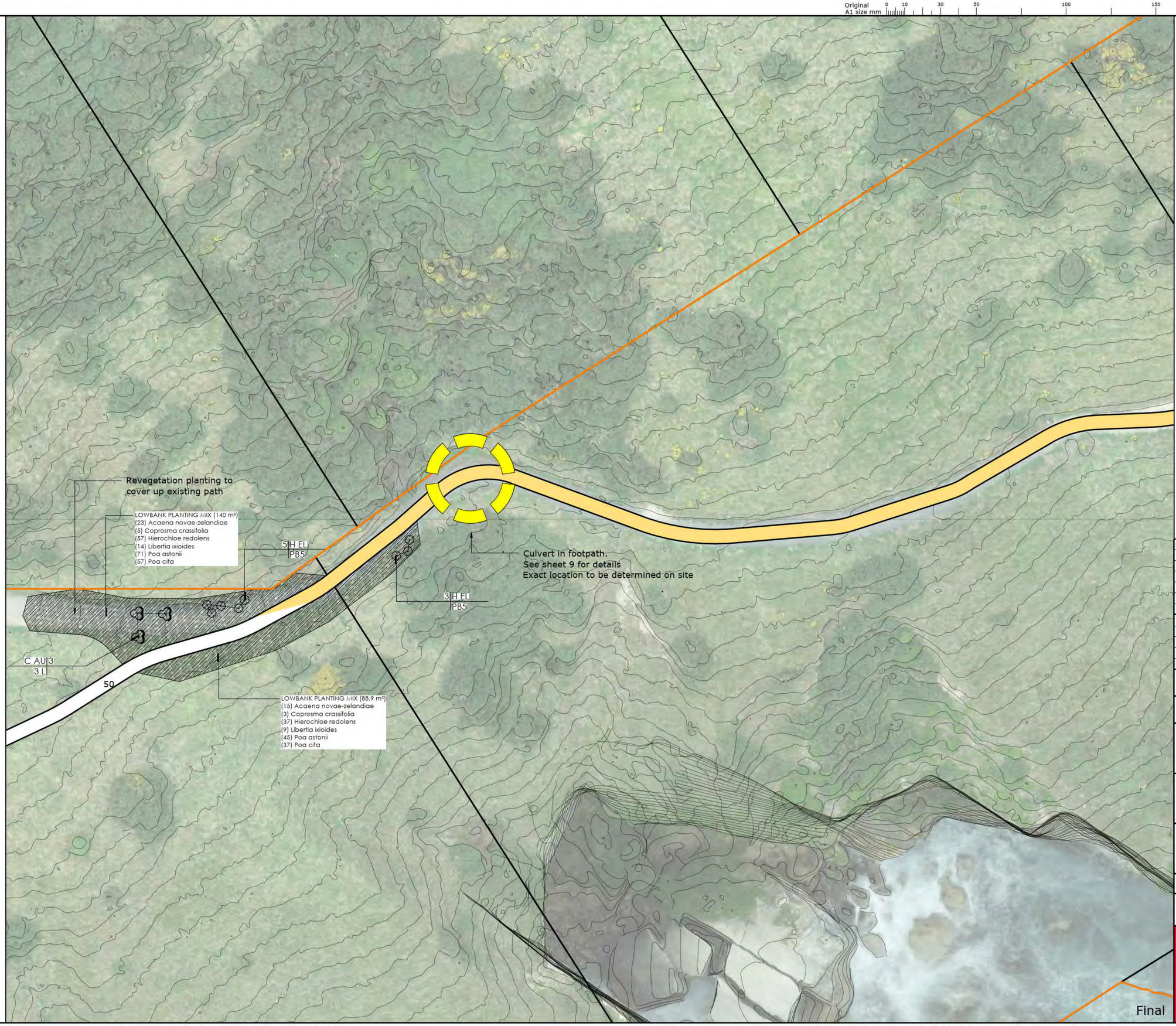
Original A1 size mm 0 10 30 50 100 150 200 300



Notes:

Excavations
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Steelwork
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2. All Cold formed steel hollow sections (CHS, SHS & RHS) shall comply with AS/NZS 1163:2016 grade C350L0.
3. All hot-rolled bars and sections (UB, UC, PFC, EA, UA & bars, etc) shall comply with AS/NZS3679:2016 grade 300.
4. All steel plate shall comply with AS/NZS 3678:2016 grade 300.
5. Unless noted otherwise in the structural drawings, all lines of contact shall be welded using 5mm structural purpose fillet weld all round.
6. All exposed steel works noted below to be hot dip galvanised Grade HDG600-5D or 5I or TSZ200S for surface-specific corrosivity category C5-M in accordance with AS/NZS 2312 and SNZ TS 3404:2018. And paint with Resene 'Black Russian'.
7. All steelwork to be painted to Resene 4D painting system specification: 1st coat: Armourcote 501 (250µm)
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   Bars prefixed H - Grade 500E MA, deformed

Track
1. Crossfall of 2°
2. Grade dips to be provided along the track at 10m intervals (refer to page 69-70 of 'Track Construction and Maintenance Guidelines - VC 1672'

Vegetation
1. Planting areas shall have a feathered edge of at least 2m wide, to create a seamless transition of the existing vegetation

KEY

- DOC reserve boundary
- Proposed new track layout (1000m)
- Existing track upgrade (300m)
- Culvert location (TBC on site)
- Planting
- VP 4 Viewpoint
- 55 Contour height (meters)

Rev.	Description	Drawn	Date
A	Final	MS	09.06.21
B	Amend culvert + viewpoints	MS	22.09.21

	Name	Date
Designed	M Smink	09.06.21
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Design Review		Date
J. McFarlane		03.06.21
Approved		Date
J. McFarlane		09.06.21

Surveyed: L. Smetana — Survey Date: 14.02.21

Coord System: NZGD 2000 North Taieri

Calibration:-

Origin of Levels: BD4X SS Pin R.L. 142.5

Datum: NZVD2016

Client: Department of Conservation Te Papa Atawhai

Project Title: Tunnel Beach Reserve Track Design
Dunedin

Drawing Title: Concept Plan
Track alignment - sheet 7

Scales: 1:200 [A1] 1:400 [A3]

Project No.	Set No.	Sht No.	Rev.
501864	L1	07	B

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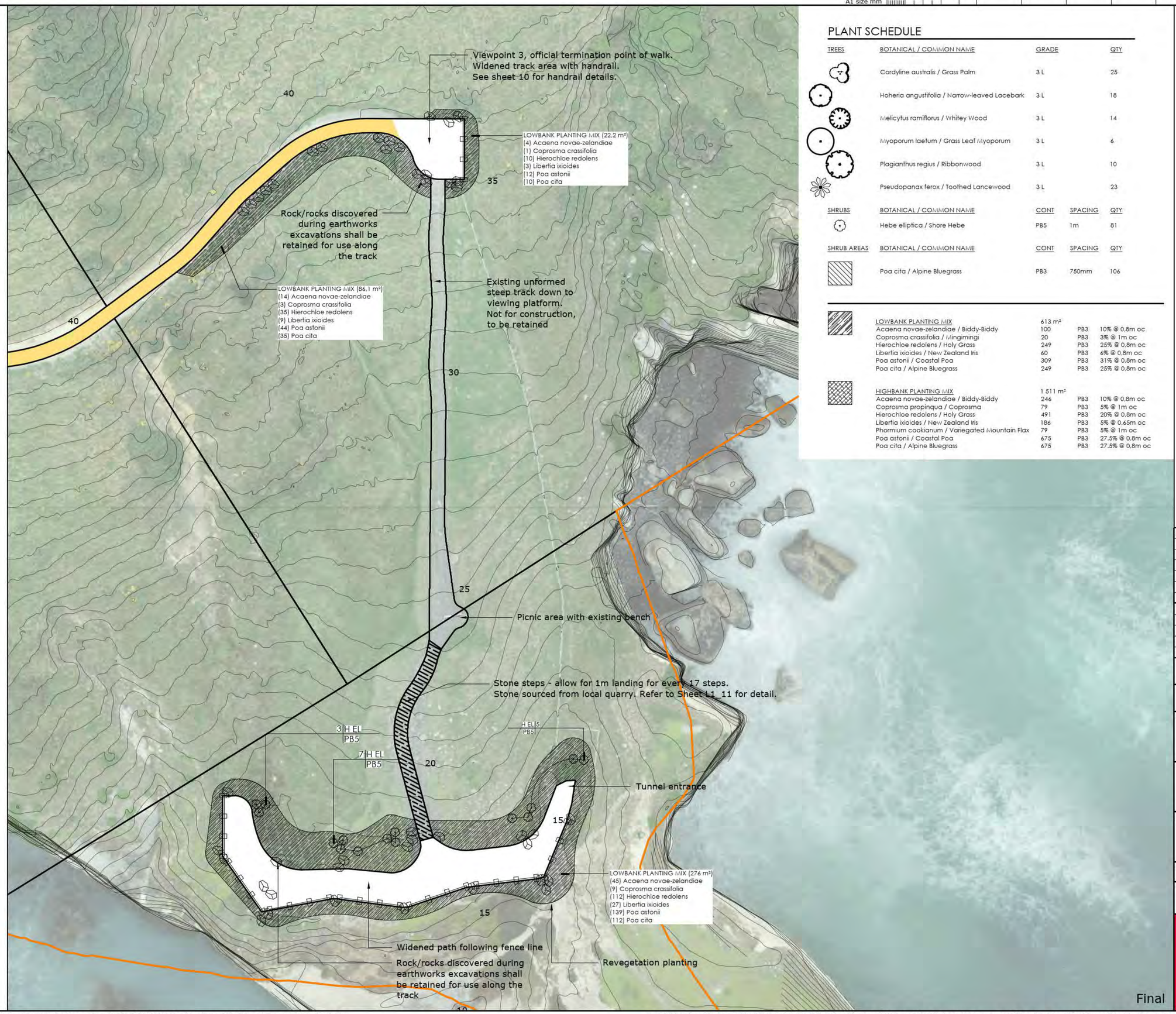
Original A1 size mm 0 10 30 50 100 150 200 300



PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	GRADE	QTY
	Cordyline australis / Grass Palm	3 L	25
	Hoheria angustifolia / Narrow-leaved Lacebark	3 L	18
	Melicytus ramiflorus / Whitey Wood	3 L	14
	Myoporum laetum / Grass Leaf Myoporum	3 L	6
	Plagianthus regius / Ribbonwood	3 L	10
	Pseudopanax ferox / Toothed Lancewood	3 L	23

SHRUBS	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
	Hebe elliptica / Shore Hebe	PB5	1m	81

SHRUB AREAS	BOTANICAL / COMMON NAME	CONT	SPACING	QTY
	Poa cita / Alpine Bluegrass	PB3	750mm	106

LOWBANK PLANTING MIX	613 m²		
Acaena novae-zelandiae / Biddy-Biddy	100	PB3	10% @ 0.8m oc
Coprosma crassifolia / Mingimingi	20	PB3	3% @ 1m oc
Hierochloe redolens / Holy Grass	249	PB3	25% @ 0.8m oc
Libertia ixioides / New Zealand Iris	60	PB3	6% @ 0.8m oc
Poa astonii / Coastal Poa	309	PB3	31% @ 0.8m oc
Poa cita / Alpine Bluegrass	249	PB3	25% @ 0.8m oc

HIGHBANK PLANTING MIX	1 511 m²		
Acaena novae-zelandiae / Biddy-Biddy	246	PB3	10% @ 0.8m oc
Coprosma propinqua / Coprosma	79	PB3	5% @ 1m oc
Hierochloe redolens / Holy Grass	491	PB3	20% @ 0.8m oc
Libertia ixioides / New Zealand Iris	186	PB3	5% @ 0.65m oc
Phormium cookianum / Variegated Mountain Flax	79	PB3	5% @ 1m oc
Poa astonii / Coastal Poa	675	PB3	27.5% @ 0.8m oc
Poa cita / Alpine Bluegrass	675	PB3	27.5% @ 0.8m oc

Notes:

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Surveyed: L. Smetana — Survey Date: 14.02.21
Coord System: NZGD 2000 North Taieri
Calibration:-
Origin of Levels: BD4X SS Pin R.L. 142.5
Datum: NZVD2016

Client: Department of Conservation Te Papa Atawhai

Project Title: Tunnel Beach Reserve Track Design
Dunedin

Drawing Title: Concept Plan
Track alignment - sheet 8

Scales: 1:200 [A1] 1:400 [A3]

Project No.	Set No.	Sht No.	Rev.
501864	L1	08	B

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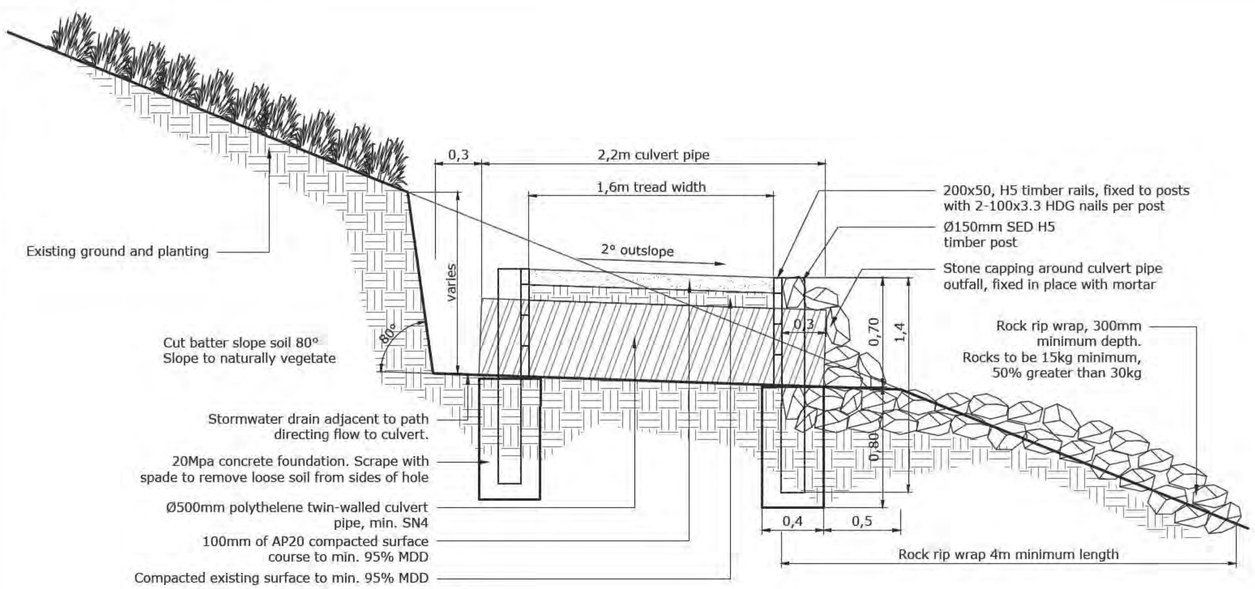
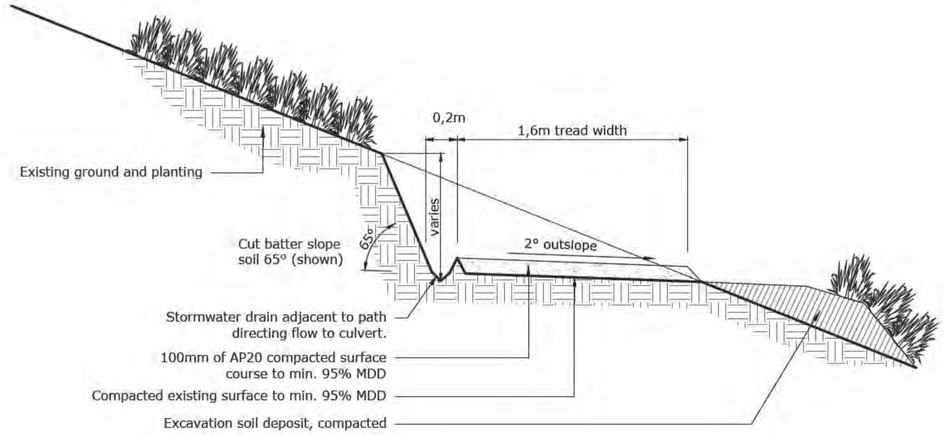
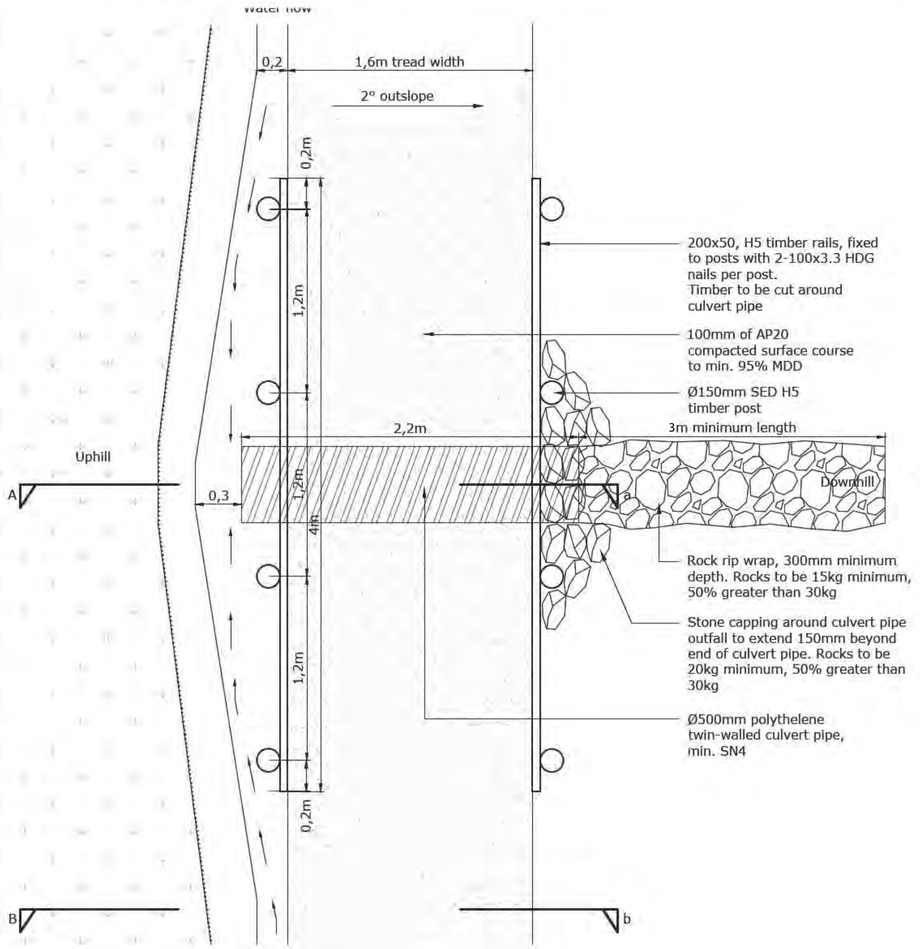


1 - Track Section Aa - Culvert
Scale 1:20



2 - Track Section Bb - within 10m of culvert structure
Scale 1:20



3 - Track Plan - Culvert
Scale 1:20

Notes:

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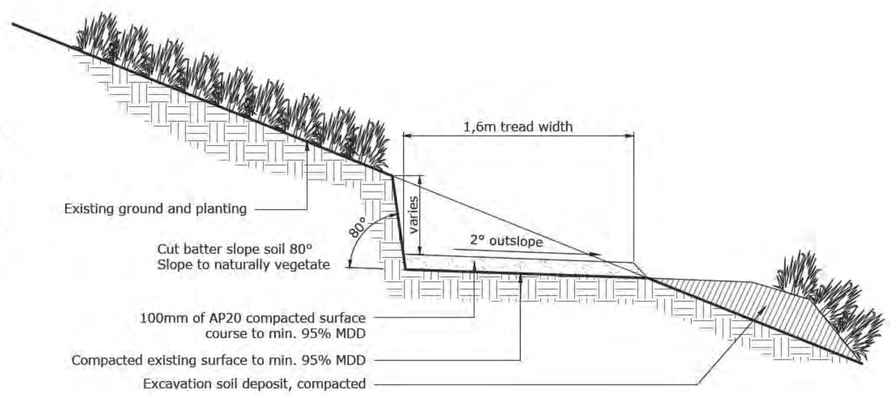

4 - Track Section - typical
Scale 1:20

Rev.	Description	Drawn	Date
A	Final	MS	09.06.21
B	Amend culvert + viewpoints	MS	22.09.21

	Name	Date
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Drawn	M Smink	09.06.21
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Proj. Mgr	J. McFarlane	09.06.21
Design Review		Date
J. McFarlane		03.06.21
Approved		Date
J. McFarlane		09.06.21

Surveyed: L. Smetana — Survey Date: 14.02.21
Coord System: NZGD 2000 North Taleri
Calibration:-
Origin of Levels: BD4X SS Pin R.L. 142.5
Datum: NZVD2016

Client: Department of Conservation Te Papa Atawbai

Project Title: Tunnel Beach Reserve Track Design
Dunedin

Drawing Title: Concept Plan
Construction details - track

Scales: 1:20 [A1] 1:40 [A3]

Project No.	Set No.	Sht No.	Rev.
501864	L1	09	B

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Final

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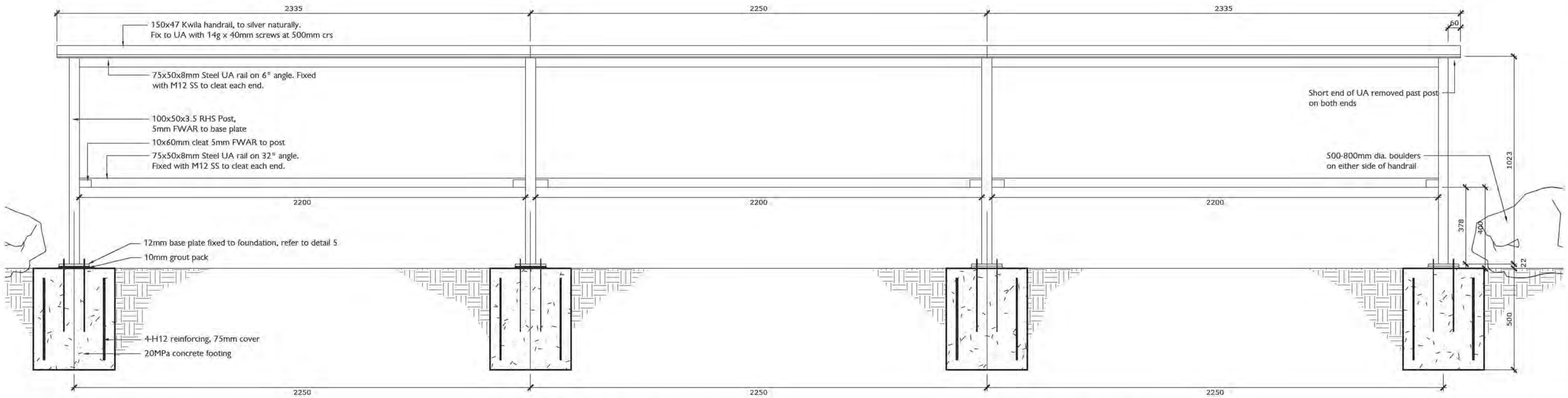
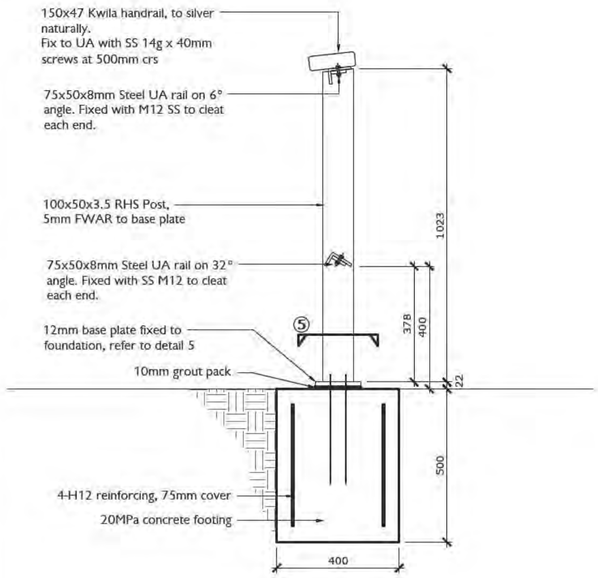
Original A1 size mm 0 10 30 50 100 150 200 300

Notes:

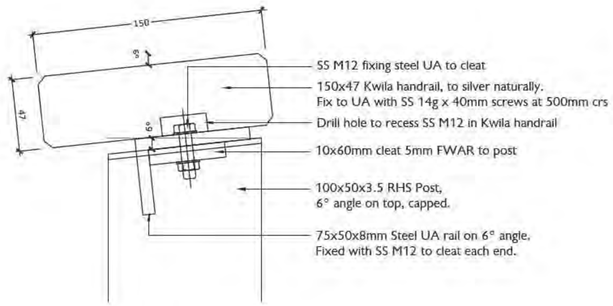


Post type A (cleat side B) **Post type B (cleat side A & B)** **Post type B (cleat side A & B)** **Post type C (Cleat side A)**

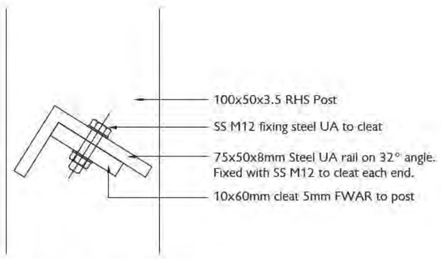
1 - Handrail Elevational Section - typical
Scale 1:10



2 - Handrail Elevational Section - Side
Scale 1:10



3 - Handrail Section
Scale 1:2



4 - Bottom rail section
Scale 1:2

Notes:

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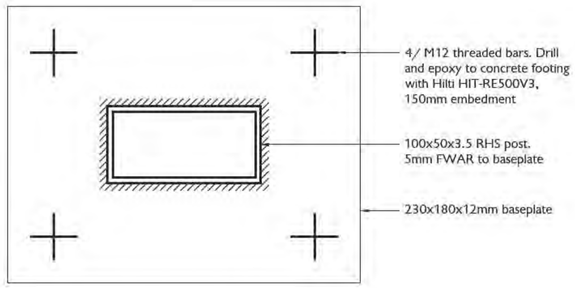

5 - Post base plate plan
Scale 1:2

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A	Final	MS	09.06.21
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Origin of Levels: BD4X SS Pin R.L. 142.5
Datum: NZVD2016

Client: Department of Conservation Te Papa Atawbai

Project Title
Tunnel Beach Reserve Track Design
Dunedin

Drawing Title
Concept Plan
Construction details - handrail

Scales
1:10;1:2 [A1] 1:20;1:4 [A3]

Project No.	Set No.	Sht No.	Rev.
501864	L1	10	B

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Final

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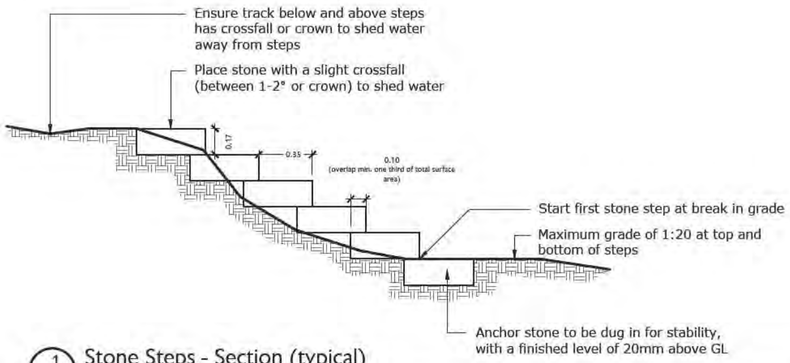
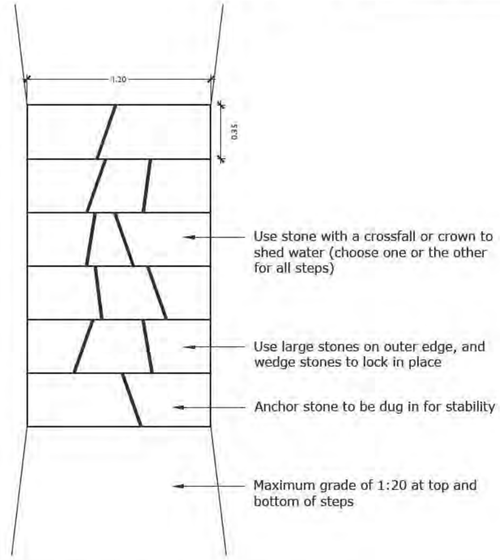


1 - Stone Steps - Section (typical)
Scale 1:20



2 - Stone Steps - Plan (typical)
Scale 1:20

Rock step construction notes:

- Work from the bottom of the slope upwards
- Build in a cross fall or crown to shed water
- Place weathered stone face to the surface
- Dig in a very stable anchor stone at the base of the flight of steps. Needs to be large as it is supporting the weight of additional stones
- Ensure there is stone to stone contact (one third of surface area minimum)
- Overlap stones, stagger joins
- On steep grades embed the stone vertically with the longest end in the ground
- Use large stones on the outer edge, they are less likely to move
- Use wedge stones to lock into place
- Construct either a drainage dip or grade reversal no less than one metre from the top of a flight of steps
- Make the track flat at the top and bottom of the step. This helps with water management and the displacement of material
- Be consistent - keep the tread rise and tread going the same in each flight of steps
- Each individual step needs to be compacted. compact loose fill in layers not exceeding 150mm
- Construct landings with a maximum slope (<2°) to stop water from sitting
- Construct the diagonals on an angle, this helps to counteract the structural staircase effect.

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	GRADE	QTY
	Cordyline australis / Grass Palm	3 L	25
	Hoheria angustifolia / Narrow-leaved Lacebark	3 L	18
	Melicytus ramiflorus / Whitey Wood	3 L	14
	Myoporum laetum / Grass Leaf Myoporum	3 L	6
	Plagianthus regius / Ribbonwood	3 L	10
	Pseudopanax ferox / Toothed Lancewood	3 L	23

SHRUBS	BOTANICAL / COMMON NAME	CONT	QTY
	Hebe elliptica / Shore Hebe	PB5	81

PLANT MIX SCHEDULE

LOWBANK PLANTING MIX	613 m²		
Acaena novae-zelandiae / Biddy-Biddy	100	PB3	10% @ 0,8m oc
Coprosma crassifolia / Mingimingi	20	PB3	3% @ 1m oc
Hierochloe redolens / Holy Grass	249	PB3	25% @ 0,8m oc
Libertia ixioides / New Zealand Iris	60	PB3	6% @ 0,8m oc
Poa astonii / Coastal Poa	309	PB3	31% @ 0,8m oc
Poa cita / Alpine Bluegrass	249	PB3	25% @ 0,8m oc

HIGHBANK PLANTING MIX	1 688 m²		
Acaena novae-zelandiae / Biddy-Biddy	275	PB3	10% @ 0,8m oc
Coprosma propinqua / Coprosma	88	PB3	5% @ 1m oc
Hierochloe redolens / Holy Grass	549	PB3	20% @ 0,8m oc
Libertia ixioides / New Zealand Iris	208	PB3	5% @ 0,65m oc
Phormium cookianum / Mountain Flax	88	PB3	5% @ 1m oc
Poa astonii / Coastal Poa	754	PB3	27.5% @ 0,8m oc
Poa cita / Alpine Bluegrass	754	PB3	27.5% @ 0,8m oc

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Datum: NZVD2016

Client: Department of Conservation Te Papa Atawbai

Project Title: Tunnel Beach Reserve Track Design, Dunedin

Drawing Title: Construction details - Stone Steps & Plant Schedule

Scales: 1:20 [A1] 1:40 [A3]

Project No.	Set No.	Sht No.	Rev.
501864	L1	11	B

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Final

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Appendix C – Landscape and Visual Assessment

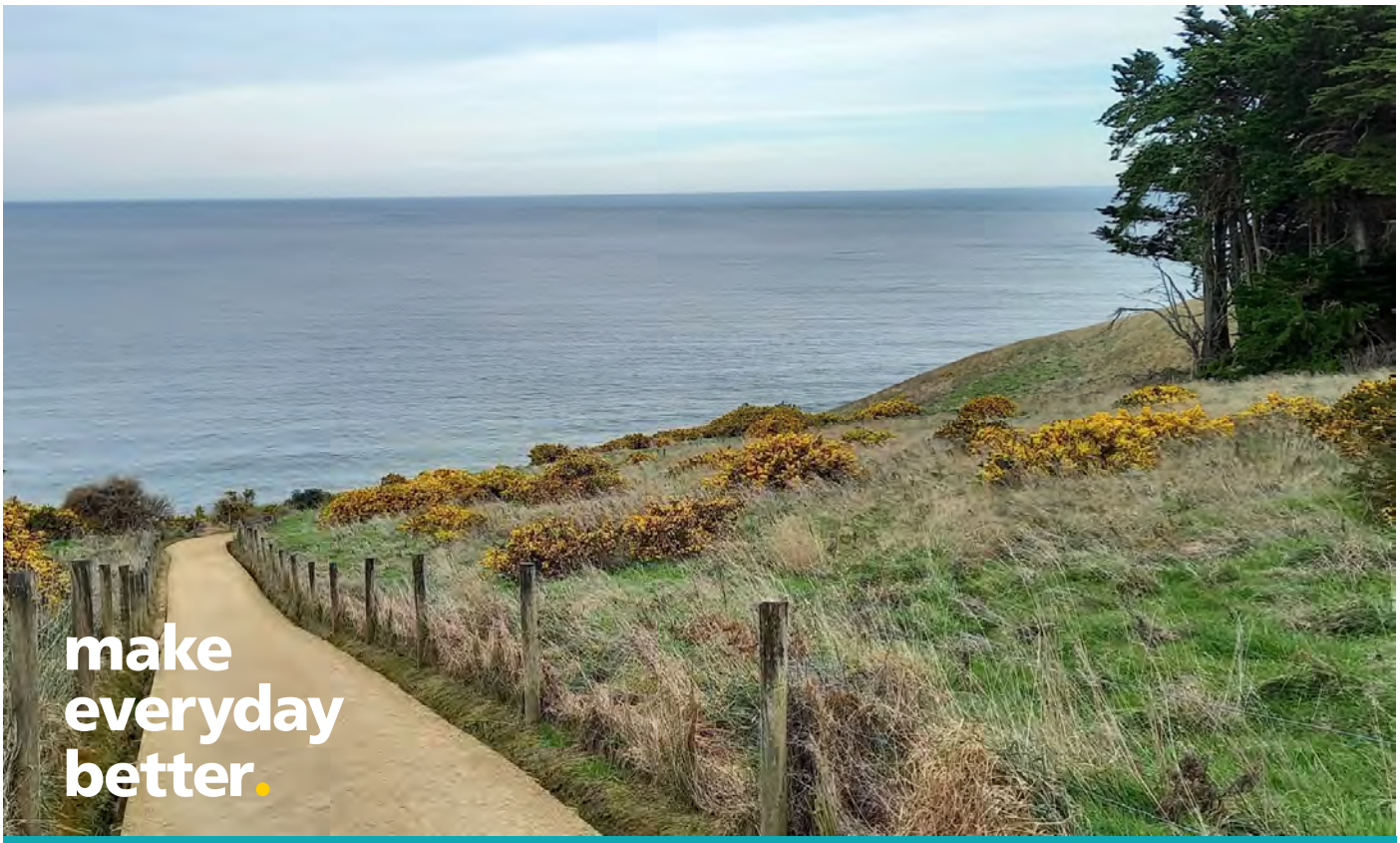
Tunnel Beach Carpark

Landscape and Visual Assessment

Prepared for Dunedin City Council

Prepared by Beca Limited

6 November 2020



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Revision History

Revision Nº	Prepared By	Description	Date
A	Anne Lassé	For internal review	29/09/2020
B	Anne Lassé	For Resource Consent	06/11/2020

Document Acceptance

Action	Name	Signed	Date
Prepared by	Anne Lassé		06/11/2020
Reviewed by	Wade Robertson		06/11/2020
Approved by	James Taylor		06/11/2020
on behalf of	Beca Limited		

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1 Introduction

1.1 Purpose

This Landscape and Visual Effects Assessment (LVA) has been prepared by Beca Ltd (Beca) on behalf of Dunedin City Council (DCC) to assess the potential landscape and visual effects of the proposal.

The Tunnel Beach coastal landscape is a key tourist destination with a well-known walking track located off Blackhead Road, just outside the suburb of Corstorphine, on the outskirts of Dunedin. The existing roadside angle carparking is frequented by cars, campervans and coaches but is insufficient to meet current demand and does not accommodate appropriate coach turning circles.

Figure 1: *The location of Tunnel Beach.*

1.2 Scope

The scope of this assessment is to assess landscape and visual effects associated with the proposal. The methodology that underpins this assessment is set out in Section 2 below, it is based on accepted industry practice and addresses the relevant policy direction and (where relevant) specific provisions of the Dunedin City Council Second Generation District Plan (the District Plan).

The scope of this assessment includes:

1. a description of the proposal;

2. a description of the existing environment including;
    - identification of the 'site' and local landscape as it relates to this assessment,
    - identification of the key physical and perceptual characteristics, including a summary statement of the overall character of the site and local landscape,
    - a brief evaluation of the sensitivity of the site and local landscape to development; and
    - identification of the relevant viewing catchment as it relates to an assessment of visual effects.
3. the relevant district plan policy considerations; and
4. an assessment of landscape and visual effects (shaped by the relevant policy provisions and methodology below);

The preparation of this assessment included the following tasks:

1. preliminary discussions with the project team regarding the intended project outcomes;
2. a formal site visit on the 31st August 2020; and
3. a desk top review of the relevant parts of the District Plan, and the relevant project material of the proposal.

2 Methodology

The methodology for this assessment is guided by:

- the New Zealand Institute of Landscape Architects (NZILA), Landscape Assessment and Sustainable Management Practice Note 10.1 [1];
- the draft NZ Transport Agency (NZTA) Landscape and Visual Assessment Guidelines [2];
- the Landscape Institute and Institute of Environmental Management and Assessment, Guidelines for Landscape and Visual Impact Assessment (GLVIA) [3]; and
- the relevant objectives, policies set out in the 2GP District Plan.

The documents above are widely acknowledged as representing accepted best practice in the assessment of landscape and visual effects in New Zealand.

Landscape Sensitivity

The consideration of the sensitivity of a particular landscape or specific site is based on the identification of those characteristics (or attributes) that exist w/……ithin a landscape, how they

[1] *Best Practice Note: Landscape Assessment and Sustainable Management 10.1. (2010). New Zealand Institute of Landscape Architects.*

[2] *App1: NZTA Landscape and Visual Assessment Guidelines (draft), October 2013.*

[3] *Guidelines for Landscape and Visual Impact Assessment, Third Edition. 2013. The Landscape Institute and Institute of Environmental Management and Assessment.*

combine as landscape character, how valued that character is and ultimately how sensitive that value is to change. In this instance a simple 3-point scale has been adopted.

- Low
- Moderate
- High

Degree of effect

The degree of positive and / or negative effects is solely based on landscape and visual aspects of the proposal, it does not take into account the 'balance' required under the broader RMA decision making process. Positive effects of the proposal are not scaled, they are simply described as positive effects. In determining the degree of negative effects of the proposal a seven-point scale has been used.

- Very low
- Low
- Low - moderate
- Moderate
- Moderate – high
- High
- Very high

This scale is intended to provide a useful way of describing the degree of effect in considering the overall acceptability and appropriateness of the proposal.

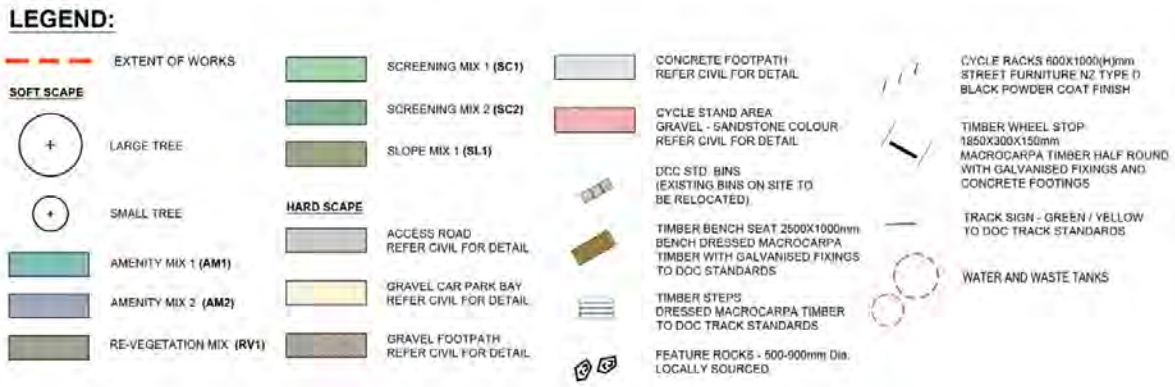
3 Proposal

A full proposal description can be found in the Assessment of Environmental Effects report (AEE)[4]. The information most relevant to landscape and visual assessment matters is summarised below.

The aim of the proposal is to rectify a currently inadequate and unsafe parking arrangement via the introduction of a new 58 space car park at 30 Tunnel Beach Road (the site). The new carpark will improve access to the coastal environment and additional toilets and amenities will also improve the overall Tunnel Beach visitor experience.

[4] Beca Ltd. (September 2020). *Tunnel Beach Carpark Assessment of Environmental Effects,* prepared for Dunedin City Council

Figure 2: Preliminary design site layout.



The proposed design includes the following:

- Cut 3,920m3 and fill 2,730m3
- A sealed access road and gravel parks
- 58 car parks, 4 camper van parks, 3 motorcycle parks, 2 accessible parks, 16 bicycle parks, a bus park and bus drop off zone and a concession area to accommodate a mobile trading
- A pedestrian footpath including steps from the Tunnel Beach Road to the concessions area and walking track entrance

- Maximum 0.95m high timber retaining walls to achieve compliant car park grades
- Toilet building
- Furniture, including signage, bench seating and a litter and recycling bin set
- 2,747m^2 native planting surrounding the carpark and within the parking bays
- A storage zone for stockpiling of gravel for track maintenance
- A noise bund to mitigate noise for the resident to the west of the site
- Inground septic tank
- Water tank 2m above ground and buried 1m inground

Landscape plans, cross sections and materiality are included in **Appendix 3**.

4 Existing Environment

4.1 Landscape character

The project site is located at the southern end of Tunnel Beach Road, south of Blackhead Road where undulating paddocks and residential lifestyle blocks meet the steep coastline. The carpark design occupies the northern corner of number 30 Tunnel Beach Road which is a parcel of DOC owned land that includes the existing tunnel beach walking track. The site sits between existing rural lifestyle blocks on two sides, residential driveway access to the north west and the steep cliffs and ocean to the southeast. The site gradient is gentle to the north east but falling steeply away to the south. Landform cover is predominantly grass which is being overtaken by gorse in places. A slight valley runs through the centre of the carpark site directing stormwater downhill and over the cliffs below. There are several stands of mature predominantly Macrocarpa trees south east of the proposed carpark site.

Natural character

The nearby coastal landscape is dramatic with rolling hills giving way to exposed cliffs and the ocean beyond. Atmospheric conditions, exposure to the elements, legibility of landform, visibility of the ocean and absence of built form on the site itself contribute to a **low-moderate** degree of natural character. The ocean is clearly visible from the carpark site with wide expansive views to the south east. The coastal features of the landscape increase in prominence moving down and in the direction of the ocean as the presence of rural activities diminish.

Rural amenity

The surrounding local landscape consists of grass livestock paddocks, agriculture, accommodation, rural living activities and coastal DOC lands. Elements contributing to a **high** degree of rural amenity include open expansive views, landform legibility, amenity property boundary planting, hedging and shelterbelts, powerlines, fencing, large dwellings and utility buildings.

Associations

A preliminary cultural statement (07 Aug 2020) has been prepared by Aukaha and states that:

"The whole of the Otago coastline / Te Tai-o-Ārai-te-uru of Te Waipounamu and the wider landscape in the area of Tunnel Beach has many significant sites/landscapes of past activities and traditions of mana whenua.". In addition the following words have been used to describe the coastal landscape - *"tempestuous nature of the*

coastal waters…coastal waters and processes were integral to the way of life… marine environment is a moving force, a reminder of the power of Takaroa… [5]

The natural coastal elements and processes are therefore important landscape considerations.

Tunnel Beach Walking Track is a widely recognised tourist destination and therefore holds shared value for tourist and local residents as a place of recreation, history and place to connect with the coastal environment. As part of the walking track feature and due to mana whenua affiliations with the coastal landscape the site is considered to have **moderate** degree of associative values.

Summary

Overall the carpark site is experienced as part of the surrounding rural amenity landscape and has a **moderate** degree of rural amenity. Due to the proximity to the coastline it also exhibits a **low-moderate** degree of natural character.

The sensitivity of the proposal site is considered **low-moderate** due to the nature of the surrounding landuse and presence of manmade elements balanced against the proximity to the natural coastline.

4.2 Visual Catchment

The proposal will have a very small visual catchment, limited to Tunnel Beach Road and the neighbouring properties to the north and east of the site and from the Tunnel Beach Walking Tack itself. Approximately eight properties have driveway access either from the southern end of Tunnel Beach Road or the easement to the north of the site, meaning residents have frequent views of the proposed carpark through vehicle movement. Dwellings to the east and west of the site look towards the ocean and away from the project site. Dwellings to the north are oriented to the north and away from the project site.

Appendix 1 and 2 include panoramic photographs of the key viewpoints which are representative of the viewing catchment. While the car park will be largely obscured due to the design being cut down into the site, the proposed planting, access path alongside Tunnel Beach Road, earthworks, and general activities associated with a car park will be visible from public roads, the walking track itself, adjacent properties and the easement to the north of the site. In addition to the physical works it is likely that traffic volumes will increase along Tunnel Beach Road including small and large vehicles travelling to and from the site.

Viewing audiences are limited to local residents, people coming to stay at nearby accommodation and users of the Tunnel Beach Walking Track.

5 Policy Framework

Dunedin City Council 2GP District Plan Considerations

The carpark is deemed a ‘community and leisure – large scale’ activity which is a discretionary activity within the Rural Residential Zone. The zone allows for *“residential activity at a scale consistent with lifestyle or hobby farming, along with those rural and community activities that are consistent with the level of amenity expected by people living in these areas”* [6]

[5] Aukaha. (August 2020). *Preliminary Statement – Dunedin City Council, Proposed car park and track upgrade – Tunnel Beach Road, Dunedin,* prepared for Beca Ltd.

[6] Dunedin City Council, (September 2015) *Second Generation City District Plan*– Section 17.1, Rural Residential Zones - Introduction

The following objectives and policies are relevant to landscape and visual matters within the Rural Residential Zone. There are two landscape overlays near the project site and within the same land parcel. These are outstanding natural feature and high natural coastal character. Whilst the site works do not occur within these overlays the relevant objectives are included below for context.

Section 17: Rural Residential Zone

17.2 OBJECTIVES AND POLICIES

OBJECTIVE 17.2.1 – *The rural residential zones enable lifestyle blocks, hobby farms and associated residential activities as the appropriate place in the rural environment for these to occur, and provide for a limited range of other compatible activities.*

- ***Policy 17.2.1.1*** *Enable farming, grazing and* ***conservation*** *in the rural residential zones.*
- ***Policy 17.2.1.5*** *Only allow* ***rural tourism****, rural research,* ***community and leisure - large scale****, early childhood education, sport and recreation, and visitor accommodation where the* ***effects will be adequately managed*** *in line with objectives 17.2.2, 17.2.3 and 17.2.4 and their policies, and the objectives and policies of any relevant overlay zones.*

OBJECTIVE 17.2.2 *– The potential for conflict between activities within the rural residential zones, and between activities within the rural residential zones and adjoining residential zones, is minimised through measures that ensure: the potential for reverse sensitivity is minimised; and a good level of* ***amenity*** *on surrounding rural residential properties, residential zoned properties and public spaces.*

- ***Policy 17.2.2.5*** *Only allow rural tourism, rural research, community and leisure - large scale, early childhood education, sport and recreation, veterinary services and visitor accommodation where any adverse effects on the* ***amenity*** *of surrounding rural residential properties are avoided or, if avoidance is not practicable, adequately mitigated.*

OBJECTIVE 17.2.3 *– The character and amenity of the rural residential zones are maintained, elements of which include: a* ***high presence of natural features*** *such as trees, bush, gully systems and water bodies; a* ***semi-rural*** *level of development, with a higher proportion of* ***open space*** *and lower density of buildings than in urban areas; and land maintained and managed for farming, grazing, conservation and rural residential activities.*

- ***Policy 17.2.3.1*** *Require buildings and structures to be set back from boundaries and of a height that maintains the character and visual amenity of the rural residential zones.*
- ***Policy 17.2.3.3*** *Only allow rural tourism, rural research, community and leisure - large scale, early childhood education, sport and recreation, veterinary services and visitor accommodation activities where any adverse effects from development on rural residential character and visual amenity will be avoided or, if avoidance is not practicable, adequately mitigated.*
- ***Policy 17.2.3.4*** *Require ancillary signs to be located and designed to maintain the character of the rural residential zones, including by being of an appropriate size and number to convey information about the name, location and nature of the activity on site to passing pedestrians and vehicles and not being oversized or too numerous for that purpose.*

Section 10: Natural Environment

OBJECTIVE 10.2.2 *- The* ***biodiversity*** *values and* ***natural character*** *of the coast and riparian margins are maintained and enhanced.*

OBJECTIVE 10.2.3 *- Areas of outstanding natural coastal character (ONCC), high natural coastal character (HNCC), and natural coastal character (NCC) are protected from inappropriate use and development; and their values, as identified in Appendix A5, are preserved or enhanced.*

OBJECTIVE 10.2.4 *- Subdivision and development activities maintain and* ***enhance access*** *to coastlines, water bodies and other parts of the natural environment, including for the purposes of gathering of food and mahika kai.*

OBJECTIVE 10.2.5 *- Outstanding Natural Features (ONFs), Outstanding Natural Landscapes (ONLs) and Significant Natural Landscapes (SNLs) are protected from inappropriate development; and their values, as identified in Appendix A3, are maintained or enhanced.*

Assessment Criteria for 'Community and Leisure – Large scale' as a discretionary activity

Relevant objectives and policies (priority considerations):

b. Any adverse effects on the amenity of surrounding rural residential properties are ***avoided or****, if avoidance is not practicable, are* ***adequately mitigated*** *(Policy 17.2.2.5).*

c. Any adverse effects on ***rural residential character*** *and* ***visual amenity*** *are avoided or, if avoidance is not practicable, are adequately mitigated (Policy 17.2.3.3).*

General assessment guidance:

e. In assessing effects on amenity, Council will consider the ***effects of vehicle movements*** *on the site as well as any significant changes to the* ***number or nature of vehicle movements*** *on the adjoining road.*

Potential circumstances that may support a consent application include:

f. The activity is set back a sufficient distance from its own boundaries and existing sensitive activities on surrounding sites.

h. Development is ***not situated on visually prominent land****.*

i. The ***form, scale and materials*** *used in buildings and structures are compatible with the* ***character and visual amenity*** *of the rural residential zones.*

j. Colours and materials used in development are chosen to ***blend in with the rural residential*** *setting and* ***minimise reflectivity****.*

k. Landscaping or other forms of ***screening*** *are used to reduce the visibility of development from surrounding properties and public viewpoints.*

Conditions that may be imposed include:

l. Restriction on hours of operation

m. Controls on on-site lighting

n. A requirement for screening of storage areas

On review of the relevant policy it is considered that maintaining rural amenity character and having regard to sought natural character outcomes within the nearby coastal overlays are important. To maintain rural amenity character, key considerations include – use of vegetation to soften hard landscapes, materiality that is in keeping with either natural features or rural activities, sensitive response to topography, retain a sense of open space and maintain or enhance views. Key considerations for proximity to the coastal overlays include use of native vegetation, use of natural materials with low reflectivity, and working with topography to minimise the need for cut and fill.

6 Landscape and Visual Effects

6.1 Landscape Effects

6.1.1 Natural Character Effects

The car park involves clearance of exotic vegetation and grass and cut and fill to accommodate required bus turning circles, and appropriate grading for accessibility and use of the car park. This will fundamentally change the underlying landscape form. Once the carpark is built it will be subject to carpark stormwater runoff from roads used by cars, campervans and coaches, as well as litter from an increase in human activity. Whilst this is a new use for the site itself it is an existing situation on the adjacent Tunnel Beach Road.

The site itself is not particularly unique in the wider landscape and reflects the character of the surrounding properties with grass, vegetation and sloping terrain proximate to the ocean. Landform alteration is not a new feature within the rural residential landscape with earthworks being undertaken to form earth bunds and building platforms. An important characteristic to the proximity to the coastline include ephemeral values such as the weather and atmospheric conditions which will be unaltered by the carpark design.

The proposal includes large areas of native vegetation which will enhance biodiversity values through increased natural habitat for birds and insects. This will help to mitigate the effects of earthworks and a change of surfacing from grass to asphalt, gravel and concrete and the addition of built structure including retaining walls and a toilet building and associated tanks.

Overall the natural character effects are considered **moderate** largely due to the fundamental change to the underlying landform.

6.1.2 Rural Amenity

The carpark design includes earthworks and several built form elements such as retaining walls, the toilet building and associated tanks and steps. There will be a large asphalt road surface broken up by gravel carparks. These elements are common in the adjacent land uses with earthworks visible for building platforms and earth bunds. Houses and farm sheds are common, as are shelterbelts, fences and power pylons all contributing to a rural amenity landscape. Strategic use of vegetation surrounding the site and within the carpark and the fact that the carpark is recessed below existing road level will soften hard surfacing. Whilst vegetation will change the balance on the site to reduce the feeling of open space it is perceived amongst a wider context and will integrate well. The effects on rural amenity are considered **low**.

6.1.3 Associative effects

As already established the proposal facilitates recreation and access to the coast. It provides an arrival experience and the look and feel of the planting and materials is natural. The carpark will improve people's connection with and ability to access the coast and experience the landscape.

As outlined in section 4.1 above cultural values relate to the natural character of the landscape. Whilst altering the landform will be detrimental, the extensive planting will be positive.

Overall the associative effects of the proposal are considered to be **low.**

6.2 Visual Effects

As described in Section 4.2 the carpark is visible from several properties although all dwellings are oriented away from the site. It is also visible from Tunnel Beach Road, the driveway easement to the north and from the Tunnel Beach Walking Track. Viewpoint 1-5 in **Appendix 1** are representative of the viewing audiences and key locations.

Views from Tunnel Beach Road, the Easement and properties to the North (Viewpoints 1,2,3 and 5)

Given the road is no exit, users of the road will be limited to local residents and people coming to the carpark site to use the Tunnel Beach Walking Track. The carpark will be sunk down into the landscape. Users of Tunnel Beach Road and views from properties to the north will be subject to potential increase in vehicle movements, visibility of planting and a gravel footpath along 78m of Tunnel Beach Road, boundary planting, the carpark entrance including a small retaining wall, and entry to the gravel storage laydown area. Views of the carpark itself will be filtered as vegetation matures with limited visibility of cars, coaches and campervans. The coach drop-off zone and the toilet and tank structures will be located 4m below existing road height and largely screened from view.

The existing scene from the road comprises a varied outlook of buildings, power pylons, fencing, trees and open expansive views of the ocean. This will become more enclosed due to additional planting and views of the ocean will be partially screened. The presence of car parking in the area exists now and clustering vehicles within adequate designated car parks will have a positive outcome during main operational times. Planting will also help improve overall amenity from the road.

Whilst the scale of the carpark is large the individual elements of the carpark are consistent with what one would expect within the zone. The toilet and tank structures will not be out of context as will be seen in proximity to the adjacent house at 31 Tunnel Beach Road. Use of natural materials and planting will help to soften the proposal into the surrounding landscape. Compared to other buildings within the area the toilet building will be very small. The final design of the toilet structure is yet to be completed however it is recommended the final design select materials that reduce reflectivity issues, not conflict with nearby architectural styles and to tie it in with adjacent vegetation.

Users of the walking track will experience the carpark as an arrival space at the beginning of the Tunnel Beach Walking Track. There will be a high level of amenity for these users due to the use of native planting. As the users enter the carpark site, they will have framed views over the ocean and the carpark surfacing would be broken up by stands of trees and planting between bays.

On balance the visual and amenity effects of the carpark from users to north is considered **low.** The activity is building on an existing activity familiar to users, the design includes a large amount of planting and is sunk down into the landscape reducing prominence.

Views from the Tunnel Beach Walking Track and property number 31 Tunnel Beach Road (Viewpoint 4)

The carpark provides an arrival space for the Tunnel Beach Walking Track. The design features native vegetation and natural materials so will tie in with the surrounding landscape. From the south the proposed carpark will rise above the landscape however the proposed fill is at a similar gradient to the existing slope and will therefore tie in well and be further softened with vegetation cover which has a naturalised edge.

Retaining walls are required due to the steep nature of the site and the need to limit steep slopes for accessibility and safety. These walls have been coupled with planted areas to allow vegetation to grow down them and break up the verticality.

The dwelling at number 31 Tunnel Beach Road is orientated away from the proposal site and the eastern boundary has screen planting that will block views and provide amenity. It is proposed that the walking track itself is moved west away from the boundary further increasing the perceived privacy of the dwelling.

The visual and amenity effects from the Tunnel Beach Walking Track and dwelling 31 Tunnel Beach Road are considered **very low**.

6.3 Policy Response

In landscape terms the proposal is considered consistent with the policy framework. Rural amenity character will be retained through use of vegetation and minimisation of built form, and the proposal will visually tie in with the surrounding land uses. Whilst the natural character effects will be moderate due to landform alteration this is off-set somewhat through extensive planting. There is a clear community benefit to the project which will enhance recreational access to the coast and the design of the car park has been designed to minimise adverse effects whilst still achieving the intended project outcomes. The proposal area is outside any landscape overlays but still responds to the natural character of the area through tying in with the surrounding topography, use of native vegetation and use of natural materials. Impacts on adjacent landowners is minimised through locality outside of key views from properties which are oriented either to the north or towards the ocean. In addition, the design being sunk below the existing road with boundaries planted filter views over the carpark and lessen the potential carpark prominence.

7 Conclusions

It is proposed to build a new carpark to provide an adequate provision of parking for the Tunnel Beach Walking Track and to rectify an unsustainable existing situation (inadequate parking, difficult and unsafe manoeuvring, and safety hazards).

The key landscape effects relate to rural amenity with a low-moderate degree of natural character and the need for extensive cut and fill. This is mitigated through design to tie in with topography, extensive native planting and use of natural materials. The purpose of the carpark to assist in recreation is congruent to existing associative values and will likely improve the overall experience through creation of a strong arrival space.

Visual effects are considered low due to a small viewing catchment, that the proposal builds on an existing activity and the site being recessed below the existing road level with boundary planting and nearby dwellings which face away from the site.

Overall, the proposal for a new carpark will result in **low-moderate** degree of effects on the landscape character of the site and the surrounding area. It will also result in **low** degree of visual effects when experienced from the surrounding public and private places.

TUNNEL BEACH CARPARK

Landscape and Visual Assessment Appendices 06.11.2020 3336298

TUNNEL BEACH CARPARK - APPENDIX 1 VIEWPOINT LOCATION PLAN

06.11.2020 3336298 Revision B

The three arrows represent the location of each of the photographs.

LEGEND A - Proposed car park
B - Area of High Natural Coastal Character & Outstanding Natural Feature

APPENDIX 1: VIEWPOINT LOCATION PLAN

Sheet 1

TUNNEL BEACH CARPARK - APPENDIX 2 VIEWPOINT LOCATION PHOTOGRAPHS

06.11.2020 3336298 Revision B

VIEWPOINT 1: Looking west toward proposed car park entrance from Tunnel Beach Road

VIEWPOINT 2: Looking south toward the ocean at the proposed car park entrance

VIEWPOINT 3: Looking east towards Tunnel Beach Road

VIEWPOINT 4: Looking west toward the site from the existing Tunnel Beach walking track

VIEWPOINT 5: Looking north along Tunnel Beach Road

TUNNEL BEACH CARPARK - APPENDIX 3 LANDSCAPE PLAN FOR RESOURCE CONSENT

06.11.2020 3336298 Revision B

Drawing Plotted: 06 Nov 2020 4:13 PM

DRAWING LIST

DRAWING NO.	DRAWING TITLE
3336298-AL-000	COVER SHEET AND DRAWING LIST
3336298-AL-010	LANDSCAPE PLAN 1 OF 2
3336298-AL-011	LANDSCAPE PLAN 1 OF 2
3336298-AL-020	LANDSCAPE CROSS SECTIONS
3336298-AL-040	MATERIALS PALETTE

▪ LANDSCAPE

Project No 3336298

DUNEDIN CITY COUNCIL
TUNNEL BEACH
CAR PARK

FOR RESOURCE CONSENT

Prepared for

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

By
Beca

06 NOVEMBER 2020

ORIGINAL DRAWING IN COLOUR

RESOURCE CONSENT
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Document No. 3336298-AL-000.DWG

Drawing No.	Rev.
3336298-AL-000	B

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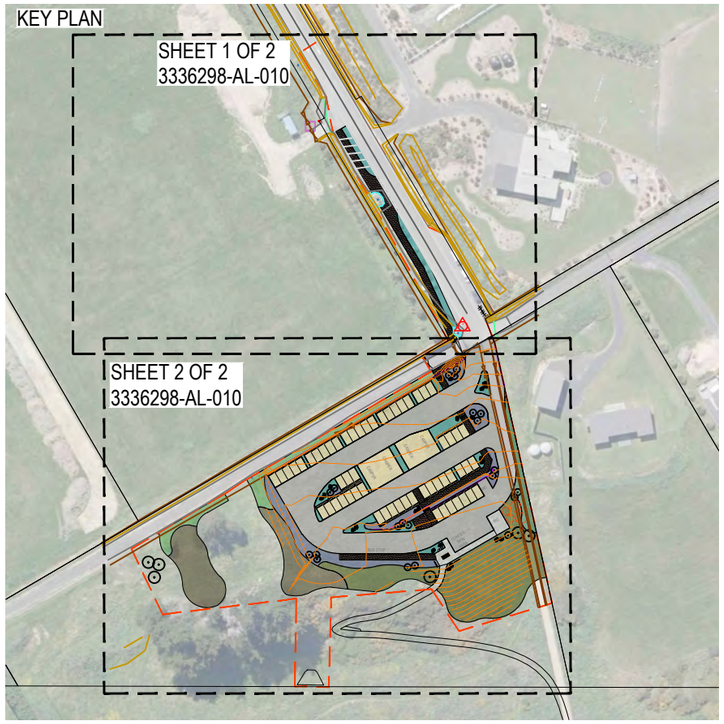

LEGEND:

EXTENT OF WORKS

SOFT SCAPE

LARGE TREE

SMALL TREE

AMENITY MIX 1 **(AM1)**

AMENITY MIX 2 **(AM2)**

RE-VEGETATION MIX **(RV1)**

SCREENING MIX 1 **(SC1)**

SCREENING MIX 2 **(SC2)**

SLOPE MIX 1 **(SL1)**

HARD SCAPE

ACCESS ROAD
REFER CIVIL FOR DETAIL

GRAVEL CAR PARK BAY
REFER CIVIL FOR DETAIL

GRAVEL FOOTPATH
REFER CIVIL FOR DETAIL

CONCRETE FOOTPATH
REFER CIVIL FOR DETAIL

CYCLE STAND AREA
GRAVEL - SANDSTONE COLOUR
REFER CIVIL FOR DETAIL

DCC STD. BINS
(EXISTING BINS ON SITE TO
BE RELOCATED)

TIMBER BENCH SEAT 2500X1000mm
BENCH DRESSED MACROCARPA
TIMBER WITH GALVANISED FIXINGS
TO DOC STANDARDS

TIMBER STEPS
DRESSED MACROCARPA TIMBER
TO DOC TRACK STANDARDS

FEATURE ROCKS - 500-900mm Dia.
LOCALLY SOURCED

CYCLE RACKS 600X1000(H)mm
STREET FURNITURE NZ TYPE D
BLACK POWDER COAT FINISH

TIMBER WHEEL STOP
1850X300X150mm
MACROCARPA TIMBER HALF ROUND
WITH GALVANISED FIXINGS AND
CONCRETE FOOTINGS

TRACK SIGN - GREEN / YELLOW
TO DOC TRACK STANDARDS

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ORIGINAL DRAWING
IN COLOUR

RESOURCE CONSENT
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Appd	Date
B	FOR RESOURCE CONSENT	BT	JB	JT	06.11.20
A	FOR RESOURCE CONSENT	BT	JB	JT	30.10.20

Drawing Originator: Beca

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Reduced Scale (A3) 1:500

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Drawn	BT	20.09.20	
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Dwg Check	JB	29.09.20	Date

* Refer to Revision 1 for Original Signature

Client: DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti

Project: TUNNEL BEACH CAR PARK

Title: LANDSCAPE PLAN SHEET 1 OF 2

Discipline: LANDSCAPE

Drawing No. 3336298-AL-010 Rev. B

Document No. 3336298-AL-010.DWG

DO NOT SCALE

IF IN DOUBT ASK.

Drawing Plotted: 06 Nov 2020 4:17 PM

LEGEND:

EXTENT OF WORKS

SOFT SCAPE

- LARGE TREE
- SMALL TREE
- AMENITY MIX 1 **(AM1)**
- AMENITY MIX 2 **(AM2)**
- RE-VEGETATION MIX **(RV1)**
- SCREENING MIX 1 **(SC1)**
- SCREENING MIX 2 **(SC2)**
- SLOPE MIX 1 **(SL1)**

HARD SCAPE

- ACCESS ROAD REFER CIVIL FOR DETAIL
- GRAVEL CAR PARK BAY REFER CIVIL FOR DETAIL
- GRAVEL FOOTPATH REFER CIVIL FOR DETAIL
- CONCRETE FOOTPATH REFER CIVIL FOR DETAIL
- CYCLE STAND AREA GRAVEL - SANDSTONE COLOUR REFER CIVIL FOR DETAIL
- DCC STD. BINS (EXISTING BINS ON SITE TO BE RELOCATED)
- TIMBER BENCH SEAT 2500X1000mm BENCH DRESSED MACROCARPA TIMBER WITH GALVANISED FIXINGS TO DOC STANDARDS
- TIMBER STEPS DRESSED MACROCARPA TIMBER TO DOC TRACK STANDARDS
- FEATURE ROCKS - 500-900mm Dia. LOCALLY SOURCED
- CYCLE RACKS 600X1000(H)mm STREET FURNITURE NZ TYPE D BLACK POWDER COAT FINISH
- TIMBER WHEEL STOP 1850X300X150mm MACROCARPA TIMBER HALF ROUND WITH GALVANISED FIXINGS AND CONCRETE FOOTINGS
- TRACK SIGN - GREEN / YELLOW TO DOC TRACK STANDARDS

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RESOURCE CONSENT
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No.	Revision	By	Chk	Appd	Date
B	FOR RESOURCE CONSENT	BT	JB	JT	06.11.20
A	FOR RESOURCE CONSENT	BT	JB	JT	30.10.20

Drawing Originator: Beca

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500

Design	JB	20.09.20	Approved For Construction*
Drawn	BT	20.09.20	
Dsg Verifier	JC	28.09.20	
Dwg Check	JB	29.09.20	Date

* Refer to Revision 1 for Original Signature

Client: DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti

Project: TUNNEL BEACH CAR PARK

Title: LANDSCAPE PLAN SHEET 2 OF 2

Discipline: LANDSCAPE

Drawing No. 3336298-AL-011 Rev. B

Document No. 3336298-AL-011.DWG

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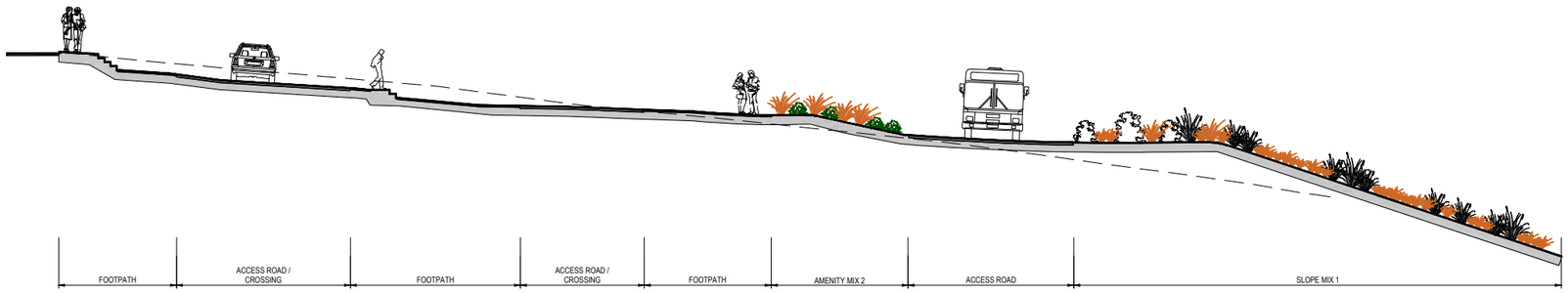

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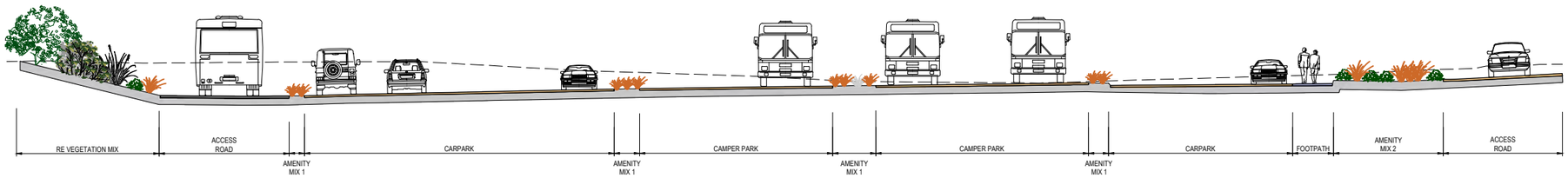

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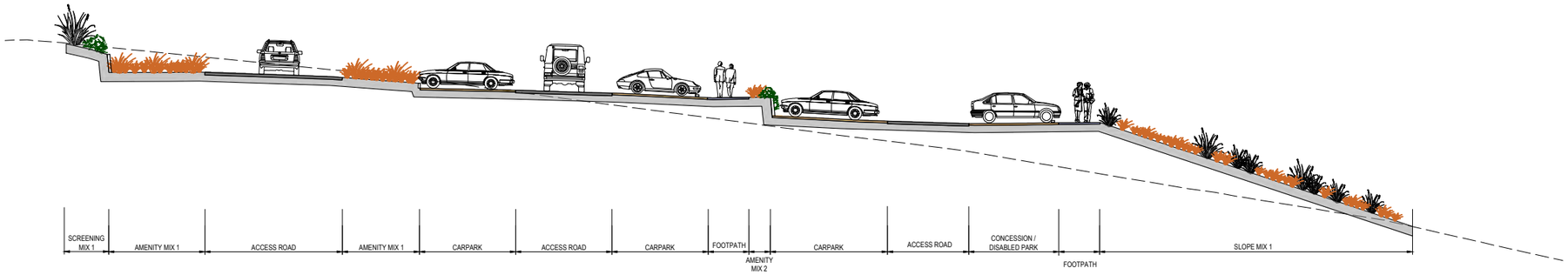

03 CROSS SECTION
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	Dsg Verifier	JC	28.09.20
	Dwg Check	JB	29.09.20

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

Client: DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti

Project: TUNNEL BEACH CAR PARK

Title: LANDSCAPE CROSS SECTIONS SHEET 1 OF 1

Discipline: LANDSCAPE

Drawing No. 3336298-AL-020 Rev. B

Document No. 3336298-AL-020.DWG

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HARD MATERIALS PALETTE

TIMBER STEPS & RAIL
DRESSED MACROCARPA

TIMBER BENCH SEAT 2500X1000mm
DRESSED MACROCARPA

TIMBER HALF ROUNDS WHEEL STOP
1850X300X150mm

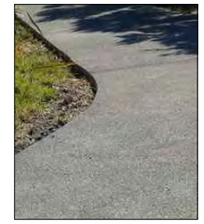
FEATURE ROCKS - 500-900mm Dia.
LOCALLY SOURCED

CYCLE RACKS 600X1000(H)mm
STREET FURNITURE NZ TYPE D - BLACK

TACK / TRAIL SIGN
TO DOC STANDARDS

BINS TO DOC / ORC
STANDARDS

GRAVEL FOOTPATH
TO DOC / ORC STANDARDS


EXPOSED AGGREGATE CONCRETE
FOOTPATH TO NZS4121:2001 STANDARDS

SOFT MATERIALS PALETTE

SMALL TREE

PSEUDOPANAX FEROX

LARGE TREE

SOPHORA MICROPHYLLA *PLAGIANTHUS REGIUS*

AMENITY MIX 1:

POA CITA

AMENITY MIX 2:

POA CITA *LIBERTIA IXIOIDES* *HEBE ELLIPTICA* *COPROSMA KIRKII*

RE-VEGETATION MIX:

CORDYLINE AUSTRALIS *MUEHLENBECKIA ASTONII* *PHORMIUM TENAX* *COPROSMA PROPINQUA* *MYOPORUM LAETUM* *COPROSMA CRASSIFOLIA* *KUNZEA ERICOIDES* *PITTOSPORUM TENUIFOLIUM*

SLOPE MIX:

POA CITA *HIEROCHLOE REDOLENS* *CHIONOCHLOA RUBRA*

SCREENING MIX 1:

POA CITA *HEBE ELLIPTICA* *CHIONOCHLOA FLAVICANS* *PHORMIUM TENAX* *PITTOSPORUM TENUIFOLIUM*

SCREENING MIX 2:

POA CITA *MUEHLENBECKIA ASTONII* *PHORMIUM TENAX* *COPROSMA PROPINQUA* *COROKIA COTONEASTER*

TOTAL AREA PLANTING PLOTS SHEET AL-010
AM1 - 115m2

TOTAL PLANTING AREAS SHEET AL-011
AM1 - 370m2
AM2 - 456m2
SC1 - 268m2
SC2 - 115m2
RV1 - 556m2
SL1 - 982m2

TOTAL - 2747m2

ORIGINAL DRAWING IN COLOUR

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Client: DUNEDIN CITY COUNCIL kaunihera a-rohe o Ōtepoti

Project: TUNNEL BEACH CAR PARK

Title: LANDSCAPE MATERIALS PALETTE SHEET 1 OF 1

Discipline: LANDSCAPE

Drawing No. 3336298-AL-040 Rev. B

Document No. 3336298-AL-040.DWG

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Appendix D – Traffic Assessment

Tunnel Beach Car Park Transport Assessment

Prepared for Dunedin City Council

Prepared by Beca Limited

9 November 2020

Creative people together transforming our world

Revision History

Revision Nº	Prepared By	Description	Date
1	Hayden Trumper	Draft for comment	30/10/2020
2	Hayden Trumper	Final	9/11/2020

Document Acceptance

Action	Name	Signed	Date
Prepared by	Hayden Trumper		9/11/2020
Reviewed by	Joe Phillips		9/11/2020
Approved by	James Taylor		9/11/2020
on behalf of	Beca Limited		

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Appendices

Appendix A – Site Visit Photos

Appendix B – Crash History (2010-2019)

Appendix C – Car Park Layout and Tracking Drawings

Executive Summary

Beca Ltd (Beca) has been commissioned by Dunedin City Council (DCC) to design a new car park for Tunnel Beach Track. Tunnel Beach is a popular tourist spot on the coast south of Dunedin with natural and historical significance that is accessed from Tunnel Beach Track which is currently accessed from Tunnel Beach Road. The proposed car park will resolve some current on-street parking issues on Tunnel Beach Road related to Tunnel Beach Track. This report is the Transport Assessment Report that provides an assessment of the current operation of the facility and identifies the potential transport impacts on the local transport network resulting from the proposals.

The current parking arrangements for people accessing the Tunnel Beach Track are 18 marked on-street car parks and a narrow shoulder on Tunnel Beach Road. The new carpark will contain 58 car parks, four campervan parks, two disabled parks, a bus stop for buses and designated toilet and concession areas. This increases the capacity of formal car parking in the area for Tunnel Beach Track with a dedicated off-street car park.

The proposed car park is not expected to induce additional trips and as such there is not expected to be any impact on the wider transport network. Whilst there has been one fatal crash and one serious injury crash at the Green Island Road / Blackhead Road / Tunnel Beach Road intersection, DCC is currently constructing an upgrade this intersection, as well as to provide a pedestrian footpath on the northern side of Blackhead Road that connects to the suburb of Cortorphine and is expected to be completed in December 2020. It is considered this will address the current safety issues at this intersection.

Whilst there are only localised provisions for pedestrians and cyclists at the facility, this is considered acceptable give the rural nature of the environment and the low number of pedestrians and cyclists expected to access the proposed car park. There is not expected to be any changes to the current public bus services, however, the proposed car park does provide bus parking bays that can be used by up to two buses.

Overall, it is considered that the proposed car park will improve the access and safety for people accessing the Tunnel Beach Track and on Tunnel Beach Road. Therefore, it is considered that the implementation of the proposed facility and its positive transport effects are acceptable.

1 Introduction

1.1 Background

Beca Ltd (Beca) has been commissioned by Dunedin City Council (DCC) to design a new car park for Tunnel Beach Track as shown in **Figure 1-1**. The proposed car park will resolve some current on-street parking issues on Tunnel Beach Road related to Tunnel Beach Track. Tunnel Beach is a popular tourist spot on the coast south of Dunedin with natural and historical significance. The beach is accessed via a 20 minute walking track that starts at the end of Tunnel Beach Road. The current on-street facilities on Tunnel Beach Road do not provide satisfactorily for visitors.

Figure 1-1: Proposed Tunnel Beach Road Car Park Location

1.2 Report Structure

This TAR provides an assessment of the current operation of the facility and identifies the potential transport impacts on the local transport network resulting from the proposals.

This report is structured as follows:

- Section 2 – Existing Transport Context: Provides a description of the current operation of the facility and existing transport environment.
- Section 3 – Proposed Development: Provides a description of the proposed facility.
- Section 4 – District Plan Assessment: Assesses the proposed facility against the requirements set out in the Dunedin City Council Second Generation District Plan.
- Section 5 – Transport Effects Assessment: Identifies potential transport effects of the facility including consideration of vehicle, pedestrian, cycle and public bus impacts.
- Section 6 – Conclusion: Provides the conclusions of the TAR for the proposed facility.

2 Existing Transport Context

2.1 Existing Site Operation

The existing parking facilities are at the southern end of Tunnel Beach Road, where it separates into two private accesses that form a T-intersection. The site is approximately 300m from the Blackhead Road / Green Island Bush Road / Tunnel Beach Road intersection. Vehicles are currently able to use the 18 marked angle parks on the western side of the road and a large shoulder on the eastern side that is often utilised for on-street parking. Self-contained campervans are permitted to stay at the site. The existing site is shown in **Figure 2-1**.

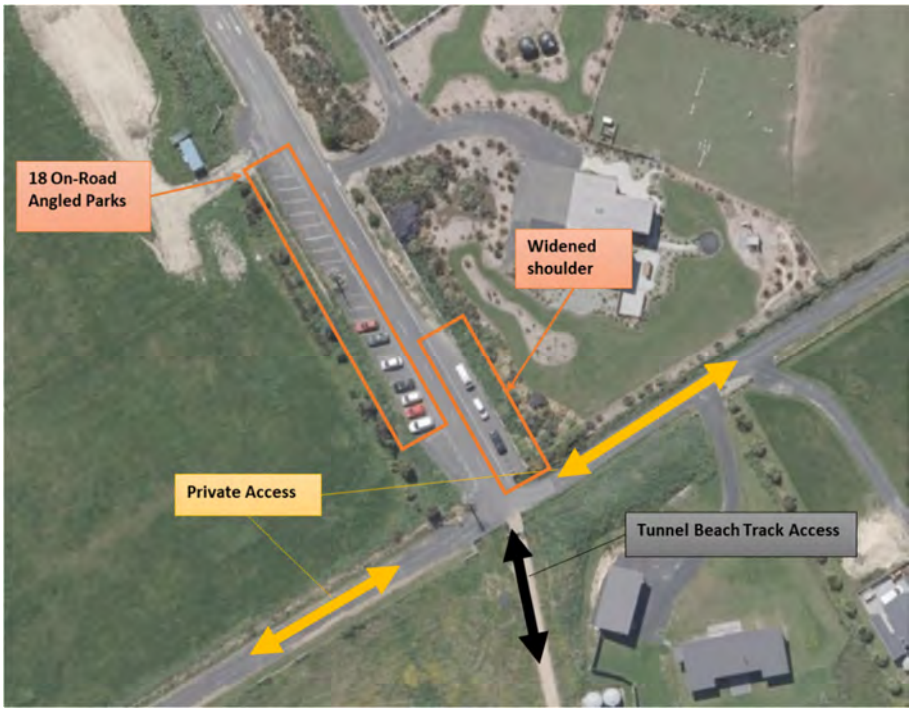


Figure 2-1: Existing site

Tunnel Beach Road is a two way, two lane rural access road and is approximately 6.5-7.0m wide to the edge of seal. Large vehicles, such as buses and vans, can occupy road space when parked and have difficulty manoeuvring due to the narrow shoulders and lack of turnaround facilities on Tunnel Beach Road. Site photos (shown in Appendix A) were taken which indicate the following issues regarding parking, manoeuvring and safety (particularly when on-street angled parking was fully utilised):

- Vehicles parking on the shoulders for up to 200m toward the Blackhead Road intersection
- Vehicles often park on both sides leaving Tunnel Beach Road very narrow, even for a single lane of traffic
- Campervans and coaches, which are too long to use the angled parks, parallel parking across multiple carparks
- Campervans, which are too long for angled parks, using them regardless and protruding into live lane
- Vehicles partially blocking accesses, while parked on the shoulder
- Pedestrians walking in live lanes outside cars parked on shoulders
- Large buses parked on the shoulder, requiring pedestrians to walk in the live lane
- Vehicles blocking road, while opening/closing the access gate for the western accessway
- Lack of adequate facilities for vehicles to turnaround at the end of Tunnel Beach Road.

2.2 Surrounding Land Use

The land surrounding the site is designated 'Rural Residential 1' by the Dunedin City Council Second Generation District Plan (DCC 2GP). This is bordered by 'Coastal Rural' zoning approximately 150m down the track toward the coastline. These zones are shown in **Figure 2-2**. There are six accessways off Tunnel Beach Road (including the two private roads). Two of these are commercial properties, including Sea Breeze Veges, approximately 150m north of the site on Tunnel Beach Road.

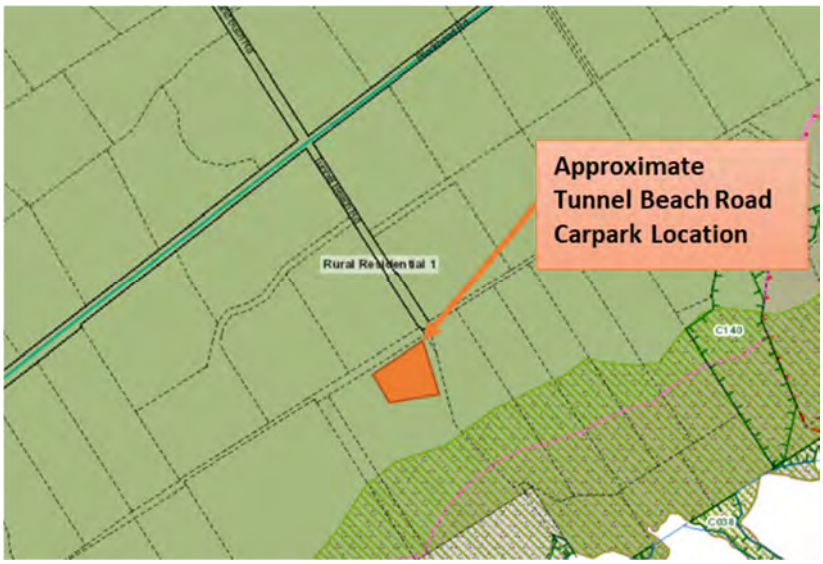


Figure 2-2: Nearby land use

2.3 Local Road Network

Tunnel Beach Road is designated as a local road by the DCC 2GP with approximately 250 vehicles/day (Mobile Roads estimate). This road is generally narrow with a cross section of typically 6.5-7m It has a very narrow shoulder (<0.5m) with an 80km/h speed limit.

Green Island Bush Road meets Tunnel Beach Road at the Blackhead Road intersection. It is a designated as a local road by the DCC 2GP with approximately 170 vehicles/day (Mobile Road Estimate). It has an 80 km/h speed limit and is a rural, two way, two lane road with a very narrow shoulder.

Local roads are defined by the 2GP as:

"Roads that are not intended to act as main through routes for motorised vehicle traffic but primarily provide for access to properties. These roads can be different in nature depending on the land use environments they serve..."

Blackhead Road is a designated primary collector by the DCC 2GP with approximately 1,320 vehicles/day (Mobile Roads estimate). It is a rural two lane, two way road with a very narrow shoulder and no parking space. It has a posted speed limit of 80 km/h. It connects Corstophine and Dunedin with towns along the southern coastline, including Waldronville and Brighton. The road is part of the Southern Scenic Route from Dunedin to Queenstown via Southland.

Collector roads are defined by the 2GP as:

"Roads in local neighbourhoods that collect and distribute local traffic. A collector road provides a local through movement function as well as access to properties…"

The Green Island Bush Road / Blackhead Road / Tunnel Beach Road intersection is a stop controlled priority intersection. Green Island Bush Road and Tunnel Beach Road are required to give-way to traffic on Blackhead Road, however, the sight distance is approximately 120-150m and is currently limited by vertical crest and roadside bushes. The Safe Intersection Sight Distance[1] required for an 80km/h speed limit (based on 90km/h design speed) is 215m, which indicates that the sight distance available at this intersection is currently less than required , given the speed limit.

2.4 Walking and Cycling

There are currently no cycling facilities in the surrounding road network and no designated cycle parking provided at the site.

There are no footpaths in the surrounding road network for pedestrians. Visitors currently walk on the narrow shoulder and walk in the live lane, if vehicles are parked on the shoulder. The Tunnel Beach Track may only be used by pedestrians (not cyclists).

There are currently no cycling facilities in the surrounding road network and no designated cycle parking provided at the site.

The surrounding environment reflects the rural nature of the proposed site where footpaths and dedicated cycle facilities would not be expected.

2.5 Public Transport

The closest bus stop is approximately 2km from the Tunnel Beach Track in the nearby suburb of Corstophine as shown in **Figure 2-3**. This is served by the 33 and 50 services, which route to the city centre. This requires an approximately 30 minute walk from bus stop 585 at the corner of Middleton Road and Stenhope Crescent to the site, which is along roads with no footpaths.

[1] As defined by Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections

Figure 2-3:Nearest bus stop to Tunnel Beach Track

It is understood that some tourism operators use coaches to take visitors to the site, however, there is often limited space available for these coaches to park.

2.6 Crash Analysis

The crash history for Tunnel Beach Road and the Green Island Road / Blackhead Road / Tunnel Beach Road over the past 10 years (2010-2019) were extracted from the Waka Kotahi Crash Analysis System (CAS) with the crash list provided in **Appendix B**. This shows there were two injury crashes on Tunnel Beach Road in the last 10 years (2010-2019), both at the Green Island Road / Blackhead Road / Tunnel Beach Road intersection. One was fatal and one was serious and the crash diagram for these crashes is shown in **Figure 2-4**.

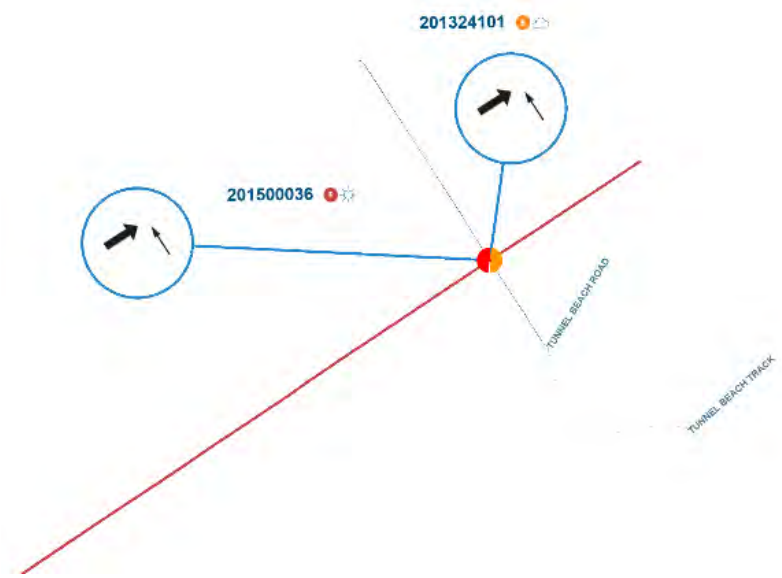


Figure 2-4: Tunnel Beach Road crash diagram (extracted from CAS)

The fatal crash was a right-angle crash that occurred when a vehicle exiting Tunnel Beach Road failed to give way while attempting to cross straight over to Green Island Bush Road. A vehicle travelling north-east along Blackhead Road did not have chance to take avoiding action and collided with left hand side of the other vehicle. The intersection has had stop signs and advanced warning signs installed and vegetation trimmed since this crash. The crash report suggests intersection visibility from Tunnel Beach Road is limited due to crest approximately 50 m south-east of intersection and grass bank south of intersection.

The serious crash was also a right-angle crash. It occurred when a vehicle exited Tunnel Beach Road travelling toward Green Island Bush Road failed to give way. It was struck by a vehicle travelling south-east on Blackhead Road.

These two right angle crashes are likely to reflect the poor sight distance available at the Green Island Road / Blackhead Road / Tunnel Beach Road.

2.7 Future Upgrades

DCC are currently constructing the following upgrades for Blackhead Road near its intersection with Tunnel Beach Road that are due for completion in December 2020 as shown in **Figure 2-5**:

- Adding a footpath on the northern side of road that connects to Mulford Street
- Providing a footpath on the eastern side of Tunnel Beach Road that terminates approximately 120m south of Blackhead Road
- Providing a compact roundabout with raised platforms on all approach to the Green Island Road / Blackhead Road / Tunnel Beach Road
- Raised pedestrian crossing to the east of Tunnel Beach Road connecting the two footpaths described.

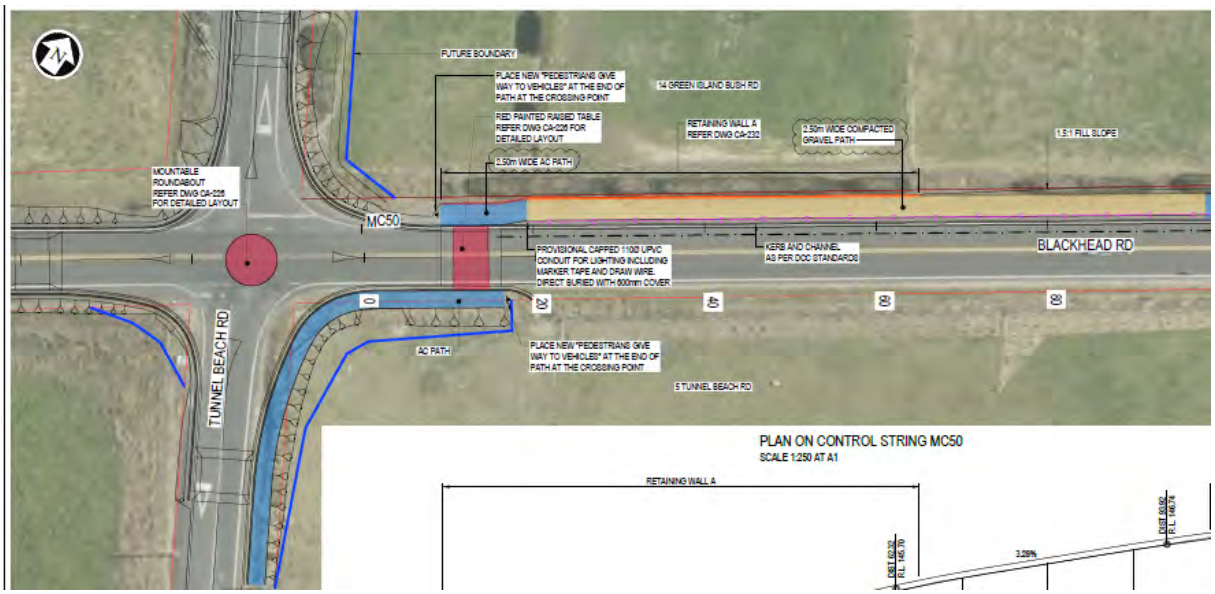


Figure 2-5: Blackhead Road upgrades currently under construction

This will improve pedestrian connectivity between Tunnel Beach Road and existing pedestrian facilities in the nearby suburb of Cortorphine and the safety of the Green Island Road / Blackhead Road / Tunnel Beach Road intersection. The roundabout is identified as an appropriate Safe System treatment for an intersection, in accordance with the Austroads Safe System Assessment Framework.

2.8 Summary

A summary of the existing transport context around the site is as follows:

- Tunnel Beach Road is classified as a local road in the DCC 2GP with 18 marked angled parks currently provided on the western side and an informal parking shoulder provided on the eastern side near the site
- There have been a number of safety issues observed regarding parking behaviour and vehicle manoeuvring on Tunnel Beach Road near the site
- There are currently no walking and cycling connections, although is typical of the rural nature of the site location. The future footpath on the north side of Blackhead Road and connection to Tunnel Beach Road will partially address this pedestrian connectivity.
- Within the vicinity of the site there has been one fatal crash and one serious injury crash at the Green Island Road / Blackhead Road / Tunnel Beach Road and likely reflect the poor sight distance available at this intersection. The intersection upgrade currently being constructed is expected improve the safety of all users at this intersection upon completion.

3 Proposed Development

The proposed facility entails constructing an off-street parking area and removing the existing on-street angled parking on Tunnel Beach Road as shown in Figure 3-1 and Figure 3-2. This will be located south of where the track currently begins in an existing field. A single access will be built at the end of Tunnel Beach Road that will cater for two way traffic.

Figure 3-1: Proposed car park development

This carpark will contain 58 car parks, four campervan parks, two disabled parks, a bus stop for buses and designated toilet and concession areas. The track entrance will be moved to the southern side of the new carpark, approximately 50m south-east of the existing entrance. The existing access gate for the western accessway will be replaced with a new gate approximately 10m west on the private road to provide adequate space for vehicles to stop to open the gate.

The existing angled parks will be converted into a footpath and landscaped area that may become part of a future shared path from Corsophine. No stopping markings will be provided along this landscaped area / footpath and on the eastern side of Tunnel Beach Road road to discourage parking near the proposed car park access.

Figure 3-2: Proposed changes to Tunnel Beach Road

The proposed design has no loading areas, but maintenance vehicles may be able to use the campervan parks or bus stop if required.

Public toilets will be built on the site. The carpark will be locked at night and freedom campers will not be allowed to use it.

4 Assessment Against District Plan

An assessment of the relevant transportation rules within the DCC 2GP are provided in **Table 4-1**.

In summary, this indicates that the proposed development does not meet the DCC 2GP requirements under Rules 6.6.1.5, 6.6.2.1-6.6.2.5, 6.6.3.3. However, for the reasons described below, it is considered that any adverse safety and efficiency effects on the transport network will be satisfactorily managed and are acceptable.

Table 4-1:Assessment of proposed development against DCC 2GP

Rule Number	2GP Rule Description	Proposed Provision	Meets Requirements
6.5.1 Design and Location - Road Signs	1. Any road sign overhanging the footpath must, at its lowest point, be at least 2.6m above the footpath directly beneath the sign. 2. Road signs must not obstruct the carriageway. 3. The maximum area of road signs providing directional information is 0.25m². For road signs providing regulatory or warning information, there is no maximum area. 4. Road signs providing directional information must not be of a design or form that resembles signs providing regulatory or warning information. 5. Road signs providing directional information must not limit the visibility of road signs providing regulatory or warning information. 6. Road signs must not replicate the colours or shapes used for traffic control devices.	Signs to be designed to meet signage requirements	Meets Requirements
6.5.2 Setback from Scheduled Tree	New roads or additions or alterations to existing roads where part of an approved subdivision must comply with Rule 7.5.2.	No scheduled trees present	Meets Requirements
6.6.1.1 Minimum parking space dimensions	Parking spaces provided for all other activities must have the following minimum dimensions, to allow for 99th percentile design motor vehicles (See Appendix 6B, figures 6B.1, 6B.3 and 6B.6):	Refer to Appendix C for car park design plans including car park dimensions	Meets Requirements

1. Parking angle		2. Stall width	3. Aisle width	4. Stall depth
i.	90º	2.5m	6.2m	5.2m
ii.	60º	2.5m	5.1m	5.5m
iii.	45º	2.5m	4.2m	5.1m
iv.	30º	2.5m	3.45m	4.3m
v.	0º (parallel) - on one side	2.3m	3.3m (one-way aisle width) 6.3m (two-way aisle width)	6m
vi.	0º (parallel) - on both sides	2.3m	6.6m	6m

Parking aisles used in off-street parking must be designed as follows:

- Parking aisles for 90º parking must be designed for two-way movement even though one-way movement may need to be imposed in some instances.
- Parking aisles for 30º, 45º and 60º parking must be one-way, except where parallel parking is allowed on one side.
- Mobility parking spaces must be provided at a parking angle of 90º and must provide a stall width of 3.6m.

6.6.1.2 Minimum manoeuvring space dimensions for parking areas	Parking areas must provide manoeuvring space that ensures a motor vehicle is not required to reverse onto or off the site in any of the following circumstances: • the site is directly accessed from a motorway, strategic road, arterial road, urban high density corridor, commercial centre street or collector road; • the parking area provides for five or more non-residential activities; • the parking area provides for five or more parking spaces that share a common access; or • the activity is on a rear site. The manoeuvring space required under Rule 6.6.1.2.a must be designed to accommodate the following vehicle sizes: • for non-residential activities: 99th percentile design motor vehicle (See Appendix 6B, Figure 6B.7); or • for residential activities: 85th percentile design motor vehicle (See Appendix 6B, Figure 6B.9).	Vehicle are not required to reverse onto the site. 99th percentile vehicle can adequately use manoeuvring space (refer to design plans provided in Appendix C)	Meets requirements

<table>
<tr><td></td><td>The manoeuvring space required under Rule 6.6.1.2.a must be of an adequate size to avoid the need for:
• a turntable;
• the vehicle specified in Rule 6.6.1.2.b.i to undertake more than one reverse manoeuvre when manoeuvring into or out of any required parking space; and
• the vehicle specified in Rule 6.6.1.2.b.ii to undertake more than two reverse manoeuvres when manoeuvring into or out of any required parking space.
• The manoeuvring space required under Rule 6.6.1.2.a may include any right of way that the site on which the manoeuvring is taking place is legally entitled to use.</td><td></td><td></td></tr>
<tr><td>6.6.1.3 Minimum queuing space for parking areas</td><td>The minimum on-site queuing space for vehicles entering or exiting parking areas is:
<table><tr><th colspan="2">Number of parking spaces</th><th>Minimum queuing space length</th></tr><tr><td>i.</td><td>5-20</td><td>6m</td></tr><tr><td>ii.</td><td>21-50</td><td>12m</td></tr><tr><td>iii.</td><td>51-100</td><td>18m</td></tr><tr><td>iv.</td><td>101+</td><td>24m</td></tr></table>Queuing space length is measured from the road boundary to the nearest vehicle control point or point where conflict with vehicles already on the site may arise.</td><td>58 car parks provided, 18m of queueing space provided for vehicles entering and exit proposed car park.</td><td>Meets requirements</td></tr>
<tr><td>6.6.1.4 Gradient of parking areas</td><td>The gradient of parking areas provided for any activity other than standard residential must not exceed 1 in 20 in any one direction.</td><td>The maximum gradient in the car park and directly behind the car park is 1 in 20 (5%).
The maximum gradient in the car park is 17% (approximately 1 in 6), however this is limited to short lengths less than 20m and occur in the circulation area where vehicles are not manoeuvring in and out of parking spaces.</td><td>Does not meet requirement.
However, general vehicle car parks are designed in accordance with ASNZS 2890.1:2004. This is considered acceptable as the excessive gradients are restricted to circulatory areas where</td></tr>
</table>

			vehicles will not be manoeuvring in and out of car parks.
6.6.1.5 Surfacing and marking of parking areas	Parking areas (including associated access and manoeuvring areas) provided for any activity other than standard residential, must: • be designed to ensure that water will not pool on the surface of the parking area, and will enter an appropriate stormwater drain effectively; • be hard surfaced; • have individual parking spaces permanently marked; and • where there are five or more parking spaces in total provided in the parking area, mobility parking spaces must be permanently marked to reserve them for the use of people with mobility parking permits.	Circulation area, coach parking and mobility parking to provided with hard surfaced area. Other standard car parking to be gravel surfacing. This is to minimise the amount of hard surface in the area in keeping with rural environment. Surfacing of gravel car parks to be maintained by Department of Conservation (DoC) to minimise surface defects creating uneven surfacing (e.g. potholes). Parking discipline to be maintained by providing half-round posts to indicate car parks extents to drivers. Sufficient sealed area provided in circulating area to minimise gravel tracking onto Tunnel Beach Road (>18m)	Does not meet requirement. However, it is considered that potential safety and parking capacity issues will be satisfactorily managed through the methods described.
6.6.1.7 Access to parking areas	Required parking spaces must be designed to allow vehicles using the spaces to enter and exit the site without the need to move a vehicle occupying any other parking or vehicle loading space on the site. Parking areas must be accessed from a clearly defined vehicle crossing and the remainder of the parking area must be designed to be physically separated from, and inaccessible from, the road.	All parking space can be freely accessed	Meets requirements
6.6.2.1 Minimum manoeuvring space	Sufficient manoeuvring space must be provided to ensure that no vehicle accessing a vehicle loading area is required to reverse either onto or off a motorway, strategic road, arterial road, urban high density corridor, commercial centre street or collector road.	No dedicated loading zone provided.	Requirement not met. Loading zone not required for facility, refer to **Section 5.4** for further details.

dimensions for loading areas	In the Industrial Port Zone and the Port Zone loading areas must be designed and located to avoid the need for vehicles to reverse either onto or off any road. Refer turning circles 8m Rigid Truck (See Appendix 6B, Figure 6B.10); B-train (See Appendix 6B, Figure 6B.11); Coach (See Appendix 6B, Figure 6B.12). Vehicles must not be required to undertake more than one reverse manoeuvre when manoeuvring out of any required loading space. Refer turning circles 8m Rigid Truck (See Appendix 6B, Figure 6B.10); B-train (See Appendix 6B, Figure 6B.11); Coach (See Appendix 6B, Figure 6B.12). Parking spaces and loading spaces may be serviced in whole or in part by a common manoeuvring area.		
6.6.2.2 Gradient of loading areas	The gradient of loading areas must not exceed 1 in 20 in any one direction.	No dedicated loading zone provided.	Requirement not met. Loading zone not required for proposed development, refer to **Section 5.4** for further details.
6.6.2.3 Surfacing and marking of loading areas	Loading areas, including associated access and manoeuvring areas, must: • be hard surfaced; • be designed to ensure that, if impermeable surfacing is used, water will not pool on the surface of the loading area and will enter an appropriate stormwater drain effectively; and • be permanently marked.	No dedicated loading zone provided.	Requirement not met. Loading zone not required for proposed development, refer to **Section 5.4** for further details.
6.6.2.5 Access to loading areas	Required vehicle loading spaces must be designed to allow vehicles using the spaces to enter and exit the site without the need to move a vehicle occupying any other parking or vehicle loading space on the site. New vehicle loading areas must not be accessed across a primary pedestrian street frontage mapped area.	No dedicated loading zone provided.	Requirement not met. Loading zone not required for proposed development, refer to **Section 5.4** for further details
6.6.3.1 Maximum number of vehicle crossings	The maximum number of vehicle crossings permitted on each road frontage of any site is: Frontage length | 1. Local road and | 2. Collector road | 3. Arterial road (less than | 4. Strategic road	One access provided	Meets requirements

			Industrial road		100kmh) and Urban High Density Corridor		
	i.	0m - 18m	1	1	1	1	
	ii.	>18m - 60m	2	1	1	1	
	iii.	>60m - 100m	3	2	1	1	
	iv.	>100m - 200m	3	3	2	1	
	v.	>200m	3	3	2	2	
	No new vehicle crossings are permitted onto a commercial centre street except for fire stations. For fire stations, the maximum number of vehicle crossings on each road frontage is two for all sites, except where three vehicle crossings are otherwise permitted.						
6.6.3.2 Minimum sight distance from a vehicle access	The minimum sight distance from a new vehicle access onto any road other than a state highway: i. Speed (km/h): 50 — Sight distance (m): 69 ii. 60 — 83 iii. 70 — 97 iv. 80 — 111 v. 90 — 125 vi. 100 — 139 Except, where a site is unable to conform with the minimum sight distances in rules 6.6.3.2.a and 6.6.3.2.b, one vehicle crossing per site is allowed in the position which most nearly complies with rules 6.6.3.4.a or 6.6.3.4.b (minimum distances of new vehicle crossing from intersections).						Sight distance: • 85m on Tunnel Beach Road • ~110m on Private access to the east • ~140m on Private access to the west	Does not meet requirements for 80km/h speed limit. Sight distances provided are considered appropriate. Refer to **Section 5.2** for further details.

<table>
<tr><td></td><td>Sight distances are measured from the points shown on Appendix 6B, Figure 6B.13.
In the rural and rural residential zones, clear sight triangles must be provided, as shown in Appendix 6B, Figure 6B.13. The clear sight triangle must be on the road side of any gate and visibility must not be obstructed by fences, structures, vegetation or any barrier above a height of 800mm.</td><td></td><td></td></tr>
<tr><td>6.6.3.3 Maximum width for a vehicle access</td><td>The maximum width for a vehicle access:
<table>
<tr><th colspan="2">All zones</th><th>Maximum vehicle access width (m)</th></tr>
<tr><td>i.</td><td>Residential activities</td><td>6</td></tr>
<tr><td>ii.</td><td>All other activities</td><td>9</td></tr>
</table></td><td>Access width 10.5m.</td><td>Does not meet requirement.
However, this is required to accommodate vehicle tracking of buses as shown in Appendix C and pedestrians do not need to cross the access.</td></tr>
<tr><td>6.6.3.4 Minimum distances of new vehicle crossing from intersections and level crossings</td><td>The minimum distance of a new vehicle crossing from intersections on roads where the speed limit is 70 - 90 km/h is as follows:
<table>
<tr><th colspan="2" rowspan="2">Frontage road</th><th colspan="3">Intersecting road type</th></tr>
<tr><th>1. Motorway, strategic road, arterial road, urban high density corridor, commercial centre street and industrial road</th><th>2. Collector</th><th>3. Local</th></tr>
<tr><td>i.</td><td>Motorway, strategic road, arterial road, urban high density corridor, commercial centre</td><td>100m</td><td>100m</td><td>100m</td></tr>
</table></td><td>Approximately 300m from Blackhead Road (Collector)</td><td>Meets requirement</td></tr>
</table>

	street and industrial road			
ii.	Collector and local	45m	45m	45m
Except, one vehicle crossing only may be constructed to provid for access to the site, in the position that most nearly complies with rules 6.6.3.4.a or 6.6.3.4.b				

5 Assessment of Effects

5.1 Vehicular Access

The proposed facility will provide 58 off-street car parks and two mobility car parks, whilst removing the 18 angled on-street car parks. This will result in a net increase of 40 car parks available in the area. Visitors will now be able to park in a dedicated off-street car park, rather than parking and manoeuvring on-street.

The proposed car park is not expected to induce additional parking demand, as car parks themselves do not generate trips. Therefore, there is not expected to be any additional impact on the wider transport network.

Vehicles exiting the car park will be required to give way to vehicles using the private roads. The impact of exiting vehicles on the private accesses is not expected to be significant due to the low volume of vehicles (~250 vehicles/day) using Tunnel Beach Road, which includes vehicles utilising the private accesses.

The proposed design would significantly improve manoeuvrability for trucks/buses with the internal circulation within the new carpark designed to provide the necessary turning circles for larger vehicles.

A new access gate is to be provided for the western private road, approximately 10m from the access to the new car park. This is expected to provide sufficient queuing space for vehicles using this access to open the gate without interfering with the operation of the proposed car park access.

5.2 Safety

The proposed facility will provide an off-street car park, where vehicles will be able to parking and manoeuvring off-street. This will improve safety for vehicles on Tunnel Beach Road and pedestrians, who will no longer need to walk down the narrow shoulder on Tunnel Beach Road. Parking manoeuvres in the carpark will reduce conflicts, as there is adequate space for vehicle circulation.

The new footpath on Tunnel Beach Road is expected to increase pedestrian safety, if any visitors need to park on Tunnel Beach Road at peak times. The ‘no stopping’ area will allow pedestrians to cross to the footpath without the risk posed from manoeuvring parking vehicles.

Visitors will access the track from the carpark, which features pedestrian crossings through the car park, so will not be required to walk on Tunnel Beach Road to access the track.

Based on an 80km/h speed limit, the sight distance required for the access would be 111m, based on the DCC 2GP. This is considered conservatively high, as the accesses to the east and west are gravel residential access roads with a gate on the western private access that may require resident to stop to open and close, therefore vehicle speeds are likely to be low. Vehicles travelling on Tunnel Beach Road are also likely to be travelling slow, as vehicles are approaching the end of a ‘no-exit’ road. It is noted that this is reflected by an average travel speed of 20km/h identified in MegaMaps Edition III.

For these reasons, the vehicle approach speeds to the proposed access is likely to be less than 50km/h, which has required sight distance of 69m in the DCC 2GP. The sight distance available at the access to the car park is as follows:

- ~95m on Tunnel Beach Road
- ~100m on private access to the east
- ~140m on private access to the west

Given low speed expected on the approach to the proposed access, the sight distances currently provided are considered more than satisfactory.

5.3 Alternative Mode Provisions

5.3.1 Active Mode Provisions

The proposed facility has been primarily designed to solve the current vehicle parking issues. No new cycling facilities have been included in the proposed design, because no cycling facilities currently exist at the site.

The proposed development includes a footpath on the western side of Tunnel Beach Road that could be utilised in the future to connect to DCC's footpath connection on Blackhead Road currently under construction. The level of active mode provisions is considered acceptable, given the rural nature of the surrounding environment and the minimal numbers of pedestrians and cyclists expected to visit the site.

5.3.2 Public Bus and Privately Operated Bus Provisions

There will be no change to the current public bus services to include the proposed development. However, the proposed car park will provide a dedicated bus parking bay that can be used by up to two privately operated buses.

This provides an improvement in the facilities for buses, as there are currently no dedicated provision for buses on Tunnel Beach Road.

5.4 Loading Provisions

There are currently no loading provisions provided within the car park. In general, it is expected that there will be minimal requirement for service vehicles to access the proposed car park.

The toilet block will require servicing to empty the septic tank. However, this servicing will be managed with DoC and is expected to occur whilst the car park is closed to the public or at times of low visitor demand.

The concessions area will not house a permanent structure, but will be an area that can be utilised by mobile food vendors and, as such, they will do their loading off site.

5.5 Effects Summary

In summary, the proposed facility will result in a net increase in the number of car parks with more vehicles now able to park in a dedicated off street facility. The proposed car parking is not expected to induce additional trips and as such there is not expected to be any impact on the wider transport network.

The proposed development will provide vehicles with an off-street car park where vehicles can park and manoeuvre and park off-street which will improve safety on Tunnel Beach Road. Vehicles on Tunnel Beach Road and the adjacent residential accesses are expected to be travelling at low speeds and the current sight distances are considered adequate.

Whilst provision for pedestrians and cyclists are localised to the new facility and adjacent part of Tunnel Beach Road, this is considered acceptable given the rural nature of the environment and low number of pedestrians and cyclists expected to access the proposed car park.

There is not expected to be any changes to the current public bus services, however, the proposed car park does provide bus parking bays that can be used by up to privately operated buses. Satisfactory loading provisions are enabled for the activities expected at the facility.

6 Conclusion

The current parking arrangements for people accessing the Tunnel Beach Track are 18 angled on-street car parks. This on-street car parking has been observed to often be over-capacity, resulting in some poor parking behaviour. With overflow parking pedestrians are currently required to walk along a narrow shoulder or within the live lane.

The proposed car park removes the existing 18 angled on-street car park and provides 58 off-street car parks, so parking and manoeuvring can occur in an off-street car park. This increases the capacity of formal car parking for Tunnel Beach track with a dedicated off-street car park.

The proposed car park is not expected to induce additional trips and as such there is not expected to be any impact on the wider transport network. Whilst there has been one fatal crash and one serious injury crash at the Green Island Road / Blackhead Road / Tunnel Beach Road intersection, DCC is current constructing (completion expected December 2020) an upgrade this intersection, as well as to provide a pedestrian footpath on the northern side of Blackhead Road that connects to the suburb of Corstorphine. It is considered this will address the current safety issues.

Whilst there are only localised provisions for pedestrians and cyclists at the facility, this is considered acceptable give the rural nature of the environment and the low number of pedestrians and cyclists expected to access the proposed car park. There is not expected to be any changes to the current public bus services, however, the proposed car park does provide bus parking bays that can be used by up to two buses.

Overall, it is considered that the proposed car park will improve the access and safety for people accessing the Tunnel Beach Track and on Tunnel Beach Road. Therefore, it is considered that the implementation of the proposed facility and its positive transport effects are acceptable.

A

Appendix A – Site Visit Photos

Memorandum

To:	Dunedin City Council	**Date:**	1 October 2020
From:	James Taylor	**Our Ref:**	3336298-1141558477-62
Copy:			
Subject:	Existing Parking at Tunnel Beach Road		

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Figure 10

Figure 11

Figure 12

Figure 13

Figure 14

Figure 15

Figure 16

Figure 17

Figure 18

Figure 19

Figure 20

Figure 21

Figure 22

Figure 23

Figure 24

Figure 25

Figure 26

Figure 27

Figure 28

Figure 29

Figure 30

Figure 31

Figure 32

Figure 33

Figure 34

Figure 35

Figure 36

Figure 37

Figure 38

Figure 39

Figure 40

Figure 41

Figure 42

Figure 43

Figure 44

Figure 45

Figure 46

Figure 47

Figure 48

B

Appendix B – Crash History (2010-2019)

Untitled query

Crash severity

Fatal Crash, Serious Crash, Minor Crash

Saved sites

Tunnel Beach Road

Crash year

2010 — 2019

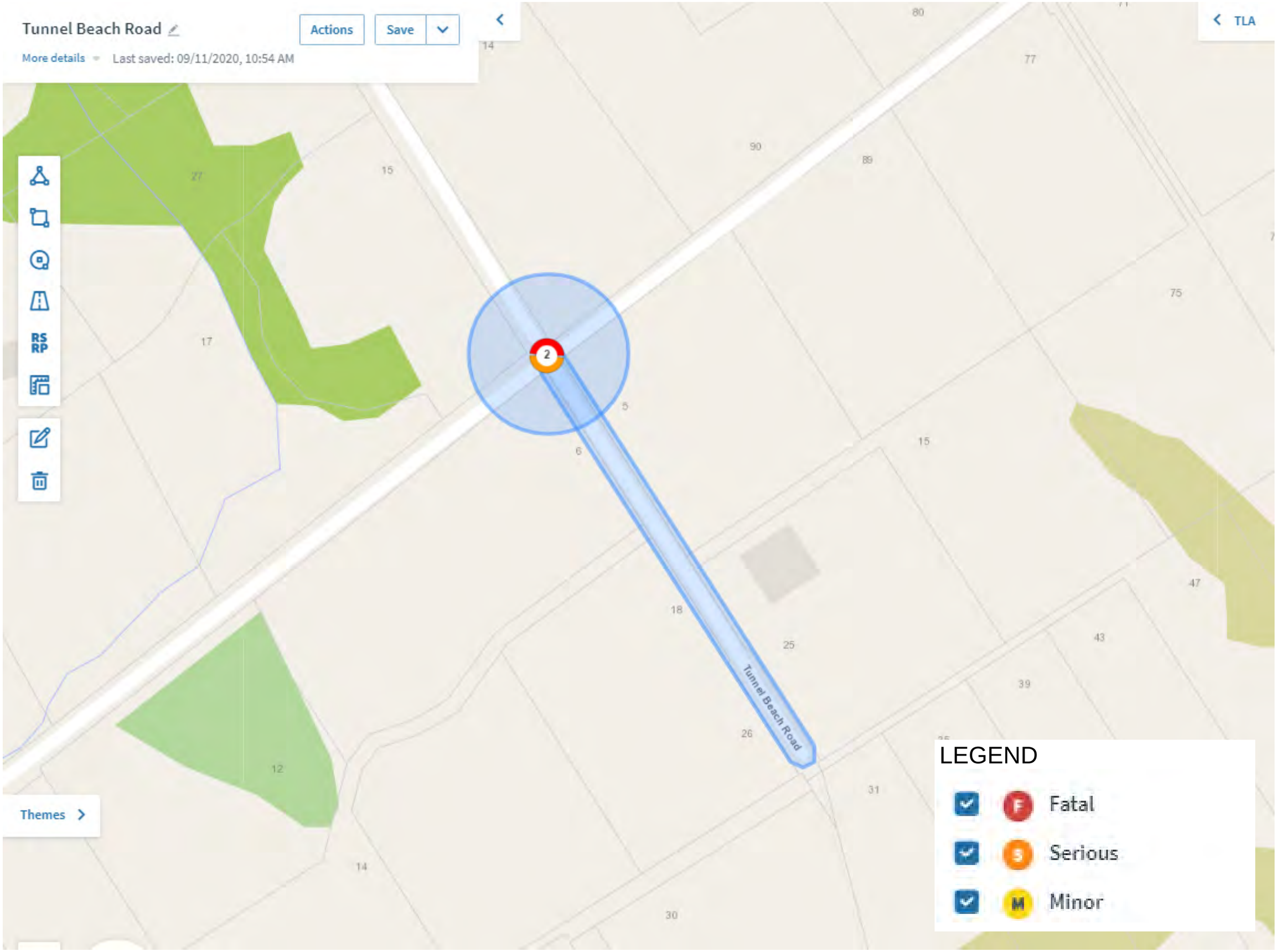
Plain English report

2 results from your query.

1-2 of 2

Crash road	Distance	Direction	Reference station	Route position	Side road	Easting	Northing	Longitude	Latitude	ID	Date	Day of week	Time	Description of events	Crash factors	Surface condition	Natural light	Weather	Junction	Control	Crash count fatal	Crash count severe	Crash count minor	Social cost $(m)
BLACKHEAD ROAD		I			GREEN ISLAND BUSH ROAD E	1402345	4912112	170.451202	-45.916130	201324101	28/10/2013	Mon	11:00	Car/Wagon1 NDB on BLACKHEAD ROAD hit Car/Wagon2 crossing at right angle from right	CAR/WAGON2, failed to give way at priority traffic control, overseas/migrant driver fail to adjust to nz roads	Dry	Overcast	Fine	Crossroads	Give way	0	1	1	0.81
BLACKHEAD ROAD		I			TUNNEL BEACH ROAD	1402345	4912112	170.451202	-45.916130	201500036	13/02/2015	Fri	18:10	SUV1 EDB on BLACKHEAD ROAD hit Car/Wagon2 crossing at right angle from right, SUV1 hit bank, fence, traffic sign,, Car/Wagon2 hit bank, fence, traffic sign,	CAR/WAGON2, alcohol not suspected, tested and -ve (mot use onl, did not check/notice another party from other dirn, failed to give way at priority traffic control, ENV: markings faded, visibility limited by bank, visibility limited by crest or dip	Dry	Bright sun	Fine	Crossroads	Give way	2	0	0	5.37

1-2 of 2


Tunnel Beach Road
Actions
Save
More details
Last saved: 09/11/2020, 10:54 AM
TLA
Tunnel Beach Road
Themes
LEGEND
Fatal
Serious
Minor

C

Appendix C – Car Park Layout and Tracking Drawings

Drawing Plotted: 09 Nov 2020 11:00 AM

DRAWING LIST

DRAWING NO.	DRAWING TITLE
3336298-CA-000	COVER SHEET AND DRAWING LIST
3336298-CA-010	LAYOUT PLAN
3336298-CA-011	TUNNEL BEACH RD ACCESS PATH LAYOUT PLAN
3336298-CA-012	DESIGN CONTOUR PLAN
3336298-CA-015	TYPICAL SECTIONS - SHEET 1 OF 2
3336298-CA-016	TYPICAL SECTIONS - SHEET 2 OF 2
3336298-CA-020	PROPOSED STORMWATER LAYOUT
3336298-CA-030	VEHICLE TRACKING PLAN

▪ CIVIL

Project No 3336298

DUNEDIN CITY COUNCIL
TUNNEL BEACH
CAR PARK

FOR RESOURCE CONSENT

Prepared for

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

By
Beca

9 NOVEMBER 2020

ORIGINAL DRAWING IN COLOUR

RESOURCE CONSENT
NOT FOR CONSTRUCTION

Drawing No.	Rev.
3336298-CA-000	B

Document No. 3336298-CA-000.DWG