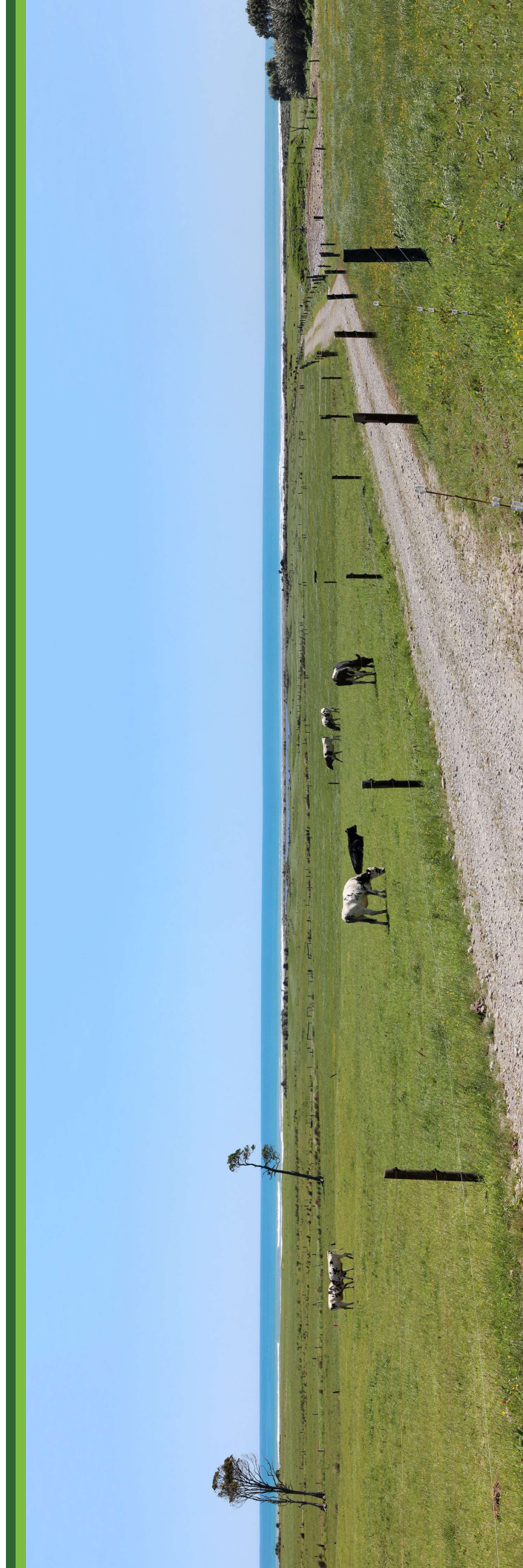


BARRYTOWN MINERAL SANDS MINING PROJECT



LANDSCAPE AND VISUAL ASSESSMENT OF EFFECTS
GRAPHIC SUPPLEMENT
JULY 2023

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1.0 WIDER CONTEXT PLAN



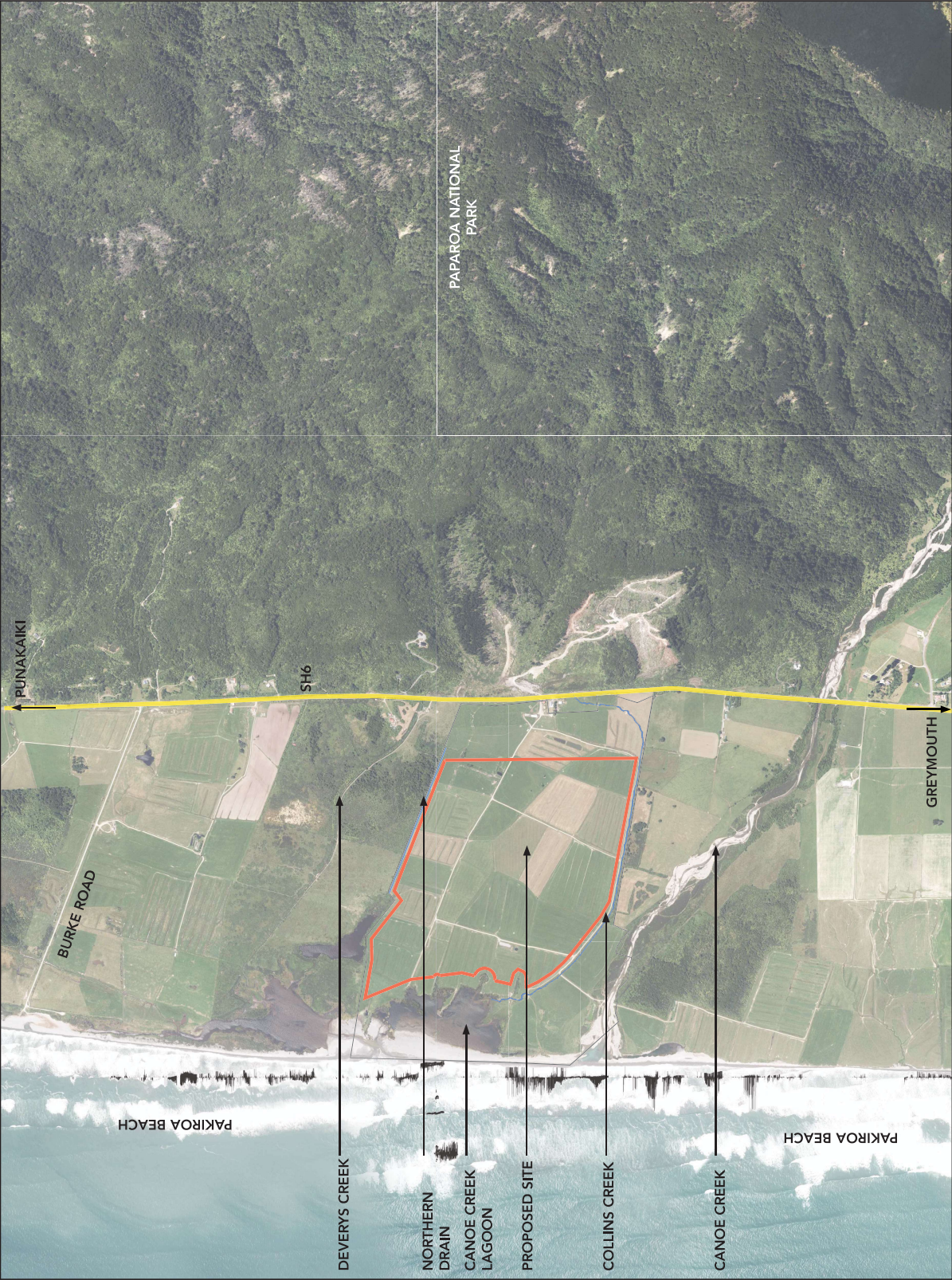
KEY

STATE HIGHWAY 6

MINING DISTURBANCE AREA

Basemap credit: Department of Conservation

2.0 SITE LOCATION PLAN



KEY

- APPLICATION AREA
- MINING DISTURBANCE AREA
- STATE HIGHWAY 6
- DRAINAGE AND WATER SYSTEMS

Basemap credits: Land Information New Zealand (LINZ) and Glasson Huxtable



3.0 PUBLIC CONSERVATION AREAS, SCENIC RESERVES AND WALKWAYS



KEY

NATIONAL PARK

CONSERVATION AREA

PUNAKAIKI MARINE RESERVE

WATER BODY (TASMAN SEA)

WALKING TRACKS

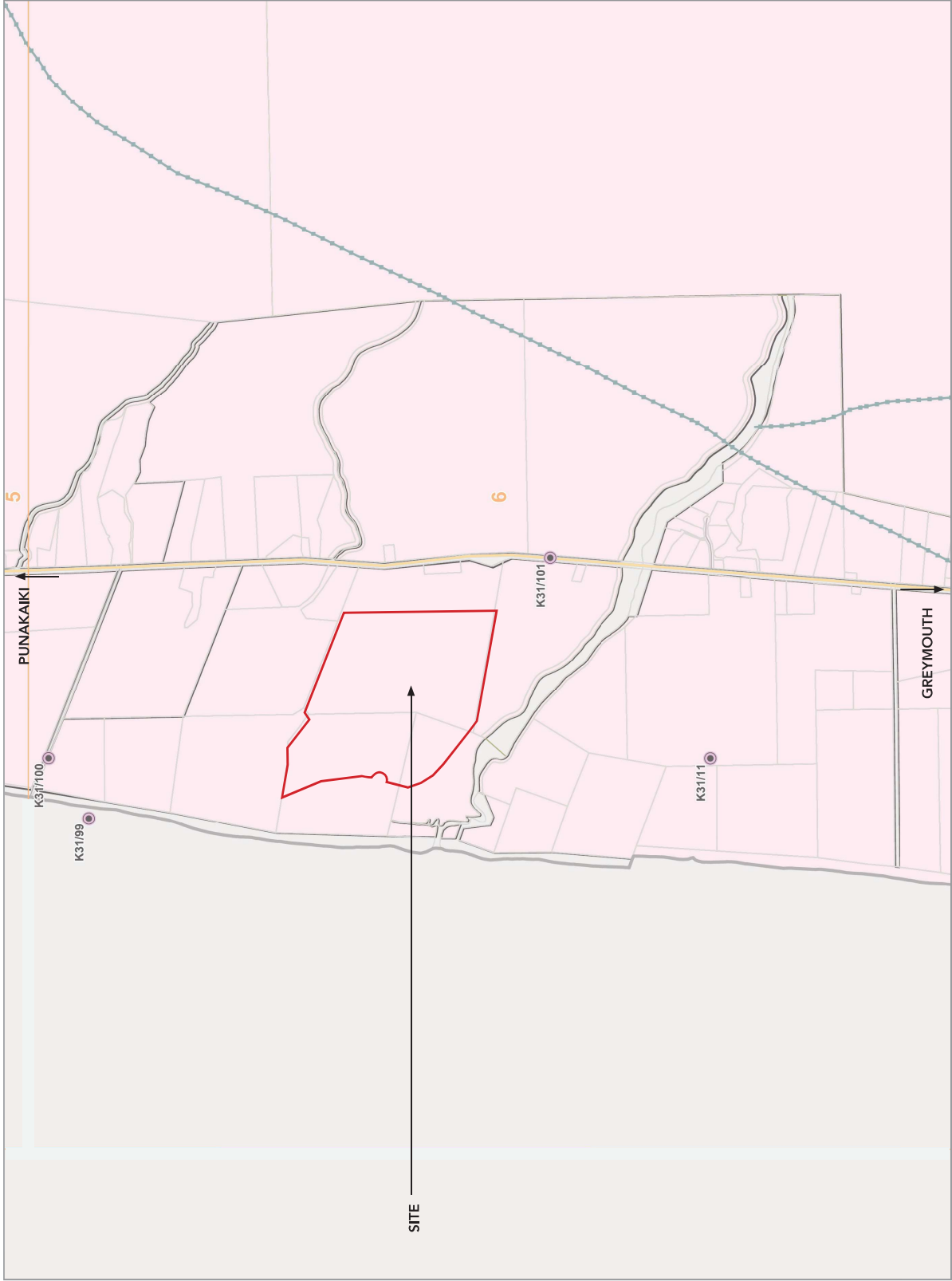
MINING DISTURBANCE AREA

STATE HIGHWAY 6

Basemap credits: Department of Conservation



4.0 GREY DISTRICT COUNCIL: OPERATIVE DISTRICT PLAN ZONING



KEY

RURAL ZONE

ARCHAEOLOGICAL SITE

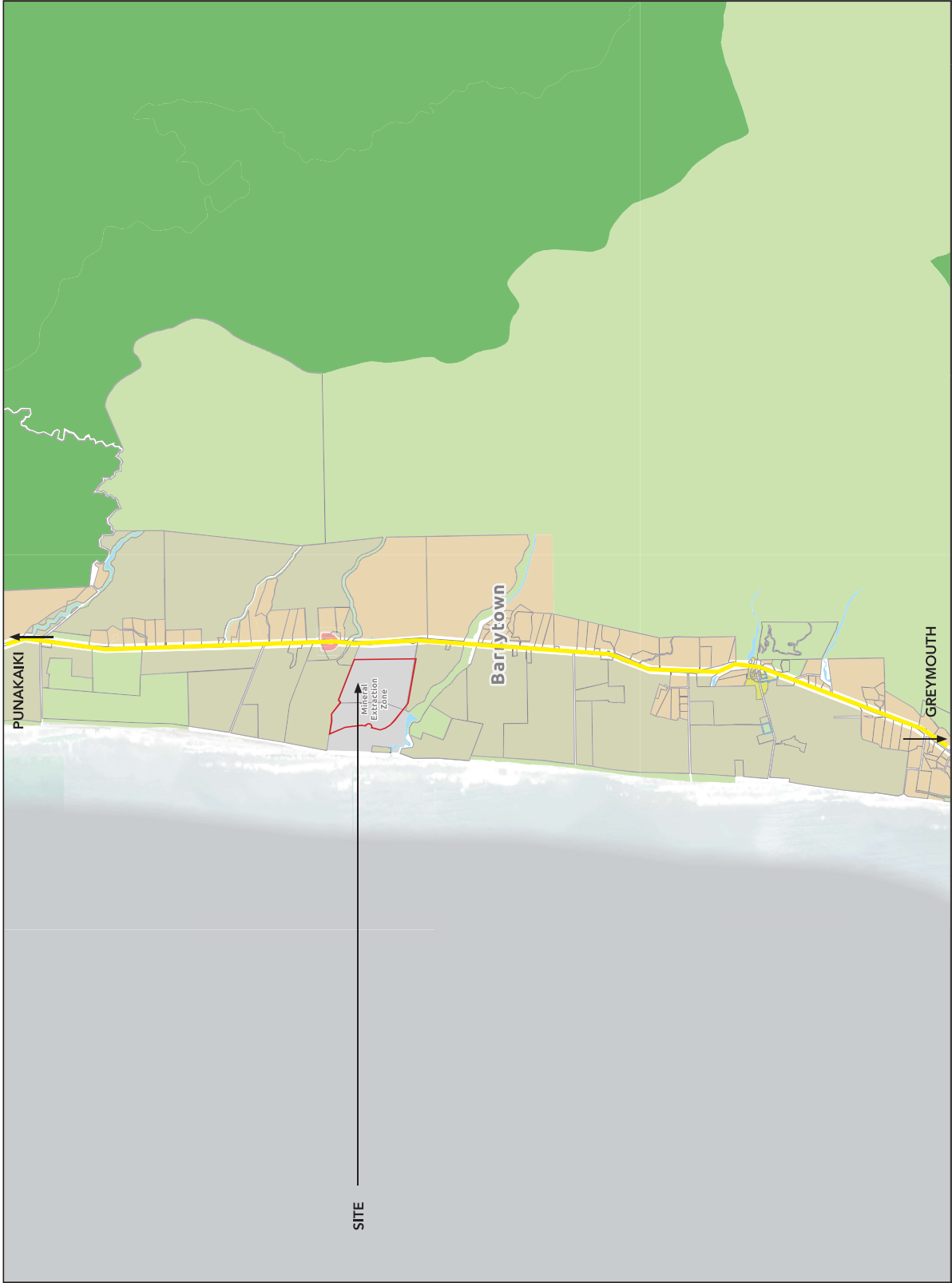
FAULTLINE

STATE HIGHWAY 6

MINING DISTURBANCE AREA

Basemap credits: Grey District Council

5.0 TE TAI O POUTINI PLAN: PROPOSED ZONING



KEY

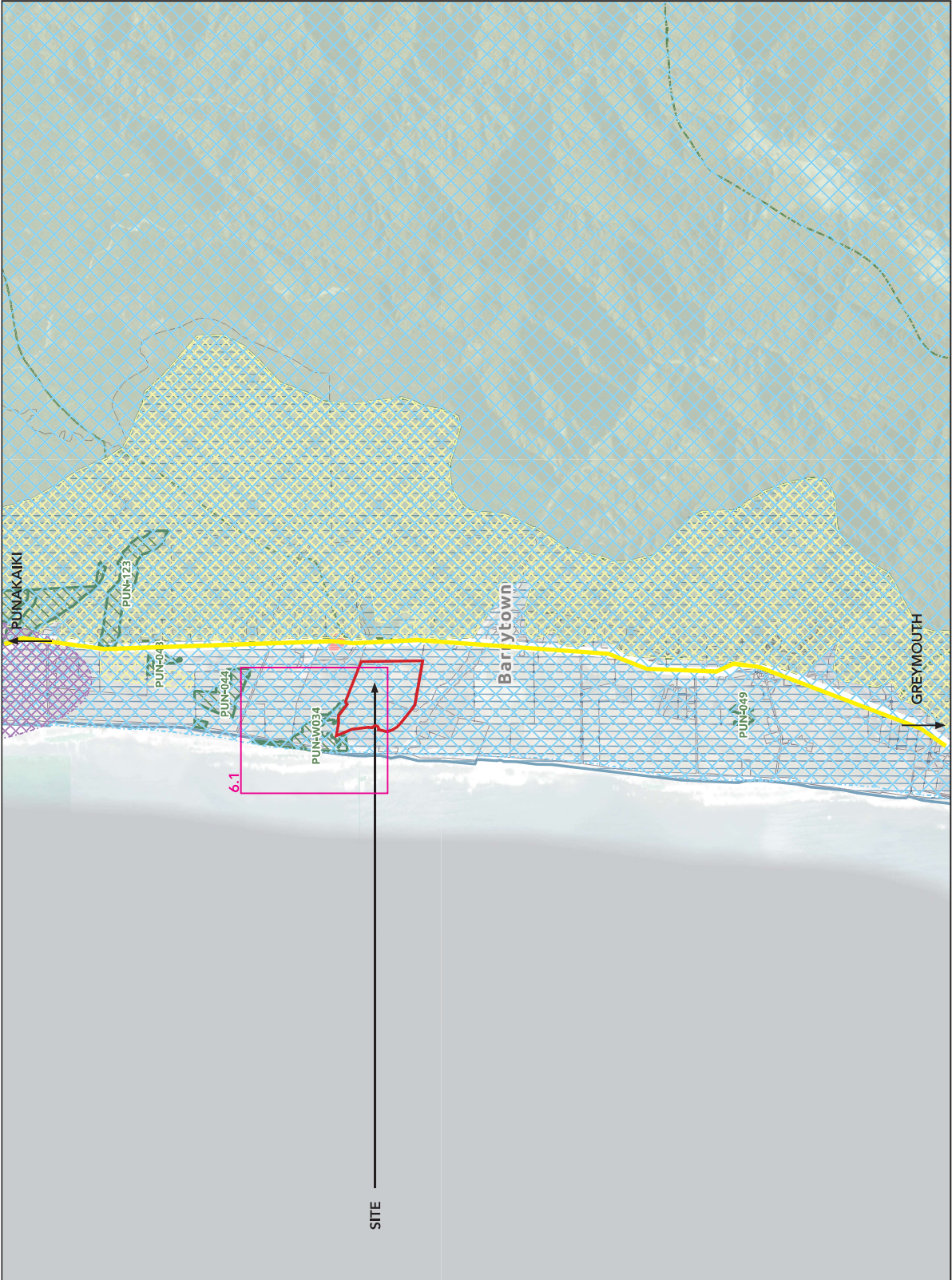
- NATURAL OPEN SPACE ZONE
- OPEN SPACE ZONE
- RURAL LIFESTYLE ZONE
- GENERAL RURAL ZONE
- MINERAL EXTRACTION ZONE
- SETTLEMENT ZONE
- WATERBODY
- STATE HIGHWAY 6
- MINING DISTURBANCE AREA

Note: Te Tai o Poutini Plan is a proposed plan. As such, it has been given limited consideration by the accompanying Landscape and Visual Assessment.

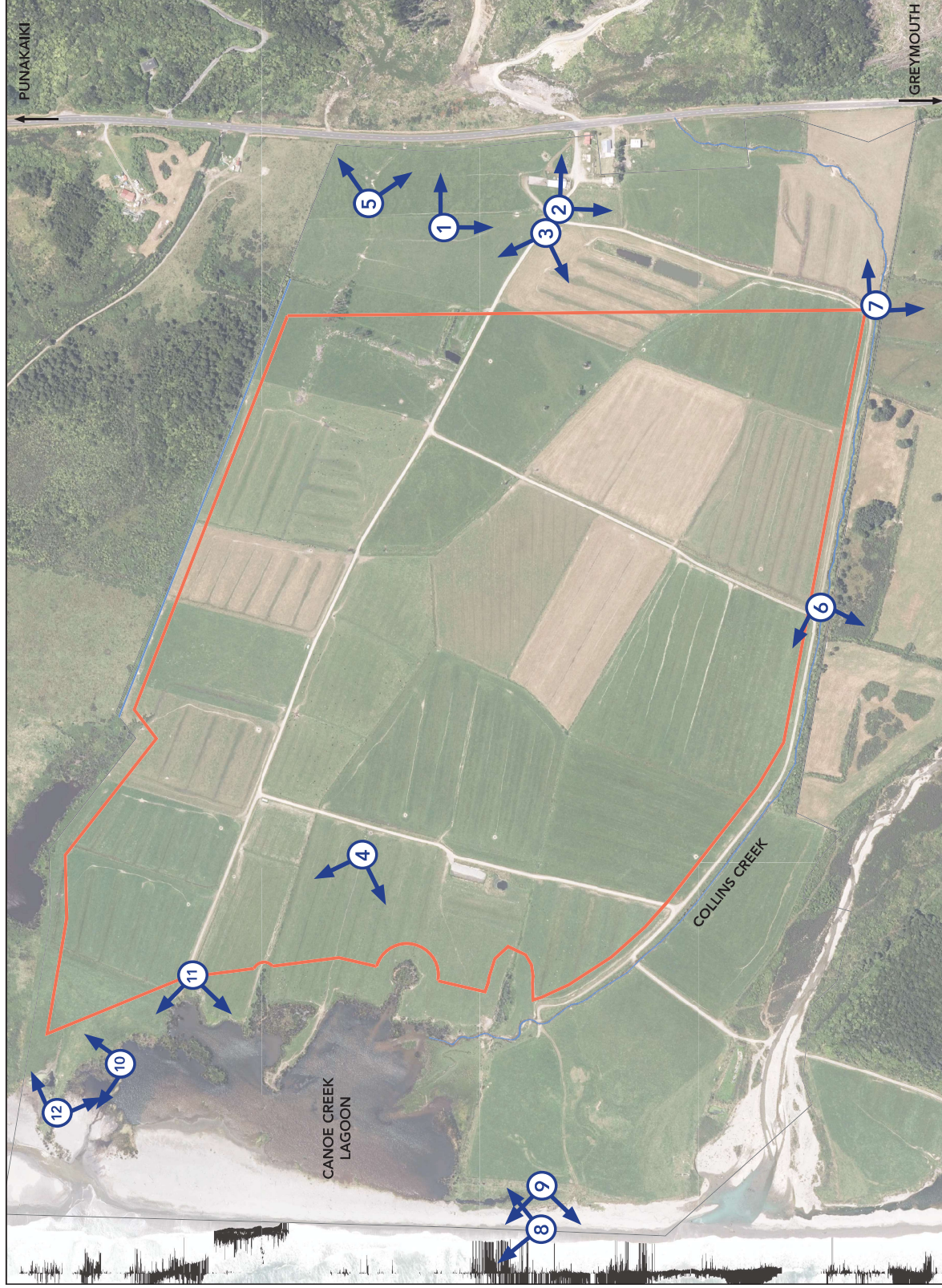
Basemap credit: Te Tai o Poutini Plan, West Coast District



6.0 TE TAI O POUTINI PLAN: PROPOSED ZONING (LANDSCAPE FEATURES)



7.0 CHARACTER IMAGE LOCATIONS



KEY:

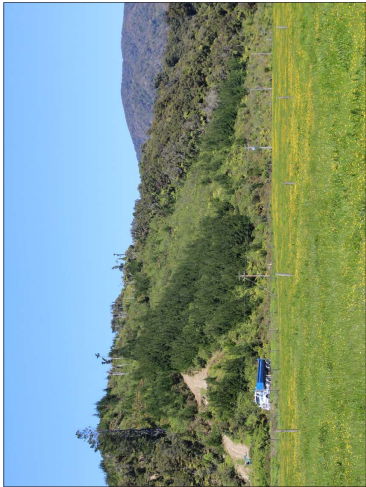


Viewpoints shown on this page correspond with character images shown on the following page.

Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable



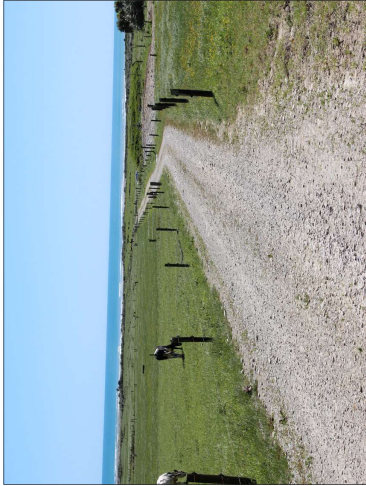
8.0 CHARACTER IMAGES



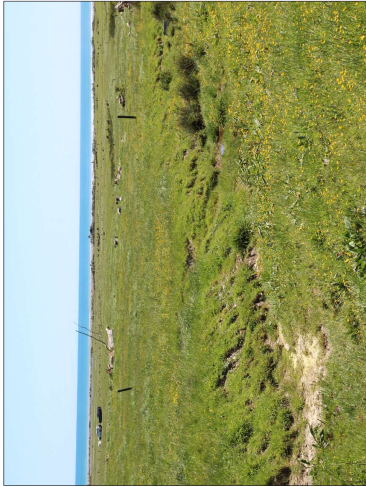
1.0: View of traffic using State Highway 6 from the site.



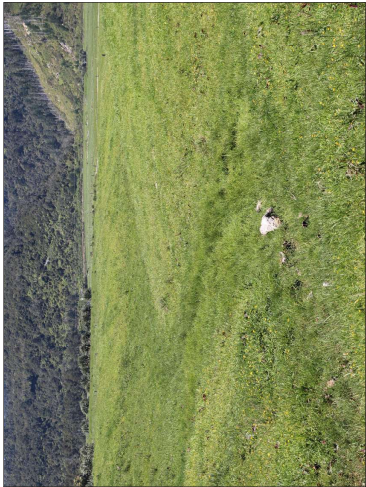
2.0: Existing farmhouse and ancillary buildings on site.



3.0: Typical farm access track.



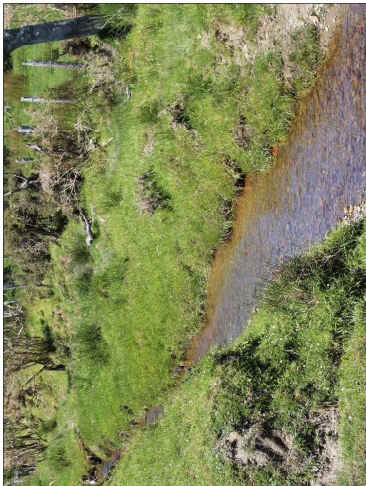
4.0: Existing humps and hollows on site.



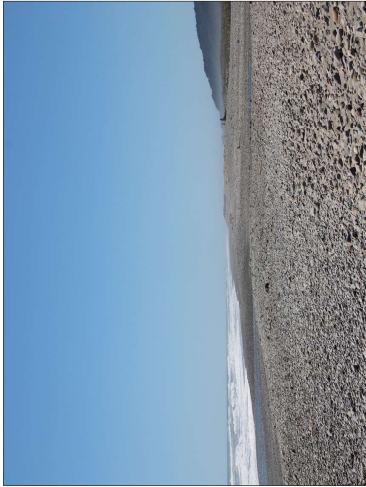
5.0: On site drainage channels.



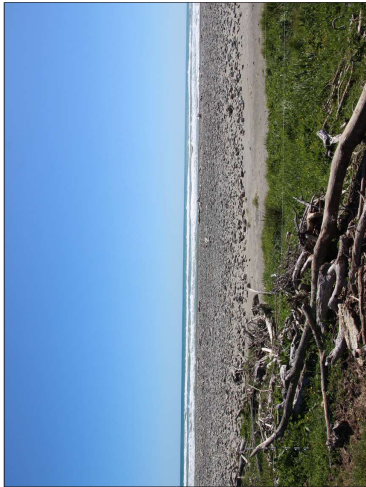
6.0: Collins Creek (looking west).



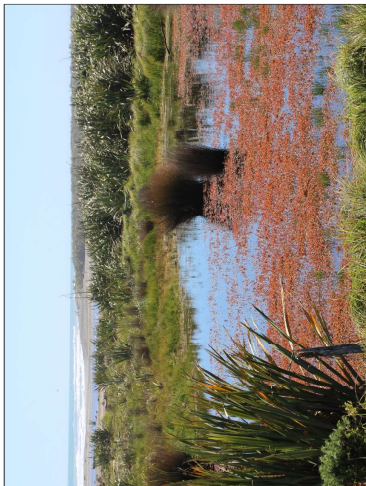
7.0: Collins Creek (looking east).



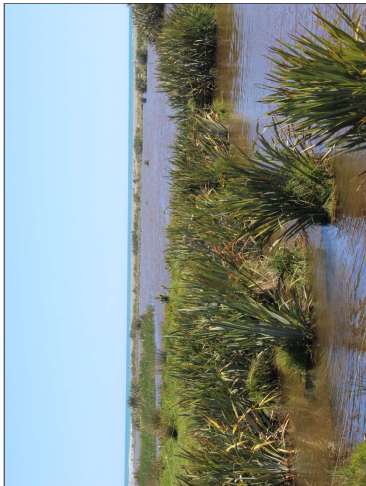
8.0: Pakiroa Beach (looking north).



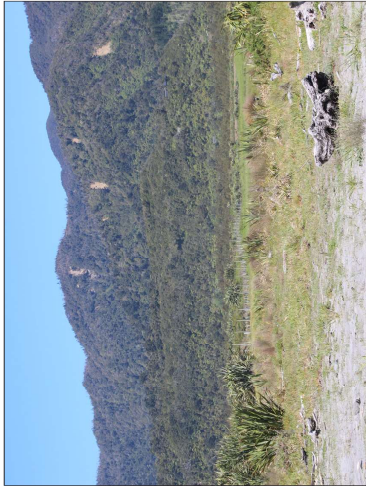
9.0: Typical Pakiroa Beach character.



10.0: Canoe Creek Lagoon.

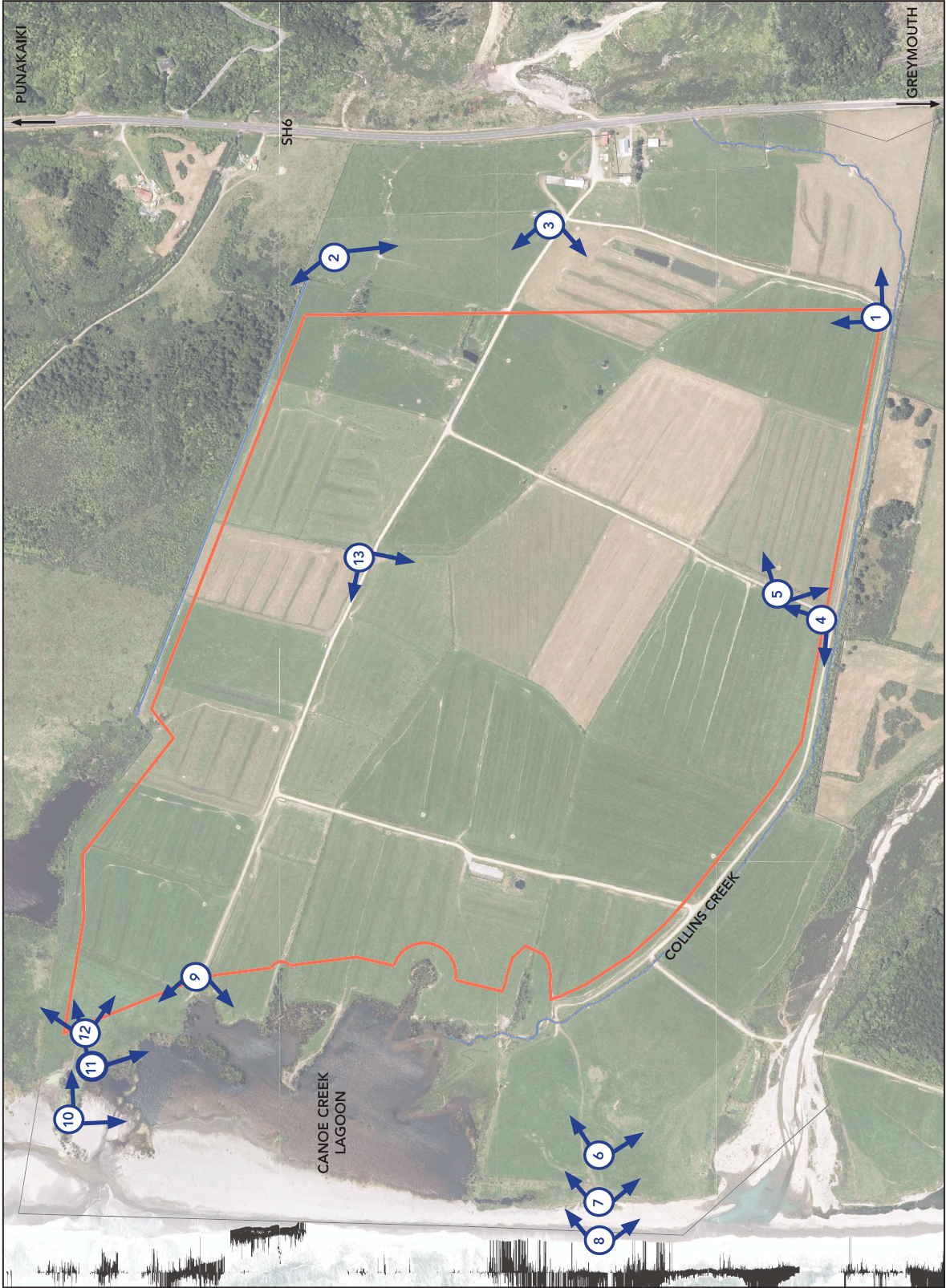


11.0: Canoe Creek Lagoon.



12.0: View of houses on flanks of hillsides (as viewed from Pakiroa Beach).

9.0 VIEWPOINTS PLAN: INSIDE THE SITE



KEY:

- PRIVATE VIEWPOINT
- APPLICATION AREA
- MINING DISTURBANCE AREA
- DRAINAGE AND WATER SYSTEMS

Viewpoints shown on this page correspond with the panoramas shown on the following pages.

Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable

GPS CO-ORDINATES:

- Private viewpoint 1: 171°19'41.47"E 42°12'20.13"S
- Private viewpoint 2: 171°19'45.71"E 42°11'58.15"S
- Private viewpoint 3: 171°19'47.00"E 42°12'7.12"S
- Private viewpoint 4: 171°19'25.28"E 42°12'17.63"S
- Private viewpoint 5: 171°19'26.49"E 42°12'15.65"S
- Private viewpoint 6: 171°18'55.39"E 42°12'8.06"S
- Private viewpoint 7: 171°18'54.58"E 42°12'7.79"S
- Private viewpoint 8: 171°18'52.13"E 42°12'7.67"S
- Private viewpoint 9: 171°19'5.49"E 42°11'51.65"S
- Private viewpoint 10: 171°18'57.21"E 42°11'45.67"S
- Private viewpoint 11& 12: 171°18'59.75"E 42°11'46.52"S
- Private viewpoint 13: 171°19'30.78"E 42°11'59.77"S



VIEWPOINT 1.0: THE SITE AS VIEWED FROM THE SOUTH EASTERN CORNER

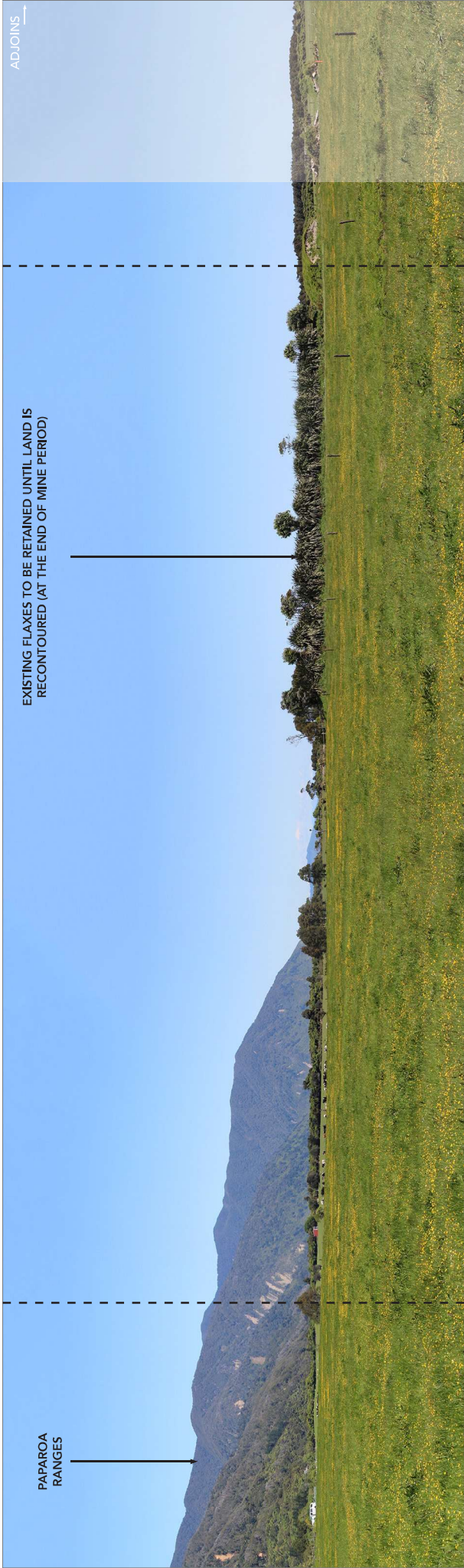
124° PRIMARY FIELD
OF VIEW EXTENT



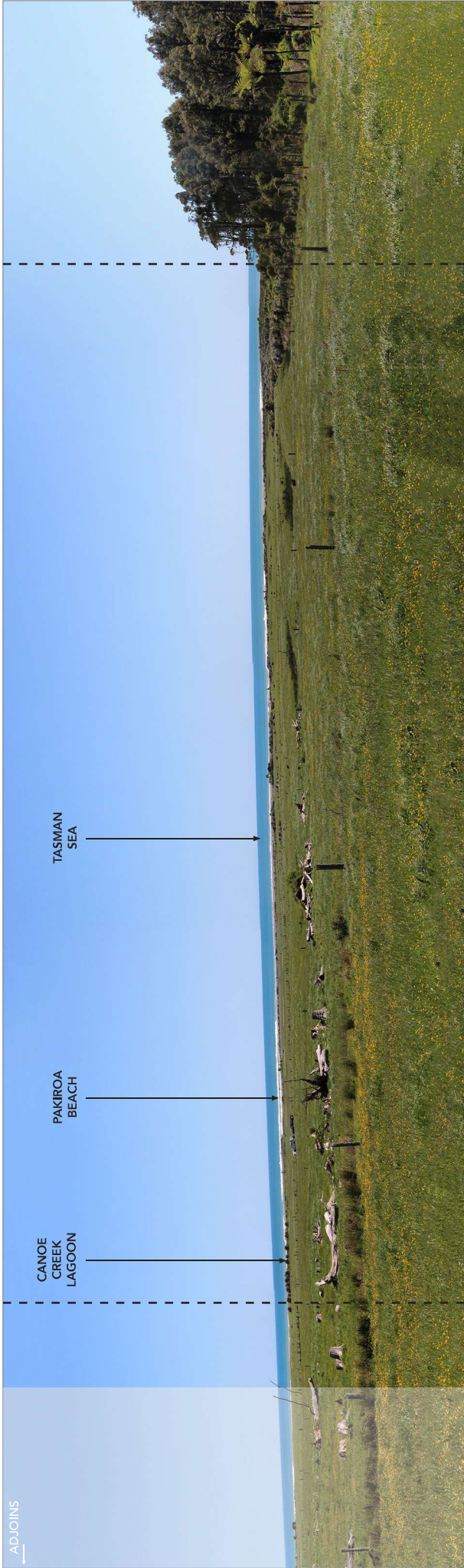
Viewpoint 1: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 2.0: THE SITE AS VIEWED FROM THE NORTH EASTERN CORNER

124° PRIMARY FIELD OF VIEW EXTENT



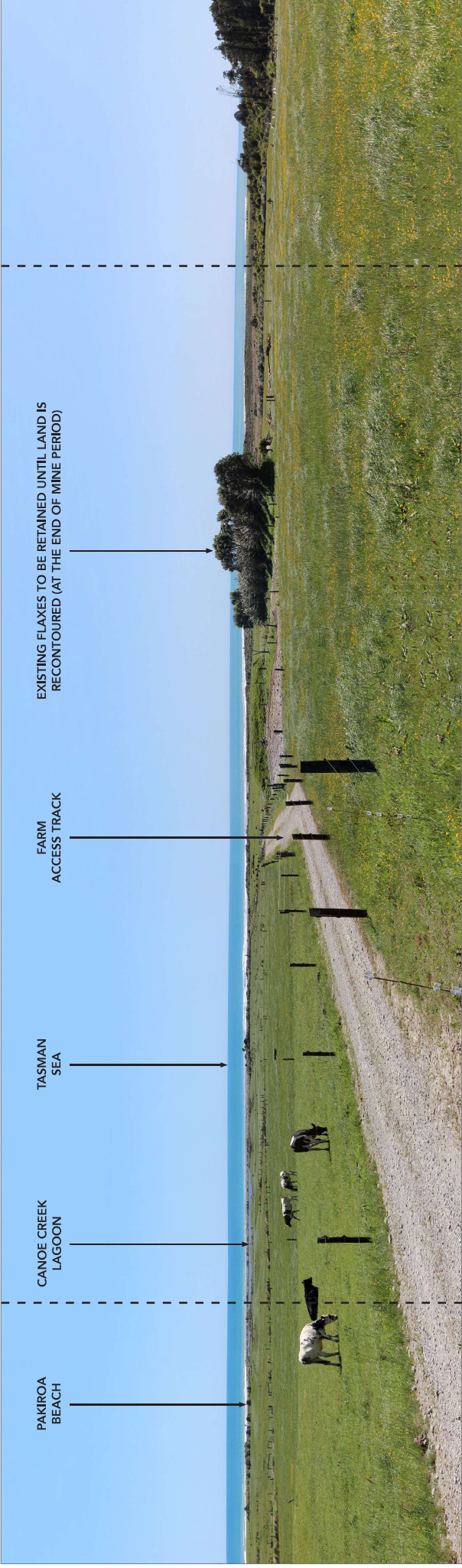
124° PRIMARY FIELD OF VIEW EXTENT



Viewpoint 2: Date Taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 3.0: LOOKING DOWN THE MAIN FARM ACCESS TRACK ON THE SITE TOWARDS THE COAST

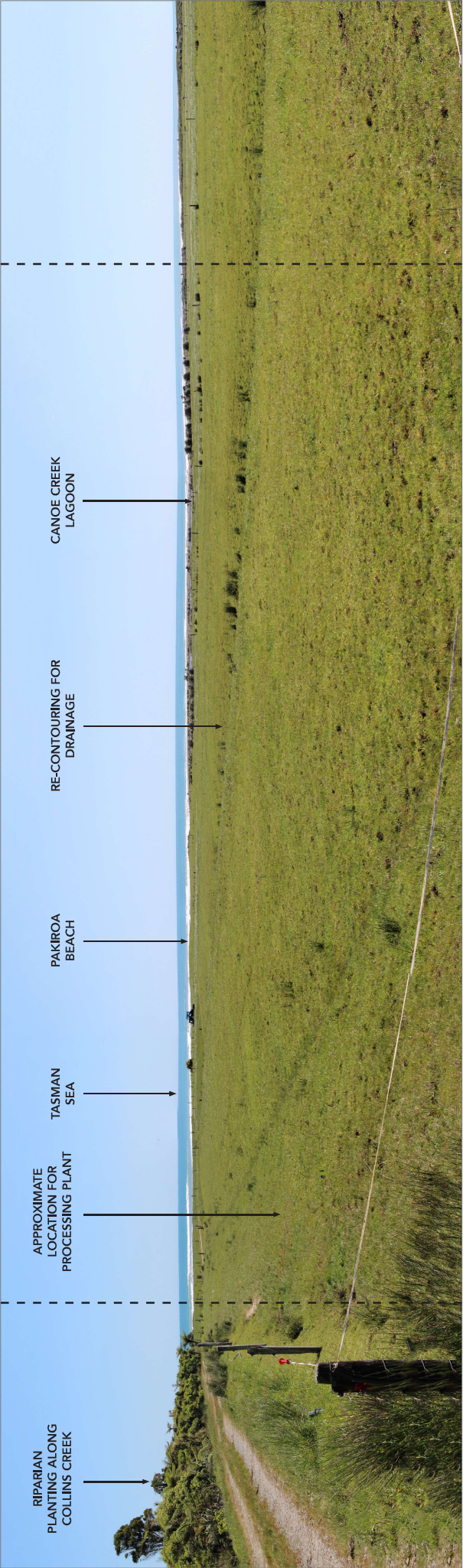
124° PRIMARY FIELD OF VIEW EXTENT



Viewpoint 3: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 4.0: THE SITE AS VIEWED FROM NEAR THE SOUTHERN BOUNDARY

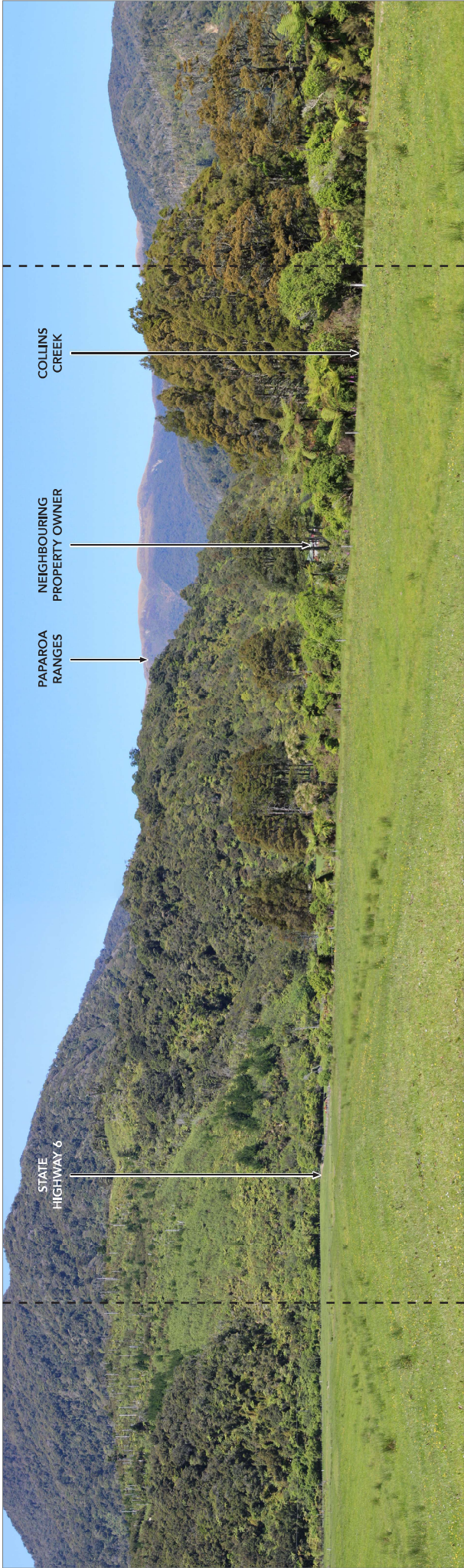
124° PRIMARY FIELD OF VIEW EXTENT



Viewpoint 4: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

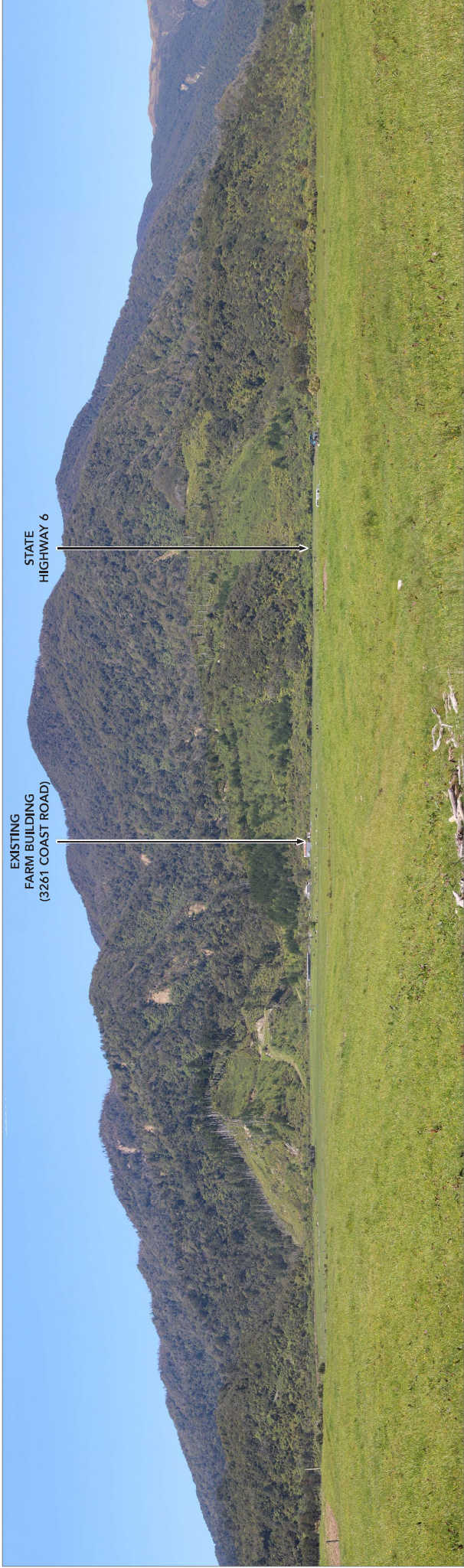
VIEWPOINT 5.0: LOOKING FROM THE SITE TOWARDS THE PAPAROA RANGES

124° PRIMARY FIELD OF VIEW EXTENT



Viewpoint 5: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 6.0: THE SITE AS VIEWED FROM THE SOUTH-WESTERN CORNER



Viewpoint 6: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 7.0: LOOKING TOWARDS THE SITE FROM A DRY STREAM BED ON THE FORESHORE

124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 7: Date taken 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 8.0: LOOKING TOWARDS THE SITE FROM THE HIGH TIDE MARK ON PAKIROA BEACH

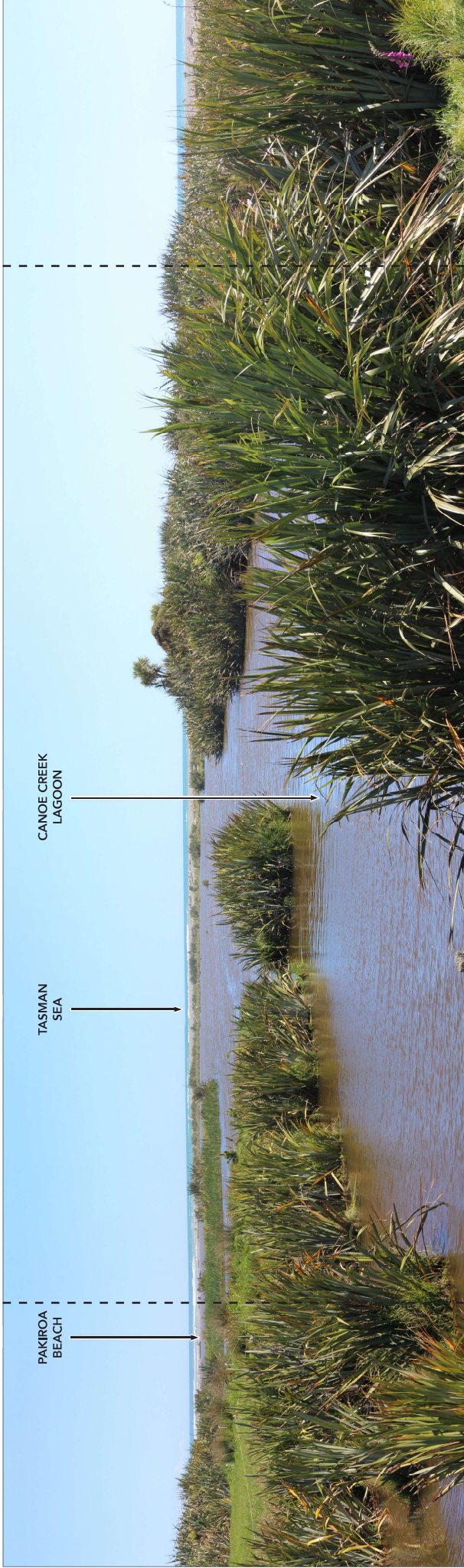
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 8: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 9.0: CANOE CREEK LAGOON

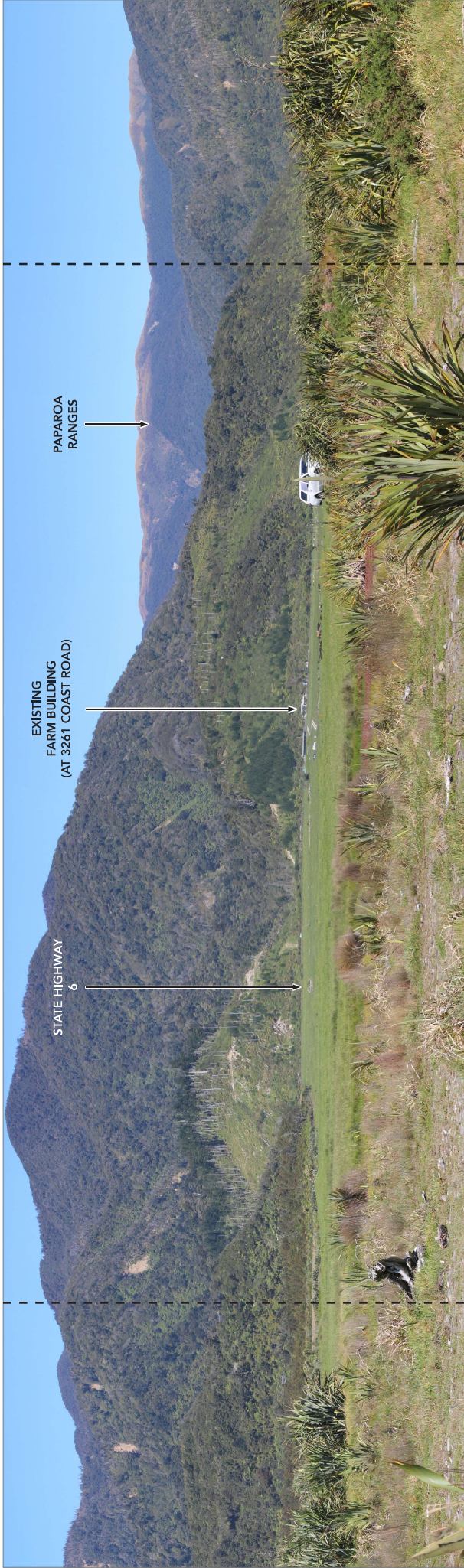
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 9: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 10.0: LOOKING TOWARDS THE SITE AND THE PAPAROA RANGES FROM PAKIROA BEACH

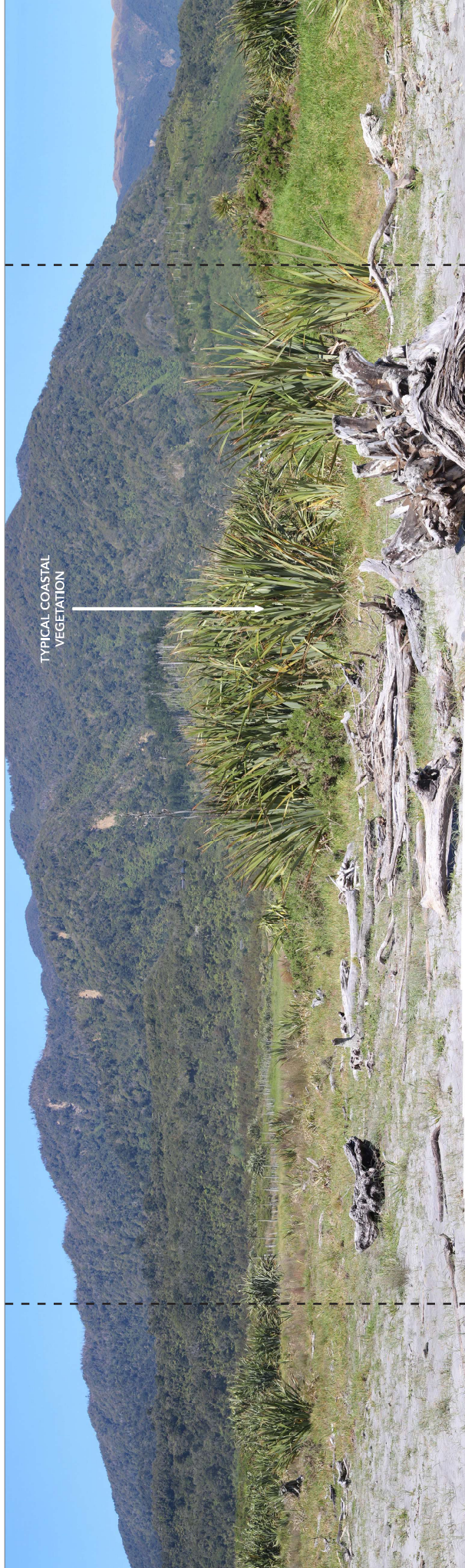
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 10: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 11.0: TYPICAL BEACH VIEW FROM THE NORTHERN EDGE OF THE SITE

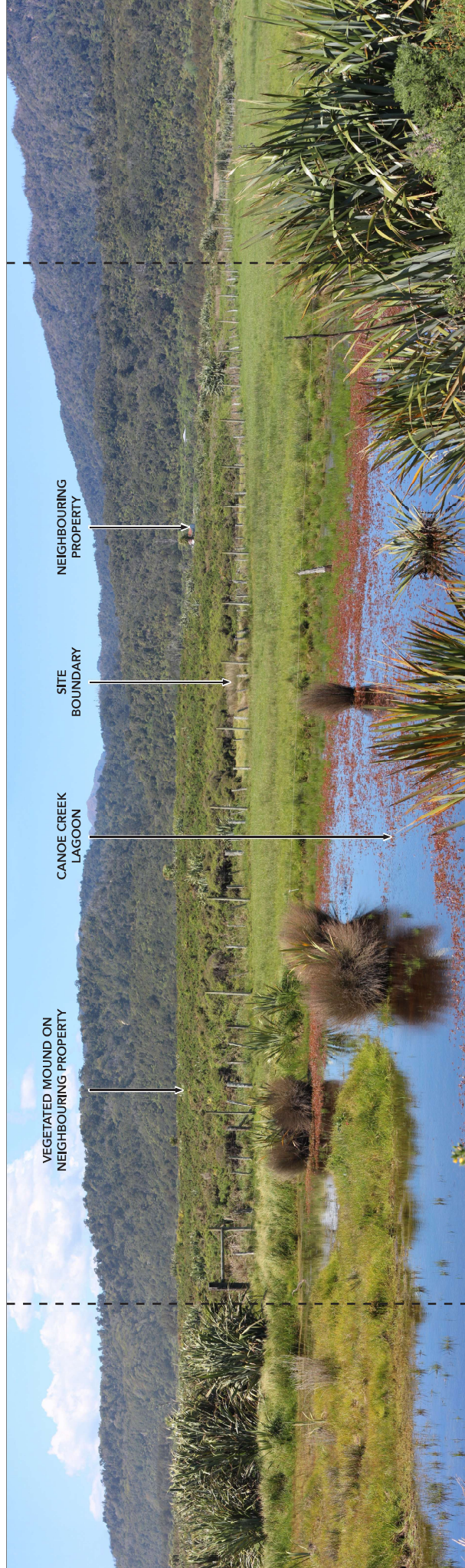
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 11: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 12.0: NORTHERN END OF CANOE CREEK LAGOON

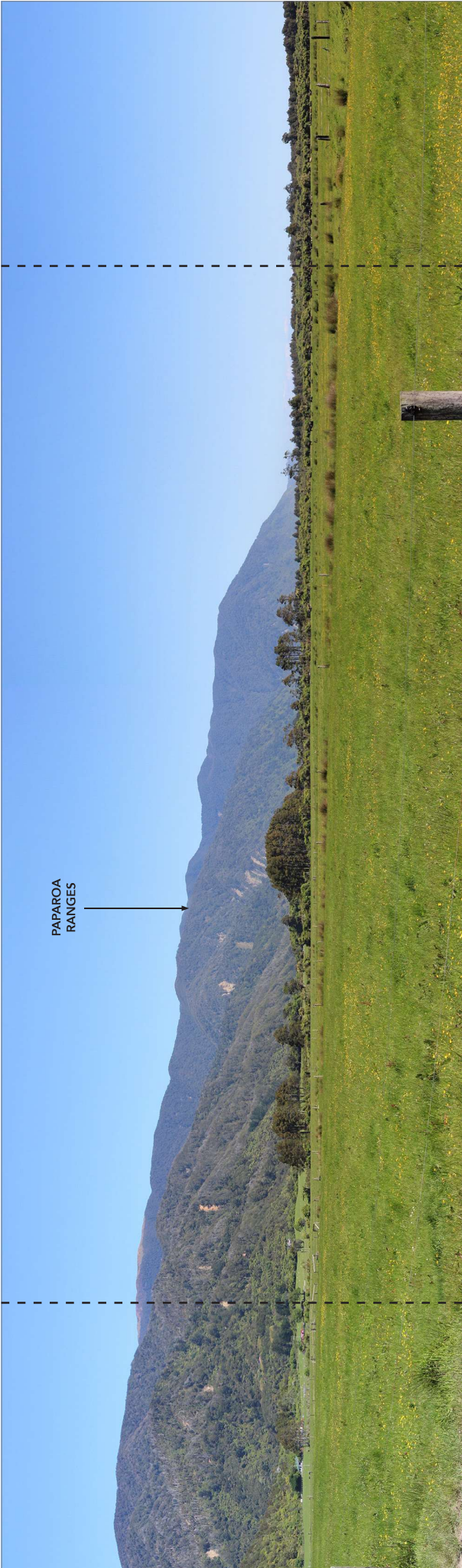
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 12: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

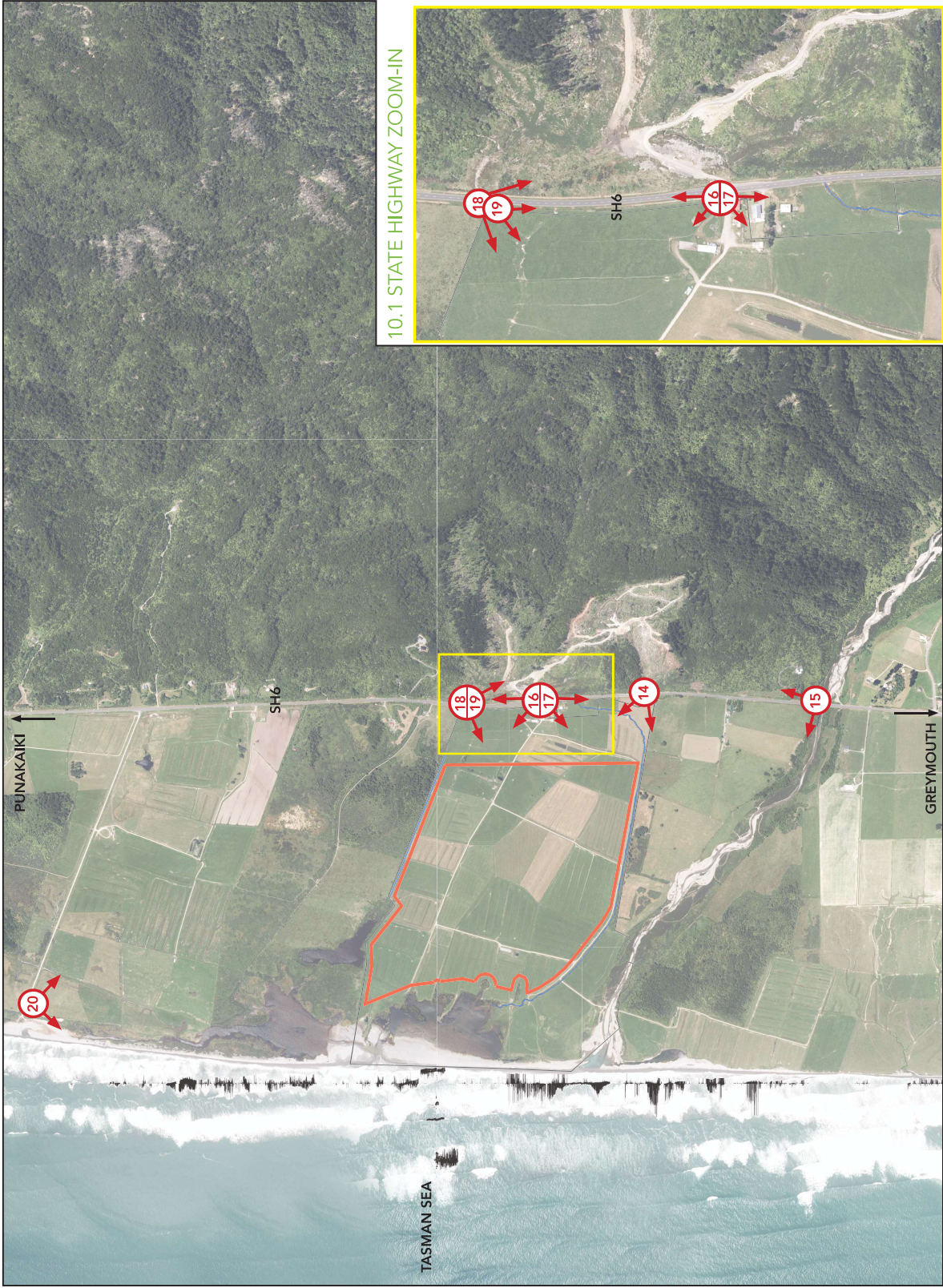
VIEWPOINT 13.0: THE CENTRAL PART OF THE SITE

124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 13: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

10.0 VIEWPOINTS PLAN: OUTSIDE THE SITE



KEY:

- PUBLIC VIEWPOINT
- ZOOM-IN
- APPLICATION AREA
- MINING DISTURBANCE AREA
- DRAINAGE AND WATER SYSTEMS

Viewpoints shown on this page correspond with the panoramas shown on the following pages.

Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable

GPS CO-ORDINATES:

Public viewpoint 14:
171°19'52.95"E 42°12'19.60"S

Public viewpoint 15:
171°19'51.33"E 42°12'38.51"S

Public viewpoint 16 & 17:
171°19'51.14"E 42°12'3.63"S

Public viewpoint 18 & 19:
171°19'51.59"E 42°11'57.07"S

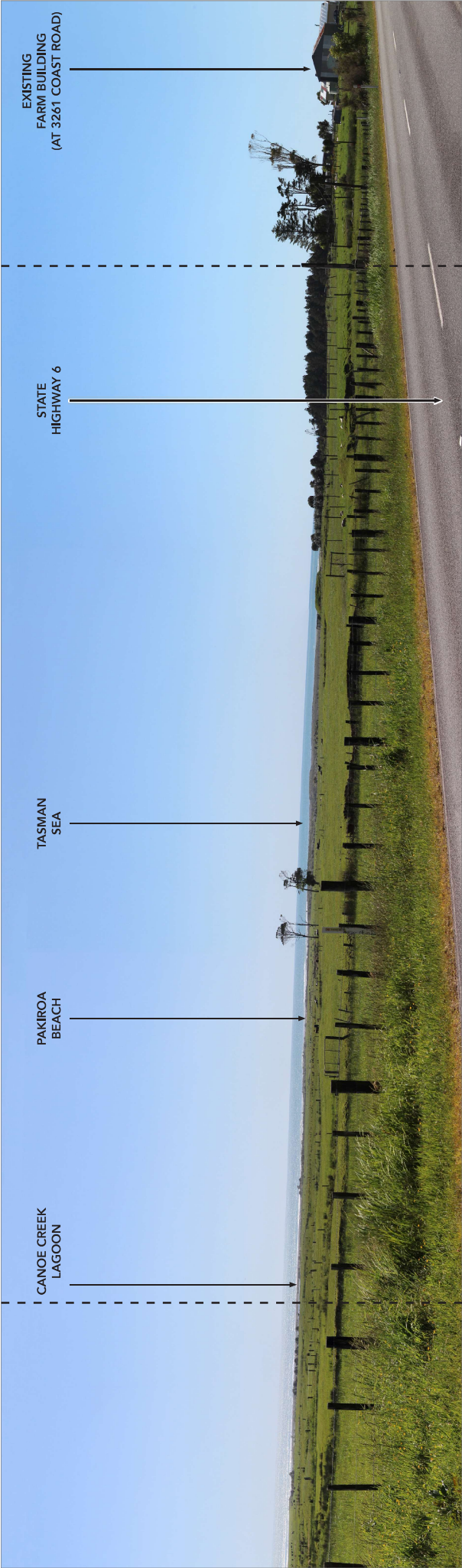
Public viewpoint 20:
171°19'3.02"E 42°11'5.61"S

GPS CO-ORDINATES DISTANCES FROM SITE:

Public viewpoint 14: 0.01km
Public viewpoint 15: 0.54km
Public viewpoint 16 & 17: 0.01km
Public viewpoint 18 & 19: 0.01km
Public viewpoint 20: 1.25km

VIEWPOINT 14.0: VIEW FROM SH6, LOOKING NORTH WEST ACROSS THE SITE

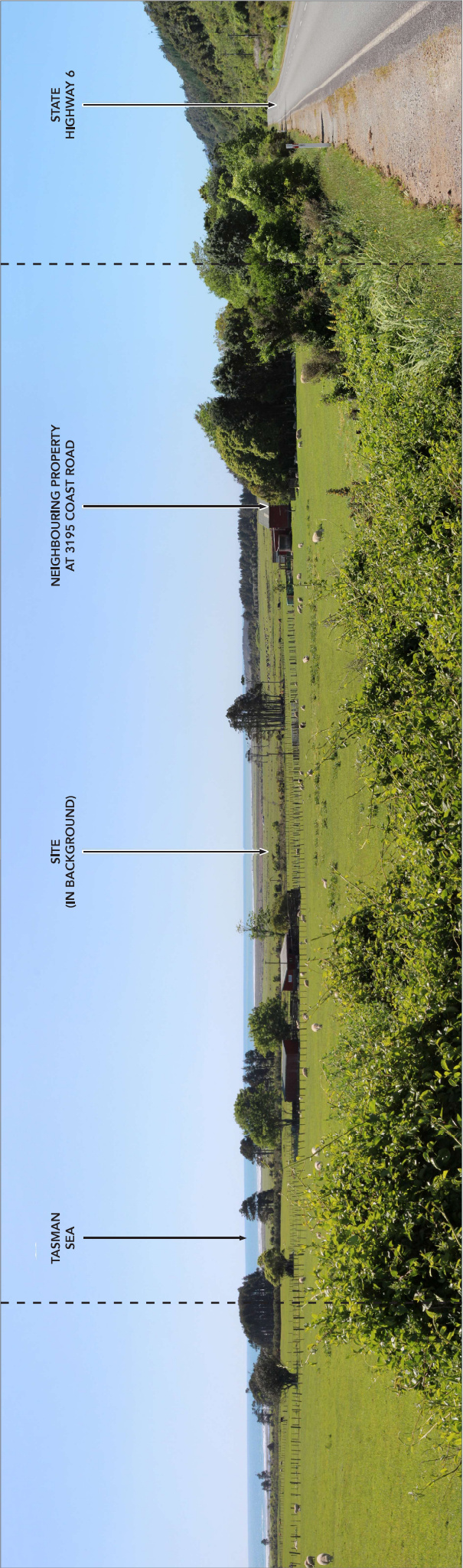
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 14: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 15.0: VIEW FROM THE DRIVEWAY OF 3172 COAST ROAD, SOUTHERN APPROACH TO THE SITE

124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 15: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 16.0: VIEW FROM SH6, LOOKING NORTH-WEST (SITE IN FOREGROUND)



Viewpoint 16: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

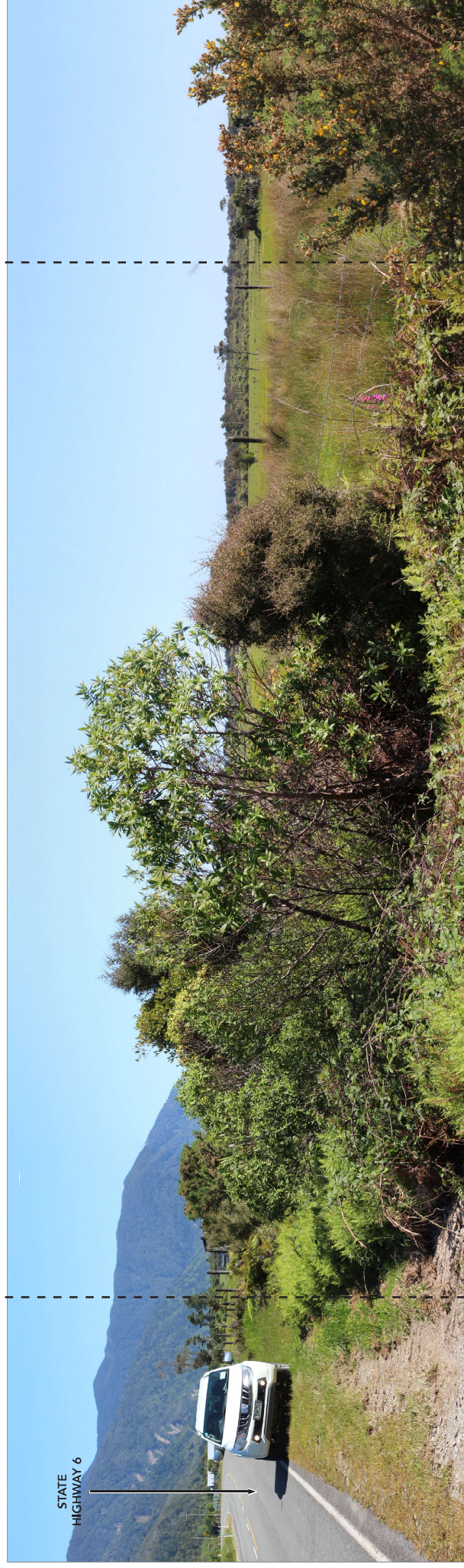
VIEWPOINT 17.0: VIEW FROM SH6, LOOKING SOUTH-WEST AT THE SITE



Viewpoint 17: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints should be viewed at approx. 500mm distance from eye level (recommended), A3 size prints should be viewed at approx. 250mm.

VIEWPOINT 18.0: VIEW FROM SH6 ILLUSTRATING THE NORTHERN APPROACH TO SITE

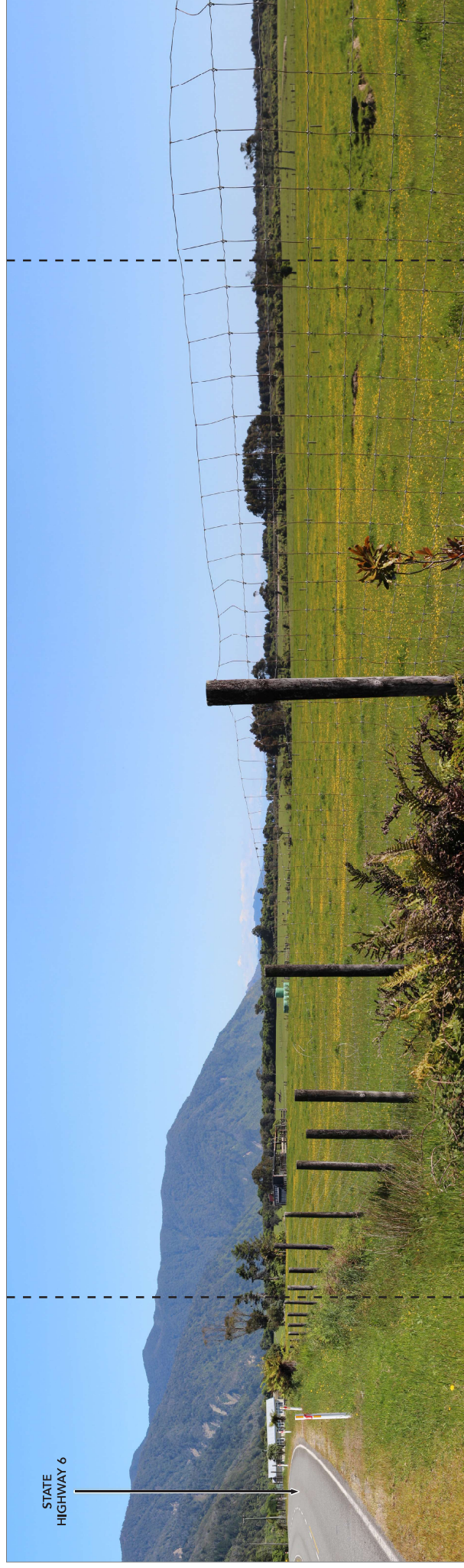
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 18.0: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

VIEWPOINT 19.0: VIEW FROM SH6 ILLUSTRATING THE NORTHERN APPROACH TO SITE

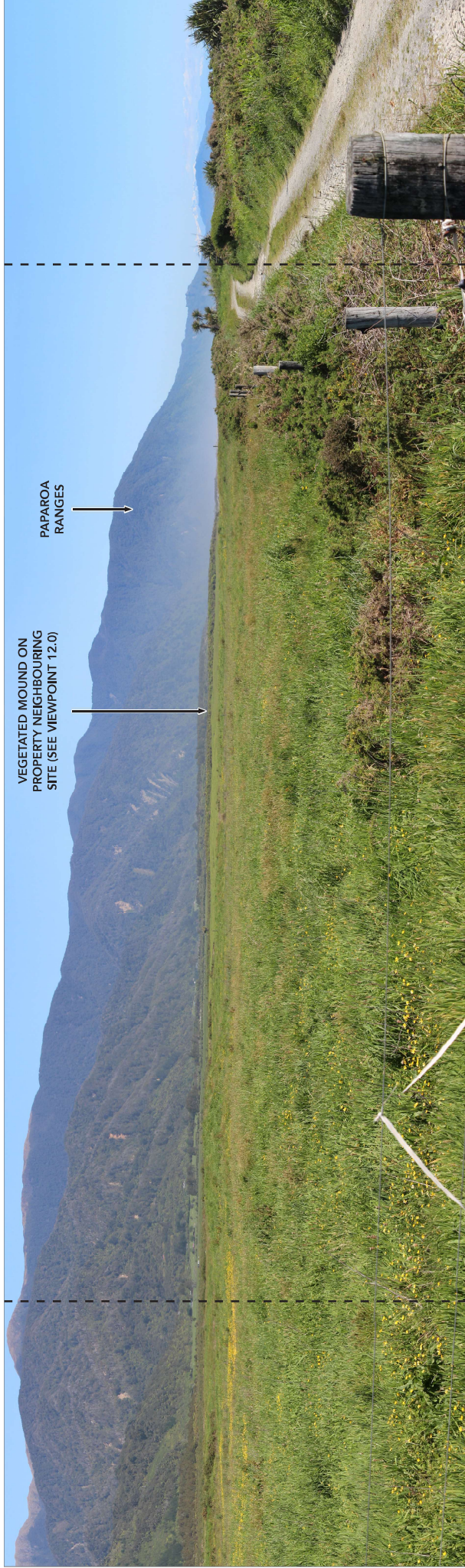
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 19.0: Date taken: 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

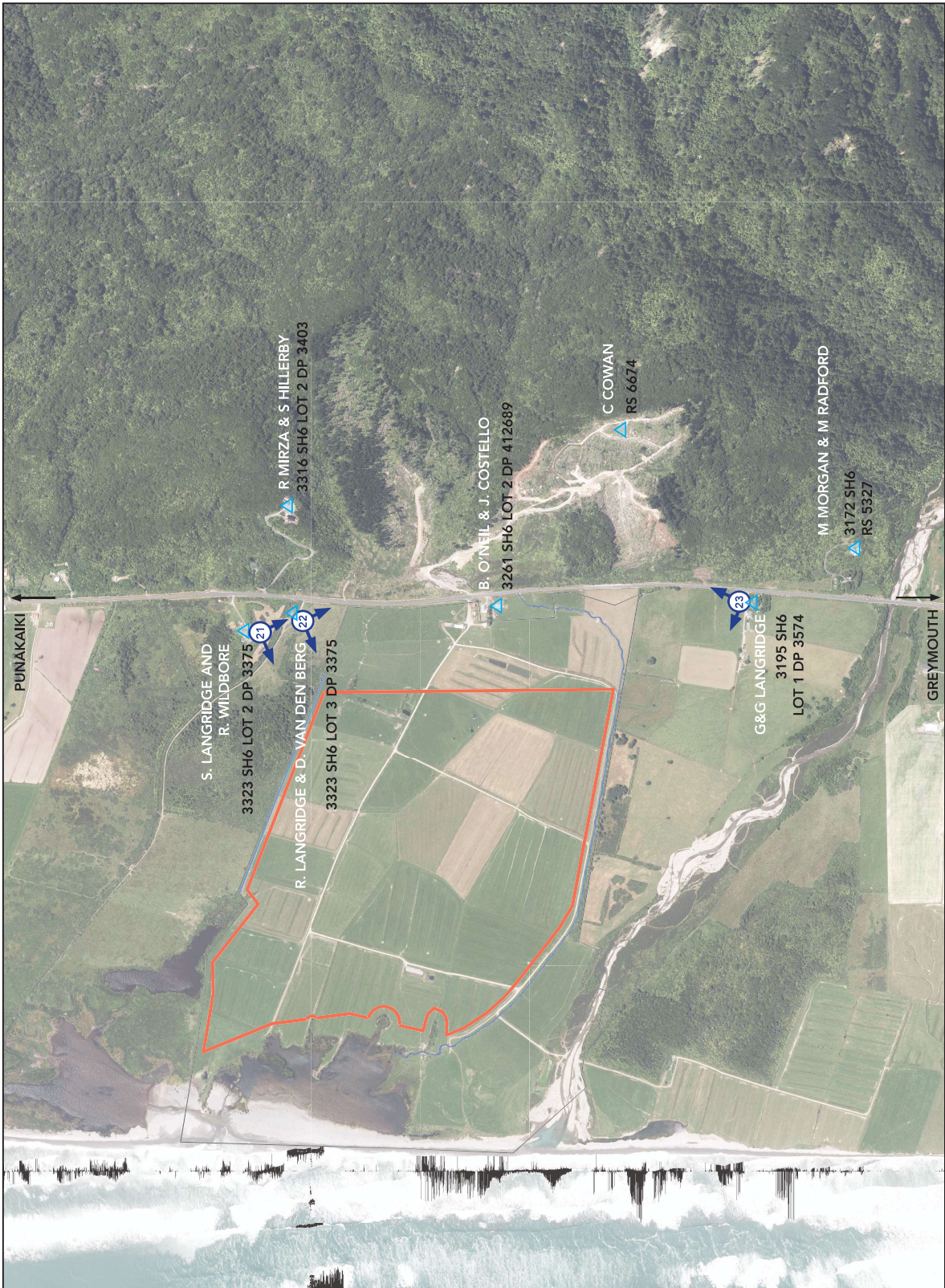
VIEWPOINT 20.0: LOOKING TOWARDS THE SITE FROM THE NORTH WESTERN END OF BURKE ROAD

124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 20.0: Date taken 14th November 2022. Taken with a Canon 600D camera with a 50mm lens. This is a public viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm.

11.0 NEIGHBOURING PROPERTIES



KEY:

- APPLICATION AREA
- MINING DISTURBANCE AREA
- NEIGHBOURING PROPERTIES
- DRAINAGE AND WATER SYSTEMS
- PRIVATE VIEWPOINT

NOTE: State Highway 6 and Coast Road are synonymous.
Many property owners possess more than one parcel of land. The supplied parcel numbers on the plan relate to the dwelling associated with each address.

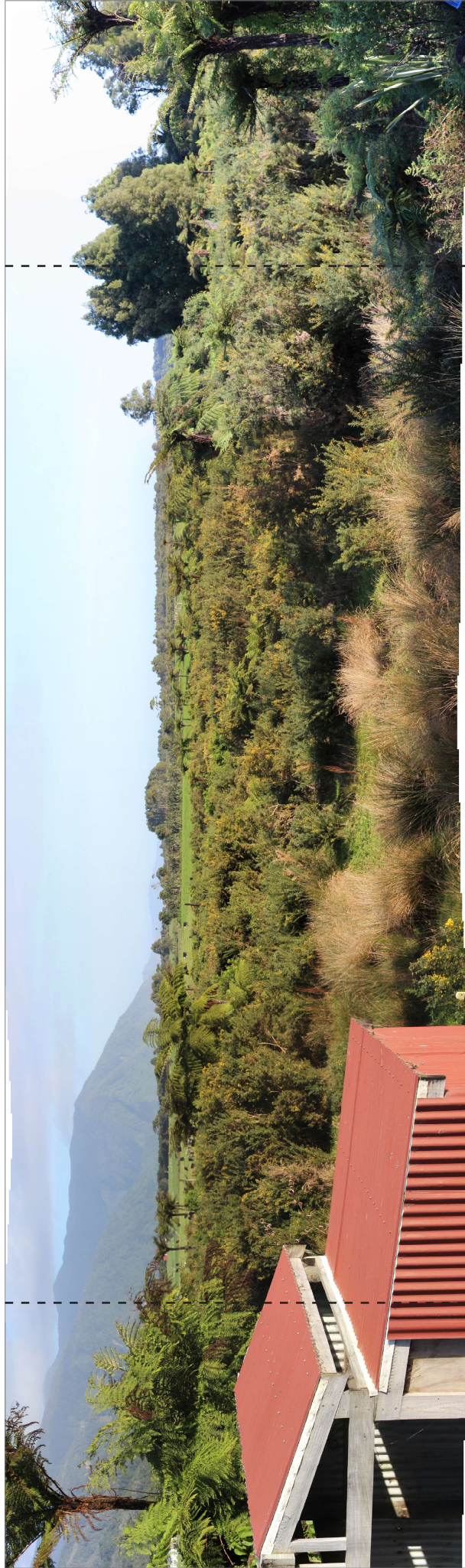
Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable

GPS CO-ORDINATES
DISTANCES FROM SITE:

- 3141 SH6: 0.72km
- 3142 SH6: 0.82km
- 3172 SH6: 0.58km
- 3195 SH6: 0.30km
- 3261 SH6: 0.00km
- 3316 SH6: 0.26km
- 3320 SH6: 0.25km
- 3375 SH6: 0.10km
- 3323 SH6: 0.22km

VIEWPOINT 21.0: VIEW FROM 3323 COAST ROAD (SH6) TOWARDS SITE

124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 21.0: Date taken: 24th May 2023. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm. This photo is taken from the fence line near the residence of S. Langridge and R. Wildbore. When the photographer visited, the view from the porch was partially obstructed by a temporary shipping container so the view from the nearby fence line was chosen instead.

VIEWPOINT 22.0: VIEW FROM 3323 COAST ROAD (SH6) TOWARDS SITE

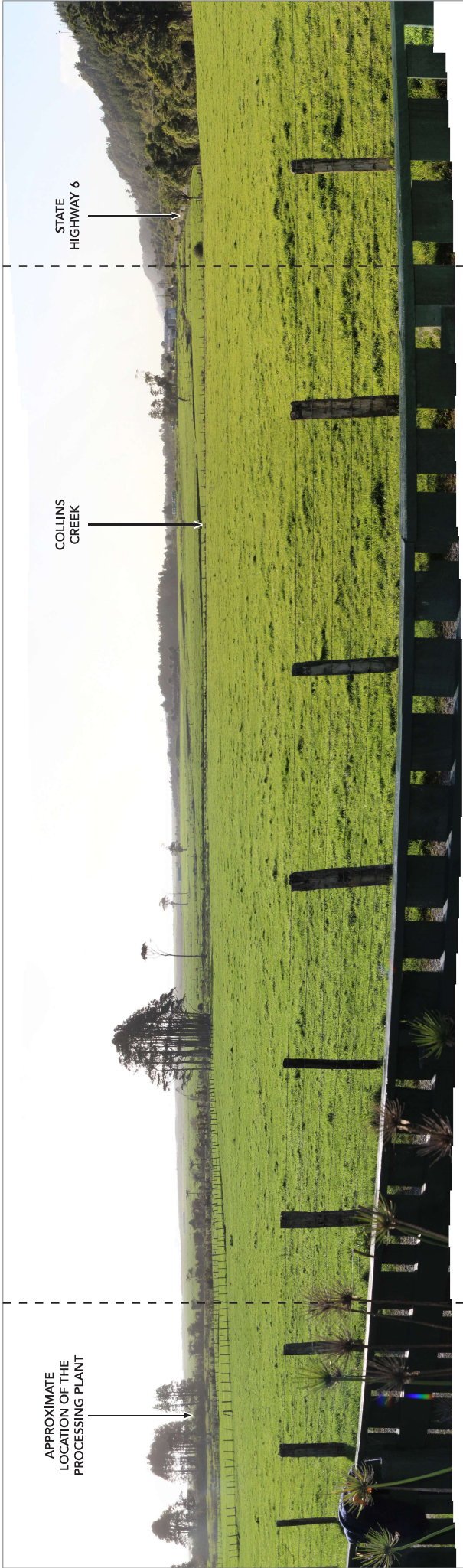
124° PRIMARY FIELD
OF VIEW EXTENT



Viewpoint 22.0: Date taken: 24th May 2023. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm. This photo is taken from outside the residence of R. Langridge and D. Van den berg. The photograph is taken from the 2nd rung of a stepladder to replicate the view of the site that would be seen from a person inside the bus.

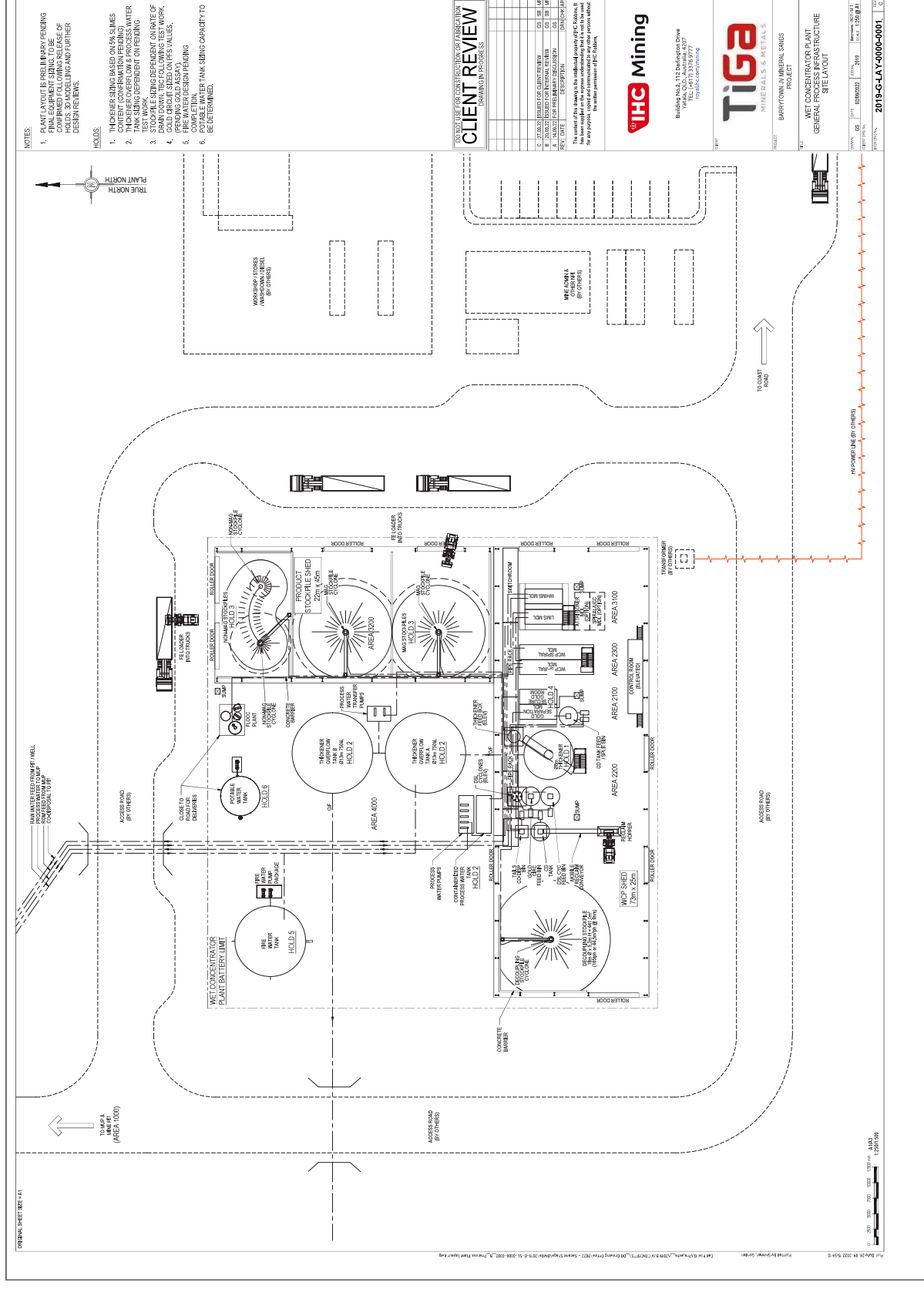
VIEWPOINT 23.0: VIEW FROM 3195 COAST ROAD (SH6) TOWARDS SITE

124° PRIMARY FIELD
OF VIEW EXTENT

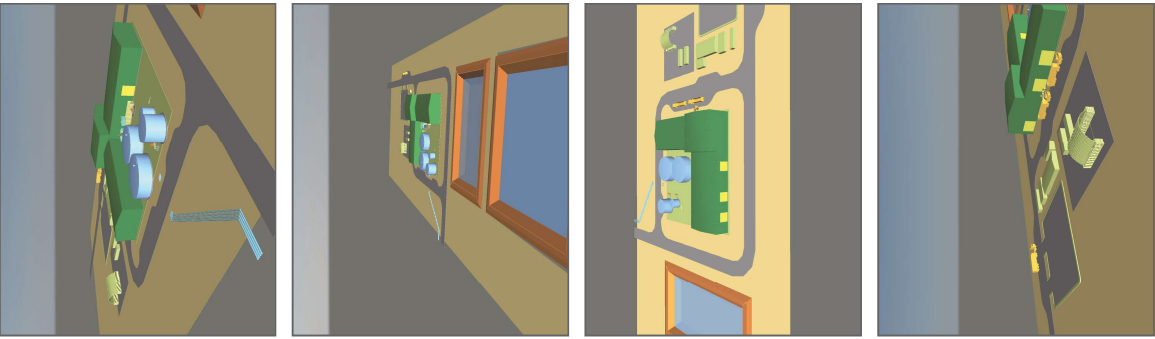
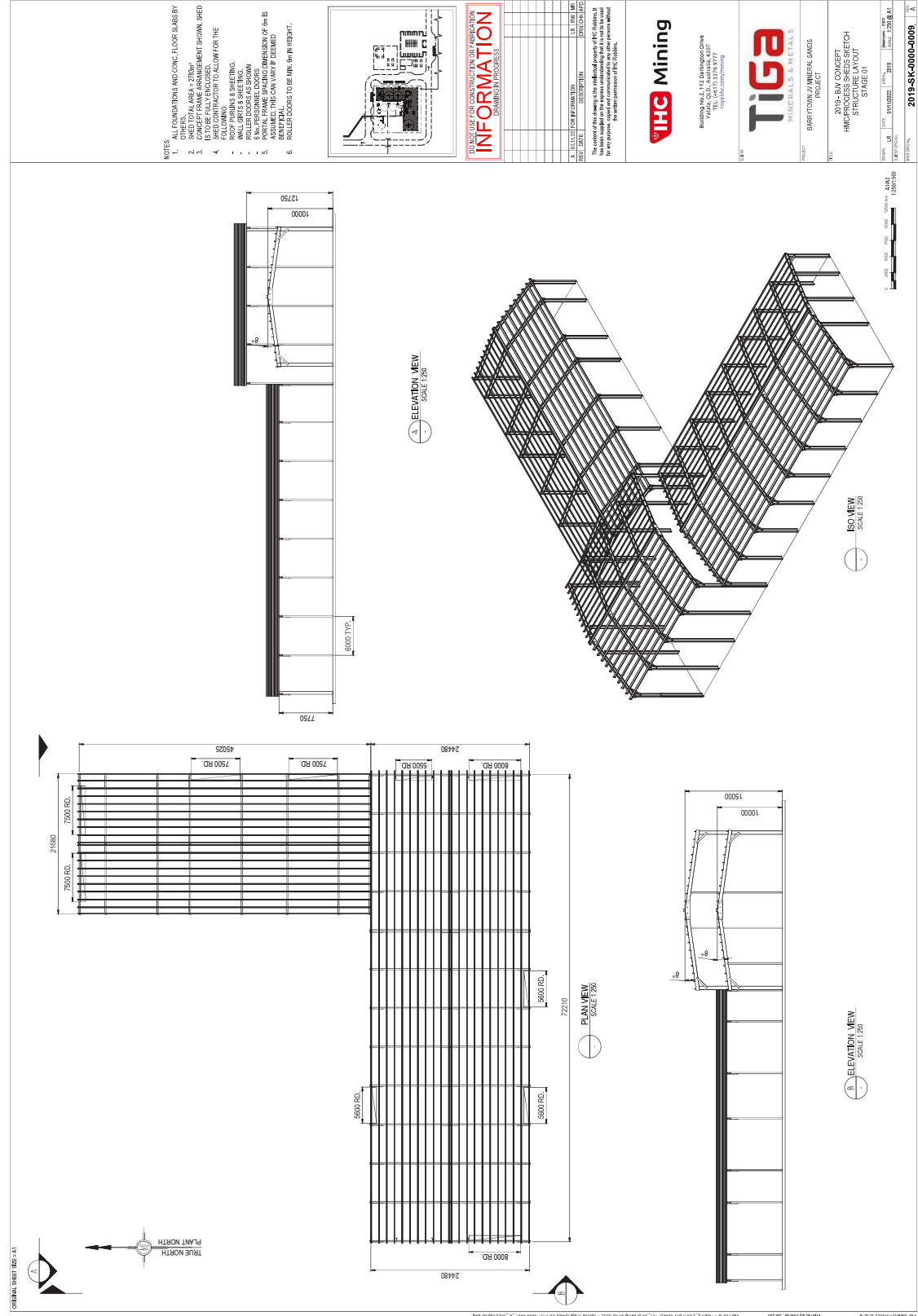


Viewpoint 23.0. Date taken: 24th May 2023. Taken with a Canon 600D camera with a 50mm lens. This is a private viewpoint. A1 size prints to be viewed at approx. 500mm distance from eye level (recommended), A3 size prints to be viewed at approx. 250mm. This photo is taken from outside the living room window at the residence of G. and G. Langridge.

12.0 THE PROCESSING PLANT AND ASSOCIATED INFRASTRUCTURE



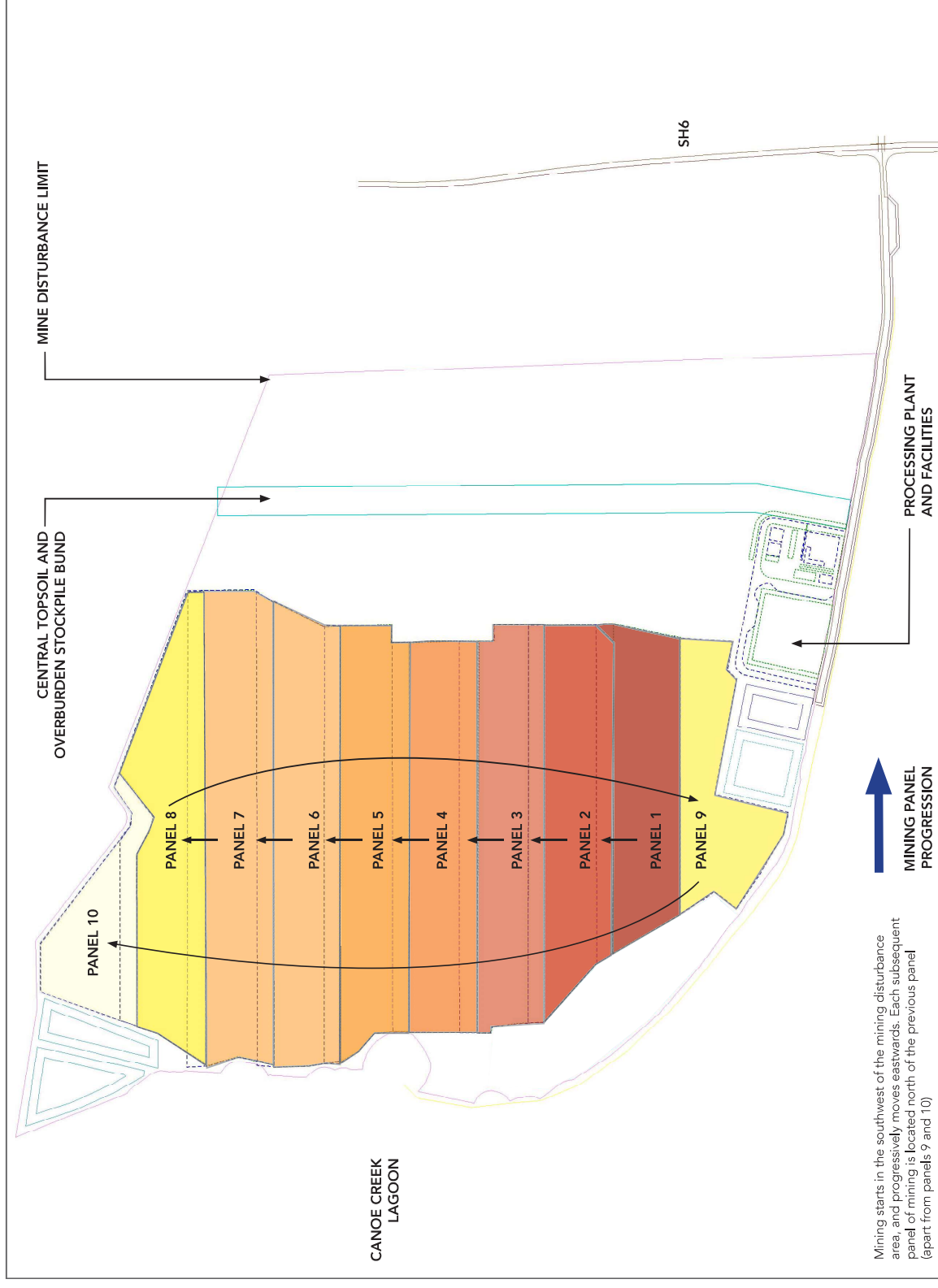
13.0 THE PROCESSING PLANT BUILDING DETAILS



SCALE: NTS

Image credits: TiGa Minerals and Metals & IHC Robbins

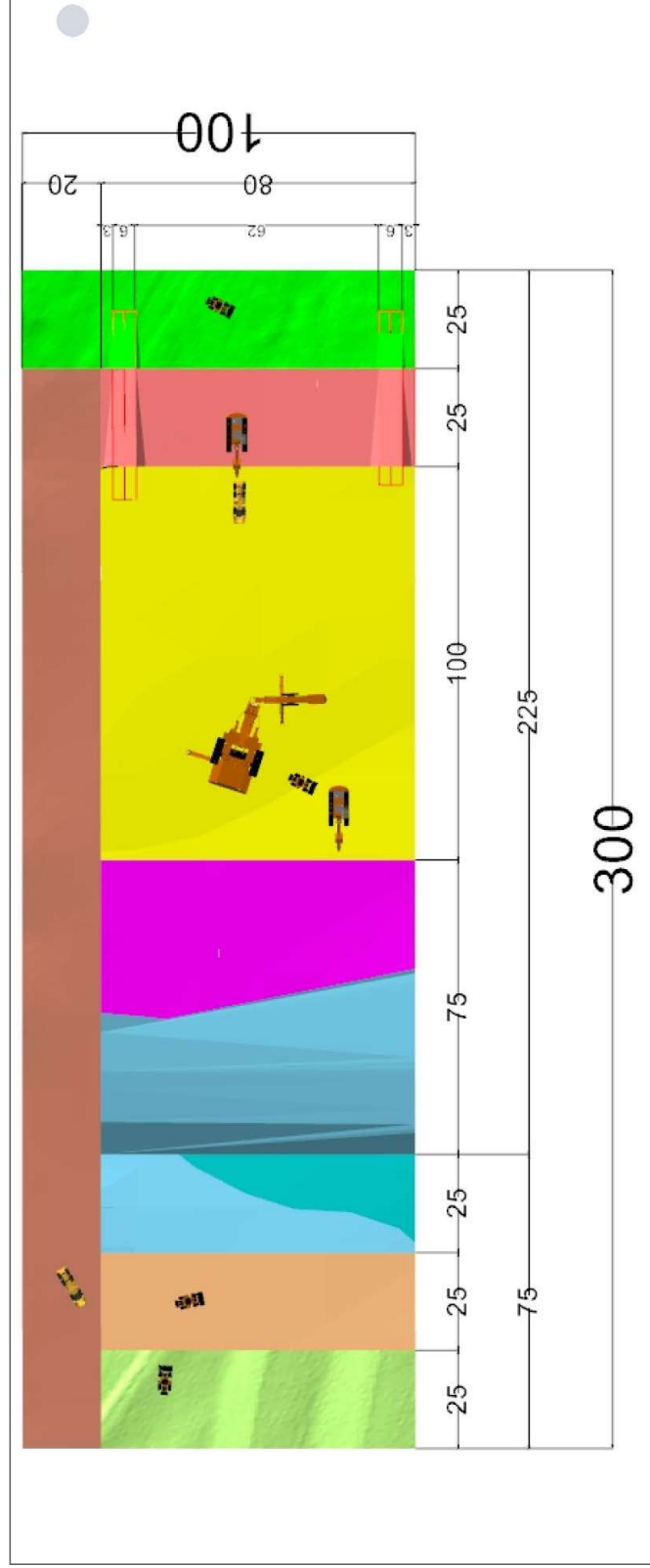
14.0 MINING STAGING PLAN



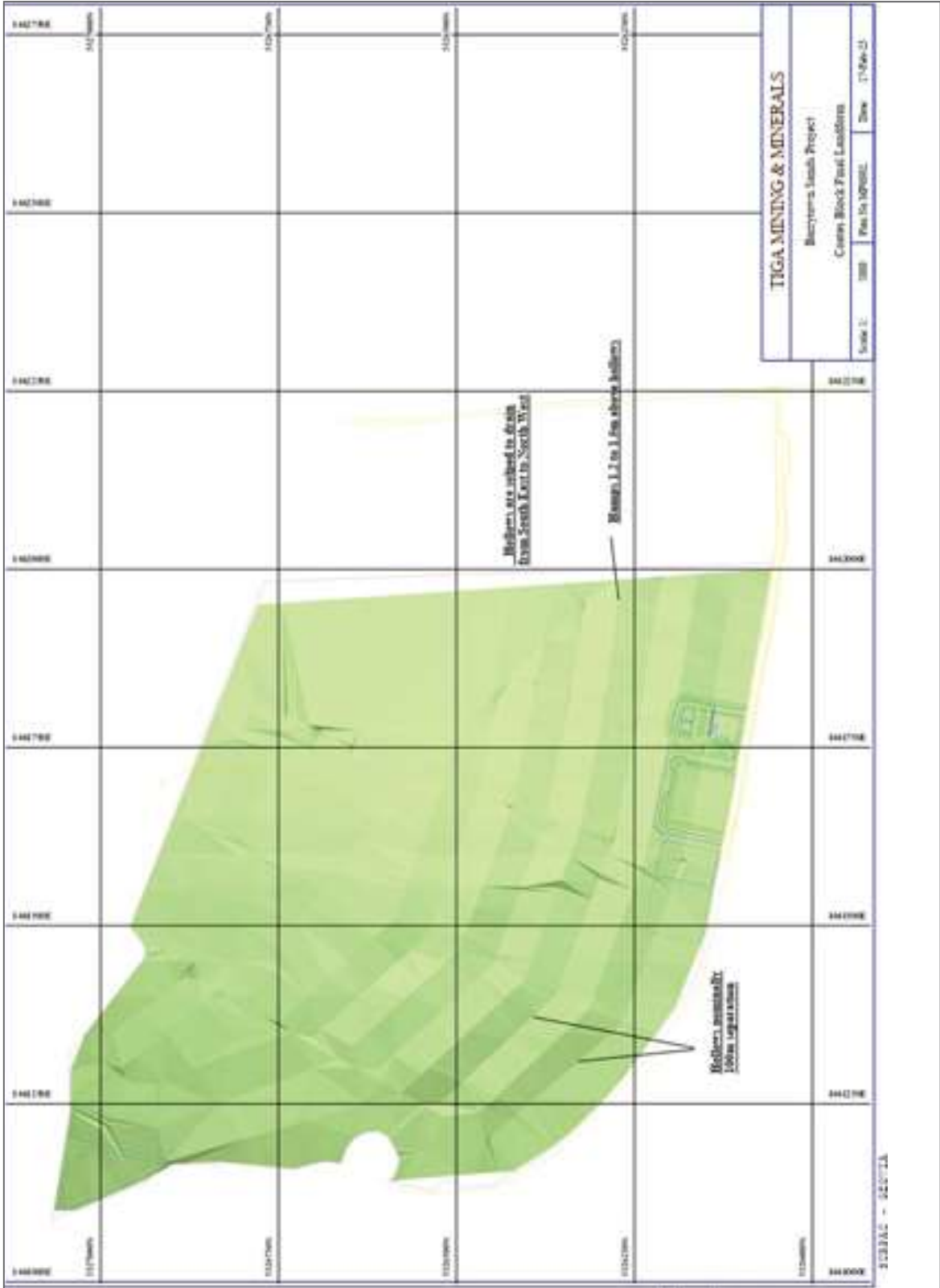
SCALE: NTS

Image credits: TiGa Minerals and Metals
and Glasson Huxtable

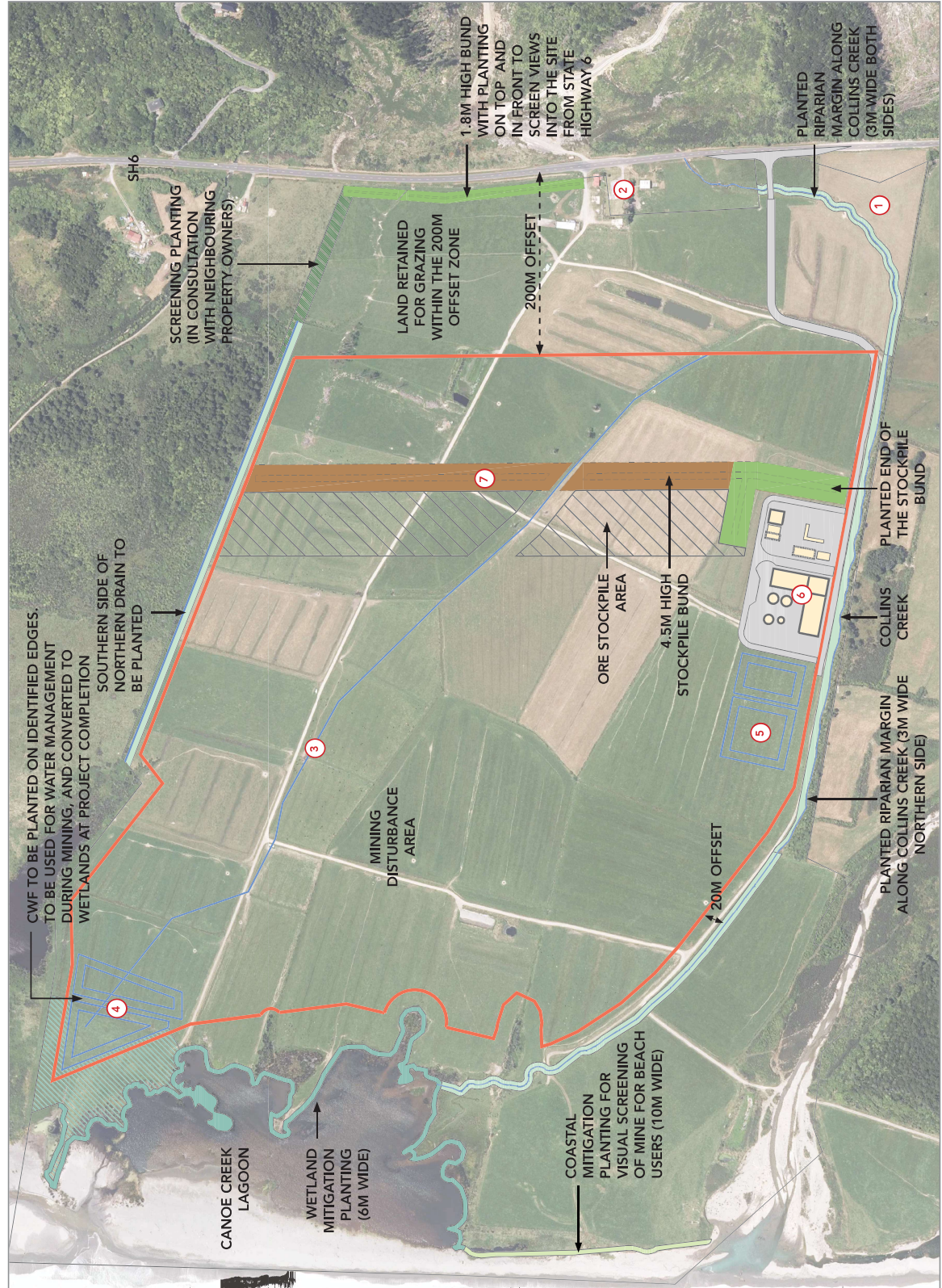
There is also a 2.0-hectare contingency in addition to the 3.0 hectare mine panel for progressive rehabilitation, to allow for weather and seasonal impacts. In winter grass may be slower to establish. At a rate of advance of 35 metres per week on average, 2.0 hectares will provide approximately 6 weeks contingency.



16.0 PROPOSED REHABILITATED SITE

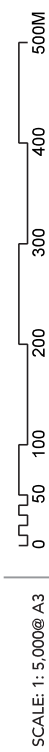


17.0 LANDSCAPE MITIGATION PLAN



KEY	
	BUND MITIGATION PLANTING
	RIPARIAN MITIGATION PLANTING
	WETLAND MITIGATION PLANTING
	COASTAL MITIGATION PLANTING
	NEIGHBOURING MITIGATION PLANTING
	CLEAN WATER FACILITY MITIGATION PLANTING
	PROCESSING PLANT AND ASSOCIATED FACILITIES
	NEW ACCESS ROAD AND HARDSTAND
	ORE STOCKPILE AREA
	STOCKPILE BUND (EASTERN BUND) FOR TOPSOIL AND OVERBURDEN
	APPLICATION AREA
	MINING DISTURBANCE AREA
	DRAINAGE AND WATER SYSTEMS
KEY MINE FEATURES	
	NEW INTERNAL ACCESS ROAD
	EXISTING RESIDENCE: 3261 COAST ROAD (RETAINED)
	CENTRAL DRAIN
	CLEAN WATER FACILITY
	MINE WATER FACILITY
	PROCESSING PLANT AND ASSOCIATED FACILITIES
	STOCKPILE BUND

Note: Refer to the plans and cross sections on the following pages which provide more details on the proposed landscape mitigation.



18.0 LANDSCAPE MITIGATION REFERENCE PLAN



KEY

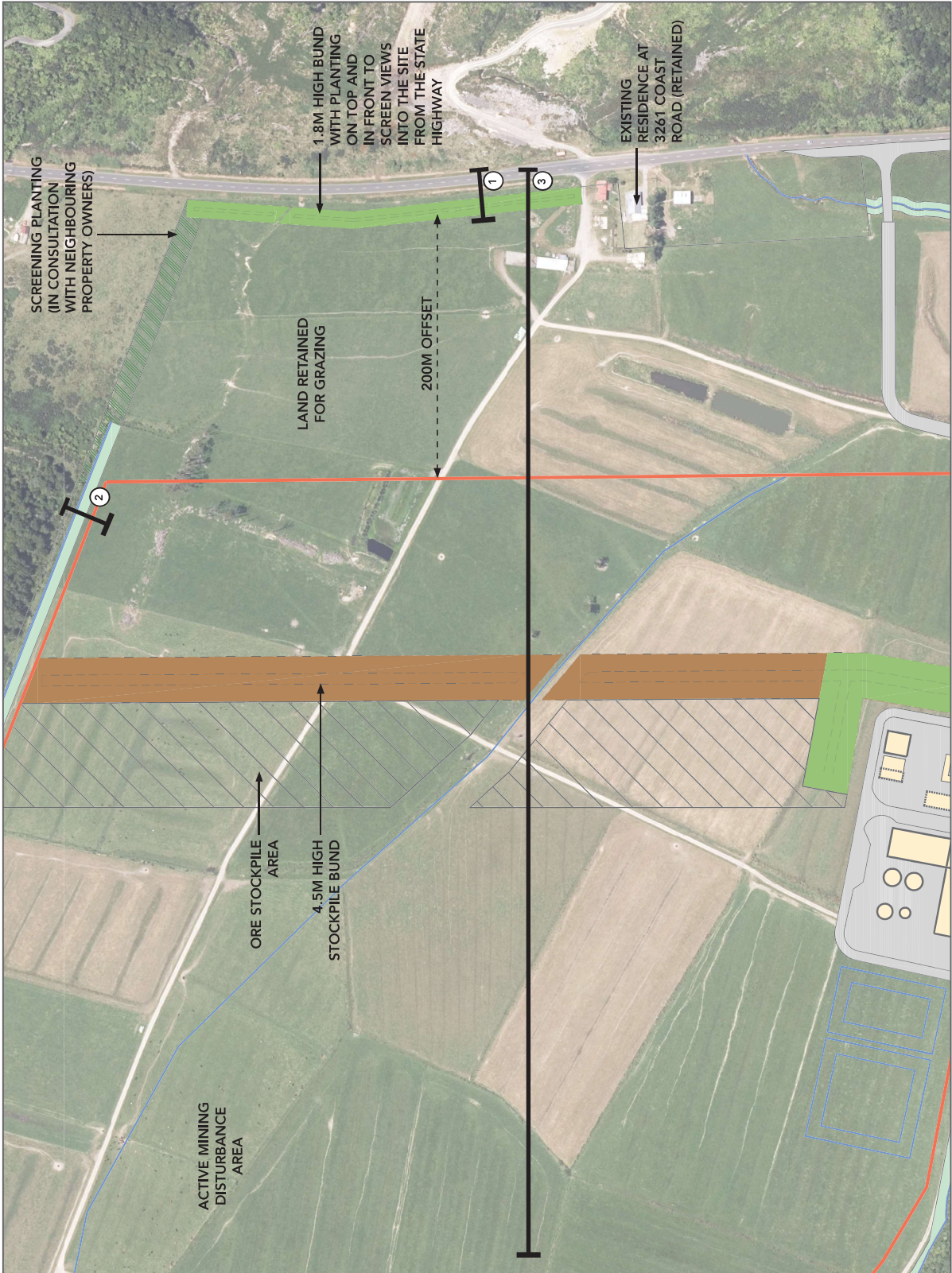
- BUND MITIGATION PLANTING
- RIPARIAN MITIGATION PLANTING
- WETLAND MITIGATION PLANTING
- COASTAL MITIGATION PLANTING
- NEIGHBOURING MITIGATION PLANTING
- CLEAN WATER FACILITY MITIGATION PLANTING
- PROCESSING PLANT AND ASSOCIATED FACILITIES
- NEW ACCESS ROAD AND HARDSTAND
- ORE STOCKPILE AREA
- STOCKPILE BUND (EASTERN BUND) FOR TOPSOIL AND OVERBURDEN
- APPLICATION AREA
- MINING DISTURBANCE AREA
- DRAINAGE AND WATER SYSTEMS

Note: Each of the dashed boxes above represent a corresponding plan on the following pages.

Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable



19.0 LANDSCAPE MITIGATION PLAN: STATE HIGHWAY 6 BOUNDARY



KEY

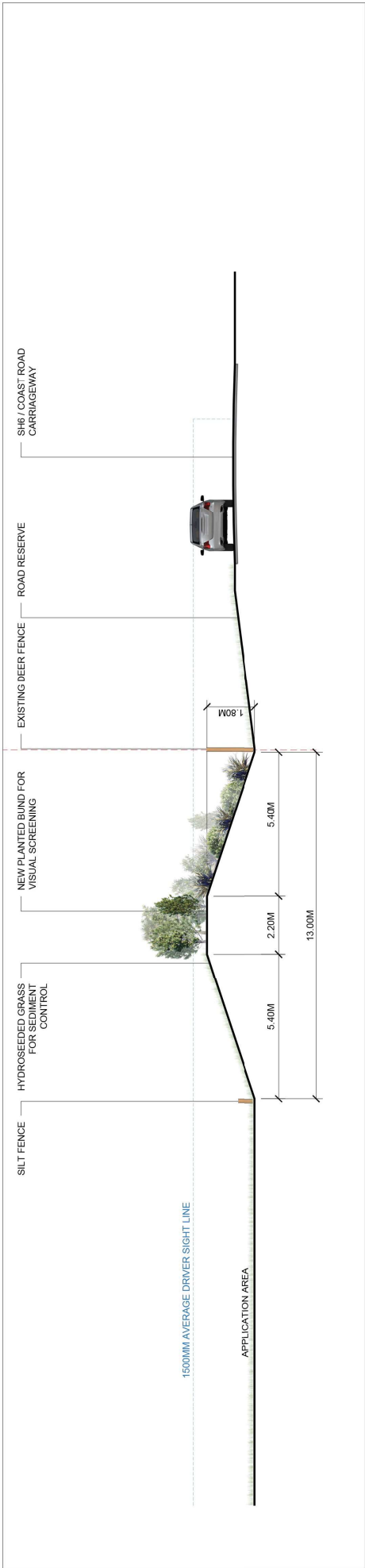
- BUND MITIGATION PLANTING
- RIPARIAN MITIGATION PLANTING
- NEIGHBOURING MITIGATION PLANTING
- PROCESSING PLANT AND ASSOCIATED FACILITIES
- NEW ACCESS ROAD AND HARDSTAND
- ORE STOCKPILE AREA
- STOCKPILE BUND (EASTERN BUND) FOR TOPSOIL AND OVERBURDEN
- APPLICATION AREA
- MINING DISTURBANCE AREA
- DRAINAGE AND WATER SYSTEMS

- 1 LANDSCAPE MITIGATION SECTION: BUND WITH MITIGATION PARALLEL TO STATE HIGHWAY 6 (SHEET 20)
- 2 LANDSCAPE MITIGATION SECTION: MORTHERN DRAIN RIPARIAN PLANTING (SHEET 20)
- 3 LANDSCAPE MITIGATION LONG SECTION: FROM SH6 TO THE MINE PIT (SHEET 21)

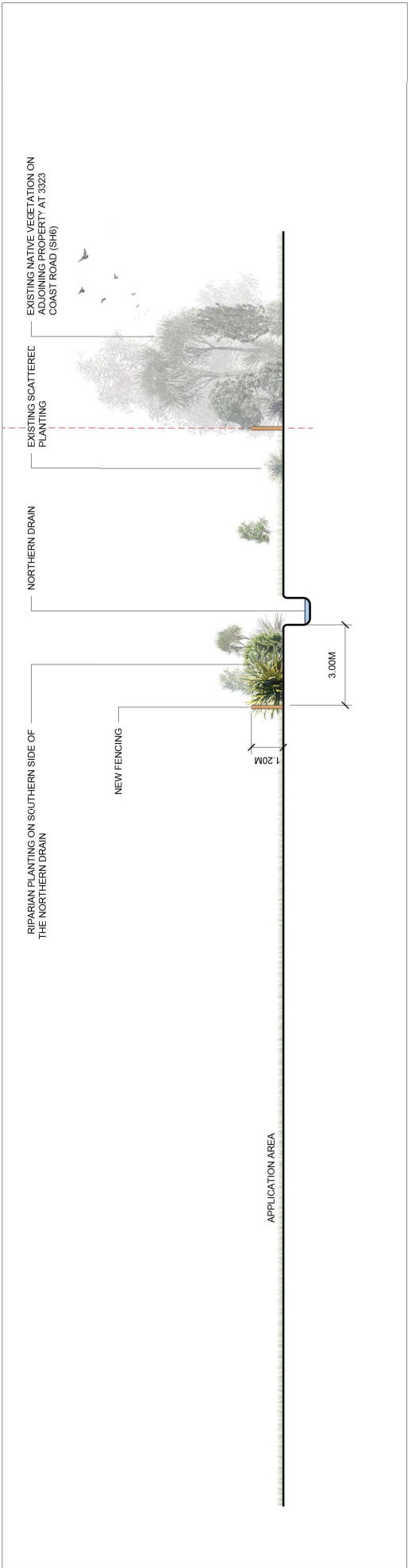
Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable

20.0 LANDSCAPE MITIGATION SECTIONS: STATE HIGHWAY 6 BOUNDARY

Note: Plant size shown is approximate to 4 years of growth.



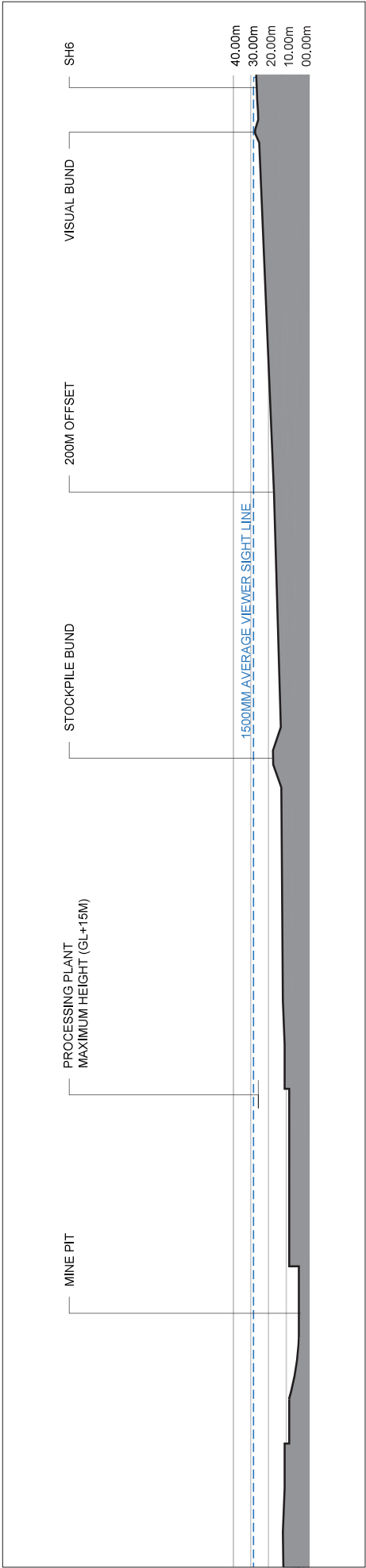
1 BUND WITH MITIGATION PLANTING PARALLEL TO STATE HIGHWAY 6
Scale: 1:150



2 NORTHERN DRAIN RIPARIAN PLANTING
Scale: 1:150

21.0 LANDSCAPE MITIGATION LONG SECTION: FROM SH6 TO THE MINE PIT

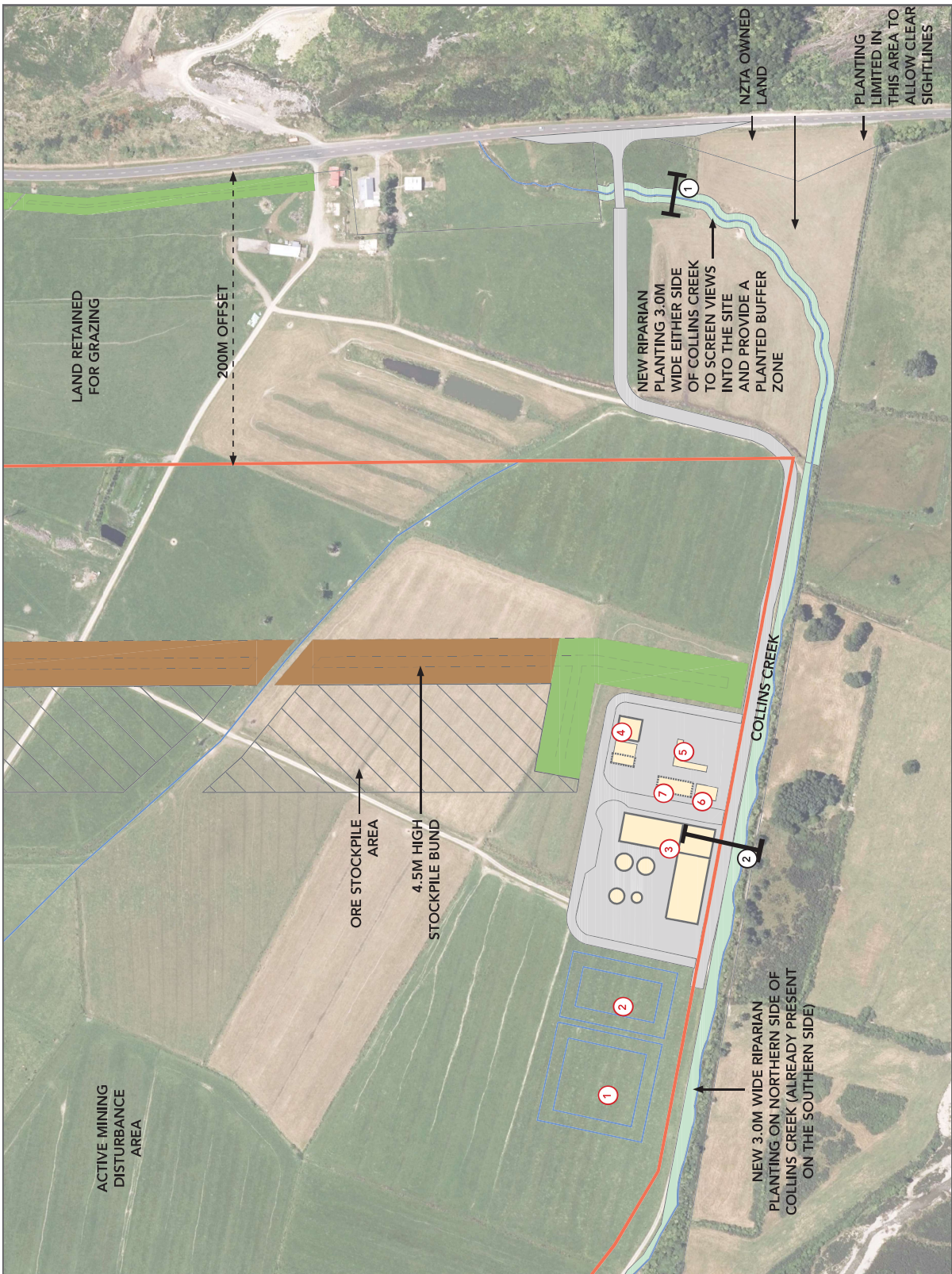
Note: This long section illustrates the downward slope across the site and the necessity for planting atop the visual bund adjacent to SH6. The screening value of the stockpile bund is nullified by the seawards slope (an average fall of 23m across the site). The planting atop the visual bund adjacent to SH6 mitigates wider views, providing the best screening over time.



3 LONG SECTION FROM STATE HIGHWAY 6 TO THE MINE PIT

Scale: 1:2250

22.0 LANDSCAPE MITIGATION PLAN: COLLINS CREEK



KEY

- BUND MITIGATION PLANTING
- RIPARIAN MITIGATION PLANTING
- NEW ACCESS ROAD AND HARDSTAND
- ORE STOCKPILE AREA
- STOCKPILE BUND (EASTERN BUND) FOR TOPSOIL AND OVERBURDEN
- PROCESSING PLANT AND ASSOCIATED FACILITIES
- APPLICATION AREA
- MINING DISTURBANCE AREA
- DRAINAGE AND WATER SYSTEMS
- CROSS SECTION OF COLLINS CREEK SOUTH EASTERN CORNER (SHEET 23)
- CROSS SECTION OF COLLINS CREEK ADJACENT TO ACCESS ROAD (SHEET 23)

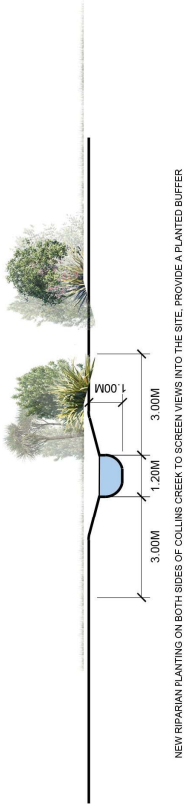
KEY MINE FEATURES

- 1 MINE WATER FACILITY: POND 1
- 2 MINE WATER FACILITY: POND 2
- 3 PROCESSING PLANT
- 4 MINE AND PLANT WORKSHOP AREA
- 5 OFFICE AREA AND CAR PARKING
- 6 GENERATORS
- 7 FUEL BAY

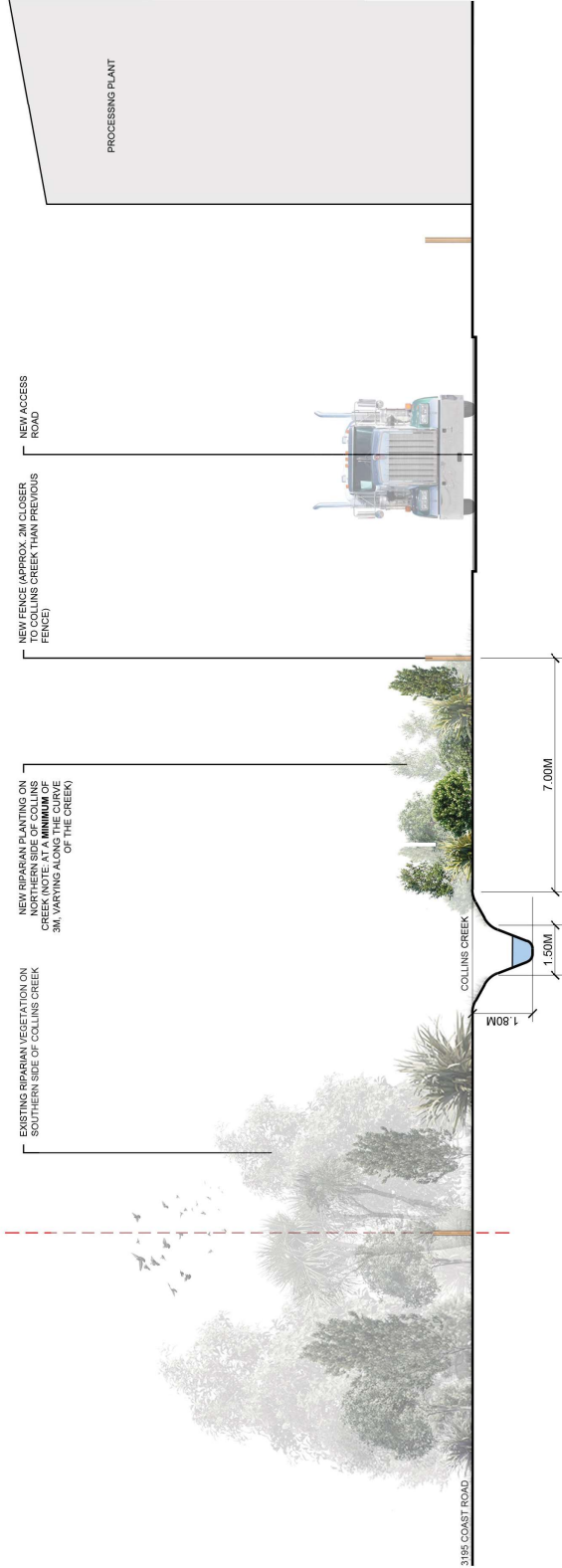
Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable

23.0 LANDSCAPE MITIGATION SECTIONS: COLLINS CREEK

Note: Plant size shown is approximate to 4 years of growth.



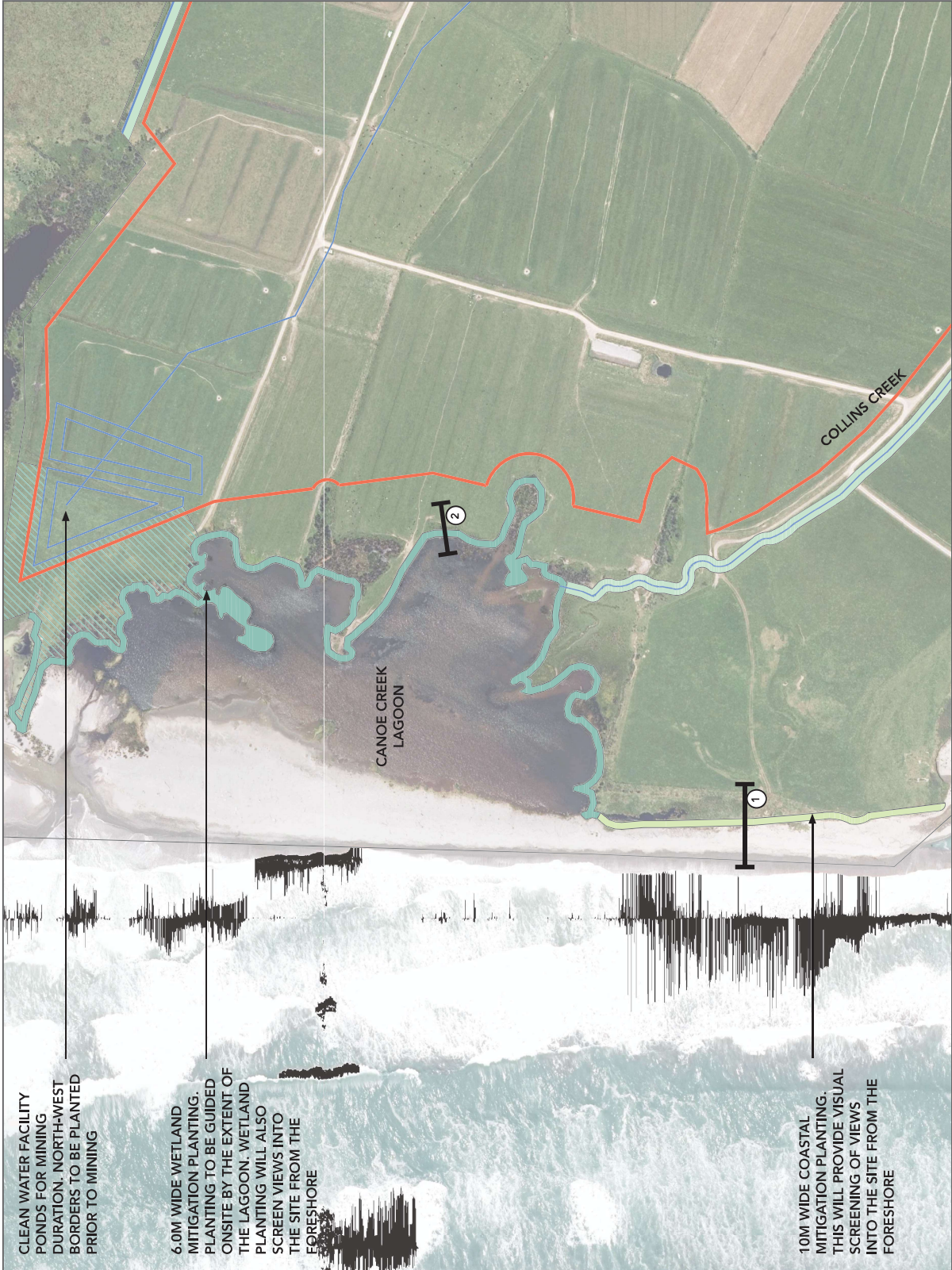
1 COLLINS CREEK PLANTING, SOUTH EAST CORNER OF THE SITE
Scale: 1:150



2 COLLINS CREEK PLANTING ADJACENT TO THE ACCESS ROAD AND MINE PLANT
Scale: 1:150

SCALE: 1: 150@ A3 0 1 5 10 15M

24.0 LANDSCAPE MITIGATION PLAN: COASTAL EDGE



KEY

	WETLAND MITIGATION PLANTING
	COASTAL MITIGATION PLANTING
	CLEAN WATER FACILITY MITIGATION PLANTING
	APPLICATION AREA
	MINING DISTURBANCE AREA
	DRAINAGE AND WATER SYSTEMS
①	CROSS SECTION OF SOUTH WESTERN COASTAL EDGE (SHEET 25)
②	CROSS SECTION OF SOUTH WETLAND EDGE (SHEET 25)

Note: Planting extents shown are indicative only and will be guided by outside extents of lagoon.

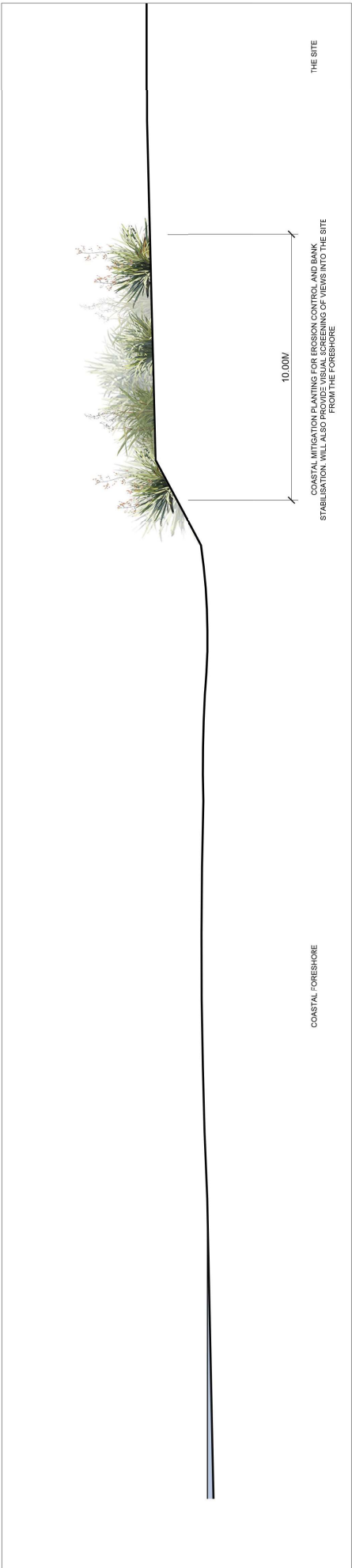
Map credits: Land Information New Zealand (LINZ) and Glasson Huxtable



SCALE: 1: 3,500@ A3

25.0 LANDSCAPE MITIGATION SECTIONS: COASTAL EDGE

Note: Plant size shown is approximate to 4 years of growth.



26.0 INDICATIVE LANDSCAPE PLANT SPECIES AND GROWTH RATES

SCIENTIFIC NAME	COMMON NAME	BUND	RIPARIAN	WETLAND	COASTAL
<i>Aristotelia serrata</i>	makomako, wineberry	x	x		
<i>Carex geminata</i>	rautahi	x	x	x	x
<i>Carex secta</i>	purei		x	x	x
<i>Carex virgata</i>	pukio		x	x	x
<i>Coprosma robusta</i>	karamu	x	x	x	x
<i>Coprosma propinqua</i>	mikimiki	x	x		
<i>Cordyline australis</i>	tī kouka, cabbage tree	x	x	x	x
<i>Dacrycarpus dacrydioides</i>	kahikatea, white pine		x	x	
<i>Juncus edgariae</i>	Edgar's rush			x	
<i>Melicynus ramiflorus</i>	māhoe, whiteywood	x	x		
<i>Phormium tenax</i>	harakeke, korari, New Zealand flax	x	x	x	x
<i>Pittosporum eugenoides</i>	tarata, lemonwood	x	x		
<i>Pittosporum tenuifolium</i>	kohuhu	x	x		
<i>Typha orientalis</i>	raupō, bull rush			x	

PLANT GROWTH

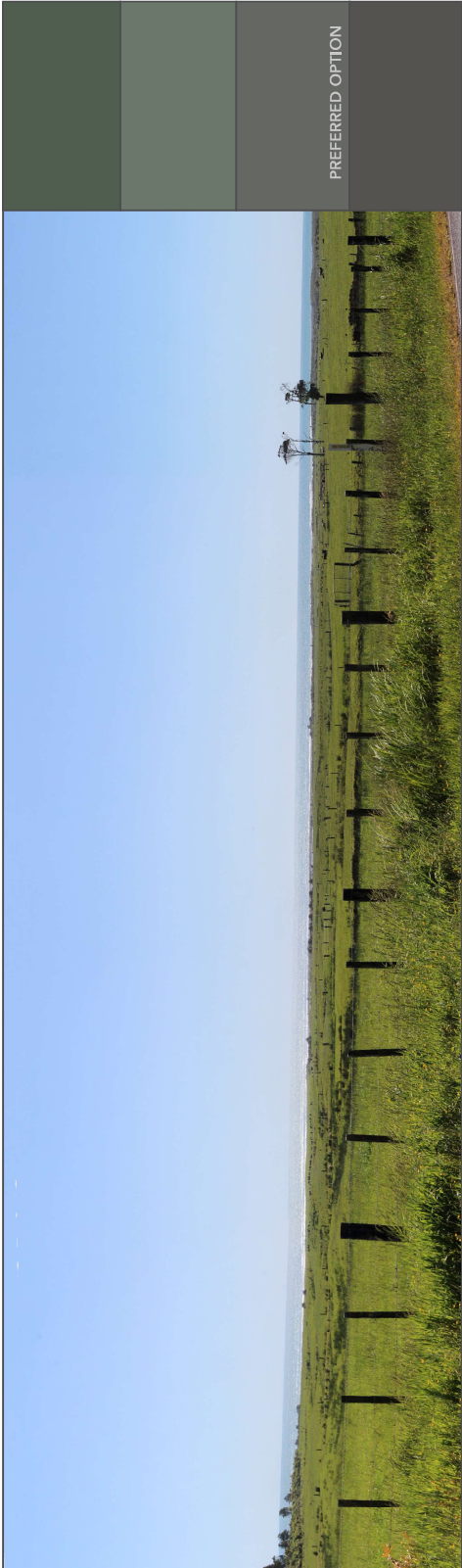
PROJECT YEAR	MINE STAGE	NATIVE PLANT HEIGHT
1	-	Seed Collection
2	-	0.5m at planting
3	1	0.90M
4	2	1.30m
5	3	1.70M
6	4	2.10M
7	5	2.50M
8	6	2.90M
9	7	3.30M

Notes:

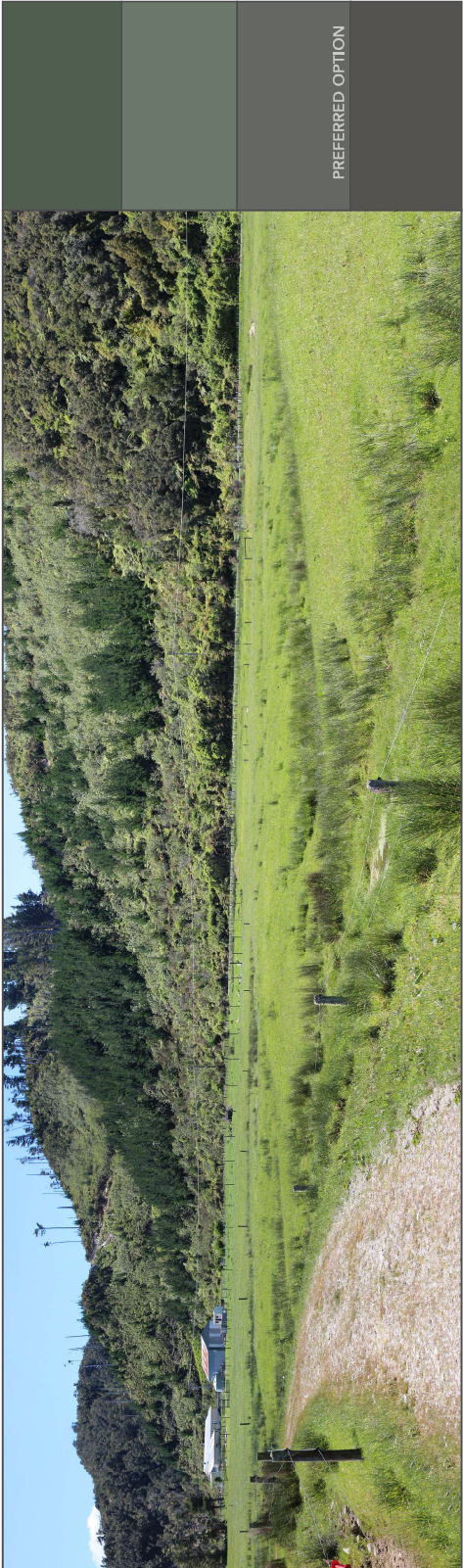
- Plant species and palettes provided will be subject to further refinement through detailed planting plans, accompanying plant schedules, and consultation with the project ecologist.
- Plant size shown in the previous cross sections are approximate to 4 years of growth.
- An approximate growth rate of 0.40-0.60m per year has been determined in consultation with the project Landscape Architect [Naomi Crawford] and project ecologist [Gary Bramley]. The combined experience of these two individuals notes that these plants will sit at a lower growth rate for the first two years following planting, and will have an increase in growth rates in following years. It is also noted that larger individual specimens have a longer 'sitting' period than smaller ones.
- Growth rates can be influenced by seasonal fluctuations, maintenance, moisture / precipitation, exposure, ground conditions, and type of plant species.

27.0 RECOMMENDED EXTERIOR COLOUR PALETTE

It is recommended to choose one of these ColorCote swatches for the exterior (cladding and roofing) of the buildings within the site so they are viewed as a recessive colour against the background environment.



Recommended colours against views from road (majority).



Recommended colours against views from the beach (minority).

*Colour names and LRV from ColorCote.co.nz

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naomi@ghla.co.nz