



THE MUNICIPALITY OF THE VILLAGE OF LIONS BAY

**INFRASTRUCTURE COMMITTEE MEETING
OF THE VILLAGE OF LIONS BAY
HELD ON THURSDAY, MAY 21, 2020 at 7:00 PM
COUNCIL CHAMBERS, 400 CENTRE ROAD, LIONS BAY**

AGENDA

- 1. Call to Order**
- 2. Appointment of Recorder**
- 3. Approval of the Agenda**
- 4. Public Questions & Comments**
- 5. Approval of Minutes**
 - A. Infrastructure Committee Meeting – January 23, 2020 (Page 3)
- 6. Business Arising from the Minutes**
- 7. Unfinished Business**
 - A. Electric Vehicle Charging Station (Page 7)
 - B. PRV Stations
 - C. Kelvin Grove WWTP
- 8. New Business**
 - A. Strategies for securing communication with/for:
 - i) Water intakes
 - ii) University of British Columbia Hydrology Study
 - iii) Lions Bay Search and Rescue
- 9. Public Questions & Comments**
- 10. Next Meeting: June 18, 2020**
- 11. Adjournment**

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LIONS BAY INFRASTRUCTURE COMMITTEE

MINUTES OF MEETING OF THURSDAY, 23 JANUARY 2020 AT 7:00 PM IN
COUNCIL CHAMBERS, 400 CENTER ROAD, LIONS BAY BC

Appointed Committee members in attendance:

Neville Abbott – elected Councillor
Fred Bain – elected Councillor (Chair)
Norm Barmeier - elected Councillor
Karl Buhr –non-elected member
Tony Greville –non-elected member
Ron McLaughlin -- elected Mayor
Brian Ulrich –non-elected member

Staff members in attendance:

Naizam Jaffer – Lions Bay Public Works Manager

Members of the public:

Marek Sredski (arrived 7:20 p.m. departed approx. 8:30 p.m.)
David Shore (arrived 7:15 p.m. departed approx. 8:30 p.m.)

- 1) **Call to Order:** the Chair called the meeting to order at 7:04 pm.
- 2) **Appointment of Recorder:** reluctant Committee member Karl Buhr was appointed Recorder.
- 3) **Approval of the Agenda** upon insertion of two further items:
 - a) Lions Bay Ave. stairs
 - b) Defer Item 7C (corrosion control) to after discussion of drainage report
- 4) **Public Questions & Comments:** deferred to New Business.
- 5) **Approval of Minutes of Previous Meetings:** Minutes of the 02 December 2019 meeting (noting the 2010 typo) were approved as an accurate with the following amendments:
 - a) 2nd sentence of 2nd full para on p.2 (Unfinished Business – EV Charging Station) is not accurate but in any case is better stated at this stage of the project as "The maintenance fees are negotiable."
 - b) Similarly the last sentence of the para is too specific for what's known about costs today, and should simply be struck.
 - c) Similarly, the last sentence of the next para is too specific for what's known about costs today and would more accurately reflect discussion at "Rate options were discussed."

- 6) **Business Arising from the Minutes:** Neville asked re. bid options for the third PRV, whether the municipality performed detail design or only specified and relied on the vendor.
- 7) **Unfinished Business**
- a) Norm reported that BC Hydro has deemed power supply feasible, that a **surveyor for the site and selected design (to prepare for federal grant) has been appointed, and that a business case has been (will be?) requested from ChargePoint.**
 - b) Nai reported continual mechanical issues with the WWTP (a broken “serpentine coupler” causing the second cell to cease rotating). **The Village received 4 expressions of interest to the RFP, with 2 requesting a bid extension after a site visit. Bid closes Feb. 3 4 p.m.**
 - c) Deferred to later
 - d) PRV: **5 vendors for 3 PRVs based on AECOM design**
 - e) Drainage: ISL Engineering and Land Services’ draft final report dated Jan. 10, 2020, (ISL) to assessing options for local drainage, was reviewed by the Committee. Previous versions of the report had been reviewed by the Committee at earlier meetings, and additional work requested. The final report finds that sections of open channel ditch are undersized for a 10-year rainfall event, and that covered culverts under driveways and roadways are all in poor condition and often undersized. The report assessed three options:
 - Option 1 – Modify ditch cross section and upsize the culverts below 270 Oceanview Road, estimated at \$733,000 on a 20 percent contingency.
 - Option 2 – Reinstall a culvert in the easement for the purpose between 260 and 270 Oceanview Road, in order to re-divert flow from above 270 Oceanview into Rundle Creek, a \$358,000 project at a 30 percent contingency. The report pointed out that ditches and culverts below 270 would still require remediation for lower flow rates, an additional \$314,000 project expenditure including a 20 percent contingency, for a total cost of \$671,000.
 - Option 3 – Divert 90 percent of the 10-year flow between 260 and 270 Oceanview and direct the remaining 10 percent of the flow downstream to a remediated culvert to Rundle Creek, and install resized ditches and culverts below, a \$769,000 project at 30 percent contingency¹.

The Committee received input from the long-term owners of the properties on either side of the drainage culvert between 260 and 270 Oceanview Rd. PWM Nai Jaffer outlined that many municipalities experience watercourses that are undersized with deteriorating culverts. Poorly constructed roads and the use of corrugated metal culverts exacerbate the drainage issues faced in these communities and Lions Bay. Ditches are typically intended to be permeable and planted with vegetation to slow

1

Option 2 diverts 100 % of the 10-year flows from above 270 across the easement to Rundle. The drainage system below 270 would be revamped to manage the drainage generated from the lower portion of Oceanview. Option 3 diverts 90% of the 10-year flows from above 270 to Rundle and then diverts the remaining 10% down Oceanview. The drainage system below Oceanview is revamped and some culverts resized to match the 10% and balance of drainage generated from below 270.

stormwater in order to aid exfiltration into the ground and to filter out road contaminants. In Lions Bay's case, the opposite is required—ideally all residential surface stormwater must be directed to one of several creek outfalls.

Of the options presented, Option 1 is only viable one, especially if its cost could be reduced by reinstating ditches in a 165-meter section currently costed for culvert replacement (a \$247,500 item). Options 2 and 3 both involve reinstating the historic culvert between 260 and 270 Oceanview, and that option should be deemed too high risk:

- The alignment lies directly over two high pressure water mains, which would need to remain operational during construction
- The \$358,000s cost estimate for the culvert between 260 and 270 Oceanview is considered to be a rough estimate, and, the Committee felt based on local knowledge, likely quite low.
- The easement is 20 feet wide. When the culvert was originally constructed there was no house on the property. Today, there is a retaining wall and a house that will make any construction much more impactful and complex.
- Access for ongoing maintenance would be “an impossible nightmare.”

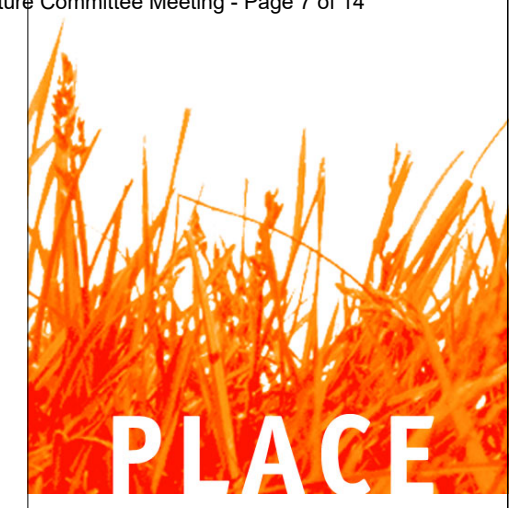
Several political considerations must be resolved by Council before the IC can opine further:

- There is no certainty that fixing drainage as outlined above would address the problem of groundwater entering onto private properties, which the Committee speculated are as much due to subsurface groundwater as to poor surface drainage. If it is in fact these issues that Council wishes to address, a costly long-term hydrology study would be required.
- PWM Nai outlined that solving the surface stormwater issues along Oceanview are a key first step in the eventual remediation of the road and that longer term remediation of the road would include watermain and road reconstruction.
- The ISL Oceanview Drainage Report considered stormwater flows for the entire catchment; however, it did not address the condition or size of the culverts or ditches above 270 Oceanview Road. It is likely that the same drainage concerns identified below 270 Oceanview Road are present on the upper section of this roadway.
- The report, which is based upon common engineering principles, modelled the stormwater catchment for Oceanview Road using flow modelling software. This incorporated rainfall and runoff from permeable (forest, lawns, gardens, etc.) and impermeable (rooftops, driveways, pavement, etc.) surfaces to determine the 10, 25, and 100-year flows through the drainage system. Ground truthing of these flows is not practical and would require a long-term hydrological study.
- .

Bottom line: the Committee has no recommendation at this point.

- f) Corrosion control: After discussion, **Nai will obtain cost estimates for various technical options to control pH and alkalinity of Lions Bay's water.**

- 8) **New Business:** Committee member and Mayor Ron expressed Council's thanks to Committee's technical members for their involvement. Valued member Jim Murtrie's untimely passing was regretted a lot. Possible replacement might focus on a Geotech or Civil Engineer. For the record, pertinent qualifications and experience of technical members are:
- Neville Abbott – Civil and Structural Engineering
 - Norm Barmeier – Biosystems Engineering, P. Eng
 - Karl Buhr – Chemical Engineering
 - Tony Greville – Chemistry
 - Brian Ulrich – Mechanical and Electrical Engineering, P.Eng.
- 9) **Public Questions and Comments:** none
- 10) **Next Meeting Dates:** Thursday 20 February 2020. Further meeting dates were mooted as March 19, April 23, May 21 and Jun 25, 2020.
- 11) **Adjournment:** 9:41 pm.



Lions Bay DC Fast Charging Station
4010 Crosscreek Rd
Lions Bay, British Columbia

project number: 1914

no.	date	issue
01	25 feb 2020	initial concepts
02	3 mar 2020	for review

LIONS BAY ELECTRIC VEHICLE CHARGING STATION

concept design



- new transformer and charging station
- new Hydro pole and connections
- regrade to a maximum 5% cross slope at new parking spaces
- relocate existing no post concrete barriers
- replace culvert (may be under separate contract)
- new retaining walls
- new shelter and board for existing Lions Bay map sign
- new planting beds and landscape



- A0.0 project information
- A0.2 perspective views
- A0.3 survey/ existing site plan
- A0.4 proposed site plan
- A1.1 existing plan
- A2.1 proposed plan
- A4.1 sections
- CPE - 250 electrical plan

2 location map
A0.0

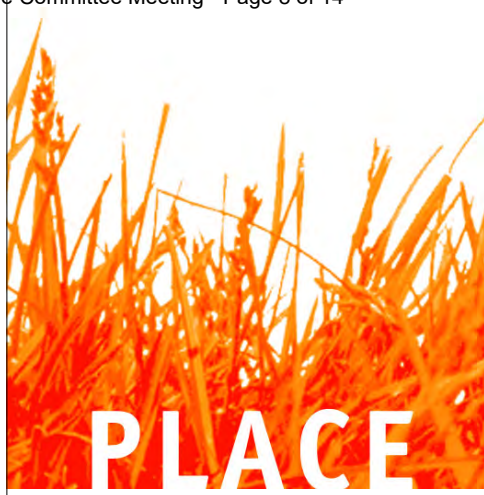
3 outline scope of work
A0.0

1 drawing index
A0.0

project information

heather ljohnston architect ATBC
PLACE architect ltd.
6262 st georges avenue
west vancouver bc, v7w 1z7
778 386 6769
www.placearchitects.com

A0.0
3 mar 2020



PLACE

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Lions Bay, British Columbia

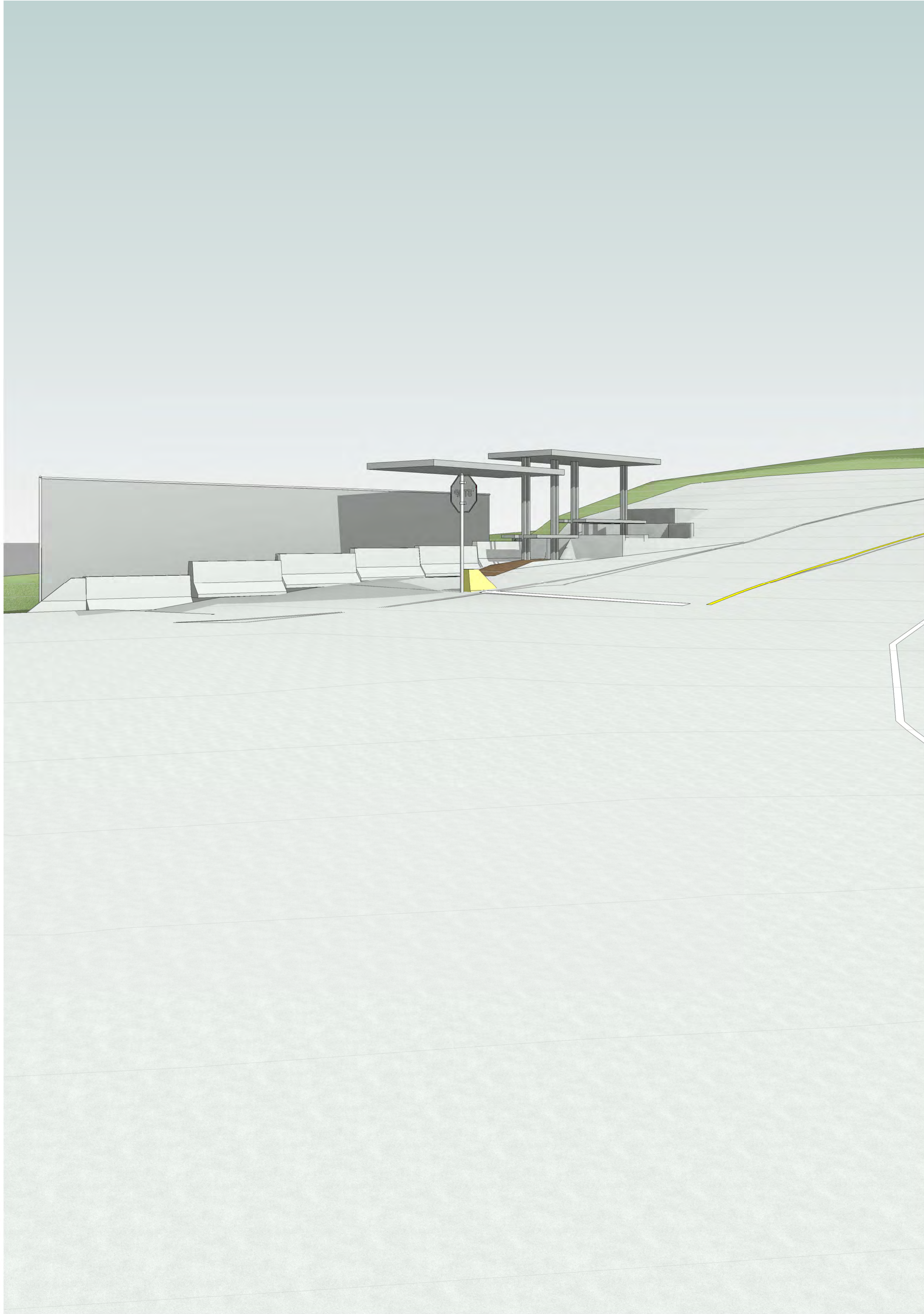
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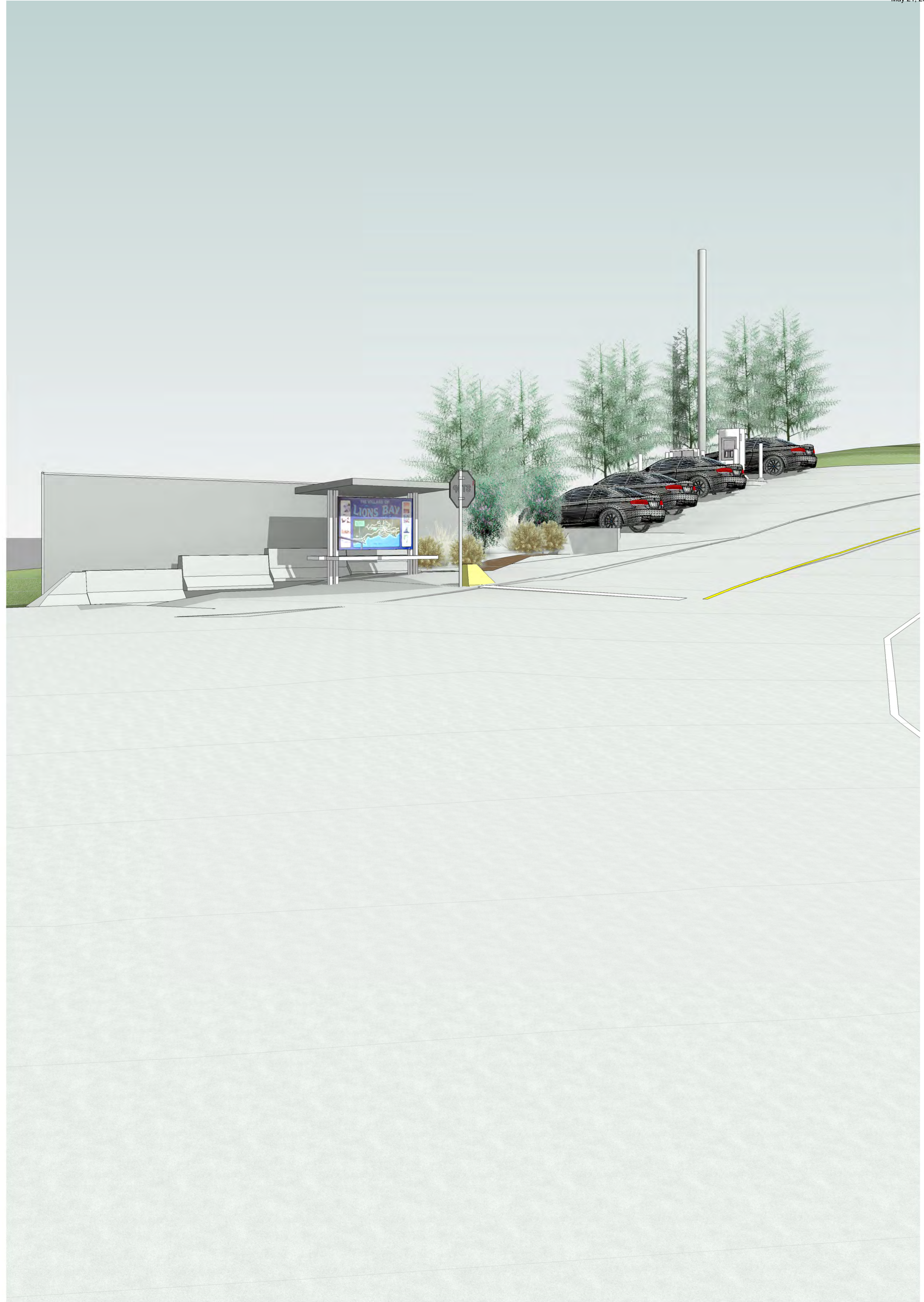
perspective views

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A0.2
3 mar 2020



1 perspective - existing
A0.2



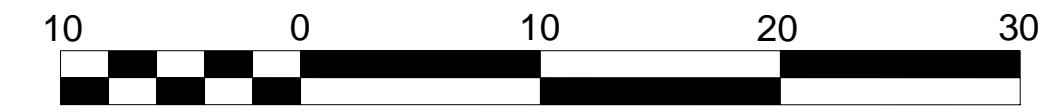
2 perspective - proposed
A0.2

3/2/2020 5:48:33 PM

BC LAND SURVEYOR'S SITE PLAN

ON A PART OF THAT PART OF BLOCK A IN EXPLANATORY PLAN 8158, GROUP 1, NEW WESTMINSTER DISTRICT, EXCEPT PORTIONS IN PLANS 13079, 13431, 13432, 13628 AND 13629, DISTRICT LOT 1575.

Oceanview Road at Crosscreek Road, Village of Lions Bay, BC
(PID 015-936-023)



The intended plot size is 22" in height by 34" in width (D Size) when plotted at a scale of 1/8" = 1'

All distances are horizontal ground-level distances in feet and decimals thereof, unless otherwise noted.



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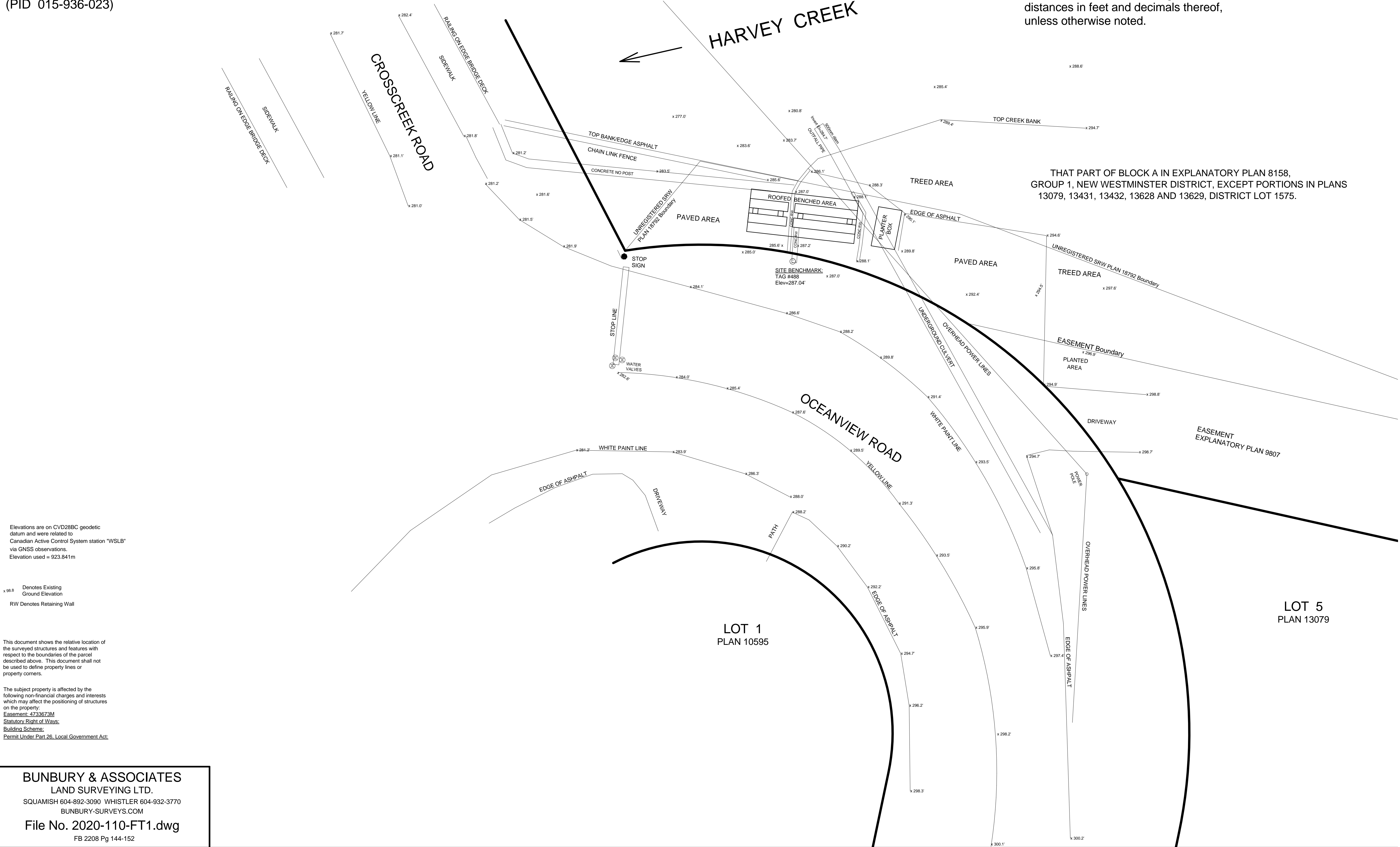
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survey/
existing site
plan

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A0.3

3 mar 2020



Elevations are on CVD28BC geodetic datum and were related to Canadian Active Control System station "WSLB" via GNSS observations. Elevation used = 923.841m

x 98.5 Denotes Existing Ground Elevation
RW Denotes Retaining Wall

This document shows the relative location of 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 subject property is affected by the following non-financial charges and interests which may affect the positioning of structures on the property:
Easement: 4733673M
Statutory Right of Ways:
Building Schemes:
Permit Under Part 26, Local Government Act.

BUNBURY & ASSOCIATES
LAND SURVEYING LTD.

SQUAMISH 604-892-3090 WHISTLER 604-932-3770
BUNBURY-SURVEYS.COM

File No. 2020-110-FT1.dwg

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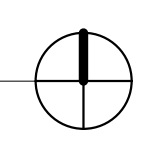
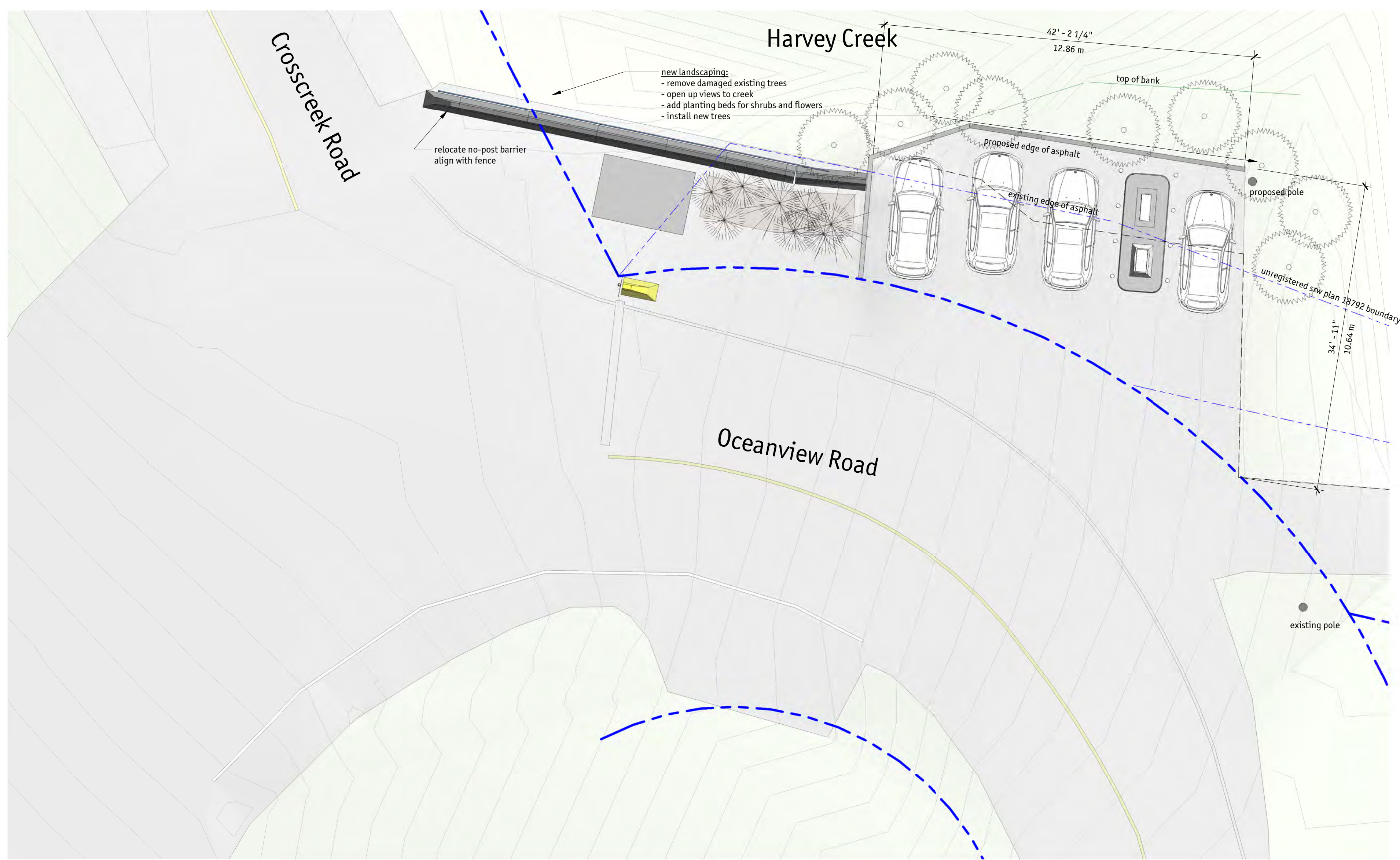
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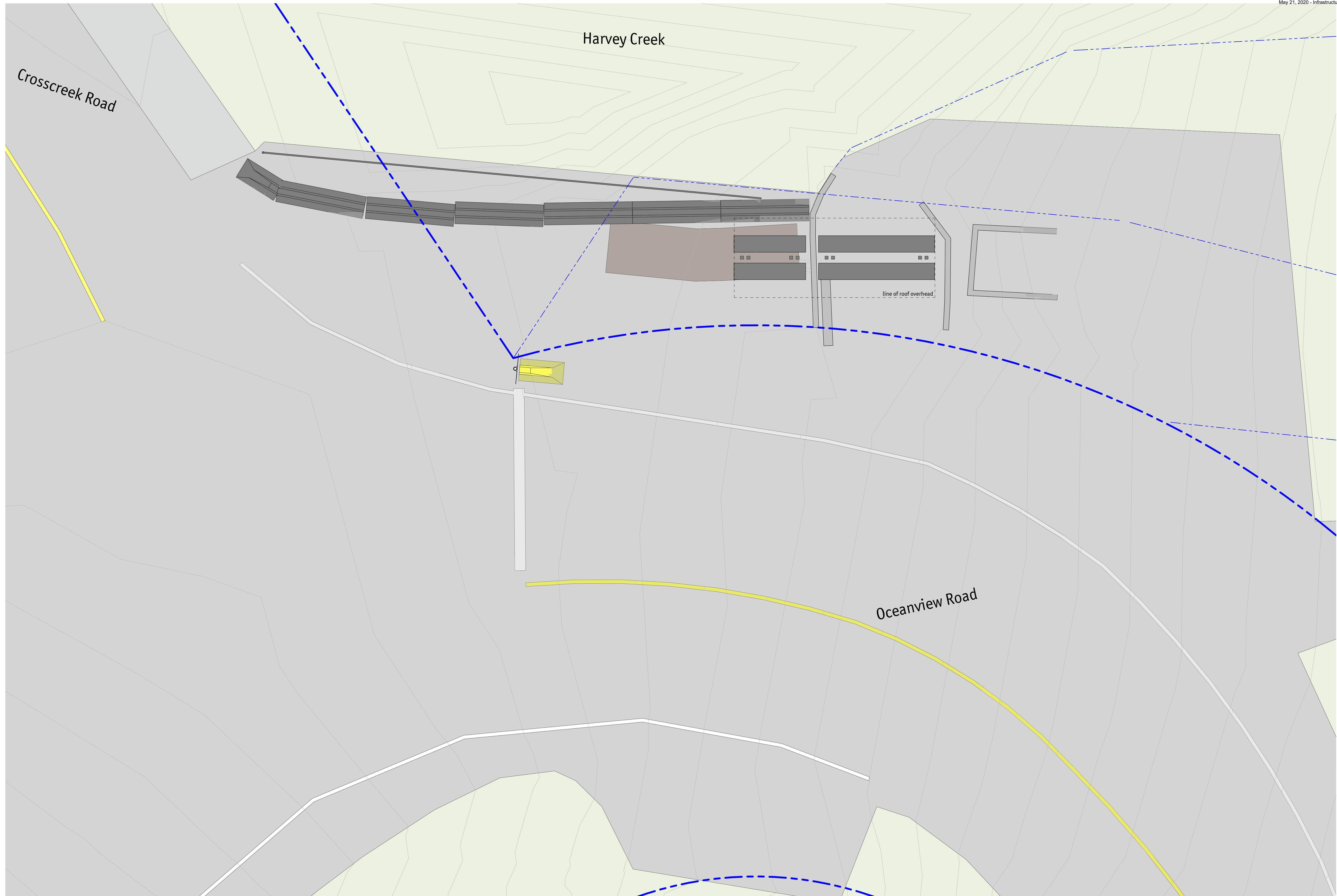
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proposed site plan

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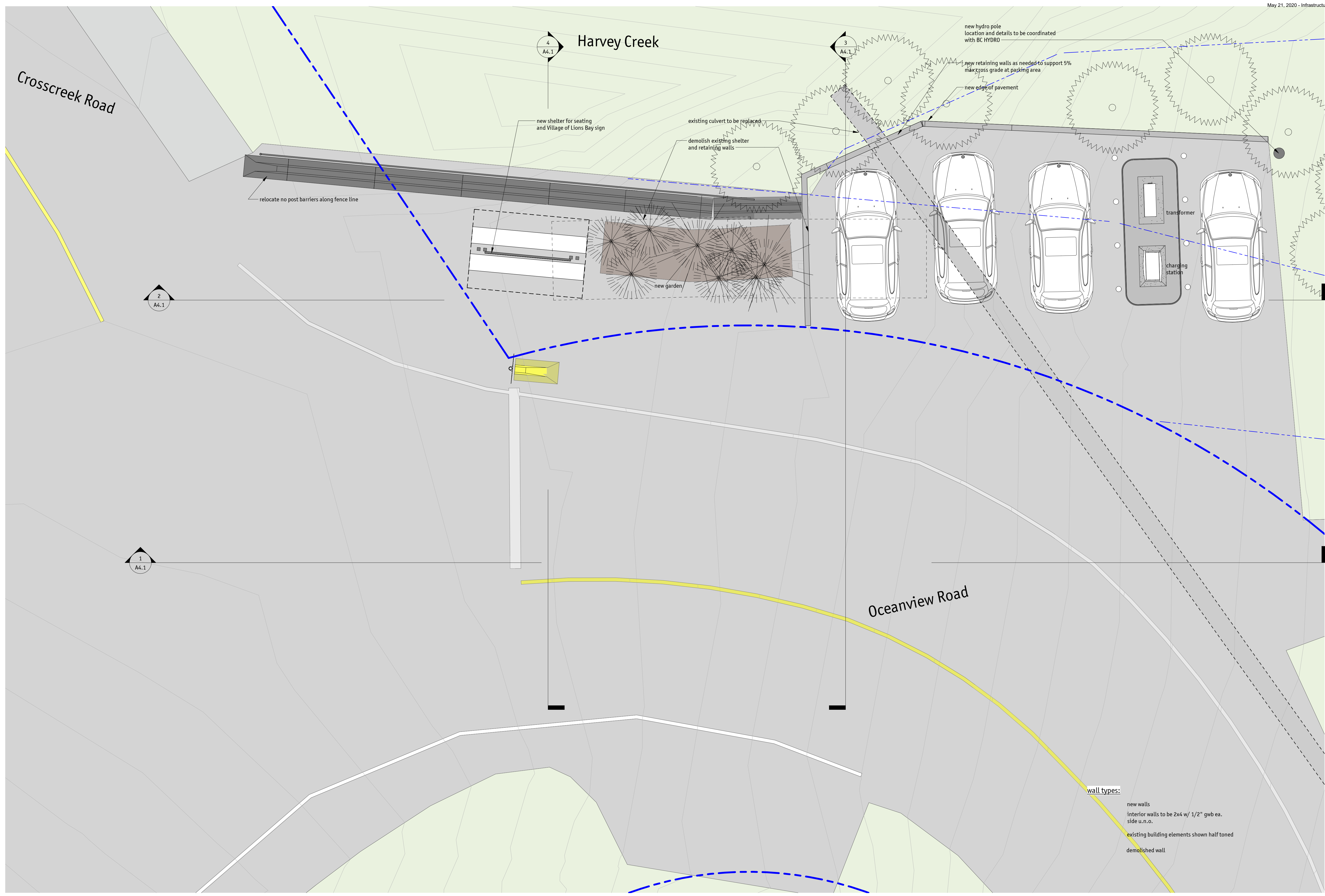
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02	3 mar 2020	for review

proposed plan

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wall types:
 new walls
 interior walls to be 2x4 w/ 1/2" gwb ea.
 side u.n.o.
 existing building elements shown half toned
 demolished wall

1 floor plan - proposed
 A2.1 scale - 1/4" = 1'-0"



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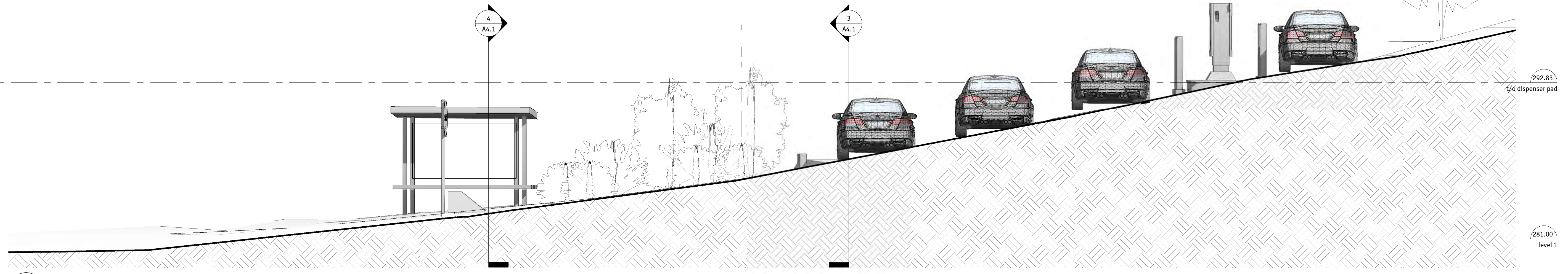
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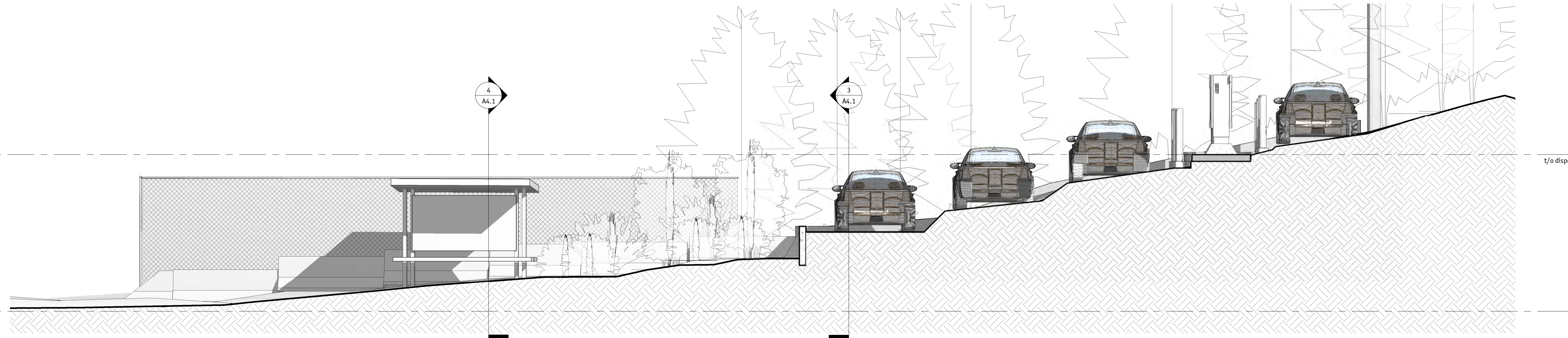
sections

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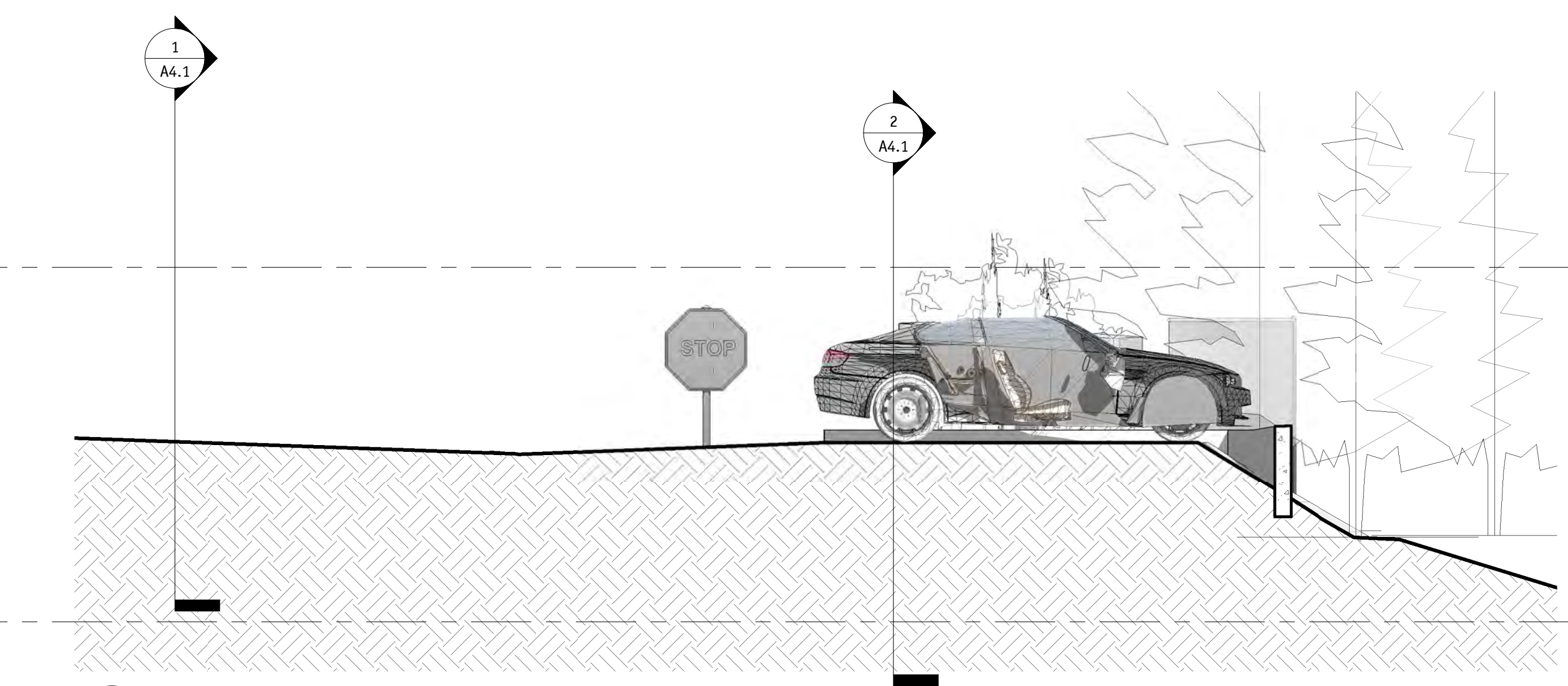
A4.1
3 mar 2020



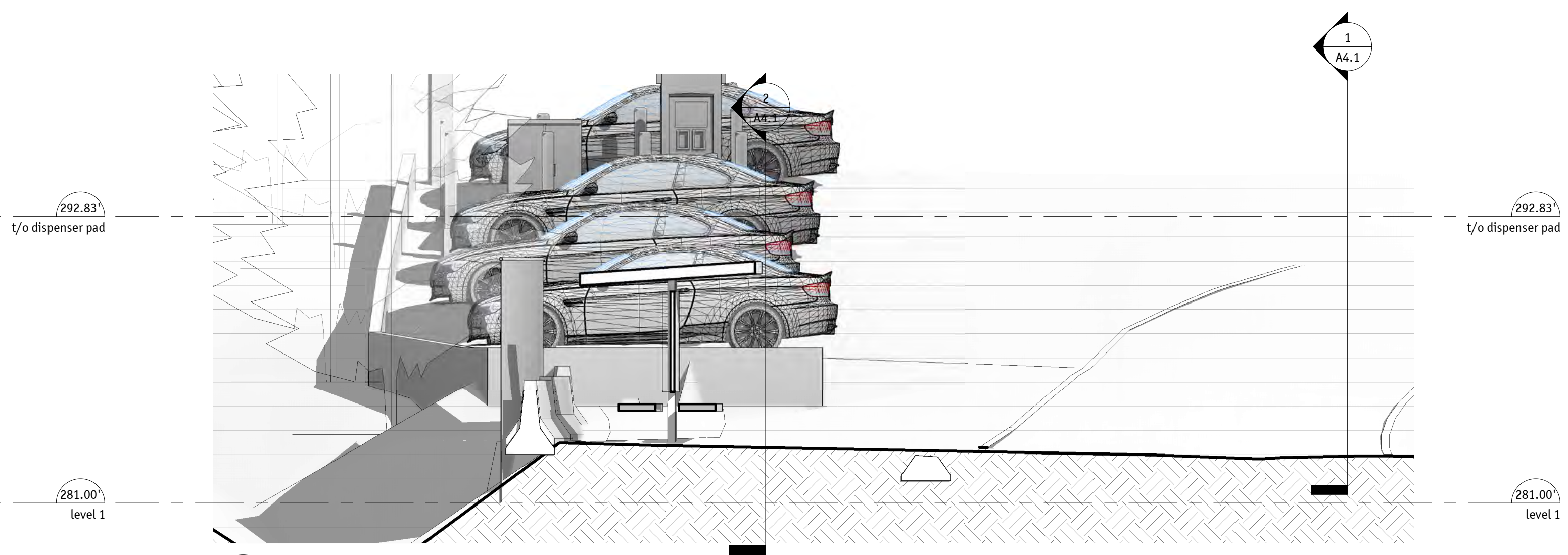
1 section 1
A4.1 scale - 1/4" = 1'-0"



2 section 2
A4.1 scale - 1/4" = 1'-0"



3 section 3
A4.1 scale - 1/4" = 1'-0"



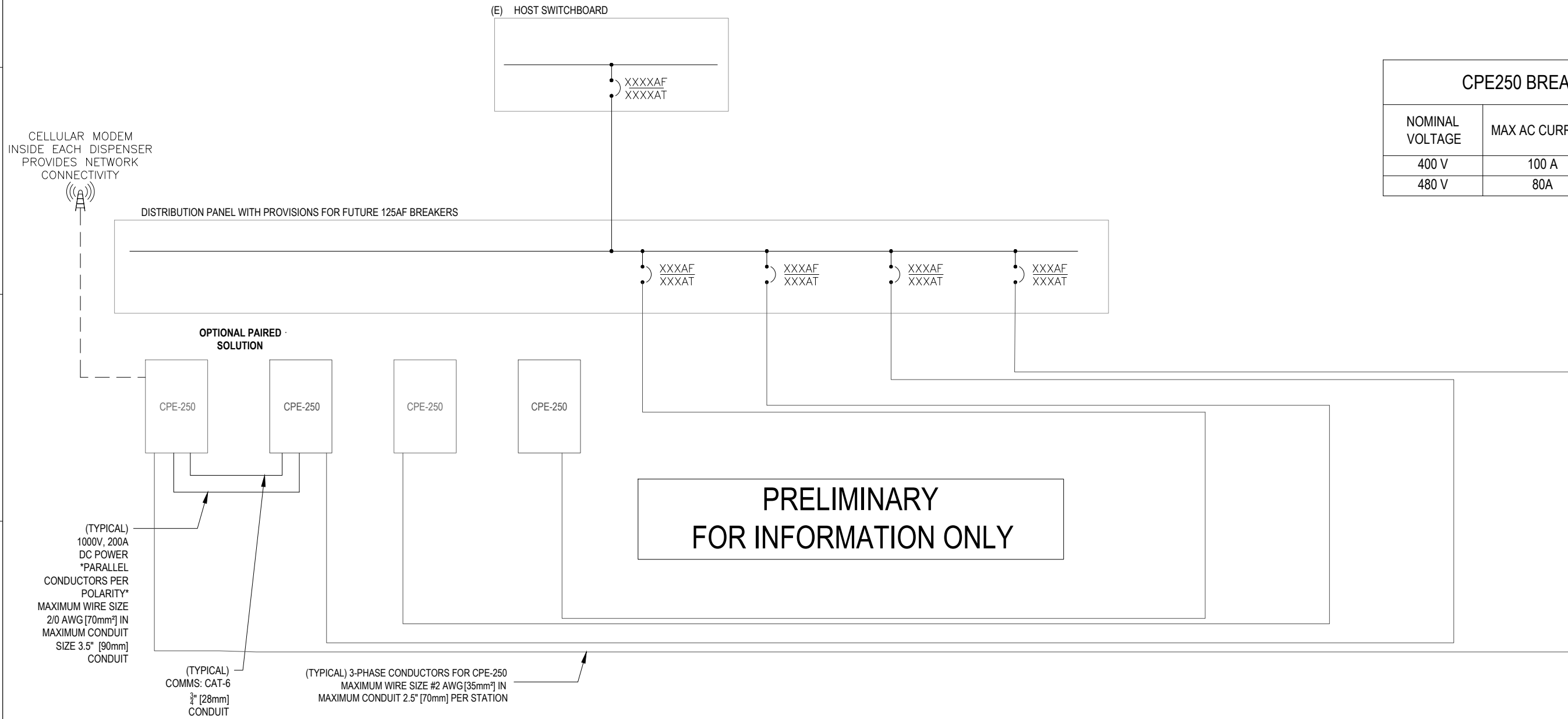
4 section 4
A4.1 scale - 1/4" = 1'-0"

GENERAL NOTES:

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- CONDUCTORS LANDING ON CHARGEPOINT EQUIPMENT SHALL BE COPPER.

NOTES: CPE-250

- 1 SET OF PAIRED CPE250 EACH CONTAINING (2) 31.25KW POWER MODULES
- 2 x CPE250 EACH CONTAINING (2) 31.25KW POWER MODULES



CPE250 BREAKER SELECTION			
NOMINAL VOLTAGE	MAX AC CURRENT	125% x CONTINUOUS LOAD	BREAKER SIZE
400 V	100 A	125 A	125 A
480 V	80A	100 A	100 A

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REVISIONS		
DESCRIPTION	BY	DATE
CPE250 SLD	WB	03/12/19



CPE-250 SINGLE LINE DIAGRAM