

# THE COMPLETION OF THE HERMANUS CLIFF PATH

*An independent report commissioned by the Hermanus Cliff Path Action Group,  
and undertaken by Mark Thomas Architects, Henry Fagan and Partners,  
and Bernard James and Partners*



HERMANUS  
**CLIFF PATH**  
ACTION GROUP



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**mta**



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# CONCEPT REPORT

## LINKING THE HERMANUS CLIFF PATH

### SITE OVERVIEW

Hermanus is a medium sized town in the Western Cape's Overberg region. It is known for its exceptional natural beauty, unique indigenous vegetation, and world-class whale watching. It is both a thriving coastal town and an established destination on the South African tourist map.

Our project aims to connect two separate coastal walkways across one of the town's most scenic stretches of coastline, a region commonly known as Pooles bay. The existing cliff path, an icon of the town, follows a route from the Klein River Estuary in the East, to the New Harbour in the west, but is broken for almost 1km by thirteen linked private properties which have property rights up to the high water mark.

The site is characterized by indigenous coastal vegetation, rugged rocky cliffs and an ever changing marine landscape, allowing for memorable opportunities for whale watching, bird watching and even sightings of the Cape Otter. The Pooles bay coastline borders the Walker Bay Whale Sanctuary Marine Protected Area and the Fernkloof nature reserve. The site has various geographical conditions, steeply angled cliffs, horizontal bedrock and loose pebbled beach areas.

### BACKGROUND INFORMATION

The full stretch of the coastline under study has been surveyed using advanced Point Cloud Survey equipment. This process produces a digitally accurate 3 dimensional matrix of points (in a cloud), ie every rock has been surveyed ! This information will become invaluable in the design development and working drawing stage of the project, where the Consultants will have full access to complex digital terrain information from the desktop.

Part of this survey includes the definition of the High Water Mark (shown in red on the attached drawings). This line is still to be confirmed and verified by the Surveyor General, so the scheme as presented allows a leeway of 3.0m on the landward side of the HWM until this has been legally defined.

### THE CONCEPT

In order to be able to have linked public access from Sea Road to Mollegren park, the entire path has been designed on the sea side of the prescribed high water mark (HWM). Although there are a few areas where the access would be a lot simpler, all the depicted current design work is located off any and all privately owned property.

The consultant team looked at structures in the region that have survived on the sea side of the high water mark, namely tidal pools, harbour walls and dollosse. All three of these share the same materiality, i.e. appropriately designed concrete as the principle structure. Concrete that is correctly re-inforced and specified has proven to be hardy enough to withstand the extremes of stormy weather and high tides, plus the corrosive effect of seawater and the abrasive and destructive action of heavy seas.

The concept therefore is a geographical solution along the HWM, a man-made concrete pathway that hugs the geography, and is of the rock (dowelled and cast in to the cliff-rock or bedrock ). The finish to the pathways is designed as rough exposed aggregate concrete, using 50mm granite chip and river sand in the mix, to bring out an earthy colour, prevent slipperiness and to encourage marine growth. The overall feel of the concrete matches that of the rock, using the existing tidal pool in front of erf 1234 as the model.



The existing tidal pool on the seaward side of erf 1234

The many level changes will be taken up by comfortable steps (risers 150 treads 350), in groups of 3 or 5 risers. The concept is to keep the new pathway as close to bedrock level as possible and to limit the drops either side to a maximum of 500mm. Where helpful, the pathway will have a fall on it, not more than 1:12. In places the existing rocks will protrude through the pathway as it winds along the route of the surveyed HWM. In order to allow the sea water out again, the gully areas are bridged by crossings made of heavy duty sugar gum beams connected to the concrete with stainless steel threaded bar, all acting as culverts over a 3.0m span. These crossings will be situated in geographically logical positions.

There are a few areas where the HWM is at the bottom of high cliffs with difficult access and in these zones the concrete pathway will be elevated and supported on buttressed concrete supports. These zones have a protecting concrete balustrade wall, with a thin Stainless steel grab rail. The concrete balustrade walls are at an angle to deflect the forces of the waves in high seas.

The conceptual intention with the use of concrete is to create a tough, natural looking intervention that blends into the geography of the coastline, and offers a tidal dependent linking route so that the full 12km path is accessible to the public.

### MATERIALS

We have limited the material to only Reinforced Concrete, heavy duty hardwoods, galvanized reinforcing and stainless steel fixings and rails. The attached pictures show the palette of colours and textures of the site,



### METHOD OF CONSTRUCTION

A team of Contractors has looked at the project with the Consultants. There are three different solutions required.

The first is the in-situ shuttering of the elevated balustrade pathway on concrete buttresses. This will require custom timber forms (curved) to create shuttering for the reinforced concrete and cut ply shutter-board to fit the varied shape of the cliff rock.

The second is for the battered pathway, steps and supports for the crossings. Here the strategy is to pack sandbags as formwork (easy curves), adding thin ply as the detailed form to take up the varied shapes of the natural rock.

The third is for the areas of varying demarcation, where actual built structures are unnecessary, just path demarcation, and here we are proposing 300x300mm solid sugar gum bollards @ 5.0m centres.

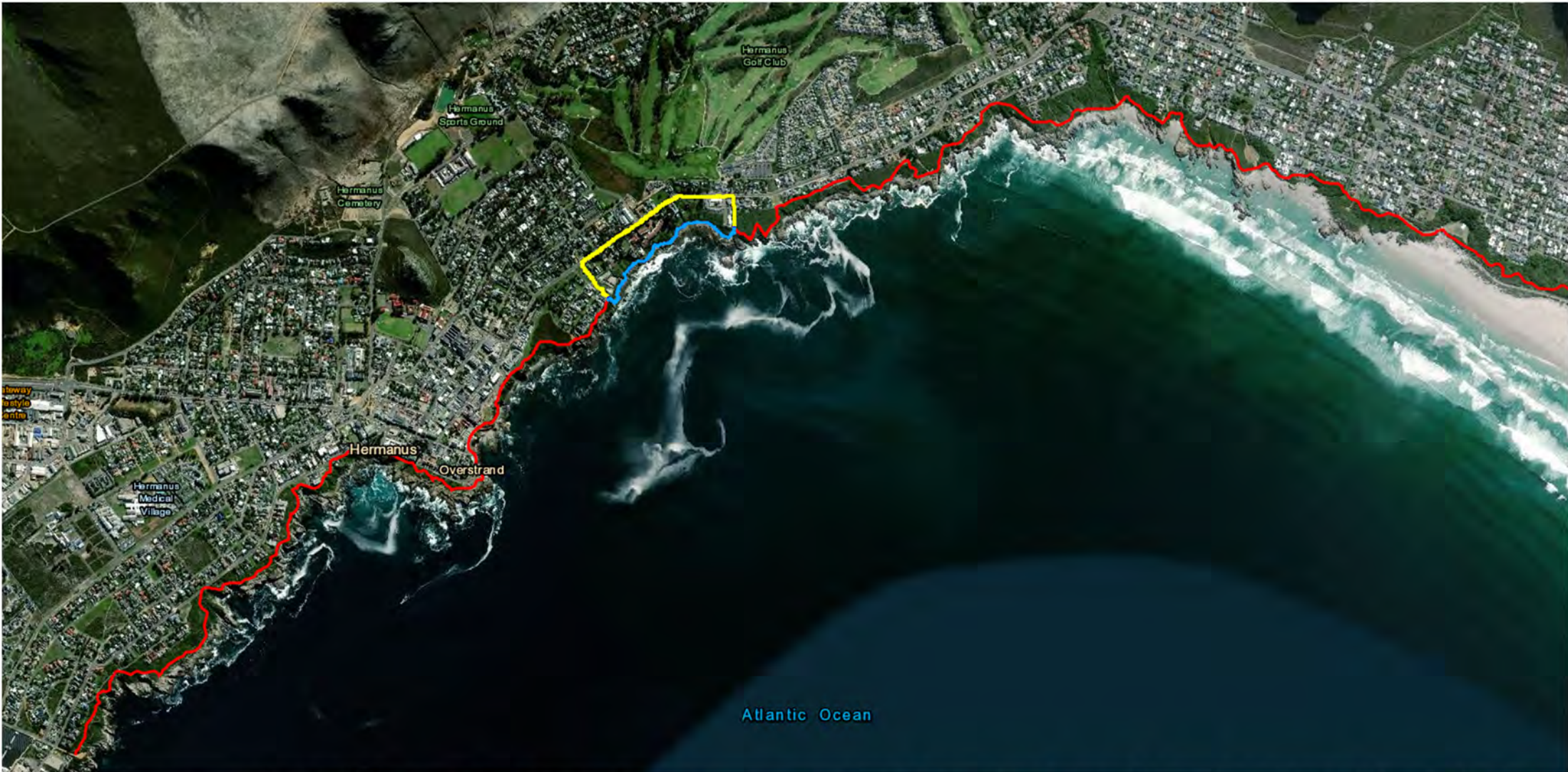
Due to the complexity of the organic forms of the site, pre-cast concrete is not seen as a solution. Site encampment and access is best suited via the Public Open Space adjacent to Erf 1233. All concrete batching and mixing to be done in controlled conditions in this area, no mixing of concrete within the coastal pathway zone. A temporary builders walkway would be constructed in the existing gully at the southerly corner of Erf 1233 and all building access to be defined and cordoned off in a 5.0m wide builders restrictive zone (shown on drawings 00-12).

In consultation with Contractors, it was mooted that smaller controlled teams of builders, working in varying positions along the route (not sequentially) would be more efficient and would limit environmental impact. Working hours would be limited in areas, depending on seasons and times, and this will be taken into account.



# LOCALITY MAP

To the right is a satellite image with the existing cliff path in red, the current detour onto main road in yellow and the proposed completion in blue.



The current detour (shown in yellow) takes walkers away from the coast to a kilometer stretch of hostile arterial road.





**NOTES TO THE DRAWINGS:**

The following drawings are placed on aerial photographs of the coast for context, and shown in bright red is the surveyed high water mark (HWM), surveyed by Geomatics in September 2020. They are at Scale 1:200 on A3, with North to the top of the page.

Hidden behind the cloud survey is extremely accurate digitally scanned topographical information (there are more than 200 million points in the cloud).

The walkway is shown in various colours (see key) at a width of 1.4m and follows the seaward side of the HWM shown in bright red. There is a 5.0 METER CONSTRUCTION ZONE on the sea side of the line. This is to accommodate the rocky and irregular landscape and as indication of the limit of construction activity. On the land side of the HWM there is a 3.5 METER BUFFER ZONE. This will block access to private property during construction.

In some sections of the proposed path, the landscape is beachy and easy to walk along already. Here the sand coloured BOLLARD DEMARCATED walkway is shown, meaning that Sugar Gum bollards would be used to demarcate a path while limiting the volume of new -build structures.

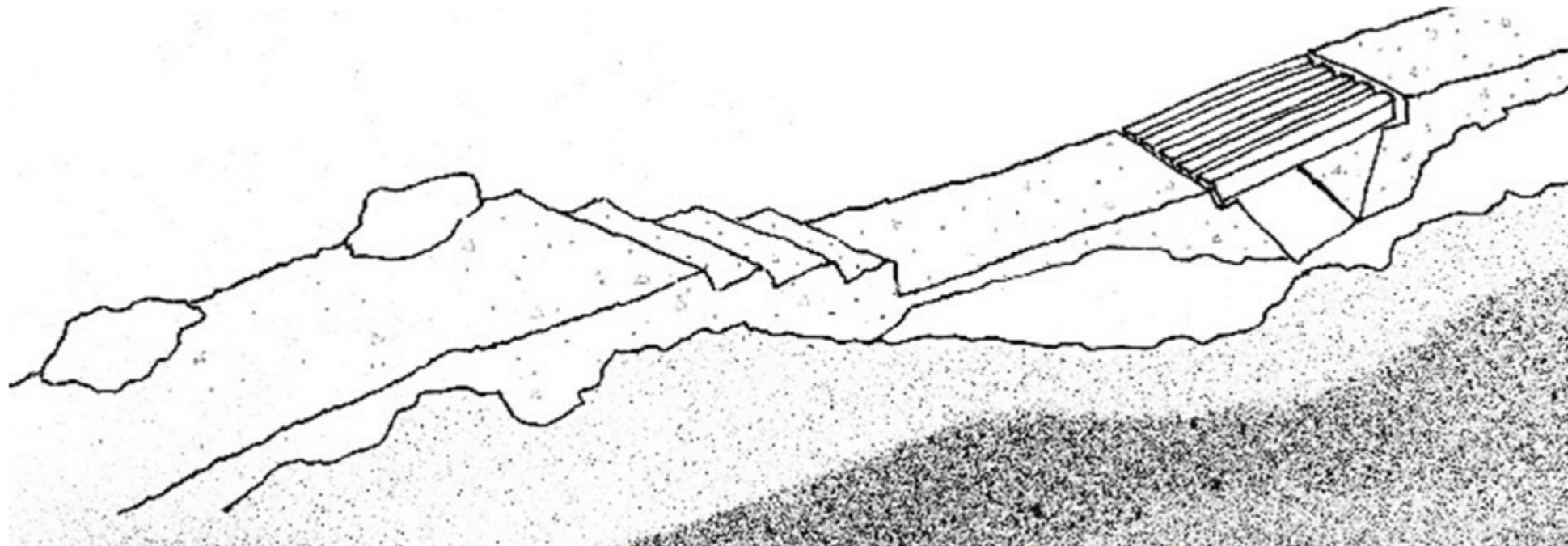
The rest of the walkway is made up of BATTERED SECTIONS and ELEVATED SECTIONS, depending on their heights above ground level and the wave force in the area. The battered section will not be more than 500mm above ground. The balustrade sections are included for areas where the cliff fall is higher than 500mm, and where the walkway would have a concrete balustrade with a steel grab-bar.

The STEPS accommodate the landscape, creating paths over large rocks, while the CROSSINGS accommodate the falls and allow sea water to flow back and under the path. These gully areas are bridged by heavy duty sugar gum beam crossings, connected to the concrete with stainless steel threaded bar.

There are two wetland areas along the walkway (refer to the Fresh Water Screening Report by EnviroSwift) and the walkway will not disrupt these. At Wetland 1, which becomes a small stream by the time it reaches the construction zone, a crossing is placed, as described above.

The drawings represent a topographical conceptual solution to linking the Hermanus cliff path, at all times looking for a minimal but permanent intervention that is sufficiently rugged to handle the specifics of the site in terms of corrosion and wave action.

-  HWM/ 2 Sept. 2020
-  Elevated concrete walkway
-  Battered concrete walkway
-  Bollard demarcated walkway
-  Possible future servitude
-  5.0m Construction zone
-  3.5m Buffer Zone / Land side
-  Steps / arrow is up
-  Crossings
-  ERF boundary
-  Sugar gum bollard







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1

1233

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2

1233

WETLAND 2

Crossing 2

Crossing 1

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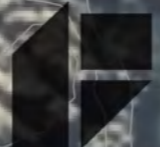
1234

3

1233

Crossing 3

WETLAND 2



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Page: 8  
Date: 19/11/2020

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4

1236

5493

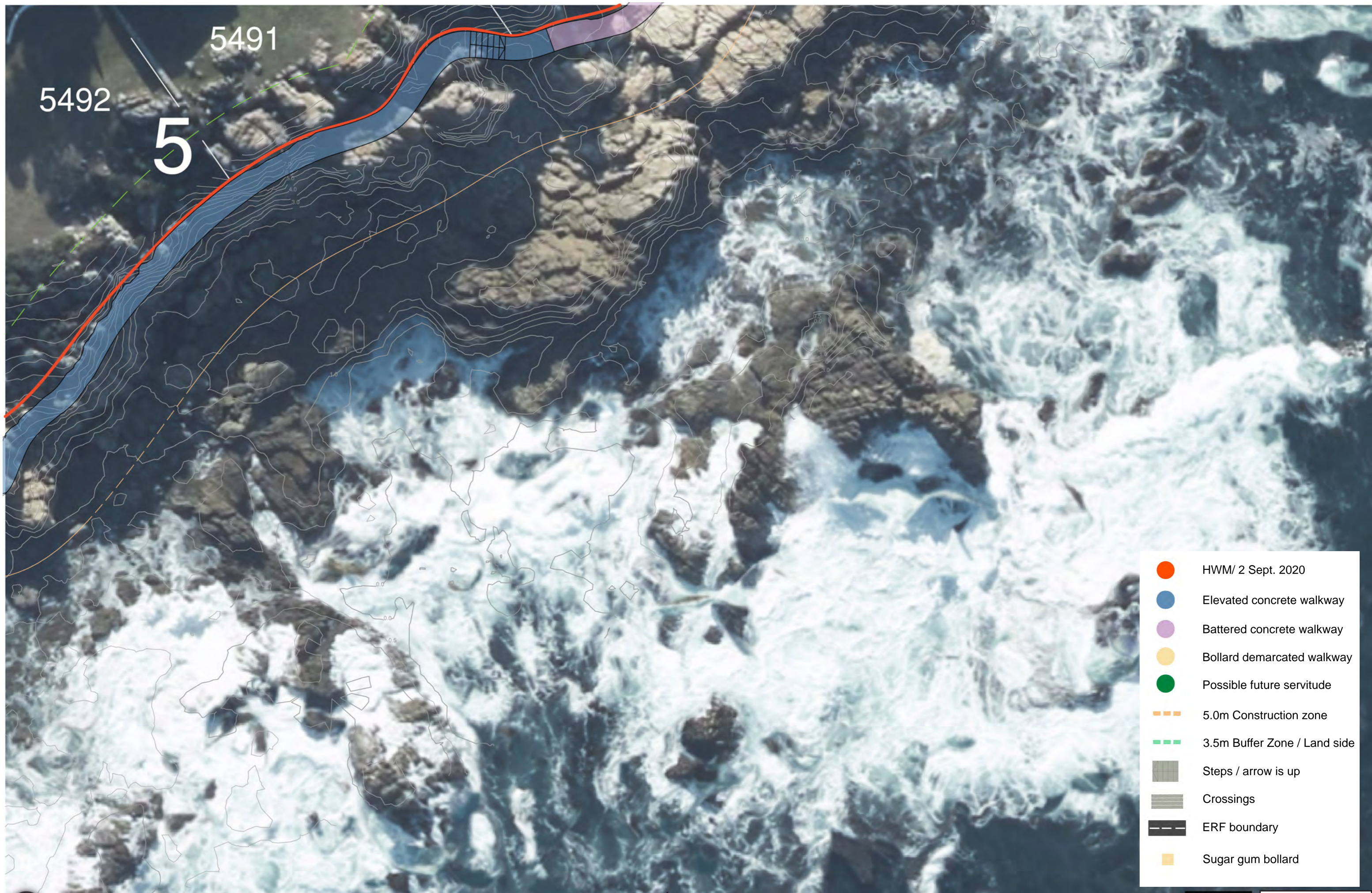
1235

1234

Crossing 4

- HWM/ 2 Sept. 2020
- Elevated concrete walkway
- Battered concrete walkway
- Bollard demarcated walkway
- Possible future servitude
- - - 5.0m Construction zone
- - - 3.5m Buffer Zone / Land side
- Steps / arrow is up
- Crossings
- ERF boundary
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- HWM/ 2 Sept. 2020
- Elevated concrete walkway
- Battered concrete walkway
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- Steps / arrow is up
- Crossings
- ERF boundary
- Sugar gum bollard



6

6337

5491

Crossing 6

Crossing 5

-  HWM/ 2 Sept. 2020
-  Elevated concrete walkway
-  Battered concrete walkway
-  Bollard demarcated walkway
-  Possible future servitude
-  5.0m Construction zone
-  3.5m Buffer Zone / Land side
-  Steps / arrow is up
-  Crossings
-  ERF boundary
-  Sugar gum bollard



7

6337

Crossing 6

-  HWM/ 2 Sept. 2020
-  Elevated concrete walkway
-  Battered concrete walkway
-  Bollard demarcated walkway
-  Possible future servitude
-  5.0m Construction zone
-  3.5m Buffer Zone / Land side
-  Steps / arrow is up
-  Crossings
-  ERF boundary
-  Sugar gum bollard



6337

8

PIPELINE

-  HWM/ 2 Sept. 2020
-  Elevated concrete walkway
-  Battered concrete walkway
-  Bollard demarcated walkway
-  Possible future servitude
-  5.0m Construction zone
-  3.5m Buffer Zone / Land side
-  Steps / arrow is up
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9

1248

STREAM FROM WETLAND 1

BRIDGE 1

1247

-  HWM/ 2 Sept. 2020
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-  Battered concrete walkway
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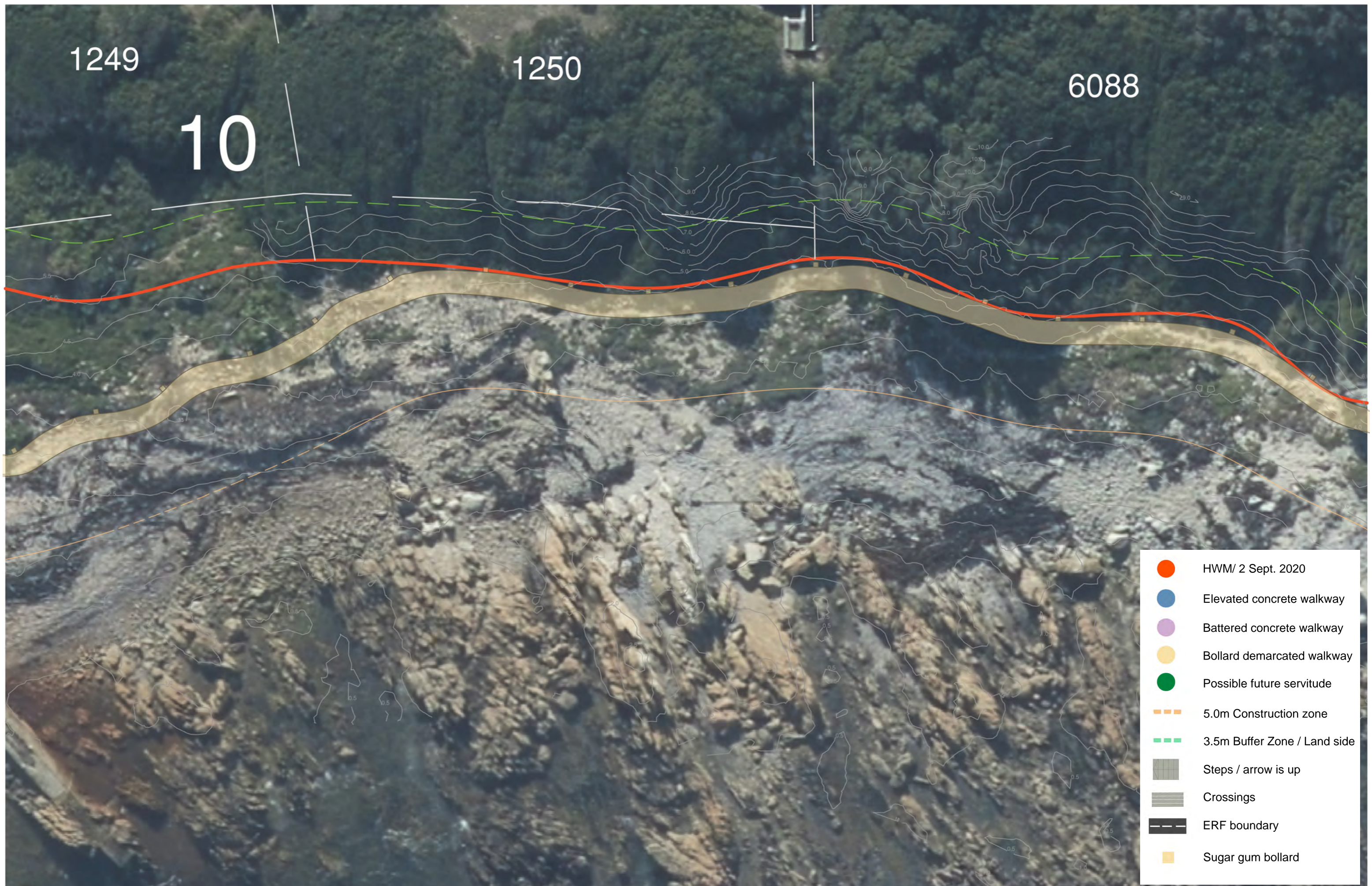


1249

1250

6088

10



- HWM/ 2 Sept. 2020
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11












6088

-  HWM/ 2 Sept. 2020
-  Elevated concrete walkway
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12

Crossing 7

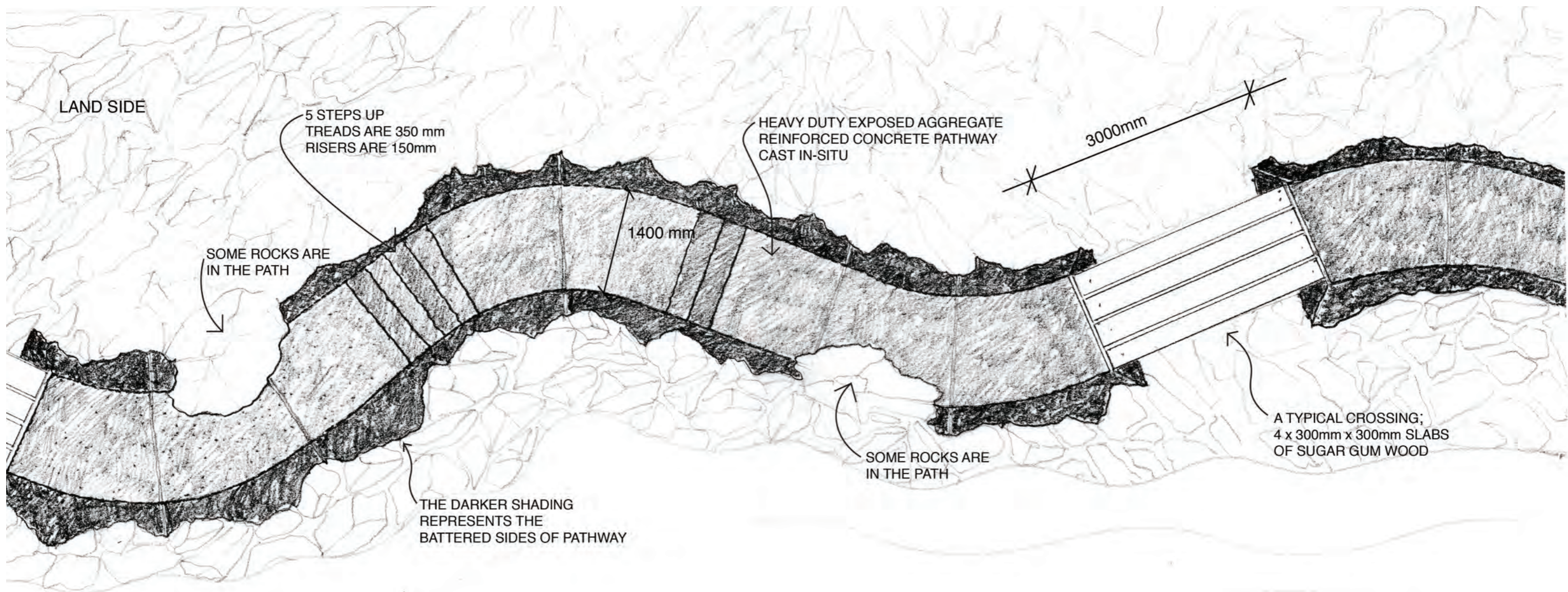
-  HWM/ 2 Sept. 2020
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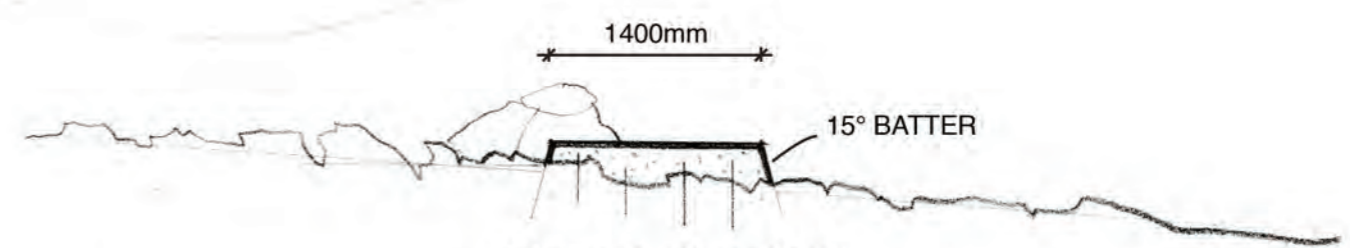


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PART PLAN



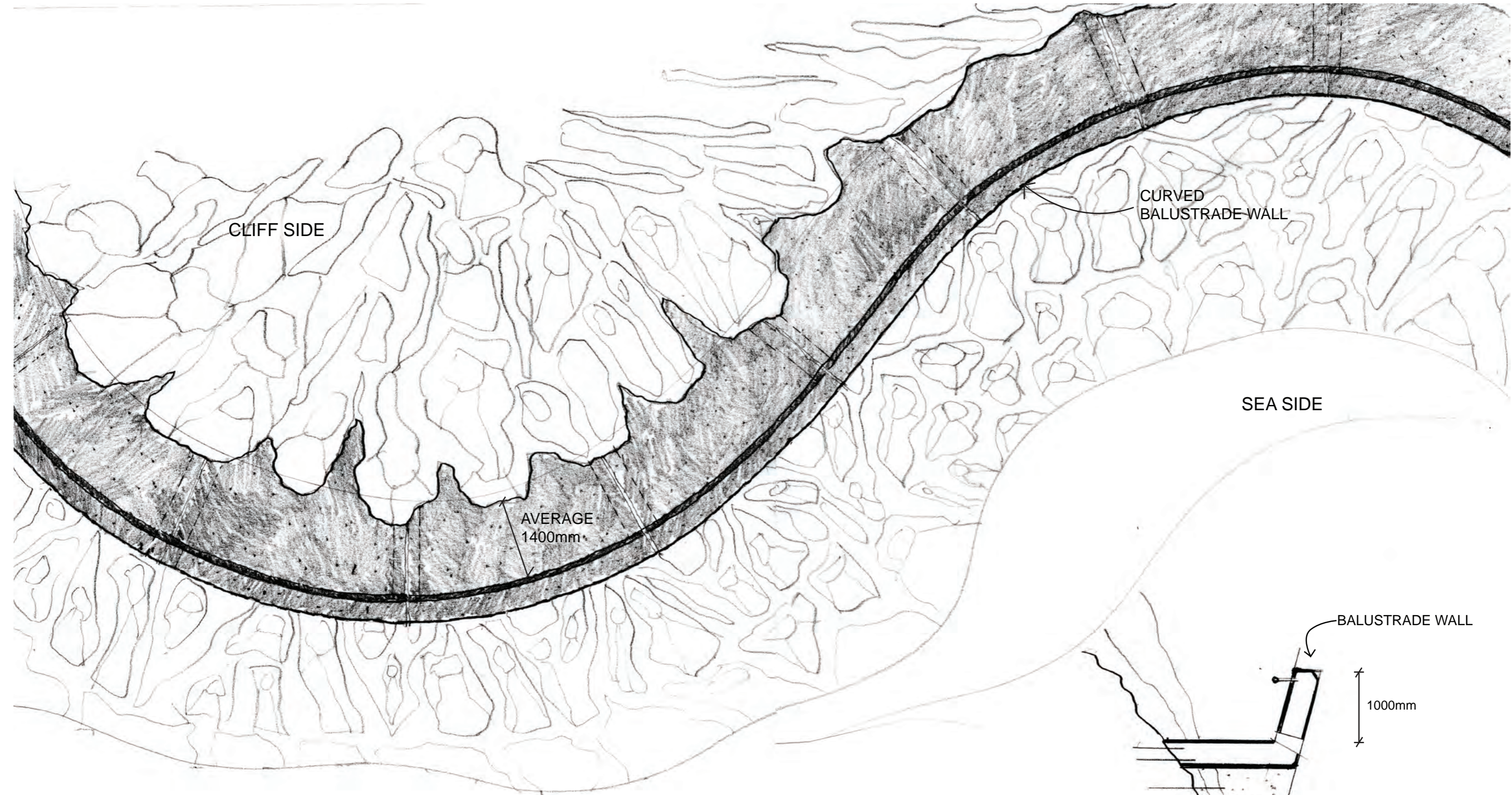
TYPICAL SECTION



TYPICAL BATTERED ELEVATION

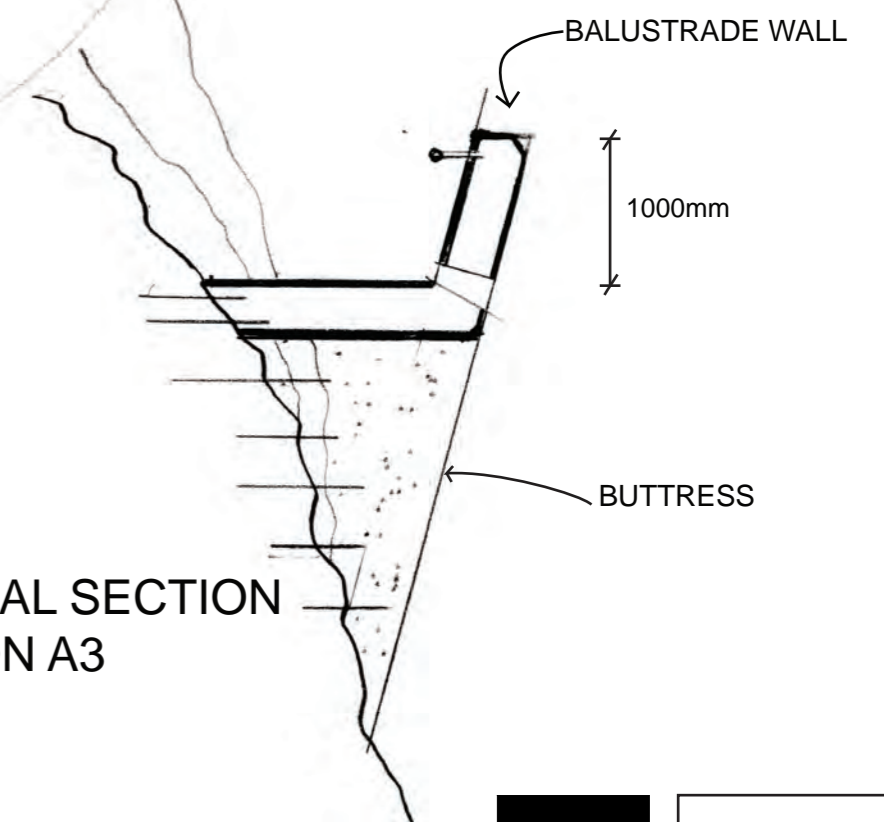
CONCEPT DRAWINGS OF BATTERED PATHWAY  
1:50 ON A3



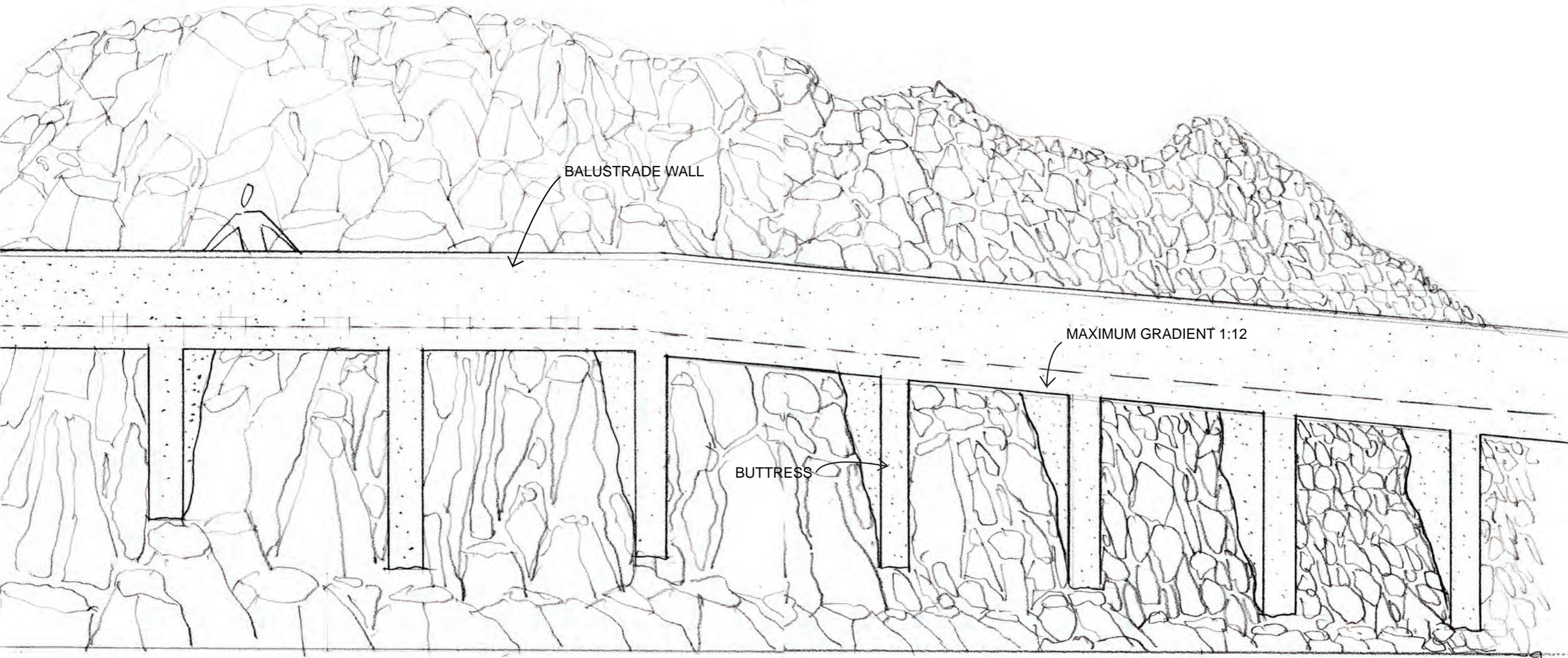


PART PLAN OF ELEVATED BALUSTRADE PATHWAY WITH BUTTRESSES  
1:50 ON A3

TYPICAL SECTION  
1:50 ON A3

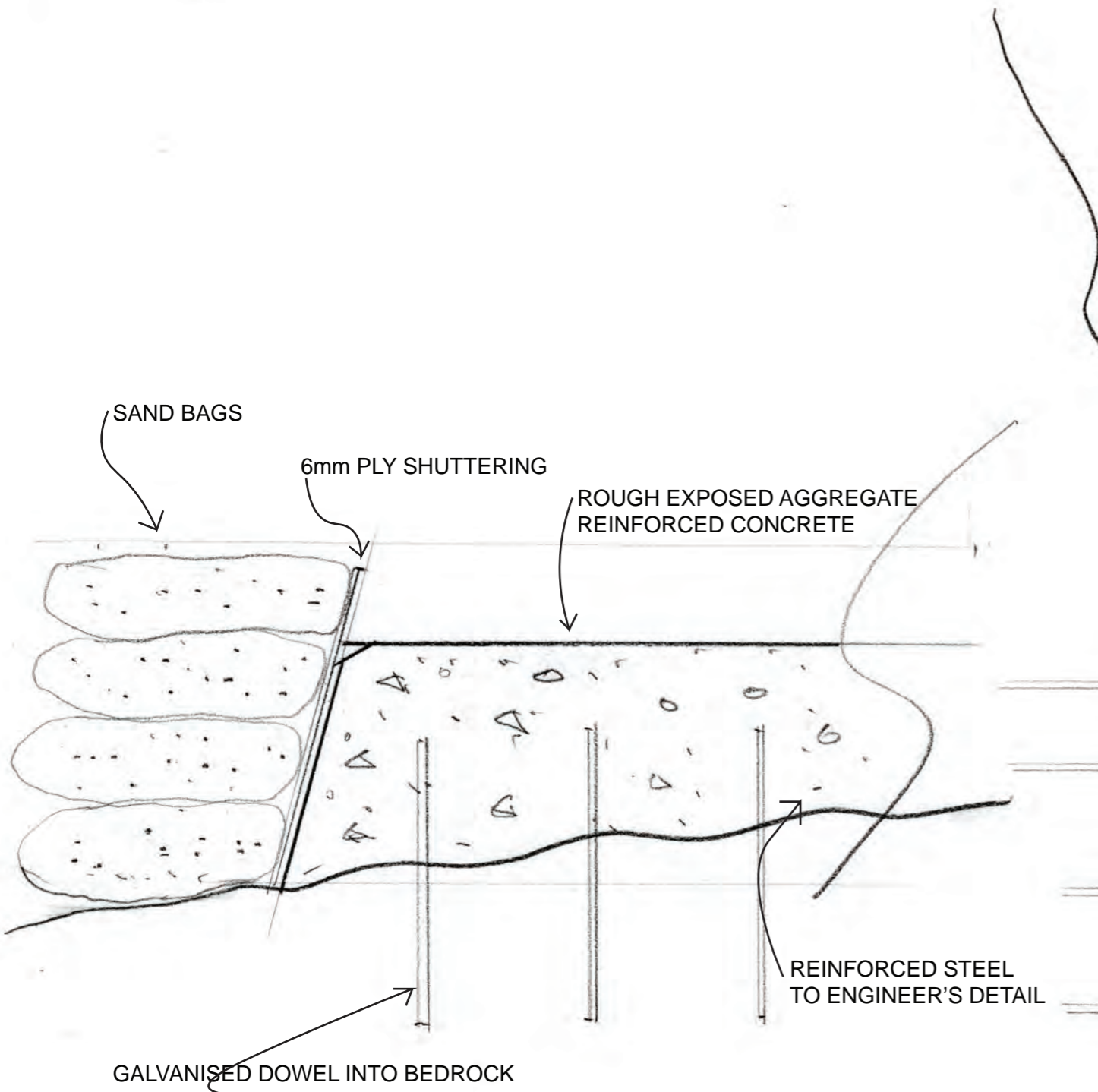




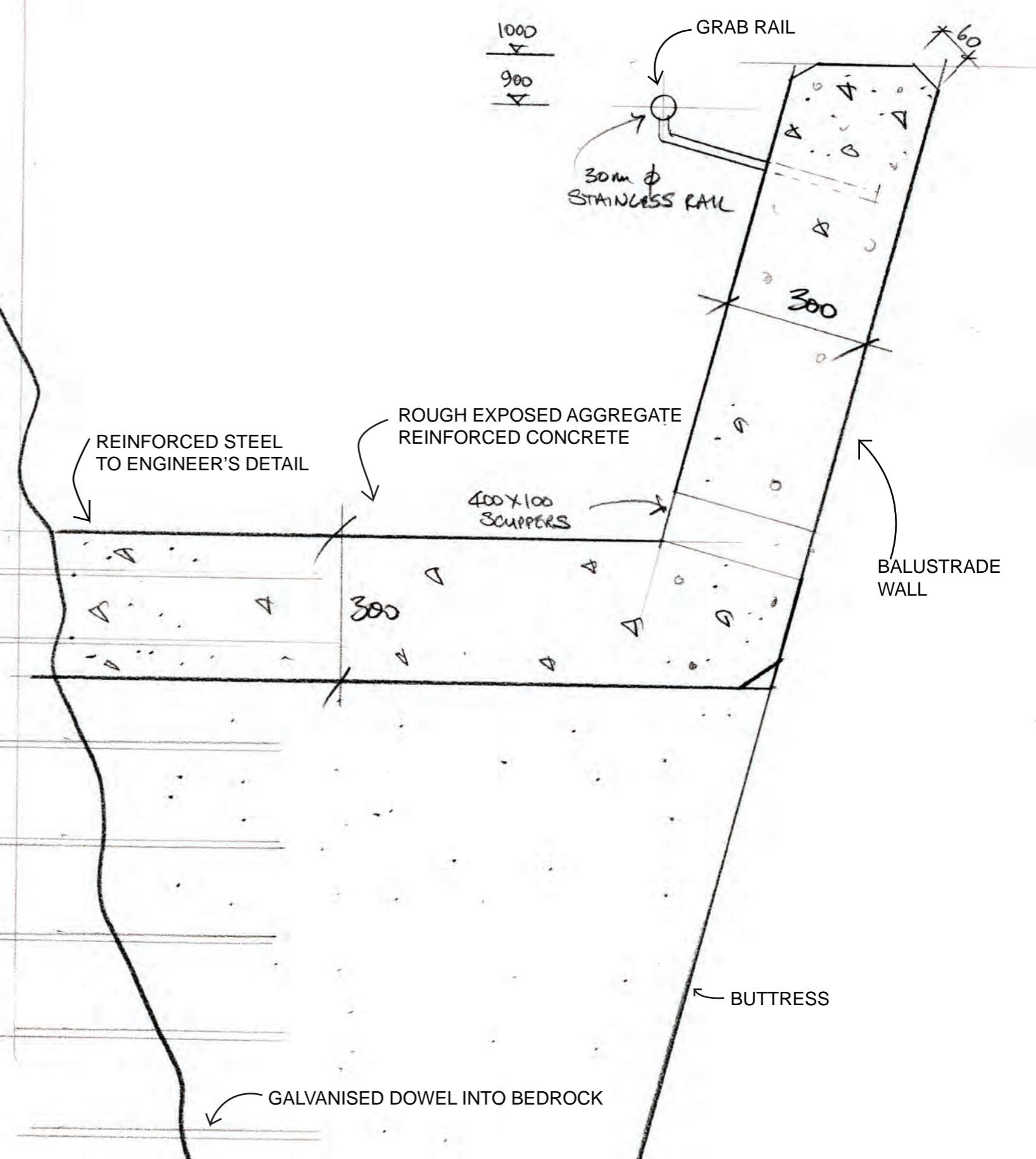


TYPICAL ELEVATION OF ELEVATED BALUSTRADE PATHWAY WITH BUTTRESSES  
1:50 ON A3





CONSTRUCTION OF BATTERED PATHWAY SECTION DETAIL  
1:10 ON A3



ELEVATED SECTION DETAIL  
1:10 ON A3



VISUALISATIONS OF THE  
PROPOSED WALKWAY SHOWING  
A BALUSTRADE SECTION (1),  
A BOLLARD SECTION (2)  
AND BATTERED SECTIONS (3-6)

