



Box 100 | 7400 Prospect Street
 Pemberton BC V0N 2L0
 P: 604.894.6135 | F: 604.894.6136
 Email: admin@pemberton.ca
 Website: www.pemberton.ca

DEVELOPMENT-GENERAL INFORMATION

Application: OCP Bylaw Amendment &/or Zoning Bylaw Amendment **(Form OR20)**
 Major Development Permit **(Form DP20)**
 Minor Development Permit **(Form DPm20)**
 Development Variance Permit **(Form DVP20)**
 Temporary Use Permit **(Form TUP20)**
 Subdivision, Strata Approval/Strata Title Conversion, Lot Consolidation **(Form SUB20)**
 Antenna System Siting Review **(Form ANT20)**

All Applications Please include Application Requirements Form (Checklist)

SITE

Civic Address: _____	Legal Description: PID: <u>023-384-018</u> Lot: <u>2</u>
	District Lot(DL): <u>203</u> Plan: <u>KAP56640</u>

OWNER(S)

Owner Name(s): <u>567726 B.C. Ltd.</u>	Home: _____
	Work: _____
Mailing Address: <u>3681 W 4th Ave, Vancouver, BC V6R 1P2</u>	Cell: _____
	Email: _____

OWNER(S) AGENT IF APPLICABLE

Agent's Name: _____	Work: <u>604 892 5796</u>
<u>Jessie Abraham of Sea to Sky Community Services</u>	Fax: _____
Mailing Address: <u>38024 Fourth Ave, Squamish BC V8B 0A7</u>	Cell: _____
	Email: <u>jessie.abraham@sscs.ca</u>

If applicable Please include Owner's Authorization

X
 Owner Signature _____ Date _____

X
 Authorized Agent Signature [REDACTED] Date January 20, 2023

COMMENTS:

Application No _____	Fee: \$ _____
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Site Alteration Permit Application Checklist: More than 100 m³ of Material

	Complete or NA	Notes
Detailed plans, data, and specifications for the proposed site, prepared by registered professional of a scale not more than 1:1000 showing the contour of the ground and shall contain the following information:		
Location from which materials are to be removed	N/A	
Location of the site to which materials will be deposited		See Pre-Load Drawings
General description and volume of soil and other materials		See Pre-Load Drawings - 9400m3 of fill required including permanent fill
All features including buildings, structures, tree cover, roads, bridges and natural water courses		See Arch site plan and survey plan
Land use and designations, Agricultural Land Reserve (ALR), zoning, floodplain areas, environmentally sensitive areas, First Nations reserve lands	ALR: N/A Reserve lands: N/A	Zoning: Rezoning process underway from Commercial Tourism to CD-zone Floodplain: See Flood Hazard Report Riparian Setback: Site is not within riparian setback
The proposed slopes which will be maintained upon completion of the site alterations		See Pre-Load Drawings
The proposed methods to control erosion of the banks of the site alteration areas		See Pre-Load Drawings notes
The proposed methods of drainage control during the site alterations		See Pre-Load Drawings
The proposed methods to control noise and dust		TBD by Pre-Load contractor
The proposed methods and locations of access to the site during site alterations		See TMP
The proposed grading and rehabilitation plan for the site during and upon completion of the proposed site alterations and copies of any remediation requirements of the Agricultural Land Commission (ALC)		See Pre-Load Drawings for grading of pre-load
The proposed location of buffers and tree cover, and the location and grade width of berms as may be required	N/A	
The proposed schedule for the deposit or removal of materials, including the amounts to be removed or deposited on a monthly basis		Exact schedule TBD by pre-load contractor Current estimate: Site grubbing/clearing to commence beginning of February, Pre-load deposited thereafter Pre-load to rest for approx. 6 months Pre-load removal by Oct 2023
The proposed routes to and from the site		See Traffic Management Plan
Tree management plan prepared by a registered professional arborist, identifying removal and protection areas within the site and the rationale for removing trees		See Tree Management Plan
Traffic management plan , identifying a description of the frequency of vehicles, signage, placement of safety control devices, and other traffic control that would minimize the disturbance created		See Traffic Management Plan
Copies of all other necessary approvals and permits from federal and provincial authorities required by statute or regulation in connection with the proposed site alteration	N/A	
If the proposed site alteration takes place on ALR land, all activities must be consistent with regulations set out in the BC Agricultural Land Commission Act [SBC 2002], Agricultural Land Reserve General	N/A	



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<p>Regulation, and Agricultural Land Reserve Use Regulation, as they exist at the time of application. In the event the ALR regulations contradict those of the Village bylaws, the ALR regulations shall prevail. Please ask Village Staff for more information or questions about the ALR and its regulations.</p>	<p>N/A</p>	
<p>A site reclamation plan including an Invasive Species Management Plan, prepared by a registered professional and attached to the permit.</p>	<p>N/A</p>	
<p>Any other documents or information required by the Manager.</p>		

Development Services
Village of Pemberton
7400 Prospect St.
Pemberton, BC
V0N 2L0

4 March 2022

RE: Letter of Agency for Harrow Road Project

Dear Development Services,

Please accept this letter as confirmation that Sea to Sky Community Services ("SSCS"), the authorized agent of LOT 2 DISTRICT LOT 203 LILLOOET DISTRICT PLAN KAP56640, is appointing Station One Architects to apply for the OCP Amendment, Rezoning, and Development Permit applications for our property located at the corner of Harrow Road and Highway 99.

Please find attached the Consent and Authorization Form between Sea to Sky Community Services and the Owner which appoints SSCS as the authorized agent regarding permit applications.

I trust this satisfies your requirements. If you have any questions or issues, please do not hesitate to give me a call.

We look forward to working with you and the community to bring about a successful application.

Respectfully yours,



Jaye Russell
Executive Director, Sea to Sky Community Services
604-892-5796

SCHEDULE C

CONSENT & AUTHORIZATION FORM

Date: January____, 2021

TO: The Village of Pemberton Municipal Clerk

This will confirm and authorize our appointment of Sea to Sky Community Services Society ("**SSCS**") as our agent to act on our behalf to seek information or make application regarding any or all of the following enquires, inspections, applications, or permits:

1. Property Enquiries;
2. Property Inspections;
3. Rezoning or OCP Application;
4. Subdivision Application;
5. Development Permit;
6. Building Permit;

regarding those certain lands and premises legally described as:

PID: 023-384-018 LOT 2 DISTRICT LOT 203 LILLOOET DISTRICT PLAN KAP56640.

I / We, the registered owner(s), reserve the right to revoke the above appointment at any time with written notice.

I / we, the registered owner(s):

Print Name: 567726 B.C.

Authorized Signatory: _____

Hereby certify that I am / we are the owner(s) of the above Land and do hereby consent to the above enquiries, applications, or permits.

Scope of Work:

This application for the grubbing, clearing, and pre-loading at the site on the corner of Harrow Rd and Pemberton Portage Rd. The works are in preparation for the development of a 5-storey mixed use building. A rezoning application and Development Permit application have been submitted to the Village. A Building Permit application will be submitted in the coming months.

Trees will be removed in accordance with the Tree Management Plan (submitted as part of the rezoning and DP application) in order to clear the site for the future building footprint. Pre-loading will consist of permanent fill and temporary fill to be removed prior to construction. The application includes pre-load drawings by the geotechnical engineer, civil drawings, tree management plan, site survey, and architectural plans for the future building.

Please see geotechnical drawings for information on soil volume, temporary retaining walls, and erosion and sediment control measures.

Dust mitigation:

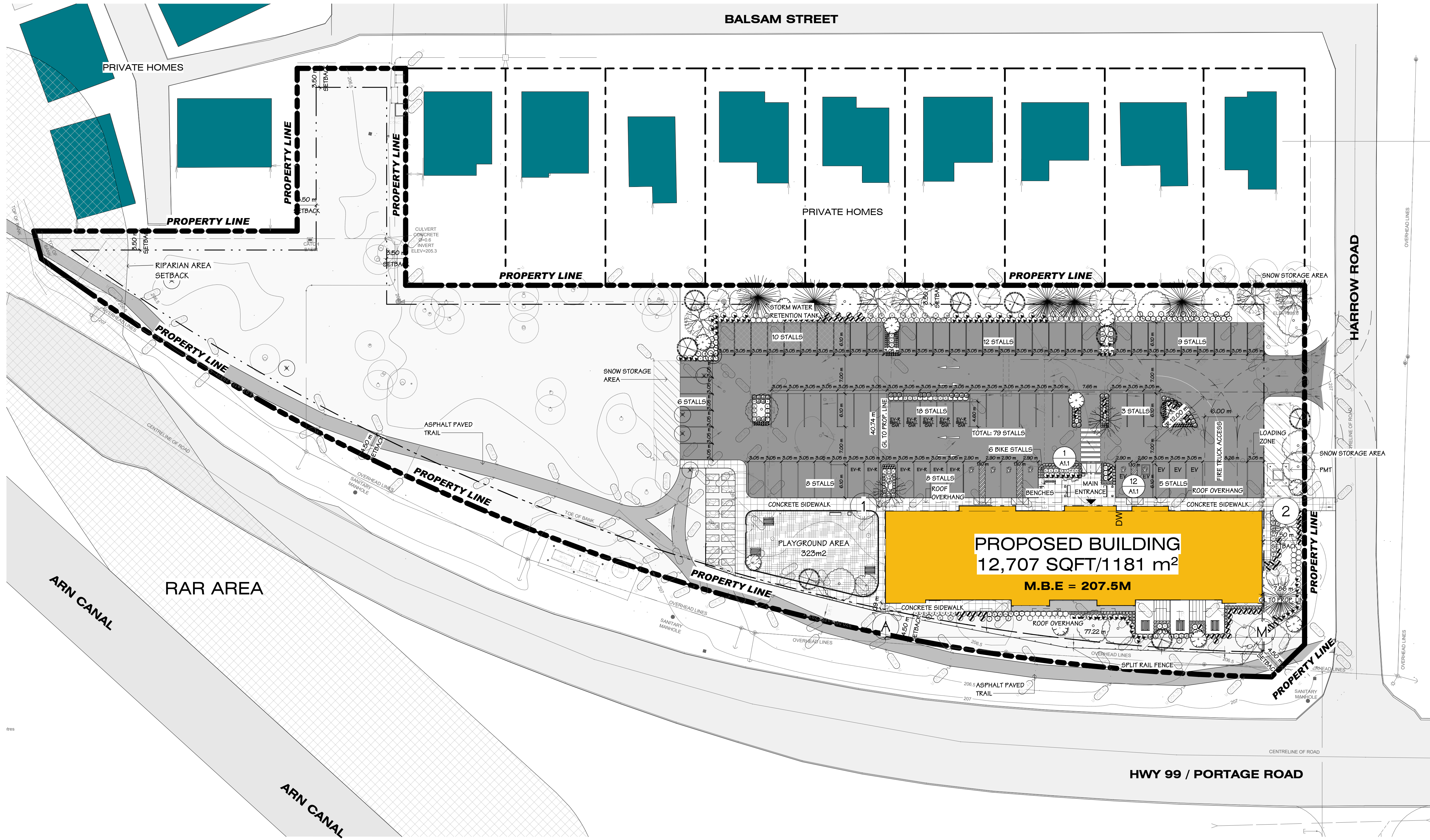
Coastal Mountain Excavation will either treat the truck turn around area with a dust proofing agent or park a water truck onsite to treat area as needed. The material being placed/imported to site is a heavy river gravel material free of fine slits, hence dust free, so no dust suppression required on the material being imported.

71 Trees to be removed

9400 m³ of soil deposit

Materials will be sold and transferred off-site by contractor at the end of the settlement period.

Contractor: Coastal Mountain Excavation
Pemberton Business License: 353



SITE PLAN
1/32" = 1'-0"
NORTH

GENERAL SITE NOTES

- SLOPE EXTERIOR SIDEWALKS, STAIRS & LANDSCAPED AREAS TO DRAIN
- ALL RETAINING WALLS OVER 4'-0" HIGH TO BE ENGINEERED WITH P.ENG SEALED SHOP DRAWINGS SEE CIVIL ENGINEER'S DRAWINGS FOR PAVED AREA DRAINAGE, SITE ELEVATIONS, SANITARY AND SEWER LINES, OTHER SERVICES, ETC.
- VERIFY ALL SITE INFORMATION, BUILDING AREA, IONS AND BEARINGS WITH LEGAL SURVEY PLAN.
- SEE ELECTRICAL DRAWINGS FOR SITE LIGHTING
- SEE LANDSCAPE DRAWINGS FOR ALL HARD AND SOFT LANDSCAPING.
- ALL ELEVATION CHANGES OF MORE THAN 2'-0" TO HAVE 42" HIGH GUARDRAIL
- VERIFY FINAL SIDEWALK ELEVATIONS WITH FINISHED FIRST FLOOR ELEVATION AT ENTRANCES.
- GRADE AT EXTERIOR OF BUILDING TO BE 8" BELOW FLOOR LEVEL EXCEPT AT ENTRY & EXITS.
- OFFSITE ROAD INFORMATION AND LANDSCAPING IS SHOWN FOR REFERENCE ONLY
- THE CONTRACTOR SHALL SLOPE FINISH GRADE, PATIO SLABS AND CONCRETE WALKS AWAY FROM BUILDING MIN. 1/4" / 1'-0" OR AS TO ELEVATIONS SET ON SITE PLAN AND CIVIL ENGINEER'S SITE PLAN FOR SITE DRAINAGE.
- MAIN FLOOR GEODETIC GRADE ELEVATION MUST BE CONFIRMED WITH CIVIL DRAWINGS PRIOR TO EXCAVATION.
- ELECTRIC VEHICLE CHARGERS & ROUGH-INS SHALL BE INSTALLED PER THE ELECTRICAL ENGINEER'S DRAWINGS, MANUFACTURER'S INSTRUCTIONS, AND MUNICIPAL BYLAWS.

LEGEND

AD - AREA DRAIN	S/C - SMALL CAR PARKING STALL
CB - CATCH BASIN	SU - SUPPLY AIR
DD - DECK DRAIN	EX - EXHAUST AIR
PD - PATIO DRAIN	EVC - ELECTRIC VEHICLE CHARGER
RD - ROOF DRAIN	EVR - ELECTRIC VEHICLE CHARGER ROUGH-IN
TBC - TO BE CONFIRMED	TA - TOP OF ASPHALT
SRW - SERVICE RIGHT OF WAY	TC - TOP OF FINISHED CONCRETE
UNO - UNLESS NOTED OTHERWISE	TG - TOP OF GRADE
RWL - RAIN WATER LEADER	TS - TOP OF STRUCTURAL SLAB
RV - ROOF VENT	TSF - TOP OF SUBFLOOR
FG - FIXED GLASS	BW - BOTTOM OF WALL
ACC - ACCESSIBLE PARKING STALL	TW - TOP OF WALL

SITE SYMBOL LEGEND

GRID REFERENCE	MISC. SYMBOLS	PATTERNED AREAS
1	HB HOSE BIB	NEW PARKING AREA
ROOM MARKER	RWL RAIN WATER LEADER	NEW ASPHALT TRAIL
Room name	GB GAS BIB	EXISTING ROADS
101	C.B. CATCH BASIN. SEE CIVIL	PROPOSED BUILDING
Room number	L.D. LAWN DRAIN. SEE CIVIL	NEIGHBOURING BUILDINGS
SECTION MARKER	LT LIGHT FIXTURE. SEE ELECTRICAL	PLAYGROUND
10		SNOW STORAGE AREA
Section number		RIPARIAN AREA SETBACK
A101		NEW SIDEWALK
DETAIL MARKER		
00		
Detail number		
A101		
Sheet number		
PROPERTY LINE		
SETBACK LINE		

station one architects

604 793 9445

Chilliwack 9355 Young Rd V2P 4S3

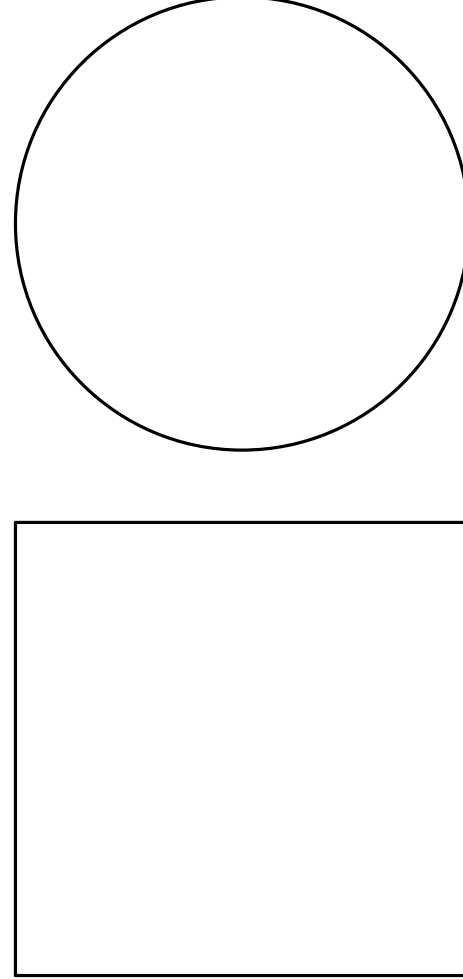
Abbotsford 203-2190 W. Railway St V2S 2E2

SITE PLAN

DRAWING NAME	DATE	DESCRIPTION
	2022.09.30	ISSUED FOR DD
JOB NO.	SCALE	DATE
20123	As indicated	2022.09.30

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED. THE CLIENT HAS ACCEPTED AND CONFIRMED THE INFORMATION CONTAINED HEREIN AND IS RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION. THE ARCHITECT AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.

HARROW ROAD AFFORDABLE HOUSING
LOT 2 HARROW ROAD, PEMBERTON

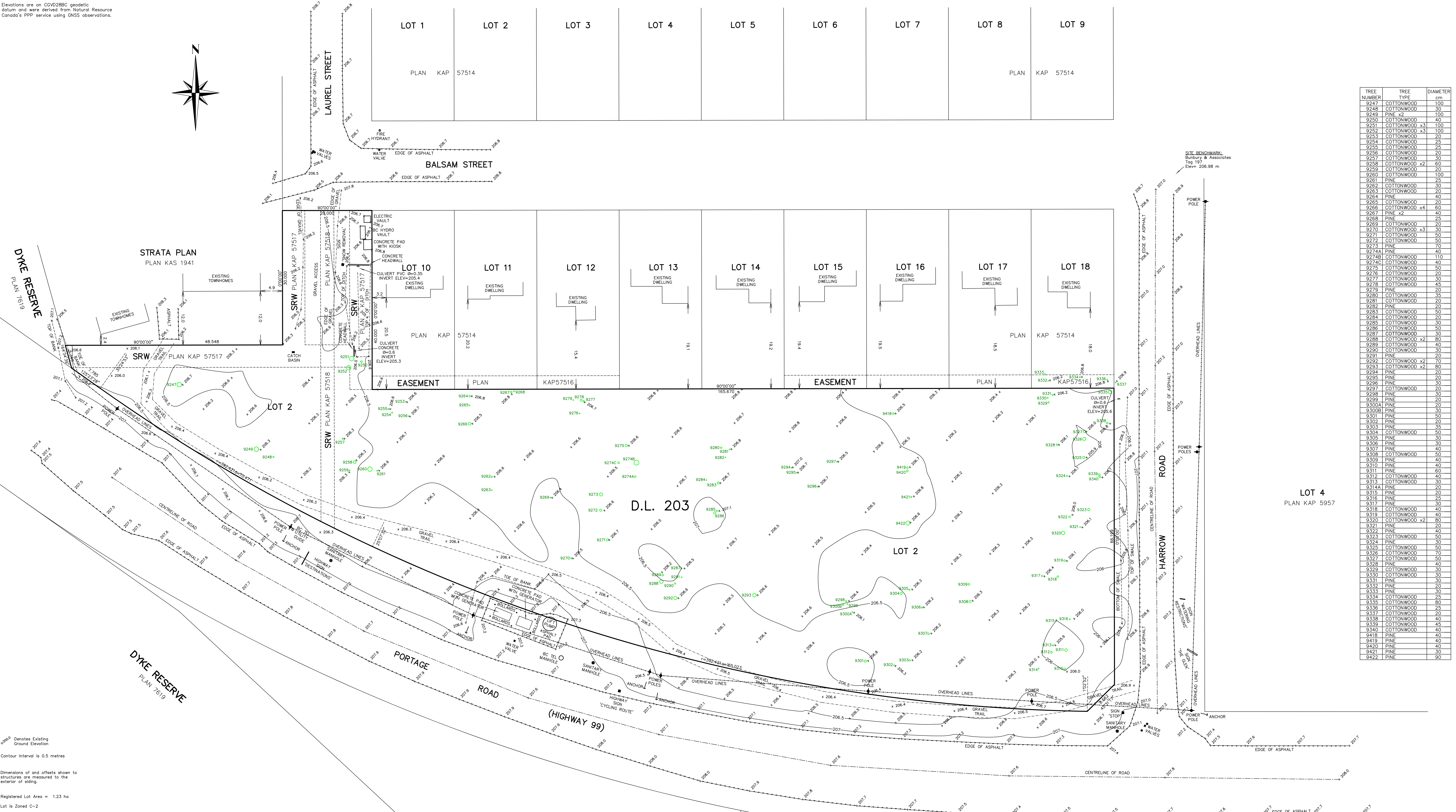


A1.0

BC LAND SURVEYOR'S SITE PLAN

ON LOT 2, DISTRICT LOT 203,
LILLOOET DISTRICT, PLAN KAP56640.
Harrow Road/Portage Road, Village of Pemberton, BC
(PID 223-384-018)

5 4 3 2 1 0 5 10 15
The intended plot size is 118mm in width
to 86mm in height (E Size) when plotted
at a scale of 1:300.
Elevations are on CGVD2883 geoidetic
datum and were derived from Natural Resource
Canada's PPP service using GNSS observations.



TREE NUMBER	TREE TYPE	DIAMETER (cm)
9247	COTTONWOOD	100
9248	COTTONWOOD	30
9249	PINE x2	100
9250	COTTONWOOD	40
9251	COTTONWOOD x3	100
9252	COTTONWOOD x3	100
9253	COTTONWOOD	20
9254	COTTONWOOD	25
9255	COTTONWOOD	25
9256	COTTONWOOD	20
9257	COTTONWOOD	80
9258	COTTONWOOD x2	80
9259	COTTONWOOD	20
9260	COTTONWOOD	100
9261	PINE	25
9262	COTTONWOOD	30
9263	COTTONWOOD	20
9264	PINE	40
9265	COTTONWOOD	20
9266	COTTONWOOD x4	60
9267	PINE x2	40
9268	PINE	25
9269	COTTONWOOD	20
9270	COTTONWOOD x3	30
9271	COTTONWOOD	50
9272	COTTONWOOD	30
9273	PINE	70
9274A	PINE	40
9274B	COTTONWOOD	110
9274C	COTTONWOOD	40
9275	COTTONWOOD	50
9276	COTTONWOOD	20
9277	COTTONWOOD	30
9278	COTTONWOOD	45
9279	PINE	20
9280	COTTONWOOD	35
9281	COTTONWOOD	20
9282	PINE	20
9283	COTTONWOOD	50
9284	COTTONWOOD	40
9285	COTTONWOOD	30
9286	COTTONWOOD	50
9287	COTTONWOOD	30
9288	COTTONWOOD x2	80
9289	COTTONWOOD	40
9290	COTTONWOOD	30
9291	PINE	20
9292	COTTONWOOD x2	70
9293	COTTONWOOD x2	80
9294	PINE	20
9295	PINE	20
9296	PINE	30
9297	COTTONWOOD	20
9298	PINE	20
9299	PINE	20
9300A	PINE	20
9300B	PINE	50
9301	PINE	50
9302	PINE	20
9303	PINE	35
9304	COTTONWOOD	50
9305	PINE	30
9306	PINE	30
9307	PINE	40
9308	COTTONWOOD	50
9309	PINE	40
9310	PINE	40
9311	PINE	60
9312	COTTONWOOD	40
9313	COTTONWOOD	30
9314A	PINE	20
9315	PINE	20
9316	PINE	25
9317	PINE	30
9318	COTTONWOOD	40
9319	COTTONWOOD	40
9320	COTTONWOOD x2	80
9321	PINE	20
9322	PINE	40
9323	COTTONWOOD	50
9324	PINE	30
9325	COTTONWOOD	50
9326	COTTONWOOD	70
9327	COTTONWOOD	50
9328	PINE	40
9329	COTTONWOOD	30
9330	COTTONWOOD	30
9331	PINE	30
9332	PINE	20
9333	PINE	50
9334	COTTONWOOD	25
9335	COTTONWOOD	80
9336	COTTONWOOD	25
9337	COTTONWOOD	20
9338	COTTONWOOD	40
9339	COTTONWOOD	45
9340	COTTONWOOD	40
9418	PINE	40
9419	PINE	40
9420	PINE	40
9421	PINE	30
9422	PINE	90

Registered Lot Area = 1.23 ha
Lot is Zoned C-2
Property line dimensions are derived from Plan KAP56640.
This document was prepared for mortgage and municipal/regional district purposes and is for the exclusive use of our client. See to Sky Community Services.
This document shows the surveyed structures and features with respect to the boundaries of the parcel described above. This document shall not be used to define property lines or property corners.
The signatory accepts no responsibility or liability for any damages that may be suffered by a third party as a result of any decisions made, or actions taken based on this document.
The subject property is affected by the following non-financial charges and interests which may affect positioning of structures on the property.
Covenants:
KG4677, KK24256, KK24260.
Statutory Right of Way:
KG64689, KK73125, KK73126, KK97857, KK97858.

BUNBURY & ASSOCIATES
LAND SURVEYING LTD.
www.bunbury-survey.com
504-892-1000
bunbury@bunbury-survey.com
504-892-1370
whitler@bunbury-survey.com

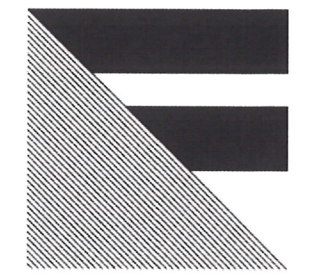
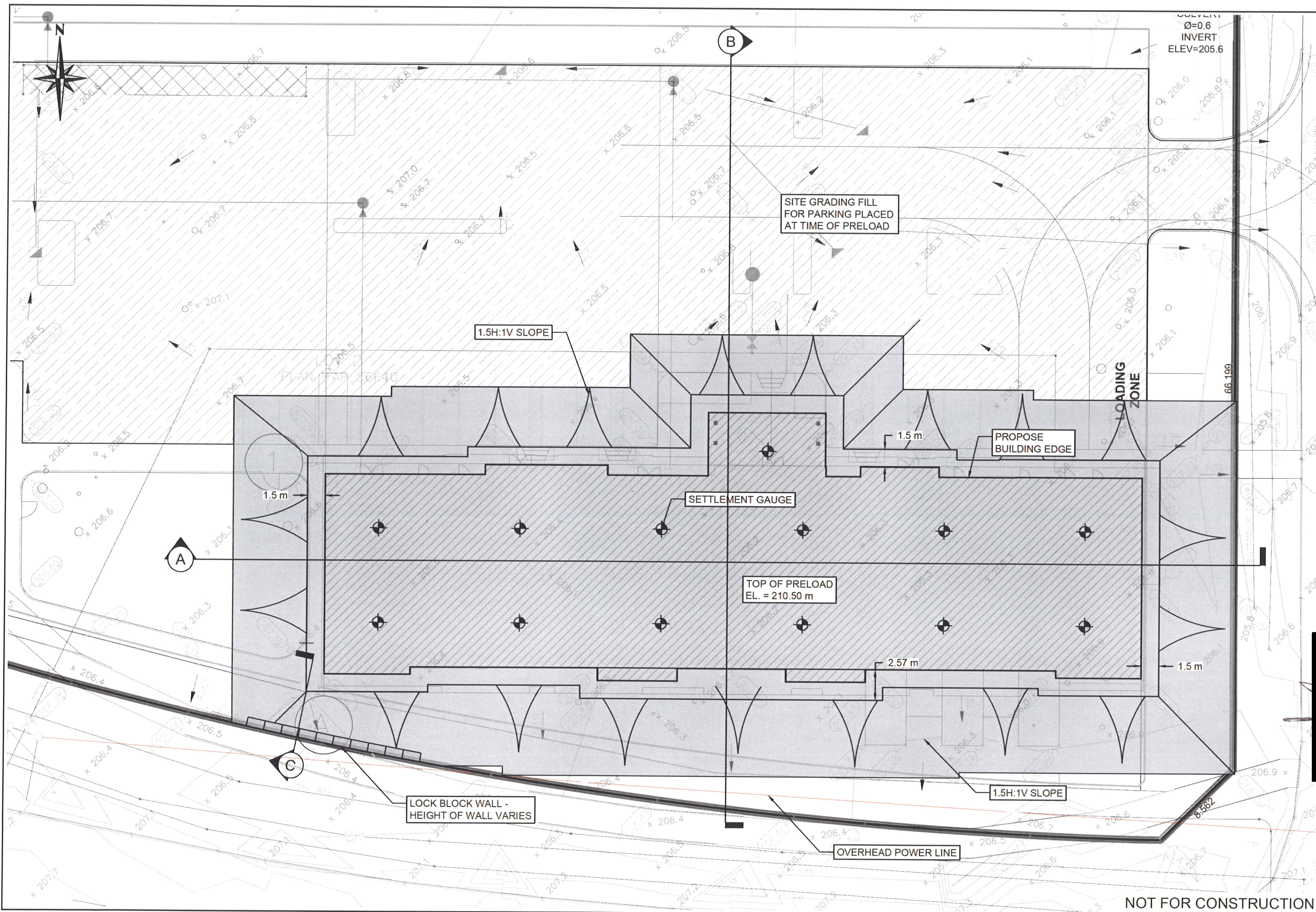
PRELOAD DESIGN
LOT 2 HARROW ROAD
PEMBERTON, BC



#1 - 38920 Queens Way, Squamish BC, V8B 0K8 • (604) 898-1093 • www.fronterageo.ca

ISSUED FOR TENDER

REFERENCES		CLIENT	
CIVIL: KM CIVIL - "SITE GRADING PLAN" (MARCH 17, 2022)		S2S COMMUNITY SERVICES	
JOB NO.	DWG NO.	REV.	DATE
1706	1706-00	A	2022/12/22



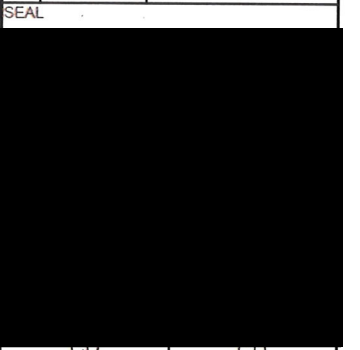
FRONTERA GEOTECHNICAL INC.
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CLIENT
SEA TO SKY COMMUNITY SERVICES SOCIETY

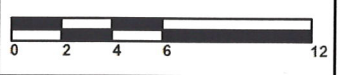
PROJECT NAME
PROPOSED MIXED-USE DEVELOPMENT
LOT 2 HARROW ROAD PEMBERTON, BC

DRAWING TITLE
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PLAN VIEW

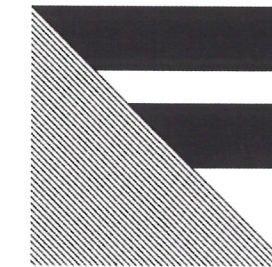
NO.	DATE	REVISIONS
A	2022-12-22	ISSUED FOR TENDER



CHECKED	CD	JOB NO.	CD
SF		1706	
DWG NO.	1706-01		
SHEET	1 OF 3		
SCALE	1:300		



NOT FOR CONSTRUCTION



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SEA TO SKY COMMUNITY SERVICES SOCIETY

PROJECT NAME

PROPOSED MIXED-USE DEVELOPMENT

LOT 2 HARROW ROAD PEMBERTON, BC

DRAWING TITLE

PRELOAD DESIGN

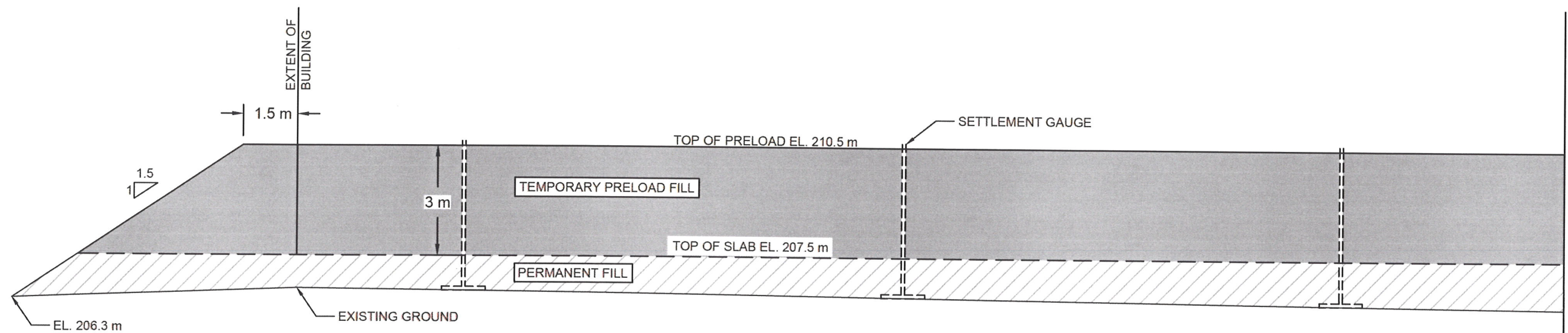
SECTION A

NO.	DATE	REVISIONS
A	2022-12-22	ISSUED FOR TENDER

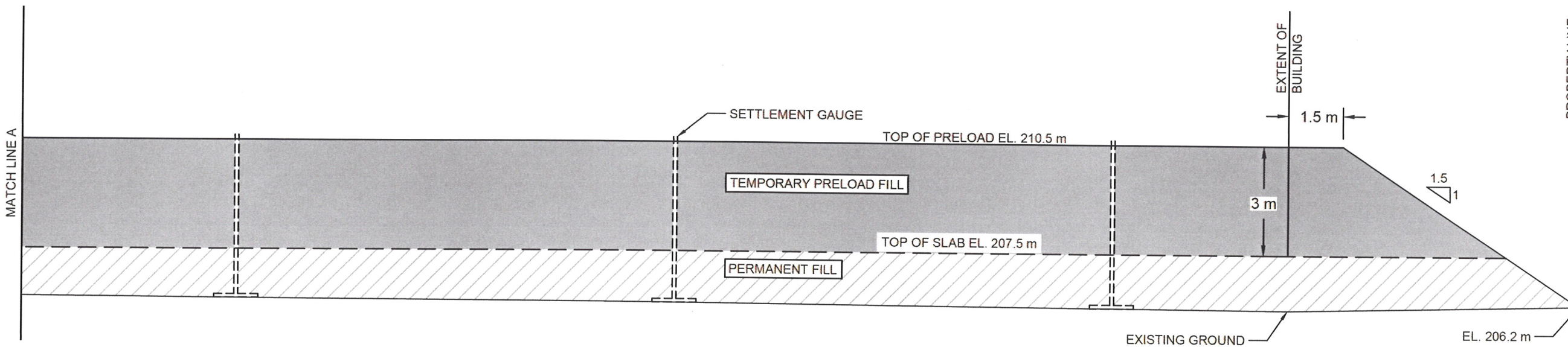
DRAWN	DESIGNED
CD	CD
CHECKED	JOB NO.
SF	1706

DWG NO. **1706-02**

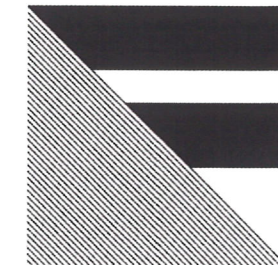
SHEET **2 OF 5**
 SCALE 1:125



SECTION A
 SCALE: 1:125



SECTION A CONTINUED
 SCALE: 1:125



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SEA TO SKY COMMUNITY SERVICES SOCIETY

PROJECT NAME

PROPOSED MIXED-USE DEVELOPMENT

LOT 2 HARROW ROAD PEMBERTON, BC

DRAWING TITLE

PRELOAD DESIGN

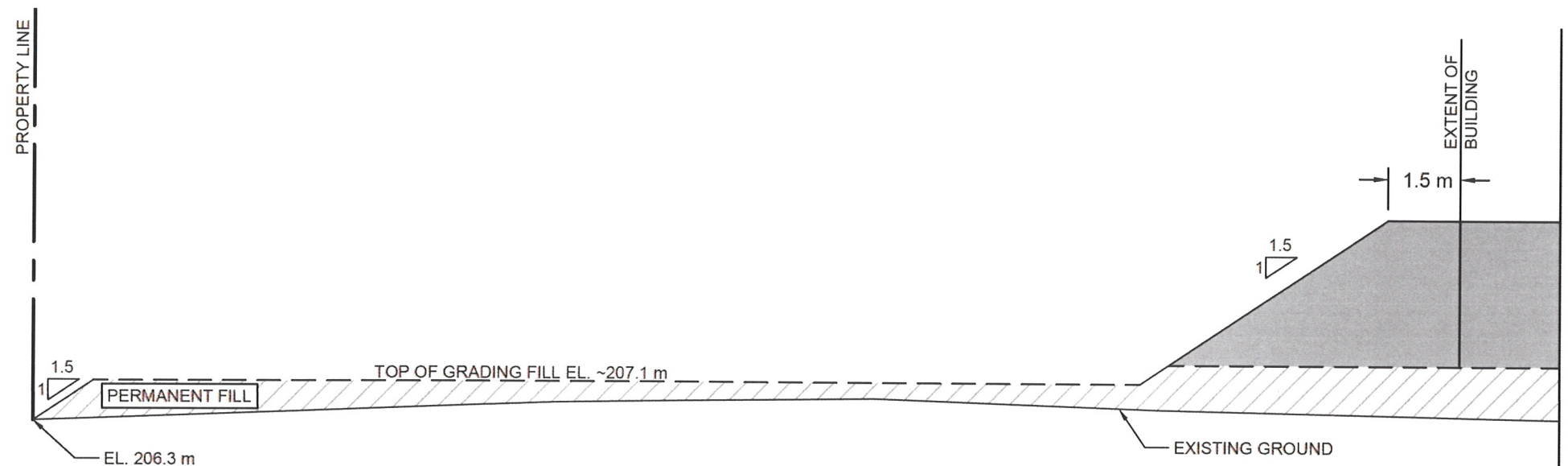
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NO.	DATE	REVISIONS
A	2022-12-22	ISSUED FOR TENDER

DRAWN	DESIGNED
CD	CD
CHECKED	JOB NO.
SF	1706

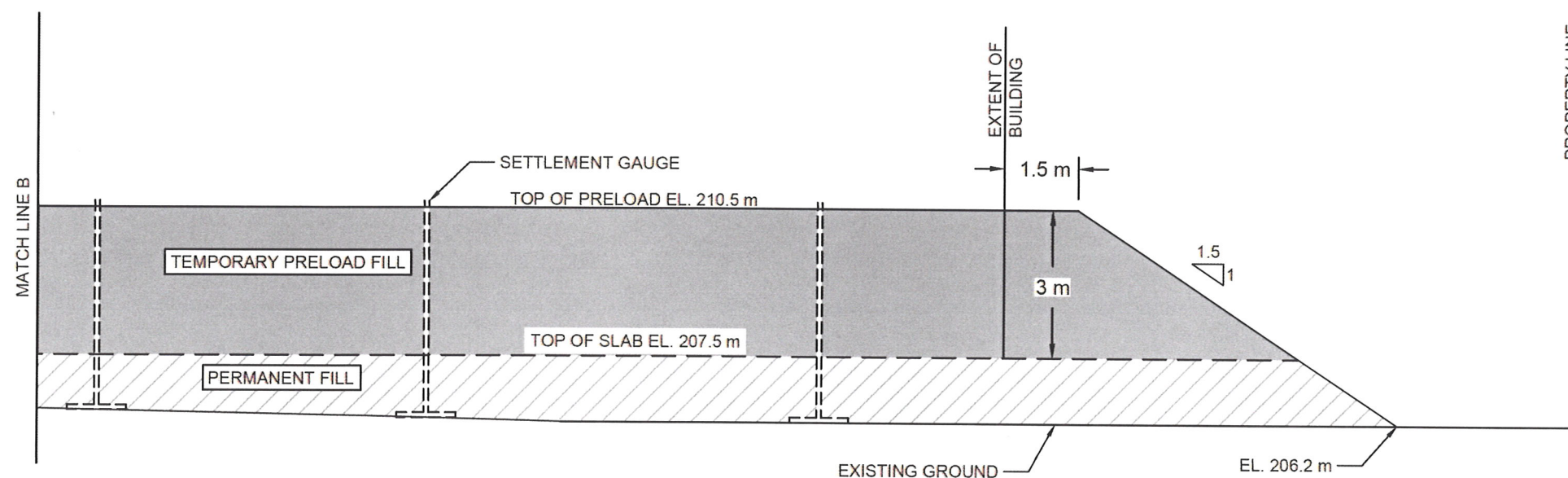
DWG NO. **1706-03**

SHEET **3 OF 5**
SCALE 1:125



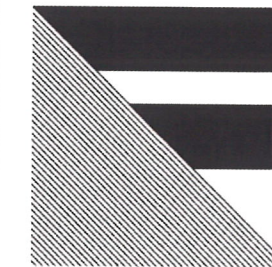
SECTION B

SCALE: 1:125



SECTION B CONTINUED

SCALE: 1:125



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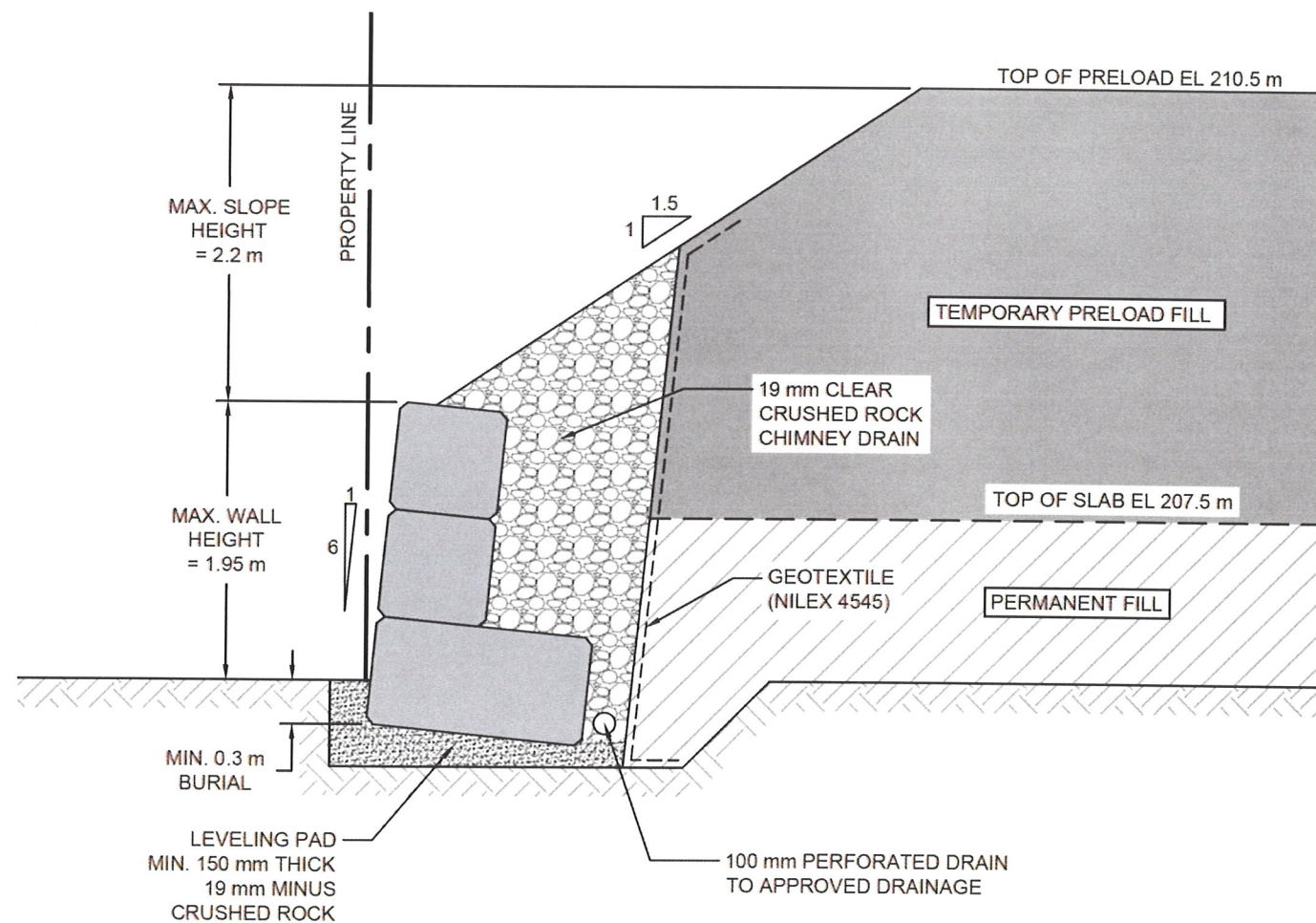
CLIENT
SEA TO SKY COMMUNITY SERVICES SOCIETY

PROJECT NAME
PROPOSED MIXED-USE DEVELOPMENT
LOT 2 HARROW ROAD
PEMBERTON, BC

DRAWING TITLE
TEMPORARY LOCK BLOCK RETAINING WALL DESIGN
SECTION C

NO.	DATE	REVISIONS
A	2022-12-22	ISSUED FOR TENDER

CHECKED	JOB NO.
SF	1706
DWG NO.	
1706-04	
SHEET	
4 OF 5	
SCALE	
1:50	



SECTION C
 SCALE: 1:50

PART 1 - GENERAL

- 1.1 IN THESE NOTES, THE ENGINEER IS FRONTERA GEOTECHNICAL.
- 1.2 THESE NOTES MUST BE READ IN CONJUNCTION WITH 1706-01.
- 1.3 THE WORK DESCRIBED AND SHOWN INVOLVES THE SUPPLY AND INSTALLATION OF LOCK BLOCK RETAINING WALLS.
- 1.4 THE RETAINING WALL WILL BE INSTALLED ON AN EXCAVATED, NATURAL, UNDISTURBED SUBGRADE, OR APPROVED SUBGRADE FILL.
- 1.5 THE CONTRACTOR SHALL CONFIRM THE LOCATIONS AND CONDITIONS OF ALL MAN-MADE STRUCTURES WHICH COULD BE AFFECTED OR DAMAGED BY THE WORK. STRUCTURES WHICH MAY BE AFFECTED OR DAMAGED BY THE WORK MUST BE REPORTED TO THE ENGINEER IN ADVANCE OF THE WORK TO TAKE PLACE. THE ENGINEER MAY CHANGE THE DESIGN OR APPROVE OF MODIFICATIONS TO INSTALLATION TECHNIQUES PROPOSED BY THE CONTRACTOR TO PRECLUDE DAMAGE OR CONFLICT WITH EXISTING STRUCTURES.
- 1.6 THE WALL MUST BE CONSTRUCTED BY AN EXCAVATION COMPANY WITH EXPERIENCE CONSTRUCTING LOCK BLOCK RETAINING WALLS.

PART 2 - MATERIALS

- 2.1 LOCK BLOCK - THE PROPOSED RETAINING WALLS HAVE BEEN DESIGN ON THE BASES OF 0.75M X 0.75M X 1.5M LOCK BLOCKS WITH A MINIMUM CONCRETE STRENGTH OF 20 MPA. ALTERNATE MATERIALS WILL REQUIRE REDESIGN OF THE WALL BY THE ENGINEER AND MAY NOT BE SUBSTITUTED WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.
- 2.2 DRAIN ROCK - SHALL CONSIST OF 19 MM CLEAR CRUSHED ROCK MATERIAL. MATERIAL SAMPLED SHOULD BE PROVIDED TO THE ENGINEER FOR APPROVAL.
- 2.3 LEVELING PAD - LEVELING PAD FILL SHALL CONSIST OF 19 MM MINUS CRUSHED GRAVEL COMPACTED USING A VIBRATORY PLATE TAMPER.
- 2.4 FOUNDATION SOIL - FOUNDATION SOIL SHALL CONSIST OF SAND OR SAND AND GRAVEL.

PART 3 - EXECUTION

- 3.1 THE ENGINEER WILL INSPECT THE EXCAVATION AND APPROVE THE SUBGRADE PRIOR TO THE PLACEMENT OF ANY FILL SOILS.
- 3.2 THE FIRST COURSE OF THE LOCK BLOCKS SHALL BE PLACED ON THE APPROVED SUBGRADE AND ALIGNMENT AND LEVEL CHECKED.

PART 4 - CONSTRUCTION INSPECTION

- THE CONTRACTOR SHALL NOTIFY FRONTERA GEOTECHNICAL INC. A MINIMUM 24 HOURS TO REVIEW THE FOLLOWING ASPECTS OF THE WORK:
- SITE STRIPPING & FOUNDATION EXCAVATION
 - WALL FOUNDATION SUBGRADE
 - PLACEMENT OF THE INITIAL COURSE OF THE FACING UNITS

PART 1 - GENERAL

- 1.1: IN THESE NOTES, THE ENGINEER IS FRONTERA GEOTECHNICAL INC., REFERRED TO IN THESE NOTES AS FRONTERA.
- 1.2: THESE NOTES MUST BE READ IN CONJUNCTION WITH DRAWINGS 1706-01 TO 1706-03.
- 1.3: CONTRACTOR TO CONFIRM ALL DIMENSIONS SHOWN ON THE DRAWINGS BY REFERENCE TO THE TOPOGRAPHIC AND LEGAL SURVEYOR'S PLANS. ANY DISCREPANCY TO BE REPORTED IMMEDIATELY TO THE GEOTECHNICAL ENGINEER.

PART 2 - MATERIALS

- 2.1: PRELOAD FILL - THE PRELOAD FILL MAY BE ANY MINERAL FILL WITH A UNIT WEIGHT OF AT LEAST 16.5 KN/M³ (105 PCF). IF THE PRELOAD FILL IS TO BE REUSED THEN THE MATERIAL SPECIFICATIONS FOR THE PRELOAD MUST MEET THE MATERIAL SPECIFICATIONS FOR THE INTENDED USE.

PART 3 - EXECUTION

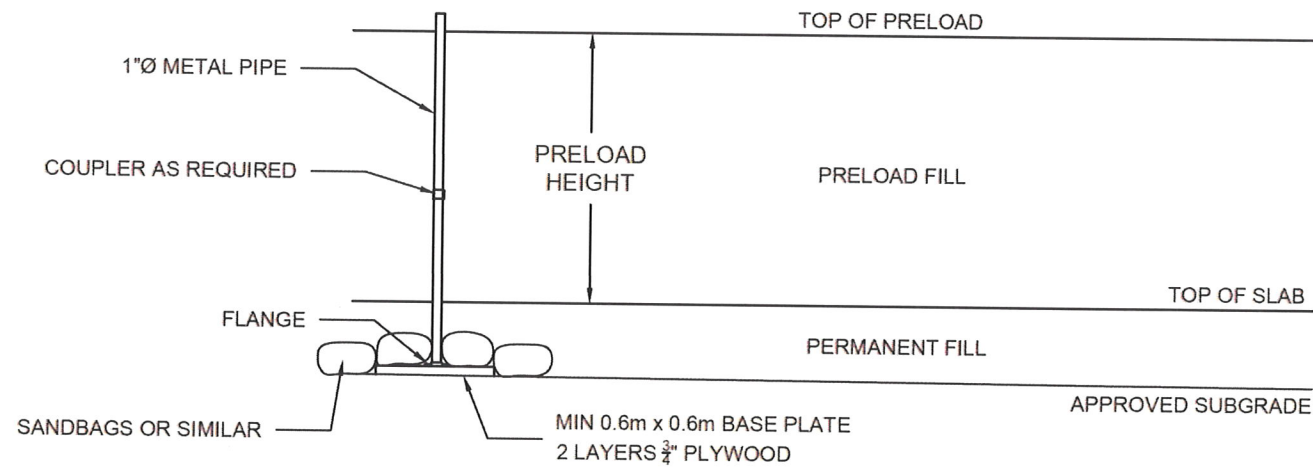
- 3.1: SITE STRIPPING WILL BE REQUIRED TO REMOVE UNUSABLE MATERIALS. UNSUITABLE MATERIAL ARE DEFINED AS ASPHALT, CONCRETE, CONSTRUCTION DEBRIS, VEGETATION, LOOSE / SOFT SOILS AND OTHER DELETERIOUS MATERIALS.
- 3.2: PLACE THE SETTLEMENT GAUGES ON THE STRIPPED SUBGRADE AND SECURE WITH SAND-BAGS OR SIMILAR. PROTECT ALL INSTRUMENTATION DURING SUBSEQUENT WORK. ANY INSTRUMENTATION DAMAGED MUST BE REPLACED AT THE CONTRACTORS COST.
- 3.3: PERMANENT FILL TO BE PLACED PER THE SPECIFICATIONS PROVIDED IN THE INTERIM GEOTECHNICAL REPORT, DATED NOVEMBER 26, 2021.

PART 4 - SETTLEMENT GAUGES & MONITORING POINTS

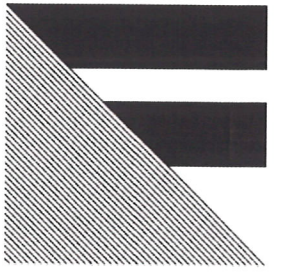
- 4.1: SETTLEMENT GAUGES SHOULD BE PLACED ON THE STRIPPED SUBGRADE. A PERMANENT BENCHMARK SHOULD BE ESTABLISHED OUTSIDE THE INFLUENCE OF THIS OR ANY OTHER PRELOAD. THE BENCHMARK SHOULD HAVE SURVEY CONTROL WITH MUNICIPAL RECORDS.
- 4.2: DETERMINE THE ELEVATION OF THE BASE OF THE SETTLEMENT GAUGES RELATIVE TO THE BENCHMARK AND DETERMINE THE APPROXIMATE LOCATIONS OF THE SETTLEMENT GAUGES RELATIVE TO THE PROPERTY LINES.
- 4.3: DETERMINE THE LENGTH OF THE RISER PIPE AND ELEVATION OF THE TOP OF THE SETTLEMENT GAUGES.
- 4.4: DETERMINE THE LOCATION OF THE CREST AND TOE OF THE PRELOAD FILL RELATIVE TO THE PROPERTY LINES AND THE ELEVATION OF THE FILL AT THE SETTLEMENT GAUGE LOCATIONS.
- 4.5: THE ELEVATIONS OF THE TOP OF THE SETTLEMENT GAUGES SHOULD BE SURVEYED AT WEEKLY INTERVALS FOR THE FIRST FOUR WEEKS, THEN BI-WEEKLY UNTIL PRIMARY SETTLEMENT IS ESSENTIALLY COMPLETE. THE SURVEYED ELEVATIONS SHALL BE FORWARDED TO THE ENGINEER WITHOUT DELAY, AFTER EACH SET OF READINGS.
- 4.6: A PLAN SHOWING THE LOCATION AND ELEVATIONS OF THE PRELOAD, SETTLEMENT GAUGES AND MONITORING POINTS AS SURVEYED AND THE SETTLEMENT GAUGE READINGS SHOULD BE SENT TO THE GEOTECHNICAL ENGINEER FOR REVIEW. THE PLAN MUST BE PREPARED BY A BCLS.
- 4.7: THE GEOTECHNICAL ENGINEER RESPONSIBLE FOR THE PERFORMANCE OF THE BUILDING WILL DETERMINE THE DURATION OF THE PRELOAD.

PART 5 - REVIEWS

- 5.1: THE CONTRACTOR SHALL NOTIFY FRONTERA A MINIMUM OF 24 HOURS IN ADVANCE OF THE COMMENCEMENT OF SITE STRIPPING AND SUBGRADE PREPARATION.
- 5.2: THE CONTRACTOR SHALL NOTIFY FRONTERA A MINIMUM OF 24 HOURS IN ADVANCE OF THE COMMENCEMENT OF THE FOLLOWING ASPECTS OF THE WORK:
 - 1. SITE STRIPPING AND SUBGRADE PREPARATION
 - 2. INSTALLATION OF SETTLEMENT GAUGES.
 - 3. PLACING THE PERMANENT FILL.
 - 4. PLACING THE TEMPORARY PRELOAD FILL.



SETTLEMENT GAUGE DETAIL



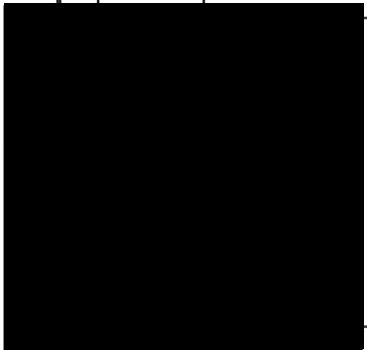
FRONTERA GEOTECHNICAL INC.
 #1 - 38920 Queens Way, Squamish, BC V8B 0K8
 (604) 898-1093 • www.fronterageo.ca

CLIENT
SEA TO SKY COMMUNITY SERVICES SOCIETY

PROJECT NAME
**PROPOSED MIXED-USE DEVELOPMENT
 LOT 2 HARROW ROAD
 PEMBERTON, BC**

DRAWING TITLE
**PRELOAD DESIGN
 SPECIFICATION**

NO.	DATE	REVISIONS
A	2022-12-22	ISSUED FOR TENDER



CD	CD
CHECKED SF	JOB NO. 1706
DWG NO. 1706-05	
SHEET	5 OF 5
SCALE	NTS



Traffic Management Plan Harrow Road Project

Prepared by Coastal Mountain Excavations Ltd. (C.M.E.)

Date: 8th day of March, 2023
Site Name: Harrow Road Project
Site Location: Lot 2, Harrow Road, Village of Pemberton, B.C.
Project Supervisor: Tim Coulson, C.M.E.
Traffic Control Supervisor: Tim Coulson, C.M.E.

Description:

A variety of traffic flow restrictions and signage to be displayed on the below mentioned roadways.

The proposed Traffic Management Plan is to be active and in place while work is undertaken over a three-to-four-week period. The work is scheduled to begin once all necessary permissions and permits have been granted by the appropriate governing bodies.

Emergency Contacts:

Tim Coulson, Chief Operating Officer, C.M.E.	604 935 5790
Village of Pemberton	604 894 6135
Devon Harlos, Development Manager, CPA Development Consultants	604 446 0035

Affected Roadways:

- Harrow Road, Pemberton, B.C.



Site Factors:

The aforementioned roadways are urban roadways with a regulated speed limit of 50 km/h and have good line of sight. Through traffic for pedestrians, motorized, and non-motorized traffic will not be affected.

Procedural Factors:

Typical work hours will be 8 a.m. to 6 p.m., Monday to Friday. The project does not expect to work on Saturdays, Sundays, or Statutory Holidays except in cases of emergency.

In order to access Lot 2, Harrow Road, a vehicular ingress / egress point will be established on Harrow Road.

Appropriate signage will be displayed to alert road users of slow / long vehicles entering / leaving the Harrow Road roadway.

Surrounding the ingress / egress point to Lot 2, Harrow Road appropriate signage will be displayed to retard traffic speed as an added safety measure.

The signage utilized above will be turned down / covered when not in use (outside active working hours).

Any debris brought on to the Harrow Road roadway from vehicles egressing the site will be removed by hand or mechanically daily or as often as required.

Appropriate signage to utilize C-172-L and C-172-R signs. A brief explanation of their use is as follows:

“The TRUCKS CROSSING / ENTERING HIGHWAY C-172-L / R sign should be used temporarily in advance of gravel pit accesses, haul road crossings, etc., where long and / or slow-moving trucks frequently cross, enter, or leave a roadway. The direction of the sign indicates the direction from which the truck will enter the roadway.” 2020 Traffic Management Manual for Work on Roadways, The Ministry of Transportation and Infrastructure of British Columbia.

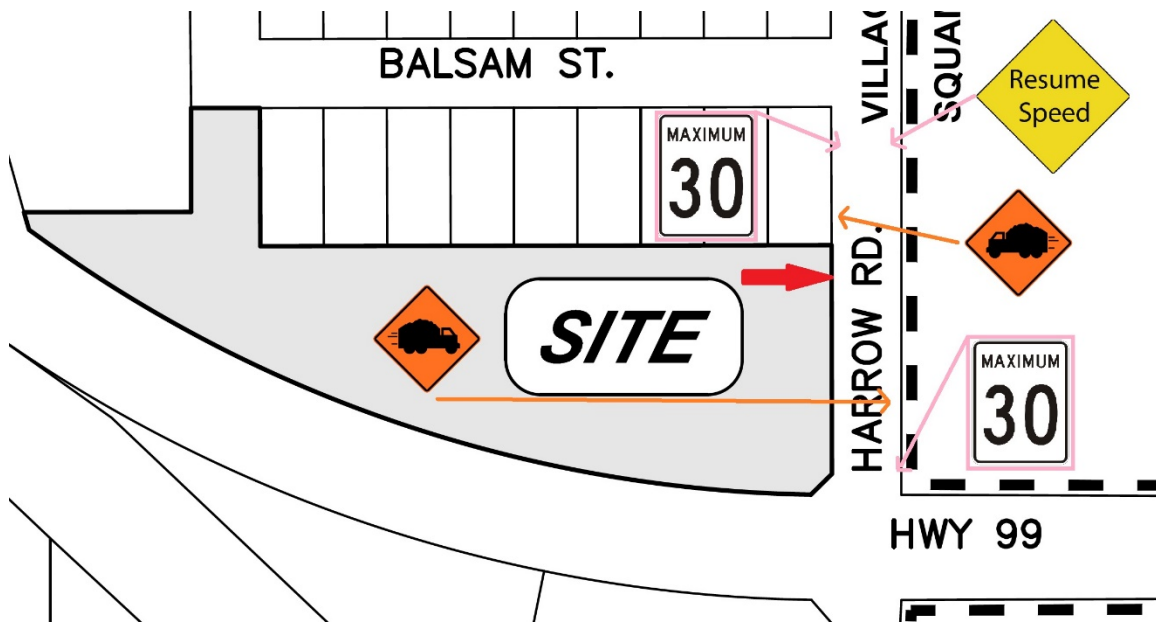
“A second C-172-L/R sign (...) may be placed on the left shoulder if this is considered necessary. C-172 and C-172-T signs should be covered or removed whenever truck hauls are not in progress.” 2020 Traffic Management Manual for Work on Roadways, The Ministry of Transportation and Infrastructure of British Columbia.

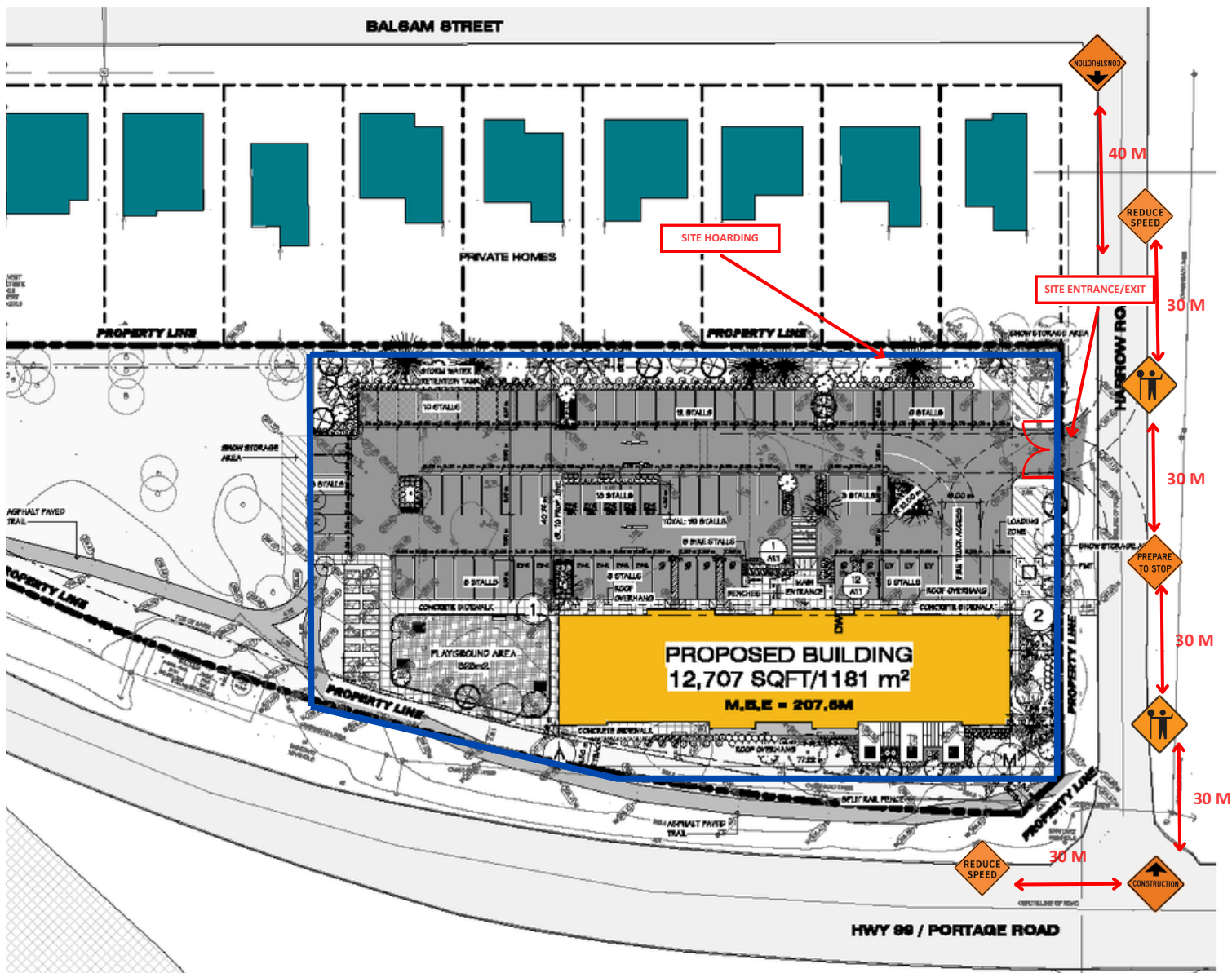


Site Map

Approximate site ingress / egress signified by red arrow.

Sign locations indicated by orange arrows (exact locations to be determined in field, signs to be placed on road shoulders with consideration to maximum visibility for all road users and without hindering non-vehicular traffic).





YELLOWRIDGE CONSTRUCTION LTD. **LEGEND**

TRAFFIC MANAGEMENT PLAN

- TEMPORARY CONSTRUCTION FENCING
- SIGNAGE - CONSTRUCTION
- SIGNAGE - FLAGGER AHEAD
- SIGNAGE - REDUCE SPEED
- SIGNAGE - PREPARE TO STOP

EMERGENCY RESPONSE PLAN & FIRE SAFETY PLAN

PEMBERTON AFFORDABLE HOUSING PROJECT

Harrow Road, Pemberton, BC



Contact:

t. (604) 936-2605
e. info@yellowridge.ca
www.yellowridge.ca

Head Office:

200-2605 Clarke Street
Port Moody, BC V3H 1Z4

EMERGENCY CONTACTS

Project Name: Pemberton Affordable Housing Project

Site Address: Lot 2, Harrow Road, Pemberton BC

Emergency Access: Harrow Road

Emergency Contact: TBD

Emergency Contact Numbers:

Police:	911
Fire:	911
Ambulance:	911
Hospital (Lillooet Hospital):	(250) 256-4233
Medical Clinic (Pemberton Health Centre):	(604) 894-6939
Poison Control Center:	1 (800) 567-8911
Electrical (BC Hydro):	1 (888) 796-3766
Natural Gas (Fortis BC):	1 (800) 663-9911
Water and Sewer:	(604) 894-6135
Spills:	1 (800) 663-3456
WorkSafe BC:	1 (888) 621-7233
Head Office:	(604) 936-2605
Corporate Safety Officer - Catherine Guest:	(604) 749-7700
Superintendent - TBD	
Project Manager - TBD	
First Aid Attendant - TBD	

Construction Site Safety Director:

TBD

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COMMUNICATION

1. Primary emergency response is the use of the 911 system. Once 911 is called, the emergency response teams operate under their own procedures. It is essential that all information regarding the nature, seriousness and location of the emergency be communicated to the 911 operator. Clear and accurate information as to the street location must be given; site personnel will guide the emergency response team to the location of the emergency.
2. If it is not possible to locate Yellowridge personnel, proceed to the nearest phone and call 911.
3. Emergency phone numbers are noted in the Emergency Contact List, which is posted in the site office. Refer to the first page.

CONSTRUCTION FIRST AID ATTENDANT ROLES AND RESPONSIBILITIES IN A FIRST AID EMERGENCY



This procedure is to be posted at all site trailers, telephones, and air horn locations. Yellowridge personnel will be primarily responsible for implementing the steps involved in the procedure. All site personnel should be familiar with the procedures and be able to activate or assist with the Emergency Response. All supervisors and foremen are to ensure that they review this procedure with their forces.

1. Scene Assessment:

- a. Check scene for hazards.
- b. Determine the mechanism of injury.
- c. Count the number of patients.

2. Call 911 and Provide:

- a. Whether you need Police and / or Fire and / or Ambulance.
- b. Site address.
- c. Details of injury / emergency (nature, seriousness, breathing, heart rate, etc.).
- d. Any relevant hazards.
- e. Location of accident on site (for example North wing of 2nd floor).
- f. Location of entrance to be used for emergency response.
- g. Your name.
- h. Project name.

3. Initiate First Aid

- a. Check for injuries to persons involved:
 - i. A – Airway

- ii. B – Breathing
 - iii. C – Circulation
 - iv. Provide first aid
- b. DO NOT MOVE the injured person(s) unless required to avoid hazards.

4. Preserve Scene

- a. For incident investigation purposes, ensure that nothing is changed or removed from the scene of the incident.
- b. Only workers who are directly involved in emergency response activities should be in the area of the incident.

5. Assist Emergency Services

- a. Clear a route to the emergency location for the emergency response team using site equipment and manpower as required.
- b. Meet emergency response team at the site entrance and guide them to the emergency location.
- c. Assist the emergency response team as required under their direction.
- d. Notify the first aid attendant and Yellowridge supervisory personnel (Refer to Emergency Contact Numbers on page 1).

CONSTRUCTION SAFETY OFFICER ROLES AND RESPONSIBILITIES IN A FIRE EMERGENCY

1. If a Fire is Discovered

Sound closest Air Horn. (3 Short Blasts Signals Emergency Evacuation)
CALL 911. Report incident. Give address.
If Fire is small enough in size, attempt to extinguish with closest Fire Extinguisher.
Never attempt to fight fire alone. Only attempt to extinguish if reasonably safe to do so.

2. If an Air Horn is Heard

CALL 911. Report incident. Give address.
Conduct sweep of site, ensure all workers are evacuating calm and orderly. Assist to extinguish the fire if safe to do so. Assist any injured workers in evacuating with help of another worker.

3. Proceed to Closest Accessible Assembly Area

(As noted in Appendix A: Emergency Response Site Plan - MUSTER STATION).

4. Conduct a Head Count of All Workers

5. Liaise With Responding Fire Department / Emergency Responders

Inform them of situation if a fire exists, if anyone is still on site, if anyone requires medical attention etc.

6. Ensure All Workers Stay at Assembly Area Until Given All Clear to Return to Site

7. Record Incident in Fire Safety Plan Following Incident Being Resolved

PUBLIC SAFETY

Even though the building is unoccupied for the duration of the project, incidents or accidents can happen to pedestrians. Injuries to members of the public would primarily be caused by movement of vehicles, equipment and materials. An accident involving the public is handled exactly as an incident or accident involving a worker on site. Emergency Response is to be alerted and first aid offered. Yellowridge must be notified of an incident or accident involving the public. Yellowridge site superintendent or representative will conduct the investigation and notification.

FIRST AID

All personnel must notify the first aid attendant should they require first aid treatment. The first aid attendant is alerted by using three short blasts of an air horn located throughout the site. All personnel are prohibited from using the first aid kit without the attendance of the first aid attendant. Workers are reminded that each trade contractor is to provide their own first aid kit for minor injuries.

- A first aid eye wash station is located at the Yellowridge first aid station.
- Emergency phone is located in the site office.
- All accidents and injuries must be reported to the Yellowridge first aid attendant
- Safety Data Sheets (SDS) are located in the site office.

First Aid Kit

There should always be at least 2 First Aid Kits kept on construction site. At beginning stages of construction, the First Aid Kits are to be kept in the trailer at South end of Site.

There will be a certified safety officer on site that will have first aid training.



Air Horn

Air Horns are the most quick and effective means of notifying all those on site of an emergency. 3 Short Blasts on the air horn will indicate that there is an emergency and all workers are to evacuate to the designated Assembly Area. 1 Long Blast will indicate there is a medical emergency.

There should always be at least 1 Air Horn per floor located at a safety station along with a fire extinguisher and evacuation plan. There should also be an Air Horn kept in the Office Trailer. An extra air horn shall be kept in trailer to be used a spare and also whenever hot work is being done.



FIRE PREVENTION

- Be alert around electrical equipment. If electrical equipment is not working properly or if it gives off an unusual odour — often the first sign of a problem that could cause a fire disconnect the equipment and call an appropriate maintenance contractor.
- Prior to commencing any activities that are considered as Hot Work, workers are required to complete a Hot Work Permit. All permits must be reviewed and accepted by a Yellowridge representative, comply to the requirements noted below, and include a plan for post work fire watch and final inspection.
- Promptly replace any electrical cord that is cracked or has a broken connection.
- When using extension cords, protect them from damage: do not put them across doorways or any place where they will be stepped on or chafed. Check the amperage load specified by the manufacturer or the “listing laboratory”, and do not exceed it. Do not plug one extension cord into another, and do not plug more than one extension cord into the outlet.
- Keep all heat — producing equipment away from the wall and away from anything combustible. Leave plenty of space for air to circulate around equipment that normally gives off heat.
- Make sure all heat producing equipment in your area is turned off when not in use. It is best to assign one person to make this check every day.
- Do your part to keep storage areas, stairway landings and other out of way locations free of waste material, combustibles, dirty rags and other material that could fuel a fire.
- Report fire hazards to the Fire Safety Director / Deputy Fire safety Director and / or Facility Management.
- A monitored security camera system will be in place, serving as a fire watch.

Flammable Liquids / Combustible Storage

There are to be limited flammable liquids stored and used on site. Any Flammable liquids need to be identified and stored separate from all other combustible materials. Keep flammable materials away from sparks, flames or any heat producing equipment. All Flammable liquids are to be marked with UN #. They are to be documented along with quantities and type.

All hydrocarbon containing materials will be stored in a space with sufficient ventilation.

Flammable liquids to be stored on site

Gasoline cylinders to be stored in a 10' x 10' sea container near office trailer at the construction site.

Gasoline - UN#1203

Gasoline is an extremely flammable liquid and vapour. Keep away from heat sources and any forms of ignition.

Location:

In flammable storage sea container located by office trailer at south end of site.

Quantity:

20 L or less.

Extinguishing Fire:

Use Fog Nozzle when using water. Suitable extinguishing types are Dry Chemical, CO₂, Water fog and Foam. Cool closed containers exposed to fire with water spray.

Hazardous Combustion Products:

Smoke, CO, CO₂. Nitrogen Oxides, Sulphur Oxides, sulphur compounds, poly nuclear aromatic hydrocarbons, phenols, aldehydes, ketones and other products of incomplete combustion.

Make attempt to prevent water from extinguishing fire from contaminating surface or ground water.

Location of Operations

- 1) Except as provided in Sentence (2) (BC Fire Code), hot work shall be carried out in an area free from combustible and flammable contents, with walls, ceilings and floors of non-combustible construction or lined with non-combustible materials.
- 2) When it is not practicable to undertake hot work in an area described in Sentence (2).
 - a) Combustible and flammable materials within a 15m distance from the hot work shall be protected against ignition.
 - b) A fire watch shall be provided during the hot work and for a period of not less than 60 minutes after its completion.
 - c) A final inspection of the hot work area shall be conducted 4 hours after completion of work.
- 3) When there is a possibility of sparks leaking onto combustible materials in areas adjacent to the area where hot works is carried out.
 - a) Openings in walls, floors or ceilings shall be covered or closed to prevent the passage of sparks to such an adjacent area, or
 - b) Sentence (2) shall apply to such adjacent areas.

Protection of Combustible and Flammable Materials

- 1) Any combustible and flammable material, dust or residue shall be
 - a) removed from the area where hot work is carried out, or
 - b) protected against ignition by the use of non-combustible materials.
- 2) Combustible materials or building surfaces that cannot be removed or protected against ignition as required in Sentence (1) shall be thoroughly wetted where hot work is carried out.
- 3) Any process or activity creating flammable gases or vapours, combustible dusts or combustible fibres in quantities sufficient to create a fire or explosion hazard shall be interrupted where hot work is carried out and hazard materials shall be removed.

Work on Containers, Equipment or Piping

- 1) Hot work shall not be performed on containers, equipment, or piping containing flammable liquids combustible liquids or Class 2.1 flammable gases unless
 - a) they have been cleaned and tested with a gas detector to ascertain that they are free of explosive vapours, or
 - b) safety measures are taken in conformance with good engineering practice.
- 2) Hot work shall not be performed on a totally enclosed container.
- 3) Hot work shall not be performed on metal objects that are in contact with combustible materials unless safety precautions are taken to prevent their ignition by conduction.

Work Adjacent to Piping

- 1) When hot work is to be carried out near piping containing a Class 2.1 flammable gas, the piping shall
 - a) conform to sentence 5.2.3.4.(1) (BC Fire Code), or
 - b) be protected by a thermal barrier against the passage of heat.

Fire Extinguishing Equipment

- 1) At least one portable fire extinguisher shall be provided in the hot work area.
- 2) Standpipes will be installed in sequence with the construction of each building storey.

Fire Safety Plan

- 1) In buildings or areas described in Article 2.8.1.1 (BC Fire Code). The required fire safety plan shall include the safety measures described in this Subsection for the safe conducting of hot works.

Fire Watch

1) The exposed areas described in Sentences 5.2.3.1 (BC Fire Code). (2) and (3) shall be examined for ignition of combustible materials by personnel equipped with and trained in the use of fire extinguishing equipment.

Smoking Area

There is no designated smoking area on construction site. Smoking can be done off site however not on any neighbouring properties. All contractors are to be informed of the no smoking on construction site policy.

FIRE PREPAREDNESS

- Know the location of the two exits closest to your area. Count the number of doors between you and each of those exits - in case you must escape through a darkened, smoke-filled corridor where you can't read the names on the doors.
- Learn where the nearest Emergency Station is located. (extinguisher, air horn, first aid)
- Learn the sound of the Air Horn.
 - Review the basic IN CASE OF FIRE procedures that are posted.
 - Ensure you know who the Fire Safety Director and Deputies are, and how to contact them.

Fire Extinguishers:

There are many dry chemical ABC fire extinguishers located throughout the construction site. There are to be at least 2 spare extinguishers kept in Office trailer. There will be 1 extinguisher per floor, to be kept at a safety station along with air horn and evacuation plan. At minimum 5lb ABC extinguishers to be used as they have a high enough rating. It is recommended 10lb ABC extinguishers be used as they have a higher rating and much longer discharge time.

All Contractors should be familiar with the operation of a Fire Extinguisher. Extinguishers should be inspected weekly to make sure they are in place, not damaged and the pressure gauge is reading normal pressure (in the green). ABC fire extinguishers can be used on ordinary combustibles, flammable liquids and electrical fires.

How To Use A Multi-Purpose Dry Chemical Type Fire Extinguisher.

Remember the word: PASS

- P** Pull the Pin.
- A** Aim the extinguisher nozzle at the base of the flames.
- S** Squeeze trigger while holding the extinguisher upright.
- S** Sweep the extinguisher from side to side, covering the area of the fire with the extinguishing agent.

Most portable fire extinguishers work according to these directions, but some do not. Read and follow the directions on the fire extinguishers within your building.

FIRE PROTECTION

New construction areas will be protected with fire extinguishers located at each work area throughout the site and at specific locations as follows:

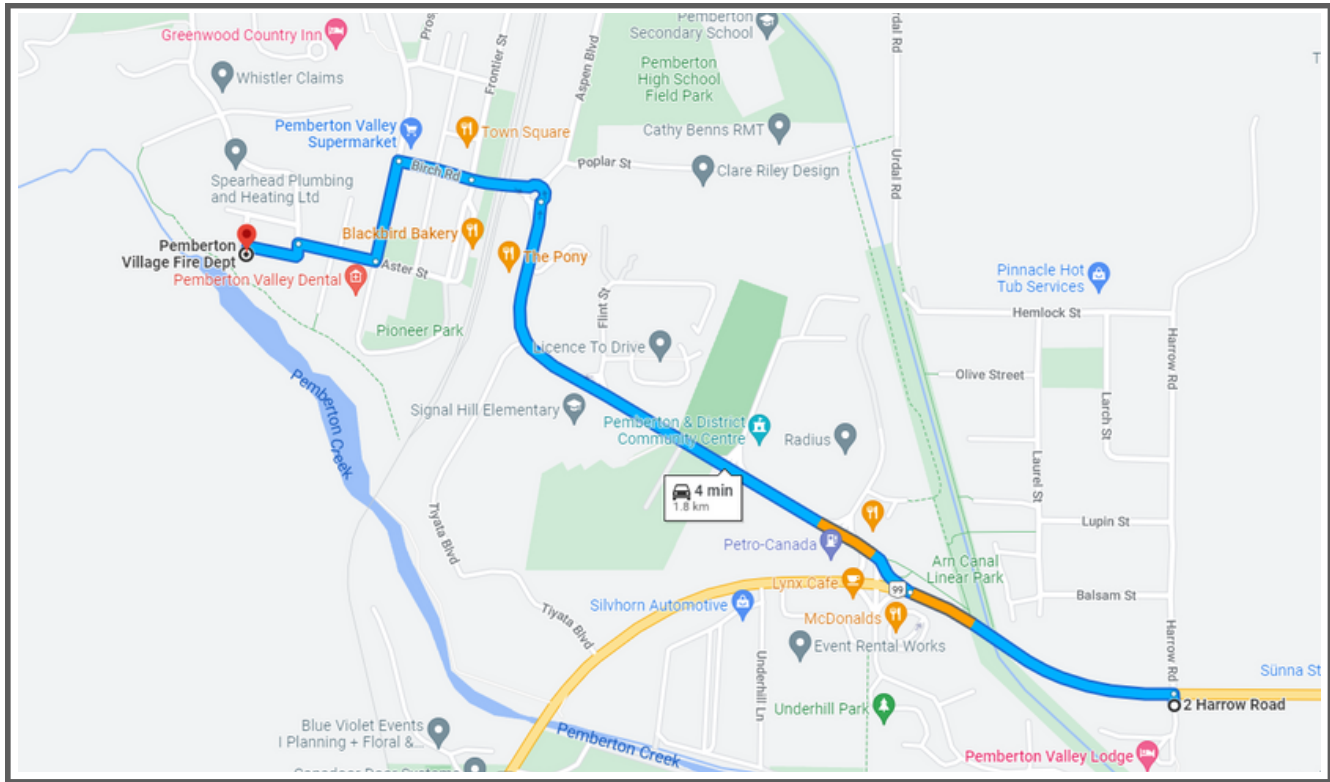
- In exterior compound where fuel and flammables are stored.
- In the site office.
- At any location where flame cutting, welding or soldering is in progress.
- In all heavy equipment (backhoes, excavators, forklifts, etc.).
- When smoke or flame is detected, you must immediately alert Emergency Response as detailed in the General Emergency Response Procedures.
- Once Emergency Response and Yellowridge have been alerted, attempt to extinguish the flames using the appropriate fire extinguishing equipment.
- Do not attempt to control a fire that is too large for normal extinguishers or that is in close proximity to fuel or explosive materials such as propane or oxygen/acetylene cylinders. Clear the area and keep all personnel well clear. This type of fire is to be handled by trained fire department personnel only.
- Early detection and the alerting of Emergency Response will be the key to fire control. Yellowridge is to be notified of any fire if it is brought under control immediately. The purpose of our investigation is to prevent future occurrences, not to find fault or lay any blame.

FIRE EVACUATION

- While exiting, walk, do not run. Shut all doors behind you and alert those who have difficulty hearing that an emergency evacuation of the building is under way. Proceed along corridors and through exits in a quiet and orderly manner.
- Do not push or jostle.
- Assist persons requiring assistance to reach the nearest safe exit:
 - Try to keep exits clear by permitting others to pass. It may be necessary to hold persons requiring assistance in or near the exit, and wait for Port Coquitlam Fire Department assistance.
- If you must use an escape route where there is smoke, stay as low as possible. Crawling lets you breathe the cleaner air near the floor as you move toward the exit.
- Before you open a closed door, feel it with the back of your hand. If it is hot, leave it closed and use your alternate escape route. If it feels normal, brace your body against the door and open it a crack — be prepared to slam it shut if heat or smoke starts to rush in.
- If all exits are blocked by fire or smoke, enter a room preferably with an exterior window, and seal the cracks in the door with available materials to prevent smoke entering the room. Phone 911 to report your situation, and attract the attention of someone outside the building by any possible means (hanging a bed sheet or towel out a window or use a flashlight). Wait to be rescued.
- When you have reached the outside of the building, move away from the exit allowing others behind you to emerge and move directly to the appointed ASSEMBLY POINTS outside of the building.
- Do not attempt to drive your vehicle from the parking area.
- Do not enter the building again until permitted by the Fire Department or the Fire Safety Director.

FIRE DEPARTMENT ACCESS

The Fire Department will be responding from Pemberton Village Fire Department which is 1.8 km or 4 min away.



EARTHQUAKE EMERGENCY PROCEDURES

1. Remain calm at all times.
2. Take cover under closest doorway, desk or table. Do not evacuate until safe to do so.
3. Keep clear of all glass windows or doors.
4. Keep clear of storage cupboards, shelving or anything large that may fall on you.
5. Check in your immediate area to see if anyone is injured, administer first aid if required. If injured yourself, attempt to notify someone of your injury and receive help or first aid.
6. The Fire Safety Director and/or Deputy Safety director should check damage and injuries and evacuate the seriously injured.
7. Keep clear of any exposed or damaged electrical wires, particularly those that may be by water from ruptured or damaged water pipes. Do not use or touch any electrical appliances that are still plugged in or energized.
8. Aftershocks may occur, do not leave area until safe to do so.



Be prepared prior to an earthquake emergency:

- Know the evacuation routes out of the building and assembly areas.
- Know the safe spots your area — against inside walls, under sturdy tables or desks.
- Know the danger spots — mirrors, hanging objects, windows and tall, heavy, unsecured objects.
- Participate in drills, (if applicable).
- Know the location of first aid kits in your area.
- Keep a list of emergency phone numbers in your area.

HAZARDS

Power Lines:

If there is a downed power line:

- Keep at least 10 metres away.
- Inform Fire Safety Director of the incident.
- Call 911 immediately and inform them of the situation and provide address.
- Keep other workers away from downed power line.

Electrical Safety guidelines:

- De-energize or lockout electrical equipment.
- Only qualified contractors are to perform work.
- Assess all of the risks associated with the task.
- Do not use damaged appliances or equipment.
- Replace worn or damaged electrical cords.

Natural Gas & Propane:

Need to call Fortis before digging so as not to hit any underground gas lines (Think BC One Call).

If you smell rotten eggs or hear the sound of escaping gas it could be a gas leak.

- Stop what you're doing.
- Do not use your cellphone or a landline.
- Don't smoke, light matches or operate electrical switches or create any other source of ignition.
- Go outside. As you exist, leave the door open behind you as well as any windows that may already be open.
- Once outside, call Fortis BC's 24-hour Emergency Line at (1-800-663-9911).
- If unable to reach gas supplier, call the Fire Department.
- If Evacuated, do not re-enter building until all clear has been given.
- Follow their instructions. Evacuate to Assembly Area if instructed to do so.

Note: Superintendent to train all workers / contractors on standard everyday construction site hazards like trips and falls, working from heights etc. Daily safety meetings are to be held prior to starting work to review any safety

concerns and standard emergency procedures. All fire hazards are to be identified. Any hot work being done or any heat or spark producing work is to be completed according to procedures set out in this plan.

Any new contractors on site are to receive a more thorough site orientation where evacuation procedures and all hazards will be identified and explained. A record of orientation is to be kept on site in office trailer.

EVACUATION

1. In special circumstances, a complete evacuation of an area or project may be required. Circumstances requiring evacuation may be a hazardous chemical spill, discovery of a designated substance, or possible explosion of a compressed gas cylinder under heat exposure. While these circumstances are remote, they are possible and therefore all personnel must be familiar with these procedures.
2. The following procedures are to be followed:
 - a. One long blast of an air horn located throughout the site.
 - b. Notify Yellowridge Site Superintendent of the situation requiring evacuation.

All workers are to meet at the Muster Station as noted on the Emergency Response Site Plan, for a proper head count.

Yellowridge site superintendent will notify workers at the termination of the evacuation to return to normal activities.

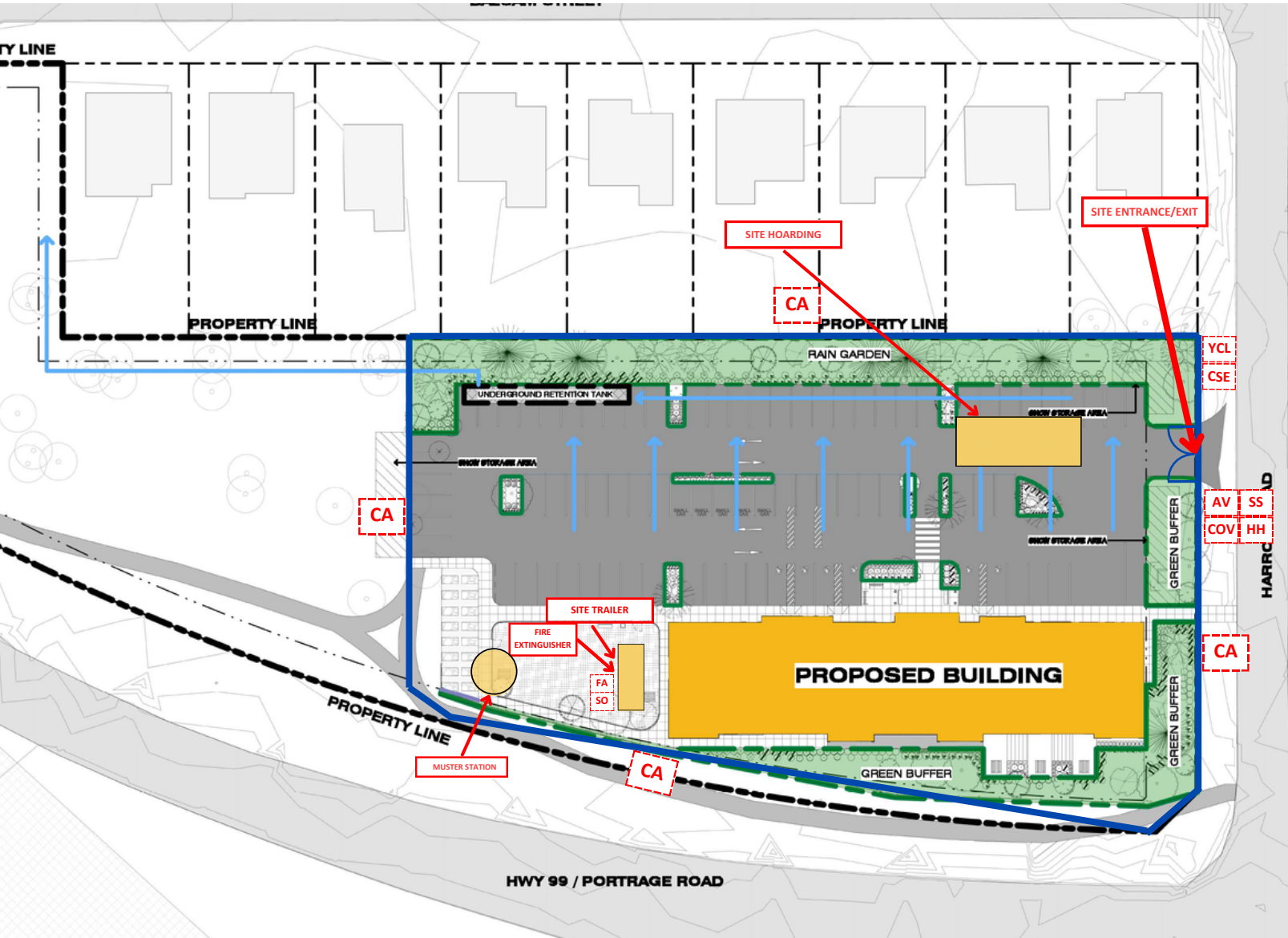
EMERGENCY RESPONSE SITE PLAN AND FLOOR PLANS

The site plan shows the location of the facilities referred to in this plan as well as any adjacent buildings or structures:

- Yellowridge Site Office
- First Aid
- Fire Extinguisher
- Muster Station
- Site Access Points
- Temporary Fencing

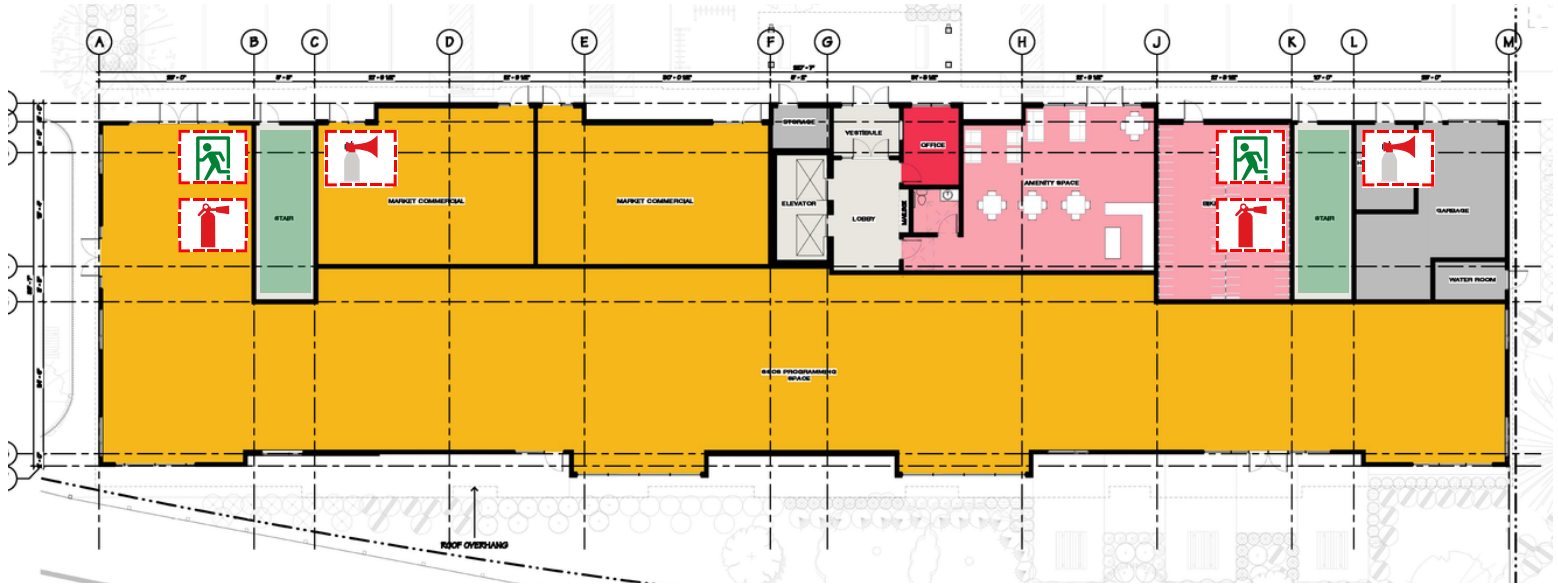
Refer to Appendix A & B

APPENDIX A - EMERGENCY RESPONSE SITE PLAN



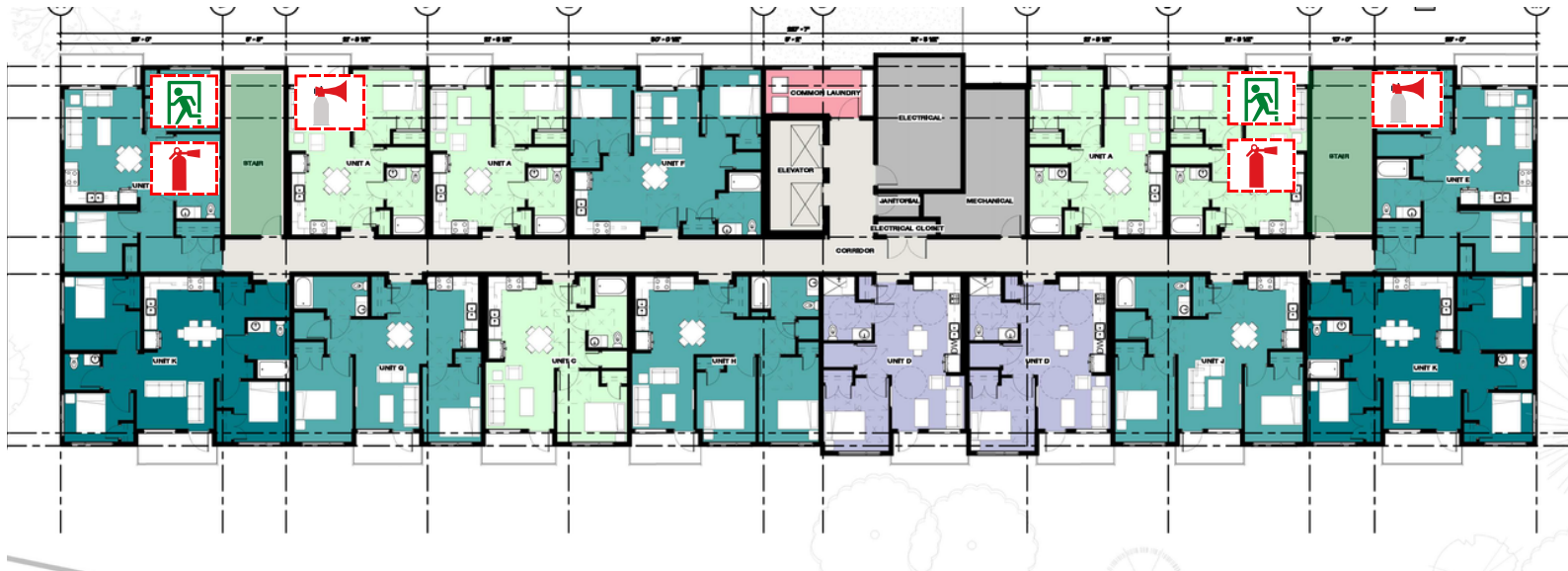
EMERGENCY RESPONSE SITE PLAN		LEGEND			
	TEMPORARY CONSTRUCTION FENCING		SIGNAGE - COVID		SIGNAGE - HARD HATS REQUIRED
	SIGNAGE - 4X8 YELLOWRIDGE CONSTRUCTION		SIGNAGE - SITE SAFETY RULES		SIGNAGE - CONSTRUCTION AREA
	SIGNAGE - CONSTRUCTION SITE ENTRANCE W/ ARROW		SIGNAGE - FIRST AID STATION		SIGNAGE - SITE OFFICE
			SIGNAGE - ALL VISITORS MUST REPORT TO SITE OFFICE		


APPENDIX B - EMERGENCY RESPONSE FLOOR PLAN FIRST FLOOR



<p>EMERGENCY RESPONSE FLOOR PLAN - FIRST FLOOR</p>	LEGEND	
	<p>EMERGENCY EXIT</p>	<p>EMERGENCY AIR HORN</p>
<p>FIRE EXTINGUISHER</p>	<p>STAIRCASE</p>	

APPENDIX B - EMERGENCY RESPONSE FLOOR PLAN SECOND FLOOR



 YELLOWRIDGE CONSTRUCTION LTD	LEGEND			
		EMERGENCY EXIT		EMERGENCY AIR HORN
		FIRE EXTINGUISHER		STAIRCASE
	EMERGENCY RESPONSE FLOOR PLAN - SECOND FLOOR			

APPENDIX B - EMERGENCY RESPONSE FLOOR PLAN THIRD - FIFTH FLOORS

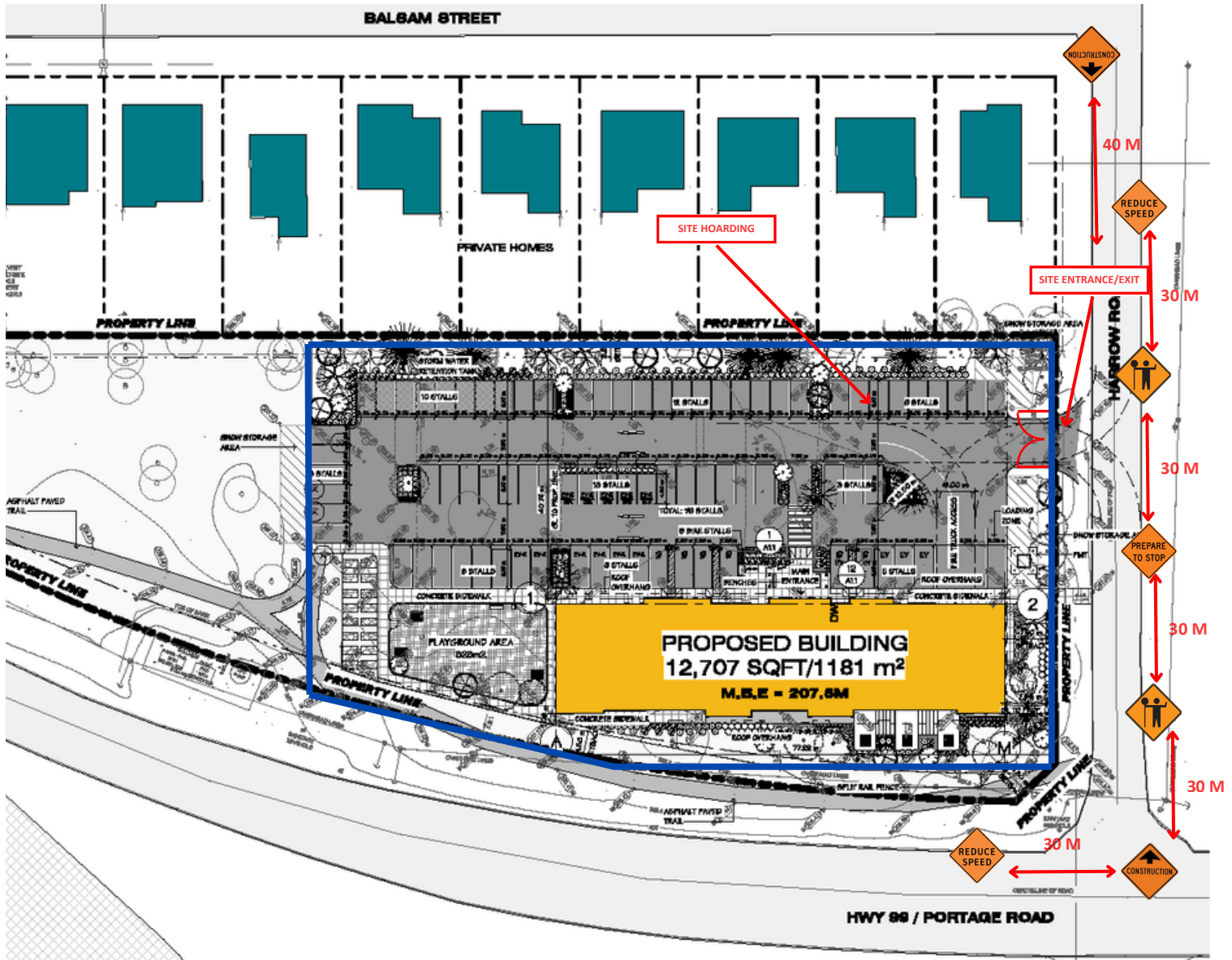


**EMERGENCY RESPONSE FLOOR PLAN -
THIRD - FIFTH FLOORS**

LEGEND

	EMERGENCY EXIT		EMERGENCY AIR HORN
	FIRE EXTINGUISHER		STAIRCASE

TRAFFIC MANAGEMENT PLAN



YELLOWRIDGE CONSTRUCTION LTD **LEGEND**

TRAFFIC MANAGEMENT PLAN

- TEMPORARY CONSTRUCTION FENCING
- SIGNAGE - CONSTRUCTION
- SIGNAGE - FLAGGER AHEAD
- SIGNAGE - REDUCE SPEED
- SIGNAGE - PREPARE TO STOP

APPENDIX C - NEAREST HOSPITAL MAP AND DIRECTIONS

Pemberton Affordable Housing

Lot 2, Harrow Road, Pemberton

↑ Head south on Harrow Rd toward Balsam St
240 m

↙ Turn left onto BC-99 N
6.5 km

↘ Turn right to stay onto BC-99 N
90.3 km

↙ Keep left to continue onto Seton Lake Rd
800 m

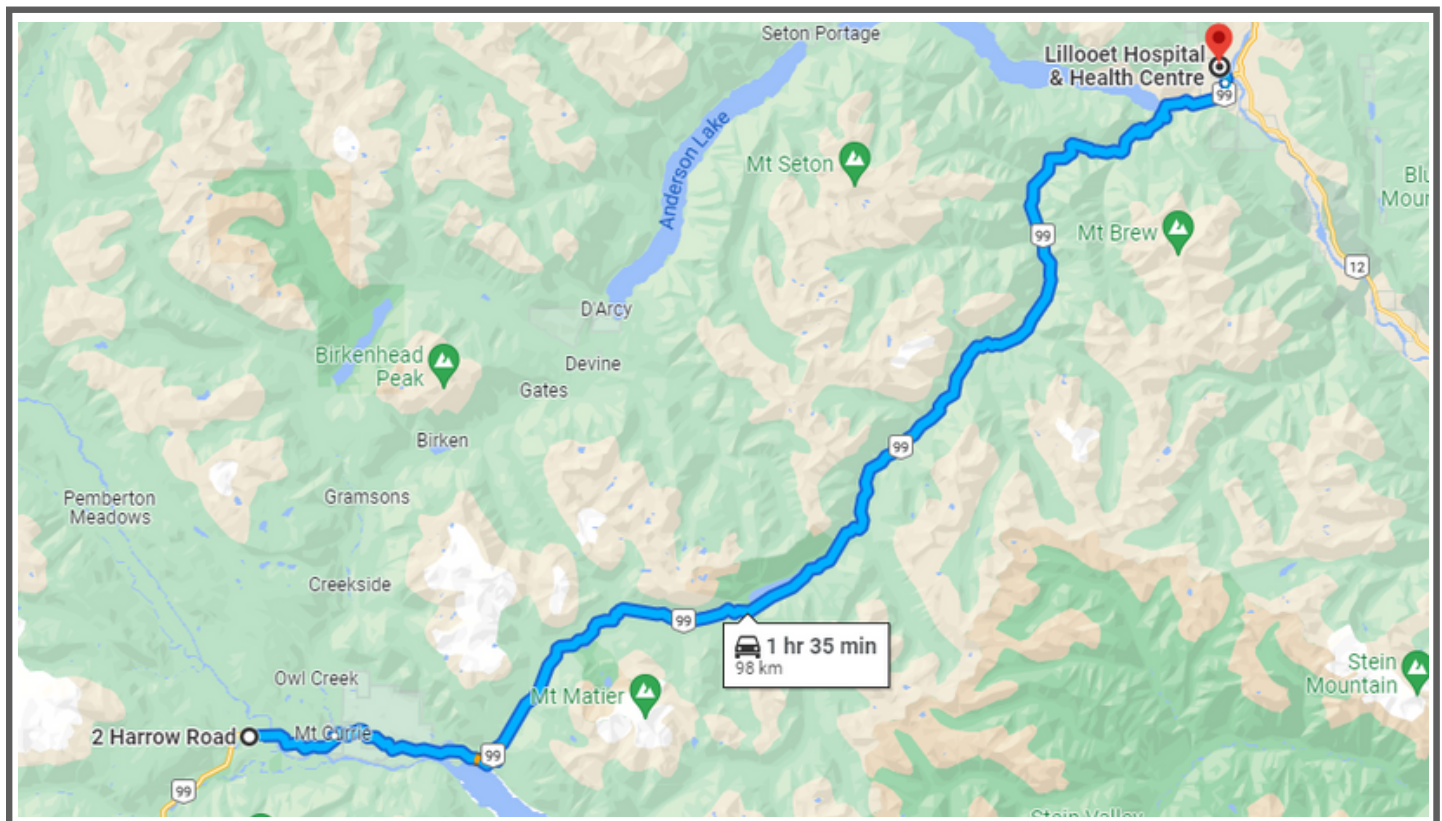
↘ Turn right onto Main St
270 m

↙ Turn left onto 10th Ave
100 m

↘ Turn right at the 2nd cross street onto Murray St
(Destination on the left)
81 m

Lillooet Hospital & Health Centre

951 Murray St, Lillooet BC, V0K 1V0



Sea to Sky Community Services
c/o CPA Development Consultants Inc.
100-283 East 11th Avenue
Vancouver, BC V5T 2C4

November 29, 2021
File: 1706

Attention: Mr Casey Clerkson

**RE: Preliminary Geotechnical Report, Proposed Mixed-Use Development,
Lot 2 Harrow Road, Pemberton, BC**

1.0 INTRODUCTION

It is proposed to construct an affordable housing project at Lot 2 Harrow Road in Pemberton, BC which has the legal lot description LOT 2 DISTRICT LOT 203 LILLOOET DISTRICT PLAN KAP56640.

We have reviewed the conceptual drawings prepared by Station One Architects dated August 30, 2021, and the site survey prepared by Bunbury and Associates dated October 6, 2021, in preparing this report. We understand that a four or five level building is being considered. Both building options are proposed to be at grade with a full or partial level of commercial space and/or parkade structure on the first floor and with residential development above.

A geotechnical investigation of the building site was completed by Frontera on October 22, 2021. This report presents the results of our geotechnical investigation which includes soil and groundwater conditions at the site and provides preliminary geotechnical recommendations for the design and construction of the building.

The site is located within the Lillooet River floodplain therefore a flood hazard exists. A flood hazard report has been prepared for the site by Frontera under separate cover which should be referenced alongside this report.

This report has been prepared exclusively for our client and for the use of others within their design and construction team, however it remains the property of Frontera Geotechnical Inc.

2.0 SITE DESCRIPTION

The property is located on the east side of the main village of Pemberton and is the lot directly adjacent to the intersection of Pemberton Portage Road and Harrow Road. The site is bound by acreages to the east and residential development and by Highway 99 to the south.

The site is an irregular triangular shape and is generally flat with grades ranging from approximately 206.0 m at the east and west ends of the site and up to 207.1 m geodetic elevation near the centre of the property based on the survey.



3.0 FIELD INVESTIGATION

Frontera conducted a geotechnical investigation on October 22, 2021. The investigation included eight solid-stem auger test holes. Four of the eight auger holes were supplemented with dynamic cone penetration test (DCPT) soundings. Two of the auger holes were supplemented with a cone penetration test (CPT) sounding.

The test holes were advanced to various depths ranging from 3.1 m to 9.1 m below the local grades at the time of the investigation. The soils were logged in the field and samples were collected for laboratory moisture content analysis. The test hole logs are included in Appendix A.

DCPT soundings are completed by driving steel rods with a blunt tip into the ground using a standardized mechanical drop hammer. The number of blows from the drop hammer required to advance the rods are recorded in 300 mm intervals. The number of blows required to drive the rods 300 mm can be used for inference of the in-situ density of granular soils and fills.

The CPT soundings were advanced to depths of 30 m below site grades, where the desired investigation depth was achieved. As the cone penetrometer is advanced into the ground, it records the tip resistance, sleeve friction, pore water pressure and inclination at 2 cm intervals. Analysis of the CPT sounding data allows for an estimation of geotechnical design parameters and inference of the sub-surface stratigraphy from soil-type behaviour characteristics. The CPT sounding logs and CPT based liquefaction analysis are presented in Appendix B and C, respectively.

The approximate locations of the test holes are shown on the attached site plan, Drawing No. 1706-01.

4.0 SUBSURFACE CONDITIONS

4.1 Soil Conditions

In general, the soil profile noted from the surface downwards at our test hole locations consists of sand to silty sand, over silt, which overlies interbedded peat and clayey silt deposits, underlain by a silt and sand layer. A general description of the soils encountered is as follows:

SAND

From the ground surface, a layer of sand was encountered in all test holes. This sand varied in thickness from 2.7 m to 3.3 m. The sand was fine to coarse grained and became coarser with depth. The sand was generally clean sand, with a trace of gravel in TH21-07. The sand was loose and dry to moist, becoming wet at approximately 2.0 m in all test hole locations. Based on laboratory moisture content analysis the moisture content within this stratum was found to range between 6% and 48%.

SILT

The sand is underlain by soft to firm, low plastic, moist, grey silt with some fibrous organics. This stratum was found at depths between 3.1 m and 3.8 m at TH21-02 to TH21-04, TH21-05 and TH21-06. Within TH21-06, the silt was found to contain traces of intact organic fibers. Moisture contents within this stratum were found to range from 33% to 45%.



Clayey SILT to Clayey PEAT

Deposits of clayey silt to clayey peat were encountered in TH21-02 through TH21-05 underlying the sand and silt where present. At similar depths, in TH21-01 a deposit of peat with trace silt and in TH21-06 an organic silt with organic fibers were noted. The unit was generally observed to contain soft, low plasticity clay and organic fibers and was encountered at depths between 3.3 m and 5.0 m.

Based on laboratory moisture content analysis the moisture content within this stratum was found to range between 80% and 118%.

PEAT

Peat was encountered below the materials above. The peat was amorphous and contained a significant long fibres and wood-like strands and noted to be soft. The peat was found to be up to 1.1 m thick and extended to depths of up to 6.1 m below ground surface. The moisture content was found to range between 104% and 297%.

SILT

The interbedded peat and clayey silt deposits are underlain by low plastic, soft silt at TH21-01, TH21-03, TH21-04 and TH21-05. The deposits encountered in TH21-05 contain traces of rotten wood. This stratum is found at depths between 4.6 m to 6.1 m. The moisture content was found to range between 42% and 53%.

SILTY SAND to SAND

At test holes TH21-05 and TH21-06 fine grained, uniformly graded, loose sand was encountered. This stratum was found at depths between 4.4 m and 9.1 m. The encountered thickness of this stratum was between 1.7 m and 2.0 m, however the stratum continued beyond the extent of our test holes. The moisture content of samples taken from this layer was found to range between 33% and 40%. Based on our review of the CPT interpretations, the silty sand/sand layer was encountered at between 9 to 9.5 m in test hole CPT21-01 and CPT21-02, and was found to extend to depths greater than 30 m.

For a more detailed description of the subsurface conditions refer to the test hole logs in Appendix A.

4.2 Groundwater Conditions

The groundwater table was estimated to be between 1.9 m and 2.4 m below the site grades at test hole locations based on CPT dissipations. The groundwater table is expected to be higher following periods of persistent precipitation and snow melt and may be influence by the water level within the Lillooet River.

5.0 DISCUSSION

5.1 General Comments

In general, the soil conditions consist of sand and silt underlain by clayey silt which in some areas is interbedded with peat. These deposits are underlain by peat, silt and loose sand to silty sand to depth beyond our investigation.

The near surface clayey silt and peat are considered susceptible to consolidation settlement when exposed to an increase in stress such as that imposed by foundation loads or site grading fill. Additional long-term



settlement is expected due to secondary compression and degradation of the peat over time. The compressible layers vary in thickness and depth across the site and therefore differential settlement would be expected unless mitigated against.

The underlying granular soils were found to be generally loose and are considered susceptible to earthquake induced liquefaction in consideration of the 2018 British Columbia Building Code (2018 BCBC) probabilistic seismic hazard.

The site is located within an identified flood hazard area. Available mapping indicates that the flood hazard at the site is significant. The flood hazard report prepared by Frontera should be referred to for flood construction considerations.

The site may be located within a geohazard area. A geohazard report should be completed, and if a hazard exists appropriate recommendations should be made for the project.

Provided the geotechnical consideration above are addressed as described below, we are of the opinion that the project is feasible from a geotechnical foundation design standpoint.

5.2 Consolidation Settlement

The underlying silt and clayey silt are considered susceptible to consolidation settlement when exposed to an increase in stress, such as that imposed by the expected foundation loads. The peat is considered susceptible to primary consolidation, secondary compression, and long-term degradation which would contribute to long term total and differential settlement. Therefore, unacceptable levels of total and differential settlement are expected if not mitigated against.

In consideration of the ground stress increase expected due to the weight of the building and site grading fill settlements are expected. To mitigate the potential for large and differential settlements, we recommend to prepare the site with a preload. The preload will pre-expose the underlying compressible soils to stress levels greater than those expected following construction.

Regardless, some long-term settlement beneath the building should be expected due to secondary compression and the long-term degradation of the underlying peat. To help reduce long term differential settlements, we propose to surcharge the preload to further compress the peat. Ultimately, review of the preload performance would allow us to estimate long term settlements.

5.3 Seismic Consideration

It is generally accepted that loose to compact and saturated non-plastic silts and sands are prone to liquefaction or strain softening during cyclic loading caused by large earthquakes. Once liquefaction is triggered, significant, permanent, vertical and horizontal movements may be experienced. The strength reduction caused by soil liquefaction can cause conventional spread foundations to fail by punching into the liquefied soils.

The 2018 BCBC states that the objective of earthquake-resistant design is to prevent major failure and/or collapse of structures. Structures designed in conformance with the National Building Code of Canada (NBCC) provisions should be able to resist moderate earthquakes without significant damage and major earthquakes without collapse. Collapse is defined as a state where occupants can no longer exit the building because of structural failure. For our analysis, we have relied upon the 2015 NBCC interpolated seismic hazard values from Natural Resources Canada, which are consistent with the 2018 BCBC.

For design purposes, the 2018 BCBC defines a “major” earthquake as one which results in accelerations and velocities with a 2% chance of being exceeded in 50 years which equates to a 1 in 2,475-year



probabilistic seismic hazard. The firm ground peak ground acceleration (PGA) at this location is 0.17g, where g is acceleration due to gravity.

For the purpose of this report, moderate ground shaking has been represented by the mean ground motion with a probability of exceedance of 10% in 50 years. This equates to a 1 in 475-year probabilistic seismic hazard with an associated firm ground PGA of 0.07g.

5.4 Liquefaction Assessment

5.4.1 Liquefaction Triggering

The near surface silts and peat are not considered susceptible to liquefaction although some strain softening may occur. The underlying loose to compact sand is considered susceptible to liquefaction.

We have carried out a liquefaction analysis using the methods of Boulanger and Idriss (2014). Liquefaction triggering was defined using a factor of safety against liquefaction of less than or equal to 1. We considered the method described by Zhang et al. (2002) for estimating liquefaction-induced free field settlements from CPT sounding data. We have limited our analysis of liquefaction potential to 20 m below grade based on common practice and the methods described by Zhang et al. (2002) which states that based on case studies from past earthquakes, little or no surface manifestation has been observed when the liquefied layer is below 20 m depth.

Review of our analysis indicates that the loose sand below 1.5 m to 2 m depth is susceptible to liquefaction triggering. Our liquefaction analysis was based on two CPT soundings at CPT21-01 and CPT21-02. The CPT soundings were advanced to 30 m depth.

Liquefaction triggering is expected when the 1 in 2,475-year seismic hazard is considered. Based on the methods proposed by Ishihara et. al (1985), ground damage is not considered likely.

Liquefaction triggering is considered to be negligible for the 1 in 475-year seismic hazard.

5.4.2 Vertical Settlements

1 in 2,475-year Seismic Hazard Analysis

Post-liquefaction free field settlements for the 1 in 2,475-year seismic hazard ranging from 32 to 40 cm have been calculated when summed from 20 m depth. We recommend that settlements up to 40 cm be considered for structural design due to inherent uncertainty. The soil profile is relatively uniform, and the total thickness and depth of liquefiable soils are similar at our test locations, however, some differential settlements should be expected. We therefore recommend that the structural designers consider differential settlements of up to 20 cm across the width of building.

1 in 475-year Seismic Hazard Analysis

Post-liquefaction free field settlements from the 1 in 475-year event are calculated to be negligible when summed from 20 m depth.

*It must be appreciated that the settlements estimated above are free field settlements and therefore are expected to be similar to the settlement of the surrounding area. The differential settlement estimates do not account for any stiffness associated with the foundation system.



5.4.3 Liquefaction Induced Lateral Displacements

Horizontal displacements are most problematic where sites are located on sloping ground, or near-to a free face such as a shoreline or large drainage channel. These conditions introduce a static bias within the soils and encourage post-liquefaction reconsolidation strains to accumulate in one direction.

The topography surrounding the site is relatively level and therefore, post-liquefaction lateral displacements are considered negligible for this site.

5.4.4 Liquefaction Induced Foundation Shear Failure

Soil liquefaction can cause a loss of vertical load carrying capacity of foundation soils. Foundations supported on non-liquefiable surficial soils can punch through into the underlying liquefied soils.

Based on the anticipated site grades we do not expect that there is sufficient thickness of non-liquefiable soils above the liquefiable stratum to prevent shear induced punching failure. Therefore, it is recommended to support the building on a raft foundation.

5.5 Liquefaction Mitigation Considerations

Provided that structural design can tolerate the post-liquefaction settlements described above, ground improvement to reduce the potential for liquefaction is not considered necessary. If the settlements as described above cannot be accommodated in the structural design of the building, then ground improvement would need to be considered.

5.6 Foundation Support Considerations

Following the recommended site preparation and preloading, we recommend that the building be supported on a raft foundation.

6.0 DESIGN RECOMMENDATIONS

6.1 Site Preparation

6.1.1 Stripping

Site stripping beneath buildings and on-site roads includes removing all trees and vegetation, organic debris, topsoil, structures, foundations, variable fill materials, and any other material considered to compromise the design recommendations herein. In all cases related to the construction these unsuitable materials should be excavated to expose a subgrade consisting of native sand or silty sand.

6.1.2 Compaction

Following stripping, the exposed granular soils should be compacted in place with a large ride-on vibratory compactor.

6.1.3 Site Grading – Engineered Fill

Following compaction, it may be necessary to place fill materials to achieve the desired building grades. Any fill materials placed beneath foundations, grade supported slabs, or roads should be carried out with “engineered fill”.



In the context of this report “engineered fill” is defined as clean sand and gravel fill, compacted in 300 mm loose lifts to a minimum standard of 95% of its Modified Proctor Maximum Dry Density (ASTM D1557) while at a moisture content that is within 2% of its optimum for compaction.

6.1.4 Preloading

Following site stripping and filling we recommend that the building area be preloaded to reduce the total and differential settlements associated with the consolidation of the underlying silt, clayey silt, and peat and to help reduce long-term settlements associated with the underlying peat deposits.

The preload would expose the underlying near-surface compressible soils to a level of stress greater than that anticipated following construction. We do not expect any significant stress attenuation between the applied stress at foundation level and the compressible stratum. Therefore, the foundations are required to be designed as not to exceed the pre-consolidation stress which will be applied during the preload period.

We recommend that for preliminary design purposes you allow for a 3.5 to 4.5 m high preload sand or sand and gravel above the finished slab level. The preload should extend outside of the edge of the foundations, at full height, a distance at least 1.5 m and then sloped at 1.5H to 1V to existing site grades. Any fill proposed for any nearby parking areas, roadways, and any raised landscaped or hardscaped areas should be placed at the time of preload placement.

Settlement gauges should be installed within the preload to measure the rate of settlement. Based on our experience in the area, we estimate that it will take 6 to 9 months for primary consolidation settlement to be complete; at which point the preload could be removed, however, ultimately the preload performance would govern when it can be removed.

Once the building design has been finalized and structural loads are available a preload design drawing can be prepared upon request.

6.2 Foundation Recommendations

6.2.1 Raft Foundation

We expect that following the preloading treatment that building loads could be supported on a raft foundation at serviceability limit state (SLS) bearing pressures of up to 60 kPa and a factored ultimate limit state (ULS) bearing pressure of up to 120 kPa. The bearing capacity for final design should be confirmed once the preload design is complete.

6.2.2 Subgrade Modulus

We recommend that the structural engineer consider a subgrade reaction modulus of 20 MPa/m for preliminary design however, we actual modulus should be confirmed, through testing, at the time of initial site preparation prior to preload placement.

6.2.3 Settlement of Foundations

Post-construction foundation settlements should be expected due to the underlying peat deposits which will continue to settle long-term as they degrade. Frontera can provide updated anticipated settlements once the site has been preloaded and the associated settlements have been reviewed.



6.2.4 Seismic Design of Foundations

The proposed development site qualifies as Site Class F as defined in Table 4.1.8.4.A of the BCBC 2018 due to the presence of liquefiable soils beneath the site. However, in accordance with 4.1.8.4(8), we have assumed that the structure will have a fundamental period of vibration of less than 0.5 seconds and therefore we recommend that the site be classified as “Site Class E” for structural design purposes.

In accordance with BCBC 2018, Section 4.1.8.16., Sentence 8 b), the requirement that “spread footings founded on soil defined as Site Class E or F shall be interconnected by continuous ties in not less than two directions” should be adhered to.

6.2.5 Frost Protection

All foundations should be located a minimum of 0.6 m below site grades for frost protection.

6.4 Concrete Slabs

All grade supported concrete slabs should be underlain by a minimum of 150 mm of 19 mm clear crushed gravel, to help prevent moisture from accumulating below the slab, placed over compacted “engineered fill” as described in this report. The gravel should be lightly tamped in place. We recommend that a poly moisture barrier be placed overlying the gravel beneath the grade supported slabs to help reduce moisture within the concrete.

6.5 Backfill

Backfill adjacent to the foundations should be completed with free draining material such as clean sand and gravel or crushed rock fill containing less than 5% fines. The backfill should be compacted in lifts. In areas where the backfill will support hard landscaping or pavement areas the material should be compacted to a minimum of 95% of its Modified Proctor Maximum Dry Density while at a moisture content that is within 2% of its optimum for compaction.

6.6 Methane Generation Potential

Methane will be produced as a by-product of the natural decay of the underlying peat. Therefore, a gas barrier and gas ventilation system should be incorporated into the project in accordance with building code requirements.

6.7 On-Site Pavement Structures

The peat deposits present beneath the pavement structure will continue to settle with time as the organics decompose and therefore some maintenance due to settlement should be planned for. Following the recommended site preparation outlined in this report, the following pavement structure is considered sufficient to carry the vehicular loading for on-site parking areas.

Table 1: Recommended minimum pavement structure for parking areas

<i>Material</i>	<i>Thickness (mm)</i>
<i>Asphaltic Concrete</i>	75
<i>19 mm minus crush gravel base</i>	150
<i>100 mm minus, well graded, clean, sand and gravel subbase course</i>	300



All base and sub-base materials should be compacted to a minimum of 95% of their Modified Proctor Maximum Dry Density (ASTM D698) at a moisture content that is within 2% of optimum for compaction.

The use of geosynthetics in the asphalt subgrade or within the pavement section could be considered to help reduce the effects of settlement on the pavement and improve long-term pavement performance.

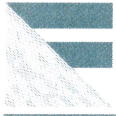
7.0 FIELD REVIEWS

As is normally required for Municipal Letters of Assurance, Frontera Geotechnical Inc. should be asked to carry out sufficient field reviews during construction to ensure that the Geotechnical Design recommendations contained within this report have been adequately communicated to the design team and to the contractors implementing the design. These field reviews are not carried out for the benefit of the contractors and therefore do not in any way effect the contractor's obligations to perform under the terms of their contract.

It is the contractors' responsibility to advise Frontera Geotechnical Inc. (a minimum of 24 hours in advance) that a field review is required. Geotechnical field reviews are normally required at the time of the following:

- | | |
|-------------------------|---|
| 1. Stripping | Review of stripped subgrade prior to any fill placement |
| 2. Engineered Fill | Review of materials, placement, and compaction |
| 3. Preload | Review of preload location and settlement readings |
| 4. Subgrade | Review of prepared foundation subgrade |
| 5. Slab-on-grade | Review of slab-on-grade preparation |
| 6. Backfill/Frost Depth | Review of final building backfill |

It is critical that these reviews are carried out to ensure that our intentions have been adequately communicated. It is also critical that contractors working on the site view this document in advance of any work being carried out so that they become familiarized with the sensitive aspects of the works proposed. It is the responsibility of the developer to notify Frontera Geotechnical Inc. when conditions or situations not outlined within this document are encountered.



8.0 CLOSURE

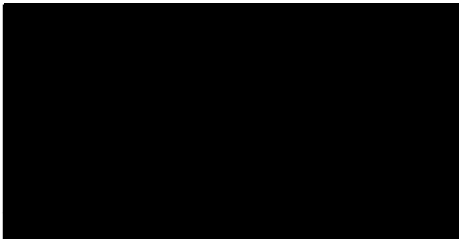
This report is prepared solely for use by our client and their design team for this project as described to the general standards of similar work for similar projects in this area and no other warranty of any kind is expressed or implied. Frontera Geotechnical Inc. accepts no responsibility for any other use of this report.

We are pleased to assist you with this project, and we trust this information is helpful and sufficient for your purposes at this time. Please do not hesitate to call the undersigned if you require clarification or additional details.

Frontera Geotechnical Inc.

Reviewed by:

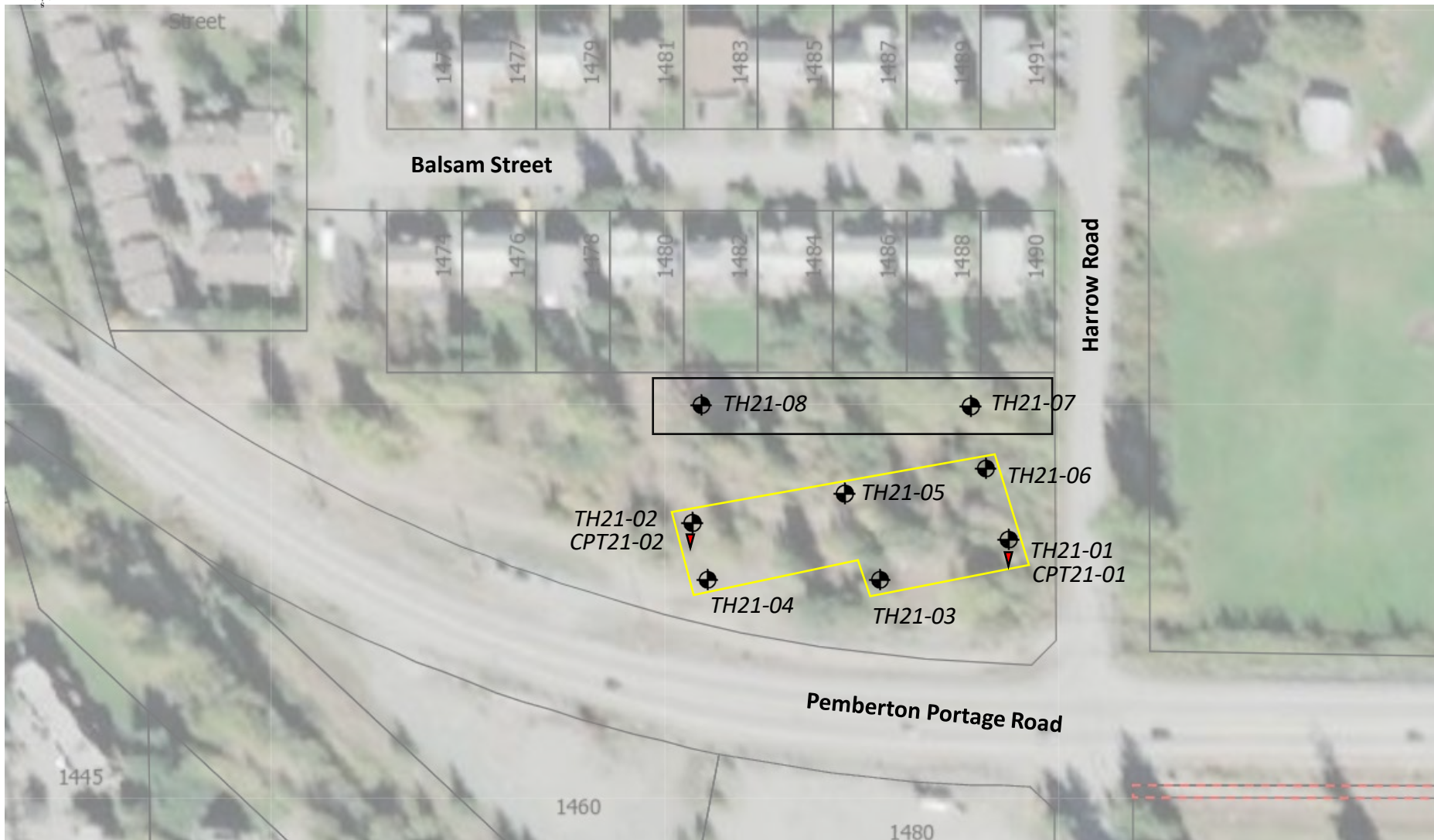
Nov. 29, 2021



Geotechnical Engineer





Principal



Geotechnical Investigation Plan
 Proposed Mixed-Use Development
 Lot 2 Harrow Road, Pemberton, BC

FILE NO.
1706
 DWG NO.
1706 - 01

- LEGEND**
-  Auger Borehole
 -  CPT Location

Date: 2021-10-05

Drawn By: JB	Approved By:	Reviewed By:
-----------------	--------------	--------------

Scale: NTS, Locations Approximate



APPENDIX A
TEST HOLE LOGS

Test Hole Log: TH21-01

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
www.fronterageo.ca

Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface				
0	SAND	Medium grained, well graded, loose, moist, brown.				
1						
2	SAND	Coarse grained, well graded, loose, wet, grey.			20	
2						
3	PEAT	Fibrous peat, woody, trace silt, soft, wet, brown.			20	
3						
4	PEAT	Fibrous peat, woody, trace silt, soft, wet, brown.			196	
4						
5	SILT	Trace organics (wood), low plastic, soft, brown.			32	
5						
6		End of Borehole				
6						
7						
8						
9						
10						

Date of Drilling: 10/22/2021

Rig Type: Solid Stem Auger

Logged By: SG

Datum: Bunbury Land Surveying

Page: 1 of 1

Test Hole Log: TH21-02

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
www.fronterageo.ca

Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface				
0 - 1.5	SAND	Fine to medium grained, poorly graded, loose, dry to moist.				
1.5 - 2.1		1.5 m - grades to medium-coarse.				
2.1 - 3.3		2.1 m - becomes wet and grey.		25		
3.3 - 4.0	SILT	Low plastic, soft, moist, grey.				
4.0 - 5.0	Clayey Peaty SILT	Low plastic, soft, moist to wet, brown/grey.		80		
5.0 - 6.0	PEAT	Amorphous with some fibres, soft, wet, brown		297		
6.0 - 10.0		End of Borehole				

Date of Drilling: 10/22/2021
Rig Type: Solid Stem Auger
Logged By: SG

Datum: Bunbury Land Surveying
Page: 1 of 1

Test Hole Log: TH21-03

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
www.fronterageo.ca

Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface	206.5			
0 - 3.5	SAND	Medium grained, well graded, loose, dry to moist, brown.	3, 7, 4, 5, 3, 2, 4, 4, 3, 4, 5	28		
3.5 - 4.0	Clayey SILT Interbedded with PEAT	Low plastic clayey silt, fibrous peat, soft, moist, grey/brown	0, 1, 1	118		
4.0 - 5.0	PEAT	Fibrous, trace silt, soft, moist, dark brown.	3, 3, 2, 4, 7	139		
5.0 - 6.0	SILT	Low plastic, soft, moist, grey.		53		
6.0 - 7.0		End of Borehole				
7.0 - 10.0						

Date of Drilling: 10/22/2021
Rig Type: Solid Stem Auger
Logged By: SG

Datum: Bunbury Land Surveying
Page: 1 of 1

Test Hole Log: TH21-04

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
www.fronterageo.ca

Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface	206.3			
0.5		SAND Fine grained, uniformly graded, loose, dry, brown.	205.6			
1.5		SAND Coarse grained, well graded, loose, moist, brown.				
2.5				25		
3.0		SILT Low plastic, soft, moist, grey.	203.3			
3.5				33		
4.0		Clayey SILT Intact organic fiber, low plastic, soft, moist, grey/brown.	202.7			
4.5				101		
5.0		PEAT Fibrous, trace silt, soft, moist, dark brown.	201.8			
5.5						
6.0		SILT Low plastic, soft, wet, grey.	200.9			
6.5				42		
6.5		End of Borehole	200.3			
7.0						
8.0						
9.0						
10.0						

Date of Drilling: 10/22/2021
Rig Type: Solid Stem Auger
Logged By: SG

Datum: Bunbury Land Surveying
Page: 1 of 1

Test Hole Log: TH21-05

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
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Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface	206.4			
0 - 1.8	SAND	Medium grained, well graded, loose, dry to moist, brown.	1 3 5 5 7			
1.8 - 2.1	SAND	Coarse grained, well graded, loose, wet, grey.	5 3	30		
2.1 - 2.3	SILT	Low plastic, soft, moist, grey.	2 2	45		
2.3 - 2.5	Clayey PEAT	Low plastic, soft, moist, grey/brown.	1 1	104		
2.5 - 4.8	PEAT	Fibrous, soft, moist, dark brown.	2 2 4 4			
4.8 - 6.8	SILT	Trace organics (rotten wood), low plastic, soft, wet, grey.	7 8 5 5	45		
6.8 - 8.1	Silty SAND	Fine grained, uniformly graded, loose, moist, grey.	5 6 6 5	33		
8.1 - 9.0		End of Borehole	5 6 7 8			

Date of Drilling: 10/22/2021
Rig Type: Solid Stem Auger
Logged By: SG

Datum: Bunbury Land Surveying
Page: 1 of 1

Test Hole Log: TH21-06

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
www.fronterageo.ca

Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface	206.3			
0 - 1		SAND Medium grained, well graded, loose, dry to moist, brown.	1 3 5 5 7	6		
1 - 2		SAND Coarse grained, well graded, loose, wet, grey.	5 3 3 2	19		
2 - 3		SILT Trace organics (intact fibers), low plastic, soft, moist, grey.	2 1 1			
3 - 4		PEAT Fibrous, soft, moist, dark brown.	1 1 2 2	190		
4 - 5		Silty SAND Fine grained, uniformly graded, loose, moist, grey.	4 4 7 8	40		
5 - 6		End of Borehole	5			
6 - 7						
7 - 8						
8 - 9						
9 - 10						

Date of Drilling: 10/22/2021
Rig Type: Solid Stem Auger
Logged By: SG

Datum: Bunbury Land Surveying
Page: 1 of 1

Test Hole Log: TH21-07

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
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Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface	206.2			
0 - 1		SAND Trace gravel, medium to coarse grained, well graded, loose, dry to moist, brown.	204.7			
1 - 2		SAND Coarse grained, well graded, loose, wet, grey.	203.1	18		
2 - 3		End of Borehole				
3 - 4						
4 - 5						
5 - 6						
6 - 7						
7 - 8						
8 - 9						
9 - 10						

Date of Drilling: 10/22/2021
Rig Type: Solid Stem Auger
Logged By: SG

Datum: Bunbury Land Surveying
Page: 1 of 1

Test Hole Log: TH21-08

Project No.: 1706

Project: Proposed Mixed-Use Development

Client: Sea to Sky Community Services Society

Location: Lot 2 Harrow Road, Pemberton, BC



#1 - 38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093
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Depth (m)	Soil Profile		Dynamic Cone Penetration Resistance (blows/0.3m)	Water Content (%)	Groundwater/Well	Remarks
	Strata	Description				
0		Ground Surface	206.2			
0 to 1.4		SAND Medium grained, well graded, loose, dry to moist, brown 1.4 m - grades to coarse.		28		
1.4 to 2.0		SAND Coarse grained, well graded, loose, wet, grey.		48		
2.0 to 10		End of Borehole				

Date of Drilling: 10/22/2021

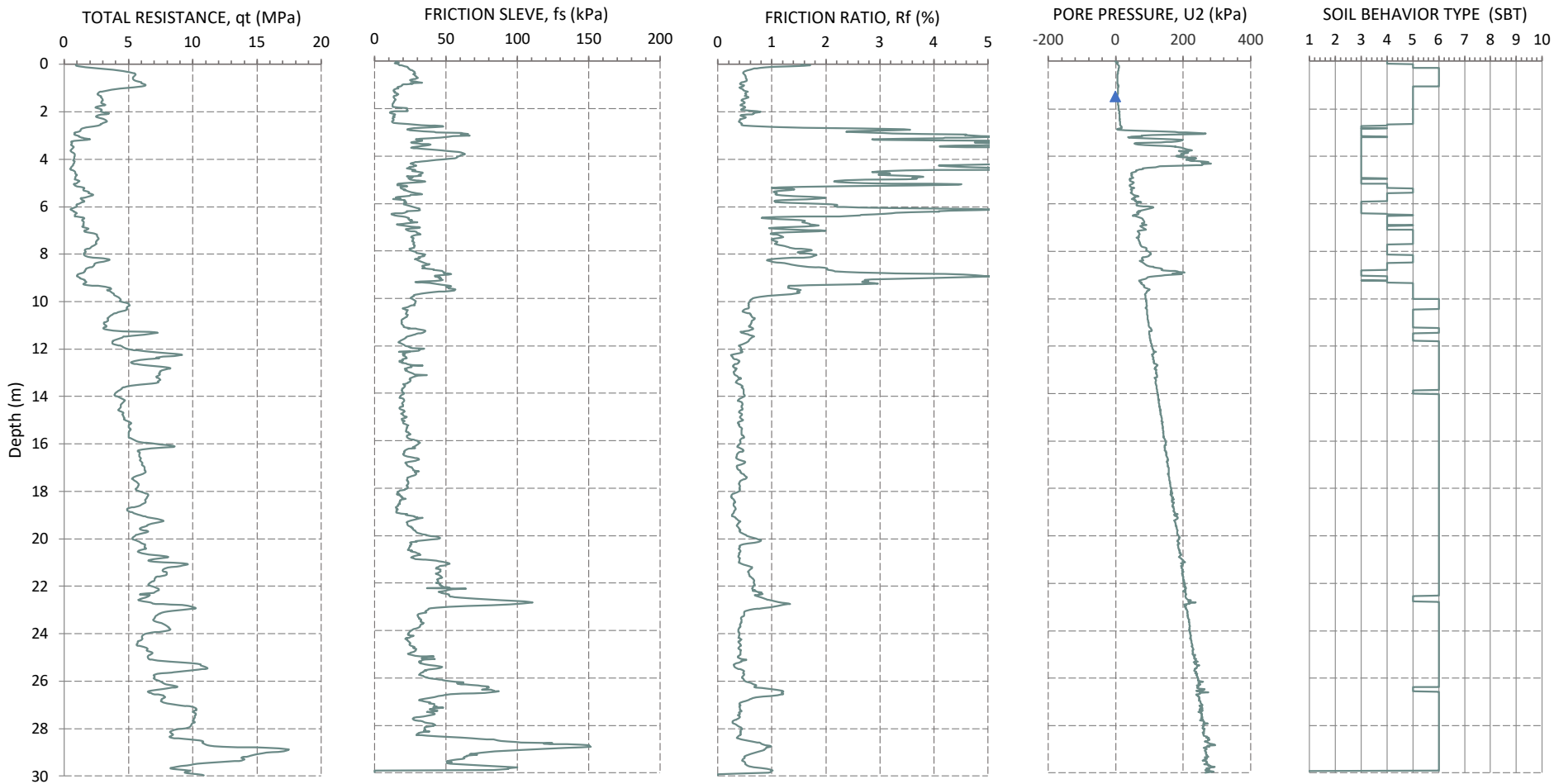
Rig Type: Solid Stem Auger

Logged By: SG

Datum: Bunbury Land Surveying

Page: 1 of 1

APPENDIX B
CPT BASED SOIL INTERPERTATION



SBT Legend

- | | | |
|---------------------------|-----------------------------|----------------------------|
| 1. Sensitive Fine Grained | 4. Clayey Silt - Silty Clay | 7. Gravely Sand - Sand |
| 2. Organic Material | 5. Silty Sand - Sandy Silt | 8. Very Stiff Clay Sand |
| 3. Clay - Silty Clay | 6. Sand to Silty Sand | 9. Very Stiff Fine Grained |

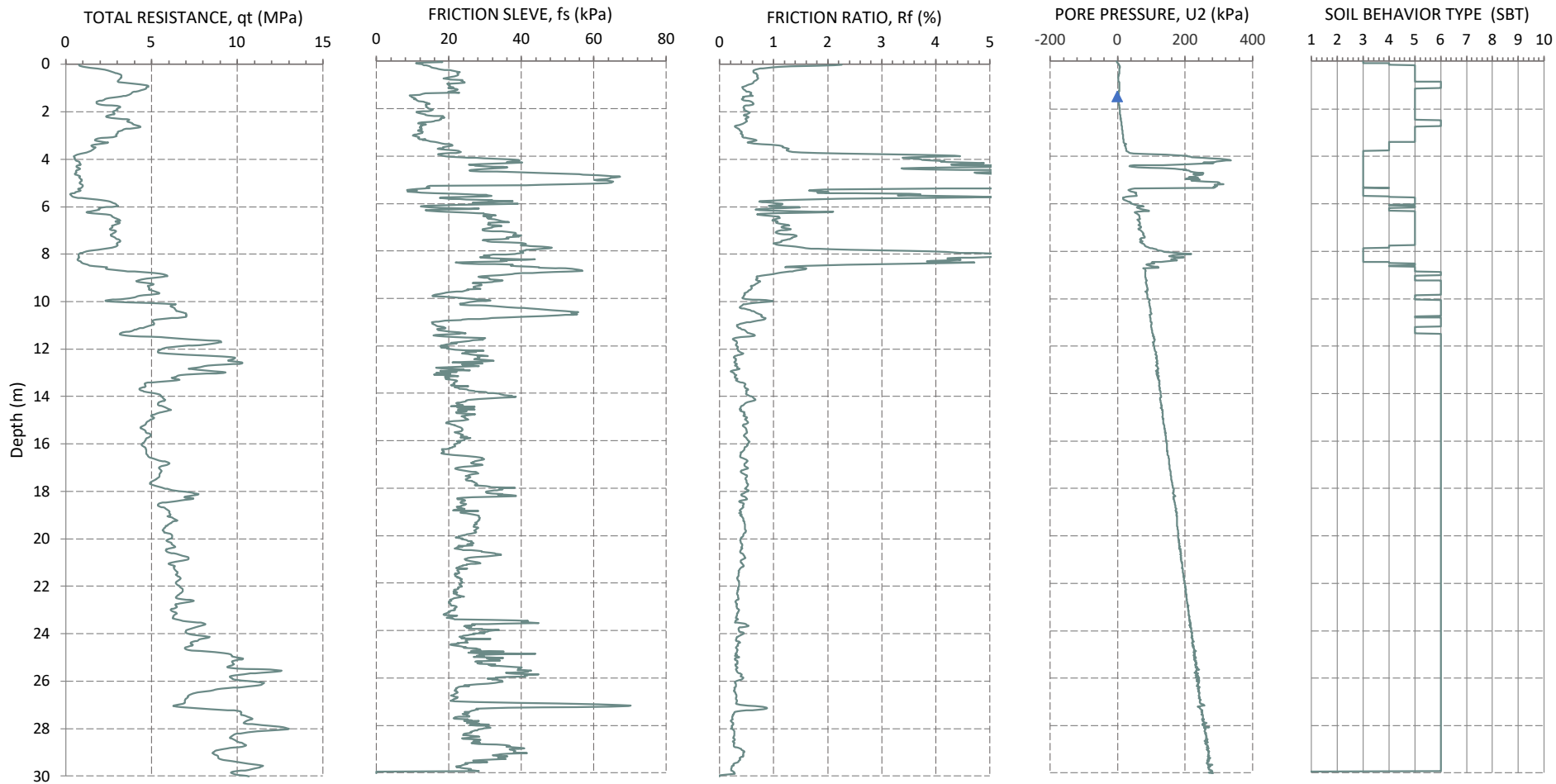
Input Parameters and Analysis Data

SBT Method:	Robertson (1986)
Water Table (m, below grade):	1.5



Frontera Geotechnical Inc.
 #1-38920 Queens Way
 Squamish, BC V8B 0K8
 604-898-1093

Client: Sea to Sky Community Services Society
Job No. 1706
Location: Lot 2 Harrow Road, Pemberton, BC
Date: October 22, 2021
CPT Trace: CPT21-01



Frontera Geotechnical Inc.

#1-38920 Queens Way
Squamish, BC V8B 0K8
604-898-1093

Client:

Sea to Sky Community Services Society
1706

Job No.:

Location:

Lot 2 Harrow Road, Pemberton, BC

Date:

October 22, 2021

CPT Trace:

CPT21-02

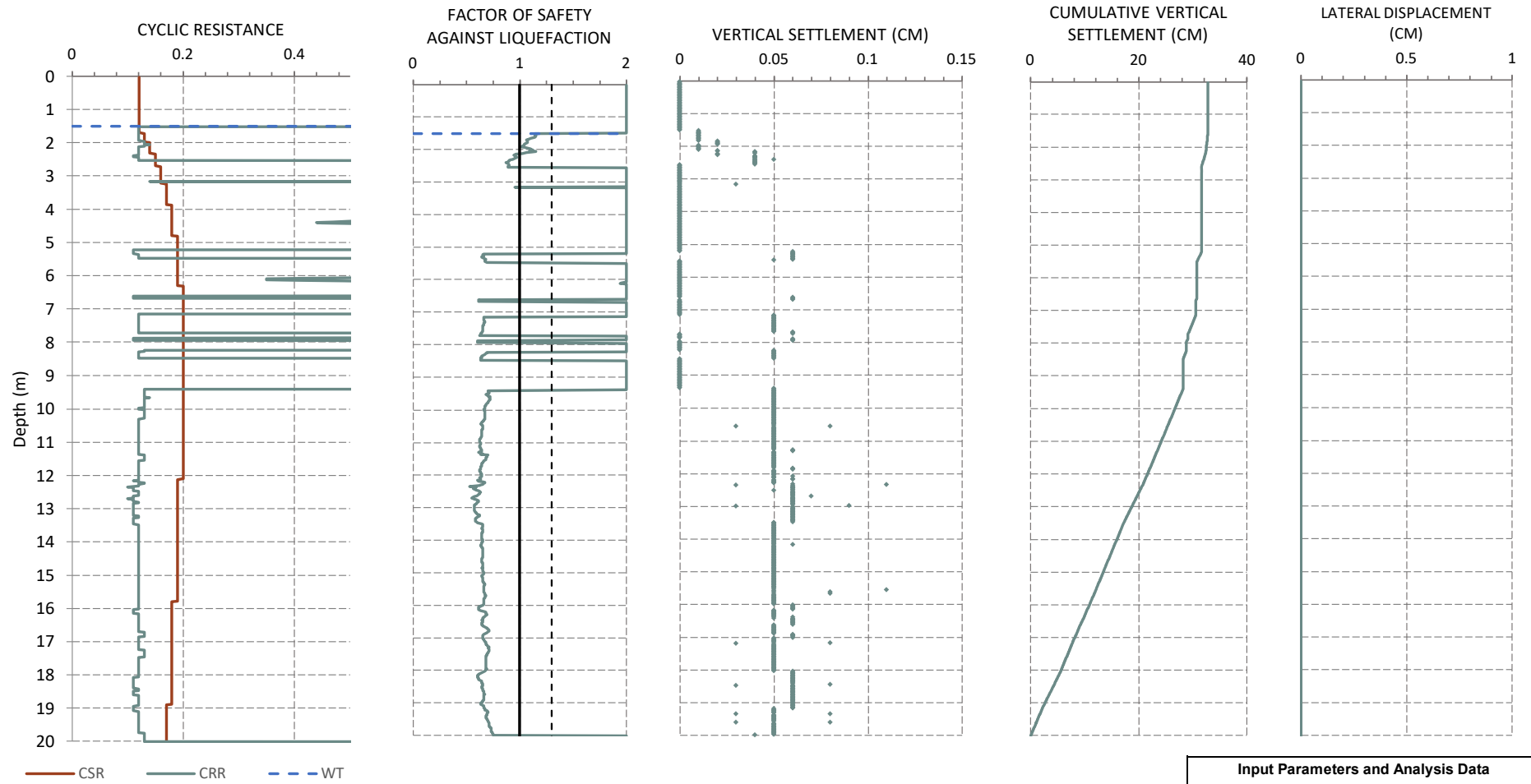
SBT Legend

- | | | |
|---------------------------|-----------------------------|----------------------------|
| 1. Sensitive Fine Grained | 4. Clayey Silt - Silty Clay | 7. Gravely Sand - Sand |
| 2. Organic Material | 5. Silty Sand - Sandy Silt | 8. Very Stiff Clay Sand |
| 3. Clay - Silty Clay | 6. Sand to Silty Sand | 9. Very Stiff Fine Grained |

Input Parameters and Analysis Data

SBT Method:	Robertson (1986)
Water Table (m, below grade):	1.5

APPENDIX C.1
1 IN 2,475 YEAR SEISMIC HAZARD CPT BASED
LIQUEFACTION ANALYSIS



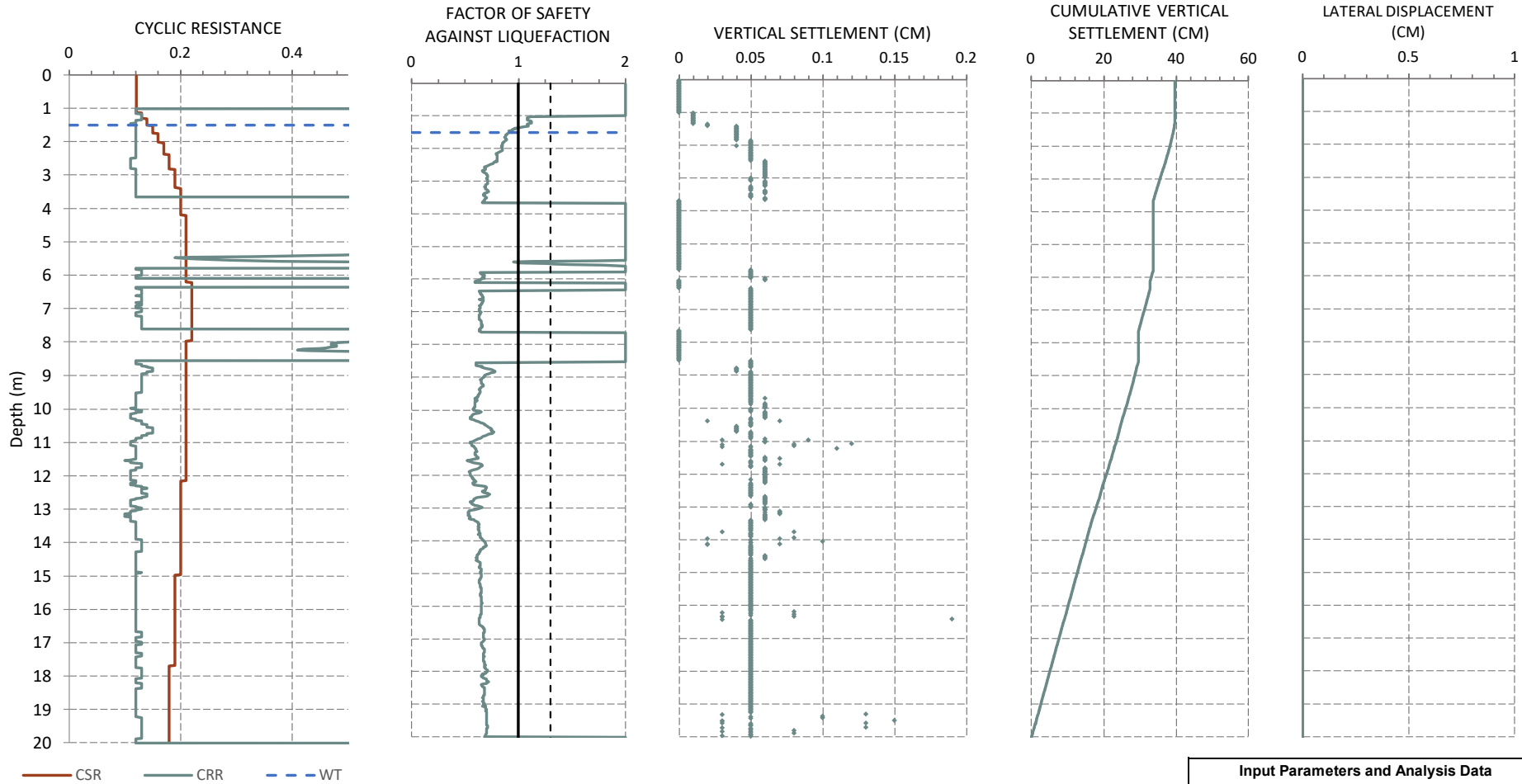
Input Parameters and Analysis Data

Analysis Method:	B&I 2014
Fines Correction Method:	B&I 2014
Earthquake Magnitude:	7
Peak Ground Acceleration:	0.18
Seismic Hazard:	1 in 2,475
I_c cut-off value:	2.6
Transitional Layer Detection:	ON
Limit Depth:	20.00 m
Water Table (m, below grade):	1.5



Frontera Geotechnical Inc.
 #1-38920 Queens Way
 Squamish, BC V8B 0K8
 604-898-1093

Client: Sea to Sky Community Services Society
Job No. 1706
Location: Lot 2 Harrow Road, Pemberton, BC
Date: October 22, 2021
CPT Trace: **CPT21-01**



Input Parameters and Analysis Data	
Analysis Method:	B&I 2014
Fines Correction Method:	B&I 2014
Earthquake Magnitude:	7
Peak Ground Acceleration:	0.18
Seismic Hazard:	1 in 2,475
I_c cut-off value:	2.6
Transitional Layer Detection:	ON
Limit Depth:	20.00 m
Water Table (m, below grade):	1.5

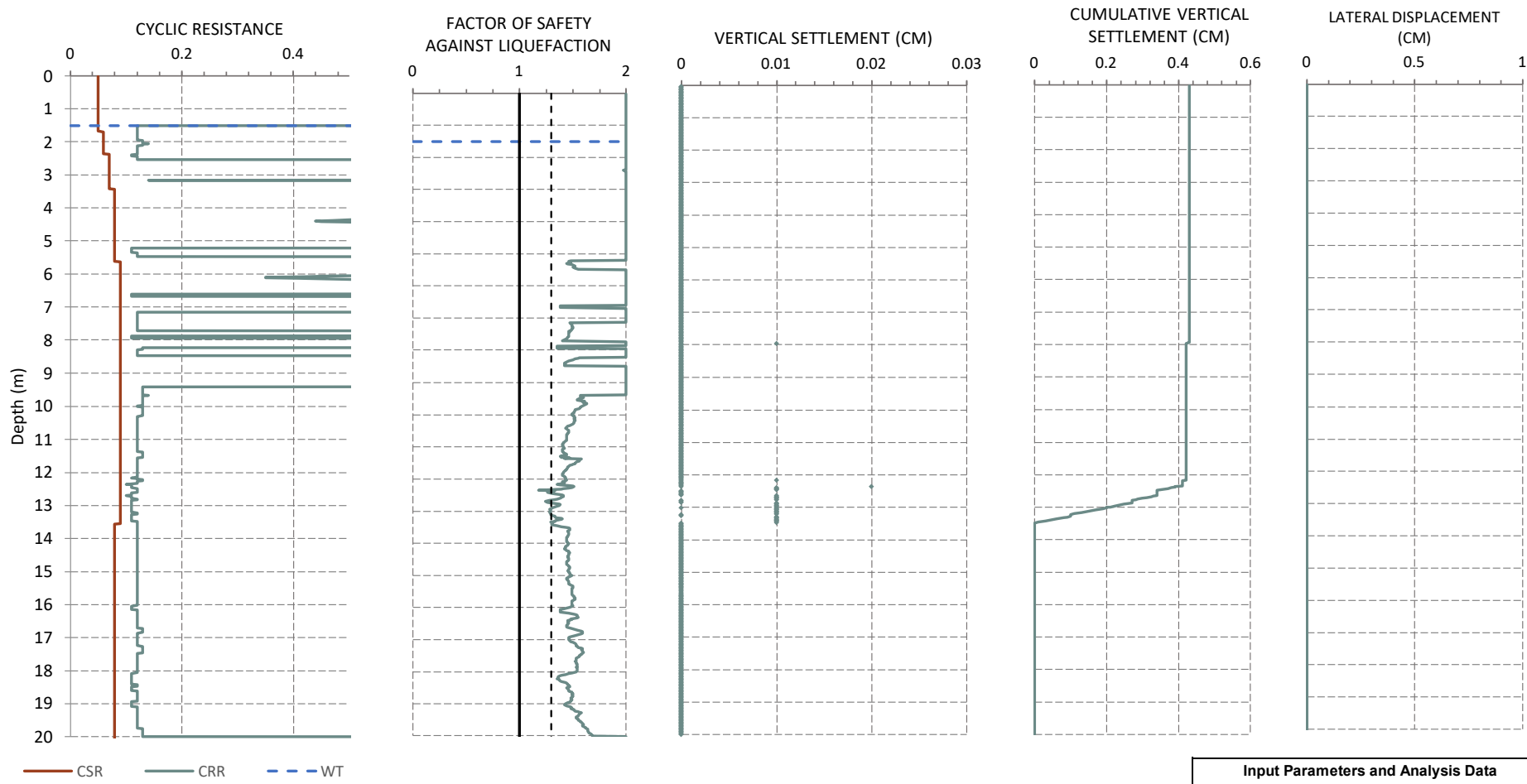


Frontera Geotechnical Inc.
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 604-898-1093

Client: Sea to Sky Community Services Society
Job No. 1706
Location: Lot 2 Harrow Road, Pemberton, BC
Date: October 22, 2021
CPT Trace: **CPT21-02**

APPENDIX C.2

1 IN 475 YEAR SEISMIC HAZARD CPT BASED LIQUEFACTION ANALYSIS

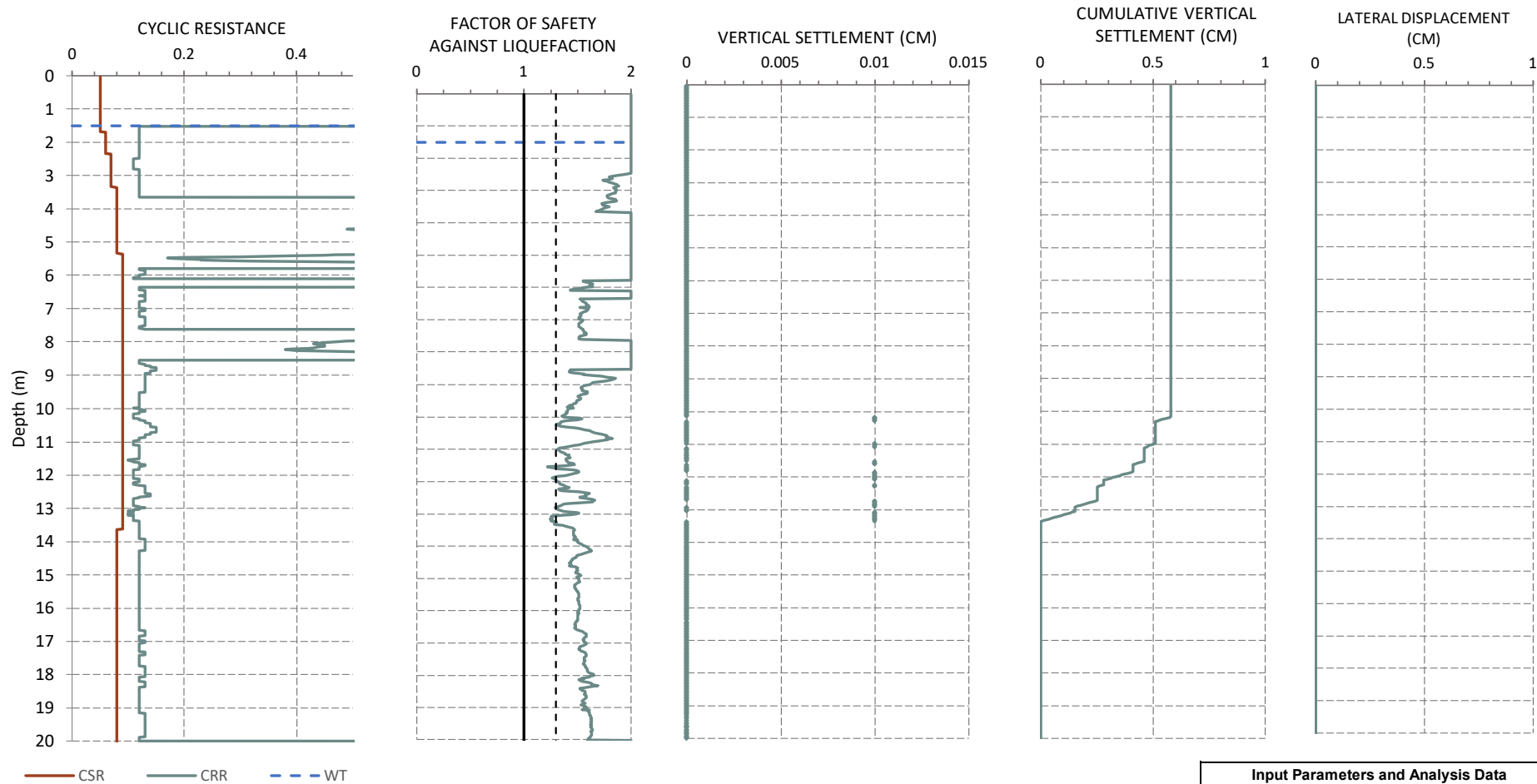


Input Parameters and Analysis Data	
Analysis Method:	B&I 2014
Fines Correction Method:	B&I 2014
Earthquake Magnitude:	7
Peak Ground Acceleration:	0.08
Seismic Hazard:	1 in 475
I_c cut-off value:	2.6
Transitional Layer Detection:	ON
Limit Depth:	20.00 m
Water Table (m, below grade):	1.5



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Job No. 1706
Location: Lot 2 Harrow Road, Pemberton, BC
Date: October 22, 2021
CPT Trace: CPT21-01



Input Parameters and Analysis Data

Analysis Method:	B&I 2014
Fines Correction Method:	B&I 2014
Earthquake Magnitude:	7
Peak Ground Acceleration:	0.08
Seismic Hazard:	1 in 475
I_c cut-off value:	2.6
Transitional Layer Detection:	ON
Limit Depth:	20.00 m
Water Table (m, below grade):	1.5



Frontera Geotechnical Inc.
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 604-898-1093

Client: Sea to Sky Community Services Society
Job No. 1706
Location: Lot 2 Harrow Road, Pemberton, BC
Date: October 22, 2021
CPT Trace: **CPT21-02**

TREE MANAGEMENT PLAN

LOT 2 HARROW RD.
PEMBERTON, BC

CPA DEVELOPMENT
CONSULTANTS

Submitted by:

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SILVERBACK
TREETWORKS LTD



Version 3.0

August 22, 2022

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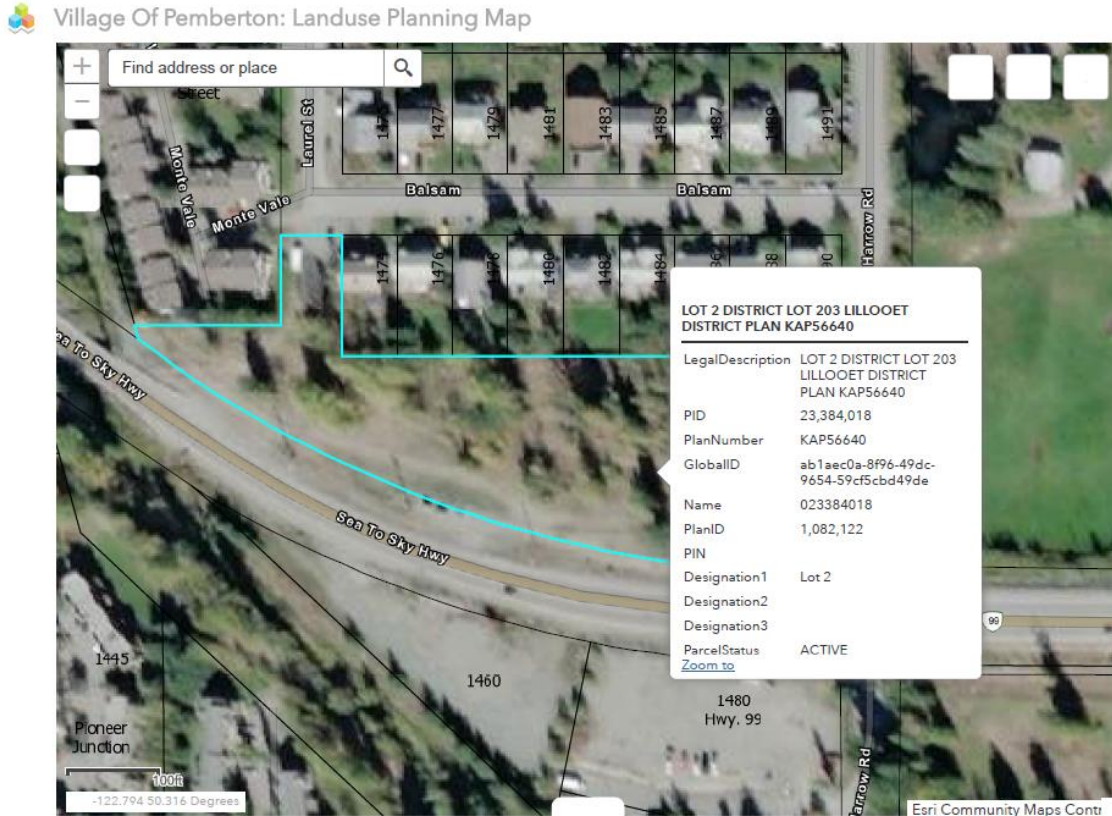
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1. Property Location

One lot comprises the property Lot 2, Harrow Rd., Pemberton, B.C.as presented in Figure 1.

Figure 1. An aerial image of the site.



2. Scope and Purpose

This report is provided to you as a means of addressing the Village of Pemberton requirements for tree inventory and management plan in the permit application process associated with the proposed development at Lot 2 Harrow Rd. The purpose of this report is to provide a tree inventory for all trees on the property and in close proximity to the proposed development (Table 1). Tree management recommendations for the development will be described. This information is intended to assist permitting officers, landscape architects, engineers and project managers during the planning and implementation of this project.

The site survey is described in Figure 2 that includes identified trees highlighted in green. The proposed development will have 63 housing units for community members and ground floor commercial space and community services. Associated parking and playground area are also proposed (Figure 3).

Figure 2. Site survey at Lot 2 Harrow Rd., Pemberton B.C.

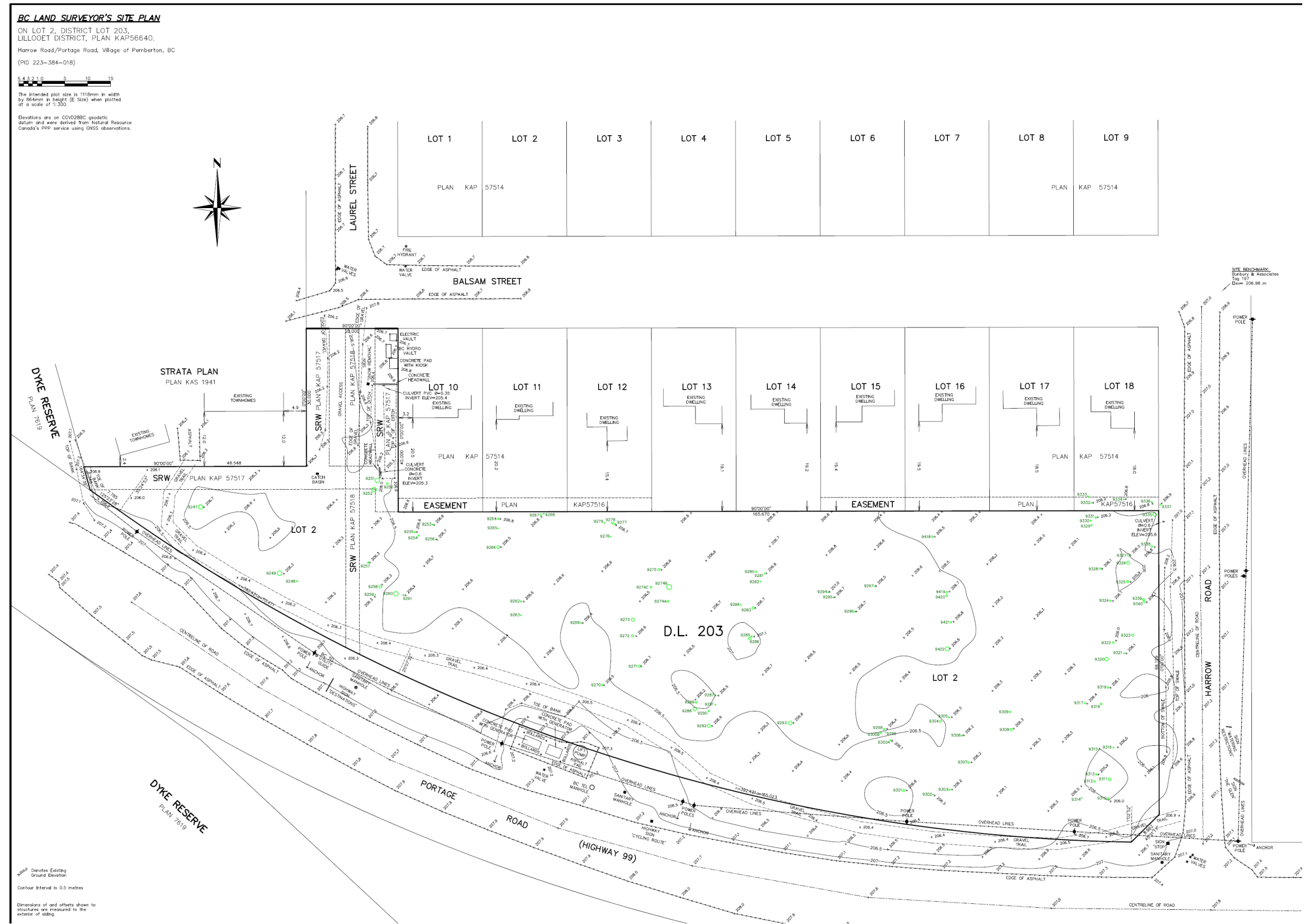
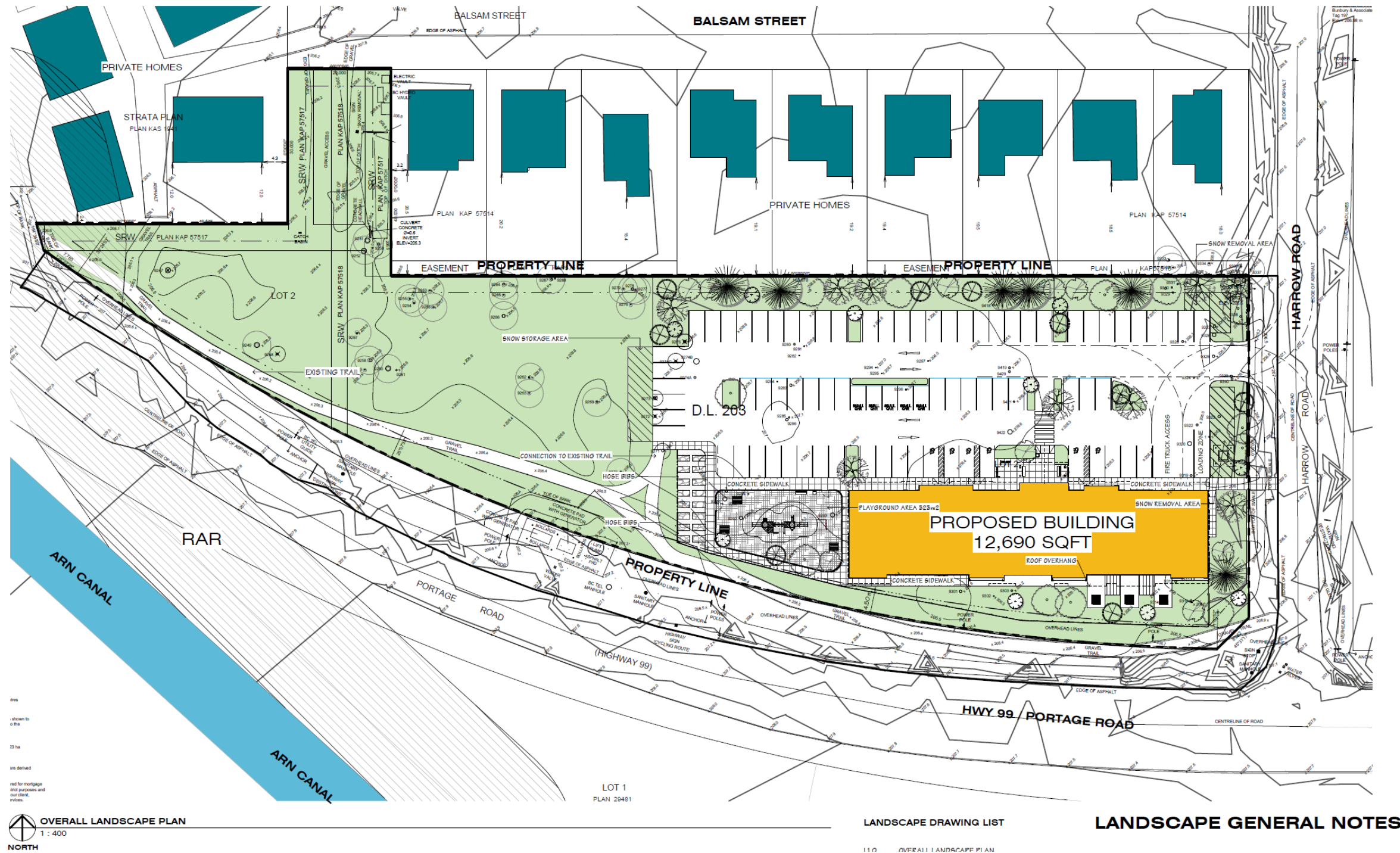


Figure 3. Proposed development at Lot 2 Harrow Rd., Pemberton B.C.



3. Site Assessment and Tree Inventory

A site visit was completed on February 28, 2022. Highway 99 borders the property, to the south. Harrow Road borders the west and private residential properties border the north of the subject property. The lot was undeveloped at time of survey.

The property is generally level and sparsely forested with juvenile mixed species forest composed of 40% Black cottonwood (*Populus trichocarpa*), 35% Pine (*Pinus spp.*) and 25% Douglas fir (*Pseudotsuga menziesii*). At time of site visit, snow was present on the ground, such that observations of tree bases and surface roots was not always possible.

In accordance with the Village of Pemberton Site Alteration Bylaw No. 822, 2017, trees with 10cm diameter at breast height (DBH) measured 1.4m above ground, were identified. In total, 102 trees were identified during the survey. Four trees were identified on neighbouring northwestern property, 1490 Balsam Street. One street tree was identified between Harrow Road and the subject property. Ninety-seven trees were located on the subject property, Lot 2 Harrow Road. Table 1 provides a description of all identified trees.

A tree protection zone (TPZ) is an arborist defined area around each tree intended to protect roots and soil within the critical root zone during development in order to ensure the health and stability for long term retention. The actual TPZ may be defined using many factors including the health and age of a tree, species and any existing factors that may have restricted root and / or canopy development.

Condition classifications included in Table 1 adhere to the following overall health and structure rating:

- Good - Tree is in good condition with no significant structural weakness or health concerns, considering the location, site conditions and species.
- Fair - Tree has noted health and / or minor structural weaknesses. Management strategies such as pruning, and modifications are reasonable to improve the health and / or condition of the tree.
- Poor - Tree is in serious decline and has multiple very definable health and / or structural weaknesses.
- Dead / Dying - Tree was found to be dead and/or dying and/or has sever defects

Table 1. Tree inventory and description of all trees on and in close proximity to the development.

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
9247	Cottonwood (<i>Populus trichocarpa</i>)	100	12	poor	extensive stem damage/rot	Remove due to poor condition
9248	Cottonwood (<i>Populus trichocarpa</i>)	30	11	poor	numerous cankers, extensive restoration	Remove due to poor condition
9249	Douglas fir (<i>Pseudotsuga menziesii</i>) x2	100	13	fair	numerous cankers, extensive restoration	Retain
9250	Cottonwood (<i>Populus trichocarpa</i>)	40	12	fair	numerous cankers, extensive restoration	Retain
9251	Cottonwood (<i>Populus trichocarpa</i>) x3	100	14	fair	numerous cankers, extensive restoration	Retain
9252	Cottonwood (<i>Populus trichocarpa</i>) x3	100	12	fair	numerous cankers, extensive restoration	Retain
9253	Cottonwood (<i>Populus trichocarpa</i>)	20	10	fair	some cankers on lower stem	Retain
9254	Cottonwood (<i>Populus trichocarpa</i>)	25	12	fair	some cankers on lower stem	Retain
9255	Cottonwood (<i>Populus trichocarpa</i>)	25	12	fair	some cankers on lower stem	Retain
9256	Cottonwood (<i>Populus trichocarpa</i>)	20	10	fair	some cankers on lower stem	Retain
9257	Cottonwood (<i>Populus trichocarpa</i>)	30	13	fair	some cankers on lower stem	Retain
9258	Cottonwood (<i>Populus trichocarpa</i>) x2	60	13	fair	some cankers on lower stem	Retain
9259	Cottonwood (<i>Populus trichocarpa</i>)	20	>	fair	some cankers on lower stem	Retain
9260	Cottonwood (<i>Populus trichocarpa</i>)	100	21	fair	no cankers present	Retain
9261	Pine (<i>Pinus spp</i>)	25	8	fair		Retain
9262	Cottonwood (<i>Populus trichocarpa</i>)	30	12	fair	some cankers on lower stem	Retain
9263	Cottonwood (<i>Populus trichocarpa</i>)	20	>	fair	some cankers on lower stem	Retain
9264	Douglas fir (<i>Pseudotsuga menziesii</i>) x2	40	15	fair	some cankers on lower stem	Retain
9265	Cottonwood (<i>Populus trichocarpa</i>)	20	14	fair	some cankers on lower stem	Retain
9266	Cottonwood (<i>Populus trichocarpa</i>) x4	60	14	fair	some cankers on lower stem	Retain
9267	Pine (<i>Pinus spp</i>) x2	40	8	fair	some cankers on lower stem	Retain
9268	Pine (<i>Pinus spp</i>)	25	8	fair	some cankers on lower stem	Retain
9269	Cottonwood (<i>Populus trichocarpa</i>)	20	7	fair	some cankers on lower stem	Retain
9270	Cottonwood (<i>Populus trichocarpa</i>) x3	30	6	fair	some cankers on lower stem	Retain
9271	Cottonwood (<i>Populus trichocarpa</i>)	50	11	poor	large cankers and stem swelling	Within development footprint, recommended for removal
9272	Cottonwood (<i>Populus trichocarpa</i>)	50	9	poor	canker and stem swelling and dead top	Within development footprint, recommended for removal
9273	Douglas fir (<i>Pseudotsuga menziesii</i>)	70	20	fair		Within development

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
						footprint, recommended for removal
9274A	Douglas fir (<i>Pseudotsuga menziesii</i>)	40	16	fair		Within development footprint, recommended for removal
9274B	Cottonwood (<i>Populus trichocarpa</i>)	110	17	poor	stem damage and badly attached top	Within development footprint, recommended for removal
9274C	Cottonwood (<i>Populus trichocarpa</i>)	40	16	poor	large wounds/swelling	Within development footprint, recommended for removal
9275	Cottonwood (<i>Populus trichocarpa</i>)	50	16	fair	some cankers/swelling	Within development footprint, recommended for removal
9276	Cottonwood (<i>Populus trichocarpa</i>)	20	9	fair	some cankers/swelling	Retain
9277	Cottonwood (<i>Populus trichocarpa</i>)	30	16	fair	some cankers/swelling	Retain
9278	Cottonwood (<i>Populus trichocarpa</i>)	45	17	fair	some cankers/swelling	Retain
9279	Douglas fir (<i>Pseudotsuga menziesii</i>)	20	5	fair	some cankers present	Retain
9280	Cottonwood (<i>Populus trichocarpa</i>)	35	12	fair	some cankers present	Within development footprint, recommended for removal
9281	Cottonwood (<i>Populus trichocarpa</i>)	20	10	fair	some cankers present	Within development footprint, recommended for removal
9282	Pine (<i>Pinus spp</i>)	20	9	fair	some cankers present	Within development footprint, recommended for removal
9283	Cottonwood (<i>Populus trichocarpa</i>)	50	10	poor	2 large tops badly attached	Within development footprint, recommended for removal
9284	Cottonwood (<i>Populus trichocarpa</i>)	20	8	fair	some cankers present	Within development footprint, recommended for removal
9285	Cottonwood (<i>Populus trichocarpa</i>)	30	9	poor	dead, significant rot	Within development footprint, recommended for removal
9286	Cottonwood (<i>Populus trichocarpa</i>)	50	10	poor	numerous large dead limbs, stem damage, badly attached	Within development footprint, recommended for removal

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
9287	Cottonwood (<i>Populus trichocarpa</i>)	30	9	poor	extensive swelling - poorly attached top	Within development footprint, recommended for removal
9288	Cottonwood (<i>Populus trichocarpa</i>) x2	80	8	poor	extensive swelling - poorly attached top	Within development footprint, recommended for removal
9289	Cottonwood (<i>Populus trichocarpa</i>)	40	5	poor	stem damage, swelling and rot	Within development footprint, recommended for removal
9290	Cottonwood (<i>Populus trichocarpa</i>)	30	8	poor	stem damage, swelling and rot	Within development footprint, recommended for removal
9291	Pine (<i>Pinus spp</i>)	20	6	fair		Within development footprint, recommended for removal
9292	Cottonwood (<i>Populus trichocarpa</i>) x2	70	12	fair	some cankers/swelling present	Within development footprint, recommended for removal
9293	Cottonwood (<i>Populus trichocarpa</i>) x2	80	12	fair	some cankers/swelling present	Within development footprint, recommended for removal
9294	Pine (<i>Pinus spp</i>)	20	9	fair		Within development footprint, recommended for removal
9295	Pine (<i>Pinus spp</i>)	20	8	fair		Within development footprint, recommended for removal
9296	Pine (<i>Pinus spp</i>)	20	8	fair		Within development footprint, recommended for removal
9297	Cottonwood (<i>Populus trichocarpa</i>)	30	10	fair		Within development footprint, recommended for removal
9298	Pine (<i>Pinus spp</i>)	20	11	fair		Within development footprint, recommended for removal
9299	Pine (<i>Pinus spp</i>)	20	11	fair		Within development footprint, recommended for removal

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
9300A	Pine (<i>Pinus spp</i>)	20	11	fair		Within development footprint, recommended for removal
9300B	Pine (<i>Pinus spp</i>)	30	10	fair		Within development footprint, recommended for removal
9301	Douglas fir (<i>Pseudotsuga menziesii</i>)	50	13	fair		Within development footprint, recommended for removal
9302	Douglas fir (<i>Pseudotsuga menziesii</i>)	20	9	fair		Within development footprint, recommended for removal
9303	Pine (<i>Pinus spp</i>)	35	9	fair		Within development footprint, recommended for removal
9304	Cottonwood (<i>Populus trichocarpa</i>)	50	14	fair		Within development footprint, recommended for removal
9305	Pine (<i>Pinus spp</i>)	30	13	fair		Within development footprint, recommended for removal
9306	Douglas fir (<i>Pseudotsuga menziesii</i>)	30	12	fair		Within development footprint, recommended for removal
9307	Pine (<i>Pinus spp</i>)	40	9	fair		Within development footprint, recommended for removal
9308	Cottonwood (<i>Populus trichocarpa</i>)	50	13	poor	extensive stem damage and rot	Within development footprint, recommended for removal
9309	Douglas fir (<i>Pseudotsuga menziesii</i>)	40	15	fair		Within development footprint, recommended for removal
9310	Pine (<i>Pinus spp</i>)	40	10	fair		Within development footprint, recommended for removal
9311	Pine (<i>Pinus spp</i>)	60	12	fair		Within development footprint, recommended for removal

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
9312	Cottonwood (<i>Populus trichocarpa</i>)	40	16	fair	some swelling and cankers	Within development footprint, recommended for removal
9313	Cottonwood (<i>Populus trichocarpa</i>)	30	15	fair	some swelling and cankers	Within development footprint, recommended for removal
9314A	Douglas fir (<i>Pseudotsuga menziesii</i>)	20	6	fair		Within development footprint, recommended for removal
9315	Pine (<i>Pinus spp</i>)	20	9	fair		Within development footprint, recommended for removal
9316	Pine (<i>Pinus spp</i>)	25	9	fair		Within development footprint, recommended for removal
9317	Douglas fir (<i>Pseudotsuga menziesii</i>)	30	12	fair		Within development footprint, recommended for removal
9318	Cottonwood (<i>Populus trichocarpa</i>)	40	12	poor	swelling/stem damage/badly attached tops	Remove due to poor condition
9319	Cottonwood (<i>Populus trichocarpa</i>)	40	10	poor	swelling/stem damage/badly attached tops	Within development footprint, recommended for removal
9320	Cottonwood (<i>Populus trichocarpa</i>) x2	80	10	poor	dead	Within development footprint, recommended for removal
9321	Pine (<i>Pinus spp</i>)	20	10	fair		Within development footprint, recommended for removal
9322	Pine (<i>Pinus spp</i>)	40	15	fair		Within development footprint, recommended for removal
9323	Cottonwood (<i>Populus trichocarpa</i>)	50	14	fair	some swelling/rot/poorly attached tops	Within development footprint, recommended for removal
9324	Pine (<i>Pinus spp</i>)	30	13	fair		Within development footprint, recommended for removal
9325	Cottonwood (<i>Populus trichocarpa</i>)	50	16	poor	swelling/cankers dead tops and large dead limbs	Remove due to poor condition

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
9326	Cottonwood (<i>Populus trichocarpa</i>)	70	14	poor	swelling/cankers dead tops and large dead limbs	Within development footprint, recommended for removal
9327	Cottonwood (<i>Populus trichocarpa</i>)	50	16	fair	swelling/cankers dead tops and large dead limbs	Within development footprint, recommended for removal
9328	Pine (<i>Pinus spp</i>)	40	13	fair		Within development footprint, recommended for removal
9329	Cottonwood (<i>Populus trichocarpa</i>)	30	14	fair	some cankers/swelling	Within development footprint, recommended for removal
9330	Cottonwood (<i>Populus trichocarpa</i>)	30	>	poor	dead	Within development footprint, recommended for removal
9331	Pine (<i>Pinus spp</i>)	30	12	fair		Within development footprint, recommended for removal
9332	Pine (<i>Pinus spp</i>)	20	10	poor	neighbour tree, 1490 Balsam Street, dead	Retain
9333	Pine (<i>Pinus spp</i>)	30	11	fair	neighbour tree, 1490 Balsam Street,	Retain
9334	Cottonwood (<i>Populus trichocarpa</i>)	25	10	fair	neighbour tree 1490 Balsam Street,	Retain
9335	Cottonwood (<i>Populus trichocarpa</i>)	80	16	poor	significant dead tops/poorly attached and stem damage	Remove
9336	Cottonwood (<i>Populus trichocarpa</i>)	25	11	fair	neighbour tree, 1490 Balsam Street, some cankers on lower stem,	Retain
9337	Cottonwood (<i>Populus trichocarpa</i>)	20	10	fair	street tree	Retain
9338	Cottonwood (<i>Populus trichocarpa</i>)	40	12	poor	swelling/cankers/poorly attached top	Remove due to poor condition
9339	Cottonwood (<i>Populus trichocarpa</i>)	45	14	poor		Within development footprint, recommended for removal
9340	Cottonwood (<i>Populus trichocarpa</i>)	40	>	poor	dead, numerous fruiting bodies	Within development footprint, recommended for removal
9418	Pine (<i>Pinus spp</i>)	40		fair		Within development footprint, recommended for removal
9419	Pine (<i>Pinus spp</i>)	40		fair		Within development footprint, recommended for removal

Tree Number	Species	DBH (cm)	Height (m)	Condition	Comments	Treatment
9420	Pine (<i>Pinus spp</i>)	40		fair		Within development footprint, recommended for removal
9421	Pine (<i>Pinus spp</i>)	30		fair		Within development footprint, recommended for removal
9422	Pine (<i>Pinus spp</i>)	90		fair		Within development footprint, recommended for removal

4. Tree Management Plan

4.1. Street Trees

The survey (Figure 2) identified, one street tree, a Cottonwood (Tag ID 9337) present within the vicinity of the project (Table 1). The tree is in fair condition and is located in the northwest corner between Harrow Road and the neighbouring northwestern property (Figure 4). The tree is on municipal land and must not be harmed during construction.

Arborist recommendations: Retain with the following management practices:

- The TPZ must be well marked and have a tree protection barrier placed 1.2m from the base of the tree to the south, east and north. Orange plastic fencing is recommended as the barrier for its high visibility and size. No material storage or construction equipment storage should occur within the TPZ of the tree. The barrier should be at least 1.4m in height and re-enforced to last throughout the construction time frame.

4.2. Neighbour Trees

The survey (Figure 2) identified four trees located on the neighbouring northwestern property, 1490 Balsam Street (Table 1). The trees are identified as 9333, 9332, 9334, and 9336 (Figure 4). All trees with the exception of 9332 are in fair condition. The trees are adjacent to the development where the proposed carpark is to be built.

Arborist recommendations: Retain with the following management practices:

- Restrict both foot and mechanized traffic over the TPZ of trees. TPZ sizes are contained in Table 1 and Figure 4. The property line fence is sufficient to act as a barrier for the development and to avoid impacting the trees. If a fence is not present then a barrier must be constructed along the property line. Orange plastic fencing is recommended as the barrier for its high visibility and size. The barrier should be at least 1.4m in height and re-enforced to last throughout the construction time frame.

4.3. Property Trees

The survey identified a total of 97 property trees (Figure 2) on the project site. Of those, 70 trees are recommended for removal because they are within the development footprint. The remainder are outside of the development footprint. Of the remaining trees, 25 trees are recommended for retention because they are in fair condition and 2 trees are in poor condition and subsequently recommended for removal. A number of Cottonwood trees in poor condition were identified to have suffered borer infestation, possibly Cottonwood Borer (*Plectrodera scalator*). The majority of these trees were within the development footprint and are requested for removal.

Arborist recommendations: Subject to receiving permission from the Village of Pemberton, remove 68 trees because they are within the development footprint as depicted in Figure 4. Subject to receiving permission from the Village of Pemberton, remove a further 2 poorly rated trees due to being assessed in poor condition (Figure 4). A summary is provided in Table 2.

Table 2. Property tree management

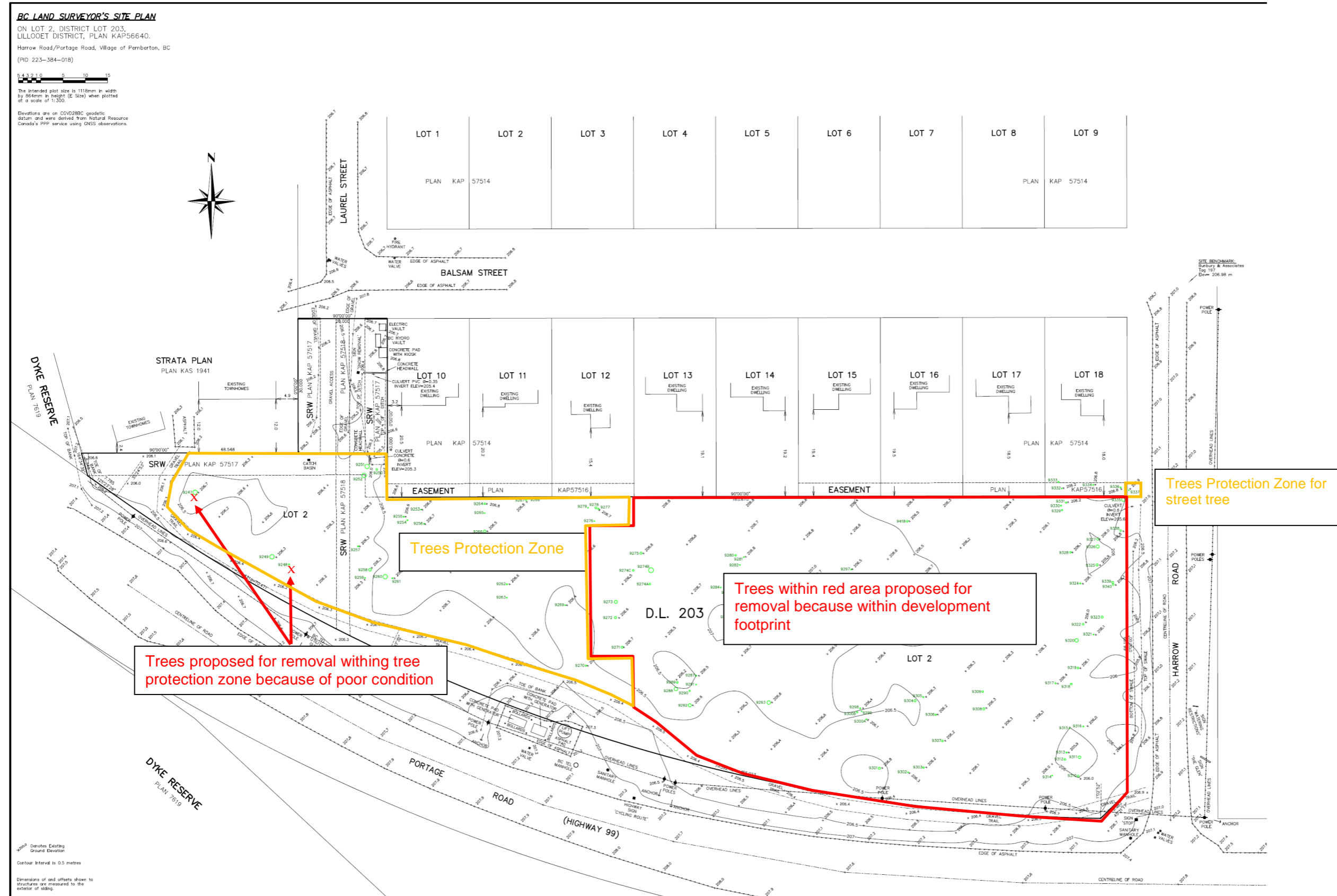
Total trees on property over 20cm Dbh	Trees proposed to be removed due to being within development footprint.	Trees proposed to be removed due to being in poor condition	Trees to be retained
97	70	2	25

The following mitigation measures are to be incorporated for construction.

- Prior to construction, protect retained trees in the western portion of the subject property by establishing a TPZ that borders the proposed wood fence along the western carpark and urban agriculture boxes in a north to south direction as depicted in Figure 4. Restrict both foot and mechanized traffic over the TPZs of the trees by using protective fencing around the area. The TPZ must be well marked and be sufficient enough to deter all foot traffic during the entire duration of the development project. Orange plastic fencing is recommended as the barrier for its high visibility and size. No material storage or construction equipment storage should occur within the TPZ of the trees. The barrier should be at least 1.4m in height and re-enforced to last throughout the construction time frame.
- Any proposed work within the TPZ for construction of the connector trail located within the western portion of the subject property, is limited to hand excavation that is no deeper than 30cm in depth from the original ground elevation. If during hand excavation critical roots greater than 2.5cm in diameter are discovered, then the supervising arborist will direct work to be halted until appropriate mitigation is enacted.
- Where the connector trail or other landscape hardscape features are proposed through the TPZ of any retained trees identified in this section, then action should be taken to disperse the load and protect the roots where incursion occurs. Minimize soil compaction and mechanical root damage by avoiding excavation for the proposed path and use permeable or semi permeable surfacing. These should be developed in consultation with a certified arborist.

- Retained trees that require pruning for development should be pruned by a certified arborist in accordance with Best Management Practices ANSI A300.

Figure 4. Tree protection zone(s) and trees recommended for removal



5. Testing and Analysis:

The assessment completed on the trees defined within this report, consisted of a visual and physical inspection from the ground and was based upon the principals of Visual Tree Assessments. No invasive tests, such as using a resistograph or increment borer, were used during the testing for this report.

6. Assumptions and Limiting Conditions:

- The information contained in this report covers only those items that were examined and reflect the condition of these items at the time of inspection. The inspection is limited to visual examination of accessible components without dissection, excavation or probing. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees or property in question may not arise in the future.
- The opinions in this Report are given based upon observations made using generally accepted professional judgment, however, because trees and plants are living organisms and subject to change, damage and disease, the results, observations, recommendations, and analysis as set out in this Report are valid only as at the date any such testing, observations and analysis took place. No guarantee, warranty, representation or opinion is offered or made by Silverback Treeworks Ltd. as to the length of the validity of the results, observations, recommendations and analysis contained within this Report.
- Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the appraiser/company can neither guarantee nor be responsible for the accuracy of information provided by others.
- All tree work is to be completed under the supervision of an ISA Certified Arborist and in compliance with ISA, BC Hydro and WCB standards.
- Alteration of any part of this report invalidates the entire report.
- Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
- Silverback Treeworks Ltd shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
- Silverback Treeworks Ltd, its officers, employees and agents make no warranty, express or implied representation or otherwise, in respect of this report or its contents.

- Silverback Treeworks Ltd, its officers, employees and agents are exempted, excluded and absolved from all liability for damage for injury, howsoever caused, to any person in connection with or arising out of the use by that person for any purpose of this report or its contents.
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7. CLOSURE

If there are any questions regarding any of the recommendations provided within this report, please feel free to contact me at any time.

Sincerely:

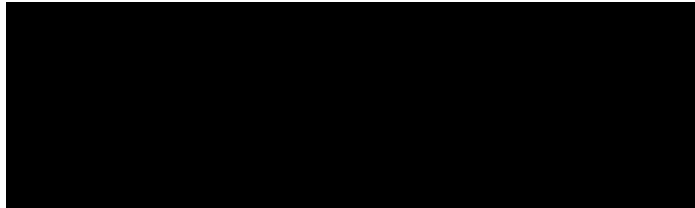


August 22, 2022

Andrew Hooper
Project Arborist
ISA Certification Number PN# 6307A

Date

Sinc



August 22, 2022

Marek Holin, RPBio
Consulting Arborist
ISA Certification Number PN# 9070A

Date

Appendix 1 Digital Photo Record





GENERAL NOTES

- ANY SIGNIFICANT REVISIONS TO THESE DRAWINGS MUST BE APPROVED BY THE OWNER'S ENGINEER, WHO SHALL REVIEW ANY CHANGES WITH THE MUNICIPAL ENGINEER, PRIOR TO ANY CONSTRUCTION.
- WORKSAFE BC IS TO BE GIVEN NOTICE OF CONSTRUCTION PRIOR TO THE START OF CONSTRUCTION.
- EXISTING UNDERGROUND UTILITIES ARE TO BE LOCATED (EXCAVATED AND SURVEYED) PRIOR TO INSTALLING ANY NEW UNDERGROUND SERVICES. ANY DISCREPANCY IN ELEVATION OR LOCATION IS TO BE REFERRED TO KM CIVIL CONSULTANTS IMMEDIATELY.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO EXISTING STREETS OR SERVICES BY CONSTRUCTION EQUIPMENT AND/OR TRUCKS HAULING MATERIALS TO THE SITE. THIS WILL INCLUDE DAILY CLEANING AND SWEEPING OF EXISTING ROADS OF DIRT AND DEBRIS CAUSED BY CONSTRUCTION ACTIVITY.
- TRAFFIC CONTROL IS TO BE MAINTAINED AT ALL TIMES WHEN WORKING ON OR ADJACENT TO MUNICIPAL RIGHTS-OF-WAY (SIGNS, BARRICADES, CERTIFIED FLAGPERSONS).
- CONSTRUCTION IN AND CLOSE TO A WATERCOURSE MUST RECEIVE PRIOR APPROVAL FROM THE PROVINCIAL MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY AND/OR THE FEDERAL DEPT. OF FISHERIES AND OCEANS, WHERE APPLICABLE.
- LEGAL SURVEY POSTS, MONUMENTS, STAKES AND INTEGRATED SURVEY MONUMENTS ARE TO BE REPLACED IF DESTROYED OR DAMAGED DURING CONSTRUCTION AT THE OWNER'S EXPENSE; THIS WORK IS TO BE UNDERTAKEN BY A B.C. LAND SURVEYOR UNLESS OTHERWISE NOTED.
- THE VILLAGE OF PEMBERTON'S SURVEY MONUMENTS ARE TO BE PROTECTED. SHOULD THEY REQUIRE RAISING OR RELOCATING, THE CONTRACTOR MUST NOTIFY THE MUNICIPAL INSPECTOR AT LEAST 72 HOURS IN ADVANCE OF SCHEDULING WORK AFFECTING THEM.
- MATERIAL SUPPLIED AND CONSTRUCTION PERFORMED ARE TO BE IN ACCORDANCE WITH THE VILLAGE OF PEMBERTON SUBDIVISION AND DEVELOPMENT CONTROL SERVICING STANDARDS BYLAW No. 677, 2011, MMCD SPECIFICATIONS, AND APPLICABLE DESIGN CRITERIA AND SPECIFICATION STANDARD DRAWINGS IN EFFECT AT THE TIME OF DRAWING ACCEPTANCE.
- APPROVED GRANULAR MATERIAL MUST BE USED FOR BACKFILL IN TRENCHES WHEN INSIDE ROAD LIMITS. APPROVED NATIVE MATERIAL MAY BE USED ONLY AS CONFIRMED IN WRITING BY A GEOTECHNICAL ENGINEER, AND ACCEPTED BY THE MUNICIPAL ENGINEER.
- WHERE UTILITY OR SERVICE CROSSINGS ARE REQUIRED ACROSS EXISTING PAVEMENT, ALL EXISTING PAVEMENT, BOULEVARDS, DRIVEWAYS, ETC. WHICH ARE DISTURBED DURING CONSTRUCTION MUST BE RESTORED TO ORIGINAL OR BETTER CONDITION, WHERE NO IMPROVEMENT IS OTHERWISE PROPOSED UNDER THIS CONTRACT. EXISTING DRIVEWAYS MUST BE SHAPED ACROSS THE WIDTH OF BOULEVARD TO FORM A SMOOTH TRANSITION WITH NEW PAVEMENT. THE FINISHED PAVEMENT SURFACE OVER TRENCH EXCAVATIONS MUST BLEND IN SMOOTHLY WITH EXISTING PAVEMENT.
- WHERE INFILLING OF DITCHES ETC. IS REQUIRED OR PROPOSED, AND WHERE SERVICES ARE CONSTRUCTED IN FILL SECTIONS, THE FILL MATERIAL MUST BE APPROVED GRANULAR MATERIAL PLACED IN LIFTS NOT EXCEEDING 300mm AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- FIGURED DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS.
- ALL REFERENCES TO MMCD REFER TO THE 2019 EDITION.

ROADWORKS

- THE CONTRACTOR IS TO ENGAGE A GEOTECHNICAL ENGINEER TO PERFORM IN-PLACE TESTING DURING THE PREPARATION OF THE SUBGRADE AND CONSTRUCTION OF THE ROAD STRUCTURE TO VERIFY THE ADEQUACY OF THE PROPOSED AND EXISTING ROAD STRUCTURE AND SUBGRADE.
- CHANGES OF GRADE ARE TO BE FORMED BY SMOOTH VERTICAL CURVES. GRADE TRANSITIONS ARE TO BE FORMED TO BE UNNOTICABLE TO VEHICULAR TRAFFIC WHEN BEING TRAVERSED.
- LOOSE OR ORGANIC MATERIAL IS TO BE EXCAVATED FROM ROADWAY PRISM.
- GRANULAR SUB-BASE AND OTHER BASE MATERIALS MUST BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- THE ROAD BASE MUST EXTEND A MINIMUM OF 0.3m BEYOND THE SIDEWALK AND/OR CURB & GUTTER.
- CATCH BASIN ELEVATIONS GIVEN ARE FOR TOP OF RIM. RIM IS TO BE SET 30mm BELOW GUTTER GRADE.
- EXISTING VALVE BOXES, MANHOLES, ETC. WITHIN THE RIGHT-OF-WAY ARE TO BE ADJUSTED TO FINISHED GRADE.
- PLACEMENT OF ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE IS TO BE UNDERTAKEN ONLY WHEN WEATHER CONDITIONS ARE IN CONFORMANCE WITH MMCD SPECIFICATIONS.
- UNLESS OTHERWISE ACCEPTED BY THE MUNICIPAL ENGINEER, ASPHALT CONCRETE IS TO BE LAID IN A MINIMUM OF 2 LIFTS TO A MAXIMUM OF 85mm PER LIFT AND A MINIMUM OF 35mm PER LIFT.
- ASPHALT TAPERS TO BE CONSTRUCTED TO PAVEMENT DESIGN SPECIFICATIONS AS SHOWN IN THE VILLAGE OF PEMBERTON SUBDIVISION AND DEVELOPMENT CONTROL SERVICING STANDARDS BYLAW No. 677, 2011.
- MACHINERY AND MATERIALS MUST NOT BE PARKED OR PLACED IN THE MUNICIPAL RIGHT-OF-WAY OVERNIGHT WHERE POSSIBLE. ANY SUCH PLACEMENT WILL REQUIRE A HIGHWAY USE PERMIT AND ILLUMINATED BARRICADES AND SIGNAGE.

WATERWORKS

- FOR TYPICAL "UTILITY TRENCH" SECTION DETAIL, SEE MMCD STANDARD DETAIL DRAWING. PAVEMENT RESTORATION TO BE IN ACCORDANCE WITH THE VILLAGE OF PEMBERTON STANDARDS.
- WATERMAIN MATERIALS MUST CONFORM TO MMCD MASTER MUNICIPAL SPECIFICATIONS, AND SCHEDULE 'B' OF THE SQUAMISH-LILLOOET REGIONAL DISTRICT SUBDIVISION SERVICING BYLAW NO. 2373, 2015.
- TIE-INS OF PROPOSED MAINS AND SERVICE CONNECTIONS TO EXISTING WATERMANS WILL BE PERFORMED BY THE SQUAMISH-LILLOOET REGIONAL DISTRICT AT THE DEVELOPER'S EXPENSE.
- NEW WATERMAIN IS TO BE INSTALLED TO WITHIN 2.0m OF EXISTING WATERMAIN AT CONNECTION LOCATION EXCEPT AS ACCEPTED BY THE SQUAMISH-LILLOOET REGIONAL DISTRICT.

- THE CONTRACTOR MUST ENSURE NEW WATERMAIN ELEVATION MATCHES EXISTING WATERMAIN ELEVATION AT THE CONNECTION LOCATION.
- THE CONTRACTOR MUST EXPOSE AND CONFIRM ELEVATION & OFFSET OF ALL UTILITIES BETWEEN NEW WATERMAIN & EXISTING WATERMAIN AT THE CONNECTION LOCATION.
- CONNECTIONS MUST NOT BE MADE WITHIN 1.0m OF EXISTING CONNECTIONS, BENDS, VALVES, OR OTHER SYSTEM FITTINGS.
- MINIMUM COVER ON WATERMANS IS TO BE 1.0m.
- WATER SERVICE CONNECTIONS ARE TO BE SET SO THAT AN ADJUSTMENT OF 200mm ABOVE FINAL GRADE IS AVAILABLE BY THE TELESCOPING BURY-BOX, MINIMUM DEPTH 0.80m, MAXIMUM DEPTH 1.0m.
- HYDRANTS IN URBAN AREAS MUST BE SUPPLIED WITH THE CORRECT DEPTH OF BURY TO MEET FINAL BOULEVARD GRADES. FOR HYDRANT DETAILS, SEE MMCD OR SQUAMISH-LILLOOET REGIONAL DISTRICT STANDARD DRAWINGS.
- FOR VALVE-BOX AND VALVE INSTALLATION DETAILS, SEE MMCD STANDARD DRAWING.
- THRUST BLOCKS AS SHOWN ON MMCD STANDARD DRAWING ARE TO BE LOCATED AT VALVES, BENDS, TEES, WYES, REDUCERS AND PLUGS. REVERSE THRUST BLOCKS ARE REQUIRED ON CAPS AND BLOWOFFS
- HYDRANTS MUST HAVE A 1.2m OFFSET FROM PROPERTY LINE UNLESS OTHERWISE NOTED. DURING CONSTRUCTION, AND AT ANY TIME PRIOR TO ACCEPTANCE OF WATERMANS BY THE SQUAMISH-LILLOOET REGIONAL DISTRICT, THE CONTRACTOR SHALL INSTALL A 300mm X 300mm SQUARE 19mm SHEET OF PLYWOOD (PAINTED WHITE) OVER THE PUMPER NOZZLE OF EACH HYDRANT TO INDICATE THAT THE HYDRANT IS NOT IN SERVICE. HYDRANTS TO HAVE A STORZ QUICK RELEASE NOZZLE INSTALLED.
- THE CONTRACTOR MUST ENSURE THAT ALL SECTIONS OF LINES HAVE TEST POINTS AND TEMPORARY BLOW-OFFS SUITABLE TO ENSURE ADEQUATE PRESSURE TESTING, CHLORINATION AND FLUSHING. DISCHARGE OF CHLORINATED WATER IS NOT PERMITTED INTO DITCHES, STORM SEWERS OR WATERCOURSES UNLESS NEUTRALIZED WITH SODIUM THIO SULPHATE OR APPROVED EQUIVALENT ACCEPTED BY THE SQUAMISH-LILLOOET REGIONAL DISTRICT.
- TESTING AND CHLORINATION OF WATERMANS IS THE RESPONSIBILITY OF THE CONTRACTOR WITH INSPECTION AUTHORIZED BY THE SQUAMISH-LILLOOET REGIONAL DISTRICT. WATERMANS MUST PASS PRESSURE AND BACTERIOLOGICAL TESTING BEFORE CONNECTION IS MADE TO EXISTING WATER SYSTEM.
- WHERE APPLICABLE, ALL SERVICE CONNECTIONS ARE TO BE MARKED ON THE CURB WITH A 2mm DEEP SAW CUT AND A 50mm x 100mm STAKE 0.3m FROM PROPERTY LINE. BOTH ARE TO BE PAINTED BLUE.

STORM SEWER

- STORM SEWER MATERIALS ARE TO CONFORM TO THE MMCD SPECIFICATIONS AND PART 10 OF THE VILLAGE OF PEMBERTON SUBDIVISION AND DEVELOPMENT CONTROL SERVICING STANDARDS BYLAW No. 677, 2011.
- FOR TYPICAL "UTILITY TRENCH" SECTION DETAIL, SEE MMCD STANDARD DETAIL DRAWING.
- EXISTING DRAINS FROM PRIVATE PROPERTIES ARE TO BE TIED INTO THE NEW STORM SYSTEM WHEN INFILLING EXISTING DITCHES, CONNECTIONS ARE NOT TO PROTRUDE INTO MAIN.
- FOR TYPICAL CATCH BASIN DETAILS REFER TO MMCD STANDARD DETAIL DRAWING UNLESS OTHERWISE SPECIFIED BY MUNICIPAL ENGINEER.
- ALL SINGLE CATCH BASIN LEADS ARE TO BE MINIMUM 200mm DIAMETER, ALL DOUBLE CATCH BASIN LEADS ARE TO BE MINIMUM 250mm DIAMETER. NO CURVES OR BENDS ARE PERMITTED IN THE LEADS.
- ALL STORM SEWER SERVICE CONNECTIONS ARE TO BE MINIMUM 100mm DIAMETER FOR RESIDENTIAL AND 150mm FOR INDUSTRIAL/COMMERCIAL.
- DIAMETER OF ALL STORM SEWER MANHOLES MUST CONFORM TO THE MMCD STANDARD DETAIL DRAWING UNLESS OTHERWISE NOTED.
- MANUFACTURED WYES ARE TO BE USED ON STORM PIPE UNDER 450mm DIAMETER.
- STORM SEWERS ARE TO BE CONSTRUCTED WITH SEALED JOINTS UNLESS OTHERWISE SPECIFIED ON THE DESIGN DRAWINGS.
- WHERE APPLICABLE ALL STORM SEWER CONNECTIONS ARE TO BE MARKED BY ALL OF THE FOLLOWING - 2mm DEEP SAW CUT ON THE CURB, 50mm x 100mm STAKE (PAINTED GREEN) AND PLACED AT END OF PIPE, AND THE END OF THE PIPE TO BE CAPPED AND PAINTED GREEN. STORM IC LID IS ALSO PAINTED GREEN.
- TOP OF INSPECTION CHAMBER STANDPIPES IS TO BE CONSTRUCTED TO 600mm ABOVE FINAL LOT GRADE.
- SEWER MAINS AND CONNECTIONS TO BE VIDEO INSPECTED PRIOR TO USE. CONTRACTOR TO PROVIDE A VIDEO COPY ON DVD TO THE VILLAGE OF PEMBERTON.

SANITARY SEWER

- SANITARY SEWER MATERIALS MUST CONFORM TO THE MMCD SPECIFICATIONS AND PART 10 OF THE VILLAGE OF PEMBERTON SUBDIVISION AND DEVELOPMENT CONTROL SERVICING STANDARDS BYLAW No. 677, 2011.
- MANHOLE DETAILS TO BE IN ACCORDANCE WITH MMCD STANDARD DETAIL DRAWINGS.
- FOR TYPICAL DETAILS OF ALL SEWER CONNECTIONS, SEE VILLAGE OF PEMBERTON SUPPLEMENTARY DRAWINGS.
- FOR TYPICAL "UTILITY TRENCH" SECTION DETAIL SEE MMCD STANDARD DETAIL DRAWING.
- SERVICE CONNECTIONS ARE AS PER DRAWING No. 2
- TOP OF INSPECTION CHAMBER STANDPIPES ARE TO BE CONSTRUCTED TO 600mm ABOVE FINAL LOT GRADE.
- NEW SEWER LINES TIED INTO EXISTING LINES MUST BE PLUGGED UNTIL THEY ARE TESTED, FLUSHED AND ACCEPTED BY THE VILLAGE OF PEMBERTON.
- SERVICE CONNECTIONS MUST BE MADE TO THE MAIN WHEREVER POSSIBLE. SHOULD A CONNECTION HAVE TO BE MADE TO A MANHOLE, IT MUST BE AT A HIGHER ELEVATION THAN THE CROWN OF THE HIGHEST SEWER MAIN ENTERING THE MANHOLE.
- TIE-INS OF PROPOSED MAINS TO EXISTING SANITARY SEWER MAINS ARE TO BE PERFORMED BY THE CONTRACTOR.
- TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR WITH INSPECTION AUTHORIZED BY THE MUNICIPAL ENGINEER. SEWER MAINS MUST PASS PRESSURE TESTING BEFORE CONNECTION IS MADE TO EXISTING SEWER SYSTEM.

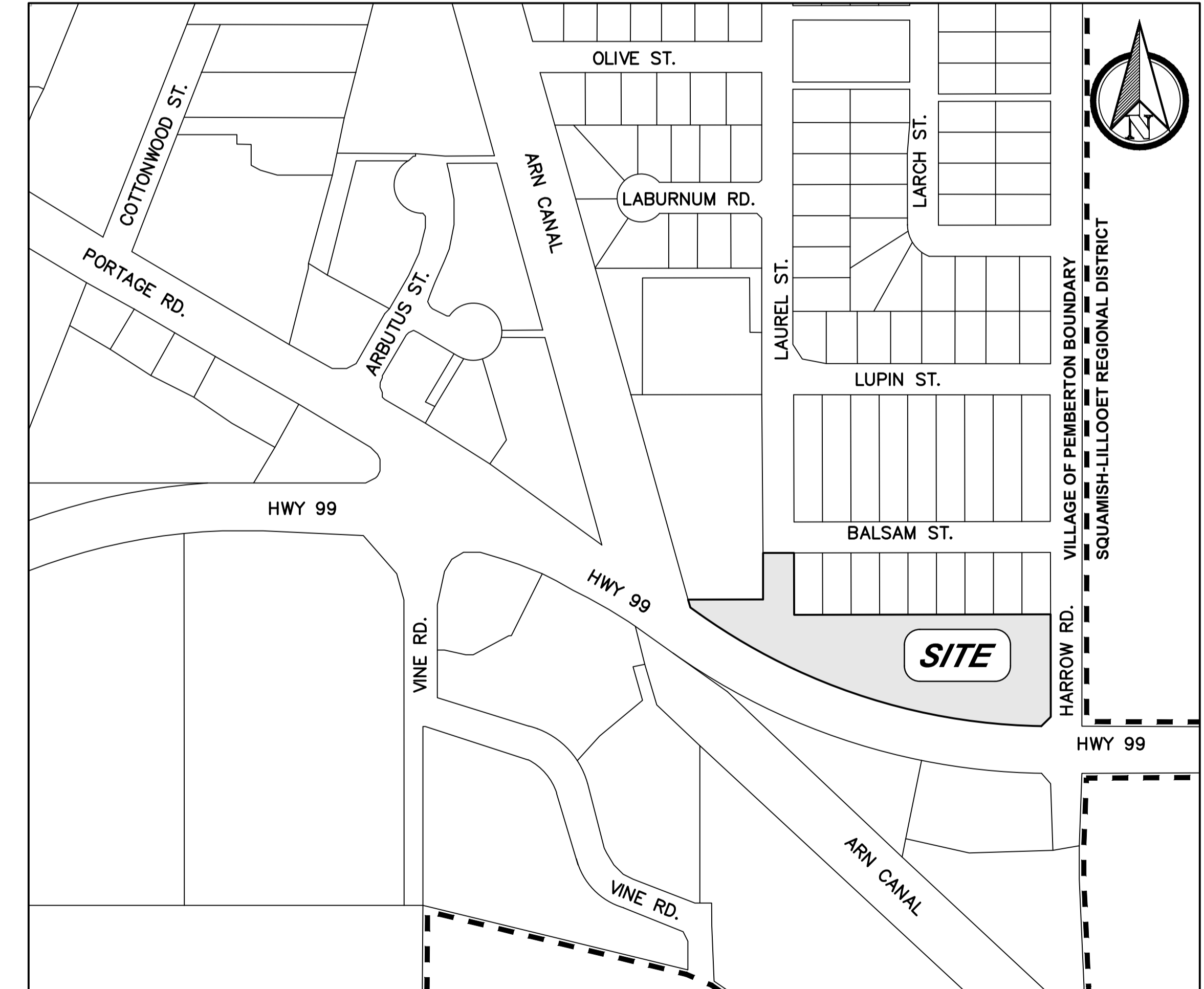
- THE CONTRACTOR MUST DISCONNECT AND SEAL ABANDONED SERVICES TO THE ACCEPTANCE OF THE MUNICIPAL ENGINEER.
- CONNECTIONS TO MAIN MUST BE PERPENDICULAR TO MAIN EXCEPT AS ACCEPTED BY THE MUNICIPAL ENGINEER.
- WHERE APPLICABLE, ALL SANITARY SEWER CONNECTIONS ARE TO BE MARKED BY ALL OF THE FOLLOWING - 2mm DEEP SAW CUT ON CURB, 50mm x 100mm STAKE (PAINTED RED) AT END OF PIPE, AND THE END OF THE PIPE TO BE PAINTED RED. SANITARY I.C. LID IS ALSO PAINTED RED.
- CONTRACTOR IS RESPONSIBLE FOR ENSURING VILLAGE OF PEMBERTON INSPECTOR IS PRESENT TO WITNESS SERVICE CONNECTION TIE-INS TO EXISTING SEWERS.
- SEWER MAINS AND CONNECTIONS TO BE VIDEO INSPECTED PRIOR TO USE. CONTRACTOR TO PROVIDE A VIDEO COPY ON DVD TO THE VILLAGE OF PEMBERTON.

SILTATION CONTROL

- THE CONTRACTOR SHALL ENSURE THAT TEMPORARY SILTATION CONTROL IS PROVIDED DURING CONSTRUCTION AS REQUIRED BY PROVINCIAL MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY AND/OR THE FEDERAL DEPT. OF FISHERIES AND OCEANS AND AS SPECIFIED IN PART 10 OF THE VILLAGE OF PEMBERTON SUBDIVISION AND DEVELOPMENT CONTROL SERVICING STANDARDS BYLAW No. 677, 2015, UNTIL 90% OF THE CONSTRUCTION IS COMPLETE.
- THE CONTRACTOR TO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT TO REGULARLY MONITOR AND, IF NECESSARY, MODIFY SILTATION CONTROL MEASURES DURING VARIOUS PHASES OF CONSTRUCTION.
- THE CONTRACTOR TO MAINTAIN EXISTING ROADS IN A CLEAN CONDITION BY SWEEPING ACCEPTABLE TO THE MUNICIPALITY.
- THE CONTRACTOR TO COVER ALL EXCAVATED MATERIAL WITH POLY AND INSTALL A PERIMETER SILT FENCE AROUND STOCKPILED MATERIALS.

DRAWING INDEX	
SHEET NO.	DRAWING TITLE
1	LOCATION PLAN AND GENERAL NOTES
2	SITE GRADING PLAN
3	SITE SERVICING PLAN

PROPOSED	EXISTING	DESCRIPTION
		BENCH MARK - GEODETIC DATUM
		GRAVEL SURFACE TREATMENT
		EDGE OF PAVEMENT
		CURB AND GUTTER
		SANITARY SEWER
		SANITARY FORCE MAIN
		SANITARY SEWER SERVICE (c/w INSPECTION CHAMBER)
		STORM SEWER
		STORM SEWER SERVICE (c/w INSPECTION CHAMBER)
		CATCH BASIN - TOP INLET
		CATCH BASIN - SIDE INLET
		CATCH BASIN - ROUND
		SWALE
		DITCH
		SIDEWALK (ASPHALT)
		SIDEWALK (CONCRETE)
		WATERMAIN
		WATER SERVICE CONNECTION
		WATER VALVE
		AIR VALVE
		HYDRANT AND VALVE ASSEMBLY
		CAPPED END
		BLOW-OFF
		TEMPORARY BLOW-OFF
		JUNCTION BOX
		UNDERGROUND HYDRO/TELEPHONE
		GAS MAIN
		UTILITY POLE
		UTILITY POLE WITH LIGHT
		STREET LIGHT



LOCATION PLAN
SCALE 1:2500

PLOT DATE: Dec 11, 2022
 15:32:33:2022 - C:\Users\km\OneDrive\Documents - 8238 - Heating\2022\03\13\210733-C-0102.dwg

No.	DATE	REVISION	DRN	TECH	ENG
6	2022.12.13	ISSUED FOR SITE ALTERATION PERMIT	NWP	JKC	PRG
5	2022.09.21	ISSUED FOR DESIGN DEVELOPMENT	NWP	JKC	PRG
4	2022.03.17	REVISED PER NEW ARCHITECTURAL SITE PLAN	NWP	JKC	PRG
3	2022.03.11	TRAIL REMOVED	NWP	JKC	PRG
2	2022.03.10	DETENTION TANK LOCATION REVISED	NWP	JKC	PRG
1	2022.03.04	OCP AMENDMENT AND DP SUBMISSION	NWP	JKC	PRG

LEGAL DESCRIPTION:
LOT 2, DISTRICT LOT 203, LILLOET DISTRICT PLAN KAP56640.

BENCHMARK:
ELEVATIONS ARE ON CGVD28BC GEODETIC DATUM AND WERE DERIVED FROM NATURAL RESOURCE CANADA'S PPP SERVICE USING GNSS OBSERVATIONS.

ABBOTSFORD OFFICE
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VANCOUVER OFFICE
 # 110 - 2920 Virtual Way
 Vancouver, BC V5M 0C4
 Tel: 604-294-6662 Fax: 604-294-6665

EGBC PERMIT TO PRACTICE No. 1000138

YELLOWRIDGE CONSTRUCTION LTD.

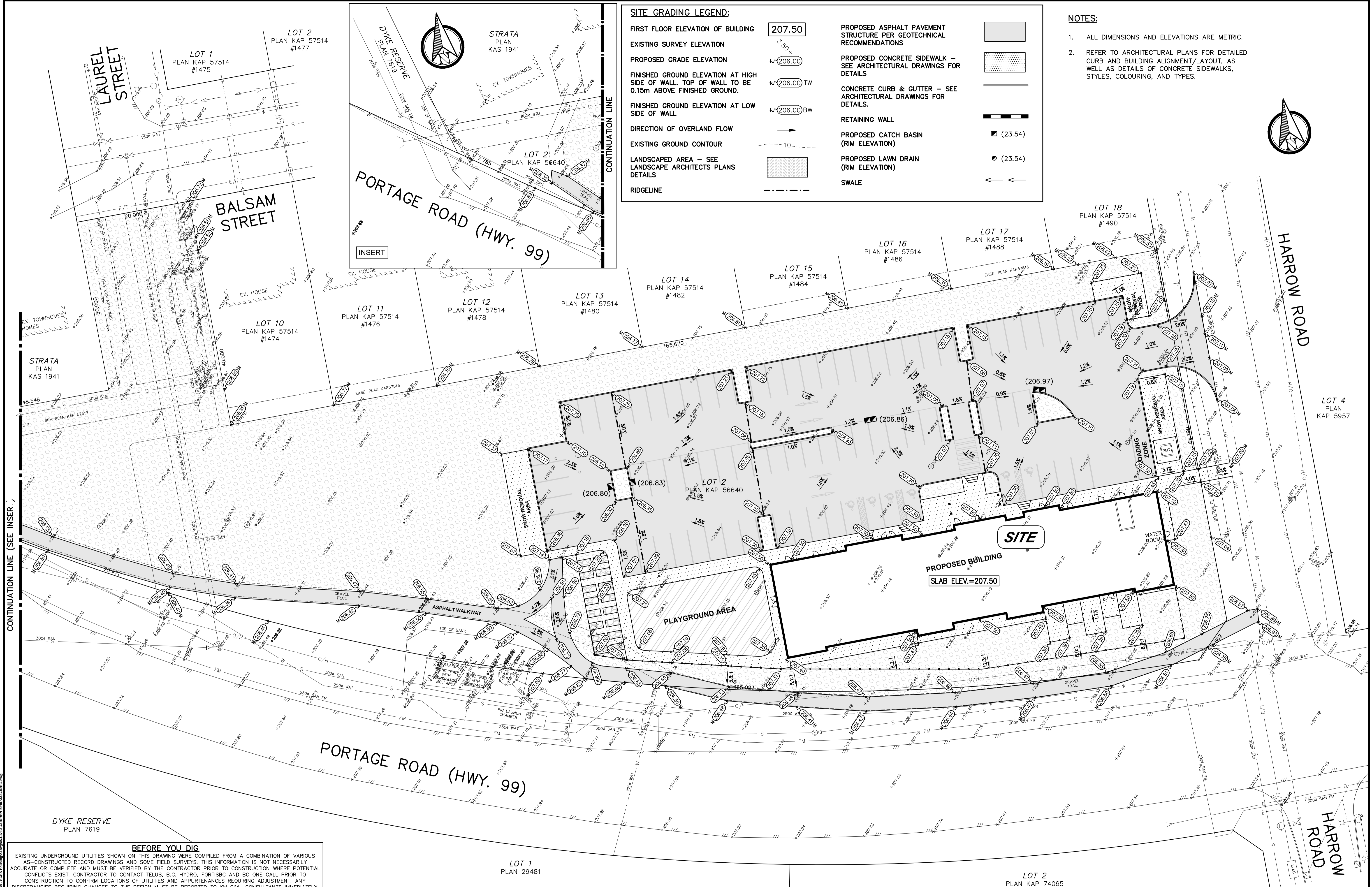
200-2605 CLARKE STREET,
 PORT MOODY, B.C., V3H 1Z4
 ATTENTION: RONALDO DUFOUR
 TEL: (604)936-2605 EMAIL: info@yellowridge.ca

LOCATION PLAN AND GENERAL NOTES

LOT 2, HARROW RD., PEMBERTON, B.C.

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:	SCALE:	HORZ:	AS SHOWN
JKC	DBL	PRG	PRG		VERT.	

MUNICIPAL PROJECT NUMBER:	DRAWING NO.:
MUNICIPAL DRAWING NUMBER:	1
KM CIVIL PROJECT NO.:	of 3
210733-C	
DATE: JANUARY, 2022	REVISION No. 6



SITE GRADING LEGEND:

FIRST FLOOR ELEVATION OF BUILDING	207.50	PROPOSED ASPHALT PAVEMENT STRUCTURE PER GEOTECHNICAL RECOMMENDATIONS	[Symbol]
EXISTING SURVEY ELEVATION	3.50+	PROPOSED CONCRETE SIDEWALK - SEE ARCHITECTURAL DRAWINGS FOR DETAILS	[Symbol]
PROPOSED GRADE ELEVATION	±206.00	CONCRETE CURB & GUTTER - SEE ARCHITECTURAL DRAWINGS FOR DETAILS.	[Symbol]
FINISHED GROUND ELEVATION AT HIGH SIDE OF WALL. TOP OF WALL TO BE 0.15m ABOVE FINISHED GROUND.	±206.00 TW	RETAINING WALL	[Symbol]
FINISHED GROUND ELEVATION AT LOW SIDE OF WALL	±206.00 BW	PROPOSED CATCH BASIN (RIM ELEVATION)	■ (23.54)
DIRECTION OF OVERLAND FLOW	→	PROPOSED LAWN DRAIN (RIM ELEVATION)	● (23.54)
EXISTING GROUND CONTOUR	-10	SWALE	←←
LANDSCAPED AREA - SEE LANDSCAPE ARCHITECTS PLANS DETAILS	[Symbol]		
RIDGELINE	- - -		

- NOTES:**
- ALL DIMENSIONS AND ELEVATIONS ARE METRIC.
 - REFER TO ARCHITECTURAL PLANS FOR DETAILED CURB AND BUILDING ALIGNMENT/LAYOUT, AS WELL AS DETAILS OF CONCRETE SIDEWALKS, STYLES, COLOURING, AND TYPES.

BEFORE YOU DIG
 EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING WERE COMPILED FROM A COMBINATION OF VARIOUS AS-CONSTRUCTED RECORD DRAWINGS AND SOME FIELD SURVEYS. THIS INFORMATION IS NOT NECESSARILY ACCURATE OR COMPLETE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION WHERE POTENTIAL CONFLICTS EXIST. CONTRACTOR TO CONTACT TELUS, B.C. HYDRO, FORTISBC AND BC ONE CALL PRIOR TO CONSTRUCTION TO CONFIRM LOCATIONS OF UTILITIES AND APPURTENANCES REQUIRING ADJUSTMENT. ANY DISCREPANCIES REQUIRING CHANGES TO THE DESIGN MUST BE REPORTED TO KM CIVIL CONSULTANTS IMMEDIATELY.

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SITE GRADING PLAN

LOT 2, HARROW RD., PEMBERTON, B.C.

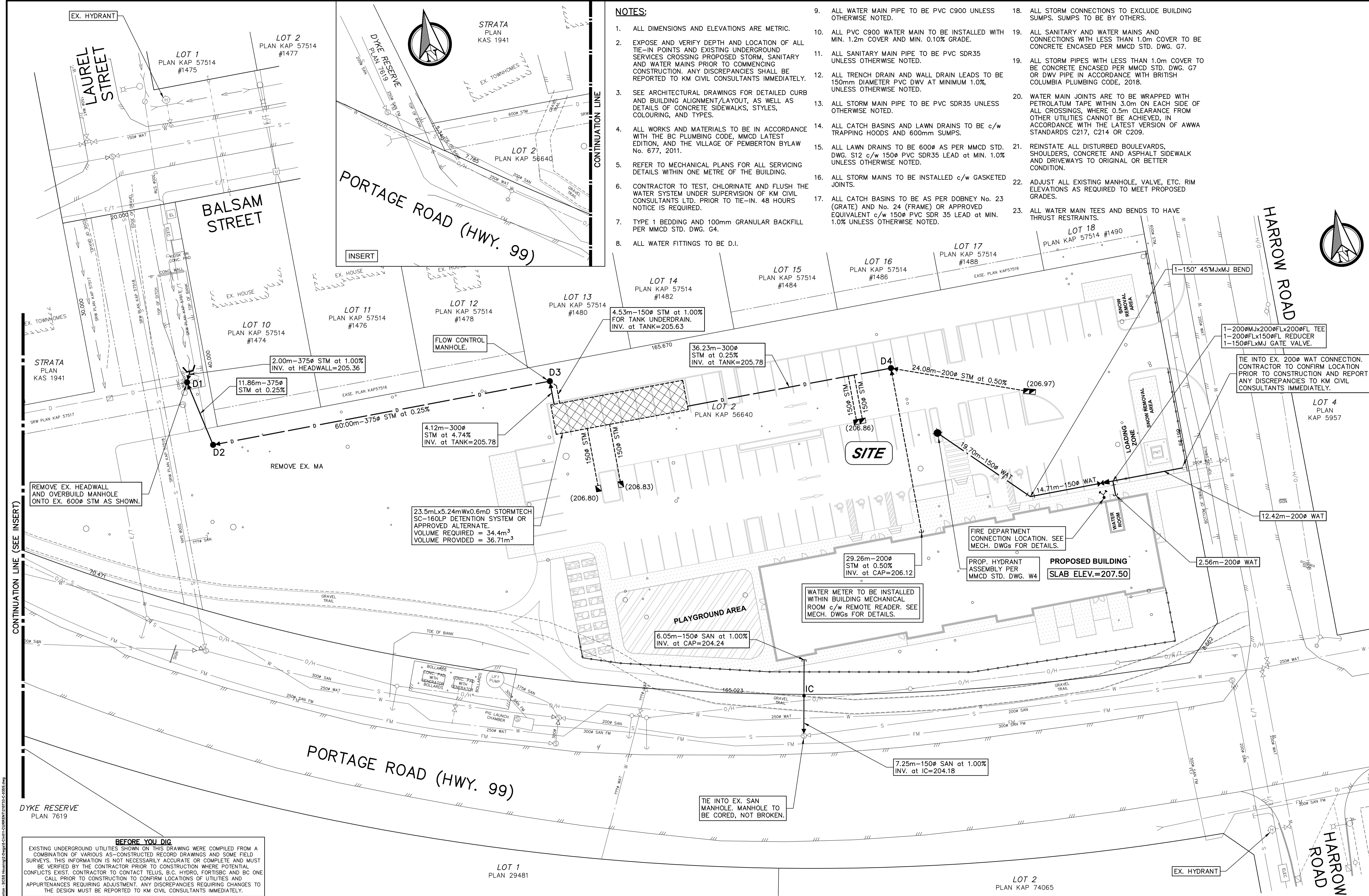
DESIGNED: JKC DRAWN: NWP REVIEWED: PRG APPROVED: PRG SCALE: HORZ: 1:300 VERT: 1:300

MUNICIPAL PROJECT NUMBER: 210733-C
 MUNICIPAL DRAWING NUMBER: 2
 DATE: JANUARY, 2022
 REVISION No. 6

PLOT DATE: Dec 13, 2022
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DESTROY ALL PRINTS BEARING PREVIOUS REVISION NUMBER

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NOTES:

- ALL DIMENSIONS AND ELEVATIONS ARE METRIC.
- EXPOSE AND VERIFY DEPTH AND LOCATION OF ALL TIE-IN POINTS AND EXISTING UNDERGROUND SERVICES CROSSING PROPOSED STORM, SANITARY AND WATER MAINS PRIOR TO COMMENCING CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO KM CIVIL CONSULTANTS IMMEDIATELY.
- SEE ARCHITECTURAL DRAWINGS FOR DETAILED CURB AND BUILDING ALIGNMENT/LAYOUT, AS WELL AS DETAILS OF CONCRETE SIDEWALKS, STYLES, COLOURING, AND TYPES.
- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH THE BC PLUMBING CODE, MMCD LATEST EDITION, AND THE VILLAGE OF PEMBERTON BYLAW No. 677, 2011.
- REFER TO MECHANICAL PLANS FOR ALL SERVICING DETAILS WITHIN ONE METRE OF THE BUILDING.
- CONTRACTOR TO TEST, CHLORINATE AND FLUSH THE WATER SYSTEM UNDER SUPERVISION OF KM CIVIL CONSULTANTS LTD. PRIOR TO TIE-IN. 48 HOURS NOTICE IS REQUIRED.
- TYPE 1 BEDDING AND 100mm GRANULAR BACKFILL PER MMCD STD. DWG. G4.
- ALL WATER FITTINGS TO BE D.I.
- ALL WATER MAIN PIPE TO BE PVC C900 UNLESS OTHERWISE NOTED.
- ALL PVC C900 WATER MAIN TO BE INSTALLED WITH MIN. 1.2m COVER AND MIN. 0.10% GRADE.
- ALL SANITARY MAIN PIPE TO BE PVC SDR35 UNLESS OTHERWISE NOTED.
- ALL TRENCH DRAIN AND WALL DRAIN LEADS TO BE 150mm DIAMETER PVC DWV AT MINIMUM 1.0%, UNLESS OTHERWISE NOTED.
- ALL STORM MAIN PIPE TO BE PVC SDR35 UNLESS OTHERWISE NOTED.
- ALL CATCH BASINS AND LAWN DRAINS TO BE c/w TRAPPING HOODS AND 600mm SUMPS.
- ALL LAWN DRAINS TO BE 600ø AS PER MMCD STD. DWG. S12 c/w 150ø PVC SDR35 LEAD AT MIN. 1.0% UNLESS OTHERWISE NOTED.
- ALL STORM MAINS TO BE INSTALLED c/w GASKETED JOINTS.
- ALL CATCH BASINS TO BE AS PER DOBNEY No. 23 (GRATE) AND No. 24 (FRAME) OR APPROVED EQUIVALENT c/w 150ø PVC SDR 35 LEAD AT MIN. 1.0% UNLESS OTHERWISE NOTED.
- ALL STORM CONNECTIONS TO EXCLUDE BUILDING SUMPS. SUMPS TO BE BY OTHERS.
- ALL SANITARY AND WATER MAINS AND CONNECTIONS WITH LESS THAN 1.0m COVER TO BE CONCRETE ENCASED PER MMCD STD. DWG. G7.
- ALL STORM PIPES WITH LESS THAN 1.0m COVER TO BE CONCRETE ENCASED PER MMCD STD. DWG. G7 OR DWV PIPE IN ACCORDANCE WITH BRITISH COLUMBIA PLUMBING CODE, 2018.
- WATER MAIN JOINTS ARE TO BE WRAPPED WITH PETROLATUM TAPE WITHIN 3.0m ON EACH SIDE OF ALL CROSSINGS, WHERE 0.5m CLEARANCE FROM OTHER UTILITIES CANNOT BE ACHIEVED, IN ACCORDANCE WITH THE LATEST VERSION OF AWWA STANDARDS C217, C214 OR C209.
- REINSTATE ALL DISTURBED BOULEVARDS, SHOULDERS, CONCRETE AND ASPHALT SIDEWALK AND DRIVEWAYS TO ORIGINAL OR BETTER CONDITION.
- ADJUST ALL EXISTING MANHOLE, VEET, ETC. RIM ELEVATIONS AS REQUIRED TO MEET PROPOSED GRADES.
- ALL WATER MAIN TEES AND BENDS TO HAVE THRUST RESTRAINTS.

REMOVE EX. HEADWALL AND OVERBUILD MANHOLE ONTO EX. 600ø STM AS SHOWN.

2.00m-375ø STM at 1.00% INV. at HEADWALL=205.36

11.86m-375ø STM at 0.25%

60.00m-375ø STM at 0.25%

4.12m-300ø STM at 4.74% INV. at TANK=205.78

4.53m-150ø STM at 1.00% FOR TANK UNDERDRAIN. INV. at TANK=205.63

36.23m-300ø STM at 0.25% INV. at TANK=205.78

24.08m-200ø STM at 0.50%

150ø STM (206.86)

150ø STM (206.86)

19.70m-150ø WAT

14.71m-150ø WAT

1-200øMjx200øFLx200øFL TEE
1-200øFLx150øFL REDUCER
1-150øFLxMj GATE VALVE.

TIE INTO EX. 200ø WAT CONNECTION. CONTRACTOR TO CONFIRM LOCATION PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO KM CIVIL CONSULTANTS IMMEDIATELY.

23.5mLx5.24mWx0.6mD STORMTECH SC-160LP DETENTION SYSTEM OR APPROVED ALTERNATE. VOLUME REQUIRED = 34.4m³ VOLUME PROVIDED = 36.71m³

WATER METER TO BE INSTALLED WITHIN BUILDING MECHANICAL ROOM c/w REMOTE READER. SEE MECH. DWGS FOR DETAILS.

FIRE DEPARTMENT CONNECTION LOCATION. SEE MECH. DWGS FOR DETAILS.

PROP. HYDRANT ASSEMBLY PER MMCD STD. DWG. W4

PROPOSED BUILDING SLAB ELEV.=207.50

6.05m-150ø SAN at 1.00% INV. at CAP=204.24

7.25m-150ø SAN at 1.00% INV. at IC=204.18

TIE INTO EX. SAN MANHOLE. MANHOLE TO BE CORED, NOT BROKEN.

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3
of 3
REVISION No. 6

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