Whey-Ah-Wichen / Cates Park Shoreline Restoration Project

Project Notification

Checklist

- ✓Initial contact with EAO sector team (optional)
- ✓ Project Notification Information
- ✓ Required maps
- ✓ Required shapefiles

Proponent Information

Organization Name		
səlilwətaɬ/Tsleil-Waututh Nation		
Mailing Address		Country
3178 Alder Court		Canada
City	Province/Territory/State	Postal/Zip Code
North Vancouver	BC	V7H 2V6
Organization Email		Organization Phone
reception@twnation.ca		604-929-3454
Organization Website		
https://twnation.ca/		
Organization Name		
District of North Vancouver		
Mailing Address		Country
355 West Queens Road		Canada
City	Province/Territory/State	Postal/Zip Code
North Vancouver	BC	V7N 4N5
Organization Email		Organization Phone
infoweb@dnv.org		604-990-2311
Organization Website		
https://www.dnv.org/		

Contact Information

Primary Contact Name	Primary Contact Department
Kate Menzies, Natural Resources Planning Manager	Public Works Department, TWN
Contact Phone Number	**Contact Email**
236-330-5612	kmenzies@twnation.ca
Alternative Contact Name	**Alternative Contact Department**
Becca Kordas, RPBio, Senior Marine Biologist | Manager, Marine Resources	Hatfield Consultants
Contact Phone Number	**Contact Email**
778-488-0501	rkordas@hatfieldgroup.com

1.0 Summary of Project Information

Project Name	Whey-Ah-Wichen / Cates Park Shoreline Restoration
Location Description	*The Project is located in Burrard Inlet, along the foreshore of Cates Park near Dollarton Highway in North Vancouver, BC.*

Project Nature	New Construction	Region	Lower Mainland
Project Type	Water Management	Latitude	49°18'1.88”
Project Sub-Type	Shoreline Modification Projects	Longitude	122°57'22.31"

2.0 Trigger for Notification

This Project Notification is triggered under: [*include all notification thresholds that apply, thresholds that are not applicable may be deleted. Be sure to answer the corresponding information requirement(s) in Section 5.0.*]

☐ **Section 5(1)(a):** A new project that is designated under the *Impact Assessment Act (Canada)* and not located wholly on federal and/or reserve lands.

✓ **Section 5(1)(b**): A new project that would meet the thresholds for its project category in the Reviewable Projects Regulation if those thresholds were reduced by 15 percent.

☐ **Section 5(1)(c)**: A new project that would result, at the peak of construction or operations, in the employment by the proponent of 250 or more employees or contractors who work more than 30 hours per week on an annual basis at the project facilities.

☐ **Section 5(1)(d)**: A new project that emits 125,000 tonnes per year or more of one or more greenhouse gases (GHG) directly from project facilities, measured in carbon dioxide equivalents, determined in accordance with *Part 3 of the Greenhouse Gas Emission Reporting Regulation*.

☐ **Section 5(1)(e)**: A transmission line greater than 230 kilovolts (kV) and greater than 40 kilometres (km) in length.

☐ **Section 5(1)(f)(i)**: A new project that includes the clearance of 40 km or more of land to be developed for an electrical transmission line, transmission pipeline, railway, public highway or resource road, if the land is not alongside and contiguous to an area of land previously developed for one of those purposes.

☐ **Section 5(1)(f)(ii)**: A new project that includes the clearance of 450 hectares (ha) or more of clearance, unless the clearance has been authorized by the minister, or delegate, under the *Resort Timber Administration Act.*

☐ **Section 5(3)**: An existing project, as modified, that emits 125,000 tonnes per year or more of one or more greenhouse gases directly from project facilities determined in accordance with *Part 3 of the Greenhouse Gas Emission Reporting Regulation*. An existing project, as modified, that meets the criterion set out in subsection (3) and for which a Project Notification has previously been submitted under that subsection is not prescribed for the purposes of Section 10 (1) of the Act.

3.0 Detailed Project Information

3.1 Project Background

səlilwətaɬ/Tsleil-Waututh Nation (TWN) and the District of North Vancouver (DNV) are seeking to implement a shoreline protection and restoration Project at Whey-ah-Wichen / Cates Park: the Whey-ah-Wichen / Cates Park Shoreline Restoration Project ("the Project"), located in səl̓ilw̓ət (Burrard Inlet), British Columbia (BC; Figure 1). Whey-ah-Wichen (meaning "facing the wind") has been an active part of the traditional and unceded territory of the Tsleil-Waututh for thousands of years and continues to hold strong cultural and archaeological significance to the Tsleil-Waututh people. Now a large waterfront park, Whey-ah-Wichen / Cates Park ("the Park"; Figure 2) has been co-managed by TWN and DNV since 2001. The shoreline of the Park has been eroding and this is likely to worsen with sea level rise and climate change. Impacts to and loss of this shoreline continue to threaten archaeological resources, shoreline habitat, park infrastructure, and Tsleil-Waututh cultural sites. The Project aims to implement long-term strategies to restore the shoreline of the Park and enhance its resilience to climate change while preserving its cultural and historical significance.

The Project involves the design and construction of nature-based shoreline protection and stabilization measures in combination with habitat restoration and enhancement. The proposed works align with TWN's overall vision for Burrard Inlet and are part of larger initiatives by TWN and DNV to mitigate coastal erosion and restore shoreline habitat on the North Shore. TWN and DNV have developed these key objectives for the Project:

- Enhance resilience to climate change using nature-based solutions.
- Preserve the historical significance and enhance Tsleil-Waututh's cultural use of the Park.
- Integrate visitor usage and education.

The shoreline protection and restoration works will be combined with improvements to park amenities and shoreline access. These additional design features are located in upland areas (above the ordinary high water mark) and thus outside the scope of this notification.

The design approach is driven by the principles of eco-cultural restoration, emphasizing the interconnectedness of ecological biodiversity and human health and equity, and centering the importance of Indigenous values and culture in habitat restoration. The design also acknowledges the need for habitat connectivity between upland, riparian, and intertidal zones, and involves strategies to enhance and restore this relationship. The nature-based approach to shoreline protection takes cues from existing habitat features and substrate types and proposes "soft" solutions using more natural materials as an alternative to more conventional hard armouring and structural engineering solutions. The Project design is data-driven and informed by both western science and Indigenous Knowledge, incorporating engagement with TWN community members, local municipalities, and technical experts (Attachment 2); an assessment of existing biophysical conditions (Hatfield 2023; Table 3); and coastal process modelling (NHC 2025; Table 3).

The Project design (Attachment 1) is informed by the existing habitat features, coastal geomorphology, and the desired cultural and recreational use of the Park. The Project footprint (the "Project Site"; Figure 2) is divided into four subsections or reaches: **(1) West Beach, (2) Central Beach, (3) Roche Point, and (4) East Beach** (Figure 3). Areas of the Whey-ah-Wichen shoreline outside the Project footprint will be addressed at a later date when funding becomes available. The design of all four reaches is driven by the priority objective of the Project, which is to mitigate historic shoreline erosion and future erosion expected from sea level rise and to protect parklands and archaeological sites. The design makes use of beach nourishment (mixed sand-gravel), and boulder headlands placed at strategic locations to stabilize and retain the new fill. At the top of the beach, along the edge of the riparian zone, mixed gravel-cobble berms will be placed to stabilize the eroding bluffs. In addition to shoreline protection, design elements include:

1. **Enhancement of forage fish spawning habitat:** Forage fish spawning has been documented at the Project Site (further described in Hatfield 2023; Table 4). Surf smelt (*Hypomesus pretiosus*) and Pacific sand lance (*Ammodytes personatus*) will spawn on beaches that contain specific sediment grain-size distributions of sand and pebble, within 2 to 3 metres above mean low tide level. A study of forage fish spawning beaches in BC found that surf smelt prefer a coarse sand to fine pebble mix ranging from 1 to 7 mm in diameter. Pacific sand lance typically spawn in medium-sized sand sediments ranging from 0.25 to 0.5 mm in diameter, with spawning also documented in coarse sand and fine pebble sediments (1 to 7 mm). The mixed sand-gravel material used for the beach nourishment material will have a size gradation suitable for spawning (refer to Attachment 1 for material specifications).

2. **Planting native vegetation:** The upland area along the shoreline at Roche Point is primarily managed parkland with limited habitat value for fish and wildlife (further described in Hatfield 2023; Table 4). This area will be planted with native riparian vegetation that will include ecologically and culturally important plant species, but will remain low in stature so as not to disrupt views. Planting will be coordinated with TWN's archaeology team to avoid or minimize ground disturbance of native soils. Saltmarsh is largely absent from the shoreline, likely due to the steep slope and relatively high wave exposure. However, there is evidence that the upper foreshore at Roche Point can support high marsh / coastal dune vegetation, suggesting there are opportunities to increase the extent of this habitat by increasing the area of suitable substrate and reducing trampling from foot traffic. Dunegrass (*Leymus mollis*) and other coastal dune species will be planted along the upper edge of the foreshore at Roche Point (Figure 5) between +2.0 m and +3.20 m Geodetic Datum (GD). A detailed planting plan has been prepared (Hatfield 2024; Table 4), which includes plant species of cultural importance to TWN (TWN 2023; Table 4).

3. **Removal of invasive vegetation:** The riparian area of the shoreline has been impacted by invasive vegetation (further described in Hatfield 2023; Table 4). To ensure vegetation removal will not adversely impact existing habitat and archaeological resources, invasive vegetation removal will be conducted in accordance with the Project's Invasive Species Management Plan (Inlailawatash 2025; Table 4), Construction Environmental Management Plan (Hatfield 2025a; Table 4) and TWN Archaeology and Cultural Heritage Permit.

Together these strategies form a cohesive and balanced approach to shoreline protection and habitat restoration at the Project Site.

3.2 Location Description

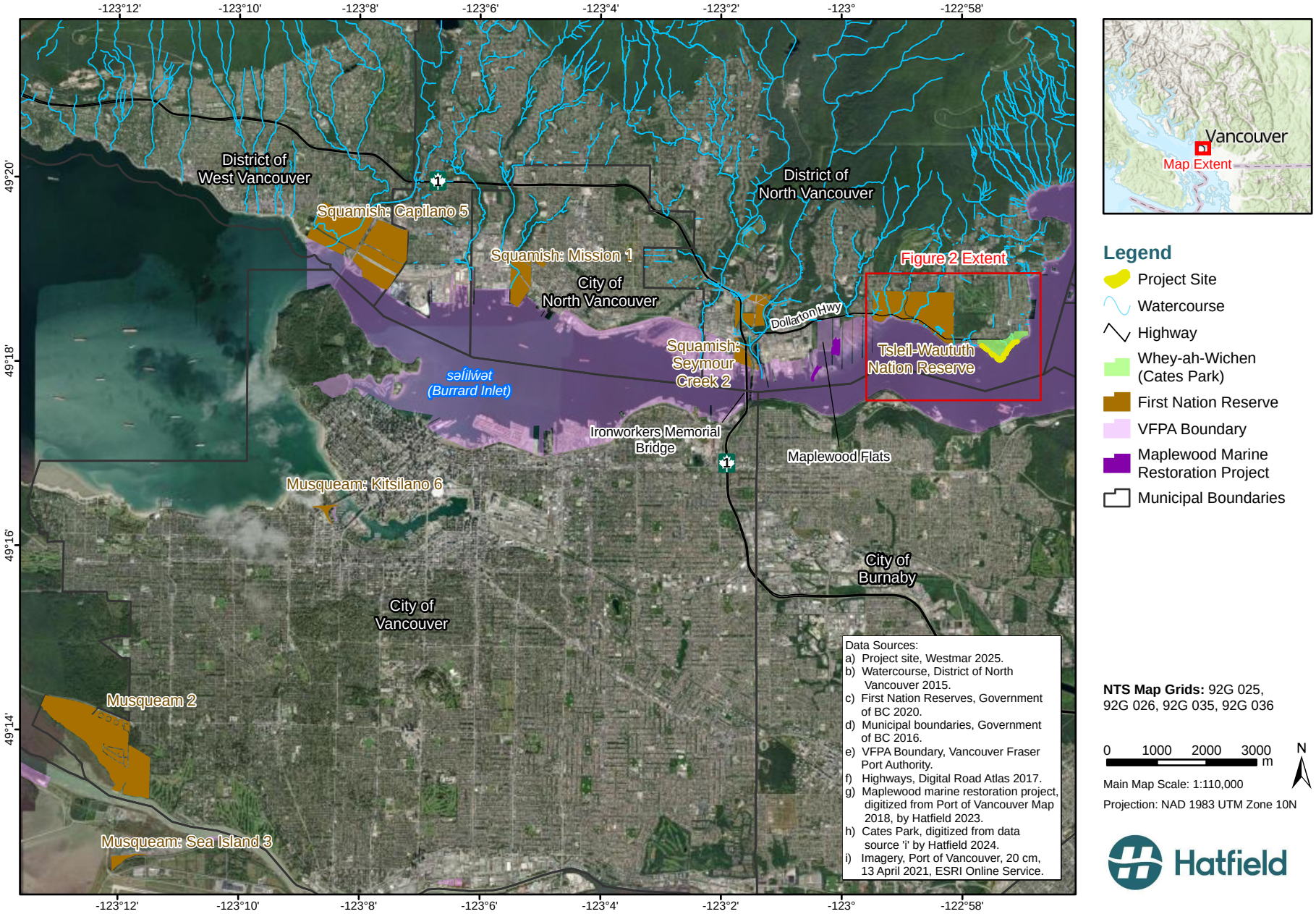
The Project Site is located in the Central Harbour of səl̓ilw̓ət (Burrard Inlet) in southwest BC , approximately 5.0 km east of the Ironworkers Memorial Bridge at the point where the Inlet curves north and becomes Indian Arm (Figure 1). The Project Site covers approximately 950 m of linear shoreline and is characterized by a beach and shallow subtidal area bordered by riparian vegetation and managed parkland (Figure 3). A public boat launch and pier are also present on the western shore of the Project Site. The TWN Reserve (səlilw̓ətaʔɬ, Burrard Inlet IR#3) is located approximately 500 m west of the Project Site and occupies approximately 112 hectares of land on the north shore of the Central Harbour (Figure 2). To the west of the Project Site lies Maplewood Flats Conservation Area (managed by Wild Bird Trust of BC, a non-profit conservation organization), which includes a large sediment shelf and the remnants of a large wetland complex that was historically fed by Lynn Creek and the Seymour River. There are no legally protected terrestrial or aquatic organism habitats within the vicinity of the Project Site. The Park is backed by residential properties and Dollarton Highway. The waters of Burrard Inlet, including the intertidal area of the Project Site, fall within federal lands and waters that are managed by the Vancouver Fraser Port Authority (VFPA).

These areas of interest are shown in Figure 1 and Figure 2, and the distances to areas of interest from the Project Site are listed in Table 1.

Table 1 Distance from the Project Site to areas of interest.

Area of Interest	Distance from Project
First Nation Reserves	
səlilwətaɬ (Tsleil-Waututh Nation)	500 m to the west
Skwxwú7mesh-ulh (Squamish Nation)	4.5 km to the west
xʷməθkʷəy̓əm (Musqueam Indian Band)	19 km to the southwest
Municipalities	
District of North Vancouver	0 m
City of North Vancouver	6 km to the west
City of Burnaby	1.5 km to the south
City of Vancouver	5 km to the southwest
Areas of Interest	
Burrard Inlet	0 m
Whey-ah-Wichen / Cates Park	0 m
Dollarton Highway	200 m to the north
Seymour River	4.5 km to the west
Maplewood Flats Conservation Area	2.5 km to the west
Ironworkers Memorial Bridge	4.5 km to the west

Figure 1 Regional overview of Project Site.



Legend

- Project Site
- Watercourse
- Highway
- Whey-ah-Wichen (Cates Park)
- First Nation Reserve
- VFPA Boundary
- Maplewood Marine Restoration Project
- Municipal Boundaries

NTS Map Grids: 92G 025, 92G 026, 92G 035, 92G 036

0 1000 2000 3000 m

N

Main Map Scale: 1:110,000

Projection: NAD 1983 UTM Zone 10N

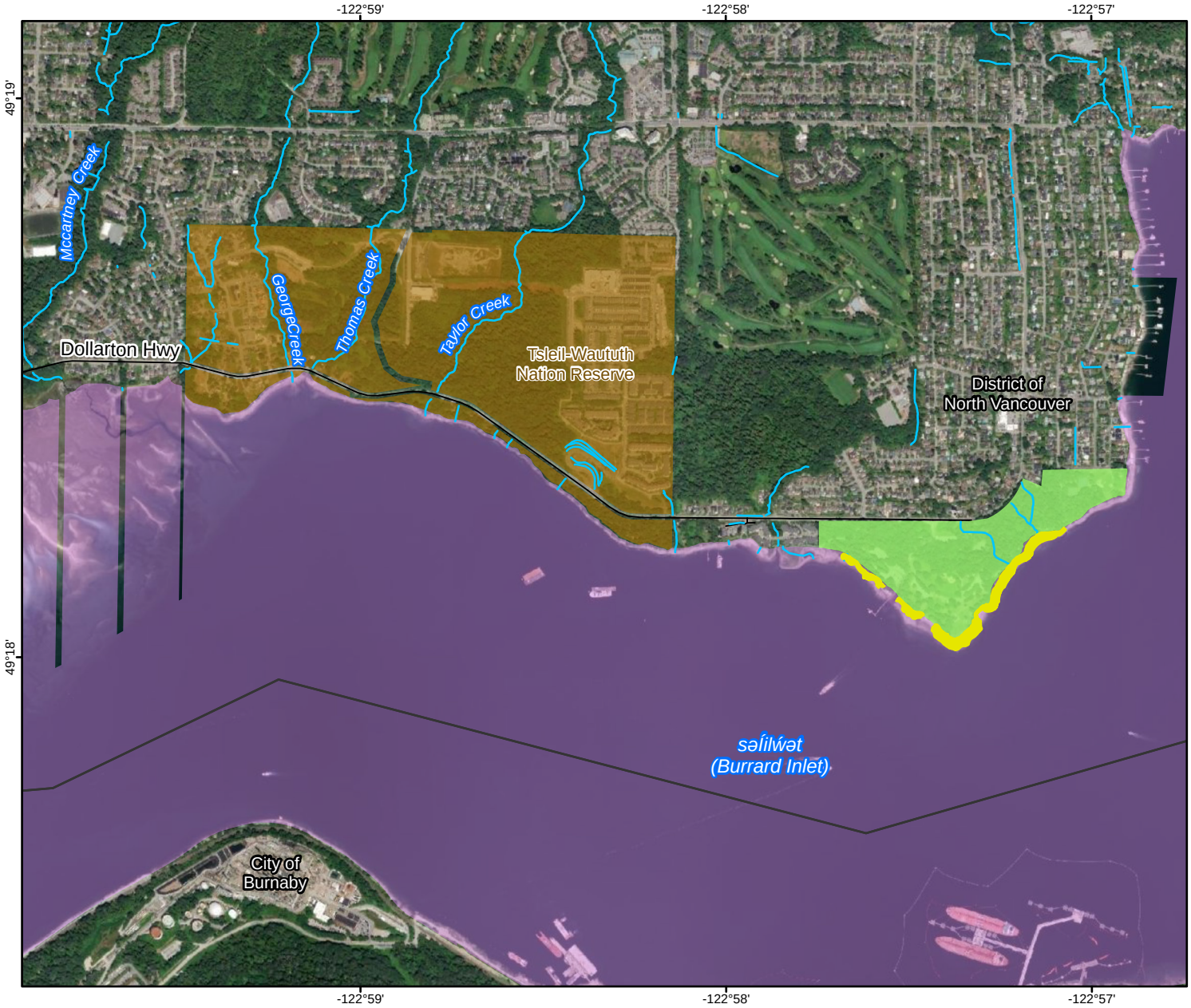
Hatfield

Shoreline Restoration Design for Whey-ah-Wichen / Cates Park

K:\Data\Project\DNV12081-NV\A_MXD\EA_Notification\DNV12081_EA_Notification_20251028_v02_VP.aprx

DNV12081_EANotification_Map1_20251028_v02_VP

Figure 2 Local overview of Project Site.



Legend

- Project Site
- Watercourse
- Highway
- Whey-ah-Wichen (Cates Park)
- First Nation Reserve
- VFPA Boundary
- Municipal Boundaries

NTS Map Grids: 92G 026, 92G 036

Data Sources:
a) Project site, Westmar 2025.
b) Watercourse, District of North Vancouver 2015.
c) First Nation Reserves, Government of BC 2020.
d) Municipal boundaries, Government of BC 2016.
e) VFPA Boundary, Vancouver Fraser Port Authority.
f) Highways, Digital Road Atlas 2017.
g) Cates Park, digitized from data source 'h' by Hatfield 2024.
h) Imagery, Port of Vancouver, 20 cm, 13 April 2021, ESRI Online Service.

0 100 200 400 600 m

N

Main Map Scale: 1:20,000

Projection: NAD 1983 UTM Zone 10N

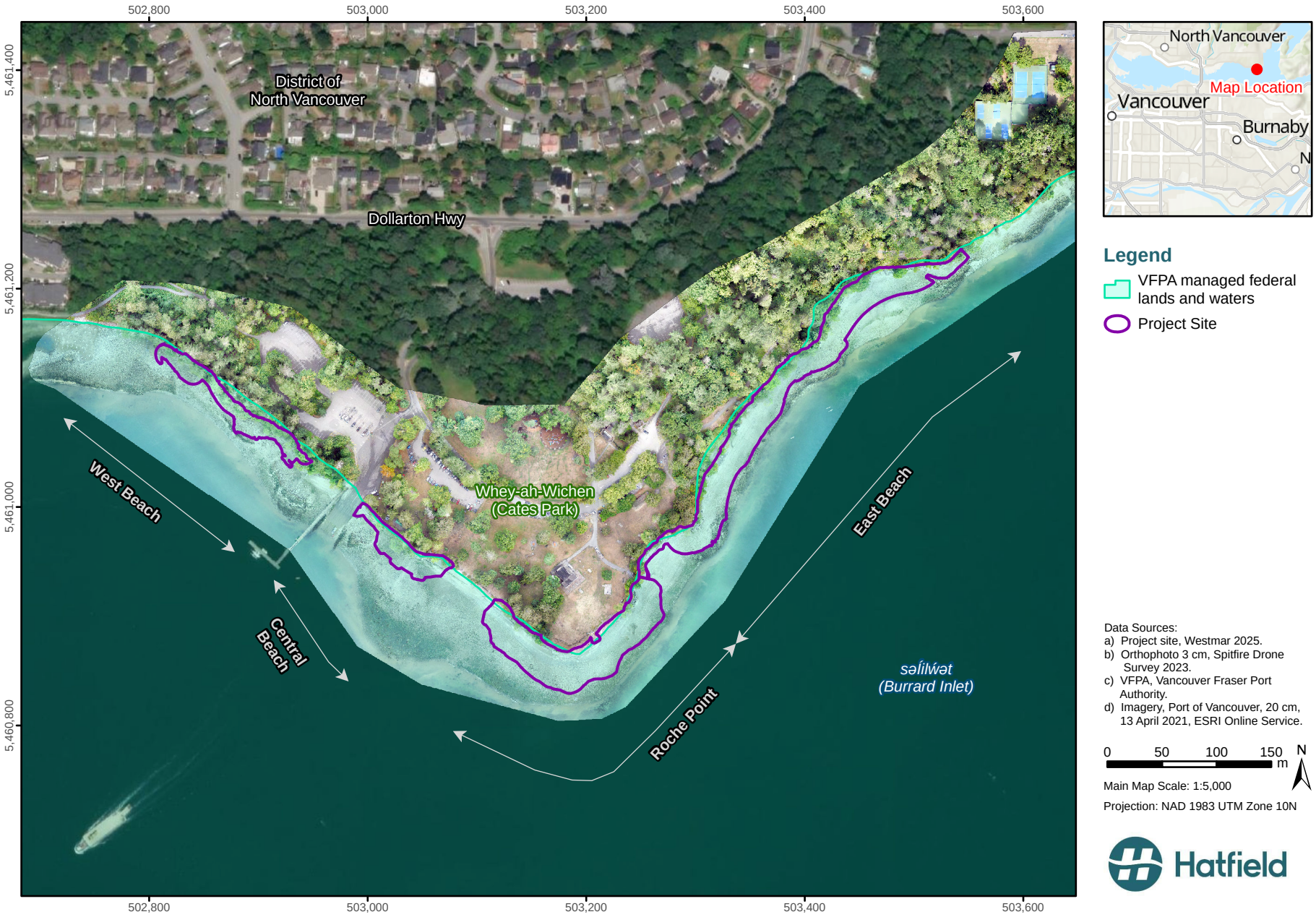
Hatfield

Shoreline Restoration Design for Whey-ah-Wichen / Cates Park

K:\Data\Project\DNV12081-NV\A_MXD\EA_Notification\DNV12081_EA_Notification_20251028_v02_VP.aprx

DNV12081_EANotification_Map2_20251028_v02_VP

Figure 3 Project overview.



Shoreline Restoration Design for Whey-ah-Wichen / Cates Park

K:\Data\Project\DNV12081-NV\A_MXD\EA_Notification\DNV12081_EA_Notification_20251029_v03_VP.aprx

DNV12081_VFPA_PER_LocationPlan_20251029_v03_VP

3.3 Project facilities

There are no built features included in the design of the foreshore restoration works.

3.4 Proposed Activities

Construction activities will involve the placement of sand, gravel, and rock materials (Table 2) and the planting of riparian and dunegrass vegetation. Existing boulder armouring on the foreshore will be buried by beach nourishment and disturbance to the shoreline bank (containing culturally significant materials) will be minimized as much as possible. Beach logs present in the work area will be salvaged for later reinstatement, unless removal is not possible without excavation, in which case the logs will be left in place and buried.

Shoreline length, total footprint area, and footprint area below +1.5 m Geodetic Datum (GD) or Higher High Water Mean Tide (HHWMT) for each Project reach are provided in Table 3.

All construction equipment and beach nourishment materials will be transported to the Project Site by barge. Vegetation to be planted at Roche Point will be delivered by truck. Staging and laydown areas will be located in the parking lot just north of the pier.

A portion of the beach nourishment materials will be sourced from dredge material. Vancouver Pile Driving (VPD) will be doing maintenance dredging of their water lot, located adjacent to the mouth of Lynn Creek, at the same time as the Project. The sediment grain size and chemical composition of the dredge material have been analyzed and found to be suitable for beneficial reuse at Whey-ah-Wichen. Environmental and Climate Change Canada has been consulted on the proposed beneficial reuse and will provide a letter for the Project and a Disposal at Sea permit to VPD for the remaining dredge material not used by the Project. The remaining portion of material for the Project will be sourced from quarries.

A conveyor will be used to offload beach nourishment materials from the barge onto the beach within the footprint of the Project work areas. The material would then be moved to final placement by low tire pressure haul vehicles along the upper shore. A spud barge would be used to secure the position adjacent to the shoreline of the materials barge. It is not anticipated that there would be any grounding of the barges during normal operations, and the only contact with the seabed would be the spuds in the subtidal area. Barges and tugs will avoid traversing sensitive subtidal eelgrass that borders the shoreline.

Work will commence with placement of materials within the middle of the work footprint to establish a haul road for vehicles working on the beach. To the extent possible, work will be completed in the dry and the lowest tides will be used to install the lowest elevation elements such as the rock toes. Where a backshore gravel-cobble berm and boulder headlands are planned, these would be installed next. Beach nourishment materials will then be placed on top of the gravel-cobble backshore berm and behind the boulder headlands.

Table 2 Amount of material required for the Project.

East Beach Material Volume	
Backshore Protection	5,070 m^3
Cobble Toe	680 m^3
Beach Nourishment	3,120 m^3
Headland Rock	490 m^3
Channel Rock	20 m^3
Roche Point Material Volume	
Beach Nourishment	6,200 m^3
Gravel ramp	34 m^3
Central Beach Material Volume	
Backshore Protection	990 m^3
Fine Mixed Sand and Gravel	980 m^3
Headland Rock	210 m^3
West Beach Material Volume	
Backshore Protection	1,200 m^3
Beach Nourishment	230 m^3
Headland Rock	470 m^3
Total	**19,694 m^3**

Table 3 Length and area of the Project footprint.

East Beach	
Shoreline Length	473 m
Area below +1.5 m GD (HHWMT)	6,054 m^2
Roche Point	
Shoreline Length	190 m
Area below +1.5 m GD (HHWMT)	4,019 m^2
Central Beach	
Shoreline Length	105 m
Area below +1.5 m GD (HHWMT)	252 m^2
West Beach	
Shoreline Length	190 m
Area below +1.5 m GD (HHWMT)	1,314 m^2
TOTAL	
Shoreline Length	**958 m**
Area below +1.5 m GD (HHWMT)	**11,639 m^2**

3.5 Associated Projects

No other projects are required for the completion of this Project.

3.6 Work Completed

Extensive work has been conducted to support this Project (Table 5). The design team has undertaken several biological and oceanographic studies to support the Project. Additional Project-specific documents have been drafted to support permit applications (e.g., effects assessments). The design was informed by previous engagement with TWN to understand the community's ideas and objectives for the shoreline of Burrard Inlet.

Table 4 Work completed to support the Project objectives and design.

Citation	Description
TWN. 2022. Collaborative Shoreline Adaptation Visualization Report prepared for TWN by Kerr Wood Leidal and UBC Coastal Adaptation Lab.	This document provides a gateway for TWN to move from climate change impact assessment to climate action along the Burrard Inlet shoreline. The vision, objectives and key shoreline adaptation elements identified in this report reflect TWN Indigenous Knowledge, values and aspirations for the shoreline. Preliminary shoreline adaption design features for key sites aim to facilitate intergenerational knowledge transfer and to promote TWN interactions with nature, stewardship, place-based learning and future harvesting.
TWN. 2023. Inventory of Culturally Important Shoreline Native Plants and Uses.	An inventory of native terrestrial and marine species that are important to TWN. This list has been used to guide the restoration works that are part of the Project. This list is a living document that gets periodically updated.
Hatfield. 2023. Whey-ah-Wichen/Cates Park Site Assessment Report. Prepared for TWN and DNV.	Hatfield Consultants (Hatfield) prepared a site assessment report to describe the existing conditions at the Project Site. The report includes the results of a desktop review and field surveys (summer 2023) of the terrestrial and marine environments around the Project Site. Proximity of the Project Site to species at risk was assessed. The report also included input from Northwest Hydraulic Consultants (NHC) on coastal processes and LEES+Associates on park use. Environmental constraints and recommendations for Project design were included. Document is part of DFO and VFPA permit applications.
NHC. 2025. Whey-ah-Wichen/Cates Park Restoration Program: Design Report. Prepared for TWN and DNV.	NHC has completed an extensive review of previous studies and literature, undertook desktop (empirical) and numerical modelling analyses to develop a coastal engineering design basis, and completed detailed modelling to characterize baseline and future potential conditions (post-implementation of the preferred design concept). Document is part of DFO and VFPA permit applications.
Hatfield. 2024. Whey-ah-Wichen/Cates Park Restoration Program: Planting Plan. Prepared for TWN and DNV.	Hatfield prepared a Planting Plan that describes the growing medium and plant specifications for the habitat types included in the design: riparian, coastal sand dune, and saltmarsh. This document will be provided to the contractor for planting specifications and is part of DFO and VFPA permit applications.
Hatfield. 2025a. Whey-ah-Wichen/Cates Park Restoration Program: Construction	Document to guide overall environmental management practices during the Project's construction phase to avoid and/or mitigate adverse effects on

Citation	Description
Environmental Management Plan. Prepared for TWN and DNV.	environmental resources and the local community. This document has been provided to the contractor and is part of DFO and VFPA permit applications.
Hatfield. 2025b. Whey-ah-Wichen/Cates Park Restoration Program: Overview Effects Assessment. Prepared for TWN and DNV.	This document, geared to DFO and VFPA, provides a summary of the Project objectives, a detailed description of the design elements and activities, the existing environment, potential effects of the project on fish and fish habitat and avoidance and mitigation measures. The document concludes that the Project is not anticipated to cause residual harmful impacts to fish and fish habitat, but rather benefit fish by improving habitat quality and enhancing habitat connectivity in Burrard Inlet. Document is part of DFO and VFPA permit applications.
Inlailawatash. 2025. Whey-ah-Wichen/Cates Park Restoration Program: Invasive Species Management Plan. Prepared for TWN and DNV.	Inlailawatash Limited Partnership (Inlailawatash) prepared a workplan for ecological restoration in areas impacted by invasive plants at the Project Site. Invasive species management methods at the Project Site must take care to minimize soil disturbance as the Project Site is archaeologically sensitive. Inlailawatash proposed a strategy of repeated manual removal above ground cutting with methods to suppress regrowth by covering cut stems with a layer of cardboard, erosion blanket, or mulch, with herbicide use applied judiciously as required.
Diamond Head. 2025. Whey-ah-Wichen/Cates Park Arboricultural Inventory and Report. Prepared for Hatfield.	Diamond Head Consulting (DHC) was retained to complete an arboricultural assessment. This report contains an inventory of trees and summarizes management recommendations with respect to construction activities. The approximate location and general health of trees potentially impacted by the foreshore work were assessed.

3.7 Duration of Project

The Project is expected to be constructed according to the schedule below. In-water fill placement will be completed during DFO's Least Risk Window for Burrard Inlet (August 16 to February 28).

- Pre-construction invertebrate salvage: October 2025 (within one week of construction).
- Mobilization and site clean up: November 2025.
- Placement of fill materials and construction of access points: November 2025 – February 2026.
- Demobilization: February 2026.
- Riparian and dunegrass habitat planting: April – May 2026.

A timeline of the completed and planned Project activities is shown in Table 5.

Table 5 Project schedule.

Date	Duration	Status	Activity / Description
2021 – ongoing	3 yrs +	ongoing	Engagement: TWN community, TWN community shoreline adaptation advisory group meetings.
2021 – 2022	12 mo.	complete	Collaborative Shoreline Adaptation Visualization Report: presents preliminary shoreline adaption design features based on TWN community objectives and vision.

Date	Duration	Status	Activity / Description
2023 – ongoing	2 yrs +	ongoing	Engagement: Chief & Council, technical advisory committee, expert advisory panel, and other First Nations.
Jul 2023	1 mo.	complete	Multi-disciplinary consultant team retained to support the shoreline restoration Project.
Jul – Dec 2023	6 mo.	complete	Site Assessment Report – literature review, field data collection and reporting.
Nov 2023 – Nov 2024	12 mo.	complete	Project concept design plan development
Jan 2024 – Jan 2025	12 mo.	complete	Development of the Cates Park/Whey-Ah-Wichen Shoreline Restoration Plan: Design Report.
Oct 2024 – Jul 2025	6 mo.	complete	Submit applications for permitting and support the permit review process. Complete engineering detailed design drawings and detailed project cost estimate.
Mar-Oct 2025	6 mo.	complete	Project tendering and procurement.
Oct 2025	1 mo.	started	Mobilization, site cleanup, staging, preparation, invertebrate salvage within the project footprint.
Nov 2025 – Feb 2026	4 mo.	not started	Construction, demobilization.
Apr-May 2026	2 mo.	not started	Foreshore planting, post-construction surveys and reporting.

4.0 Engagement

Engagement for the Project has been conducted throughout the design process. The memorandum “Engagement Summary for Whey-ah-Wichen/Cates Park Improvements” (Attachment 2) contains a full overview of the engagement conducted for this Project. Examples of engagement conducted to date include:

- Whey-ah-Wichen Cultural Cooperation Agreement Steering Committee Meetings;
- Meetings with TWN Cultural Team;
- Concept Designs Feedback with TWN Community;
- TWN Newsletter Updates;
- Engagement Sessions with TWN Community;
- Discussion with Takaya Tours at the Whey-ah-Wichen Technical Meeting;
- DNV Parks and Natural Environment Advisory Committee Meeting;
- Multi-stakeholder Shoreline Technical Advisory Group Presentation;
- Chief and Council and CAO ‘Snapshot’ Update;
- Presentation at Nature-based Coastal Solutions Conference, Atlantic Chapter (Halifax, NS);
- Presentation at Nature-based Coastal Solutions Conference, Pacific Chapter (Vancouver, BC);
- Consultation with Deep Cove Kayak; and
- Meeting with the Sḵwx̱wú7mesh Úxwumixw (Squamish Nation) and written communication with xʷməθkʷəy̓əm (Musqueam) Indian Band.

Ongoing engagement efforts include the use of online resources to keep the community informed and involved in the Project. The DNV has created a section of their website under Parks, Trails, and Recreation, summarizing the proposed restoration and improvements at Whey-ah-Wichen. The webpage also has a dedicated area for news and updates on the Project. Additionally, TWN has published a blog post on their website, and will continue to post updates when construction commences in November 2025.

5.0 Authorizations

Permits, licenses, tenures or other authorizations	Issuer	Status
Request for Review (RfR), under the *Fisheries Act*	Fisheries and Oceans Canada (DFO)	The RfR package was submitted on October 12, 2024 and a Letter of Advice from DFO was received on March 18, 2025. File #24-HPAC-01222.
Project and Environmental Review (PER) Category B, under the *Impact Assessment Act* (Section 82) and *Canada Marine Act*	Vancouver Fraser Port Authority (VFPA)	Preliminary Review package was submitted on November 19, 2024. File #24-174. The full application submission (Category C) was submitted on May 21, 2025. The permit was issued by the VFPA on July 31, 2025.
Notification, under the *Canadian Navigable Waters Act*	Transport Canada	A Notification was submitted in August 2025.
Scientific Collection licence, under the *Fisheries Act*	DFO	Permit received on August 25, 2025 (Permit # XHAB 375 2025).
TWN Archaeological & Cultural Heritage Permit	TWN	This work is conducted under *HCA* permit 2023-0034 NOI No. 1 and NOI No. 1 AMD, and First Nations permits: xʷməθkʷəy̓əm Musqueam Heritage Research/Investigation Permit MIB-2023-061-AIA, Skwxwu7mesh Uxwumixw (Squamish Nation) Archaeological Investigation Permit 23-0136, Sto:lō Heritage Investigation Permit 2025-069, səlilwətaɬ Tsleil-Waututh Cultural Heritage Inspection Permit TWN-22563-25044.

6.0 Notification Threshold Information

Design Thresholds (Section 5(1)(b))	
Information Requirement	Proponent's Response
Notification Category	Shoreline Modification Projects
Project's Design Value, in the applicable unit of measurement related to the design threshold that triggered notification.	The shoreline restoration project entails filling of 1.16 ha foreshore over 958 m of linear shoreline below the natural boundary of a marine coastline. The length of linear shoreline is within 15% of the 1, 000 m threshold but the area is less than 15% of the 2 ha threshold.

7.0 Attachments

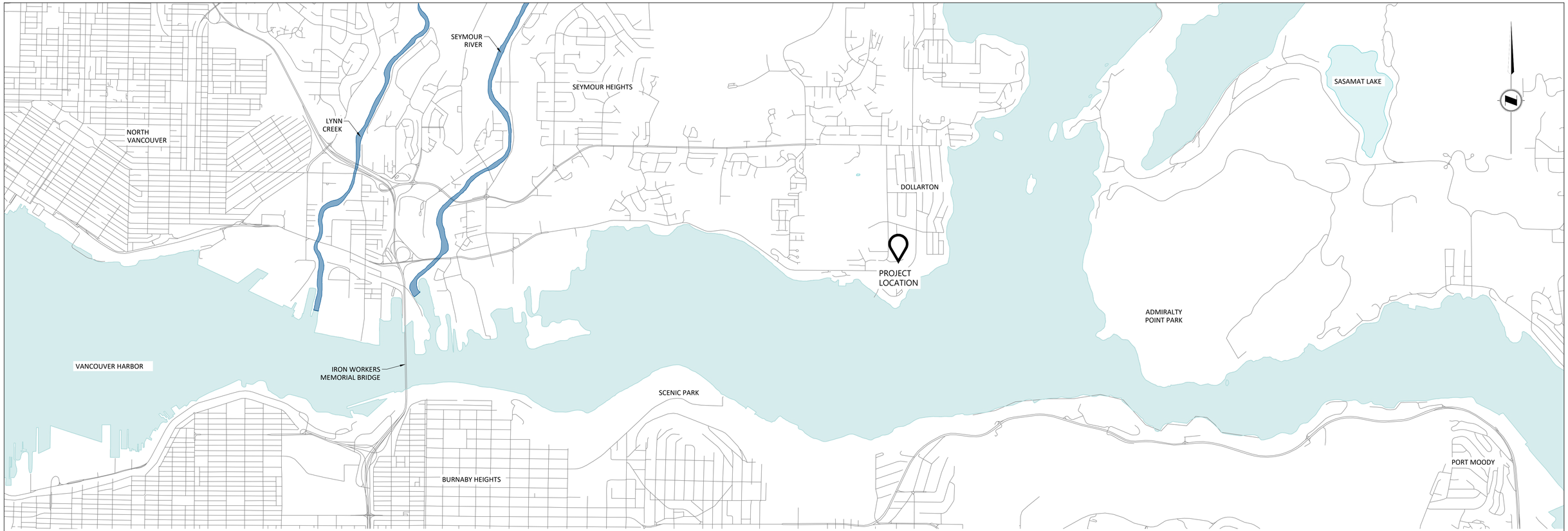
The following attachments are included as part of this package:

- Attachment 1 – Shoreline Restoration Design (NHC)
- Attachment 2 – Engagement Summary Report

8.0 [*Summary/Conclusion – Optional*]

TWN and DNV are seeking to implement a shoreline protection and restoration project which aims to mitigate the impacts of shoreline erosion and protect archaeological and recreational assets at the Park. Shoreline erosion driven by changes to local sediment dynamics from urban and industrial development, as well as increased wave action associated with heavy boat traffic, is likely to worsen without intervention. The Project design is based on data-driven research, and draws on Indigenous Knowledge, nature-based design principles, and community engagement. The design also aims to reconnect TWN community members to the shoreline, facilitating intergenerational knowledge transfer and promoting TWN interactions with nature, stewardship, place-based learning, and future harvesting. The Project advances TWN's overall vision for improving the health of Burrard Inlet and takes action to restore marine habitat and build community resilience to sea level rise and other climate change impacts. The Project has gone through the DFO RfR process and is not anticipated to cause residual harmful impacts to fish and fish habitat, but rather benefit fish by improving habitat quality and enhancing habitat connectivity in Burrard Inlet. The Project has also gone through the VFPA PER Process and no significant adverse environmental effects were identified. The Project has not raised concerns with TWN community members or the public, which TWN and DNV have confirmed through an extensive engagement process.

Attachment 1
Shoreline Restoration Design (NHC)



LINEWORK DATA SOURCE: HTTPS://CATALOGUE.DATA.GOV.BC.CA/DATASET

0 0.25 0.50 1km
SCALE = 1:20,000

DISTRICT OF NORTH VANCOUVER

CATES PARK SHORELINE RESTORATION PHASE 1

ISSUED FOR CONSTRUCTION, 2025-11-12

DRAWING INDEX	
Sheet Number	Sheet Title
G-0001	COVER SHEET
G-0002	NOTES
G-0101	SITE OVERVIEW
G-0102	WEST BEACH OVERVIEW
G-0103	CENTRAL BEACH OVERVIEW
G-0104	ROCHE POINT AND EAST BEACH OVERVIEW
	WEST BEACH
C-1101	PLAN VIEW
C-1301	SECTIONS AND TYPICALS
C-1500	DETAILS
	CENTRAL BEACH
C-2102	PLAN VIEW
C-2301	SECTIONS AND TYPICALS
C-2500	DETAILS
	ROCHE POINT
C-3101	PLAN VIEW
C-3301	SECTIONS
C-3302	SECTIONS
C-3500	DETAILS
	EAST BEACH
C-4101	PLAN VIEW
C-4102	PLAN VIEW
C-4103	PLAN VIEW
C-4301	SECTIONS
C-4302	SECTIONS
C-4500	DETAILS

0

DISTRICT OF NORTH VANCOUVER

Tsleil-Waututh Nation
PEOPLE OF THE INLET

nhc

NHC PROJECT No. 3008311
REVISION No. 0
SHEET No.
G-0001

1. GENERAL NOTES

1.1. A COPY OF THE LATEST REVISION OF THE DRAWING SET MUST BE REVIEWED BY THE CONTRACTOR, AND MUST BE PRESENT AT ALL TIMES ON SITE WHILE WORK IS PROCEEDING.

1.2. WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, PROVINCIAL, AND FEDERAL REGULATIONS FOR THE PROJECT AREA.

1.3. REFER TO CONTRACT DOCUMENTS FOR GENERAL NOTES, INCLUDING ENVIRONMENTAL, ARCHAEOLOGICAL, AND ANY OTHER REGULATORY AUTHORITY'S REQUIREMENTS. IT IS IMPORTANT TO READ THE CONTRACT DOCUMENTS IN FULL ALONG WITH THESE DRAWINGS.

1.4. THE CONSTRUCTION OF WEST BEACH AND CENTRAL BEACH IS CONTINGENT UPON OWNERS APPROVAL.

1.5. CONTRACTOR TO NOTIFY OWNERS ENGINEER REGARDING SEQUENCING OF WORK WITH STAIRS AND BEACH FILL.

0

1.6. DIMENSIONS

1.6.1. ALL ELEVATIONS AND DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.

1.6.2. COORDINATES ARE IN NAD83 (CSRS), UTM ZONE 10 NORTH.

1.6.3. ALL ELEVATIONS ARE TO CGVD28. 0 M CGVD28 IS APPROXIMATELY 3.0 M ABOVE 0 M CHART DATUM (CD).

1.7. DESIGN CRITERIA

1.7.1. THE RELATIVE SEA LEVEL RISE (RSLR) CONSIDERED FOR THIS DESIGN IS 0.60 M (NHC, 2023).

1.7.2. DESIGN WATER LEVELS (BASED ON CHS DATUM FROM VANCOUVER HARBOUR) ARE SHOWN IN TABLE 1.

1.8. DESIGN INTENT

1.8.1. THIS DESIGN IS MEANT TO MITIGATE EROSION OF THE BEACH USING A NATURE-BASED SOLUTION INCLUDING BEACH NOURISHMENT AND HEADLANDS DESIGN. AREAS USING BEACH NOURISHMENT, OR SOFT SHORE APPROACH ARE EXPECTED TO ADJUST FOLLOWING CONSTRUCTION. MONITORING AND ADAPTIVE MANAGEMENT ARE EXPECTED.

1.8.2. THIS DESIGN IS TO PROTECT AGAINST SHORELINE EROSION, AND FUTURE EROSION DUE TO CLIMATE CHANGE, AND MITIGATE THE POTENTIAL FOR WAVE RUNUP TO DAMAGE NEARBY PARK RECREATIONAL ASSETS. THE DESIGN DOES NOT MITIGATE FLOOD RISK, AS THE BERM AT THE TOP OF BEACH IS PERMEABLE. THIS IS TO ALLOW SURFACE WATER TO DRAIN THROUGH THE BERM. AS IT IS PERMEABLE, IT IS NOT A DIKE, NOR DOES IT FUNCTION AS A DIKE.

1.8.3. THIS WORK HAS BEEN DESIGNED TO AVOID ANY EXCAVATION OR DIGGING. NO EXCAVATION OR DIGGING WILL BE ALLOWED DURING CONSTRUCTION.

1.8.4. THIS DESIGN HAS A SERVICE LIFE OF 30 YEARS. MAINTENANCE IS EXPECTED OVER THE DURATION OF THE SERVICE LIFE.

1.9. WORK AREA

1.9.1. THE WORK AREA IS EXPOSED TO TIDES, WAVES, AND CURRENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW TIDE AND WEATHER FORECASTS AND PLAN THEIR WORK ACCORDINGLY TO MINIMIZE STAND-BY TIME AND DELAYS.

1.9.2. WATER LEVELS ARE SHOWN IN TABLE 1. WEATHER SYSTEMS MAY CAUSE STORM SURGES THAT INCREASE WATER LEVELS ABOVE ASTRONOMICAL PREDICTIONS.

1.9.3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE UTILITIES (IF ANY).

1.9.4. TABLE 2 SHOWS THE APPROXIMATE DESIGN FOOTPRINTS FOR THE PROJECT. NOTE THAT THESE ARE ESTIMATES BASED ON THE BASELINE SURVEY AND MAY VARY.

0

2. MATERIALS

2.1. SEE TABLE 3 FOR A SUMMARY OF DIFFERENT MATERIAL TYPES.

2.2. SEE TABLE 4 TO TABLE 10 FOR INDIVIDUAL MATERIAL SPECIFICATIONS.

2.3. BENEFICIAL REUSE MATERIAL TO BE PLACED BELOW MATERIAL TYPE 1 AND TYPE 3. THE MATERIAL TYPE 1 OR TYPE 3 LAYER COVERING THE BENEFICIAL REUSE PLACEMENT REQUIRES A MINIMUM THICKNESS OF 300 mm.

TABLE 1. DESIGN WATER LEVELS

DESCRIPTION	ABBREVIATION	ELEVATION (m, CGVD28)	ELEVATION (m, CD)
HIGHER HIGH WATER LARGE TIDE	HHWLT	2.0	5.0
HIGHER HIGH WATER MEAN TIDE	HHWMT	1.5	4.5
MEAN WATER LEVEL	MWL	0.1	3.1
LOWER LOW WATER MEAN TIDE	LLWMT	-1.8	1.2
LOWER LOW WATER LARGE TIDE	LLWLT	-2.9	0.1

0

TABLE 2. DESIGN AREA BY REACH

REACH	AREA (Ha)	AREA (m^2)
WEST BEACH	2,663	0.27
CENTRAL BEACH	1,877	0.19
ROCHE POINT	6,864	0.69
EAST BEACH	10,202	1.02

TABLE 3. MATERIAL TYPES AND PRELIMINARY DESCRIPTION

MATERIAL TYPE	TARGET D50 (mm)	DESCRIPTION
TYPE 1. BACKSHORE MIXED GRAVEL-COBBLE	50	15 INCH MINUS COBBLE WITH COARSE TO MEDIUM GRAVEL BASE (ROUNDED)
TYPE 2. TOE MIXED GRAVEL-COBBLE	90	11 INCH MINUS COBBLE WITH VERY COARSE GRAVEL BASE (ROUNDED)
TYPE 3. COARSE MIXED SAND-GRAVEL	10	MEDIUM TO FINE PEBBLES (ROUNDED GRAVEL) WITH COARSE SAND BASE
TYPE 4. HEADLAND ROCK	390	GOOD QUALITY WIDELY GRADED ROCK
TYPE 5 . ANGULAR ROCK	180	GOOD QUALITY WIDELY GRADED ROCK
TYPE 6. FINE MIXED SAND-GRAVEL	1.2	FINE (PEA) GRAVEL WITH MEDIUM SAND BASE

0

TABLE 4. TYPE 1 BACKSHORE MIXED GRAVEL-COBBLE GRADATION

PERCENT PASSING (%)	MINIMUM DIAMETER (mm)	AVERAGE DIAMETER (mm)	MAXIMUM DIAMETER (mm)
90	100	200	300
50	25	50	75
15	5	10	15

TABLE 5. TYPE 2 TOE MIXED GRAVEL-COBBLE GRADATION

PERCENT PASSING (%)	MINIMUM DIAMETER (mm)	AVERAGE DIAMETER (mm)	MAXIMUM DIAMETER (mm)
90	150	200	250
50	70	90	120
15	35	50	75

TABLE 6. TYPE 3 COARSE MIXED SAND-GRAVEL GRADATION

PERCENT PASSING (%)	MINIMUM DIAMETER (mm)	AVERAGE DIAMETER (mm)	MAXIMUM DIAMETER (mm)
90	20	22	26
50	8	10	15
15	1	1	2

TABLE 7. TYPE 4 HEADLAND ROCK

PERCENT PASSING (%)	MINIMUM MASS (kg)	AVERAGE MASS (kg)	MAXIMUM MASS (kg)
90	185	250	340
50	120	155	190
15	50	85	120

TABLE 8. TYPE 4 HEADLAND ROCK GRADATION - SIZE FOR REFERENCE ONLY

PERCENT PASSING (%)	MINIMUM DIAMETER (mm)	AVERAGE DIAMETER (mm)	MAXIMUM DIAMETER (mm)
90	420	460	510
50	360	390	420
15	270	320	360

0

TABLE 9. TYPE 5 ANGULAR ROCK

PERCENT PASSING (%)	MINIMUM DIAMETER (mm)	AVERAGE DIAMETER (mm)	MAXIMUM DIAMETER (mm)
90	200	240	260
50	140	180	220
15	100	120	180

0

TABLE 10. TYPE 6 FINE MIXED SAND-GRAVEL

PERCENT PASSING (%)	MINIMUM DIAMETER (mm)	AVERAGE DIAMETER (mm)	MAXIMUM DIAMETER (mm)
90	7	13	17
50	0.5	1.2	1.8
15	0.25	0.7	1

0

TABLE 11. MATERIALS AND QUANTITIES BY REACH

MATERIAL	VOLUME (m^3)
WEST BEACH	
TYPE 1	1,320
TYPE 3	250
TYPE 4	500
CENTRAL BEACH	
TYPE 1	1,040
TYPE 4	230
TYPE 6	1,030
ROCHE POINT	
TYPE 3	5,550
TYPE 4	240
TYPE 5	370
EAST BEACH	
TYPE 1	4430
TYPE 2	680
TYPE 3	3,710
TYPE 4	510
TYPE 5	60

0

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, TABLES AND NOTES UPDATED	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc
30 GOSTICK PLACE | NORTH VANCOUVER | BC | V7M 3G3
www.nhcwater.com

CATES PARK SHORELINE RESTORATION PHASE 1

NOTES

NHC PROJECT No. 3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No. G-0002

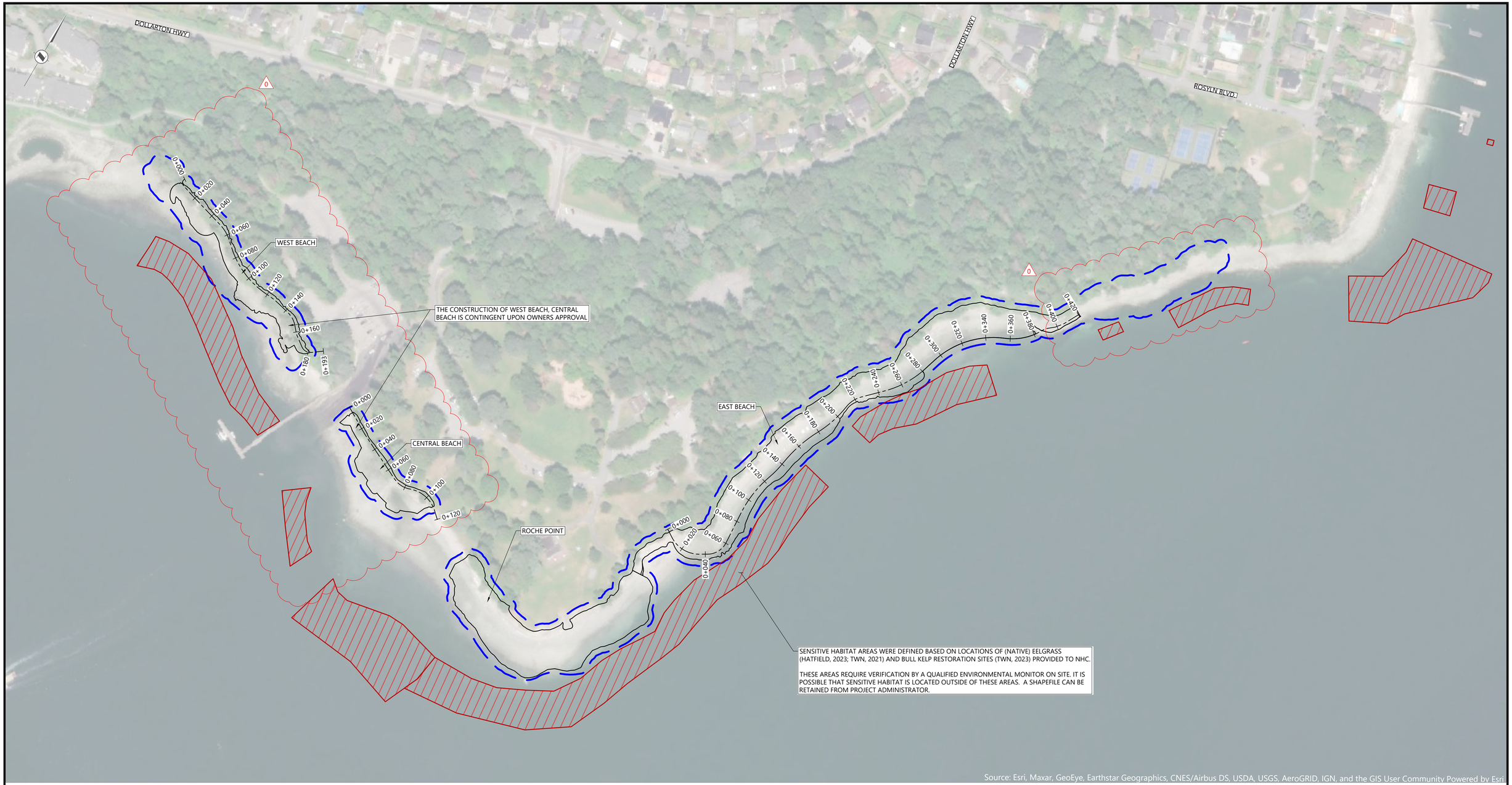


IMAGE SOURCE: ESRI OPEN IMAGERY (DATE UNKNOWN)

0 20 40 60 80 100m
SCALE = 1:1,500

SITE OVERVIEW
SCALE 1:1,500

LEGEND:
- ALIGNMENT
- DESIGN FOOTPRINT
- ARCHEOLOGICAL PERMIT BOUNDARY
- SENSITIVE HABITAT AREAS

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, WEST BEACH & CENTRAL BEACH ADDED, EAST BEACH MODIFIED	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

nhc
30 GOSTICK PLACE | NORTH VANCOUVER | BC | V7M 3G3
www.nhcwater.com

CATES PARK SHORELINE RESTORATION PHASE 1

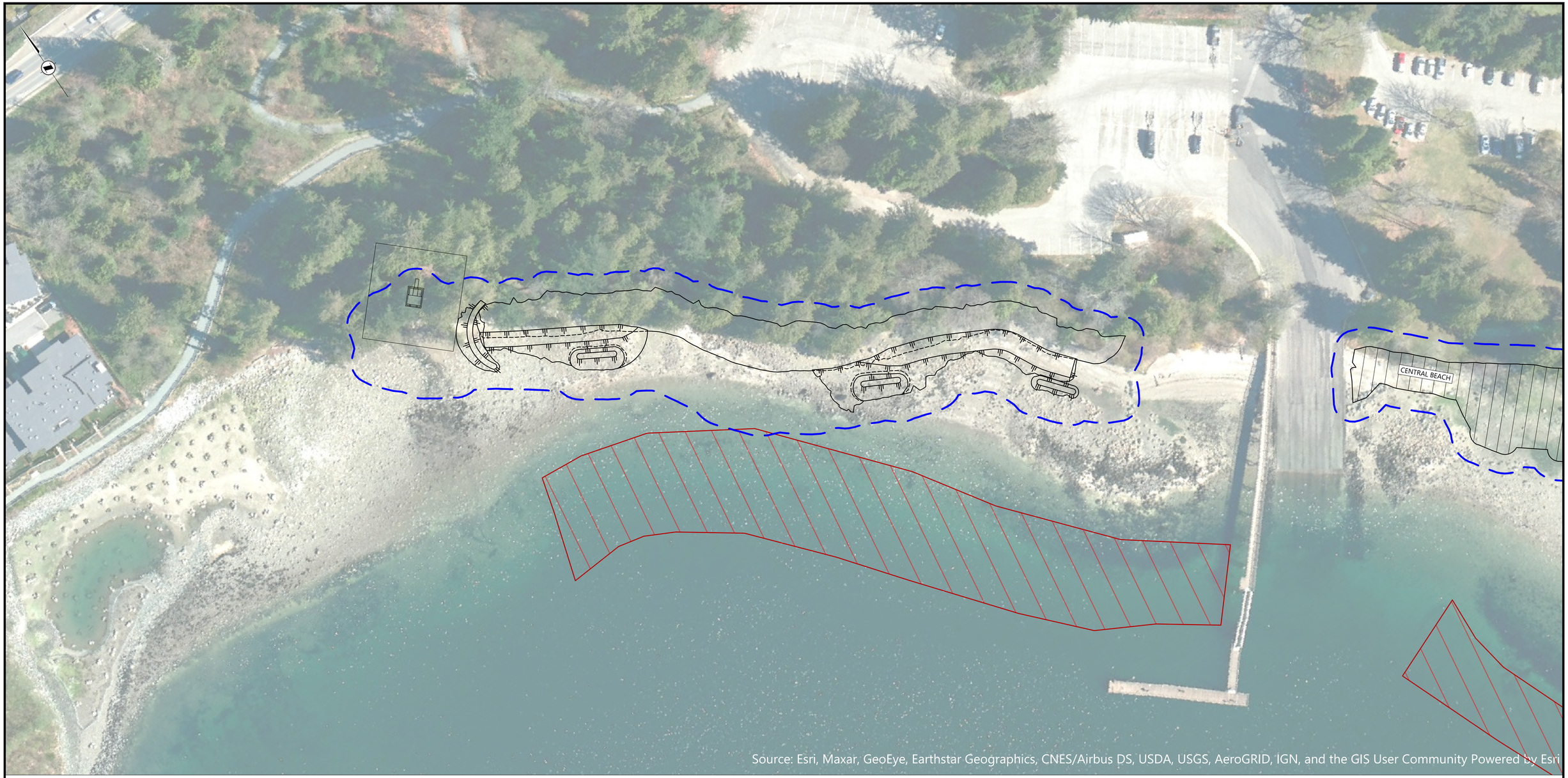
SITE OVERVIEW

NHC PROJECT No. 3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No. G-0101

FILE LOCATION: C:\Users\rclark\Documents\2_Projects\CatePark\20251104 NHC 3008311_DRAW_CATESPARK_PHASE1_R0\3008311_DRAW_CATESPARK_GENERAL.dwg PLOT DATE 2025-11-12 3:59:04 PM PLOTTED BY: Ryan Clark



0 5 10 15 20 25m
SCALE = 1:500

WEST BEACH - REACH OVERVIEW
SCALE 1:500

LEGEND:
- ARCHEOLOGICAL PERMIT BOUNDARY
- HIDDEN LINEWORK
- TOP OF SLOPE
- SENSITIVE HABITAT

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

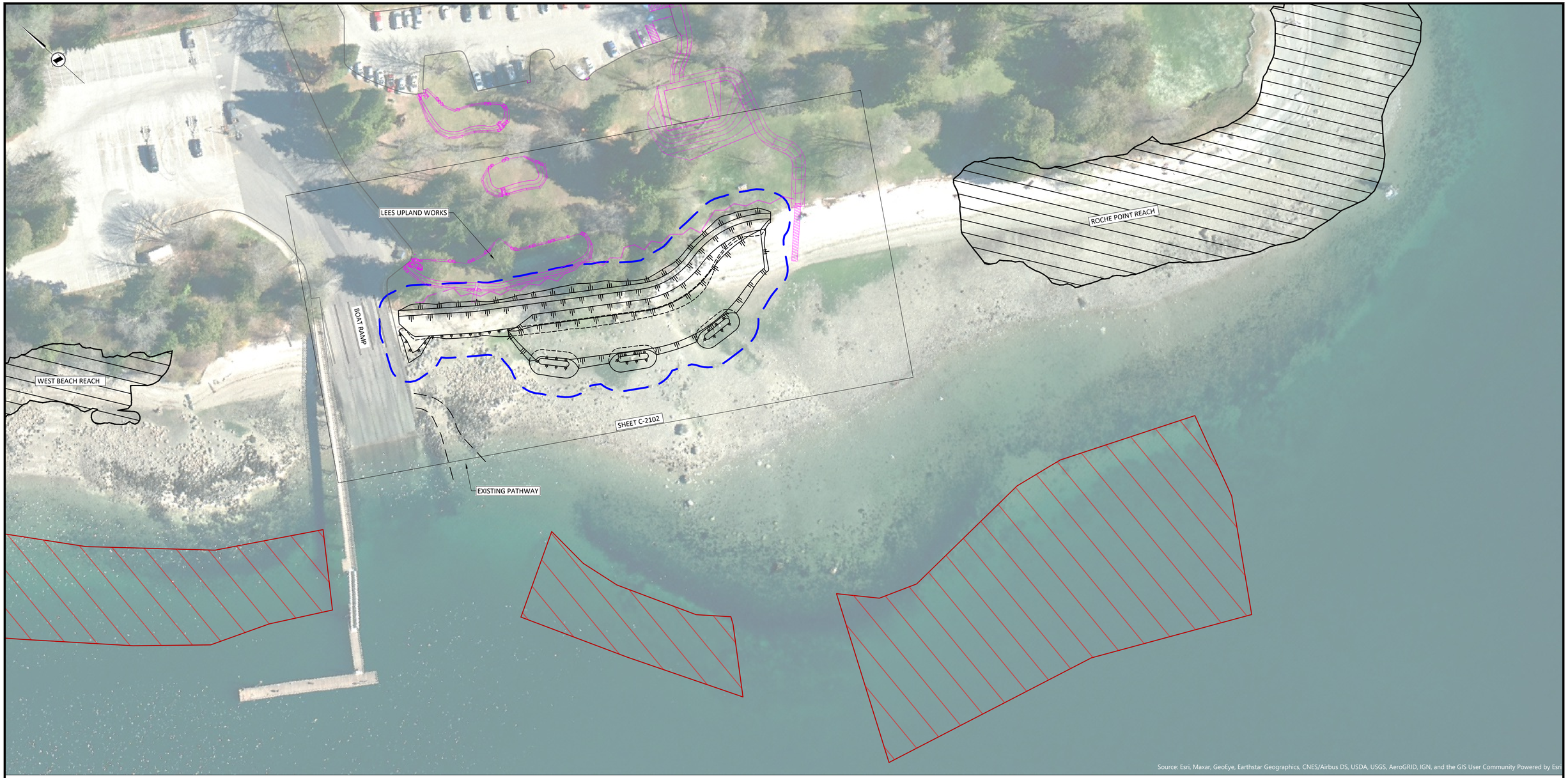
WEST BEACH
SITE OVERVIEW

NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
G-0102

FILE LOCATION: C:\Users\rclark\Documents\2_Projects\CatePark\20251104 NHC_3008311_DRAW_CATESPARK_PHASE1_R0\3008311_DRAW_CATESPARK_WestBeach.dwg PLOT DATE 2025-11-12 3:59:05 PM PLOTTED BY: Ryan Clark



0 5 10 15 20 25m
SCALE = 1:500

CENTRAL BEACH - REACH OVERVIEW
SCALE 1:500

LEGEND:
- ARCHEOLOGICAL PERMIT BOUNDARY
- LEES UPLAND DESIGN
- HIDDEN LINEWORK
- TOP OF SLOPE
- SENSITIVE HABITAT

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

0 5 10 15 20 25m
SCALE = 1:500

DRAWING REVISION SCHEDULE

REV		DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

IMAGERY: ESRI OPEN SOURCE (DATE UNKNOWN)
PROVIDED FOR REFERENCE ONLY

nhc

CATES PARK SHORELINE RESTORATION PHASE 1

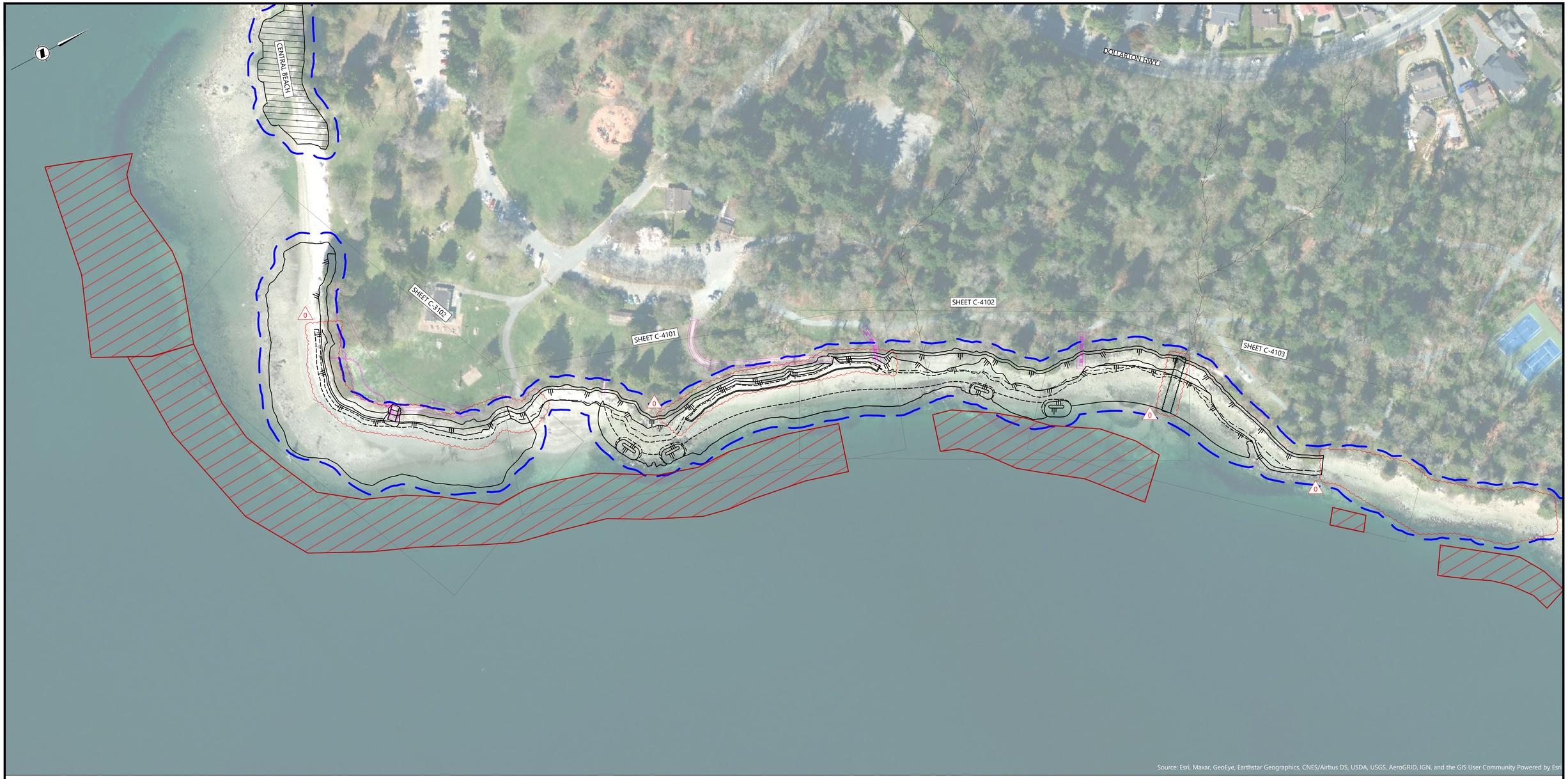
CENTRAL BEACH
SITE OVERVIEW

NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
G-0103

FILE LOCATION: C:\Users\rclark\Documents\2_Projects\CatePark\20251104 NHC 3008311_DRAW_CATESPARK_PHASE1_R0\3008311_DRAW_CATESPARK_CentralBeach.dwg PLOT DATE: 2025-11-12 3:59:06 PM PLOTTED BY: Ryan Clark



0 10 20 30 40 50m
SCALE = 1:1,000

ROCHE POINT AND EAST BEACH - REACH OVERVIEW
SCALE 1:1,000

LEGEND:

- SHEET MATCHLINE
- ARCHEOLOGICAL BOUNDARY
- LEES UPLAND DESIGN
- EXISTING SURFACE CHANNEL
- DESIGN LINEWORK
- HIDDEN DESIGN LINEWORK
- DESIGN TOP OF SLOPE
- DESIGN GRADE BREAK
- SENSITIVE HABITAT

GENERAL NOTES
1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   2.1. MAJOR: 1.0 m
   2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION PHASE 1

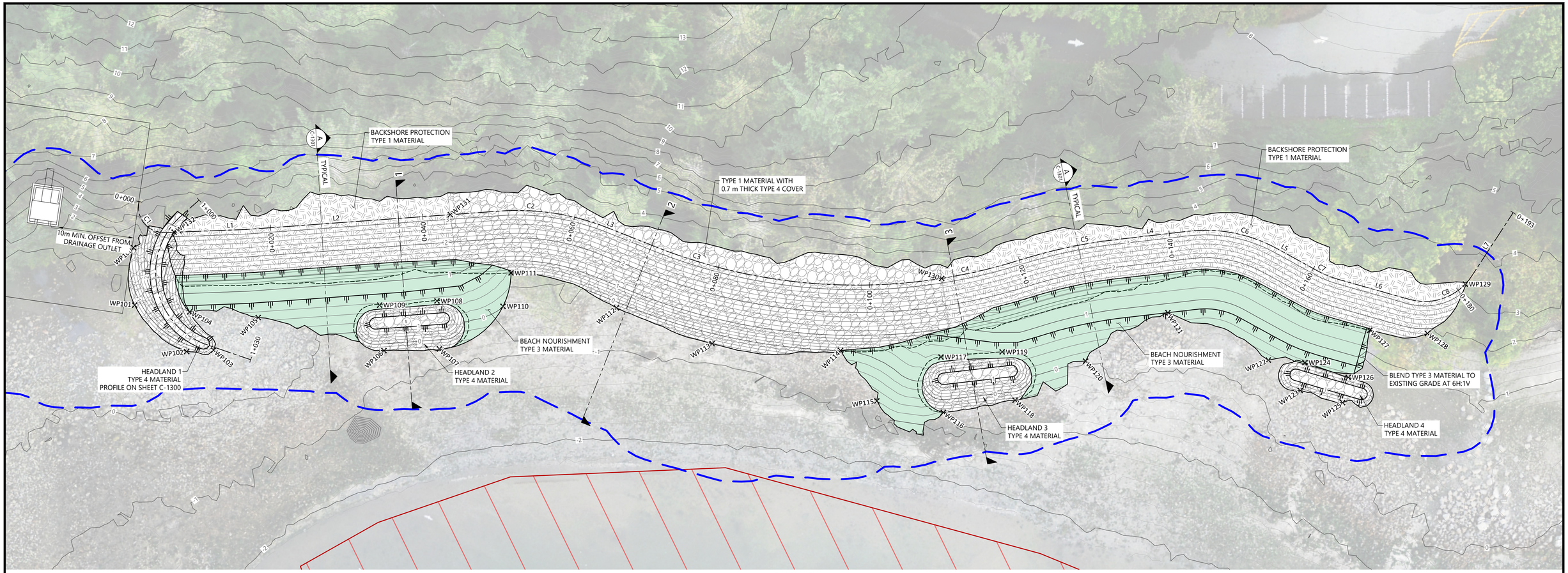
ROCHE POINT AND EAST BEACH
REACH OVERVIEW

NHC PROJECT No.
3008311

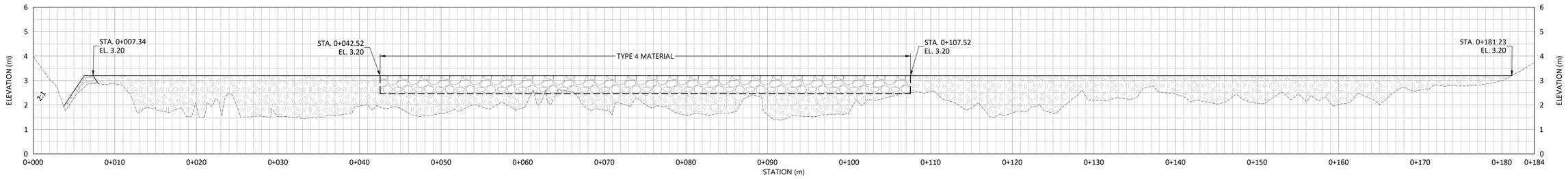
COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
G-0104

FILE LOCATION: C:\Users\rclark\Documents\2_Projects\CatePark\20251104 NHC 3008311_DRAW_CATESPARK_PHASE1_R0\3008311_DRAW_CATESPARK_RPandEB.dwg PLOT DATE: 2025-11-12 3:59:09 PM PLOTTED BY: Ryan Clark



PLAN VIEW
SCALE 1:250



PROFILE - BACKSHORE CREST
SCALE 1:250 | 3x VERTICAL EXAGGERATION

LEGEND:

- ALIGNMENT CENTERLINE
- ARCHEOLOGICAL PERMIT BOUNDARY
- HIDDEN LINEWORK
- TOP OF SLOPE
- EXISTING GRADE
- DESIGN GRADE
- TYPE 4 BOTTOM
- NHC WORKPOINT (SEE SHEET C-1500)
- SENSITIVE HABITAT AREAS
- TYPE 1 MATERIAL BACKSHORE PROTECTION
- TYPE 3 MATERIAL BEACH NOURISHMENT
- TYPE 4 MATERIAL HEADLAND ROCK

GENERAL NOTES
1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   2.1. MAJOR: 1.0 m
   2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

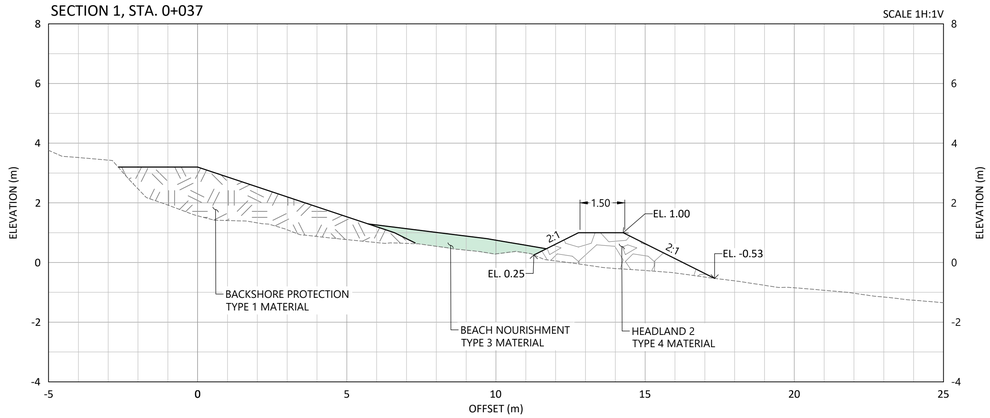
CATES PARK SHORELINE RESTORATION
PHASE 1

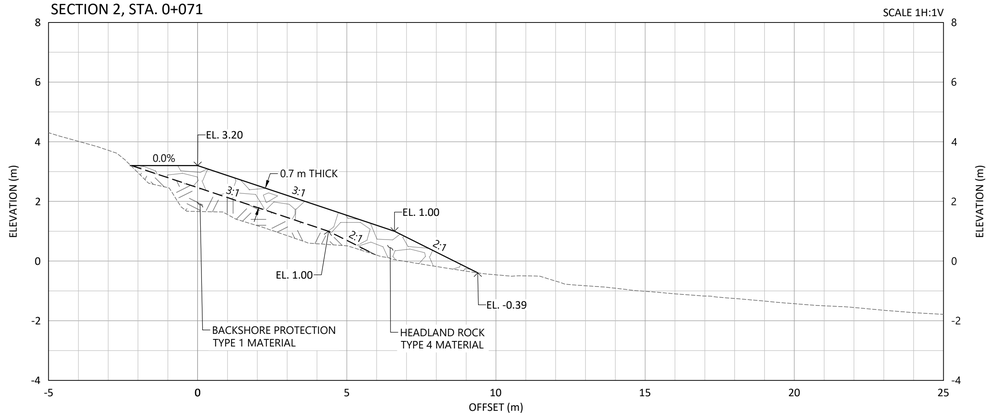
WEST BEACH
PLAN VIEW

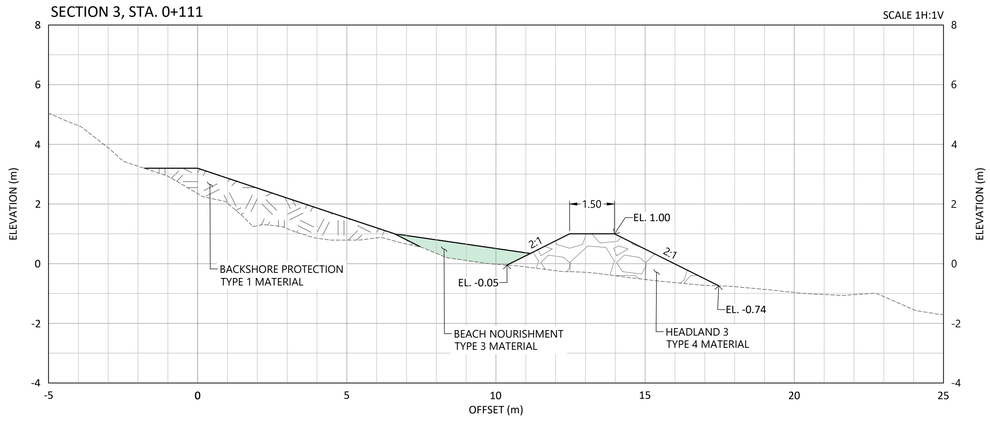
NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-1101





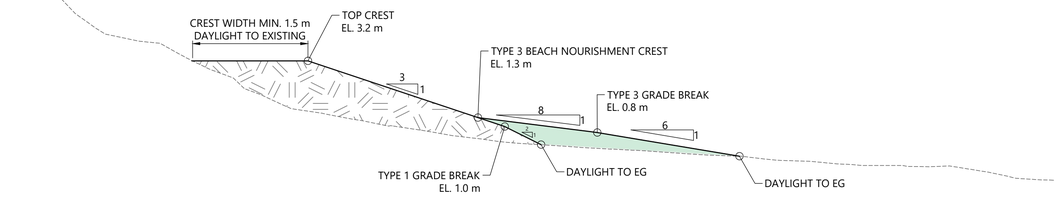


WEST BEACH SECTIONS

SCALE 1:100 | 1H:1V

PROFILE - HEADLAND 1 CENTERLINE

SCALE 1:100 | 3x VERTICAL EXAGGERATION



A / C-1101 TYPE 1 BACKSHORE AND TYPE 3 BEACH NOURISHMENT TYPICAL

SCALE 1:100 | 1H:1V

LEGEND:

- EXISTING GRADE
- DESIGN GRADE
- TYPE 4 BOTTOM
- TYPE 1 MATERIAL BACKSHORE PROTECTION
- TYPE 3 MATERIAL BEACH NOURISHMENT
- TYPE 4 MATERIAL HEADLAND ROCK

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

WEST BEACH
PLAN VIEW

NHC PROJECT No. 3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No. C-1301

WEST BEACH WORKPOINTS TABLE

WORKPOINT	EASTING (m)	NORTHING (m)	ELEVATION (m)
WP100	502810.37	5461148.25	1.27
WP101	502806.07	5461142.05	0.60
WP102	502808.00	5461133.12	0.56
WP103	502810.97	5461131.19	0.58
WP104	502811.37	5461137.09	0.64
WP105	502818.21	5461131.21	0.48
WP106	502829.00	5461118.00	-0.44
WP107	502835.01	5461113.90	-0.65
WP108	502838.45	5461119.18	0.16
WP109	502832.04	5461123.16	0.16
WP110	502845.03	5461113.51	-0.23
WP111	502848.46	5461116.44	0.21
WP112	502856.95	5461104.60	-0.37
WP113	502864.33	5461093.43	-0.65
WP114	502877.43	5461082.81	-0.07
WP115	502877.38	5461074.65	-0.80
WP116	502883.55	5461068.32	-0.82
WP117	502887.57	5461074.37	-0.06
WP118	502892.09	5461064.07	-0.56
WP119	502894.45	5461070.19	0.06
WP120	502902.59	5461062.78	0.01
WP121	502915.06	5461061.57	0.80
WP122	502922.05	5461048.80	0.29
WP123	502923.08	5461043.12	0.47
WP124	502925.74	5461045.71	0.44
WP125	502926.65	5461038.56	0.48
WP126	502929.18	5461040.80	0.58
WP127	502935.11	5461044.13	1.40
WP128	502940.97	5461039.36	1.80
WP129	502948.79	5461041.68	3.20
WP130	502893.71	5461082.65	0.00
WP131	502846.52	5461127.31	0.00
WP132	502815.88	5461146.74	3.20

WEST BEACH ALIGNMENT LAYOUT

TAG	START STA.	START E.	START N.	START TANGENT	LENGTH	RADIUS
C1	0+000.000	502814.54	5461152.68	179° 38' 28.39"	6.066	3.285
L1	0+006.066	502814.83	5461147.45	123° 54' 42.14"	10.524	
L2	0+016.590	502823.56	5461141.58	121° 52' 22.69"	33.529	
C2	0+050.119	502852.03	5461123.88	129° 05' 58.50"	14.399	31.955
L3	0+064.517	502862.17	5461113.82	147° 41' 24.27"	6.767	
C4	0+071.285	502865.79	5461108.10	114° 22' 55.24"	48.588	71.379
C3	0+071.285	502865.79	5461108.10	143° 13' 21.98"	48.588	71.379
C5	0+120.235	502903.58	5461078.52	116° 04' 54.96"	12.619	67.270
L4	0+132.854	502915.09	5461073.38	119° 26' 11.75"	9.670	
C6	0+142.524	502923.51	5461068.63	140° 57' 39.96"	12.034	19.492
L5	0+154.558	502931.57	5461059.95	154° 48' 34.67"	6.038	
C7	0+160.596	502934.14	5461054.49	153° 17' 52.94"	3.002	13.163
L6	0+163.597	502935.72	5461051.94	141° 44' 38.17"	9.659	
C8	0+173.256	502941.70	5461044.36	102° 03' 18.89"	9.343	7.373
L7	0+182.599	502950.11	5461042.03	069° 08' 15.95"	9.921	

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

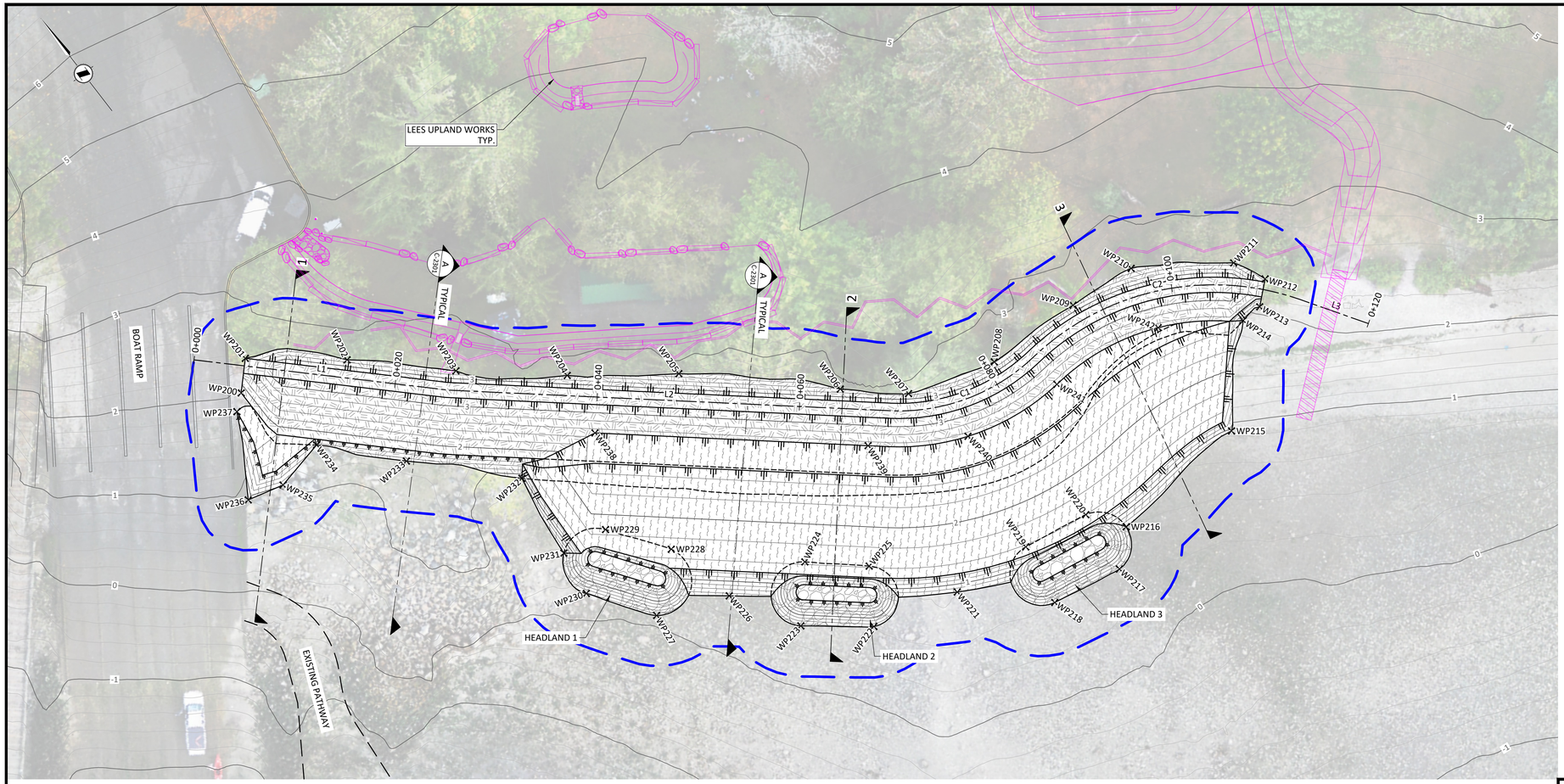
CATES PARK SHORELINE RESTORATION
PHASE 1

WEST BEACH
DETAILS

NHC PROJECT No.
3008311

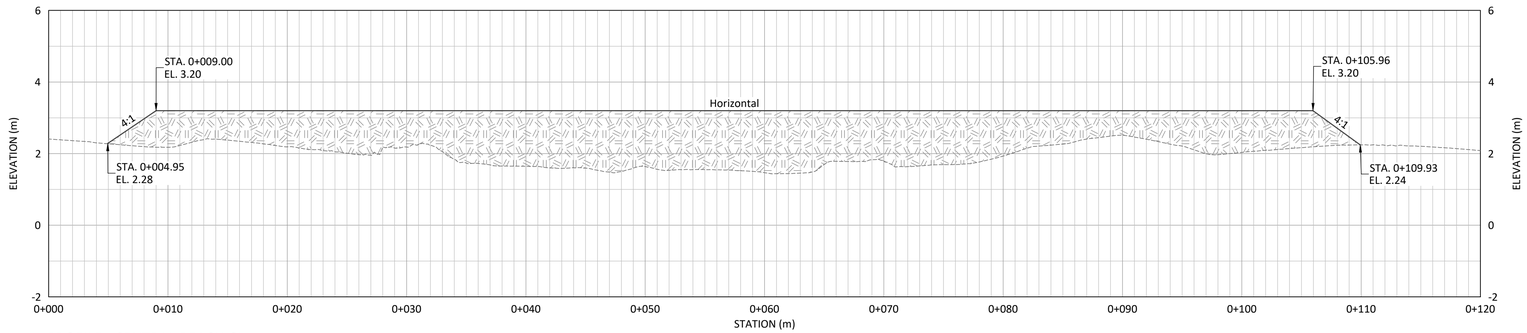
COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-1500



0 5 10 15m
SCALE = 1:250

PLAN VIEW
SCALE 1:500



PROFILE - CENTRAL BEACH CL
SCALE 1:250 | 3x VERTICAL EXAGGERATION

GENERAL NOTES
1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   2.1. MAJOR: 1.0 m
   2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

LEGEND:
- ALIGNMENT CENTERLINE
- ARCHEOLOGICAL PERMIT BOUNDARY
- LEES UPLAND DESIGN
- HIDDEN LINEWORK
- TOP OF SLOPE
- EXISTING GRADE
- DESIGN GRADE
- WP200-242 NHC WORKPOINT (SEE SHEET C-2500)
- SENSITIVE HABITAT AREAS
- TYPE 1 MATERIAL BACKSHORE PROTECTION
- TYPE 6 MATERIAL BEACH NOURISHMENT
- TYPE 4 MATERIAL HEADLAND ROCK

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

CATES PARK SHORELINE RESTORATION
PHASE 1

NHC PROJECT No.
3008311

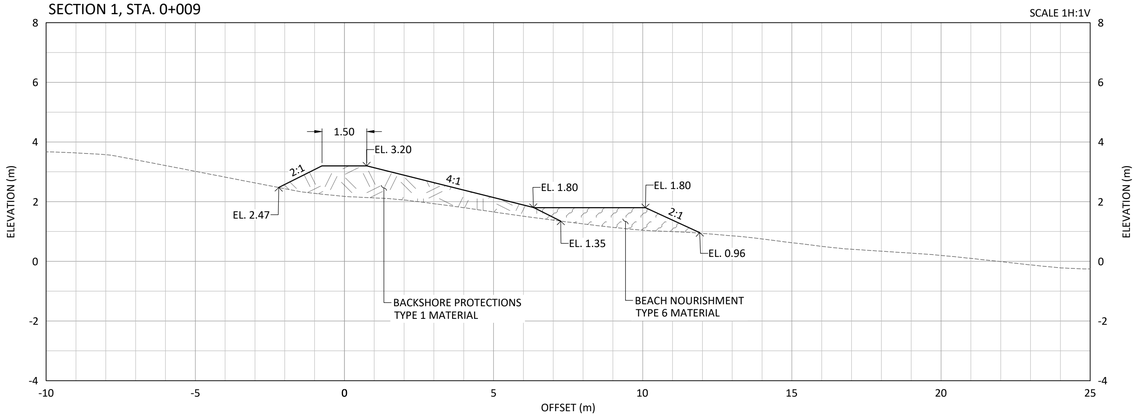
COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

CENTRAL BEACH
PLAN VIEW

SHEET No.
C-2102

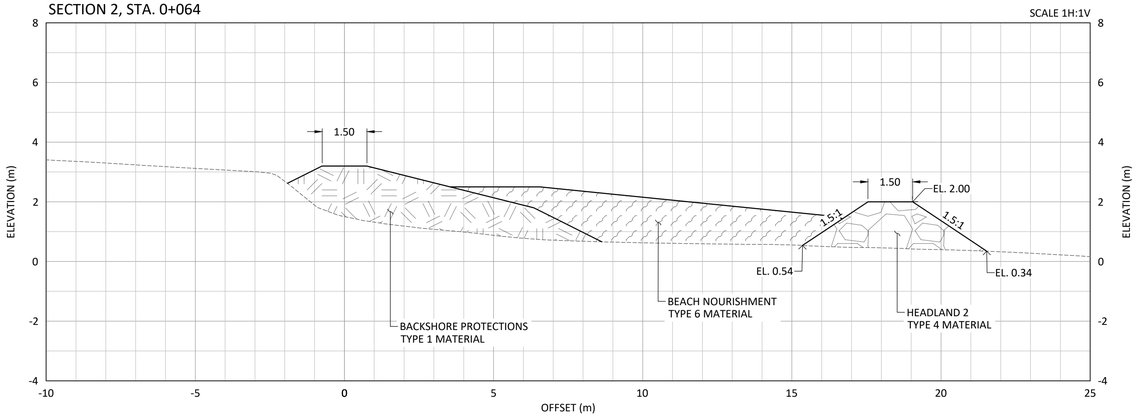
SECTION 1, STA. 0+009

SCALE 1H:1V



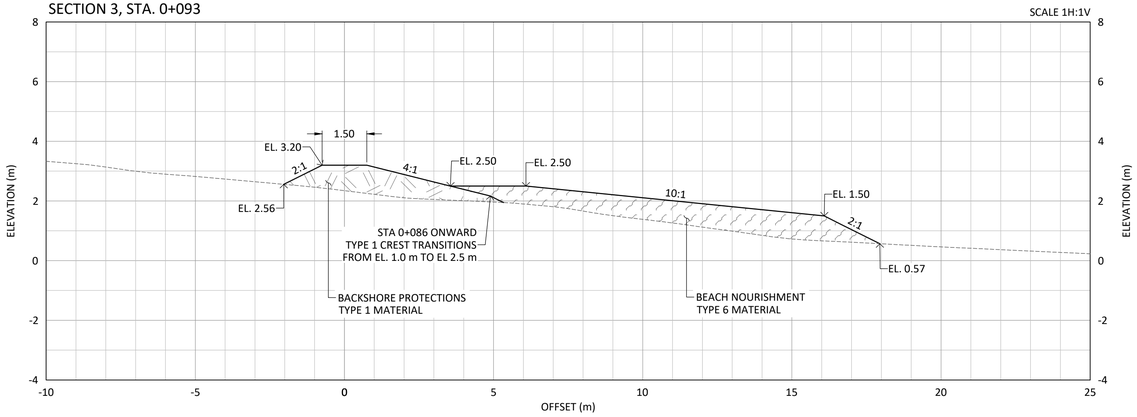
SECTION 2, STA. 0+064

SCALE 1H:1V



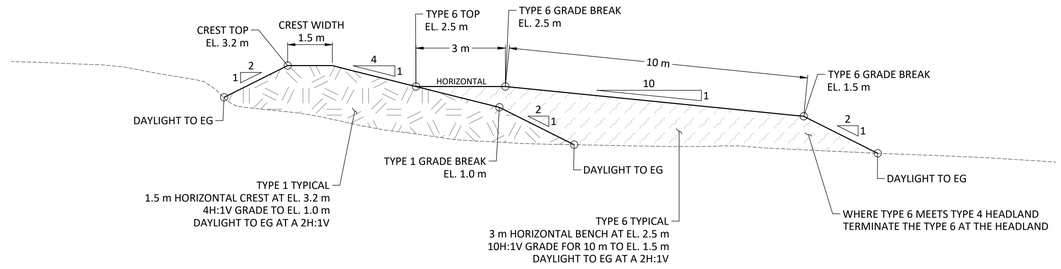
SECTION 3, STA. 0+093

SCALE 1H:1V



CENTRAL BEACH SECTIONS

SCALE 1:100 | 1H:1V



A (C-2101) TYPE 1 BACKSHORE AND TYPE 6 BEACH NOURISHMENT TYPICAL

SCALE 1:100 | 1H:1V

NOTE: TYPE 1 GRADE BREAK GRADUALLY TRANSITIONS FROM EL. 1.0 m TO EL. 2.5 m FROM STA 0+086 ONWARD

LEGEND:

- EXISTING GRADE
- DESIGN GRADE
- TYPE 1 MATERIAL BACKSHORE PROTECTION
- TYPE 6 MATERIAL BEACH NOURISHMENT
- TYPE 4 MATERIAL HEADLAND ROCK

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

NHC PROJECT No. 3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

CENTRAL BEACH
SECTIONS AND DETAILS

SHEET No. C-2301

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

CENTRAL BEACH WORKPOINTS TABLE

WORKPOINT	EASTING (m)	NORTHING (m)	ELEVATION (m)
WP200	502993.16	5461001.12	1.97
WP201	502995.63	5461003.52	2.36
WP202	503003.34	5460997.06	2.68
WP203	503010.99	5460989.43	2.61
WP204	503019.23	5460982.14	2.58
WP205	503027.89	5460975.33	2.23
WP206	503039.31	5460964.09	2.62
WP207	503044.25	5460959.49	2.73
WP208	503052.80	5460956.58	2.55
WP209	503062.37	5460956.01	2.70
WP210	503069.12	5460955.22	2.17
WP211	503077.31	5460949.25	2.46
WP212	503078.73	5460946.06	2.30
WP213	503076.58	5460944.26	2.09
WP214	503074.46	5460944.24	1.87
WP215	503066.68	5460936.51	0.88
WP216	503052.63	5460935.72	0.38
WP217	503049.49	5460932.91	0.28
WP218	503042.45	5460934.38	0.39
WP219	503043.69	5460940.44	0.48
WP220	503050.30	5460939.17	0.47
WP221	503035.63	5460941.25	0.61
WP222	503027.10	5460943.80	0.41
WP223	503021.54	5460948.40	0.28
WP224	503025.83	5460953.05	0.50
WP225	503030.50	5460948.72	0.59
WP226	503017.92	5460955.16	0.27
WP227	503011.14	5460958.19	0.06
WP228	503016.38	5460962.35	0.39
WP229	503012.57	5460967.95	0.44
WP230	503007.12	5460964.25	0.16
WP231	503007.90	5460968.75	0.38
WP232	503009.35	5460977.09	0.79
WP233	503001.58	5460985.61	1.25
WP234	502995.70	5460992.44	1.52
WP235	502990.63	5460991.46	1.04
WP236	502987.04	5460992.48	0.83
WP237	502991.67	5460999.95	1.80
WP238	503017.78	5460976.01	2.50
WP239	503037.91	5460958.02	2.50
WP240	503046.16	5460952.51	2.50
WP241	503056.21	5460950.96	2.50
WP242	503067.50	5460948.99	2.50

CENTRAL BEACH ALIGNMENT LAYOUT

TAG	START STA.	START E.	START N.	START TANGENT	LENGTH	RADIUS
L1	0+000.000	502991.61	5461006.59	135° 54' 10.84"	25.234	
L2	0+025.234	503009.17	5460988.46	131° 47' 08.53"	43.699	
C1	0+068.934	503041.76	5460959.34	108° 36' 17.58"	15.576	19.250
C2	0+084.510	503056.12	5460954.51	116° 57' 58.10"	28.351	25.750
L3	0+112.862	503080.13	5460942.29	148° 30' 29.57"	7.138	

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION PHASE 1

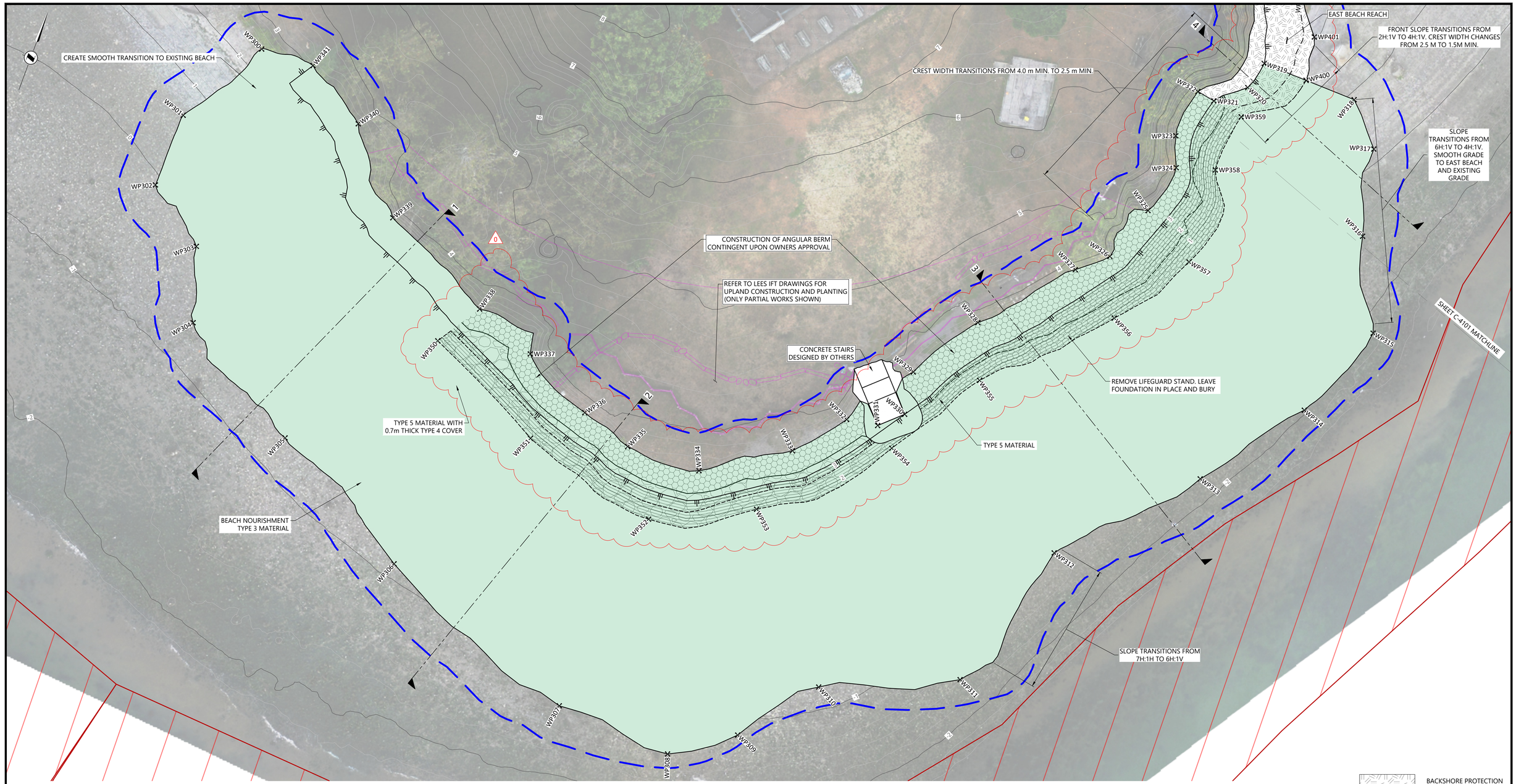
NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

CENTRAL BEACH
DETAILS

SHEET No.
C-2500

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".



0 5 10 15m
SCALE = 1:250

PLAN VIEW
SCALE 1:250

GENERAL NOTES
1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   2.1. MAJOR: 1.0 m
   2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM
4. IMAGE SOURCE: AUGUST 2023 SPITFIRE DRONES UAV FLIGHT

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

LEGEND:

- ALIGNMENT CENTERLINE
- SHEET MATCHLINE
- LEES UPLAND DESIGN
- ARCHEOLOGICAL BOUNDARY
- DESIGN LINEWORK
- HIDDEN DESIGN LINEWORK
- DESIGN TOP OF SLOPE
- DESIGN GRADE BREAK
- WP300-359 NHC WORKPOINT (SEE SHEET C-3500)
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- SENSITIVE HABITAT

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	2025-11-12 ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT
Tsleil-Waututh Nation
PEOPLE OF THE INLET
DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

ROCHE POINT
PLAN VIEW

NHC PROJECT No.
3008311

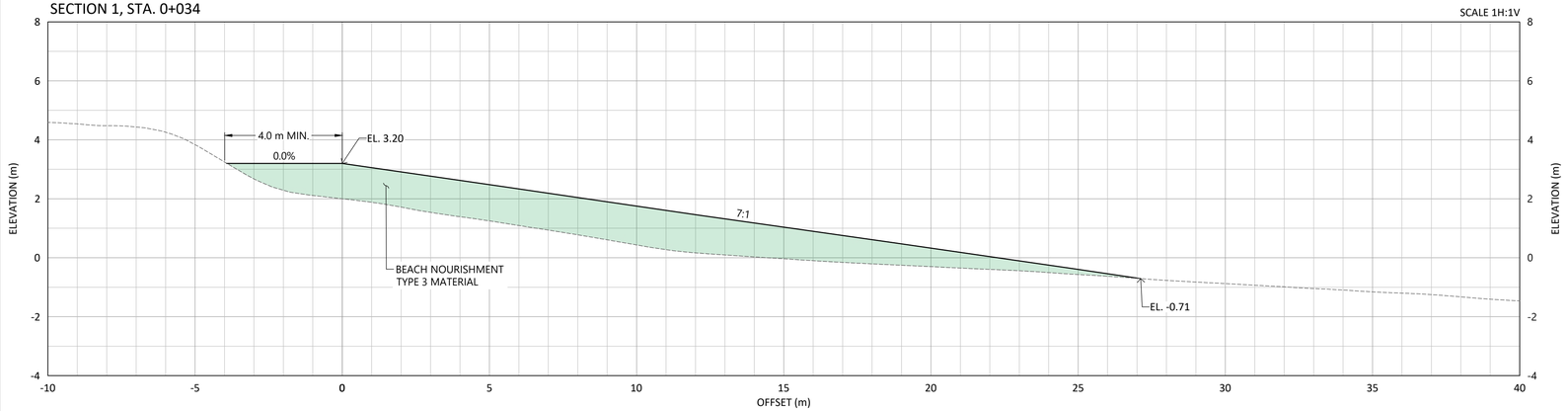
COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-3101

FILE LOCATION: C:\Users\rclark\Documents\2_Projects\CatesPark\20251104 NHC_3008311_DRAW_CATESPARK_PHASE1_R0\3008311_DRAW_CATESPARK_RPandEB.dwg PLOT DATE: 2025-11-12 3:59:27 PM PLOTTED BY: Ryan Clark

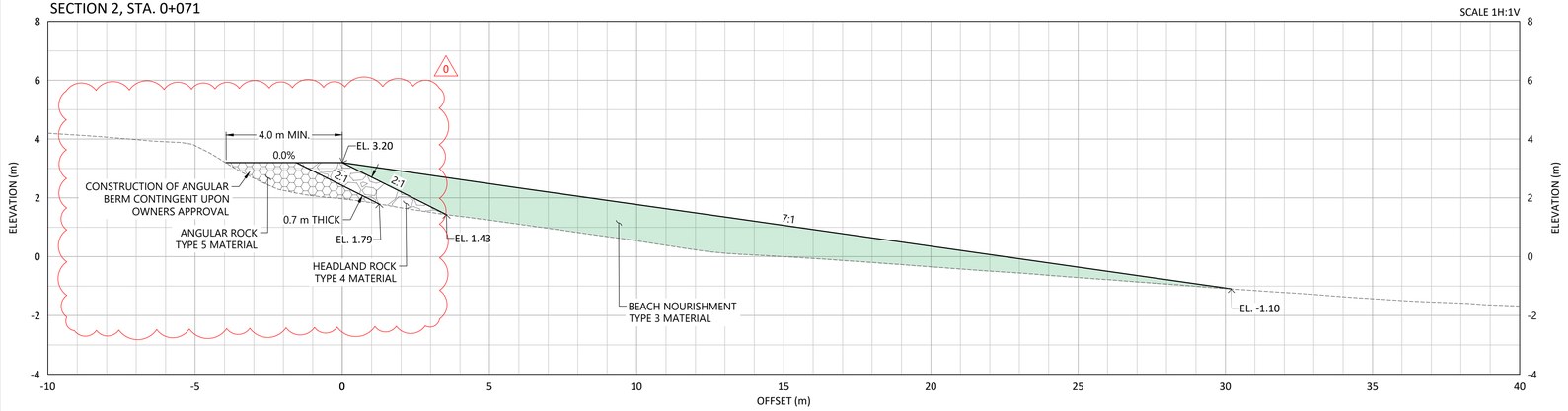
SECTION 1, STA. 0+034

SCALE 1H:1V



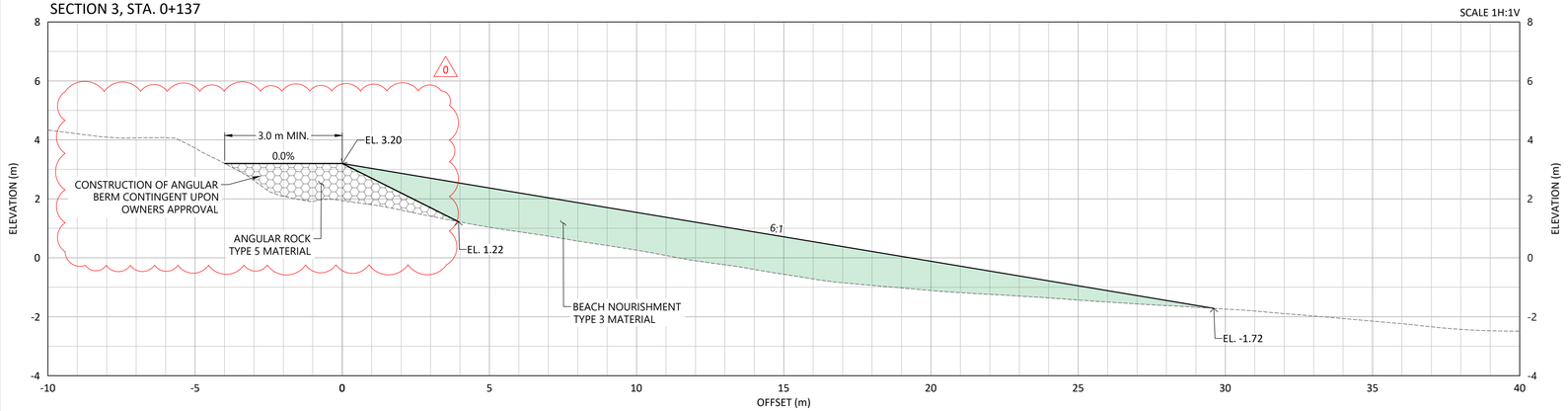
SECTION 2, STA. 0+071

SCALE 1H:1V



SECTION 3, STA. 0+137

SCALE 1H:1V



LEGEND:

- EXISTING GRADE
- DESIGN GRADE
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL
- ANGULAR ROCK TYPE 5 MATERIAL

ROCHE POINT SECTIONS

SCALE 1:100 | 1H:1V

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, CONTINGENT ANGULAR BERM ADDED	2025-11-04	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

ROCHE POINT
SECTIONS

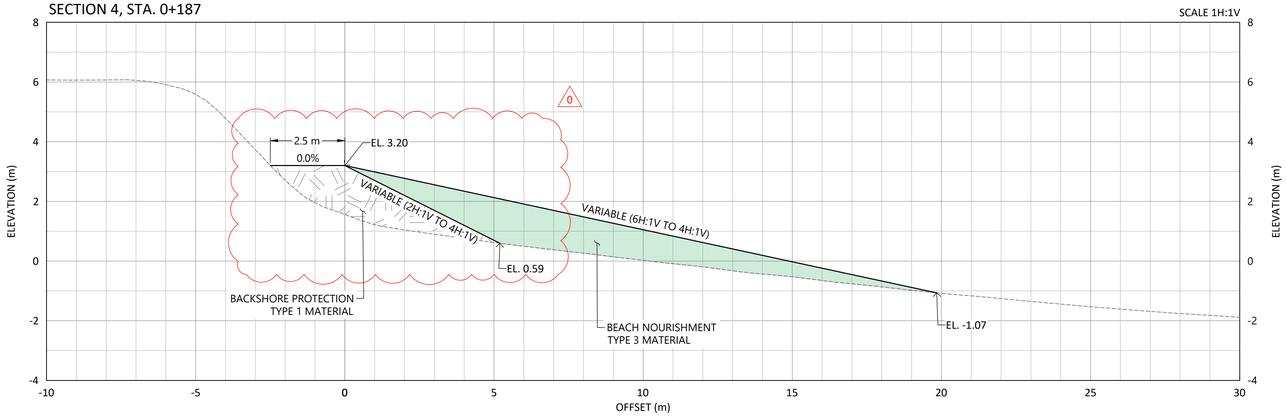
NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-3301

SECTION 4, STA. 0+187

SCALE 1H:1V



LEGEND:

- EXISTING GRADE
- DESIGN GRADE
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL
- ANGULAR ROCK TYPE 5 MATERIAL

ROCHE POINT SECTIONS

SCALE 1:100 | 1H:1V

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, BACKSHORE PROTECTION CHANGE	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION PHASE 1

ROCHE POINT SECTIONS

NHC PROJECT No. 3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No. C-3302

0

ROCHE POINT WORKPOINTS TABLE

WORKPOINT	EASTING (m)	NORTHING (m)	ELEVATION (m)
WP300	503116.25	5460915.06	2.31
WP301	503107.14	5460904.50	0.43
WP302	503104.92	5460894.57	-0.06
WP303	503111.72	5460887.21	-0.17
WP304	503112.92	5460876.91	-0.58
WP305	503127.72	5460863.44	-0.73
WP306	503145.02	5460848.89	-0.87
WP307	503170.21	5460833.41	-1.36
WP308	503185.75	5460829.27	-1.46
WP309	503194.74	5460833.30	-1.24
WP310	503204.57	5460841.47	-0.72
WP311	503223.36	5460845.50	-1.59
WP312	503233.26	5460864.50	-1.40
WP313	503251.24	5460877.55	-1.80
WP314	503263.72	5460888.99	-1.99
WP315	503271.29	5460900.79	-2.13
WP316	503267.80	5460913.56	-1.49
WP317	503267.44	5460925.48	-0.82
WP318	503263.75	5460931.68	-0.09
WP319	503250.92	5460934.60	3.20
WP320	503249.23	5460931.03	3.20
WP321	503244.96	5460928.52	3.20
WP322	503242.63	5460929.43	3.20
WP323	503240.62	5460923.02	3.20
WP324	503241.36	5460918.75	3.20
WP325	503238.49	5460912.40	3.20
WP326	503234.37	5460905.44	3.20
WP327	503230.02	5460902.92	3.20
WP328	503218.10	5460893.74	3.20
WP329	503210.50	5460885.73	3.20
WP330	503210.25	5460879.88	3.20
WP331	503206.86	5460877.79	3.20
WP332	503202.58	5460877.93	3.20
WP333	503195.99	5460872.58	3.20
WP334	503183.90	5460867.91	3.20
WP335	503173.82	5460869.62	3.20
WP336	503167.34	5460873.24	3.20
WP337	503158.77	5460879.95	3.20
WP338	503151.03	5460884.87	3.20
WP339	503137.43	5460895.25	3.20
WP340	503130.78	5460907.11	3.20
WP341	503123.48	5460913.95	3.20
WP350	503146.09	5460879.73	1.64
WP351	503160.61	5460868.63	1.53
WP352	503178.18	5460860.33	1.30
WP353	503192.43	5460863.98	1.72
WP354	503209.25	5460875.06	1.83
WP355	503219.57	5460886.03	1.81
WP356	503236.27	5460897.26	0.67
WP357	503245.10	5460906.38	0.13
WP358	503246.64	5460919.29	0.99
WP359	503248.97	5460926.96	1.05

CONTINGENT ON OWNER'S APPROVAL

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, WORKPOINT UPDATES	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

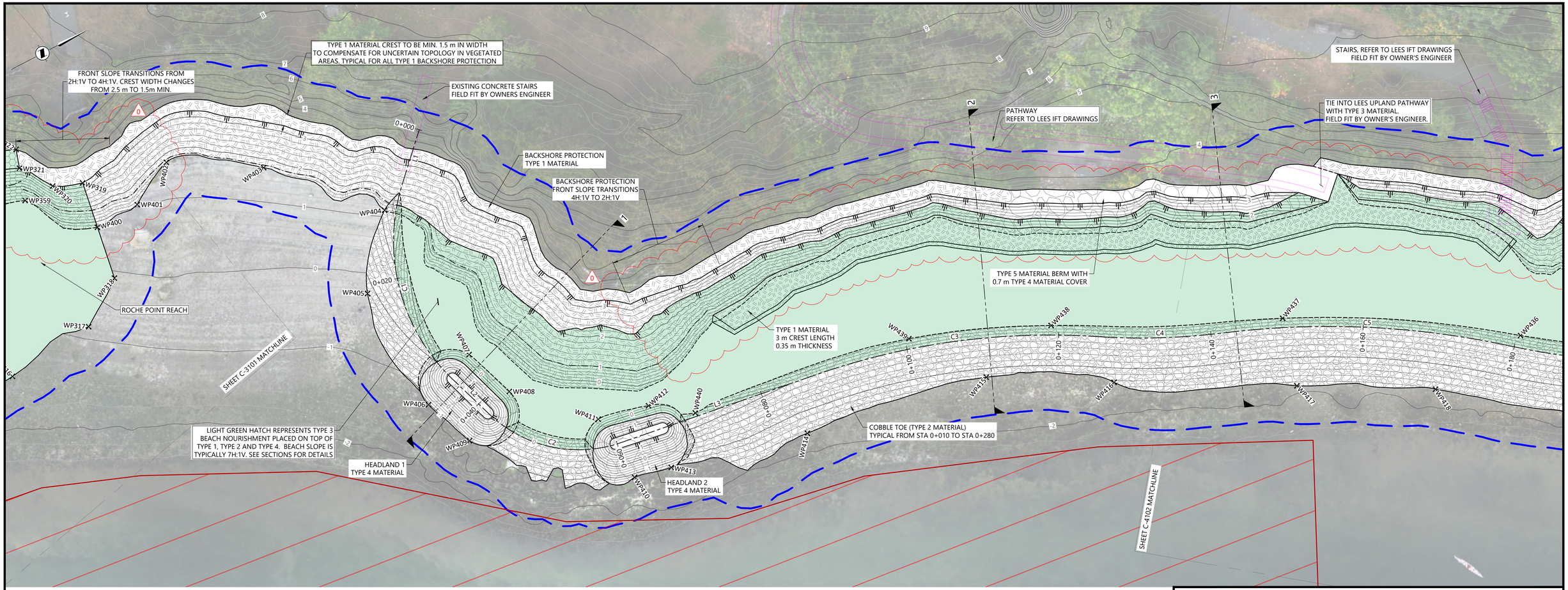
CATES PARK SHORELINE RESTORATION
PHASE 1

ROCHE POINT
DETAILS

NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-3500

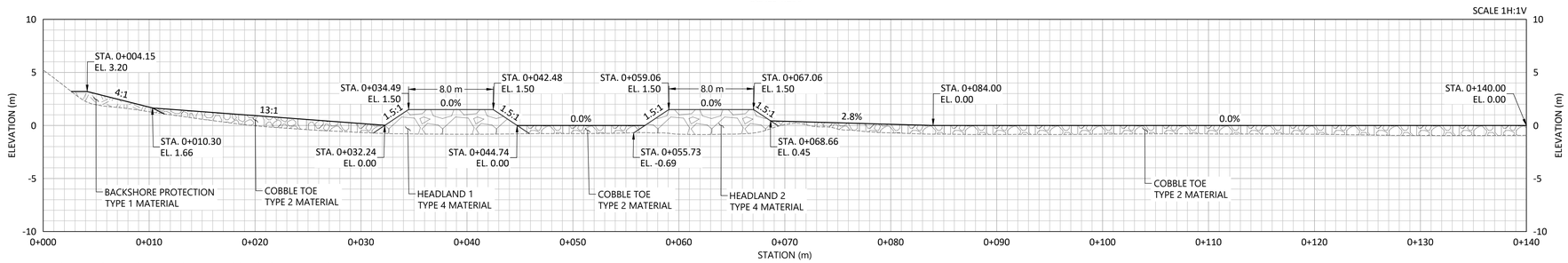


0 5 10 15m

SCALE = 1:250

PLAN VIEW

SCALE 1:250



EAST BEACH PROFILE - STA 0+000 TO STA 0+140

SCALE 1:250 | 1H:1V

EAST BEACH ALIGNMENT LAYOUT

TAG	START STA.	START E.	START N.	START TANGENT	LENGTH	RADIUS
L1	0+000.000	503267.89	5460975.93	138° 33' 10.71"	7.550	
C1	0+007.550	503272.88	5460970.27	106° 44' 22.65"	27.762	25.000
L2	0+035.312	503298.12	5460962.68	074° 55' 34.58"	6.594	
C2	0+041.906	503304.49	5460964.40	043° 31' 18.62"	18.636	17.000
L3	0+060.542	503316.69	5460977.24	012° 07' 02.66"	27.175	
C3	0+087.717	503322.40	5461003.81	023° 39' 40.18"	37.366	93.000
C4	0+125.083	503337.27	5461037.82	029° 39' 44.16"	16.439	86.000
C5	0+141.522	503345.39	5461052.08	033° 53' 31.16"	37.945	112.000

LEGEND:

- ALIGNMENT CENTERLINE
- SHEET MATCHLINE
- LEES UPLAND DESIGN
- ARCHEOLOGICAL BOUNDARY
- DESIGN LINEWORK
- HIDDEN DESIGN LINEWORK
- DESIGN TOP OF SLOPE
- DESIGN GRADE BREAK
- EXISTING GRADE
- DESIGN GRADE
- NHC WORKPOINT (SEE SHEET C-4500) ✕WP400-440
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- COBBLE TOE TYPE 2 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL
- SENSITIVE HABITAT

GENERAL NOTES

1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   - 2.1. MAJOR: 1.0 m
   - 2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM
4. IMAGE SOURCE: AUGUST 2023 SPITFIRE DRONES UAV FLIGHT

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, BACKSHORE PROTECTION CHANGE	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

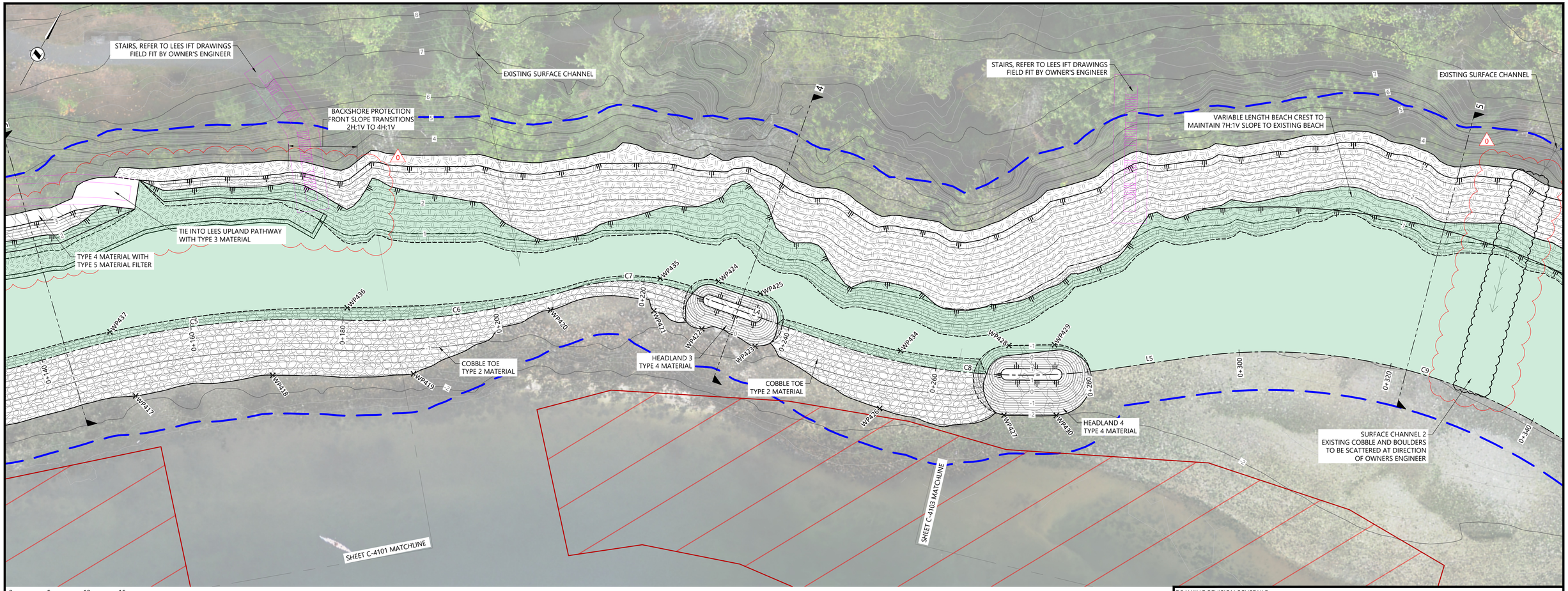
NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

EAST BEACH
PLAN VIEW
STA 0+000 TO STA 0+140

SHEET No.
C-4101

FILE LOCATION: C:\Users\rclark\Documents\2_Projects\CatePark\20251104 NHC 3008311_DRAW_CATESPARK_PHASE1_R0\3008311_DRAW_CATESPARK_PhaseEB.dwg PLOT DATE: 2025-11-12 3:59:38 PM PLOTTED BY: Ryan Clark

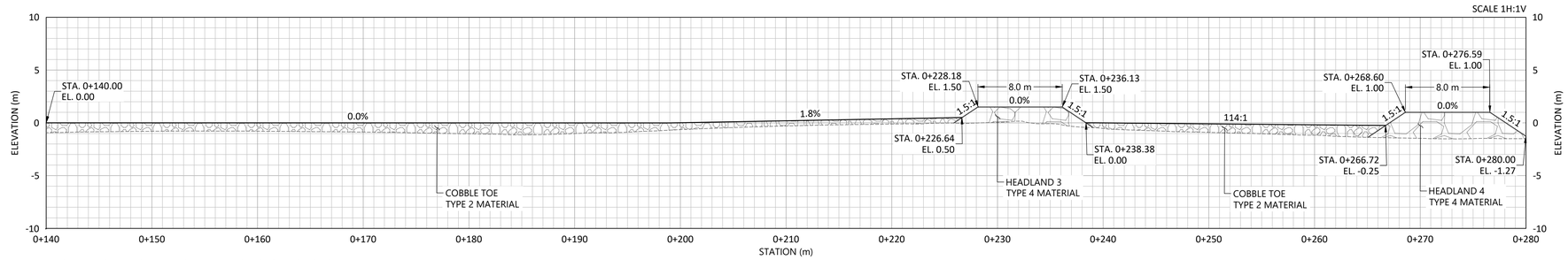


0 5 10 15m

SCALE = 1:250

PLAN VIEW

SCALE 1:250



EAST BEACH PROFILE - STA 0+140 TO STA 0+280

SCALE 1:250 | 1H:1V

EAST BEACH ALIGNMENT LAYOUT

TAG	START STA.	START E.	START N.	START TANGENT	LENGTH	RADIUS
C5	0+141.522	503345.39	5461052.08	033° 53' 31.16"	37.945	112.000
C6	0+179.467	503366.45	5461083.43	033° 41' 51.39"	31.102	90.000
C7	0+210.569	503383.62	5461109.17	042° 14' 45.56"	14.811	23.000
L4	0+225.380	503393.41	5461119.95	060° 41' 40.06"	19.898	
C8	0+245.278	503410.76	5461129.69	046° 49' 02.12"	37.784	78.000
L5	0+283.062	503438.04	5461155.29	032° 56' 24.17"	10.387	
C9	0+293.449	503443.69	5461164.01	057° 59' 49.44"	62.101	71.000

LEGEND:

- ALIGNMENT CENTERLINE
- SHEET MATCHLINE
- ARCHEOLOGICAL BOUNDARY
- LEES UPLAND DESIGN
- DESIGN LINEWORK
- HIDDEN DESIGN LINEWORK
- DESIGN TOP OF SLOPE
- DESIGN GRADE BREAK
- EXISTING GRADE
- DESIGN GRADE
- WP400-440 NHC WORKPOINT (SEE SHEET C-4500)
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- COBBLE TOE TYPE 2 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL
- SENSITIVE HABITAT

GENERAL NOTES

1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   - 2.1. MAJOR: 1.0 m
   - 2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM
4. IMAGE SOURCE: AUGUST 2023 SPITFIRE DRONES UAV FLIGHT

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, BACKSHORE PROTECTION CHANGE	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

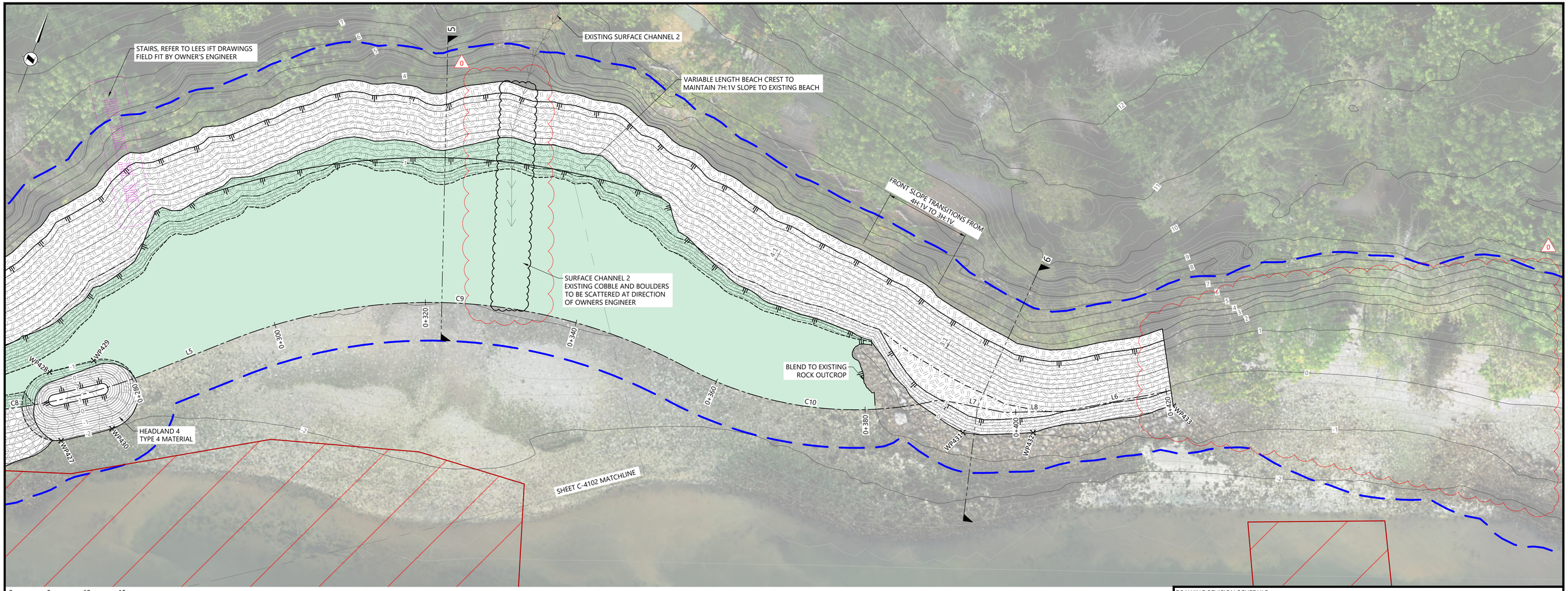
CATES PARK SHORELINE RESTORATION
PHASE 1

NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

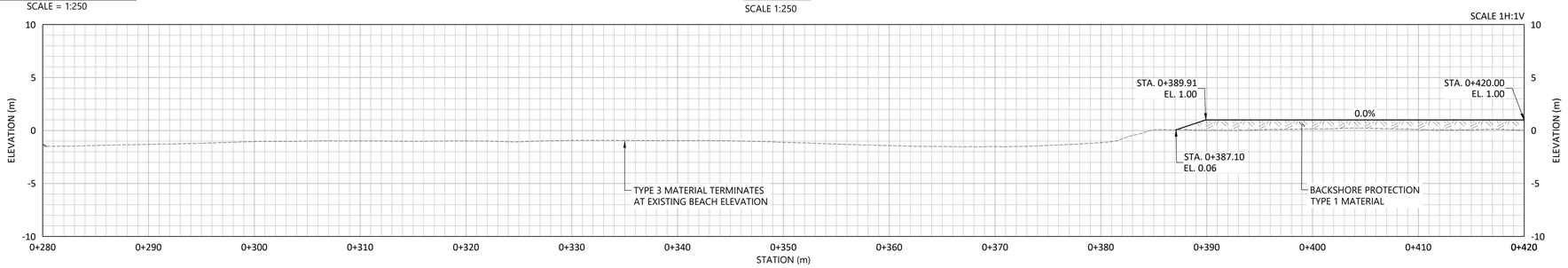
EAST BEACH
PLAN VIEW
STA 0+140 TO STA 0+280

SHEET No.
C-4102



0 5 10 15m
SCALE = 1:250

PLAN VIEW
SCALE 1:250



EAST BEACH PROFILE - STA 0+280 TO STA 0+420
SCALE 1:250 | 1H:1V

EAST BEACH ALIGNMENT LAYOUT						
TAG	START STA.	START E.	START N.	START TANGENT	LENGTH	RADIUS
L5	0+283.062	503438.04	5461155.29	032° 56' 24.17"	10.387	
C9	0+293.449	503443.69	5461164.01	057° 59' 49.44"	62.101	71.000
C10	0+355.550	503494.69	5461195.88	062° 06' 29.04"	34.364	47.000
L7	0+389.914	503524.39	5461211.60	065° 56' 33.95"	8.611	
L8	0+398.525	503532.25	5461215.11	053° 39' 16.86"	7.956	
L6	0+406.481	503538.66	5461219.83	043° 47' 01.45"	13.519	

LEGEND:

- ALIGNMENT CENTERLINE
- SHEET MATCHLINE
- ARCHEOLOGICAL BOUNDARY
- LEES UPLAND DESIGN
- DESIGN LINEWORK
- HIDDEN DESIGN LINEWORK
- DESIGN TOP OF SLOPE
- DESIGN GRADE BREAK
- EXISTING GRADE
- DESIGN GRADE
- NHC WORKPOINT (SEE SHEET C-4500) ×WP400-440
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- COBBLE TOE TYPE 2 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL
- SENSITIVE HABITAT

GENERAL NOTES
1. EXISTING GRADE CREATED FROM A COMBINATION OF 2019 BCLIDAR AND AUGUST 2023 SPITFIRE DRONES UAV FLIGHT
2. CONTOUR INTERVAL
   2.1. MAJOR: 1.0 m
   2.2. MINOR: 0.2 m
3. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS WITH RESPECT TO CGVD28 VERTICAL DATUM
4. IMAGE SOURCE: AUGUST 2023 SPITFIRE DRONES UAV FLIGHT

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, EAST BEACH EXTENTS & SURFACE CHANNEL CHANGES	2025-11-04	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR CONSTRUCTION	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

CATES PARK SHORELINE RESTORATION
PHASE 1

NHC PROJECT No.
3008311

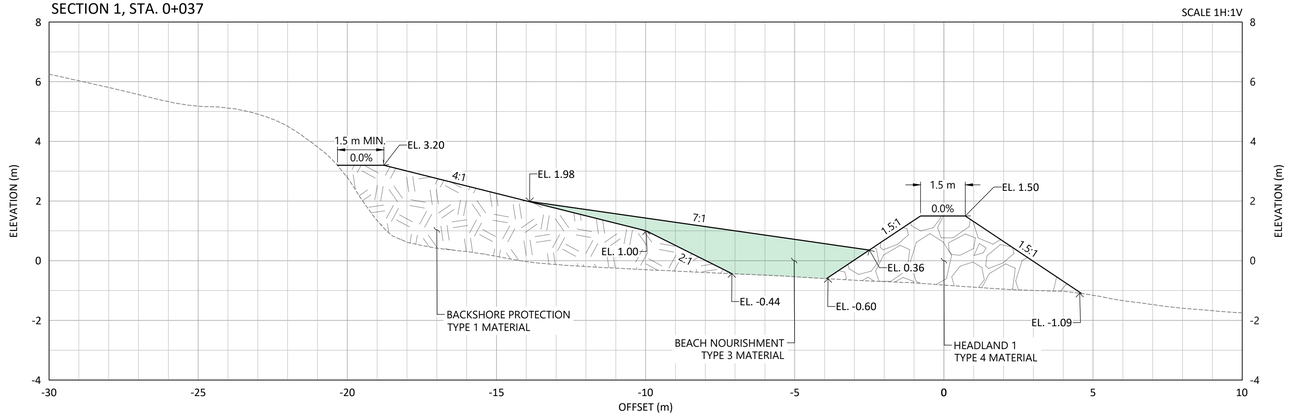
COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

EAST BEACH
PLAN VIEW
STA 0+280 TO STA 0+420

SHEET No.
C-4103

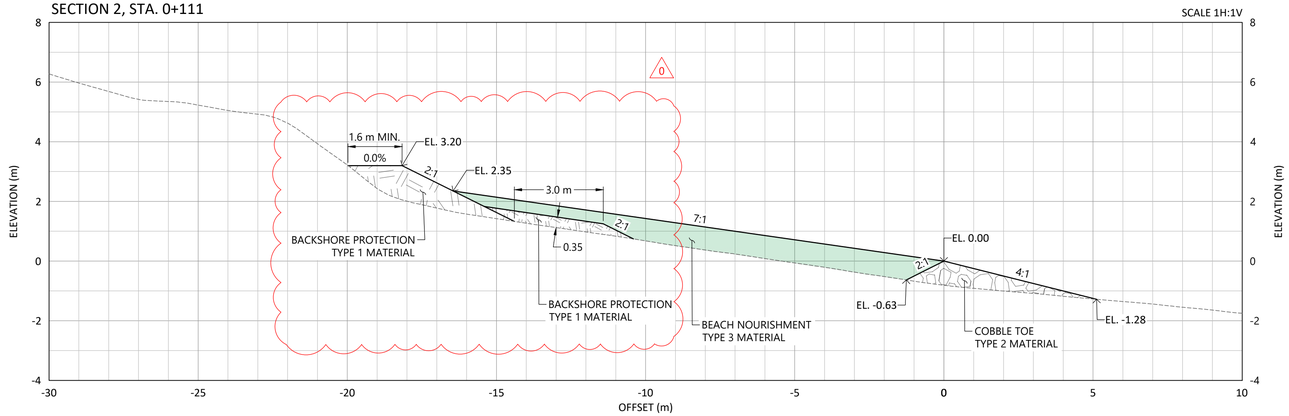
SECTION 1, STA. 0+037

SCALE 1H:1V



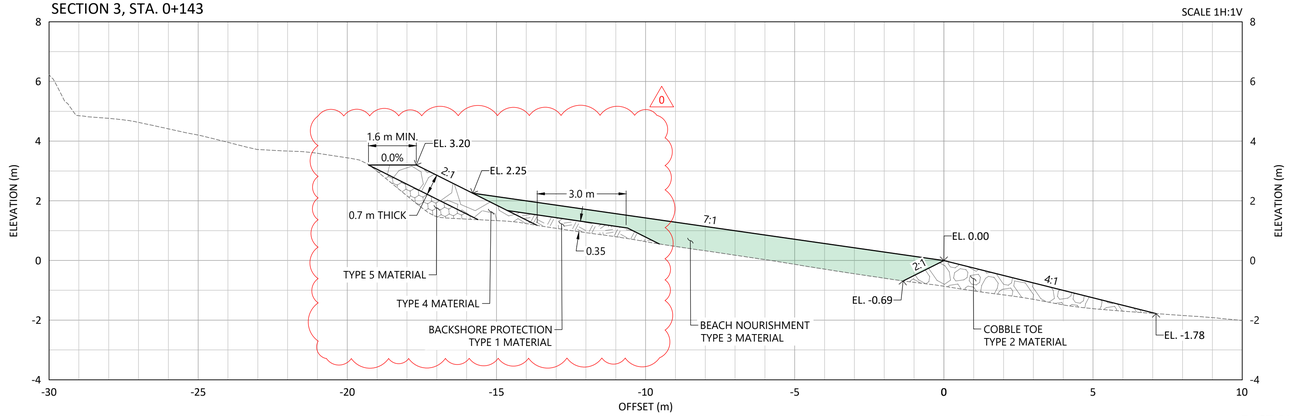
SECTION 2, STA. 0+111

SCALE 1H:1V



SECTION 3, STA. 0+143

SCALE 1H:1V



LEGEND:

- EXISTING GRADE
- DESIGN GRADE
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- COBBLE TOE TYPE 2 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL
- ANGULAR ROCK TYPE 5 MATERIAL

EAST BEACH SECTIONS

SCALE 1:100 | 1H:1V

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, BACKSHORE PROTECTION CHANGE	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION
PHASE 1

EAST BEACH
SECTIONS

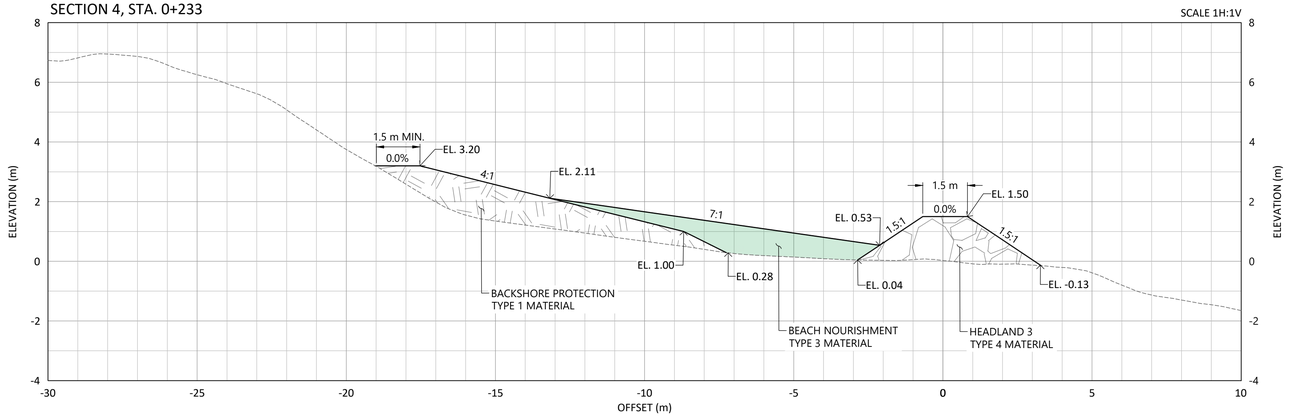
NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-4301

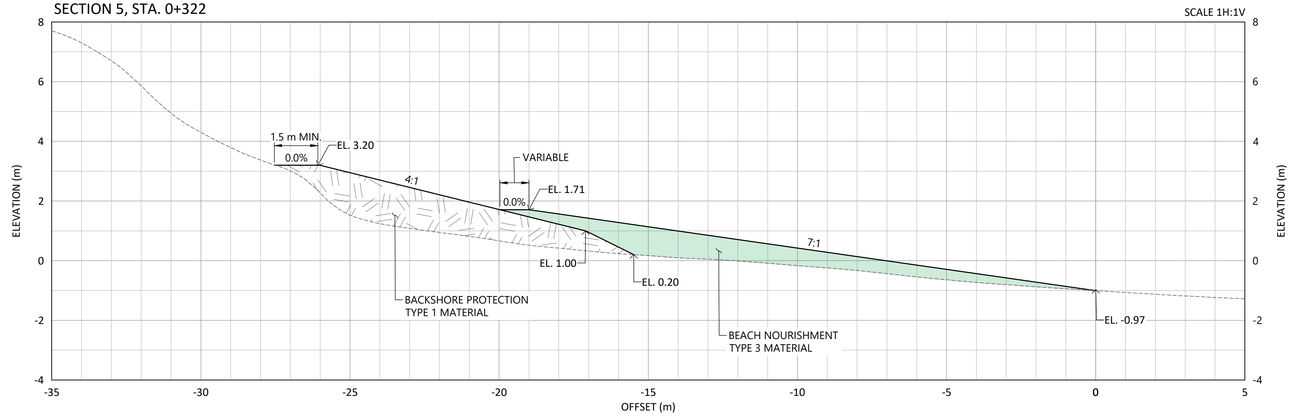
SECTION 4, STA. 0+233

SCALE 1H:1V



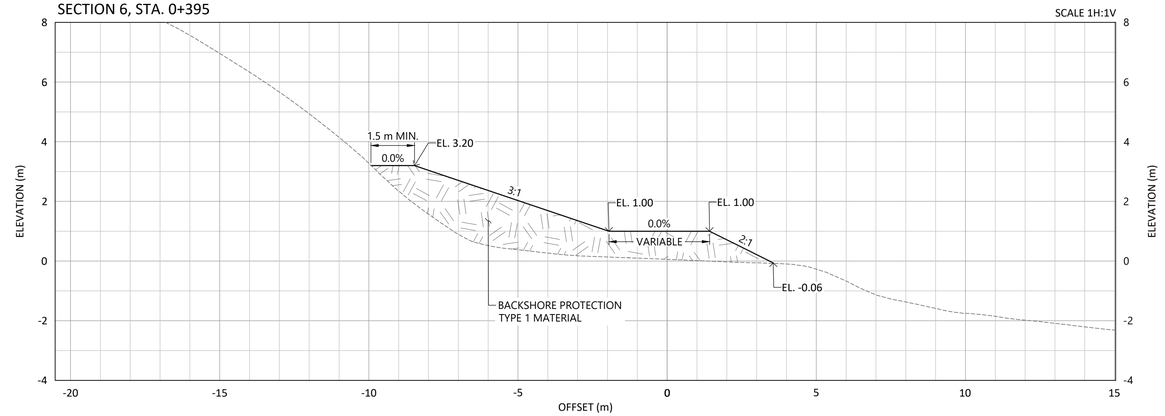
SECTION 5, STA. 0+322

SCALE 1H:1V



SECTION 6, STA. 0+395

SCALE 1H:1V



LEGEND:

- EXISTING GRADE
- DESIGN GRADE
- BACKSHORE PROTECTION TYPE 1 MATERIAL
- COBBLE TOE TYPE 2 MATERIAL
- BEACH NOURISHMENT TYPE 3 MATERIAL
- HEADLAND ROCK TYPE 4 MATERIAL

EAST BEACH SECTIONS

SCALE 1:100 | 1H:1V

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

nhc

CATES PARK SHORELINE RESTORATION PHASE 1

EAST BEACH SECTIONS

NHC PROJECT No. 3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No. **C-4302**

0

EAST BEACH WORKPOINTS TABLE

WORKPOINT	EASTING (m)	NORTHING (m)	ELEVATION (m)
WP400	503256.90	5460933.24	0.64
WP401	503257.06	5460939.23	1.04
WP402	503254.31	5460945.38	1.61
WP403	503261.54	5460955.92	1.63
WP404	503274.55	5460966.56	1.12
WP405	503282.72	5460958.98	-0.26
WP406	503299.32	5460958.25	-1.10
WP407	503296.47	5460966.20	-0.55
WP408	503303.35	5460968.19	-0.67
WP409	503306.15	5460960.38	-0.90
WP410	503321.49	5460976.38	-1.30
WP411	503312.51	5460976.28	-0.63
WP412	503314.43	5460982.82	-0.27
WP413	503322.89	5460981.17	-1.48
WP414	503328.33	5460998.74	-1.72
WP415	503334.24	5461022.60	-1.28
WP416	503343.53	5461036.57	-1.47
WP417	503356.37	5461056.81	-1.93
WP418	503366.19	5461072.11	-1.82
WP419	503378.22	5461086.11	-1.80
WP420	503383.78	5461105.13	-0.47
WP421	503392.78	5461115.26	-0.59
WP422	503398.71	5461118.42	-0.54
WP423	503405.02	5461122.16	-0.60
WP424	503395.48	5461124.18	0.15
WP425	503400.26	5461127.24	-0.04
WP426	503421.93	5461129.06	-1.77
WP427	503433.35	5461140.75	-2.07
WP428	503426.91	5461147.25	-1.02
WP429	503430.77	5461151.80	-1.11
WP430	503437.90	5461145.89	-2.06
WP431	503529.33	5461209.81	-0.14
WP432	503536.84	5461215.11	0.01
WP433	503549.86	5461228.56	-0.07
WP434	503418.06	5461136.12	-0.87
WP435	503390.13	5461118.68	-0.02
WP436	503365.97	5461085.28	-0.82
WP437	503347.83	5461059.82	-0.62
WP438	503332.87	5461033.38	-0.63
WP439	503324.66	5461016.55	-0.68
WP440	503318.42	5460987.57	0.14

EAST BEACH ALIGNMENT LAYOUT

TAG	START STA.	START E.	START N.	START TANGENT	LENGTH	RADIUS
L1	0+000.000	503267.89	5460975.93	138° 33' 10.71"	7.550	
C1	0+007.550	503272.88	5460970.27	106° 44' 22.65"	27.762	25.000
L2	0+035.312	503298.12	5460962.68	074° 55' 34.58"	6.594	
C2	0+041.906	503304.49	5460964.40	043° 31' 18.62"	18.636	17.000
L3	0+060.542	503316.69	5460977.24	012° 07' 02.66"	27.175	
C3	0+087.717	503322.40	5461003.81	023° 37' 40.18"	37.366	93.000
C4	0+125.083	503337.27	5461037.82	029° 39' 44.16"	16.439	86.000
C5	0+141.522	503345.39	5461052.08	033° 53' 31.16"	37.945	112.000
C6	0+179.467	503366.45	5461083.43	033° 41' 51.39"	31.102	90.000
C7	0+210.569	503383.62	5461109.17	042° 14' 45.56"	14.811	23.000
L4	0+225.380	503393.41	5461119.95	060° 41' 40.06"	19.898	
C8	0+245.278	503410.76	5461129.69	046° 49' 02.12"	37.784	78.000
L5	0+283.062	503438.04	5461155.29	032° 56' 24.17"	10.387	
C9	0+293.449	503443.69	5461164.01	057° 59' 49.44"	62.101	71.000
C10	0+355.550	503494.69	5461195.88	062° 06' 29.04"	34.364	47.000
L7	0+389.914	503524.39	5461211.60	065° 56' 33.95"	8.611	
L8	0+398.525	503532.25	5461215.11	053° 39' 16.86"	7.956	
L6	0+406.481	503538.66	5461219.83	043° 47' 01.45"	13.519	

THIS DRAWING MAY HAVE BEEN REDUCED AND IS HALF SCALE WHEN PRINTED TO 11" X 17".

DRAWING REVISION SCHEDULE

REV	DESCRIPTION	DATE	DESIGNER	DRAWN BY	APPROVED
0	ISSUED FOR CONSTRUCTION, WORKPOINT UPDATES	2025-11-12	P.MARTENS	R.CLARK	G.LAMONT
A	ISSUED FOR TENDER	2025-07-30	P.MARTENS	R.CLARK	G.LAMONT

CLIENT

Tsleil-Waututh Nation
PEOPLE OF THE INLET

DISTRICT OF NORTH VANCOUVER

SEAL

CATES PARK SHORELINE RESTORATION
PHASE 1

EAST BEACH
DETAILS

NHC PROJECT No.
3008311

COORD SYS. AND DATUM
HORIZ: NAD83 UTM ZONE 10 N
VERT: CGVD28

SHEET No.
C-4500

Attachment 2

Engagement Summary Report

MEMO

Hatfield

Date:	April 4, 2025	Hatfield Ref No.: TWN12545-NV
From:	Becca Kordas, Hatfield Consultants LLP	
To:	Vancouver Fraser Port Authority Project and Environmental Review Team	
Subject:	APPENDIX A6: Engagement Summary for Whey-Ah-Wichen / Cates Park Shoreline Restoration Program. VFPA PER #24-174.	

The District of North Vancouver (DNV) and səlilwətaɬ/Tsleil-Waututh Nation (TWN) are seeking to implement a shoreline adaptation and restoration program at Whey-ah-Wichen (Cates Park; "the Program"). Whey-ah-Wichen (meaning "facing the wind") has been an active part of the traditional and unceded territory of the TWN for thousands of years and continues to hold strong cultural and archeological significance to TWN. Now a large waterfront park, Whey-ah-Wichen is co-managed by DNV and TWN. The shoreline has been eroding and this is likely to worsen with sea level rise and climate change, which threaten archeological resources, shoreline habitat, park infrastructure, and TWN cultural sites.

The Program involves the construction of nature-based shoreline protection and stabilization measures in combination with habitat restoration and enhancement. The proposed works align with TWN's overall vision for Burrard Inlet and are part of a larger TWN program to mitigate coastal erosion and restore shoreline habitat on the North Shore. The key objectives for the Program are to (1) enhance resilience to climate change using nature-based solutions, (2) preserve the historical significance and enhance TWN's cultural use of the site, and (3) integrate visitor usage and education.

Engagement for the Program is ongoing and has been conducted throughout the design process, including engagement with the TWN community, technical and other advisory groups, and referral and engagements with the xʷməθkʷəy̓əm (Musqueam) and Sḵwx̱wú7mesh (Squamish). This document provides a summary of the Program engagement that has been completed to date.

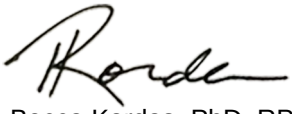
1. Presentation at Nature-based Coastal Solutions Conference, Atlantic Chapter (Halifax, NS):
    - Date: October 10, 2023.
    - Purpose: Presented the proposed Program design to conference attendees, which included regulators, contractors, and academics.
2. Whey-ah-Wichen Cultural Cooperation Agreement Steering Committee Meetings:
    - Dates: November 30, 2023; January 17, 2024; November 20th and March 12, 2025.
    - Purpose: Discussions regarding future engagement and Program design priorities.

3. Meetings with TWN Cultural Team:
    - Dates: January 26, 2024; February 28, 2024; April 10, 2024; September 11, 2024; October 2, 2024; November 13, 2024; December 4, 2024; January 15, 2025; February 5, 2025; February 25, 2025; and March 10, 2025.
    - Purpose: Ongoing progress meetings.
4. Concept Designs Feedback with TWN Community:
    - Date: March 1, 2024.
    - Purpose: TWN Community and Program Design Team (DNV, NHC, Hatfield) met to receive feedback on Program designs.
5. TWN Newsletter Updates and Public blog post:
    - Dates: March 25, 2024 and October 21, 2024. Public blog post published March 2025. https://twnation.ca/reviving-the-shores-a-transformative-shoreline-restoration-project-at-whey-ah-wichen-cates-park/
    - Purpose: Providing Program updates to TWN community, with quarterly newsletters to start upon construction commencement in August 2025.
6. Engagement Sessions with TWN Community:
    - Dates: April 2, 2024 and November 7, 2024.
    - Purpose: Community feedback provided on Program overview poster, Little Cates Point and East Beach poster, East Beach boulder aprons and Roche Point poster, Central Beach and West Beach poster, and prompts.
7. Discussion with Takaya Tours at the Whey-ah-Wichen Technical Meeting:
    - Date: April 9, 2024.
    - Purpose: To identify opportunities to improve access and visitor use of the site through Program design. Understand current constraints and challenges with the site, from a site user perspective.
8. DNV Parks and Natural Environment Advisory Committee Meeting:
    - Date: April 17, 2024.
    - Purpose: Program overview provided, including a summary of engagement feedback to date. Discussion on Program design, funding, and next steps.
9. Consultation with Deep Cove Kayak:
    - Date: April 19, 2024.
    - Purpose: To share Program scope with tourism/service operator and hear ideas/concerns.

10. Multi-stakeholder Shoreline Technical Advisory Group Presentation:
    - Date: May 21, 2024.
    - Purpose: TWN-led presentation on Program design and progress.
11. Correspondence with the xʷməθkʷəy̓əm (Musqueam) Nation:
    - Dates: Program information meeting originally scheduled for August 8, 2024, cancelled and rescheduling at Musqueam's convenience, likely spring/summer 2025.
    - Email sent to Musqueam with Program information Nov 14, 2024. Musqueam response received Dec 4, 2024.
    - Purpose: Engagement with xʷməθkʷəy̓əm Nation, to describe the Program, answer any questions and let them know to expect a referral from DFO and VFPA regarding the Program.
12. Chief and Council and CAO "Snapshot" Update:
    - Date: September 9, 2024.
    - Purpose: To update TWN's Chief and Council on the progress of the Program planning and design work and provide an opportunity for feedback or questions.
13. DNV Climate Action Advisory Committee:
    - Date: October 9, 2024.
    - Staff provided a presentation on the Whey-ah-Wichen / Cates Park Shoreline Restoration Program. The committee shared their support and ideas on how to communicate the impacts of climate change related to the Program to park visitors.
14. Presentation at Nature-based Coastal Solutions Conference, Pacific Chapter (Vancouver, BC):
    - Date: October 10, 2024.
    - Purpose: Presented proposed Program design to conference attendees, which included regulators, contractors, academics, and BC First Nations members.
15. District of North Vancouver Public Signage (Attachment A1):
    - Date: Installed on site the week of October 20, 2024.
    - Purpose: Provide accessible signage to inform park visitors of the Program purpose and design, including key elements and Program timeline.
16. Meeting and email correspondence with Sḵwx̱wú7mesh Úxwumixw (Squamish Nation):
    - Date: In-person discussion October 22, 2024. Virtual meeting November 12, 2024. Email with Program information sent to Squamish November 14, 2024.
    - Purpose: Engagement with Sḵwx̱wú7mesh Úxwumixw to describe the Program, answer any questions and let them know to expect a referral from DFO and VFPA regarding the Program.

Ongoing engagement efforts include the use of online resources to keep the community informed and involved in the Program. The DNV has created a section of their website under Parks, Trails, and Recreation, summarizing the proposed restoration and improvements at Whey-ah-Wichen. The website page also has a dedicated area for news and updates on the Program. Additionally, TWN published a blog post on its website and will continue to post updates when construction commences in August 2025.

Sincerely,



Becca Kordas, PhD, RPBio
Senior Marine Biologist and Manager, Marine Resources
HATFIELD CONSULTANTS LLP

Attachment A1

District of North Vancouver
Public Signage Example

Whey-Ah-Wichen/Cates Park Improvements

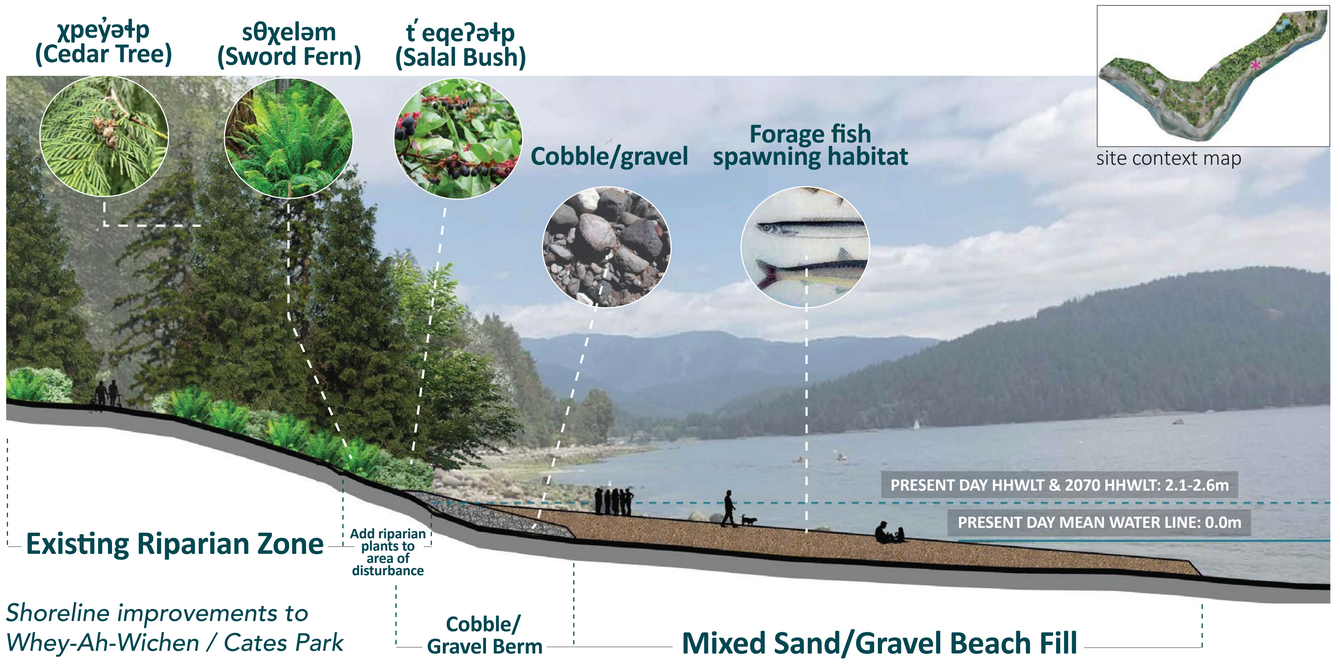
As co-managers of Whey-Ah-Wichen/Cates Park, the District of North Vancouver and the Tsleil-Waututh Nation are working together to implement a series of improvements. The long-term objectives of this work include:

- Enhance resilience to climate change using nature-based solutions.
- Protect Tsleil-Waututh's cultural heritage and archaeology.
- Enhance forage fish habitat.
- Integrate visitor usage and education.

2024 Permitting
Design

2025 Construction

2027 Project Completed
Monitoring



Shoreline improvements to Whey-Ah-Wichen / Cates Park

Key Elements

Improved Beach Access

New Picnic Shelters

Interpretive Panels

Bioswales
to improve drainage and water quality

Beach Nourishment
(adding sediment)

Planting
native and culturally important species

DISTRICT OF NORTH VANCOUVER

BRITISH COLUMBIA

Tsleil-Waututh Nation
PEOPLE OF THE INLET

To learn more about this project, visit
DNV.org/WAW-Cates-Improvements