

File: 2022.68

Via: email

Date: May 28, 2024
Attention: Kimberly Thompson, Natural Resource Specialist, FrontCounter BC
Re: Crown Land Tenure Application (Tracking Number 100439391)
 Land / Foreshore Use Application: Shoreline Erosion Mitigation ("Green Shoring")
 Information Request IR-001

1 This document package is submitted on behalf of the Applicants detailed in Table 1 ("the Owner
 2 Group") who seek approval for a shoreline erosion mitigation project ("the Project") concerning their
 3 properties as indicated ("the Subject Parcels.")

4 *Table 1: Owner Group and Subject Parcels*

Address	PID	Legal Description	Owners
235 Quarry Dr, Salt Spring Island	009-555-706	LOT 1 SECTIONS 6 AND 7 RANGE 1 WEST NORTH SALT SPRING ISLAND COWICHAN DISTRICT PLAN 46155	HEIDI KUHRT AND DAVID DEMNER
239 Quarry Dr, Salt Spring Island	009-555-731	LOT 3, SECTIONS 6 AND 7, RANGE 1 WEST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 4615	PAT AND BRUCE SANDERS
434 Baker Rd, Salt Spring Island	009-555-781	LOT 5, SECTION 6, RANGE 1 WEST, NORTH SALT SPRING ISLAND, COWICHAN DISTRICT, PLAN 46155	ETHAN WILDING
431 Baker Rd, Salt Spring Island	000-014-656	AMENDED LOT 2 (DD 251903I) SECTION 6 RANGE 1 WEST NORTH SALT SPRING ISLAND COWICHAN DISTRICT PLAN 7144 EXCEPT PART IN PLAN 40042	CLAIRE & JEREMY SICHERMAN

5 A Crown Land Tenure Application (the "Application") was submitted on behalf of the Owner Group on
 6 March 12, 2024, by their Agent, Aurora Professional Group Inc. In preparation for the Application, the
 7 Owner Group engaged qualified professionals to oversee application scopes, as detailed in Table 2,
 8 herein referred to as the "Consultant Team."

9 *Table 2: Project Team and Related Scope*

Consultant	Lead Contact	Scope
Aurora Professional Group Inc. ("ENG")	Bradley Fossen P.Eng.,QEP t. 778.400.3375 e. brad@thinkapg.com	Coordinating QP
CORVIDAE Environmental Consulting Inc. ("RPBIO")	Julie Bugden BSc, RPBio, QEP m. 250.415.8553 e. julieb@corvid.pro	Habitat Assessments QEP, Vegetation Enhancements Design
Millennia Research Ltd. ("ARCH")	Thea Sawin MA t. 250.360.0919	Archeological Permitting and Monitoring

Consultant	Lead Contact	Scope
	e. thea@millennia-research.com	
Polaris Land Surveying Inc. ("SURVEY")	Jordan Litke P.Surv, BCIS m. 250.686.0278 e. jlitke@plsi.ca	Property Survey, Topography
TRE Environmental Services ("GEO")	Thomas R Elliot PhD P.Geo P.Ag, QEP m. 250.732.9004 e. tom@elliot.org	Geo-assessments, Coastal Processes QP, and Design Bases

10 **INFORMATION REQUEST RESPONSES**

11 FrontCounter BC has requested information to support the Application. The Consultant Team has
 12 prepared this submission in response to the request.

13 01. *Shapefile: In order for the Province to enter the application area into our mapping, please provide a
 14 shapefile for the application area.*

- 15 • Response IR-001.01.1: The drawing set now includes drawing 2022.68-46-LAY-005,
 16 which designates an "Overall Project Area." The updated drawing set and shapefile are
 17 included as attachments.

18 02. *Removal areas: The site plans show revegetation areas, but don't indicate any removal areas (see
 19 Section 4.0 of the Checklist). Are there any specific areas where plants will be removed? If so,
 20 please show these on a plan. If any native plants will be impacted, is there a plan to salvage these
 21 for replanting?*

- 22 • Response IR-001.02.1 (RPBIO, CORVIDAE): Plant removal is limited to invasive species
 23 before the natives are planted. Removals will occur only within the "re-vegetation" areas
 24 shown in the plans.

25 03. *Detailed planting plan: Section 5 of Corvidae's Environmental Assessment report mentions a
 26 detailed design plan with specific plant species, locations, spacing, methods of planting and
 27 maintenance. Please provide a copy of this detailed design report if available.*

- 28 • Response IR-001.03.1: The RPBIO Detailed Planting Plan is now attached.

29 04. *Section 3.2 of TRE's "Assessment of Marine Shoreline Characteristics" report recommends sparse
 30 placement of boulders in the indicated areas to deflect waves. However, the side view plan in the
 31 drawing package shows non-uniform rock clusters. Please update the application package to
 32 provide more information about the boulders or rock clusters such as the size range of the rocks,
 33 approximate size of each cluster, approximate number of clusters and approximate spacing
 34 between clusters.*

- 35
- Response IR-001.04.1 (GEO, TRE): More specifically, "placement of boulders" or "non-uniform rock clusters" can be described as 'boulder placement for wave-energy dissipation'. These are rock clusters that mimic existing natural deposits in the area. See attached for field photos for examples of existing natural deposits at the Project.
- 36
- 37
- 38



39
40

Figure 1: Photo 1 of existing natural deposits of "rock clusters" at the Project Site.



41
42

Figure 2: Photo 2 of existing natural deposits of "rock clusters" at the Project Site.

- 43 • Response IR-001.04.2 (GEO, TRE): Cluster Specification
- 44 i. 0.5 – 1.2m boulders, sandstone or low sulphide granite, rounded to sub-rounded
45 (no blast rock)
- 46 ii. Amoebic clusters of 10 – 15, generally with 20% density within the areas
47 designated on the plans.
- 48 iii. Spaced 0.5 – 1.0m
- 49 iv. -Placed on the largest side to minimize topple/movement
- 50 • Response IR-001.04.3 (ENG): Drawings have been updated to include further "wave
51 energy dissipation installations" terminology.

52 05. *Material sourcing: In order to confirm that the aggregate will be from a clean source, do you know
53 the quarry (or quarries) where the aggregate will be sourced?*

- 54 • Response IR-001.05.1 (ENG): After early procurement efforts, the most likely source will
55 be from Heidelberg Materials, operating from Sechelt Band Lands No. 2. Only "clean"
56 (undisturbed, quarry) materials are being considered for aggregate—preliminary
57 aggregate source gradations attached.

DISCLAIMERS

58 This document, prepared by Aurora Professional Group Inc., represents a technical submission for the
59 Project. The information contained herein is based on the best available data, expertise of engaged
60 professionals, and adherence to applicable standards and regulatory requirements at the time of
61 preparation.

62 It is important to note that engineering, environmental science, and regulatory landscapes are subject
63 to change. Therefore, while every effort has been made to ensure the accuracy and relevance of the
64 information provided, Aurora Professional Group Inc. does not warrant the completeness or accuracy
65 of the information, nor does it assume any liability for errors or omissions. Decisions based on
66 information contained in this document are the sole responsibility of the user.

67 Furthermore, this document does not constitute an exhaustive treatment of the subject matter and
68 should be used in conjunction with professional judgement and after consultation with appropriate
69 regulatory authorities. The recommendations and findings presented are specific to the conditions
70 encountered at the project site at the time of assessment and are intended for use by qualified
71 professionals familiar with the nuances of shoreline erosion mitigation.

72 Any use of this document by third parties, or for purposes other than those for which it is specifically
73 intended, is prohibited without the express written permission of Aurora Professional Group Inc.
74 Modifications to the project design or deviations from the recommendations contained herein should
75 only be made by qualified professionals with full knowledge of the specific conditions and
76 requirements of the project site.

ATTACHMENTS

- 77 (1) Drawing Set 2022.68-46-LAY-001/002/003/004/005/006 (R.1)
78 (2) 2022.68 Overall Project Area Shapefile.
79 (3) CORVIDAE Detailed Planting Plan (By Owner/Property)
80 (4) Example Heidelberg Gradation Tests

SIGN OFF

By this submission, the Applicants have attempted to provide all relevant information to the approving authority to support the expedited permit process.

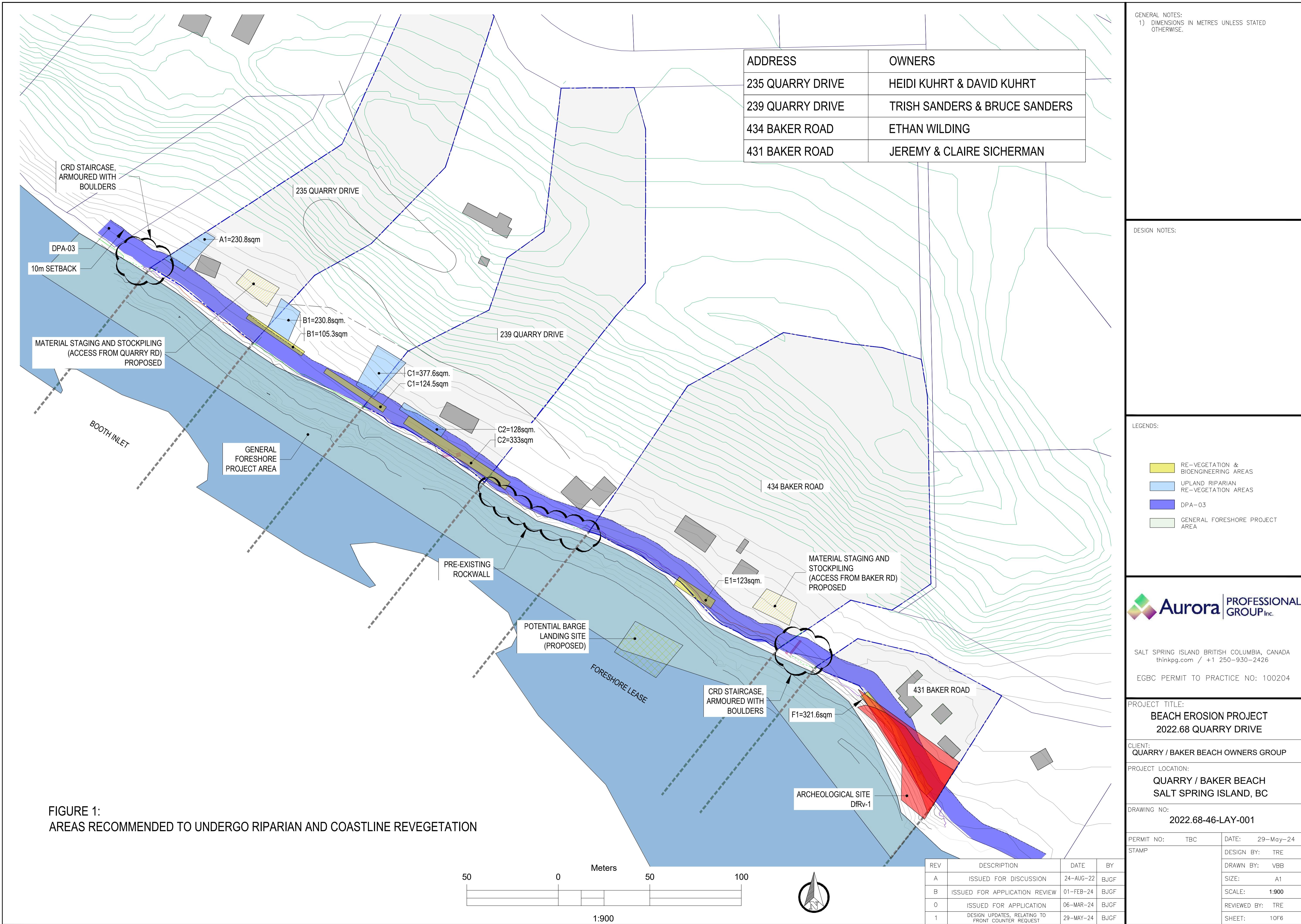
Please feel free to contact the undersigned or Consultant Team directly if you have any questions or concerns.

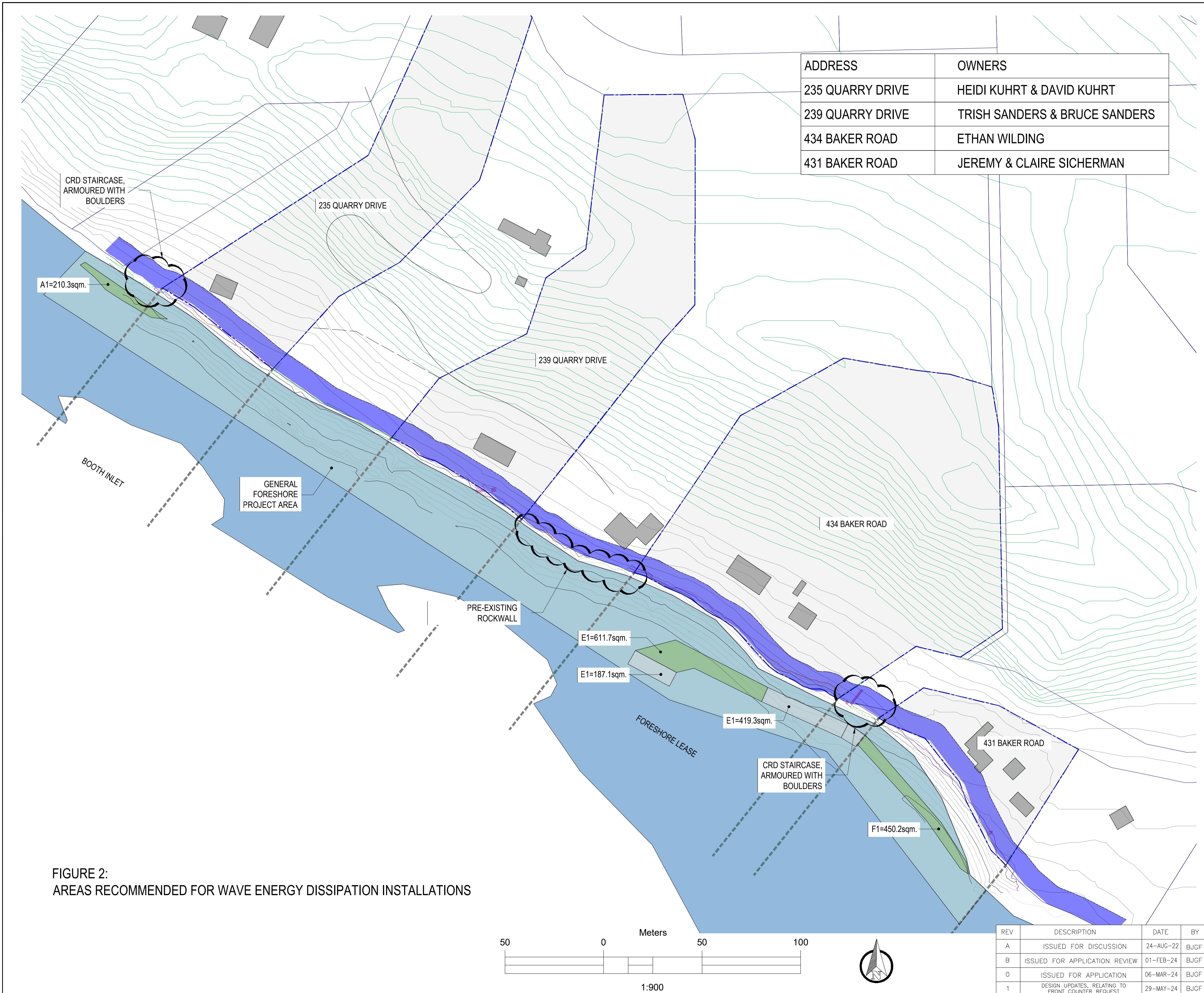
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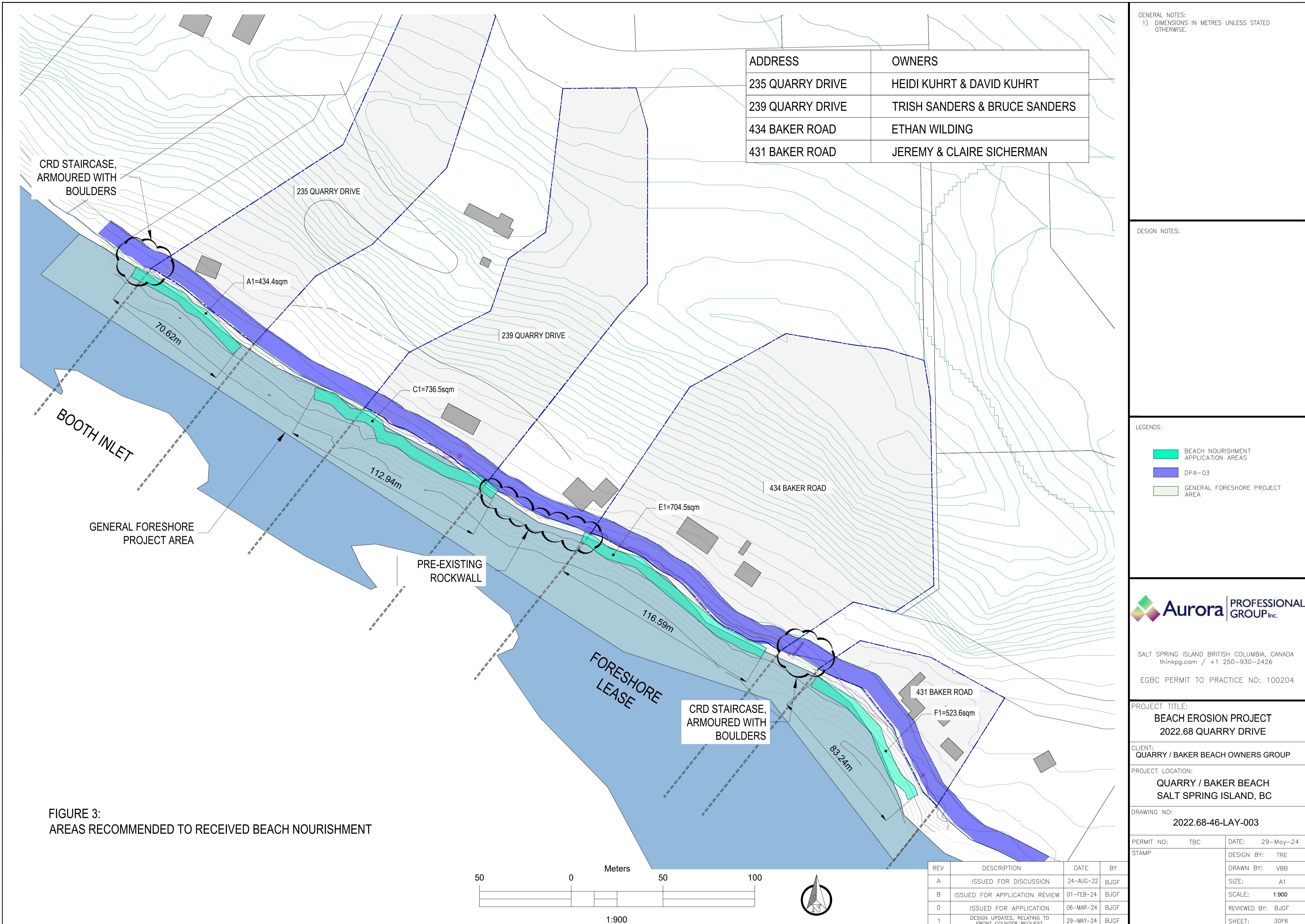
Bradley Fossen, P.Eng., Agent, and on behalf of the Consultant Team

Managing Director | Aurora Professional Group Inc.

E: brad@thinkapg.com | T: 778-400-3375







GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED OTHERWISE.

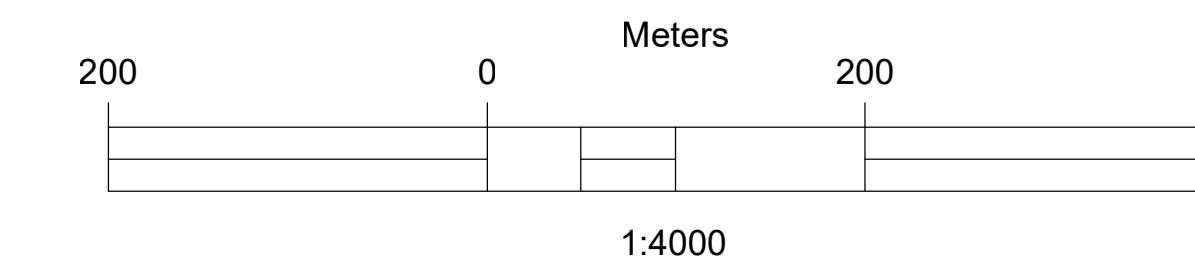
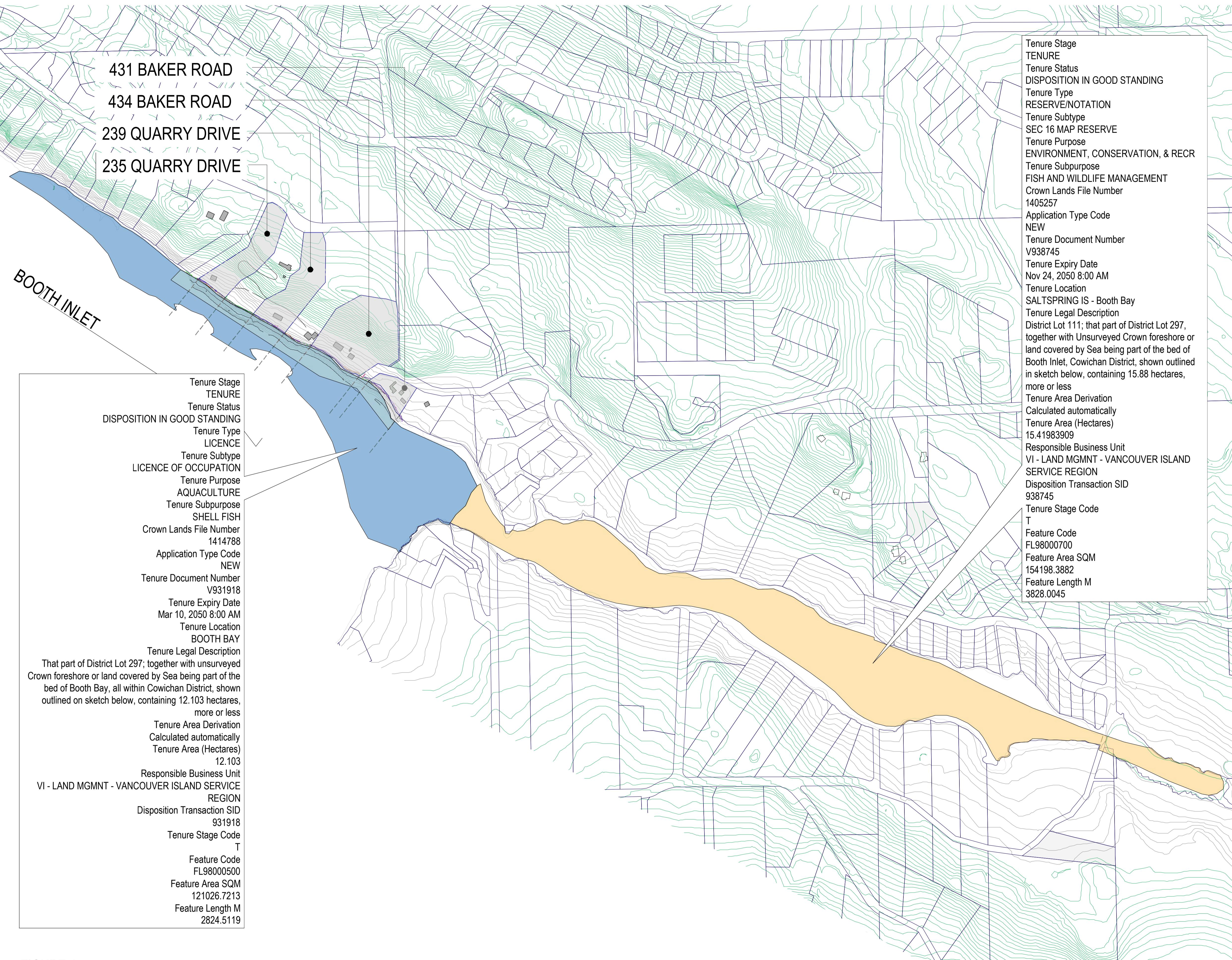


FIGURE 4:
FORESHORE LEASES

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
O	ISSUED FOR APPLICATION	06-MAR-24	BJGF
1	DESIGN UPDATES, RELATING TO FRONT COUNTER REQUEST	29-MAY-24	BJGF

DESIGN NOTES:

LEGENDS:

Aurora PROFESSIONAL GROUP Inc.

SALT SPRING ISLAND BRITISH COLUMBIA, CANADA
thinkpg.com / +1 250-930-2426

EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

DRAWING NO:
2022.68-46-LAY-004

PERMIT NO:	TBC	DATE:	29-May-24
STAMP		DESIGN BY:	TRE
		DRAWN BY:	VBB
		SIZE:	A1
		SCALE:	As Shown
		REVIEWED BY:	BJGF
		SHEET:	40F6



GENERAL NOTES:
1) DIMENSIONS IN METRES UNLESS STATED OTHERWISE.

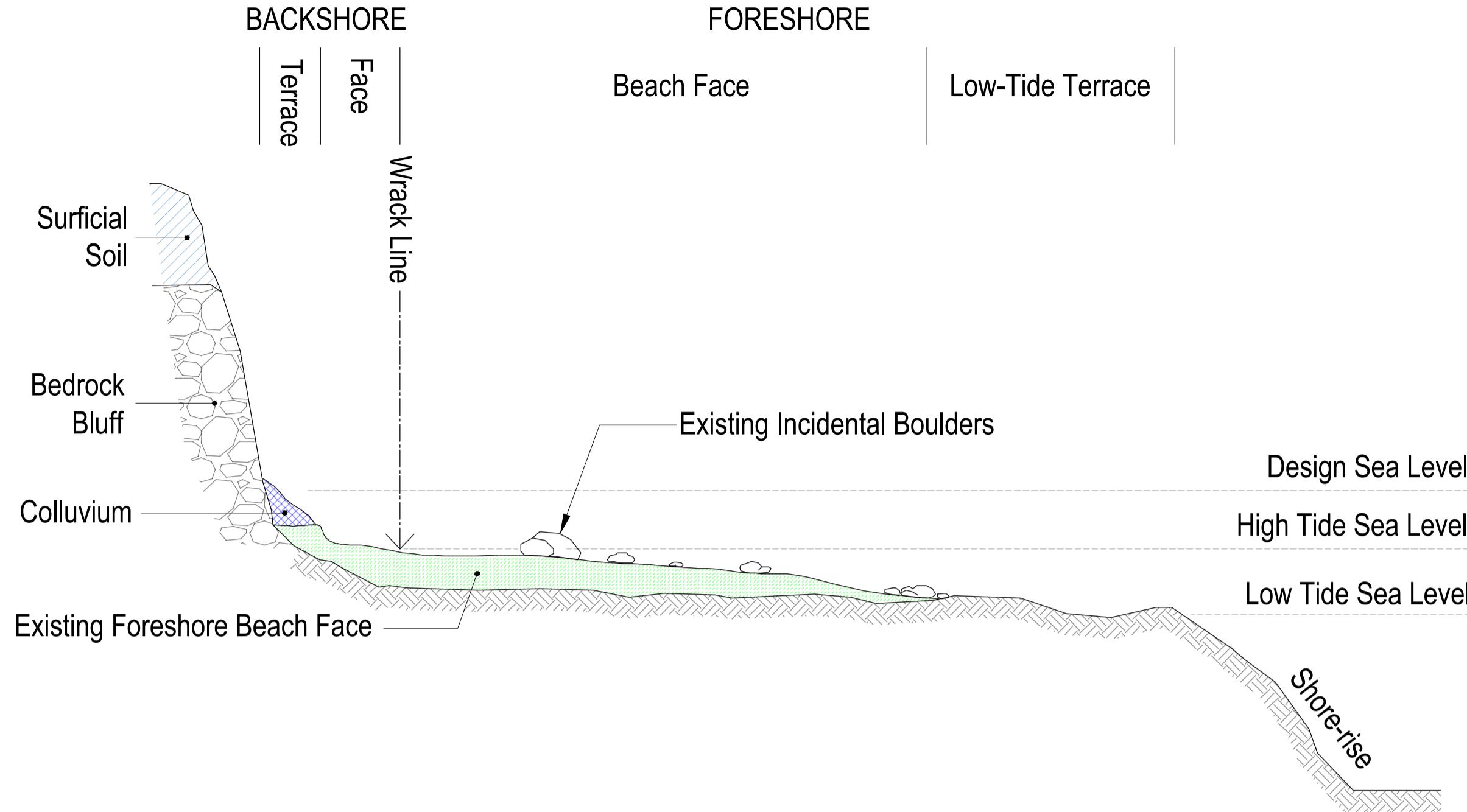


FIGURE 6:
NOMINAL CROSS-SECTION OF A PROJECT AREA
CURRENT CONDITION

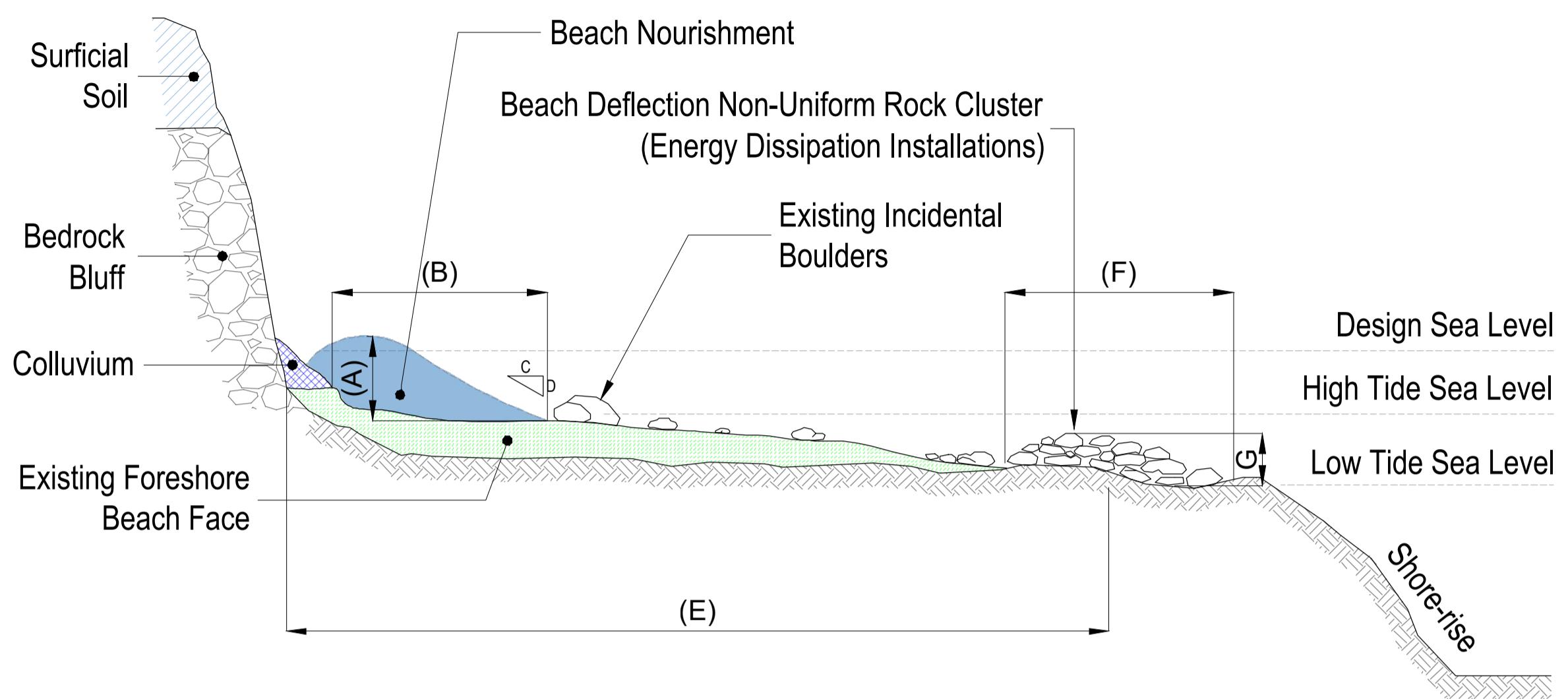


FIGURE 7:
NEAR-TERM CROSS-SECTION

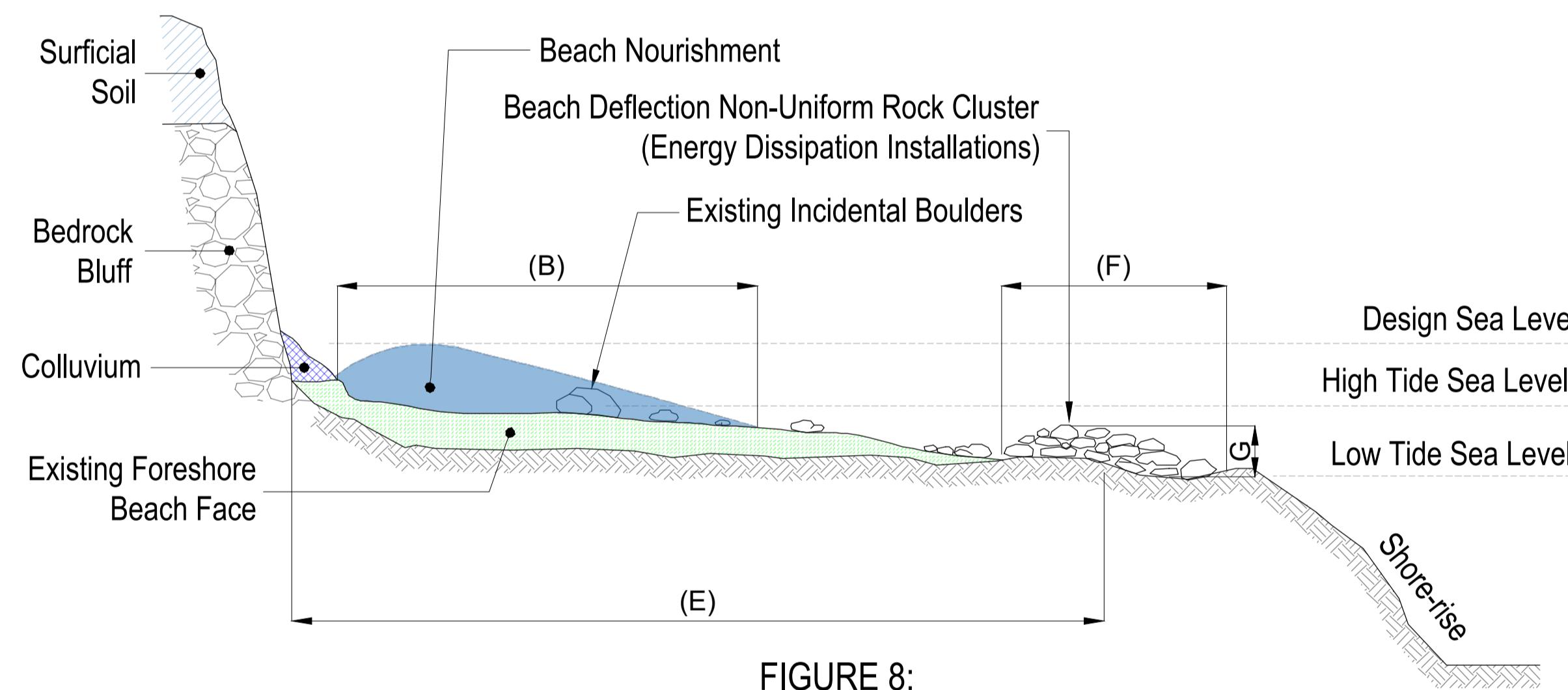


FIGURE 8:
5 YEAR CROSS-SECTION

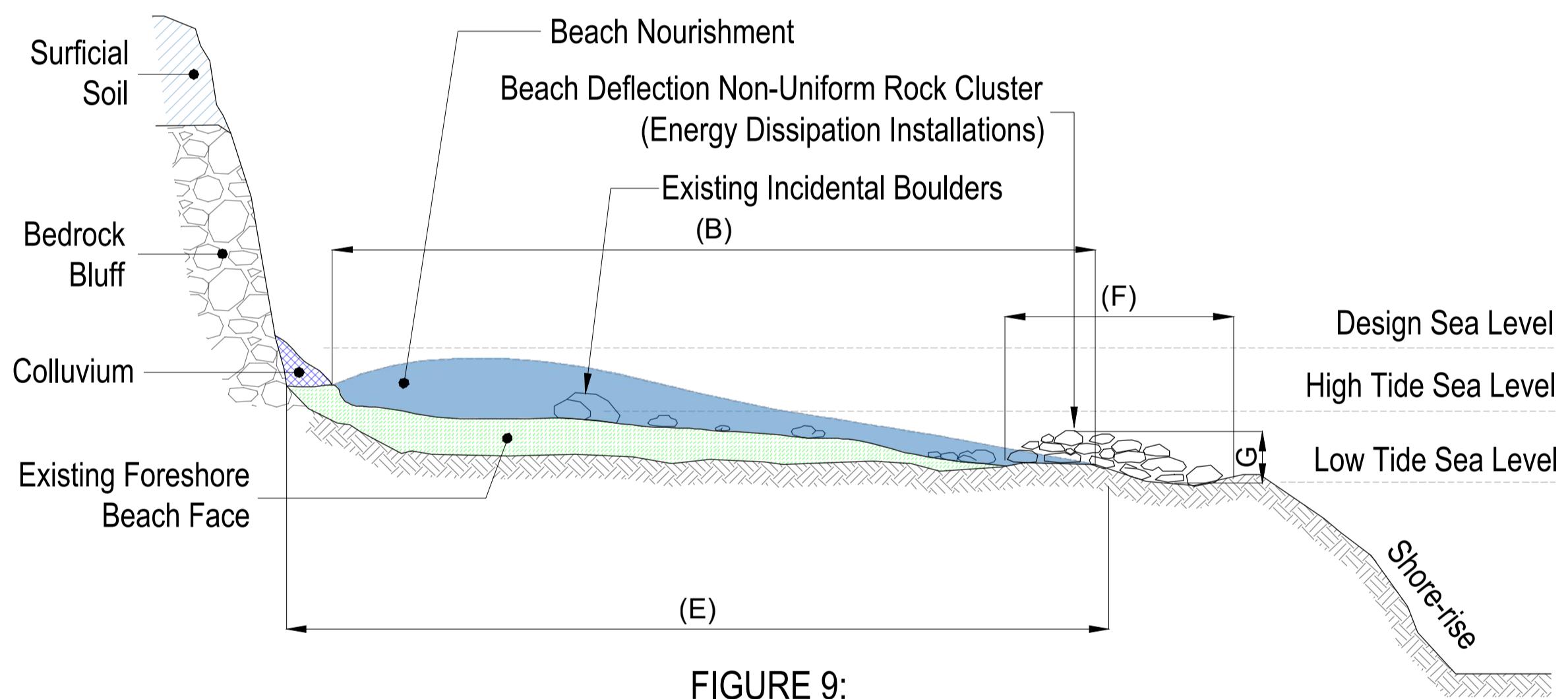


FIGURE 9:
15 YEAR CROSS-SECTION

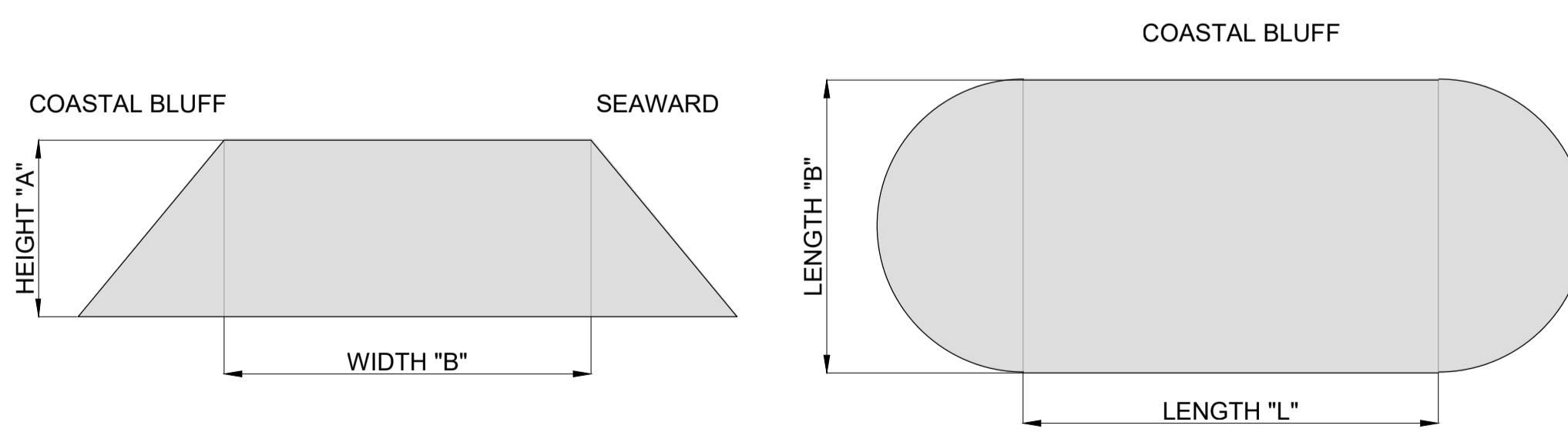


FIGURE 10:
INSTALL PROFILE
(MASS PLACEMENT)

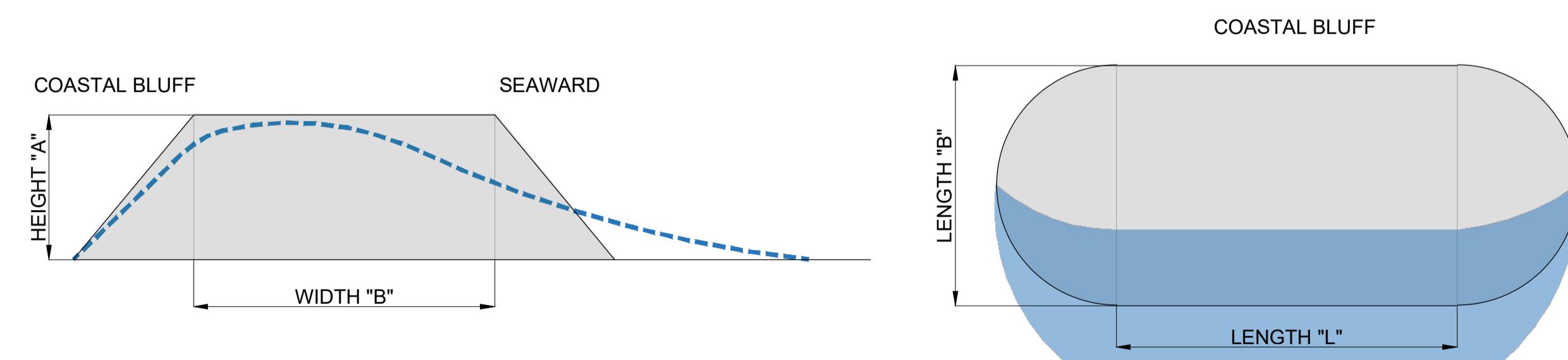


FIGURE 11:
INSTALL PROFILE
(SHAPING)

REV	DESCRIPTION	DATE	BY
A	ISSUED FOR DISCUSSION	24-AUG-22	BJGF
B	ISSUED FOR APPLICATION REVIEW	01-FEB-24	BJGF
O	ISSUED FOR APPLICATION	06-MAR-24	BJGF
1	DESIGN UPDATES, RELATING TO FRONT COUNTER REQUEST	29-MAY-24	BJGF

DESIGN NOTES:

LEGENDS:
Beach Nourishment
Existing Foreshore Beach Face
Colluvium
Surficial Soil
Bedrock Bluff



SALT SPRING ISLAND BRITISH COLUMBIA, CANADA
thinkpg.com / +1 250-930-2426

EGBC PERMIT TO PRACTICE NO: 100204

PROJECT TITLE:
BEACH EROSION PROJECT
2022.68 QUARRY DRIVE

CLIENT:
QUARRY / BAKER BEACH OWNERS GROUP

PROJECT LOCATION:
QUARRY / BAKER BEACH
SALT SPRING ISLAND, BC

DRAWING NO:
2022.68-46-LAY-006

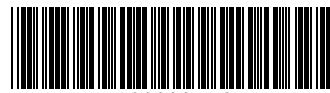
PERMIT NO:	TBC	DATE:	29-May-24
STAMP	DESIGN BY:	TRE	
	DRAWN BY:	VBB	
	SIZE:	A1	
	SCALE:	NTS	
	REVIEWED BY:	BJGF	
	SHEET:	60F6	

Property	Area (m2)	Species	Scientific Name	Location	Total Plants Needed	Notes
431 Baker	350	Trees / Shrubs				
Total Est. Plants		Beaked hazelnut	<i>Corylus cornuta</i>	Top, west end.	4	This property has the most invasives. Following removal it will be a long, open slope. High density planting throughout. Plant using hand tools and low ground pressure equipment.
		Bitter cherry	<i>Prunus emarginata</i>	Mid to lower slope, spaced to sides	4	
		Black hawthorn	<i>Crataegus douglasii</i>	Mid to lower slope	6	
		Dune grass	<i>Elymus mollis</i>	bottom/toe of slope	60	
		Evergreen huckleberry	<i>Vaccinium ovatum</i>	Upper slope area	6	
		Flowering currant	<i>Ribes sanguineum</i>	Mid to lower slope	10	
		Indian plum	<i>Oelmeria cerasiformis</i>	Mid to lower slope	10	
		Mock orange	<i>Philadelphus lewisii</i>	Upper slope area	10	
		Oceanspray	<i>Holodiscus discolor</i>	Mid to lower slope	10	
		Pacific crabapple	<i>Malus fusca</i>	Upper slope area	10	
		Saskatoon	<i>Amelanchier alnifolia</i>	Mid to lower slope	6	
		Snowberry	<i>Symphoricarpos albus</i>	Upper slope area	20	
		Springbank clover	<i>Trifolium wormskioldii</i>			
				Total Plants	156	

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1903884567

Sample Information

Sample No -1903884567

Split Sample
Date Sampled 05/25/2022 12:15

Resample
Sampled By Amy McGuigan

Type Production

Method Belt-Stream

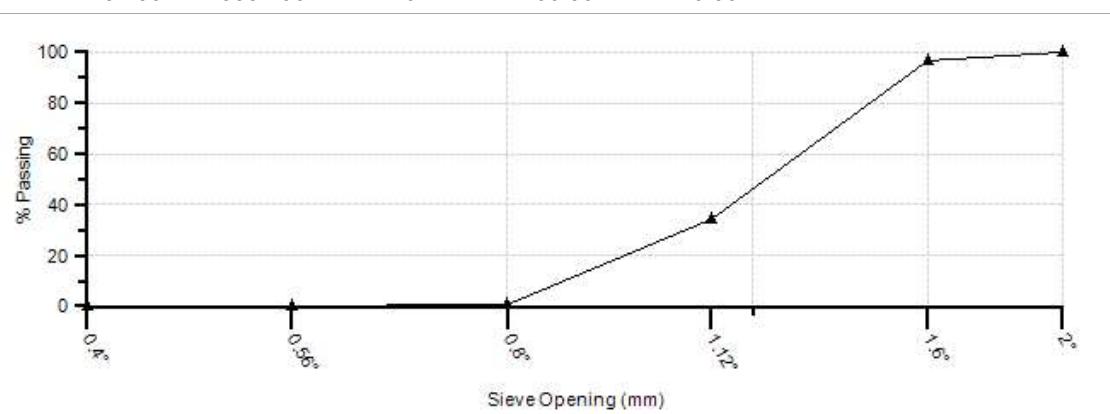
Location 504

Gradation Results

Date Completed 05/25/2022 12:15

Tested By Amy McGuigan

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		13534.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	465.00	465.00	3.4	3.4	96.6		90-100	
1.12" (28mm)	8436.00	8901.00	62.3	65.8	34.2	30		
0.8" (20mm)	4492.00	13393.00	33.2	99.0	1.0			
0.56" (14mm)	105.00	13498.00	0.8	99.7	0.3			
0.4" (10mm)	4.00	13502.00	0.0	99.8	0.2			
Pan	32.00	13534.00	0.24	100.00	0.00			



Tests: 1 D10(ES): 21.910 D15: 23.049 D30: 26.833 D50: 30.646 D60: 32.449 D85: 37.434 D90: 38.519 Cu: 1.481 Cc: 1.013

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1989735897

Sample Information

Sample No -1989735897

 Split Sample
Date Sampled 05/31/2022 19:10

 Resample
Sampled By Joshua Croteau

Type Production

Method Belt-Stream

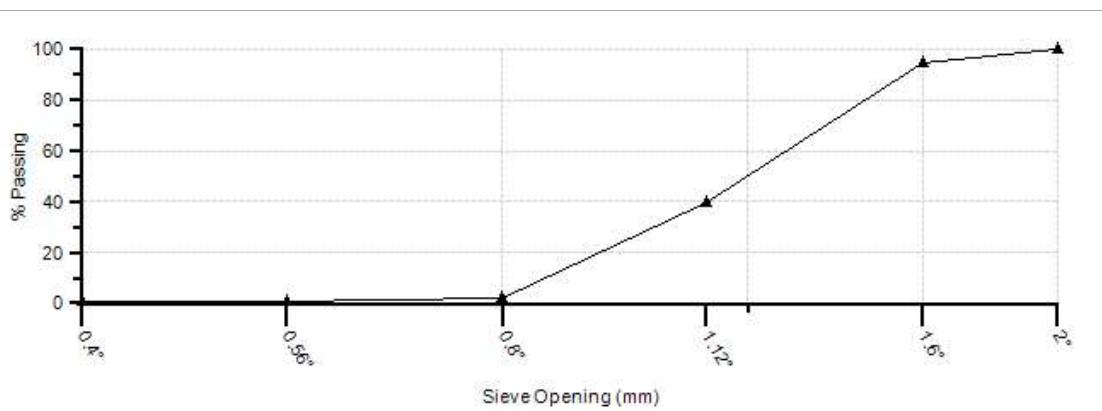
Location 504

Gradation Results

Date Completed 05/31/2022 19:10

Tested By Joshua Croteau

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	695.00	695.00	5.7	5.7	94.3		90-100	
1.12" (28mm)	6632.00	7327.00	54.6	60.3	39.7	30		
0.8" (20mm)	4530.00	11857.00	37.3	97.7	2.3			
0.56" (14mm)	216.00	12073.00	1.8	99.4	0.6			
0.4" (10mm)	23.00	12096.00	0.2	99.6	0.4			
Pan	46.00	12142.00	0.38	100.00	0.00			



Tests: 1 D10(ES): 21.435 D15: 22.421 D30: 25.660 D50: 29.949 D60: 31.971 D85: 37.642 D90: 38.892 Cu: 1.492 Cc: 0.961

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1871804130

Sample Information

Sample No -1871804130

 Split Sample
Date Sampled 06/01/2022 10:07

 Resample
Sampled By Amy McGuigan

Type Production

Method Belt-Stream

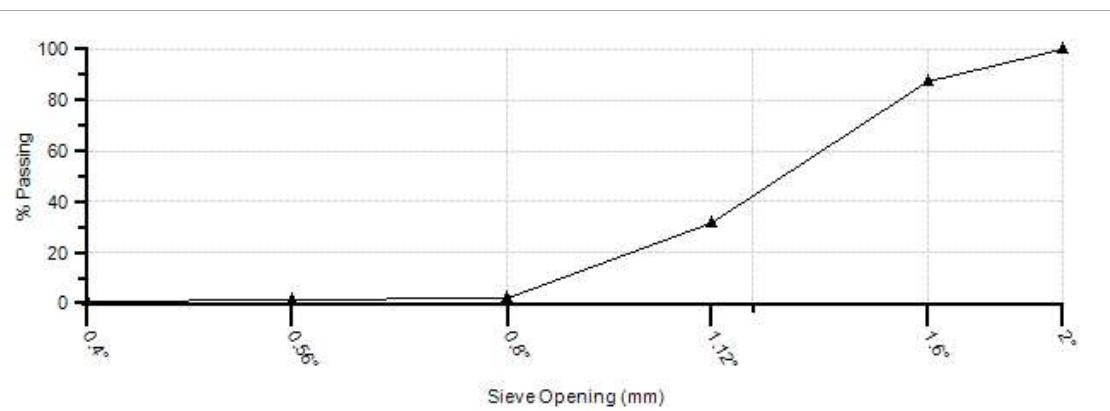
Location 504

Gradation Results

Date Completed 06/01/2022 10:07

Tested By Joshua Croteau

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		15438.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	1946.00	1946.00	12.6	12.6	87.4		90-100	Coarse
1.12" (28mm)	8663.00	10609.00	56.1	68.7	31.3	30		
0.8" (20mm)	4531.00	15140.00	29.3	98.1	1.9			
0.56" (14mm)	132.00	15272.00	0.9	98.9	1.1			
0.4" (10mm)	21.00	15293.00	0.1	99.1	0.9			
Pan	145.00	15438.00	0.94	100.00	0.00			



Tests: 1 D10(ES): 21.943 D15: 23.235 D30: 27.586 D50: 31.535 D60: 33.605 D85: 39.394 D90: 40.667 Cu: 1.531 Cc: 1.032

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1559354748

Sample Information

Sample No -1559354748

 Split Sample
Date Sampled 06/08/2022 18:57

 Resample
Sampled By Joshua Croteau

Type Production

Method Belt-Stream

Location 504

Gradation Results

Date Completed 06/08/2022 18:57

Tested By Joshua Croteau

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
	12481.00							
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	489.00	489.00	3.9	3.9	96.1		90-100	
1.12" (28mm)	7414.00	7903.00	59.4	63.3	36.7	30		
0.8" (20mm)	4472.00	12375.00	35.8	99.2	0.8			
0.56" (14mm)	49.00	12424.00	0.4	99.5	0.5			
0.4" (10mm)	9.00	12433.00	0.1	99.6	0.4			
Pan	48.00	12481.00	0.38	100.00	0.00			

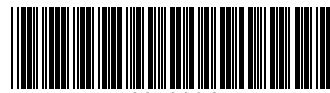


Tests: 1 D10(ES): 21.801 D15: 22.847 D30: 26.296 D50: 30.328 D60: 32.205 D85: 37.421 D90: 38.561 Cu: 1.477 Cc: 0.985

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1835020644

Sample Information

Sample No -1835020644

 Split Sample
Date Sampled 07/20/2022 21:21

 Resample
Sampled By Nick Sawchuk

Type Production

Method Bucket-Blend

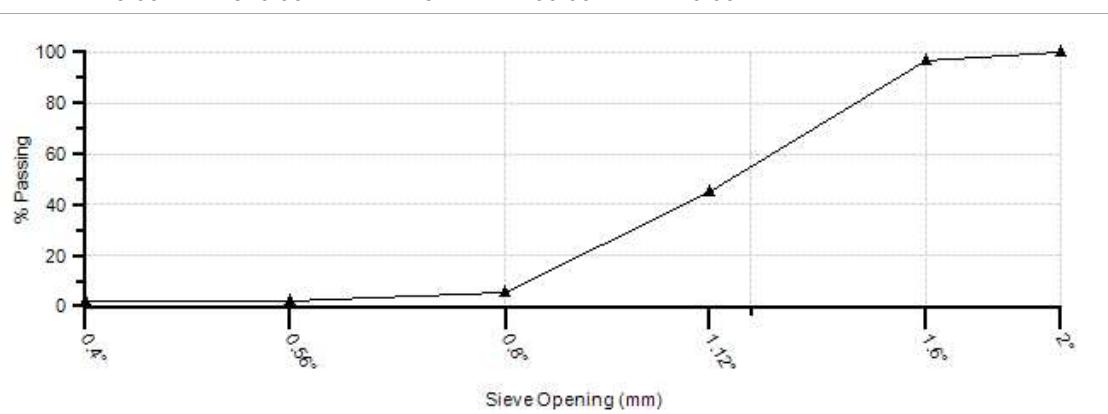
Location 607

Gradation Results

Date Completed 07/20/2022 21:21

Tested By Nick Sawchuk

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		11810.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	375.00	375.00	3.2	3.2	96.8		90-100	
1.12" (28mm)	6157.00	6532.00	52.1	55.3	44.7	30		
0.8" (20mm)	4623.00	11155.00	39.1	94.5	5.5			
0.56" (14mm)	385.00	11540.00	3.3	97.7	2.3			
0.4" (10mm)	55.00	11595.00	0.5	98.2	1.8			
Pan	215.00	11810.00	1.82	100.00	0.00			



Tests: 1 D10(ES): 20.788 D15: 21.699 D30: 24.681 D50: 29.035 D60: 31.092 D85: 36.896 D90: 38.181 Cu: 1.496 Cc: 0.942

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1603919167

Sample Information

Sample No -1603919167

 Split Sample
Date Sampled 07/29/2022 10:14

 Resample
Sampled By Anthony van Poppelen

Type Production

Method Belt-Stream

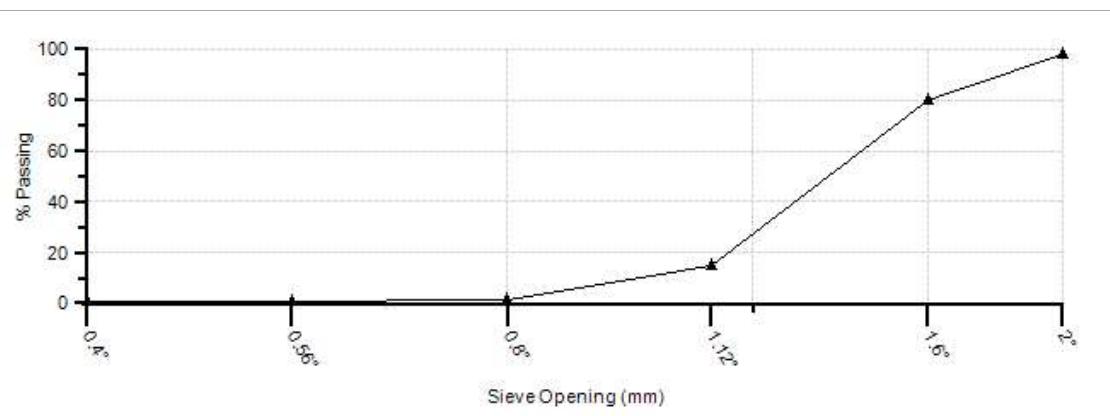
Location 504

Gradation Results

Date Completed 07/29/2022 10:14

Tested By Amy McGuigan

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		11699.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	205.00	205.00	1.8	1.8	98.2		≥100	Coarse
1.6" (40mm)	2115.00	2320.00	18.1	19.8	80.2		90-100	Coarse
1.12" (28mm)	7617.00	9937.00	65.1	84.9	15.1	30		
0.8" (20mm)	1631.00	11568.00	13.9	98.9	1.1			
0.56" (14mm)	50.00	11618.00	0.4	99.3	0.7			
0.4" (10mm)	15.00	11633.00	0.1	99.4	0.6			
Pan	66.00	11699.00	0.56	100.00	0.00			

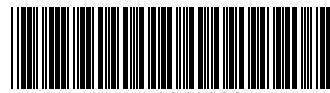


Tests: 1 D10(ES): 24.770 D15: 27.933 D30: 30.382 D50: 33.900 D60: 35.809 D85: 41.066 D90: 42.206 Cu: 1.446 Cc: 1.041

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1559362983

Sample Information

Sample No -1559362983

 Split Sample
Date Sampled 09/02/2022 06:36

 Resample
Sampled By Nick Sawchuk

Type Production

Method Auto Sampler

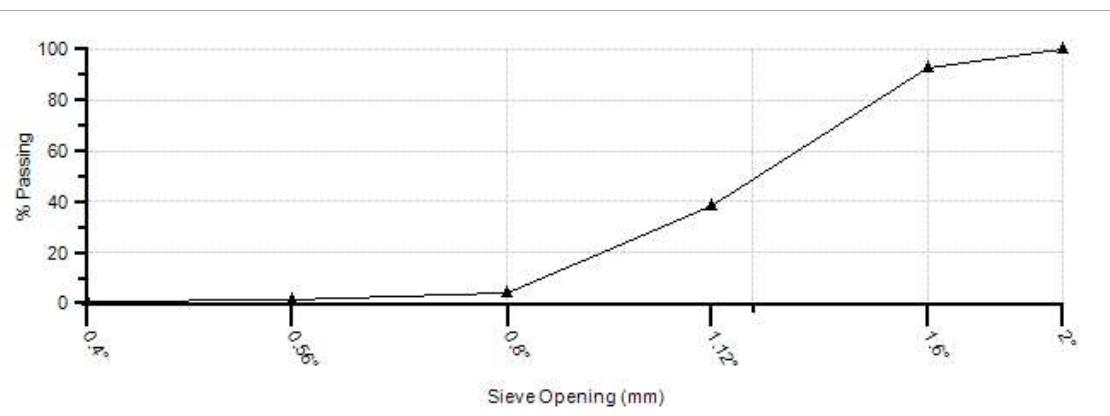
Location 504

Gradation Results

Date Completed 09/02/2022 06:36

Tested By Amy McGuigan

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		11098.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	832.00	832.00	7.5	7.5	92.5		90-100	
1.12" (28mm)	6013.00	6845.00	54.2	61.7	38.3	30		
0.8" (20mm)	3803.00	10648.00	34.3	95.9	4.1			
0.56" (14mm)	315.00	10963.00	2.8	98.8	1.2			
0.4" (10mm)	42.00	11005.00	0.4	99.2	0.8			
Pan	93.00	11098.00	0.84	100.00	0.00			



Tests: 1 D10(ES): 21.195 D15: 22.264 D30: 25.804 D50: 30.241 D60: 32.298 D85: 38.074 D90: 39.347 Cu: 1.524 Cc: 0.973

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1504609044

Sample Information

Sample No -1504609044

 Split Sample
Date Sampled 03/08/2023 08:55

 Resample
Sampled By Jackson Connolly

Type Production

Method Belt-Stream

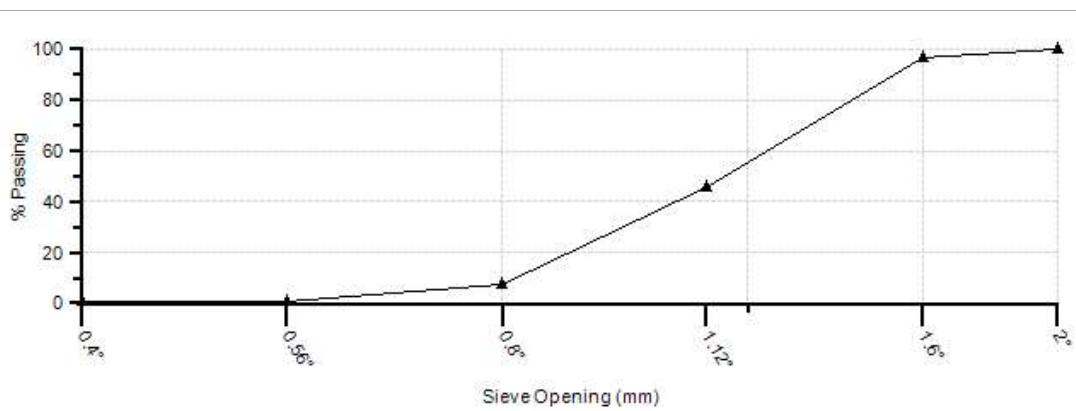
Location 504

Gradation Results

Date Completed 03/08/2023 08:55

Tested By Jackson Connolly

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		10672.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	382.00	382.00	3.6	3.6	96.4		90-100	
1.12" (28mm)	5405.00	5787.00	50.6	54.2	45.8	30		
0.8" (20mm)	4125.00	9912.00	38.7	92.9	7.1			
0.56" (14mm)	684.00	10596.00	6.4	99.3	0.7			
0.4" (10mm)	29.00	10625.00	0.3	99.6	0.4			
Pan	47.00	10672.00	0.44	100.00	0.00			



Tests: 1 D10(ES): 20.511 D15: 21.422 D30: 24.406 D50: 28.841 D60: 30.948 D85: 36.911 D90: 38.236 Cu: 1.509 Cc: 0.938

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1946688564

Sample Information

Sample No -1946688564

 Split Sample
Date Sampled 03/10/2023 10:18

 Resample
Sampled By Nick Sawchuk

Type Production

Method Auto Sampler

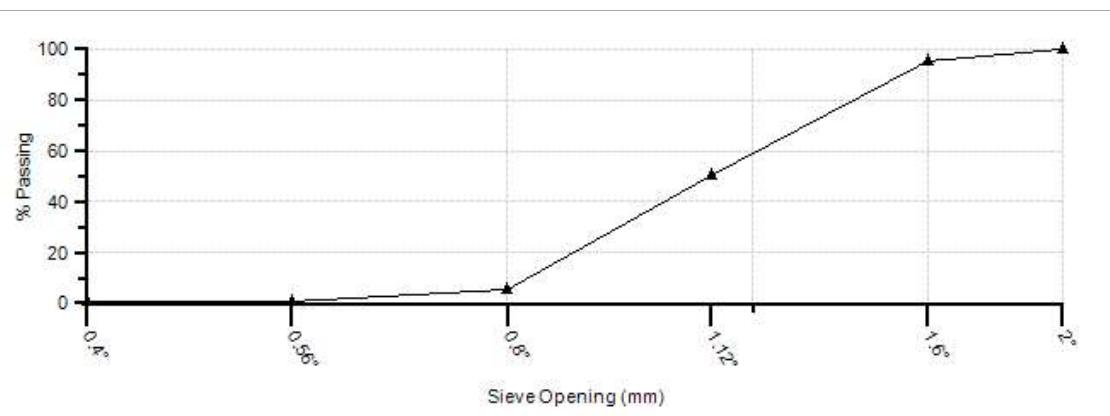
Location 504

Gradation Results

Date Completed 03/10/2023 10:18

Tested By Nick Sawchuk

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
	12479.00							
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	584.00	584.00	4.7	4.7	95.3		90-100	
1.12" (28mm)	5623.00	6207.00	45.1	49.7	50.3	30		
0.8" (20mm)	5600.00	11807.00	44.9	94.6	5.4			
0.56" (14mm)	590.00	12397.00	4.7	99.3	0.7			
0.4" (10mm)	14.00	12411.00	0.1	99.5	0.5			
Pan	68.00	12479.00	0.54	100.00	0.00			



Tests: 1 D10(ES): 20.701 D15: 21.492 D30: 24.049 D50: 27.937 D60: 30.238 D85: 36.864 D90: 38.354 Cu: 1.461 Cc: 0.924

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1917845219

Sample Information

Sample No -1917845219

 Split Sample
Date Sampled 03/12/2023 09:28

 Resample
Sampled By Jackson Connolly

Type Production

Method Belt-Stream

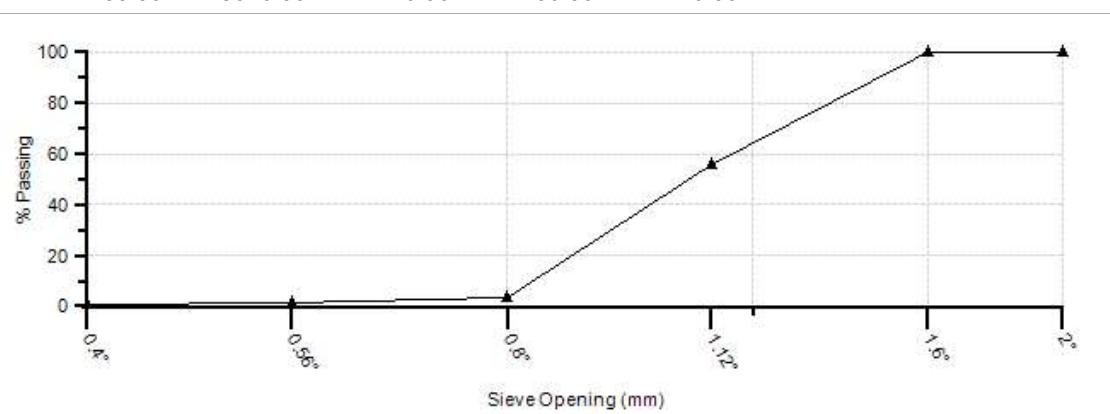
Location 504

Gradation Results

Date Completed 03/12/2023 09:28

Tested By Jackson Connolly

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
g		8646.00				
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	
2" (50mm)	0.00	0.00	0.0	0.0	100.0	≥100
1.6" (40mm)	0.00	0.00	0.0	0.0	100.0	90-100
1.12" (28mm)	3823.00	3823.00	44.2	44.2	55.8	30
0.8" (20mm)	4556.00	8379.00	52.7	96.9	3.1	
0.56" (14mm)	176.00	8555.00	2.0	98.9	1.1	
0.4" (10mm)	8.00	8563.00	0.1	99.0	1.0	
Pan	83.00	8646.00	0.96	100.00	0.00	



Tests: 1 D10(ES): 20.901 D15: 21.579 D30: 23.748 D50: 26.982 D60: 28.761 D85: 33.738 D90: 34.833 Cu: 1.376 Cc: 0.938

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021



-1899084494

Sample Information

Sample No -1899084494

Split Sample

Date Sampled 03/18/2023 08:20

Resample

Sampled By Jackson Connolly

Type Investigative

Method Belt-Stream

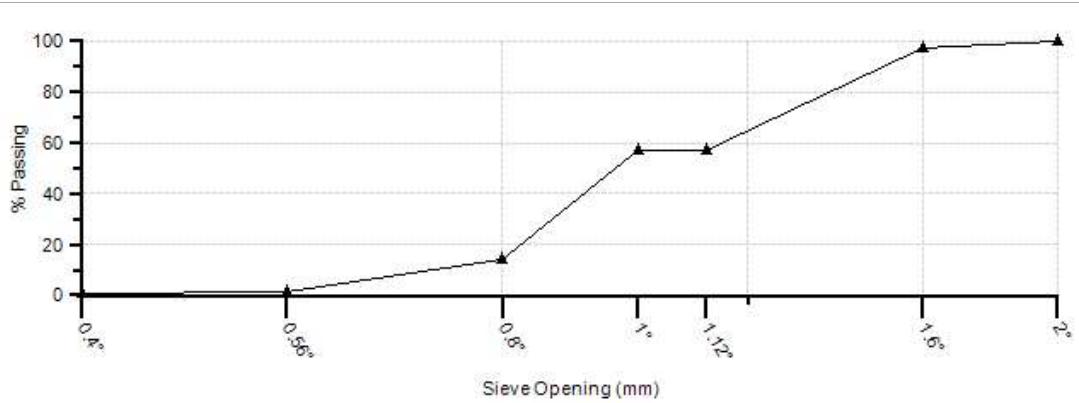
Location 504

Gradation Results

Date Completed 03/18/2023 08:20

Tested By Jackson Connolly

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		10500.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	307.00	307.00	2.9	2.9	97.1		90-100	
1.12" (28mm)	4190.00	4497.00	39.9	42.8	57.2	30		
1" (25mm)	0.00	4497.00	0.0	42.8	57.2			
0.8" (20mm)	4508.00	9005.00	42.9	85.8	14.2			
0.56" (14mm)	1331.00	10336.00	12.7	98.4	1.6			
0.4" (10mm)	80.00	10416.00	0.8	99.2	0.8			
Pan	84.00	10500.00	0.80	100.00	0.00			



Tests: 1 D10(ES): 17.758 D15: 20.126 D30: 22.632 D50: 26.466 D60: 28.710 D85: 35.899 D90: 37.540 Cu: 1.617 Cc: 1.005

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021



-1549323023

Sample Information

Sample No -1549323023

Split Sample

Date Sampled 03/30/2023 08:52

Resample

Sampled By Jackson Connolly

Type Investigative

Method Belt-Stream

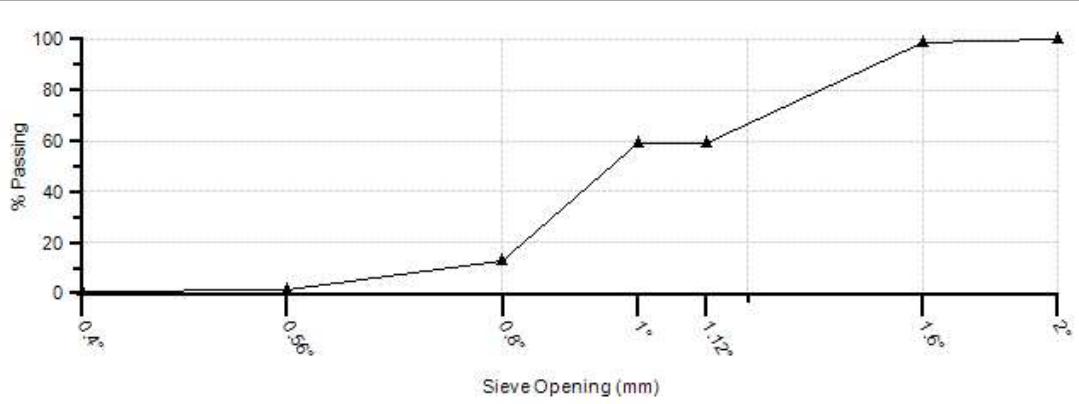
Location 504

Gradation Results

Date Completed 03/30/2023 08:52

Tested By Jackson Connolly

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		10440.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	126.00	126.00	1.2	1.2	98.8		90-100	
1.12" (28mm)	4172.00	4298.00	40.0	41.2	58.8	30		
1" (25mm)	0.00	4298.00	0.0	41.2	58.8			
0.8" (20mm)	4789.00	9087.00	45.9	87.0	13.0			
0.56" (14mm)	1185.00	10272.00	11.4	98.4	1.6			
0.4" (10mm)	71.00	10343.00	0.7	99.1	0.9			
Pan	97.00	10440.00	0.93	100.00	0.00			

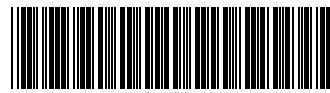


Tests: 1 D10(ES): 18.208 D15: 20.296 D30: 22.661 D50: 26.247 D60: 28.301 D85: 35.369 D90: 36.981 Cu: 1.554 Cc: 0.996

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.504-40mm Clear Stone

Specification 40mm Clear Crush Production 2021


-1504605051

Sample Information

Sample No -1504605051

 Split Sample

Date Sampled 04/23/2023 09:33

 Resample

Sampled By Nick Sawchuk

Type Production

Method Belt-Stream

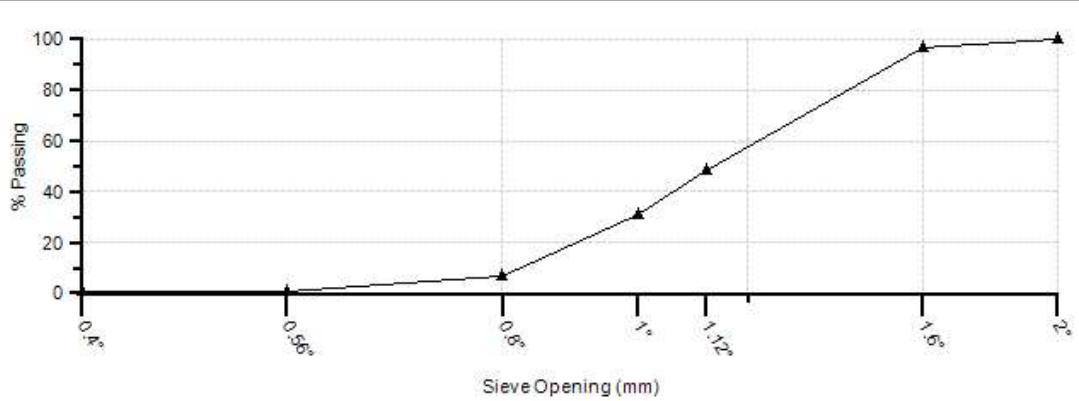
Location 504

Gradation Results

Date Completed 04/23/2023 09:33

Tested By Nick Sawchuk

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
		10270.00						
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
2" (50mm)	0.00	0.00	0.0	0.0	100.0		≥100	
1.6" (40mm)	365.00	365.00	3.6	3.6	96.4		90-100	
1.12" (28mm)	4925.00	5290.00	48.0	51.5	48.5	30		
1" (25mm)	1786.00	7076.00	17.4	68.9	31.1			
0.8" (20mm)	2541.00	9617.00	24.7	93.6	6.4			
0.56" (14mm)	551.00	10168.00	5.4	99.0	1.0			
0.4" (10mm)	31.00	10199.00	0.3	99.3	0.7			
Pan	71.00	10270.00	0.69	100.00	0.00			



Tests: 1 D10(ES): 20.661 D15: 21.616 D30: 24.753 D50: 28.314 D60: 30.503 D85: 36.745 D90: 38.138 Cu: 1.476 Cc: 0.972

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.610-Concrete Sand

Specification PRD.610 - Process Targets


-1768959399

Sample Information

Sample No -1768959399

 Split Sample
Date Sampled 05/27/2024 07:01

 Resample
Sampled By Joshua Croteau

Type Production

Method Bucket-Blend

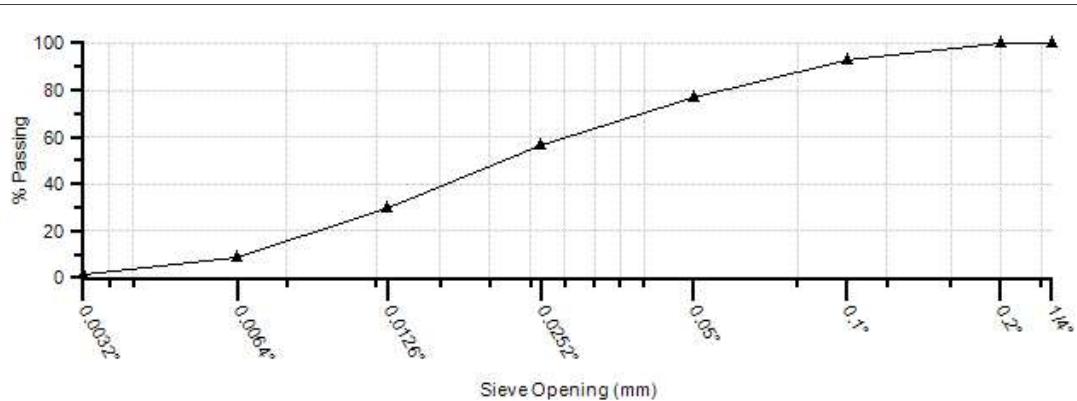
Location Gate 25

Gradation Results

Date Completed 05/27/2024 07:01

Tested By Joshua Croteau

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
	g					
	656.10	547.80		19.8		
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	
1/4" (6.3mm)	0.00	0.00	0.0	0.0	100.0	
0.2" (5mm)	0.20	0.20	0.0	0.0	100.0	
0.1" (2.5mm)	39.80	40.00	7.3	7.3	92.7	
0.05" (1.25mm)	86.10	126.10	15.7	23.0	77.0	
0.0252" (.63mm)	110.50	236.60	20.2	43.2	56.8	57
0.0126" (.315mm)	146.70	383.30	26.8	70.0	30.0	51-61
0.0064" (.16mm)	118.40	501.70	21.6	91.6	8.4	3-9
0.0032" (80µm)	37.30	539.00	6.8	98.4	1.6	1
Pan	9.10	548.10	1.61	100.00	0.00	≤1.7



Tests: 1 D10(ES): 0.168 D15: 0.197 D30: 0.315 D50: 0.528 D60: 0.702 D85: 1.780 D90: 2.219 Cu: 4.174 Cc: 0.840

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.609-Washed Fill

Specification PRD.609 - Process Targets


-1768955886

Sample Information

Sample No -1768955886

 Split Sample
Date Sampled 05/27/2024 07:01

 Resample
Sampled By Joshua Croteau

Type Production

Method Bucket-Blend

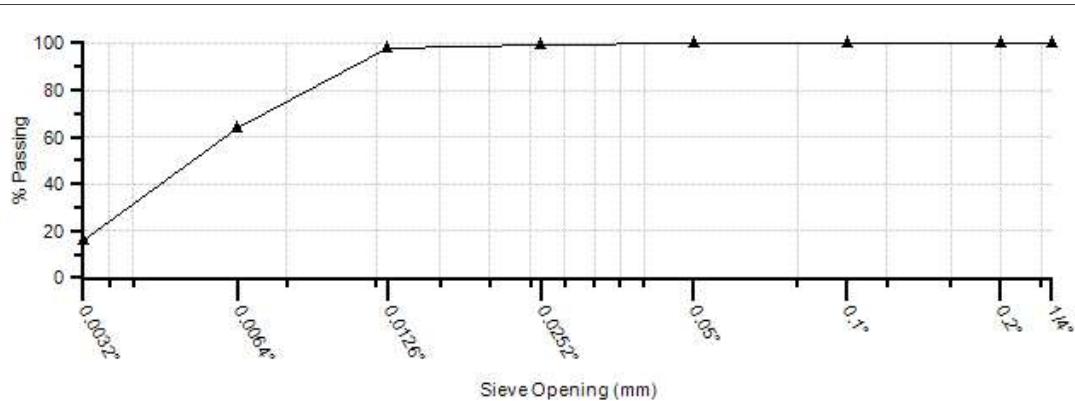
Location 609

Gradation Results

Date Completed 05/27/2024 07:01

Tested By Joshua Croteau

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
	g					
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target
1/4" (6.3mm)	0.00	0.00	0.0	0.0	100.0	
0.2" (5mm)	0.00	0.00	0.0	0.0	100.0	
0.1" (2.5mm)	0.20	0.20	0.0	0.0	100.0	
0.05" (1.25mm)	0.60	0.80	0.1	0.2	99.8	
0.0252" (.63mm)	1.00	1.80	0.2	0.4	99.6	≥95
0.0126" (.315mm)	6.00	7.80	1.4	1.9	98.1	
0.0064" (.16mm)	143.50	151.30	34.4	36.3	63.7	
0.0032" (80µm)	199.90	351.20	47.9	84.2	15.8	≤7
Pan	66.70	417.90	15.84	100.00	0.00	



Tests: 1 D10(ES): 0.202 D15: 0.091 D30: 0.098 D50: 0.131 D60: 0.152 D85: 0.243 D90: 0.269 Cu: 0.750 Cc: 0.315

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.608-Coarse Sand

Specification PRD.608 - Process Targets



-1713012337

Sample Information

Sample No -1713012337

Split Sample

Date Sampled 05/27/2024 07:01

Resample

Sampled By Joshua Croteau

Type Production

Method Bucket-Blend

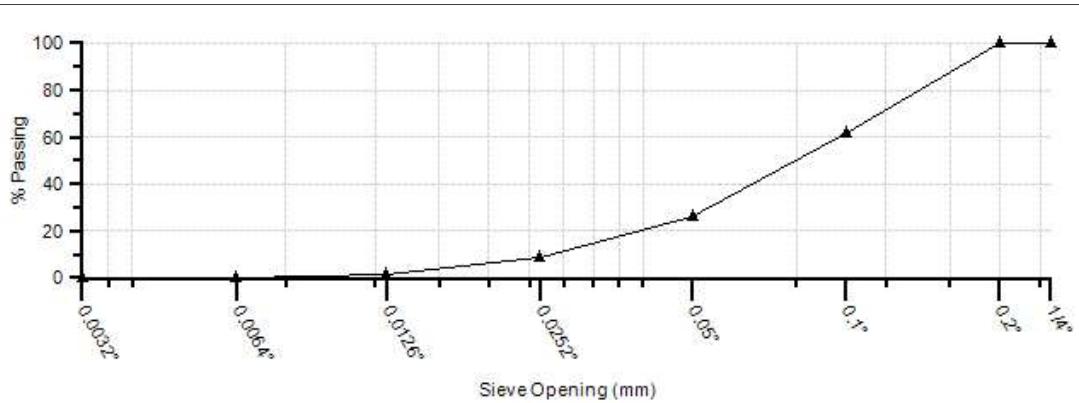
Location 608

Gradation Results

Date Completed 05/27/2024 07:01

Tested By Joshua Croteau

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
	521.20	479.40		8.7				
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
1/4" (6.3mm)	0.00	0.00	0.0	0.0	100.0			
0.2" (5mm)	1.20	1.20	0.3	0.3	99.7			
0.1" (2.5mm)	181.60	182.80	37.9	38.1	61.9			
0.05" (1.25mm)	171.90	354.70	35.9	74.0	26.0			
0.0252" (. 63mm)	82.50	437.20	17.2	91.2	8.8	12-21		OT
0.0126" (. 315mm)	33.70	470.90	7.0	98.2	1.8			
0.0064" (. 16mm)	7.00	477.90	1.5	99.7	0.3			
0.0032" (80µm)	1.40	479.30	0.3	100.0	0.0	≤1.5		
Pan	0.50	479.80	0.02	100.00	0.00			

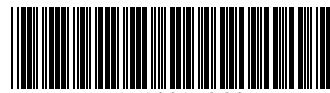


Tests: 1 D10(ES): 0.661 D15: 0.806 D30: 1.350 D50: 1.987 D60: 2.410 D85: 3.819 D90: 4.185 Cu: 3.647 Cc: 1.145

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.607-Birdseye

Specification PRD.607 - Process Targets


-1713014966

Sample Information

Sample No -1713014966

 Split Sample
Date Sampled 05/27/2024 11:03

 Resample
Sampled By Joshua Croteau

Type Production

Method Belt-Stream

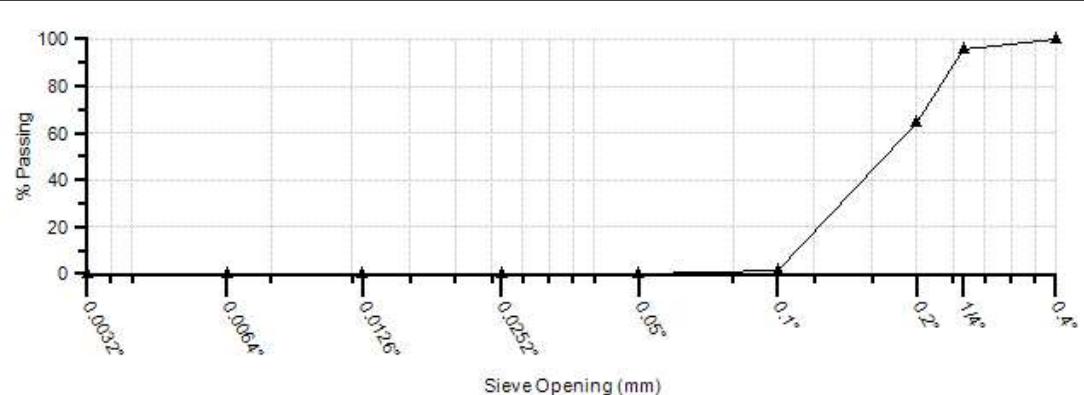
Location 607

Gradation Results

Date Completed 05/27/2024 11:03

Tested By Joshua Croteau

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure		
0.4" (10mm)	0.00	0.00	0.0	0.0	100.0			
1/4" (6.3mm)	28.20	28.20	4.7	4.7	95.3			
0.2" (5mm)	183.80	212.00	30.8	35.5	64.5			
0.1" (2.5mm)	373.80	585.80	62.7	98.2	1.8			
0.05" (1.25mm)	9.10	594.90	1.5	99.7	0.3	0-4	0-6	
0.0252" (. 63mm)	0.90	595.80	0.2	99.9	0.1			
0.0126" (. 315mm)	0.30	596.10	0.1	99.9	0.1			
0.0064" (. 16mm)	0.20	596.30	0.0	99.9	0.1			
0.0032" (80μm)	0.30	596.60	0.1	100.0	0.0			
Pan	0.90	597.50	0.00	100.00	0.00			



Tests: 1 D10(ES): 2.737 D15: 2.893 D30: 3.415 D50: 4.259 D60: 4.757 D85: 5.831 D90: 6.054 Cu: 1.738 Cc: 0.895

Gradation Test With Sieve Chart Report

Plant 001-Sechelt Mine

Product PRD.506-20mm Stone

Specification


-1660997147

Sample Information

Sample No -1660997147

 Split Sample
Date Sampled 05/27/2024 11:03

 Resample
Sampled By Joshua Croteau

Type Production

Method Belt-Stream

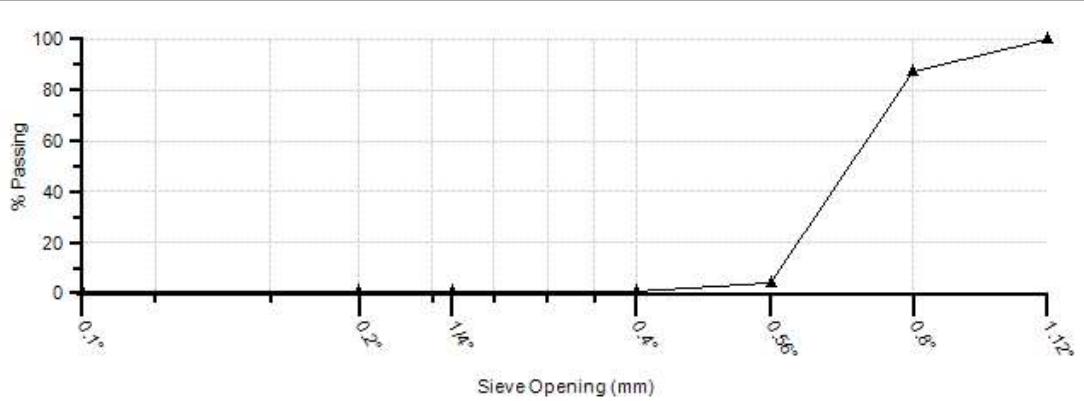
Location 506

Gradation Results

Date Completed 05/27/2024 11:03

Tested By Joshua Croteau

Unit g	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
		7206.00				
Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target
1.12" (28mm)	0.00	0.00	0.0	0.0	100.0	
0.8" (20mm)	913.00	913.00	12.7	12.7	87.3	
0.56" (14mm)	6026.00	6939.00	83.6	96.3	3.7	
0.4" (10mm)	208.00	7147.00	2.9	99.2	0.8	
1/4" (6.3mm)	16.00	7163.00	0.2	99.4	0.6	
0.2" (5mm)	5.00	7168.00	0.1	99.5	0.5	
0.1" (2.5mm)	9.00	7177.00	0.1	99.6	0.4	
Pan	29.00	7206.00	0.40	100.00	0.00	



Tests: 1 D10(ES): 14.381 D15: 14.691 D30: 15.662 D50: 17.058 D60: 17.801 D85: 19.805 D90: 20.232 Cu: 1.238 Cc: 0.958