The Corporation of the City of Courtenay

Council Agenda

Meeting #: R12/2025
Date: July 16, 2025
Time: 5:00 p.m.
Location: CVRD Civic Room, 770 Harmston Ave, Courtenay

We respectfully acknowledge that the land we gather on is Unceded territory of the K'ómoks First Nation, the traditional keepers of this land.

7. INTERNAL REPORTS AND CORRESPONDENCE

7.1 Braidwood Road Infrastructure Upgrades/ Ryan Road Sidewalk Project Update 159

8. COUNCIL RESOLUTIONS

8.1 Traffic Safety Enforcement on Back Road - Councillor Hillian 204

WHEREAS traffic safety in residential neighbourhoods continues to be an issue of primary concern to Courtenay residents, including speeding and intersection safety, with particular concern regarding the Back Road area between Courtenay and Comox;

WHEREAS the City has limited methods of effective enforcement and limited financial resources to address traffic safety and municipal servicing in general;

THEREFORE BE IT RESOLVED THAT Council advocate to the Provincial government for municipal implementation of photo radar and expanded use of intersection cameras to significantly improve traffic safety enforcement and generate much needed municipal revenue; and

BE IT FURTHER RESOLVED THAT, if general municipal implementation is not supported or imminent, Council request implementation of a pilot speed enforcement program, utilizing photo radar or such other advanced technology as may be available, on an urgent basis on Back Road between Courtenay and Comox.

9. BYLAWS

9.1 For First, Second and Third Readings:

9.1.1 Zoning – Amendment Bylaw No. 3186 (649 McPhee Avenue) 205

9.2 For Adoption:

9.2.1 Loan Authorization Bylaw No. 3183, 2025 – Strategic Land Acquisition 2025 218

9.2.2 Loan Authorization Bylaw No. 3184, 2025 - 6th Street Bridge 2025 220

10. COUNCIL REPORTS

10.1 Councillor Cole-Hamilton

10.2 Councillor Frisch

10.3 Councillor Hillian 222

10.4 Councillor Jolicoeur

10.5 Councillor McCollum

10.6 Councillor Morin

10.7 Mayor Wells

11. IN CAMERA RESOLUTION

THAT Council close the meeting to the public pursuant to the following subsections of

the *Community Charter*:

90 (1) (e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality;

(g) litigation or potential litigation affecting the municipality;

(i) the receipt of advice that is subject to solicitor-client privilege, including communications necessary for that purpose;

(k) negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public; and

(2) (b) the consideration of information received and held in confidence relating to negotiations between the municipality and a provincial government or the federal government or both, or between a provincial government or the federal government or both and a third party.

12. ADJOURNMENT

The Corporation of the City of Courtenay

Council Minutes

Meeting #:	**R11/2025**
Date:	**June 25, 2025**
Time:	**4:00 pm**
Location:	**CVRD Civic Room, 770 Harmston Ave, Courtenay**

Council Present:
B. Wells (Mayor)
W. Cole-Hamilton
D. Frisch
D. Hillian
E. Jolicoeur (electronic, joined at 4:16 pm.)
M. McCollum
W. Morin

Staff Present:
G. Garbutt, City Manager (CAO)
C. Davidson, Director of Infrastructure & Environmental Engineering
A. Langenmaier, Director of Financial Services
K. Macdonald, Fire Chief
K. O'Connell, Director of Corporate Services
S. Saunders, Director of Recreation, Culture & Community Services
K. Shaw, Director of Operational Services
M. Wade, Director of Development Services
R. Dickinson, Development Engineer
A. Proton, Manager of Legislative Services (CO)
L. Bourgeois, Deputy Corporate Officer
L. Zervakis, Communication and Marketing Specialist

1. CALL TO ORDER

Mayor Wells called the meeting to order at 4:00 pm. and respectfully acknowledged that the meeting was conducted on the unceded territory of the K'ómoks First Nation, the traditional keepers of this land

Mayor Wells acknowledged the recent passing of local musician Anela Kahiamoe and extended condolences to his family and friends, recognizing his contributions to the Comox Valley community.

2. INTRODUCTION OF LATE ITEMS

Moved By Hillian
Seconded By McCollum

THAT Council add correspondence from Union of BC Municipalities (UBCM) Convention Lead under a new item numbered 6.1 - 2025 Union of BC Municipalities (UBCM) Convention - Provincial Appointment Book + Ministerial Meeting Requests and re-order the agenda accordingly.

CARRIED

3. ADOPTION OF MINUTES

3.1 Regular Council Minutes - June 11, 2025

Moved By Frisch
Seconded By Cole-Hamilton

THAT Council adopt the June 11, 2025 Regular Council minutes.

CARRIED

4. STAFF REPORTS

4.1 Corporate Services

4.1.1 City of Courtenay 2024 Annual Report

Moved By Hillian
Seconded By McCollum

THAT Council approve the City of Courtenay 2024 Annual Report.

CARRIED

4.2 Development Services

4.2.1 Development Cost Charge Proposed Rates

Nancy Henderson, Senior Local Government Advisor at Urban Systems Ltd presented the proposed Development Cost Charge (DCC) rates. Jessica Wang, Development Finance Consultant, at Urban Systems Ltd was available to answer Council's questions.

Councillor Jolicoeur joined the meeting at 4:16 p.m.

Moved By Frisch
Seconded By McCollum

THAT Council endorse the application of a 1% Municipal Assist Factor in the calculation of Development Cost Charges.

CARRIED

Moved By Frisch
Seconded By Morin

THAT Council endorse Table 2, 'Proposed DCC Rates (2025) by Category,' as presented in the June 25, 2025 staff report titled "Development Cost Charge Proposed Rates".

CARRIED

Moved By Frisch
Seconded By Hillian

THAT staff be directed to initiate public engagement on the draft Development Cost Charge (DCC) rates, as outlined in Table 2, and report back to Council by September 2025 with a summary of engagement feedback and the draft DCC bylaw for consideration.

CARRIED

4.3 Financial Services

4.3.1 2026-2027 RCMP Municipal Policing Contract: Approval in Principle

Inspector Scott Mercer, Officer in Charge of the Comox Valley RCMP, responded to questions from Council.

Moved By Frisch
Seconded By Cole-Hamilton

THAT Council provide approval in principle for an expenditure cap of $9,758,180 for the 2026/2027 Municipal Policing Contract.

CARRIED

4.3.2 Financial Information Act – 2024 Statement of Financial Information

Moved By McCollum
Seconded By Hillian

THAT Council approve the City of Courtenay Statement of Financial Information for the year ended December 31, 2024.

CARRIED

4.4 Fire Department

4.4.1 Fire Apparatus Replacement Schedule

Moved By Frisch
Seconded By Morin

THAT Council adopt a 15-year fire apparatus replacement cycle to ensure compliance with Fire Underwriters Survey standards for a medium-sized community; and

THAT Council direct staff to incorporate the revised apparatus replacement cycle into the 2026-2030 Financial Plan.

CARRIED

5. INTERNAL REPORTS AND CORRESPONDENCE

5.1 Solid Waste Curbside Collection Zone and Calendar Update

Moved By Hillian
Seconded By Cole-Hamilton

THAT Council receive the Solid Waste Curbside Collection Zone and Calendar Update briefing note.

CARRIED

6. EXTERNAL CORRESPONDENCE

6.1 2025 Union of BC Municipalities (UBCM) Convention - Provincial Appointment Book + Ministerial Meeting Requests

Moved By Frisch
Seconded By Cole-Hamilton

THAT Council direct staff to submit ministerial meeting requests for the Union of BC Municipalities (UBCM) Convention as follows:

- Minister of Housing and Municipal Affairs, Ravi Kahlon
- Minister of Infrastructure, Bowinn Ma
- Premier David Eby
- Minister of Health, Josie Osborne
- Minister of Transportation and Infrastructure, Mike Farnworth
- Minister of Tourism, Arts, Culture and Sport, Spencer Chandra Herbert.

CARRIED

7. NOTICE OF MOTION

7.1 Traffic Safety Enforcement on Back Road - Councillor Hillian

WHEREAS traffic safety in residential neighbourhoods continues to be an issue of primary concern to Courtenay residents, including speeding and intersection safety, with particular concern regarding the Back Road area between Courtenay and Comox; and

WHEREAS the City has limited methods of effective enforcement and limited financial resources to address traffic safety and municipal servicing in general;

THEREFORE BE IT RESOLVED THAT Council advocate to the Provincial government for municipal implementation of photo radar and expanded use of intersection cameras to significantly improve traffic safety enforcement and generate much needed municipal revenue; and

BE IT FURTHER RESOLVED THAT, if general municipal implementation is not supported or imminent, Council request implementation of a pilot speed enforcement program, utilizing photo radar or such other advanced technology

as may be available, on an urgent basis on Back Road between Courtenay and Comox.

8. COUNCIL REPORTS

8.1 Councillor Cole-Hamilton

No report provided.

8.2 Councillor Frisch

No report provided.

8.3 Councillor Hillian

Councillor Hillian referenced resident correspondence regarding traffic concerns on Back Road and McDonald Road. He requested staff input on suggested safety measures. Staff confirmed data is being compiled and a memo can be provided. Councillor Hillian also reported on a recent call with the Ministry of Solicitor General and ICBC regarding traffic enforcement technology and municipal input on pilot programs.

Councillor Hillian submitted a report of activities, see agenda.

8.4 Councillor Jolicoeur

No report provided.

8.5 Councillor McCollum

No report provided.

8.6 Councillor Morin

No report provided.

8.7 Mayor Wells

Mayor Wells acknowledged Council's participation in recent community events, including graduation ceremonies and Indigenous Peoples Day on June 21st, hosted by K'ómoks First Nation, noting strong turnout and community engagement.

9. IN CAMERA RESOLUTION

Moved By Frisch
Seconded By Cole-Hamilton

THAT Council close the meeting to the public pursuant to the following subsections of the Community Charter:

90 (1) A part of a council meeting may be closed to the public if the subject matter being considered relates to or is one or more of the following:

(b) personal information about an identifiable individual who is being considered for a municipal award or honour, or who has offered to provide a gift to the municipality on condition of anonymity;

(e) the acquisition, disposition or expropriation of land or improvements, if the council considers that disclosure could reasonably be expected to harm the interests of the municipality; and

(k) negotiations and related discussions respecting the proposed provision of a municipal service that are at their preliminary stages and that, in the view of the council, could reasonably be expected to harm the interests of the municipality if they were held in public.

CARRIED

10. ADJOURNMENT

Mayor Wells terminated the open portion of the meeting at 6:10 p.m. Following the conclusion of the in camera portion of the meeting, Mayor Wells terminated the meeting at 6:45 pm.

CERTIFIED CORRECT

Adopted by Council [MONTH] [DAY], 2025.

Mayor Bob Wells

Corporate Officer

June 16, 2025

Letter mailed & emailed to:

Mayor & Members of Council
City of Courtenay
830 Cliffe Avenue
Courtenay, BC V9N 2J7

Copy emailed to:

Inspector Scott Mercer
Comox Valley Police Department
via email: scott.mercer@rcmp-grc.gc.ca

Dear Mayor & Members of Council,

Back Road residents have had more than enough of this chaos - thousands more cars and a thousand times more noise that is caused by high volumes of traffic and excessive speeds. Not a single driver cares that this is NOT the *Detour Route* or that Back Road is for *Local Traffic Only.* The level of driver negligence while transiting through a residential street is quite stunning when it's witnessed up close on Back Road. And because of this, residents' are rightly concerned for their safety and making different choices about how they go about their their day to day routines. So why do we need to live like this?

We know you're all busy people, so we will be as brief as possible while trying to convey residents' feelings of betrayal and outrage.

After meeting with the CVRD Sewer Commission on June 10th, we are asking the City Council if it was aware that the CVRD would in effect do NOTHING to enforce the detour route or mitigate volume until there was 8,800 cars on Back Road?

If Council members read our October 2023 letter about speed, high risk driver behaviour, and rat running they would have, at a minimum, implemented speed mitigation measures over a year ago. Instead they hired a Consultant last Spring and 6 months later approved a Traffic Circle for Valley View Drive/Back Road to be built near the end of the Project, that will slow traffic at a single conflict point on 3.2 kms of road.

The option proposed by the CVRD last year was to install a barricade north of the hairpin but they conveniently neglected to mention that option wouldn't be considered until 8,800 vehicles, or the equivalent of 6000+ new vehicles, were choosing Back Road as their detour route. So enforcement was NEVER actually the Plan, it was just words meant to placate Back Road residents.

We are therefore calling on the City of Courtenay to install a barricade now, *because we have zero speed enforcement, no detour enforcement and the speeds of those cutting through is absolutely out-of-control. Back Road literally feels like living on a freeway.*

Do the Police have the resources to keep residents safe?

When our Campaign started, every local leader knew Back Road's notorious reputation for street racing. What they didn't know is just how bad it was until the City collected the first Speed Board data - 110 km/h is not reserved for nighttime racing any longer but happens in the middle of the day and it gets worse year over year.

We stopped reporting speed, street racing, dangerous driver behaviour, close calls, or near death experiences to the Police more than a year ago. This is the only advice we have gotten at every turn and we initially followed that advice - in fact some of us had the Police on speed dial. However, it accomplished two things, 1) raised people's blood pressure, and 2) adds numbers to a statistical report.

*The problem starts with an understaffed Police department and two traffic officers for the entire Comox Valley, one of which is part time. Then there's the reality, as described by the new Police Inspector, almost the same words as his predecessor two years ago: "**To operate speed enforcement on Back Road is dangerous for Officers and puts the public at risk.**"*

With the greatest respect for our Local Police, calling to report an incident has resulted in a zero response rate and becomes a data point on a quarterly report. People feel hopeless in this circumstance and stop making those calls.

The problems have exploded since the Project started as thousands more drivers divert onto Back Road for the sole purpose of saving time. Drivers are not phased by the fact this is a residential neighbourhood and show no concern over the disruption or the danger this poses to us.

As long as this is tolerated by our local leaders, drivers will continue to speed through with impunity on Back Road. The sooner Council accepts that it is not possible for the Police to save our neighbourhood, the sooner they will accept that it is Council that is responsible for our safety and it is Council that needs to fix this problem. And any new speed mitigation measures need to protect all residents from Ryan Road to the City's southern boundary. It is NOT enough to build a single ($300,000) speed hump at Valley View Drive.

How is this impacting people's lives?

The night time speed noise wakes us up many times a night. Through our recent survey we learned that many households close their windows at night and use a fan to try to mask the noise. And it's not just vehicles and motorbikes, it's commercial trucks, hundreds of contractor vehicles, Comox Taxi, logging & dump trucks, semi's and long flat deck trucks that are flooding our neighbourhood. They SPEED and IT'S LOUD!

People feel at high risk entering or exiting their DRIVEWAYS, one family invested thousands to try to soundproof their bedroom, people's health & well being is compromised and their entire lives are upended. Families argue because of the stress and fear - one wants to stay hoping something will change and the other wants to sell and get the hell out of here. Not only because there's 3 - 4,000 more cars going past our doorsteps but because driver behaviour and speed is so out-of-control they no longer feel safe even on the sidewalk or crossing at a crosswalk.

Summary

We do not feel that Council has taken this situation serious enough.

The City of Courtenay placed residents' safety in the hands of the CVRD and at no time did they disclose to us that they could do nothing except count cars. The CVRD emphasized that whatever problems existed on Back Road before the Project IS NOT their responsibility. Although they promised us that 'if necessary' a barricade could be installed at Morrison, they conveniently neglected to tell us that 8,800 cars was the magic number before this option was considered. It appears that everyone knew, except us, and regrettably we placed our trust and hope that signage and enforcement would work. Their Plan failed spectacularly.

We don't accept moving residents through on a residential street between Comox and Courtenay when there are multiple Arterial roads designed for and designated as detour routes. Courtenay roads are the responsibility of Courtenay Council. We demand that you accept that responsibility and make changes to protect Back Road residents. The CVRD is focused on a number counting exercise and it is based on a severely inflated view of Back Road's safe carrying capacity. Back Road is being used as an Arterial route and it's completely unacceptable.

The CVRD's closures at Comox Avenue and last week at Strathcona & Corker will do nothing to change the traffic pattern on Courtenay's Back Road as vehicles continue to re-route from Ryan Road and up MacDonald for the duration of the project.

The profound impact on our lives is impossible to overstate. The City should choose a **barricade that divides the two communities at Courtenay's southern boundary** and could do so **immediately and inexpensively.**

This option will force drivers to stay on the appropriate Arterial roads and stop them from rat running through our residential neighbourhood. This will also serve to stop the ever increasing number of large commercial vehicles, and an ever increasing number of motorbikes and cars that street race day and night from Comox to Courtenay.

It is time for City Council to put Courtenay residents FIRST and take IMMEDIATE ACTION.

Regards,

Carolyn Rice

Carolyn Rice
Campaign to Make Back Road Safe

Matthews, Rayanne

From: Back Road Campaign <makebackroadsafe@gmail.com>
Sent: Thursday, July 10, 2025 11:59 AM
To: Matthews, Rayanne
Cc: Hillian, Doug
Subject: Delegation Request - Conditions on Back Road

Categories: Delegation

Today, residents are less safe than we were two years ago when we launched our campaign. We now live in a constant state of fear and anxiety, suffer from sleep deprivation fatigue and stay indoors to escape the chaotic noise. Writing these words is as disturbing as the reality of how dramatically our lives have been impacted.

Courtenay residents on Back Road have borne the greatest burden and a level of disruption that exceeds that of any other resident in the Comox Valley. We have a right to be heard by this Council. The CVRD and City of Courtenay have for over four months stood by while their ineffective detour/local traffic signs failed miserably. Arguably no one expected the Plan to succeed and that's why there are no expressions of concern and the motion on the table changes nothing for at least another year or maybe not at all. A Plan that kicks our issues down the road, while knowing that Back Road is a dangerous daily speedway for thousands and thousands of vehicles, is unacceptable. We can't imagine that any one of us can survive another five months.

We are demanding that the City STOP putting our concerns on hold while they engage with the Province because they have had two years and taken no action. The Province has for 10 years, in spite of all the compelling evidence, refused to allow a Municipal Photo Speed Enforcement (PSE) - making this feel like another in a growing list of delay tactics. This motion is two years too late. A long term goal, perhaps, but we need immediate and urgent ACTION from this Council.

A similar motion supporting Photo Speed Enforcement was adopted by Council over a year ago and there has been zero follow up or promising news from the Province. Further, the Comox Valley Mayors, First Nation and CVRD signed onto a letter addressed to the Ministry of Transportation in June 2024, a copy of which they provided as proof they were doing something, and that letter may still be sitting on someone's desk in Victoria because there was no follow up. The Mayor's office has verified there are no notes, reports, pending actions or anything that confirms a meeting was planned or held.

We will not give up our fight to protect the integrity, safety and liveability of our neighbourhood. The City needs to place a barricade on Back Road, as was promised by the CVRD, and it needs to be a priority. Once in place, we will celebrate by *walking* to our neighbour's house because we will no longer fear being killed along the way, we will *sit outside* on a sunny day and we will *open our windows* once again to breath the night air with the promise of a good night's sleep.

We are asking that the City of Courtenay reserve the permitted delegation time to our group, who in good faith and with respect, have asked that their voices be heard. We are available for either the July 16th or 30th meeting. Thank you.

Regards,
Carolyn Rice
Campaign to Make Back Road Safe

RCMP·GRC
ROYAL CANADIAN MOUNTED POLICE • GENDARMERIE ROYALE DU CANADA

Comox Valley RCMP Detachment

QUARTERLY REPORT

CITY OF COURTENAY

April 1, 2025 – June 30, 2025

Comox Valley RCMP Detachment Quarterly Report

April 1, 2025 to June 30, 2025

The Comox Valley Royal Canadian Mounted Police (RCMP) provides quarterly updates on policing in the community. The quarterly reports coincide with the Comox Valley RCMP Annual Performance reporting timelines in conjunction with Community Priorities.

First Quarter: April 1 to June 30
Second Quarter: July 1 to September 30
Third Quarter: October 1 to December 31
Fourth Quarter: January 1 to March 31

Calls for Service

In the first quarter of the 2025-2026 fiscal year, there was an 8.9 percent (336 file) decrease in the number of Calls for Service in Courtenay relative to the first quarter of the previous fiscal year.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2021	1195	1159	1308	1309	1279	1452	1410	1452	1405	1254	1276	1207	**15706**
2022	1059	1016	1241	1243	1253	1330	1403	1402	1488	1331	1101	1085	**14952**
2023	1248	1133	1232	1235	1392	1345	1411	1373	1177	1088	1099	1246	**14979**
2024	1120	1120	1174	1310	1306	1177	1351	1294	1206	1099	1043	964	**14164**
2025	1046	946	1025	1019	1208	1230							**6474**

Most Common Call Types

In the first quarter of the 2025-2026 fiscal year, the most common types of Call for Service in Courtenay were Traffic Incident, Check Wellbeing, and Unwanted Person. Relative to the first quarter of the previous fiscal year, there were notable decreases in Calls for Service for Check Wellbeing as well as Unwanted Person files and there was a notable increase in Calls for Service for Breach. The increase in Calls for Service for Breach was largely attributable to warrants issued at the Courthouse.

Final File Type	First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
	2021	2022	2023	2024	2025		

1	TRAFFIC INCIDENT	376	278	288	295	329	12%	34
2	CHECK WELLBEING	295	340	410	338	265	-22%	-73
3	UNWANTED PERSON	215	304	373	362	253	-30%	-109
4	DISTURBANCE	235	227	275	221	211	-5%	-10
5	THEFT	247	234	178	175	183	5%	8
6	PROPERTY	218	176	177	181	173	-4%	-8
7	SUSPICIOUS CIRCUMSTANCES	167	164	199	174	171	-2%	-3
8	BREACH	101	96	97	108	163	51%	55
9	ASSIST POLICE / FIRE / AMBULANCE	117	120	155	132	116	-12%	-16
10	ALARM	83	92	110	129	105	-19%	-24

Most Common Call Locations (Excluding RCMP Detachment)

In the first quarter of the 2025-2026 fiscal year, relative to the first quarter of the previous fiscal year, there were notable increases in Calls for Service at the Provincial Courthouse, The Junction, and the Driftwood Mall. There was a 35-precent decrease in Calls for Service at the Connect Warming Centre. In the first quarter of the 2025-2026 fiscal year:

- Calls for Service at the Provincial Courthouse were predominantly related to Breach;
- Over half the Calls for Service at The Junction pertained to Missing Person, Check Wellbeing, Unwanted Person, Assault, Assist Police/Fire/Ambulance, and Abandoned 911; and
- Over half the Calls for Service at the Driftwood Mall pertained to Unwanted Person, Shoplifter, Theft, and Suspicious Circumstances.

Location		First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
		2021	2022	2023	2024	2025		
1	420 CUMBERLAND RD (Provincial Courthouse)	36	60	30	38	93	145%	55
2	757 RYAN RD (Superstore)	45	79	71	69	78	13%	9
3	685 CLIFFE AVE (Connect Warming Centre)	63	16	127	111	72	-35%	-39
4	988 8TH ST (The Junction)	35	41	20	18	44	144%	26
5	2751 CLIFFE AVE (Driftwood Mall)	45	50	32	28	43	54%	15
6	444 LERWICK RD (Crown Isle Shopping Plaza)	18	23	26	36	41	14%	5
7	101 LERWICK RD (Hospital)	79	77	65	48	40	-17%	-8
8	0 COURTENAY	16	24	42	37	37	0%	0

	(Unspecified Location)							
9	3199 CLIFFE AVE (SmartCentres Mall / Walmart)	39	55	24	31	33	6%	2
10	1029 RYAN RD (Washington Inn Apartments)	8	32	40	22	27	23%	5

Most Common Downtown Calls for Service

In Downtown Courtenay, the number of Calls for Service the first quarter of the 2025-2026 fiscal year (757) decreased by 13 percent from the number of Calls for Service the first quarter of the previous fiscal year (868). In the first quarter of the 2025-2026 fiscal year, there was a notable decrease in Calls for Service pertaining to Unwanted Person and a notable increase in Calls for Service pertaining to Breach relative to the first quarter of the previous fiscal year.

Final File Type		First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
		2021	2022	2023	2024	2025		
1	UNWANTED PERSON	71	96	170	157	104	-34%	-53
2	BREACH	25	53	26	45	86	91%	41
3	CHECK WELLBEING	55	68	96	77	58	-25%	-19
4	DISTURBANCE	43	46	84	49	51	4%	2
5	TRAFFIC INCIDENT	67	41	49	37	47	27%	10
6	THEFT	34	24	43	51	40	-22%	-11
7	ALARM	27	19	35	34	36	6%	2
8	SUSPICIOUS CIRCUMSTANCES	22	24	41	34	32	-6%	-2
9	DRUGS	15	13	6	25	26	4%	1
10	SUSPICIOUS PERSON	17	20	36	11	24	118%	13
11	PROPERTY	21	17	26	35	24	-31%	-11
12	MISCHIEF	19	20	34	30	19	-37%	-11
13	ASSAULT	11	9	19	26	16	-38%	-10
14	ABANDONED 911	23	13	21	16	16	0%	0
15	ASSIST POLICE / FIRE / AMBULANCE	19	19	38	28	14	-50%	-14

Violent Crime

In the first quarter of the 2025-2026 fiscal year, there were 236 Violent Crime files in Courtenay. This was a 6 percent (15 file) decrease relative to the first quarter of the previous fiscal year.

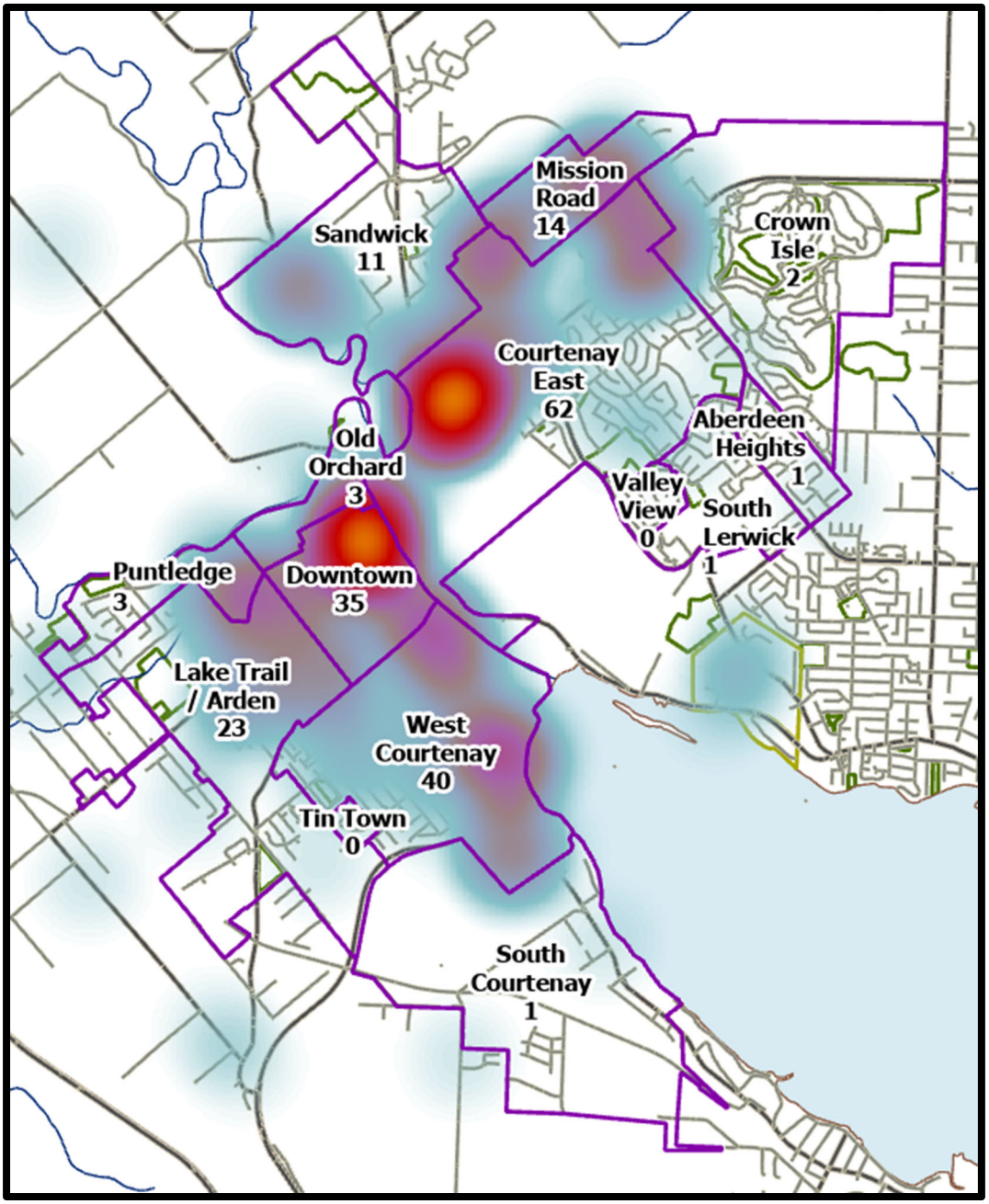
Types of Violent Crime

In the first quarter of the 2025-2026 fiscal year, the most common types of Violent Crime in Courtenay were Assaults, Harassment, and Utter Threats.

File Type	First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
	2021	2022	2023	2024	2025		
ASSAULTS	99	104	126	113	120	6%	7
HARASSMENT	49	41	50	45	49	9%	4
UTTER THREATS	65	53	51	58	42	-28%	-16
SEX OFFENCES	20	20	21	19	16	-16%	-3
EXTORTION	1	2	9	5	4	-20%	-1
ROBBERY	7	0	1	10	2	-80%	-8
WEAPONS OFFENCES	1	0	0	1	1	0%	0
HOMICIDE	0	1	0	0	1		1
INTIMIDATION	0	0	0	0	1		1
KIDNAPPING	0	1	0	0	0		0
Grand Total	**242**	**222**	**258**	**251**	**236**	-6%	-15

Map of Violent Crime by Area of Courtenay

In the first quarter of the 2025-2026 fiscal year, the areas of Courtenay with the highest number of Violent Crime files were Courtenay East and West Courtenay. Please note that are more files attached to Courtenay than are included in the neighbourhoods shown in this map.



Property Crime

In the first quarter of the 2025-2026 fiscal year, there were 529 Property Crime files in Courtenay. This was a 16 percent (98 file) decrease relative to the first quarter of the previous fiscal year.

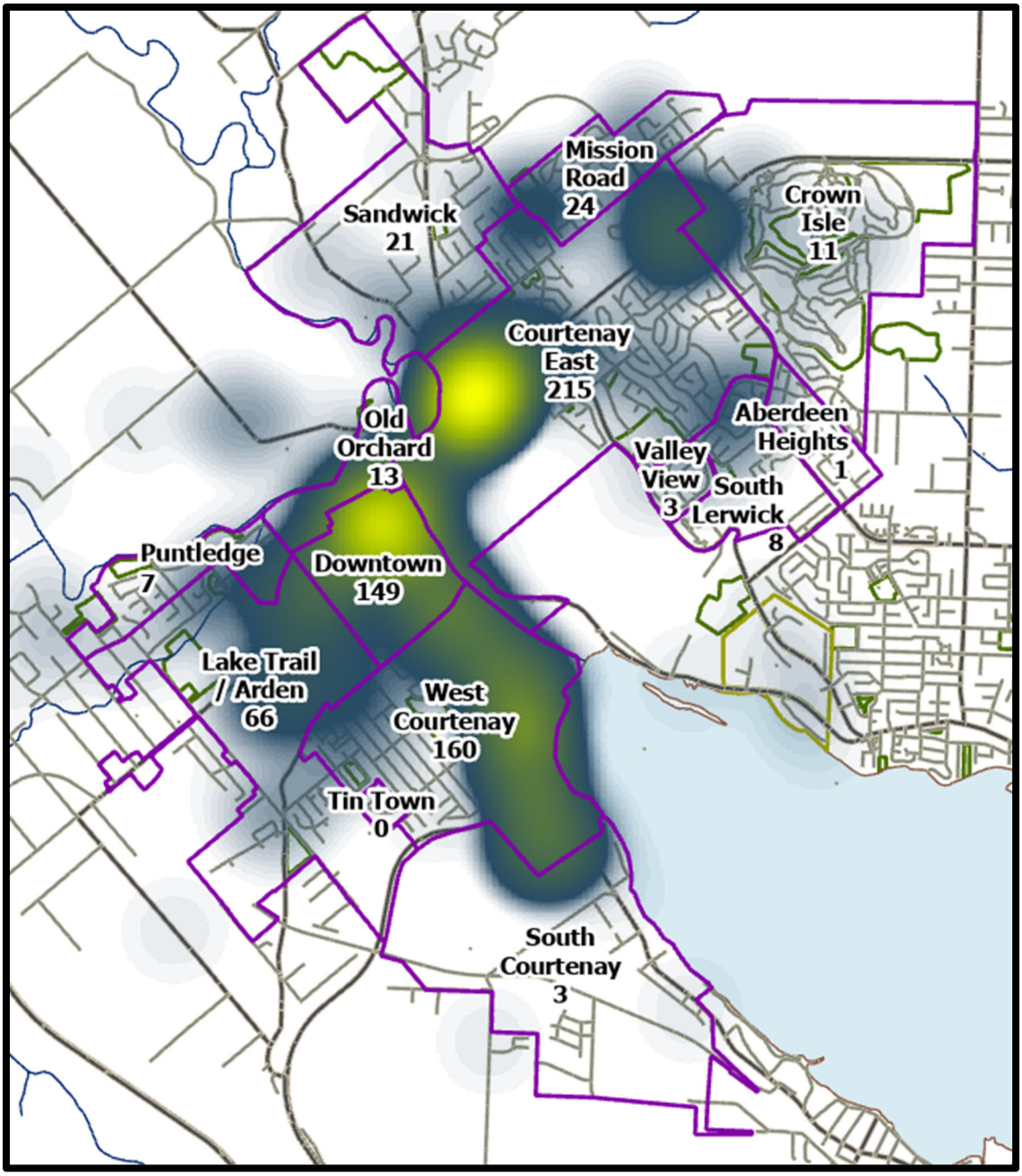
Types of Property Crime

In the first quarter of the 2025-2026 fiscal year, the most common types of Property Crime in Courtenay were Mischief to Property and Shoplifting. Relative to the first quarter of the previous fiscal year, there were notable decreases in Mischief to Property as well as Break and Enters. There was a notable increase in Shoplifting.

File Type	First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
	2021	2022	2023	2024	2025		
MISCHIEF TO PROPERTY	209	245	250	253	190	-25%	-63
SHOPLIFTING	56	91	69	87	103	18%	16
OTHER THEFT U/5000	83	80	68	74	65	-12%	-9
FRAUDS	63	65	60	64	57	-11%	-7
THEFT FROM VEHICLE	116	88	48	38	45	18%	7
AUTO THEFT	26	20	14	14	17	21%	3
BREAK & ENTER - RES	11	11	17	24	12	-50%	-12
BIKE THEFT	31	15	21	14	12	-14%	-2
OTHER GO	7	6	30	10	11	10%	1
POSSESS STOLEN PROPERTY	11	9	11	12	5	-58%	-7
BREAK & ENTER - OTH	13	13	4	10	4	-60%	-6
BREAK & ENTER - BUS	20	18	18	17	3	-82%	-14
THEFT FROM MAIL	1	2	1	1	1	0%	0
ARSON	7	0	0	5	1	-80%	-4
THEFT UTILITIES	3	4	0	0	0		0
OTHER THEFT O/5000	5	1	3	1	0	-100%	-1
Grand Total	**662**	**668**	**614**	**624**	**526**	-16%	-98

Map of Property Crime by Area of Courtenay

In the first quarter of the 2025-2026 fiscal year, the areas of Courtenay with the highest number of Property Crime files were Courtenay East, West Courtenay, and Downtown. Please note that are more files attached to Courtenay than are included in the neighbourhoods shown in this map.



Controlled Drugs and Substances Act (CDSA) Offences

In the first quarter of the 2025-2026 fiscal year, there was a 243 percent (17 file) increase in drug trafficking files relative to the first quarter of the previous fiscal year. This increase was attributable to enforcement initiatives rather than a rise in the incidence of drug trafficking.

File Type	First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
	2021	2022	2023	2024	2025		
DRUG TRAFFICKING	7	9	8	7	24	243%	17
DRUG POSSESSION	26	27	5	40	23	-43%	-17
DRUGS OTHER	0	0	0	1	0	-100%	-1
DRUG PRODUCTION	1	0	0	0	0		0
Grand Total	**34**	**36**	**13**	**48**	**47**	-2%	-1

Traffic Offences

In the first quarter of the 2025-2026 fiscal year, there was a 12 percent (6 file) increase in Traffic Offences relative to the first quarter of the previous fiscal year. This was attributable to a rise in Dangerous Operation of Motor Vehicle and Prohibited Driving files.

File Type	First Quarter/Year					% Change from Q1 24-25	Difference from Q1 24-25
	2021	2022	2023	2024	2025		
IMPAIRED OP MOTOR VEHICLE	63	67	60	44	42	-5%	-2
DANGEROUS OP MOTOR VEHICLE	2	1	2	1	6	500%	5
PROHIBITED DRIVING	2	3	2	0	4	#	4
MOTOR VEHICLE INCIDENTS	1	0	1	4	3	-25%	-1
IMPAIRED OP BOAT/VESS/AIR	0	0	1	0	0		0
Grand Total	**68**	**71**	**66**	**49**	**55**	12%	6

The Corporation of the City of Courtenay

Staff Report

To: Council **File No.:** 3150-20-2501

From: Director of Development Services **Date:** July 16, 2025

Subject: Request for Reduction of Development Cost Charges – 925 Braidwood Road

PURPOSE:

For Council to consider a request from British Columbia Housing Management Corporation (BC Housing) to reduce the Development Cost Charges associated with the purpose-built shelter and permanent supportive housing buildings at 925 Braidwood Road (LOT 8, SECTION 16, COMOX DISTRICT, PLAN 6065 EXCEPT PART IN PLAN 1149RW) in the amount of $157,292.97

BACKGROUND:

On May 28, 2025, BC Housing submitted Building Permit applications for a two-storey purpose-built shelter and a four-storey permanent supportive housing apartment building. BC Housing selects a non-profit operator for the purpose-built shelter and the permanent supportive housing buildings through a request for proposal process.

As part of these applications, BC Housing submitted a formal letter (***Attachment 1***) requesting that Council consider reducing their Development Cost Charges (DCCs) in accordance with *Development Cost Charges for Non-profit Affordable Rental Housing Bylaw No. 3118, 2024*.

Both developments meet the eligibility requirements of Bylaw No. 3118, in that the projects will provide non-profit affordable rental housing to be operated by a registered non-profit society and that a covenant will be registered on title (***Attachment 2***) that restricts the use of the applicable portions of the development to the aforementioned purpose.

DISCUSSION:

Based on the dates of the Development Permit and Building Permit Applications for the proposed developments, the projects are subject to *Development Cost Charges Bylaw No. 3116, 2023* and its associated charges. The purpose-built shelter is classified as *Congregate Care* and the permanent supportive housing is classified as *Multi-family Residential,* per the definitions in the Development Cost Charges Bylaw.

In accordance with *Development Cost Charges for Non-profit Affordable Rental Housing Bylaw No. 3118*, only the portions of the development which provide Non-Profit Affordable Rental Housing are eligible for waiver of their DCCs. This is defined as housing that is owned and/or operated by a registered non-profit society and that is subject to a covenant registered to title to the satisfaction of the Director of Development Services. Once the non-profit operator is secured, both developments are consistent with this definition.

For the purpose-built shelter, only 85% of the development meets this definition, based on floor area calculations that exclude the public washrooms, healthcare provider space and legal aid offices from the total floor area of the building, the rest of which is considered residential. For the permanent supportive housing, which is entirely affordable rental housing, this amounts to 100% of the development. The proposed waiver is consistent with the proportion of the development that is used for Non-Profit Affordable Rental Housing.

Table 1: Development Cost Charges and proposed amounts payable (City of Courtenay DCCs Only)

	Purpose-Built Shelter - Residential	Purpose-Built Shelter - Commercial	Permanent Supportive Housing	Total
Total Development Cost Charges	$30,622.44	$12,540.04	$126,670.53	$169,833.01
Percentage Eligible for Waiver	100%	0%	100%	
Total Amount Waived by City	$30,622.44	$ 0.00	$126,670.53	$157,292.97
Total Amount Paid by Applicant	$ 0.00	$12,540.04	$ 0.00	$ 12,540.04

Council's ability to waive or reduce Development Cost Charges only extends to City DCCs. Applicable regional district Development Cost Charges will be still be collected on behalf of the CVRD. BC Housing can make a request to the CVRD for the Board to consider the exemption or reduction of their DCC rates.

POLICY ANALYSIS:
Alleviating some of the development costs incurred by non-profit societies in the development of non-market rental housing aligns with and helps to realize the City's Official Community Plan policies for Affordable Housing:

- Objective 3: New non-market housing is actively pursued and supported
- Objective 4: Incentives are in place to create below-market housing

FINANCIAL IMPLICATIONS:
If Council chooses to waive certain Development Cost Charges for the developments at 925 Braidwood Road, the amount not required to be paid by the developer will be paid by the City from the City of Courtenay Affordable Housing Reserve Fund. As of December 2024, the funds balance was $1,542,742. If the full DCC reduction request ($157,292.97) is granted the remaining fund balance would be, short of any interest that may have accumulated since the end of 2024, approximately $1,385,449.

ADMINISTRATIVE IMPLICATIONS:
Processing Development Cost Charge waiver requests is a statutory component of the corporate work plan and a core duty of the Development Services Department. Work to date has primarily been carried out by Development Services staff.

STRATEGIC PRIORITIES REFERENCE:
This initiative addresses the following strategic priorities:

- Buildings and Landscape - Update Development Cost Charges (DCC) Bylaw
- Affordable Housing - Explore approaches to develop affordable housing: Clarify municipal role in housing affordability

OPTIONS:

1. THAT Council approve the Development Cost Charge reduction request by BC Housing for 925 Braidwood Road in the amounts of $30,622.44 for the purpose-built shelter and $126,670.53 for

the permanent supportive housing, totaling $157,292.97 to be paid from the Housing Amenity Reserve; and

THAT Council direct the Director of Development Services to execute a Section 219 Covenant, in substantially the form as set out in Attachment 2; and

THAT the covenant be registered on title prior to issuance of building permits for the purpose-built shelter and permanent supportive housing developments receiving the Development Cost Charge waivers.

2. THAT Council provide alternative direction to staff.

3. THAT Council deny BC Housing's request for Development Cost Charge reductions for 925 Braidwood Road.

ATTACHMENTS:

1. BC Housing – Development Cost Charge Reduction Request
2. Draft Section 219 Covenant Restricting Use

Prepared by: Jacob Cramer, Planner II
Reviewed by: Adam Langenmaier, Director of Finance
Marianne Wade, MCIP, RPP, Director of Development Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

1701 – 4555 Kingsway
Burnaby, BC V5H 4V8
T: 6044331711
F: 604 439 4722
www.bchousing.org

June 23, 2025

File: 96328-11741/11742

Marianne Wade
City of Courtenay
830 Cliffe Avenue
Courtenay, BC V9N 2J7

Email: mwade@courtenay.ca

Dear Marianne,

RE: Braidwood Purpose-built Shelter & Permanent Supportive Housing – 925 Braidwood Rd, Courtenay, BC – Request for Development Cost Chargers Waiver

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We are writing to formally request a Development Cost Charges (DCC) waiver for two publicly funded, purpose-built, non-market housing developments at 925 Braidwood Road, Courtenay, BC. These projects, which will be owned by BC Housing with the operators still as yet to be selected, include:

1. A **Supportive Housing** building offering long-term, stable housing with on-site supports for individuals who are homeless or at risk of homelessness; and

2. An **Emergency Shelter** facility providing temporary accommodation, referrals, and support for unhoused individuals in the community.

We submit this request in accordance with **City of Courtenay Development Cost Charges Waiver for Affordable Housing Bylaw No. 3118, 2024** , which allows Council to waive DCCs for eligible affordable housing developments that meet the bylaw's criteria. Both buildings qualify for exemption under the definitions and provisions of this Bylaw as they are:

- Funded by a government agency (BC Housing);
- Owned by a public body (BC Housing);
- Operated by non-profit society (to be selected); and
- Intended to provide affordable, supportive, and emergency housing to vulnerable populations subject to a covenant registered to title to the satisfaction of the Director of Development Services.

Additionally, the Emergency Shelter specifically aligns with the intent of the bylaw to exempt facilities that provide transitional or emergency housing for people who are homeless or at risk of homelessness.

These developments are also consistent with the City's Official Community Plan (OCP Bylaw No. 3070, 2022), including the following policies:

- **AH 18** – senior government funding for affordable housing projects and initiatives
- **AH 19 –** strengthen partnerships to deliver and manage more affordable housing including K'ómoks First Nation and other Indigenous partners on the delivery of non- or below-market housing projects for Indigenous residents
- **SI 8 –** continue to support program administration and delivery for homelessness

Given the public ownership, program objectives, and alignment with both Bylaw No. 3118 and the OCP, we respectfully request written confirmation that both developments at 925 Braidwood Road are eligible for full DCC waivers with respect to the non-profit rental housing. We additionally acknowledge that DCC's will be payable on that portion of the shelter building not designated for non-profit rental housing.

Please let us know if any further documentation is required to support this request. The building permit applications have been submitted, and we appreciate City staff's continued support in advancing these essential housing projects.

Sincerely,

Nicole Yang
Development Manager

Land Title Act

Charge

General Instrument – Part 1

1. Application

Jennifer Wong
Richards Buell Sutton LLP
700-401 West Georgia Street
Vancouver BC V6B 5A1
604.661.9259

File No.: 32374-0690
BCHMC No.: 96328/11742
Covenant - Development Cost Charges Waiver

2. Description of Land

PID/Plan Number	Legal Description
000-408-999	**LOT 8, SECTION 16, COMOX DISTRICT, PLAN 6065 EXCEPT PART IN PLAN 1149RW**

3. Nature of Interest

Type	Number	Additional Information
COVENANT		**Entire Instrument**

4. Terms

Part 2 of this instrument consists of:

(b) Express Charge Terms Annexed as Part 2

5. Transferor(s)

PROVINCIAL RENTAL HOUSING CORPORATION, NO.BC0052129

6. Transferee(s)

THE CORPORATION OF THE CITY OF COURTENAY
830 CLIFFE AVENUE
COURTENAY BC V9N 2J7

7. Additional or Modified Terms

8. Execution(s)

This instrument creates, assigns, modifies, enlarges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Witnessing Officer Signature	Execution Date	Transferor / Transferee / Party Signature(s)
_____	YYYY-MM-DD	**Provincial Rental Housing Corporation** By their Authorized Signatory _____ **Name:** _____ **Name:**

Officer Certification

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

Witnessing Officer Signature	Execution Date	Transferor / Transferee / Party Signature(s)
_____	YYYY-MM-DD	**The Corporation of the City of Courtenay** By their Authorized Signatory _____ **Name:** _____ **Name:**

Officer Certification

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

Electronic Signature

Your electronic signature is a representation that you are a designate authorized to certify this document under section 168.4 of the *Land Title Act*, RSBC 1996 c.250, that you certify this document under section 168.41(4) of the act, and that an execution copy, or a true copy of that execution copy, is in your possession.

WHEREAS:

A. The Transferor is the registered owner of those lands and premises set out in Item 2, Part 1 of this instrument (the "**Lands**");

B. The Transferee is a municipality incorporated under the laws of the Province of British Columbia;

C. Pursuant to section 563 of the Act, the Transferee may waive or reduce a development cost charge by bylaw for certain classes of eligible developments, including not-for-profit and for-profit rental housing;

D. The Transferee has enacted the Bylaw which provides that Development Cost Charges shall be reduced by 100% for that portion of the Development which provides Non-Profit Affordable Rental Housing, provided that (i) the Zoning Bylaw as it applies to the Lands is amended by the Zoning Amendment Bylaw to permit only Non-Profit Affordable Rental Housing; and (ii) the Non-Profit Affordable Rental Housing is secured through a covenant on title to the Lands which restricts the use of that portion of the Lands for the Term;

E. The Zoning Bylaw as it applies to the Lands has been amended by the Zoning Amendment Bylaw to permit only Non-Profit Affordable Rental Housing, being:

   a) purpose-built shelter, being the provision of communal, transitional accommodation, and ancillary uses required to operate such accommodation, sponsored or supervised by a public authority or non-profit agency intended to provide basic lodgings for persons requiring immediate shelter and assistance for a short period of time. This use includes an ancillary supportive housing use if the majority of the gross floor area is used for temporary shelter services;

   b) supportive housing, being subsidized housing with on-site supports for people at risk of or experiencing homelessness;

   c) housing owned by a government agency or corporation, or non-profit society;

   d) community service;

   e) office; and

   f) accessory buildings and structures;

F. The Transferor acknowledges that it is in the public interest that the use and development of the Lands be restricted as set out in this Agreement;

G. Section 219 of the *Land Title Act* provides that a covenant, whether of negative or positive nature, in respect of the use of land or the use of a building on or to be erected on land, or that land is not to be built on or subdivided except in accordance with the covenant may be granted.

NOW THEREFORE THIS AGREEMENT WITNESSES that under Section 219 of the *Land Title Act*, and in consideration of the premises and the mutual covenants and agreements contained herein, and the sum of ONE ($1.00) DOLLAR of lawful money of Canada now paid to the Transferor by the Transferee (the receipt and sufficiency of which is hereby acknowledged), and for other good and valuable consideration the parties covenant and agree each with the other as

follows:

1.0 DEFINITIONS

1.1 The following terms have the following meanings:

a) "**Agreement**" means this agreement;

b) "**Act**" means the *Local Government Act,* RSBC 2015, c 1;

c) "**Bylaw**" means *City of Courtenay Development Cost Charges Waiver (Affordable Housing) Bylaw No. 3118*;

d) "**Development**" means the development that is or will be constructed on the Lands comprised of a purpose-built shelter with support services, supportive housing, and non-market housing, including 27 Shelter Units and 70 Dwelling Units;

e) "**Development Cost Charges**" means a charge imposed by a City of Courtenay bylaw pursuant to section 559(1) of the Act;

f) "**Dwelling Units**" means a habitable room which constitutes one self-contained unit used or intended to be used for living and sleeping purposes for which is provided cooking equipment or the facilities for the installation of cooking equipment and one or more bathrooms with a water closet, wash basin and shower or bath;

g) "**Lands**" has the meaning given to it at Recital "A";"

h) "**Non-Profit Affordable Rental Housing**" means housing that is owned and/or operated by a registered non-profit society, Provincial Rental Housing Corporation and/or BC Housing Management Commission that is subject to a covenant registered to title to the satisfaction of the City of Courtenay's Director of Development Services;

i) "**Term**" means the life of that portion of the building;

j) "**Shelter Units**" means a habitable room containing various number of temporary beds to be provided to persons experiencing homelessness or housing insecurity;

k) "**Zoning Amendment Bylaw**" means Bylaw No. 3154 to rezone the Lands from Residential Four A (R-4A) to Comprehensive Development Zone 43 (CD-43); and

l) "**Zoning Bylaw**" means the City of Courtney Bylaw No. 2500, 2007, as amended from time to time.

2.0 COVENANTS

2.1 The purpose of this Agreement is to establish the terms and conditions under which the Transferor agrees that it will build on the Lands, and the Transferor therefore covenants and agrees with the Transferee that it shall not construct any building on the Lands except in accordance with this Agreement.

2.2 During the Term, the Transferor covenants and agrees with the Transferee that it shall not use or permit the use of the Lands or any building on the Lands for any purpose, construct any building on the Lands or subdivide the Lands except in strict accordance with this Agreement.

2.3 Prior to the issuance of a building permit for any buildings or structures on the Lands, the Transferor covenants and agrees to make a financial contribution to the Transferee in the amount equal to <@> per m^2 of gross floor area of all buildings located on the Lands (the "**Development Cost Charges**").

2.4 If any of the following considerations apply, the Development Cost Charges for the Development shall be reduced in accordance with the Bylaw, as it was on the date this Agreement was entered:

Development Cost Charges shall be reduced by 100% for that portion of a development which provides Non-Profit Affordable Rental Housing, provided that the Non-Profit Affordable Rental Housing:

a) May be secured through a zoning restriction; and

b) Is secured through a covenant on title which restricts the use of that portion of the applicable development class for the life of that portion of the building.

2.5 Notwithstanding section 2.4 of this Agreement, in the event the Transferor applies for the stratification of any part or the whole of the Development for which Development Cost Charges were waived or reduced pursuant to section 2.4 of this Agreement, the Development Cost Charges will be due and payable at the then-current rate of the Transferee.

2.6 During the Term, the Transferor covenants and agrees with the Transferee that it shall not use or permit the use of the Lands or any building on the Lands for any purpose or construct any building on the Lands until:

(a) the Transferor has paid the Development Cost Charges, if any, in accordance with section 2.3; and

(b) the Transferor has registered on title to the Lands all covenants required by section 2.4, if any.

Notwithstanding the foregoing, the parties agree that the existing buildings and improvements in place, may continue to be used and operated in their current capacity.

3.0 PUBLIC BODY

3.1 Nothing contained or implied within this Agreement shall prejudice or affect the duties, rights and powers of the Transferee in the exercise of its functions under any public or private statutes, bylaws, orders or regulations, all of which may be fully and effectively exercised in relation to the Lands as if this Agreement had not been executed and delivered.

3.2 Nothing in this Agreement shall relieve the Transferor from any obligation or requirement arising under any applicable statute, bylaw or regulation in respect of the development of the Lands.

4.0 GENERAL PROVISIONS

4.1 At the Transferor's expense, the Transferor must do everything necessary to secure priority of registration and interest for this Agreement and the Section 219 Covenant it creates over all registered and pending charges and encumbrances of a financial nature against the Lands.

4.2 Time is of the essence of this Agreement.

4.3 The recitals form part of this Agreement.

4.4 The Transferor covenants and agrees for itself, its heirs, executors, successors and assigns, that it will at all times perform and observe the requirements and restrictions set out in this Agreement and they shall be binding upon the Transferor as personal covenants only during the period of its respective ownership of any interest in the Lands.

4.5 It is mutually understood, acknowledged and agreed by the parties hereto that the Transferee has made no representations, covenants, warranties, guarantees, promises or agreements (oral or otherwise) with the Transferor other than those contained in this Agreement.

4.6 The waiver by a party of any breach of this Agreement or failure on the part of the other party to perform in accordance with any of the terms or conditions of this Agreement is not to be construed as a waiver of any future or continuing failure, whether similar or dissimilar, and no waiver shall be effective unless it is in writing signed by both parties.

4.7 Wherever the singular, masculine and neuter are used throughout this Agreement, the same is to be construed as meaning the plural or the feminine or the body corporate or politic as the context so requires.

4.8 No remedy under this Agreement is to be deemed exclusive but will, where possible, be cumulative with all other remedies at law or in equity.

4.9 The enforcement of this Agreement shall be entirely within the discretion of the Transferee and the execution and registration of the Agreement against title to the Lands shall not be interpreted as creating any duty on the part of the Transferee to the Transferor or to any other person to enforce any provision or the breach of any provision of this Agreement.

4.10 Subject the expiry of the Term, the restrictions and covenants herein contained shall be covenants running with the Lands, and shall continue to bind all of the Lands when subdivided, and shall be registered in the Land Title Office pursuant to section 219 of the *Land Title Act* as covenants in favour of the Transferee.

4.11 Upon the expiry of the Term or the earlier termination of this Agreement, the Transferor may prepare or cause to be prepared a discharge of this Agreement at the Transferor’s sole cost, and the Transferor will promptly execute same. The Transferor will pay for the cost of registering such discharge.

4.12 The Transferor agrees to execute all other documents and provide all other assurances necessary to give effect to the covenants contained in this Agreement.

4.13 This Agreement represents the entire agreement between the Transferee and the Transferor regarding the matters set out in this Agreement and supersedes all prior agreements, letters of intent, or understandings about these matters.

4.14 This Agreement may be executed in any number of counterparts and delivered via facsimile or email, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument.

4.15 If any part of this Agreement is found to be illegal or unenforceable, that part will be considered separate and severable and the remaining parts will not be affected thereby and will be enforceable to the fullest extent permitted by law.

4.16 This Agreement is to be construed in accordance with and governed by the laws applicable in the Province of British Columbia.

As evidence of their agreement to be bound by the terms of this instrument, the parties have each executed this Agreement by executing Part 1 of the *Land Title Act* Form C to which this Agreement is attached and which forms part of this Agreement.

The Corporation of the City of Courtenay

Staff Report

To: Council **File No.:** 4530-20-2501/LL000023

From: Director of Development Services **Date:** July 16, 2025

Subject: Liquor Licence Application No. 2501 - 2910 Kilpatrick Avenue

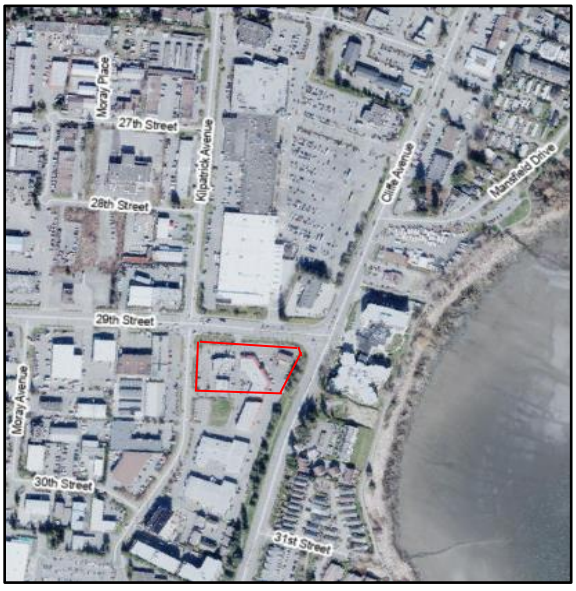
PURPOSE:

For Council to consider a resolution to the Liquor and Cannabis Regulation Branch (LCRB) in response to Liquor Licence Application No. 2501 to amend its Food Primary Liquor Licence by including a Patron Participation Entertainment Endorsement for Kelly O'Bryan's Neighbourhood Restaurant located at 2910 Kilpatrick Avenue.

BACKGROUND:

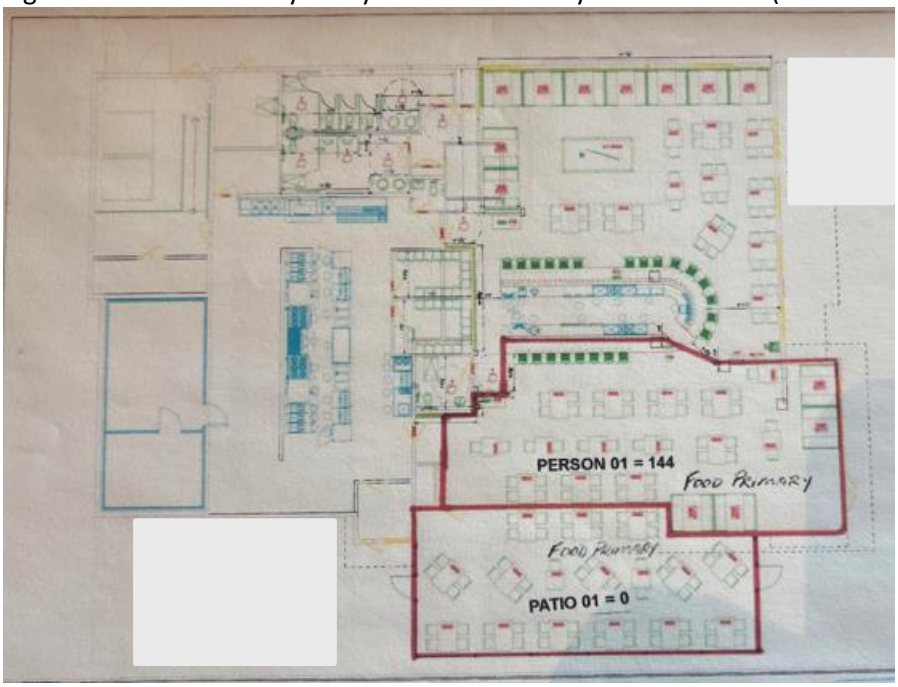
The proprietor of Kelly and Carlos O'Bryan's, located at 2910 Kilpatrick Avenue, (LOT B, SECTION 67, COMOX DISTRICT, PLAN 33851). At this location two businesses with valid business licenses are currently operating; LCRB has issued Carlos O'Bryan's Neighbourhood Pub with a Liquor License with 77-person capacity and Kelly O'Bryan's Neighbourhood Restaurant with a Food Primary Licence permitting 144-person capacity.
According to the proprietor, the licence permit service 1:00AM weekdays and until midnight on Sundays. Current operating hours are 11:00 AM to 12:00 AM weekly; until 1:00 AM on Fridays and Saturdays.

Figure 1: Site Location and Context



The subject of the application request pertains to the Kelly O'Bryan's Neighbourhood Restaurant only, specifically a patron participation entertainment endorsement to the existing Food Primary licence. If approved by the LCRB this would allow live entertainment, such as dancing and music trivia within the existing Food Primary licensed areas at Kelly O'Bryan's as illustrated in Figure 2 (highlighted by red lines). As proposed, this endorsement would not change the 144-person capacity or hours of operation already permitted under the Food Primary licence.

Figure 2: Site Plan – Kelly O'Bryan's Food Primary licenced areas (outlined in red)



DISCUSSION:

According to the LCRB and City of Courtenay Liquor License Application and Process Policy (DS-03), Staff are to undertake an analysis describing impacts of noise on the community in the immediate vicinity of the establishment or service area; general impact if application is approved and in the case of a food primary, whether the application for hours after midnight or patron participation may result in the focus of the establishment shifting away from food service. What follows is a summary of this analysis based on current land use zoning and the LCRB application and supplement information provided by the proprietor.

Land Use Considerations

Under the City's Zoning Bylaw No. 2500, 2007, the subject location is zoned Commercial Two (C-2), which permits licensed premises, microbrewery and restaurant uses. The site and its surrounding area are designated Urban Corridor in Official Community Plan Bylaw No. 3070, 2022. This designation accommodates high-density multi-residential buildings and commercial uses such as offices, retail and large-format shopping centres outside of the Downtown.

To the north of the site, across 29th Street, is Driftwood Mall (2751 Cliffe Avenue), a prominent commercial shopping centre in Courtenay. This area offers a blend of commercial, office, and retail uses including Canadian Tire (2801 Cliffe Avenue), Landmark Cinemas (2655 Cliffe Avenue), and the Coast Courtenay Hotel (2605 Cliffe Avenue). Additional nearby amenities include a variety of dining options such as Plates Eatery (2601 Cliffe Avenue), Starbucks Coffee and Drive Thru (2627 Cliffe Avenue) and Boston Pizza (2633 Cliffe Avenue).

To the immediate south and east of the subject property is a mix of commercial, retail and office use: Harbour Kitchen and Millwork (2930 Kilpatrick Avenue), the Great Canadian Oil Exchange (450 Kilpatrick); Fairstone Financial (468 Kilpatrick Avenue), the Salvation Army Family Services Office (468 Kilpatrick) and Aqua Salon (468 Kilpatrick Avenue).

To the west are retail uses including: The Brick (630 Kilpatrick Avenue) La-Z-Boy Home Furnishings and Decor (2937 Kilpatrick Avenue), Colonial Countertops (2989 Kilpatrick Avenue) and Bartle and Gibson Co Ltd (2989 Kilpatrick Avenue).

The commercial location means any increase in noise as a result of the amendment to the licence is not anticipated to have much, if any, negative impact on the community within the immediate vicinity of the establishment.

Based on the location, hours of service, referral comments (to Building Division, Operations Services Department, Fire Department, RCMP, K'ómoks First Nation) and public engagement, it is not anticipated that granting the license will have a negative impact on the broader community. Further details on the engagement results are provided later in this report under 'Public Engagement'.

POLICY ANALYSIS:

The City of Courtenay Liquor License Application and Process Policy (DS-03)

On May 7, 2025 the City of Courtenay Council approved Liquor License Application and Process Policy (DS-03). This policy is harmonized with the LCRB liquor license application requirements and aims to promote clarity and consistency for applicants, Development Services staff and to support Council in their deliberation.

In accordance with this Policy, Staff have proceeded by opted-in, initiating the provincial 90-day time frame during which staff must implement the public input process, (see below Public Engagement) and prepare a report to Council. Per the LCRB's requirements, a patron participation endorsement application requires local government comment. By way of this report to Council, the policy and legislative requirements have been met, including Staff analysis regarding noise, potential impact on the community for Council's consideration and respond to the LCRB by resolution.

Official Community Plan (OCP)

- Social Infrastructure Policy12 (SI 12) directs the City and its staff to: "Work regionally to further recommendations of the Comox Valley Substance Use Strategy Phase 1 Report (2021) including identifying an appropriate role for the City."
- Local Economy Policy12 (LE 12) directs the City and its staff to: "Work with the local business community and major employers to focus investment, facility and business development in Town and Neighbourhood Centres and Corridors."

FINANCIAL IMPLICATIONS:

Processing and proceeding with this liquor licence application has no financial implications to the City's Financial Plan 2025 – 2029.

ADMINISTRATIVE IMPLICATIONS:

Processing LCRB Liquor Licence applications is the current responsibility of the Development Services Department. Work to date has primarily been carried out by Development Services staff, others were invited to provide comments via the formal referral process, including Building Division, Operations Services Department, Fire Department, RCMP, and K'ómoks First Nation.

STRATEGIC PRIORITIES REFERENCE:
This initiative addresses the following strategic priorities:

- Local Economy - Review City processes that may be barriers to economic development
- Local Economy - Identify appropriate roles and responsibilities for the City in the delivery of economic development services in the region

PUBLIC ENGAGEMENT:
As per section 38 (c) of the *Liquor Control and Licensing Act*, the City was required to gather the views of residents before providing a resolution and comments to the LCRB. A two-week comment period was provided from June 12 to June 27, 2025. The City sent mailout notifications to all property owners and occupants within a 30-metre radius of the subject property (24 mailouts) and posted notice of the application on the City's website for two consecutive weeks, inviting public comments.

At the time of the writing of this report, the City received zero (0) comments in response to the engagement. Any comments received after the writing of this report will be provided to Council.

OPTIONS:

1. THAT Council recommend the Liquor and Cannabis Regulation Branch (LCRB) approve the application from Kelly O'Bryan's Neighborhood Restaurant, located at 2910 Kilpatrick Avenue (LOT B, SECTION 67, COMOX DISTRICT, PLAN 33851) to amend its Food Primary Liquor Licence by including a Patron Participation Entertainment Endorsement and Council's comments on LCRB prescribed considerations are as follows:

a. If the application is approved, any increase in noise as a result of the licence is not anticipated to have much, if any, impact on the community within the immediate vicinity and;

b. Based on the majority of views submitted by members of the public and the agencies for comment, including the RCMP, if the application is approved the general impact on the community is not anticipated to be negative.

2. THAT Council requests additional information or alternative conditions before responding to the Liquor and Cannabis Regulation Branch.

3. THAT Council not recommend support to the Liquor and Cannabis Regulation Branch for the application from Kelly O'Bryan's Neighborhood Restaurant, located at 2910 Kilpatrick Avenue (LOT LOT B, SECTION 67, COMOX DISTRICT, PLAN 33851) for a patron participation entertainment endorsement.

ATTACHMENT:
Attachment – Propietor's Letter of Intent

Prepared by: Dana Beatson, RPP, MCIP, Planner
Reviewed by: Jamai Schile, RPP, MCIP, Manager of Development Planning
Marianne Wade, RPP, MCIP, Director of Development Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

Patron Licence Application of Intent

We currently have two licences in our establishment.

Liquor: CARLOS O'BRYAN'S and KELLY O'BRYAN'S food primary.

We just recently increased our Food primary hours of operation because of service issues not matching the entire building. Eg Pub closed at 1:00 and Restaurant closed at 12:00 which is our main entrance to both sides. This complicated service. People walking to the restaurant after last call. That took over a year to get approved.

Now we can last call the entire building at the same time which makes it easier for our staff and guests.

The Patrons Application for KELLY O'BRYAN'S has a few purposes

1) Being more flexible with events, Live music on the patio, Burger Beer nights for Charity (DJ), Karaoke, Music Bingo, Paint nights. We have double the seating capacity on the KELLY O'BRYAN'S side. The Pub has two pool tables, and this makes it hard to hold larger group events without moving the tables.
2) Better service to our customers eg. When we have a DJ on the pub, we must inform guests they cannot dance on the KELLY O'BRYAN'S side, and this makes them unhappy and leave. We should be able to have music playing and all patrons can enjoy.
3) When we do ST Patrick's day this is very complicated as it's our busiest day for service
4) We currently serve food Open until Close 11:00 AM until 12:00 AM weekly 1:00 AM on fri/sat

Because we have two Identities in the Building KELLY O'BRYAN'S family restaurant and CARLOS O'BRYAN's Neighbourhood pub, we did not want to go full LIQOUR Primary. This is the main reason we are applying for the Patrons Licence.

Sincerely;

Shaun Spooner

Owner / Operator

The Corporation of the City of Courtenay

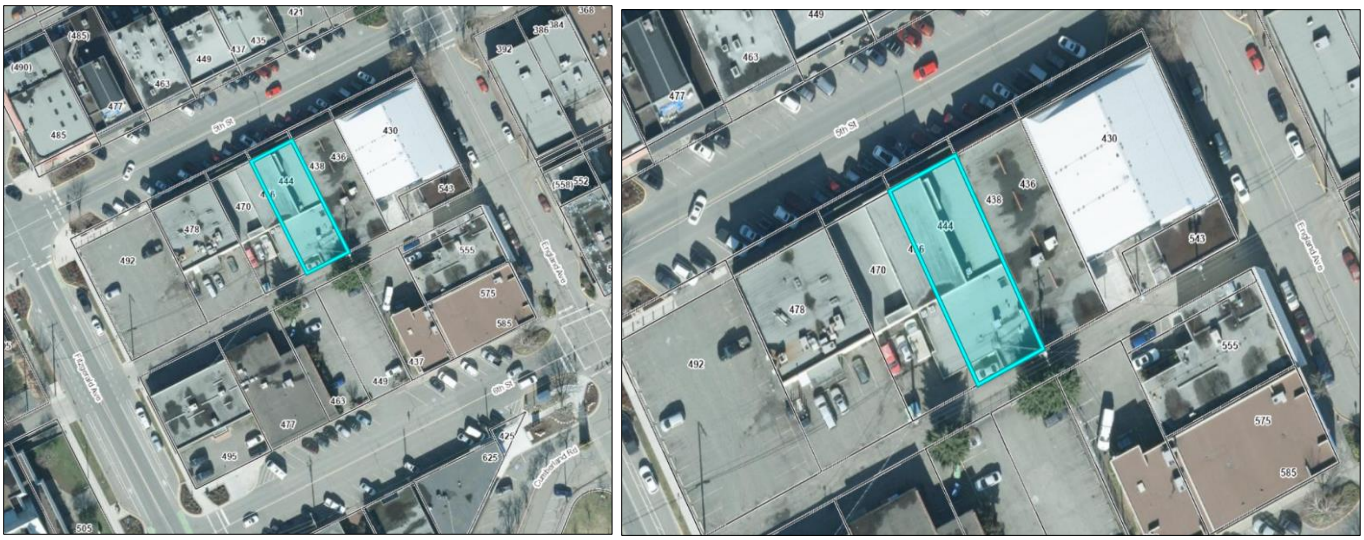
Staff Report

To:	Council	**File No.:**	4530-20-2502/LL000024
From:	Director of Development Services	**Date:**	July 16, 2025
Subject:	Liquor Licence Application No. 2502– 444 5th Street		

PURPOSE:
For Council to consider a resolution to the Liquor and Cannabis Regulation Branch (LCRB) in response to Liquor Licence Application No. 2501 to amend a Food Primary Liquor Licence by including a Patron Participation Entertainment Endorsement at the existing business located at 444 5th Street.

BACKGROUND:
The proprietor of Taco Bandido Restaurant, located at 444 5th Street (LOT 2, SECTION 61, COMOX DISTRICT, PLAN 4541, EXCEPT THAT PART SHOWN COLOURED RED ON PLAN 356 BL) currently holds a valid Business License issued by the City and valid Food Primary Licence issued by the LCRB where the primary focus is the service of food with a 110-person capacity. According to the proprietor, the licence permits food service anytime and liquor is only from 9AM to midnight. The current hours of operation are 11AM to 9PM weekdays and 11AM until late on weekends; usually closed by midnight.

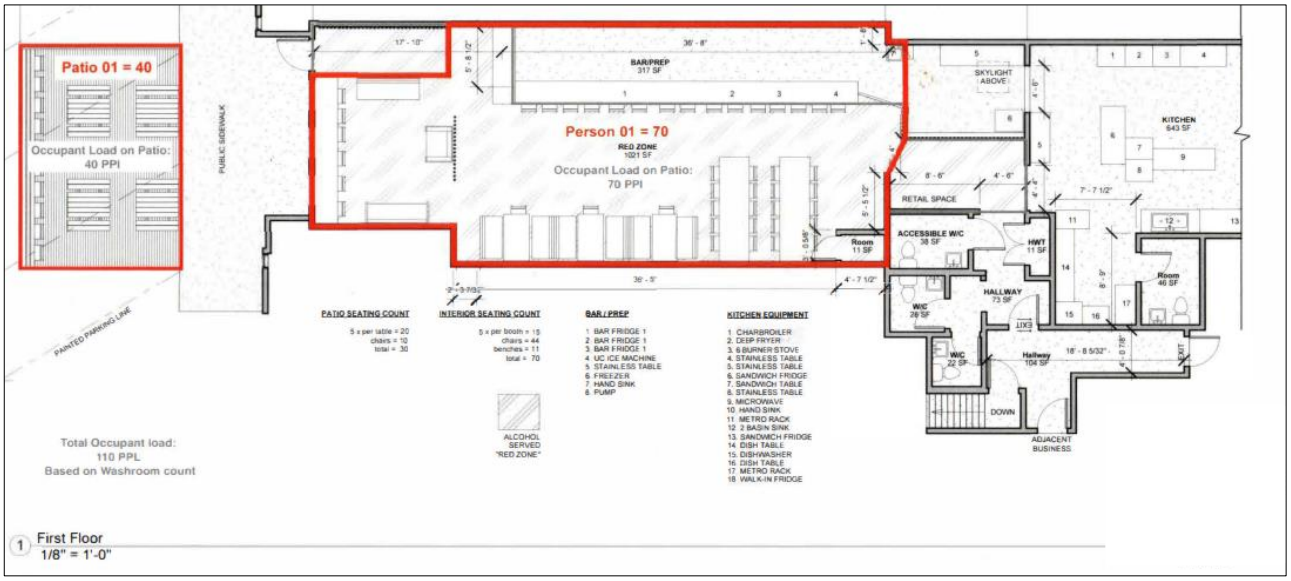
Figure 1: Site Location and Context



The proprietor requests a patron participation entertainment endorsement to the existing Food Primary licence for a 110-person capacity (70 persons inside the building and 40 persons on the patio once installed). If approved by the LCRB this would allow the establishment to host entertainment activities such as trivia night, speed dating, and dancing, within the Food Primary licenced area, illustrating in Figure 2 (highlighted by red lines).

The proposed patron participation endorsement would not change the 110-person capacity or hours of operation already permitted under the LCRB issued Food Primary licence.

Figure 2: Site Plan – Illustrating existing Food Primary licenced areas (highlighted by red lines)



DISCUSSION:

In accordance with the LCRB requirements and City of Courtenay Liquor License Application and Process Policy (DS-03), Development Services staff have opted-in initiating the provincial 90-day time frame during which the staff must implement the public input process, (see section Public Engagement) and prepare a report to Council inclusive of an analysis describing impacts of noise on the community in the immediate vicinity of the establishment or service area; general impact if application is approved and in the case of a food primary, whether the application for hours after midnight or patron participation may result in the focus of the establishment shifting away from food service. A summary of this analysis follows based on current land use zoning and the LCRB application and supplement information provided by the proprietor.

Under the City's Zoning Bylaw No. 2500, 2007, the subject location is zoned Commercial One (C-1), which permits licensed premises, microbrewery, and restaurant uses. The subject site and surrounding area are designated as part of the Downtown Town Centre in Official Community Plan Bylaw No. 3070, 2022. This designation reinforces the downtown's role as Courtenay's central hub for cultural, civic, culinary, economic, and public life.

To the north of the site, across 5th Street, is a variety of commercial businesses such as Bigfoot Donuts, Square 1 Travel, Headz Up Barber and Brennan Day MLA Courtenay-Comox Office (477, 449, 435, and 437 5th Street). To the south, on the other side of the lane, are commercially zoned lots occupied by the Bank of Montreal and Edible Island Market (449 and 463 6th Street). To the west of the subject property, there are retail stores and a restaurant use (478 and 470 5th Street) and to the east are a mix of commercial and residential uses, Extreme Runners and Shar-Ons All Sizes (438, 436 and 430 5th Street).

The downtown, commercial location means any increase in noise as a result of the amendment to the licence is not anticipated to have much, if any, negative impact on the community within the immediate vicinity of the establishment.

Based on the location, hours of service, referral comments (to Building Division, Operations Services Department, Fire Department, RCMP, K'ómoks First Nation), and public engagement, it is not anticipated that granting the license will negatively impact the broader community. Further details on the engagement results are provided later in this report under 'Public Engagement'.

POLICY ANALYSIS:

The City of Courtenay Liquor License Application and Process Policy (DS-03)

As per this Policy, Staff have proceeded by opted-in initiating the Provincial 90-day time frame and public input process and request for Council resolution. By way of this report, the outcomes of this process, including Staff analysis are presented for Council's consideration prior to providing a response to the LCRB by resolution.

Official Community Plan (OCP)

- Social Infrastructure Policy12 (SI 12) directs the City and its staff to: "Work regionally to further recommendations of the Comox Valley Substance Use Strategy Phase 1 Report (2021) including identifying an appropriate role for the City."

- Local Economy Policy12 (LE 12) directs the City and its staff to: "Work with the local business community and major employers to focus investment, facility and business development in Town and Neighbourhood Centres and Corridors."

FINANCIAL IMPLICATIONS:

Processing and proceeding with this liquor licence application has no financial implications to the City's Financial Plan 2025 - 2029.

ADMINISTRATIVE IMPLICATIONS:

Processing Liquor Licence applications is the current responsibility of the Development Services Department. Work to date has primarily been carried out by Development Services staff, although other departments have provided referral comments.

STRATEGIC PRIORITIES REFERENCE:

This initiative addresses the following strategic priorities:

- Local Economy - Review City processes that may be barriers to economic development
- Local Economy - Identify appropriate roles and responsibilities for the City in the delivery of economic development services in the region

PUBLIC ENGAGEMENT:

As per section 38 (c) of the Liquor Control and Licensing Act, the City was required to gather the views of residents before providing a resolution and comments to the LCRB. A two-week comment period was provided from June 11 to June 27, 2025. The City sent mailout notifications to all property owners and occupants within a 30-metre radius of the subject property (51 mailouts) and posted notice of the application on the City's website for two consecutive weeks, inviting public comments.

At the time of the writing of this report, the City received two (2) comments in response to this application. Any comments received after the writing of this report will be provided to Council. Of the two comments

mentioned, both spoke in favour of supporting the application citing a support for additional venues/ locations for music, trivia and dancing and a good opportunity for gathering with friends and neighbours.

OPTIONS:

1. THAT Council recommend the Liquor and Cannabis Regulation Branch (LCRB) approve the Taco Bandido Restaurant, located at 444 5th Street (LOT 2, SECTION 61, COMOX DISTRICT, PLAN 4541, EXCEPT THAT PART SHOWN COLOURED RED ON PLAN 356 BL) request to amend its Food Primary Liquor Licence by including a Patron Participation Entertainment Endorsement and Council's comments on LCRB prescribed considerations are as follows:

   a) If the application is approved, any increase in noise as a result of the licence is not anticipated to have much, if any, impact on the community within the immediate vicinity and;

   b) Based on the majority of views submitted by members of the public and the agencies for comment, including the RCMP, if the application is approved the general impact on the community is not anticipated to be negative.

2. THAT Council requests additional information or alternative conditions before responding to the Liquor and Cannabis Regulation Branch.

3. THAT Council not recommend support to the Liquor and Cannabis Regulation Branch for the application from Taco Bandido Restaurant, located at 444 5th Steret (LOT 2, SECTION 61, COMOX DISTRICT, PLAN 4541, EXCEPT THAT PART SHOWN COLOURED RED ON PLAN 356 BL) for a patron participation entertainment endorsement.

ATTACHMENT(S):
At the time of this report, the propietor's Letter of Intent was not received. To avoid delaying this application, the proprietor has been notified as well as invited to attend the Council meeting at which this report is presented.

Prepared by: Dana Beatson, RPP, MCIP, Planner
Reviewed by: Jamai Schile, RPP, MCIP, Manager of Development Planning
Marianne Wade, RPP, MCIP, Director of Development Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

The Corporation of the City of Courtenay

Staff Report

To:	Council	**File No.:**	5335-20
From:	**Director of Infrastructure and Environmental Engineering**	**Date:**	July 16, 2025
Subject:	**Lake Trail Multi-Use Path – Project Update**		

PURPOSE: The purpose of this report is to provide an update to Council on the status of the Lake Trail Multi-Use Path project, propose potential construction phasing options and request direction from Council on how to proceed.

BACKGROUND:
The Lake Trail Multi-Use Pathway project will construct dedicated bike lanes between Lake Trail School and Arden Elementary and fill an important gap in the City's cycling network. The project will also construct a 2.0m wide gravel path that's set back from the road and is intended for all users.

On July 11, 2022, Council resolved the following;

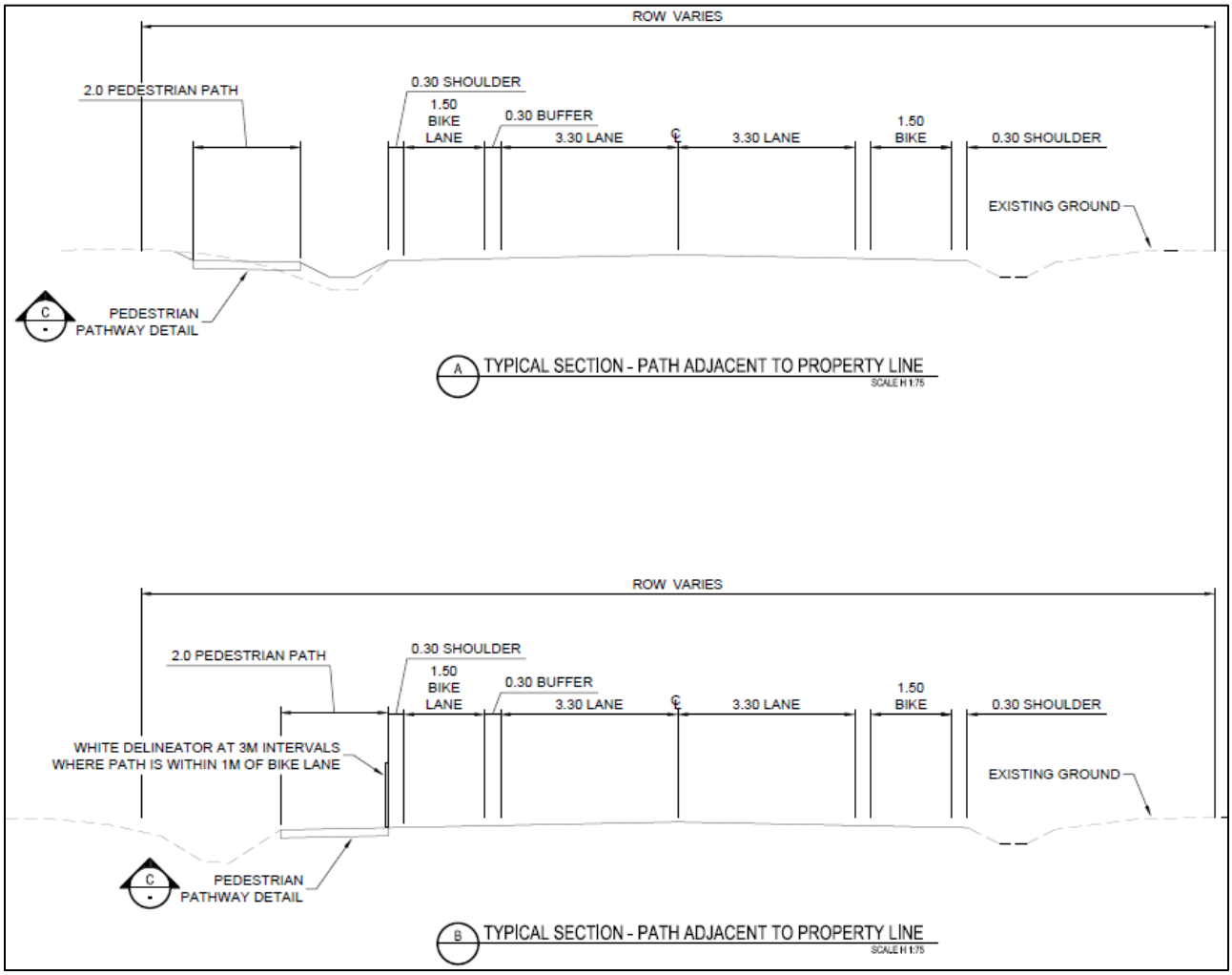
1. *THAT Council approves Option 1, and direct staff to submit an application for grant funding for the Lake Trail Multi-Use Path through the BC Active Transportation Grant Program for the 2 metre wide gravel pathway; and,*
2. *THAT Council support the project and commit to any associated ineligible costs or potential cost overruns; and,*
3. *THAT Council direct staff to send correspondence to the CVRD Electoral Areas requesting consideration of financial contribution to the project through the 2023 financial planning process.*

On November 13, 2024, Council was further informed that it was determined through environmental consultation that a portion of the roadside ditching along the frontage of the Courtenay Fellowship Baptist Church (the Church), 2693 Lake Trail Road, was discovered to be an environmentally sensitive and fish-bearing portion of Arden Creek. This discovery incurred further environmental permitting requirements and some project redesign. At the time, the project budget was estimated to be $1,650,000, with construction planned for 2025 to coincide with meeting the BC Active Transportation Fund grant deadline of March 31, 2026.

DISCUSSION:
Lake Trail Road is a semi-rural minor arterial roadway in the City of Courtenay which fronts both Lake Trail Community School and Arden Elementary School. Despite this, the existing roadway provides little active transportation safety or opportunity, generally consisting of a single travel lane, paved shoulder, and ditch in each of the eastbound and westbound directions.

The Lake Trail Multi-Use Pathway project aims to enhance connectivity and improve safety within the community, particularly for our younger citizens. It proposes:

- Connecting Lake Trail Community School and Arden Elementary School with just over 1.2 kilometres of 2.0 m wide gravel pathway set back from the vehicle travel lane.
- Almost 600m of road widening will be constructed in order to extend the existing painted bike lanes along Lake Trail Rd from Arden Rd to Webb Rd, at the frontage of Arden Elementary.
- High performance green MMA paint at intersections and conflict zones.
- Upgraded bus stop location with concrete pad.
- Upgrades to the storm system including new 1200mm culvert crossing near Webb Road.



Progress

In August of 2024, staff with support from Environmental experts submitted a Request for Review (RfR) to Department of Fisheries and Oceans. The project's location is adjacent to Arden Creek and is within critical habitat of the endangered Morrison Brook Lamprey, Morrison Creek population, and is also a documented location for Chinook and Coho salmon.

Based on the factors above, Fisheries and Oceans Canada (DFO)'s response to the Request for Review revealed the need for permitting under both the Fisheries Authorization Act (FAA) and the Species at Risk

Act (SARA). For this permit, additional environmental consultants from Current Environmental were retained as experts experienced in mitigation efforts of the Morrison Brook Lamprey, including retention, salvage, relocation, and monitoring, who joined the existing group from McElhanney. This team of environmental professionals performed extensive additional fieldwork to identify the in-situ conditions of both the identified critical habitat and further upstream flow channels affected by project works. The application was submitted alongside a detailed technical memo which describes the proposed works, identifies the fish and fish habitat present near these works, discusses the temporary and permanent impacts to the fish and fish habitat, and provides the measures and efforts to avoid or mitigate disruption harm to the impacted species in both the short- and long-term, including monitoring efforts. The technical memo also discusses habitat credits and proposes a detailed offsetting plan, with critical habitat and riparian measures (such as in-stream and riparian plantings, riffle-pool features, and large woody debris placement) applied to un-impacted areas to restore and enhance the overall watershed habitat value.

City consultants submitted an initial package for review on March 18, 2025. Unfortunately, this package required supplemental information by DFO's reviewing officer and a revised permit application package was submitted June 19, 2025.

DFO has permitting processing timelines for these types of permits which are shown below:

- Maximum 60-day review for submittal package completeness (minimum once)
- Indigenous Consultation process of indefinite time
- Maximum 90-day review of submittal package content (minimum once)

Based on the above timeline provided by DFO, the earliest approvals could be expected would be approximately December, 2025. However, a minimum of one review cycle is often required for these permitting packages, and a safer timeline to assume is likely April, 2026, to have permitting in hand.

As part of the permitting process, DFO is required to engage with K'ómoks First Nation. City Staff and our consulting team have pre-engaged both DFO Review Officers and representatives from K'ómoks First Nation to expedite this timeline as much as possible.

Additional Requirements

In order to procure FAA and SARA permitting approvals, the project has required additional efforts to prepare the required submittals to the satisfaction of DFO. In addition to this, DFO requires all in-stream or riparian areas denoted as sensitive habitat which are temporarily or permanently altered as part of this project's works to be offset by improvements elsewhere.

The City is currently proposing offsetting improvements, which consist of naturalized plantings in-stream and within riparian areas, as directed by a qualified environmental professional. This includes locations adjacent to project works such as a long stretch of under-planted ditching along the Arden Elementary frontage of Lake Trail Rd. DFO further requires that these offsetting works undergo a 5-year monitoring and reporting period, with maintenance as required. Bonding for the costs of the works and monitoring are also required prior to permit approval.

Offsetting

In order to construct this project, both permanent and temporary impacts to in-stream and riparian fish habitat are expected in the project area. As a result, and per permitting requirements, the City of Courtenay is obligated to implement habitat offsetting measures to compensate for these impacts. The offsetting must meet the *no net loss* principle and demonstrate that it will produce a long-term net benefit or equivalency in habitat function and ecological value.

Type of Habitat Impact	Existing Conditions	Area	Total Area	Comments
Temporary Instream Alteration or Loss	In Stream	32 m^2	**32 m^2**	Habitat below the high-water mark that will be permanently altered or lost due to construction activities
Permanent Instream Alteration or Loss	In Stream	122.5 m^2	**122.5 m^2**	Habitat below the high-water mark that will be permanently altered or lost due to construction activities
Temporary Area within Riparian setback Alteration or Loss	Pavement	0 m^2	**0**	Intact (not regularly maintained) riparian habitat that will be temporarily altered due to construction activities. These areas are the areas of construction for new riparian plantings.
	Gravel Shoulder	0 m^2		
	Grassed Area	0 m^2		
	Shrubs & Trees	0 m^2		
Permanent Area within Riparian setback Alteration or Loss	Pavement	0 m^2	**466.8 m^2**	Intact (not regularly maintained) riparian habitat between the ordinary high-water mark and the riparian boundary that will be altered due to construction activities
	Gravel Shoulder	109.8 m^2		
	Grassed Area	357.0 m^2		
	Shrubs & Trees	0 m^2		
Total Riparian Loss (Temporary + Permanent) = **466.8 m^2**				
Total Instream Loss (Temporary + Permanent) = **154.5 m^2**				
Proposed Instream Habitat Improvements = **500.7 m^2**				
Proposed Riparian Habitat Improvements = **356.2 m^2**				
Surplus Habitat Improvements = **235.6 m^2**				

(Table 1 - Instream and Riparian Habitat Changes Associated with the Project)

Common name	Scientific Name	Spacing
Shrubs		
Pacific Willow	*Salix lucida ssp. laciandra*	1 m
Red Osier Dogwood	*Cornus stolonifera*	1 m
Pacific Ninebark	*Physocarpus capitatus*	1 m
Black Gooseberry	*Ribes lacustre*	1 m
Red Flowering Currant	*Ribes sanguineum*	1 m
Nootka Rose	*Rosa nutkana*	1 m
Thimbleberry	*Rubus parviflorus*	1 m
Salmonberry	*Rubus spectabilis*	1 m
Hardback	*Spiraea douglasii*	1 m
Red Elderberry	*Sambucus racemosa*	1 m
Snowberry	*Symphoricarpos albus*	1 m

(Table 2 - Proposed species for riparian restoration)

The proposed offsetting directly mitigates unavoidable habitat loss and degradation resulting from culvert installations, riparian vegetation clearing, and road widening in proximity to Arden Creek. Restored riparian zones will moderate flows, stabilize stream banks, retain spawning substrates, improve filtration of surface runoff, and enhance thermal regulation for aquatic species. Instream improvements are expected to improve habitat complexity and fish passage, benefiting not only lamprey but also other resident fish species and aquatic organisms.

Monitoring

As part of the regulatory approvals for the *Fisheries Act Authorization* (FAA) and *Species at Risk Act* (SARA), the City is required to implement and maintain a post-construction environmental monitoring program to determine the effectiveness of the offsetting works

The monitoring program is expected to extend over a 3 to 5-year period and will be implemented in two phases:

Year 1 – Contractor Responsibility: The project contractor will maintain the site from the date of substantial completion through to final acceptance, ensuring that all planted areas and habitat features are stabilized and functioning.

Years 2–5 – City Responsibility: Following the contractor's maintenance period, the City will retain a Qualified Environmental Professional (QEP) experienced in monitoring and collection of the local fish species, including the Morrison Brook Lamprey, to conduct ongoing site monitoring. This will include three formal assessments of the riparian plantings and instream habitat features, carried out during the growing season (typically September). Key performance measures include vegetation survival (minimum 85% coverage) and functionality of installed habitat structures.

Permanent photo transects and GPS-referenced site data will be used to evaluate success over time. If any deficiencies or failures are identified—such as invasive species growth, poor plant survival, or habitat degradation—the City will be responsible for implementing corrective actions.

The City will also be required to submit a post-construction report within 60 days of completing the offsetting works, and subsequent monitoring reports in years 1, 2, 3, and 5. A final monitoring report in year 5 will evaluate overall success, compare conditions to pre-construction baselines, and determine whether any further offsetting is necessary.

Project Phasing

There are two options for Phasing this work. One option is to split the project into phases over the next two years to account for the additional environmental work. Another option would be to build out only phase 1. An analysis of the options is detailed below.

Phase 1 Only Construction

Phase 1 would focus only on delivering the highest-value pedestrian and cycling connections on the corridor, in areas which do not include any of the work considered critically environmentally sensitive, and as such do not require DFO permitting. This makes up approximately the eastern half of the original scope. Specifically, it includes:

- **Pedestrian Pathway and Signage Improvements**: A continuous off-street pedestrian connection between Lake Trail Community School to Arden Road on the north side**,** as well as a second section from Webdon Road to Arden Road. This represents about 50% of the total pathway length for the full project.
- The most immediate benefit is that this phase links the westbound sidewalk at the school directly to the existing crosswalk at Arden Road, closing a significant gap in the network.
- The Webdon connection also provides better access for the surrounding neighbourhood to the crosswalk at Arden.

- **North Side (Westbound) Bike Lane Improvements**: Upgrades to the north side bike lane will extend from Webb Road to Arden Road**,** covering approximately half of the planned new cycling infrastructure**.**

- This segment creates a continuous, marked westbound bike lane along a busy section of the corridor.

- **Transit Stop Improvements at the School (Pending SRW approval)**
  The bus stop in front of Lake Trail Community School will be improved as part of this phase, supporting safer and more accessible transit access for students and other riders.

- **Drainage Upgrades**
  localized drainage issues along the Arden Road to Lake Trail Community School section will be addressed**.**

A proposed schedule is shown for Phase 1.

Task	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026
Phase 1 Tendering					
Phase 1 Construction					

Phase 1 costs are estimated to be approximately $825,000, within the available project budget.

2 Year Phased Project – Construct both Phases

There is an opportunity to phase the proposed works, splitting the project into a Phase 1-as discussed above, which does not require DFO permitting—and a second phase to be completed later, likely during the Morrison Brook Lamprey environmental fish window. Environmental work windows for the Morrison Brook Lamprey are from July 14 – August 6 in a given year, this should be the target construction timeline for in-stream works. While performing the in-stream works outside of this window may be possible, pending DFO approval, efforts, environmental sensitivity, risk, and budget would be greatly amplified.

Phase 2 would include the western half of the project from Arden Rd to Arden Elementary School, including supporting DFO required environmental works.

Splitting the project into two phases would entail greater staff efforts and increased total costs. It is estimated that total project costs could increase by approximately 10% to accomplish this, although this would need to be confirmed through the tender process(es). If the project was split into phases, the most expedient timeline possible would likely see Notice of Award for Phase 1 works issued in fall, 2025, with a late 2025 construction schedule. The remainder of the work would be scheduled for the summer of 2026 if permitting is approved by DFO.

A proposed schedule for the 2-year phased project is shown below. There is some overlapping of the FAA Permitting process with phase 2 construction tendering. This represents schedule risk that staff may need

to balance by tendering (but not starting construction) without formal approval of the FAA permit, or risk pushing the construction outside of the preferred work window for Morrison Creek Lamprey, which is July 14 to August 6.

Task	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026
FAA Permitting Reviews					
Phase 1 Tendering					
Phase 1 Construction					
Phase 2 Tendering					
Phase 2 Construction					

Phase 2 costs are estimated to be approximately $1,285,000. This cost does not include the cost for Phase 1.

Analysis of Options

Completing only Phase 1 would provide a significant upgrade compared to the existing facilities while also reducing total project costs and a one-year extension to the project schedule.

Completing only Phase 1 of the Lake Trail Multi-Use Pathway offers a way to deliver active transportation improvements while avoiding some of the most significant risks and constraints, as well as environmental impacts, associated with the full buildout. By limiting construction to areas outside of designated SARA critical habitat, the project avoids the added complexity, timelines, and costs tied to those processes, including design changes, bonding requirements, habitat compensation planning, and impacts to a species at risk. Additionally, Phase 1 work can proceed with fewer seasonal or regulatory windows, reducing schedule uncertainty and allowing for a more streamlined construction timeline.

Work during the fall or even winter months for Phase 1 is not considered a concern, as there is no paving and insignificant stormwater flow with no flow bypass requirements in these portions of the works. In addition, contracting firms with potential to bid on late-year tenders for simple, small- to medium-sized projects such as this one, often seek to keep their crews busy. Work during the school year may negatively impact traffic flow during busy morning and afternoon pick-up and drop-off times, but measures would be taken to minimize disruptions experienced. Much of the works would be completed by small machinery within the road shoulder.

If Phase 2 is not constructed, total separation between users and traffic will not be achieved across the entire project.

BC Active Transportation Grant Impacts

This project has received approval for up to $500,000 in grant funding for the design and construction of this project. According to the grant agreement, this project must be completed by March 31, 2026. Staff intend to discuss the permitting delays with the granting authorities to determine if an extension can be granted for these funds. The grant was secured for construction of the complete scope of work. If only a portion of the scope is pursued, engagement with the grant regulator will be required to confirm impacts to grant funding.

POLICY ANALYSIS:

Regional Growth Strategy Reference:

Goal 4: Transportation

Objective 4-B: Improve bicycle and pedestrian infrastructure to increase the use of active transportation options.

Targets: 20% bicycle and pedestrian commuters by 2030.

Official Community Plan Reference:

Transportation

5.2 Goals

2. Development of a transportation system that provides choices for different modes of travel including vehicle, transit, pedestrian, cycling and people with mobility impairments.
5. Support a transportation system that recognizes the importance of the character and overall appearance of the City.

5.3 Policies

6. The City will pursue the development of a continuous pedestrian system and will continue to ensure that walkways and pedestrian linkages are provided in all new developments, particularly for major destination points, and are provided by the developer at the time of subdivision.

FINANCIAL IMPLICATIONS:

At the July 11, 2022 Council meeting, Council approved Option 1, which included a 2m wide multi use path as well as widening of the road in selected areas to accommodate additional cycling lanes. The cost estimate was reported at approximately $917,000. Staff were also directed to apply for the BC Active Transportation grant.

The project was included in the 2024 financial plan with an updated budget of $1,400,000. The total City contribution was $714,000. The funding sources were as per the table shown below:

Taxation (current and prior years)	$464,000
Infrastructure Reserve	$250,000
BC Active Transportation Grant	$500,000
CVRD Grant	$186,000
Total	$1,400,000

At the November 13, 2024 Council meeting, Council was informed that the total project budget was estimated to be $1,650,000, an increase of $250,000. The reason for the increased costs were a result of DFO's request for review which resulted in detailed design changes to avoid sensitive habitats, estimated costs for statutory right of ways to accommodate the newly designed path on private property, and higher estimated projects costs for contractors to include environmental mitigation measures and oversight during construction.

The project budget was increased in the 2025 financial plan to $1,650,000 to reflect these changes. In order to fund this increase, interest from the Growing Communities Funds received in 2023 was used. The total City contribution increased to $964,000.

Phase 1 Only Construction

Phase 1 only would represent about 50% of the previously contemplated project. Additionally, this would remove the additional environmental work, bonding and construction escalation. This is only an estimate and final costs are dependent on construction.

Project Description	**Budget**
Lake Trail MUP – 2025 budget	$1,650,000
Phase 1 Estimated Project Costs	$825,000

2 Year Phased Project – Construct both Phases

Due to the Environmental Scope and bonding required for the FAA and SARA permits, the additional costs are currently estimated at $124,200 in 2025 dollars. Please note this is based on the currently proposed offsetting plan, which has not yet been approved by DFO, and should be considered an estimate only until DFO requirements are confirmed.

In addition, due to the one-year project delay, a year-over-year project cost escalation could be expected for this project, estimated at 8% of total works.

If the project were to be split into two phases as discussed above, additional budget may be required for additional efforts by the contractor, such as increased total site time and multiple mobilization/demobilization processes. This cost is currently estimated at 5% of total project costs.

The total estimated price for the project based on a phased implementation is $2,107,750. The construction escalation and costs to phase the work are two unknown risks and staff have taken a conservative approach in these estimates.

Project Description	**Budget**
Lake Trail MUP – 2025 budget	$1,650,000
Additional Environmental Scope	$94,200
Bonding	$30,000
Subtotal	**$1,774,200**
1-year Budget Escalation (8%)	$141,936
TOTAL (Unphased)	**$1,916,136**
Costs to Phase Works (10%)	$191,614
TOTAL (Phased)	**$2,107,750**

In addition, costs for a Qualified Environmental Professional (QEP) experienced in monitoring and collection of the local fish species, including the Morrison Brook Lamprey, will need to be included as operating costs for the next 5 years. The QEP will need to conduct three formal assessments of the riparian plantings and instream habitat features during the growing season.

A report will also need to be issued in year 5 addressing the conditions of the offsetting measures and their effectiveness, including statistical analysis comparing year five vegetation dynamics to pre-construction. Evaluation will be required to determine if the offsetting measures were successful based on a comparison to the reference sites, and to identify if any additional offsetting measures must be implemented to ensure success of the offsetting measures.

The total estimated operating funds required for the next 5 years is estimated at $80,000 ($15,000 per year with an additional $5,000 for wrap up reporting)

Budget Shortfall for Both Phases

The current expected budget shortfall to construct both phases of this project is $457,750 and is based on the table below. This is based on conservative cost estimates that were detailed in the previous sections. This funding shortfall could be less depending on the results of the tendering process. The City's portion of this project would increase to $1,421,750 from the prior years $964,000 and the original budget of $714,000.

Estimated Total (Phase 1 & 2)	$2,107,750
Current Budget	$1,650,000
Budget Shortfall	**$457,750**

At this time, staff cannot provide a clear recommendation on how to fund the budget short fall as there is a lack of certainty around future environmental requirements for the project by the regulator. Given recent Council direction regarding the 6th Street Bridge project, existing reserves and surpluses have been reviewed and allocated, resulting in fewer funds available for other projects. If direction is received to construct Phase 2, staff will propose funding options during the upcoming financial planning process.

ADMINISTRATIVE IMPLICATIONS:

This project will be led by the Infrastructure and Environmental Engineering division, with support from most other City departments. Consultants with technical knowledge specific to this work will be utilized to

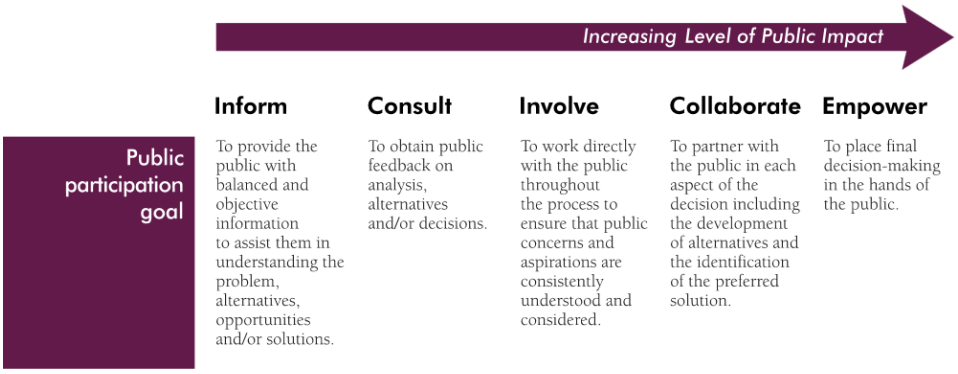
implement the detailed design. Estimated costs associated with external consultants are included in the project capital budget.

STRATEGIC PRIORITIES REFERENCE:
Although this project is not a strategic priority, the following master plan references support the construction of the project:

- The City of Courtenay's Official Community Plan (OCP) includes "Lake Trail Road upgrade (multi-use path)" as a desired amenity for the Lake Trail Neighbourhood Centre.
- Cycling Network Plan: A multi-use pathway is recommended for Lake Trail Road to provide separation from traffic and a connection for both cyclists and pedestrians between Lake Trail Middle School and Arden Elementary
- The Transportation Master Plan also lists Lake Trail Road as a medium-term (10-year) cycling improvement priority
- The Parks and Recreation Master Plan supports establishing a system of trails with connections to schools and linking the trail system with the active transportation network that serves pedestrians and cyclists. The plan also notes that Lake Trail Community School has "enviable access to nature at the neighbourhood's doorstep" due to connections to regional greenways.

PUBLIC ENGAGEMENT:
The Arden Green Team are strong supporters of the project and will continue to be informed as the project progresses. Before construction begins, public notices will be distributed to the residents and businesses in the area.

Staff would **inform** the public based on the IAP2 Spectrum of Public Participation:



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OPTIONS:

1. THAT Council direct staff to proceed with construction of Phase 1 of the Lake Trail Multi-Use Path project (the eastern half from Lake Trail Elementary to Arden Road) in fall 2025, and report back on the Department of Fisheries and Oceans (DFO) permitting status for Phase 2, including funding and construction options.

2. THAT Council direct staff to proceed with the full Lake Trail Multi-Use Path project in phases, awarding only Phase 1 for construction in fall 2025, and planning Phase 2 for summer 2026, subject

to confirmation from the Department of Fisheries and Oceans (DFO); and

THAT staff report back with options to fund the budget shortfall for Phase 2 during the 2026 financial planning process.

3. THAT Council provide alternative direction to staff.

ATTACHMENTS:
1. Lake Trail Road - Fisheries Act Authorization Memo

Prepared by: Sean Hayes, P.L.Eng., PMP, Engineering Technologist
Reviewed by: Adam Pitcher, AScT, PMP, Manager of Capital Projects
Chris Davidson, P.Eng., PMP, Director of Infrastructure and Environmental Engineering
Adam Langenmaier, BBA, CPA, CA, Director of Financial Services / Chief Financial Officer
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

Fisheries Act Authorization Application Memo

Lake Trail Road Pedestrian Pathway Project

Courtenay, BC

June 16, 2025 | Revision #0

Submitted to: City of Courtenay
Prepared by: McElhanney Ltd.

Contact
Daniel Mackle
Senior Aquatic Biologist
587-582-2826
dmackle@mcelhanney.com

Address
100, 402 – 11th Ave SE,
Calgary AB Canada T2G 0Y4

Prepared by
Daniel Mackle, RPBio.
Our file: 2211 47614 05

Reviewed by
Rupert Wong, RPBio.

Your Challenge.
Our Passion.

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1. Introduction

The City of Courtenay (the City) retained McElhanney Ltd. (McElhanney) to provide engineering and environmental services with respect to pathway construction, culvert works, and road widening along Arden Creek, in Courtenay, BC. The works described in this Fisheries Act Authorization (FAA) technical memorandum is being completed as part of the Lake Trail Road Pedestrian Pathway Project (the Project). McElhanney has previously submitted a request for review (RfR) under 24-HPAC-00909. DFOs response to the review indicated that an FAA for the Project was required due to potential effects on listed aquatic species at risk within Arden Creek, specifically Western brook lamprey, Morrison Creek population (*Lampetra richardsoni & Lampetra richardsoni var. marifuga*).

This report provides details to support the DFO Application Form for the Issuance of an Authorization under Paragraphs 34.4(2)b and 35(2)(b) of the *Fisheries Act* (non-emergency situations). McElhanney is assigned agency to provide environmental assessment and permitting support services on behalf of the City (***Appendix A***). The structure of the memo adheres to the checklist for prescribed information. McElhanney has previously submitted an Environmental Impact Assessment (EIA) as part of the RfR which contains additional details about the Project and the biophysical features within the study area.

Fish habitat features were assessed in the field by a Qualified Environmental Professional (QEP) where the proposed works will interact with Arden Creek and its interconnecting waterways.

1.1. CONTACT INFORMATION

1. The applicant's and, if applicable, their representative's name, address and telephone number.

Applicant	Representative
Adam Pitcher, City of Courtenay	Daniel Mackle RPBio., McElhanney
830 Cliffe Avenue, Courtenay, BC V9N 2J7	100, 402 – 11th Ave SE, Calgary, AB T2G 0Y4
apitcher@courtenay.ca	dmackle@mcelhanney.com
250-334-4441	587-582-2826

2. Description of Proposed Work

2. A detailed description of the proposed work, undertaking or activity and, if applicable, a detailed description of the project of which the proposed work, undertaking or activity is a part, including:

a. The purpose of the proposed work, undertaking or activity and, if applicable, the project;

The purpose of this Project is to improve road safety considerations for all users of Lake Trail Road (residences, school, and commercial businesses). The Project design includes the construction of a pedestrian pathway and associated road widening - with culvert works, headwall installation, and ditch modifications required within Arden Creek and its interconnecting waterways.

Below is a summary of the major Project components:

- Culvert works and extensions,
- Headwall construction,
- Ditch modifications,
- Road widening,
- Tree removal,
- Waste management and disposal during construction, and
- Site clean-up, reclamation/restoration, and final landscaping.
- The use of industrial equipment for material removal, placement, and grading,
- Waste management and disposal during construction, and
- Site clean-up, reclamation/restoration, and final landscaping.

b. The associated infrastructure;

Project works will fall within within the Species at Risk Act (SARA) critical habitat for Western brook lamprey, Morrison Creek population. This includes instream works or works within the SARA buffer at 5 separate sections of the Project:

- Section 1: Culvert works in Arden Creek and Tree Removal at Webb Road
- Section 2 – Ditch Modifications and Vegetation Removal Between Church and 2877 Lake Trail Road
- Section 3 – Culvert Extensions at Powerhouse Road
- Section 4 – Culvert Extension and New Headwall at Arden Creek
- Section 5 – Road Widening

c. Any permanent or temporary structure involved; and

To facilitate the project works, both permanent and temporary impacts to riparian vegetation are expected. The areas of impact will be restored which will further stabilize the riparian areas by planting and seeding vegetation and additional riparian planting will occur within the Project Area as part of the Project's offsetting obligation. Permanent and temporary impacts to instream habitat are expected and will be offset by the construction of rock, riffle, pool, and spawning gravel installations and with the introduction of large woody debris.

d. The construction methods, building materials, explosives, machinery and other equipment that will be used.

The following activities are expected during construction (detailed explanations can also be found in Project EIA):

- Section 1: instream works associated with culvert installation and extension and tree removal.
- Section 2: instream works associated with culvert installation and vegetation removal.
- Section 3: instream works associated with culvert extensions, ditch modifications, and vegetation removal.
- Section 4: instream works associated with culvert extensions, headwall installation, and ditch modifications.

- Section 5: works within riparian buffer associated with road widening

The following methods, materials and equipment will be required for construction:

- Earthworks, material placement, and infill will be completed with the use of heavy equipment (e.g., an excavator),

The Contactor will identify the heavy equipment to be used to complete the Project works. The following equipment, which may contain petroleum products or other harmful and polluting substances in on-board tanks and/or hydraulic systems, is inferred to be required to complete the works:

- Excavator (TBD)
- Flat-bed truck or truck & trailer (TBD)
- Loader (TBD)
- Dump truck or rock truck (TBD)

Equipment will not enter the bed or shores of the adjacent watercourse during construction. The Contractor will confirm equipment usage upon project tender, within the Construction Environmental Management Plan.

3. Project Engineering Specification and Drawings

3. If physical works are proposed, the project engineering specifications, scale drawings and dimensional drawings.

The Project includes five (5) sections in which instream works, and/or riparian buffer impacts are required: referred to as Sections 1 through 5. Issued for permitting drawings and offsetting plans are included in ***Appendix B***.

4. Phases and Schedule Information

4. A description of the phases and the schedule of the proposed work, undertaking or activity and, if applicable, the project of which the proposed work, undertaking or activity is a part.

Construction of the proposed works is anticipated to take 2-3 months and will occur in the late summer and fall once project permitting is complete. The instream and riparian vegetation removal works will be performed in the least risk timing window for Morrison Creek Lamprey between July 14 to August 6; however, project works which do not involve instream or riparian impacts will continue to end of October. The scope of the Project includes all physical activities associated with the pathway construction. It includes the onsite works involving the riparian restoration of areas temporarily impacted during construction and the enhancement of riparian & instream habitat within areas that have been impacted by Project works.

5. Project Locations

5. A description of the location of the proposed work, undertaking or activity and, if applicable, of the location of the project of which the proposed work, undertaking or activity is a part, including:

a. Geographic coordinates;

Table 1. Site Locations along Arden Creek

Site ID	Coordinate System	Latitude	Longitude
Section 1	GEOGRAPHIC (WGS84)	49.672769	-125.024631
Section 2	GEOGRAPHIC (WGS84)	49.673111	-125.024175
Section 3	GEOGRAPHIC (WGS84)	49.674087	-125.02242
Section 4	GEOGRAPHIC (WGS84)	49.675051	-125.020663
Section 5	GEOGRAPHIC (WGS84)	49.672921	-125.024135

b. A small-scale plan identifying the overall location and boundaries;

The Project includes five (5) locations in which instream works, or riparian vegetation removal is required referred to as Sections 1 through 5. These sections are located between Webb Rd. and Webdon Rd., *Figure 1*.

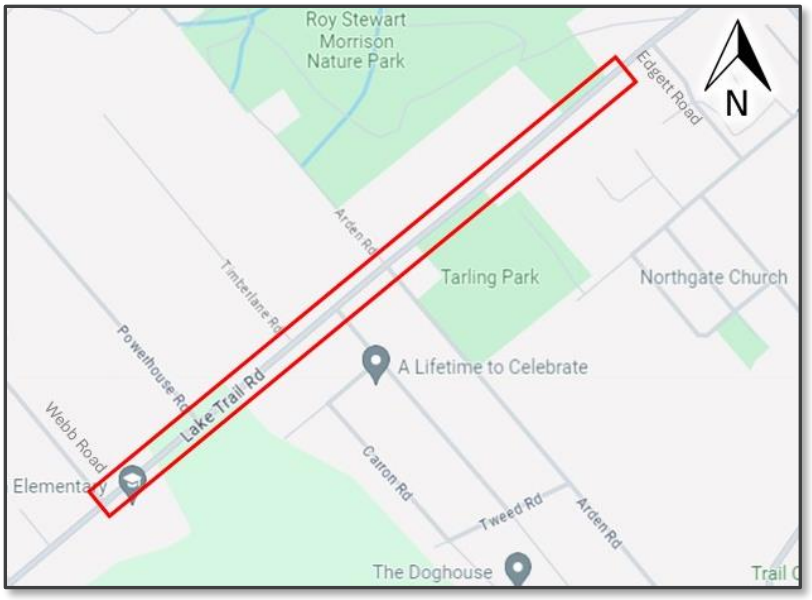

Figure 1. Project area along Lake Trail Rd, in Courtenay, BC. Proposed works affecting Arden Creek are limited to the area bounded by Webb Rd and Webdon Rd.

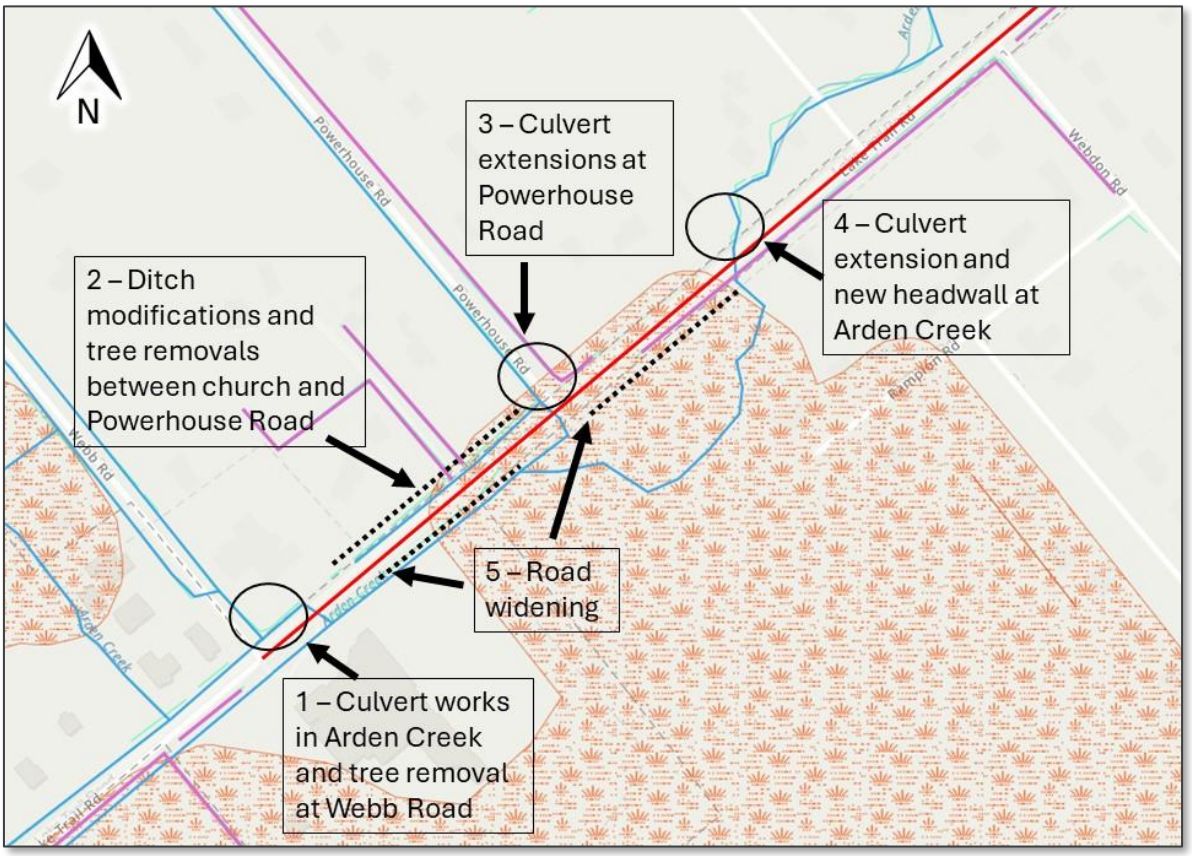

Figure 2. Project sections 1 to 5 along Lake Trail Rd, in Courtenay, BC. Proposed works affecting Arden Creek are limited to the area bounded by Webb Rd and Webdon Rd.

c. *A large-scale site plan indicating the size and spatial relationship of the planned facilities, infrastructure and other component and of any existing structures, landmarks, water sources or water bodies and other geographic features; and*

The site plan at each location indicating the size and proximity to the watercourse are shown in *Figures 2* through *12.*

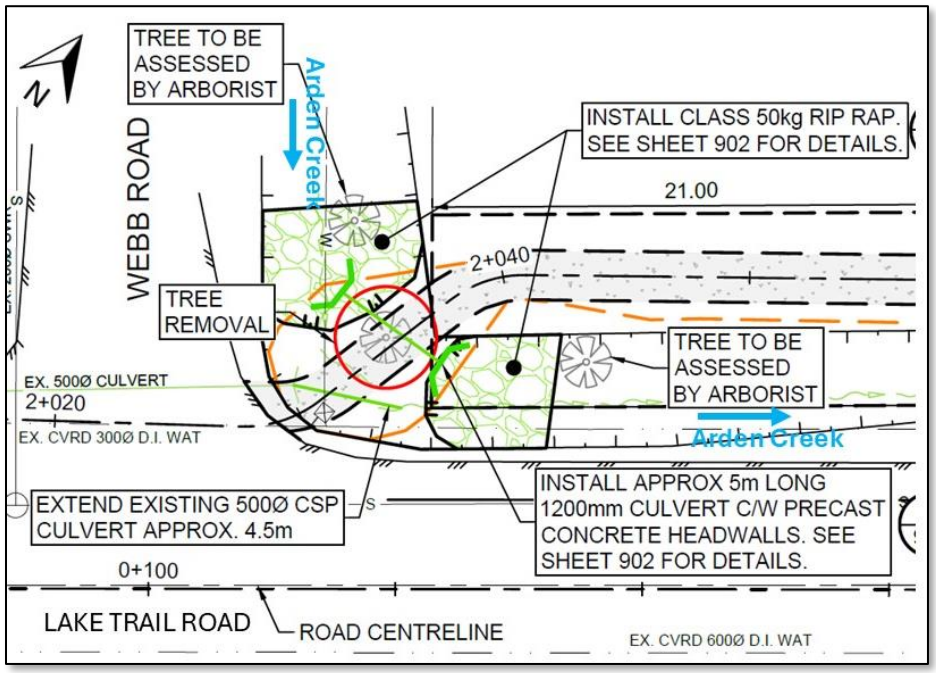

Figure 3. Project activities proposed at the corner of Webb Road and Lake Trail Road including culvert installation and extension in Arden Creek, and tree removal

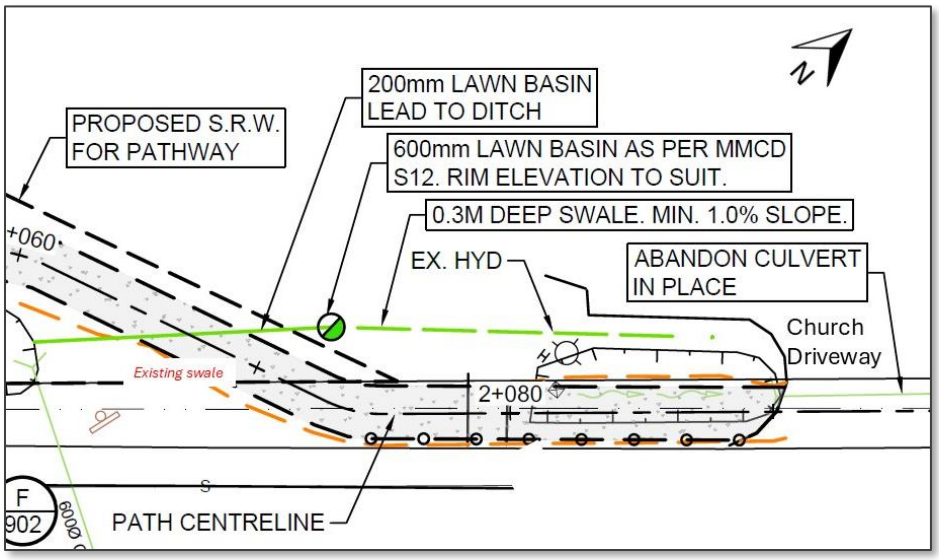

Figure 4. Site Proposed Project scope adjacent to the Courtenay Fellowship Baptist Church property including pathway construction in an existing swale

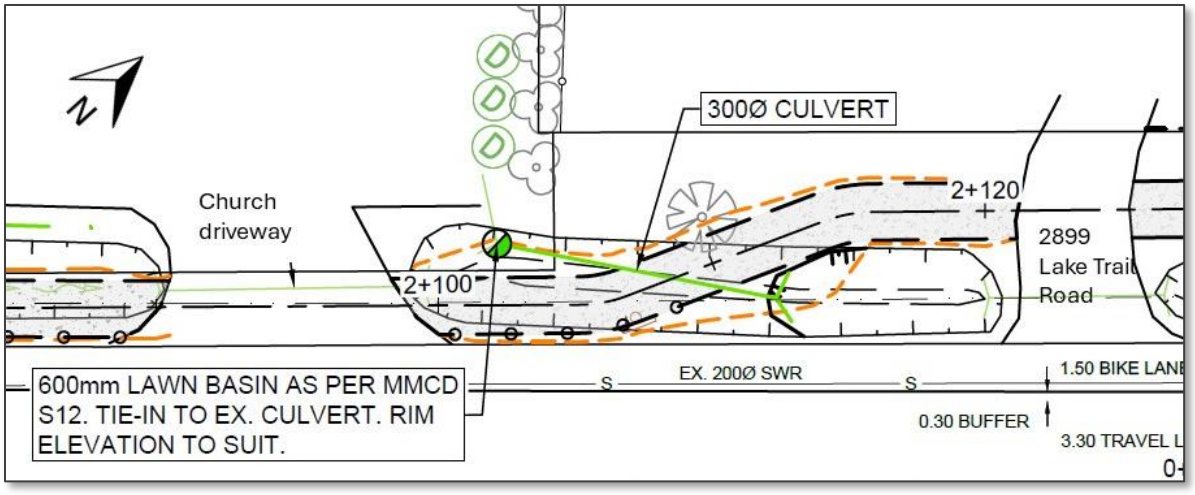

Figure 5. Proposed Project scope between the church driveway and 2899 Lake Trail Road driveway including culvert installation.

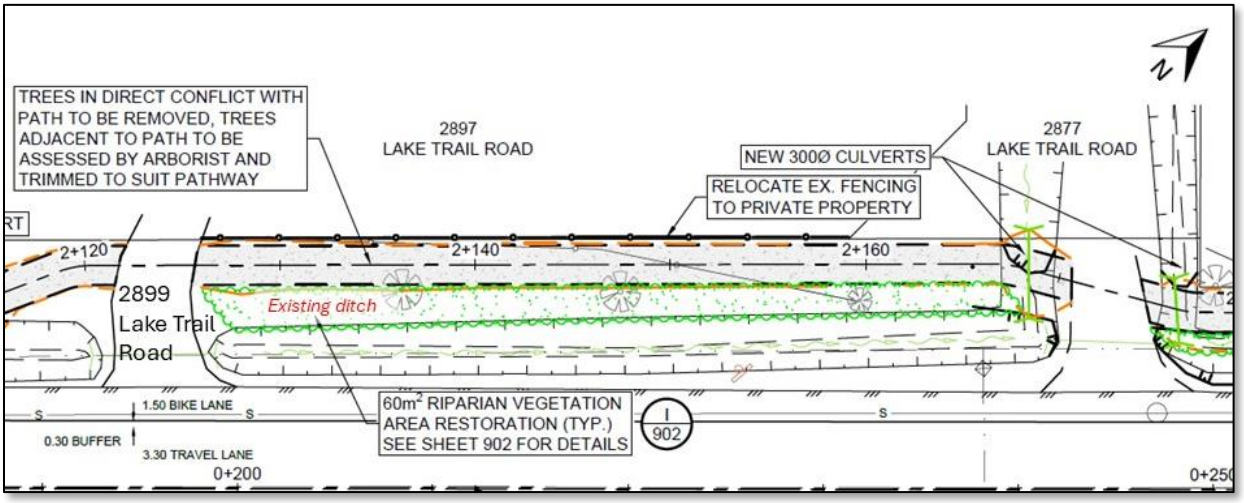

Figure 6. Proposed culvert installations on either side of the driveway at 2877 Lake Trail Road and required vegetation clearing between 2899 and 2877 Lake Trail Road.

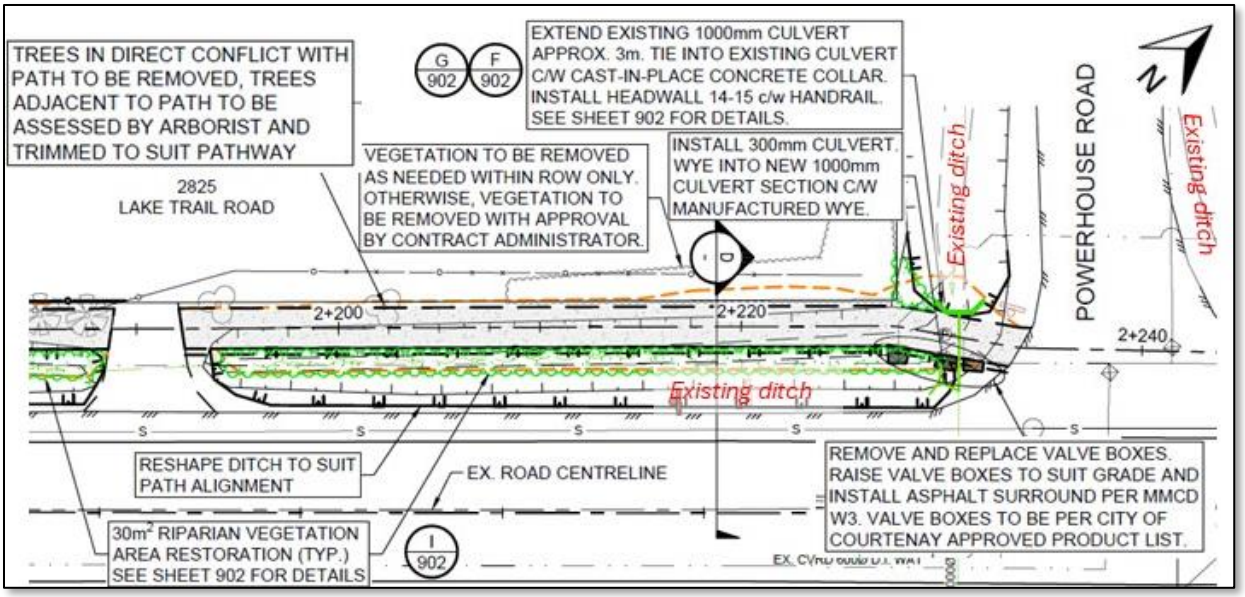

Figure 7. Proposed scope activities at Powerhouse Road including culvert installation and extension on the south side of the road, vegetation removal, and re-shaping the ditchline on the west side of Lake Trail Road.

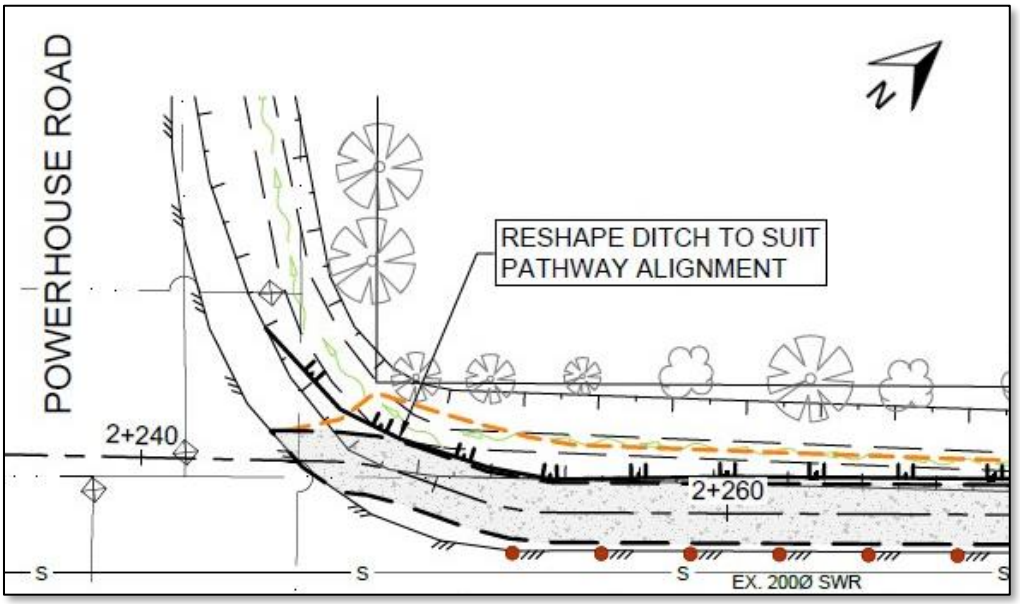

Figure 8. Proposed scope activities at Powerhouse Road including culvert installation and extension on the south side of the road, vegetation removal, and re-shaping the ditchline on the west side of Lake Trail Road.

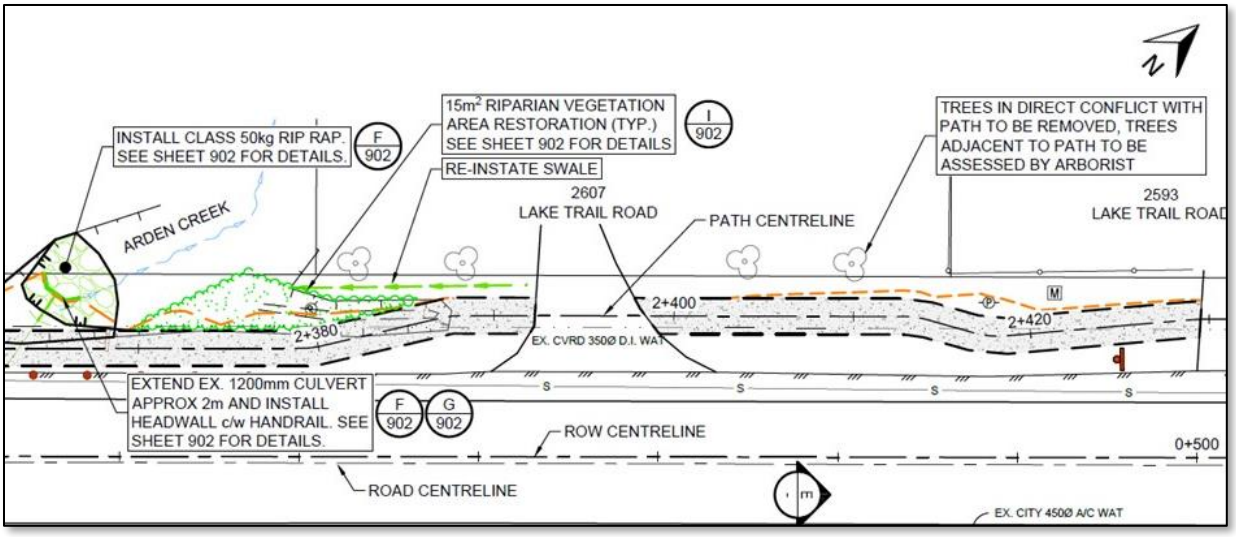

Figure 9. Proposed scope activities at approximate 2+360 where Arden Creek flows under Lake Trail Road towards the north. Modifications in this location include extending the existing culvert north into the creek, installation of a precast concrete headwall, vegetation removal, and re-instating a swale to direct surface flows into the creek.

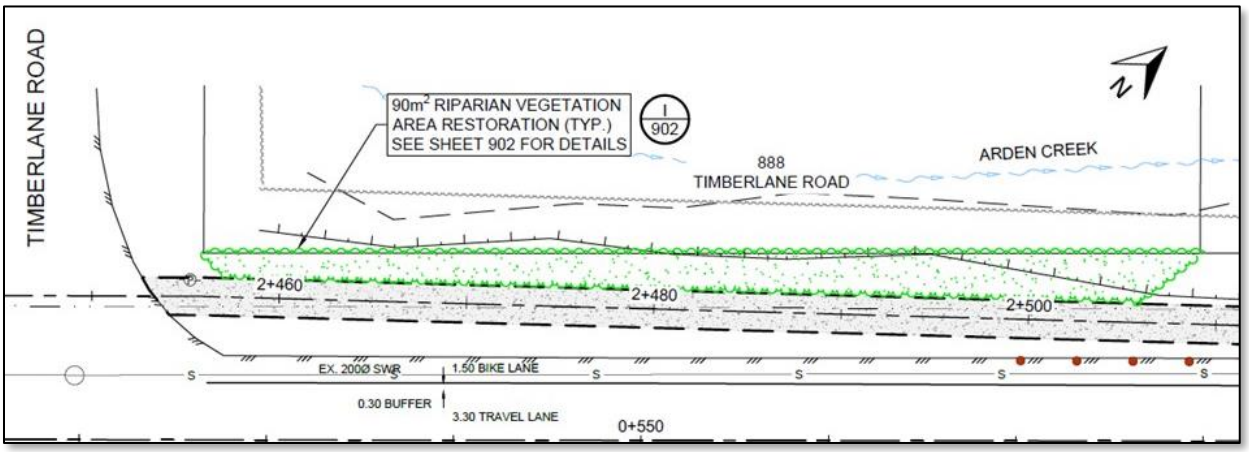

Figure 10. Vegetation restoration adjacent to Arden Creek at Timberland Road.

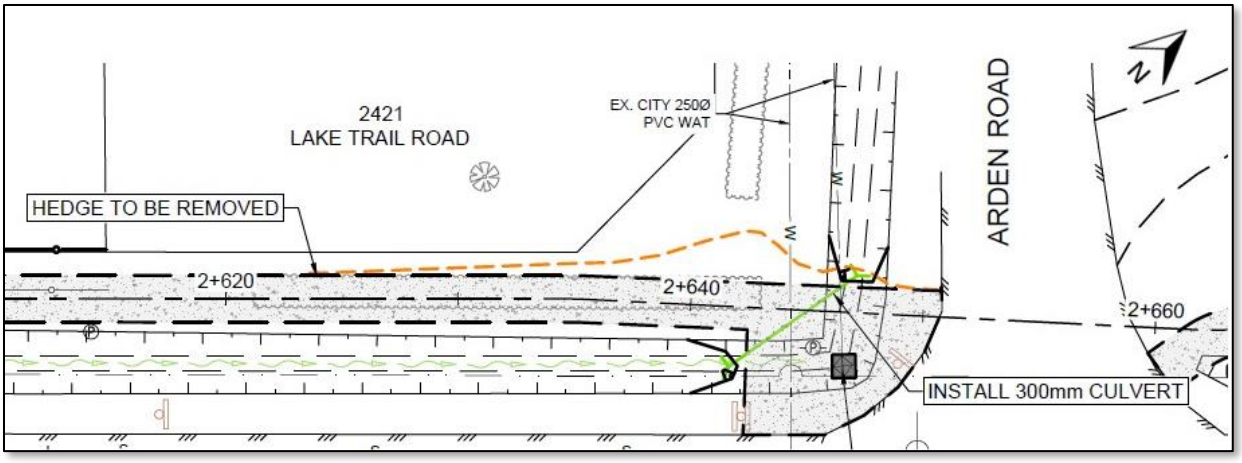

Figure 11. Culvert installation and hedge removal at Arden Road.

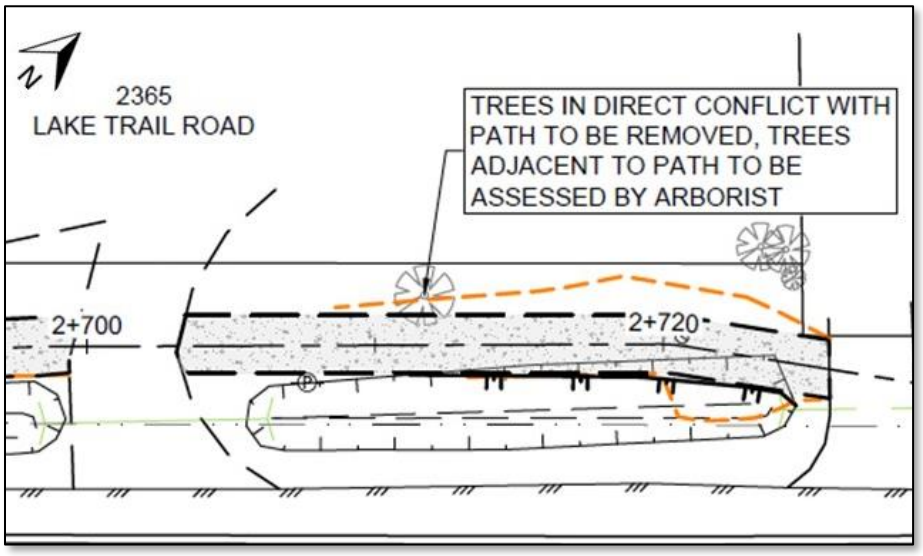

Figure 12. Tree removal on the north side of the driveway at 2365 Lake Trail Road

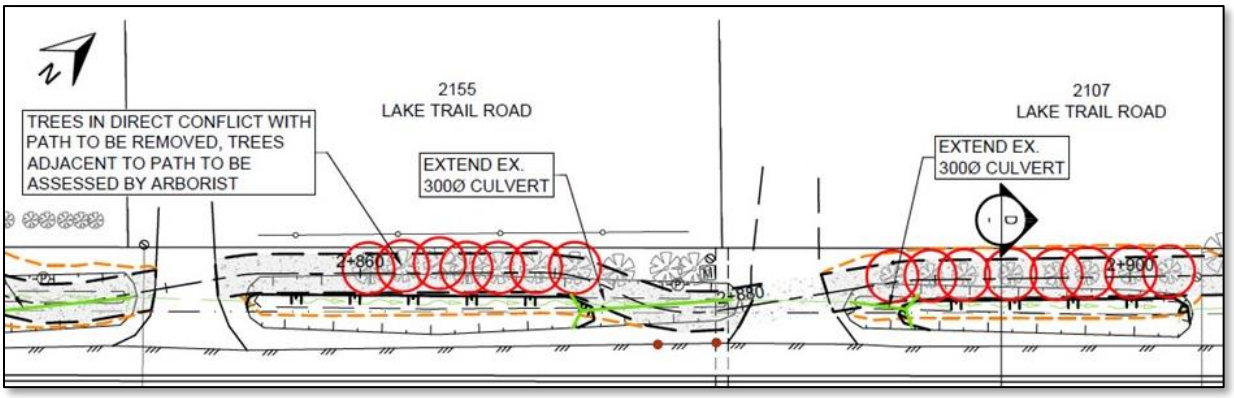

Figure 13. Vegetation removal and culvert extensions required at 2155 Lake Trail Road alongside a drainage ditch.

d. *The name of any watersheds, water sources and water bodies that are likely to be affected and the geographic coordinates of the water sources and water bodies.*

Watercourse details are summarized in *Table 2*.

Table 2. Watercourse Details

Watercourse Summary	
Watercourse Name:	Arden Creek
Waterbody ID	307756
Watercourse Type (Strahler Order Number):	First Order Stream

6. *The name of the community nearest to the location and the name of the county, district or region and the province in which the proposed work, undertaking or activity will be carried on.*

The City of Courtenay, British Columbia.

6. Description of any Consultations Undertaken Prior to Application

7. *A description and the results of any consultations undertaken in relation to the proposed work, undertaking or activity, including with Indigenous communities or groups and the public.*

The City of Courtenay has begun Indigenous consultation with K'omoks First Nation. K'omoks First Nation has requested that the City provide additional information for their review. The City will submit this report and additional documentation K'omoks First Nation concurrently with the submission to DFO to facilitate consultation.

7. Description of Fish and Fish Habitat

8. *A detailed description of the fish and fish habitat found at the location of the proposed work, undertaking or activity and within the area likely to be affected by the proposed work, undertaking or activity, including:*

a. *The type of water source or water body*

Arden Creek is a small, headwater stream, classified as a 'Strahler 1' stream order watercourse (Strahler, 1952) (Strahler, A. N., 1957). Flowing water is present year-round. The morphology of the creek within the study area has generally been altered and straightened by road and ditch development.

b. *The characteristics of the fish habitat and how those characteristics directly or indirectly support fish in carrying out their life processes;*

While each Site has slightly different habitat characteristics, overall, there are important similarities between all locations as they relate to fish habitat, specifically regarding Western brook lamprey, Morrison Creek population. The habitat requirements for this species include sand and gravel substrate, pools, riffles and hydraulic complexity for nest building, spawning, egg incubation, and rearing, in addition to foraging habitat for adults (GoC, 2022b) (Wade and Grant, 2022). Adults excavate a small depression used as a nest for spawning and egg incubation from April to June. It is inferred that none of the Sites provide spawning or

rearing habitat for Western brook lamprey given the overall lack of suitable substrates and hydraulic complexity.

Proposed works are limited in the natural areas of Arden Creek (e.g., those associated with an adjacent, undeveloped wetland) which flows away from Project Area. Both cover availability and hydraulic complexity of the watercourse appear to increase as it meanders away from Lake Trail Rd, and away from sources of modification such as landscaped lawns and urban ditch lines. Habitat for Western brook lamprey near the various Project sections is assumed to be utilized for migration - as they move between areas better suited for spawning or otherwise supporting their species' sensitive life stages. Further details can be found in the Project's Fish and Fish Habitat Assessment which was previously submitted to DFO.

7.1. SECTION 1 - CULVERT WORKS IN ARDEN CREEK AND TREE REMOVAL AT WEBB ROAD

At Section 1, Arden Creek can be characterized as a ditch with predominant run habitat (e.g., see Photo 1 & 2 - below) and moderate gradients. The channel width at the top-of-bank (TOB) ranged from 2.2 metres (m) – 5 m in width. The substrate within the assessment location was primarily composed of agronomic grasses. The wetted width ranged from 0.30 m – 1.3 m, with a maximum depth of 0.15 m at the time of the field assessment. Instream cover was observed to be negligible. Banks were rated as stable and native vegetation within the riparian area was observed to be limited, apart from some occasional shrub species adjacent to the ditch.

This Section has low-quality habitat in context of critical habitat for Western brook lamprey. The ditch substrate is vegetated, and minimal cover is provided along the margins. The Site may provide low quality habitat for other species and their sensitive life-stages.

Photograph 1. View of downstream habitat at Section 1 - Webb Rd. (January 21, 2025)

7.2. SECTION 2 - DITCH MODIFICATIONS AND VEGETATION REMOVAL BETWEEN CHURCH AND 2877 LAKE TRAIL ROAD

At Section 2, Arden Creek can be characterized as a ditch with predominant run habitat (e.g., see Photo 2 - below) and moderate gradients. The channel width at the top-of-bank (TOB) ranged from 2.2 metres (m) – 5 m in width. The substrate within the assessment location was primarily composed of agronomic grasses. The wetted width ranged from 0.30 m – 1.3 m, with a maximum depth of 0.15 m at the time of the field assessment. Instream cover was observed to be negligible. Banks were rated as stable and native vegetation within the riparian area was observed to be limited, apart from some occasional coniferous trees adjacent to the ditch. The watercourse crosses Lake Trail Rd. at this location and begins to flow downstream, along the fence line of Arden Elementary School.

This Section has low-quality habitat in context of critical habitat for Western brook lamprey. The ditch substrate is vegetated, and minimal cover is provided along the margins. The Site may provide low quality habitat for other species and their sensitive life-stages.

Photograph 2. View of upstream habitat at Section 2 - Courtenay Fellowship Baptist Church (January 21, 2025)

7.3. SECTION 3 – CULVERT EXTENSIONS AT POWERHOUSE RD.

After passing the northern property boundary of Arden Elementary School, Arden Creek transitions from an anthropogenic form to a natural morphology. Arden Creek was assessed within wetland habitat at this location where the watercourse possessed defined run and riffle sections and maximum depths of 0.33 m (e.g., see Photo 3 - below). Substrates were primarily comprised of cobble, gravel, and fine materials with a small proportion of organics. Wetted width was measured at 1.9 m and channel width at the TOB was

measured at 2.5 m. Instream cover was provided by overhanging vegetation. Banks were rated as stable, and vegetation within the riparian area consisted of grasses, shrubs, and deciduous trees. A culvert containing water was observed to cross Lake Trail Rd. at Powerhouse Rd., and therefore the ditch line on the northwest side of Lake Trail Rd. and Powerhouse Rd. in this vicinity should be viewed as potential fish habitat when water is present (e.g., see Photo 3 & 4 – below). Arden Creek continues to flow downstream through the wetland area until it again crosses Lake Trail Rd., between Powerhouse Rd. and Timberlane Rd.

From the perspective of critical habitat for Western brook lamprey, there is overhanging vegetation for concealment and some hydraulic complexity near Section 3; however, the relative lack of suitable gravel substrates means that this section is of moderate quality for the species. The Site may provide moderate habitat for other species and their sensitive life-stages.

Photograph 3. View of downstream habitat at Section 3 – Powerhouse Rd. (January 21, 2025)

Photograph 4. View of ditch line which may be hydraulically connected to Arden Creek during periods of high flow at Powerhouse Rd. – facing northwest (January 21, 2025)

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7.4. SECTION 4 – CULVERT EXTENSION AND NEW HEADWALL AT ARDEN CREEK

Section 4 is characterized by an increase in riffle habitat, increased gradient, and higher banks with maximum depths of 0.18 m (e.g., see Photo 6 - below). Arden Creek maintained its natural morphology in this area as it traversed a mix of urban yards and forested areas. Substrates were primarily a mix of gravel, cobble, and boulder material. Wetted width ranged from 0.8 m - 1.0 m and channel width at the OHW was ranged from 3.5 m – 7.0 m. Instream cover was provided by overhanging vegetation. Banks were generally stable, but some erosion was noted at Transect 5. Vegetation within the riparian area consisted primarily of grasses, shrubs, and deciduous trees. Additional downstream assessments were not completed as Arden Creek began to track away from Lake Trail Rd. beyond Transect 5 (between Timberlane Rd. and Webdon Rd.) and as further access was limited by the prevalence of private property.

From the perspective of critical habitat for Western brook lamprey, there is overhanging vegetation for concealment and increased hydraulic complexity near Section 4; however, the relative lack of suitable gravel substrates means that this section is of moderate quality for the species. The Site may provide moderate habitat for other species and their sensitive life-stages.

Photograph 5. View of downstream habitat at Section 4 - 2675 Lake Trail Rd. (January 21, 2025)

7.5. SECTION 5 – ROAD WIDENING AND ARDEN CREEK HABITAT IMPROVEMENTS

Within the western portion of Section 5, Arden Creek remains characterized as a ditch with predominant run habitat (e.g., see Photo 6 - below) and moderate gradients. The watercourse flows along the fence line of Arden Elementary School at this location. Within the eastern portion of Section 5, Arden Creek has meandered away from Lake Trail Rd – leaving only the SARA buffer to be considered as part of the road widening activities.

While assessment transects were not sited within Arden Creek at these locations, general observations made during the assessment indicated that the lack of cover and suitable substrates adjacent to Arden Elementary provide low-quality habitat in context of critical habitat for Western brook lamprey. Further south, the developed nature of the road shoulder and lack of vegetation will result in limited impacts to the riparian buffer. This section may provide low quality habitat for other species and their sensitive life-stages adjacent to the school and moderate quality habitat within the wetland portion of Arden Creek further south.

Photograph 6. View of upstream habitat adjacent to Arden Elementary (January 21, 2025)

Photograph 7. View of upstream habitat adjacent to eastern portion of Section 5 (January 21, 2025)

c. The fish species that are present and an estimate of the abundance of those species; and

The BC Habitat Wizard (BC Habitat Wizard, 2025) database was queried to identify fish species in Arden Creek. The search results are included in *Table 3.*

Table 3. Historically documented fish species within Arden Creek & their conservation status

Family	Scientific Name	Common Name	Legislated Protection		Scientific Review or Recommendation	
			SARA (Federal)	Wildlife Act (Provincial)	COSEWIC (Federal)	General Status (Provincial)
Salmonidae (trouts and salmons)	*Oncorhynchus tshawytscha (East Vancouver Island, Stream, Spring population)*	Chinook salmon	**Not listed (Under Consideration)**	**Not reviewed**	**Endangered**	**Not reviewed**
	Oncorhynchus kisutch	Coho salmon	**Not listed**	**Not reviewed**	**Not reviewed**	**Not reviewed**
Petromyzontidae (lampreys)	*Lampetra richardsoni* &	Western brook lamprey, Morrison	**Endangered**	**Critically Imperiled**	**Endangered**	**Red Listed**

Family	Scientific Name	Common Name	Legislated Protection		Scientific Review or Recommendation	
			SARA (Federal)	Wildlife Act (Provincial)	COSEWIC (Federal)	General Status (Provincial)
	Lampetra richardsoni var. marifuga	Creek population				

McElhanney reviewed the DFO mapped aquatic species at risk habitat to determine if any critical habitat polygons where within the study area. In the study area, Arden Creek is mapped by the DFO Critical Habitat database as a critical habitat polygon for Western brook lamprey, Morrison Creek population (DFO, 2023). The Morrison Creek population of Western brook lamprey is listed as 'Endangered' under Schedule 1 of the SARA and COSEWIC (GoC, 2022b), as 'Critically Imperiled' under the Wildlife Act (Province of BC , 1996) and is designated 'Red' under the provincial Red, Blue & Yellow List (Province of BC, 2023) – which indicates that it is a species at great risk of being lost. Based on DFO's Aquatic Species at Risk Map, there is also identified critical Western brook lamprey habitat located within the assessed reach of Arden Creek – including the associated wetland and ditch line areas (DFO, 2024c). The Morrison Creek population exhibits a rare life history in which both a non-parasitic (*L. richardsoni*) and a parasitic (*L. richardsoni var. marifuga*) type of lamprey are produced (GoC, 2020).

Activities occurring inside the defined critical habitat area have direct impacts, and activities located outside of an area identified as critical habitat can indirectly damage or destroy critical habitat. As such, activities including installation, maintenance, repair, or replacement of any anthropogenic structures, located within, or adjacent to, critical habitat, must be reviewed by DFO to determine whether a *SARA* permit, *Fisheries Act* and/or other authorizations or permits are required and can be issued.

A SARA permit will be required to conduct Project activities within the OHW and within a riparian buffer area that will be confirmed by DFO during the engagement process - anticipated to range between 10-30 m from each bank, depending on the associated habitat type (e.g., ditch, creek, and wetland).

d. A description of how the information provided under paragraphs (a) to (c) was obtained, including the sources, methods and sampling techniques.

Assessment methods for included the following;

1. Desktop review of existing data, aerial imagery, and regulatory guidance,

2. Field assessment data collection to supplement knowledge of habitat, and,

3. Compilation of these information sources and the proposed Project work plans to determine areas of impact, potential mitigations, and residual impacts that require on-site compensation or off-site offsetting.

Fish habitat was assessed over a series of transects throughout the portion of the project area which interacts with Arden Creek and its associated riparian habitat. Habitat composition measured in each segment included standard variables related to fish habitat quality such as average channel width and water depth, substrate classification based on particle size, assessment of in-stream and overhead cover, streambank stability and character assessment upstream and downstream of the crossing (noting the height and condition of the banks), and channel geomorphic unit flow type (also known as habitat type).

Additional data relating to parameters that characterize potential for limits to fish passage at the crossing structure were recorded. Additional photographs of the field reconnaissance and data tables which summarize the fish habitat inventories are included in the Project's Fish and Fish Habitat Assessment report, previously submitted under DFO file number 25-HPAC-00276. The below information provides a summary of the fish habitat features collected by the QEP within the relevant Project Sections. Fish inventories were conducted not due to the sensitive nature of Arden Creek's resident species (i.e., Western brook lamprey, Morrison Creek population).

8. Description of Effects on Fish and Fish Habitat

9. *(1)A detailed description of the likely effects of the proposed work, undertaking or activity on fish and fish habitat. The description must include*

a. *the fish species that are likely to be affected and the life stages of the individuals of those species;*

With the implementation of recommended mitigation measures, there is unlikely to be injury or mortality of fish within the instream footprints – this includes known species such at Western brook lamprey, Morrison Creek population, Chinook salmon, and Coho salmon. Adherence to least risk timing windows and site isolation should avoid the death of fish or Harmful Alteration, Disruption and Destruction (HADD) or fish or their habitat. It is the view of the Project team that the current condition of the instream and riparian footprint within the Project Area provides low critical habitat values for Western brook lamprey due to a relative lack of suitable substrates and hydraulic complexity, and a previously impacted riparian area. While instream impacts will alter fish-habitat at this location, it is not altering critical habitat features; however, given that the impacts will occur to instream and riparian habitat within a critical habitat polygon, a FAA was triggered for the Project. The existing landscape will be permanently modified as follows:

- Removal of some riparian vegetation to facilitate infrastructure placement, replanting will occur as required in appropriate locations to further stabilize the banks.
- Culvert installation and extension within Arden Creek.
- Headwall installation within Arden Creek.
- Ditch modifications within Arden Creek.
- Road widening within the critical habitat polygon.

b. *the extent and type of fish habitat that is likely to be affected;*

Table 4 Instream and Riparian Habitat Changes Associated with the Project

Type of Habitat Impact	Existing Conditions	Area	Total Area	Comments
Temporary Instream Alteration or Loss	In Stream	32 m^2	**32 m^2**	Habitat below the high-water mark that will be temporarily altered due to construction activities
Permanent Instream Alteration or Loss	In Stream	122.5 m^2	**122.5 m^2**	Habitat below the high-water mark that will be permanently altered or lost due to construction activities
Temporary Area within Riparian setback Alteration or Loss	Pavement	0 m^2	**0 m^2**	Riparian habitat between the ordinary high-water mark and the riparian boundary that will be temporarily altered due to construction activities .
	Gravel Shoulder	0 m^2		
	Grassed Area	0 m^2		
	Shrubs & Trees	0 m^2		
Permanent Area within Riparian setback Alteration or Loss	Pavement	0 m^2	**466.8 m^2**	Riparian habitat between the ordinary high-water mark and the riparian boundary that will be altered due to construction activities
	Gravel Shoulder	109.8 m^2		
	Grassed Area	357.0 m^2		
	Shrubs & Trees	0 m^2		
Total Riparian Loss (Temporary + Permanent) = **466.8m^2**				
Total Instream Loss (Temporary + Permanent) = **154.5 m^2**				

8.1. SECTION 1 & SECTION 2

Work in these adjacent sections will result in **75.7 m^2 of permanent riparian impacts** and **83.2 m^2 of permanent instream impacts**.

1.1.1. Section 1

Proposed Project activities in the area of Webb Road and Lake Trail Road include culvert installations and extensions in Arden Creek, as well as tree removal. Up to two trees will be removed at the corner of Webb Road and Lake Trail Road to accommodate pathway construction; these trees will not be replanted as part of the Project.

Proposed Project activities include the following:

- Extension of the existing 500 mm diameter (dia.) corrugated steel pipe (CSP) culvert approximately 4.5 m into the creek,

- Installation of a new 1200 mm dia. concrete culvert to convey Arden Creek under the pathway alignment,
- Installation of two precast concrete headwalls within the stream channel of Arden Creek, and
- Removal of one tree within the riparian zone on the north side of the creek. Additional tree removal requirements will be decided through an arborist assessment prior to the start of construction.

1.1.2. Section 2

Proposed activities within this section include culvert installations and vegetation removal on the north side of Lake Trail Road between the Courtenay Fellowship Baptist Church property and the driveway at 2877 Lake Trail Road. Stormwater runoff on the south side of the church driveway flows south towards Arden Creek, while ditches on the north side of the driveway flow north towards Powerhouse Road and Arden Creek.

The existing culvert under the church driveway will be abandoned in place (AiP) and a lawn basin and culvert will be installed in the ditch on the north side of the driveway. The proposed pedestrian pathway alignment will be above the TOB of the ditchline other than at 2+100 where culvert extension is required to accommodate the pathway.

Proposed Project activities include the following:

- Pathway construction through an existing shallow swale that is connected to Arden Creek on the south side of the church driveway,
- Installation of a 600 mm lawn basin and 300 mm dia. culvert on the south side of the church driveway to direct flows south to Arden Creek (*Error! Reference source not found.*),
- Installation of a 600 mm lawn basin and associated 300 mm dia. culvert on the north side of the church driveway at 2+100. The existing culvert under the church driveway will be AiP (*Error! Reference source not found.*),
- Installation of two new 300 mm dia. culverts within ditches at both sides of the driveway at 2877 Lake Trail Road (at 2+170) (*Error! Reference source not found.*),
- Tree removal as needed based on an arborist assessment of trees in conflict with the proposed pathway alignment (between 2899 and 2825 Lake Trail Road), and
- Vegetation restoration between the driveways of 2899 and 2877 Lake Trail Road (*Error! Reference source not found.*).

8.2. SECTION 3

Work in this section will result in **83.0 m^2 of permanent riparian impacts**.

Proposed works within this section include the extension of existing culverts within ditches on either side of Powerhouse Road at Lake Trail Road, vegetation removal, and re-shaping/widening of the ditch on the south side of Powerhouse Road. Ditches at this location flow directly into Arden Creek.

Proposed Project activities include the following:

- Install a new 300 mm dia. culvert in the ditch at the northwest corner of Lake Trail Road and Powerhouse Road at 2+230,

- Extend the existing 1000 mm dia. culvert approximately 3 m into the ditch adjacent to Powerhouse Road to tie into existing culvert,

- Install a new cast-in-place concrete collar,

- Re-shaping of the ditch on both the south and north sides of Powerhouse Road,

- Tree and shrub removal based on an arborist assessment of vegetation in conflict with the proposed pathway alignment, and

- Vegetation restoration between the driveway at 2825 Lake Trail Road and Powerhouse Road.

8.3. SECTION 4

Work in this section will result in **198.3 m^2 of permanent riparian impacts** and **39.3 m^2 of permanent instream impacts**.

Proposed Project activities in this section include the extension of the existing culvert that conveys Arden Creek flows under Lake Trail Road to the northwest, installation of a new precast concrete headwall at the outlet of the culvert, and re-instating of swale that directs surface water flows to the creek.

Proposed Project activities include the following:

- Extension of a 1200 mm dia. CSP culvert and installation of a new headwall at 2675 Lake Trail Road where Arden Creek flows under Lake Trail Road towards the northeast (at 2+360),

- Re-instatement of a swale on the east side of the existing creek channel to direct surface water flows into Arden Creek,

- Vegetation removal on the north side of the 2607 Lake Trail Road driveway based on an arborists assessment of trees in conflict with the proposed pathway alignment,

- Vegetation restoration adjacent to Arden Creek on the south side of the driveway at 2607 Lake Trail Road, and

- Vegetation restoration/planting adjacent to Arden Creek on the north side of Timberland Road (Figure 12)

8.4. SECTION 5

Work in this section will result in **109.8 m^2 of permanent riparian impacts**.

Road widening is proposed along the south side of Lake Trail Road in two locations above the TOB of Arden Creek and existing ditches:

- Adjacent to the start of the naturalized channel of Arden Creek at Arden Elementary School (2+070) to the driveway at 2877 Lake Trail Road (approximately 2+180), and

- Between Powerhouse Road (2+140) to the crosswalk at Arden Road (approximately 2+640) adjacent to an existing drainage ditch.

c. the probability, magnitude, geographic extent and duration of the likely effects on fish and fish habitat; and

Residual impacts of potential Project impacts on biophysical components were completed and provided as an impact statement. Impact statements are included in *Table 8*.

Table 5. Residual impact analysis following the implementation of BMPs and measures to reduce or avoid impacts

Biophysical Component	Potential Impact	Activities Proposed to Cause Impact	Mitigation Measure	Magnitude	Geographic Extent	Duration	Significance / Impact Statement
Landforms & Soils	Alteration or disturbance to soil profiles	• Land based clearing and construction • Site regrading/infilling • Excavations	• Where applicable, soils stripped during site preparation should be stockpiled (with cover to prevent incursion by invasive species) and put back on site during landscaping. • Ensure that topsoil is replaced on all future lawn/vegetated areas after development has been completed.	• Low or Nil given historic impacts	• local in geographic extent in a pre-disturbed environment.	• Short term	• Mitigation measures and proper pre-construction stripping of soils for re-use should retain the health of the soils to be reused. • Impact is Minimal to Minor
	Erosion and sedimentation	• Land based clearing and construction • Stripping and stockpiling of soils	• Develop an erosion and sediment control plan (ESC) • Minimize the extent of the area cleared at any one time and promptly revegetate or stabilize disturbed areas • Use of appropriate native plant species to revegetate that will quickly re-establish vegetation cover • Erosion protection measures will be applied to any material stockpiled • Control erosion and sediment generation at the source rather than attempting to treat sediment-laden water	• Moderate	• local in geographic extent in a pre-disturbed environment	• Short term	• Implementation of mitigation measures should result in a Minimal impact
	Compaction	• Heavy equipment uses on the Site	• Soil compaction can be reduced by using heavy equipment on the existing road surface wherever possible • Strip topsoil and retain it for reuse prior to the extensive use of heavy equipment during construction	• Low	• local in geographic extent in a pre-disturbed environment	• Short term	• Mitigation measures and proper pre-construction stripping of soils for re-use should retain the health of the soils to be reused. • Impact is Minimal
Hydrology & Watercourses (including fish habitat)	Construction near water (e.g., culverts, culvert extensions, ditch modifications, headwall installation)	• Removal of riparian vegetation anticipated • Modification of the bed and banks or Arden Creek • Disturbance to fish during site isolation and salvage	• Instream works will occur within an isolation. • Salvage works associated with the isolation will be conducted by a local environmental professional with experience handling the Western brook lamprey, Morrison Creek population • A Notification under the WSA is required for this aspect of the Project as well as a Request for Project Review under the *Fisheries Act*	• Moderate	• local in geographic extent in a pre-disturbed environment	• Medium term	• Impacts have been avoided, when possible, through design • Implementation of mitigation measures will be required to avoid a HADD. • Until vegetation is re-established, there will be Minor impacts locally, but long-term impacts will be Minimal.

Biophysical Component	Potential Impact	Activities Proposed to Cause Impact	Mitigation Measure	Magnitude	Geographic Extent	Duration	Significance / Impact Statement
			• Provincial and Federal fish collection permits will be required to facilitate salvage works. • Works within Arden Creek will be completed in the least risk timing window • Riparian enhancement and offsetting are planned for the Project				
	Accidental spill of deleterious substances such as fuel, oil or spills from equipment that degrade surface and groundwater quality	• Spills from heavy equipment including refueling • Asphalt resurfacing • Generation of sediment laden water during construction works	• Protection of water quality through use of ESC measures as appropriate • Utilize pre-cast concrete components • Develop a spill prevention and response plan	• Moderate	• local in geographic extent	• Short term	• Mitigation measures will result in non-substantial impact
Terrestrial Vegetation Resources (Including Riparian Areas)	Introduction of invasive species	• Disturbance to soil and vegetation clearing during site preparation	• Project design should retain vegetation where appropriate • Replace removed vegetation with new native plantings, as feasible • Use local native plants in landscaping; they are adapted to local climates and once established, will need less maintenance than non-native plants	• Low (based on current health of ecosystem)	• local in geographic extent in a pre-disturbed environment	• Long-term	• Impact is Minor with implementation of BMPs
	Damage or loss of native plant communities and species	• Vegetation clearing during site preparation • Removal of vegetation during Project construction	• Project design should retain vegetation where appropriate • Use local native plants in landscaping that are adapted to local climates • Manage weeds according to the *Weed Control Act*	• Moderate	• local in geographic extent in a pre-disturbed environment	• Medium term	• Until vegetation is re-established, there will be Minor impacts locally, but long-term impacts will be Minimal.
	Potential root zone disturbance of trees to be retained	• Damage to root zones by construction activities on the Site and on adjacent properties.	• Where applicable, erect a fence at the outer limit of the critical root zone of trees to be retained, which is defined as the distance around the tree at a radius of 10 times the diameter of the tree (at breast height) or outside the dripline of the tree, where feasible • Avoid damage to the root system, trunk, or branches of any retained tree • Do not place any material or equipment within the critical root zone of the tree	• Low (the majority of vegetation will be removed within Project footprint and replanted)	• local in geographic extent	• Medium Term	• Mitigation measures will result in non-substantial impact

Biophysical Component	Potential Impact	Activities Proposed to Cause Impact	Mitigation Measure	Magnitude	Geographic Extent	Duration	Significance / Impact Statement
			• Do not attach any signs, notices, or posters to retained trees				
	Decrease in biodiversity	• Increase in invasive species to newly disturbed areas	• Re-establishing native vegetation along new or disturbed edges of natural features by seeding or transplanting locally appropriate native species • Control of designated noxious species when encountered	• Moderate	• local in geographic extent in a pre-disturbed environment	• Medium term	• Until vegetation is re-established, there will be Minor impacts locally, but long-term impacts will be Minimal as the Site will be enhanced from current condition.

d. a description of how the information provided under paragraphs (a) to (c) was derived, including the methodologies used.

A QEP reviewed the data from desktop and field assessments in context with DFOs pathway of effects and measures to protect fish and fish habitat. Residual impacts of potential Project impacts were quantified in terms of magnitude, reversibility, geographic extent, duration, frequency, and overall significance, as outlined below, and based on guidelines provided by the BC Environmental Assessment Office (BC Environmental Assessment Office, 2013).

McElhanney has reviewed the Pathway of Effects (PoEs) available through the DFO website to describe the type of cause-effect relationships that apply to this Project (DFO, 2024). DFO's PoE framework outlines potential effects that may have an influence on fish and fish habitat which are summarized in ***Table 6***.

Table 6. Pathways of Effects (DFO 2024) relating to the Project activities.

Pressure	Pathways of Effects								
	Use of machinery on land/alteration of riparian vegetation	Use of machinery in water	Placement of materials in water	Removal of materials and aquatic vegetation from water	Water level/flow modification	Water diversion	Dewatering	Detonation in or near water	Introduction of underwater noise
Change or loss of wetted area	-	-	✓	✓	-	-	✓	-	-
Change or loss of fish passage	-	-	-	-	-	✓	✓	-	-
Change or loss of riparian habitat	✓	-	-	-	-	-	-	-	-
Change or loss of habitat structure and cover	✓	-	✓	✓	-	-	-	-	-
Sedimentation of fish habitat	✓	✓	✓	✓	-	✓	✓	-	-
Sublethal effects and/or mortality	-	✓	✓	✓	-	✓	✓	-	-
Contamination of fish habitat	-	✓	-	-	-	-	-	-	-
Potential direct or indirect impairment of the habitat's capacity to support one or more life processes of fish (spawning, breeding, rearing, nursery, feeding, migration, refuge) resulting in sublethal or lethal effects	-	✓	✓	✓	-	✓	✓	-	-
Change in water temperature	✓	-	-	-	-	-	-	-	-

1) MAGNITUDE

Magnitude is a measure of the intensity of a residual impact or the degree of change cause by a Project on an Environmentally Valuable Resource (EVR) relative to the existing conditions. Geographic extent and duration of an impact is important in classifying magnitude. For magnitude, the criteria are defined as follows:

- High: A residual environmental impact affecting a whole stock, population, habitat, or ecosystem, outside the range of natural variation that may be near or exceed the resilience limits of a population or community, such that communities do not return to pre-Project levels for multiple generations.
- Moderate: A small, measurable residual environmental impact affecting a portion of a population or habitat, or ecosystem, returns to pre- Project levels in one generation or less, rapid, and unpredictable change, temporarily outside range of natural variability.
- Low: A negligible residual environmental impact affecting a specific local group, habitat, or ecosystem, returns to pre-Project levels in one generation or less, within natural variation.
- Nil: No discernable change to an EVR.
- Unknown: A residual environmental impact affecting an unknown portion of a population or group or where the changes in a specific parameter are unknown.

2) GEOGRAPHIC EXTENT

Geographic extent refers to the spatial extent of the area affected and is related to the spatial distribution and movement of an EVR. When considering geographic extent in the determination of magnitude, it is important to understand that local scale effects are less severe than those that extend to the regional scale or beyond. Geographic extent is broken into local, regional, and beyond regional as defined as follows:

- Local scale effects are those largely associated with direct effects from the Project footprint (i.e., removal of vegetation for construction of Project components) and project specific small-scale indirect changes (i.e., within the Local Assessment Area).
- Regional scale effects are those that are associated with incremental and cumulative changes from the Project and other developments but are restricted to within the Regional Assessment Area.
- Beyond regional includes cumulative residual effects from the project and other developments that extend beyond the Regional Assessment Area

3) DURATION

Duration is defined as the amount of time from the beginning of a residual effect to when that effect on an EVR is reversed. Duration is the result of two factors: the amount of time between the start and end of a Project activity that causes stress on an EVR, and the time required for the effect to be reversible. The duration of individual Project activities and the period in which the residual effect may occur are considered. Some effects are reversible shortly after the stress has been removed (e.g., changes in the distribution of some wildlife species following the removal of noise after decommissioning and abandonment), while others may take longer to be reversed (e.g., the change in abundance of some species until revegetation has occurred). In some cases, a prediction of duration may be well beyond the temporal boundary of the Project, it is not known when those effects may be reversed, and an EVR may never return to a state that was

unaffected by the Project. In these cases, the likelihood of reversibility is so low that the effect is classified as irreversible. Duration is broken into the following categories:

- Short-term – the residual effect is reversible at the end of construction.
- Medium-term – the residual effect is reversible at the end of operation of the Project.
- Long-term – the residual effect is reversible within a defined length of time where prediction certainty can predict the effect is reversible after decommissioning and abandonment.
- Permanent – the residual effect is predicted to influence an EVR indefinitely. This is applied when an effect is determined to be irreversible.

4) SIGNIFICANCE

For adverse residual effects, the evaluation for the individual criteria was combined into an overall rating of significance as follows:

- Major: Potential impact could jeopardize the long-term sustainability of the resource, such that the impact is considered sufficient in magnitude, aerial extent, duration, and frequency, as well as being considered irreversible. Additional research, monitoring, and/or recovery initiatives should be considered.
- Medium: Potential impact could result in a decline of a resource in terms of quality/quantity, such that the impact is considered moderate in its combination of magnitude, aerial extent, duration, and frequency, but does not affect long-term sustainability (that is, it is considered reversible). Additional research, monitoring, and/or recovery initiatives may be considered.
- Minor: Potential impact may result in a localized or short-term decline in a resource during the life of the Project. Typically, no additional research, monitoring, and/or recovery initiatives are considered.
- Minimal: Potential impact may result in a small, localized decline in a resource during the construction phase of the Project and should be negligible to the overall baseline status of the resource.

An adverse effect is considered “significant” where its residual effects are classified as major; while they are considered “not significant” where residual effects are classified as medium, minor, or minimal. For effects of the Project to have a significant effect on EVRs, individuals would have to be affected to the extent that there would be a permanent adverse change to survival and reproduction at the population level.

9. (2)A detailed description of:

a. How the effects referred to in subsection (9) are likely to result in the death of fish or the harmful alteration, disruption or destruction of fish habitat; and

With the proposed habitat balance for riparian vegetation and instream habitat improvements, the Project is unlikely to result in the death of fish or a HADD in the long term. There will be short term impacts to vegetation during construction and after as it re-establishes following planting.

a. The extent of the elements referred to in paragraph (a).

Table 7. Changes to Instream and Riparian Habitat Resulting from Project Activities

Type of Habitat Impact	Existing Conditions	Area	Total Area	Comments
Temporary Instream Alteration or Loss	In Stream	32 m^2	**32 m^2**	Habitat below the high-water mark that will be permanently altered or lost due to construction activities
Permanent Instream Alteration or Loss	In Stream	122.5 m^2	**122.5 m^2**	Habitat below the high-water mark that will be permanently altered or lost due to construction activities
Temporary Area within Riparian setback Alteration or Loss	Pavement	0 m^2	**0**	Intact (not regularly maintained) riparian habitat that will be temporarily altered due to construction activities. These areas are the areas of construction for new riparian plantings.
	Gravel Shoulder	0 m^2		
	Grassed Area	0 m^2		
	Shrubs & Trees	0 m^2		
Permanent Area within Riparian setback Alteration or Loss	Pavement	0 m^2	**466.8 m^2**	Intact (not regularly maintained) riparian habitat between the ordinary high-water mark and the riparian boundary that will be altered due to construction activities
	Gravel Shoulder	109.8 m^2		
	Grassed Area	357.0 m^2		
	Shrubs & Trees	0 m^2		
Total Riparian Loss (Temporary + Permanent) = **466.8 m^2**				
Total Instream Loss (Temporary + Permanent) = **154.5 m^2**				
Proposed Instream Habitat Improvements = **500.7 m^2**				
Proposed Riparian Habitat Improvements = **356.2 m^2**				
Surplus Habitat Improvements = **235.6 m^2**				

A total of 122.5 m^2 of instream habitat is anticipated to be lost during the proposed works, mostly from the installation of culvert extensions. This is proposed to be offset by upwards of 500 m^2 of instream habitat improvements within the Project Area. A total of 466.8 m^2 of riparian area will be permanently impacted by the proposed works, mostly from construction of a gravel pathway within the existing gravel shoulder. This is proposed to be offset by 356.2 m^2 of riparian plantings within the Project Area. An overall **621.3 m^2** of habitat loss (instream and riparian) will be offset with an estimated **856.9 m^2** of habitat improvements, giving rise to a 1.4-fold increase in fish habitat. The proposed riparian planting and instream habitat restoration measures are detailed within the attached project drawings (***Appendix B***). It should be noted that much of the calculated riparian loss applies to existing gravelled or grassed road shoulders and previously disturbed areas that are located within the setback boundaries. The proposed treatments of those areas will serve to formalize a gravelled pathway for pedestrians, and in general do not require vegetation removal.

As the proposed offsets maximize the opportunities within the Project Area (i.e., available city property), additional offsetting opportunities could be explored in cooperation with the Morrison Creek Streamkeepers or other local advocacy groups that have ongoing habitat enhancement opportunities within the watershed. An example would be a control weir that backwaters the 1St Street culvert crossing on Morrison Creek in Courtenay. This rock riffle feature has deteriorated and requires some repairs to improve lamprey passage.

9. Description of Measures and Standards to Avoid or Mitigate Death of Fish or Harmful Alteration, Disruption or Destruction of Fish Habitat

9. A detailed description of the measures and standards that will be implemented, including an analysis of the expected effectiveness of those measures and standards, to:

a. Avoid the death of fish or to mitigate the extent of their death; or b. Avoid or mitigate the harmful alteration, disruption or destruction of fish habitat.

Proposed project works are anticipated to result in a measurable loss of instream and riparian habitat that will affect or alter the productive capacity of habitat for fish; however, the magnitude of residual effects is expected to be negligible. It should be noted that the proposed Project works will contribute greatly to the safety of local schoolchildren, cyclists, and pedestrians and that the design has been refined through several design concepts and iterations to minimize impacts to fish and fish habitat.

Some permanent loss of instream habitat is anticipated for the construction. The Project proposes a replanting and enhancement plan to counter these losses – both riparian and instream.

9.1. FISH AND FISH HABITAT

Mitigation measures and environmental BMPs are key steps in avoiding or reducing impacts to the existing environment. Further mitigations may also be provided by the Construction Contractor's QEP, as appropriate to the season, timing, and current conditions observed or expected at the time of construction activity. Recommended mitigation strategies are outlined below.

9.1.1. General mitigation measures

- While surface flow in the subject watercourses are expected to diminish substantially during the reduced risk timing window any residual water within the construction footprint will be carefully managed and monitored to ensure no offsite release of deleterious substances.
- The construction will be timed for the low flow conditions to reduce potential impacts to water quality.
- Maintain riparian vegetation as per the Project design. Keep an undisturbed vegetated buffer zone between areas of on-land activity and nearby water resources.
- Avoid tree removal.
- Use methods to prevent soil compaction, such as swamp mats or pads.
- Ensure proper sediment control measures are in place to avoid introducing sediment to the water.
- Develop and implement an erosion sediment control plan.
- Schedule work to avoid wet, windy, and rainy periods that may increase erosion and sedimentation.
- Prevent entry of deleterious substances into nearby surface water features.

Riparian restoration is planned to reduce or offset the impacts related to vegetation removal or grasses and low-lying shrubs in the Project footprint.

9.1.2. Timing

As an inclusive reduced risk timing window does not exist for Morrison Creek and its tributaries (i.e., Arden Creek) (Province of BC, 2011), the proposed reduced risk window for construction activities is **July 14 to August 6** for instream works - based on aquatic species expected in Arden Creek and its interconnecting waterways. This timing window has been recommended to protect sensitive life stages of aquatic species; however, timing windows will ultimately be determined through the permitting process.

9.1.3. Works in and around Water

BMPs outlined in 'Measures to protect fish and fish habitat' can be employed to protect fish habitat and water quality and should be considered to assist in adhering to the *Water Sustainability Act,* the *Wildlife Act,* and the *Fisheries Act.*

The following mitigation measures are relevant to protecting water quality:

- The removal of material must not lead to further channel instability or increase the risk of sedimentation into the waterbody.
- Any spoil materials must be placed in a location which prevents sediment or debris entering the water.
- Equipment used in proximity to watercourses must be free of deleterious material (e.g., hydrocarbons) and in good mechanical condition (no fuel or hydraulic leaks).
- Machinery (e.g., excavators, bobcats, generators) must be stored, maintained, and refueled on a flat surface, outside the drip line[1] of trees and a minimum of 30 m from waterbodies, as measured from the high-water mark; increase the 30 m buffer depending on level of risk and site-specific conditions. Refueling must take place on a tarp or portable berm, or on compacted ground.
- Gas generators must be secured to prevent movement during operation and set up on an impermeable fuel mat with a berm or within a container that can contain 110% of the volume of fuel in the generator.
- Measures must be taken to ensure that no harmful material (e.g., fuel and other hydrocarbons, soil, or sediment), which could adversely impact water quality, fish, and other aquatic life, and /or fish habitat, can enter the water as a result of the Project activities.
- Do not work in weather conditions likely to contribute to sediment production to the water.
- Erosion control measures (e.g., silt fences, matting, gravel, and check dams) shall be installed and maintained where appropriate, and
- Effective management of site water and ESC measures to protect water quality of off-Site resources. Where vegetated buffers alone do not retard water and sediment movement effectively, appropriate obstructions (e.g., logs, rocks, mounds) or sediment control structures shall be installed to dissipate the flow of water exiting the Site during construction.
- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species, and noxious weeds.

[1] The area defined by the outermost circumference of a tree canopy where water drips from and onto the ground.

9.1.4. Heightened mitigation measures for salvage and relocation of Morrison Creek Lamprey

- Any watercourse segments within the project footprint with flowing water (or isolated standing water) will be carefully assessed for fish presence and managed prior to construction. It is understood that visual observation of lamprey is not reliable as filter feeding larvae burrow into the streambed. Accordingly, incremental dewatering methods will be used to "daylight" lamprey to the substrate surface where they will be captured with soft dip nets and transferred to dark buckets with aerated water.
- Any stream segments requiring dewatering for lamprey salvage will be isolated with coffer dams installed upstream and downstream of the channel reach, A 5 mm mesh stop net will be installed above the upstream coffer dam to prevent entrainment of fish into the flow diversion pump(s). The isolated area will be slowly dewatered using a low velocity electric pump with a screened sump. Most lamprey rearing within the substrates of the isolated construction site are expected to emerge as the site dewaters. Stream sediment suspected of containing residual lamprey will be carefully removed by hand or soft nets and washed through sieve(s).
- Salvaged lamprey will be transported in aerated buckets and relocated to suitable downstream habitat after observation and recording of data in accordance with the Fish Collection Permit.

9.1.5. Construction Materials, Practices, and Waste

The following are BMPs used to control and mitigate the effects of construction materials:

- Use natural material and environmentally friendly products whenever possible.
- When practical, consider pre-fabrication of parts of structures at an approved off-site location to minimize on-site construction impacts.
- Contain and stabilize waste material (e.g., excavated materials, construction waste and materials, vegetation) above the high-water mark to prevent them from entering any waterbody.
- All construction materials must be removed from the site on Project completion (e.g., refuse material, waste petroleum, construction material).
- Contain waste and transport to an approved waste landfill site.

Anticipated Effectiveness: High.

When outcomes will be achieved: Project completion.

Methods used to assess effectiveness: EM will identify and report on impacts to fish and fish habitat including the death of fish, fish in distress, and data obtained during salvage activities.

Reference standard used: DFO measures to protect fish and fish habitat (prevent the death of fish and prevent entry of deleterious substances in water), Least Risk Timing Window of July 14 to August 6 of any year, BC WQG for protection of aquatic life.

9.2. CONTAMINANT AND SPILL MANAGEMENT

The following are BMPs used to control and mitigate the effects of potential spills:

- Plan activities near water such that materials such as paint, primers, rust solvents, degreasers, grout, poured concrete or other chemicals do not enter the water.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.

- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.
- Report any spills of sewage, oil, fuel, or other deleterious material whether near or directly into a water body.
- Ensure clean-up measures are suitably applied so as not to result in further alteration of sensitive habitat.
- Clean up and appropriately dispose of deleterious substances.
- Maintain all machinery on site in a clean condition and free of fluid leaks to prevent any deleterious substances from entering the water.

Anticipated Effectiveness: High.

When outcomes will be achieved: Project completion.

Methods used to assess effectiveness: EM will monitor for compliance of BMPs and mitigation measures.

Reference standard used: DFO measures to protect fish and fish habitat (prevent entry of deleterious substances in water).

9.3. EROSION AND SEDIMENT CONTROL PRACTICES

The Contractor will develop and implement an ESC Plan for the site that minimizes risk of sedimentation during all phases of the Project. ESC measures will be maintained until all disturbed ground has been permanently stabilized.

The ESC plan should, where applicable, include:

- When possible, minimize vegetation clearing and avoid clearing and grubbing areas with sensitive soils.
- Installation of effective ESC measures prior to onset of work, especially within 30 m of a waterbody.
- Utilize ESC products that correspond with the nature and duration of the Project. When possible, consider the use of biodegradable products. Select products that are not potential wildlife attractants and do not contain invasive species.
- Minimal soil disturbance should be planned as well as limiting the duration of soil exposure.
- Measures for managing water flowing onto the site, divert surface runoff away from exposed areas and manage water flowing onto the site as appropriate.
- If required, sediment laden water is to be pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
- Natural drainage patterns are to be retained wherever possible.
- Site isolation measures for containing suspended sediment where in-water work is required.
- Measures for containing and stabilizing waste material (e.g., construction waste and materials, uprooted or cut aquatic plants, accumulated debris) above the high-water mark of nearby waterbodies to prevent re-entry.
- Regular inspection and maintenance of ESC structures during all phases of the Project and modification, as necessary.
- Halt construction during periods of heavy precipitation and runoff to minimize soil disturbance.
- Removal of non-biodegradable erosion and sediment control materials once site is stabilized.

Anticipated Effectiveness: High.

When outcomes will be achieved: Continuously through construction.

Methods used to assess effectiveness: EM will monitor water quality at regular intervals for TSS.

Reference standard used: DFO measures to protect fish and fish habitat (ensure proper sediment control), CCME WQG for protection of aquatic life.

9.4. VEGETATION MANAGEMENT

The Project's CEMP will detail the specific areas where vegetation removal is required, methods for vegetation removal, methods to retain riparian and mature vegetation in and around the Project footprints where possible, and appropriate BMPs to protect the river and adjacent riparian areas. The CEMP should also include BMPs for tree felling and removal, details regarding revegetation and final landscaping for disturbed areas if they differ from the design drawings, and measures to avoid the introduction or spread of invasive weed species.

McElhanney recommends enhancement from current conditions through the planting of native trees and shrubs within and adjacent to the Project footprint. As such we have developed appropriate planting plans for on-site restoration and habitat offsetting. See **Appendix B.**

9.4.1. Revegetation Prescriptions & Habitat Enhancement

Engineering plans relating to revegetation include but are not limited to the following:

- If vegetation pruning is required on trees adjacent to the Project footprint, trim any tree branches cleanly back to the bark collar. Care must be taken to minimize damage to the bark of live trees.
- No trees outside the Project footprint are to be cut down without prior marking or approval.
- Avoid disturbance to features that have wildlife habitat value such as middens, dens, and fallen logs. Wherever possible, leave existing or potential habitat trees on the landscape.
- All imported soil, gravel, aggregate or fill must be verified by a qualified professional to be free of noxious and prohibited noxious weeds.
- Organic materials that are excavated during construction should be used during site restoration. All fill materials must comprise native mineral soils free of organics, vegetation, debris, and/or other deleterious substances or imported fill as specified in the contract documents.
- Any excess topsoil buried under disturbed root mat or organics with green side up or organics not required for rehabilitation along the trail edges should be broadcast scattered into the surrounding forest. On no account shall construction debris be disposed of by dumping onto slopes.
- Oversized rocks found during excavation and grading, to be salvaged and re-used on site.
- Seed blends will be selected that are deemed appropriate for the region.

It is recommended that native deciduous trees are planted where they have adequate depth for their rooting zone and a combination of native species (such as low-lying shrubs and herbaceous species) to be planted in areas with shallower soil profiles. It is also anticipated that many species will naturally regenerate in the years following disturbance.

9.4.2. Noxious Weeds & Invasive Plant Handling

Procedures will be followed to prevent spread of noxious weeds and invasive plant species which include the following:

- All equipment is thoroughly cleaned prior to being brought on site (e.g., remove dirt from other work sites that has accumulated on the tracks, undercarriage, tires) and before departure to the next site.
- Check clothing and footwear for seeds or plant matter and, if materials are detected, remove, and segregate to not infest the area.
- Use established roads/tracks to prevent access to potentially weed infested areas.
- Areas requiring clearing and grubbing should be screened by the EM for the presence of invasive plants. If invasive species are identified, they should be flagged, removed, segregated, and transferred under cover to a facility capable of accepting such material (i.e., transfer station).
- Know the origin of gravel or other fill used and that it is free of invasive plant species, invasive plant seeds, or rhizomatous plant parts. Avoid using fill from known sites of invasive plant infestation.
- Noxious weeds and invasive plant species that are encountered and are to be removed to facilitate construction activities will be bagged to prevent spread or dispersal and removed from site for incineration at an approved facility.
- Areas of known locations of noxious weeds will be clearly marked by the QEP to prevent unintentional disturbance. Avoid entry to areas that are marked as weed infestations to prevent spread.
- Revegetating the site as soon as possible after work is completed – cover of native or other planted species is among the best preventative measures to block weed infestations from taking hold.

A full list of noxious and undesirable weeds and exotic / introduced plants and control measures are available from the BC Ministry of Agriculture as mandated by the provincial *Weed Control Act.*

Anticipated Effectiveness: High.

When outcomes will be achieved: Project completion.

Methods used to assess effectiveness: EM will monitor for compliance with BMPs and mitigation measures.

Reference standard used: N/A.

10. A detailed description of the monitoring measures that will be implemented to assess the effectiveness of the measures and standards referred to in (9)

The Contractor will be required to develop a CEMP and have a qualified on-site EM. The EM will monitor all work below the HWM or with the potential to impact the aquatic habitat. The EM will monitor for the following:

- Fish and Fish Habitat
    - <u>Fish presence:</u>
        - Objective: Avoid and/or reduce death of fish.
        - Indicator(s): Fish presence.

- Technique(s): Complete a sweep of the Project footprint immediately prior to construction to identify fish present. Complete a salvage of any fish identified within the Project footprint.
- Rationale(s): Project activities will include instream works. Completing a fish salvage will reduce fish present within the footprint and therefore reduce the death of fish.
- Timing/Frequency: Fish presence sweeps will be completed prior to construction following work zone isolation.

  - Fish disturbance:

    - Objective: Reduce disturbance to fish.
    - Indicator(s): Fish in distress.
    - Technique(s): The EM will monitor the work zone for fish presence and distress during work below the HWM.
    - Rationale(s): Project activities will some include in water works. Visually assessing the water line for fish presence will allow the EM to identify any fish in distress near the disturbance.
    - Timing/Frequency: The EM will be on-site daily to monitor for fish presence, distress, and other impacts.

- Sediment Control

  - Water quality:

    - Objective: Avoid sedimentation of marine environment.
    - Indicator(s): BC Water Quality Guidelines (MWLRS, 2025)[2].
    - Technique(s): The EM will visually monitor for sedimentation adjacent to the works and complete water quality monitoring for Total Suspended Solids (TSS) and turbidity.
    - Rationale(s): Monitoring will align with the CCME Water Quality Guidelines for the protection of aquatic life.
    - Timing/Frequency: Monitoring will occur multiple times a day during construction, and prior to construction each day to establish a baseline.

- Invasive Species

  - Equipment:

    - Objective: Avoid transfer of invasive species.
    - Indicator(s): Clean equipment and vehicles upon arrival to the Site.
    - Technique(s): EM will inspect equipment and vehicles upon arrival to the Site for mud, plant material, and miscellaneous debris.
    - Rationale(s): Inspection of equipment and vehicles upon arrival to the Site will reduce potential of invasive species being transferred to the Site.
    - Timing/Frequency: Inspections will occur upon arrival of equipment and vehicles at the Site.

- Spill Management

  - Refueling:

    - Objective: Evaluate refueling techniques and mitigation measures.

[2] British Columbia Ministry of Water, Land, and Resource Stewardship. 2025. British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife & Agriculture - Guideline Summary. Water Quality Guideline Series, WQG-20. Retrieved from wqg_summary_aquaticlife_wildlife_agri.pdf

- Indicator(s): Proper technique and mitigation measures in place during refueling of equipment.
- Technique(s): EM will monitor refueling activities to note technique and mitigation measures in place.
- Rationale(s): Monitoring refuelling will allow the EM to determine potential risk and areas of improvement.
- Timing/Frequency: Monitoring will occur during all refueling activities while the EM is on-site.

- Containment:

  - Objective: Evaluate preparedness of contractor to respond to a spill.
  - Indicator(s): Sufficient supplies and knowledge on how to respond.
  - Technique(s): EM will identify and assess supplies on-site and equipment and discuss preparedness with crew. EM will complete an Environmental Orientation with the crew to discuss spill response plan.
  - Rationale(s): Allows EM to identify if sufficient resources are available and knowledge gaps within the crew to respond prior to the start of work.
  - Timing/Frequency: Start of Project and each crew change.

The EM will complete a daily monitoring report for each day of works and one final report after construction is complete.

10. *A detailed description of the contingency measures that will be implemented if the measures and standards referred to in (10) do not meet their objectives.*

If measures and standards referred to in (10) do not meet their objectives the EM will issue a stop work order. All work will be ceased until the EM and the Contractor are able to implement additional mitigation measures where required to meet the objectives. Any additional mitigation measures not outlined in this document but are provided in the *Fisheries Act* Authorization will be implemented for the Project.

11. *A quantitative and detailed description of the death of fish referred to in 9(2) after the measures and standards in 10(a) are implemented.*

Not applicable

12. *A quantitative and detailed description of the harmful alteration, disruption or destruction of fish habitat referred to in 9(2) after the measures and standards referred to in 10(b) are implemented.*

The study area exhibits a variety of channel morphologies, both natural and modified, with differing levels of stability, cover, and hydraulic complexity. The area generally features a moderate-gradient, meandering riffle-run system with small channels. Arden Creek's size and morphology provide limited water depths and flow velocities, offering fish limited cover and foraging opportunities within the Project Area. As headwater streams rely primarily on terrestrial inputs for their food web (Ward, 1997), the impacted nature of much of the riparian area in relation to the proposed works will result in a lessening of negative effects.

To assess the potential for harmful alteration, disruption, or destruction (HADD) of habitat in the project area, McElhanney reviewed the Action Plan for the Western Brook Lamprey – Morrison Creek Population (*Lampetra richardsoni*) in Canada 2018 (GoC, 2020). The Western brook lamprey, Morrison Creek population is a freshwater fish endemic to the Morrison Creek watershed in Courtenay, British Columbia.

The habitat requirements for *L. richardsoni* include sand and gravel substrate, pools, riffles and hydraulic complexity for nest building, spawning, egg incubation, and rearing, in addition to foraging habitat for adults

(GoC, 2022b) (Wade and Grant, 2022). Adults excavate a small depression used as a nest for spawning and egg incubation from April to June. Channel enhancement work recently completed an estimated 1.4 km downstream of the Project under SARA Permit #21-HPAC-00937 successfully increased *L. richardsoni* production using fish habitat restoration techniques, including rock riffle installations and gravel nourishment (Wade et. al., 2025). Restored lamprey spawning habitat typically includes areas with small riffles and a mix of sand and gravel for nest building (1–100 mm diameter) (Stone, J., 2006) (Gunkel et. al., 2006) with low flow (0–0.7 m/s). Eggs generally hatch within 30 days. Subsequently, the filter feeding larvae burrow into the substrate to rear for up to seven years, before completing metamorphosis into an adult. In general, larval rearing habitat can be characterized as occurring in slow water allowing for the accumulation of fine burrowing sediments, silt and detritus covered mud areas with gravel (Farlinger and Beamish, 1984) (Stone, J., 2006). Larvae also tend to prefer the margins of streams particularly areas with root balls and undercut banks (Farlinger and Beamish, 1984). Unfragmented riparian zones support lamprey habitat by providing banks stability, mitigating fine sediment load into the watercourse, and helping maintain cool water temperatures.

The predicted HADD for Western brook lamprey, Morrison Creek population and other fish species is quantified as low risk, as the project design was carefully developed to minimize impacts. These design mitigations include:

- Narrowing the City's original plan of a 3.0m Multi-use Pathway to 2.0m
- Avoiding the use of pavement and creation of impervious surfaces and instead opting for maintaining a gravelled pathway
- Meandering the proposed pathway to avoid impact to ditches, trees, and vegetation

For existing culverts begin extended, design mitigations include placement of gravels within the culvert bottom and on the headwall apron, installation of concrete headwalls to reduce the footprint of construction within the creek, and installation of riprap aprons beyond the culvert outlet to reduce flow velocity and allow fish passage.

For the installation of the new culvert in Arden Creek at Section 1, a bridge was considered. In order to support the bridge, piers would be required which would have encroached on the existing roadway or the existing stream – the edge of pavement required for safe vehicle turning paths is within 0.5m of the top of bank at the intersection of Lake Trail Road and Webb Road. This would have in turn caused more disturbance within the riparian and instream habitat compared to placement of a culvert. The culvert proposed to be installed exceeds the size requirement for the 1 in 200 year storm, and includes all of the instream mitigations and improvements of the culvert extensions: placement of gravels within the culvert bottom and on the headwall apron, installation of concrete headwalls to reduce the footprint of construction within the creek, and installation of riprap aprons beyond the culvert outlet to reduce flow velocity and allow fish passage.

There is minimal cover, and a generally lack of suitable habitat preferred by the species within the project footprints. After revegetation, impacts are expected to be negligible or even improved compared to current conditions.

11. Habitat Credit

13. *The number of habitat credits the applicant plans to use to offset the death of fish referred to in section 13 and the harmful alteration, disruption or destruction of fish habitat referred to in section 14, as well as the number of any certificate referred to in paragraph 42.02(1)(b) of the Act.*

As the City of Courtenay does not have an existing agreement with DFO for the Morrison Creek Watershed, no habitat credits are available to be used to offset the impacts to riparian areas for this Project.

12. Offsetting Plan

The offsetting plan described in this section is based on DFOs Policy for Applying Measures to Offset Harmful Impacts to Fish and Fish Habitat (DFO, 2025)[3].

Principle 1: Offsetting is last in a hierarchy of measures

- Avoid: Unnecessary removal of riparian vegetation and the extension of existing culverts were prioritized to prevent undue impacts to fish and fish habitat.

- Mitigate: The completion of instream works and those within the riparian buffer during the Least Risk Timing Window, in addition to ESC BMPs have been specified to mitigate impacts to fish and fish habitat. The applicant has also taken steps through design to minimize impact to Arden Creek and nearby habitat in a restricted footprint. These design measures have included:

    - Narrowing the City's original plan of a 3.0m Multi-use Pathway to 2.0m
    - Avoiding the use of pavement and creation of impervious surfaces and instead opting for maintaining a gravelled pathway
    - Meandering the proposed pathway to avoid impact to ditches, trees, and vegetation

- Offset: Where the installation of new infrastructure is required to meet Project objectives (e.g., culvert installation, ditch modification, headwall installation), improvements to riparian areas and instream areas have been prescribed to counter the habitat losses.

Principle 2: There are limits to what can be offset

- Although the Western brook lamprey, Morrison Creek population is confined to a small geographical area (i.e., Morrison Creek watershed), the habitat impacted by the proposed works is generally of low value. Riparian and instream improvements proposed as part of the Project will improve upon the current state of Arden Creek.

[3] Fisheries and Oceans Canada. 2025. Policy for Applying Measures to Offset Harmful Impacts to Fish and Fish Habitat. 29p. https://www.dfo-mpo.gc.ca/pnw-ppe/documents/reviews-revues/policies-politiques/offsetting-policy-politiques-mesures-compensation-eng.pdf

Principle 3: The benefits from offsetting measures must counterbalance the harmful impacts, including time lags and uncertainties

- The project is proposing a net surplus of habitat improvements when compared against the anticipated riparian and instream impacts. The fish habitat lost through Project activities will be effectively replaced with habitat features that surpass current conditions (e.g., increased hydraulic complexity, spawning substrates, increased riparian vegetation).

Principle 4: Indigenous Peoples are engaged in the planning, design, implementation and monitoring of measures to offset

- The City of Courtenay has and will continue to engage with K'omoks First Nation as the Project evolves. In addition, the City commits to DFOs own engagement process with interested parties from First Nations communities throughout British Columbia.

Principle 5: Measures to offset are in addition to what would have otherwise occurred

- The project is proposing a net surplus of habitat improvements when compared against the anticipated riparian and instream impacts. The fish habitat lost through Project activities will be effectively replaced with habitat features that surpass current conditions (e.g., increased hydraulic complexity, spawning substrates, increased riparian vegetation).

- Habitat improvements to the areas specified in the offsetting plan are generally sited within ditch lines that front residential and commercial properties that would not otherwise have been targeted for restoration.

Principle 6: Offsetting measures are located to optimize ecological outcomes, taking into account the needs of rights holders and resource users

- Habitat improvements to the areas specified in the offsetting plan are generally sited within ditch lines that front residential and commercial properties that currently possess limited cover, unsuitable substrates for Western brook lamprey, Morrison Creek population, and low hydraulic complexity. Restoring these urban sites represents an opportunity to satisfy the habitat criteria and increase production for this species.

Principle 7: Measures to offset generate benefits that last over the long term

- The intent of the prescribed offsetting measures is to provide a long term, sustainable improvement to local fish habitat. By planting native, riparian species and introducing hydraulic complexity, cover, and suitable substrate to urban ditch lines, McElhanney contends that the habitat benefits will not be temporary – this will be verified through a 5-year post-construction monitoring effort. Furthermore, the relatively minor gradient and ditch line nature of the watercourse are unlikely to produce water velocities which could contribute to migration of the introduced materials.

Principle 8: Time lags between the impact and offsetting measures are avoided or minimized

- Offsetting measures will be installed as part of the prescribed project schedule and will occur upon completion of work within a given project section.

14. A detailed description of a plan to offset the death of fish referred to in section 13 and the harmful alteration, disruption or destruction of fish habitat referred to in section 14 that were not offset by the habitat credits referred to in section 15, including:

a. The geographic coordinates of the location where offsetting measures will be implemented;

Offsetting measures will be implemented within the project footprint at the following Sections:

Table 8 Offsetting locations within the project footprint

Site ID	Coordinate System	Latitude	Longitude
Section 1	GEOGRAPHIC (WGS84)	49.672769	-125.024631
Section 2	GEOGRAPHIC (WGS84)	49.673111	-125.024175
Section 4	GEOGRAPHIC (WGS84)	49.675051	-125.020663
Section 5	GEOGRAPHIC (WGS84)	49.672921	-125.024135

b. A small-scale site plan identifying the general location and boundaries of the location where the measures will be implemented;

Please refer to **Appendix B** for the relevant site plans.

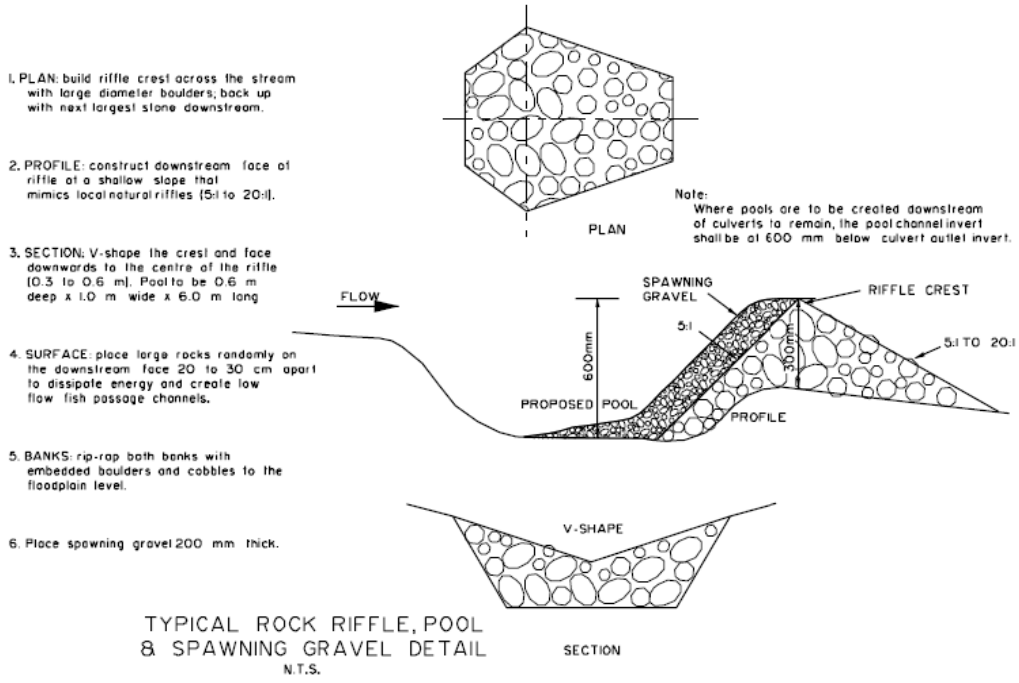
c. A detailed description of the measures and how those measures will meet their objectives;

Habitat restoration using DFOs mitigation hierarchy will be implemented, including minimizing impact, restoring on-site and offsetting impacts off-site (if needed). As very little substrate suitable for lamprey spawning and early rearing was found within the estimated 1200 m long project footprint, the installation of rock riffle sequence(s) and spawning gravel nourishment is expected to restore opportunities for *L. richardsoni* breeding and rearing. The Project will adapt similar instream enhancement strategies for *L. richardsoni* completed by Wade et. al. 2025 (Wade et. al., 2025) by way of riparian planting and instream habitat complexing. Fish habitat restoration work will be undertaken over an estimated 532 m^2 area, focused on impacted habitat near Section 2 & 5 and is expected to give rise to a long-term net benefit to lamprey and salmonid production.

Proposed restoration on-site includes installation of rock riffle sequences near Transects 2 & 3 with an emphasis on backwatering existing crossings with perched outlets to restore lamprey access. This will

improve previously impacted habitat and avoid access restrictions associated with private property. Rock riffles will provide hydraulic complexity, moderate flows, temper erosive energy and retain spawning substrates. Rock riffle sequences shown in *Figure 14* and *Photograph 8* are expected to have a moderating effect on high flows as shear stress is tempered by the decrease in water surface slope (Newbury et. al., 1997). Properly built rock riffles are also expected to address limiting factors to fish production by creating stable pool habitat, re-aerating flows, providing substrate for benthic invertebrates and sustaining spawning gravel. Gravel will be used to seed each riffle and re-nourish the channel bed wherever possible.

Figure 14 Typical rock riffle, pool & spawning gravel detail.



Photograph 8. Lamprey specific channel restoration work in Arden Creek completed in 2021 under SARA Permit 21-HPAC-00397, showing rock riffle, spawning gravel nourishment, LWD complexing and riparian planting.

The following spawning gravel mix will be used to restore an estimated 500.7 m^2 of instream habitat.

Table 9 Spawning gravel mix

Gravel type	Percentage of mix
Pit run	15
¼"– ½"	15
½ "–1"	20
1"–1 ½"	40
1 ½ "–2"	10

The following assemblage of riparian plants will be used to reinstate fish habitat along degraded or/and disturbed segments of Arden Creek and Arden Creek tributaries. Restoration work along the fragmented riparian corridor will ensure a long-term net benefit to fish habitat. Due to overhead utility conflicts, riparian restoration plantings are selected to avoid future trimming requirements.

Table 10 Proposed species for riparian restoration

Common name	Scientific Name	Spacing
Shrubs		
Pacific Willow	*Salix lucida ssp. laciandra*	1 m
Red Osier Dogwood	*Comus stolonifera*	1 m
Pacific Ninebark	*Physocarpus capitatus*	1 m
Black Gooseberry	*Ribes lacustre*	1 m
Red Flowering Currant	*Ribes sanguineum*	1 m
Nootka Rose	*Rosa nutkana*	1 m
Thimbleberry	*Rubus parviflorus*	1 m
Salmonberry	*Rubus spectabilis*	1 m
Hardback	*Spiraea douglasii*	1 m
Red Elderberry	*Sambucus racemosa*	1 m
Snowberry	*Symphoricarpos albus*	1 m

Sections 1, 2, 4, and 5 will have on-site restoration as shown in the design drawings and planting plans. Restoration and enhancement efforts have been focused on the project footprint due to the relatively small size of the Arden Creek (and greater Morrison Creek) watershed. Without obtaining permission to apply offsets on private property or finding an alternative location offsite, a 3:1 replacement ratio for riparian vegetation plantings and instream enhancements is not possible.

12.1. AREA

The area to be offset was determined by the permanent loss of 122.5 m^2 of instream habitat and the temporary/permanent alteration of 466.8 m^2 of riparian habitat. Combined instream habitat improvements of 500.7 m^2 and 356.2 m^2 of riparian habitat improvements have resulted in a surplus of 235.6 m^2.

12.2. UNCERTAINTY AND OFFSETTING RATIO

Uncertainty for the Project is evaluated based on uncertainties in prediction of Project impacts, effectiveness of habitat offsetting, and future states of nature. Future states of nature are nearly impossible to predict. To account for uncertainty associated with the success of the proposed offsetting Project, the habitat balance includes a surplus offsetting area of 235.6 m^2, located directly within the Project Footprint.

d. A detailed description of the monitoring measures that will be implemented to assess the effectiveness of the measures referred to in paragraph (c);

12.3. INSTREAM HABITAT IMPROVEMENTS SUCCESS

Post restoration monitoring for instream improvements, including the placement of large woody debris and rock riffle, pool, and spawning gravel sequences will include an image set, confirmation of location coordinates via GPS, and a description of site conditions – including incidental observations of fish and observed changes to habitat composition and structure.

12.4. RIPARIAN REVEGETATION SUCCESS

Post restoration monitoring for the reestablishment of native riparian vegetation (ground cover, shrubs, and trees) will look to a **>85% survivorship rate** to be determined by means of a field survey that includes vegetation plots set at intervals along pre-determined transects. Prior to field surveys, linear transects will be drawn through each of the vegetation treatment areas, and a random number generator to determine the location along the transect of the first plot on each transect. Subsequent plots along the transects will be measured at regular intervals.

To establish each plot, the radius will be laid out using a locked measuring tape. In the 2-person field crew, one person maneuvers the measuring tape around the circle from a fixed central point and calls out counts of individual plants by species to the second person, who documents the count and assesses the vigour of each plant as it is counted. Data will account for all live and dead vegetation, including planted and naturally regenerated vegetation. Vigour will be scored on a scale of 0 through 4, using the following parameters:

- 0 = dead
- 1 = poor, declining health / heavily stressed
- 2 = fair, stressed
- 3 = good, healthy with some new growth and/or minor stress
- 4 = excellent, strong health and abundant new growth

MONITORING METHODOLOGY

The following provides post-construction monitoring to be completed at the Offsetting Site within the existing Project footprints. Any conditions provided within the Authorization, once received, will be incorporated into the offsetting and monitoring plan.

The contractor is to provide maintenance for one year from substantial completion until the date of final acceptance. Following that, the City will hire a suitably qualified professional to conduct annual monitoring of the offsetting measures over a 3 to 5-year period according to the methodologies outlined within this report. The City proposes to monitor the offsetting works by completing three combined vegetation and instream habitat improvement surveys over a 3-year period, as outlined below. Surveys will be completed in September, during the growing season, and assess efficacy plantings and staking.

For the riparian improvements, the Offsetting Sites will be evaluated based on permanent transects diagonally through the planting site. These transects will be established during the post-construction monitoring and stakes will be placed at their end points. Photo locations along these transects will also be determined at this time to allow a times series of the site to be captured via photographs. Each transect will be assessed for percent survival based on aerial coverage to determine if success drops below 85%.

For the instream improvements, the Offsetting Sites will be evaluated at their installed locations.

MONITORING REPORTS

The City will provide a post-construction monitoring report describing the offsetting measures completed as part of the Project as per all relevant permits. The report will include details of plantings and staking works and will be submitted within 60 days of the completion of the offsetting measures. The post-construction report will include:

- Planting details including date, crew, weather, etc.,
- Locations of permanent transects to be used throughout monitoring program,
    - Including GPS coordinates and photographs before and after planting,
- GPS coordinates of entire area planted, and
- Confirmed planting density and number of each species planted.

The City will report on whether the offsetting measures have been completed according to all applicable permits by providing the following:

- Summary reports for years 1, 2, 3, and 5, addressing the conditions of the offsetting measures and their effectiveness. Each report will include:
    - Geo-referenced photographic assessment of the offsetting measures,
    - Assessment of success and effectiveness of the offsetting measures as outlined in any conditions, and
    - Identification of any functional concerns with the offsetting measures and description of any remedial measures taken.
- A final report for year 5 addressing the conditions of the offsetting measures and their effectiveness, including:
    - All aspects of the above summary reports,
    - Statistical analysis comparing year five vegetation dynamics to pre-construction,
    - Evaluate if the offsetting measures were successful based on a comparison to the reference sites, and
    - Identify any additional offsetting measures to be implemented to ensure success of the offsetting measures.
- The City will submit four monitoring reports according to the schedule below, by December 31 to info@dfo-mpo.gc.ca with the DFO reference file number:
- One post-construction report with the initial results of the improvement efforts within 60 days of Project completion,
- One report each for years 1, 2, 3, and 5 of the post-construction monitoring, and
- One final report for year 5 of the post-construction monitoring.

e. A detailed description of the contingency measures and associated monitoring measures that will be implemented if the measures referred to in paragraph (c) do not meet their objectives;

If the survival rate of the plantings at the offsetting site falls below 85% at any point in the monitoring program, it will be replanted to 100%. This will be determined in the first year of monitoring by percent survival of individual plants. For the remainder of the monitoring program this will be determined by survival

of the site as a whole using percent cover. For the instream improvements, any observed loss of large woody debris or spawning gravel will be replenished within the 5-year period.

Based on the results of the vegetation post-restoration survivorship results, targeted replanting efforts will be conducted for those species and areas that do not successfully re-establish within a 1-year monitoring timeframe. Any evidence of reintroduction of invasive plants species will be handled on a species-by-species bases for treatment either by herbicide application, mechanical removal, or hand pulling. Successful management of invasives might not be the total eradication but deters growth enough to allow for an average density of one native plant/m^2.

Thresholds for invasive species prevalence can vary, but typically, a reasonable threshold is between **5-10% coverage** of the area with invasive species, especially in sensitive ecosystems or where invasive species can rapidly spread. This means that if invasive species cover more than 5-10% of the area, additional management or remediation actions will be recommended. Highly aggressive invasive species might necessitate a lower threshold (<5%) and will be determined by the QEP conducting the monitoring.

f. A detailed description of any adverse effects on fish and fish habitat that could result from the implementation of the plan;

No adverse impacts are anticipated by implementing the improvement plans.

g. A detailed description of the measures and standards that will be implemented to avoid or mitigate the adverse effects and how those measures will meet their objectives;

No adverse effects to fish and fish habitat are anticipated through planting and staking, or the placement of large woody debris and rock riffle, pool, and gravel sequences during construction. Offsetting measures will be overseen by experienced professional engineer and will be done in such a way to avoid impacts to fish and fish habitat. Such measures may include selecting an access route to not disturb existing riparian vegetation and removing all refuse from the site after completion. These avoidance measures will also be implemented throughout the monitoring program.

The contractor must ensure that the minimum planting medium depths are achieved and that plant materials meet the minimum size requirements as indicated on the plant list. Plants shall be nursery grown under climatic conditions like those in the location of the Project and root balls are to be free of pernicious weeds.

h. The timeline for the implementation of the plan;

The timing of which will be dictated by the contractor's schedule under the requirements of permits and best practices for riparian planting. Planting will be scheduled to align with highest potential survival, which is late fall after substantial completion of construction.

i. An estimate of the cost of implementing each element of the plan; and

The estimated cost for implementation of the offsetting measures and monitoring are included in *Table 11* below. McElhanney developed an estimated cost for the 5-year monitoring plan and applicable reporting based on the details provided in *10(d)*. The material and labour cost estimate provided in *Table 12* is based on recent construction costs for similar projects in the region.

Table 11. Material and Labour Cost Estimate

Project Component	Unit Rate	Estimated Cost
Stream Improvements at Arden Elementary School (500m^2)	\$90 / m^2	\$45,000
Riparian Plantings (356m^2)	\$50 / m^2	\$17,800
Contractor Environmental Protection	Lump Sum	\$11,775
	Total	**\$74,575**

A summary of offsetting costs for the proposed plan is provided in *Table 12.* Inflation is based on the Canadian inflation target rate, for the below estimate an inflation rate of 3% was utilized against the total of 5-year monitoring and maintenance cost.

Table 12. Offsetting Cost Estimate Summary

Project Component	Estimated Cost
Initial Material and Labour	\$74,575
Project Coordination, Supervision, Implementation (5% of material and labour)	\$3,925
5-Year Monitoring and Reporting	\$16,500
Maintenance (Years 2-5)	\$37,500
Subtotal	**\$132,500**
Inflation (5 years at 3%)	\$7,976
Total	**\$140,476**

j. If the implementation of the plan requires access to lands, water sources or water bodies that are not owned by the applicant, a description of the steps that are proposed to be taken to obtain the authorization required for the applicant, the Department of Fisheries and Oceans and anyone authorized to act on the Department's behalf to access the lands, water sources or water bodies in question. This information is not required if the applicant is His Majesty in right of Canada, His Majesty in right of a province or the government of a territory.

The Offsetting Sites fall within the land owned by the City. The Offsetting Site will be accessed via public road.

13. Financial Guarantee

An irrevocable letter of credit will be developed by The City of Courtenay upon acceptance of the offsetting plan and will be submitted to DFO as soon as it's received from a financial institution (**Appendix D**).

The City will work with their financial institution to put a draft letter of credit together for DFO. The wording and format of this letter will be based upon template information provided by DFO.

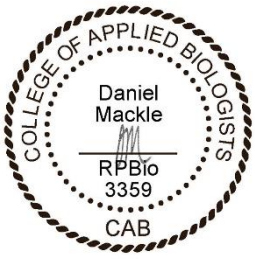
Professional Statement

This report has been prepared with information available at the time of writing. This assessment and its recommendations are based on a review of readily available web databases and field verification of desktop findings. This review identified environmentally sensitive features to be protected during the Project design and construction. Conclusions and recommendations presented here may change with additional information. We trust the information provided is sufficient to meet your needs at this time.

Respectfully submitted,

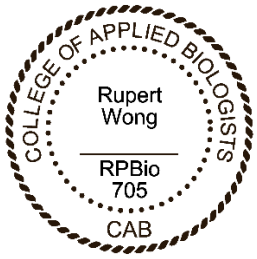
McElhanney Ltd.

Prepared by:



Daniel Mackle, RPBio.
Senior Aquatic Biologist
McElhanney
dmackle@mcelhanney.com

Reviewed by:



Rupert Wong, RPBio.
Senior Partner/President
Current Environmental
rwong@currentenv.ca

Statement of Limitations

Use of this Report. This report was prepared by McElhanney Ltd. ("**McElhanney**") for the particular site, design objective, development and purpose (the "**Project**") described in this report and for the exclusive use of the client identified in this report (the "**Client**"). The data, interpretations and recommendations pertain to the Project and are not applicable to any other project or site location and this report 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 McElhanney. The Client may provide copies of this report to its affiliates, contractors, subcontractors and regulatory authorities for use in relation to and in connection with the Project provided that any reliance, unauthorized use, and/or decisions made based on the information contained within this report are at the sole risk of such parties. McElhanney will not be responsible for the use of this report on projects other than the Project, where this report or the contents hereof have been modified without McElhanney's consent, to the extent that the content is in the nature of an opinion, and if the report is preliminary or draft. This is a technical report and is not a legal representation or interpretation of laws, rules, regulations, or policies of governmental agencies.

Standard of Care and Disclaimer of Warranties. This report was prepared with the degree of care, skill, and diligence as would reasonably be expected from a qualified member of the same profession, providing a similar report for similar projects, and under similar circumstances, and in accordance with generally accepted engineering/planning/etc., and scientific judgments, principles and practices. McElhanney expressly disclaims any and all warranties in connection with this report.

Information from Client and Third Parties. McElhanney has relied in good faith on information provided by the Client and third parties noted in this report and has assumed such information to be accurate, complete, reliable, non-fringing, and fit for the intended purpose without independent verification. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed.

Effect of Changes. All evaluations and conclusions stated in this report are based on facts, observations, site-specific details, legislation and regulations as they existed at the time of the site assessment/report preparation. Some conditions are subject to change over time and the Client recognizes that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site may substantially alter such evaluations and conclusions. Construction activities can significantly alter soil, rock and other geologic conditions on the site. McElhanney 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 upon any of the following events: a) any changes (or possible changes) as to the site, purpose, or development plans upon which this report was based, b) any changes to applicable laws subsequent to the issuance of the report, c) new information is discovered in the future during site excavations, construction, building demolition or other activities, or d) additional subsurface assessments or testing conducted by others.

Independent Judgments. McElhanney will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions of the Client, or others, who may come into possession of this report, or any part thereof. This restriction of liability includes decisions made to purchase, finance or sell land or with respect to public offerings for the sale of securities

References

BC Environmental Assessment Office. (2013). *Guideline for the Selection of Valued Components and Assessment of Potential Effects*. Retrieved from https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/guidance-documents/eao-guidance-selection-of-valued-components.pdf

BC Habitat Wizard. (2025). *Habitat Wizard*. Retrieved from https://maps.gov.bc.ca/ess/hm/habwiz/

DFO. (2020). *Recovery Strategy for the Bull Trout (Salvelinus confluentus), Saskatchewan-Nelson Rivers populations, in Canada [Final]. Species at Risk Act Recovery Strategy Series. Ottawa: Government of Canada.*

DFO. (2023). *Aquatic Species at Risk Map*. Retrieved from https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

DFO. (2024). *Pathways of Effect.* Retrieved from https://www.dfo-mpo.gc.ca/pnw-ppe/pathways-sequences/index-eng.html

DFO. (2024c). *Aquatic species at risk map*. Retrieved from https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

Farlinger and Beamish. (1984). Recent colonization of a major salmon-producing lake in British Columbia by Pacific Lamprey (Lampetra tridentata). *Canadian Journal of Fisheries and Aquatic Sciences*, 278-285.

GoC. (2020). Retrieved from Western Brook Lamprey, Morrison Creek population (Lampetra richardsoni): action plan 2018: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/action-plans/morrison-creek-lamprey-2018.html

GoC. (2022b). *Species at Risk Act: COSEWIC assesments and status reports*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports.html

Gunkel et. al. (2006). Spawning distribution and habitat use of adult Pacific and western brook lampreys in Smith River, Oregon. *American Fisheries Society Symposium*.

Province of BC . (1996). Retrieved from Wildlife Act: https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96488_01

Province of BC. (2011). Retrieved from Terms and Conditions For Changes In And About A Stream Specified By Ministry of Forests, Lands and Natural Resource Operations Habitat Officer, West Coast Region (Vancouver Island & Gulf Islands): https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/terms_conditions_van_island.pdf

Province of BC. (2023). Retrieved from Red, Blue & Yellow Lists: https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data/red-blue-yellow-lists

Stone, J. (2006). Observations on nest characteristics, spawning habitat, and spawning behaviour of Pacific and western brook lamprey in a Washington stream. *Northwestern Naturalist*.

Strahler, A. N. (1952). Hypsometric (area-altitude) analysis of erosional topology. *Geological Society of America Bulletin, 63(11):*, 1117–1142.

Strahler, A. N. (1957). Quantitative analysis of watershed geomorphology. *Transactions of the American Geophysical Union, 38(6):*, 913–920.

Wade and Grant. (2022). Opportunistic observations of nest building and spawning of the endangered Western Brook Lamprey, Morrison Creek population (Lampetra richardsoni). *Canadian Manuscript Report of Fisheries and Aquatic Sciences*.

Wade et. al. (2025). Stream remediation - a key to the survival of recovery of the endangered Western Brook Lamprey. 18 pp.

Ward, H. a. (1997). *Watershed Geoporphology and Fish Habitat - Chapter 2.* Retrieved from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.for.gov.bc.ca/hfd/library/FFIP/Hogan_DL1997.pdf

Appendix A – Letter of Agency

Infrastructure and Environmental Engineering
830 Cliffe Avenue Courtenay, B.C. V9N 2J7
Phone: 250-703-4838 | Email:
engineering@courtenay.ca
courtenay.ca

August 21, 2024 File No. 5335-20-22009

Triage and Planning Unit
Fish and Fish Habitat Protection Program
Ecosystem Management Branch
Fisheries and Oceans Canada
200 – 401 Burrard Street
Vancouver, BC V6C 3S4

Re: City of Courtenay Lake Trail Road Project, Courtenay, BC

This letter is to advise Fisheries and Oceans Canada that the City of Courtenay (the Client) has retained McElhanney Ltd. (McElhanney) to provide environmental consulting services for the City of Courtenay Lake Trail Road Project (the Project). By way of this letter, McElhanney is hereby authorized to submit relevant environmental applications and other necessary supporting documentation on behalf of the Client for the duration of the Project.

Please contact the undersigned if you have any questions.

DocuSigned by:
Adam Pitcher
8EACF04952184F5...

Adam Pitcher, AScT, PMP
Manager of Capital Projects
apitcher@courtenay.ca
250-703-4838

Appendix B – Engineering Drawings and Offsetting Site Plans

CLIENT

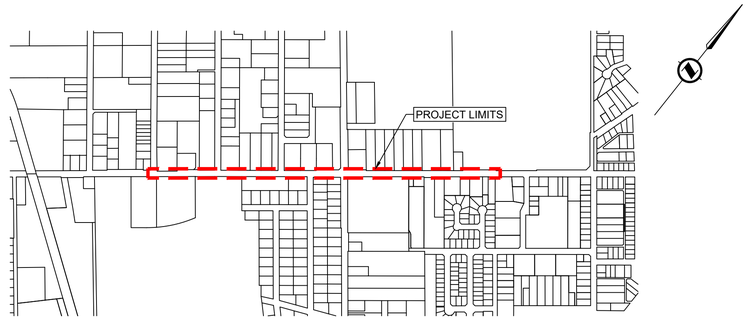
CITY OF COURTENAY

PROJECT NAME

LAKE TRAIL ROAD PEDESTRIAN PATHWAY

DESCRIPTION

WEBB ROAD TO LAKE TRAIL SCHOOL



KEY MAP

McELHANNEY PROJECT

2211-47614-05

STATUS

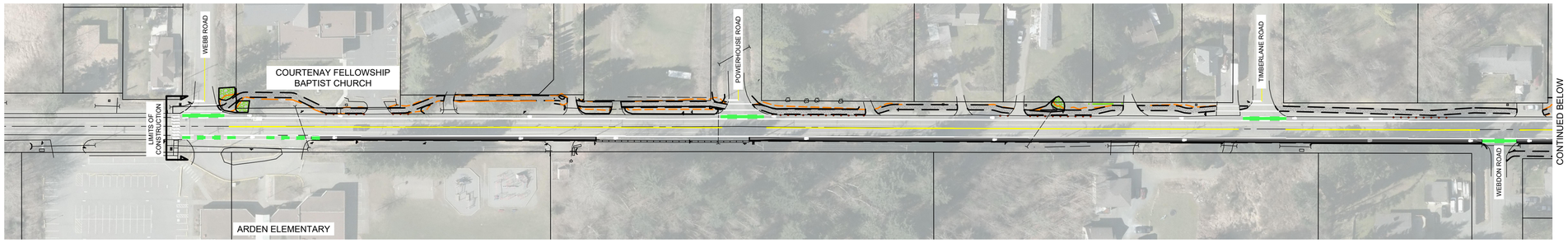
ISSUED FOR PERMITTING

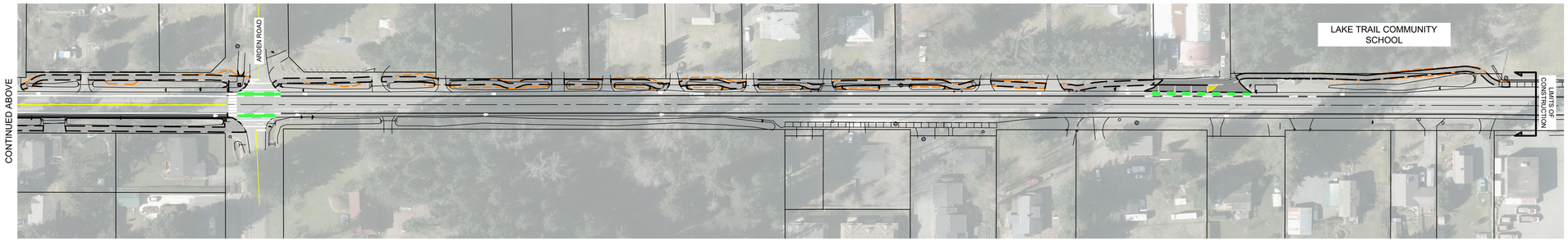
DRAWING LIST

SHEET #	SHEET TITLE	REVISIONS			
		PE	1	2	3
001	GENERAL SITE PLAN				
101	PLAN & PROFILE - STA 2+000 TO 2+360				
102	PLAN & PROFILE - STA 2+360 TO 2+720				
103	PLAN & PROFILE - STA 2+720 TO 3+080				
104	PLAN & PROFILE - STA 3+080 TO 3+160 & 4+000 TO 4+110				
701	SIGNAGE AND ROAD MARKING PLAN - STA 2+000 TO 2+360				
702	SIGNAGE AND ROAD MARKING PLAN - STA 2+360 TO 2+720				
703	SIGNAGE AND ROAD MARKING PLAN - STA 2+720 TO 3+080				
801	ENVIRONMENTAL OFFSETTING PLAN - STA 2+000 TO 2+350				
802	ENVIRONMENTAL OFFSETTING PLAN - STA 2+350 TO 2+720				
803	ENVIRONMENTAL PLAN & PROFILE				
804	ENVIRONMENTAL DETAILS				
901	DETAILS (1 OF 2)				
902	DETAILS (2 OF 2)				

McElhanney

1211 Ryan Road
Courtenay BC
Canada V9N 3R6
T 250 338 5495





GENERAL

1. ALL WORKS, MATERIALS, AND TESTING SHALL BE IN ACCORDANCE WITH THE CITY OF COURTENAY SUBDIVISION AND DEVELOPMENT SERVICING BYLAW 2919 AND THE CURRENT ISSUE OF THE MASTER MUNICIPAL CONSTRUCTION DOCUMENT, UNLESS OTHERWISE APPROVED BY THE CONTRACT ADMINISTRATOR.
2. ALL PRODUCTS TO BE PER THE CURRENT VERSION OF THE CITY OF COURTENAY APPROVED PRODUCTS LIST.
3. ALL REQUESTS FOR CHANGES TO THE DESIGN FOR FIELD CHANGES MUST BE SUBMITTED TO THE CONTRACT ADMINISTRATOR AND THE CITY FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTING THE CHANGE AND INSTALLATION.
4. A PRE-CONSTRUCTION MEETING WITH CITY STAFF IS TO BE HELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE ENVIRONMENTAL MONITOR SHALL ATTEND THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR IS REQUIRED TO SUBMIT ALL NECESSARY PERMITS (ROAD PERMIT AND E48 PROJECT INFORMATION) TO THE CITY DEVELOPMENT SERVICES DIVISION PRIOR TO SCHEDULING A PRE-CONSTRUCTION MEETING.
5. THE CONTRACTOR SHALL OBTAIN A PERMISSION TO CONSTRUCT WORKS WITHIN CITY LIMITS (ROADS) PERMIT FROM THE CITY OF COURTENAY OPERATIONS DEPARTMENT PRIOR TO CONSTRUCTING WORKS WITHIN A MUNICIPAL ROAD ALLOWANCE, STATUTORY RIGHT-OF-WAY, AND/OR UPON MUNICIPAL PROPERTY.
6. A PERMIT IS REQUIRED FROM FORTIS BC GAS WHEN THE SITE WORK OR ACTIVITY INVOLVES:
   - 6.1. WORKING WITHIN TWO (2) METRES OR CROSSING UNDER/OVER AN INTERMEDIATE PRESSURE (IP) GAS PIPELINE (701-2070 KPA / 101.6 - 300 PSI)
   - 6.2. CROSSING A TRANSMISSION PRESSURE (TP) GAS PIPELINE (ABOVE 2070 KPA / 300 PSI) OR WORKING WITHIN A RIGHT-OF-WAY.
7. TREE PROTECTION FENCING TO BE INSTALLED AS SOON AS ADJACENT TREES ARE REMOVED. FENCING TO BE MAINTAINED IN GOOD CONDITION UNTIL CONSTRUCTION/SUBDIVISION COMPLETION. ARBORIST TO PROVIDE CONFIRMATION OF CONDITION PRIOR TO REQUESTING SUBSTANTIAL COMPLETION.
8. CONTRACTOR SHALL CONTACT BC 1-CALL TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXPOSE LOCATIONS OF ALL EXISTING UTILITIES AND ADVISE THE CONTRACT ADMINISTRATOR OF ANY POTENTIAL CONFLICTS.
10. THE CITY OF COURTENAY ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY AND VALIDITY OF THE INFORMATION SHOWN OR PROVIDED THROUGH RECORD COPIES SUPPLIED BY THE CITY OF COURTENAY. ALL INFORMATION SHOULD BE SITE VERIFIED.
11. THE CONTRACTOR SHALL DELIVER WRITTEN NOTICE OF CONSTRUCTION TO ALL RESIDENTS AND BUSINESSES WITHIN 1 BLOCK OF THE PROJECT.
12. ANY DAMAGES TO THE CITY'S INFRASTRUCTURE MUST BE REPORTED BY THE CONTRACTOR TO THE CONTRACT ADMINISTRATOR AND THE CITY IMMEDIATELY.
13. ALL DISTURBED AREAS, STRUCTURES (IE. RETAINING WALL, FENCES), VEGETATION, HABITAT, BOULEVARDS, ETC. ON PUBLIC / PRIVATE PROPERTY TO BE RESTORED TO EQUAL OR BETTER CONDITION THAN EXISTING AND TO THE SATISFACTION OF THE CITY OF COURTENAY / PROPERTY OWNER.
14. ANY EXISTING CITY INFRASTRUCTURE NOT REQUIRED AS A RESULT OF THIS PROJECT IS TO BE RETURNED TO THE OPERATIONS YARD. OPERATIONS TO BE CONTACTED A MINIMUM OF TWO WEEKS IN ADVANCE OF DELIVERY TO CONFIRM DESIRE FOR RETURN.
15. THE CONTRACTOR SHALL ASSUME "PRIME CONTRACTOR" STATUS AND WILL BE RESPONSIBLE FOR ALL MULTIPLE WORK PLACE SAFETY RESPONSIBILITIES FOR WORKERS IN ACCORDANCE WITH WORKSAFE BC AND OHS REGULATIONS.
16. THE CONTRACTOR IS TO ARRANGE FOR OBSERVATION OF ALL KEY UNDERGROUND ASPECTS OF THE WORK BY THE CONTRACT ADMINISTRATOR PRIOR TO BACKFILL.
17. THE CONTRACTOR IS TO ARRANGE FOR ALL APPLICABLE TESTING REQUIRED AND TO PROVIDE TESTING RESULTS TO CONTRACT ADMINISTRATOR FOR REVIEW AND ACCEPTANCE.

EXCAVATING, TRENCHING AND BACKFILLING

1. INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE NOR ACCURATE. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXPOSE LOCATIONS OF ALL EXISTING UTILITIES AND ADVISE THE ENGINEER OF ANY POTENTIAL CONFLICTS.
2. THE CONTRACTOR IS TO CALL "BC ONE CALL" TO LOCATE EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.
3. ALL BACKFILL IS TO BE IMPORT PIT-RUN OR AS APPROVED BY A GEOTECHNICAL ENGINEER.
4. ALL WATER, SANITARY SEWER AND STORM DRAINAGE TRENCHING IS TO BE AS PER MMCD DWG. G4 UNLESS OTHERWISE NOTED.
5. ALL GRANULAR AGGREGATE MATERIALS ARE TO BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY (ASTM D1557) IN ANY AREAS THAT WHERE STRUCTURAL SUPPORT IS REQUIRED.

TRAFFIC CONTROL / SITE SAFETY

1. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN FOR REVIEW BY THE CITY OF COURTENAY & THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. THE CONTRACTOR SHALL DELIVER WRITTEN NOTICE OF CONSTRUCTION TO ALL RESIDENTS & BUSINESSES WITHIN 1 BLOCK OF THE PROJECT.
3. THE CONTRACTOR SHALL NOTIFY ALL EMERGENCY SERVICE AGENCIES, MoTI, COMOX VALLEY REGIONAL DISTRICT, SCHOOL BUS, GARBAGE CONTRACTORS & BC TRANSIT OF THE SUBSEQUENT WORK ZONE AREA, SPEED REDUCTIONS, OR DETOURS WHICH MAY AFFECT TRAFFIC FLOW.
4. THE CONTRACTOR SHALL MAINTAIN VEHICLE & PEDESTRIAN ACCESS TO ALL RESIDENCES & BUSINESSES AT ALL TIMES.
5. THE CONTRACTOR SHALL VERIFY THAT SITE SAFETY FOR VEHICLE OPERATORS & PEDESTRIANS IS MAINTAINED FROM THE END OF EACH WORK DAY, THROUGH THE NIGHT, & UNTIL THE START OF THE NEXT WORK DAY BY USING FLASHING BEACONS, BARRICADES, SIGNS, DELINEATORS ETC., IN ACCORDANCE WITH CURRENT MoTI CONSTRUCTION ZONE SIGNAGE STANDARDS.
6. THE CONTRACTOR IS TO ERECT ALL APPROPRIATE CONSTRUCTION ZONE SIGNS AND USE CERTIFIED FLAG PERSONNEL TO MAINTAIN SAFE AND EFFICIENT TRAFFIC FLOW THROUGH & AROUND THE WORK SITE
7. ALL TRAFFIC SIGNS ARE TO BE AS PER THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (CURRENT EDITION).

PERMITS

1. A PERMIT IS REQUIRED FROM FORTIS BC GAS WHEN THE SITE WORK OR ACTIVITY INVOLVES:
   - 1.1. WORKING WITHIN TWO (2) METRES OR CROSSING OVER/UNDER AN INTERMEDIATE PRESSURE (IP) GAS PIPELINE (701-2070 kPa / 101.6 - 300 psi)
   - 1.2. CROSSING A TRANSMISSION PRESSURE (TP) GAS PIPELINE (ABOVE 2070 kPa / 300 psi) OR WORKING WITHIN A RIGHT-OF-WAY.
2. CONTRACTOR TO OBTAIN A ROAD PERMIT TO CONSTRUCT WITHIN THE PUBLIC ROW.

ENVIRONMENTAL PROTECTION

1. THE CONTRACTOR SHALL ENSURE THAT ALL ENVIRONMENTAL PROTECTIONS TO ELIMINATE DOWNSTREAM SILT ARE IN PLACE PRIOR TO THE START OF CONSTRUCTION & REMAIN FOR THE DURATION OF THE CONTRACT. THE CONTRACTOR SHALL OBTAIN A COPY OF, AND FOLLOW THE PROCEDURES CONTAINED IN THE "LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT". THE CONTRACTOR IS TO PROVIDE AN "EROSION & SEDIMENT CONTROL PLAN", FOR REVIEW BY THE ENGINEER.
2. ALL WORKS ARE TO BE INSTALLED UNDER THE DIRECTION OF AN ENVIRONMENTAL MONITOR & ARE TO MITIGATE MIGRATION OF SILTS/SANDS BY AIR, WATER, OR VEHICLES /EQUIPMENT.
3. REQUIRED PERMITS TO WORK IN WATERWAYS WILL BE OBTAINED BY OWNER PRIOR TO CONSTRUCTION THE CONTRACTOR WILL BE REQUIRED TO FOLLOW ALL CONDITIONS REQUIRED FOR PERMIT APPROVAL.

RESTORATION

1. RESTORE DISTURBED SOFTSCAPE AREAS WITH 150mm OF TOPSOIL & HYDROSEED WITH NATIVE GRASS MIX UNLESS OTHERWISE INDICATED BY DRAWINGS
2. ALL PAINT LINES AND SIGNS ARE TO BE IN ACCORDANCE WITH BC MoTI MANUAL OF STANDARD TRAFFIC SIGNS & PAVEMENT MARKINGS.

PAVEMENT AREAS:

3. EXISTING ASPHALT EDGE IS TO BE SAW CUT IN LONG STRAIGHT LINES PRIOR TO PAVING. UTILIZE STEP JOINT WHERE EXISTING ASPHALT THICKNESS EXCEEDS 50mm.
4. LONGITUDINAL ROAD RESTORATION PAVEMENT JOINTS SHALL NOT BE LOCATED WITHIN THE LANE WHEEL PATH. RESTORATION SHALL BE TO EITHER THE WHITE FOG LINE, CENTRE OF LANE OR 1.5m EITHER SIDE FROM CENTRE OF TRENCH PER LIMITS AS DEFINED IN THESE DRAWINGS.
5. PRIO TO PAVING, REMOVE ANY BROKEN OR CRACKED PAVMENT AND ANY AREAS SHOWING SETTLEMENTADJACENT TO PAVING WORKS AND DISPOSE OF OFF-SITE,
6. GRIND EDGE OF TRENCH MIN. 500mm BACK OF TRENCH WALL AND 300mm FROM ANY BROKEN OR DAMAGED EDGES.
7. CONTRACTOR SHALL TEMPORARILY RESTORE EXCAVATIONS AND MAINTAIN A SMOOTH AND RUT-FREE SURFACE (COLD MIX) UNTIL PLACING PERMANENT PAVEMENT.
8. RESTORE ROAD AS PER TYPICAL ROAD SECTION DETAILS ON THESE PLANS.

RIPARIAN RESTORATION ARES:

1. ALL WORK AND MATERIALS TO CONFORM TO THE LATEST EDITION OF THE CANADIAN LANDSCAPE STANDARD UNLESS SPECIFICALLY OTHERWISE NOTED.
2. SOIL DISTURBANCE SHALL BE MINIMIZED WHERE POSSIBLE IN ALL RIPARIAN AREAS. CONDUCT CLOSE-CUT CLEARING OF SHRUBS INSTEAD OF GRUBBING, WHERE POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL PLANTS PER THE PRESCRIBED PLANTING MIX, IF NECESSARY TO RESTORE ANY ADDITIONAL DISTURBED AREAS.
3. IF INVASIVE PLANT SPECIES ARE OBSERVED IN THE WORK AREA, MACHINERY MUST AVOID CONTACT WITH THE PLANT TO PREVENT SPREAD. SPECIES IDENTIFICATION TO BE DEFERRED TO THE QEP IF/AS NEEDED.
4. DISTURBED OR NEW TOPSOIL SURFACES IN PLANTING AREAS ARE TO BE FINISHED "ROUGH AND LOOSE" PRIOR TO PLANTING, IE AVOID BOTH COMPACTION AND SMOOTH GRADING.
5. APPLY A 300 MM LAYER OF IMPORTED ORGANIC TOPSOIL THROUGHOUT TREE AND SHRUB PLANTING AREAS PRIOR TO PLANT INSTALLATIONS.
6. PROVIDE FERTILITY AND PARTICLE SIZE ANALYSIS TEST FOR IMPORTED ORGANIC TOPSOIL PRIOR TO STARTING WORK.
7. AFTER TOPSOIL AND SHRUB INSTALLATIONS, PLANTING AREA SHALL BE FINISHED WITH 25MM LAYER OF COMPOSTED BARK OR WOOD MULCH.
8. IRRIGATION WILL BE NEEDED DURING THE GROWING SEASON (MAY 1ST THROUGH SEPTEMBER 30TH) TO MAINTAIN SURVIVAL OF PLANTED STOCK, FOR THE DURATION OF THE MAINTENANCE PERIOD (TO BE SPECIFIED IN THE WORKS CONTRACT). WATER AS FREQUENTLY AS NECESSARY TO MAINTAIN HEALTHY PLANTS.

LEGEND

EXISTING	DESCRIPTION	PROPOSED	EXISTING	DESCRIPTION	PROPOSED
	LIMIT OF CONSTRUCTION		D	STORM SEWER	
60	GROUND CONTOUR			CATCH BASIN	
	TOP OF SLOPE			LAWN BASIN	
	BOTTOM OF SLOPE			CATCH BASIN LEAD	
	DITCH		W	WATER MAIN	
	SWALE			WATER VALVE	
	CULVERT			HYDRANT ASSEMBLY	
	FENCE (WOOD)			PERMANENT BLOW-OFF	
	FENCE (CHAIN LINK)			AIR VALVE	
	VEGETATION BOUNDARY		M	WATER METER	
	SIGN			WATER MANHOLE	
	EDGE OF PAVEMENT (WITHOUT CURB)			UTILITY POLE	
S	SANITARY SEWER			STREET LIGHT (DAVIT POLE)	
FM	SANITARY FORCE MAIN		E	HYDRO DUCT	
	SANITARY MANHOLE		G	GAS DUCT	

SITE: STORM SEWER, WATER WORKS, SAN. SEWER, UTILITIES

Rev	Date	Description	Drawn	Design	App'd
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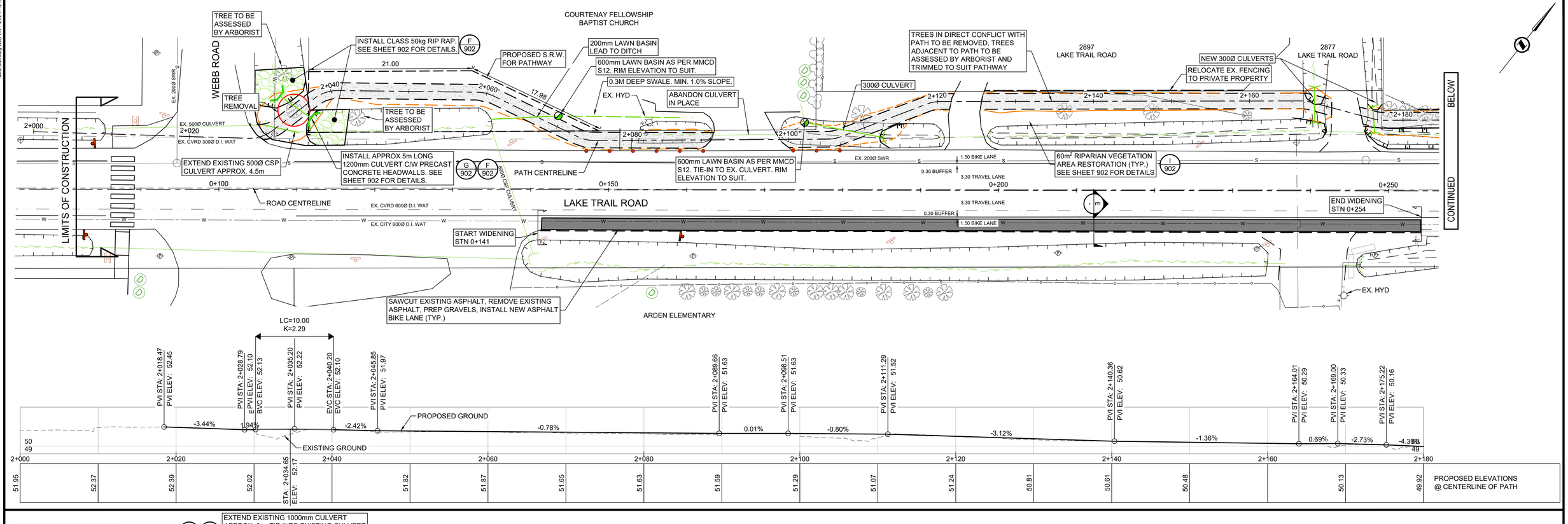
CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
GENERAL SITE PLAN

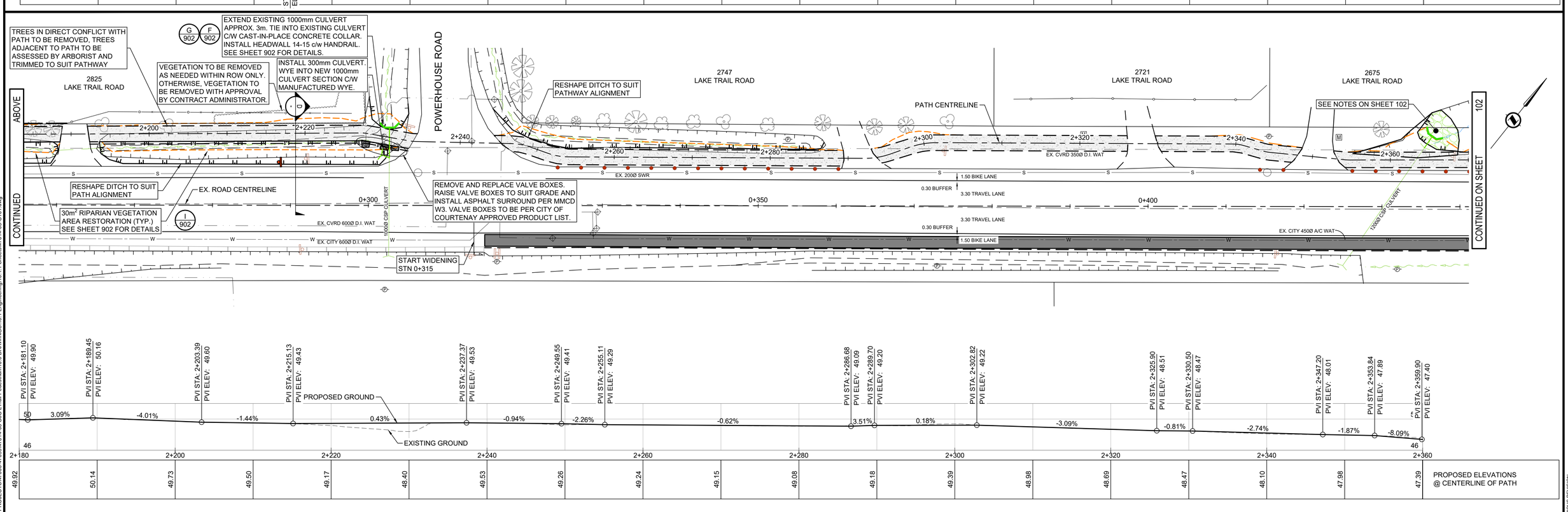
COURTENAY, BC

Drawing No. 001

Project Number	Rev.
2211-47614-05	PE

DESTROY ALL PRINTS BEARING PREVIOUS REVISION





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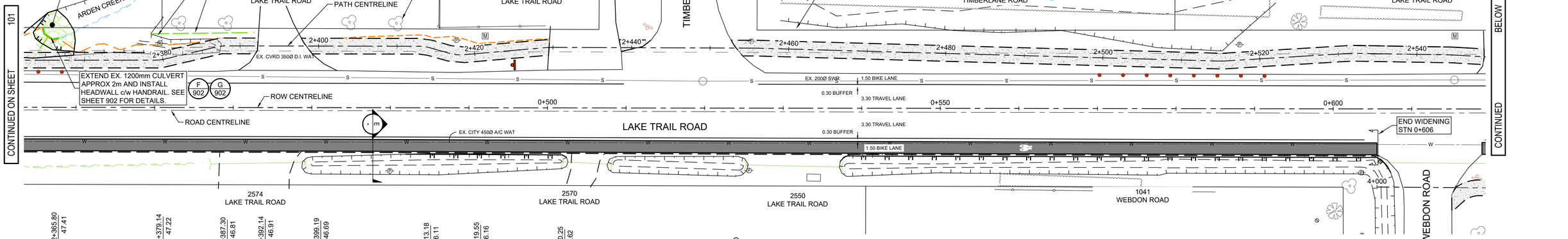
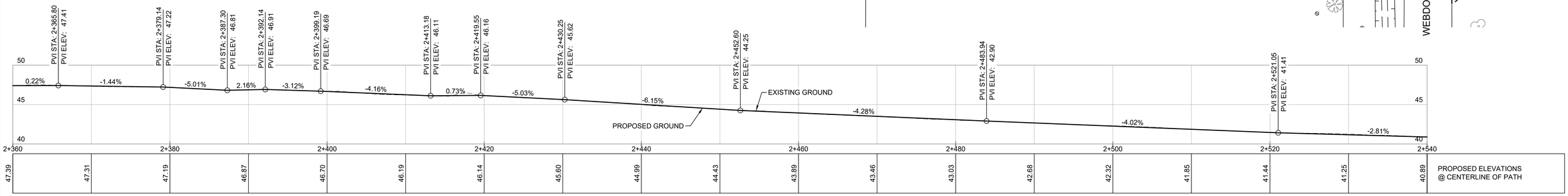
CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
PLAN & PROFILE
STA 2+000 TO 2+360

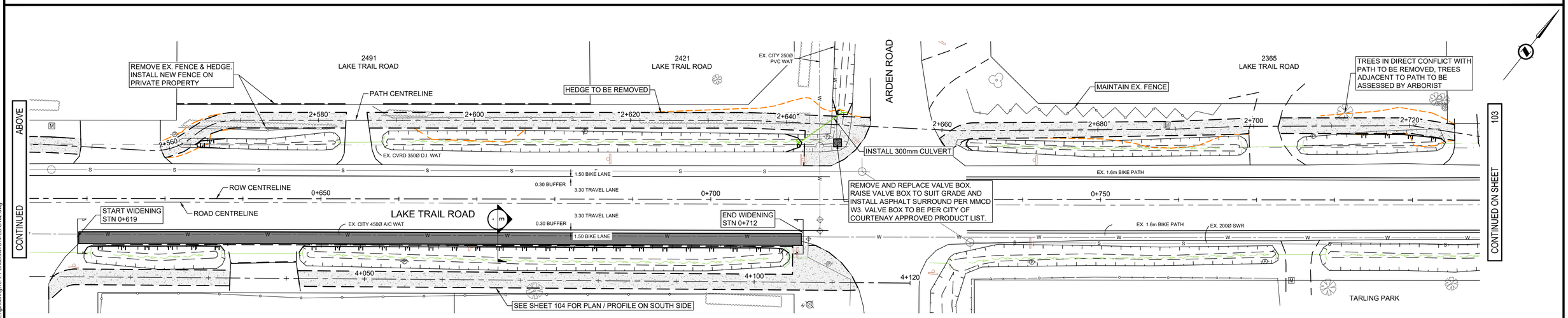
COURTENAY, BC

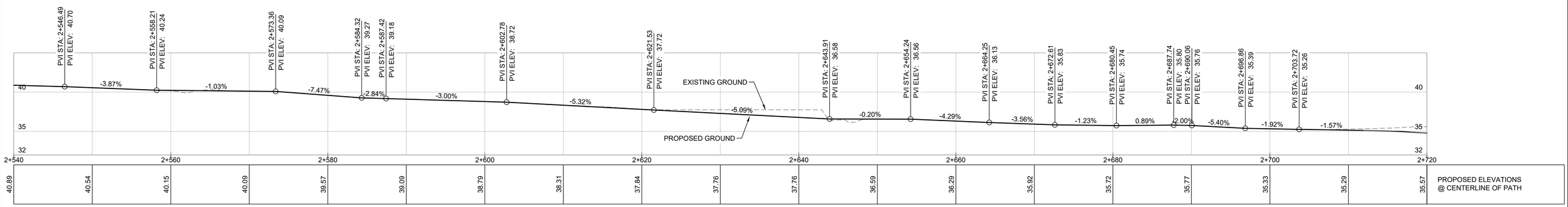
Drawing No. 101

Project Number	Rev.
2211-47614-05	PE









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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
PLAN & PROFILE
STA 2+360 TO 2+720

COURTENAY, BC

Drawing No. 102

Project Number	Rev.
2211-47614-05	PE

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

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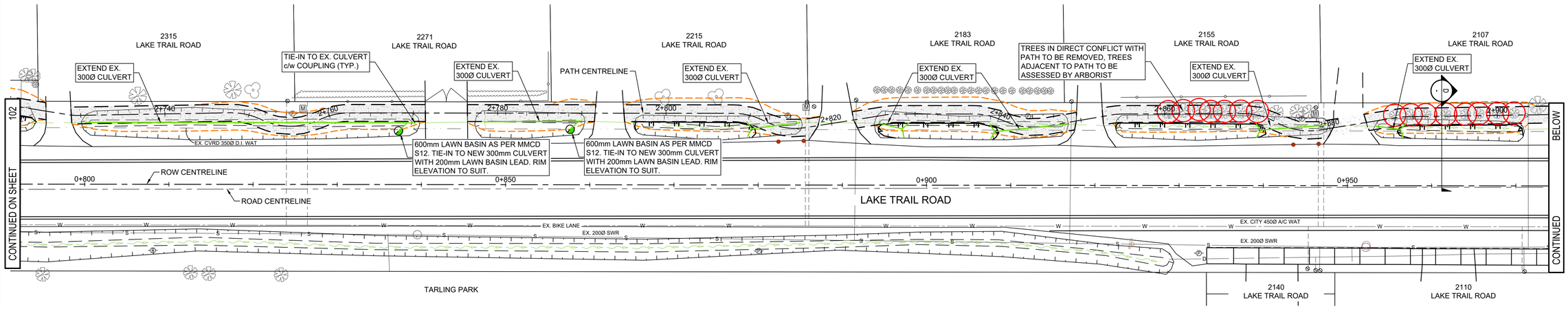

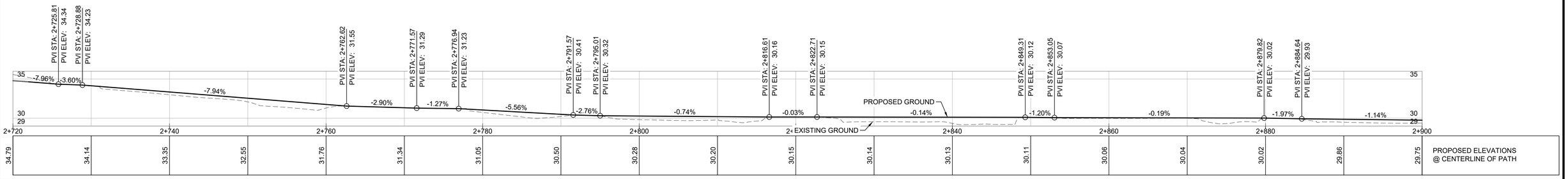

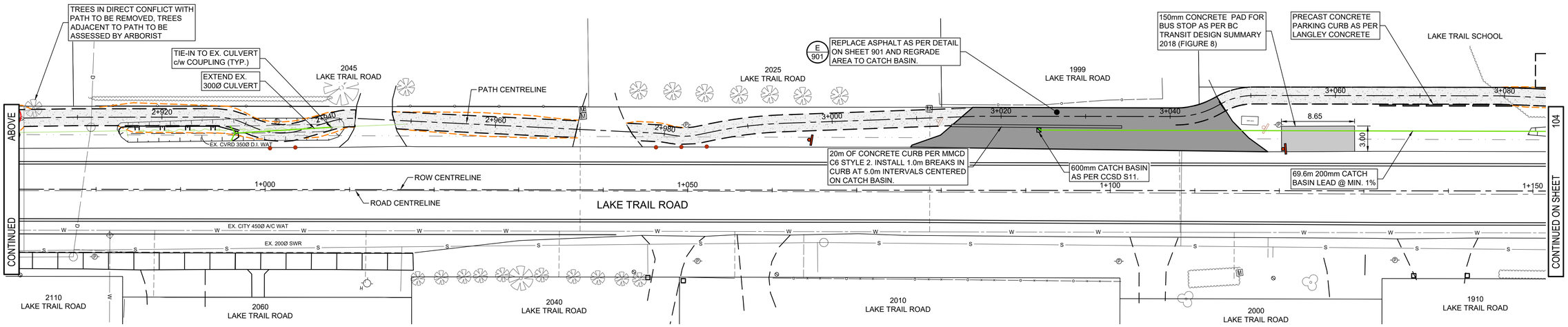

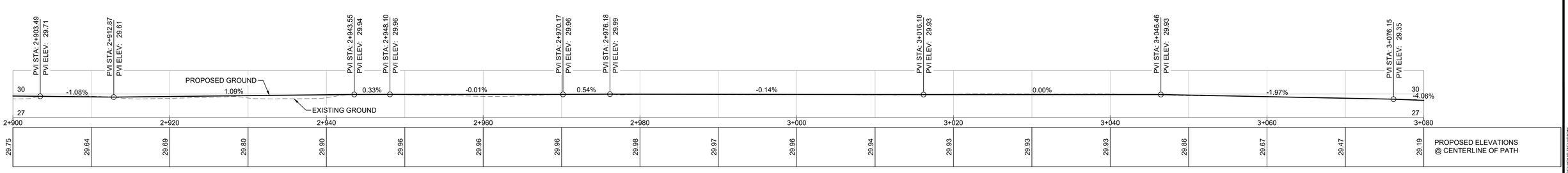

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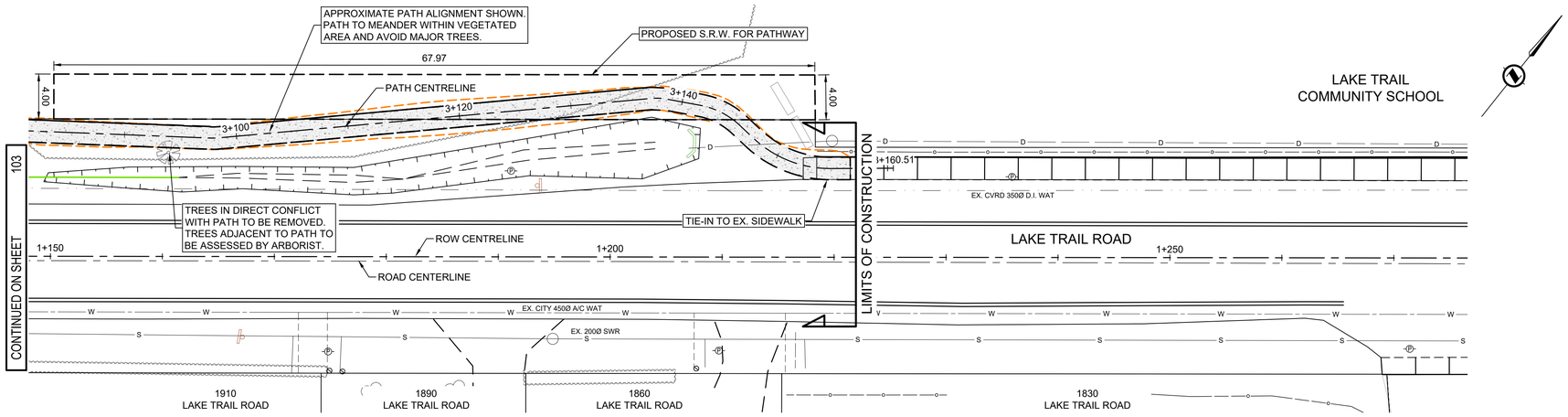
CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
PLAN & PROFILE
STA 2+720 TO 3+080

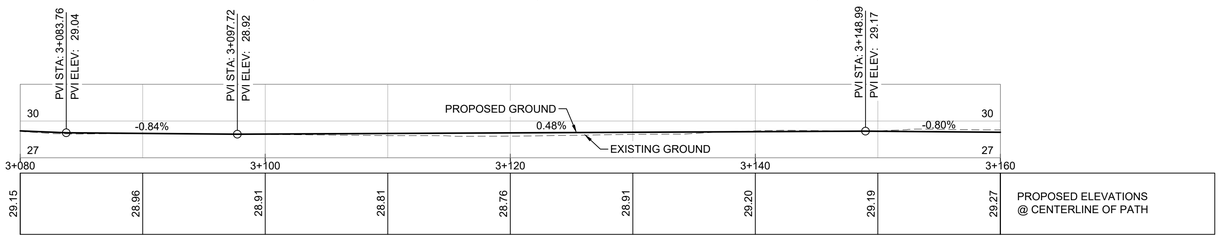
COURTENAY, BC

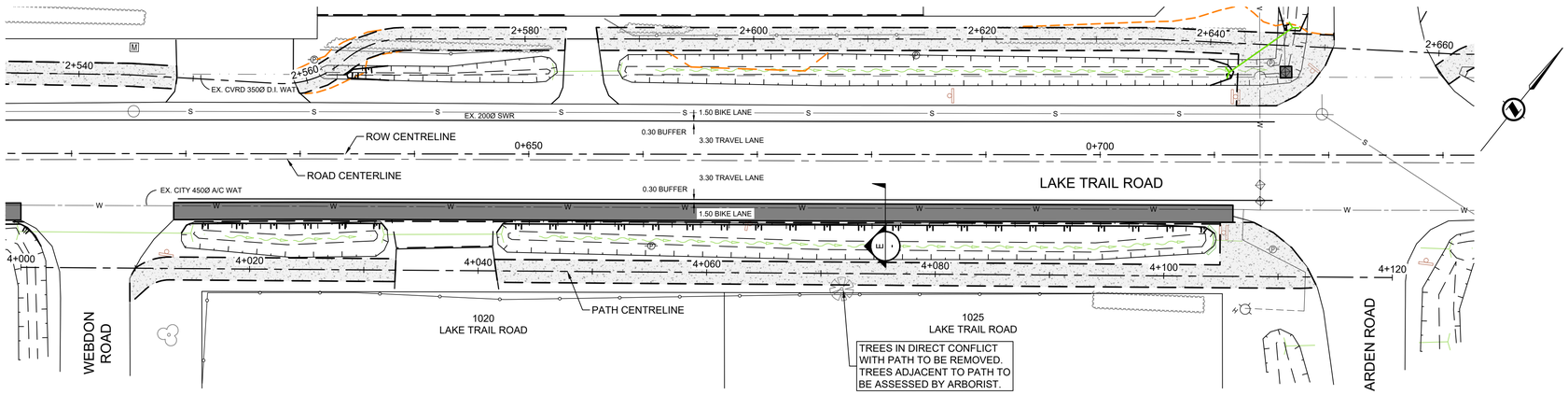
Drawing No. 103

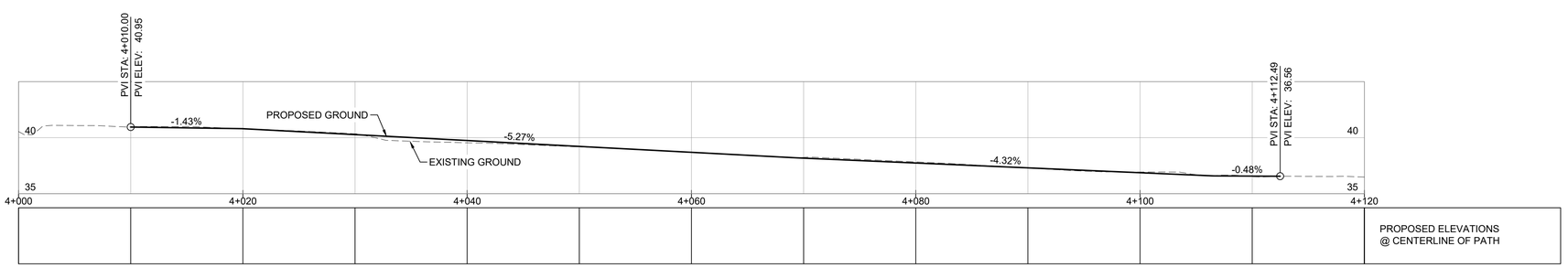
Project Number	Rev.
2211-47614-05	PE

DESTROY ALL PRINTS BEARING PREVIOUS REVISION









SOUTH SIDE PATHWAY
WEBDON ROAD TO ARDEN ROAD

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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
PLAN & PROFILE
STA 3+080 TO 3+160 & 4+000 TO 4+110

COURTENAY, BC

Drawing No. 104

Project Number	Rev.
2211-47614-05	PE

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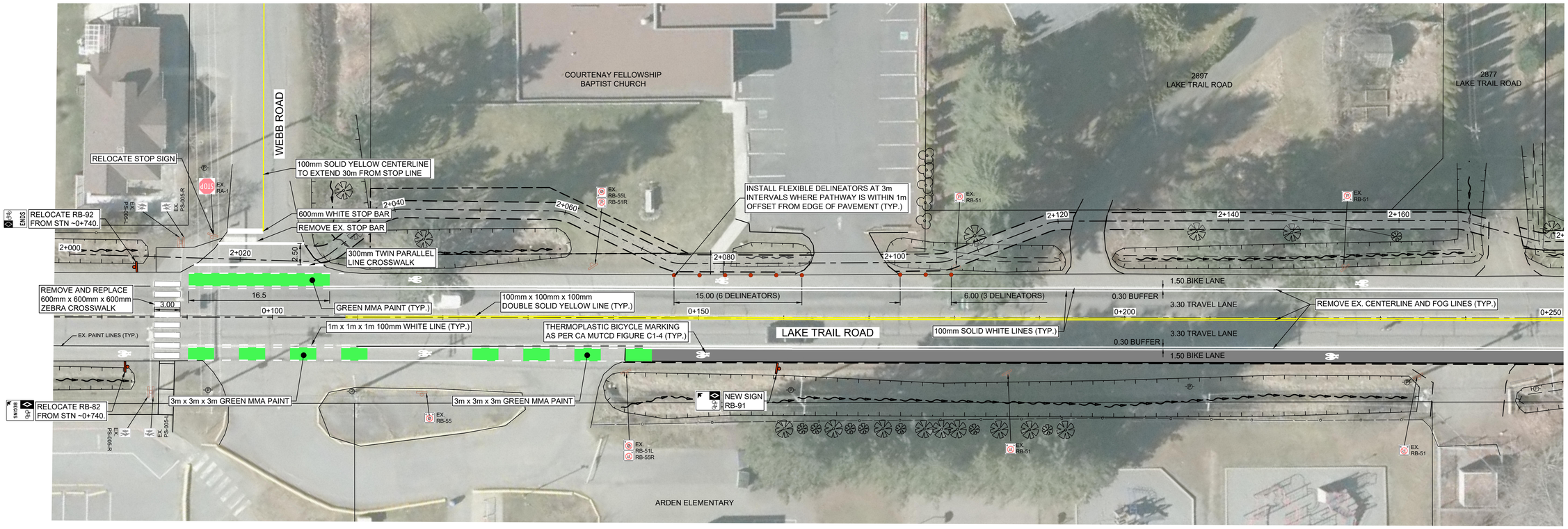

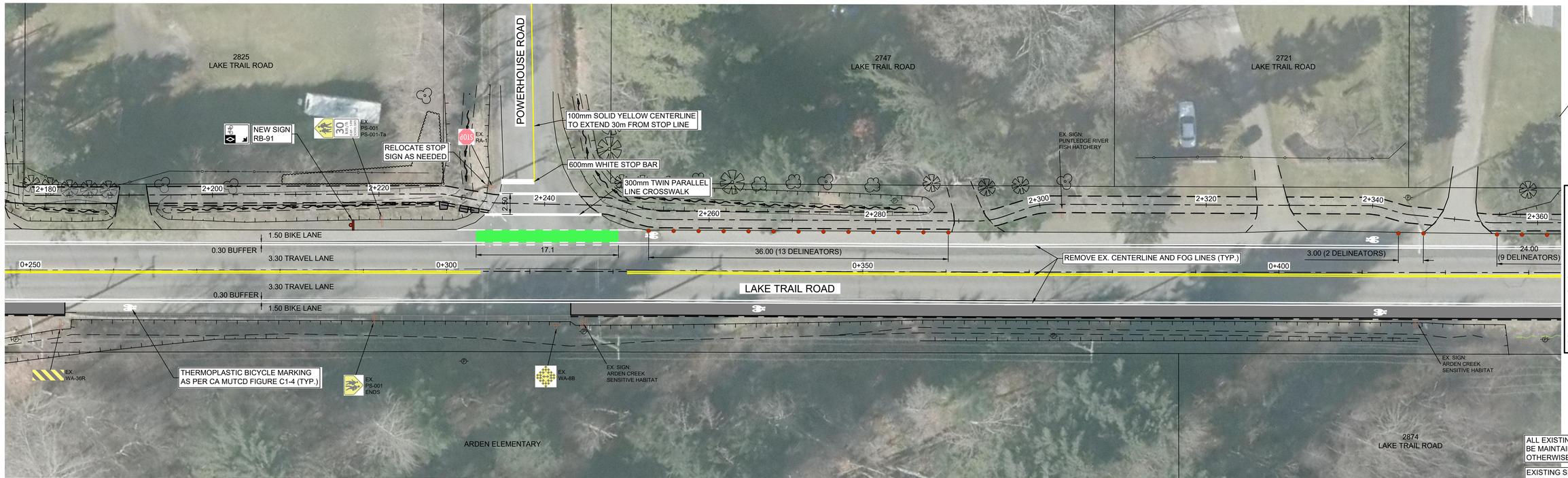

ALL EXISTING SIGNS TO BE MAINTAINED UNLESS OTHERWISE NOTED.

EXISTING SIGNS IN CONFLICT WITH PATH TO BE REINSTATED IN SIMILAR LOCATION.

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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
SIGNAGE AND ROAD MARKING PLAN
STA 2+000 TO 2+360

COURTENAY, BC

Drawing No. 701

Project Number 2211-47614-05 | Rev. PE

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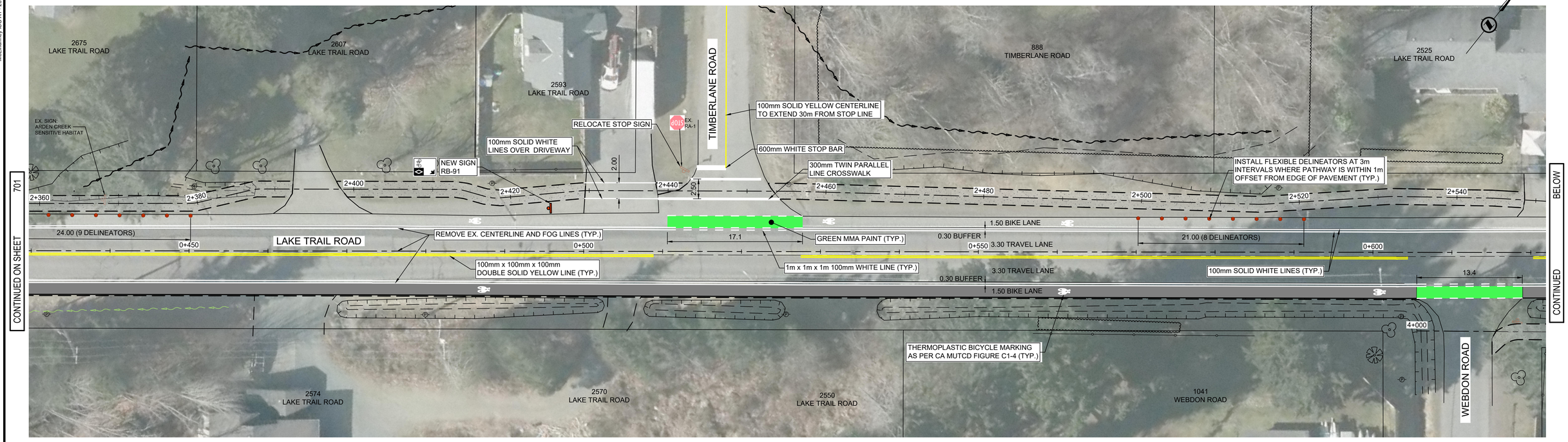

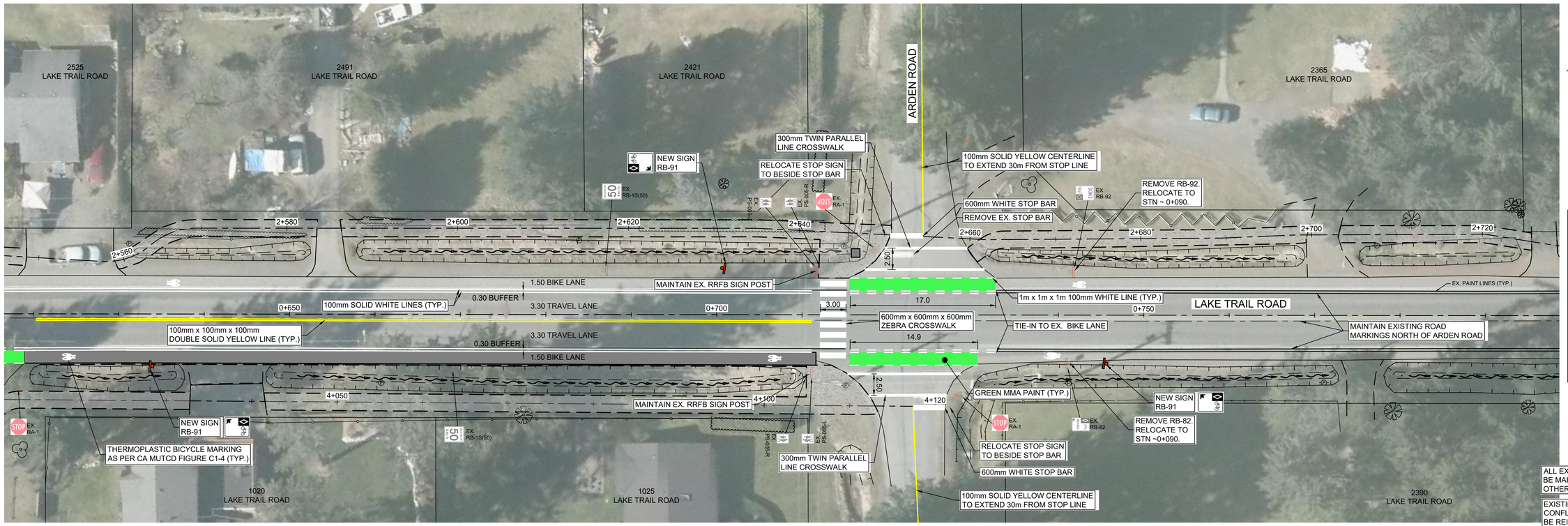

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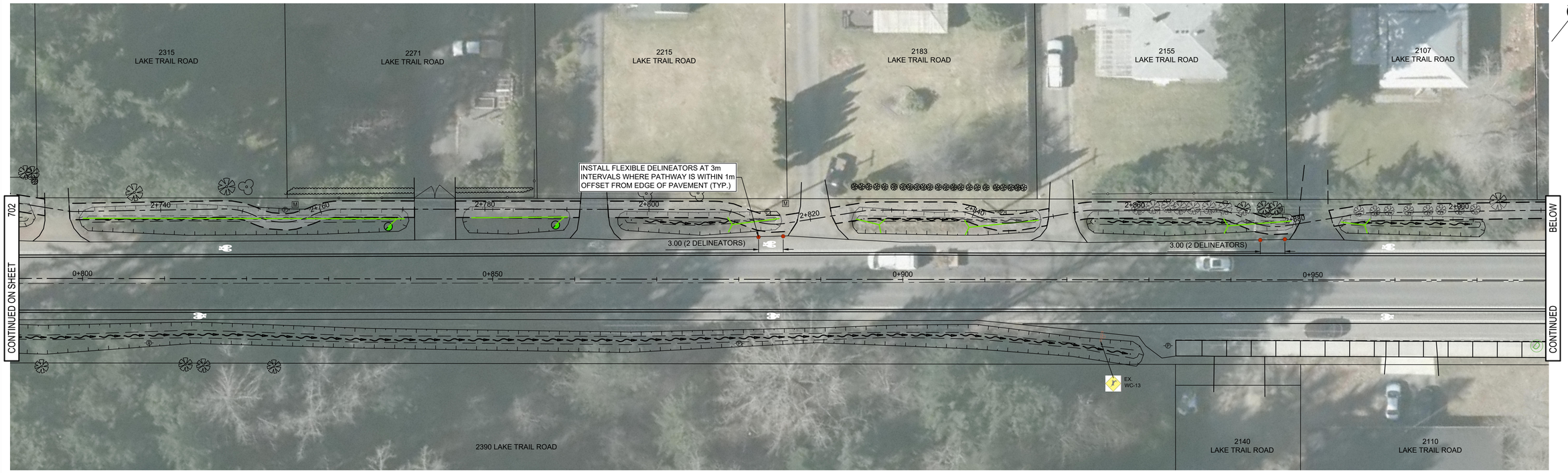
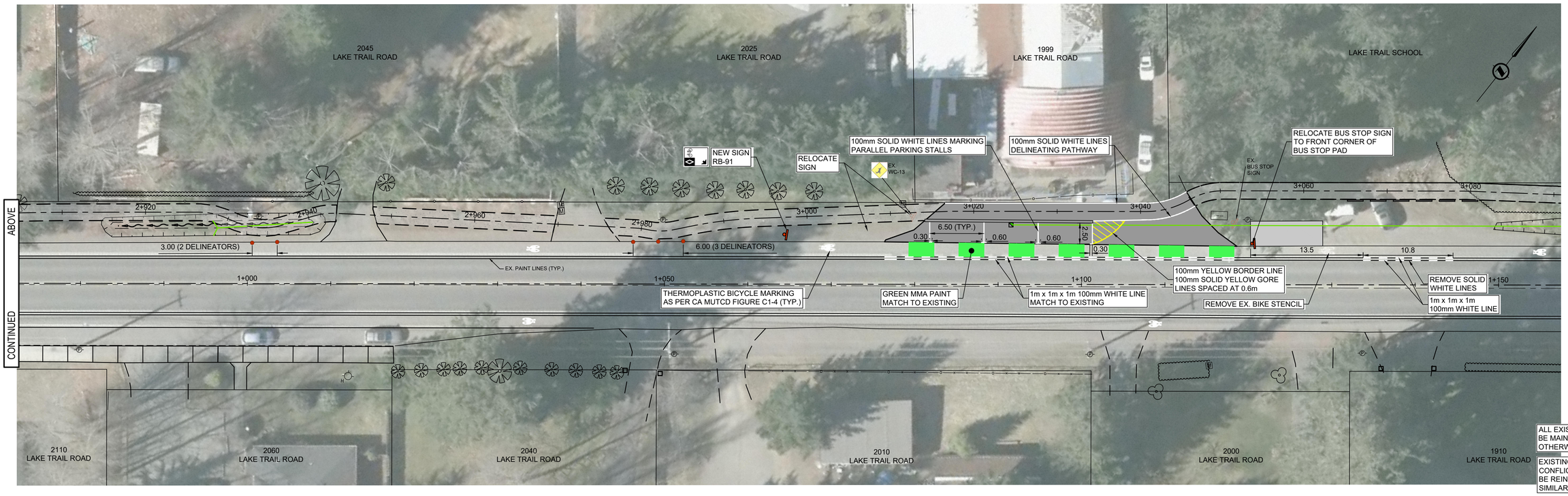
CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
SIGNAGE AND ROAD MARKING PLAN
STA 2+360 TO 2+720

COURTENAY, BC

Drawing No.
702

Project Number	Rev.
2211-47614-05	PE





ALL EXISTING SIGNS TO BE MAINTAINED UNLESS OTHERWISE NOTED.

EXISTING SIGNS IN CONFLICT WITH PATH TO BE REINSTATED IN SIMILAR LOCATION.

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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
SIGNAGE AND ROAD MARKING PLAN
STA 2+720 TO 3+080

COURTENAY, BC

Drawing No. 703

Project Number 2211-47614-05

Rev. PE

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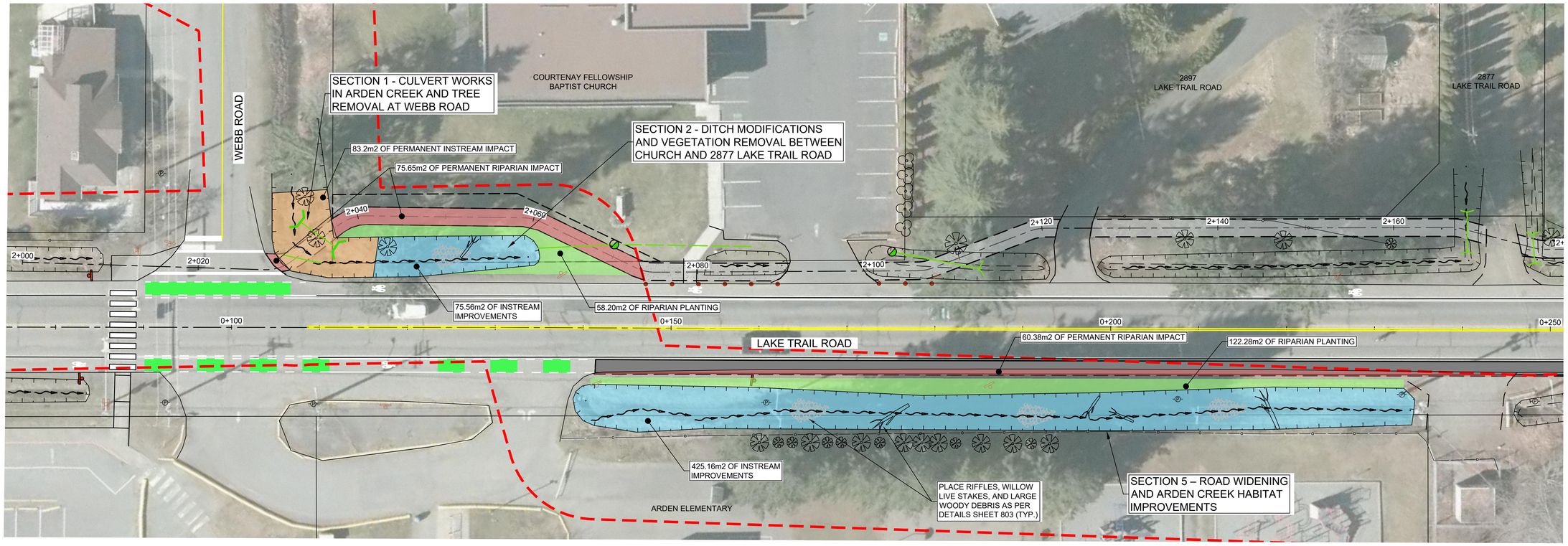

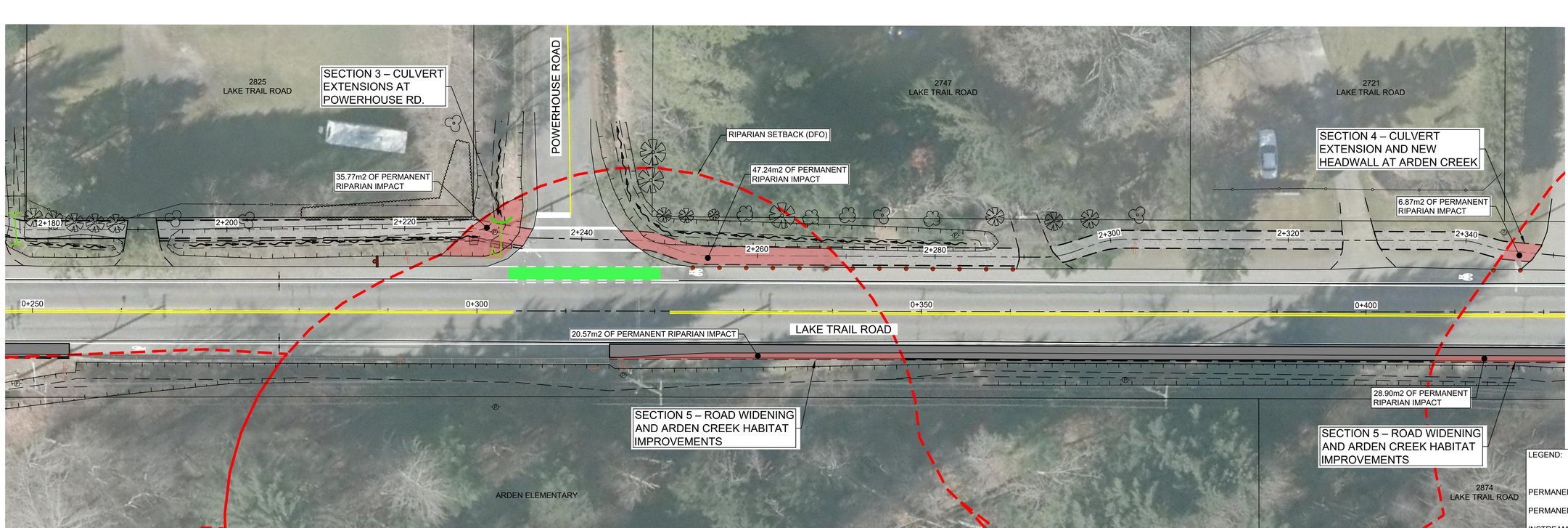

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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY ENVIRONMENTAL OFFSETTING PLAN STA 2+000 TO 2+350

COURTENAY, BC

Drawing No. 801

Project Number	Rev.
2211-47614-05	PE

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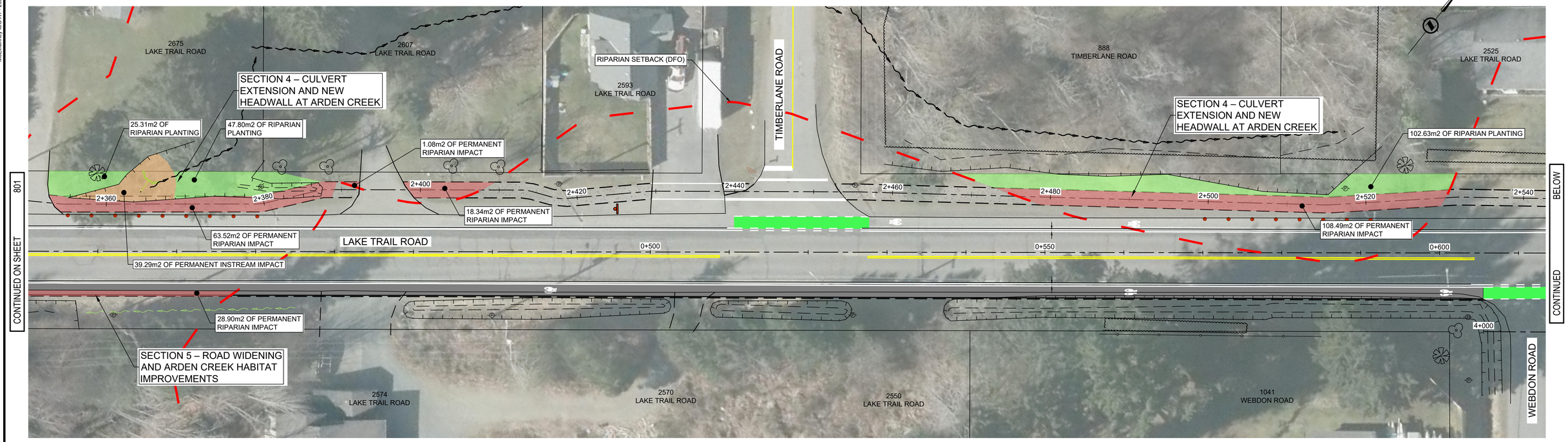

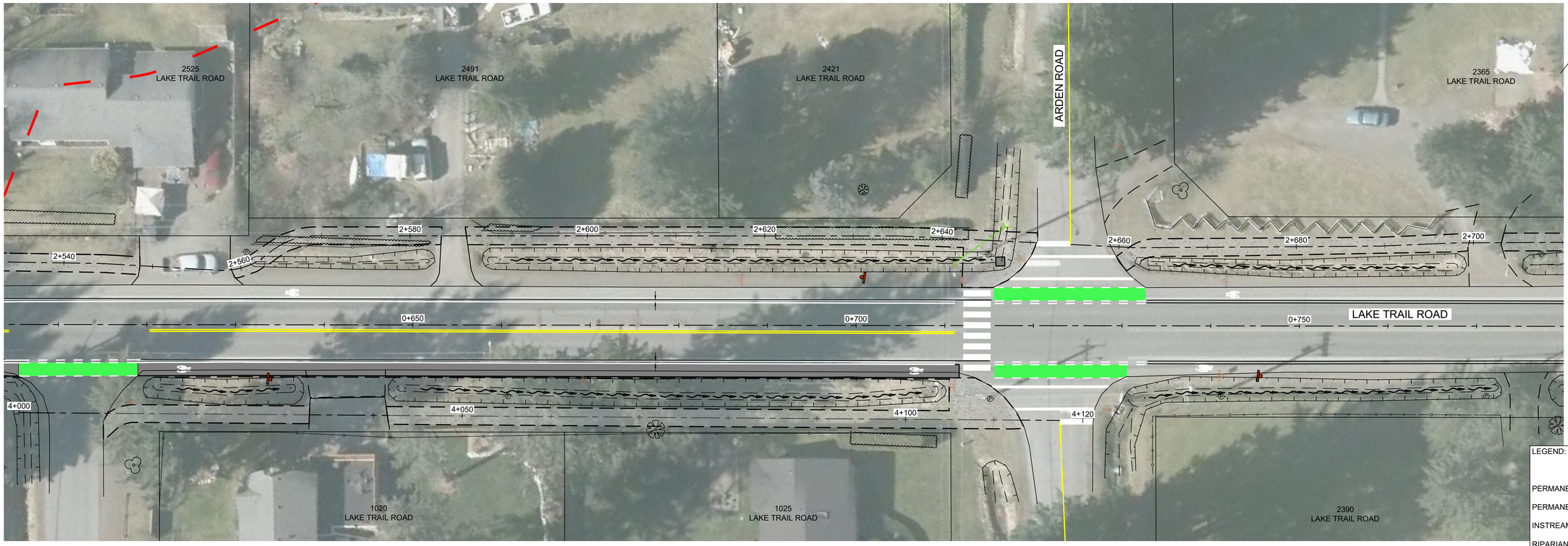

LEGEND:

- PERMANENT RIPARIAN IMPACT
- PERMANENT INSTREAM IMPACT
- INSTREAM IMPROVEMENT (OFFSET)
- RIPARIAN PLANTING (OFFSET)

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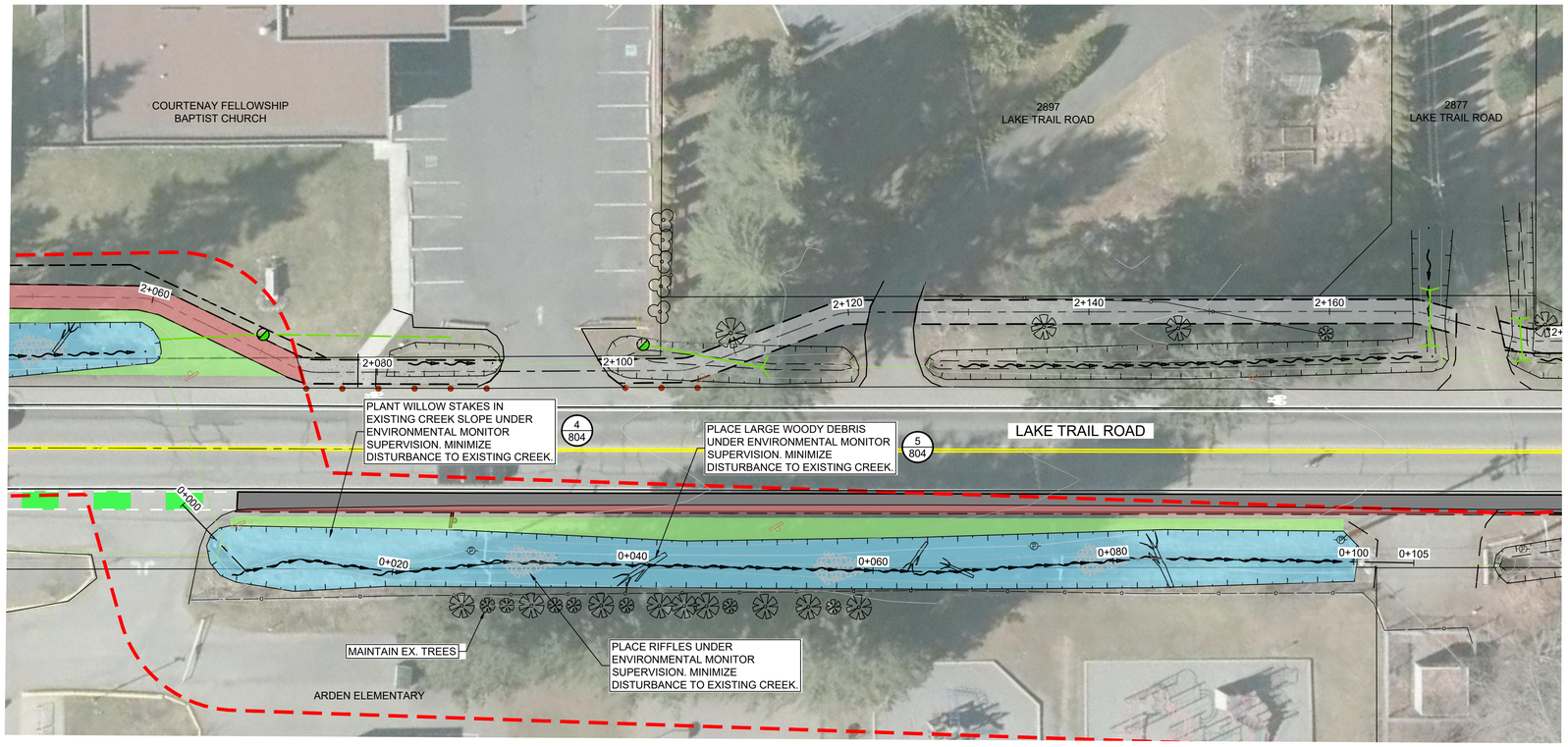
CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
ENVIRONMENTAL OFFSETTING PLAN
STA 2+350 TO 2+720

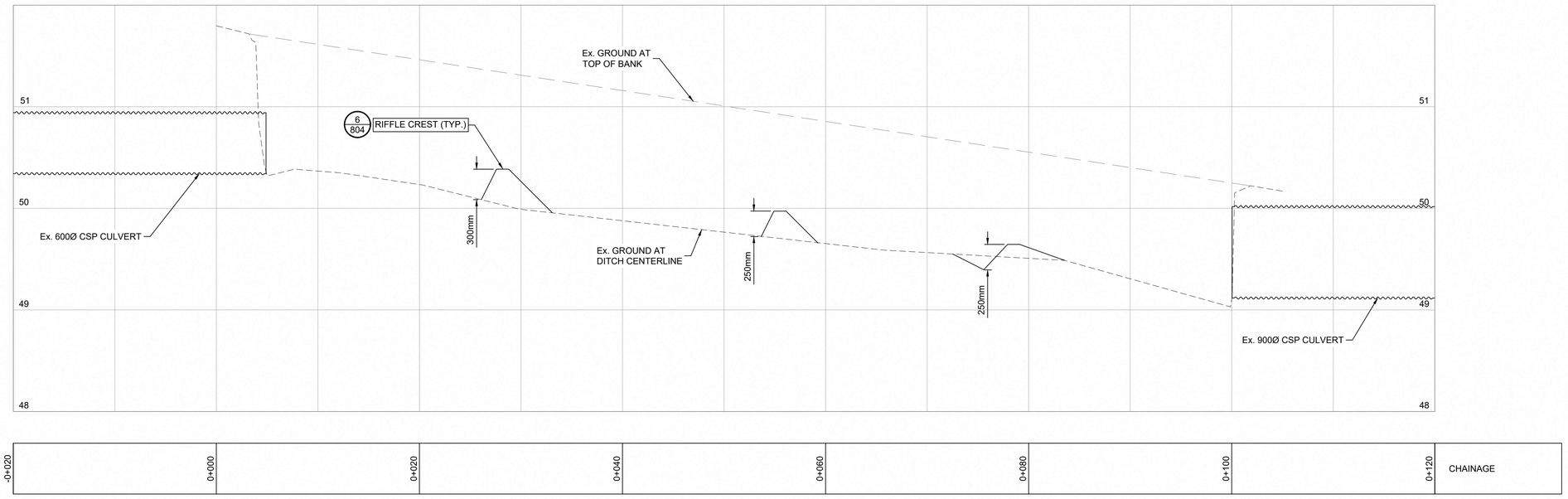
COURTENAY, BC

Drawing No. 802

Project Number	Rev.
2211-47614-05	PE

DESTROY ALL PRINTS BEARING PREVIOUS REVISION





LEGEND:

- PERMANENT RIPARIAN IMPACT
- PERMANENT INSTREAM IMPACT
- INSTREAM IMPROVEMENT (OFFSET)
- RIPARIAN PLANTING (OFFSET)

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PE	2025-06-16	ISSUED FOR PERMITTING	SB	SB	BK

0 H1:250 10
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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
ENVIRONMENTAL PLAN & PROFILE
STA 0+000 TO 0+105

COURTENAY, BC

Drawing No.
803

Project Number	Rev.
2211-47614-05	PE

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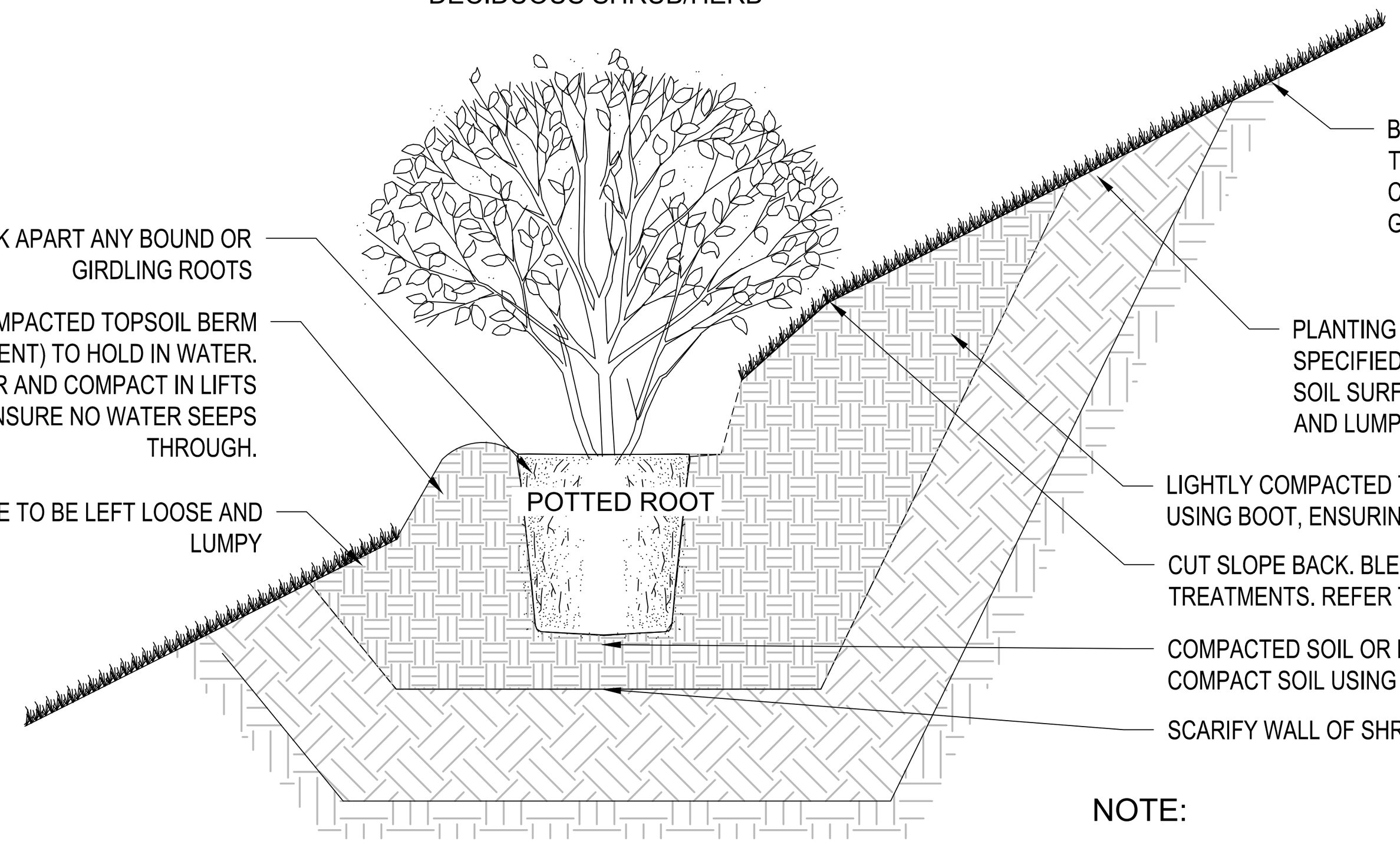
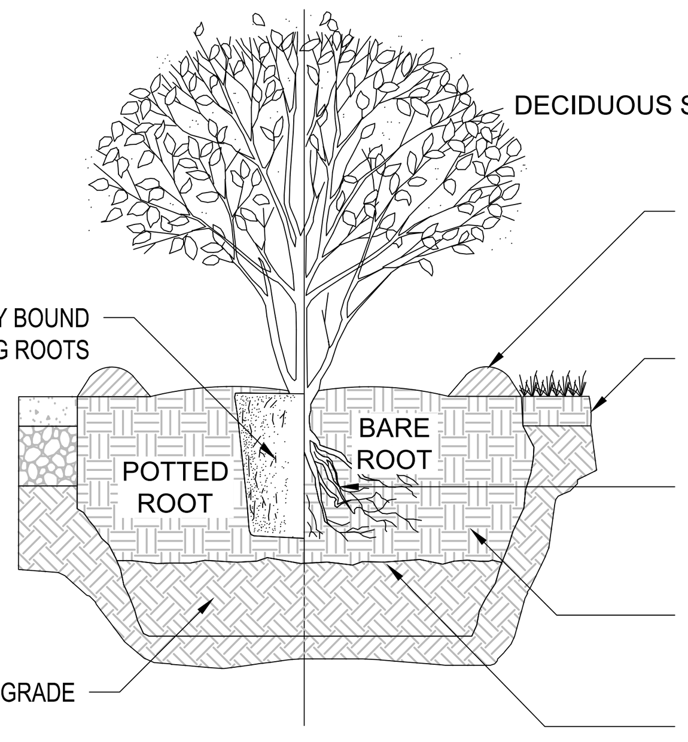


NOTE:

1. REFER TO PLANTING PRESCRIPTIONS FOR CONTAINER SIZE.

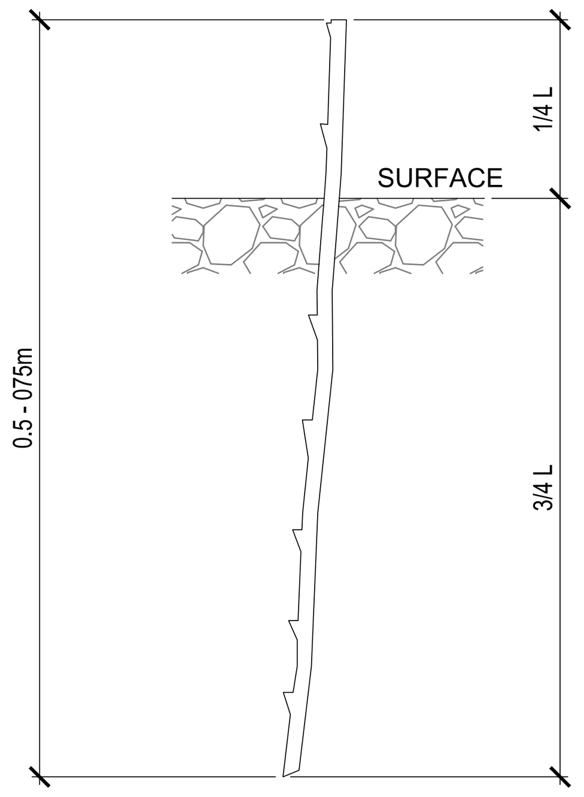
01 SHRUB/HERB PLANTING ON SLOPE

SCALE: N.T.S.



02 SHRUB/HERB PLANTING ON LEVEL SITES

SCALE: N.T.S.

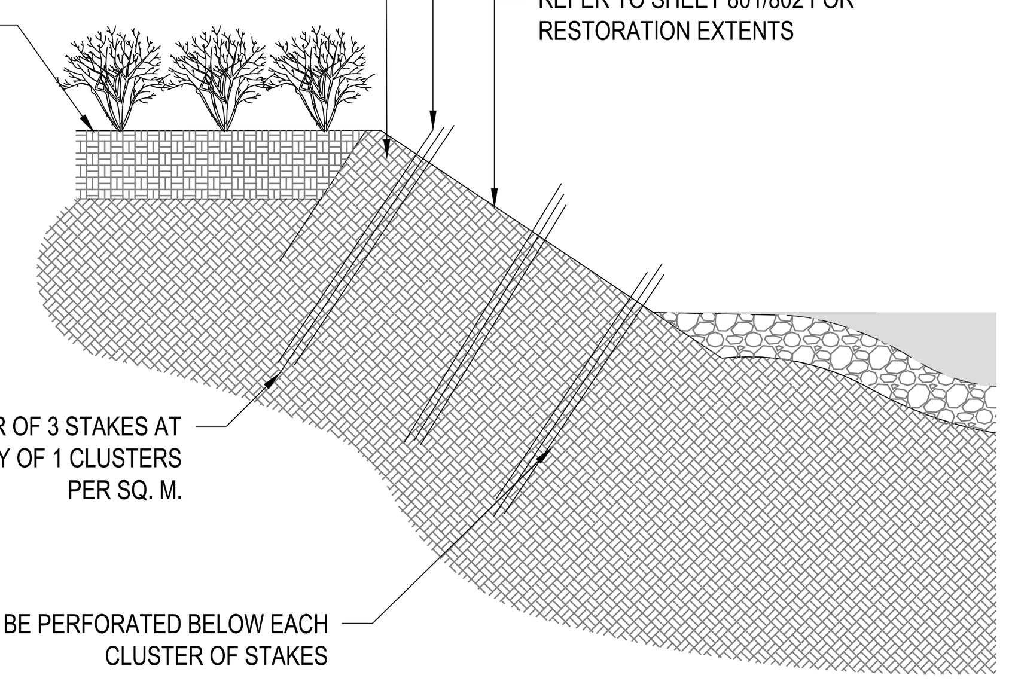


NOTES:

1. HARVEST LIVE POLES DURING THE DORMANT STAGE, NOVEMBER 1-MARCH 31.
2. STORE POLES IN COOL, WET PLACE UNDER STRAW/BURLAP AND AWAY FROM DIRECT SUN. SOAK POLES DURING STORAGE FOR MAX 2 WEEKS, ENSURING THEY DO NOT DRY OUT. IF POLES ARE TO BE STORED FOR A LONGER PERIOD, DRY REFRIGERATION WILL BE REQUIRED.
3. PROTECT POLES FROM DESICCATION DURING TRANSPORT, AND KEEP MOIST ON SITE UNTIL PLANTING.
4. PILOT OPENINGS FOR STAKES SHALL BE CREATED USING REBAR.
5. USE RUBBER MALLET ON FLAT TOP TO BURY STAKE.
6. MULCH TO BE APPLIED FOLLOWING STAKING.
7. ANGLED CUT TO BE MADE AT BUTT-END AND PLANT BUTT-END DOWN.
8. BUDS MUST POINT UPWARDS.
9. MINIMUM DIAMETER OF 1.5cm CALIPER.
10. STAKES MUST BE IN CONTACT WITH TOPSOIL AT EDGES OF PILOT HOLE TO ENSURE ROOTING.
11. FOR SPECIES AND QUANTITIES, REFER TO PLANTING PRESCRIPTION TABLE.

03 LIVE STAKE PLANTING DETAIL

SCALE 1:20



04 LIVE STAKE PLANTING IN STREAM BANK

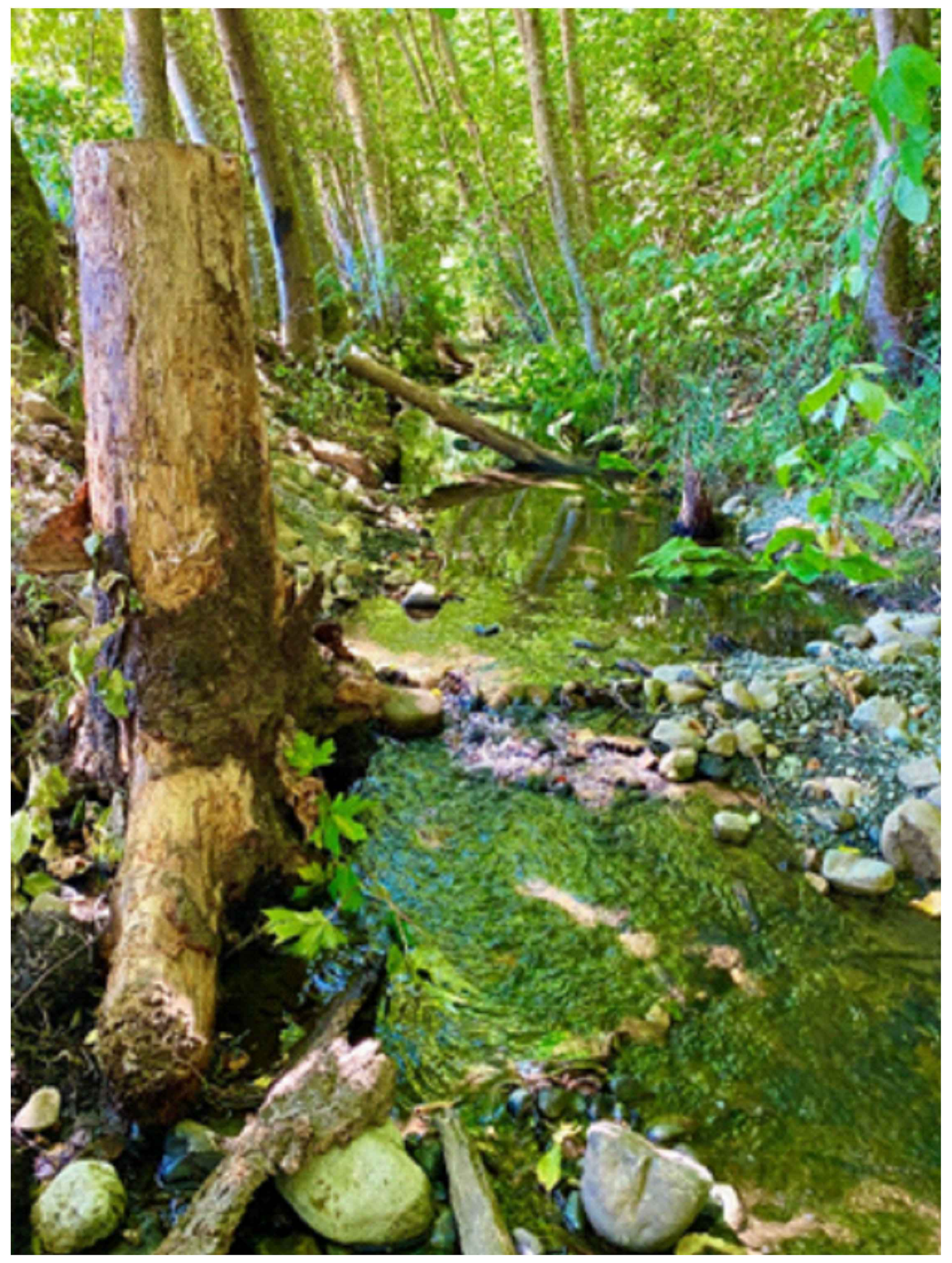
SCALE 1:50

PLANTING PRESCRIPTION SCHEDULE:

Riparian Plantings					
Salix lucida ssp. laciandra	Pacific Willow	Live Stakes (intream only)	Plant at 1 per 1 sq.m. Maintain 1 m distance from existing retained trees/shrubs. Follow all specifications in Details and Guidelines.	40%	244
Cornus stolonifera	Red Osier Dogwood	#2 Pot or 2+0 plugs		5%	31
Physocarpus capitatus	Pacific Ninebark	#2 Pot or 2+0 plugs		3%	18
Ribes lacustre	Black Gooseberry	#2 Pot or 2+0 plugs		3%	18
Ribes sanguineum	Red Flowering Currant	#2 Pot or 2+0 plugs		5%	31
Rosa nutkana	Nootka Rose	#2 Pot or 2+0 plugs		9%	55
Rubus parviflorus	Thimbleberry	#2 Pot or 2+0 plugs		8%	49
Rubus spectabilis	Salmonberry	#2 Pot or 2+0 plugs		8%	49
Spiraea douglasii	Hardhack	#2 Pot or 2+0 plugs		5%	31
Sambucus racemosa	Red Elderberry	#2 Pot or 2+0 plugs		5%	31
Symphoricarpos albus	Snowberry	#2 Pot or 2+0 plugs		9%	55
			SHRUBS TOTAL	100%	366

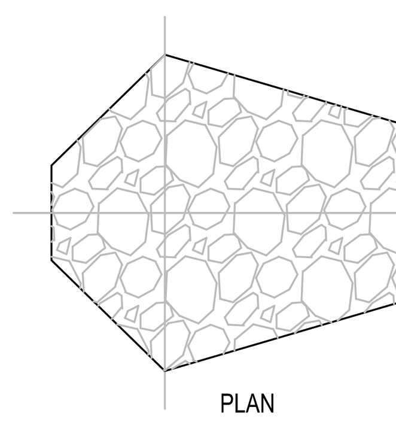
RESTORATION GUIDELINES

GENERAL	1	All work and materials to conform to the latest edition of the Canadian Landscape Standard unless specifically otherwise noted.
	2	Soil disturbance shall be minimized where possible in all riparian areas. Conduct close-cut clearing of shrubs instead of grubbing, where possible. The Contractor shall be responsible for installing additional plants per the prescribed planting mix, if necessary to restore any additional disturbed areas.
	3	If invasive plant species are observed in the work area, machinery must avoid contact with the plant to prevent spread. Species identification to be deferred to the QEP if/as needed.
TOPSOIL & MULCH	4	Disturbed or new topsoil surfaces in planting areas are to be finished "rough and loose" prior to planting, ie avoid both compaction and smooth grading.
	5	Apply a 300 mm layer of imported organic topsoil throughout tree and shrub planting areas prior to plant installations.
	6	Provide fertility and particle size analysis test for imported organic topsoil prior to starting work.
	7	After topsoil and shrub installations, planting area shall be finished with 1 5mm layer of composted bark or wood mulch.
MAINTENANCE	8	Irrigation will be needed during the growing season (May 1st through September 30th) to maintain survival of planted stock, for the duration of the maintenance period (to be specified in the works contract). Water as frequently as necessary to maintain healthy plants.

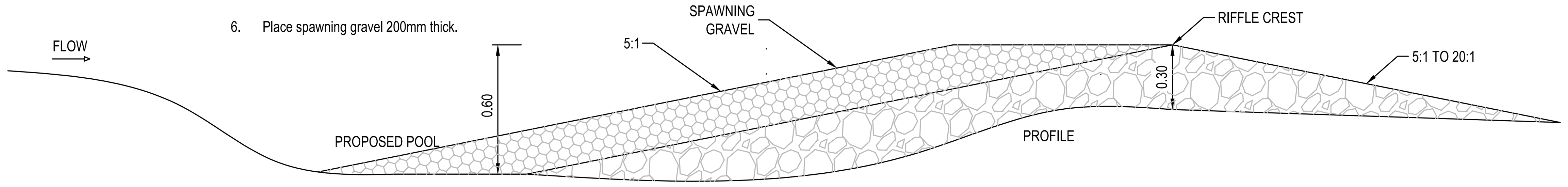


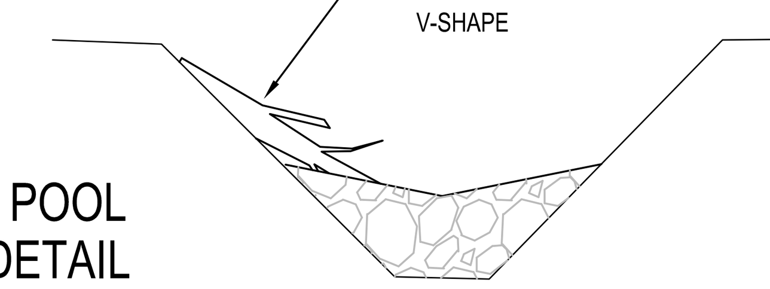
05 EXAMPLE OF INSTREAM HABITAT RESTORATION

1. PLAN: build riffle crest across the stream with large diameter boulders; back up with next largest stone downstream.
2. PROFILE: construct downstream face of riffle at a shallow slope that mimics local natural riffles (5:1 to 20:1).
3. SECTION: V-shape the crest and face downwards to the centre of the riffle (0.3 to 0.6m). Pool to be 0.6m deep x 1.0m wide x 6.0m long
4. SURFACE: place large rocks randomly on the downstream face 20 to 30 cm apart to dissipate energy and create low flow fish passage channels.
5. BANKS: rip-rap both banks with embedded boulders and cobbles to the floodplain level.
6. Place spawning gravel 200mm thick.



Note:
Where pools are to be created downstream of culverts to remain, the pool channel invert shall be at 600mm below culvert outlet invert.





TYPICAL ROCK RIFFLE, POOL & SPAWNING GRAVEL DETAIL

N.T.S.

06 TYPICAL ROCK RIFFLE, POOL & SPAWNING GRAVEL DETAIL

SCALE: N.T.S.

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PE	2025-06-16	ISSUED FOR PERMITTING	SB	BK	BK

SCALE AS NOTED

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Tel 250 338 5495

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CITY OF COURTENAY

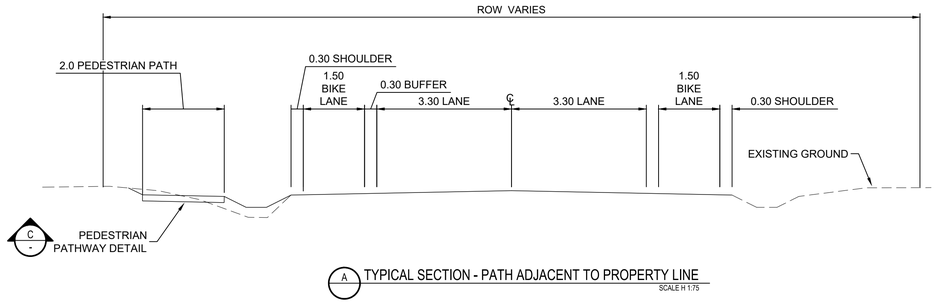
LAKE TRAIL PATHWAY
ENVIRONMENTAL DETAILS

COURTENAY, BC

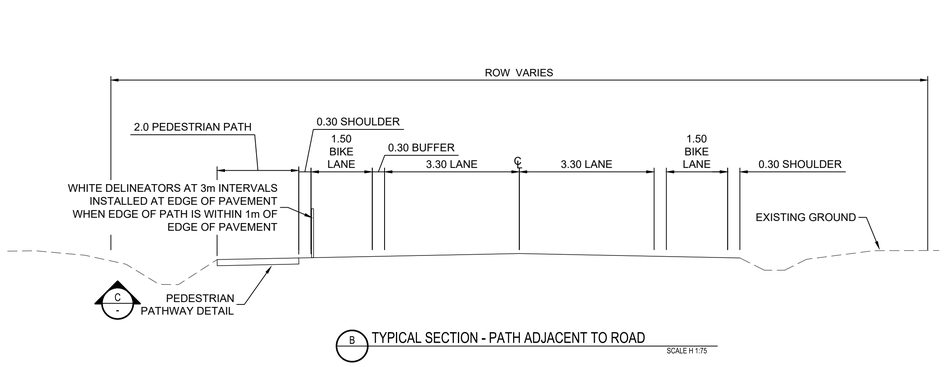
Drawing No. 804

Project Number 2211-47614-05

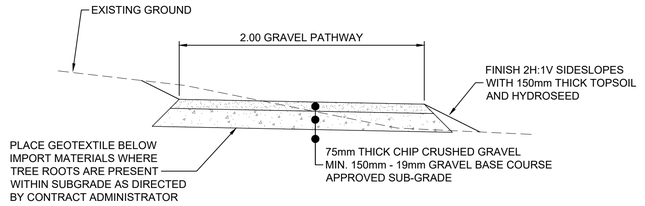
Rev. PE



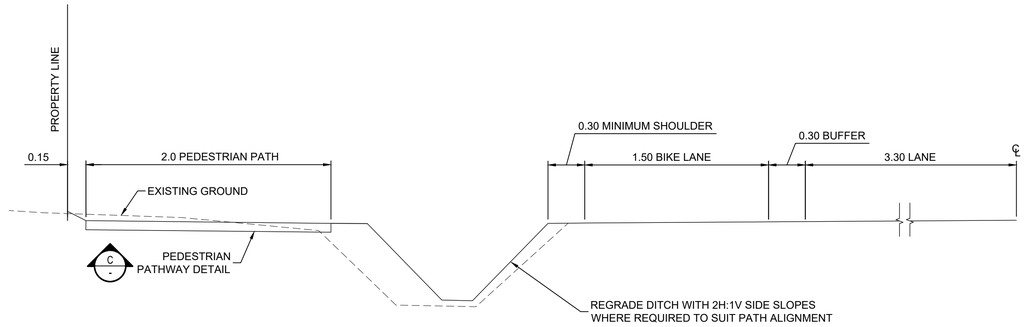
A - TYPICAL SECTION - PATH ADJACENT TO PROPERTY LINE
SCALE H 1:75



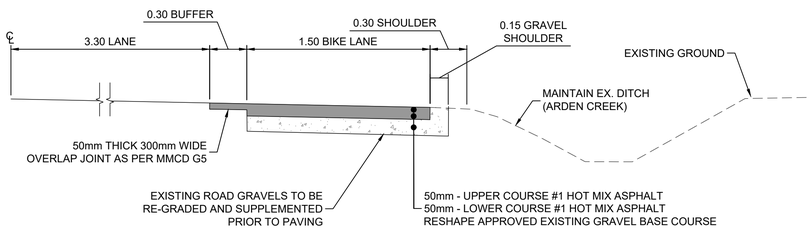
B - TYPICAL SECTION - PATH ADJACENT TO ROAD
SCALE H 1:75



C - GRAVEL PATHWAY TYPICAL SECTION
SCALE H 1:25
V 1:25



D - PATHWAY AND DITCH
SCALE H 1:25
V 1:25



E - ROAD WIDENING SECTION
SCALE H 1:25
V 1:25

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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY DETAILS (1 OF 2)

COURTENAY, BC

Drawing No.
901

Project Number	Rev.
2211-47614-05	PE

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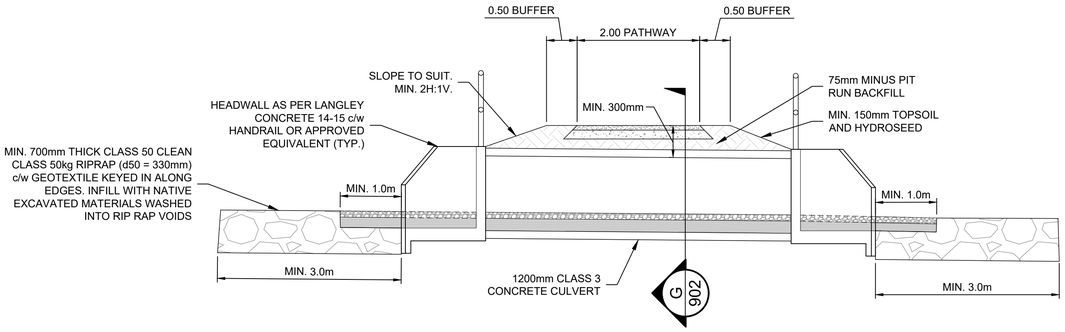
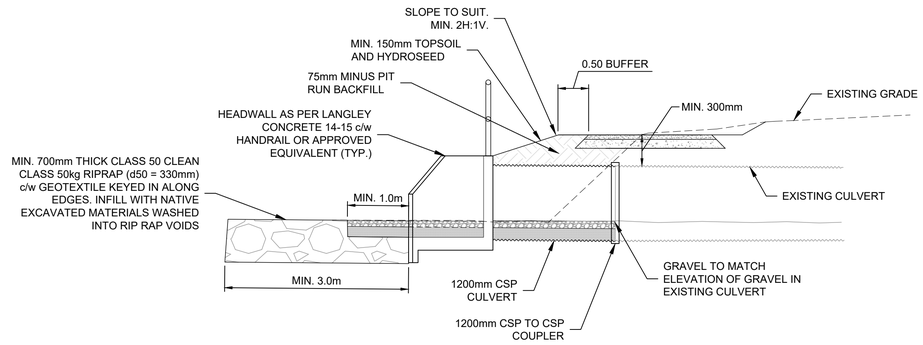
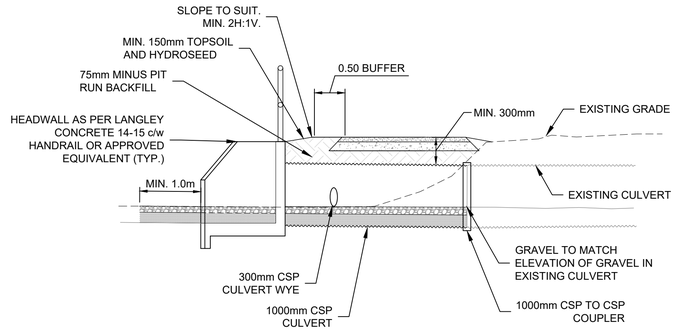


F — CULVERT CROSSING PATH AT WEBB ROAD
SCALE H 1:50

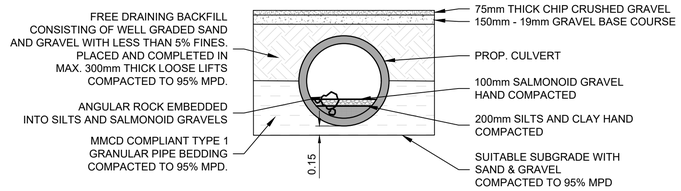


J — ARDEN CREEK CULVERT EXTENSION
SCALE H 1:50

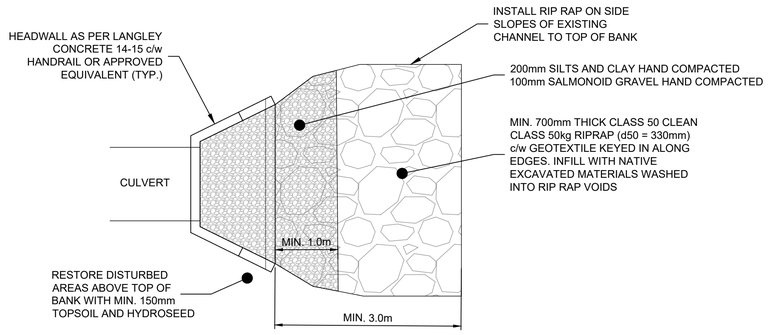


K — POWERHOUSE ROAD CULVERT EXTENSION
SCALE H 1:50

CHANNEL SUBSTRATE SPECIFICATION:
- CLEAN SALMONOID GRAVEL WITH THE FOLLOWING GRADATION:
  - 80% 10mm - 50mm
  - 20% UP TO 100mm
  - SMALL PORTION OF COARSE SAND (2 - 5mm)



G — CULVERT SECTION
SCALE H 1:50
V 1:50



H — TYPICAL HEADWALL DETAIL
SCALE H 1:50

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CITY OF COURTENAY
-
LAKE TRAIL PATHWAY
DETAILS (2 OF 2)

COURTENAY, BC

Drawing No.
902

Project Number	Rev.
2211-47614-05	PE

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Appendix C – Letter of Credit

PLACEHOLDER FOR LETTER OF CREDIT - TO BE PROVIDED IN CONSULTATION WITH DFO

Contact
McElhanney | Daniel Mackle, RPBio.
587-582-2826
dmackle@mcelhanney.com

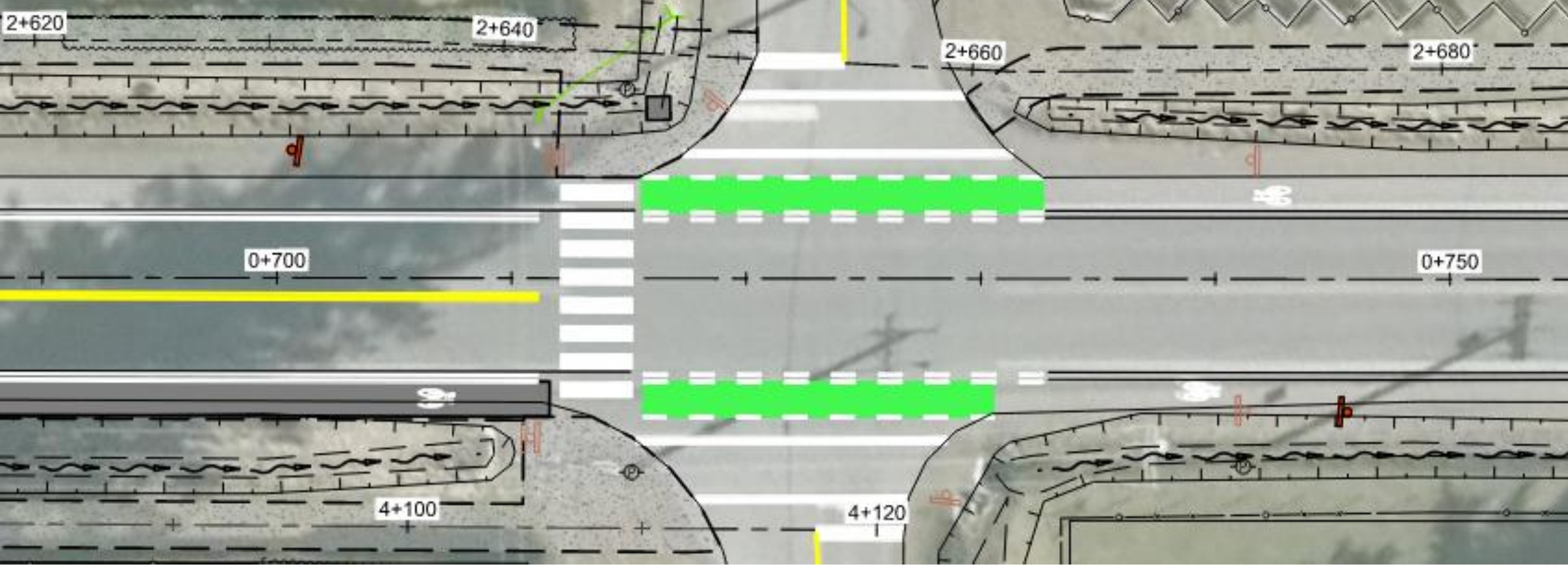
Lake Trail Pedestrian Pathway
July 2025 Update

Today's Presentation

- Project History
- Project Design
- Environmental Requirements and Permitting Process
- Project Phasing
- Next Steps

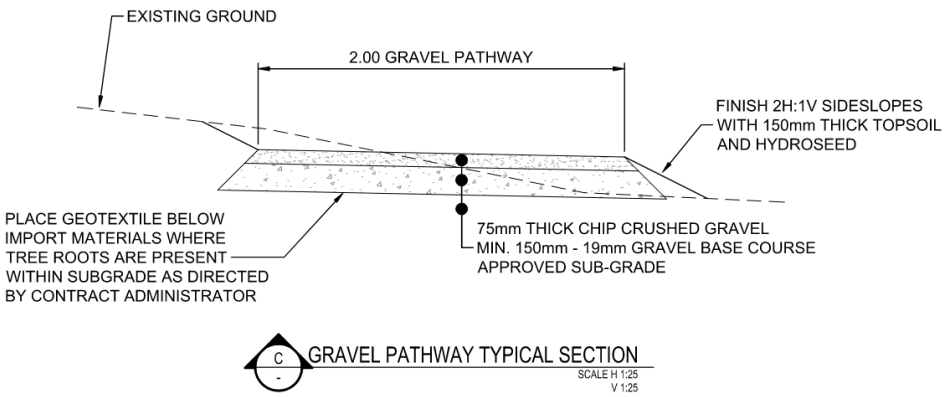
Lake Trail Pedestrian Pathway: Project History

- Project Goal
  - Develop a multi-use pathway and improved bike facilities between Lake Trail Community School and Arden Elementary School along Lake Trail Road to improve connectivity and safety for children, pedestrians, and cyclists.
- Project History
  - In 2018, Arden Ambassadors requested that the City review in Lake Trail Road between Arden Elementary and Lake Trail Middle Schools for opportunities for pedestrian improvements.
  - The City began the design process 2021, with the goal of attaining a BC Active Transportation Grant to supplement funding. McElhanney assisted with application for an Active Transportation Grant in 2022. CVRD electoral areas services committee supported the project in October 2023.
  - With the grant awarded in March 2024, McElhanney began environmental review in April 2024 and continued with the pathway design in July 2024.



Lake Trail Pedestrian Path Design

City of Courtenay



Lake Trail Pedestrian Pathway: Project Design

- 2.0m gravel pathway along the north side of Lake Trail Road, new concrete bus pad at Lake Trail School, bike lane improvements
- Signage and painting improvement
- Culvert installation at Webb Road and drainage improvements
- Habitat restoration and improvements along Arden Creek

Lake Trail Pedestrian Path Environmental Considerations

City of Courtenay

Environment and Climate Change Canada Species at Risk Act: Morrison Creek Lamprey

The Morrison Creek Lamprey is only located in the Morrison Creek watershed (including Arden Creek) and is protected by the federal Species At Risk Act (SARA), which places additional scrutiny over works in and around Arden Creek.

Ministry of Water, Lands, and Resource Stewardship (MWLRS)

Water Sustainability Act

- Change Approval – up to a year
  - Significantly altering a watercourse
  - E.g. infilling a ditch to become a storm system
- Notification – 60 day review
- Anything that isn't a Notification is likely a Change Approval

Department of Fisheries and Oceans

Fisheries Act

- Based on not causing a HADD – harmful alteration, disruption, or destruction of fish habitat
- Request for Review (RfR)
    - Explains the project scope and how the project will not cause a HADD
- Fisheries Act Authorization (FAA)
    - Has additional considerations – First Nations consultation, mitigation and offsetting of impacts, bonding/maintenance for the offsets

Environmental Overview Assessment
April 2024 to City of Courtenay

Overall review of potential environmental impact, identifies mitigation and which permits are likely to be triggered by scope of work

Environmental Impact Assessment
August 2024 to DFO
RfR Submission August 2024
(Response December 2024)

Report detailing the specific impact the project will have to habitat. RfR submission to DFO to ask what permits will be required. Requires Detailed Design Drawings.

FAA / SARA Permit
First Submission March 2025 to DFO
(Response May 2025)
Second Submission June 2025 to DFO

Reporting and Permitting with regulator (DFO) to show how works will be mitigated and offset with habitat improvements

Environmental Management Plan
To be finalized once permits secured

Informs contractor (and regulators) what will be done during the project need to do to meet permitting requirements

Lake Trail Pedestrian Path Project Phasing

City of Courtenay

Phase 1: Works not requiring environmental permits – FALL 2025

- Pedestrian pathway works up to Arden Road
- Bus stop improvements at Lake Trail Community School
- Drainage improvements up to Arden Road
- All north side bike lane improvements up to Webb Road

Phase 2: Works requiring environmental permits – SUMMER 2026

- Pedestrian Pathway works from Arden Road to Webb Road
- All south side bike lane improvements up to Webb Road
- Instream works within Arden Creek
- Habitat compensation and restoration within Arden Creek

Thank You

McElhanney

CANADA BEST MANAGED COMPANIES

Platinum member

The Corporation of the City of Courtenay

Staff Report

To:	Council	**File No.:**	0890-20
From:	**Director of Recreation, Culture, and Community Services**	**Date:**	July 16, 2025
Subject:	**971 Cumberland Road – Authority to apply for a Temporary Use Permit**		

PURPOSE: For Council to consider giving authority to Lookout Housing and Health Society to apply for a Temporary Use Permit at 971 Cumberland Rd, a City-owned property.

BACKGROUND:

The 2023 Point-in-Time (PiT) Count in the Comox Valley unveiled a worrying escalation in homelessness, with a recorded 272 individuals experiencing homelessness—more than doubling the 132 individuals identified in 2020. This data, gathered nearly two years ago, underscores the urgent need for targeted interventions and community support.

In summer 2024, the City of Courtenay requested authority to lead the development and implementation of a Winter Shelter Strategy on behalf of the region with the financial support of the Comox Valley Regional District (CVRD), including facilitating the establishment of winter shelter services for the 2024/2025 winter season.

In December 2024, Council through an emergency policy decision, facilitated the use of a recently acquired City property (971 Cumberland Road) for the provision of winter shelter services in the 2024 / 2025 winter season until April 15, 2025. Following this decision, Lookout Housing and Health Society (Lookout) was funded by BC Housing to operate an Extreme Weather Response (EWR) shelter at this location based on the Community EWR Plan developed by the Coordinator for the Comox Valley Coalition to End Homelessness (CVCEH) and approved by BC Housing. The shelter operated for 46 nights and provided 668 overnight stays from February through April 2025.

A report summarizing the impacts and outcomes of the EWR shelter at 971 Cumberland Road, including feedback from the operator, local service providers and partners, shelter guests, neighbouring businesses and residents was presented to Council on May 21, 2025.[1] The report outlines that the shelter effectively delivered critical shelter services that met the urgent needs of unhoused community members and also identified the neighbourhood impacts and observations of this service. The report provided considerations and potential actions to improve both service outcomes and address neighbourhood impacts when planning any future winter shelter activation.

DISCUSSION:

Winter Shelter Strategy

Development of the regional Winter Shelter Strategy builds on the significant efforts of the regional EWR Task Force, Winter Shelter Working Group, as well as the advocacy and work of the Comox Valley Coalition to End Homelessness, service providers, peers, and others in the Comox Valley over the past few years.

[1] Extreme Weather Response End of Season Report, City of Courtenay, Council Meeting May 21, 2025. Extreme Weather Response Shelter – End of Season Report

A key priority of the Winter Shelter Strategy was the identification and activation of a location for a winter shelter for the 2024 / 2025 season. Over the past two years, community groups and local governments worked collectively and urgently to identify suitable locations for winter shelter services. This included reviewing over 60 properties across a wide range of commercial, private, and publicly owned spaces. Despite this significant effort, including potential lease negotiations, building and fire code reviews, and partner and funder discussions, no shelter was able to be activated for the 2023/2024 season, and a location had not yet been identified well into the early 2024/2025 winter shelter season months. Following the City's acquisition of 971 Cumberland Road in December 2024, the vacant, City-owned property was identified as the most promising option to deliver winter shelter services for the 2024/2025 season and Council facilitated its use through a resolution of Council at the December 11, 2024 meeting.

Based on learnings from the 2024/2025 activation of the EWR at 971 Cumberland Rd, recommendations and considerations will be applied to inform the creation of a regional action plan for winter shelter activation in future years. Completing a fulsome Winter Shelter Strategy and action plan for the Comox Valley is essential to ensuring the community does not find itself once again urgently seeking shelter locations, operators, and funding well into the cold weather season as happened in late 2024. It is expected that the Winter Shelter Strategy will be completed in summer 2025 and will provide recommendations regarding decision making, roles and responsibilities, and actions that will position the Comox Valley to be able to better respond to opportunities as they arise and ensure that the full spectrum of winter shelter services are considered and planned for, as well as maximizing access to funding streams available through the Province.

BC Housing Shelter Funding & Timelines

Throughout development of the Winter Shelter Strategy, including activation of the EWR shelter for the 2024/2025 season, staff have been in regular contact with BC Housing regarding funding availability, approval processes, and timelines. BC Housing staff have shared the following funding timelines and processes with city staff:

- Extreme Weather Response (EWR) Shelters[2]:
  - EWR Community Plans are due no later than September 30 annually, including proposed nightly budgets by an operator and site identification.
  - It is the operator's responsibility to obtain approval by the municipality and the fire department for use as an EWR shelter.
  - BC Housing is committed to reviewing EWR Community Plans throughout the season, however funding is allocated based on first come first served basis following the September 30 deadline.
- Temporary Winter Shelters[3]:
  - BC Housing have shared that decisions regarding funding for Temporary Winter Shelters for the 2025/2026 season will be made in summer 2025.
  - Funding allocations are based on likelihood of shelter activation, with those shelter programs with confirmed locations being funded first, followed by those with potential for activation, until such time as all funding is allocated.
  - For the 2024/2025 winter season, the city was informed by BC Housing that funding allocations for Temporary Winter Shelters were completed by the end of August 2024.

BC Housing has recently shared that they have identified Courtenay as a potential location to receive Temporary Winter Shelter funding. In order to avoid a repeat of the urgent nature of this past season's EWR

[2] About the Extreme Weather Response Program | BC Housing
[3] Emergency Shelter Services and Support | BC Housing

activation, it is recommended that the site selection process for the 2025/2026 winter season be facilitated in a timely manner well before the cold weather.

971 Cumberland Road

2024/2025 EWR Operation

The City owned property at 971 Cumberland Rd was activated as an EWR shelter from February through to April 15, 2025 following building renovations and modifications necessary to comply with building and fire code requirements for sheltering. As per the "Extreme Weather Response End of Season Summary Report" presented to Council on May 21, 2025, the EWR effectively met the needs of unhoused community members during times of extreme winter weather – providing a safe, sheltered space to sleep overnight. However, neighbouring residents and businesses provided feedback that the shelter increased the observance of loitering, sheltering, and public consumption of substances, including increased presence of drug paraphernalia, in the surrounding neighbourhood. The majority of feedback was supportive of shelter services in general, although concerns were raised about the location at 971 Cumberland Road due to its proximity to a daycare, residences, and schools.

The site at 971 Cumberland Road is zoned Industrial Two (I-2), a zoning classification that does not allow shelter services. To facilitate the temporary operation of a winter shelter, Council via resolution at the December 11th, 2024, exercised their authority under Section 20(2) of the Community Charter to not strictly enforce the zoning bylaw until April 15th, 2025.

Authority to Apply for a Temporary Use Permit (TUP)

Prior to finalizing shelter program funding allocations, BC Housing requires confirmation of site availability and suitability, including any necessary permissions from local governments and approvals from fire and building officials. Because shelter service providers must secure these permissions and approvals prior to BC Housing funding approvals, providers are not in positions to enter into lease or license agreements for use of spaces until these steps are completed and funding is confirmed. Therefore, it is not an option to first lease the lands and then have the service provider apply for a Temporary Use Permit (TUP).

BC Housing has recently shared that it is holding funding for a potential Temporary Winter Shelter at 971 Cumberland Rd, and subsequent to a successful TUP application and the site being secured, BC Housing would finalize an operating agreement with the shelter operator. Lookout has now approached staff indicating their interest in pursuing the use of 971 Cumberland Rd for winter shelter purposes. As 971 Cumberland Rd is a city-owned property, the City would need to authorize any third parties / external agencies to apply for uses and or permissions related to City-owned properties. Providing such authority does not in any way imply approval of the use but rather allows for council to hear from the public via the TUP process and then either reject or approve such use after consideration of public comments.

Lookout Housing and Health Society (Lookout) operated the EWR at 971 Cumberland Rd and have indicated to staff that they would like to further explore the use of this location for Temporary Winter Shelter. Lookout has indicated that they are confident that with more planning and preparation time, including for community engagement and consultation, that many of the concerns raised by neighbouring businesses and residents could be addressed and mitigated.

Based on the experience of the Extreme Weather Response shelter in the 2024/2025 season, staff support that Lookout be given authority to apply for a Temporary Use Permit and or other required permissions and or approvals at this City-owned location for the future provision of winter shelter services. A decision of Council authorizing Lookout to make such an application in no way provides explicit or tacit approval of the use. It will however allow for a public process as outlined in the City of Courtenay Development Procedures Bylaw No. 3106, 2023. A public process would also respond to the feedback provided by residents regarding

the perception of a lack of transparency and public input opportunities into the decision made by Council in December 2024 based on emergency conditions.

If Council authorizes Lookout to apply for a TUP, Council would hear the application and make a decision at that time regarding the use of 971 Cumberland Rd for the provision of winter shelter services. If Council approves a Temporary Use Permit, Council could at that time direct staff to enter in to the necessary forms of agreement to facilitate Lookout's use of the property (such as a Lease or License). If council does not approve the TUP, other potential options for a location for winter shelter will need to be considered by Lookout and the City or region.

POLICY ANALYSIS:

OCP, 2022

Affordable Housing

- AH 13: Identify undeveloped and underdeveloped municipal sites for future affordable housing projects with emphasis on providing a mix of tenures including supportive housing.
- AH 18: Advocate for senior government funding for affordable housing projects and initiatives.

Social Infrastructure

- SI 6: Identify an appropriate role for the City in the delivery of social infrastructure in relation to other organizations, agencies, and jurisdictions that provide services for equity-priority groups.
- SI 8: Continue to support regional partners on program administration and delivery for homelessness, poverty prevention, mental health, addiction, and overdose prevention programs.
- SI 21: Support volunteers, organizations, and other social assets to continue undertaking their work within the community

Zoning

Zoning for 971 Cumberland Road site is Industrial Two (I-2). This site was permitted to operate temporarily without strict enforcement of the Zoning Bylaw in accordance with Section 20(2) of the Community Charter, Emergency Powers, via Council resolution on December 11th, 2024 until April 15th, 2025.

FINANCIAL IMPLICATIONS:

There are no financial implications associated with the recommendation.

ADMINISTRATIVE IMPLICATIONS:

Development and implementation of the regional Winter Shelter Strategy has been led by Recreation, Culture, and Community Services with support from several other departments including Planning, Building, Communications, and Corporate Services, as well as a hired consultant.

Should Council grant authority to a third-party to apply for a Temporary Use Permit for 971 Cumberland Rd, Development Services would facilitate the necessary reviews according to City policy and procedure and City of Courtenay Development Procedures Bylaw No. 3106, 2023.

STRATEGIC PRIORITIES REFERENCE:

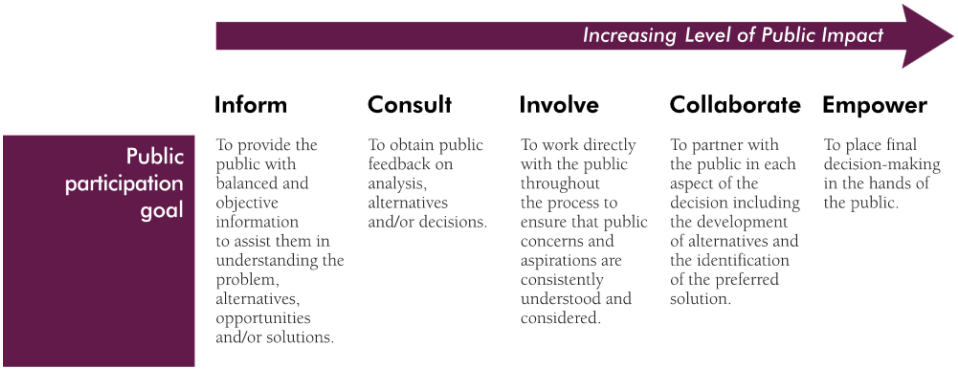
This initiative addresses the following strategic priorities:

- Social Infrastructure - Continue working with community agencies to deliver day services. Explore role in the provision of social support services, including future of Connect Centre.

- Social Infrastructure - Identify roles for the City in the delivery of social infrastructure outlined in the OCP; Implementation plan for delivery of social infrastructure
- Public Safety - Build capacity for emergency planning and local response
- Affordable Housing - Explore approaches to develop affordable housing: Review potential of city property for housing partnerships with BC Housing

PUBLIC ENGAGEMENT:

Staff would inform and consult the public based on the IAP2 Spectrum of Public Participation. Should Council proceed with the recommendation, the applicant would be required to adhere to public notification and engagement protocols as guided by Division 8 (Temporary Use Permits) of the Local Government Act and the City of Courtenay Development Procedures Bylaw No. 3106, 2023.



OPTIONS:

1. THAT Council hereby grants authority to Lookout Housing and Health Society in regards to 971 Cumberland Road, legally described as PID: 002-492-431 Lot A, Section 69, Comox District, Plan VIP26945, to apply for a Temporary Use Permit for the provision of winter shelter services.

2. THAT Council provide alternative direction to staff.

Prepared by: Susie Saunders, Director of Recreation, Culture, and Community Services
Reviewed by: Marianne Wade, Director of Development Services
Kate O'Connell, Director of Corporate Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

The Corporation of the City of Courtenay

Briefing Note

To: Council **File No.:** 5335-20

From: Director of Infrastructure and Environmental Engineering Services **Date:** July 16, 2025

Subject: Braidwood Road infrastructure upgrades /Ryan Road Sidewalk Project Update

PURPOSE:

The purpose of this staff report is to update Council on the current status of two key infrastructure projects: the Ryan Road pedestrian improvements and the Braidwood Road infrastructure upgrades. This update provides an overview of each project's scope and design progress, outlines the intent to combine both initiatives into a single construction tender to enhance delivery efficiency and coordination, and summarizes the associated financial implications.

BACKGROUND:

Ryan Road and Braidwood Road are both identified as high-priority transportation corridors in the City of Courtenay's Transportation Master Plan and Cycling Network Plan, supporting the City's commitment to active transportation principles.

- Ryan Road pedestrian improvements: The project addresses a 400-metre pedestrian gap on the north side of Ryan Road between Sandwick Road and Back Road. A concept design was completed in April 2024, which includes a protected bike lane, floating bus stop, drainage improvements, and boulevard enhancements.
- Braidwood Road upgrades: This corridor spans from Back Road to the Island Highway and features full roadway and utility reconstruction. The design for this project was completed in 2021 but never advanced to construction. The design includes upgrades to water, storm, and sanitary infrastructure alongside transportation, drainage, and streetscape improvements.

The Ryan Road Sidewalk project originally was designed to improve pedestrian safety by adding a sidewalk between Back Road and Sandwick Road and an expanded bus pull-out. At the October 25th, 2021 Council meeting, Council resolved the following:

"THAT based on the October 25th, 2021 staff report "Ryan Road Sidewalk (Back Road to Sandwick Road) Project Update" Council approve OPTION 1 and direct staff to:

1. *Advance permitting in 2021, supporting the design of a sidewalk and expanded bus pull-out, based on MoTI's [Ministry of Transportation and Infrastructure] feedback.*

2. *Pending budget and funding approval, through the 2022-2026 financial planning process, proceed into detailed design and construction in 2022.*

DISCUSSION:

Ryan Road Sidewalk:

The Ryan Road Pedestrian Improvements project addresses a critical 400-metre gap in pedestrian and cycling infrastructure on the north side of Ryan Road, between Sandwick Road and Back Road. This section of Ryan Road is a four-lane arterial with high vehicle volumes and limited pedestrian amenities—particularly on the

north side, where there is currently no sidewalk, and pedestrians walk adjacent to open ditches and traffic lanes.
The Transportation Master Plan and Cycling Network Plan identify this corridor as a priority for investment, citing its role in connecting residential neighbourhoods to transit routes, schools, and commercial areas. In addition, the OCP (2022) designates Ryan Road as a key east-west spine for active transportation connectivity.

In April 2024, ISL Engineering completed a concept design that proposes the following improvements:

- A 2.0 metre concrete sidewalk on the north side of Ryan Road to fill the missing pedestrian link.
- A 1.8 metre protected cycling lane designed to physically separate cyclists from vehicular traffic, improving comfort and safety.
- A 0.7 metre utility strip or boulevard buffer, which enhances separation and may include signage or low landscaping.
- A floating transit stop, located mid-block, designed to meet universal accessibility standards and accommodate existing BC Transit service.
- Storm drainage improvements, including ditch infill, and installation of new storm mains, manholes, and catch basins to manage surface runoff and enhance long-term resilience.
- Minor utility adjustments, such as relocation of existing gas infrastructure, streetlights, and signage to accommodate the new active transportation corridor.

The proposed design was shared with the Ministry of Transportation and Transit (MOTT) in May of 2024 and comments were received in September of 2024 that required additional correspondence and meetings with MOTT staff. A meeting was held in February of 2025 to discuss the project further. In late April, 2025, a response was received from MOTT stating they are generally supportive of cycling infrastructure in this corridor. A follow up meeting is planned with MOTT once design restarts to discuss further approvals and permitting.

The Ryan Road Sidewalk project originally approved by the Council on October 25, 2021, was designed to improve pedestrian safety by adding a sidewalk and an expanded bus pull-out based on feedback from the Ministry of Transportation and Transit. Following Council's approval, community feedback highlighted a strong demand for incorporating a bike lane to promote safer and more comprehensive active transportation. Additionally, the 2023 Cycling Network Plan update which has been endorsed by Council, identifies the long term build out for this corridor as a Protected Bike Lane - AAA Facility. In response, the concept design scope was expanded to include a protected bike lane adjacent to the sidewalk.

The Class D cost estimate for this work is $1.98 million (2024 dollars), inclusive of a 40% contingency and 10% engineering allowance. Design is currently at the conceptual stage and is proposed to be advanced to detailed design as part of the combined contract, pending direction from Council.

This project addresses both safety and accessibility concerns on a high-volume corridor and is expected to deliver immediate benefits for pedestrians, cyclists, and transit users once completed.

Braidwood Road
The Braidwood Road project includes the full renewal and redesign of the corridor between Back Road and the Island Highway**.** Braidwood Road functions as a local collector serving a mix of multi-family residential housing, commercial areas, and community amenities. The corridor has long-standing deficiencies in both underground utilities and active transportation infrastructure. The project was taken to 100% detailed design in 2021, with final documentation to be completed prior to tendering.

This project was initiated based on priorities identified through the City's infrastructure planning program, which identified the existing water, sanitary, and storm systems as nearing end-of-life and in need of capacity upgrades—particularly for fire flow and climate resilience**.**

- The scope includes full roadway reconstruction and complete utility replacement:
  - Watermain upgrades to address capacity and fire flow deficiencies identified in the City's Water Master Plan.
  - Full sanitary sewer reconstruction, including new mains, manholes, and service laterals.
  - Stormwater system renewal with new mains and catch basins to improve drainage performance.
- Surface-level transportation and streetscape improvements include:
  - Cycling facilities coordinated with the Cycling Network Plan.
  - Curb extensions at intersections for traffic calming and pedestrian safety.
  - Landscaped boulevards, street trees, and enhanced intersection geometry at Braidwood and Back Road.

The original design was finalized in 2022, prior to several significant policy changes that directly affect land use and servicing assumptions. Since that time, both the City of Courtenay and the Comox Valley Regional District (CVRD) have advanced regional planning initiatives to guide coordinated growth, housing, and infrastructure delivery across the region. In parallel, the City's Official Community Plan (OCP) has been updated, introducing new growth management priorities and revised transportation and land use objectives. More notably, recent provincial legislation enabling small-scale multi-unit housing (SSMUH) across the City has been introduced. This change is expected to increase population density and utility demand in the project area, requiring a re-evaluation of underground infrastructure capacity by both the City and CVRD, curbside uses, and active transportation elements to ensure the corridor can support increased demands.

A key component of this project is the upsizing of the water main along Braidwood Road to support future development, including the supportive housing at 925 Braidwood. The upgraded main is required to meet fire flow requirements for the proposed facility and will also result in a significant improvement in firefighting capacity for existing properties along the corridor. Additionally, servicing and access considerations for 925 Braidwood will be incorporated into the detailed design to ensure long-term viability and performance of the corridor's infrastructure.

Combined Delivery Approach

To maximize efficiency and ensure construction occurs in a coordinated effort, the Ryan Road improvements and Braidwood Road projects design will be delivered through a single contract for professional consulting services. The intent of this combined procurement is to:

- Update and finalize detailed designs for both corridors;
- Prepare a consolidated, tender-ready construction package; and
- Facilitate construction to be completed in 2026, in support of 925 Braidwood servicing requirements.

This integrated approach offers several key advantages:

- Promotes consistency in design standards across two adjacent and functionally related corridors;
- Improves project management efficiency by reducing administrative overhead and consultant duplication;

- Enables coordinated construction staging and traffic management;
- Supports cost-effective procurement and mobilization, improving overall value to the City.

By bundling the projects under a single contract, the City can streamline the capital delivery process while aligning both initiatives with broader transportation, infrastructure, and asset management strategies.

POLICY ANALYSIS:
The Ryan Road and Braidwood Road upgrades strongly align with the City of Courtenay's 2022 Official Community Plan (OCP), advancing strategic goals in transportation, infrastructure renewal, and compact growth.

1. Streets & Transportation – Functional, Low-Carbon Mobility
- Projects support OCP goals to increase active transportation to 30% of all trips by 2030.
- Integrated design includes bike lanes, sidewalks, and improved transit stops, in line with ST 4, ST 5, ST 6, and ST 8(c).
- Ryan Road improvements enhance school travel safety; both corridors fill critical active transportation gaps identified in the Transportation Master Plan.

3. Growth Management & Livability
- Align with LU 2 and LU 3 by supporting infill and higher-density development in East Courtenay.
- Enhanced multimodal access fosters the 10-minute neighbourhood model, improving connections to schools, shops, and transit.

The Ryan Road pedestrian improvements and Braidwood Road upgrades align with several Regional Growth Strategy (RGS) policy goals, particularly those promoting compact growth, integrated transportation systems, infrastructure efficiency, and climate adaptation.

Goal 4 – Multi-Modal Transportation
- RGS Intent: Build an accessible, efficient transportation network.
- Project Alignment:
    - Projects incorporate protected bike lanes, barrier-free sidewalks, and transit stops, advancing Objective 4-B.
    - Support for transit-oriented design reflects Policy 4A-1, integrating land use with mobility planning.

Goal 5 – Infrastructure Efficiency
- RGS Intent: Deliver cost-effective, sustainable urban infrastructure.
- Project Alignment:
    - Braidwood renews aging water, sanitary, and storm systems, fulfilling Objective 5-D to optimize use of existing systems and reduce capital redundancy.
    - Projects demonstrate integrated capital planning and lifecycle asset management.

FINANCIAL IMPLICATIONS:
The current budgets included in the financial plan are shown in the table below, and are inclusive of general, water, and sewer budget components:

Project Description	2025 Budget	2026 Budget	Project Totals
Ryan Road Pedestrian Improvements	$220,000	$2,558,500	**$2,778,500**
Braidwood Road Infrastructure Upgrades	$58,000	$4,330,000	**$4,388,000**
Total Budget Available	$278,000	$6,888,500	**$7,166,500**

At this time, it is not anticipated that the existing Braidwood Road project budget includes sufficient funding to proceed with detailed design within the 2025 financial plan. However, there is potential capacity within the Ryan Road sidewalk project budget to support detailed design for both projects if they are combined under a single scope.

Staff plan to proceed with a combined design approach for the Ryan Road and Braidwood Road improvements. This would enable staff to award the design contract and initiate work efficiently within the current budget framework. If additional funding is required to complete the design, staff will return to Council requesting a budget reallocation.

The following summarizes the most recent available construction cost estimates for both projects:

Project	Estimate	Cost Estimate
Ryan Road Pedestrian Improvements	Class D Estimate (2024)	$1,977,750
Braidwood Road Complete Streets	100% Detailed Design (2022)	$3,800,000
	Total	$5,777,750

The Ryan Road cost estimate was prepared in April 2024. It includes design, construction, and a 40% contingency, allowance.

The Braidwood Road project cost estimate was prepared in May 2022, based on 100% detailed design drawings. The estimate includes all major components such as roadworks, underground utilities, drainage improvements, concrete infrastructure, landscaping, contract administration/inspection and a 10% contingency. The total estimated cost is approximately $4.3 million. While comprehensive at the time of preparation, this estimate will require updating, especially in light of the significant amount of construction cost escalation over the past few years.

The table below summarize the current capital budgets and identified funding sources for the Ryan Road pedestrian improvements and Braidwood Road upgrades.

	Reserves General	Reserves Sanitary	Reserves Water	Debt & Other	DCC	**Project Totals**
Ryan Rd	$620,000	$0	$0	$2,000,000	$158,500	**$2,778,500**
Braidwood Rd	$284,800	$551,600	$551,600	$3,000,000	$0	**$4,388,000**
Funding Source Totals	**$904,800**	**$551,600**	**$551,600**	**$5,000,000**	**$158,500**	**$7,166,500**

ADMINISTRATIVE IMPLICATIONS:
The project will be led by the City's Infrastructure and Environmental Engineering Services department, with interdepartmental coordination and consultant engagement to finalize detailed design, specifications, and tender documents. The approach reduces duplication and project overhead by delivering both projects under one contract.

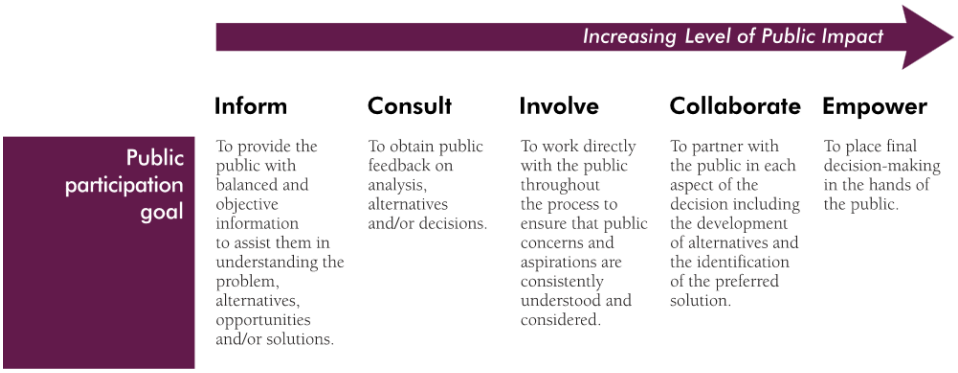
STRATEGIC PRIORITIES REFERENCE:
Importantly, 925 Braidwood Road is the site of a supportive housing development delivered in partnership with BC Housing. Ensuring sufficient utility servicing capacity for this location is essential to support the long-term viability and operations of this facility, which provides critical shelter and support services to vulnerable members of the community. Upgrading water and sanitary infrastructure in this area aligns with the City's broader social responsibility goals and supports provincial and regional investment in affordable housing solutions.

Although these projects are not specifically identified as Council priorities, the upgrades required on Braidwood Road are necessary due to the utilities reaching the end of their useful service life. Moreover, they are nearing capacity and should be upgraded to meet future needs.

Ryan Road and Braidwood Road are both identified as high-priority transportation corridors in the City of Courtenay's Transportation Master Plan and Cycling Network Plan, supporting the City's commitment to active transportation principles.

The watermain upgrades will address capacity and fire flow deficiencies identified in the City's Water Master Plan.

PUBLIC ENGAGEMENT:
Staff would inform the public based on the IAP2 Spectrum of Public Participation:



Should borrowing be required to fund the project, the decision may be subject to public approval, potentially placing final decision-making in the hands of the public consistent with the "Empower" level of the IAP2 public participation framework.

RECOMMENDATION: THAT Council receive the "Braidwood Road infrastructure upgrades /Ryan Road Sidewalk Project Update" briefing note.

ATTACHMENTS:
1. Ryan Road Transportation Improvements – Conceptal Design Report, Dated April 26, 2024
2. Braidwood Road Corridor Improvements – Detailed Design, Dated May 16, 2022

Prepared by: Curtis Mousseau, AScT, Engineering Technologist
Reviewed by: Adam Pitcher, AScT, PMP, Manager of Capital Projects
Chris Davidson, P.Eng., PMP, Director of Infrastructure and Environmental Engineering
Adam Langenmaier, BBA, CPA, CA, Director of Finance
Marianne Wade, MCIP, RPP, Director of Development Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

1051 Vancouver Street, Victoria BC V8V 3K3, T: 250.361.3230 F: 604.629.2698

To:	**City of Courtenay**	Date:	**April 26, 2024**
Attention:	**Sofia Senin, C. Tech, CAPM**	Project No.:	**33727**
Reference:	**Ryan Road Transportation Improvements – Conceptual Design Report**		
From:	**Khal Joyce, EIT & Ian McKinnon, P.Eng.**		

1.0 Introduction

The City of Courtenay (the City) has retained ISL Engineering and Land Services Ltd. (ISL) to provide engineering services related to the conceptual design of active transportation and transit improvements on Ryan Road between Old Island Highway and Back Road. The project aims to enhance the safety and comfort of pedestrians, cyclists, and transit users along the corridor, as well as improve the efficiency and reliability of transit service. The project also considers the future needs and growth of the corridor, as well as the impacts and opportunities for adjacent land uses and developments.

This report presents two concept designs for the corridor: a short-term design and a long-term design. The short-term design proposes the installation of a sidewalk and raised (protected) bike lane on Ryan Road between Back Road and Sandwick Road to fill the existing infrastructure gap. The long-term design proposes a comprehensive corridor revitalization and includes dedicated bus lanes, protected bike lanes, continuous sidewalks, and protected intersections. The design options were developed based on the review of previous studies and planning documents, the BC Active Transportation Design Guide (BCATDG), Ministry of Transportation and Infrastructure (MoTI) standards, and industry best practices.

2.0 Background

2.1 Existing Conditions

Ryan Road is a major arterial road that connects the east and west sides of Courtenay and provides access to several commercial, residential, and institutional destinations. The corridor spans about 900 m and has four signalized intersections, located at Old Island Highway, N Island Highway, Sandwick Road, and Back Road. The roadway between curb lines is under the jurisdiction of MoTI, while all roadway outside of the curb lines is under the jurisdiction of the City. This is with the exception of Ryan Road at Old Island Highway, which is completely under the jurisdiction of the City.

The existing cross-section of Ryan Road consists of two through lanes in each direction, separated in some locations by a raised center median. The lane widths vary, ranging from 3.8 to 4.6 m with a posted speed limit of 50 km/h. There are left-turn lanes at all intersections, including a dual left-turn lane at the intersection of Ryan Road and N Island Highway (westbound). All four intersections include slip lanes for right-turn movements, which reduce the corner radius and increase the vehicle turning speeds. The slip lanes also create longer and less comfortable crossings for pedestrians and cyclists.

There are limited bicycle facilities on Ryan Road. Cyclists either need to share the road with vehicles or use the painted bicycle lanes or paved shoulders, which are not continuous or consistent in width. There are painted/buffered bike lanes on Back Road, south of the intersection with Ryan Road; however, they do not connect to any bike facilities north of the intersection.

There are sidewalks on both sides of Ryan Road, except for the north side between Sandwick Road and Back Road, where there is a gap of about 400 m. Pedestrians must walk on the shoulder or cross the road to access the south sidewalk. There are several commercial accesses along the corridor, especially on the south side, which create potential conflicts and disruptions for pedestrians.

There are multiple transit routes that operate on Ryan Road, with a total of four transit stops along the corridor (two in each direction). The transit stops are located on the shoulder or are partially in the travel lanes. The transit stop on the north side of Ryan Road between Sandwick Road and Back Road is not accessible by sidewalk and can only be reached by walking on the shoulder.

The traffic volumes on Ryan Road are high, especially during peak hours. The corridor also experiences significant congestion and delays, particularly at the intersections with Old Island Highway and N Island Highway. Intersections along the corridor are also identified as being in the top 10 collision locations in the region, according to the City's Transportation Master Plan (2019).

2.2 Previous Work

Several studies and projects have been conducted to address the issues and opportunities on Ryan Road. The following is a summary of the relevant previous work that has been reviewed and utilized by ISL as part of this assignment.

MoTI's Ryan Road Improvements Memo (2023)

This memo outlined the objectives and potential scope for a Ryan Road active modes improvement project, based on the findings of a corridor assessment and a stakeholder workshop. The memo identified the key issues and opportunities on the corridor, such as the lack of bicycle facilities, the gap in the north sidewalk, the safety concerns at the slip lanes, the transit delays and reliability, and the future growth and development potential. The memo also proposed some preliminary design concepts and recommendations, such as dedicated bus lanes, transit queue jumps, multi-use paths, slip lane closures, and protected intersections.

Associated Engineering's (AE) Technical Memorandum (2020)

This memo presented two options for a new sidewalk on the north side of Ryan Road between Sandwick Road and Back Road to fill the existing gap and improve pedestrian connectivity and accessibility. The minimized design proposed a 2.0 m wide concrete sidewalk along the existing shoulder of the roadway, complete with MoTI curb and gutter. The maximized design included a 2.0 m bike lane and buffer zone along with the 2.0 m sidewalk proposed in the minimized option. Both design options considered the relocation of the bus stop near Sandwick Road, the relocation of existing streetlights, as well as the drainage factors.

City of Courtenay's Cycling Network Plan (2019)

This plan provided a vision and a framework for developing a safe, comfortable, and connected cycling network in Courtenay for the next 5-20+ years. The plan was guided by the Official Community Plan (OCP) and the Regional Growth Strategy (RGS), and aligned with the BC Active Transportation Design Guide. The plan developed a long-term cycling network which focused on a spine network that builds on recent improvements and connects to key destinations. Specific to the Ryan Road corridor, the plan recommended improving crossing conditions for connecting bike lanes on Back Road by utilizing a protected intersection design.

The Cycling Network Plan was updated in June 2023 and included revised locations for cycling network improvements on both a 5-year and long-term timeline. The revised report also included updated cross-sections. This updated Cycling Network Plan formed the basis of our recommended designs.

Urban Systems Transit Infrastructure Study (2021)

This study assessed the existing and future transit infrastructure needs and opportunities in Courtenay, Comox, and Cumberland, in coordination with BC Transit and the Comox Valley Regional District (CVRD). The study identified several transit priority measures and infrastructure improvements to enhance the transit service quality and reliability, as well as the transit user experience and accessibility. For the Ryan Road corridor, the study suggested interim queue jump lane improvements at Old Island Highway, where a westbound queue jump lane would allow buses to bypass queued left-turn vehicles. A long-term improvement would be to consider dedicated transit lanes.

PBX Engineering's Traffic and Lighting Installation Design (2023)

This project involved the design and installation of new traffic signals and street lighting at the Ryan Road/Back Road intersection, as well as the upgrade of the existing traffic signals and street lighting at the Ryan Road/Sandwick Road intersection. As part of this project, bike boxes were added for westbound left-turn and through cyclists at the Ryan Road/Back Road intersection. The project also included new signage and detection systems.

3.0 Conceptual Options

3.1 Overview

Based on the review of the previous work and the current conditions on the corridor, ISL has developed two design options for the active transportation and transit improvements on Ryan Road: a short-term design and a long-term design. The short-term design aims to provide some immediate and low-cost improvements that can enhance the safety and comfort of pedestrians, cyclists, and transit users, as well as support the City's goals. The long-term design envisions a full build-out scenario that can accommodate future growth and demand on the corridor, as well as provide a high-quality active transportation and transit network that follows best practices and standards.

The design options were developed using the City-provided cadastral mapping and orthophotos, as well as the BC Active Transportation Design Guide, MoTI standards and other relevant documents and guidelines. Concept drawings for each design option are attached in Appendix A.

3.2 Short-Term Design

The short-term design was developed with the goal of filling the gap in existing sidewalk infrastructure, while considering the alignment for continuity with the future long-term designs. It proposes a 1.8 m protected bike lane adjacent to a 2.0 m sidewalk, following the City's "Arterial Road Section B" guidelines, with a 0.7 m utility strip as a buffer. A floating bus stop will be integrated for transit users' convenience, while ensuring that the stop is accessible for those with visual impairments, based on the latest guidance from the BCATDG and other relevant sources.

Benefits

- Enhanced safety for pedestrians and cyclists
- Improved connectivity for transit users
- Aligns with future option to install dedicated bus lanes, protected bike lanes along the rest of the corridor
- Does not require reconfiguration of travel lanes

Considerations

- Cycling connectivity remains limited and unbalanced with the rest of the corridor

- Requires ditch infilling and installation of a new drainage system along the new sidewalk and bike lane
- Existing gas main appears to run directly below the proposed sidewalk and bike lane and may require adjustment or relocation. The City should confirm the location of the main during detailed design.
- Multiple existing light poles located along the section are in conflict and may require adjustment or relocation.
- Possible need for retaining wall or additional right-of-way between 800 Ryan Road and Back Road on the north side to accommodate cut slopes.
- Proposed development frontage at 925 Braidwood Road does not align and will need to be adjusted.

A possible alternative to this design could include the substitution of the sidewalk and bike lane for a multi-use path. Some of the benefits and considerations of this option are described below.

- Allows for bi-directional travel for people biking between Back Road and Sandwick Road, particularly during the time when only the short-term design has been constructed.
- Improves connectivity while maintaining the same footprint as future full reconstruction alignments.
- May require some modifications once the long-term design is implemented to maintain consistency with the rest of the corridor.

While the multi-use path option is beneficial in the short-term, we understand that the City would prefer to not make any modifications to the infrastructure once the long-term design has been constructed. Based on this preference, ISL recommends the short-term design as described above, which includes a uni-directional protected bike lane and sidewalk.

3.3 Long-Term Design

The long-term design proposes a comprehensive and sustainable transportation corridor that prioritizes safety, accessibility, and efficiency for all users. This vision integrates key elements such as protected bike lanes, sidewalks, and dedicated bus lanes. The long-term design was developed based on the guiding background information, particularly the updated Cycling Network Plan and the 2021 Transit Infrastructure Study. The cross section for the corridor is based on a modification to the City's "Arterial Road Section B" guidelines, which includes the addition of dedicated bus lanes.

Key Elements

- **1.8 m Protected Bike Lanes:** Dedicated lanes adjacent to the sidewalk provide a safe and separated space for cyclists, promoting active transportation and reducing the risk of conflicts with vehicles.
- **2.0 m Sidewalks:** Wide sidewalks enhance pedestrian accessibility and comfort, fostering a pedestrian-friendly environment along the corridor.
- **0.7 m Utility Strips:** Buffer zones between the bike and vehicular lanes enhance safety and provide space for utilities and possible landscaping.
- **3.3 m Travel Lanes:** Opportunity to reduce the width of the existing oversized travel lanes to a modern standard of 3.3 m. This extra space can be used to accommodate dedicated bus lanes with limited right-of-way acquisition. This width of travel lane may require additional coordination with MoTI, discussed further below in the ‘considerations’ section.
- **3.6 m Dedicated Bus Lanes:** Dedicated bus lanes prioritize public transit, improving reliability and efficiency for transit users while reducing vehicle congestion. 3.3 m (measured to face of curb) is considered to be a sufficient lane width for dedicated bus lanes based on BC Transit’s Infrastructure Guidelines; however, 3.6 m was selected based on MoTI’s requirement to measure lane width to edge of pavement for curb lanes.
- **Protected Intersections:** All intersections along Ryan Road will be redesigned with protected features, including closure of slip lanes, offsetting the bike lanes with physical protection, as well as reduced crossing distances.

- **Driveway Consolidation and Continuous Sidewalks:** Driveways along the corridor will be consolidated to minimize interruptions to pedestrian and cyclist pathways, improving overall safety and efficiency. At all existing driveways, the sidewalk will be extended through to create a continuous pedestrian pathway, enhancing connectivity and accessibility along the corridor, and reinforcing the modal hierarchy.
- **Floating Bus Stops:** All four bus stops along the corridor will be upgraded and integrated with the new bike facilities and sidewalk to ensure safety and accessibility for all users. Bus stops will be designed in accordance with the latest guidance from the BCATDG and may include the use of rapid rectangular flashing beacons (RRFBs).

Benefits

- Protected bike lanes, dedicated bus lanes, and intersection improvements enhance safety for all road users, reducing the risk of conflicts.
- Widened sidewalks and continuous pathways improve accessibility for pedestrians, cyclists, and transit users.
- Investments in safe infrastructure for vulnerable modes encourages more people to travel using modes other than a personal vehicle, one of the City's stated goals.

Considerations

- Implementing these corridor enhancements will require significant capital expenditures. The City could consider engaging MoTI or other organizations that may be able to provide some cost sharing through grants or other means.
- Significant engagement with MoTI may be required in order to implement 3.3 m lanes along the corridor. While lanes of this width are considered by professionals in this industry to be the safest, MoTI standards may require additional analysis of turning movements or other factors before they will be accepted for use on their right-of-way.
- The curb alignments shown on the provided drawings are conceptual only and are not based on topographic survey data. Some locations show civil works extending beyond the property lines. The extent of these encroachments will need to be confirmed and considered by the City during the detailed design process, as land may need to be acquired.
- Closure of slip lanes and reconfiguration of the intersections will require replacement of traffic signal infrastructure. This investment can also be paired with improvements that could allow for transit and emergency vehicle signal priority.
- In general, there are multiple utilities along the project alignment that may need to be relocated to facilitate the road upgrades. During this road upgrade project, there may also be opportunities for underground asset renewal. The condition of all underground infrastructure in the area should be assessed as part of the detailed design to determine if replacement is necessary.

This design was developed based on the provided background information, previous studies, and planning documents. However, there are other options that could be considered by the City that may involve additional challenges. In particular, maintaining lane widths greater than 3.5 m, along with centre medians, while technically feasible, may require significantly more right-of-way, along with the challenges associated with road widening of this scale, such as property acquisition and construction costs.

4.0 Cost Estimate

Summaries of the Class D construction cost estimates for both designs are presented below (2024 dollars). A detailed breakdown for each design option is attached following this report. This cost estimate is conceptual and was established based on both historical costs and project experience. Further refinement and accuracy will require the completion of a topographic survey and further detailed design.

Short-Term Design

Item	Subtotal
General Requirements	$110,000
Roadworks	$1,063,500
Electrical	$135,000
Subtotal	$1,318,500
Contingency (40%)	$527,400
Engineering and Professional Services Allowance (10%)	$131,850
Total	**$1,977,750**

Long-Term Design

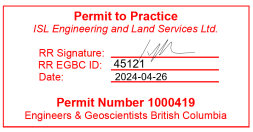
Item	Subtotal
General Requirements	$400,000
Roadworks	$4,327,500
Electrical	$1,700,000
Subtotal	$6,567,500
Contingency (40%)	$2,627,000
Engineering and Professional Services Allowance (10%)	$656,750
Total	**$9,851,250**

5.0 Closure

We trust this memorandum meets the City's current requirements. Please contact the undersigned at your earliest convenience should there be any additional clarification or discussion of next steps required.

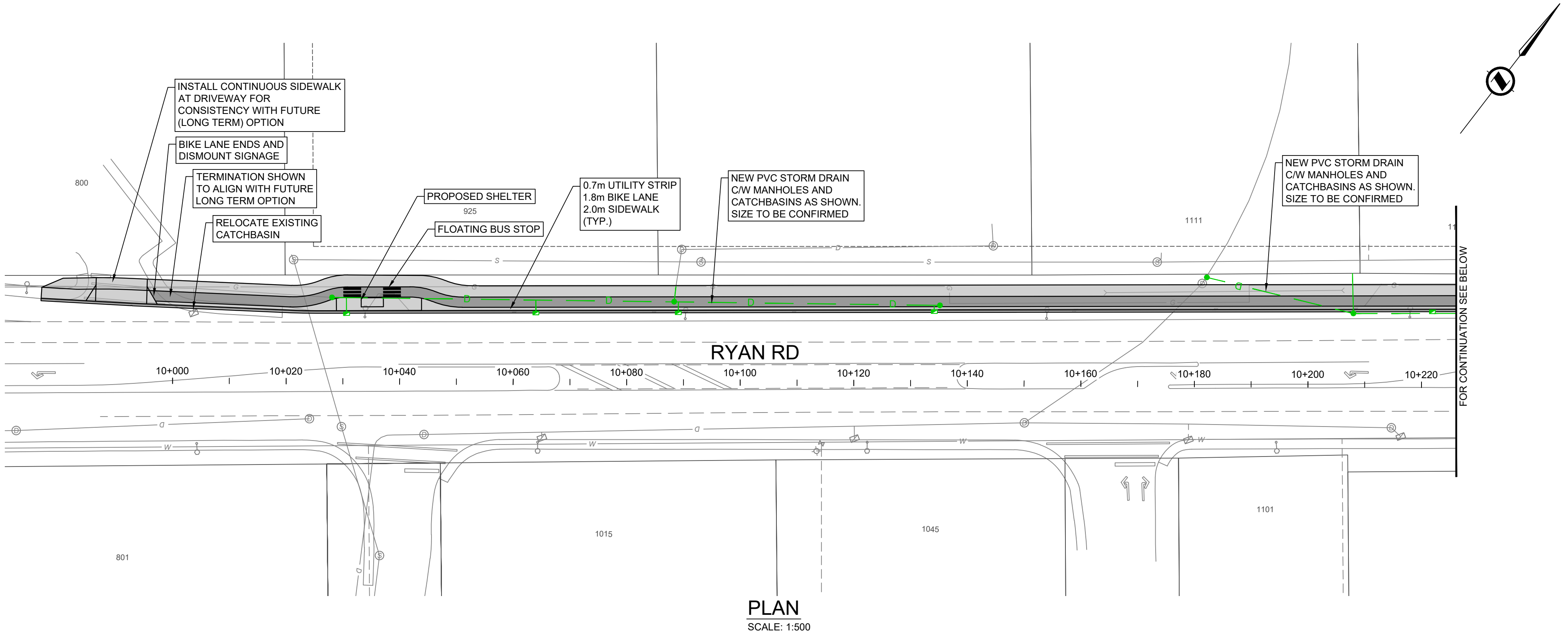
Sincerely,
ISL Engineering and Land Services Ltd.

Khal Joyce, EIT
Project Engineer



Ian McKinnon, P.Eng.
Engineer of Record

Attachments
Concept Design Drawings
Cost Breakdown



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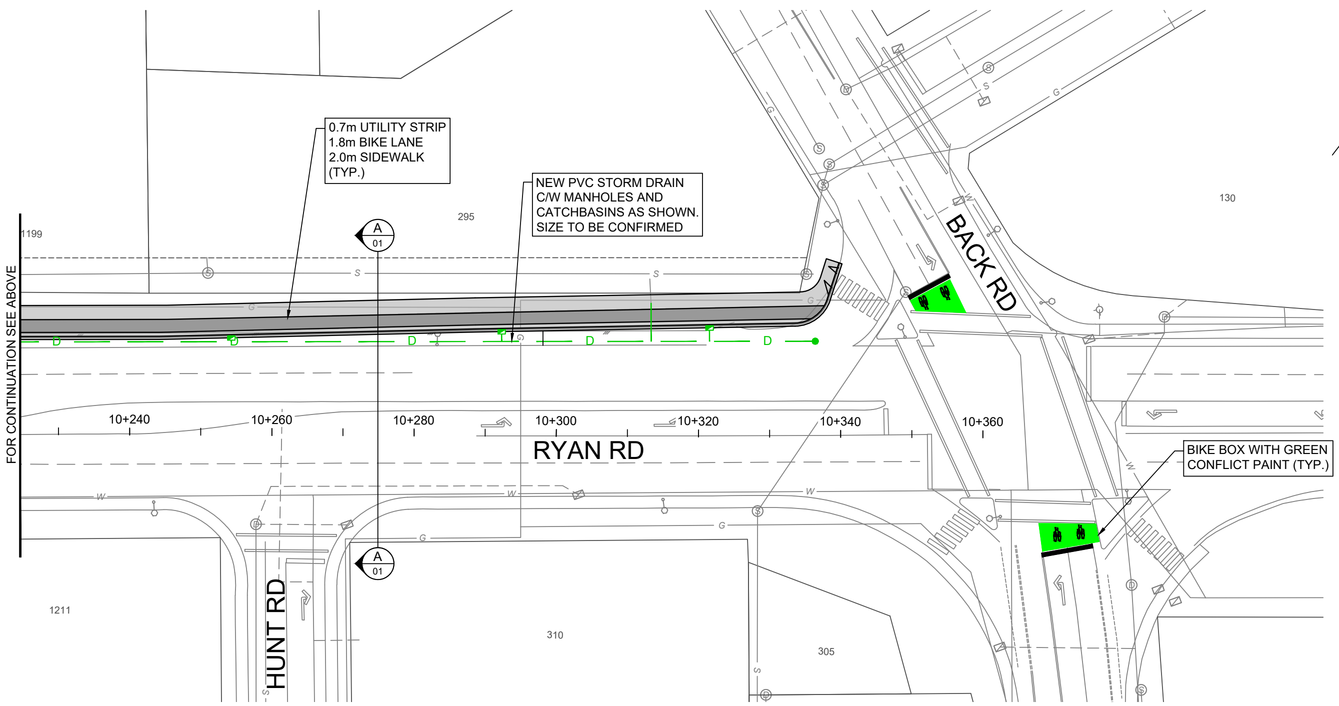

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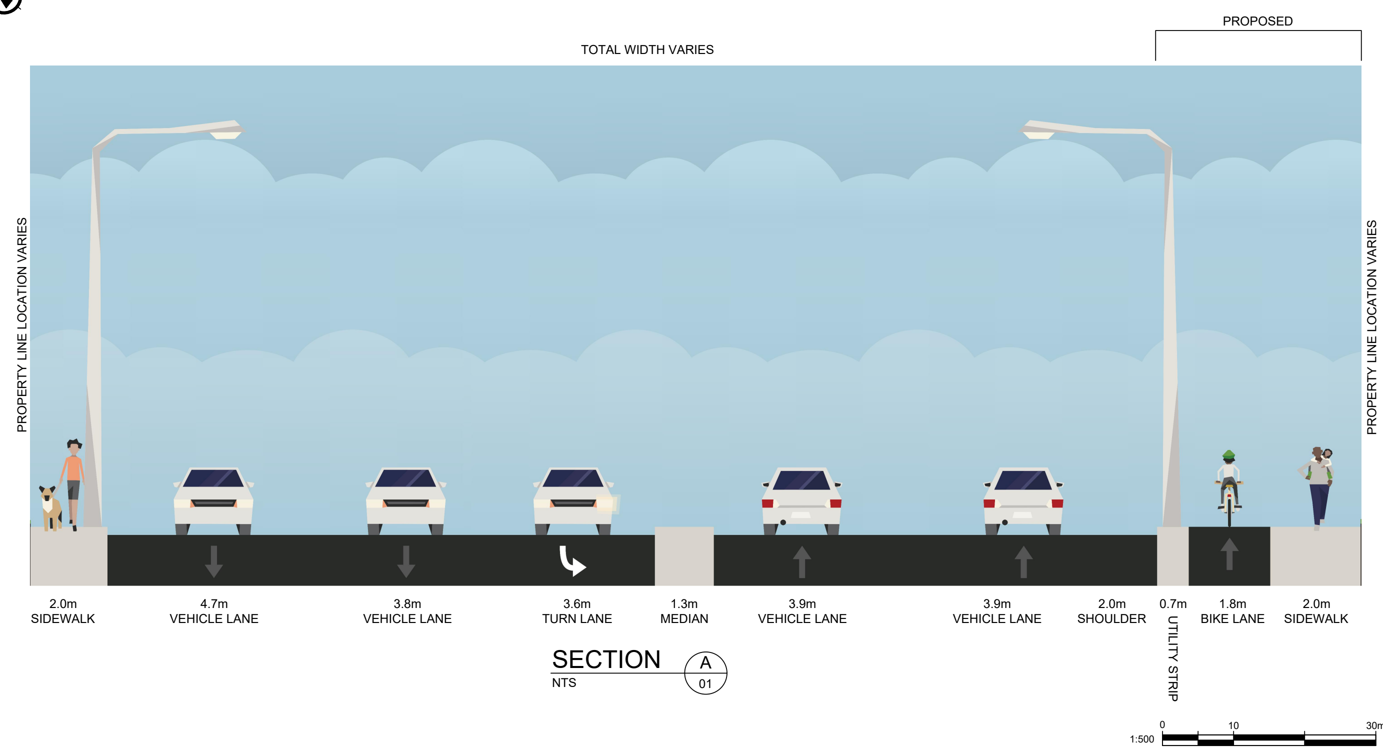

SECTION A/01
NTS

GENERAL NOTES:

1. EXISTING PAVEMENT MARKINGS ARE DRAWN BASED ON ASSUMED LOCATIONS (NO TOPOGRAPHIC SURVEY)

PLOT DATE: April 16, 2024

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REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPR'D
1	CONCEPT DESIGN	2024-04-16	KPJ	IM

City of Courtenay

ROAD WORKS

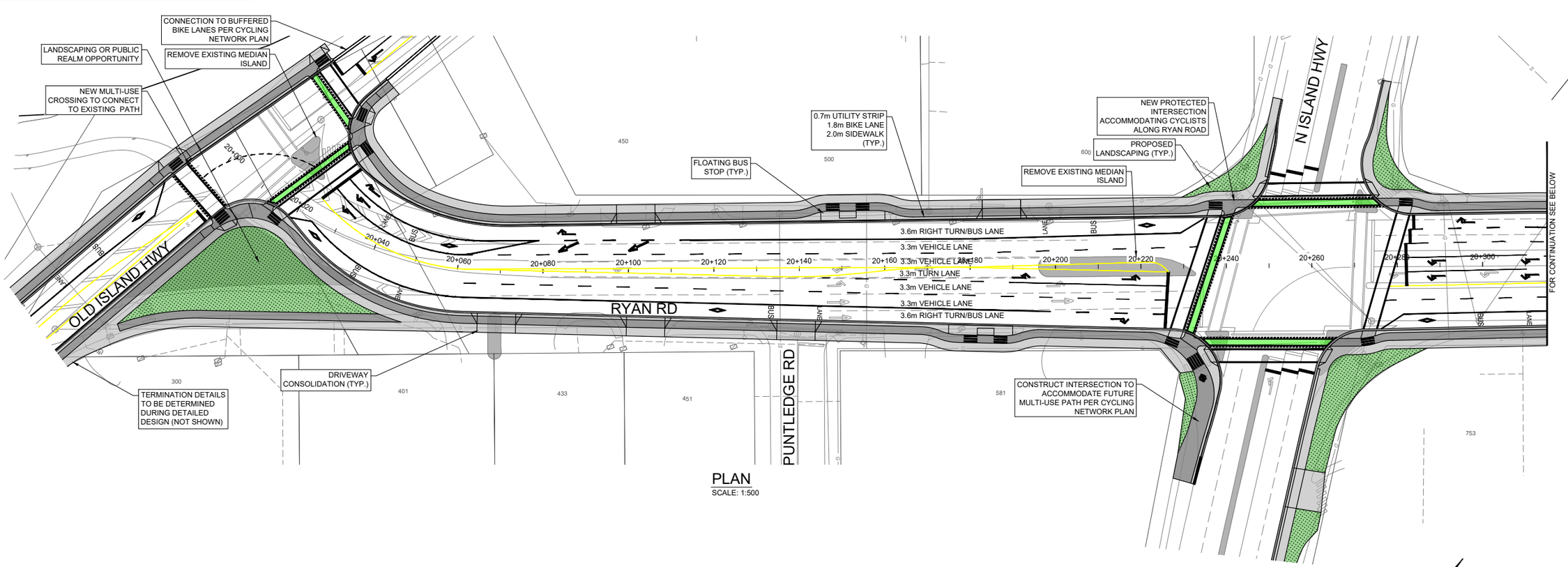
RYAN RD - SHORT TERM UPGRADES
STA 10+000 TO 10+360

CONCEPT DESIGN
DESIGN NO. 33727

ISL
1051 Vancouver St, Victoria, BC V8V 3K3
T: (250)361-3230 F: (604)629-5756

SCALE	1:500	CREATION DATE	2024-04-16
DRAWN BY	KPJ	DESIGN BY	KPJ
CHECKED BY	ES	APPROVED BY	IM

DWG. NO. 01 OF 01
REV. 1



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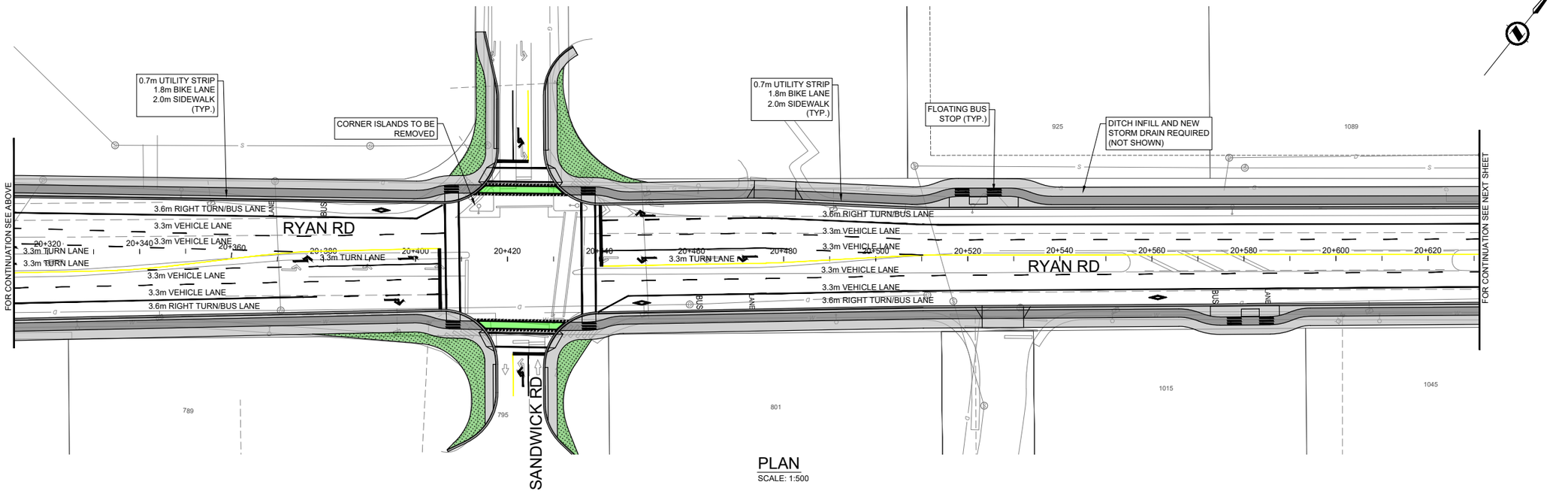

PLAN
SCALE: 1:500

GENERAL NOTES:

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PLOT DATE: April 16, 2024

REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPR'D
1	CONCEPT DESIGN	2024-04-16	KPJ	IM

City of Courtenay

ROAD WORKS

RYAN ROAD - LONG TERM UPGRADES

STA 20+000 TO STA 20+630

ISL
1051 Vancouver St, Victoria, BC V8V 3K3
T: (250)361-3230 F: (604)629-9756

1:500 0 10 30m

CONCEPT DESIGN

DESIGN NO. 33727

SCALE	1:500	CREATION DATE	2024-04-16
DRAWN BY	KPJ	DESIGN BY	KPJ
CHECKED BY	ES	APPROVED BY	IM

DWG. NO. 01 OF 02

REV. 1

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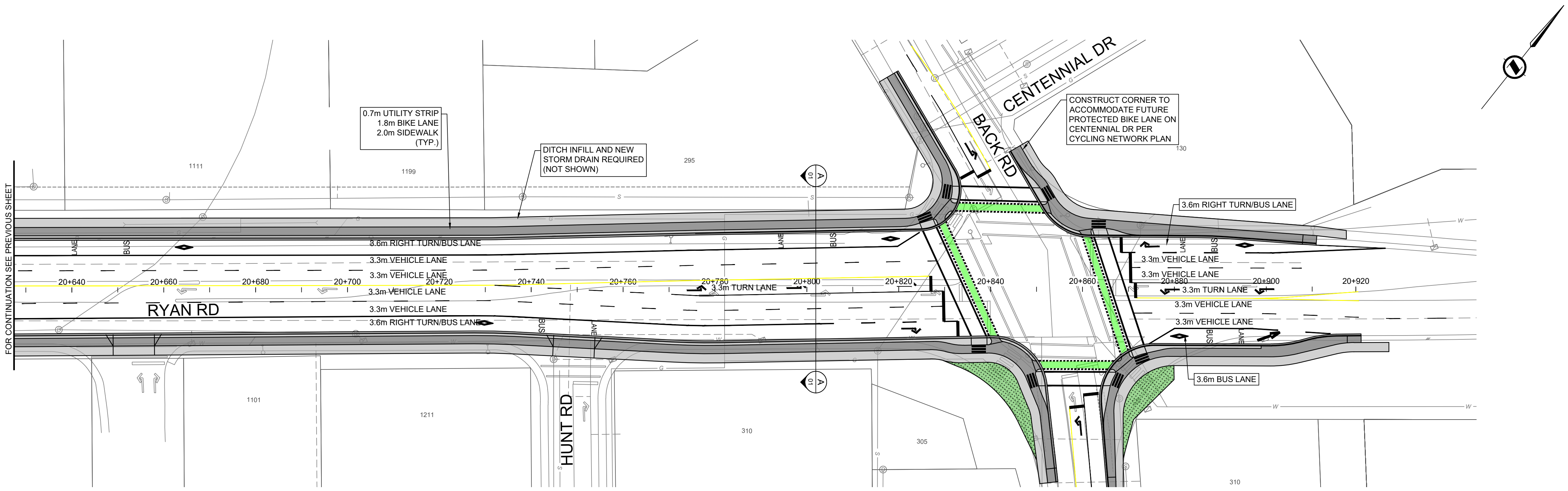

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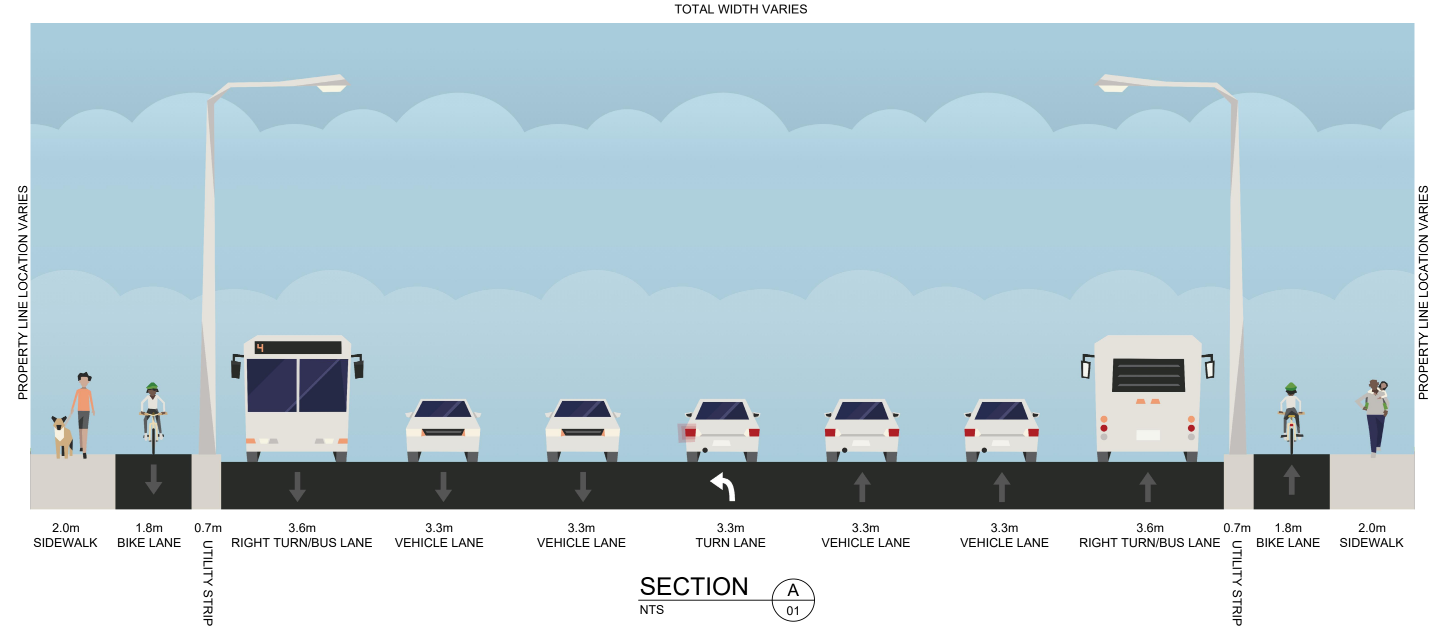

SECTION A/01
NTS

1:500 — 0 10 30m

GENERAL NOTES:

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PLOT DATE: April 16, 2024

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REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPR'D
1	CONCEPT DESIGN	2024-04-16	KPJ	IM

City of Courtenay

ROAD WORKS

RYAN ROAD - LONG TERM UPGRADES
STA 20+630 TO STA 20+920

ISL
1051 Vancouver St, Victoria, BC V8V 3K3
T: (250)361-3230 F: (604)629-5756

CONCEPT DESIGN — DESIGN NO. 33727

SCALE	1:500	CREATION DATE	2024-04-16
DRAWN BY	KPJ	DESIGN BY	KPJ
CHECKED BY	ES	APPROVED BY	IM

DWG. NO. 02 OF 02
REV. 1

Ryan Road AT Improvements

Class D Project Cost Estimate - Short Term Design

	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	AMOUNT
	TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING				
	Traffic Control and Traffic Management Plan	Lump Sum	1	$ 50,000.00	$ 50,000.00
	Mobilization/Demobilization	Lump Sum	1	$ 40,000.00	$ 40,000.00
	ENVIRONMENTAL PROTECTION				
	Environmental Protection	Lump Sum	1	$ 20,000.00	$ 20,000.00
	CONCRETE WALKS CURBS AND GUTTERS				
	Concrete Barrier Curb & Gutter c/w Granular Base	Lineal Metre	400	$ 350.00	$ 140,000.00
	Concrete Sidewalk c/w Granular Base	Square Metre	1000	$ 200.00	$ 200,000.00
	PRE CAST CONCRETE				
	Retaining Walls (0.5-1.5m Height) (Optional)	Square Metre	25	$ 1,000.00	$ 25,000.00
	ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION				
	Removals and Common Excavation	Lump sum	1	$ 80,000.00	$ 80,000.00
	HOT-MIX ASPHALT CONCRETE PAVING				
	Machine Laid Hot Mix Asphalt - 75mm Thickness	Tonne	120	$ 400.00	$ 48,000.00
	PERMANENT PAVEMENT MARKINGS				
	Permanent Thermoplastic and Paint Markings	Lump Sum	1	$ 10,000.00	$ 10,000.00
	MMA (Bike Boxes)	Square Metre	50	$ 400.00	$ 20,000.00
	STORM SEWER				
	PVC DR35 Main	Lineal Metre	275	$ 1,100	$ 302,500.00
	Storm Servicing and Misc. Infrastructure	Lump Sum	1	$ 40,000.00	$ 40,000.00
	Storm Tie-ins	Each	3	$ 5,000.00	$ 15,000.00
	MANHOLES AND CATCHBASINS				
	Manhole c/w Base, Risers, Frame, Barrel and Cover	Each	6	$ 10,000.00	$ 60,000.00
	Catchbasin c/w Frame, Cover, Leads, Tie-ins	Each	13	$ 6,000.00	$ 78,000.00
	Removal of Existing Storm Infrastructure	Lump Sum	1	$ 45,000.00	$ 45,000.00

	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	AMOUNT
	ELECTRICAL AND UTILITIES				
	Utility Relocation	Lump sum	1	$ 50,000.00	$ 50,000.00
	Light Pole Relocation or Replacement	Lump Sum	1	$ 75,000.00	$ 75,000.00
	New Signage and/or Relocation	Lump Sum	1	$ 10,000.00	$ 10,000.00
	Rapid Rectangular Flashing Beacons (Optional at Bus Stop)	Lump Sum	1	$ 10,000.00	$ 10,000.00
				Subtotal	**$ 1,318,500.00**
				Class D General Contingency Allowance (40%)	**$ 527,400.00**
				Allowance for Engineering (10%)	**$ 131,850.00**
				GRAND TOTAL ESTIMATE	**$ 1,977,750.00**

Advisory: This cost estimate has been developed based on both historical costs and project experience. ISL Engineering and Land Services Ltd. accepts no liability for any variance from the costs and quantities estimated during this project.

Assumptions and Notes:

1. This estimate was established based on conceptual designs only. Further refinement and accuracy will require conducting a topographic survey and detailed design.
2. Storm sewer costs are based on conceptual design only. Some details are assumed to be included in lump sum costs.
3. Need for retaining walls to be assessed further in detailed design. Included assumed quantity for costing purposes.

Ryan Road AT Improvements

Class D Project Cost Estimate - Long Term Design

	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	AMOUNT
	TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING				
	Traffic Control and Traffic Management Plan	Lump Sum	1	$ 200,000.00	$ 200,000.00
	Mobilization/Demobilization	Lump Sum	1	$ 150,000.00	$ 150,000.00
	ENVIRONMENTAL PROTECTION				
	Environmental Protection	Lump Sum	1	$ 50,000.00	$ 50,000.00
	CONCRETE WALKS CURBS AND GUTTERS				
	Concrete Barrier Curb & Gutter c/w Granular Base	Lineal Metre	2350	$ 350.00	$ 822,500.00
	Concrete Sidewalk c/w Granular Base	Square Metre	7250	$ 200.00	$ 1,450,000.00
	PRE CAST CONCRETE				
	Retaining Walls (0.5-1.5m Height) (Optional)	Lineal Metre	50	$ 1,000.00	$ 50,000.00
	ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION				
	Removals and Common Excavation	Lump sum	1	$ 520,000.00	$ 520,000.00
	HOT-MIX ASPHALT CONCRETE PAVING				
	Machine Laid Hot Mix Asphalt - 75mm Thickness	Tonne	800	$ 400.00	$ 320,000.00
	PERMANENT PAVEMENT MARKINGS				
	Eradication	Lump Sum	1	$ 50,000.00	$ 50,000.00
	Permanent Thermoplastic and Paint Markings	Lump Sum	1	$ 100,000.00	$ 100,000.00
	MMA (Green Conflict Paint)	Square Metre	350	$ 300.00	$ 105,000.00
	LANDSCAPING				
	Topsoil and Seed	Square Metre	1800	$ 50.00	$ 90,000.00
	UTILITIES				
	Drainage (Allowance)	Lump Sum	1	$ 820,000.00	$ 820,000.00
	Electrical, Traffic Signals, Light Poles, Utilities and Signage (Allowance)	Lump sum	1	$ 1,700,000.00	$ 1,700,000.00
	Rapid Rectangular Flashing Beacons (Optional at Bus Stops)	Lump sum	4	$ 10,000.00	$ 40,000.00
				Subtotal	**$ 6,567,500.00**
				Class D General Contingency Allowance (40%)	**$ 2,627,000.00**
				Allowance for Engineering (10%)	**$ 656,750.00**
				GRAND TOTAL ESTIMATE	**$ 9,851,250.00**

Advisory: This cost estimate has been developed based on both historical costs and project experience. ISL Engineering and Land Services Ltd. accepts no liability for any variance from the costs and quantities estimated during this project.

Assumptions and Notes:

1. This estimate was established based on conceptual designs only. Further refinement and accuracy will require conducting a topographic survey and detailed design.
2. Drainage is based on the short term design + additional catch basins and associated infrastructure. Assumed no new storm drain aside from between Back Rd and Sandwick Rd (not shown on drawings).
3. Need for retaining walls to be assessed further in detailed design. Included assumed quantity for costing purposes.

CITY OF COURTENAY
BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

DRAWING INDEX

Q:\2021-2264-00\civil\2264-00-c-001.dwg
DATE: 2022-05-20, Gerrit Aldenliesten

Associated Engineering

Platinum member

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. DHILLON

2022-05-24

PRELIMINARY/ FOR DISCUSSION
NOT FOR CONSTRUCTION

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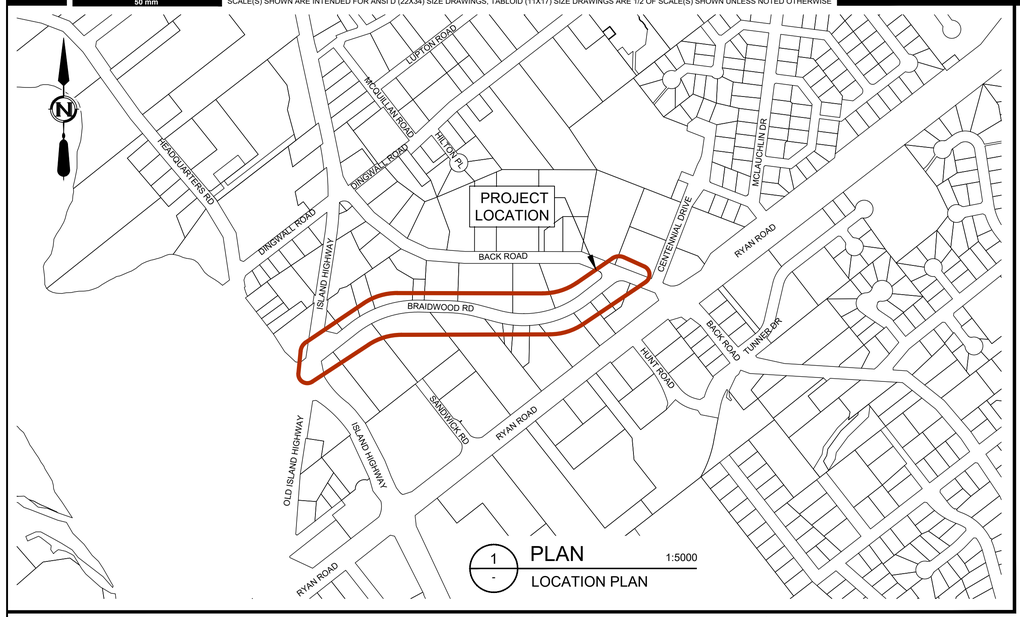
D	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
C	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
B	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN
A	2018NOV30	A.STEPHENSON	G.ALDERLIESTEN	40% DESIGN

DRAWING	REVISION	SHEET
2264-00-C-001	E	1 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE



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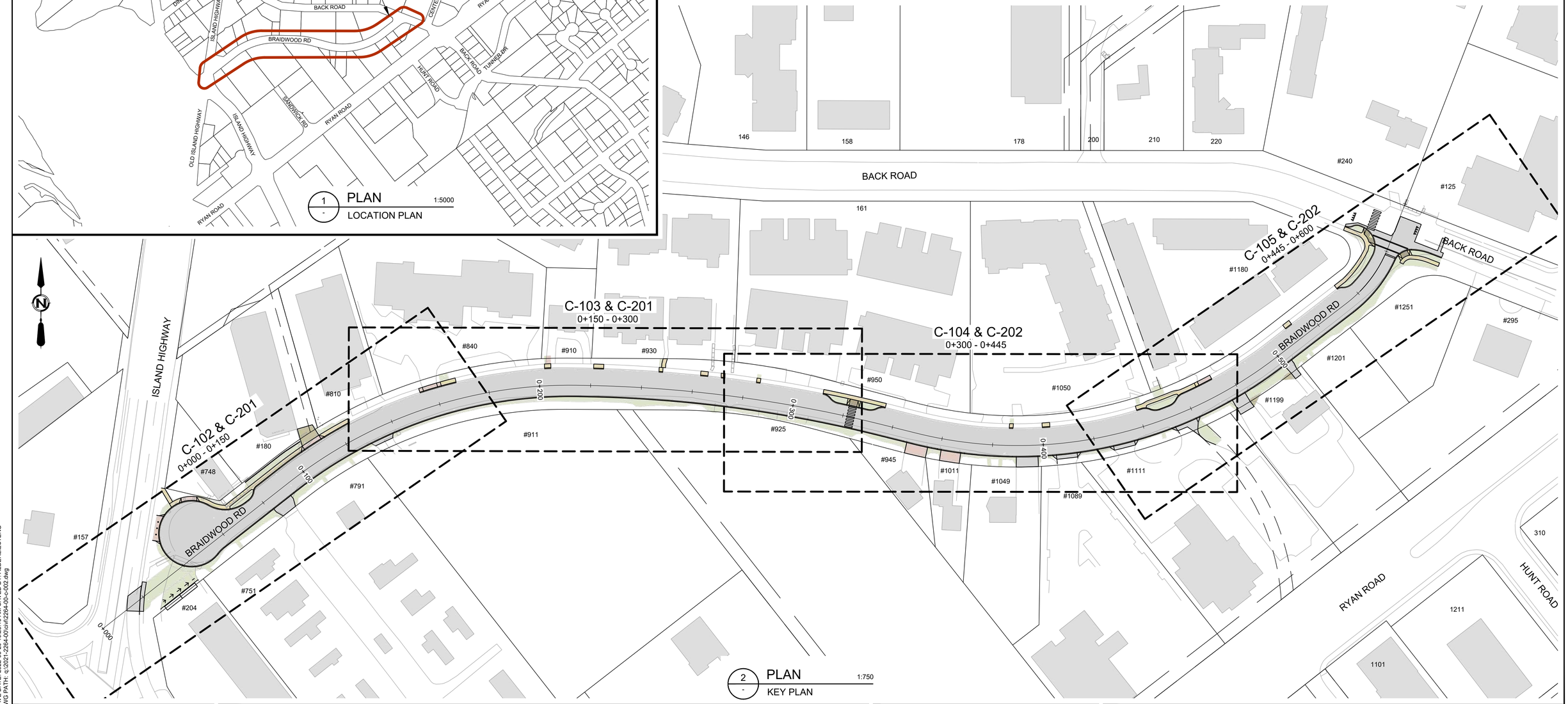
LOCATION PLAN



2 - PLAN 1:750
KEY PLAN

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Associated Engineering

BEST MANAGED COMPANIES Platinum member

CITY OF COURTENAY

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
E	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
D	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
C	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
B	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN
A	2018NOV30	A.STEPHENSON	G.ALDERLIESTEN	40% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:750

CIVIL
KEY PLAN & LOCATION PLAN

DRAWING	REVISION	SHEET
2264-00-C-002	E	2 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE

STANDARD SYMBOLS

COMMUNICATIONS

	EXISTING	DESIGN
CABLE MANHOLE	C	C
CABLE VAULT BOX	C	C
COMMUNICATIONS MANHOLE	T	T
COMMUNICATIONS PEDESTAL	T	T
COMMUNICATIONS VAULT BOX	T	T

GAS

METER	G	G
MANHOLE	G	G
VALVE BOX	G	G

POWER

GUY WIRE		
JUNCTION BOX	J	J
LAMP STANDARD		
MANHOLE	E	E
METER	M	M
POLE		
PULL BOX	PB	PB
TRANSFORMER PAD	TP	TP
TRANSFORMER VAULT MANHOLE	TM	TM
TRANSFORMER	TR	TR
VAULT / HYDRO BOX	E	E

ROAD

ONE POST SIGN		

SANITARY SEWER

CLEANOUT	CO	CO
DIRECTION OF FLOW ARROW		
FLUSH VALVE		
MANHOLE COMBINED	CS	CS
MANHOLE	S	S
SERVICE BOX	S	S

TOPO / MISCELLANEOUS

MAILBOX	MB	MB
SHRUB		
TREE		
TREE-CONIFEROUS		
TREE-DECIDIOUS		
UNIDENTIFIED MANHOLE	U	
TEST HOLE		
TEST PIT		

STORM DRAINAGE

	EXISTING	DESIGN
CATCH BASIN / MANHOLE	CB	CB
CATCH BASIN	CB	CB
CULVERT INLET	CI	CI
CULVERT OUTLET	CO	CO
DITCH INLET CB	DICB	DICB
DITCH		
DOUBLE CATCH BASIN	DCB	DCB
HEADWALL		
LAWN BASIN, MMCD TYPE 2	LB	LB
MANHOLE	D	D
SWALE		
SERVICE BOX	D	D

SURVEY

TEST PIT	TP
BORE HOLE	BH
HUB	HUB
IRON PIN (FOUND)	IPF
IRON PIN	IP
LEAD PLUG	LP
MONUMENT	MON

WATER

	EXISTING	DESIGN
45 DEGREE ELBOW		
90 DEGREE ELBOW		
COUPLING		
CROSS FLANGE		
ENCASEMENT		
END CAP		
FIRE HYDRANT	FH	FH
FLANGE		
GATE VALVE		
MANHOLE	W	W
METER	W	W
REDUCER		
TEE FLANGE		
THRUST BLOCK		
VAULT BOX	W	W

LINETYPES

	EXISTING	DESIGN
CABLE VISION		
CABLE SYSTEM	CATV	CATV
UNDERGROUND DUCTS	UC	UC
COMMUNICATIONS / TELEPHONE		
COMMUNICATIONS LINE	T T	T T
UNDERGROUND DUCTS	UT	UT
NATURAL GAS / OIL		
NATURAL GAS LINES	G G	G G
POWER / ELECTRICAL		
OVERHEAD LINES	OP	OP
UNDERGROUND DUCTS	UP	UP
SANITARY SEWER		
SANITARY LINES	SS	SS
STORM DRAINAGE		
STORM LINES	D D	D D
CULVERT	CP CP	CP CP
WATER		
IRRIGATION WATER LINE	IR IR	IR IR
WATER LINES	W W	W W
SURFACE FEATURES		
TOP OF BANK		
BOTTOM OF BANK		
DRAINAGE DEPRESSION / SWALE		
LOT BOUNDARIES		
EASEMENT		
RIGHT OF WAY		
STATUTORY RIGHT-OF-WAY		

ROAD	EXISTING	DESIGN
CONTROL LINE		
PAVEMENT EDGE		
CURB (ACTUAL WIDTH)		
MISCELLANEOUS FEATURES		
BUILDING		
FENCE	X X	X X
SILT FENCE	O O	O O
EXISTING WATER MAIN TO BE ABANDONED OR REMOVED	W W	
EXISTING SANITARY MAIN TO BE ABANDONED OR REMOVED	SS	
EXISTING STORM MAIN TO BE ABANDONED OR REMOVED	D D	

HATCH PATTERNS

- ASPHALT
- SIDEWALK, CONCRETE, 100 mm
- DRIVEWAY, CONCRETE, 150 mm
- DRIVEWAY, GRAVEL
- BOULEVARD

Associated Engineering

BEST MANAGED COMPANIES
Platinum member

CITY OF COURTENAY

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
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NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — M. DHILLON

2022-05-24

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D	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
C	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
B	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
A	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

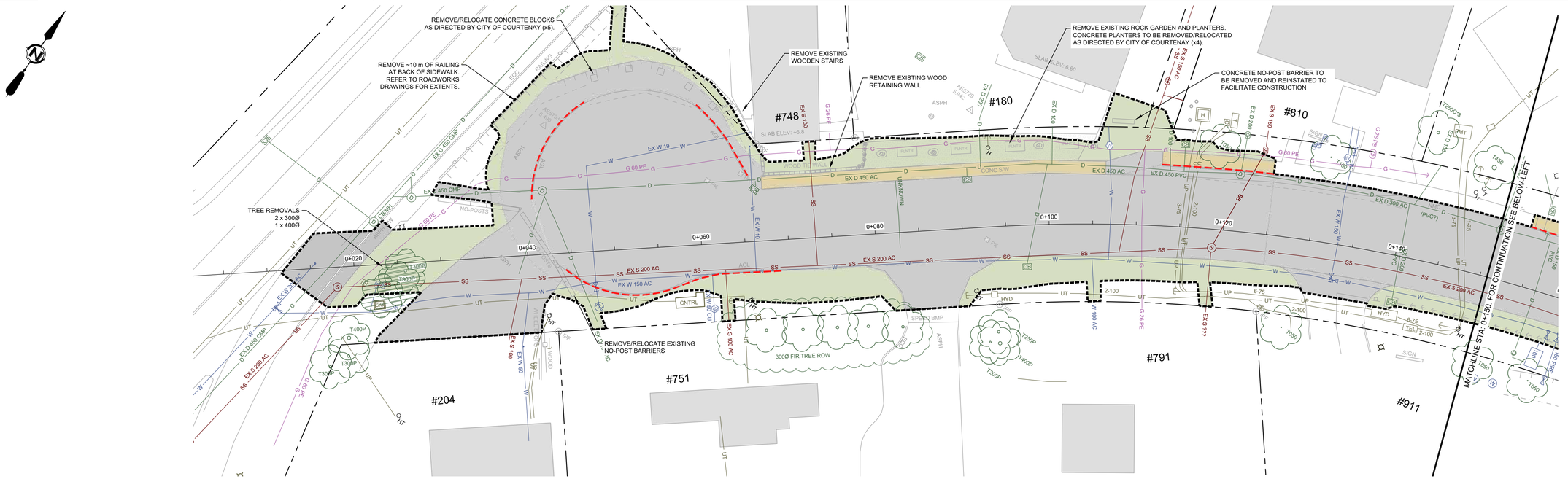
SCALE: AS SHOWN

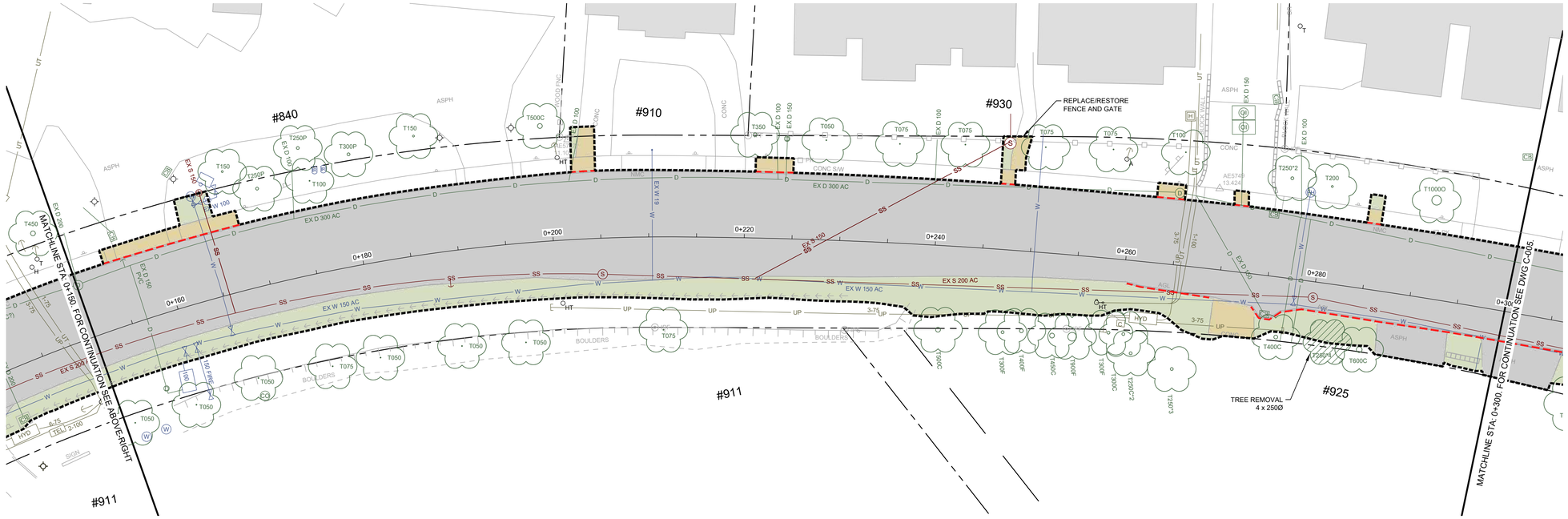
CIVIL
LEGEND

DRAWING	REVISION	SHEET
2264-00-C-003	D	3 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE





REMOVALS HATCH LEGEND

- APPROXIMATE CONSTRUCTION BOUNDARY
- ASPHALT ROADWAY AND DRIVEWAY REMOVAL
- CONCRETE SIDEWALK AND DRIVEWAY REMOVAL
- STRIPPING, CLEARING AND GRUBBING
- CURB (CONCRETE OR ASPHALT)
- TREE REMOVAL

Q:\2021-2264-00\civil\2264-00-c-004-005.dwg
DATE: 2022-05-20, Gerrit Aldenliesten

Associated Engineering

BEST MANAGED COMPANIES Platinum member

CITY OF COURTENAY

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

M. DHILLON — PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
C	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
B	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
A	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

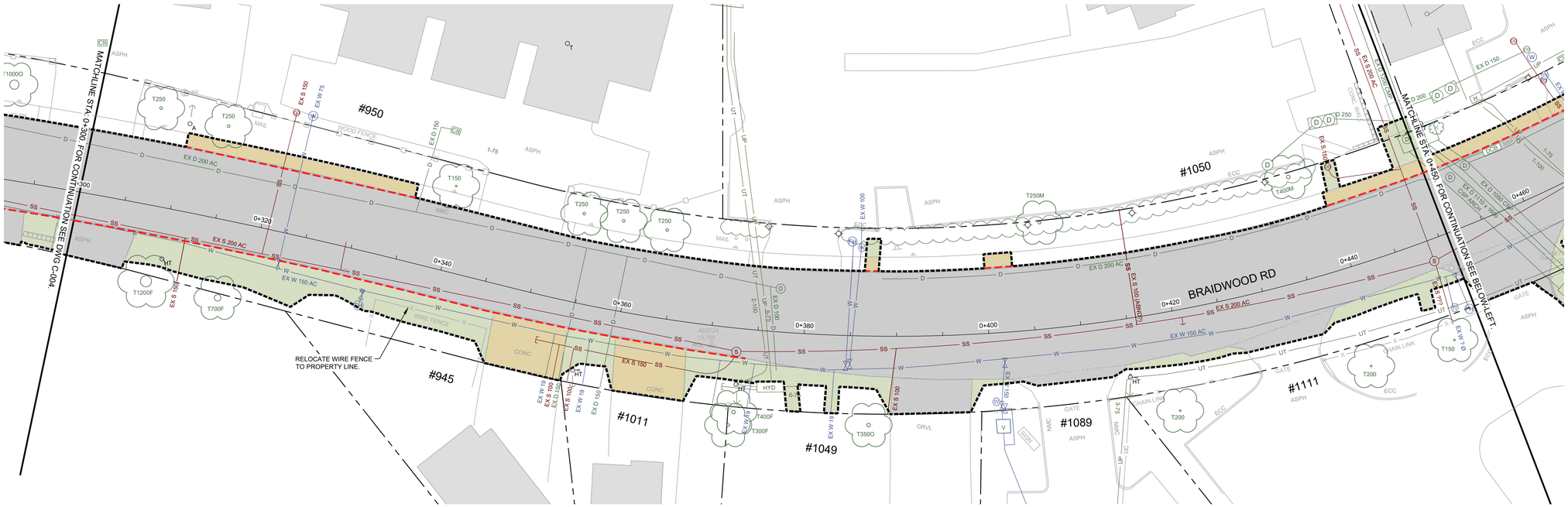
SCALE: 1:250

CIVIL
SURFACE DEMOLITION PLAN
STA: 0+000 TO 0+300

DRAWING	REVISION	SHEET
2264-00-C-004	C	4 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE



REMOVALS HATCH LEGEND

- APPROXIMATE CONSTRUCTION BOUNDARY
- ASPHALT ROADWAY AND DRIVEWAY REMOVAL
- CONCRETE SIDEWALK AND DRIVEWAY REMOVAL
- STRIPPING, CLEARING AND GRUBBING
- CURB (CONCRETE OR ASPHALT)
- TREE REMOVAL

O:\2021-2264-00\civil\2264-00-c-004-005.dwg
DATE: 2022-05-20, Gerrit Alderliesten

Associated Engineering

BEST MANAGED COMPANIES Platinum member

CITY OF COURTENAY

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PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
C	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
B	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
A	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250

CIVIL
SURFACE DEMOLITION PLAN
STA: 0+300 TO 0+600

DRAWING	REVISION	SHEET
2264-00-C-005	C	5 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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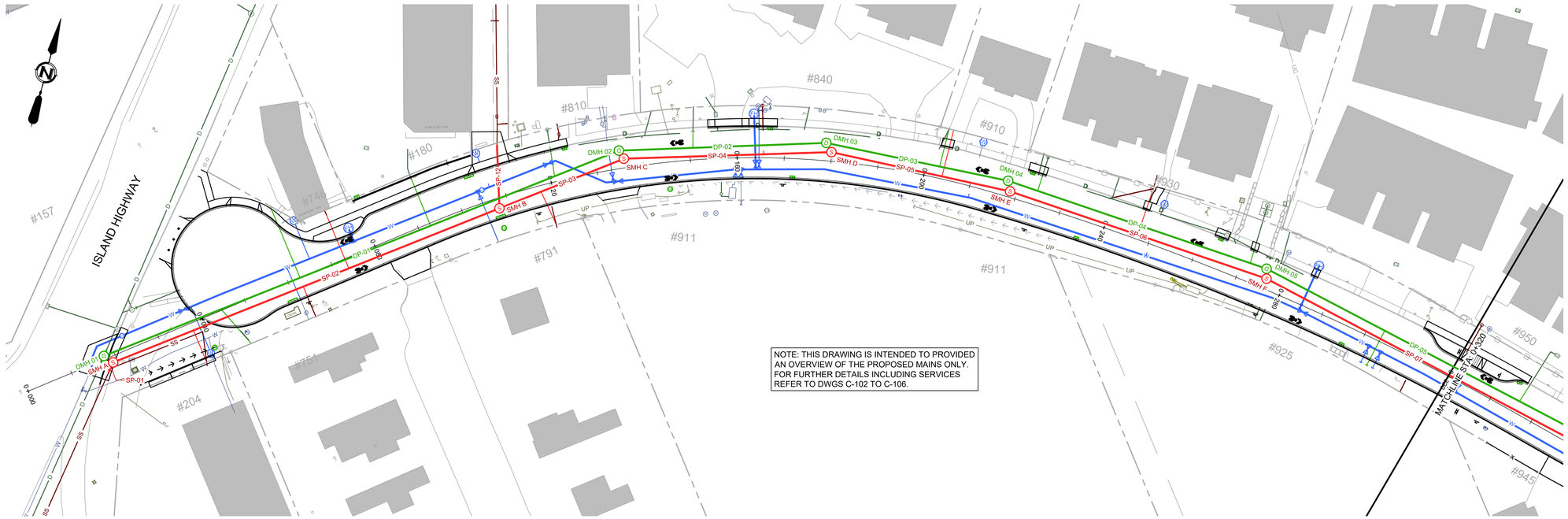
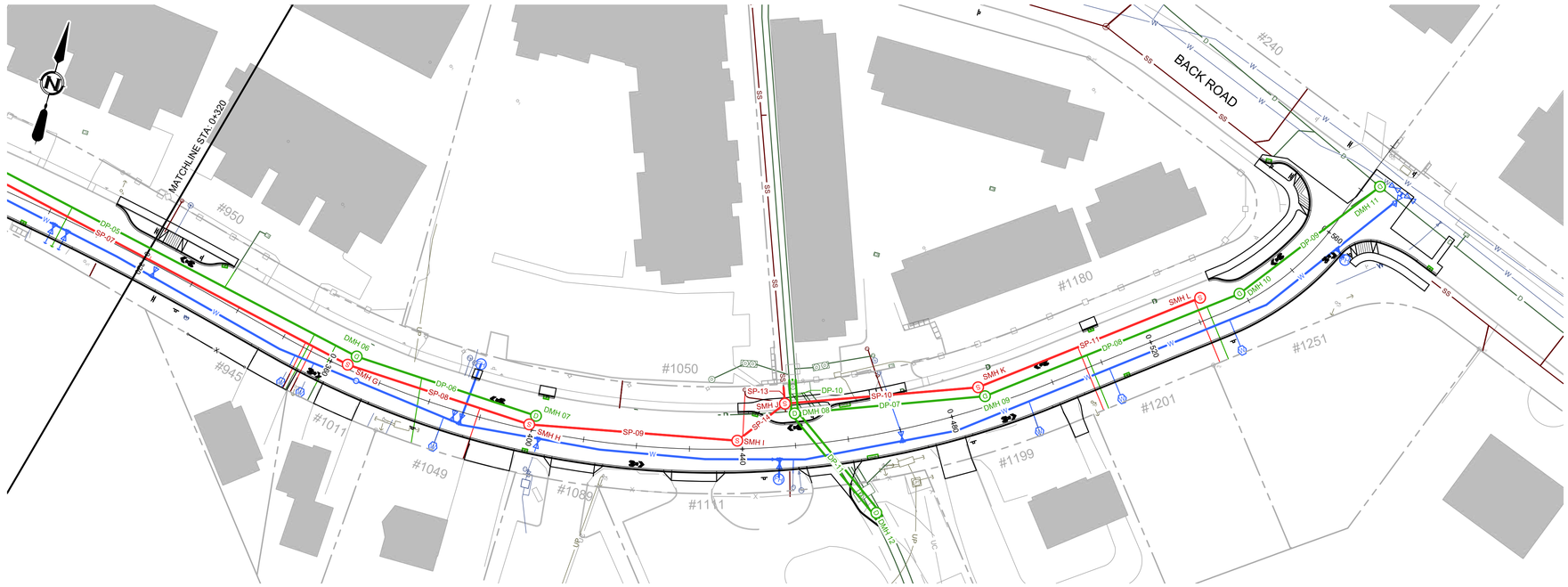


NOTE: THIS DRAWING IS INTENDED TO PROVIDED AN OVERVIEW OF THE PROPOSED MAINS ONLY. FOR FURTHER DETAILS INCLUDING SERVICES REFER TO DWGS C-102 TO C-106.



SANITARY STRUCTURE TABLE				
NAME	SIZE	RIM	INVERT IN	INVERT OUT
SMH A	1200 Ø	7.152	3.047 NE (250 Ø)	3.022 S (250 Ø)
SMH B	1200 Ø	5.881	3.803 N (150 Ø) 3.318 N (150 Ø) 3.298 NE (250 Ø)	3.268 SW (250 Ø)
SMH C	1200 Ø	6.469	4.460 E (200 Ø) 5.303 E (200 Ø)	3.369 SW (250 Ø)
SMH D	1050 Ø	9.268	7.460 E (200 Ø)	7.430 W (200 Ø)
SMH E	1050 Ø	11.439	9.503 E (200 Ø)	9.478 W (200 Ø)
SMH F	1200 Ø	13.463	9.701 E (200 Ø)	9.676 W (200 Ø)
SMH G	1200 Ø	13.943	9.987 E (200 Ø)	9.962 W (200 Ø)
SMH H	1200 Ø	13.449	10.120 E (200 Ø)	10.095 W (200 Ø)
SMH I	1050 Ø	12.416	10.263 NE (200 Ø)	10.238 W (200 Ø)
SMH J	1050 Ø	12.434	10.347 N (200 Ø) 10.375 E (200 Ø)	10.297 SW (200 Ø)
SMH K	1050 Ø	12.310	10.625 NE (200 Ø)	10.595 W (200 Ø)
SMH L	1050 Ø	13.213		10.984 SW (200 Ø)

SANITARY PIPE TABLE				
NAME	SIZE	LENGTH	SLOPE	MATERIAL
SP-01	250 Ø	2.14 m	0.30%	PVC SDR35
SP-02	250 Ø	88.56 m	0.25%	PVC SDR35
SP-03	250 Ø	28.51 m	0.25%	PVC SDR35
SP-04	200 Ø	44.24 m	6.71%	PVC SDR35
SP-05	200 Ø	38.95 m	5.18%	PVC SDR35
SP-06	200 Ø	57.67 m	0.30%	PVC SDR35
SP-07	200 Ø	87.11 m	0.30%	PVC SDR35
SP-08	200 Ø	35.98 m	0.30%	PVC SDR35
SP-09	200 Ø	39.29 m	0.30%	PVC SDR35
SP-10	200 Ø	36.51 m	0.60%	PVC SDR35
SP-11	200 Ø	45.06 m	0.80%	PVC SDR35
SP-12	150 Ø	13.36 m	1.00%	PVC SDR35
SP-13	200 Ø	3.08 m	2.00%	PVC SDR35
SP-14	200 Ø	11.35 m	0.30%	PVC SDR35

DRAIN STRUCTURE TABLE				
NAME	SIZE	RIM	INVERT IN	INVERT OUT
DMH 01	1800 Ø	6.806	4.262 N (450 Ø) 4.274 NE (750 Ø)	4.244 S (450 Ø)
DMH 02	1350 Ø	6.385	5.003 E (375 Ø)	4.628 SW (750 Ø)
DMH 03	1200 Ø	9.160	7.016 E (375 Ø)	6.858 W (375 Ø)
DMH 04	1200 Ø	11.334	9.354 E (375 Ø)	9.294 W (375 Ø)
DMH 05	1200 Ø	13.413	10.883 E (375 Ø)	10.808 W (375 Ø)
DMH 06	1050 Ø	13.884	11.699 E (300 Ø)	11.594 W (375 Ø)
DMH 07	1050 Ø	13.384		12.055 W (300 Ø)
DMH 08	2400 Ø	12.369	10.741 N (1200 Ø) 10.394 E (525 Ø)	10.196 SE (1200 Ø)
DMH 09	1200 Ø	12.360	10.901 NE (450 Ø)	10.826 W (525 Ø)
DMH 10	1200 Ø	13.506	11.836 NE (375 Ø)	11.631 SW (450 Ø)
DMH 11	1500 Ø	15.091	13.416 NW (200 Ø) 13.418 SE (300 Ø)	13.335 SW (375 Ø)
DMH 12	1200 Ø	11.705	9.143 NW (1200 Ø)	9.143 SE (1200 Ø)

DRAIN PIPE TABLE				
NAME	SIZE	LENGTH	SLOPE	MATERIAL
DP-01	750 Ø	118.06 m	0.30%	ADS HP
DP-02	375 Ø	44.20 m	4.20%	PVC SDR35
DP-03	375 Ø	39.58 m	5.76%	PVC SDR35
DP-04	375 Ø	58.11 m	2.50%	PVC SDR35
DP-05	375 Ø	88.87 m	0.80%	PVC SDR35
DP-06	300 Ø	35.56 m	1.00%	PVC SDR35
DP-07	525 Ø	35.97 m	1.20%	PVC SDR35
DP-08	450 Ø	51.64 m	1.41%	PVC SDR35
DP-09	375 Ø	33.26 m	4.51%	PVC SDR35
DP-10	1200 Ø	6.30 m	3.40%	CMP
DP-11	1200 Ø	24.21 m	4.35%	CONC C76

PLOT DATE: 2022-05-20 12:21:28 PM
SAVE DATE: 2022-05-20 10:27:26 AM SAVED BY: ALDERLIESTENG
DWG PATH: q:\2021-2264-00\civil\2264-00-c-101.dwg

Associated Engineering

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Platinum member

CITY OF COURTENAY

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PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

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D	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
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B	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
A	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. DHILLON

2022-05-24

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:500

CIVIL
UTILITY OVERVIEW PLAN

DRAWING	REVISION	SHEET
2264-00-C-101	D	6 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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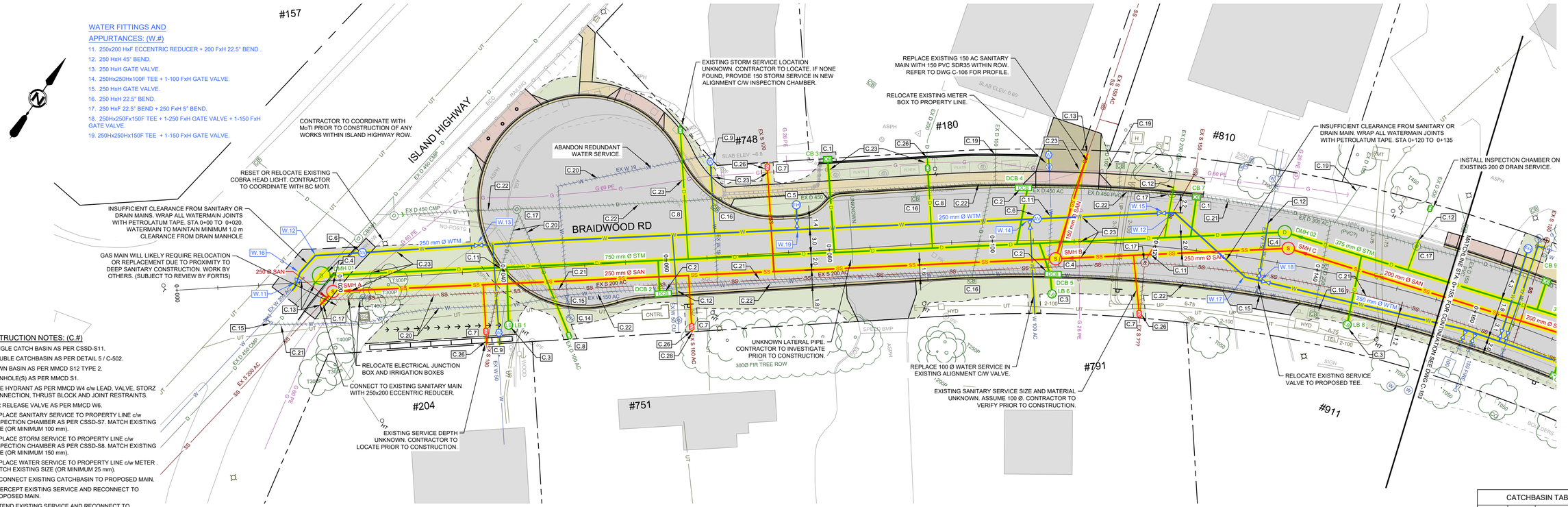
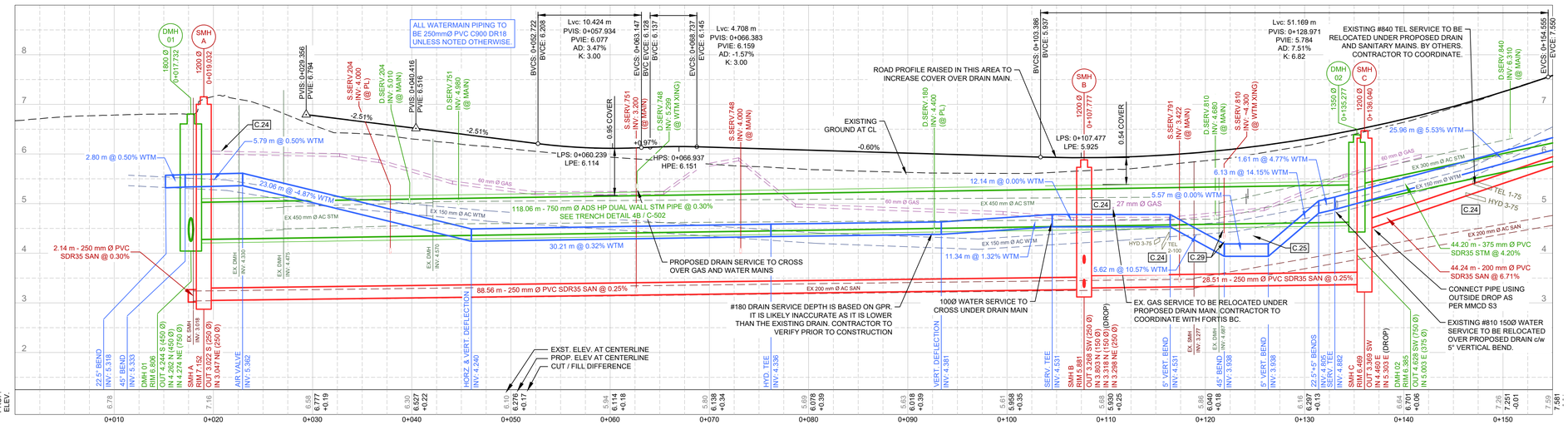


CONSTRUCTION NOTES: (C.#)

1. SINGLE CATCH BASIN AS PER CSSD-S11.
2. DOUBLE CATCHBASIN AS PER DETAIL 5 / C-502.
3. LAWN BASIN AS PER MMCD S12 TYPE 2.
4. MANHOLE(S) AS PER MMCD S1.
5. FIRE HYDRANT AS PER MMCD W4 c/w LEAD, VALVE, STORZ CONNECTION, THRUST BLOCK AND JOINT RESTRAINTS.
6. AIR RELEASE VALVE AS PER MMCD W6.
7. REPLACE SANITARY SERVICE TO PROPERTY LINE c/w INSPECTION CHAMBER AS PER CSSD-S7. MATCH EXISTING SIZE (OR MINIMUM 100 mm).
8. REPLACE STORM SERVICE TO PROPERTY LINE c/w INSPECTION CHAMBER AS PER CSSD-S8. MATCH EXISTING SIZE (OR MINIMUM 150 mm).
9. REPLACE WATER SERVICE TO PROPERTY LINE c/w METER . MATCH EXISTING SIZE (OR MINIMUM 25 mm).
10. RECONNECT EXISTING CATCHBASIN TO PROPOSED MAIN.
11. INTERCEPT EXISTING SERVICE AND RECONNECT TO PROPOSED MAIN.
12. EXTEND EXISTING SERVICE AND RECONNECT TO PROPOSED MAIN. MATCH EXISTING SIZE.
13. CONNECTION TO EXISTING MAIN. CONTRACTOR TO VERIFY AND RECORD EXISTING LOCATION AND DEPTH PRIOR TO CONSTRUCTION. SUBMIT SEWER AND DRAIN CONNECTION SHOP DRAWINGS FOR REVIEW. BYPASS PUMPING MAY BE REQUIRED FOR SEWER OR DRAIN.
14. REMOVE EXISTING HYDRANT AND DISPOSE OFFSITE. EXISTING LEAD TO BE CAPPED OR PLUGGED WATERTIGHT.
15. REMOVE EXISTING VALVE BOX(ES) AND RISER(S) AND DISPOSE OFFSITE. VALVE(S) TO BE LEFT IN CLOSED POSITION.
16. REMOVE EXISTING CATCHBASIN AND DISPOSE OFFSITE. CAP ALL EXPOSED PIPE ENDS.
17. REMOVE EXISTING MANHOLE(S) OR CLEANOUT(S) AND DISPOSE OFFSITE. CAP ALL EXPOSED PIPE ENDS.
18. ABANDON EXISTING MANHOLE IN PLACE. REFER TO DETAIL 3 / C-502.
19. ASSUMED EXISTING SERVICE IS ABANDONED. CONTRACTOR TO CONFIRM PRIOR TO CONSTRUCTION.
20. ABANDON EXISTING PIPE IN PLACE. CAP EXPOSED ENDS.
21. ABANDON EXISTING PIPE IN PLACE AND FILL COMPLETELY WITH CONTROL DENSITY FILL (CDF). CAP EXPOSED ENDS.
22. REMOVE EXISTING PIPE. CAP EXPOSED ENDS.
23. CAUTION! PROPOSED STRUCTURE OR PIPE CROSSES OR IS IN CLOSE PROXIMITY TO GAS LINE. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
24. DEPTH OF CROSSING IS UNCERTAIN. EXPOSE PRIOR TO CONSTRUCTION TO CONFIRM LOCATION, SIZE, AND ELEVATION.
25. VERTICAL SEPARATION LESS THAN 450 mm. WRAP WATERMAIN JOINTS WITH PETROLATUM TAPE 3.0 m EACH SIDE OF CROSSING.
26. CONTRACTOR TO CONFIRM DEPTH OF SERVICE PRIOR TO CONSTRUCTION.
27. CITY OF COURTENAY TO REVIEW CONDITION OF EXISTING HYDRANT PRIOR TO CONSTRUCTION TO CONFIRM NEED FOR REPLACEMENT. CONTRACTOR TO COORDINATE.
28. SERVICE DEPTH CRITICAL. REDUCE PIPE SLOPE TO 1.0% IF REQUIRED.
29. IF VERTICAL SEPARATION LESS THAN 150 mm FILL SEPARATION SPACE WITH CONTROL DENSITY FILL (CDF) TO SPRINGLINE OF BOTH PIPES.

NOTE TYPE KEY

NOTE	SPECIFIC CONSTRUCTION NOTE
C.1	STANDARD CONSTRUCTION NOTE
W.1	WATER FITTING NOTE



CATCHBASIN TABLE		
NAME	RIM	INVERTS
CB 3	5.682	5.182 OUT (200 Ø)
CB 7	5.900	5.100 OUT (200 Ø)
DCB 2	5.961	5.161 OUT (200 Ø)
DCB 4	5.695	4.995 OUT (200 Ø)
DCB 5	5.828	5.028 OUT (200 Ø) 5.078 IN (150 Ø)
LB 1	6.100	5.500 OUT (150 Ø)
LB 6	5.664	5.121 OUT (150 Ø)
LB 8	6.825	6.225 OUT (150 Ø)

CATCHBASIN LEAD TABLE			
NAME	SIZE	LENGTH	SLOPE
CBL-1	150 Ø	7.084 m	2.00%
CBL-2	200 Ø	3.895 m	2.00%
CBL-3	200 Ø	11.099 m	2.00%
CBL-4	200 Ø	6.832 m	2.00%
CBL-5	200 Ø	3.909 m	2.00%
CBL-6	150 Ø	2.140 m	2.00%
CBL-7	200 Ø	5.212 m	2.00%
CBL-8	150 Ø	8.594 m	2.00%

Q:\2021-2264-00\civil\2264-00-C-102-106.dwg
DATE: 2022-05-20, Gerrit Abdellatesten

Associated Engineering
BEST MANAGED COMPANIES Platinum member

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
E	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
D	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
C	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
B	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN
A	2018NOV30	A.STEPHENSON	G.ALDERLIESTEN	40% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250 (H), 1:50 (V)

CIVIL
UTILITY PLAN AND PROFILE
STA: 0+000 TO 0+155

DRAWING	REVISION	SHEET
2264-00-C-102	E	7 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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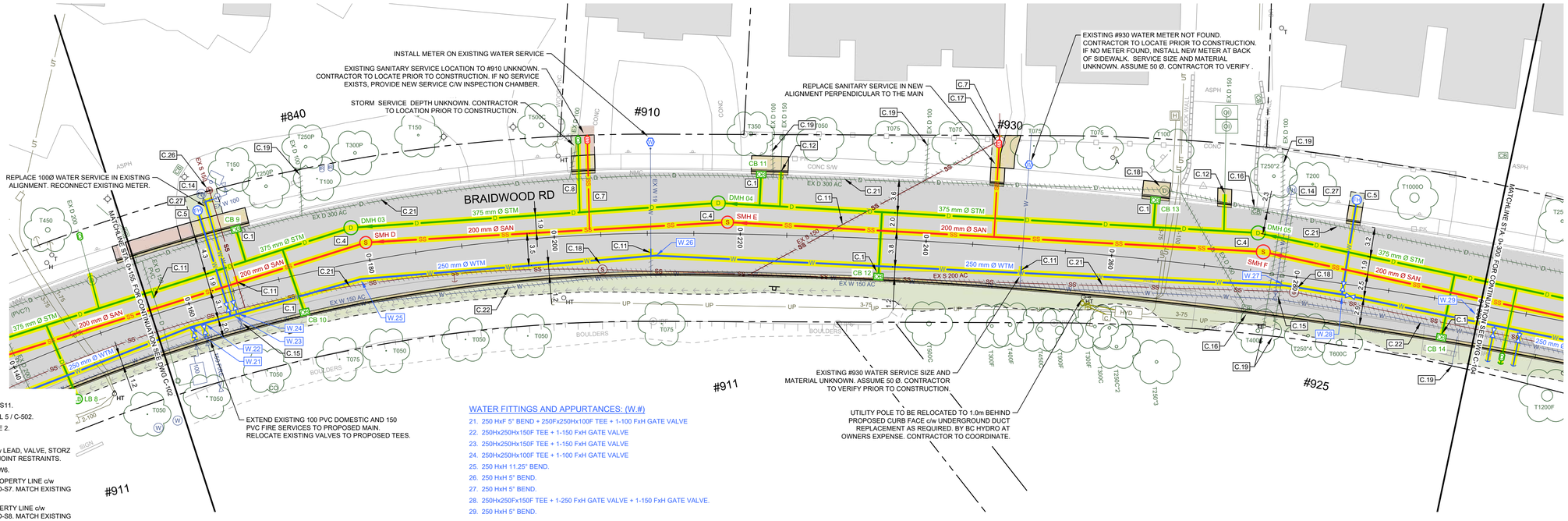

CONSTRUCTION NOTES: (C.#)

1. SINGLE CATCH BASIN AS PER CSSD-S11.
2. DOUBLE CATCHBASIN AS PER DETAIL 5 / C-502.
3. LAWN BASIN AS PER MMCD S12 TYPE 2.
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10. RECONNECT EXISTING CATCHBASIN TO PROPOSED MAIN.
11. INTERCEPT EXISTING SERVICE AND RECONNECT TO PROPOSED MAIN.
12. EXTEND EXISTING SERVICE AND RECONNECT TO PROPOSED MAIN. MATCH EXISTING SIZE.
13. CONNECTION TO EXISTING MAIN. CONTRACTOR TO VERIFY AND RECORD EXISTING LOCATION AND DEPTH PRIOR TO CONSTRUCTION. SUBMIT SEWER AND DRAIN CONNECTION SHOP DRAWINGS FOR REVIEW. BYPASS PUMPING MAY BE REQUIRED FOR SEWER OR DRAIN.
14. REMOVE EXISTING HYDRANT AND DISPOSE OFFSITE. EXISTING LEAD TO BE CAPPED OR PLUGGED WATERTIGHT.
15. REMOVE EXISTING VALVE BOX(ES) AND RISER(S) AND DISPOSE OFFSITE. VALVE(S) TO BE LEFT IN CLOSED POSITION.
16. REMOVE EXISTING CATCHBASIN AND DISPOSE OFFSITE. CAP ALL EXPOSED PIPE ENDS.
17. REMOVE EXISTING MANHOLE(S) OR CLEANOUT(S) AND DISPOSE OFFSITE. CAP ALL EXPOSED PIPE ENDS.
18. ABANDON EXISTING MANHOLE IN PLACE. REFER TO DETAIL 3 / C-502.
19. ASSUMED EXISTING SERVICE IS ABANDONED. CONTRACTOR TO CONFIRM PRIOR TO CONSTRUCTION.
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23. CAUTION! PROPOSED STRUCTURE OR PIPE CROSSES OR IS IN CLOSE PROXIMITY TO GAS LINE. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
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28. SERVICE DEPTH CRITICAL. REDUCE PIPE SLOPE TO 1.0% IF REQUIRED.
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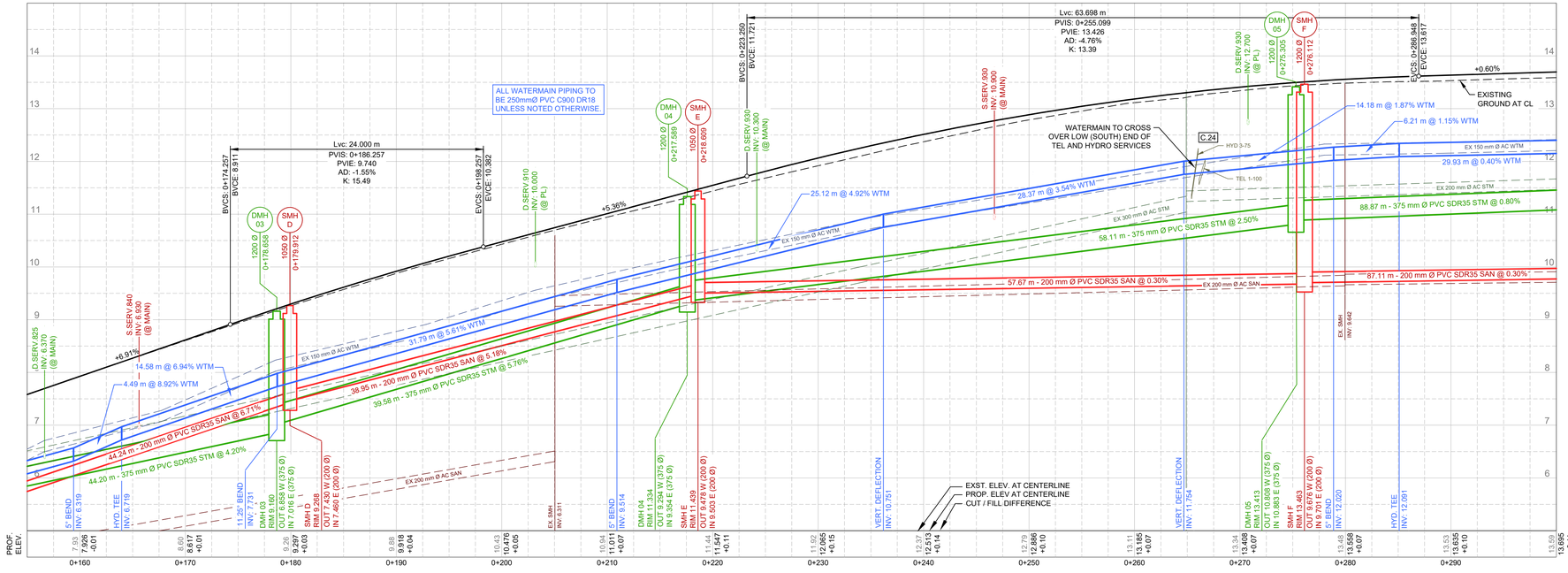
NOTE TYPE KEY

NOTE	SPECIFIC CONSTRUCTION NOTE
C.1	STANDARD CONSTRUCTION NOTE
W.1	WATER FITTING NOTE

WATER FITTINGS AND APPURTANCES: (W.#)

21. 250 HxF 5° BEND + 250Fx250Hx100F TEE + 1-100 FxH GATE VALVE
22. 250Hx250Hx150F TEE + 1-150 FxH GATE VALVE
23. 250Hx250Hx150F TEE + 1-150 FxH GATE VALVE
24. 250Hx250Hx100F TEE + 1-100 FxH GATE VALVE
25. 250 HxH 11.25° BEND.
26. 250 HxH 5° BEND.
27. 250 HxH 5° BEND.
28. 250Hx250Fx150F TEE + 1-250 FxH GATE VALVE + 1-150 FxH GATE VALVE.
29. 250 HxH 5° BEND.



CATCHBASIN TABLE		
NAME	RIM	INVERTS
CB 9	8.270	7.270 OUT (200 Ø)
CB 10	8.653	7.853 OUT (200 Ø)
CB 11	11.471	10.471 OUT (200 Ø)
CB 12	12.205	11.405 OUT (200 Ø)
CB 13	13.143	12.142 OUT (200 Ø)
CB 14	13.578	12.778 OUT (200 Ø)

CATCHBASIN LEAD TABLE			
NAME	SIZE	LENGTH	SLOPE
CBL-9	200 Ø	3.928 m	2.00%
CBL-10	200 Ø	7.406 m	2.00%
CBL-11	200 Ø	3.641 m	2.00%
CBL-12	200 Ø	7.285 m	2.00%
CBL-13	200 Ø	3.219 m	1.99%
CBL-14	200 Ø	7.205 m	2.00%

Q:\2021-2264-00\civil\2264-00-C-102-106.dwg
DATE: 2022-05-20, Gerrit Aderhiesen

Associated Engineering
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Engineers & Geoscientists BC

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON
2022-05-24

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D	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
C	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
B	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN
A	2018NOV30	A.STEPHENSON	G.ALDERLIESTEN	40% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

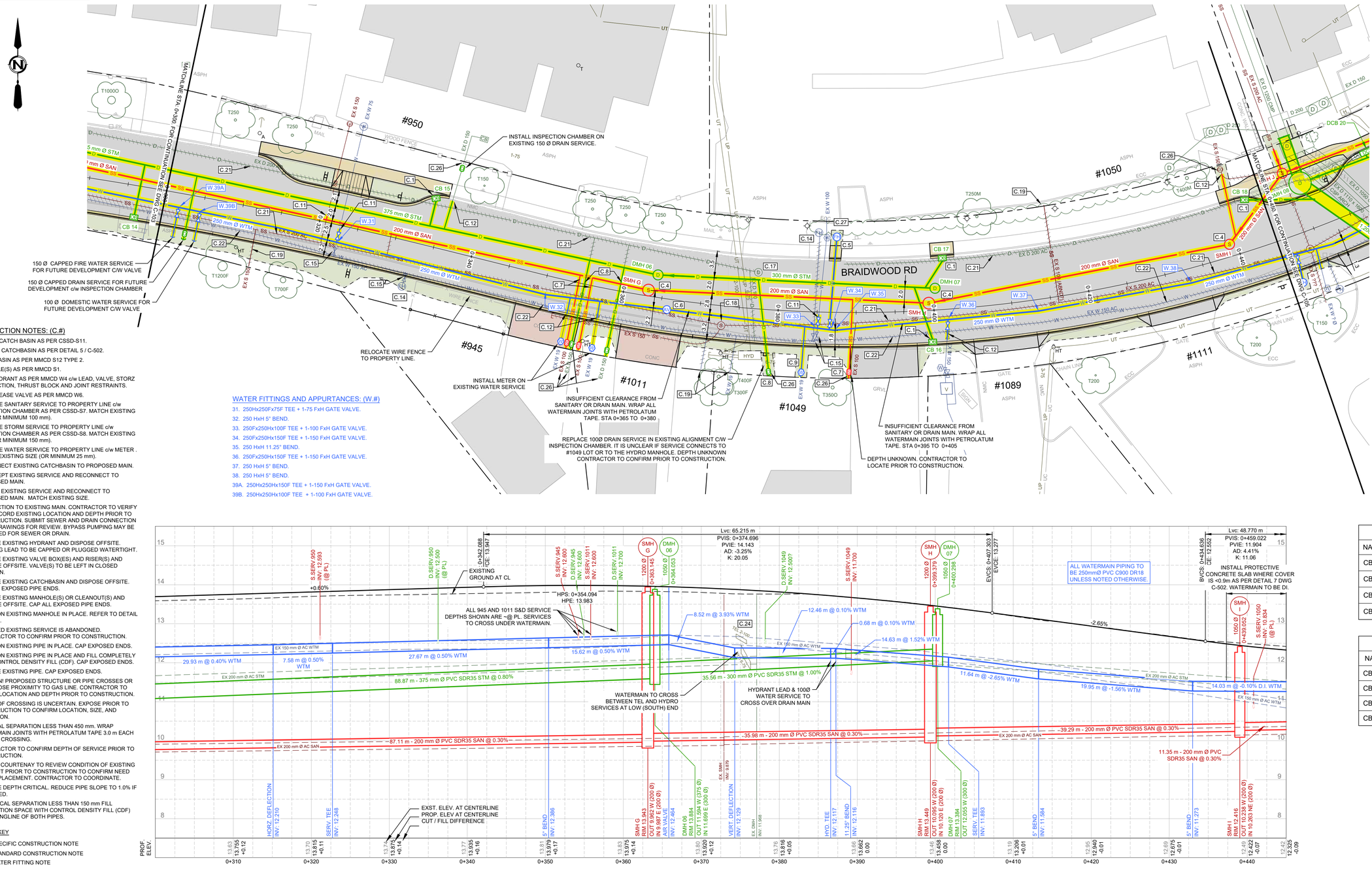
SCALE: 1:250 (H), 1:50 (V)

CIVIL
UTILITY PLAN AND PROFILE
STA: 0+155 TO 0+300

DRAWING	REVISION	SHEET
2264-00-C-103	E	8 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE



CONSTRUCTION NOTES: (C.#)

1. SINGLE CATCH BASIN AS PER CSSD-S11.
2. DOUBLE CATCHBASIN AS PER DETAIL 5 / C-502.
3. LAWN BASIN AS PER MMCD S12 TYPE 2.
4. MANHOLE(S) AS PER MMCD S1.
5. FIRE HYDRANT AS PER MMCD W4 c/w LEAD, VALVE, STORZ CONNECTION, THRUST BLOCK AND JOINT RESTRAINTS.
6. AIR RELEASE VALVE AS PER MMCD W6.
7. REPLACE SANITARY SERVICE TO PROPERTY LINE c/w INSPECTION CHAMBER AS PER CSSD-S7. MATCH EXISTING SIZE (OR MINIMUM 100 mm).
8. REPLACE STORM SERVICE TO PROPERTY LINE c/w INSPECTION CHAMBER AS PER CSSD-S8. MATCH EXISTING SIZE (OR MINIMUM 150 mm).
9. REPLACE WATER SERVICE TO PROPERTY LINE c/w METER . MATCH EXISTING SIZE (OR MINIMUM 25 mm).
10. RECONNECT EXISTING CATCHBASIN TO PROPOSED MAIN.
11. INTERCEPT EXISTING SERVICE AND RECONNECT TO PROPOSED MAIN.
12. EXTEND EXISTING SERVICE AND RECONNECT TO PROPOSED MAIN. MATCH EXISTING SIZE.
13. CONNECTION TO EXISTING MAIN. CONTRACTOR TO VERIFY AND RECORD EXISTING LOCATION AND DEPTH PRIOR TO CONSTRUCTION. SUBMIT SEWER AND DRAIN CONNECTION SHOP DRAWINGS FOR REVIEW. BYPASS PUMPING MAY BE REQUIRED FOR SEWER OR DRAIN.
14. REMOVE EXISTING HYDRANT AND DISPOSE OFFSITE. EXISTING LEAD TO BE CAPPED OR PLUGGED WATERTIGHT.
15. REMOVE EXISTING VALVE BOX(ES) AND RISER(S) AND DISPOSE OFFSITE. VALVE(S) TO BE LEFT IN CLOSED POSITION.
16. REMOVE EXISTING CATCHBASIN AND DISPOSE OFFSITE. CAP ALL EXPOSED PIPE ENDS.
17. REMOVE EXISTING MANHOLE(S) OR CLEANOUT(S) AND DISPOSE OFFSITE. CAP ALL EXPOSED PIPE ENDS.
18. ABANDON EXISTING MANHOLE IN PLACE. REFER TO DETAIL 3 / C-502.
19. ASSUMED EXISTING SERVICE IS ABANDONED. CONTRACTOR TO CONFIRM PRIOR TO CONSTRUCTION.
20. ABANDON EXISTING PIPE IN PLACE. CAP EXPOSED ENDS.
21. ABANDON EXISTING PIPE IN PLACE AND FILL COMPLETELY WITH CONTROL DENSITY FILL (CDF). CAP EXPOSED ENDS.
22. REMOVE EXISTING PIPE. CAP EXPOSED ENDS.
23. CAUTION! PROPOSED STRUCTURE OR PIPE CROSSES OR IS IN CLOSE PROXIMITY TO GAS LINE. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
24. DEPTH OF CROSSING IS UNCERTAIN. EXPOSE PRIOR TO CONSTRUCTION TO CONFIRM LOCATION, SIZE, AND ELEVATION.
25. VERTICAL SEPARATION LESS THAN 450 mm. WRAP WATERMAIN JOINTS WITH PETROLATUM TAPE 3.0 m EACH SIDE OF CROSSING.
26. CONTRACTOR TO CONFIRM DEPTH OF SERVICE PRIOR TO CONSTRUCTION.
27. CITY OF COURTENAY TO REVIEW CONDITION OF EXISTING HYDRANT PRIOR TO CONSTRUCTION TO CONFIRM NEED FOR REPLACEMENT. CONTRACTOR TO COORDINATE.
28. SERVICE DEPTH CRITICAL. REDUCE PIPE SLOPE TO 1.0% IF REQUIRED.
29. IF VERTICAL SEPARATION LESS THAN 150 mm FILL SEPARATION SPACE WITH CONTROL DENSITY FILL (CDF) TO SPRINGLINE OF BOTH PIPES.

NOTE TYPE KEY

NOTE	SPECIFIC CONSTRUCTION NOTE
C.1	STANDARD CONSTRUCTION NOTE
W.1	WATER FITTING NOTE

WATER FITTINGS AND APPURTANCES: (W.#)

31. 250Hx250Fx75F TEE + 1-75 FxH GATE VALVE.
32. 250 HxH 5° BEND.
33. 250Fx250Hx100F TEE + 1-100 FxH GATE VALVE.
34. 250Fx250Hx150F TEE + 1-150 FxH GATE VALVE.
35. 250 HxH 11.25° BEND.
36. 250Fx250Hx150F TEE + 1-150 FxH GATE VALVE.
37. 250 HxH 5° BEND.
38. 250 HxH 5° BEND.
39A. 250Hx250Hx150F TEE + 1-150 FxH GATE VALVE.
39B. 250Hx250Hx100F TEE + 1-100 FxH GATE VALVE.

CATCHBASIN TABLE		
NAME	RIM	INVERTS
CB 15	13.708	12.708 OUT (200 Ø)
CB 16	13.370	12.570 OUT (200 Ø)
CB 17	13.265	12.465 OUT (200 Ø)
CB 18	12.357	11.557 OUT (200 Ø)

CATCHBASIN LEAD TABLE			
NAME	SIZE	LENGTH	SLOPE
CBL-15	200 Ø	3.704 m	2.00%
CBL-16	200 Ø	7.432 m	2.00%
CBL-17	200 Ø	4.223 m	2.00%
CBL-18	200 Ø	8.676 m	2.00%

Q:\2021-2264-00\civil\2264-00-C-102-106.dwg
DATE: 2022-05-20, Gerrit Alderliesten

Associated Engineering

BEST 5 MANAGED 5 COMPANIES
Platinum member

CITY OF COURTENAY

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA G. M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
E	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
D	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
C	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
B	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN
A	2018NOV30	A.STEPHENSON	G.ALDERLIESTEN	40% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250 (H), 1:50 (V)

CIVIL
UTILITY PLAN AND PROFILE
STA: 0+300 TO 0+450

DRAWING	REVISION	SHEET
2264-00-C-104	E	9 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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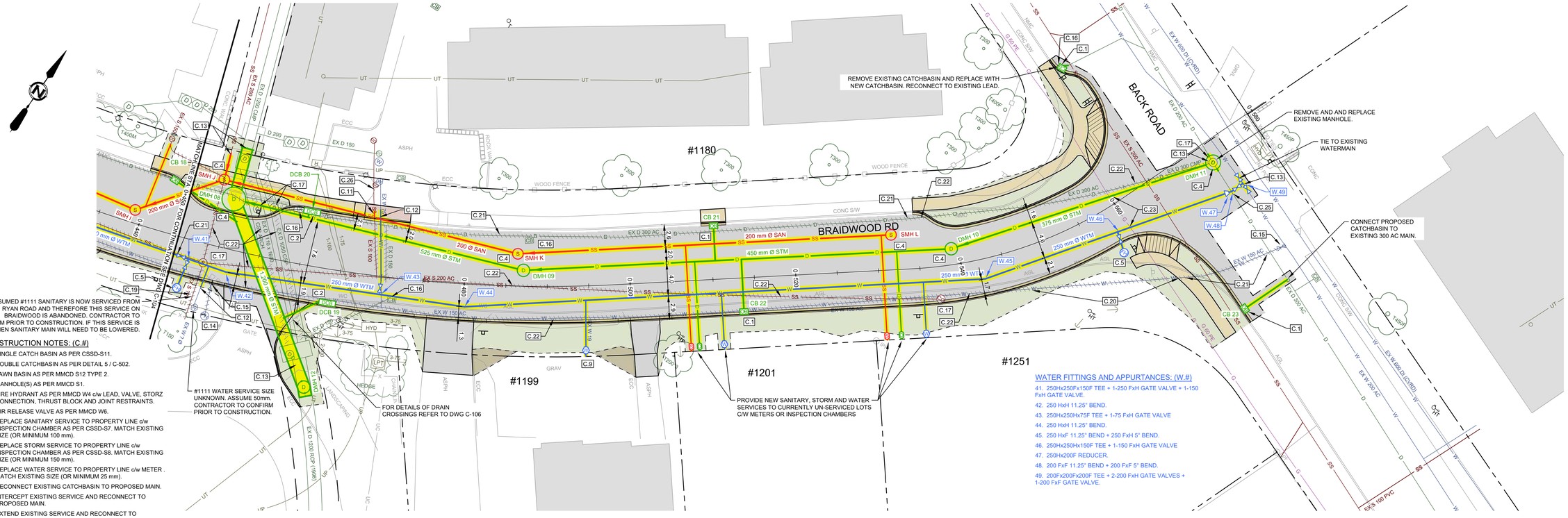

CONSTRUCTION NOTES: (C.#)

1. SINGLE CATCH BASIN AS PER CSSD-S11.
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6. AIR RELEASE VALVE AS PER MMCD W6.
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9. REPLACE WATER SERVICE TO PROPERTY LINE c/w METER . MATCH EXISTING SIZE (OR MINIMUM 25 mm).
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23. CAUTION! PROPOSED STRUCTURE OR PIPE CROSSES OR IS IN CLOSE PROXIMITY TO GAS LINE. CONTRACTOR TO VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION.
24. DEPTH OF CROSSING IS UNCERTAIN. EXPOSE PRIOR TO CONSTRUCTION TO CONFIRM LOCATION, SIZE, AND ELEVATION.
25. VERTICAL SEPARATION LESS THAN 450 mm. WRAP WATERMAIN JOINTS WITH PETROLATUM TAPE 3.0 m EACH SIDE OF CROSSING.
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27. CITY OF COURTENAY TO REVIEW CONDITION OF EXISTING HYDRANT PRIOR TO CONSTRUCTION TO CONFIRM NEED FOR REPLACEMENT. CONTRACTOR TO COORDINATE.
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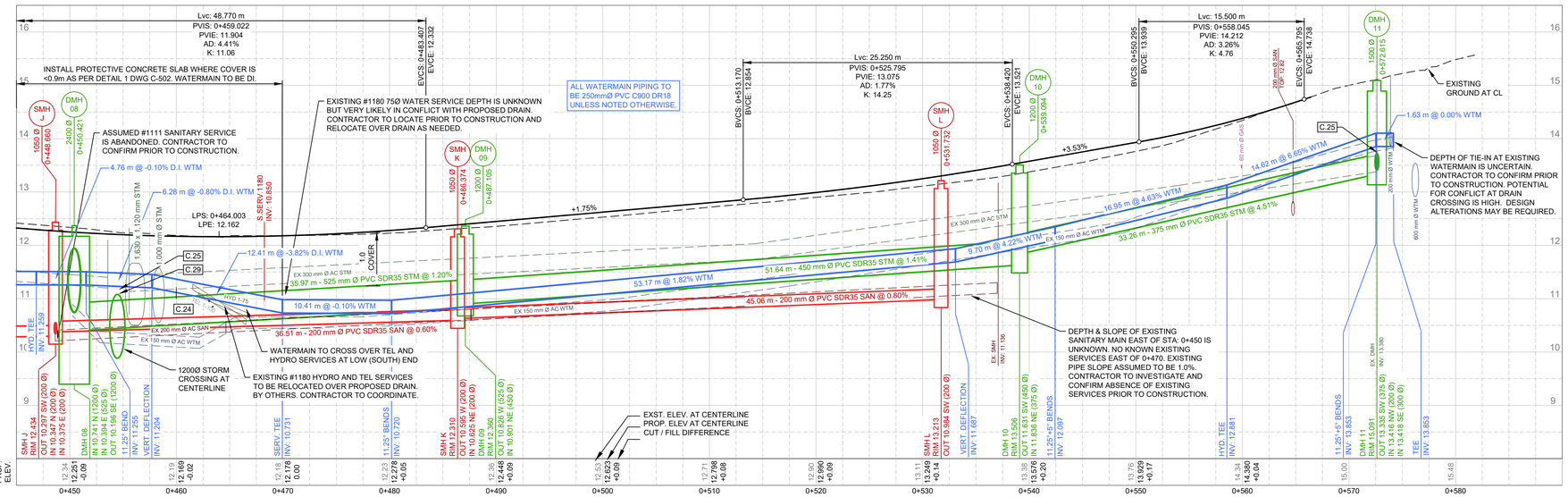
29. IF VERTICAL SEPARATION LESS THAN 150 mm FILL SEPARATION SPACE WITH CONTROL DENSITY FILL (CDF) TO SPRINGLINE OF BOTH PIPES.

NOTE TYPE KEY

NOTE	SPECIFIC CONSTRUCTION NOTE
C.1	STANDARD CONSTRUCTION NOTE
W.1	WATER FITTING NOTE

WATER FITTINGS AND APPURTANCES: (W.#)

41. 250Hx250Fx150F TEE + 1-250 FxH GATE VALVE + 1-150 FxH GATE VALVE.
42. 250 HxH 11.25° BEND.
43. 250Hx250Hx75F TEE + 1-75 FxH GATE VALVE
44. 250 HxH 11.25° BEND.
45. 250 HxF 11.25° BEND + 250 FxH 5° BEND.
46. 250Hx250Hx150F TEE + 1-150 FxH GATE VALVE
47. 250Hx200F REDUCER.
48. 200 FxF 11.25° BEND + 200 FxF 5° BEND.
49. 200Fx200Fx200F TEE + 2-200 FxH GATE VALVES + 1-200 FxF GATE VALVE.



CATCHBASIN TABLE

NAME	RIM	INVERTS
CB 21	12.682	11.782 OUT (200 Ø)
CB 22	12.764	11.964 OUT (200 Ø)
CB 23	14.641	13.841 OUT (200 Ø)
DCB 19	12.050	11.040 OUT (200 Ø)
DCB 20	12.015	11.015 OUT (200 Ø)

CATCHBASIN LEAD TABLE

NAME	SIZE	LENGTH	SLOPE
CBL-19	200 Ø	4.738 m	2.00%
CBL-20	200 Ø	0.787 m	2.00%
CBL-21	200 Ø	4.540 m	2.00%
CBL-22	200 Ø	6.638 m	2.00%
CBL-23	200 Ø	6.538 m	2.00%

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DATE: 2022-05-20, Gerrit Alderliesten

Associated Engineering
BEST 5 MANAGED COMPANIES Platinum member

CITY OF COURTENAY

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
E	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
D	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
C	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN
B	2019FEB28	A.STEPHENSON	G.ALDERLIESTEN	70% DESIGN
A	2018NOV30	A.STEPHENSON	G.ALDERLIESTEN	40% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250 (H), 1:50 (V)

CIVIL
UTILITY PLAN AND PROFILE
STA: 0+450 TO 0+600

DRAWING	REVISION	SHEET
2264-00-C-105	E	10 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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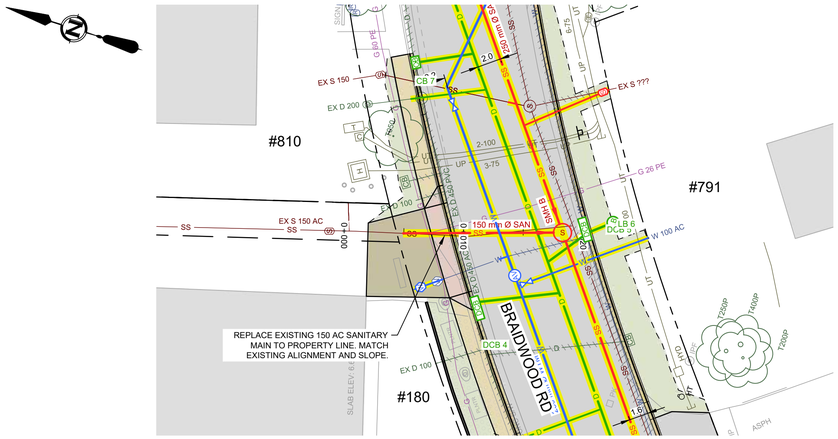

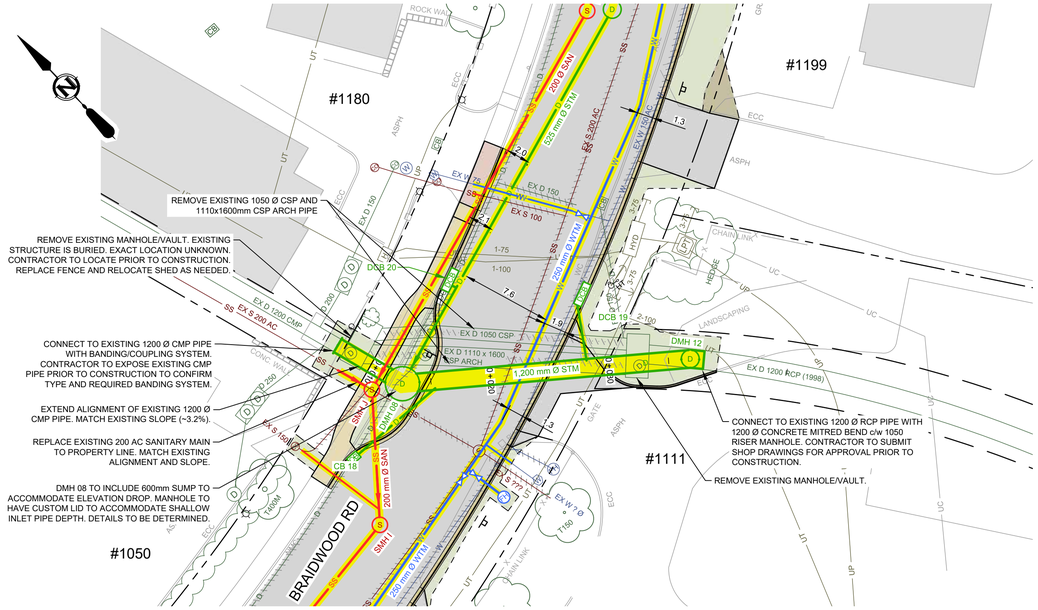

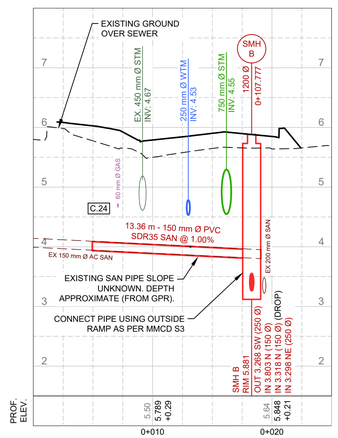

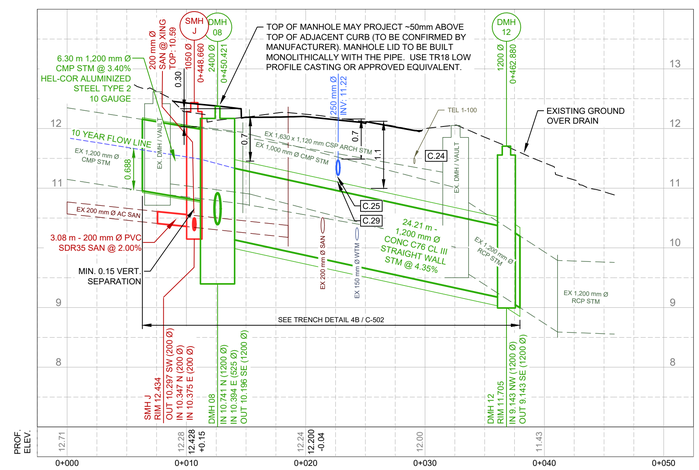

NOTE TYPE KEY

NOTE	SPECIFIC CONSTRUCTION NOTE
C.1	STANDARD CONSTRUCTION NOTE
W.1	WATER FITTING NOTE

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DATE: 2022-05-20, Gerrit Alderliesten

Associated Engineering

BEST 5 MANAGED COMPANIES
Platinum member

CITY OF COURTENAY

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PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
C	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
B	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
A	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250 (H), 1:50 (V)

CIVIL
UTILITY PLAN AND PROFILE
LATERAL MAINS

DRAWING	REVISION	SHEET
2264-00-C-106	C	11 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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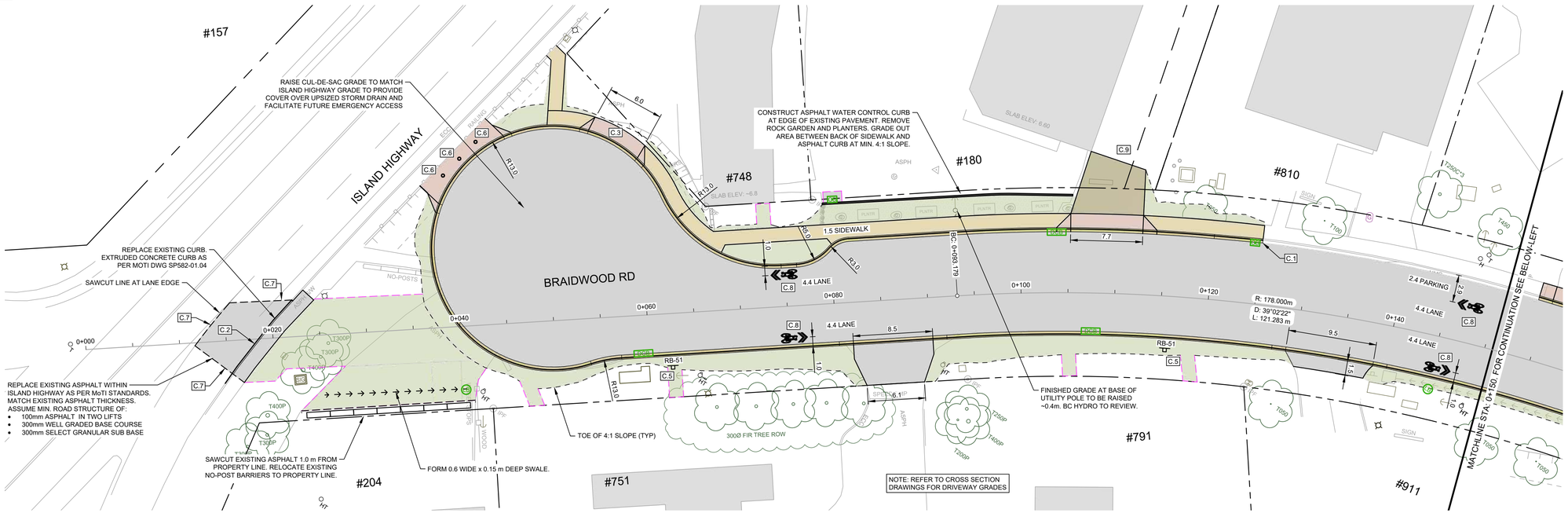

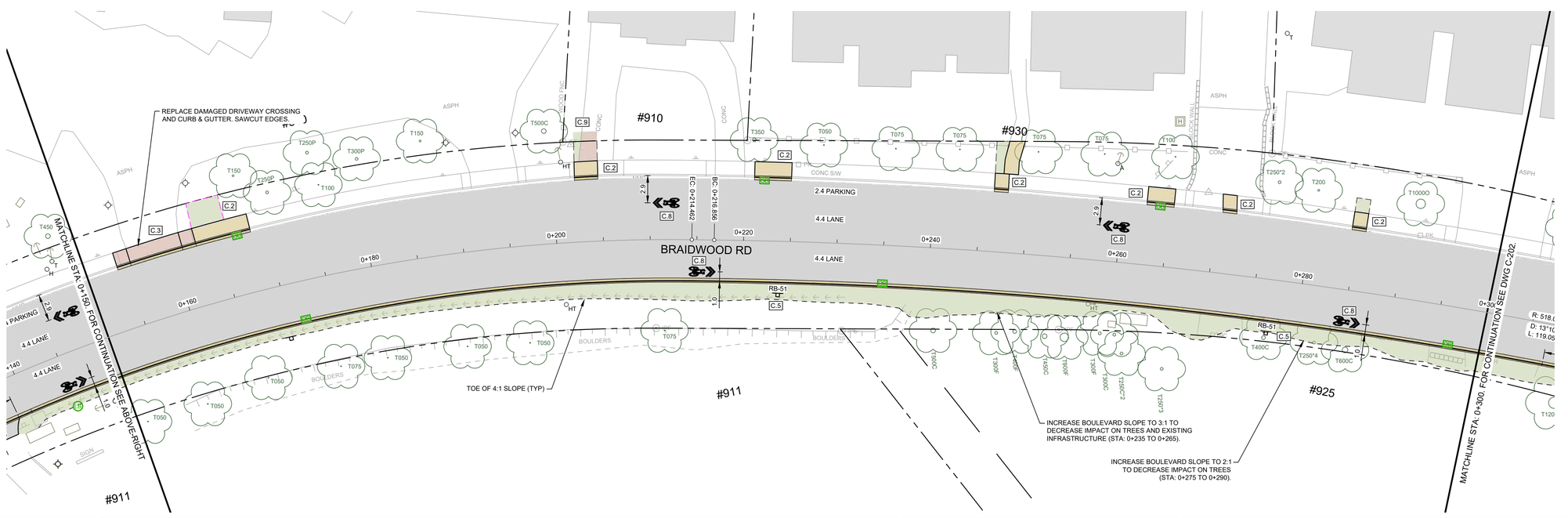

CONSTRUCTION NOTES: (C.#)

1. TIE TO EXISTING CURB AND/OR SIDEWALK. SAWCUT EDGES. MATCH EXISTING ELEVATION.
2. CURB REPLACEMENT DUE TO UTILITY UPGRADES (INCLUDING SIDEWALK WHERE APPLICABLE). MATCH EXISTING ELEVATIONS. EXTENTS SHOWN INDICATE MINIMUMS ONLY. SAWCUT EDGES. MATCH EXISTING CURB TYPE AND DIMENSIONS.
3. DRIVEWAY AS PER CDDS C7C. INCREASE SIDEWALK THICKNESS TO 150mm.
4. 100 mm WIDE DIRECTIONAL DIVIDING LINE, PAINT, YELLOW.
5. NEW SIGN c/w BASE.
6. REMOVABLE BOLLARD AS PER CSSD C12.
7. TIE TO EXISTING ASPHALT WITH 300x50mm LAP JOINT (TYPICAL ALL SAWCUTS ON BACK ROAD AND ISLAND HIGHWAY).
8. SHARED USE LANE SYMBOL OR "SHARROWS", WHITE, THERMOPLASTIC.
9. DRIVEWAY RECONSTRUCTION EXTENDS ONTO PRIVATE PROPERTY. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER.

HATCH LEGEND

- ASPHALT
- CONCRETE, 100mm
- CONCRETE, 150 mm
- GRAVEL
- BOULEVARD, MIN 200mm TOPSOIL & SEED

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DATE: 2022-05-20, Gerrit Aldenliesten

Associated Engineering
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CITY OF COURTENAY

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Engineers & Geoscientists BC

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON
2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
E	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250

CIVIL
ROADWORKS PLAN
STA: 0+000 TO 0+300

DRAWING	REVISION	SHEET
2264-00-C-201	E	12 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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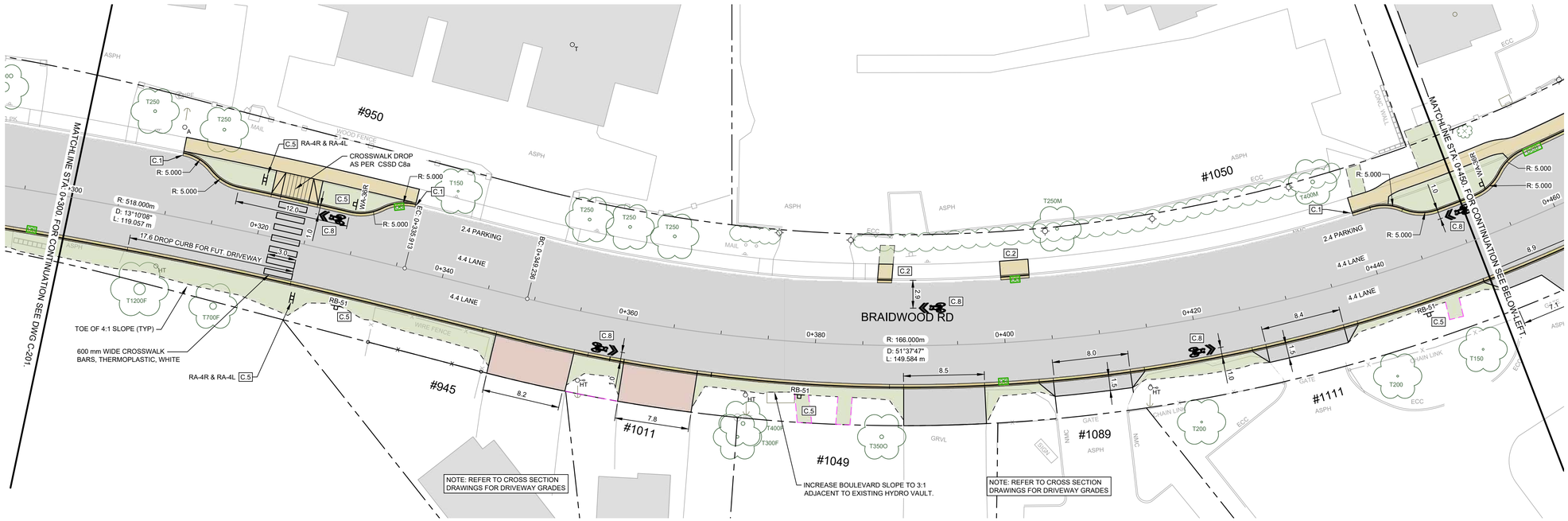

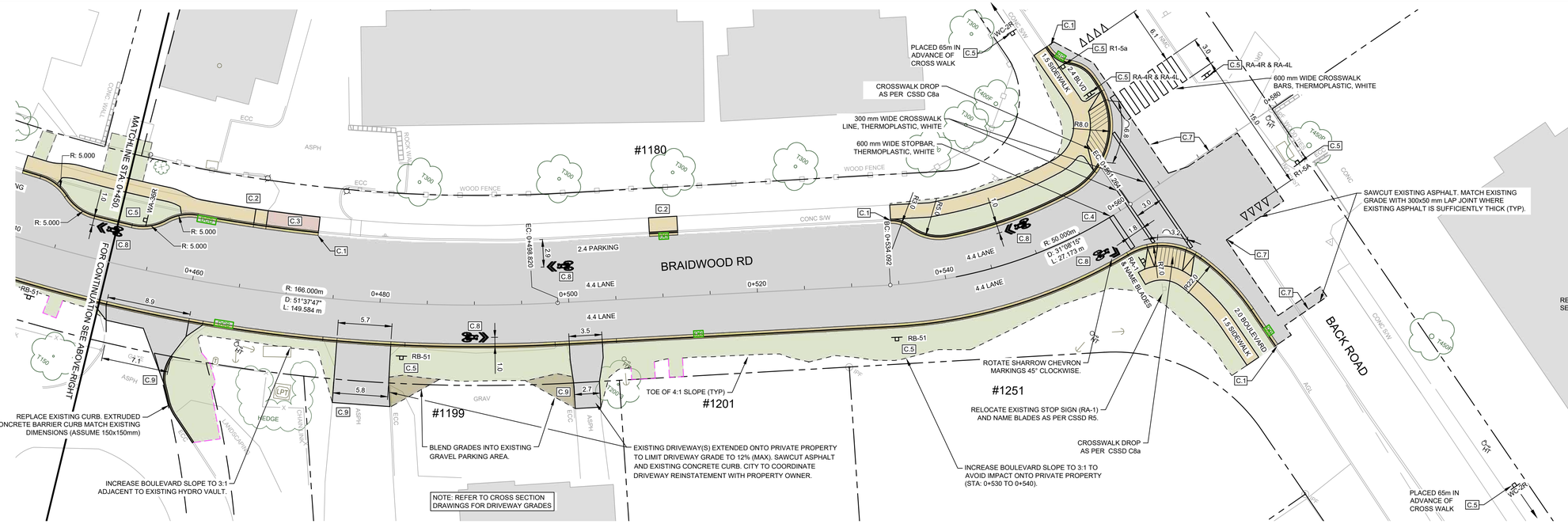

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HATCH LEGEND

- ASPHALT
- CONCRETE, 100mm
- CONCRETE, 150 mm
- GRAVEL
- BOULEVARD, MIN 200mm TOPSOIL & SEED

SIGNAGE KEY:

RA-1, WA-36R, RB-51, R1-5A, RA-4R, RA-4L, WC-2R

REFER TO MUTCD SECTION 3B.16

DIRECTION OF TRAVEL

WHITE, THERMOPLASTIC

CROSSWALK YIELD LINES

CROSSWALK LINES (ZEBRA)

Q:\2021-2264-00\civil\2264-00-c-201-202.dwg
DATE: 2022-05-20, Gerrit Abbenhesen

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2022-05-24

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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250

CIVIL
ROADWORKS PLAN
STA: 0+300 TO 0+600

DRAWING	REVISION	SHEET
2264-00-C-202	E	13 / 22

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50 mm

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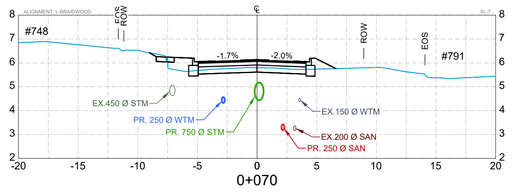
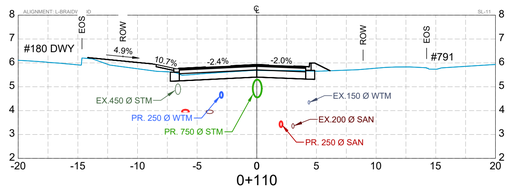
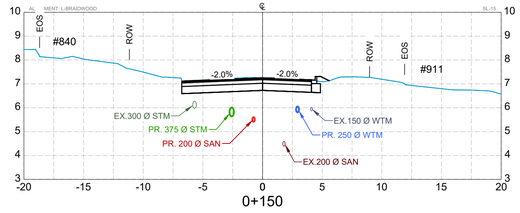
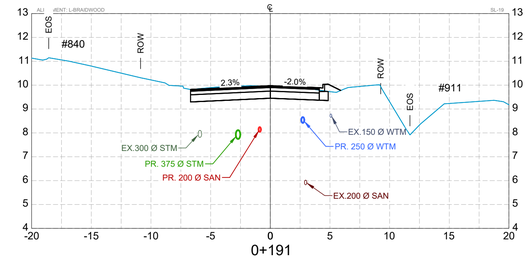
LEGEND:

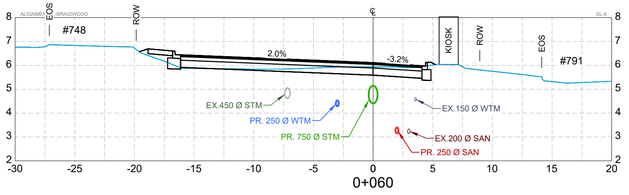
ROW = RIGHT OF WAY
EOS = EDGE OF TOPOGRAPHIC SURVEY
DWY = DRIVEWAY

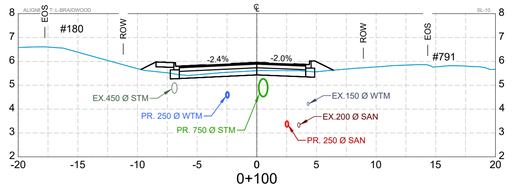


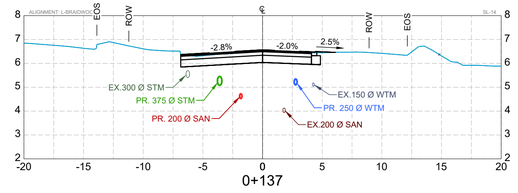


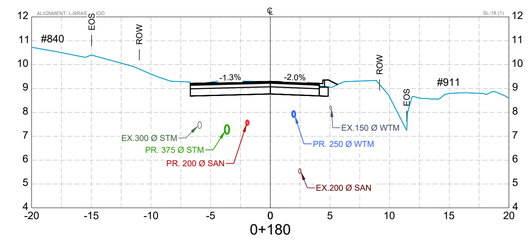


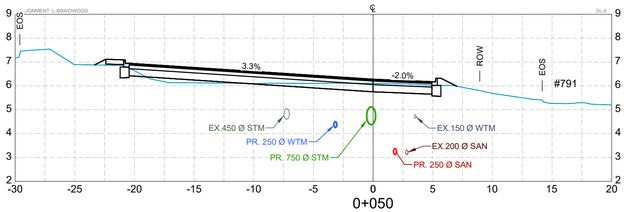


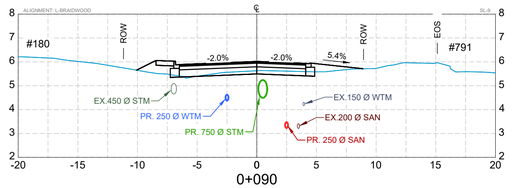


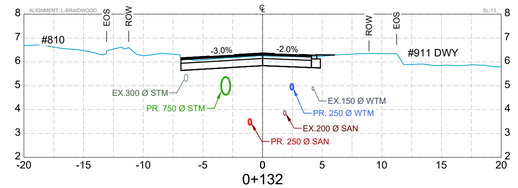


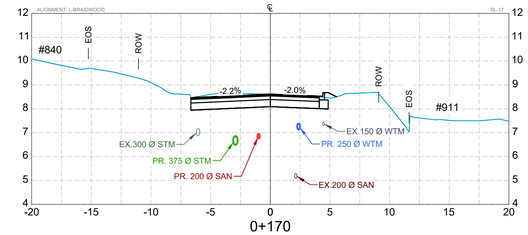


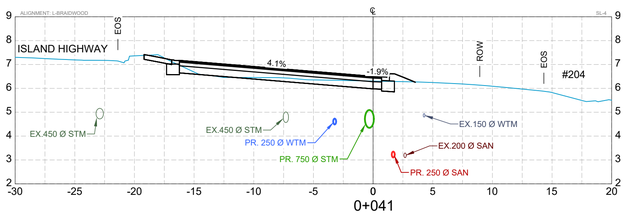


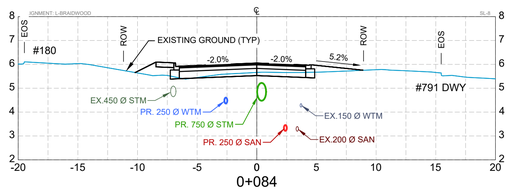


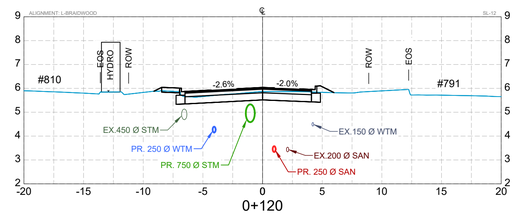


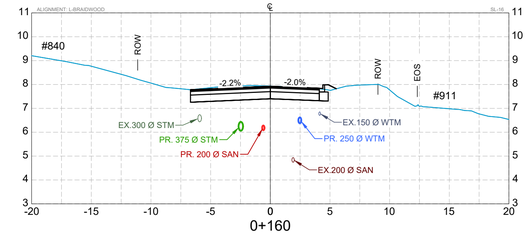












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CITY OF COURTENAY

PERMIT TO PRACTICE
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PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

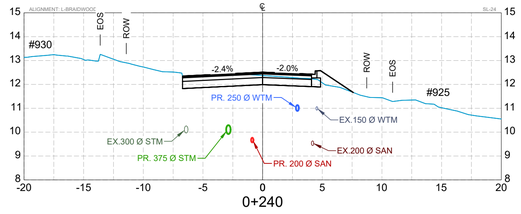
SCALE: 1:250 (H), 1:125 (V)

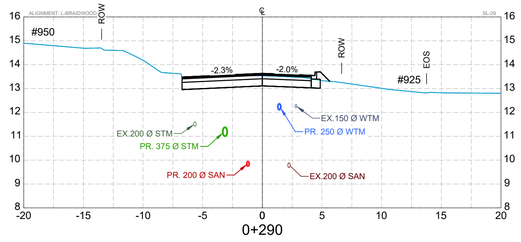
CIVIL
CROSS SECTIONS
STA: 0+000 TO 0+195

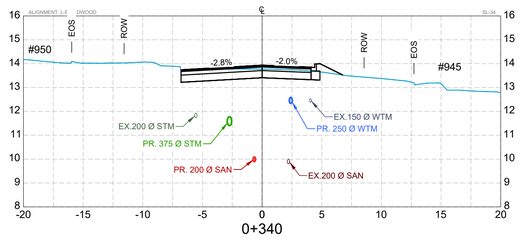
DRAWING	REVISION	SHEET
2264-00-C-301	D	14 / 22

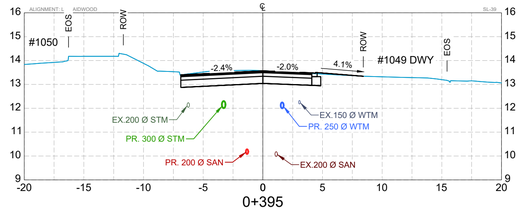
IF NOT 50 mm ADJUST SCALES
50 mm

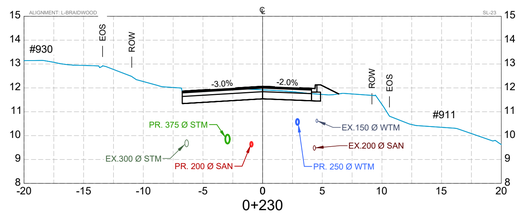
SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE

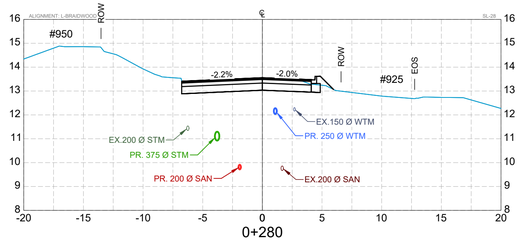


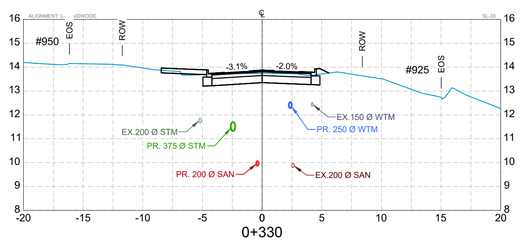


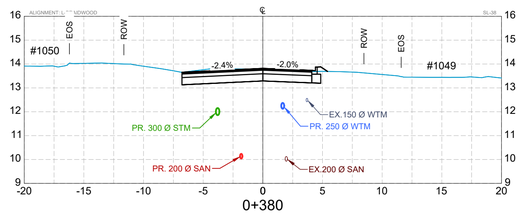


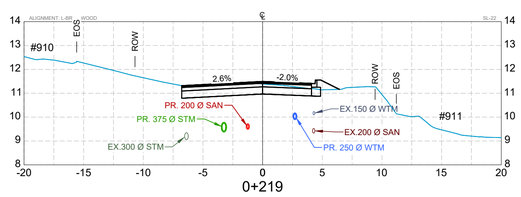


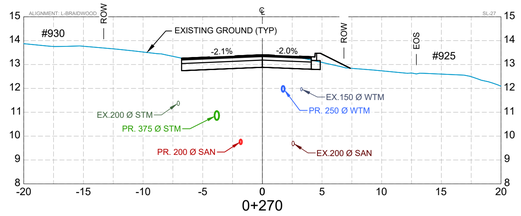


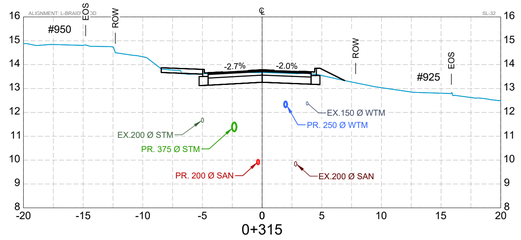


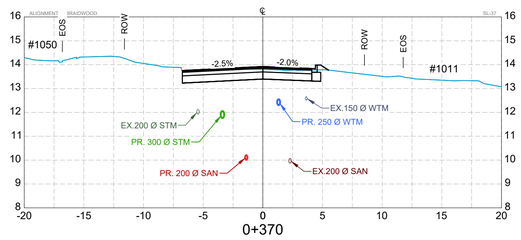


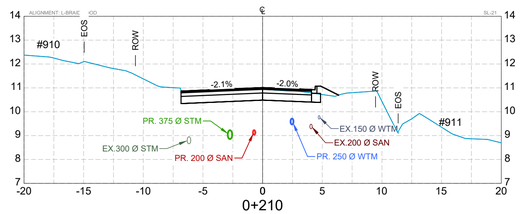


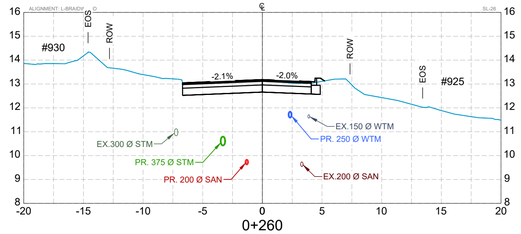


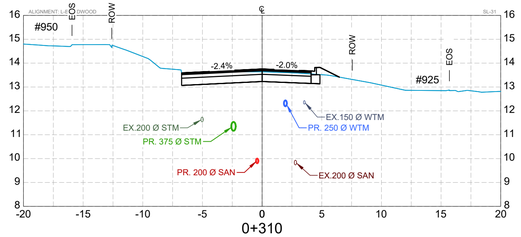


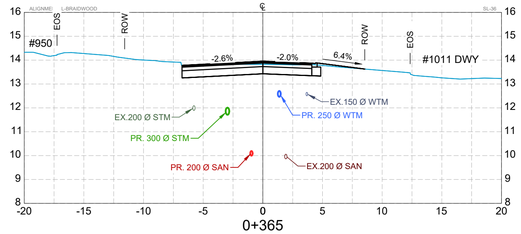


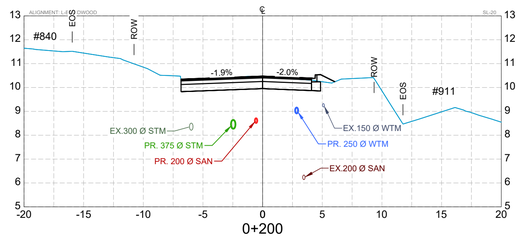


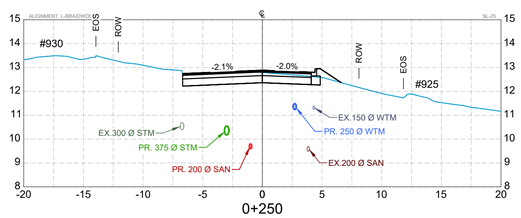


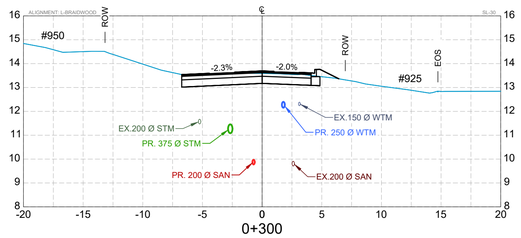


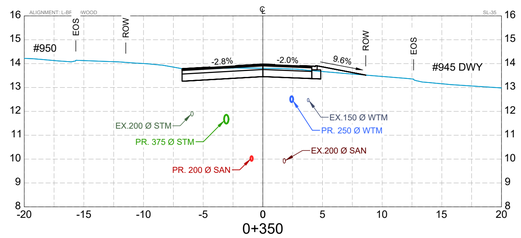












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Engineers & Geoscientists BC

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
D	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250 (H), 1:125 (V)

CIVIL
CROSS SECTIONS
STA: 0+200 TO 0+395

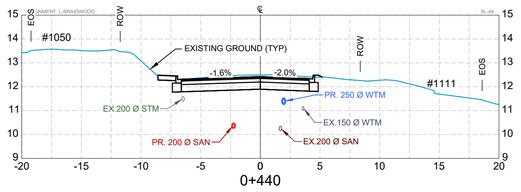
DRAWING	REVISION	SHEET
2264-00-C-302	D	15 / 22

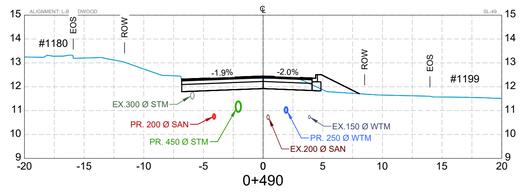
IF NOT 50 mm ADJUST SCALES
50 mm

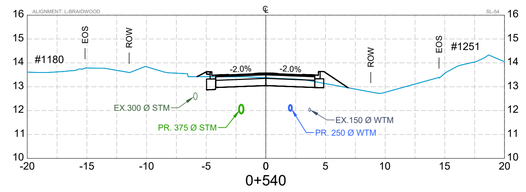
SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE

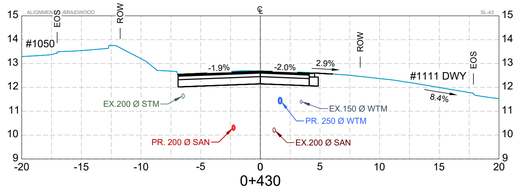
LEGEND:

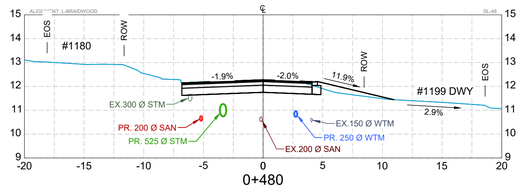
ROW = RIGHT OF W
EOS = EDGE OF TC
DWY = DRIVEWAY

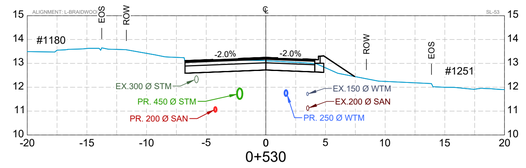


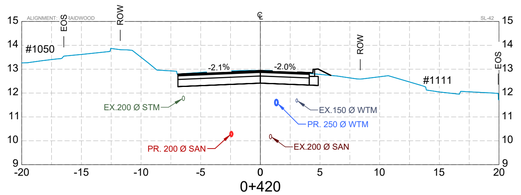


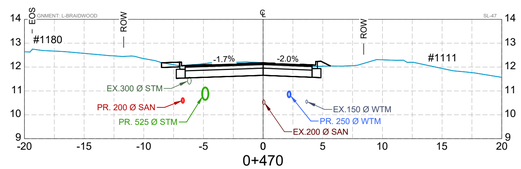


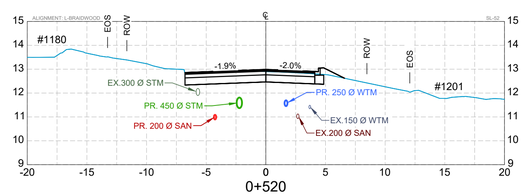


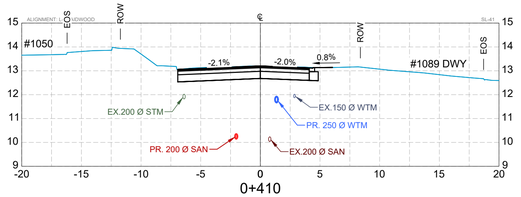


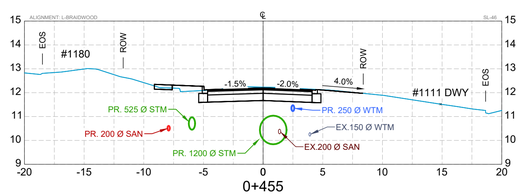


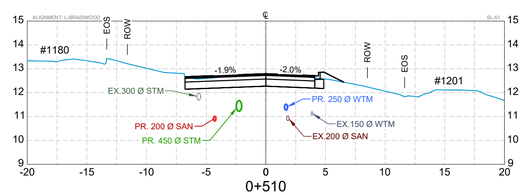


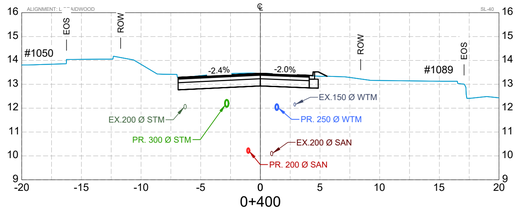


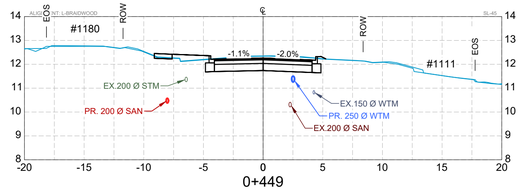


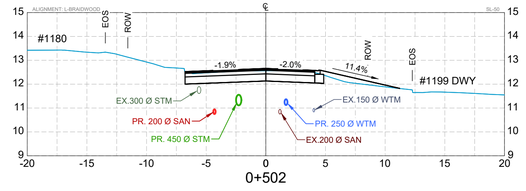


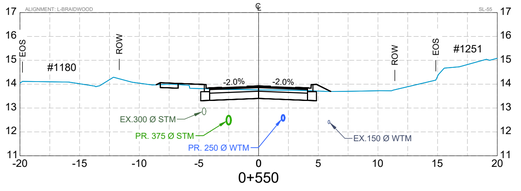












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STA: 0+400 TO 0+560

DRAWING	REVISION	SHEET
2264-00-C-303	D	16 / 22

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50 mm

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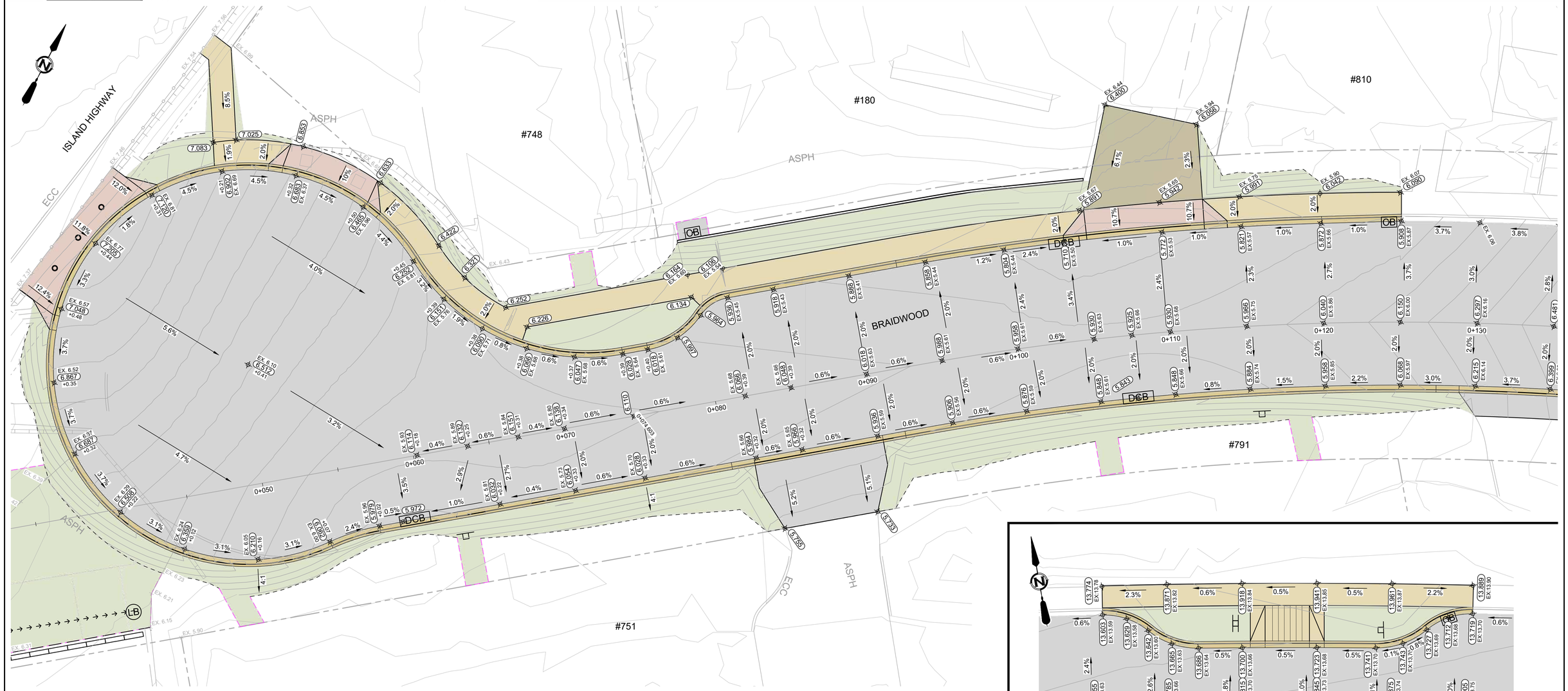
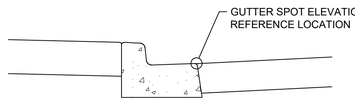
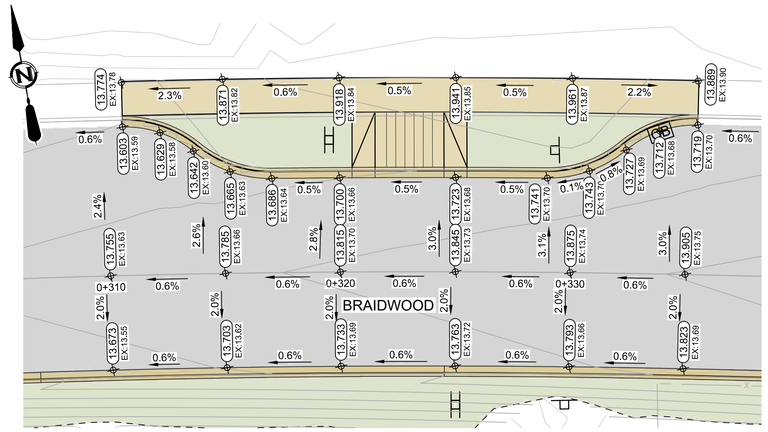


1 - PLAN 1:125
GRADING PLAN, STA 0+040 TO 0+120



3 - DETAIL NTS
ELEVATION REFERENCE LOCATION



2 - PLAN 1:125
GRADING PLAN, STA 0+310 TO 0+335

Associated Engineering

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Platinum member

CITY OF COURTENAY

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
C	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
B	2022MAR03	M.DHILLON	G.ALDERLIESTEN	100% DESIGN
A	2021DEC23	M.DHILLON	G.ALDERLIESTEN	90% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:125

CIVIL
GRADING PLAN
STA: 0+000 TO 0+340

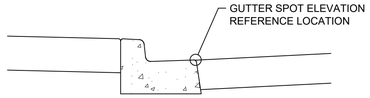
DRAWING	REVISION	SHEET
2264-00-C-401	C	17 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE

1 - PLAN 1:125
#1050/#1180 BRAIDWOOD RD FRONTAGE REGRADING

2 - PLAN 1:125
INTERSECTION GRADING PLAN BACK ROAD AT BRAIDWOOD ROAD



3 - DETAIL NTS
ELEVATION REFERENCE LOCATION

Associated Engineering
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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:125

CIVIL
GRADING PLAN
STA: 0+430 TO 0+600

DRAWING	REVISION	SHEET
2264-00-C-402	C	18 / 22

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF COURTENAY STANDARDS AND SPECIFICATIONS AND THE LATEST EDITION OF MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD) STANDARD SPECIFICATIONS & DRAWINGS, APPROPRIATE AMENDMENTS AND RESOLUTIONS.
2. CONTRACTOR TO OBTAIN ALL APPLICABLE PERMITS TO UNDERTAKE THE REQUIRED WORKS FROM ALL APPLICABLE AUTHORITIES.
3. CONTRACTOR IS RESPONSIBLE TO COORDINATE WORKS WITH CITY OF COURTENAY, COMOX VALLEY REGIONAL DISTRICT, TELUS, SHAW, BC HYDRO, FORTISBC.
4. ELEVATIONS ARE GEODETIC.
5. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
6. THE CONTRACTOR IS RESPONSIBLE FOR UTILITY POLE SUPPORT REQUIRED IN ORDER TO CONSTRUCT THE WORKS.
7. OVERHEAD WIRING NOT SHOWN ON DRAWINGS.
8. LEGAL BASE COMPOSITE PROVIDED BY HOERBURGER LAND SURVEYORS.
9. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT SURVEY.
10. ALL MATERIALS SHALL CONFORM TO THE CITY OF COURTENAY APPROVED PRODUCTS LIST.
11. ANY REVISIONS TO THESE DRAWINGS MUST BE APPROVED BY THE DESIGN ENGINEER, WHO SHALL REVIEW ANY CHANGES WITH CITY OF COURTENAY ENGINEERING.
12. WORKSAFE BC IS TO BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION AND CONTRACTOR SHALL BE REGISTERED WITH WORKSAFE BC.
13. CONTRACTOR TO SUBMIT A BC ONE TICKET AT LEAST 72 HOURS PRIOR TO CONSTRUCTION.
14. CONTRACTOR TO COORDINATE WITH MoTI PRIOR TO CONSTRUCTION OF ANY WORKS WITHIN ISLAND HIGHWAY ROW.

ROADWORKS:

15. SUBGRADE TO BE INSPECTED AND APPROVED BY PROJECT GEOTECHNICAL ENGINEER PRIOR TO SUBBASE OR BASE COURSE CONSTRUCTION.
16. CONTRACTOR TO MAINTAIN DRAINAGE DURING CONSTRUCTION.
17. CURBS ARE TO BE CONCRETE BARRIER CURB AND GUTTER AS PER MMCD STD. DWG. C4 UNLESS NOTED OTHERWISE. DRIVEWAYS AND CROSSWALK DROPS TO USE CONCRETE DROP CURB.
18. CROSSWALK DROPS TO CONFORM TO CITY OF COURTENAY CSSD C8a WHERE APPLICABLE.
19. SIDEWALK THICKNESS TO BE 100mm EXCEPT 150mm THROUGH ALL DRIVEWAYS.
20. DRIVEWAY CONSTRUCTION AS PER CITY OF COURTENAY CSSD C7C .
21. DRIVEWAYS TO BE REPLACED WITH CONCRETE BACK TO PROPERTY LINES UNLESS NOTED OTHERWISE.
22. FOR DETAILS OF GEOTECHNICAL CONDITIONS AND REQUIREMENTS REFER TO GEOTECHNICAL REPORT TITLED "PROPOSED ROAD AND UTILITY UPGRADES, BRAIDWOOD ROAD, COURTENAY, BC" DATED OCTOBER 27, 2018 BY LEWDOWICH ENGINEERING ASSOCIATES LTD.
23. ALL LOOSE, ORGANIC, OTHERWISE DELETERIOUS MATERIALS OR SOFT SPOT(S) ARE TO BE EXCAVATED AND REMOVED FROM THE ROADWAY AND UTILITY TRENCHES IN THE ROADWAY.
24. ALL EXISTING ASPHALT TO BE REMOVED MUST BE DISPOSED OF AT AN APPROVED SITE.
25. THE CONDITIONS FOR PLACING ASPHALT PAVEMENT AND P.C. CONCRETE SHALL BE IN ACCORDANCE WITH CITY OF COURTENAY STANDARD CONSTRUCTION DOCUMENTS AND MMCD SPECIFICATIONS AND STANDARD DETAIL DRAWINGS APPLICABLE AT THE TIME OF CONSTRUCTION. WEATHER CONDITIONS MUST ALSO BE IN CONFORMANCE WITH MMCD SPECIFICATIONS. SHOULD DEVIANCIES BE ALLOWED FROM THESE SPECIFICATIONS, THE CONTRACTOR IS TO ASSUME ALL RESPONSIBILITY FOR THESE PRODUCTS.
26. CROSSWALK AND STOP BAR PAINT MARKINGS TO BE THERMOPLASTIC, ALL OTHERS TO BE ALKYD PAINT.
27. ALL PAVEMENT MARKINGS AND SIGNAGE TO BE TO TRANSPORTATION ASSOCIATION OF CANADA (TAC) MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES STANDARDS.

RESTORATION:

28. ALL DAMAGED OR DISTURBED MONUMENTS AND IRON PINS ARE TO BE RECALIBRATED OR REPLACED AND TIED-IN BY A B.C.L.S. AT THE CONTRACTOR'S EXPENSE.
29. ALL DISTURBED BOULEVARD AREAS AND DRIVEWAYS ARE TO BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER AFTER CONSTRUCTION. NOTE SOME EXISTING BOULEVARDS ARE IN POOR CONDITION.
30. ALL LAWN AND GRASS AREAS AFFECTED BY CONSTRUCTION TO BE REPLACED WITH SOD GRASS ON MINIMUM 150mm OF TOPSOIL.
31. RESTRIPE ALL DISTURBED TRAFFIC MARKINGS OUTSIDE THE AREA OF ROAD RECONSTRUCTION AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
32. ADJUST ALL EXISTING CASTINGS TO NEW GRADE INCLUDING THOSE WITHIN LANDSCAPED AREAS.
33. WHERE TYING TO EXISTING CONCRETE CURB OR SIDEWALK, REMOVE AND REPLACE EXISTING CURB OR SIDEWALK TO THE NEAREST EXPANSION JOINT.
34. NO ASPHALT RESTORATIONS ARE TO LEAVE A JOINT BETWEEN NEW AND OLD ASPHALT THAT FALLS WITHIN THE TRAVELED WHEEL PATH OF ANY ROADWAYS. MINIMUM DIMENSION OF REMAINING ASPHALT SECTIONS IS TO BE 1.0 m. IF ASPHALT REMOVAL WILL LEAVE A REMAINDER WITH A MINIMUM DIMENSION OF LESS THAN 1.0 m (I.E. BETWEEN TRENCHLINE AND CURB, OR TRENCHLINE AND EDGE OF ASPHALT), THIS REMAINING ASPHALT MUST BE REMOVED AND REINSTATED WITH NEW ASPHALT.
35. ALL EXISTING TREES WITHIN THE R.O.W. TO REMAIN UNLESS OTHERWISE NOTED.

PUBLIC SAFETY:

36. THE CONTRACTOR IS TO SUBMIT FOR APPROVAL & BE RESPONSIBLE FOR A TRAFFIC MANAGEMENT PLAN INCLUDING: RUSH HOUR PROCEDURES, NUMBER OF LANES OPEN AT ANY TIME, AND DETOURS. PROFESSIONAL TRAFFIC CONTROL SYSTEMS TO BE PROVIDED FOR ALL ROAD & LANE CLOSURES. LOCAL VEHICLE, PEDESTRIAN & EMERGENCY VEHICLE ACCESS IS TO BE MAINTAINED AT ALL TIMES. TRAFFIC MANAGEMENT PLAN IS TO BE SUBMITTED TO CITY OF COURTENAY PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
37. THE CONTRACTOR SHALL KEEP THE SITE NEAT AND TIDY AND AT ALL TIMES PROTECT PUBLIC SAFETY.
38. THE CONTRACTOR SHALL ORGANIZE HIS WORKS TO MINIMIZE INCONVENIENCE TO THE PUBLIC AND INDIVIDUAL PROPERTY OWNERS.
39. VEHICULAR AND PEDESTRIAN ACCESS IS TO BE MAINTAINED ALONG EXISTING ROADS DURING CONSTRUCTION.
40. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE ACCESS TO DRIVEWAYS TO MINIMIZE DISRUPTION TO LOCAL RESIDENTS.
41. RESIDENTS AND BUSINESSES AFFECTED BY THE PROPOSED CONSTRUCTION ARE TO BE NOTIFIED BY THE CONTRACTOR IN WRITING A MINIMUM OF 4 DAYS PRIOR TO THE START OF CONSTRUCTION AND PROVIDED WITH THE CONTRACTORS PHONE NUMBER AND SCHEDULE.
42. CONSTRUCTION STAGING AREAS & MATERIAL STOCK PILES TO BE LOCATED ON MUNICIPAL R.O.W. ONLY & CANNOT BLOCK ANY DRIVEWAYS. LOCATIONS TO BE APPROVED BY CONTRACT ADMINISTRATOR.

UTILITIES (GENERAL)

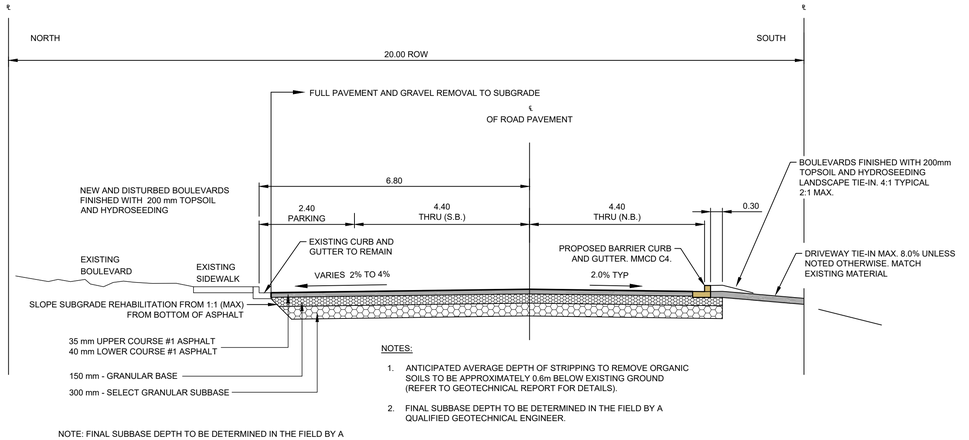
43. EXISTING UTILITIES, INCLUDING SERVICE LOCATIONS, SHOWN ON THESE DRAWINGS HAVE BEEN PROVIDED BY UTILITY COMPANY ASBUILTS. THE INFORMATION PROVIDED IS NOT GUARANTEED ACCURATE OR COMPLETE. ALL EXISTING UTILITIES AND CONNECTIONS MAY NOT BE SHOWN ON DRAWINGS.
44. CONTACT BC-1 (1-800-474-6886) AND COORDINATE WITH LOCAL MUNICIPAL PLANNING AND ENGINEERING SERVICES AND ALL OTHER AGENCIES FOR UNDERGROUND UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
45. CONTRACTOR TO EXPOSE ALL CONNECTIONS AND CROSSINGS OF EXISTING SYSTEMS TO CONFIRM LOCATION, ELEVATION, AND SIZE PRIOR TO CONSTRUCTION. THE LOCATION OF ALL UTILITIES SHOWN ARE APPROXIMATE. ALL EXISTING CONNECTIONS MAY NOT BE SHOWN ON DRAWINGS.
46. ALL EXISTING SERVICES TO BE REPLACED IN THEIR EXISTING ALIGNMENTS UNLESS NOTED OTHERWISE INCLUDING ANY SERVICES WHICH MAY NOT BE SHOWN ON THE DRAWINGS.
47. THE PROJECT AREA IS PARTIALLY SERVICED BY NATURAL GAS LINES. CONTRACTOR TO USE ANY AND ALL METHODS NECESSARY TO ENSURE THAT NATURAL GAS LINES ARE LOCATED AND PROTECTED FROM BREAKAGE.
48. ALL PIPE BEDDING IS TO BE CLASS 'B'. WHERE THE TRENCH IS UNDER OR WITHIN 1.0 m OF A VEHICLE TRAFFIC AREA OR SIDEWALK.
49. SELECT EXISTING MAINS TO BE ABANDONED BY COMPLETELY FILLING WITH CONTROLLED DENSITY FILL (CDF). CAP ALL ENDS OF ABANDONED MAINS PRIOR TO FILLING. CDF SHALL HAVE MAXIMUM COMPRESSIVE STRENGTH OF 0.5 MPA AT 28 DAYS AND MAXIMUM CEMENT CONTENT OF 25KG/M3. CDF SHALL HAVE A SLUMP/CONSISTENCY SUITABLE TO ALLOW COMPLETE FILLING OF ABANDONED MAINS WITHOUT VOIDS. ALTERNATE METHODS OF FILLING ABANDONED MAINS MAY BE CONSIDERED.
50. CONTRACTOR TO COORDINATE RELOCATION OF UTILITY POLES AND GUY WIRES WITH BC HYDRO.
51. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF ALL MANHOLES FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

STORM AND SANITARY:

52. SANITARY SERVICE CONNECTIONS TO MATCH EXISTING SIZE (OR MINIMUM 100 mm) UNLESS NOTED OTHERWISE AND CONFORM TO CSSD-S7.
53. STORM SERVICE CONNECTIONS TO MATCH EXISTING SIZE (OR MINIMUM 150 mm) UNLESS NOTED OTHERWISE AND CONFORM TO CSSD-S8.
54. ALL SANITARY AND STORM SERVICES TO INCLUDE INSPECTION CHAMBERS AS PER CSSD S9.
55. ALL SERVICES ARE TO MATCH THE EXISTING SERVICE INVERT AT THE PROPERTY LINE UNLESS NOTED OTHERWISE.
56. CATCHBASINS TO CONFORM TO CSSD S11.
57. CATCHBASIN LEADS TO BE MINIMUM 200 mm DIAMETER AND HAVE A MINIMUM 2.0% SLOPE.
58. CATCHBASIN GRADE TO BE RECESSED 20 mm BELOW GUTTER INVERT ELEVATION. SURROUNDING CONCRETE AND ASPHALT TO BE SLOPED TO SUIT.
59. CATCH BASIN ELEVATIONS GIVEN ARE THE ELEVATION OF THE EDGE OF ASPHALT OR LIP OF GUTTER AT THE CATCHBASIN LOCATION.
60. DOUBLE CATCHBASINS AS PER DETAIL 5 / C-502.

WATERWORKS:

61. ALL WATER MAIN PIPING MATERIAL TO BE PVC C900 DR18 UNLESS NOTED OTHERWISE.
62. WATER SERVICE CONNECTIONS TO MATCH EXISTING SIZE (OR MINIMUM 25 mm) UNLESS NOTED OTHERWISE AND CONFORM TO CSSD-W2A, CSSD-W2C, AND CSSD-W2D.
63. ALL WATER SERVICES TO INCLUDE METERS AS PER DETAILS DWG C-502.
64. CONTRACTOR TO TEST, FLUSH AND DISINFECT NEW SYSTEMS AS PER REQUIREMENTS SET OUT IN MMCD SECTION 33 11 01. ALL TESTS MUST BE COMPLETED SUCCESSFULLY PRIOR TO TIE IN .
65. FOR DISINFECTION OF CONNECTION PIPING, THE CONTRACTOR MAY SWAB A MAXIMUM LENGTH OF 6.0m OF PIPE. CONNECTION ASSEMBLIES THAT CONSIST OF PIPE WITH A TOTAL LENGTH IN EXCESS OF 6.0m THAT CAN NOT BE DISINFECTED AS PART OF THE MAIN INSTALLATION, MUST BE ASSEMBLED ABOVE GROUND AND DISINFECTED AS PER MMCD SECTION 33 11 01 PRIOR TO INSTALLATION.
66. ALL HYDRANTS THAT ARE NON-FUNCTIONAL DURING WATER MAIN WORKS ARE TO BE CLEARLY IDENTIFIED IN ACCORDANCE WITH CITY REQUIREMENTS. FIRE DEPARTMENT TO BE NOTIFIED OF ANY PLANNED OR ACCIDENTAL INTERRUPTION OF WATER SUPPLY TO HYDRANT.
67. WATER MAINS TO MAINTAIN 3.0m HORIZONTAL SEPARATION AND 450mm VERTICAL SEPARATION FROM SEWER AND DRAIN LINES. IF SEPARATION CANNOT BE MAINTAINED WRAP WATERMAIN JOINTS WITH PETROLATUM TAPE 3.0m EACH SIDE OF CROSSING.
68. THE CONTRACTOR IS NOT TO OPERATE THE WATER SYSTEM (INCLUDING OPERATING ANY VALVES). ANY WATER SHUT DOWNS ARE TO BE COORDINATED WITH CITY OF COURTENAY PUBLIC WORKS.
69. ALL JOINTS TO BE RESTRAINED AS PER THE JOINT RESTRAINT TABLE DWG C-502.
70. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF 48 HOURS PRIOR TO ANY INTERRUPTIONS TO THE WATER SERVICE.
71. CONNECTIONS TO LIVE AND EXISTING WATER SYSTEMS ARE TO BE MADE UNDER THE SUPERVISION OF THE CITY OF COURTENAY PERSONNEL.
72. CONTRACTOR TO MAINTAIN POTABLE WATER SERVICE TO ALL RESIDENTS DURING CONSTRUCTION.

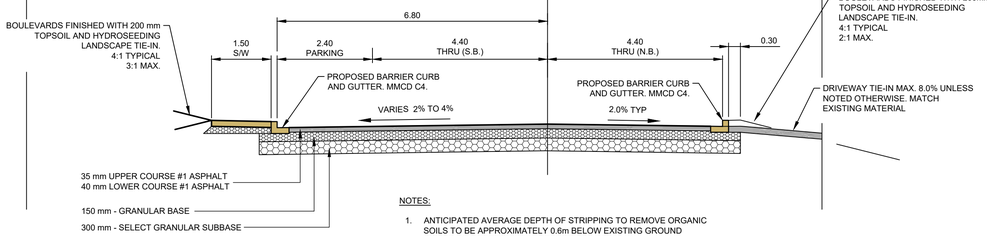


NOTES:

1. ANTICIPATED AVERAGE DEPTH OF STRIPPING TO REMOVE ORGANIC SOILS TO BE APPROXIMATELY 0.6m BELOW EXISTING GROUND (REFER TO GEOTECHNICAL REPORT FOR DETAILS).
2. FINAL SUBBASE DEPTH TO BE DETERMINED IN THE FIELD BY A QUALIFIED GEOTECHNICAL ENGINEER.

NOTE: FINAL SUBBASE DEPTH TO BE DETERMINED IN THE FIELD BY A QUALIFIED GEOTECHNICAL ENGINEER.

1 TYPICAL SECTION 1:75
BRAIDWOOD ROAD - STA 0+125 TO 0+535



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2 TYPICAL SECTION 1:75
BRAIDWOOD ROAD - STA 0+075 TO 0+125 & 0+535 TO 0+570

Q:\2021-2264-00\civil\2264-00-c-501-502.dwg
DATE: 2022-05-20, Gerrit Aldenliesten

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CITY OF COURTENAY

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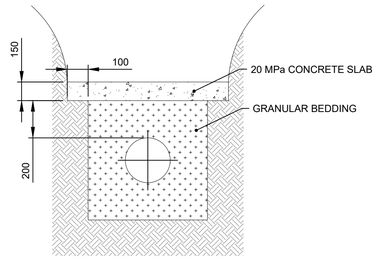
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: AS SHOWN

CIVIL
GENERAL NOTES AND DETAILS

DRAWING	REVISION	SHEET
2264-00-C-501	D	19 / 22

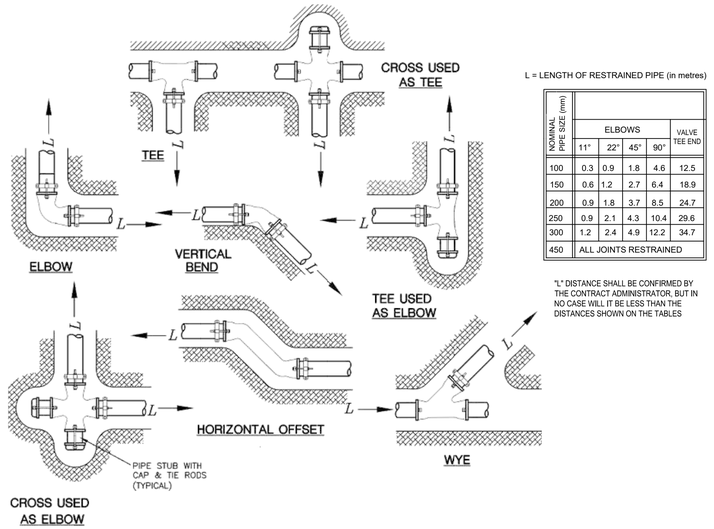


NOTES:

1. USE ONLY WHERE DIRECTED BY CONTRACT ADMINISTRATOR OR AS SPECIFIED ON CONTRACT DRAWINGS.

1 - DETAIL NTS

CONCRETE PROTECTION FOR UNDERGROUND UTILITIES



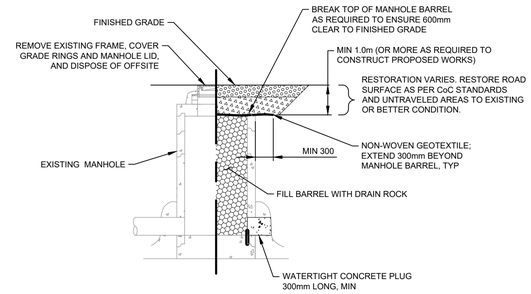
L = LENGTH OF RESTRAINED PIPE (in metres)

NOMINAL PIPE SIZE (mm)	ELBOWS				VALVE TEE END
	11°	22°	45°	90°	
100	0.3	0.9	1.8	4.6	12.5
150	0.6	1.2	2.7	6.4	18.9
200	0.9	1.8	3.7	8.5	24.7
250	0.9	2.1	4.3	10.4	29.6
300	1.2	2.4	4.9	12.2	34.7
450	ALL JOINTS RESTRAINED				

"L" DISTANCE SHALL BE CONFIRMED BY THE CONTRACT ADMINISTRATOR, BUT IN NO CASE WILL IT BE LESS THAN THE DISTANCES SHOWN ON THE TABLES

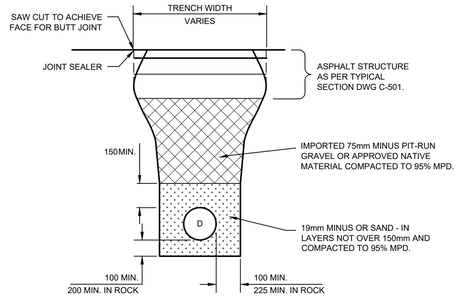
2 - DETAIL NTS

MECHANICAL THRUST RESTRAINT APPLICATIONS



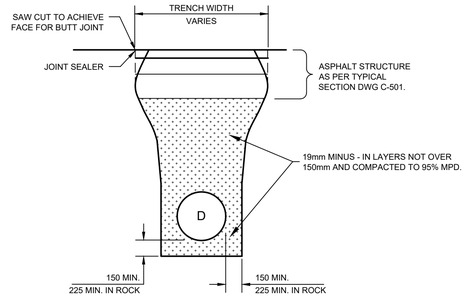
3 - DETAIL NTS

EXISTING MANHOLE ABANDONMENT



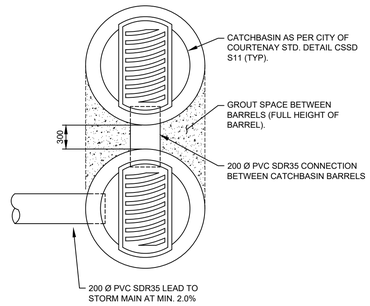
4A - DETAIL NTS

TYPICAL TRENCH DETAIL
PIPES 675mm Ø OR LESS



4B - DETAIL NTS

TYPICAL TRENCH DETAIL
PIPES 750mm Ø OR GREATER



5 - DETAIL NTS

DOUBLE CATCHBASIN

45° BEND

MINIMUM THRUST AREAS			
TYPE OF FITTING	PIPE SIZE	AREA SQ. METERS	L x D AT FACE
45° BEND	150	0.3	1.0 x 0.3m
	200	0.4	1.0 x 0.4m
	250	0.6	1.0 x 0.6m
	300	0.9	1.5 x 0.6m

6 - DETAIL NTS

THRUST BLOCK DETAIL

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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: AS SHOWN

CIVIL
TYPICAL DETAILS

DRAWING	REVISION	SHEET
2264-00-C-502	D	20 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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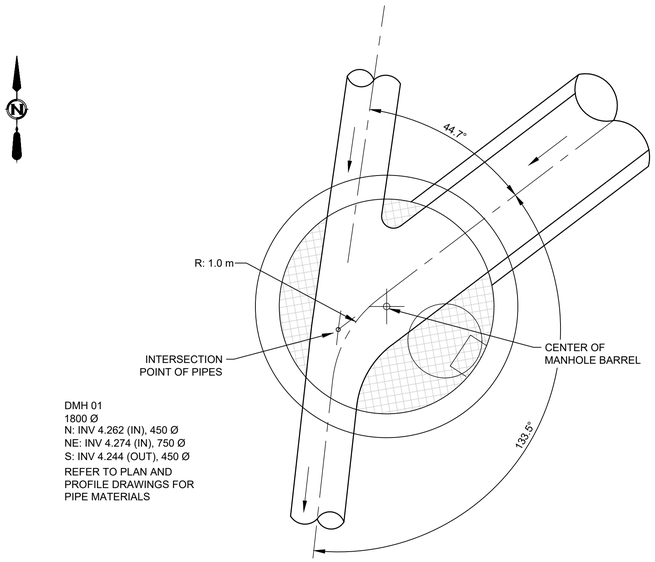
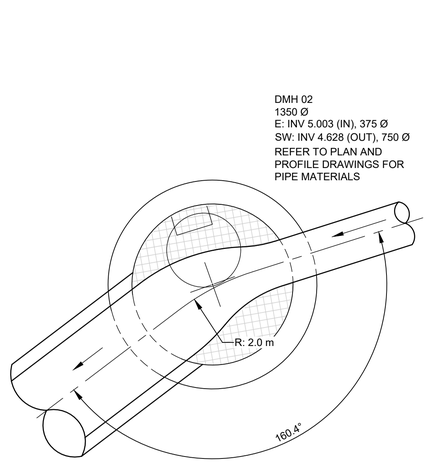
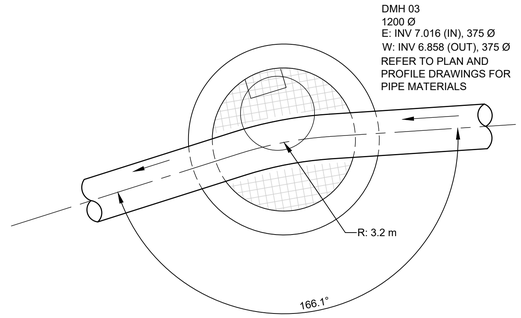


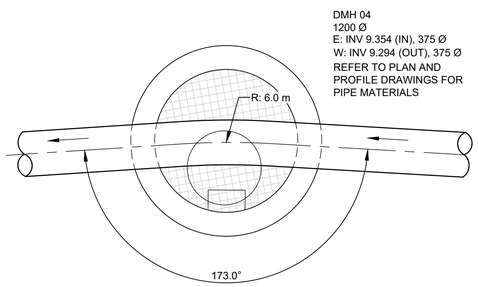
1 - DETAIL 1:25
DMH 01 BENCHING



2 - DETAIL 1:25
DMH 02 BENCHING



3 - DETAIL 1:25
DMH 03 BENCHING



4 - DETAIL 1:25
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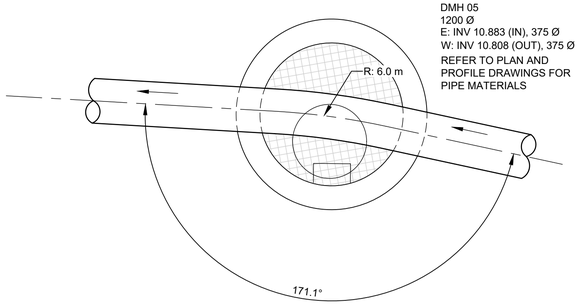
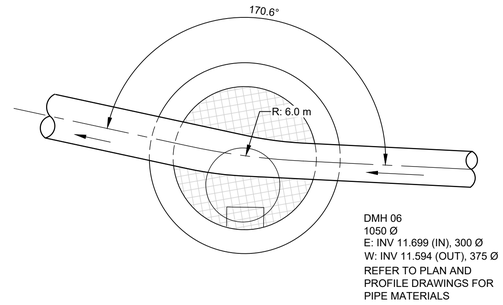


5 - DETAIL 1:25
DMH 05 BENCHING



6 - DETAIL 1:25
DMH 06 BENCHING

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Platinum member

CITY OF COURTENAY

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PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. DHILLON

2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
B	2022MAY16	M.DHILLON	G.ALDERLIESTEN	REVISED 100% DESIGN
A	2022MAR03	M.DHILLON	A.SHEWAN	100% DESIGN

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

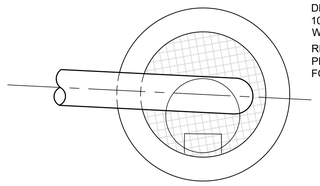
SCALE: AS SHOWN

CIVIL
DRAIN MANHOLE DETAILS

DRAWING	REVISION	SHEET
2264-00-C-503	B	21 / 22

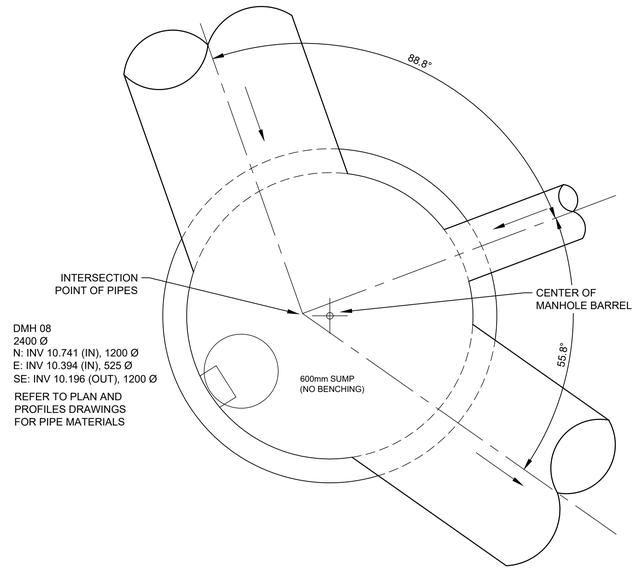
IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE



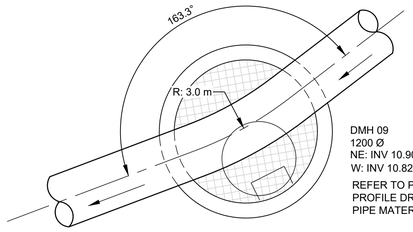
DMH 07
1050 Ø
W: INV 12.055 (OUT), 300 Ø
REFER TO PLAN AND PROFILES DRAWINGS FOR PIPE MATERIALS

7 / - DETAIL 1:25
DMH 07 BENCHING



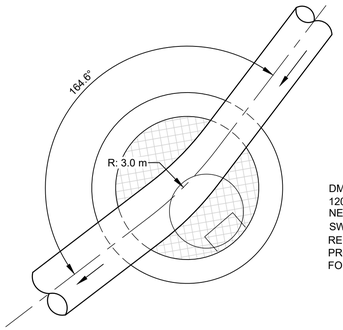
DMH 08
2400 Ø
N: INV 10.741 (IN), 1200 Ø
E: INV 10.394 (IN), 525 Ø
SE: INV 10.196 (OUT), 1200 Ø
REFER TO PLAN AND PROFILES DRAWINGS FOR PIPE MATERIALS

8 / - DETAIL 1:25
DMH 08 BENCHING



DMH 09
1200 Ø
NE: INV 10.901 (IN), 450 Ø
W: INV 10.826 (OUT), 525 Ø
REFER TO PLAN AND PROFILE DRAWINGS FOR PIPE MATERIALS

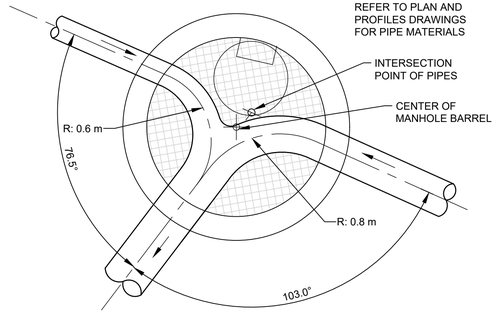
9 / - DETAIL 1:25
DMH 09 BENCHING



DMH 10
1200 Ø
NE: INV 11.836 (IN), 375 Ø
SW: INV 11.631 (OUT), 450 Ø
REFER TO PLAN AND PROFILES DRAWINGS FOR PIPE MATERIALS

10 / - DETAIL 1:25
DMH 10 BENCHING

DMH 11
1500 Ø
NW: INV 13.416 (IN), 200 Ø
SE: INV 13.418 (IN), 300 Ø
SW: INV 13.335 (OUT), 375 Ø
REFER TO PLAN AND PROFILES DRAWINGS FOR PIPE MATERIALS



11 / - DETAIL 1:25
DMH 11 BENCHING

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2022-05-24

REV	DATE	DESIGN	DRAWN	DESCRIPTION
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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: AS SHOWN

CIVIL
DRAIN MANHOLE DETAILS

DRAWING	REVISION	SHEET
2264-00-C-504	B	22 / 22

IF NOT 50 mm ADJUST SCALES
50 mm

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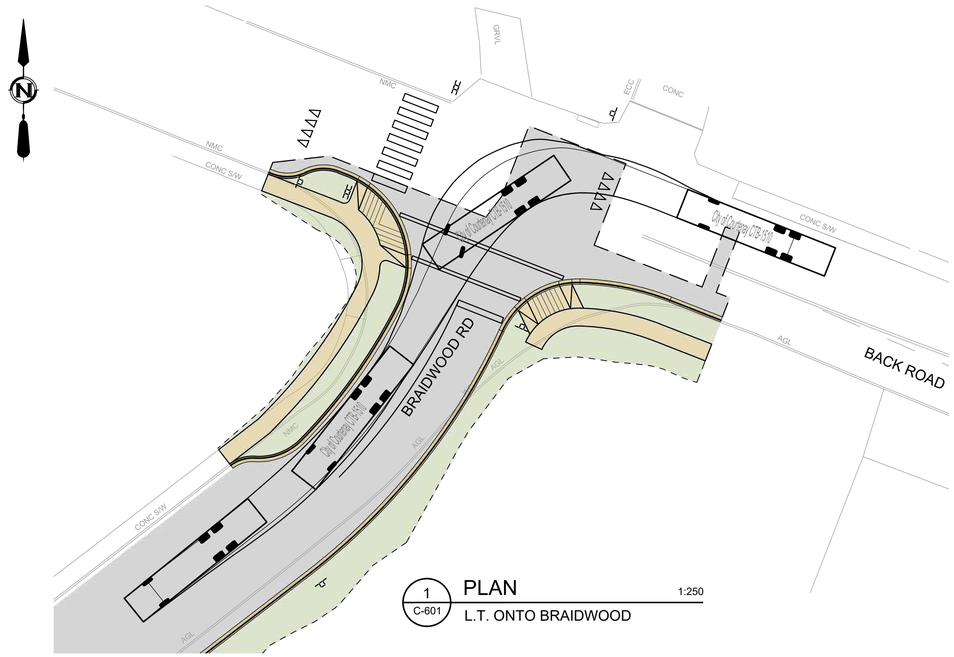
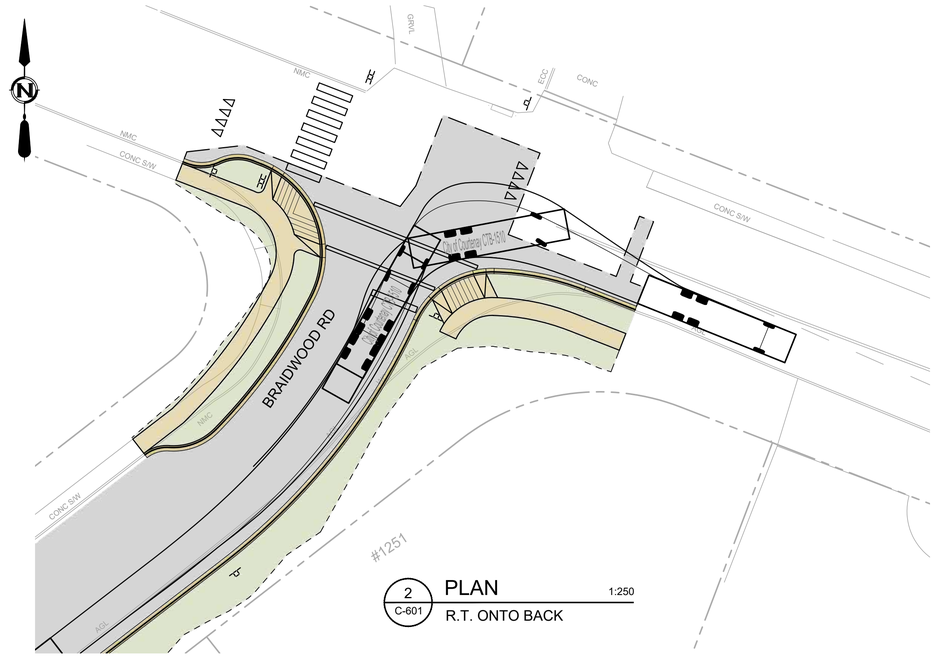
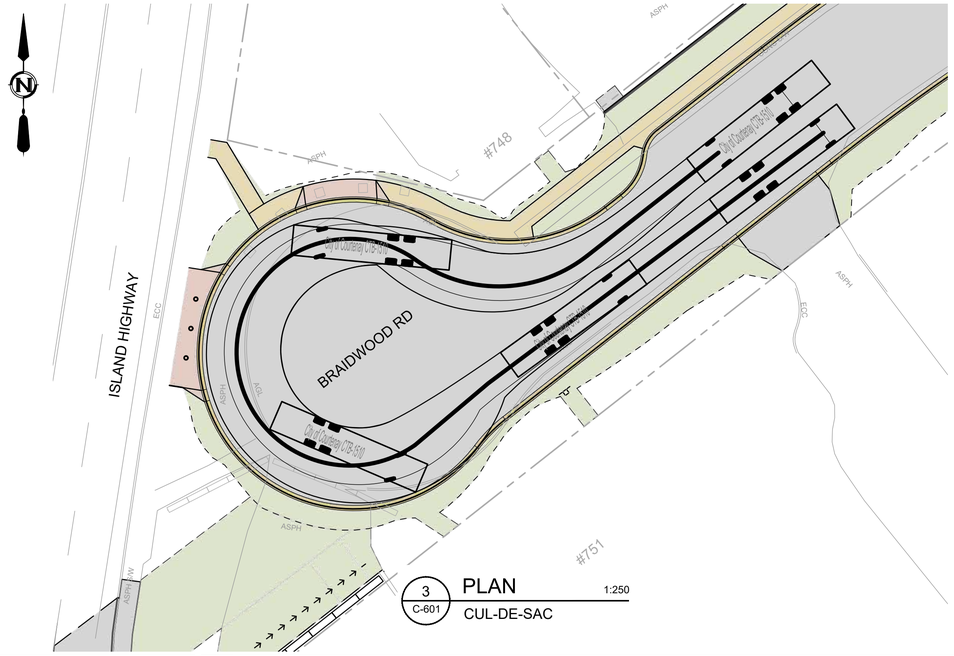


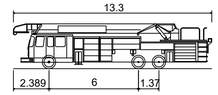
1 C-601 PLAN 1:250
L.T. ONTO BRAIDWOOD



2 C-601 PLAN 1:250
R.T. ONTO BACK



3 C-601 PLAN 1:250
CUL-DE-SAC



City of Courtenay CTB-1510

Overall Length	13.300m
Overall Width	2.540m
Overall Body Height	3.003m
Min Body Ground Clearance	0.281m
Track Width	2.540m
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°
Curb to Curb Turning Radius	10.300m

PLOT DATE: 2022-05-20 12:50:09 PM
SAVE DATE: 2022-05-20 10:03:51 AM SAVED BY: ALDERLIESTENG
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2022-05-24

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CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

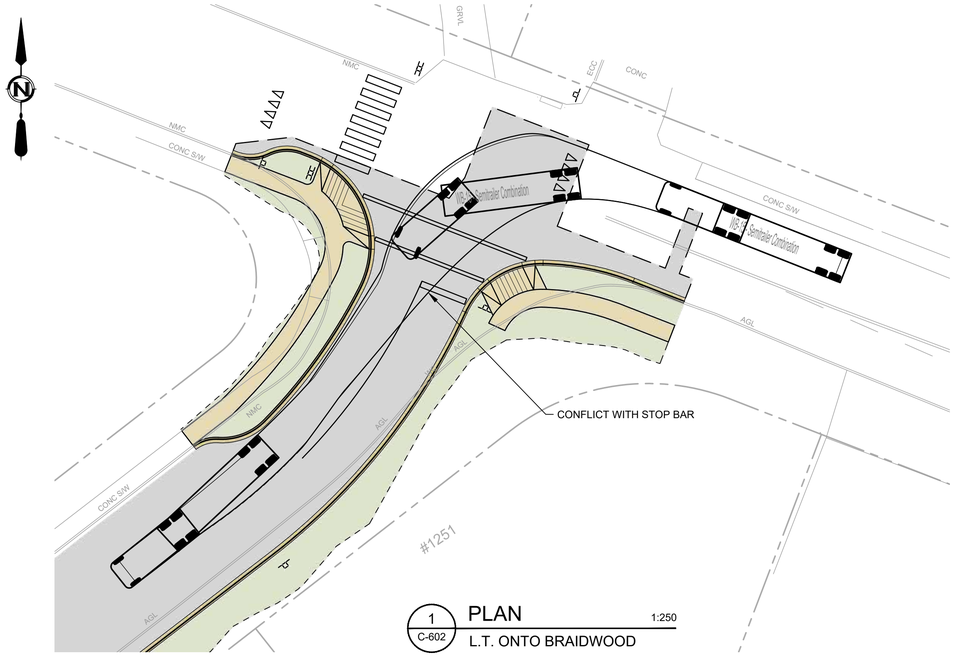
SCALE: 1:250

VEHICLE TURNING MOVEMENTS
CTB-1510 FIRE VEHICLE

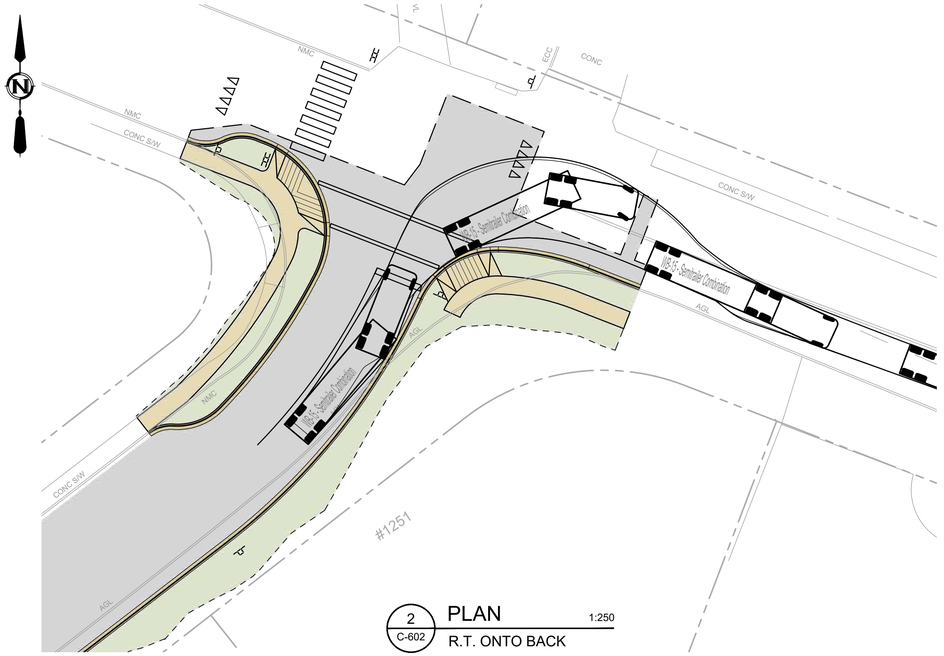
DRAWING	REVISION	SHEET
2264-00-C-601	C	1 / 4

IF NOT 50 mm ADJUST SCALES
50 mm

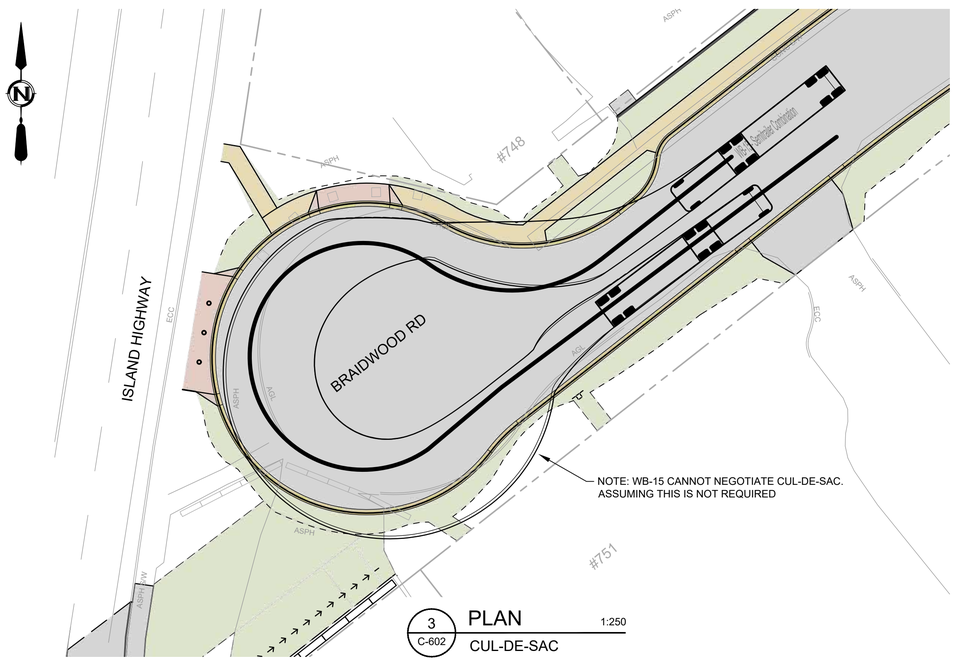
SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE



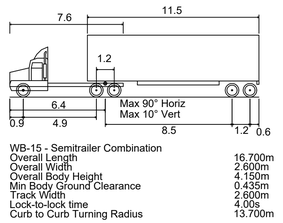
1 C-602 PLAN 1:250
L.T. ONTO BRAIDWOOD



2 C-602 PLAN 1:250
R.T. ONTO BACK



3 C-602 PLAN 1:250
CUL-DE-SAC



WB-15 - Semitrailer Combination

Overall Length	16.700m
Overall Width	2.600m
Overall Body Height	4.150m
Min Body Ground Clearance	0.435m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	13.700m

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CITY OF COURTENAY

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2022-05-24

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A	2018NOV22	A.STEPHENSON	G.ALDERLIESTEN	ISSUED FOR REVIEW

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250

VEHICLE TURNING MOVEMENTS
WB-15 DESIGN VEHICLE

DRAWING	REVISION	SHEET
2264-00-C-602	C	2 / 4

IF NOT 50 mm ADJUST SCALES
50 mm

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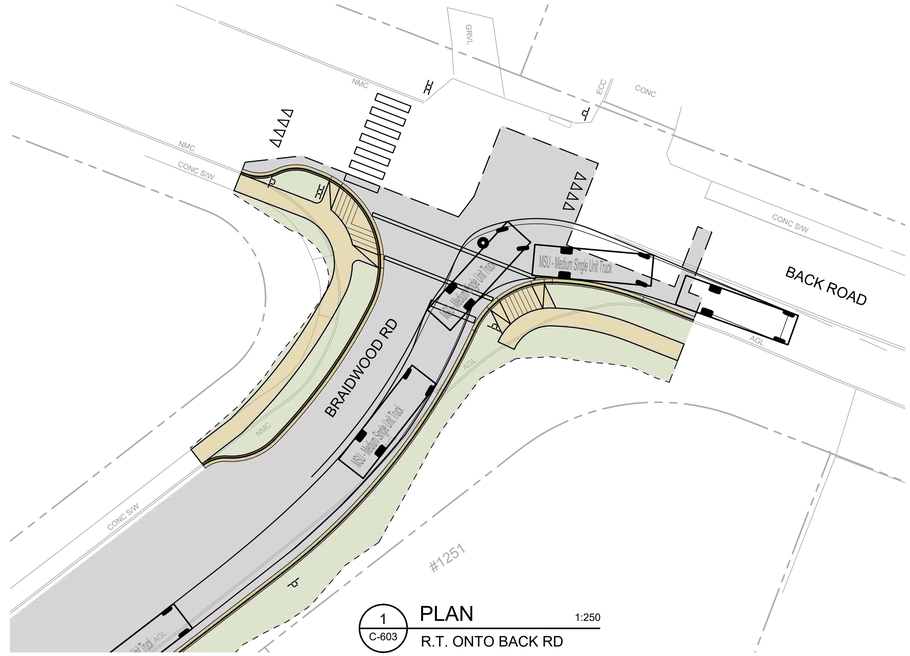
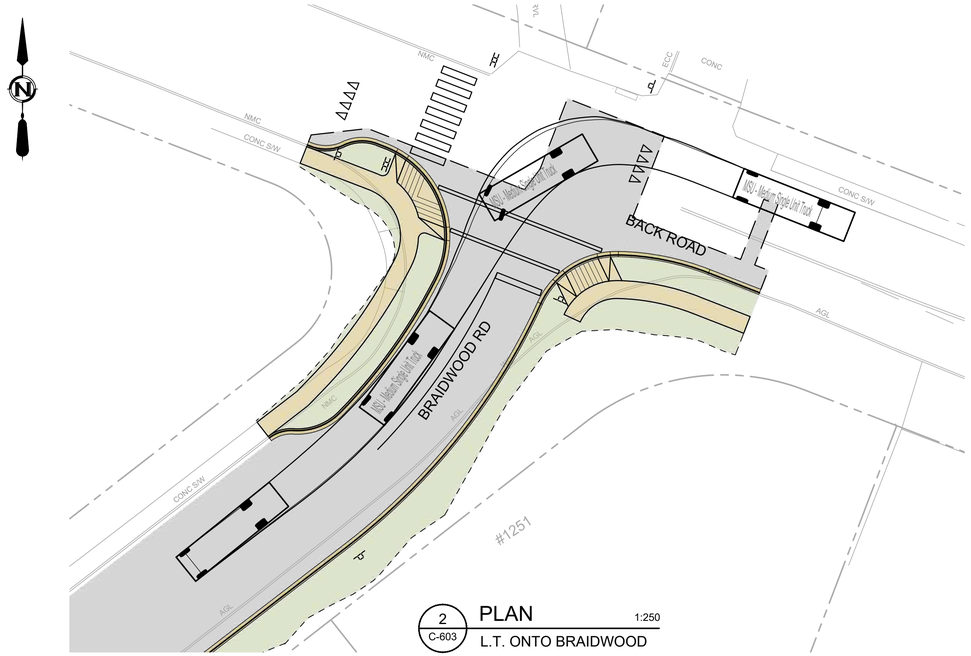
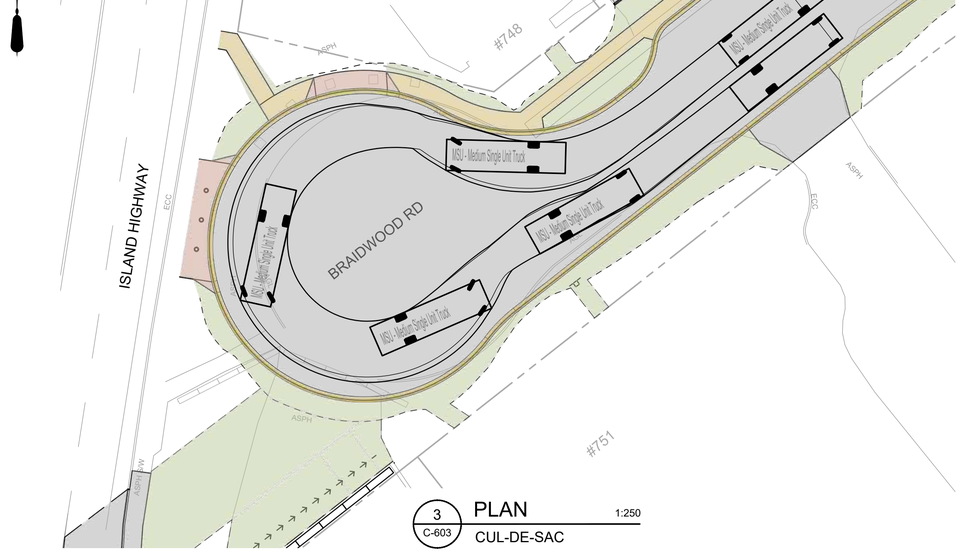


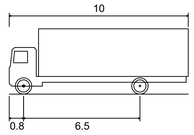
1 C-603 PLAN 1:250
R.T. ONTO BACK RD



2 C-603 PLAN 1:250
L.T. ONTO BRAIDWOOD



3 C-603 PLAN 1:250
CUL-DE-SAC



MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

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2022-05-24

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A	2018NOV22	A.STEPHENSON	G.ALDERLIESTEN	ISSUED FOR REVIEW

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250

VEHICLE TURNING MOVEMENTS
M.S.U. DESIGN VEHICLE

DRAWING	REVISION	SHEET
2264-00-C-603	C	3 / 4

IF NOT 50 mm ADJUST SCALES
50 mm

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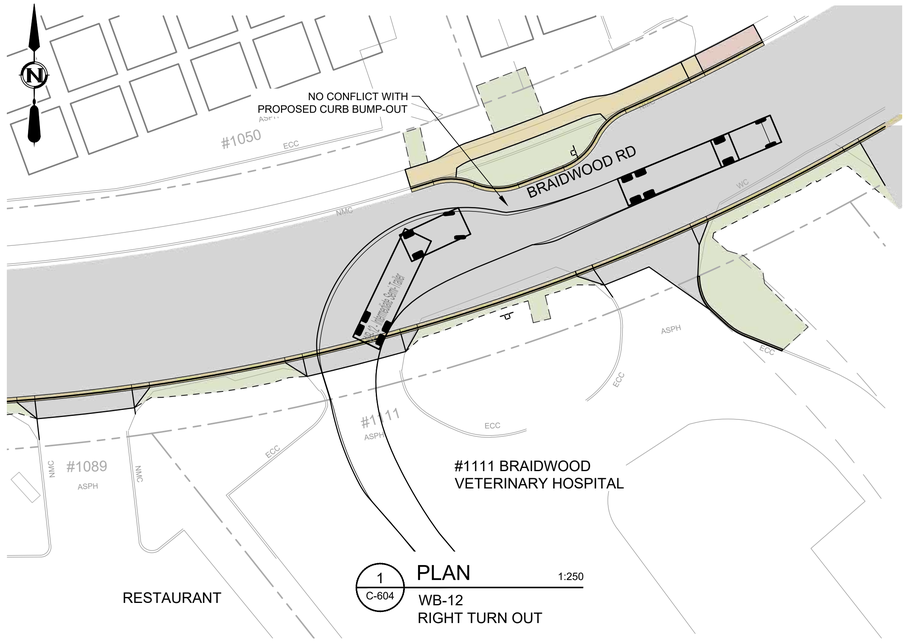
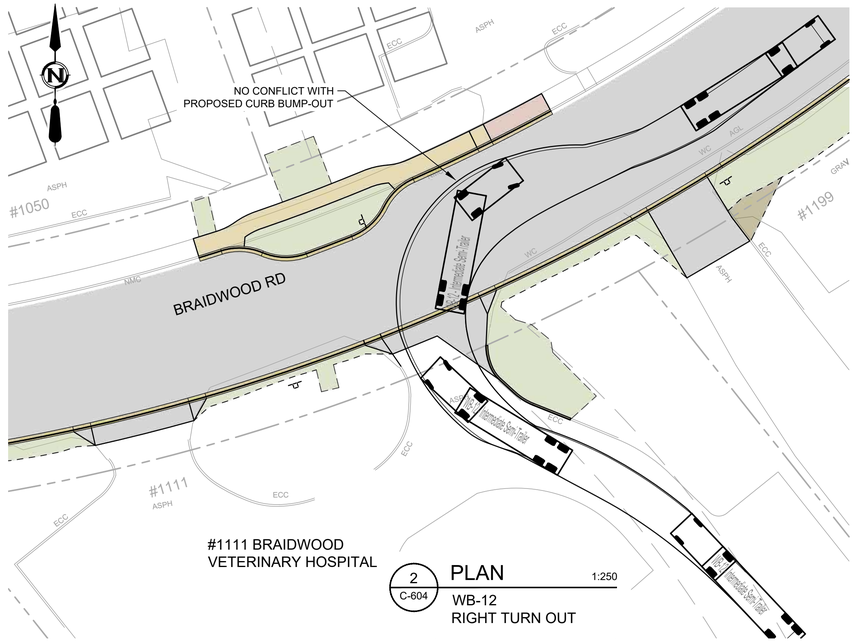
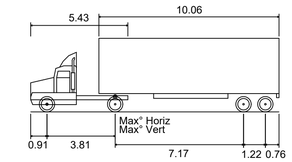


1 C-604 PLAN 1:250
WB-12
RIGHT TURN OUT

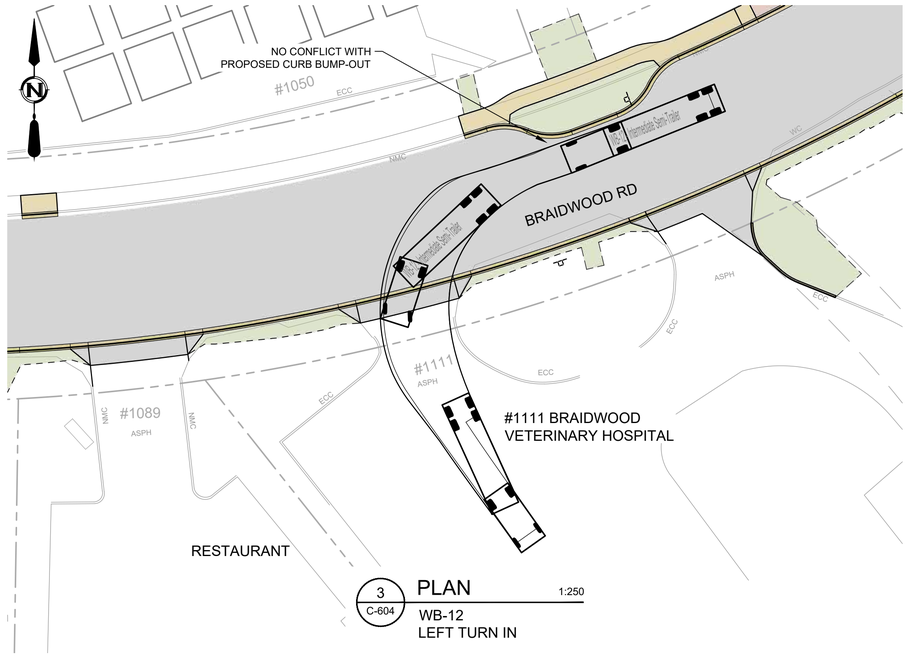


2 C-604 PLAN 1:250
WB-12
RIGHT TURN OUT

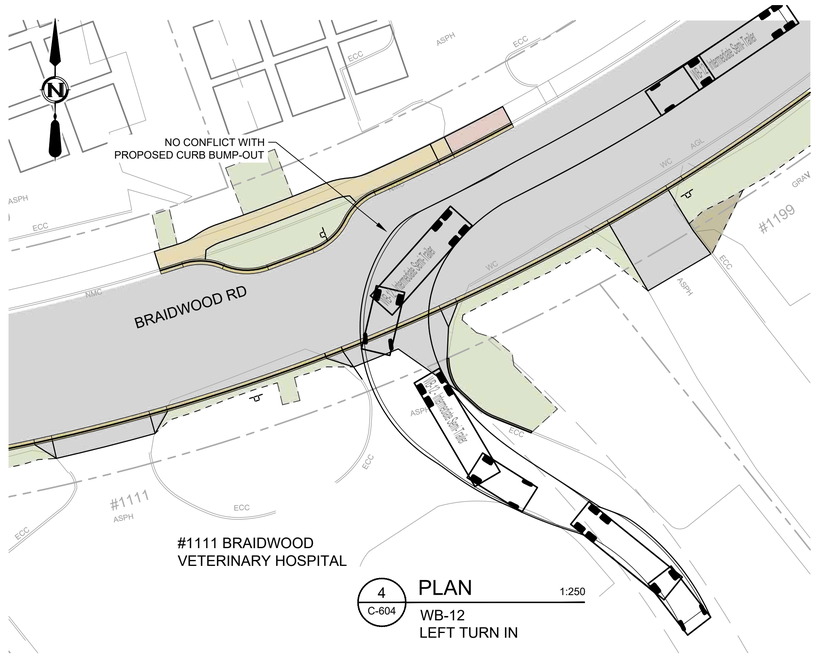


WB-12 - Intermediate Semi-Trailer

Overall Length	13.870m
Overall Width	2.440m
Overall Body Height	4.110m
Min Body Ground Clearance	0.407m
Track Width	2.440m
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	20.30°



3 C-604 PLAN 1:250
WB-12
LEFT TURN IN



4 C-604 PLAN 1:250
WB-12
LEFT TURN IN

PLOT DATE: 2022-05-20 12:52:18 PM
SAVE DATE: 2022-05-20 10:03:51 AM SAVED BY: ALDERLIESTENG
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A	2018NOV22	A.STEPHENSON	G.ALDERLIESTEN	ISSUED FOR REVIEW

CITY OF COURTENAY

BRAIDWOOD ROAD
CORRIDOR IMPROVEMENTS

2021-2264-00

SCALE: 1:250

VEHICLE TURNING MOVEMENTS
COMMERCIAL DRIVEWAYS
WB-12

DRAWING	REVISION	SHEET
2264-00-C-604	B	4 / 4

From: Jaclyn Collings <[redacted]>
Sent: Friday, June 20, 2025 10:06 AM
To: Wells, Bob <mayor@courtenay.ca>; InfoAlias <info@courtenay.ca>; CouncilAlias <Council@courtenay.ca>; town@comox.ca; nminions@comox.ca
Cc: Cole-Hamilton, Will <wcole-hamilton@courtenay.ca>; Morin,Wendy <wmorin@courtenay.ca>; McCollum, Melanie <mmccollum@courtenay.ca>; Jolicoeur, Evan <ejolicoeur@courtenay.ca>; Wells, Bob <mayor@courtenay.ca>; Hillian, Doug <dhillian@courtenay.ca>; Garbutt, Geoff <ggarbutt@courtenay.ca>; Frisch, David <dfrisch@courtenay.ca>

Subject: McDonald Road

To City of Courtenay and Town of Comox,

I am contacting you today in regards to McDonald Road. As you know, McDonald Rd is now a detour route due to the construction in and around Comox Rd and Back Rd. Consequently, this already busy road is experiencing more traffic especially during commuting times in the morning and afternoon.

As a Resident of this neighbourhood with 2 young children, I would like to express my ongoing concern about the speed at which people travel along this road. Lancaster Park is a speed limit of 30 km/h. No one goes the speed limit through there. Northbound cars come roaring up the hill of McDonald road, do not have adequate time to see and stop for people waiting at the crosswalk at Lancaster and McDonald road and do not slow down through the park zone.

During the commute there are many children walking and biking to school, using this crosswalk and it is very dangerous.

I would like to suggest that something be done to slow traffic down in this area. My suggestions are:

1. Make Lancaster and McDonald Rd a 4-way stop. This would slow traffic down all directions as well as keep this crosswalk much safer.
2. Put in a speed bump in the 30 km/h park zone
3. Request RCMP to enforce the speed limit more regularly, especially during these times of increased traffic volume.
4. Flashing speed limit sign encouraging vehicles to slow down in both directions

I realize that this road is somewhat of a boundary between Courtenay and Comox and would require collaboration, or please forward this email to the interested parties on my behalf.

Thank you for your time and service,

Jaclyn Collings
[redacted]
Courtenay, BC

The Corporation of the City of Courtenay

Staff Report

To: Council **File No.:** 3360-20-2502/RZ000091

From: Director of Development Services **Date:** July 16, 2025

Subject: Zoning – Amendment Bylaw No. 3186 (649 McPhee Avenue) – 1st, 2nd and 3rd Readings

PURPOSE:

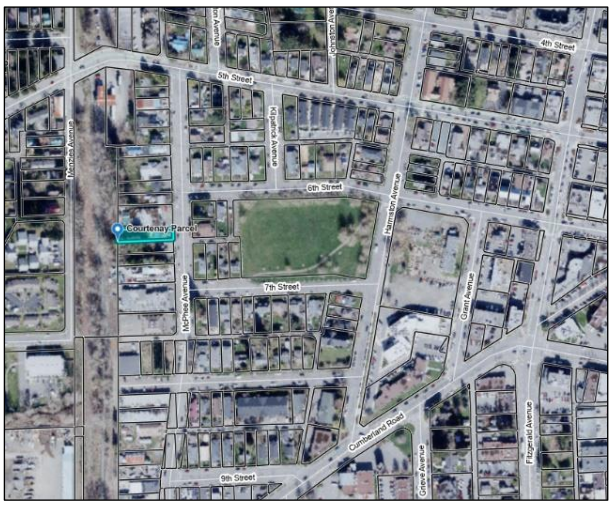
For Council to consider first, second and third reading of Zoning Amendment Bylaw No. 3186 which proposes to amend Zoning Bylaw No. 2500, 2007 by rezoning 649 McPhee (LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464) from Industrial Two (I-2) to Multiple Use Four (MU-4) to permit vertical addition to an existing single residential dwelling and to create site specific text amendments to legalize non-conformities of the property and development with the MU-4 zone.

BACKGROUND:

In April 2025, the property owners of 649 McPhee Avenue submitted a Zoning Bylaw Amendment application to rezone their property to Multiple Use Four (MU-4) to allow for improvements to the existing single residential dwelling on their property. The property's current Industrial Two (I-2) zone does not permit single residential dwellings and therefore, in accordance with *Local Government Act* section 531(1), a structural alteration or addition cannot be made to a building while it contains a non-conforming use.

If rezoned, the property owners intend to undergo structural alterations by raising the ground floor of the existing home approximately two feet and finishing the existing basement to create additional habitable space. A concurrent Building Permit application has been made to the City and would progress upon finalization of the rezoning process.

Figure 1: Subject Property Location and Context



DISCUSSION:

The 738.5m^2 subject property is currently zoned Industrial Two (I-2) and contains an existing single residential home originally constructed in the early 1940s. The proposed construction would not expand the existing

building's footprint or change the building's siting and no mature trees would be impacted by the proposed building improvements.

Located in northwest Courtenay, the subject property is designated Neighbourhood Centre, specifically McPhee Neighbourhood Centre, within Official Community Plan (OCP) Bylaw No. 3070, 2022. Neighbourhood Centres envision a diversity of housing choices and small-scale commercial uses and the McPhee Neighbourhood Centre is expected to undergo significant land use change from the predominately industrial uses of the past century to a mix of residential, commercial and light industry in the future.

Figure 2: Street View – Existing front deck not shown
(Source: Google Maps May 2018. Retrieved June 24, 2025)

Figure 3: OCP Land Use Designation Map – Pink is Neighbourhood Centre, Red is Downtown, Yellow is Urban Residential

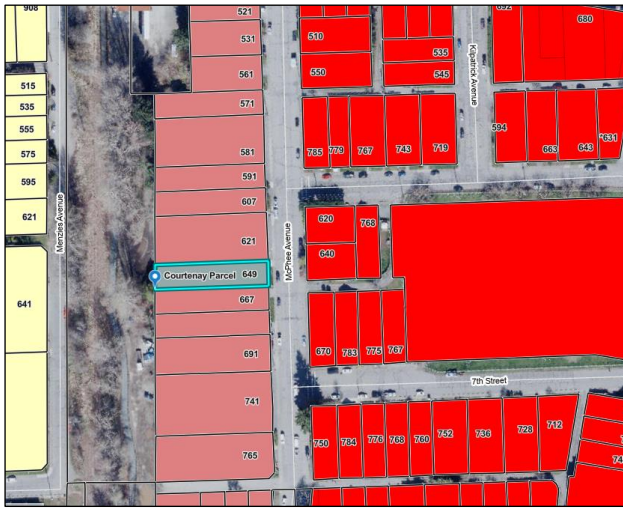
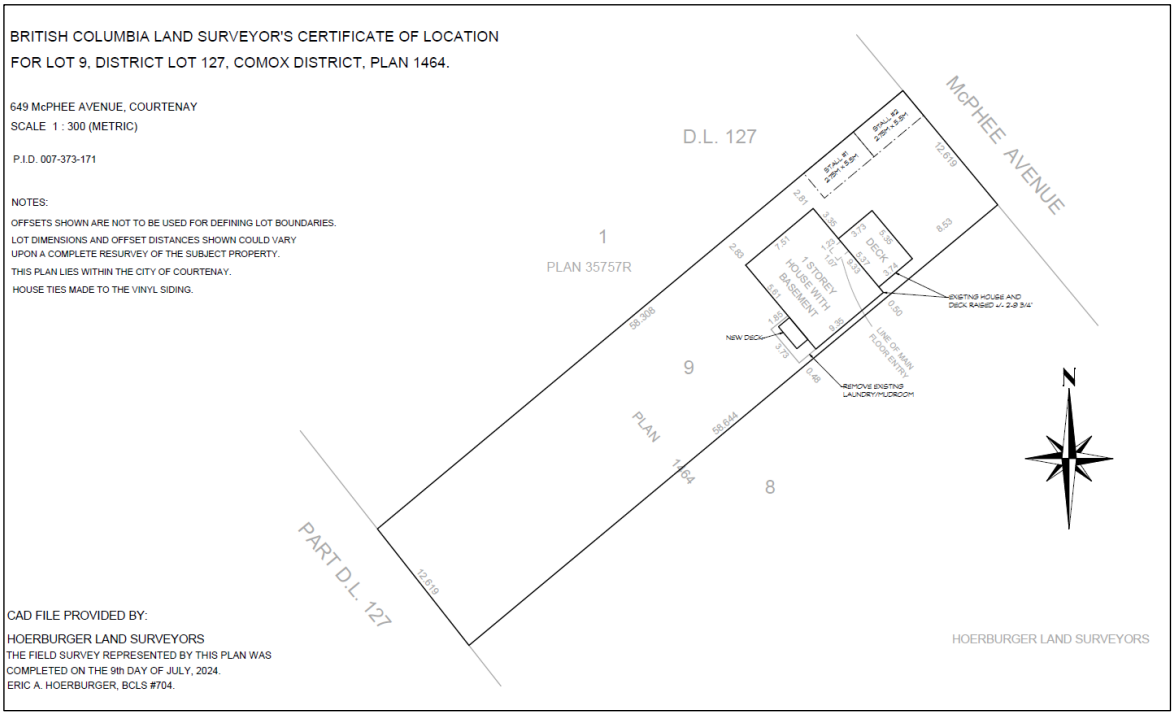


Figure 4: Site Plan



The intent of the rezoning application is to bring into conformity the lot's existing single residential dwelling, which will also permit for its proposed addition. This would be achieved by rezoning to Multiple Use Four (MU-4) which permits single residential dwellings as well as other uses in alignment with the OCP land use designation. However, there are four non-conformities of the property and development with the MU-4 zone regarding side yard building setbacks, minimum lot size, minimum frontage length and portions of the landscaping and screening requirements. To address this, Zoning - Amendment Bylaw No. 3186 includes additional provisions to legalize the four zoning non-conformities through property-specific notwithstanding text amendments within the MU-4 zone (Attachment 1). These property-specific text amendments are described in greater detail in Table 1 Zoning Bylaw Compliance below.

Table 1: Zoning Bylaw Compliance – Site specific text amendments in bold

Regulation	**Required MU-4**	**Proposed**
Permitted Use	Single residential dwelling	Single residential dwelling
Maximum Floor Area Ratio	0.6	0.18
Minimum Lot Size	**1,250 m^2**	**700 m^2**
Minimum Lot Frontage	**20.0 m**	**12.0 m**
Maximum Lot Coverage	40%	14.7%
Minimum Front Yard Setback (McPhee)	7.5 m	8.5 m
Minimum Rear Yard Setback	7.5 m	> 7.5 m
Minimum Side Yard Setback(s)	**3.0 m**	**0.5 m on the south side yard** **2.8 m on the north side yard**
Maximum Building Height	9.5 m	6.9 m
Minimum Vehicle Parking Required	2 stalls	2 stalls
Landscaping and Screening	(1) Where a lot in this zone adjoins any other street, a landscaped area of at least 4.5 m in width extending along the entire frontage of the property on the street shall be provided inside the property line. **(2) To separate parking, internal roads, services or storage areas from adjacent properties, a landscaped buffer area of at least 2.0 m in width and 2.0 m in height shall be provided along the inside of all property lines.** **(3) Loading areas, garbage and recycling containers shall be screened and gated to a minimum height of 2 m by a landscaping screen or solid decorative fence or a combination thereof.**	Section (1) is met **Section (2) and (3) are considered non-applicable given the context of this rezoning and development proposal. Staff will propose removing them as a requirement of this parcel through the zoning amendment bylaw.**

Staff do not anticipate adverse affects to amending these requirements. Many of the properties in Tin Town, the neighbourhood the McPhee Neighbourhood Centre is envisioned to emulate, are zoned MU-4 and have existed with similar side yard setback, lot size and frontage non-conformities with no issue. There are also already multiple properties on the same block (581, 591 and 607 McPhee Avenue) which are zoned MU-4 and contain lot size and frontage non-conformities. The existing home will undergo a structural change to raise the floor and expand the habitable area of the building, the existing building footprint and siting will not change. This means the side yard building setbacks, although non-conforming, will not be increasing horizontally nor would the legalized encroachment into the setback change much from how the building currently operates on-site and interfaces with the neighbouring properties. As the City works to update its Zoning Bylaw by the end of 2025 to better serve the implementation of Courtenay's OCP, non-conformities between properties and the zones available in the Bylaw should become less common.

The proposal to rezone to MU-4 aligns with the OCP's current vision and land use designations. The MU-4 zone permits an array of housing types including single residential, duplex and multi-residential housing as well as commercial and combined commercial and residential uses. Although the rezoning is requested by the property owners to permit improvements to an existing single residential home, the rezoning would also allow for larger and denser residential or multi-use development on the site.

Land use planning that may affect the land use designation of this property is currently underway. Through the concurrent Downtown Vitalization Local Area Plan (DVLAP) and OCP update process, the subject property may be subject to a new land use designation before the end of 2025. The DVLAP currently proposes to extend the boundaries of the Downtown Town Centre land use designation to include the west side of McPhee Avenue from 5th Street to Cumberland Road, inclusive of this property. Through adoption of the Downtown Vitalization Local Area Plan, if the property's land use designation were to be amended, there is a chance the property could be again rezoned to meet the updated land use visions in the DVLAP and OCP and to support the provincial requirement to ensure adequately zoned land for at least 20 years of housing need.

This means while the rezoning application meets the current OCP requirements, the development rights on the property could change again soon as a result of on-going land use planning for the area and to support the proactive planning required by the provincial government to facilitate a long-term supply of housing. The owners are aware of this potential outcome for their property, should Council adopt Zoning Amendment Bylaw No. 3186.

Frontage improvements and off-site requirements

Based on the proposal for a modest addition to a pre-existing building, no frontage improvements or off-site requirements are required. If the property is redeveloped in the future, or if the scope of the building were to change from the current application, at that time the City may require capacity modelling to verify capacity and adequacy of municipal sanitary and water networks.

POLICY ANALYSIS:

Official Community Plan

The proposed rezoning is consistent with the Neighbourhood Centre land use designation which supports the development of a variety of housing options, including multi-residential and mixed use. The McPhee Neighbourhood Centre area-specific planning direction states that "Within these lands, uses that are similar to the Tin Town 'live-work' options will be available and encouraged to support a neighbourhood character that connects historical uses with future needs." (Page 66, OCP Bylaw No. 3070).

The proposed rezoning is in alignment with land use objectives within the OCP including focusing community growth within the existing city boundary, away from hazardous, agricultural and environmentally sensitive lands. The housing forms allowed by this proposed rezoning (single residential, duplex and multi-residential) are consistent with the land use pattern envisioned in this neighborhood and the MU-4 zone and its development capacity are already established within adjacent properties (581, 591 and 607 McPhee Avenue) and similar Neighbourhood Centres such as Tin Town.

Regional Growth Strategy (RGS)

This development proposal is consistent with the RGS Housing Goal to "ensure a diversity of affordable housing options to meet evolving regional demographics and needs" including:

- Promote the efficient use of land, provide greater transportation choices, reduce public servicing costs, and achieve environmental benefits through compact growth.
- Promote intensification, compact growth and supportive public transit services throughout designated Municipal Areas as the primary means of accommodating population and employment growth.

FINANCIAL IMPLICATIONS:

There are no financial implications for the City with respect to this Zoning Amendment Bylaw.

ADMINISTRATIVE IMPLICATIONS:

Processing Zoning Bylaw amendments is a statutory component of the corporate work plan and a core duty of the Department of Development Services. Work to date has primarily been carried out by Development Services staff, with other departments providing referral comments.

STRATEGIC PRIORITIES REFERENCE:

This initiative addresses the following strategic priorities:

- Buildings and Landscape - Support investment and redevelopment in downtown core: Review and evaluate Downtown development incentives e.g. fast tracking/density bonuses/DCC
- Buildings and Landscape - Review and update land use regulations and bylaws for consistency with OCP
- Good Governance - Review and streamline development process and set targets for application processing times

PUBLIC ENGAGEMENT:

The Community Information Meeting requirements for this development have been waived at the discretion of the Director of Development Services per Section 7.2 of *Development Procedures Bylaw No. 3106, 2023*.

Development Procedures Bylaw No. 3106 delegates to the Director of Development Services the authority to provide notice under section 467 of the *Local Government Act* when a zoning amendment is consistent with the Official Community Plan as per section 464 (2) of the *Local Government Act*. Notice was provided that no Public Hearing would be held, as the proposal was consistent with Official Community Plan (OCP) Bylaw No. 3070, 2022.

Notification consisted of advertisements posted on the City's website and social media channels for two consecutive weeks in advance of bylaw reading, mailed to residents within 100 metres, and run in the Comox Valley Record July 2nd and July 9th. There were no public comments received at the time of writing this report. Any comments received by 1:00 p.m. on Wednesday, July 16, 2025 will be presented to Council at the regular council meeting.

The applicant has provided four Letters of Support from neighbours within the immediate vicinity of the subject property (Attachment 2).

OPTIONS:

1. THAT Council receive for information the proposed rezoning aligns with the Official Community Plan and a public hearing is not required as per the *Local Government Act* section 464(2) and the public notice has been given.

   THAT Council give first, second and third readings to "Zoning – Amendment Bylaw No. 3186 (649 McPhee Avenue)" LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464.

2. THAT Council request additional information from staff through a resolution.
3. THAT Council not proceed with the application.

ATTACHMENTS:

1. Zoning – Amendment Bylaw No. 3186 (649 McPhee Avenue)
2. Neighbour Letters of Support

Prepared by: Jacob Cramer, Planner II
Reviewed by: Nancy Gothard, RPP, MCIP, Manager of Community and Sustainability Planning
Marianne Wade, RPP, MCIP, Director of Development Services
Concurrence: Geoff Garbutt, M.PI., MCIP, RPP, City Manager (CAO)

The Corporation of the City of Courtenay

Bylaw No. 3186

A bylaw to amend Zoning Bylaw No. 2500, 2007

NOW THEREFORE the Council of the City of Courtenay, in open meeting assembled, enacts as follows:

Citation

1. This Bylaw shall be cited as "Zoning - Amendment Bylaw No. 3186 (649 McPhee Avenue)".

Amendment

2. "Zoning Bylaw No. 2500, 2007" is amended as follows:

    a) Rezoning from Industrial Two (I-2) to Multiple Use Four (MU-4) a parcel with the legal description LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464 as shown in bold outlined on **Attachment A**, which is attached hereto and forms part of this bylaw;

    b) At the end of Section 8.16.2, inserting "Notwithstanding the minimum lot size specified above, a minimum lot size of 700 m^2 is permitted on LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464 (649 McPhee Avenue).";

    c) At the end of Section 8.16.3, inserting "Notwithstanding the minimum lot frontage specified above, a minimum lot frontage of 12.0 m is permitted on LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464 (649 McPhee Avenue).";

    d) At the end of Section 8.16.6, inserting "Notwithstanding the minimum side yard *building setback* above, a minimum 0.5 m side yard *building setback* is permitted on the south side yard and 2.8 m side yard *building setback* is permitted on the north side yard on LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464 (649 McPhee Avenue).";

    e) At the end Section 8.16.11, inserting "Notwithstanding the Landscaping and Screening requirements specified above, the requirements in 8.16.11 (2) and 8.16.11 (3) are not required on LOT 9, DISTRICT LOT 127, COMOX DISTRICT, PLAN 1464 (649 McPhee Avenue)."; and

    f) That Schedule No. 8 Zoning Map be amended accordingly.

Severability

1. If any portion of this Bylaw is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed and the remainder of the Bylaw is deemed valid.

2. This Bylaw shall come into effect upon final adoption hereof.

Zoning - Amendment Bylaw No. 3186 (649 McPhee Avenue)

Read a first time this [day] day of [month], [year]

Read a second time this [day] day of [month], [year]

Public Hearing held this [day] day of [month], [year]

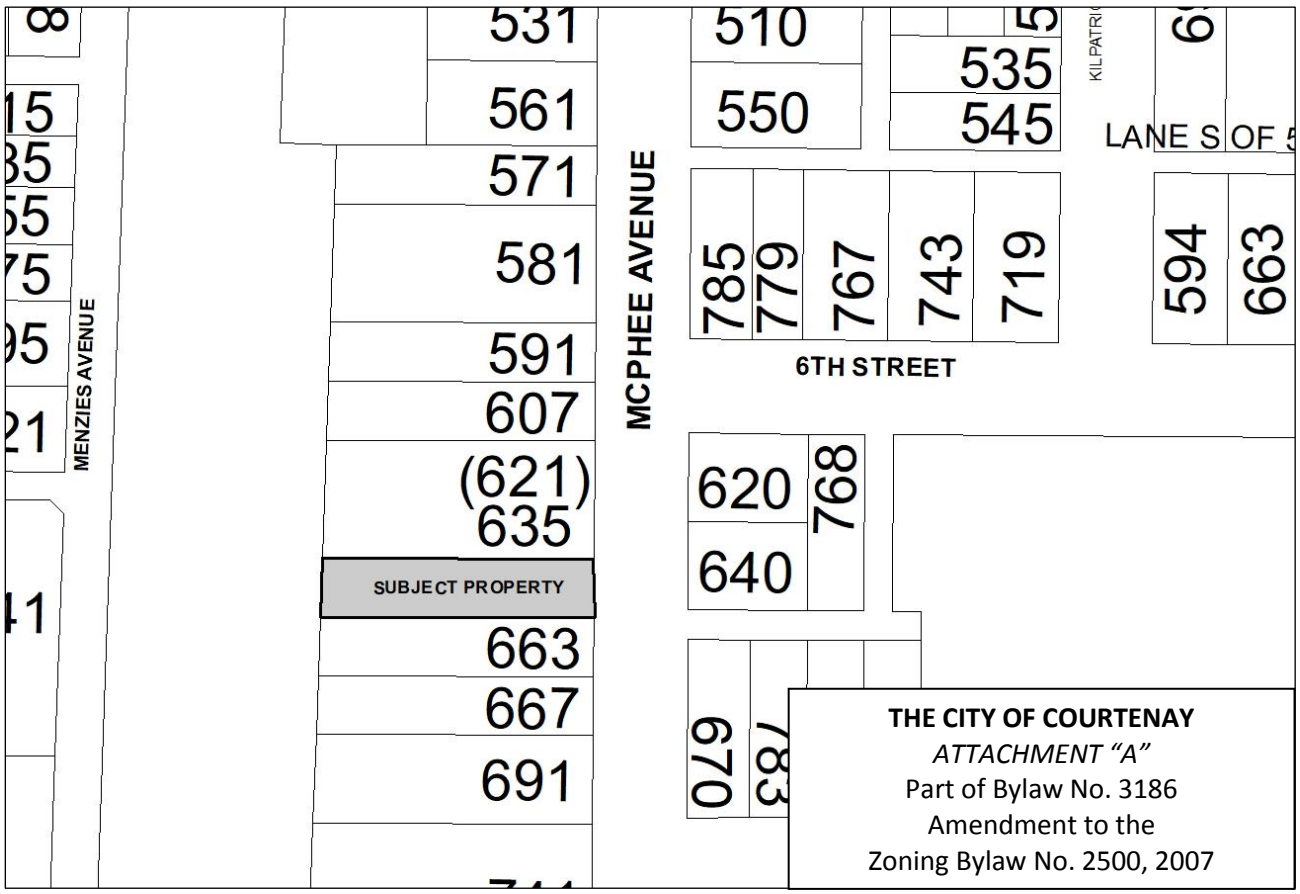
Read a third time this [day] day of [month], [year]

Adopted this [day] day of [month], [year]

Mayor Bob Wells

Corporate Officer Adriana Proton

Attachment A



Dear neighbor,

My partner Hannah and I purchased 649 McPhee Ave in May of last year and are so excited to live here. We love this neighborhood and are hoping to be long-term residents of Courtenay. We recently moved to the Comox Valley from Victoria after a job change, and after we bought the house, we decided we wanted to do some renovations to accommodate our desire to raise a family here. Due to the current zoning of the property, we are unable to do our renovations until we rezone to something that allows a residential use case. Through collaboration with the city, we've identified the Multi-Use 4 (MU-4) zone to be most appropriate for this area and the city's long-term plans for the area.

Our plan for the house is to add height to the current partial-height basement and some general improvements to the interior. As the scope of this is beyond what is allowed without re-zoning, we feel rezoning the property is our best option.

Part of the re-zoning process involves informing neighbors and getting their feedback. If you wouldn't mind, we'd ask you to sign this document granting your support of us rezoning the property to allow us to progress with our desired renovations. I've provided my email below – feel free to drop me a note if you have any questions or concerns. You may see me outside on the weekends doing yard work and poking around, don't hesitate to say hi! We look forward to being your neighbors. *For those we were unable to reach in person on Saturday, May 24th, please drop this form off in the mailbox on the right side of our place.*

Thank you,

Mike & Hannah

[redacted]

[redacted] 641 McPhee Ave

Name Address

Dear neighbor,

My partner Hannah and I purchased 649 McPhee Ave in May of last year and are so excited to live here. We love this neighborhood and are hoping to be long-term residents of Courtenay. We recently moved to the Comox Valley from Victoria after a job change, and after we bought the house, we decided we wanted to do some renovations to accommodate our desire to raise a family here. Due to the current zoning of the property, we are unable to do our renovations until we rezone to something that allows a residential use case. Through collaboration with the city, we've identified the Multi-Use 4 (MU-4) zone to be most appropriate for this area and the city's long-term plans for the area.

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Thank you,

Mike & Hannah

[redacted]

[redacted]

620 Mcphee Ave, Courtenay, V9N2Z8

Address

Dear neighbor,

My partner Hannah and I purchased 649 McPhee Ave in May of last year and are so excited to live here. We love this neighborhood and are hoping to be long-term residents of Courtenay. We recently moved to the Comox Valley from Victoria after a job change, and after we bought the house, we decided we wanted to do some renovations to accommodate our desire to raise a family here. Due to the current zoning of the property, we are unable to do our renovations until we rezone to something that allows a residential use case. Through collaboration with the city, we've identified the Multi-Use 4 (MU-4) zone to be most appropriate for this area and the city's long-term plans for the area.

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Thank you,

Mike & Hannah

[redacted]

[redacted]

591 McPhee Ave.

Address

Dear neighbor,

My partner Hannah and I purchased 649 McPhee Ave in May of last year and are so excited to live here. We love this neighborhood and are hoping to be long-term residents of Courtenay. We recently moved to the Comox Valley from Victoria after a job change, and after we bought the house, we decided we wanted to do some renovations to accommodate our desire to raise a family here. Due to the current zoning of the property, we are unable to do our renovations until we rezone to something that allows a residential use case. Through collaboration with the city, we've identified the Multi-Use 4 (MU-4) zone to be most appropriate for this area and the city's long-term plans for the area.

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Thank you,

Mike & Hannah

[redacted]

[redacted]

607- McPhee Ave.

Address

The Corporation of the City of Courtenay

Bylaw No. 3183

A bylaw to authorize the borrowing of the estimated cost of the Strategic Land Acquisition 2025 Capital Project.

WHEREAS it is deemed desirable and expedient to purchase Strategic Lands within the Municipality.

AND WHEREAS the estimated cost of lands including expenses incidental thereto is the sum of $1,800,000 of which the sum of $1,800,000 is the amount of debt intended to be borrowed by this bylaw;

NOW THEREFORE, the Council of the City of Courtenay in open meeting assembled, enacts as follows:

1. The Council is hereby empowered and authorized to undertake and carry out or cause to be carried out the strategic land acquisition 2025 project generally in accordance with general plans on file in the municipal office and to do all things necessary in connection therewith and without limiting the generality of the foregoing:

    a) To borrow upon the credit of the Municipality a sum not exceeding one million eight hundred thousand dollars ($1,800,000).

    b) To acquire all such real property, easements, rights-of-way, licenses, rights or authorities as may be requisite or desirable for or in connection with strategic land acquisitions.

2. The maximum term for which debentures may be issued to secure the debt created by this bylaw is thirty years.

Citation

3. This Bylaw shall be cited as “Loan Authorization Bylaw 3183, 2025 – Strategic Land Acquisition 2025”.

Severability

4. If any portion of this Bylaw is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed and the remainder of the Bylaw is deemed valid.

Read a first time this 23rd day of April, 2025.

Read a second time this 23rd day of April, 2025.

Read a third time this 21st day of May 2025.

Received the approval of the Deputy Inspector of Municipalities this 23rd day of June, 2025.

Assent of the elector of the City of Courtenay is not required as per Section 7 of the Municipal Liabilities Regulation (approval-free liability zone).

Adopted this [DAY] day of [MONTH] 2025

Mayor Bob Wells

Corporate Officer, Adriana Proton

BRITISH COLUMBIA

Statutory Approval

Under the provisions of section 179

of the *Community Charter*

I hereby approve Bylaw No. 3183

of the City of Courtenay ,

a copy of which is attached hereto.

Dated this 23rd day

of June , 2025

Deputy Inspector of Municipalities

The Corporation of the City of Courtenay

Bylaw No. 3184

A bylaw to authorize the borrowing of the estimated cost of 6th Street.

WHEREAS it is deemed desirable and expedient to construct a pedestrian bridge at 6th Street

AND WHEREAS the estimated cost of pedestrian bridge including expenses incidental thereto is the sum of $11,105,000 of which the sum of $1,245,000 is the amount of debt intended to be borrowed by this bylaw;

NOW THEREFORE the Council of the City of Courtenay, in open meeting assembled, enacts as follows:

1. The Council is hereby empowered and authorized to undertake and carry out or cause to be carried out the 6th street bridge project generally in accordance with general plans on file in the municipal office and to do all things necessary in connection therewith and without limiting the generality of the foregoing:

    a) To borrow upon the credit of the Municipality a sum not exceeding one million two hundred forty five thousand dollars ($1,245,000).

    b) To acquire all such real property, easements, rights-of-way, licenses, rights or authorities as may be requisite or desirable for or in connection with bridge project.

2. The maximum term for which debentures may be issued to secure the debt created by this bylaw is thirty years.

Citation

3. This Bylaw shall be cited as “Loan Authorization Bylaw No. 3184, 2025 - 6th Street Bridge 2025”.

Severability

4. If any portion of this Bylaw is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed and the remainder of the Bylaw is deemed valid.

Read a first time this 21st day of May, 2025.

Read a second time this 21st day of May, 2025.

Read a third time this 21st day of May, 2025.

Received the approval of the Deputy Inspector of Municipalities this 23rd day of June, 2025.

Assent of the elector of the City of Courtenay is not required as per Section 7 of the Municipal Liabilities Regulation (approval-free liability zone).

Adopted this [DAY] day of [MONTH] 2025

Mayor Bob Wells

Corporate Officer

BRITISH COLUMBIA

Statutory Approval

Under the provisions of section 179

of the *Community Charter*

I hereby approve Bylaw No. 3184

of the City of Courtenay ,

a copy of which is attached hereto.

Dated this 23rd day

of June , 2025

Deputy Inspector of Municipalities

THE CORPORATION OF THE CITY OF COURTENAY

COUNCIL MEMBER REPORT

To: **COUNCIL** File No.: 0540

From: Councillor Hillian Date *(MMM-YYYY):* Jun-2025

Subject: **REPORT OF ACTIVITIES AND EVENTS**

	DATE *(MMM-DD)*	EVENT/LOCATION	COMMENTS
1.	Jun-01	Representing City at memorial service for Mike Trask, who discovered the Elasmosaur	
2.	Jun-02	Meet with Mayor	
3.	Jun-03	Presentation re toxic drug crisis	
4.	Jun-04	Workshop on Universal Metering business case; Aging in BC presentation; presentation by former BC Coroner	
5.	Jun-05	Meet City Manager; follow up with resident re neighbourhood fire	
6.	Jun-09	Kus-kus-sum partner meeting;	
7.	Jun-10	Meeting re Back Rd traffic safety; Sewage Commission; Water Committee; Regional District Board meeting	
8.	Jun-12	Meet with resident re park vandalism	

	DATE *(MMM-DD)*	EVENT/LOCATION	COMMENTS
9.	Jun-16	Meet with property development company re future project; Community Justice Centre meeting	
10.	Jun-17	Regional District Board Strategic Planning session	
11.	Jun-18	Community agency re reconciliation practice; meet with provincial officials re Intersection Safety program	
12.	Jun-18	City Strategic Planning session	
13.	Jun-24	Regional District Board meeting	
14.	Jun-27	Tour of Dashwood Fire Hall; meeting re Canada Day promotion	
15.			
16.			
17.			
18.			