



North Pender Island Board of Variance Meeting Agenda

Date: January 19, 2022

Time: 9:00 a.m.

Location: Electronic Meeting

- 1. CALL TO ORDER**
- 2. APPROVAL OF AGENDA**
- 3. MINUTES**
 - 3.1 August 19, 2021 (attached)**
- 4. UPDATE FROM SECRETARY**
- 5. APPLICATIONS**
 - 5.1 NP-BOV-2021.2 (Grant) - Staff Report (attached)**
- 6. ADJOURNMENT**



DRAFT

North Pender Island Board of Variance Minutes of a Hearing

Date: August 19, 2021
Location: Electronic Meeting (Zoom Webinar)

Members Present: Andrew MacLean, BOV Member
Michael Symons, BOV Member
Priscilla Zimmerman, BOV Member

Staff Present: Phil Testemale, Planner 2 – Secretary to the NPI Board of Variance
Carly Bilney, Recorder
Dionne LoForte, Planning Assistant (Host)

Applicant Representatives: Heath Lansdowne (Heath Lansdowne Design Studio)

Members of the Public: There were three members of the public present.

1. CALL TO ORDER

Planner Testemale called the meeting to order at 9:00 a.m. and acknowledged that the meeting was taking place on the traditional territories of the Coast Salish Peoples.

2. APPROVAL OF AGENDA

By general consensus the agenda was approved as presented.

3. SELECTION OF BOARD VARIANCE CHAIR

Planner Testemale asked for nominees for the position of chair. Member Symons nominated Member Zimmerman and the nomination was accepted. No further nominations were made.

NP BOV-2021-001

It was Moved and Seconded

That the North Pender Island Board of Variance appoint Member Zimmerman as the Board of Variance Chair.

CARRIED

4. MINUTES

4.1 June 19, 2019

By general consent the Board of Variance meeting minutes of June 19, 2019 were adopted as presented.

5. APPLICATIONS

5.1 NP-BOV-2021.1 (Lansdowne) – Staff Report

Planner Testemale provided a summary of the Staff Report related to NP-BOV-2021.1 (Lansdowne).

Chair Zimmerman invited questions from the Board and the following comments were made:

- The Board of Variance (BOV) must assess whether the applicant can alter or add to a nonconforming structure;
- If the BOV chooses to grant the exemption, it would be approving the exact alterations to the structure that have been laid out in the application;
- The plans are based on legal surveys;
- It appears that the applicant is continuing the existing use of the dwelling by removing a failing deck and replacing it with a newer one;
- An undue hardship must be demonstrated and it is hard to determine whether there is an applicable hardship in the context of this bylaw;
- The existence of Section 540 (c) of the Local Government Act (LGA) presents the hardship in this instance;
- The existence of a law presenting a hardship in and of itself is nonsensical;
- There is no concrete definition of “hardship” and it is up to the BOV to determine the definition; and
- The proposed project is sustainable and reasonable.

Chair Zimmerman summarized the following *Local Government Act* requirements by stating:

Section 542 establishes that the board of variance may order an exemption to the prohibition if the board of variance:

- a) has heard from the applicant and any person notified under section 541,*
- b) finds that undue hardship would be caused to the applicant if the bylaw or section 531 (1) is complied with, and*
- c) is of the opinion that the variance or exemption does not do any of the following:*
 - *result in inappropriate development of the site;*
 - *adversely affect the natural environment;*
 - *substantially affect the use and enjoyment of adjacent land;*
 - *vary permitted uses and densities under the applicable bylaw;*
 - *defeat the intent of the bylaw.*

NP-BOV-2021-002

It was moved and seconded,

That, having considered the matters set out in s.542(1)(c) of the *Local Government Act*, and having found that undue hardship would be caused to the applicant if s.531 (1) of the *Local Government Act* is complied with, the North Pender Island Board of Variance approve application NP-BOV-2021.1 (Lansdowne) as presented and shown on Schedules A, B and C of the NP-BOV-2021.1 Notice of Hearing.

CARRIED

Member Symons OPPOSED

6. ADJOURNMENT

By general consent the meeting was adjourned at 10:00 a.m.

Recorder

Date

DATE OF MEETING: January 19, 2022

TO: North Pender Island Board of Variance

FROM: Phil Testemale, Planner 2
Southern Team

SUBJECT: Board of Variance Application
Applicant: Chelsea Grant
Location: 2603 Galleon Road

REPORT SUMMARY

The purpose of the report is for an appeal to the Board of Variance to vary the North Pender Island Land Use Bylaw No. 103, 1996 (LUB) for the setback to the natural boundary of the sea for the replacement of an existing shoreline protection structure on the subject property.

The variances are to **Section 3.7 'Siting'** in the **'General Regulations'** of the LUB as shown on the attached Schedule 'A' of the Notice (Attachment 7), and specifically as follows:

1. Subsection 3.7.1 which states that no building or structure may be sited, nor fill placed to support a building or structure, within 15 metres upland of the natural boundary of the sea is varied to permit a **Structure (Shoreline Stabilization)** within 0.0 metres (0.0 ft.) of the natural boundary of the sea.

This application is being made under Section 540 (a) (i) of the *Local Government Act* for a variance to a bylaw respecting the siting, size or dimensions of a building or other structure.

APPLICANT'S RATIONALE

- To permit the necessary replacement of the existing shoreline stabilization structure and restore the natural ecology of the shoreline environment.
- The new structure will: limit the erosion of the foreshore slope of the property; protect the foundation of the existing dwelling; and, protect portions of the seawall on the neighbouring property to the south from potential deterioration.
- The removal and rehabilitation work will restore and enhance the ecology of the shoreline environment.

BACKGROUND

The application is being made as the owners are undertaking a small addition and other internal upgrades to the existing dwelling. Replacing the shoreline protection will ensure that the foundation is sufficiently protected from ocean influences. The existing protection structure has deteriorated and is currently providing minimal protection to the foreshore slope and putting the foundations of the dwelling at risk. Additionally, the lack of protection on

the subject property could potentially impact the existing shoreline protection structure on the property to the south.

A letter from the applicant submitted with the application provides a summary, a case for hardship, and outlines the project's design strategy (Attachment 3). The design is based on a partnership between Swell Environmental Consulting and Ryzuk Geotechnical Engineers and incorporates a 'Green Shores' approach to shoreline protection. The goal of this approach is to balance the protection of the property and buildings from current and future impacts of shoreline erosion due to rising sea levels, increased storm surges, wave action and sea spray in balance with a 'soft' shores approach that integrates natural structures, elements and plantings with an overall ecological rehabilitation strategy.

Referencing Figure 2, the project is divided into two (2) sections: Section A (southern in proximity to the dwelling) incorporates a more 'robust' use of stacked boulders that is pulled back closer to the dwelling to allow for soft shore planting and habitat creation on the ocean-side; and, Section B (northern portion) employs a soft shore, planted approach. No permanent structures or land alteration will occur below the NBS.

Two (2) professional reports were submitted as part of the application: a geotechnical report "Existing Foreshore Slope/Seawall Assessment and Recommendations, 2603 Galleon Way - Pender Island, BC" (Ryzuk Geotechnical, November 10, 2021 (Rev) – 'Geotechnical Report') is Attachment 5; and, an environmental review "2603 Galleon Way, Pender Island – Environmental Review - Board of Variance Application: Proposed Shoreline Stabilization and Restoration Planting Plan" (Swell Environmental Consulting, November 11, 2021 – 'Environmental Assessment') is Attachment 6. Both are discussed further under 'Issues and Opportunities' (below).

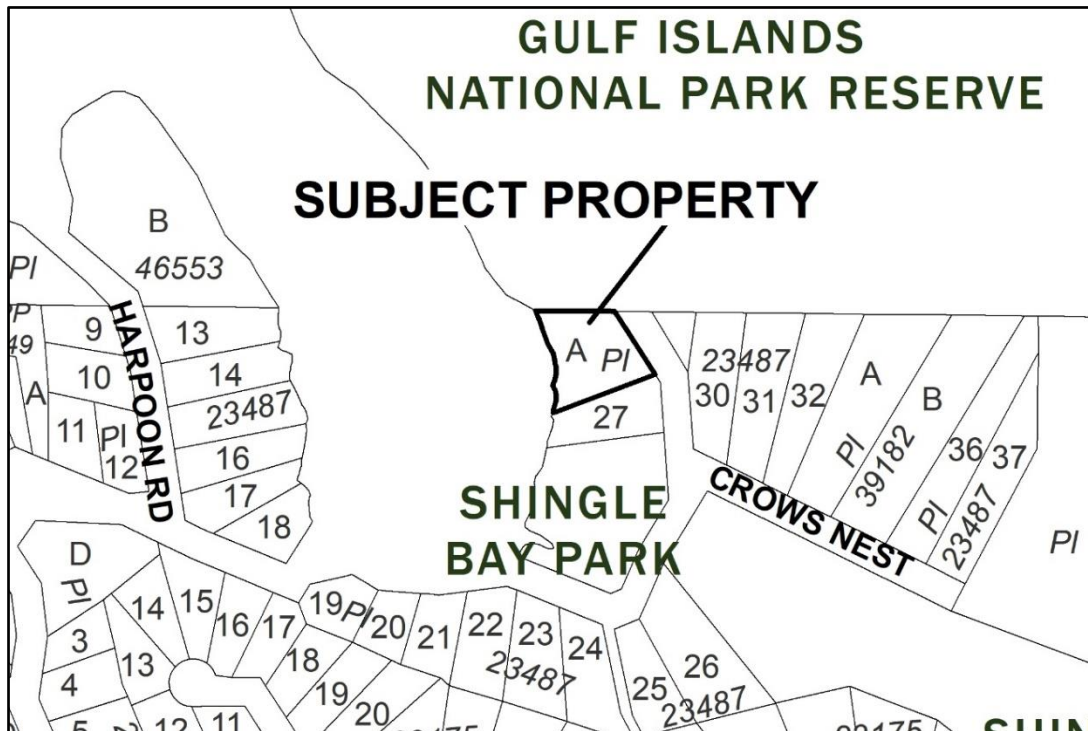
The property is located at 2603 Galleon Way on North Pender Island and is a 0.28 ha (2,900 square meter), ocean-facing property that borders on Shingle Bay. The 150 m² (1,570 ft²) dwelling was built in the mid-1970s and is sited within 8 to 10 metres of the Present Natural Boundary of the Sea (NBS). The dwelling and deck have legal, non-conforming status for siting, as the setback requirement to the NBS at the time of construction was only 7.6 metres. There is also an accessory garage on the property, and a dock in the northwest corner (Attachment 2.1 and 2.7). The western property boundary (the shoreline of Shingle Bay) is delineated by the existing, non-continuous vertical timber pile seawall which establishes the current Natural Boundary of the Sea (NBS). That was constructed by previous property owners with an unknown date of construction.

If the appeal for variance is not granted by the Board of Variance, the applicants could make a subsequent Development Variance Permit application for consideration by the North Pender Island Local Trust Committee (LTC). Other than a variance, the alternatives available to the owners are the status quo; repair the existing shoreline structure (in its current location) or undertake a 'retreat strategy' involving moving the dwelling in part or whole back from the NBS. The latter strategies have been assessed by the applicant and owners as ineffective and/or cost prohibitive.

The notice mailed to all adjacent neighbours and the applicant is Attachment 7.

Staff visited the property on October 15, 2021 (Attachment 2.7).

Figure 1 – Subject Property



ANALYSIS

Official Community Plan:

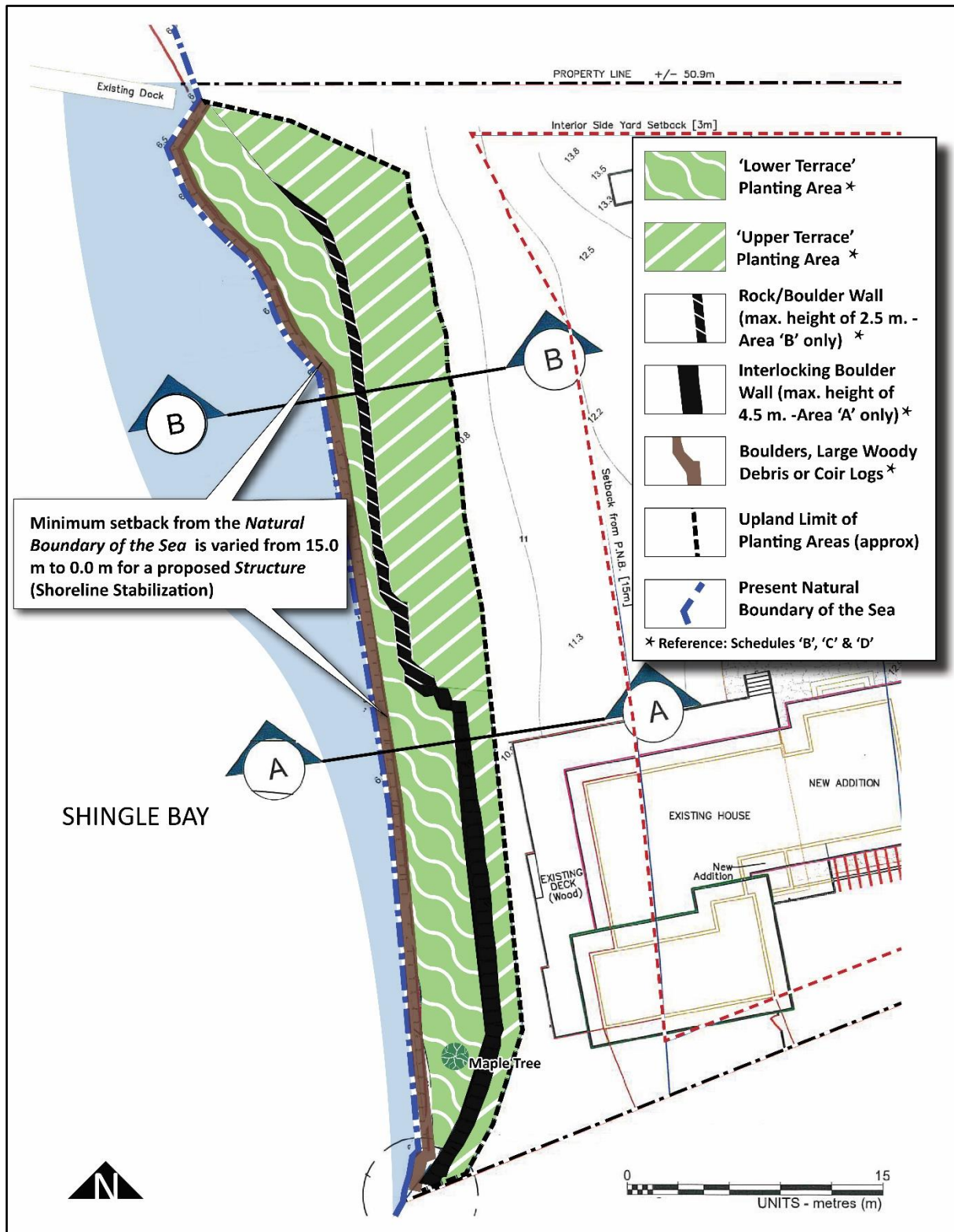
The property is designated as **RR (Rural Residential)** in the North Pender Island Official Community Plan No. 171, 2007 (OCP).

Development Permit Area 2 – Intertidal Ecosystems designated on the water area adjacent (seaward) of the property (see Attachment 2.2). There is no requirement to obtain Development Permit with this proposal (see 'Environmental Assessment' - below).

Land Use Bylaw

The property is zoned **Rural Residential (RR)** in the North Pender Island Land Use Bylaw No. 103, 1996. The zone permits the residential uses on the property.

Figure 2 – Site Plan with Detail



Issues and Opportunities

Geotechnical Report

The Geotechnical Report by Ryzuk assesses: the geological conditions on the property; the condition and efficacy of the existing timber seawall; foreshore erosion; risks to the dwelling from ocean influences; and, the potential deterioration of the stack style foreshore structure on the neighbouring property to the south from the failing protection structure on the subject property. The report recommends “that a new foreshore revetment structure be constructed as soon as feasibly possible to stabilize the foreshore soils supporting the residence.” (p. 2) The recommendations for replacement and deconstruction/construction staging of the seawall are on page 3 and were made in consultation with Swell Environmental (next).

Environmental Assessment

The Environmental Assessment by Swell Environmental provides: observations of the ecological condition of the shoreline zone; potential impacts from proposed works; recommendations for environmental protection and monitoring during and following construction; and, a detailed ecological restoration plan. For the two sections (A and B) this includes details on proposed plantings by area, as well as landscape treatment (boulders, large woody debris and coir logs). Monitoring is to be provided by Swell Environmental in addition to them facilitating the requirement for submission to Fisheries and Oceans Canada of a Project Review, and a proposed application for Green Homes for Shores certification from the Stewardship Council of BC.

As above, although the works abut Development Permit Area 6 – Intertidal Ecosystem designated below the NBS, there will be no land alteration or permanent structures in that area, and therefore no requirement to obtain a Development Permit. Notwithstanding, the guidelines for that DPA were voluntarily used as the design principles and framework for the above management and monitoring recommendations in the Environmental Assessment.

It is noted that a Board of Variance order cannot place include any conditions, nor can the approval be made conditional.

The Environmental Assessment concludes that:

“...the shoreline stabilization design by Ryzuk Geotechnical will remedy the existing failing log shoreline stabilization structure and the eroding shoreline slope. The work is not expected to create detrimental environmental impacts, and no HADD (Harmful Alteration, Disruption or Destruction) of Fish Habitat is expected from the proposed construction, provided the environmental protection and site restoration measures outlined are implemented. The Green Shores shoreline stabilization and restoration planting plan will provide an improvement to the shoreline ecological condition by providing a corridor of native shoreline vegetation and salt marsh plantings, as well as provide a variety of habitat elements along the shore edge with rock, large woody debris and coir logs.” (p. 10)

Undue Hardship

The *Local Government Act* (LGA) establishes that a Board of Variance may order that a *minor* variance be permitted provided that the Board finds that *undue hardship* would be caused to the applicant if the variance is not granted (see ‘Legislative Context’ – below).

The applicant’s “Expression of Undue Hardship” that is part of Attachment 3 is as follows:

“As portions of the existing home are currently sited within the modern 15m foreshore setback, there are limited opportunities to properly stabilize the foreshore habitats and protect the existing structures. Leaving the existing timber seawall as is does not provide protection or stability in its current state and is not expected to be able to withstand greater pressures when factoring in rising sea levels and greater storm surges that are the anticipated effects of climate change. A loss of foundation support due to foreshore slope erosion is potentially imminent, and any appreciable erosion could lead to immediate property loss. The development of a more traditional “seawall” (rip rap, concrete, or otherwise) would require siting beyond the 15m setback, bisecting the existing house. Furthermore, more traditional, and “fortified” seawall designs are no longer considered to be environmentally appropriate strategies with regards to foreshore habitat and stewardship. Finally, the demolition and reconstruction of a new residence, sited beyond the 15m foreshore setback, places a significant and undue financial hardship on the current property owners, who seek to revitalize this modest and efficient home for family use.

A building permit has been approved for the addition located on the east side of the house, however the owners hesitate to proceed with plans for property improvements until a suitable strategy is developed and approved that allows for protection of the existing house. An improved and appropriate shoreline stabilization strategy, located within the 15m foreshore setback area, is therefore required before any improvements can be reasonably undertaken” (pp. 2-3)

The Intent of the Regulation being Varied

Section 542 (c) (v) of the LGA states that the Board may grant a minor variance if the Board is of the opinion that the variance does not defeat the intent of the bylaw. Although the Board must form its own opinion, the following assessment of the intent of the natural boundary setback regulation may assist:

- Protection of development from natural hazards, particularly with sea level rise and increased storm surges.
- Protection of the natural shoreline environment.
- Limiting the visual impact of development on adjacent properties and the public realm.
- Establishing a consistent development pattern within a local area.
- Protection of views, scenic areas and distinctive features contributing to the overall visual quality and scenic value of the Trust Area.
- Maintaining a rural character.
- Establishing certainty with respect to residential development by maintaining consistent siting regulations.

Potential Impacts of Granting the Variance

Granting a variance can potentially create an expectation in the community with regard to future applications. As variances consider the unique circumstances pertaining to a particular situation that may warrant the relaxation of a specific zoning regulation each application should be evaluated on its own merits.

Consultation

Notices were circulated to all adjacent properties (Attachment 7). In addition, copies have been posted on island bulletin boards and the Islands Trust website under North Pender Island.

At the time of writing one (1) letter of support has been provided from a neighbouring property to the south (Attachment 4).

First Nations

The Islands Trust reviews all applications to ensure the preservation and protection of cultural heritage, archaeological sites, and ancestral places. As reviewed, the application is consistent with respect to LTC Standing Resolutions on reconciliation. Based on mapping of archaeological potential, the applicant proactively contacted the provincial Archaeological Branch and received guidance on compliance and obligations under the *Heritage Act*. Notwithstanding, staff has also forwarded the Islands Trust Chance Find Protocol to the applicant.

Statutory Requirements

Legislative Context

Section 536 of the LGA stipulates that any local government that has adopted a zoning bylaw must establish a Board of Variance. Each LTC has a Board of Variance.

A person may apply to the Board of Variance for an order to vary certain zoning bylaw provisions where an applicant can adequately demonstrate, to the satisfaction of the Board, that compliance with the bylaw provisions would cause the applicant undue hardship.

It is up to the Board of Variance to determine what constitutes a minor variance and whether or not undue hardship has been proven.

This application is being made under Section 540 (a) (i) of the LGA where:

A person may apply to a board of variance for an order under Section 542 if the person alleges that compliance with any of the following would cause the person hardship:

(a) a bylaw respecting

(i) the siting, dimensions or size of a building or structure

Section 542 establishes that the board of variance may only order that a minor variance be permitted from the requirements of the bylaw, if the board of variance:

(a) has heard from the applicant and any person notified any person notified under section 541,

(b) finds that undue hardship would be caused to the applicant if the bylaw or 531 (1) is complied with, and

(c) is of the opinion that the variance or exemption does not do any of the following:

- i. result in inappropriate development of the site;*
- ii. adversely affect the natural environment;*
- iii. substantially affect the use and enjoyment of adjacent land;*
- iv. vary permitted uses and densities under the applicable bylaw;*
- v. defeat the intent of the bylaw;*
- vi. vary the application of an applicable bylaw in relation to residential rental tenure.*

Further, Section 542 (2) establishes that the board of variance must not make an order that would:

- (a) *be in conflict with a covenant registered under section 219 of the Land Title Act or section 24A of the Land Registry Act, R.S.B.C., c. 208;*
- (b) *deal with a matter that is covered in a land use permit or covered in a land use contract*
- (c) *to (e) deal with matters covered by a phased development agreement; a floodplain specification; or apply to a property with heritage protection applies.*

Staff is satisfied that all other requirements set out in LGA section 542 (1) and (2) have been met. Specifically:

- The statutory notification has been undertaken with one (1) letter of support.
- The proposed development would be of a minor nature as it is the replacement an existing structure that has been in place for a significant period of time with no increase to the encroachment.
- The natural environment would be: protected with construction management and monitoring; ecologically restored and enhanced with the use of Green Shores techniques; improved with the removal of a deteriorating structure; and further protected by the required DFO review process for fisheries habitat.
- The variance would not impact the use and enjoyment of neighbouring properties.
- The variance would not vary permitted uses or densities.
- The variance would not defeat the intent of the bylaw.
- The variance would not be in conflict with any covenants or permits.

Lastly, in considering the appeal, the Board should be satisfied that the requirements under LGA Section 542 (1) and (2) are met:

1. That the owner would experience a hardship if the appeal is not granted; and,
2. That the proposed variance is of a minor nature.

Submitted By:	Phil Testemale, Planner 2	January 12, 2022
Concurrence:	Robert Kojima, Regional Planning Manager	January 12, 2022

ATTACHMENTS

1. Site Context
2. Maps, Plans, Photographs
3. Applicant Summary Letter
4. Correspondence
5. Geotechnical Report (Ryzuk)
6. Environmental Assessment (Swell Environmental)
7. Notice

ATTACHMENT 1 – SITE CONTEXT

LOCATION

Legal Description	Lot A (See EX81156) Section 9, Pender Island, Cowichan District, Plan 23487
PID	026-329-514
Civic Address	2603 Galleon Way

LAND USE

Current Land Use	Rural Residential
Surrounding Land Use	National Park (North) and Rural Residential

HISTORICAL ACTIVITY

File No.	Purpose
NP-BP-2021.14	Addition to Dwelling

POLICY/REGULATORY

Official Community Plan Designations	The property is designated as RR (Rural Residential) in the North Pender Island Official Community Plan No. 171, 2007 (OCP). Development Permit Area 2 – Intertidal Ecosystems designated on adjacent foreshore and water area. (Attachment 2.2)
Land Use Bylaw	The property is zoned Rural Residential (RR) in the North Pender Island Land Use Bylaw No. 103, 1996. (Attachment 2.1)
Other Regulations	Review of proposal by DFO - see main report
Covenants	None
Bylaw Enforcement	N/A

SITE INFLUENCES

Islands Trust Fund	The proposal has no implications for the Island Trust Conservancy
Regional Conservation Strategy	The proposal has no implications for the Regional Conservation Strategy
Species at Risk	None on TAPIS Mapping
Sensitive Ecosystems	None on property (terrestrial – Attachment 2.3); Marine sensitive - Attachment 2.4
Hazard Areas	See Steep Slope Hazard and Contour Map Attachment 2.5
Archaeological Sites	Remote Access to Archaeological Data (RAAD) information indicates there are no archaeological sites noted on the property or within 100 metres. There are, however, areas of high archaeological potential in the area of proposed work. The applicant has contacted the Archaeology Branch and been provided with guidance on their obligations and procedures if archaeological material that is protected under the <i>Heritage Conservation Act</i> is encountered during development. The applicant has also been sent the Islands Trust Chance Find Protocol.

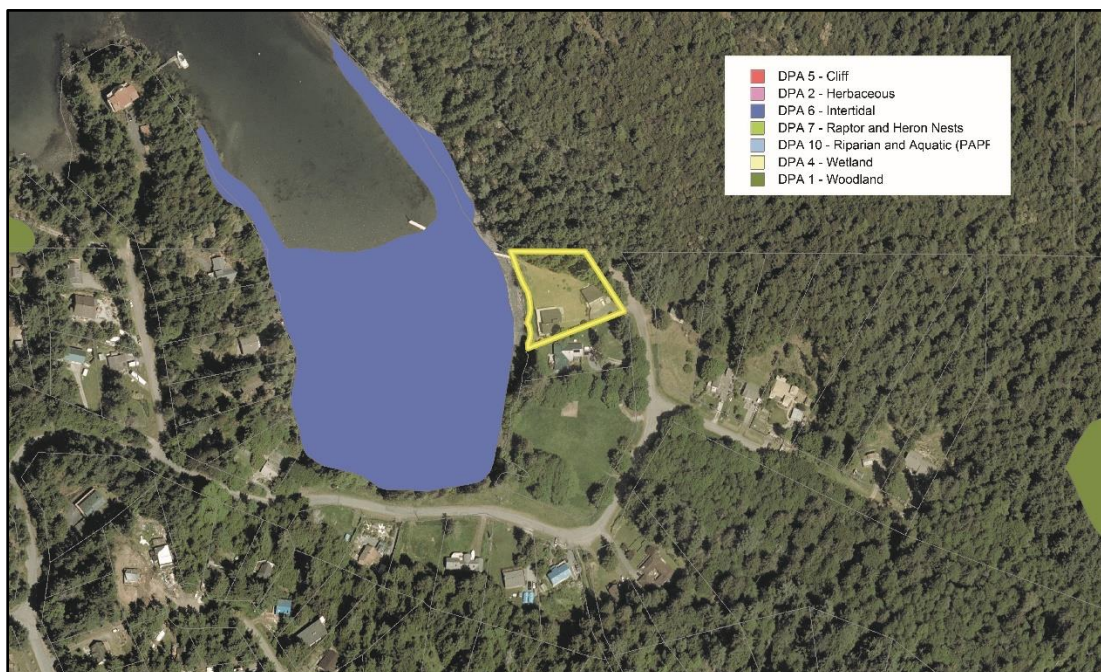
Climate Change Adaptation and Mitigation	The proposal will enhance and restore the shoreline's ecology with benefits to GHG emissions, and is intended to protect the property and structures from climate change induced impacts.
Shoreline Classification	Sediment Shoreline - Pebble/Sand
Shoreline Data in TAPIS	See Attachment 2.4

ATTACHMENT 2 – MAPS, PLANS, DRAWINGS, PHOTOGRAPHS

2.1 ORTHOPHOTO WITH ZONING



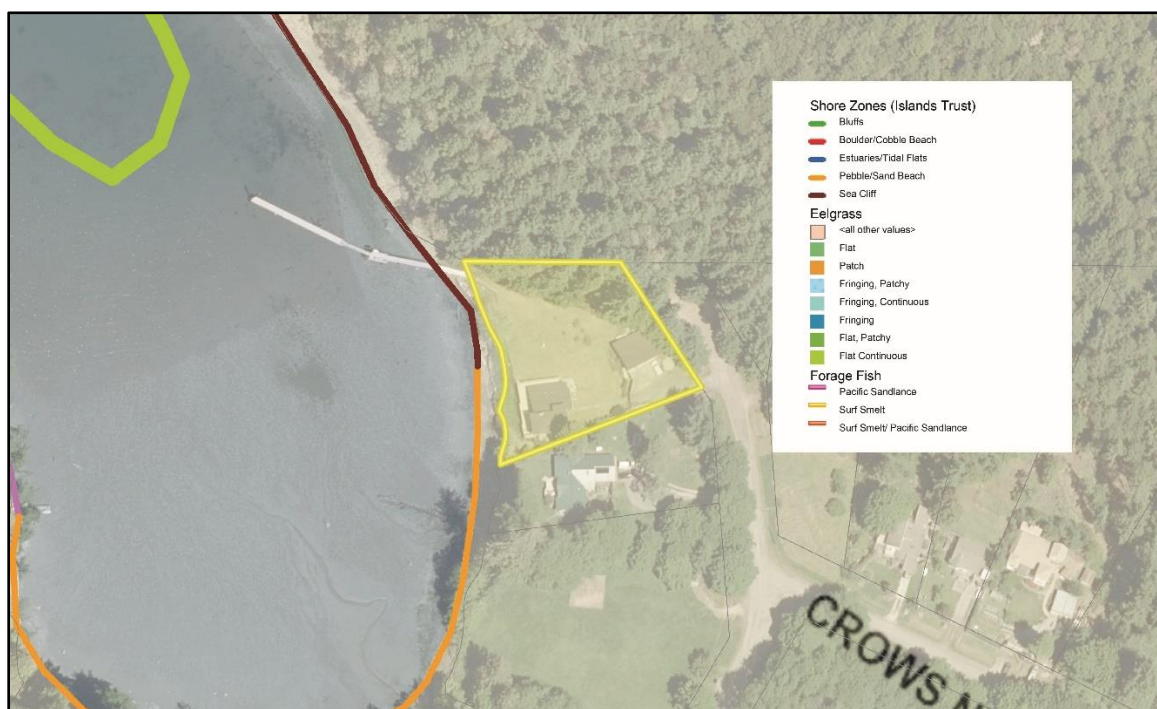
2.2 DPA



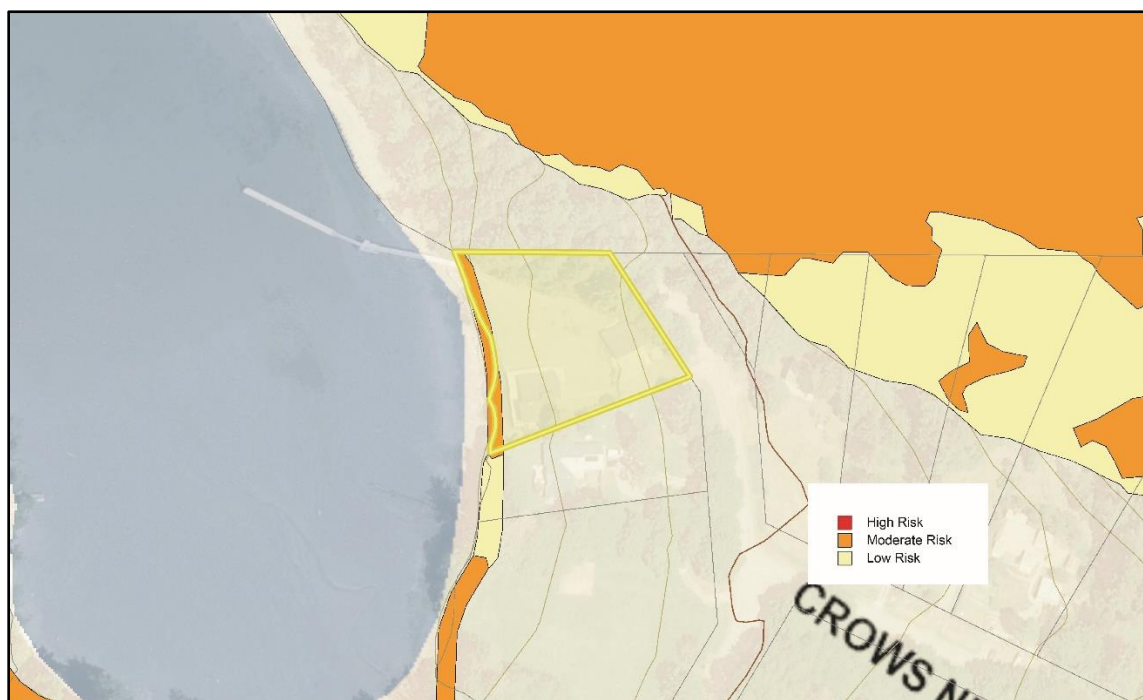
2.3 SENSITIVE ECOSYSTEM MAPPING (TERRESTRIAL)



2.4 MARINE SENSITIVE ECOSYSTEM AND SHORELINE TYPES



2.5 STEEP SLOPE MAPPING



2.6 PROTECTED AREAS



2.7 PHOTOGRAPHS

One: View of dwelling and existing shoreline protection from south



Two: View south of dwelling and nearshore



Three: View south of existing shoreline protection structure

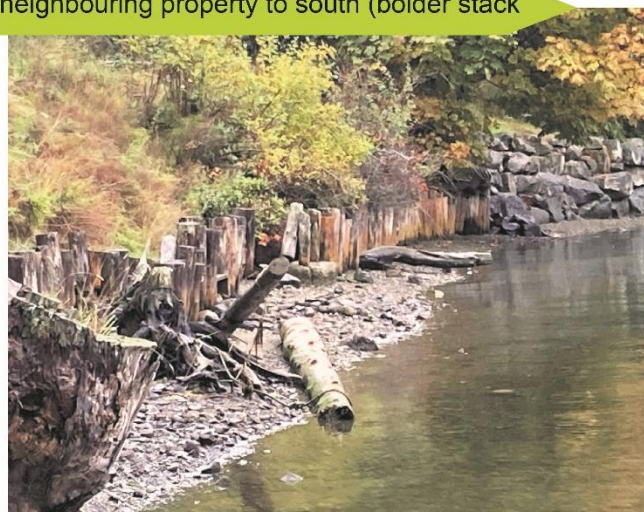


2.7 PHOTOGRAPHS (CONT'D)

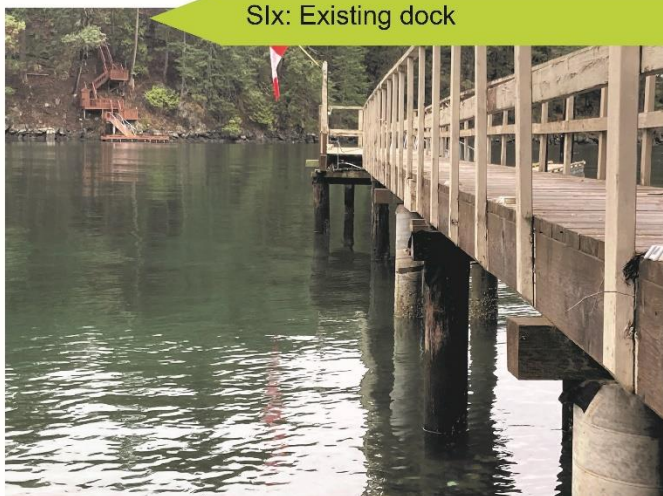
Four: Existing shoreline protection structure showing deterioration at base (typ.)



Five: View of existing protection and neighbouring property to south (bolder stack



Six: Existing dock



Phil Testemale
Planner 2 – Southern Team

Islands Trust
200-1627 Fort Street
Victoria BC, V8R 1H8
250-405-5170

ptestemale@islandstrust.bc.ca

November 10, 2021

Dear Mr. Testemale,

**Re: Board of Variance Application: Shoreline Stabilization + Rehabilitation,
2603 Galleon Way, North Pender Island**

We are pleased to be submitting our proposal for a new shoreline stabilization and rehabilitation design at the aforementioned property, for review and consideration by the Board of Variance members. This letter summarizes the project and site history, undue hardships that have informed our approach to the proposed design, and an overall summary of the values and guiding principles for sensitive, sustainable shoreline stabilization and rehabilitation. Further aggregate information, with respect to geotechnical and environmental systems and processes, has been included in reports from Swell Environmental Consulting and Ryzuk Geotechnical Engineers (included in this proposal).

Project Summary

The project site at 2603 Galleon Way on North Pender Island, is a 0.28 Hectare (2,900 square meter), ocean-facing property that borders on Shingle Bay, located south of Roe Lake and the Gulf Islands National Park Reserve.

The property includes an existing detached single family-use residence and existing garage accessory structure. The original house was built in the mid 1970s; archival building permit files acquired from the CRD are dated 1974, and include approval for both the house structure and its elevated deck/terrace. The existing two-storey residence has a building footprint of approximately 1,570 square feet (150 square meters). The north-west corner of the property includes an existing dock. The western property boundary (bordering on Shingle Bay) features an existing, non-continuous vertical timber pile seawall. This seawall was constructed by previous property owners (the year of construction is unconfirmed) and forms the line of the current Present Natural Boundary (PNB).

The original house and deck structures, aside from general maintenance, have not been updated since their original construction (some interior upgrades have been completed since original construction). The existing detached single-family home, albeit sited and constructed legally at the time of permit approval, is now non-conforming in its siting, with a portion of the western façade and deck structures located within the modern foreshore setback of 15m from the PNB. The house is located approximately 8-10 meters from the PNB, on an eroding slope that extends

to the vertical log seawall structure. Please refer to A101-Proposed Site Plan for more detailed siting information.

The current owners purchased the property in late 2020, with intentions to maintain the existing structures, upgrade windows and doors, and complete interior upgrades. A modest addition of 660 square feet (61.3 square meters) is proposed at the east side of the residence, located away from the boundary of the ocean. A hazardous materials assessment has also been completed, and necessary abatement will be undertaken as a portion of the scope of work. The proposed building use is not changing, and the proposal does not adjust the structure, or envelope boundaries of the home within the boundary of the 15m foreshore setback.

Existing Vertical Stacked Log Seawall + Foreshore Slope Erosion

As outlined in greater detail in the attached geotechnical and environmental reporting, the existing vertical log seawall is in various states of decay and disrepair. Significant decomposition of the timber piles has been observed, with many readily movable by hand. Evidence of toppled timbers has also been observed. It is assumed that the seawall was once continuous along the foreshore, however large openings are now present where erosion and slope regression of the foreshore habitat is occurring. This erosion has placed the westernmost foundations of the house and elevated deck at risk of being undermined due to a loss of support. Furthermore, the regression of the foreshore slope also places an existing seawall on the neighbouring property to the south at risk of further deterioration from erosion behind the wall.

It has been recommended that this seawall be replaced at the owner's earliest opportunity. Further detailed information regarding foreshore slope stability is contained in the Geotechnical Report.

Expression of Undue Hardship

As portions of the existing home are currently sited within the modern 15m foreshore setback, there are limited opportunities to properly stabilize the foreshore habitats and protect the existing structures. Leaving the existing timber seawall as-is does not provide protection or stability in its current state and is not expected to be able to withstand greater pressures when factoring in rising sea levels and greater storm surges that are the anticipated effects of climate change. A loss of

foundation support due to foreshore slope erosion is potentially imminent, and any appreciable erosion could lead to immediate property loss. The development of a more traditional "seawall" (rip rap, concrete, or otherwise) would require siting beyond the 15m setback, bisecting the existing house. Furthermore, more traditional, and "fortified" seawall designs are no longer considered to be environmentally appropriate strategies with regards to foreshore habitat and stewardship. Finally, the demolition and reconstruction of a new residence, sited beyond the 15m foreshore setback, places a significant and undue financial hardship on the current property owners, who seek to revitalize this modest and efficient home for family use.

A building permit has been approved for the addition located on the east side of the house, however the owners hesitate to proceed with plans for property improvements until a suitable strategy is developed and approved that allows for protection of the existing house. An improved and appropriate shoreline stabilization strategy, located within the 15m foreshore setback area, is therefore required before any improvements can be reasonably undertaken.

Shoreline Stabilization + Rehabilitation Strategy

The property owners are taking great care to spearhead a stabilization strategy for this property that is in alignment with current and future expectations and values regarding sensitive shoreline ecosystems, and shoreline erosion, as outlined in the North Pender Island Official Community Plan (OCP). It is understood that the Islands Trust is moving away from approvals of traditional seawalls in favour of soft-shores approaches, such as those developed under the Green Shores Program. This proposal has been mindfully developed as a collaboration with our geotechnical engineering and environmental partners to strike a balance between the protection of existing structures in the modern context of rising sea levels and increased storm events, and re-establishing sensitive and natural ecosystems that allow for natural processes to occur. In addition to protecting the existing-use structures and stabilizing the slope, this project is an opportunity to demonstrate that sensitive, softer approaches to shoreline stabilization at the residential scale are not only appropriate and achievable, but also desirable.

This design aims to not only lessen the negative impacts on ecological functions, but rather enhance them; existing trees are to be retained where possible, indigenous and drought tolerant planting is selected to stabilize the shoreline and increase viable habitat. The design of the proposed Green Shores shoreline stabilization

system is proposed to be constructed of a blend of innovative, simple shoreline retention techniques, including planted coir (coconut fiber) logs. More robust assemblies are limited to the use of stacked rock boulders on the south side of the property, adjacent to existing structures that need to be protected, and where the proposed shoreline stabilization design connects to an existing stacked boulder seawall on the neighbors' property to the south. Where this method has been employed, stacked boulders have been pulled back closer towards the house to allow for soft shore planting and habitat creation on the ocean-side. The rest of the property employs a soft shore, planted approach. These strategies are outlined in greater detail in both the geotechnical and environmental reports.

It is our team's intention to develop this shoreline stabilization strategy to Green Shores standards, and our intended path to Green Shores Homes certification is also outlined in greater detail in our Environmental Reporting. Certification under Green Shores will make this project among the first certified residential projects in the Southern Gulf Islands.

We trust that this design rationale adequately outlines and addresses the undue hardships that the property owners are facing with regards to developing an appropriate shoreline stabilization strategy for this property. Great care has been taken to develop a sensitive and appropriate system that protects the existing home and re-establishes and rehabilitates natural habitat, in alignment not only with current Islands Trust expectations for appropriate shoreline revetment design, but also with the values of the owners as caretakers of this property and stewards of the surrounding natural landscapes.

On behalf of the project team, we thank you and the Board of Variance members for your consideration of this proposal. We look forward to your comments. If you have any questions, please do not hesitate to ask.

Kind Regards,

Chelsea Louise Grant, Architect AIBC, LEED AP

Attachment 4

David Kirsop and Kathy MacLachlan
2605 Galleon Way
Pender Island BC, V0N 2M2

[REDACTED]

November 10, 2021

Islands Trust
200 – 1627 Fort Street
Victoria BC, V8R 1H8

Attention: P. Testemale, Planner 2 – Southern Team

Re: Board of Variance Application: Shoreline Stabilization + Rehabilitation, 2603 Galleon Way, North Pender Island

We own and reside at 2605 Galleon Way adjacent to the subject property referred to in the above variance application. We are writing in support of the application and to confirm that we have been kept informed throughout the development of the application by Mr. Keay.

During the 20 years we have owned our property we have witnessed the continual erosion of the adjacent shore line which has now receded behind the log wall constructed by the previous owners. The log wall was first built tight to the embankment as it existed at that time. The bank has since eroded considerably and is now positioned several feet behind the remnants of the wall.

In our opinion, if nothing is done to prevent the shoreline erosion that is occurring at the above property then structural damage will soon occur to the house.

Yours truly,

[REDACTED]

David Kirsop & Kathy MacLachlan

c. C. Keay



RYZUK GEOTECHNICAL

Engineering & Materials Testing

6-40 Cadillac Ave, Victoria, BC, V8Z 1T2 Tel: 250-475-3131 E-mail: mail@ryzuk.com www.ryzuk.com

November 10, 2021

File No: 10267-1

809-250 E 6th Ave
Vancouver, BC
V5T 0B7
Canada

Attn: Charles Keay
(By email: charleskeay@gmail.com)

Re: Existing Foreshore Slope/Seawall Assessment & Recommendations
2603 Galleon Way – Pender Island, BC

We have recently attended the above referenced site to visually assess the condition of the existing timber pile foreshore revetment structure (timber seawall) and inspect for foreshore slope erosion. Our related observations and recommendations are summarized below. Our work has been undertaken in accordance with, and is subject to, the previously agreed upon Terms of Engagement documentation.

The site is a waterfront property bordered to the north by heavily forested park land, to the east by Galleon Way, to the south by a similarly sized residential property, and to the west by the intertidal inlet of Shingle Bay. The western foreshore slope has a height of about 2.5 to 4 metres by vertical measure and sloped at about 1H:1V on the southern portion near the residence transitioning to about 2H:1V (Horizontal: Vertical) to the north, with some localized steeper regions where recent erosion has occurred. The detached single-family residence located on the western extent of the property has foundation elements located directly adjacent to the crest of the foreshore slope. Based on exposed soils on-site, our experience from working on nearby projects, and our review of available geological mapping, we expect soil conditions consist of surficial fill materials atop native dense silty sand and gravel or firm to soft sandy/silty clay.

The existing seawall is a non-continuous vertical timber pile wall with the ends of the timbers resting on beach deposits and supported by steel dowels protruding from the base of the timbers a shallow distance into the beach deposits. The timber piles vary in height but are generally between 0.3 m to 1.0 m above the beach deposits. During our inspection we observed significant decomposition of the timber piles and noted that the piles were readily movable by hand. We consider it likely that the timber seawall was once continuous across the foreshore area; however, decomposition of the timbers and storm wave/tidal action has caused large openings in

the seawall to occur. There is also evidence of toppled/fully unseated timbers along the seawall. We consider that the seawall currently provides little protection to the foreshore slope from erosion by wave action.

During our site inspection we observed periodic erosional scarps along the entire length of the foreshore slope. We noted vegetation loss and exposed fill soils near the crest of the slope. We consider it likely that the observed erosion/material loss within the foreshore slope is caused in part by the timber seawall not providing suitable protection to the foreshore slope. We also understand that in the wetter winter months significant groundwater seepage is observed within the existing foreshore banks which can further lead to slope instability. We observed several properties within Shingle Bay and noted that where revetment structures were not present, erosion and slope regression of the foreshore slope was evident. Such evidence is present in the form of open unvegetated steep slopes (scarps) and numerous trees that were either overturned or with sloped trunks that are indicative of slope movement/creep.

Given the above, we consider that the timber seawall in its current state will continue to deteriorate at an increased rate due to the non-continuous state and poor condition of many of the timbers. As a result, we anticipate that the foreshore slope will continue to erode due to daily tidal forces, wave impacts, and sea spray which will eventually lead to periodic overturning of vegetation and further acceleration of slope deterioration. The timeline of slope regression is difficult to determine but due to the poor state of the existing wall and current site conditions, we anticipate that slope regression is imminent within several years or possibly less due to increased large storm events resulting from the widely agreed upon global climatic change.

Given the noted evaluation of the foreshore slope, it is our opinion that as the westernmost foundation elements of the residence are at a considerable risk of being undermined or having supporting soils within the foundation splay zone undermined, which would cause loss of foundation support. As the foundations are situated at or near the crest of the 1H:IV foreshore slope any additional appreciable foreshore slope erosion could immediately negatively impact the foundations.

If the continued regression of the foreshore slope is allowed, we also consider that the boulder stack style foreshore revetment structure present within the property to the south could deteriorate at an increased rate due to wave flanking effects causing erosion behind the wall.

We recommend that a new foreshore revetment structure be constructed as soon as feasibly possible to stabilize the foreshore soils supporting the residence. We have been in ongoing discussions with Swell Environmental to provide a cohesive design approach to the foreshore area that will provide protection to the residence while also considering the environmental impacts of the project.

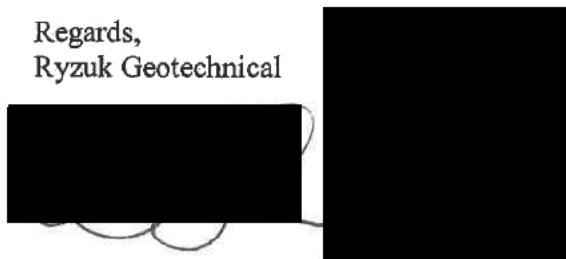
We provide the following general recommendations and staging for replacement of the existing seawall and reconfiguring the foreshore area with a shoreline stabilization and rehabilitation system.

- Complete deconstruction of the existing timber seawall, removing all pilings and backfill present and exposing the foreshore slope native soils.
- Excavate to expose native soil subgrade for the base of the proposed shoreline stabilization and rehabilitation works at a depth to allow for the newly constructed works to be adequately keyed in. This is anticipated to be at a shallow depth, consisting of native firm/soft silty clays.
- A shoreline stabilization and rehabilitation system is to be constructed set back from the existing foreshore present natural boundary. The design is proposed to be more robust adjacent to the existing residence, using imported medium to large, dimensioned boulders, as such will provide a balance of protecting the residence foundations by limiting future migration of foreshore slope soils but also allowing vegetative growth and aesthetically marrying with the neighbouring property foreshore. The majority of the foreshore slope is not critical for support of the residence, and as such the design in these areas are proposed to consist of a softer approach with room for growing mediums/soil wraps/planting areas/coir logs etc.
- The proposed shoreline stabilization and rehabilitation works are designed to mesh to the southern neighbouring seawall, mirroring wall height and location, to provide continuous foreshore slope protection.

At this time, the above general recommendations are to provide an indication of the proposed shoreline stabilization and rehabilitation design work.

Please let us know if you have any comments or questions.

Regards,
Ryzuk Geotechnical



Christian J. Flanagan, P.Eng.
Project Engineer

Attachment: Terms of Engagement

Attachment 6



Charlie Keay
2603 Galleon Way
North Pender Island, BC V0N 2M2

November 11, 2021

RE: 2603 Galleon Way, Pender Island – Environmental Review - Board of Variance Application: Proposed Shoreline Stabilization and Restoration Planting Plan

Lehna Malmkvist, M.Sc., R.P. Bio. and Sara Stallard, BSc., ASCT visited the site on July 30, 2021 to meet with the owner, Charlie Keay, and Christian Flanagan, PEng., Ryzuk Geotechnical to evaluate the existing condition of 2603 Galleon Way, North Pender Island in reference to a failing shoreline protection structure, shoreline erosion, and to develop a plan for a Green Shores shoreline stabilization and restoration planting plan within 15m of the Present Natural Boundary (PNB) of the sea, and adjacent to (upslope of) the Development Permit Area 6 - Intertidal Ecosystems (Figures 1-4, Appendices 1 and 2). This report summarizes the observations of the ecological conditions, potential impacts from proposed works, and recommendations for environmental protection and restoration following construction.



Figure 1. Location of 2603 Galleon Way (red dot), North Pender Island. DPA 6 – Intertidal Ecosystems is the blue outline on the left image.

Figure 2. Site Plan for shoreline stabilization and restoration planting areas.



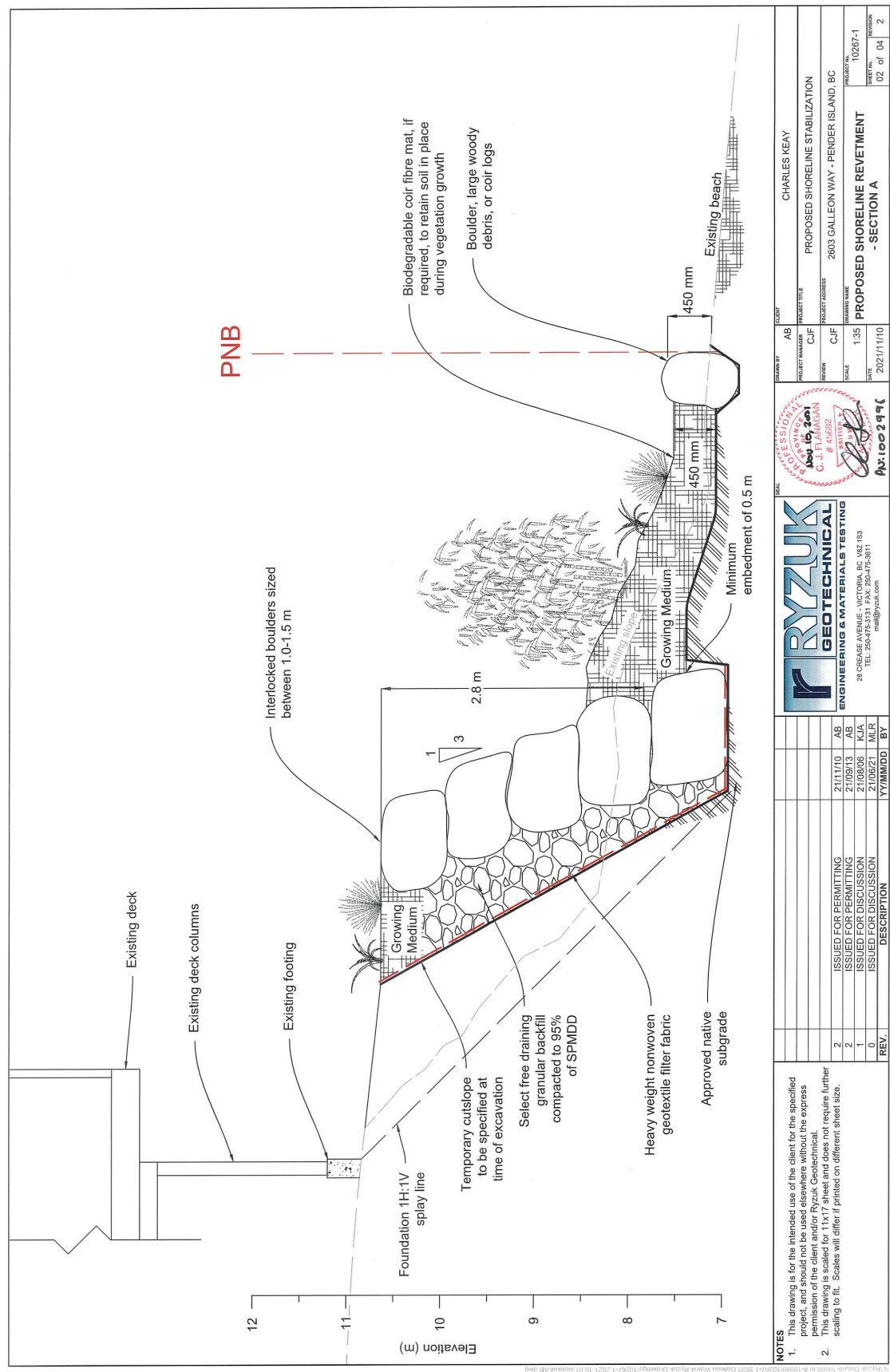


Figure 3. Section A – Shoreline stabilization and planting area adjacent to the house.

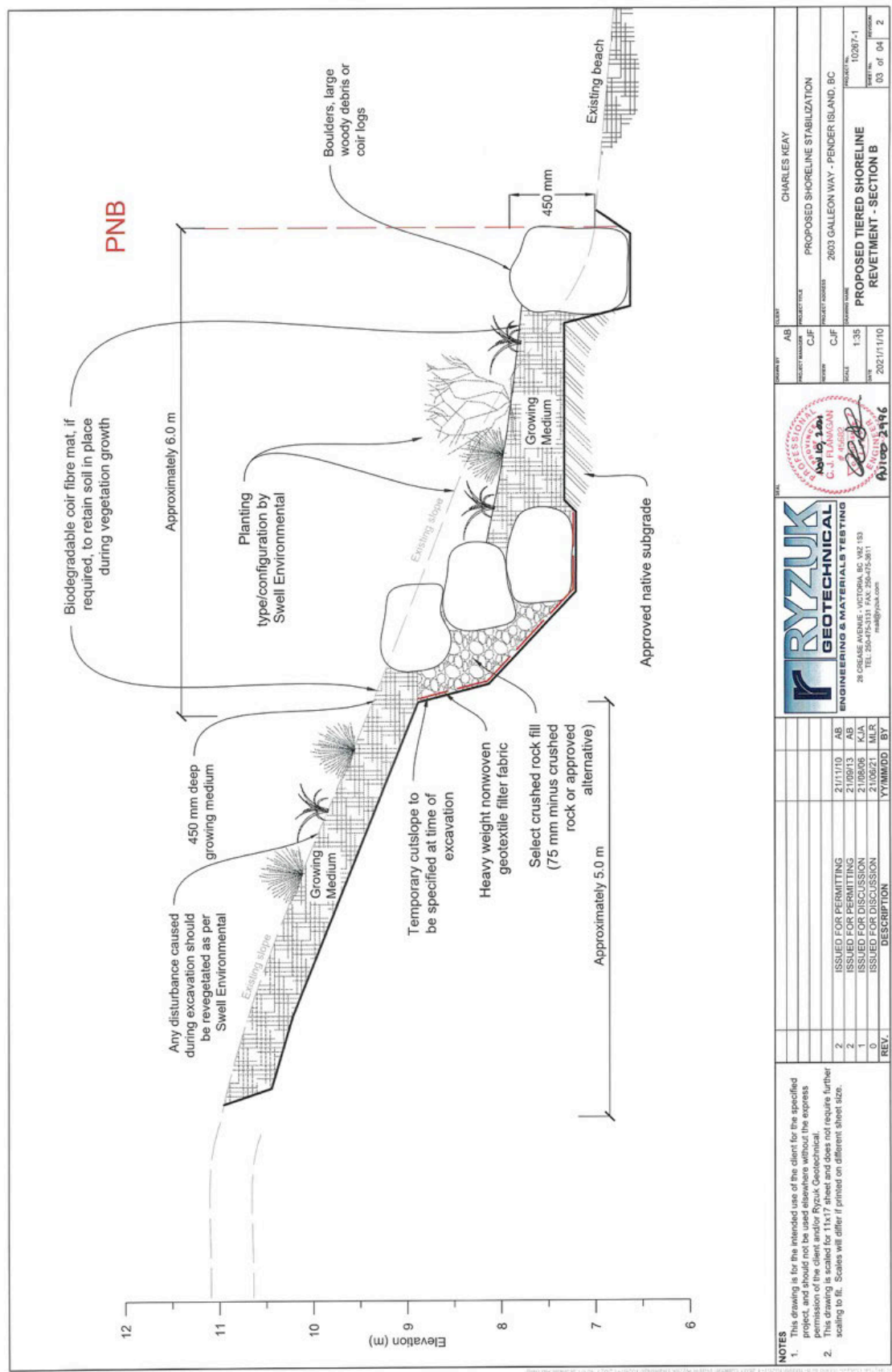


Figure 4. Section B – Shoreline stabilization and planting area adjacent to the yard.

Existing Condition

The property is a previously developed 0.3 ha waterfront lot, with an existing single-family home and garage, on approximately 65 m of shoreline. The property has been historically cleared down to the shoreline. There is an existing dock on the north property line, a stormdrain outfall at the south property line, and a failing log shoreline stabilization structure running the length of the shoreline along the present natural boundary (PNB) (Appendix 1 – Ryzuk Geotechnical Report).

The home is approximately 8-10 m from the PNB with an eroding slope down to the failing stabilization structure. The shoreline vegetation is primarily horsetail (*Equisetum arvense*) and non-native agricultural grasses, with occasional occurrences of the native species salmonberry (*Rubus spectabilis*), Nootka rose (*Rosa nutkana*), salal (*Gaultheria shallon*), dull Oregon-grape (*Mahonia nervosa*), stinging nettle (*Urtica dioica*), and common rush (*Juncus effusus*). A bigleaf maple is resprouting from an old stump at the south end of the property adjacent to the stormdrain. Within the intertidal area are Lyngbei's sedge (*Carex lyngbei*), perennial saltwort (*Sarcocornia pacifica*), and seashore saltgrass (*Distichlis spicata*). Non-native, invasive species on the shoreline include, agricultural grasses, thistles (*Cirsium* sp.), dock (*Rumex* sp.) and orache (*Atriplex* sp.), which may be native or exotic (Photos 1-16).

The intertidal beach habitat is composed of gravel embedded in soft clay, which depresses easily with foot traffic (Photo 11). The clay substrate along this shoreline creates a sediment plume in the nearshore waters, even in mild sea conditions with no water disturbance (Photo 12). This beach substrate is entirely unsuitable spawning habitat for forage fish (such as Sand Lance and Surf Smelt), which require the interstitial spaces between sands and gravels for egg development.

Ryzuk Geotechnical has observed that the existing log shoreline stabilization structure is failing, and the bank slope behind is actively eroding (Photos 1-10).

The shoreline on the adjacent property to the south consists of a stacked boulder wall (Photos 3-4).

Proposed Project

The proposed work is a Green Shores shoreline stabilization and restoration planting plan, has been designed by Ryzuk Geotechnical (Appendix 1), in consultation with Swell Environmental Consulting Ltd (Figures 2-4). The owners are planning to apply to the Stewardship Centre for BC to obtain Green Shores for Homes certification for the project.

The project will include (Figures 2-4):

- Stormdrain outfall within a stacked rock wall at the south end of the site, which will tie into the existing rock wall on the adjacent property to the south
- Section A (Figure 3): Shoreline stabilization to ensure stability of the foundation of the existing house, 8-10 m from the PNB, which will include:
 - Stacked boulder backwall, this wall is set back (approx. 3-4 m) from the PNB to allow plantings along the shoreline in front of the wall
 - Native plantings at the top of the stacked boulder backwall
 - Edge treatment of rock, large woody debris, and coir logs [densely packed coir (coconut) fibres contained within a woven coir mesh to produce an entirely natural coir log]. The coir log is designed to biodegrade over a period of years to leave a stabilised bank of plant biomass to retain soil between the PNB and rock backwall.
 - Soil partially burying the rock backwall to provide a shoreline planting area for marine shoreline (shrubs and groundcover) and salt marsh plantings. Soil to be covered with compostable coir (coconut fibre) mats, if needed, to retain soil while plantings become established.

- Section B (Figure 4): Shoreline stabilization to stabilize the eroding slope in front of the existing lawn area:
 - Stacked boulder backwall, this wall is set back (approx. 5-6 m) from the PNB to allow plantings along the shoreline in front of the wall
 - Native plantings at the top of the stacked boulder backwall
 - Edge treatment of rock, large woody debris, and coir logs [densely packed coir (coconut) fibres contained within a woven coir mesh to produce an entirely natural coir log]. The coir log is designed to biodegrade over a period of years to leave a stabilised bank of plant biomass to retain soil between the PNB and rock backwall.
 - Soil partially burying the rock backwall to provide a shoreline planting area for marine shoreline (shrubs and groundcover) and salt marsh plantings. Soil to be covered with compostable coir (coconut fibre) mats, if needed, to retain soil while plantings become established.
- Rock to protect the existing dock structure, where it connects to the shoreline.

The work will be constructed during the summer Reduced Risk Fisheries Window for marine shorelines (July 1 to October 1).

The work (including the removal of the existing log retaining structure) will be conducted in such a way to minimize the impact to the shoreline and no permanent structures or land alteration are proposed below the PNB. The work will be done:

- by excavator from the top of the slope, for the majority of the works (northern half of the site);
- above the PNB, but below the top of bank, when working adjacent to the house, working towards the north while constructing the boulder stack backwall and shoreline planting bench with rock, large woody debris, and coir logs; and
- below the PNB (on the beach, using a temporary heavy equipment access) for a limited section at the southern end of the works in order to save the existing shoreline bigleaf maple tree, where the proposed works will join with the adjacent wall on the neighbouring property and the stormdrain outfall will be constructed.

An ISA certified arborist will work with the contractor to retain the bigleaf maple resprouting at the south end of the site during construction. If it not possible to retain the tree safely then it will be replaced (2:1).

Environmental Protection Measures including erosion and sediment control and spill prevention and response will be implemented to minimize the potential for release of deleterious substances to the marine environment. Following completion of the construction of the rock wall and rock/log/coir log and soil placement, the terraces will be planted with a mix of native plants. Additionally, 2 trees will be planted for any trees that are removed during construction.

Ryzuk and Swell reviewed the range of stabilization options from soft to hard engineering solutions, and have determined that this Green Shores shoreline stabilization and restoration planting plan is an appropriate solution to the existing failing structure and eroding slope, which will protect the foundation of the existing house and shoreline slope, while re-establishing native shoreline vegetation.

Appendix 3 provides examples of the coir log treatments proposed.

Potential Impact of Proposed Development on Shoreline

The potential impacts of the project are:

- 0 to 1 trees will be removed in the DPA
- Approximately 400m² of low-growing shoreline vegetation (mix of native and non-native, invasive species) will be cleared within the DPA to accommodate the construction
- Potential for sediment laden runoff from the site
- Potential for spills from equipment working on site
- Temporary disturbance of a short section of upper intertidal area of the beach.

No permanent work is proposed past the present natural boundary (PNB), therefore, provided the environmental protection measures described below are implemented, no negative impacts are expected to the marine environment. The terrestrial habitat and salt marsh will be restored and improved with native vegetation and habitat elements (rock, logs, and coir logs). The total area of native plantings will increase over the existing condition and the works will include invasive species removal. There will be no change to the public access to and along the foreshore.

The plantings on the shoreline will provide overhanging shoreline vegetation to provide leaf fall and insect drop for food and nutrients into the marine environment, habitat for birds and small wildlife, and a protected corridor along the shoreline.

While the proposed works are not located within DPA6, they are adjacent to this sensitive ecosystem, and there will be a small area of temporary access through the intertidal area (DPA6) during construction, so the Development Permit Guidelines have been used as the design principles for the project. Appendix 4 describes how each of the relevant Development Permit Guidelines are being addressed in the project.

Recommendations for Environmental Protection and Restoration

A Project Review will be submitted to Fisheries & Oceans Canada. The following are recommended to meet the Fisheries and Oceans Canada requirement: Measures to Protect Fish & Fish Habitat (<https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>):

- Maintain riparian vegetation (note: the resprouting tree will be retained, if possible, and the understory will be replanted)
- Carry out works, undertakings and activities on land (an exception is the small section at the south end of the project)
- Maintain fish passage
- Ensure proper sediment control
- Prevent entry of deleterious substances in water

Green Shores for Homes certification from the Stewardship Centre for BC will provide an additional review of the project.

- <https://stewardshipcentrebc.ca/green-shores-home/gs-programs/green-shores-for-homes/>

Environmental Protection Measures During Construction

The contractor must implement environmental protection measures to ensure that the project has the minimum impact and no contaminants, such as sediment-laden water or spills, enter the marine environment.

- The work is proposed to take place within the Reduced Risk Fisheries Window for marine shorelines (July 1 to October 1).
- The majority of work will be constructed from the top of slope.
- Minimize tree and vegetation removal to the minimum required to construct the shoreline stabilization structures.

- Consult an ISA Certified arborist prior to and during construction to provide recommendations to protect retained trees during construction.
- Remove and properly dispose of the existing log shoreline stabilization structure and debris materials behind the wall.
- Salvage native plants to re-use in the shoreline plantings (e.g. salal, oceanspray, Nootka rose).
- Remove invasive species
 - Most will be removed during construction
 - Any remaining should be removed prior to planting native species
 - Maintenance will be required to control invasive species
- Properly dispose of any excavated soils

Temporary Equipment Access Below the PNB

- Minimize the area and time for equipment access onto the intertidal marine substrate
- Work will be conducted during dry weather
- Work will be conducted during low tide
- Swamp mats or other materials will be used to minimize disturbance of the intertidal marine substrate
- Sediment curtain will be installed, if needed, to prevent sediment from migrating beyond the work site

Erosion & Sediment Control

- Minimize vegetation removal
- Sediment fence or curtain or other measures will be installed, as needed, to prevent sediment from migrating into the marine environment.
- Swamp mats or other materials will be used as required where heavy equipment is below the Top of Bank, and near the PNB to ensure sediment does not migrate onto the intertidal habitat.
- Excavations conducted during forecasted dry weather
- Do not direct water runoff from the site or dewatering from excavations directly into the marine environment. If dewatering of excavations is required, the Environmental Monitor must be consulted to determine where runoff can be directed.
- Cover exposed soils, if needed (e.g. poly, tarps, mulch, seeding, 'rough and loose' treatment)
- Ensure soil and debris stockpiles are placed away from the shoreline and sediment-laden water cannot flow into the waterbodies.
- Ensure no tracking of sediments on to roadways from truck traffic (road sweeping and installing rock/hog fuel at entrance to minimize tracking)
- Immediate planting of exposed soils after project completion (Fall 2022)
- Contact Environmental Monitor immediately with any concerns.

Spill Prevention and Response

- Equipment is inspected for leaks prior to beginning work.
- Spill response kits (capable of addressing the volume of fuel/oils/chemicals on site) are on site when any heavy machinery is working, and operators are trained in their use.
- Equipment refueling is at a designated location and >30 m from marine ecosystems and stormdrain
- Fuel generators must be placed in a spill-proof container capable of addressing the maximum volume of fuel involved (e.g. plastic bin, or impermeable containment area, eg. poly-lined bermed depression).
- Store all fuel cans in spill-proof containers (e.g. as above).
- Concrete wash-water and wet concrete is highly alkaline and toxic to fish and other aquatic organisms. All concrete wash-water from equipment, trucks and/or hand tools needs to be directed to a settling area away from runoff paths to the waterbodies. Freshly poured concrete needs to be covered when rain is forecasted or runoff needs to be isolated from waterbodies during the curing process.

- In case of spills, the following general steps are recommended:
 - Stop source of spill/prevent further spillage (turn off valves, right overturned containers)
 - Block spill from reaching aquatic environment or pathways to waterbodies
 - Block spill from spreading
 - Call Environmental Monitors
 - Clean up spilled materials

Site Restoration

- Plant material must be ordered from the nursery between January 2022 to March 2022 to ensure it is available for the construction period (seed, plugs, and potted plants)
- Following completion of construction, implement the planting plan in Appendix 2
- Weed-free growing medium to be added as shown on the site plan (Figures 3 and 4))
- Remove and control invasive species in the prior to planting.
- Vegetation to be planted as per Appendix 2. Substitutions must be approved by the biologist
- The planted area above the intertidal area should be mulched with 10 cm composted mulch.
- Irrigation
 - Years 1 and 2 - watering 2/week deeply during the growing season or if plants are wilting.
 - Years 3 and onwards - Water as needed to establish and wean plants off irrigation.
- Maintenance
 - Invasive species removal a minimum of 4 times/growing season for a minimum of 3 growing seasons
- Temporary fencing
 - Deer protection fencing is required until the vegetation is established enough to withstand browsing (3-5 years)
- Suggested sources for native plants:
 - Satinflower Nurseries (Saanich) – www.satinflower.ca
 - Galiano Conservancy – www.galianoconservancy.ca
 - Mayne Island Conservancy - <https://mayneconservancy.ca/nursery/>
 - Fraser's Thimble Farms (Salt Spring Island) - www.thimblefarms.com
 - Streamside Native Plants (Bowser) – www.streamsidenativeplants.com

Environmental Monitoring

The following environmental monitoring protocol is recommended to ensure that environmental protection measures are properly implemented and maintained, and to meet regulatory reporting requirements:

- **Owner must notify the Swell Environmental Consulting Ltd. a minimum of 4 weeks prior to the initiation of the works.**
- Preconstruction meeting with owner, contractor, Swell Environmental Consulting Ltd., and Ryzuk Geotechnical to review Project Tasks, Environmental Protection Measures and Permit Requirements
- Site visits, periodically during key phases, as determined by the RPBio, such as:
 - Inspect Erosion & Sediment Control measures once they are installed
 - During removal of the log shoreline stabilization structure
 - During installation shoreline stabilization works
 - During excavation within the 15m shoreline area
 - During heavy equipment temporary access below the PNB
 - During invasive species removal and native species planting
 - Heavy rainfall (>10mm/24 hours) until the QEP is satisfied that erosion and sediment control measures are preventing sediment laden water from entering the marine environment
 - Emergencies, such as spills
 - To assess completion of the project

- Monitoring during construction will also consist of photos to be sent by the owner or contractor to the RPBio periodically throughout the construction period to show protection of native vegetation and functioning of ESC measures. If needed, due to uncertainty or changes to the construction process, the RPBio will schedule site visits as needed.
- Preparation of a completion report to be provided to Islands Trust and Fisheries & Oceans Canada to ensure all Variance Permit and DFO Project Review requirements are completed by December 31, 2022.

SUMMARY

In summary, the shoreline stabilization design by Ryzuk Geotechnical will remedy the existing failing log shoreline stabilization structure and the eroding shoreline slope. The work is not expected to create detrimental environmental impacts, and no HADD (Harmful Alteration, Disruption or Destruction) of Fish Habitat is expected from the proposed construction, provided the environmental protection and site restoration measures outlined are implemented. The Green Shores shoreline stabilization and restoration planting plan will provide an improvement to the shoreline ecological condition by providing a corridor of native shoreline vegetation and salt marsh plantings, as well as provide a variety of habitat elements along the shore edge with rock, large woody debris and coir logs.

While the proposed works are not located within DPA6, they are adjacent to this sensitive ecosystem, and there will be a small area of temporary access through the intertidal area (DPA6) during construction, so the Development Permit Guidelines have been used as the design principles for the project. Appendix 4 describes how each of the relevant Development Permit Guidelines are being addressed in the project.

Please do not hesitate to contact us with any questions you may have.

Sincerely,



Lehna Malmkvist, MSc, RPBio (#1613)



Sara Stallard, BSc, ASCT (#22338), Envr. Tech.



Photo 1. Looking south along the shoreline at failing log shoreline stabilization structure and eroding slope behind.



Photo 2. Looking south along the shoreline at failing log shoreline stabilization structure and eroding slope behind.



Photo 3. Looking south along the shoreline at the junction of the failing log structure and stacked boulder wall on the adjacent property. Temporary beach access by heavy equipment proposed for this section.



Photo 4. South end of the site: the proposed wall will be integrated with the existing stacked boulder wall to the south, incorporate the stormdrain outfall, and support the existing bigleaf maple. Retention of the maple will require temporary beach access for the heavy equipment.



Photo 5. Towards the north end of the site, example of the failing log shoreline stabilization structure and eroding slope behind.



Photo 6. Towards the north end of the site, example of the failing log shoreline stabilization structure and eroding slope behind. Note that the log ends are not embedded into the shoreline substrate.



Photo 7. Towards the southern end of the site, near the house, remnant native vegetation on the overhanging slope, revealing erosion and old carpeting used in the original structure.



Photo 8. North end of the site adjacent to the dock, example of the failing log shoreline stabilization structure and eroding slope behind, with materials placed over the years to try to stop the erosion. Existing stairs to the shoreline.



Photo 9. North end of the site adjacent to the dock, example of the failing log shoreline stabilization structure and eroding slope behind. Existing stairs to the shoreline.



Photo 10. North end of the site at the dock and undercut eroding bank, with existing stairs to the shoreline.



Photo 11. The beach is composed of gravel embedded in soft clay, unsuitable for forage fish spawning habitat.



Photo 12. The clay in the beach substrate creates a sediment plume even in mild sea conditions with no foot disturbance.



Photo 13. Looking south from the dock along the shoreline at the top of the eroding slope to the shoreline.



Photo 14. Existing dock and beach access.



Photo 15. Looking south along the top of bank, work will be conducted from the top of the slope.



Photo 16. Looking northeast to the subject site. Red line indicates south property line.

Appendix 1. Ryzuk Geotechnical Memo & Design

Appendix removed - see Attachment 5

Appendix 2. Planting List

2603 Galleon Way Shoreline Planting List		Number of plants	Minimum size
TREES			
Bigleaf maple	<i>Acer macrophyllum</i>	2 - if required due to tree removal	5 gallon
UPPER TERRACES = (172 + 69) = 241m²			
SHRUBS			
Saskatoon	<i>Amelanchier alnifolia</i>	1/m ² of planting area = 241 plants mix of species to be determined based on nursery availability.	1 gallon
Red-osier dogwood	<i>Cornus stolonifera</i>		1 gallon
Salal	<i>Gaultheria shallon</i>		1 gallon
Oceanspray	<i>Holodiscus discolor</i>		1 gallon
black twinberry	<i>Lonicera involucrata</i>		1 gallon
Dull Oregon grape	<i>Mahonia nervosa</i>		1 gallon
Pacific crabapple	<i>Malus fusca</i>		1 gallon
June plum	<i>Oemleria cerasiformis</i>		1 gallon
Mock orange (Coastal)	<i>Philadelphus lewisii</i> 'Gordianus'		1 gallon
Red flowering currant	<i>Ribes sanguineum</i>		1 gallon
Baldhip rose	<i>Rosa gymnocarpa</i>		1 gallon
Nootka rose	<i>Rosa nutkana</i>		1 gallon
Hooker's willow	<i>Salix hookeriana</i>		live stake or 1 gallon
Scouler's willow	<i>Salix scouleriana</i>		live stake or 1 gallon
Sitka willow	<i>Salix sitchensis</i>		live stake or 1 gallon
Common snowberry	<i>Symphoricarpos albus</i>		1 gallon
NATIVE GROUND COVER SEED MIX			
Yarrow	<i>Achillea millefolium</i>	native ground cover seed mix for 241m ² mix of species to be determined based on nursery availability.	seed
Nodding Onion	<i>Allium cernuum</i>		seed
Coastal Mugwort	<i>Artemisia suksdorfii</i>		seed
California Brome	<i>Bromus carinatus</i>		seed
Great Camas	<i>Camassia leichtlinii</i>		seed
Field Chickweed	<i>Cerastium arvense</i>		seed
Farewell-to-Spring	<i>Clarkia amoena</i>		seed
Tufted Hairgrass	<i>Deschampsia cespitosa</i>		seed
Blue Wildrye	<i>Elymus glaucus</i>		seed
Woolly Sunflower	<i>Eriophyllum lanatum</i>		seed
Roemer's Fescue	<i>Festuca roemerii</i>		seed
Entire-leaved Gumweed	<i>Grindelia stricta</i>		seed
Cow Parsnip	<i>Heracleum maximum</i>		seed
Junegrass	<i>Koeleria macrantha</i>		seed
Barestem Desert-parsley	<i>Lomatium nudicaule</i>		seed
Spring Gold	<i>Lomatium utriculatum</i>		seed
Sea Blush	<i>Plectritis congesta</i>		seed
Self-heal	<i>Prunella vulgaris</i> ssp. lanceolata		seed
Canada Goldenrod	<i>Solidago lepida</i>		seed
LOWEST TERRACE (60+108 = 158m²)			
SHRUBS = 108m²			
Red-osier dogwood	<i>Cornus stolonifera</i>	1/m ² of planting area = 108 plants + 108m ² native ground cover seed mix	1 gallon
Oceanspray	<i>Holodiscus discolor</i>		1 gallon
Salmonberry	<i>Rubus spectabilis</i>		1 gallon
Hooker's willow	<i>Salix hookeriana</i>		live stake or 1 gallon
Scouler's willow	<i>Salix scouleriana</i>		live stake or 1 gallon
Sitka willow	<i>Salix sitchensis</i>		live stake or 1 gallon
SALT MARSH & SHORELINE EDGE PLANTINGS - 1m x 60m = 60m²			
Silver Burweed	<i>Ambrosia chamissonis</i>	7/m ² = 420 plugs + 50m ² seeding to densify plantings, mix of species to be determined based on nursery availability.**	plug or seed
Sea Thrift	<i>Armeria maritima</i>		plug or seed
Lyngbyei's Sedge	<i>Carex lyngbyei</i>		plug or seed
Tufted hairgrass	<i>Deschampsia cespitosa</i>		plug or seed
Seashore Saltgrass	<i>Distichlis spicata</i> ssp. spicata		plug or seed
Dune Grass	<i>Elymus mollis</i>		plug or seed
Red fescue	<i>Festuca rubra</i>		plug or seed
Coastal Strawberry	<i>Fragaria chiloensis</i>		plug or seed
Entire-leaved Gumweed	<i>Grindelia integrifolia</i>		plug or seed
Arctic Rush	<i>Juncus arcticus</i>		plug or seed
Common rush	<i>Juncus effusus</i>		plug or seed
Beach Pea	<i>Lathyrus japonicus</i>		plug or seed
Seashore Lupine	<i>Lupinus littoralis</i>		plug or seed
Sea Plantain	<i>Plantago maritima</i> ssp. juncoideus		plug or seed
Silverweed	<i>Potentilla anserina</i>		plug or seed
Perennial Saltwort	<i>Sarcocornia pacifica</i>		plug or seed
Oney's Bulrush	<i>Schoenoplectus americanus</i>		plug or seed
Tule (Soft-stem Bulrush)	<i>Scirpus lacustris</i>		plug or seed
Seaside Arrowgrass	<i>Triglochin maritima</i>		plug or seed

*Other native species may be substituted if approved by the RPBio.

**A combination of plugs and seeds is recommended to accommodate a variety of shoreline conditions as the materials settle and the saltwater moisture regime is established.

Appendix 3. Coir Log Examples

Shoreline coir logs with plantings



Appendix 4. Development Permit Guidelines

While the proposed works are not located within DPA6, they are adjacent to this sensitive ecosystem, and there will be a small area of temporary access through the intertidal area (DPA6) during construction, so the Development Permit Guidelines have been used as the design principles for the project. Appendix 4 describes how each of the relevant Development Permit Guidelines are being addressed in the project.

The following describes how the **Overall Guidelines for Sensitive Ecosystems** are being addressed for the project:

1. Where lots are not subject to further subdivision, applicable guidelines should be considered to the extent reasonable within the constraints of the site and the lot.
 - No subdivision proposed.
2. Avoid locating development in areas containing important, rare or fragile sensitive ecosystems or habitat where reasonable alternative sites exist.
 - No alternative locations available, the project is located to address the existing failing log shoreline stabilization structure and eroding shoreline slope to protect an existing home.
3. The area cleared and disturbed for development should be minimized.
 - Area to be cleared will be the minimal area required to address the failing log shoreline stabilization structure and eroding shoreline slope and to restore the shoreline.
4. Fewer, but larger, undisturbed areas should be retained, rather than small or isolated undisturbed areas.
 - The entire property has been previously disturbed, the project will provide the shoreline stabilization and restore native vegetation to the shoreline area.
5. Buildings and associated infrastructure should be sited with sufficient undisturbed space around significant mature or established trees to protect root systems.
 - No buildings are proposed. One small tree (bigleaf maple resprouting from previously cut stump) is located within the project area; an ISA certified arborist will be consulted during construction to retain the tree, if possible. If not possible, the tree will be replaced 2:1.
6. Undeveloped buffer areas should be retained around sensitive ecosystems, features or habitat where feasible. Buffer areas should be of sufficient width to limit access by invasive plants.
 - No undeveloped areas are present on the property. The project will create a buffer for the intertidal and shoreline area, by stabilizing and revegetating the shoreline with native vegetation.
7. Natural features should be retained through incorporation into the design of the development. In particular, unique or special natural features such as native grasses, rare plants, unique land forms, rock outcroppings, mature trees, spits and dunes should be protected.
 - No rare plants, unique landforms, rock outcroppings or other unique or natural features are present. One small tree is located within the project area; an ISA certified arborist will be consulted during construction to retain the tree, if possible. If not possible, the tree will be replaced 2:1.
8. Connections and corridors should be maintained to provide continuity between sensitive ecosystems and important habitat.
 - The project will create a corridor along the intertidal and shoreline area by stabilizing and revegetating the shoreline with native vegetation, and providing habitat elements such as logs, rocks, and coir logs.
9. Use of drought resistant and native plants in landscaping should be encouraged. The planting or introduction of non-native plants should be avoided.

- The planting plan consists of all native shoreline and salt marsh plants.
10. Soil removal and deposit within or adjacent to a sensitive ecosystems or habitat should be avoided.
- Soils are required for the slope stabilization and planting areas.
11. Alteration of natural drainage systems in ways that increase or decrease the amount of water available to a sensitive ecosystem should be avoided.
- No natural drainage systems will be altered.
12. Septic fields should be located in such a manner that the possibility of pollution of sensitive ecosystems or habitat is avoided.
- No septic field are proposed.
13. Driveways and other accesses should be limited to the number required for safe access, with shared driveway access where feasible. Driveway lengths and widths should be limited to the minimum necessary. The use of impervious surfaces should be discouraged.
- No driveways are proposed.
14. Shoreline structural modifications should be limited in number and extent and should be necessary to support or protect a permitted or existing use or structure.
- The proposed shoreline stabilization is designed to protect the existing house and yard because the existing log shoreline stabilization structure is failing and the shoreline slope is eroding.
15. Preference should be given to shoreline structures that have a lesser impact or enhance ecological functions, including vegetation enhancement, drainage control, beach enhancement, anchor trees, gravel placement. Harder construction measures should be avoided where possible.
- The project has used a Green Shores approach to provide the softest feasible approach to shoreline stabilization. The site will be fully vegetated following construction.

The project will include (Figures 2-4):

- Stormdrain outfall within a stacked rock wall at the south end of the site, which will tie into the existing rock wall on the adjacent property to the south
- Section A (Figure 3: Shoreline stabilization to ensure stability of the foundation of the existing house, 8-10 m from the PNB, which will include:
 - Stacked boulder backwall, this wall is set back (approx. 3-4 m) from the PNB to allow plantings along the shoreline in front of the wall
 - Native plantings at the top of the stacked boulder backwall
 - Edge treatment of rock, large woody debris, and coir logs [densely packed coir (coconut) fibres contained within a woven coir mesh to produce an entirely natural coir log]. The coir log is designed to biodegrade over a period of years to leave a stabilised bank of plant biomass) to retain soil between the PNB and rock backwall.
 - Soil partially burying the rock backwall to provide a shoreline planting area for marine shoreline and salt marsh plantings. Soil to be covered with compostable coir (coconut fibre) mats, if needed, to retain soil while plantings become established.
- Section B (Figure 4): Shoreline stabilization to stabilize the eroding slope in front of the existing lawn area:
 - Stacked boulder backwall, this wall is set back (approx. 5-6 m) from the PNB to allow plantings along the shoreline in front of the wall
 - Native plantings at the top of the stacked boulder backwall

- Edge treatment of rock, large woody debris, and coir logs [densely packed coir (coconut) fibres contained within a woven coir mesh to produce an entirely natural coir log]. The coir log is designed to biodegrade over a period of years to leave a stabilised bank of plant biomass to retain soil between the PNB and rock backwall.
- Soil partially burying the rock backwall to provide a shoreline planting area for marine shoreline (shrubs and groundcover) and salt marsh plantings. Soil to be covered with compostable coir (coconut fibre) mats, if needed, to retain soil while plantings become established.
- Rock to protect the existing dock structure, where it connects to the shoreline.

16. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land, except for agriculture. Vegetation which helps stabilise banks, reduce erosion and provides habitat should be retained or enhanced.

- The project has used a Green Shores approach to provide the softest feasible approach to shoreline stabilization, the shoreline will be fully vegetated following construction, including using large wood, coir logs, and rocks with native shoreline and salt marsh plantings.

17. The permit conditions may include:

- a) the construction of permanent or temporary fencing around sensitive features;
- b) fencing, flagging and posting of notices during construction;
- c) limits on blasting in sensitive areas;
- d) limits on construction timing;
- e) provision of works to maintain or restore the quantity or quality of water reaching environmentally sensitive areas or habitat;
- f) restoration or enhancement of disturbed sensitive ecosystems and habitat;

18. The LTC may consider variances to siting or size regulations where the variance could result in enhanced protection of an environmentally sensitive area.

Intertidal Ecosystem Guidelines

In addition to the overall and subdivision guidelines, the following specific guidelines are applicable to Development Permit Area Six (Intertidal ecosystems) are being addressed for the project:

1. Stairs, walkways and other access within a sensitive intertidal ecosystem should be limited to that required for safe access, with shared access where feasible. Stairs should incorporate landings, follow the existing contours of the site, utilize small concrete pilings and have gaps between boards.

- Existing access to the shoreline will be maintained near the dock, utilizing the rocks which will be installed to protect where the existing dock joins the shoreline.

2. Docks should be sited to avoid impacts on sensitive ecosystems such as eelgrass beds, fish habitat and natural processes such as currents and littoral drift.

- A new dock is not proposed, the existing dock will be retained.

3. Docks should be constructed in a manner which allows free flow of water beneath the dock and supports should be located on a hard substrate.

- A new dock is not proposed, the existing dock will be retained.

4. Floating docks that do not rest on the bottom at any time and a minimal ramp should be utilized rather than fixed wharves.

- A new dock is not proposed, the existing dock will be retained, which is on pilings with a floating dock.

5. Piers on pilings and floating docks are preferred over solid-core piers.
 - A new dock is not proposed, the existing dock will be retained, which is on pilings with a floating dock.
6. Docks should not incorporate unenclosed plastic foam or other non-biodegradable materials and should be constructed of stable materials that will not degrade water quality.
 - A new dock is not proposed, the existing dock will be retained, and existing dock utilizes encapsulated foam floats.
7. Boat launch ramps should only be located on stable, non-erosional banks where a minimum amount of substrate disturbance or stabilization is required.
 - A boat launch is not proposed.

NORTH PENDER ISLAND BOARD OF VARIANCE

NOTICE OF HEARING

NOTICE is hereby given pursuant to Section 541 of the *Local Government Act* to the persons who deem that their interest in property is affected that there will be an **electronic hearing** of the North Pender Island Board of Variance held on **January 19, 2022, starting at 9:00 a.m.**

The Board will consider the following appeal: **NP-BOV-2021.2 (Grant)**

Re: **2603 Galleon Way**

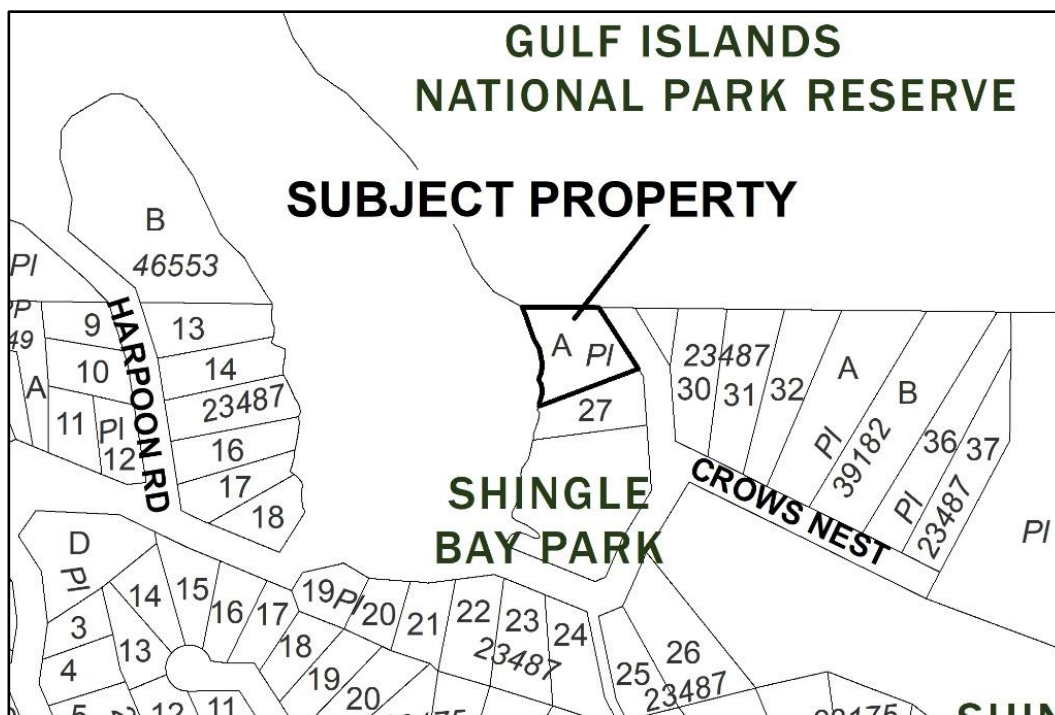
Legally described as: Lot A (See EX81156), Section 9, Pender Island, Cowichan District, Plan 23487.
(PID: 026-329-514)

The purpose of the appeal is to:

Allow for variances to North Pender Island Land Use Bylaw 103 (LUB) respecting the siting, size or dimensions of a building or other structure. The proposed variances are to **Section 3.7 'Siting'** in the **'General Regulations'** of the LUB, as shown on the attached Schedules 'A', 'B', 'C' and 'D', and specifically as follows:

1. Subsection 3.7.1 which states that no building or structure may be sited, nor fill placed to support a building or structure, within 15 metres upland of the natural boundary of the sea is varied to permit a **Structure (Shoreline Stabilization)** within 0.0 metres (0.0 ft.) of the natural boundary of the sea.

The general location of the subject property is shown on the sketch below:



Any person whose property may be affected by an appeal to a Board of Variance has the right to be heard and give evidence at the hearing, or to be represented by some other person authorized by them in writing to do so.

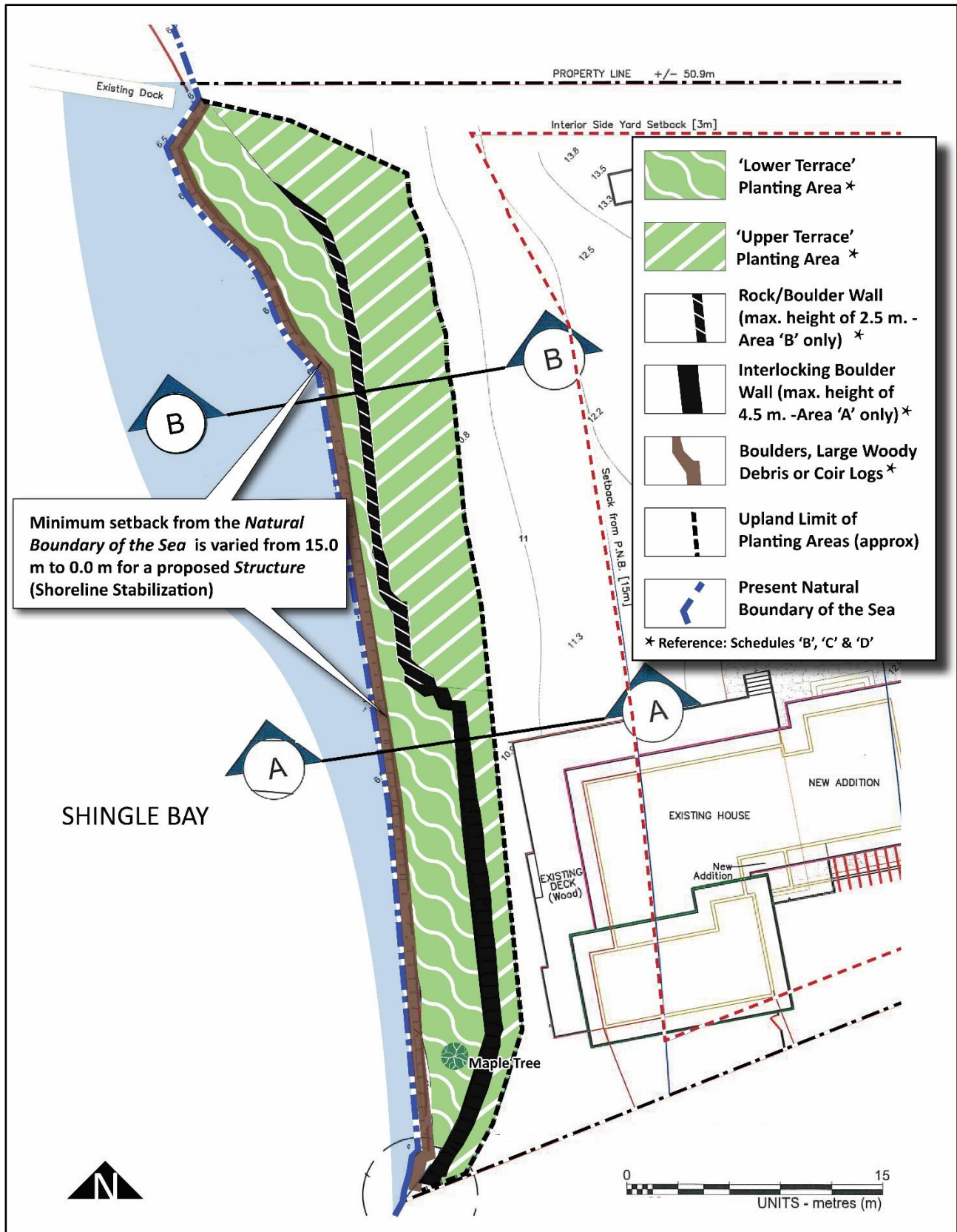
Written submissions may be delivered as follows:

1. To the Secretary to the North Pender Island Board of Variance, at the office of Islands Trust #200 - 1627 Fort Street, Victoria, BC, V8R 1H8, telephone (250) 405-5170, fax (250) 405-5155, or by email to southinfo@islandstrust.bc.ca, prior to **4:30 p.m., January 11, 2022**.
2. After **4:30 p.m., January 11, 2022**, to the Chair of the North Pender Island Board of Variance at the hearing by emailing to southinfo@islandstrust.bc.ca.

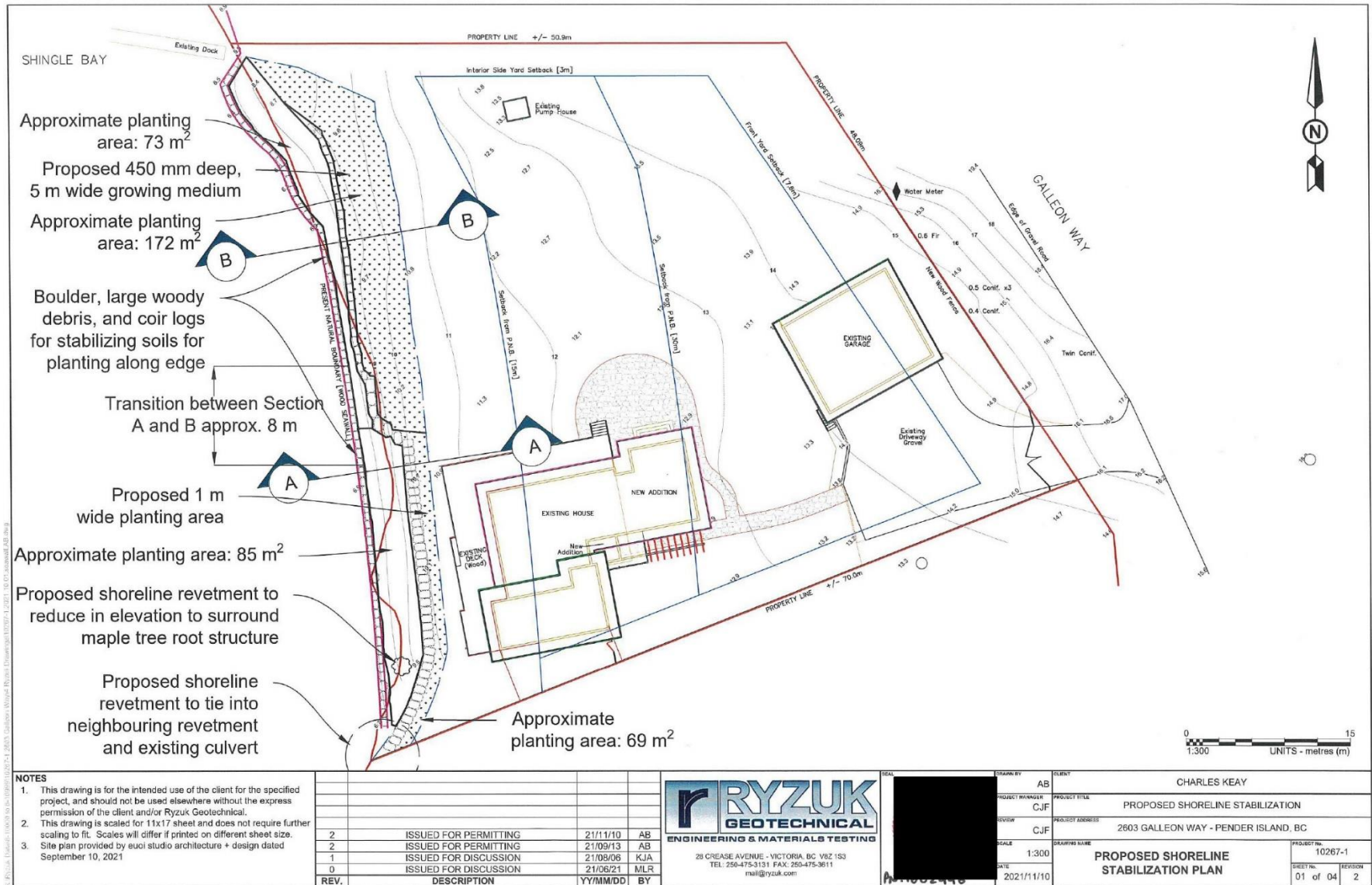
Enquiries or questions should be directed to: Phil Testemale, Planner 2 at (250) 405-5170, for Toll Free Access, request a transfer via Enquiry BC: In Vancouver 660-2421 and elsewhere in BC 1-800-663-7867; or by fax (250) 405-5155; or by email to: ptestemale@islandstrust.bc.ca.

All applications are available for review by the public. Written comments made in response to this notice will also be available for public review. A copy of the notice and additional information including how to connect to the **electronic hearing** can also be viewed on the Islands Trust webpage: <https://islandstrust.bc.ca/event/north-pender-bov-hearing/>

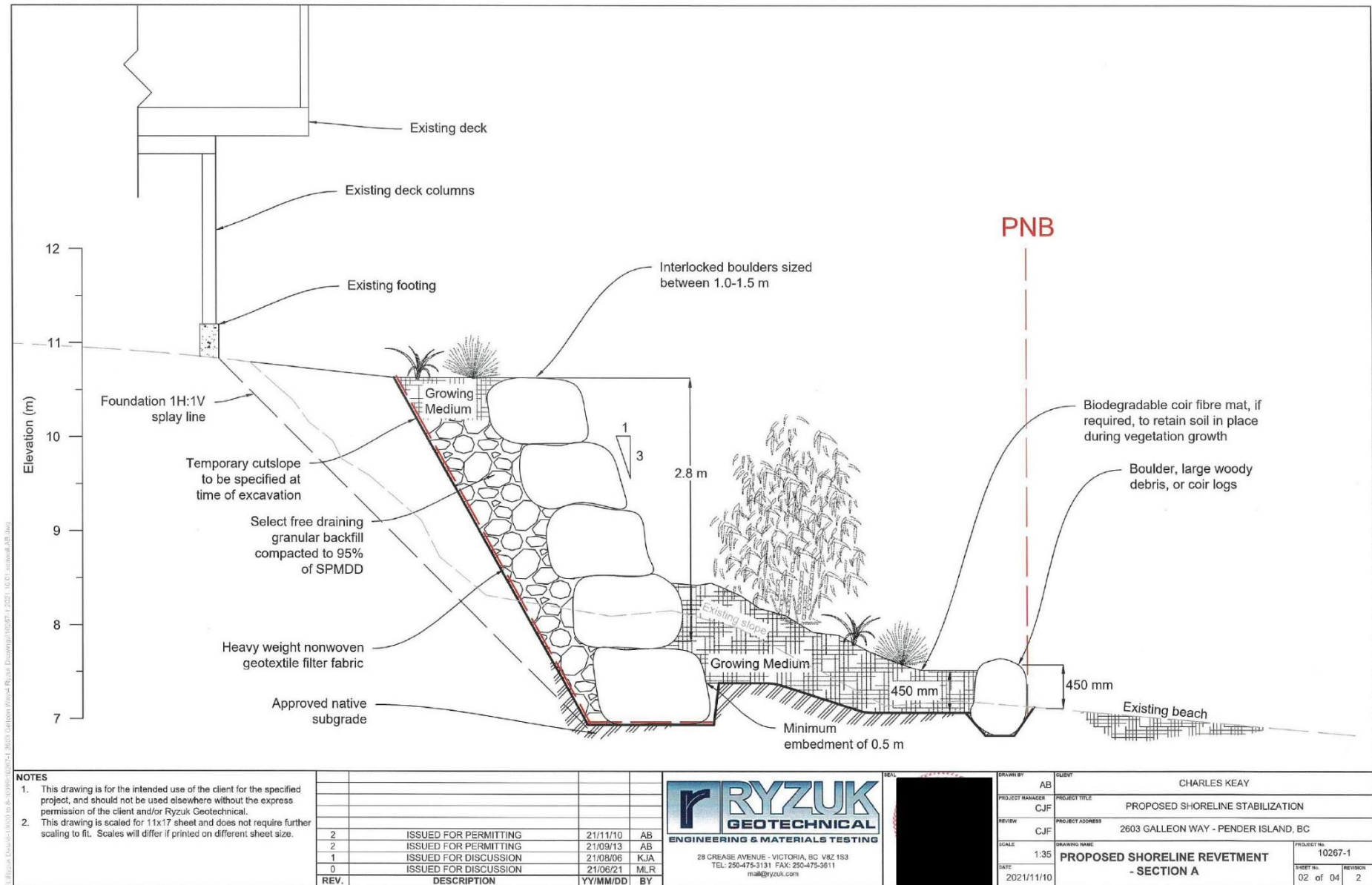
Phil Testemale
Secretary to the North Pender Island Board of Variance



NP-BOV-2021.2 (Grant)
Schedule B
Site Plan (Biologist/Engineer)



NP-BOV-2021.2 (Grant)
Schedule C
Section A-A (Area 'A')



NP-BOV-2021.2 (Grant)
Schedule D
Section B-B (Area 'B')

