3.	ISSUED FOR OFFSITE APPROVAL	2025-01-03	STR				

DRAWN BY: SR
DESIGN: SR
ENGINEER: CV

SEAL — PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
WISHART FRONTAGE IMPROVEMENTS

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No. TBD.
SHEET 9 OF 9
REV: ----
ON POINT DRAWING No. 369-01-C303

Walking Stick Developments Inc.

Erosion and Sediment Control Plan

3494 Wishart Road - Townhouse Development

The primary focus of the erosion and sediment control plan is to prevent erosion. If there is no erosion there will be minimal to no sediment substantially reducing the risk of sediment leaving the property.

General Mitigation Techniques to Prevent Erosion and Manage Sediment

- All sediment control barriers and structures will be inspected regularly and maintained/repaired as necessary under the supervision and direction of the project biologist.
- Weather advisories will be carefully monitored so that work can be scheduled to avoid wet and rainy periods that may result in a high surface flow rate that could lead to an increase in erosion and sedimentation.
- All catch basins will have a sediment "CB sock" installed to prevent any runoff into the storm system. The CB socks will be regularly inspected.
- Silt fencing composed of geotextile fabric will be installed along the East boundary (low point) of the property. Preventing any sediment from entering the storm water ditch that runs along the Western edge of Wishart Road.
- Gravel construction entrances will be built off of Wishart Road and at the Delora Dr extension point.
- Material stockpiles will be kept in flat areas whenever possible and at least 15 metres from any natural water course.
- Construction equipment and tools will be cleaned at least 30 metres from any water features.

Erosion and Sediment Control in Restoration Areas

- To reduce risk of erosion and sedimentation during restoration activities work will be scheduled to avoid periods of heavy rainfall (>20 mm in 24 hrs.) and re-plant bare areas promptly after invasive species removal.
- No large heavy equipment is to be used in the restoration area. Invasive vegetation is to be removed with hand tools or a mini excavator with a skilled operator.
- The amount of time soil is exposed will be minimized followed by seeding and planting as soon possible after the removal of invasive species.

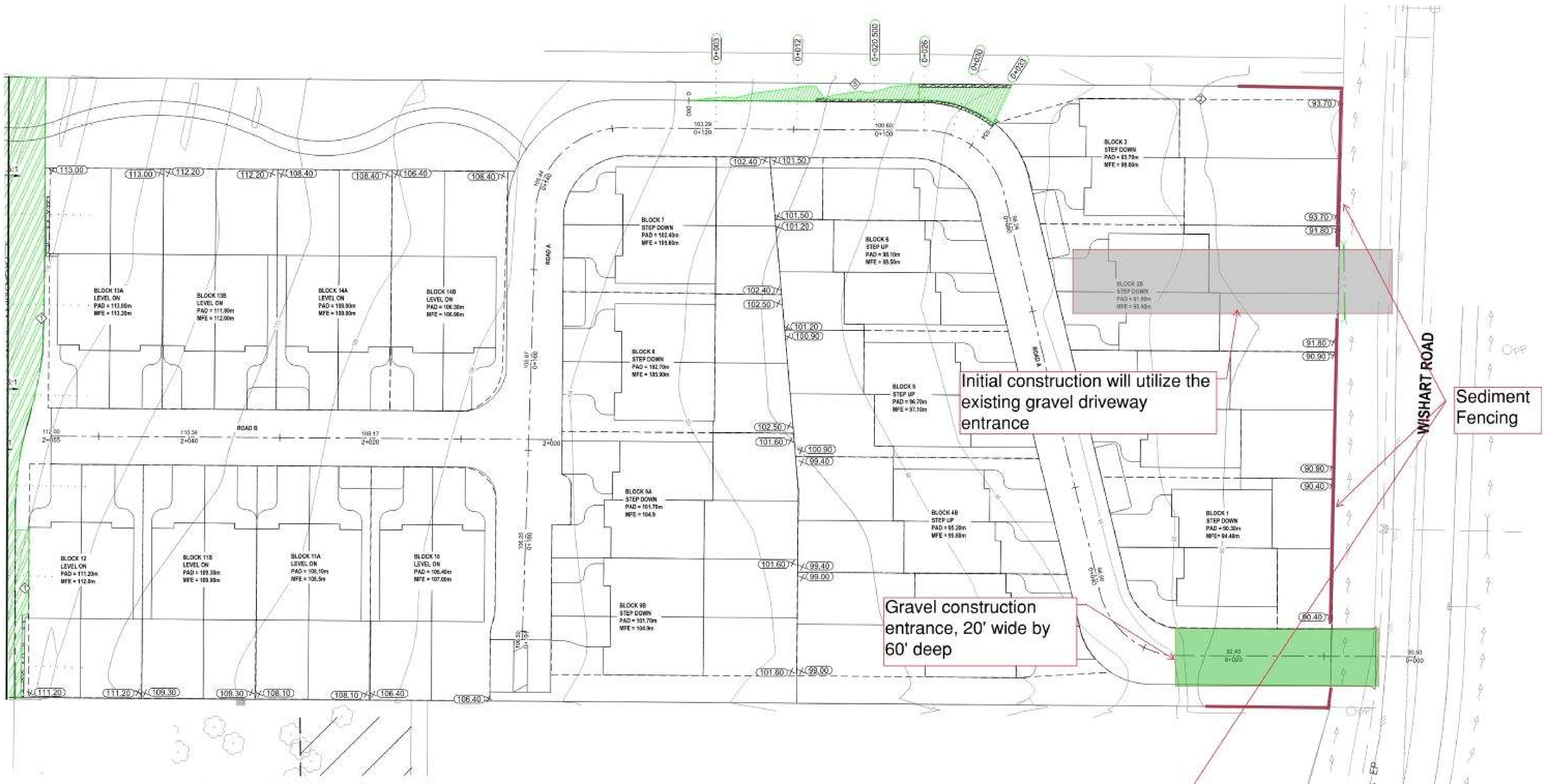
The attached site plans for 3494 Wishart Road display the location of the erosion and sediment control features and structures.

Sincerely,

David Lunn, P. Eng

7401 Veyaness Rd, Saanichton, B.C. V8M 1V9

250-686-5192 david@lunnprojects.ca

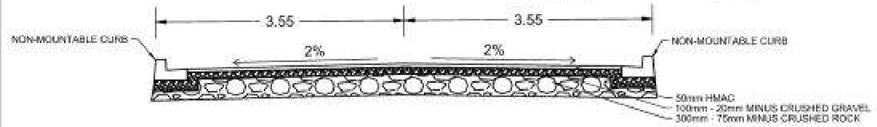


LEGEND

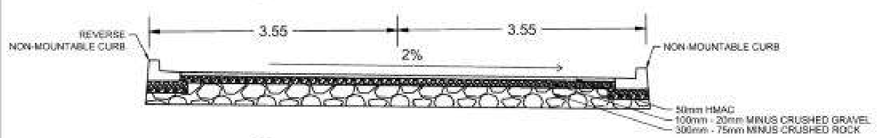
MFE	MAIN FLOOR ELEVATION.
PAD	BUILDING PAD PREP ELEVATION (0.6m BELOW FLOOR SLAB).
STEP UP	REAR STEP UP. WALKOUT AT REAR ON UPPER FLOOR.
STEP DOWN	REAR STEP DOWN. WALKOUT AT REAR ON LOWER FLOOR.
LEVEL	REAR LEVEL. WALKOUT AT REAR AT SAME LEVEL.
(205.38)	PROPOSED GROUND SPOT ELEVATION.
	MAJOR STORM FLOW PATH.
	FILL SLOPE
	CUT SLOPE
	FILL AREA
	CUT AREA

CONSTRUCTION NOTES

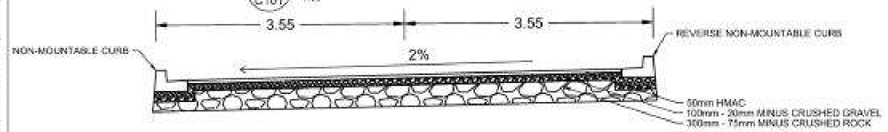
1. BUILDING FOOTINGS TO SUPPORT FILL SLOPE FROM DELORA DRIVE TO BE COORDINATED WITH GEOTECHNICAL AND STRUCTURAL ENGINEER. FINAL DESIGN TO BE COMPLETED FOR ISSUED FOR APPROVAL DRAWING SET.
2. DROP FOOTING TO BE USED TO ENSURE TOE OF FILL SLOPE MEETS EXISTING GROUND AT PROPERTY LINE. FINAL PAD ELEVATION TO BE DETERMINED FOR ISSUED FOR APPROVAL DRAWING SET.
3. ALL EARTHWORKS TO BE DONE UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER.
4. ALL RETAINING STRUCTURES OVER 1.2m HIGH, SLOPES OVER 30°, AND FILLS TO BE CERTIFIED BY GEOTECHNICAL ENGINEER.
5. PROPOSED WALL HEIGHT SUBJECT TO SITE CONDITIONS. WALL HEIGHT GREATER THAN 1.2m TO BE DESIGNED AND CERTIFIED BY GEOTECHNICAL ENGINEER.
6. CENTER LINE ROAD ELEVATION SHOWN ARE TO TOP OF ASPHALT.
7. CUT AND FILLS FOR LOTS ARE BASED ON PAD ELEVATIONS.
8. PRIVATE ROAD STRUCTURES SUBJECT TO APPROVAL BY GEOTECHNICAL ENGINEER.



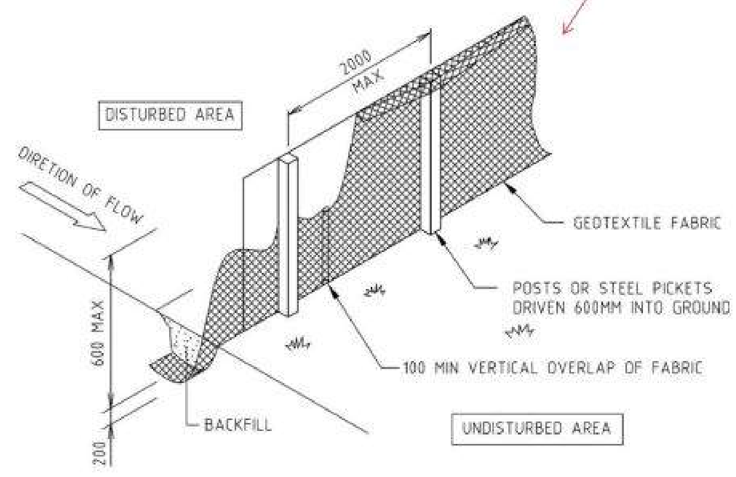
DETAIL A C101 ROAD A AND ROAD B STANDARD CROSS-SECTION 1:50



DETAIL B C101 ROAD A CROSS-SECTION (STA 0+000 - 0+083) 1:50



DETAIL C C101 ROAD A CROSS-SECTION (STA 0+083 - 0+139) 1:50



1:250 0 5 15m

2024-08-09

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Contractor must check and verify all dimensions and conditions on site and report any discrepancies to engineer prior to proceeding with work.

DO NOT SCALE THE DRAWING

ISSUED No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC

REVISIONS No.	DESCRIPTION	DATE	SIGN

DRAWN BY: NOC
DESIGN: NOC
ENGINEER: DM

SEAL — PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
EARTHWORKS - TOWNHOMES

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No.
SHEET 3 OF 8
ON POINT DRAWING No. 369-02-C101

LEGEND

MFE	MAIN FLOOR ELEVATION.
PAD	BUILDING PAD PREP ELEVATION (0.6m BELOW FLOOR SLAB)
STEP UP	REAR STEP UP. WALKOUT AT REAR ON UPPER FLOOR.
STEP DOWN	REAR STEP DOWN. WALKOUT AT REAR ON LOWER FLOOR.
LEVEL	REAR LEVEL. WALKOUT AT REAR AT SAME LEVEL.
205.38	PROPOSED GROUND SPOT ELEVATION.
	MAJOR STORM FLOW PATH.
	FILL SLOPE
	CUT SLOPE
	FILL AREA
	CUT AREA

CONSTRUCTION NOTES

1. BUILDING FOOTINGS TO SUPPORT FILL SLOPE FROM DELORA DRIVE TO BE COORDINATED WITH GEOTECHNICAL AND STRUCTURAL ENGINEER. FINAL DESIGN TO BE COMPLETED FOR ISSUED FOR APPROVAL DRAWING SET.
2. ALL EARTHWORKS TO BE DONE UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER.
3. ALL RETAINING STRUCTURES OVER 1.2m HIGH, SLOPES OVER 30°, AND FILLS TO BE CERTIFIED BY GEOTECHNICAL ENGINEER.
4. CENTER LINE ELEVATIONS SHOWN ARE TO TOP OF ASPHALT.
5. REFER TO DELORA DRIVE SECTION INCLUDED ON SHEET C102

1:125 — 0 2.5 7.5m

2024-08-09

ISSUED FOR 70% APPROVAL

ONPOINT PROJECT ENGINEERS LTD.

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DO NOT SCALE THE DRAWING

ISSUED

No.	DESCRIPTION	DATE	SIGN
1.	ISSUED FOR 70% APPROVAL	2024-08-09	NOC

REVISIONS

No.	DESCRIPTION	DATE	SIGN

DRAWN BY: NOC
DESIGN: NOC
ENGINEER: DM

SEAL — PERMIT TO PRACTICE

WALKING STICK DEVELOPMENTS LTD.

3494 WISHART ROAD
WALKING STICK DEVELOPMENTS LTD.
DELORA DRIVE - EARTHWORKS

ON POINT PROJECT No. 369-02
GOVERNING AUTHORITY FILE No.
SHEET 2 OF 8
REV
ON POINT DRAWING No. 369-02-C100