



EASTERN ENTRY AND CARPARK UPGRADE.

Design Development Principles

Design Development Process And Outcome

During the design development, Loci Design Collective completed a Gap Analysis on the concept design, a Precedent Assessment of coastal walkways, and an Options Analysis on boardwalk structures to inform the detailed design of the Merimbula boardwalk and foreshore path.

Overall, the design principles from the concept design remain the same, with a few exceptions:

- The width of the boardwalk will be 2.5m, not 2.0m
- The boardwalk sub-structure will be two posts, not a single central column.
- The boardwalk will need a balustrade at the eastern entry, where the trail passes over rock.
- A simplified design of the park at the western end of the boardwalk to reduce the hardscaping.
- A simplified design at the western jetty retains its existing character and provides more seating opportunities.
- There are additional small lookouts/platforms.
- There is a reconfigured car park midway at the sewer pump station (Bodalla Place) to improve maintenance and operations.
- The boardwalk will consist of straight edges and not be curved.

The reason for these changes are detailed in a separate document – Notable changes from the Concept Design to the Detailed Design.

Landscape Character

- The following observations capture the landscape character of Merimbula and the boardwalk:
- A bayside and tidal zone marine and littoral bushland zone.
- High scenic, ecological, economic, social, and cultural values.
- The existing boardwalk is well placed with its finishes and alignment and suited to its surrounding environment.
- It does not dominate its environment but is immersive and recessive, providing an enriching connection to the landscape, views, and ecological communities.
- Passive activities apart from walking include fishing, bird watching, marine life watching, photography, and dog walking.

The design of the new boardwalk will not diminish this character or be intrusive or a distraction within its environment. It must be subtle. The existing boardwalk,

seating areas, and jetties are used as a design reference – the current character is incorporated into the new design.

Boardwalk Character

Based on the above, the upgraded boardwalk will have the following:

- Minimal balustrades and vertical elements to ensure an immersive experience that is not corralled.
- A delicate structure that will sit as close to the ground/water as possible and be determined by high tide level.
- Soft dark grey colours that recede within the landscape, light colours for structures will be avoided.
- Barriers such as the ‘Type C’ used on most lookouts are designed to be consistent with traditional jetties. The balustrades while not required on straight runs, do make many people more comfortable and are good for leaning on and fishing from.
- Well-formed on-grade areas with stabilised granular paving and good drainage.
- Minimal concrete to reduce the carbon, environmental, and visual impacts.
- Change of surface materials (to timber deck, recycled timber, or stone) at key areas (interpretation, narrative, junction points, and lookouts).
- Class 2 bush tracks to residential streets to make safe or bridge wetland or marshy areas. They may remain as worn packed earth where possible.
- Subtle and integrated signage to address regulatory information, wayfinding, and interpretive information.
- An expression of Aboriginal heritage and culture through interpretive signage and artwork.
- Strengthened entry points with artistic intervention and interpretation.

Boardwalk width

The existing boardwalk is uncomfortably narrow at only 1.5m wide. The concept design proposed a width increase to 2.0m. As part of the design development, Loci Design Collective prepared a Precedent Assessment comparing nine (9) coastal walks across NSW, including Aslings Beach boardwalk (Eden), Waverley coastwalk (Sydney), Uranga boardwalk (Uranga), Mill Bay boardwalk (Narooma), Red Bluff boardwalk (Lake Macquarie), Terrigal boardwalk (Terrigal) Saltwater Creek boardwalk (Central Coast), Tathra headland walk (Tathra) and Newcastle memorial walk (Newcastle).



It is important to protect the high quality natural visual character of Merimbula Lake both from and back towards the boardwalk. Visitors and locals are attracted to the boardwalk for the immersive experience.



The existing features such as the western jetty will be replaced in the same locations, as this is where they have become well loved and used. The character of the walk will not be radically changed.



While in urgent need of repair, the character will be inspired by the existing with far better accessibility, durability and high quality finished. The clarity of wayfinding will be improved.

Design Development Principles

The Precedent Assessment considered boardwalk widths ranging from 1.8m to 2.5m. The Precedent Assessment found that boardwalks that were 2.5m wide were more comfortable to walk, particularly for those with dogs, children, a pram, a wheelchair, mobility scooters, or infirm walkers. Notably, 2.5m allows for a wheelchair or mobility scooter to turn around on the boardwalk. As such, the boardwalk and foreshore path width will be 2.5m.

The boardwalk will remain a walking trail unsuitable for bikes or foot scooters.

Walking Trail Classification

The boardwalk and foreshore path will meet the Australian Standards for access and mobility AS 1428.1 :2021 and Australian Standards for Walking Tracks AS 2156.2-2001: Classification and Signage.

The main trail is classified as a Class 1 walking track under Australian Standards for Walking Tracks AS 2156.2-2001: Classification and Signage. The definition of a Class 1 walking track is:

1. Generally a broad, hard surfaced track suitable for wheelchair use. Width: 1200 mm or more. Well maintained with minimal intrusions.
2. Grades in accordance with the AS 1428 series. Steps allowed only with alternate ramp access.
3. Signs for management and interpretation purposes may be used frequently. Arrow type track markers shall be used at intersections.
4. Facilities along the track may include lookout platforms, seats and barrier rails.
5. Users need no previous experience and are expected to exercise normal care regarding their personal safety.

SIDE TRAILS NOT PART OF APPROVAL

The existing side trails will be upgraded from a ‘goat trail’ to a Class 2 walking track to meet the Australian Standards for Walking Tracks AS 2156.2-2001: Classification and Signage. The trails will be made sustainable with improved drainage and track over wet areas to reduce erosion and protect the environment. The definition of a Class 2 walking track is:

1. Generally a modified or hardened surface. Width: 900 mm or more. Well maintained with minimal intrusions.
2. Generally no steeper than 1:10. Minimal use of steps.
3. Signs for management and interpretation purposes may be used frequently. Arrow type track markers shall be used at intersections.
4. Facilities along the track may include lookout platforms, seats and barrier rails.
5. Users need no previous experience and are expected to exercise normal care

regarding their personal safety.

Alignment

The existing alignment works well, integrates with the landscape and engages with key experiences. It is proposed to keep the existing alignment. Using the existing alignment minimises the impact on the marine and bushland environment.

Structural Design

As part of the design development, Loci Design Collective prepared a Precedent Assessment and an Options Analysis on boardwalk structures. The Precedent Assessment found that boardwalks that were constructed with a central pile had a thicker headstock and therefore higher visual impact. They appeared over designed and at odds with the surrounding landscape.

The Options Analysis considered the construction methodology of the central pile and determined that it is difficult to install and poses a higher risk to environmental damage and pollution. The negative impacts include:

- The requirement for a steel reinforced concrete pillar for a 2.5m cantilevered boardwalk.
- The risk of concrete spillage during construction, as well as logistics of concrete pumping in an area with difficult access.
- The risk of pollution of the adjacent oyster leases.
- The negative visual impact of a stout concrete pillar 300-400mm wide.
- More construction work needed for sleeving and piling resulting in damage to eelgrass areas.

The Options Analysis also considered a traditional boardwalk construction that is consistent with the existing. The headstocks, whilst smaller, are still visible in this construction. The Options Analysis determined that a boardwalk constructed with two posts, and a hidden headstock – creates a slim line profile and has minimal visual impact. This option is more expensive to construct than the traditional boardwalk, however, has longer durability.

Proposed materials for the boardwalk is:

- Portal timber frame and posts.
- Timber or FRP (Fibreglass Reinforced Polymer) headstocks.
- Predominantly FRP boardwalk deck with timber in ‘special areas’
- Recycled wharf timber may supplement the special areas.
- Timber post balustrades with galvanised panel inserts where required (Type A)



Character, charm and suitability for the environment of existing structures will inform new ones, including the rational geometries.



Offline nature walks will be largely unchanged, though improved where steep terrain, creeklines and boggy areas limit access and minimise damage. Access to the littoral rainforest enriches and informs the experience.



The curved alignment is attractive, however all timber decking has a limited lifespan. This alignment is maintained for the more rational geometry required by FRP deck panels.

Design Development Principles

- Timber post and rail balustrades (Type C)
- Timber lean rails.
- Timber boardwalk kickstand edges.
- Infill concrete footpaths in Portland grey cement to match existing (and new paths at eastern parking area).

Proposed material for the main trail (on grade is).

- Crushed local Rhyolite (Screened Mine Gravel). Compacted and non stabilised.
- Timber trail edge to match the kickrail.
- Local Merimbula Split Stone Mine as garden mulch.
- Class 2 walking tracks (secondary tracks).
- Concrete transitions from boardwalks to on grade paths.
- Decorative concrete new paths near entries.

Proposed materials for signage is:

- Short timber National Parks style direction signage.
- Interpretive signage of recycled timber and local stone with routed and engraved text (to be developed further in an interpretative and cultural strategy).

Proposed Furniture is:

- Place defining timber seating and benches.
- Place defining playful timber and stone furniture with lighting.
- Timber bollards.
- Council standard picnic tables, shelters, bins and bubblers.

Proposed Vehicle Pavements in Carparks are:

- Bitumen to Council Standards.
- Porous unit paving in parking bays.
- Hardwood Wheelstops.
- Concrete paving for Department of Fisheries Driveway and Boat ramp adjustments.

Ecology

The boardwalk site traverses many important ecological vegetation communities, both terrestrial and marine. Ecological impacts will be minimised in the following ways:

- Open mesh fibreglass reinforced panels (FRP) to allow light to penetrate through the deck (note that the aperture of the mesh is compliant with Australian

Standards for access and mobility AS 1428.1 :2021).

- Minimisation of concrete footpaths to avoid damage to the environment caused using concrete construction equipment along remote parts of the trail.
- Closing unnecessary shortcuts with post and wire strand fencing and re-vegetating.
- Post and wire strand fencing to protect vulnerable salt marsh areas from people and dogs walking off trail.
- Addressing the threat on vegetation communities from the Kikuyu grass by removing weeds along the water edge of the path and re-vegetating with appropriate species.



Kikuyu grass, mown and unmown along the shore edge is a threat to the salt-marsh and intertidal indigenous plant communities. It should be removed to return the boardwalk experience to a nature based one.



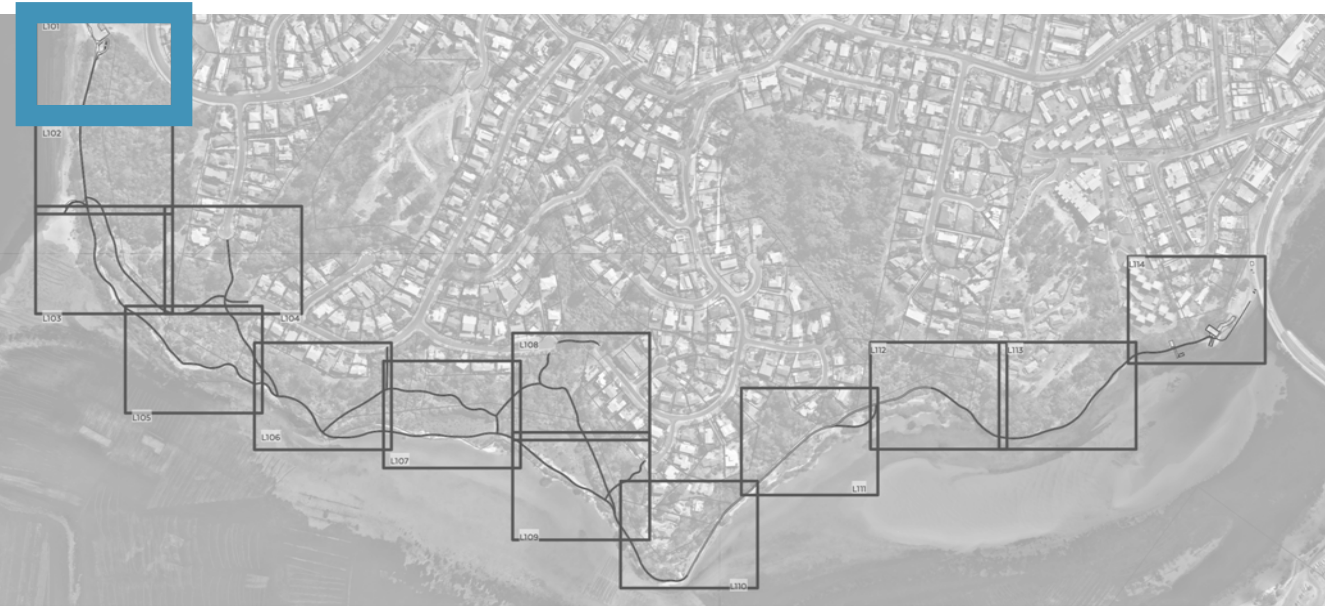
Unnecessary shortcuts and will be removed to restore the indigenous vegetation communities and restrict damage.



A Type A handrail, similar to what will be required in particular locations where Australian Standards requires.



NOTE:
Draft design layout based off GIS topographic information. Design will be updated with site survey for tender and construction drawings.



KEY PLAN

LEGEND

The pocket park may relate to the public space adjacent to the carpark as much as the boardwalk. Its identity is strengthened. Its identity as its own small park will be better defined.

- The small park will be upgraded to including two picnic tables with combined shade structure to replace the two existing picnic tables and single shelter.
- The existing entry timber portal and sign will be retained as an important gesture recognising the original builders of the boardwalk. The boardwalk currently was an important and enduring community contribution. References to its existing character should be included within the new design.
- Existing carpark , toilet and boat ramp functions well and is to remain unchanged.
- The existing post and wire strand fence repaired to limit access to Swamp Oak Forest and Mangrove vegetation communities.
- An additional bubbler will be provided at the entry to supplement the one next to the toilets.
- An bin will be added at the entry for convenience for all users including dog walkers.
- Were 450mm diameter timber is not available for FX4 salvaged 300mm diameter local timber will be used.



LEGEND

[MERIMBULA LAKE] waterline based on preliminary contour information exact tide lines.

[CL] CENTRE LINE

[PG] PATH ON GRADE
2.5m wide gravel path with flush 100mm wide timber edging.

[TR] PATH - TRAIL
1.25m typical wide existing trail fix and extend as required to Class 3 Walking Track.

[FRP] BOARDWALK -
2.5m wide boardwalk with Fibreglass Reinforced Polymer (FRP) mesh grating.

[BW] BOARDWALK - TIMBER
Timber finish to lookouts and jettys mix of timber and FRP mesh grating to jettys / lookouts.

[BW1] BOARDWALK - RECYCLED TIMBER
Interpretive/ decorative timber finish to lookouts and jetties.

[RW] CONCRETE LOW RETAINING WALL

[PS] PLACE SEATS
Local natural stone and timber modular signage, seating and play. Located at start of the walk (both ends).

[TCA] TYPE A BARRIER

[TCC1] TYPE A BARRIER WITH HANDRAIL

[TCC] TYPE C BARRIER

[KR] KICK RAIL

[HR] HANDRAIL

[L1] ROAD LIGHT TO COUNCIL STANDARD

[L2] LED STRIP LIGHT

[L3] LED SPOT LIGHTS

[PV] CONCRETE PAVING existing.

[PV1A] CONCRETE PAVING New Concrete Finish.

[PV2] ASPHALT PAVING For carparks where shown.

[JBS] Jetty Barrier Seats To future details. Refer to visualisations for design direction.

[SW] NEW PLANTING For regeneration of vegetation communities.

[T] PROPOSED NEW TREE.

[FX1] BIKE RAIL.

[FX2] BOLLARD. - using locally sourced hardwood salvaged from Tathra Wharf stockpile.

[FX3] POST AND WIRE FENCING TO PROTECT Regeneration of vegetation communities.

[FX4] CUBIC 450 SQ TIMBER BOLLARD

[FX5] RETRACTABLE BOLLARDS DEPARTMENT OF FISHERIES

[IS] INTEGRATED DIRECTIONAL/INTERPRETIVE SIGNAGE as part of boardwalk structure.

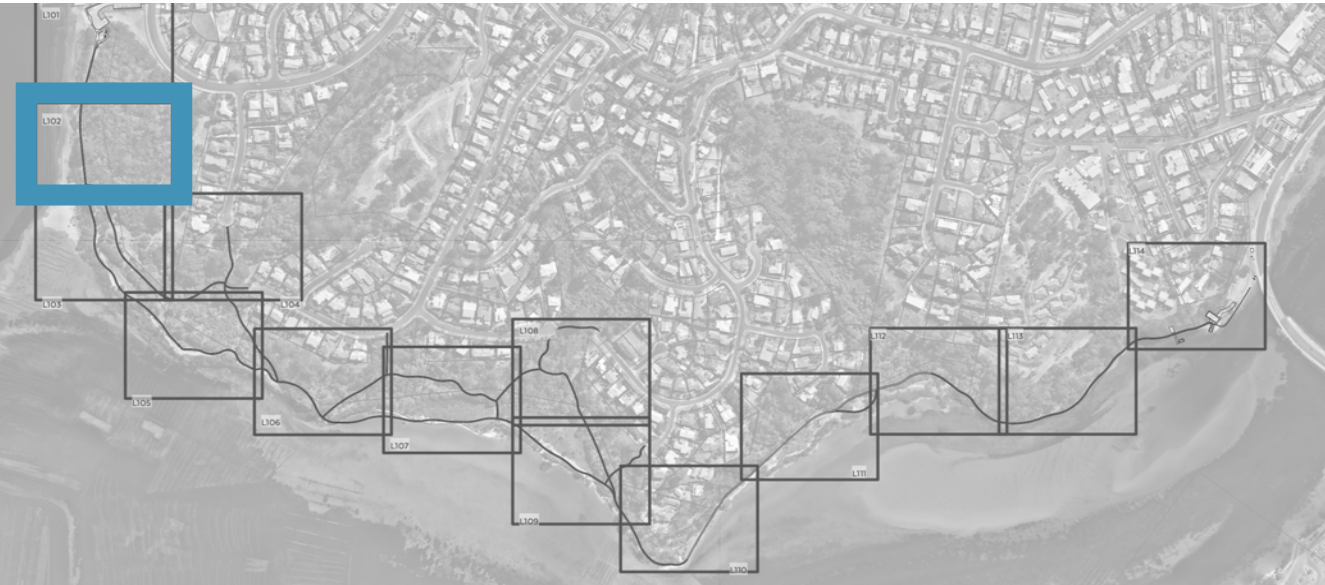
[SP1] SIGN POST SECONDARY CLASS 3 TRAILS

[BIN]

[BUBBLER- Existing relocated or new to match.

[TI] TACTILE INDICATOR PLATES TO STAIRS

[SE] TABLE AND BENCH SEAT



KEY PLAN SIDE TRAILS NOT PART OF APPROVAL

LEGEND

- The existing jetty is located in a tranquil and popular spot that provides excellent views of the sunset. It is proposed that the jetty is upgraded to be wider and provide more seating opportunities. The jetty will be rebuilt in a consistent geometry to existing to retain character.
- Its character will be of simple post and timber rail balustrade on one side typical of jetties found in many coastal bays in NSW. This will retain a sense of familiarity.
- Recycled timber from local sources will be used as detailing within the jetty lookout deck.
- Steps will be provided at the same location as the existing for access to the tidal flats.
- A nature trail leads away from the main boardwalk into the littoral forest and connects residents to the surrounding street ends.
- The majority of seating includes a backrest and armrest for better comfort and mobility. An exception to this is where 'seating' is used in conjunction with artistic interpretation at the entrances.
- Timber kickrail to all edges over water.



KEY PLAN

SIDE TRAILS NOT PART OF APPROVAL

LEGEND

- The boardwalk traverses three vegetation communities in this area including Mangrove, Salt-marsh and Swamp Oak Forest.
- There are opportunities to hop off the boardwalk onto the beaches as currently occurs however this is not to be formalised. As is the case currently.
- The nature trail extends beyond the salt-marsh .Bush track paths will be repaired as required to Class 3/4 standards. Any additional subsurface drainage and culverts, raising or boardwalks over creek and drainage lines are to be determined by the contractor and agreed to by Council.
- Extent and setout of these is paths to be assessed with ecological consultant, however they will likely follow the existing tracks.



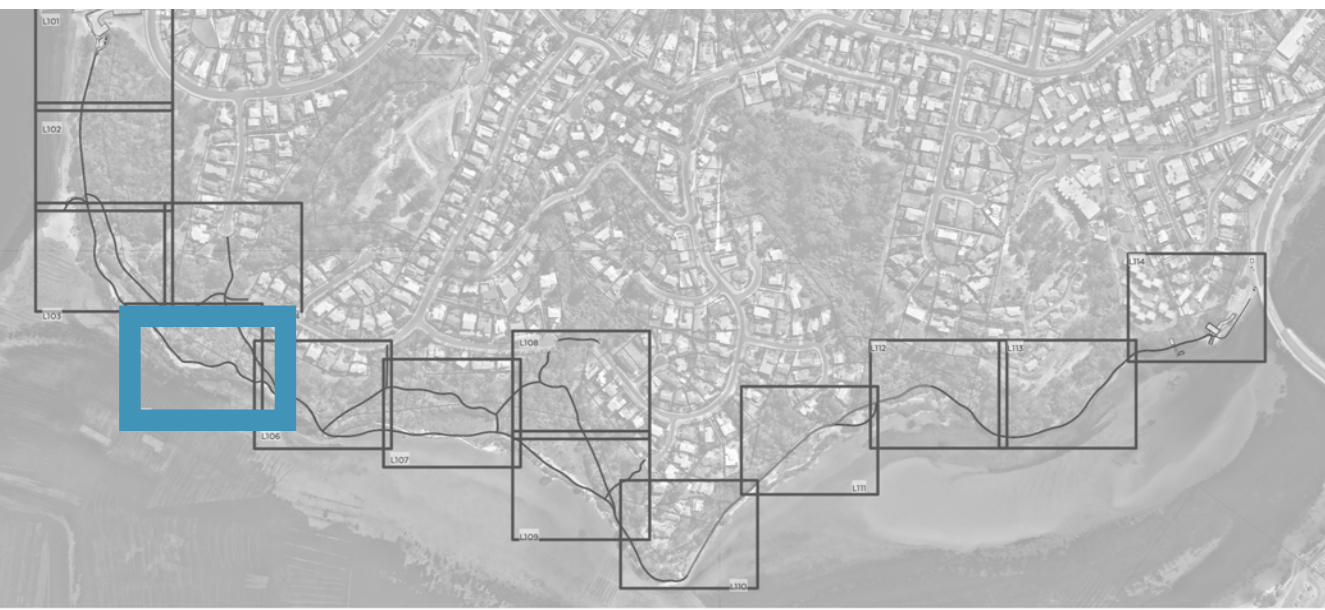
KEY PLAN

SIDE TRAILS NOT PART OF APPROVAL



LEGEND

- The nature trail continues through closed forest and will skirt and existing fenced detention basin.
- There is an opportunity for this detention basis to be restored to its original function to manage stormwater quality to the salt-marsh downstream.
- Simple timber wayfinding plinths direct walkers to exits at Tern Close and Imlay Street where the nature trail branches off.
- Appropriately subtle plinth signage is also included at these street connections to direct walkers to the main boardwalk.



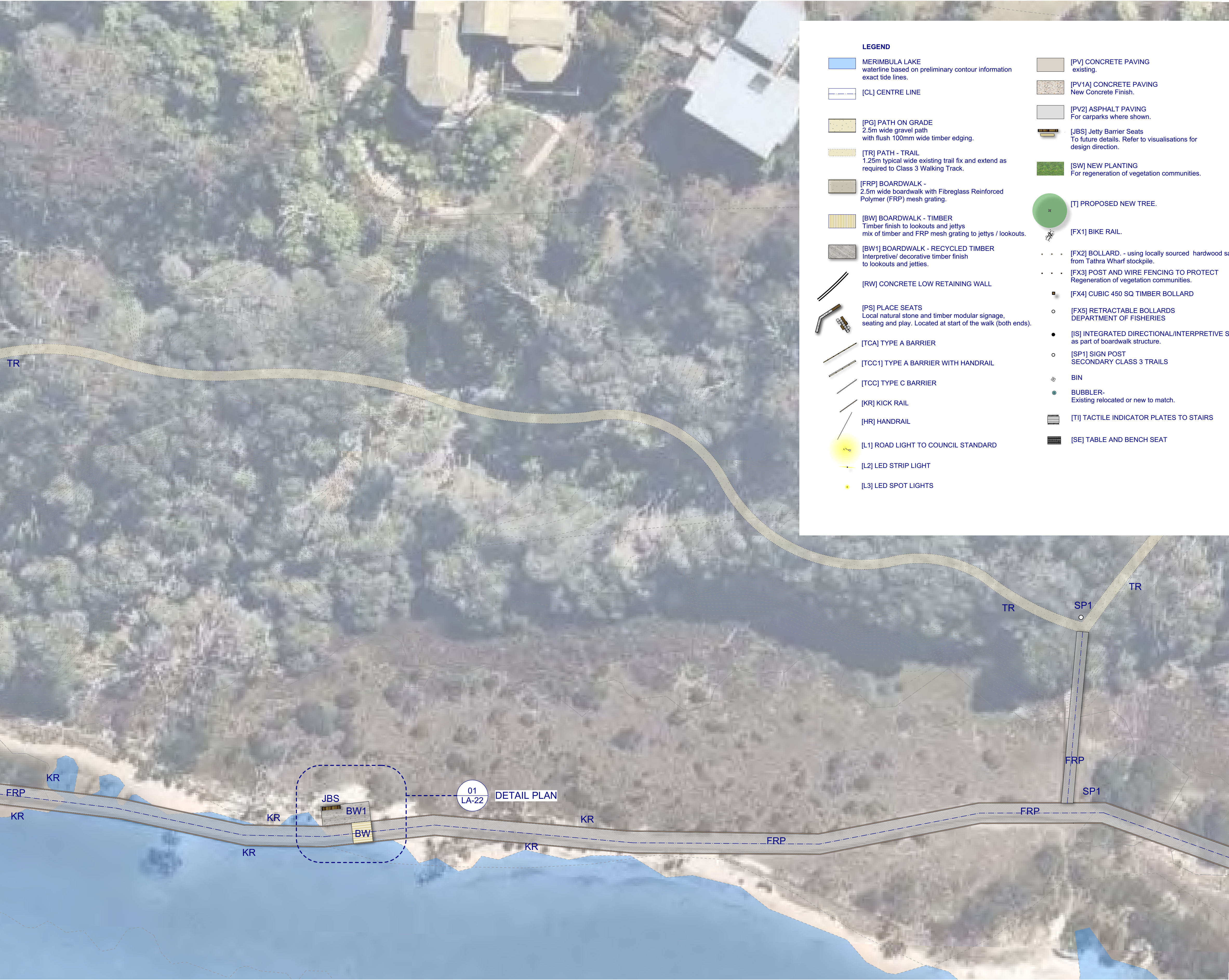
KEY PLAN

LEGEND

- There is the opportunity for a new lookout almost midway where there is a beach and break within the mangroves.
- This lookout is adjacent to the oyster leases and gives a different perspective and landscape experience with the Lake.
- The Lookout is designed to be consistent with other lookouts along the walk with its construction and character, however is shortened to avoid impact on seagrasses.
- A seat will be included adjacent to the lookout as a rest point, to ensure that sufficient rest points are spaced along the path.
- Stone crazy paved junctions are used where a solid abutment is needed between fibreglass raised boardwalk and on grade gravel path. These demarcate a change of materials and help detailing a change of direction.
- The alignment closely follows the existing boardwalk to avoid large mangrove trees.



- KEY PLAN**
- LEGEND**
- SIDE TRAILS NOT PART OF APPROVAL**
- Rest spots and intersections with the bush tracks on grade are marked with a stone paving pad and signage.
 - Signage is included to prevent walkers from accidentally losing their way.
 - Materials changes are specific and have a clear hierarchy to make the main walk obvious. This includes a timber edge that cuts across side paths following the main path alignment.
 - Rest spots are frequently located at existing locations, to retain the character of what has been successful planning of the existing.
 - Rest spots alternate between having a seat behind the walk or an undisturbed connection in front of the boardwalk.

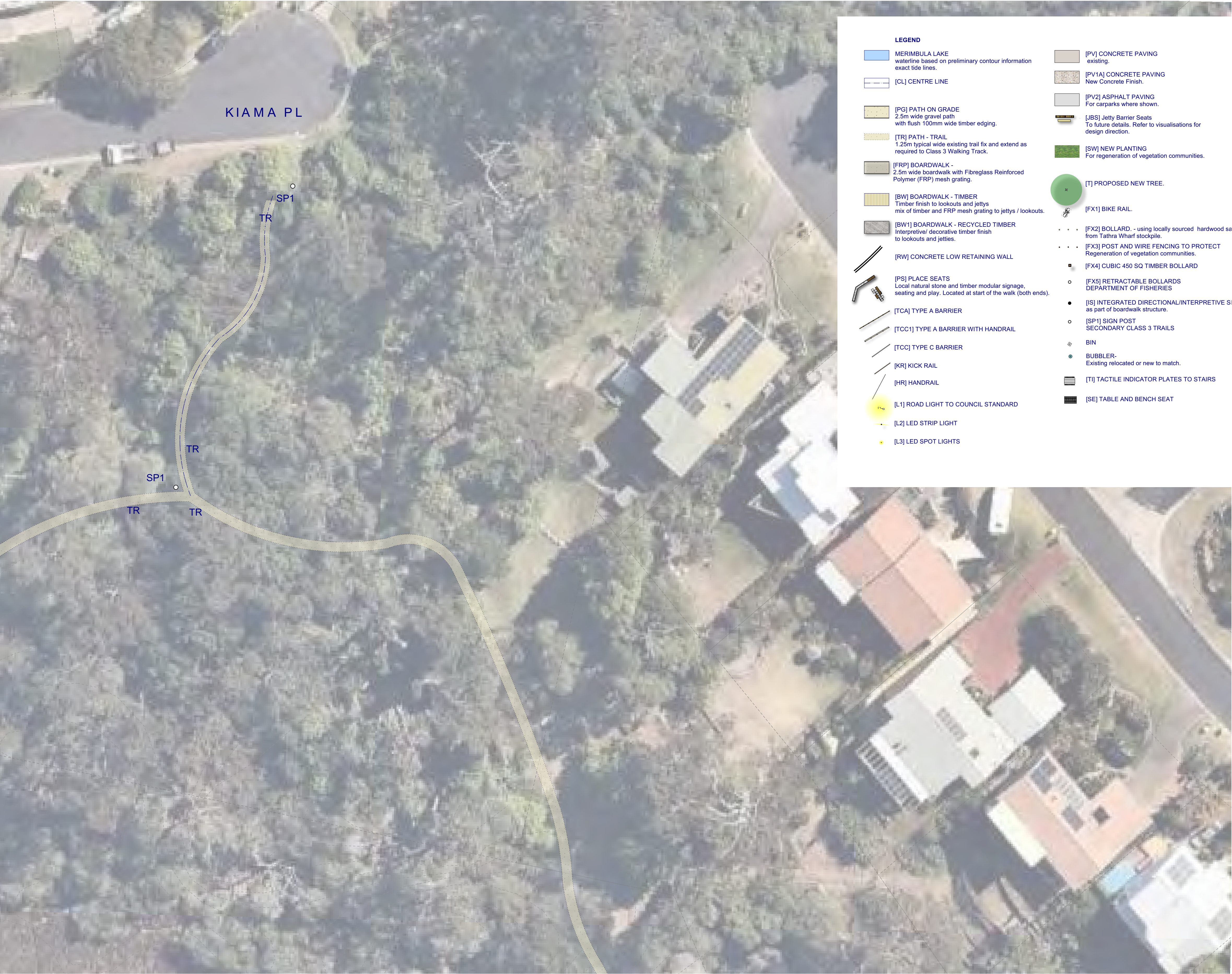


SIDE TRAILS NOT PART OF APPROVAL

KEY PLAN

LEGEND

- The FRP boardwalk retains the existing alignment and height across the salt marsh to minimise damage to this important vegetation community.
- The existing rest area is upgraded in the same location. This retains a familiarity with the boardwalk between the existing and upgraded.
- There will be the opportunity for interpretative signage to be included. These will be updated and designed to be more integrated with the furniture and structure.



KEY PLAN

LEGEND

- New wayfinding signage from Kiama Place to the boardwalk.
- Forks in the tracks will all have subtle wayfinding signage.

← SIDE TRAILS NOT PART OF APPROVAL



KEY PLAN

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LEGEND

- Rest spots and intersections with the bush tracks on grade are marked with a stone paving pad and signage.
- Materials changes are specific and have a clear hierarchy to make the main walk obvious.
- Rest spots are frequently located often determined by existing locations.
- Rest spots alternate between having a seat behind the walk or an undisturbed connection in front of the boardwalk.



KEY PLAN

LEGEND

- The existing concrete path is retained.
- New concrete path extended to kayak ramp. Width of path transitions from 3m existing back to 2.5 metres at the boatshed.
- All kikuyu grass verges to be removed and revegetated to eliminate weed invasion risk of intertidal and salt-marsh vegetation. If necessary, damaged salt-marsh should be fenced off with post and wire fencing. To be confirmed by Ecological Consultant.
- Existing rest point beneath shade tree upgraded.
- Existing kayak ramp retained.

LEGEND

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Interpretive/ decorative timber finish to lookouts and jettys.

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Local natural stone and timber modular signage, seating and play. Located at start of the walk (both ends).

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BIN

BUBBLER- Existing relocated or new to match.

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[SE] TABLE AND BENCH SEAT



KEY PLAN

LEGEND

- The existing car park at Bodalla Place will be better defined to protected natural vegetated areas and formalise and clarify the parking spaces. This includes dedicated parking for disabled users and council works access to the sewer pump station.
- Existing concrete vehicular ramp will be retained between Bodalla Place and the boardwalk.
- All kikuyu grass verges to be removed and revegetated to eliminate weed invasion risk of intertidal and saltmarsh vegetation. If necessary, damaged salt-marsh should be fenced off with post and wire fencing. To be confirmed by Ecological Consultant.
- A new bioretention basin will be constructed to manage stormwater runoff from the carpark and prevent shortcuts and vehicles parking on the grass.
- The turf area behind the carpark will be maintained for turning movements for Councils trucks and plant.
- The existing bin will be maintained for convenience.
- The seat, bubbler and paving will be consolidated for a simpler design.



- LEGEND**

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KEY PLAN

LEGEND

- The existing privately built boardwalk offshoot will be retained, but not upgraded.
- Existing seating area on boardwalk upgraded to the new standard.
- Existing Council detention basin.

General Arrangement 13

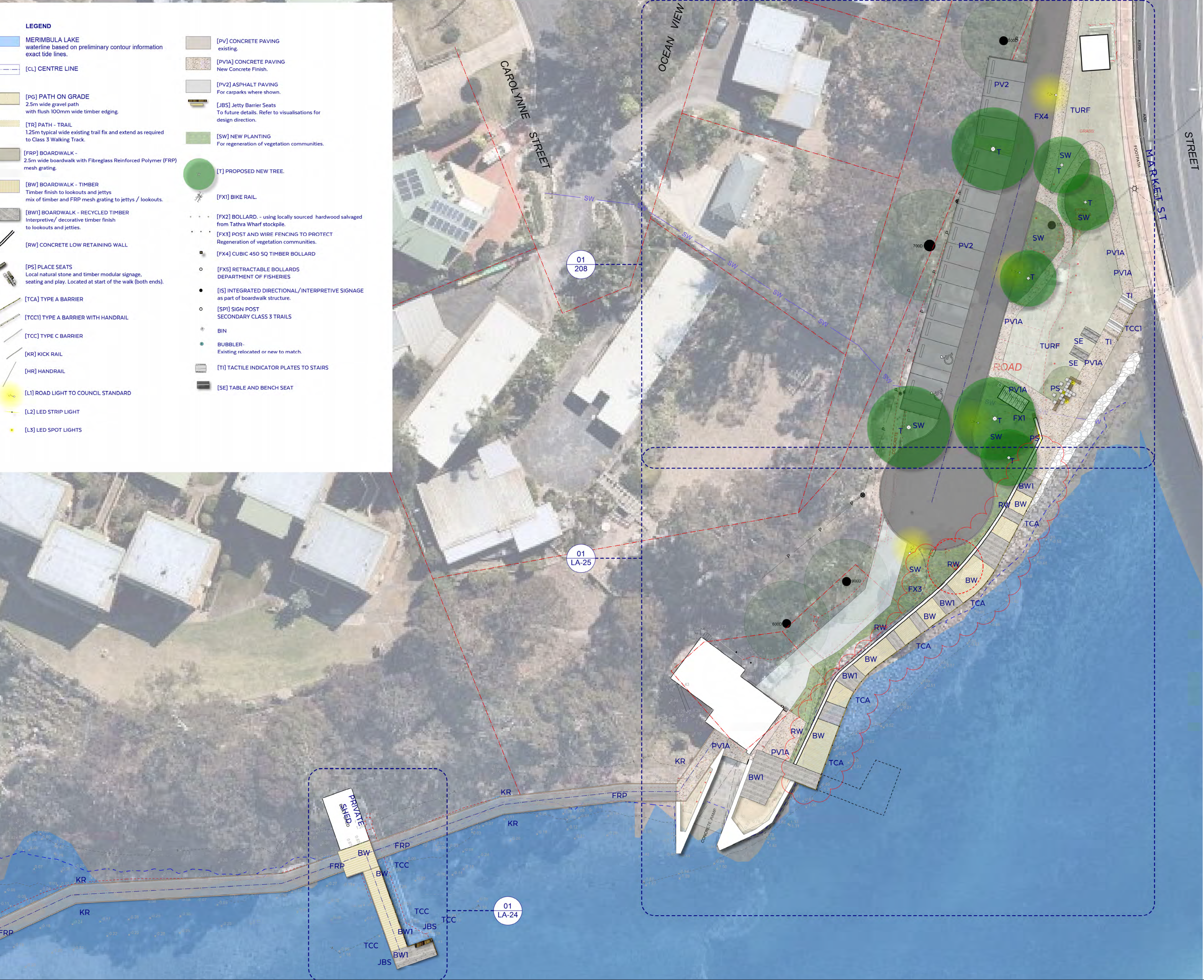


KEY PLAN

LEGEND

- The height of boardwalk adjusted to allow for king tides and prevent immersion.
- The existing rest area is upgraded in the same location. This retains a familiarity with the boardwalk between the existing and upgraded.

General Arrangement 14



KEY PLAN

LEGEND

- The design will improve the entry from Market Street by separating vehicles from pedestrian access and enhancing the entry point with access paths and landscaping.
- New signage will be provided to make it easy for newcomers to see the boardwalk from Market Street.
- A reconfigured carpark is proposed. There will be 14 new spots, 2 accessible car parking, with removal of 8. This reconfiguration enables a pocket park and enhanced entrance to the boardwalk.
- There is the potential for artwork at Department of Fisheries building, using wall and potentially the paving.
- Massed planting and a physical gap will separate the new driveway for the Department of Fisheries and the boardwalk. This will be paved in concrete to differentiate it from the public character of the carpark.
- The existing jetty will be upgraded to provide a 2.5 wide approach and larger platform. The ladder will be replaced for safety. The footprint essentially stays the same to protect seagrasses.
- Potential for a new pontoon designed to be consistent with the proposed boardwalk.



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LEGEND

- Existing carpark retained, with no proposed alterations.
- Existing boat ramp retained.
- Interpretive artwork and playful structure.
Opportunities for cultural expression and reuse of materials such as wharf timbers and local quarry stone. Opportunity to incorporate lighting with this important feature. (refer to precedents on LA-34)
- Rest / meeting area including two picnic tables with small shade shelter to Council standard.
- Signage to engage and inform visitors at the start of their journey.
- New tree planting. Small groups of Melaleuca armillaris consistent with existing trees.
- Littoral rainforest shade species planted as feature tree. Species to be verified to be consistent with those found on the nature trail.
- New Eucalypt planting in groups to integrate car parking area with boardwalk.
- Retain portal as a cultural marker for the original work installed by the Green Corps. Repair if necessary.
- Bin enclosure at the start of the walk.
- Salvaged timber square sections 450 -300mm depending on salvaged local supply.
- Open turf area to remain.
- Bike racks.



- LEGEND**
- [MERIMBULA LAKE] waterline based on preliminary contour information exact tide lines.
 - [CL] CENTRE LINE
 - [PG] PATH ON GRADE
2.5m wide gravel path with flush 100mm wide timber edging.
 - [TR] PATH - TRAIL
1.25m typical wide existing trail fix and extend as required to Class 3 Walking Track.
 - [FRP] BOARDWALK - FIBREGLASS REINFORCED POLYMER (FRP) mesh grating.
 - [BW] BOARDWALK - TIMBER
Timber finish to lookouts and jettys mix of timber and FRP mesh grating to jettys / lookouts.
 - [BW1] BOARDWALK - RECYCLED TIMBER
Interpretive/ decorative timber finish to lookouts and jetties.
 - [RW] CONCRETE LOW RETAINING WALL
 - [PS] PLACE SEATS
Local natural stone and timber modular signage, seating and play. Located at start of the walk (both ends).
 - [TCA] TYPE A BARRIER
 - [TCC1] TYPE A BARRIER WITH HANDRAIL
 - [TCC] TYPE C BARRIER
 - [KR] KICK RAIL
 - [HR] HANDRAIL
 - [L1] ROAD LIGHT TO COUNCIL STANDARD
 - [L2] LED STRIP LIGHT
 - [L3] LED SPOT LIGHTS
 - [PV1A] CONCRETE PAVING
New Concrete Finish.
 - [PV2] ASPHALT PAVING
For carparks where shown.
 - [JBS] Jetty Barrier Seats
To future details. Refer to visualisations for design direction.
 - [SW] NEW PLANTING
For regeneration of vegetation communities.
 - [T] PROPOSED NEW TREE.
 - [FX1] BIKE RAIL.
 - [FX2] BOLLARD. - using locally sourced hardwood salvaged from Tathra Wharf stockpile.
 - [FX3] POST AND WIRE FENCING TO PROTECT
Regeneration of vegetation communities.
 - [FX4] CUBIC 450 SQ TIMBER BOLLARD
 - [FX5] RETRACTABLE BOLLARDS
DEPARTMENT OF FISHERIES
 - [IS] INTEGRATED DIRECTIONAL/INTERPRETIVE SIGNAGE
as part of boardwalk structure.
 - [SP1] SIGN POST
SECONDARY CLASS 3 TRAILS
 - BIN
 - BUBBLER-
Existing relocated or new to match.
 - [TI] TACTILE INDICATOR PLATES TO STAIRS
 - [SE] TABLE AND BENCH SEAT

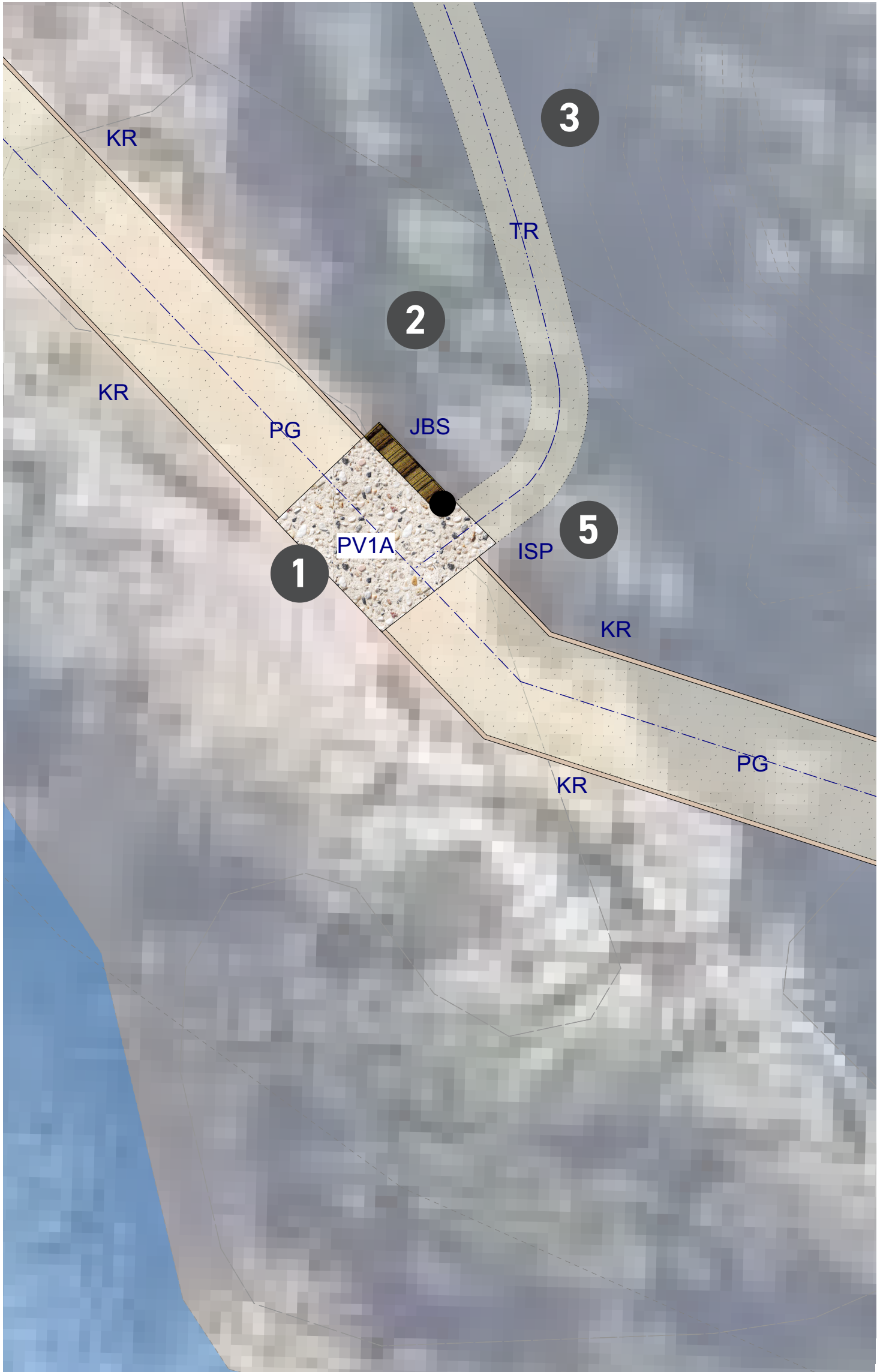
- LEGEND**
1. Seat and rest spot provides views of oyster farms, mangroves and sunset. Two seating areas enable more options than currently.
 2. Upgraded concrete steps to the tidal zone upgraded with new and expanded to provide further seating opportunities.
 3. 2.5m wide gravel path on grade (PG) with flush 100mm wide timber edging
 4. Decorative concrete at intersections and to highlight change of materials.
 5. Timber boardwalk jetty. Potential for reusing boards or salvaged sections from council stocks. This also would allow interpretation opportunities. Mixed timbers would create a strong local story and create an patina of different weathered timber.
 6. Bush track junction.

← SIDE TRAILS NOT PART OF APPROVAL

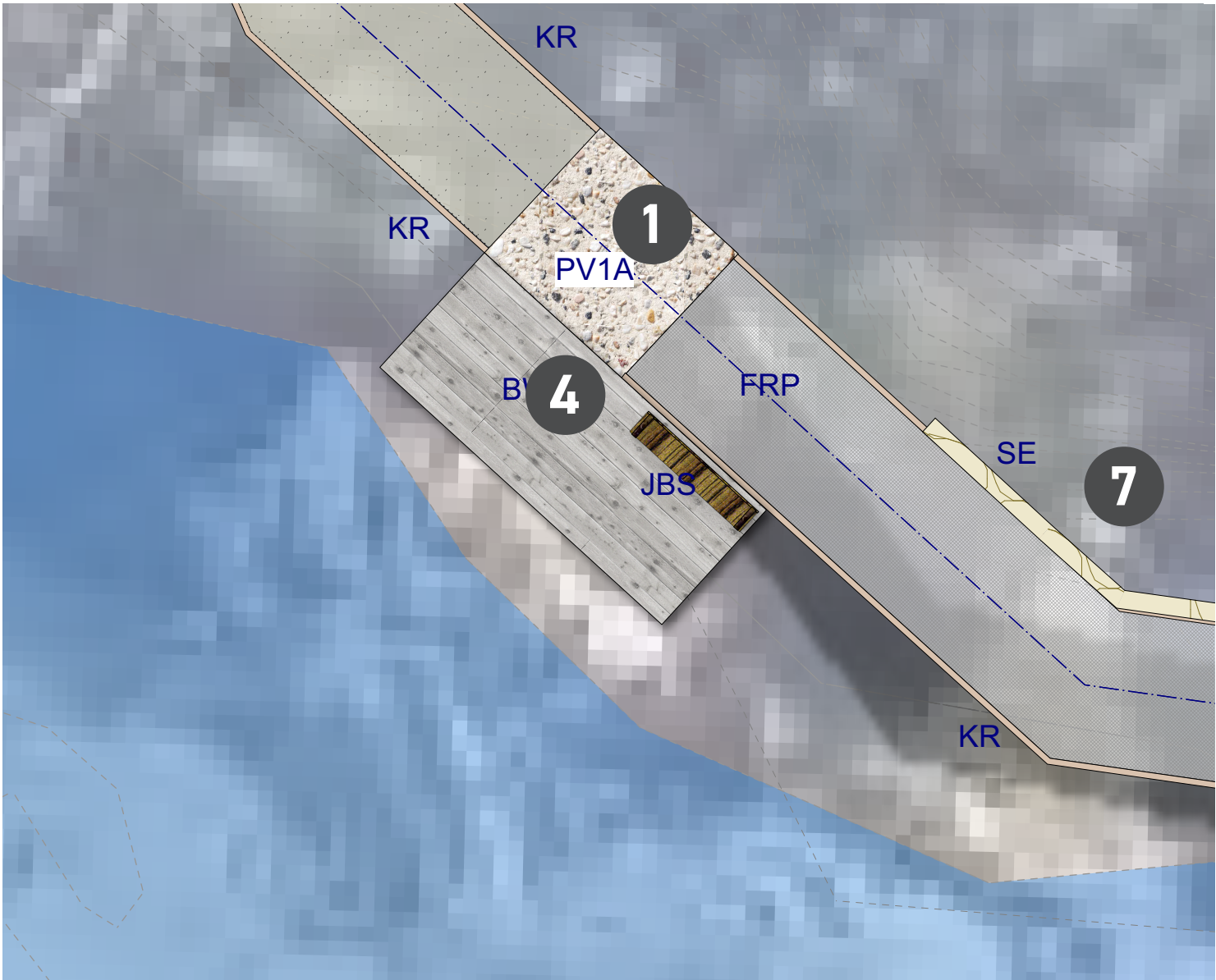
Detail Plans 03 (JETTY 02 AND OTHERS)



1 DETAIL PLAN | Jetty lookout 2 to future
Scale: 1:100



2 DETAIL PLAN | Seating area + junction btw boardwalk & trail
Scale: 1:100



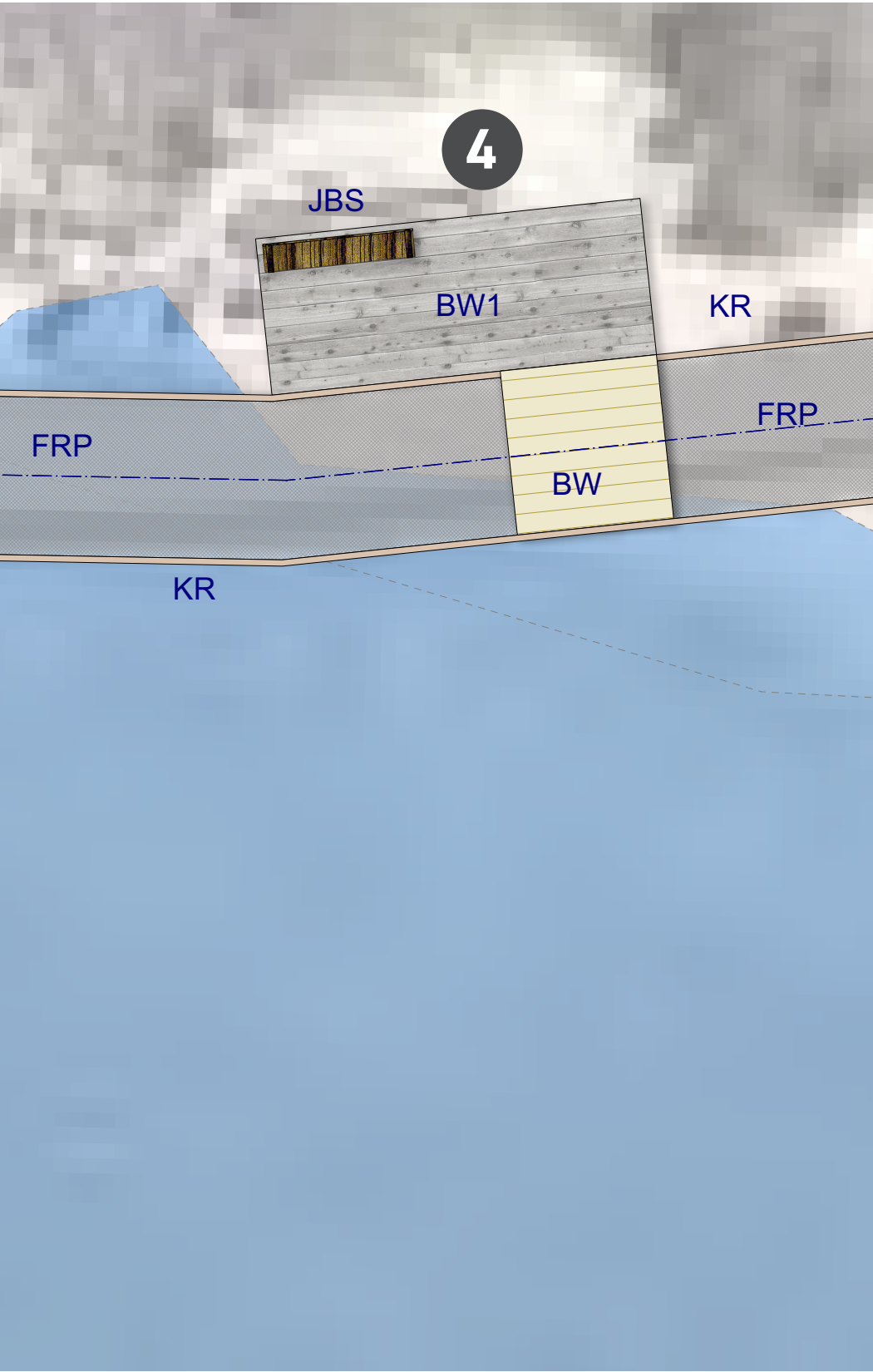
3 DETAIL PLAN | Seating area
Scale: 1:100

- LEGEND**
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 - [CL] CENTRE LINE
 - [PG] PATH ON GRADE
2.5m wide gravel path with flush 100mm wide timber edging.
 - [TR] PATH - TRAIL
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 - [RW] CONCRETE LOW RETAINING WALL
 - [PS] PLACE SEATS
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 - [TCC1] TYPE A BARRIER WITH HANDRAIL
 - [TCC] TYPE C BARRIER
 - [KRJ] KICK RAIL
 - [HR] HANDRAIL
 - [L1] ROAD LIGHT TO COUNCIL STANDARD
 - [L2] LED STRIP LIGHT
 - [L3] LED SPOT LIGHTS
 - [PV] CONCRETE PAVING existing.
 - [PV1A] CONCRETE PAVING New Concrete Finish.
 - [PV2] ASPHALT PAVING For carparks where shown.
 - [JBS] Jetty Barrier Seats To future details. Refer to visualisations for design direction.
 - [SW] NEW PLANTING For regeneration of vegetation communities.
 - [T] PROPOSED NEW TREE.
 - [FX1] BIKE RAIL.
 - [FX2] BOLLARD. - using locally sourced hardwood salvaged from Tathra Wharf stockpile.
 - [FX3] POST AND WIRE FENCING TO PROTECT Regeneration of vegetation communities.
 - [FX4] CUBIC 450 SQ TIMBER BOLLARD
 - [FX5] RETRACTABLE BOLLARDS DEPARTMENT OF FISHERIES
 - [IS] INTEGRATED DIRECTIONAL/INTERPRETIVE SIGNAGE as part of boardwalk structure.
 - [SP1] SIGN POST SECONDARY CLASS 3 TRAILS
 - BIN
 - BUBBLER- Existing relocated or new to match.
 - [TI] TACTILE INDICATOR PLATES TO STAIRS
 - [SE] TABLE AND BENCH SEAT

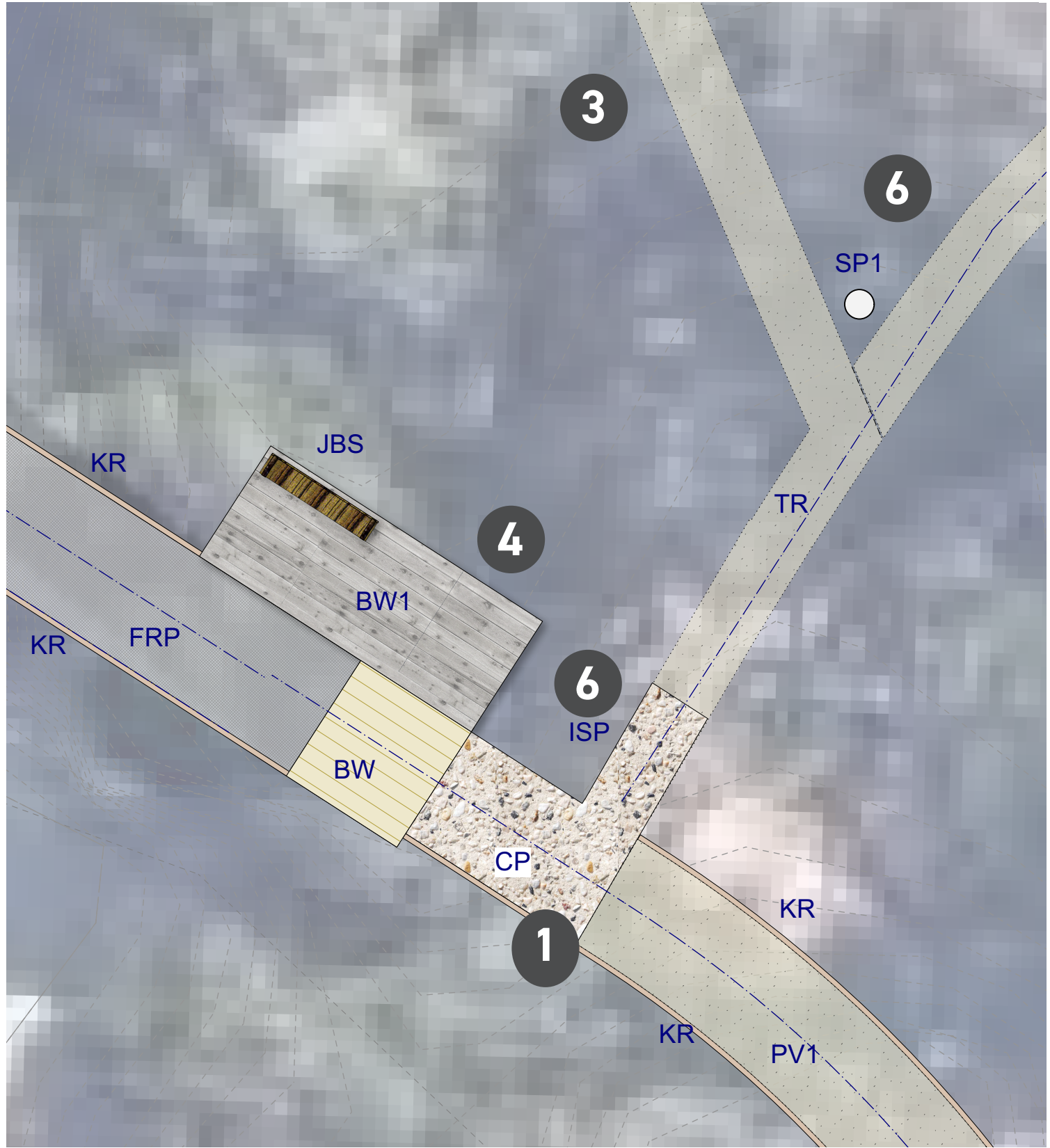
LEGEND

1. Stone paved entry marker and low bench with integrated signage at street connections.
2. Existing seat upgraded.
3. Bush tracks upgraded where necessary to National Parks standards.
4. Timber boardwalk jetty. Potential for reusing salvaged boards would allow interpretation opportunities. Mixed timbers would create a strong local story and create an patina of different weathered timber.
5. Wayfinding and interpretive signage.
6. Lookout avoids adjacent mangroves and length minimises impact on seagrass beds.
7. Existing low rock retaining wall extended.
8. Jetty reduced in length to avoid conflict with seagrass beds.

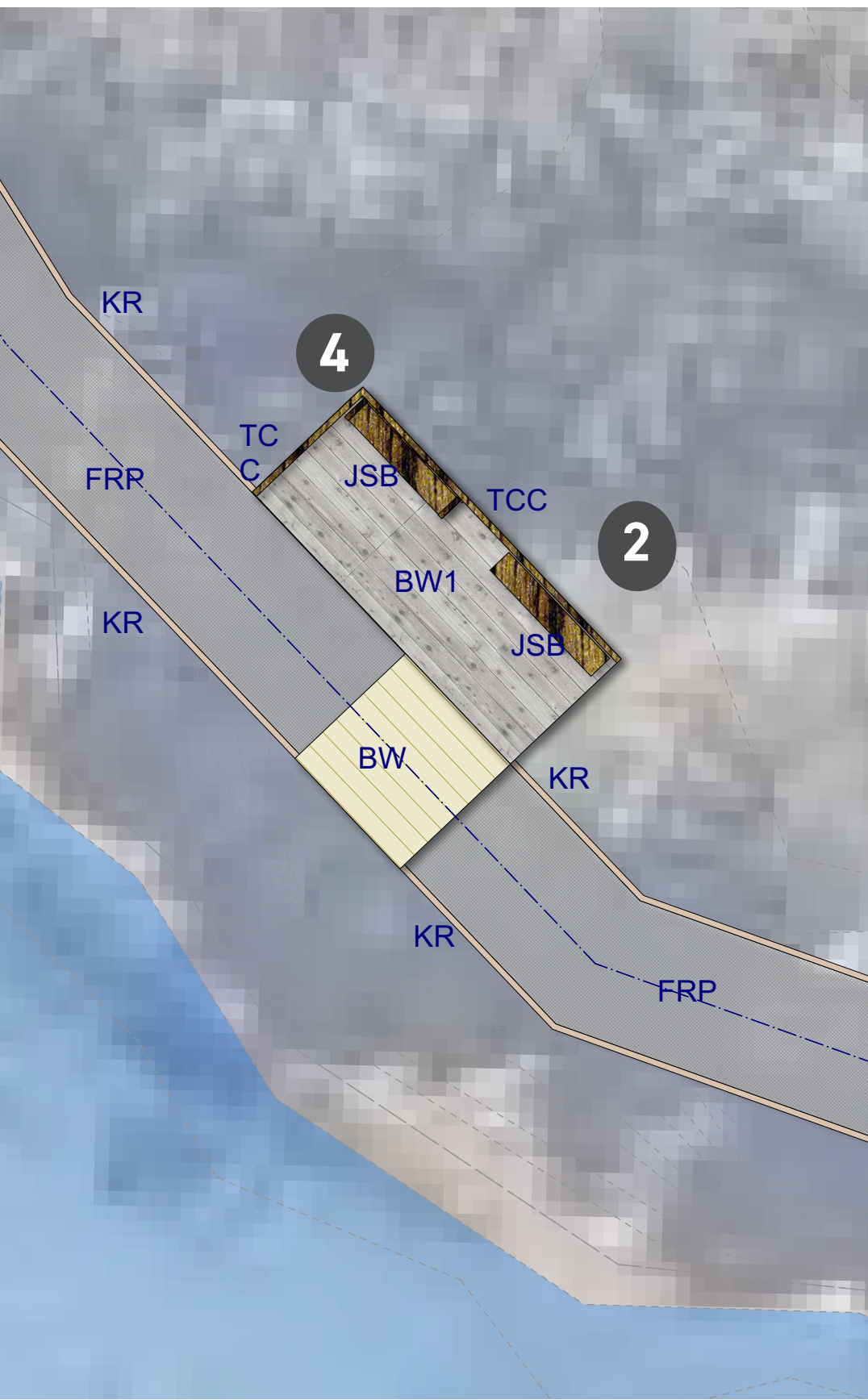
SIDE TRAILS NOT PART OF APPROVAL



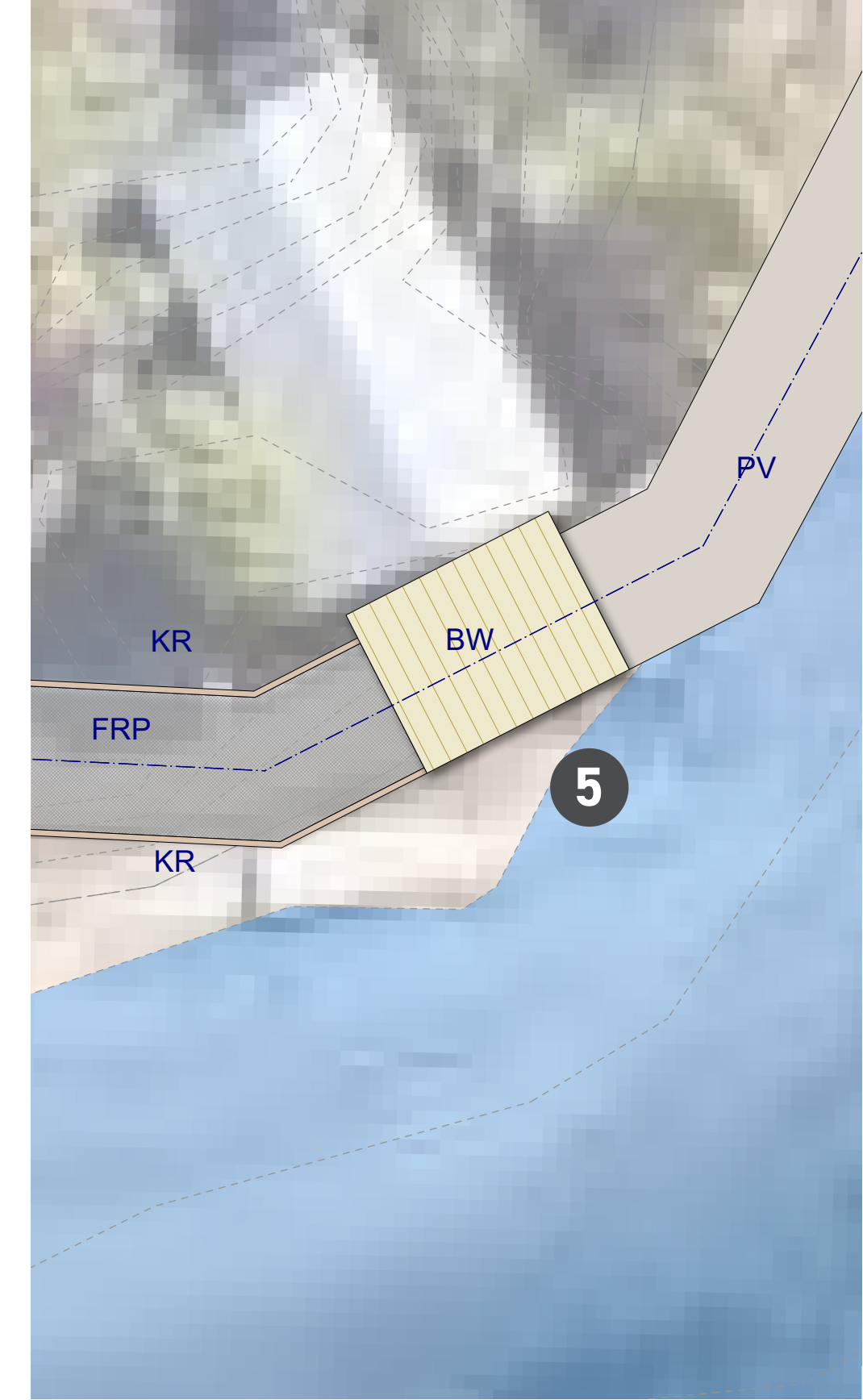
1 DETAIL PLAN | seating area
Scale: 1:100



2 DETAIL PLAN | seating area & junction btw boardwalk + trail
Scale: 1:100



3 DETAIL PLAN | seating area
Scale: 1:100



4 DETAIL PLAN | boardwalk
Scale: 1:100

LEGEND

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- [TR] PATH - TRAIL
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- [KR] KICK RAIL
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- [L2] LED STRIP LIGHT
- [L3] LED SPOT LIGHTS

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- [SP1] SIGN POST SECONDARY CLASS 3 TRAILS
- BIN
- BUBBLER- Existing relocated or new to match.
- [TI] TACTILE INDICATOR PLATES TO STAIRS
- [SE] TABLE AND BENCH SEAT

LEGEND

1. Stone paved entry marker and low bench with integrated signage at street connections.
2. Existing seat upgraded.
3. Bush tracks upgraded where necessary to National Parks standards.
4. Timber rest spots with seating. Some with backrest or benches. Interpretive signage provided in conjunction with Council signage strategy.
5. Bridge connection from private boatshed. Timber boardwalk remains a public asset.
6. Wayfinding signage.

← SIDE TRAILS NOT PART OF APPROVAL

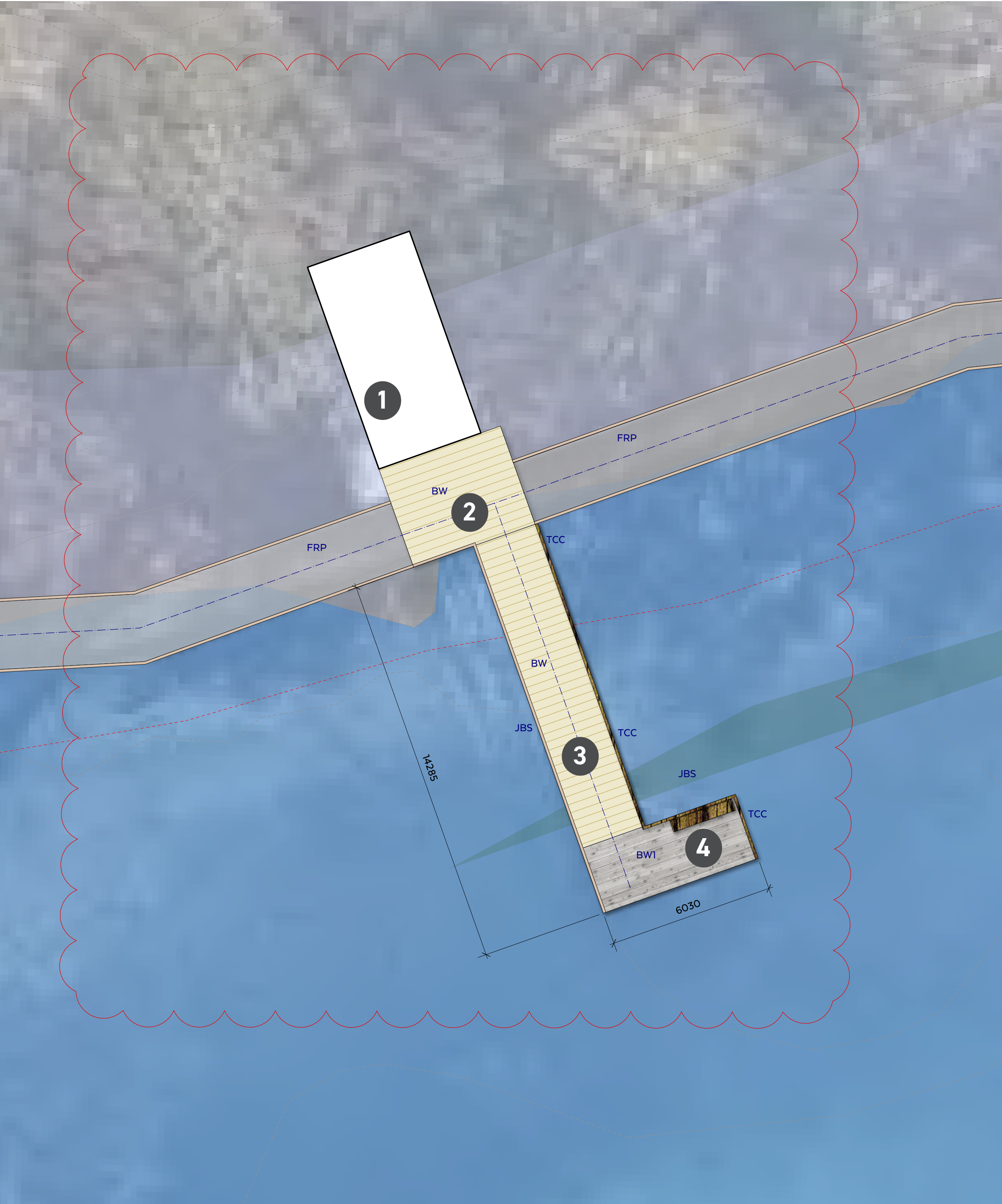


1 DETAIL PLAN | entry from Bodalla Pl
Scale: 1:150

- LEGEND**
- [MERIMBULA LAKE] waterline based on preliminary contour information exact tide lines.
 - [CL] CENTRE LINE
 - [PG] PATH ON GRADE
2.5m wide gravel path with flush 100mm wide timber edging.
 - [TR] PATH - TRAIL
1.25m typical wide existing trail fix and extend as required to Class 3 Walking Track.
 - [FRP] BOARDWALK -
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 - [RW] CONCRETE LOW RETAINING WALL
 - [PS] PLACE SEATS
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 - [TCA] TYPE A BARRIER
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 - [TCC] TYPE C BARRIER
 - [KR] KICK RAIL
 - [HR] HANDRAIL
 - [L1] ROAD LIGHT TO COUNCIL STANDARD
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 - [L3] LED SPOT LIGHTS
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 - [PV2] ASPHALT PAVING
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 - [JSB] Jetty Barrier Seats
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 - [FX1] BIKE RAIL.
 - [FX2] BOLLARD. - using locally sourced hardwood salvaged from Tathra Wharf stockpile.
 - [FX3] POST AND WIRE FENCING TO PROTECT
Regeneration of vegetation communities.
 - [FX4] CUBIC 450 SQ TIMBER BOLLARD
 - [FX5] RETRACTABLE BOLLARDS
DEPARTMENT OF FISHERIES
 - [IS] INTEGRATED DIRECTIONAL/INTERPRETIVE SIGNAGE
as part of boardwalk structure.
 - [SP1] SIGN POST
SECONDARY CLASS 3 TRAILS
 - BIN
 - BUBBLER-
Existing relocated or new to match.
 - [TI] TACTILE INDICATOR PLATES TO STAIRS
 - [SE] TABLE AND BENCH SEAT

- LEGEND**
- Existing Bodalla Place driveway maintained.
 - Vehicle access and gate retained.
 - Wire strand fencing to protect revegetation.
 - Dedicated Council carpark with bollard adjacent to sewage pump.
 - Hardstand adjacent to pump station with bollard for additional Council access.
 - Regular car space with wheel stop.
 - Disabled car space with wheel stop.
 - Dish drain perimeter to carpark (or upstand kerb if parking is to be controlled.)
 - Pit connection to drain carpark to biofiltration basin.
 - Biofiltration basis to treat carpark run-off and prevent shortcut and damage to the bush.
 - New stone paved entry to the boardwalk to consolidate and rationalise paving. Bubbler and bin enclosure provided.
 - Existing sewage pump with riser vent removed to enable hardstand.
 - Revegetated zone in front of pump station to integrate better with natural landscape. Protected by post and wire fencing during establishment.
 - Turning circle shown for Council maintenance vehicle.
 - Grass maintained for additional reversing room.

Detail Plan 06 (JETTY 01)

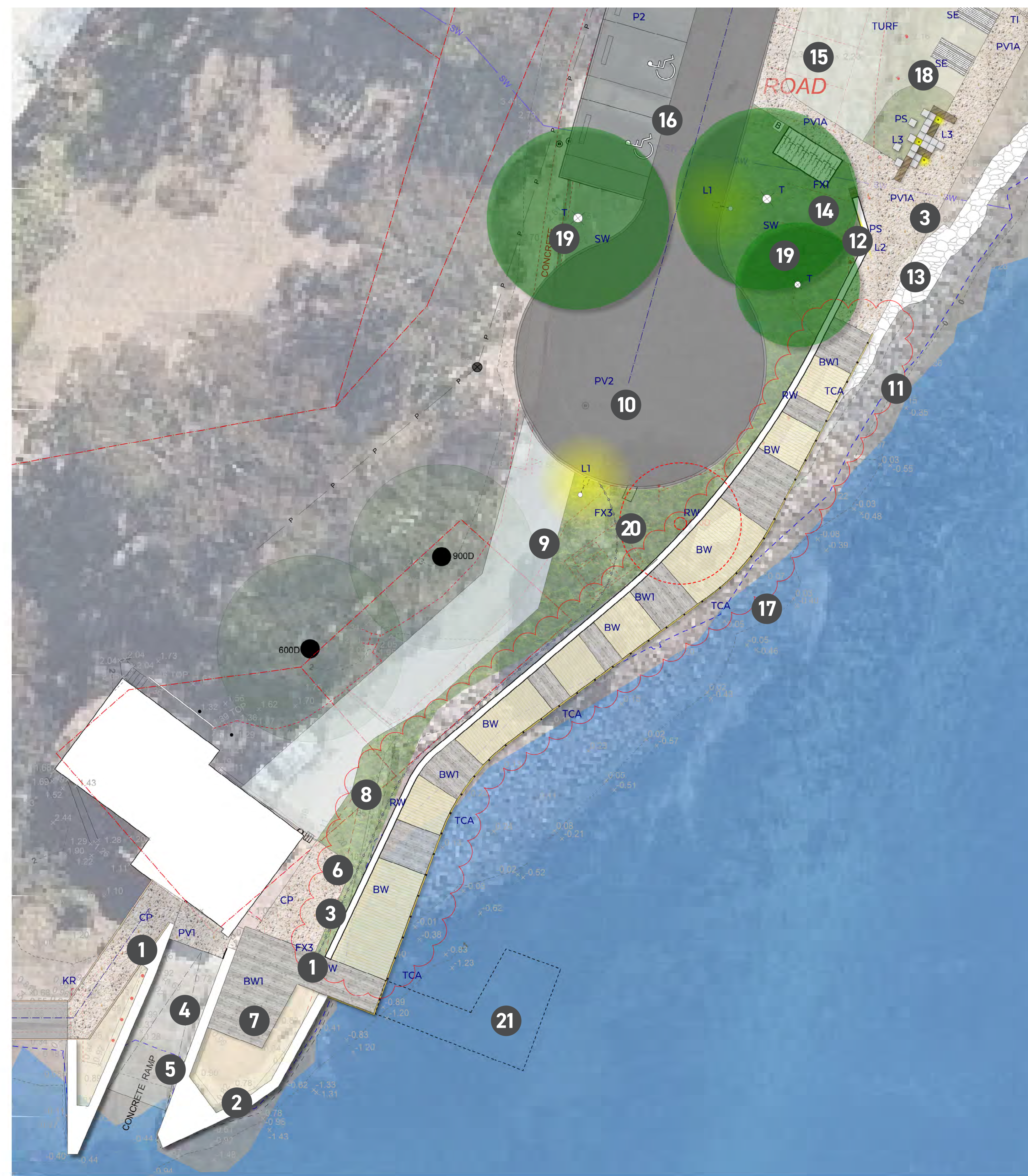


1 DETAIL PLAN | Jetty lookout 1
Scale: 1:100

- LEGEND**
- [MERIMBULA LAKE] waterline based on preliminary contour information exact tide lines.
 - [CL] CENTRE LINE
 - [PG] PATH ON GRADE
2.5m wide gravel path with flush 100mm wide timber edging.
 - [TR] PATH - TRAIL
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Timber finish to lookouts and jettys mix of timber and FRP mesh grating to jettys / lookouts.
 - [BW1] BOARDWALK - RECYCLED TIMBER
Interpretive/ decorative timber finish to lookouts and jetties.
 - [RW] CONCRETE LOW RETAINING WALL
 - [PS] PLACE SEATS
Local natural stone and timber modular signage, seating and play. Located at start of the walk (both ends).
 - [TCA] TYPE A BARRIER
 - [TCC1] TYPE A BARRIER WITH HANDRAIL
 - [TCC] TYPE C BARRIER
 - [KR] KICK RAIL
 - [HR] HANDRAIL
 - [L1] ROAD LIGHT TO COUNCIL STANDARD
 - [L2] LED STRIP LIGHT
 - [L3] LED SPOT LIGHTS
 - [PV] CONCRETE PAVING existing.
 - [PV1A] CONCRETE PAVING New Concrete Finish.
 - [PV2] ASPHALT PAVING For carparks where shown.
 - [JBS] Jetty Barrier Seats To future details. Refer to visualisations for design direction.
 - [SW] NEW PLANTING For regeneration of vegetation communities.
 - [T] PROPOSED NEW TREE.
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 - [FX3] POST AND WIRE FENCING TO PROTECT Regeneration of vegetation communities.
 - [FX4] CUBIC 450 SQ TIMBER BOLLARD
 - [FX5] RETRACTABLE BOLLARDS DEPARTMENT OF FISHERIES
 - [IS] INTEGRATED DIRECTIONAL/INTERPRETIVE SIGNAGE as part of boardwalk structure.
 - [SP1] SIGN POST SECONDARY CLASS 3 TRAILS
 - BIN
 - BUBBLER- Existing relocated or new to match.
 - [TI] TACTILE INDICATOR PLATES TO STAIRS
 - [SE] TABLE AND BENCH SEAT

LEGEND

- Existing private boatshed.
- Timber boardwalk in front of boatshed to maintain access. All of this infrastructure apart from the boatshed is a public asset.
- New jetty with treatments consistent with other new work.
- More generous seating, sightseeing and fishing. The alignment will be similar to existing to minimise impact on seagrasses adjacent to the channel.
- The existing jetty will be upgraded to provide a 2.5 wide approach and larger platform. The jetty ladder will be replaced for safety .



1 DETAIL PLAN | entry from Market St SOUTH
Scale: 1:150

- LEGEND**
- [MERIMBULA LAKE] waterline based on preliminary contour information exact tide lines.
 - [CL] CENTRE LINE
 - [PG] PATH ON GRADE
2.5m wide gravel path with flush 100mm wide timber edging.
 - [TR] PATH - TRAIL
1.25m typical wide existing trail fix and extend as required to Class 3 Walking Track.
 - [FRP] BOARDWALK -
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Interpretive/ decorative timber finish to lookouts and jettys.
 - [RW] CONCRETE LOW RETAINING WALL
 - [PS] PLACE SEATS
Local natural stone and timber modular signage, seating and play. Located at start of the walk (both ends).
 - [TCA] TYPE A BARRIER
 - [TCC1] TYPE A BARRIER WITH HANDRAIL
 - [TCC] TYPE C BARRIER
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 - [HR] HANDRAIL
 - [L1] ROAD LIGHT TO COUNCIL STANDARD
 - [L2] LED STRIP LIGHT
 - [L3] LED SPOT LIGHTS
 - [PV] CONCRETE PAVING existing.
 - [PV1A] CONCRETE PAVING New Concrete Finish.
 - [PV2] ASPHALT PAVING For carparks where shown.
 - [JBS] Jetty Barrier Seats To future details. Refer to visualisations for design direction.
 - [SW] NEW PLANTING For regeneration of vegetation communities.
 - [T] PROPOSED NEW TREE.
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 - BIN
 - BUBBLER- Existing relocated or new to match.
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 - [SE] TABLE AND BENCH SEAT

LEGEND

- FRP boardwalk following existing line and level to meet on grade paving.
- Existing sea walls and gravel paving. Gravel upgraded with compacted rhyolite.
- Crazy stone paving on grade.
- Top of boat ramp/ boardwalk threshold improved to meet minimum AS 1428.1 cross falls (1:40)
- Existing boat ramp may need concrete screed or topping to meet level adjustment.
- Potential for artistic treatment of Department of Fisheries wall and paving in foreground.
- Timber boardwalk on top of existing sea wall and flush with top of boat ramp. Fishing spots are uninterrupted on the gravel zone in front.
- Planting between seawall and driveway to discourage access. The boardwalk entry will be clear and distinct with less visitors using the Fisheries driveway.
- Pavement for the driveway should be a different finish to emphasise it is not public access. Fence separation within planting.
- Existing turning circle formalised. Retracting bollards at Department entry.
- Timber boardwalk at entry, following same alignment as concept to direct visitors from the carpark away from the Department of Fisheries building.
- Planted area to control pedestrian movement and emphasise the entrance to the walk. The design will improve the entry from Market Street by separating vehicles from pedestrian access and enhancing the entry point with access paths and landscaping
- Interpretive and informative signage to engage and inform visitors at the start of their journey. Similar to the structure at the western entry.
- Bike rack and new bubbler.
- Waterfront car parking removed (consistent with concept) to create a park area and allow people to connect to the Lake.
- All access parking bays (x2).
- Lean rail balustrade along entry boardwalk.
- New picnic tables.
- New *Eucalyptus bosistona* (Coast Grey Gum) planting to compliment existing.
- Existing Eucalypt removed to enable formalisation of turning circle.
- Proposed pontoon for fishing (future).

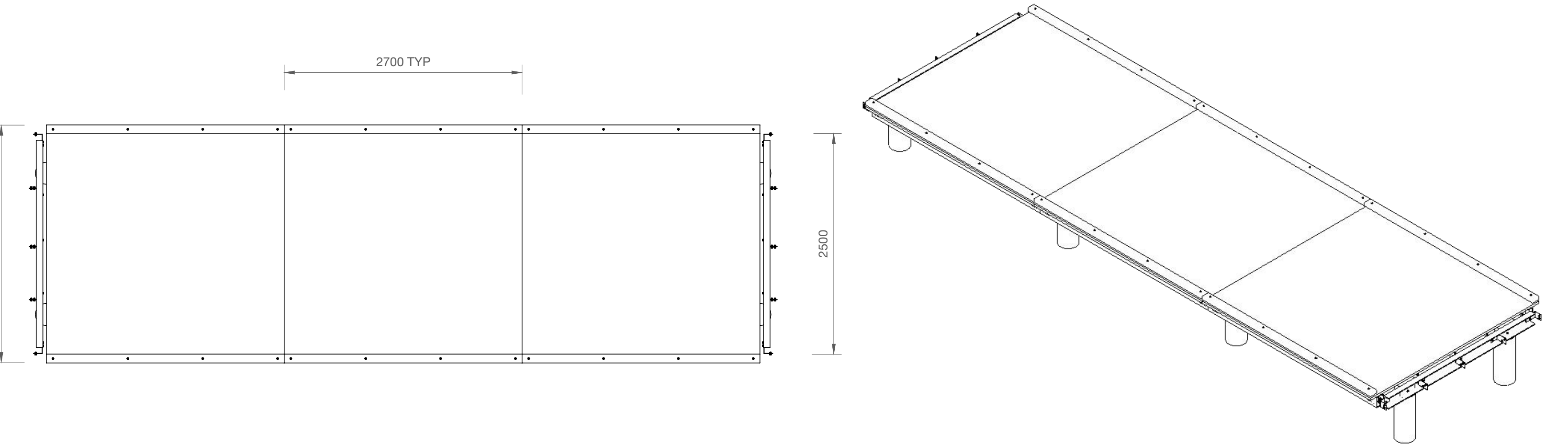


- LEGEND**
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exact tide lines.
 - [CL] CENTRE LINE
 - [PG] PATH ON GRADE
2.5m wide gravel path
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existing.
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New Concrete Finish.
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 - [BIN]
 - [BUBBLER]-
Existing relocated or new to match.
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 - [SE] TABLE AND BENCH SEAT

- LEGEND**
1. New porous paved car parking bays.
 2. Proposed new car parking spots. 14 new spots, 2 accessible car parking, with removal of 8.
 3. Driveway geometry reconfigured. To be assessed by Council engineers. New larger signage provided for improved wayfinding.
 4. Path connection from Market Street along carpark drive. No kerb edge requires bollards for vehicle management.
 5. Existing pit within existing turf slope.
 6. Ramp access from bridge abutment to carpark. Not all access but suitable for prams etc. Ramp minimum 1200mm width.
 7. Mass planting to slope adjacent to ramp. New Eucalyptus bosistona (Coast Grey Gum) planting.
 8. Existing Eucalyptus bosistona (Coast Grey Gum) to be retained with massed planting underneath.
 9. Carpark limited by steep levels and existing remnant trees.
 10. Stair access from Market Street to boardwalk. Timber handrail and tactical indicators provided along with wayfinding signage.
 11. New carpark lighting to be confirmed by traffic engineer.

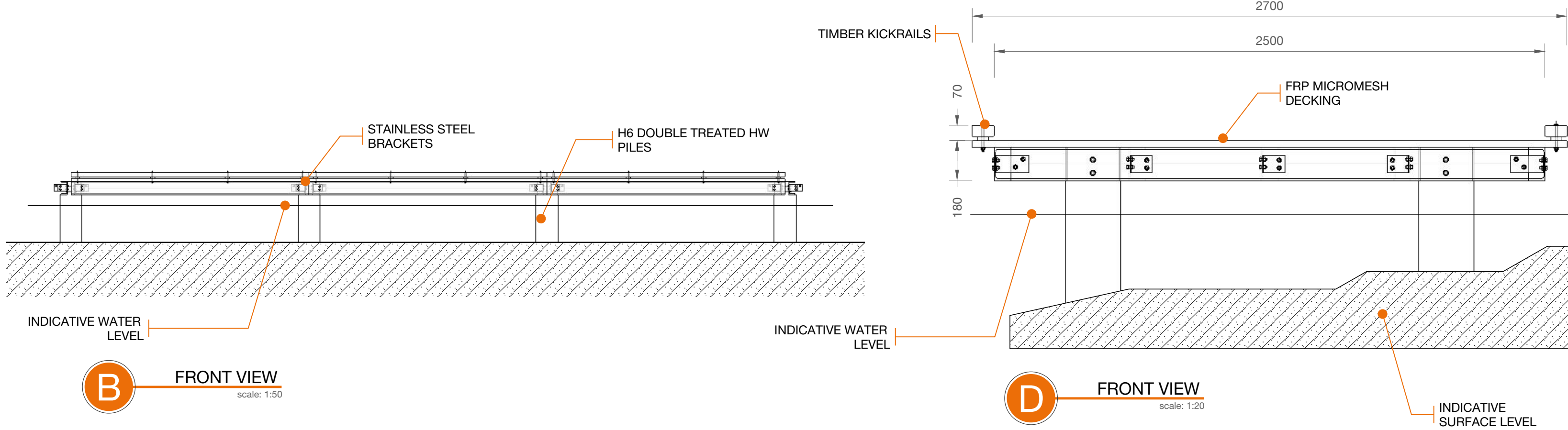
1 DETAIL PLAN | entry from Market St NORTH
Scale: 1:150

Detail - Timber boardwalk construction typical.



A PLAN
scale: 1:50

C AXONOMETRIC
scale: 1:50



B FRONT VIEW
scale: 1:50

D FRONT VIEW
scale: 1:20

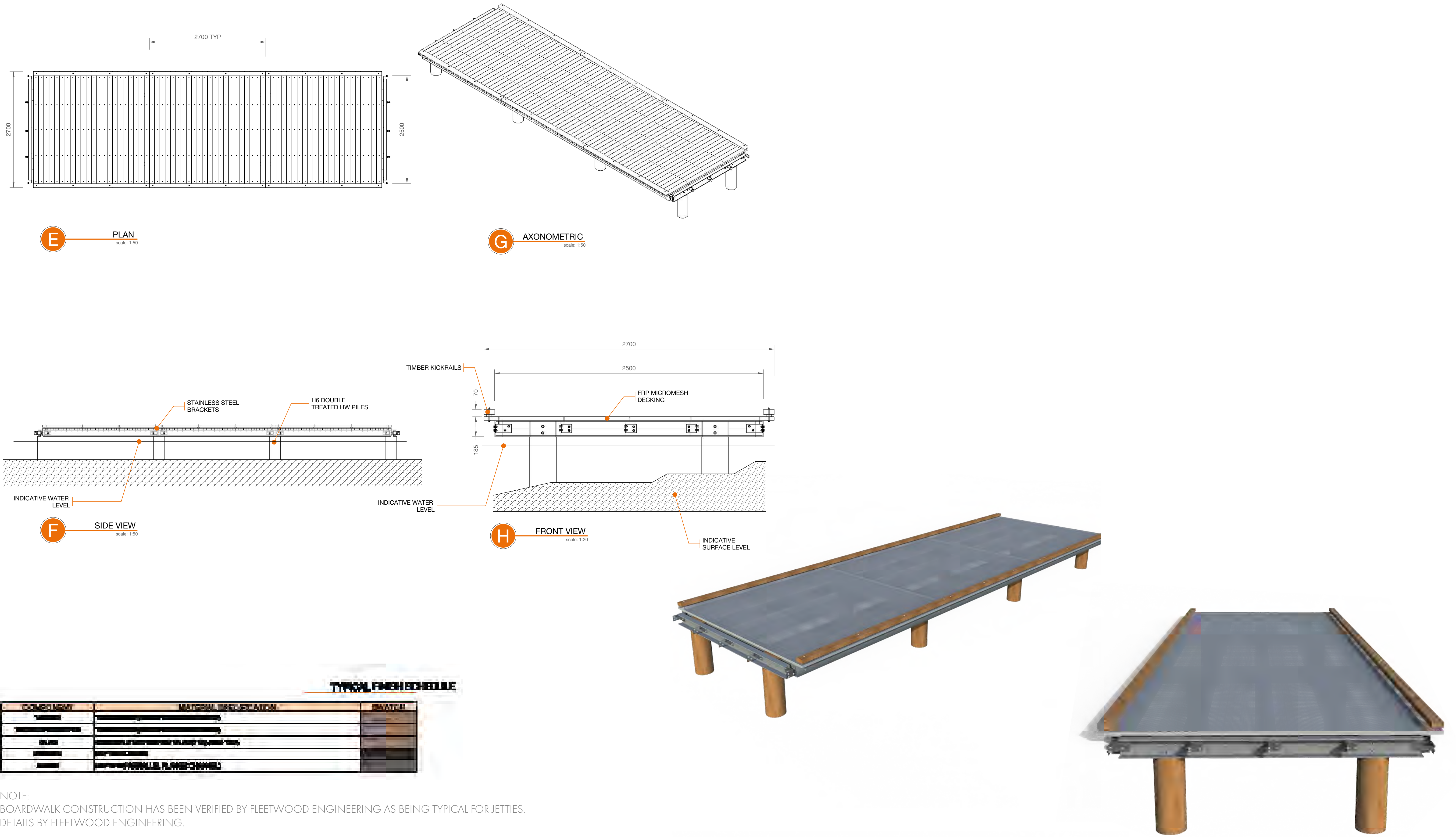
TYPICAL FINISHES

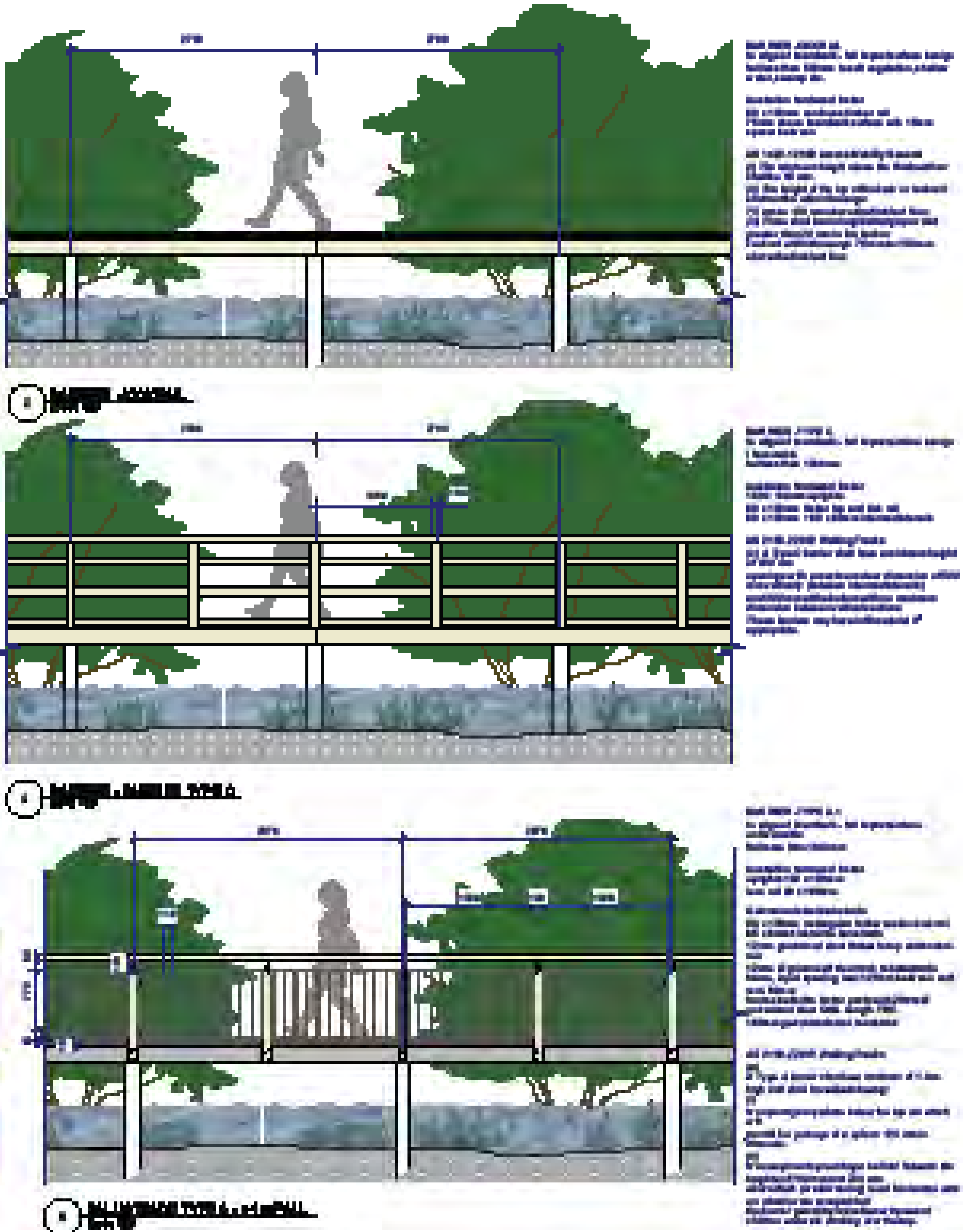
COMPONENT	MATERIAL SPECIFICATION	FINISH
Decking	FRP Micromesh Decking	Dark Grey
Kickrails	Timber Kickrails	Light Brown
Brackets	Stainless Steel Brackets	Brushed Steel
Piles	H6 Double Treated HW Piles	Galvanneal
Channel	FRP Channel	Dark Grey

NOTE:
BOARDWALK CONSTRUCTION HAS BEEN VERIFIED BY FLEETWOOD ENGINEERING AS BEING TYPICAL FOR JETTIES.
DETAILS BY FLEETWOOD ENGINEERING.



Detail - FRP deck





BALUSTRADES AND SAFETY

The boardwalk is designed to Australian Standards for Walking Tracks AS 2156.2-2001: Classification and Signage. Professional duty of care by the consultants is also be a key factor beyond the standards, to determine risk and variables.

Safety barriers are directed by the following requirements.

- Barrier - Kick rail

A kick rail is installed to the edge of the boardwalk where the effective fall height is less than 1 metre onto a benign surface (i.e. the fall is onto soft vegetation, shallow water, swamp, etc.)

Note that an effective fall height is calculated by the height of the fall + the fall surface. Where the fall surface is benign then it is given a value of minus 0.5 metres. For example, if the height of the fall is 1.4 metres onto a benign surface, the effective fall height is calculated as 1.4m - 0.5 = 0.9m.

Therefore, the majority of the boardwalk does not require a barrier as there is predominately a benign surface and the effective fall height is less than 1 metre. A kick rail is not required on the foreshore path that is at grade and where the ground extends flat for more than 600mm (as it would become a trip hazard and limit access).

- Barrier – Type C

This is where a 0.9 metre high post and rail barrier is installed where there is an opening or sharp turn creating a fall hazard into deep water without reasonable means of exit. This is relevant to some of the jetties. This barrier type while not required on most lookouts where shown are an important addition. This is to make some people feel more comfortable walking out over the water, as a lean-rail and for fishing from.

- Barrier – Type A

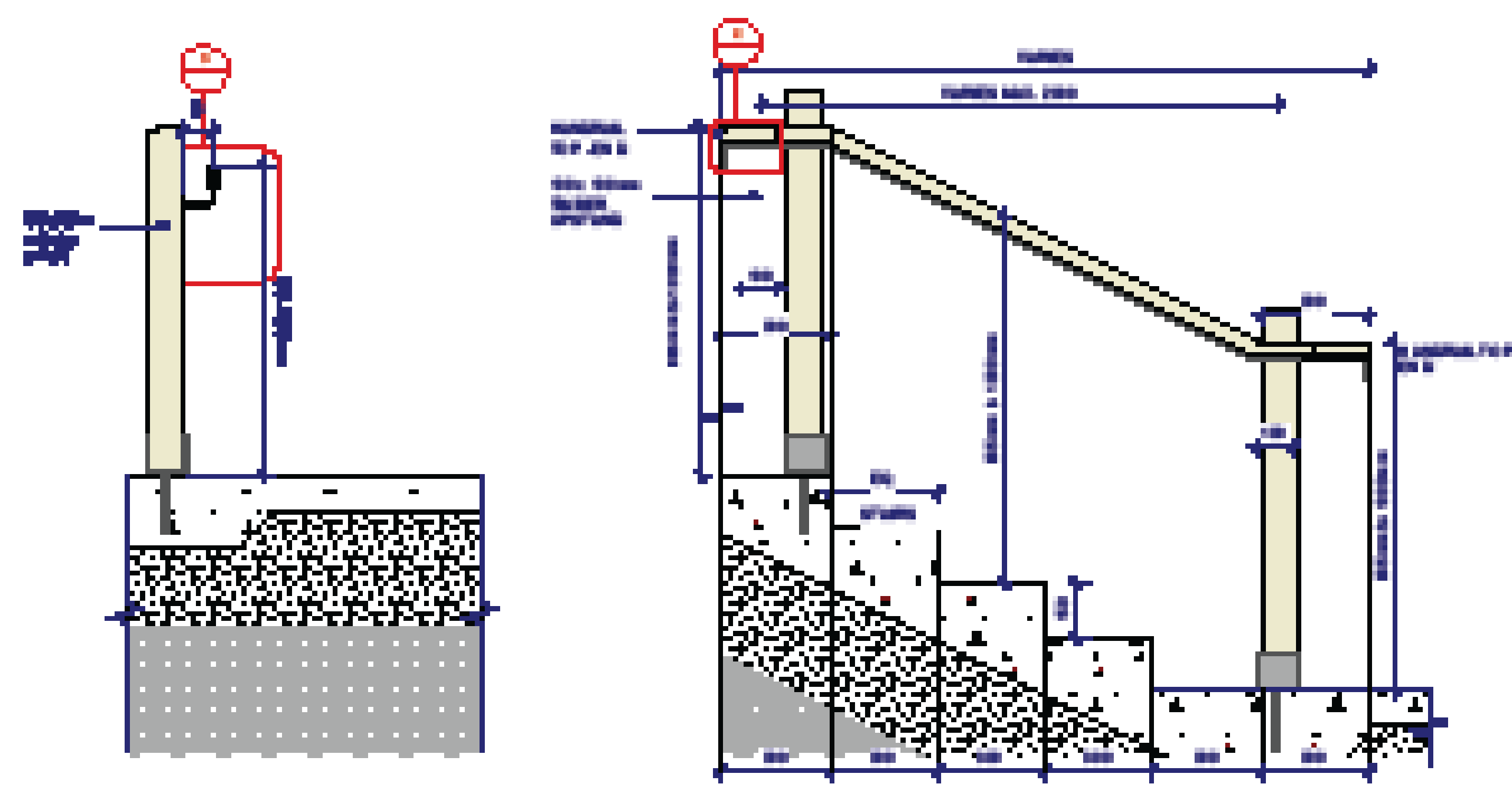
This is where a 1 metre high barrier is installed where there is a fall height equal to or greater than 1.0m onto loose gravel, sand, grass or deep water with reasonable means of exit. This includes rocks and oysters.

This barrier type is located on the curved entry boardwalk at the Eastern carpark. It may be used along the stretch of boardwalk immediately to the east of the Department of Fisheries if deemed necessary by Council.

NOTE:

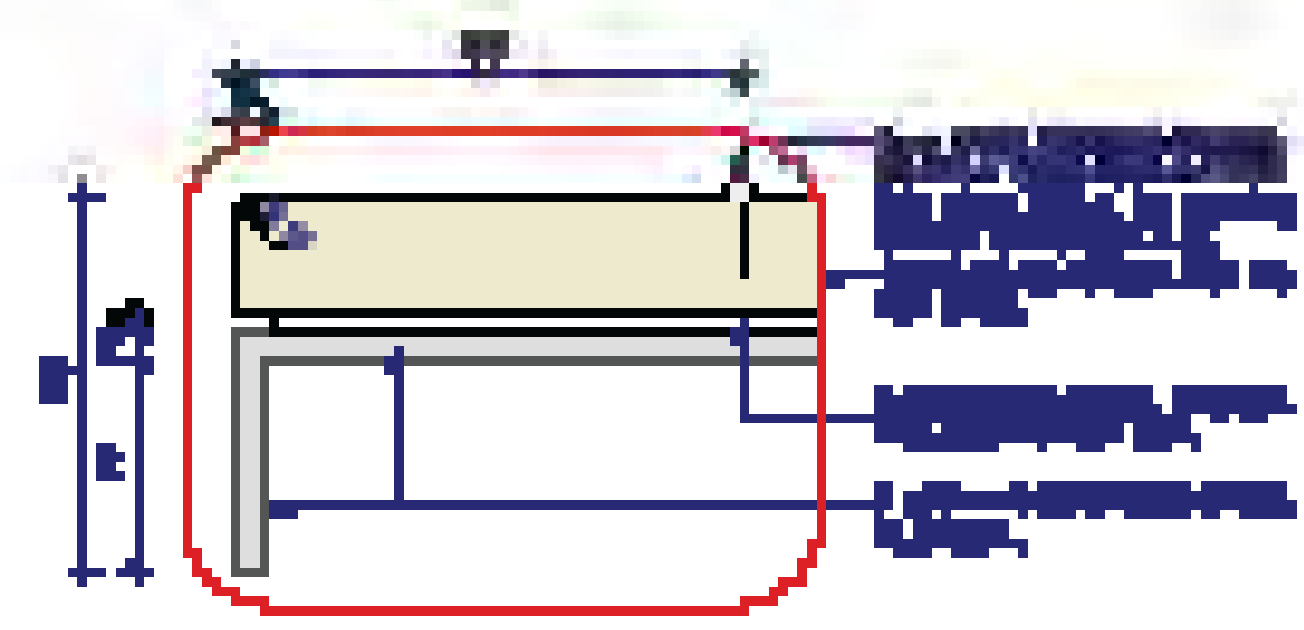
REFER TO DETAIL PLANS FOR BALUSTRADE TYPES AND EXTENT.

Typical Stair handrail detail (at entry from Market Street)

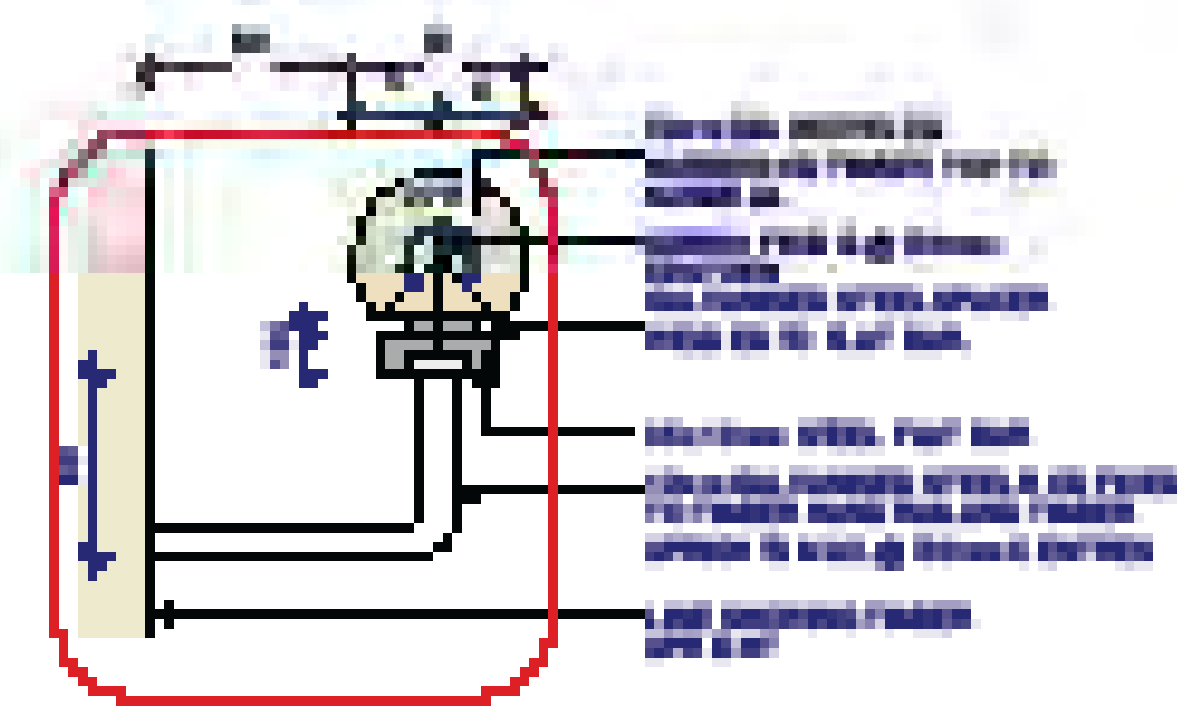


NOTE:
REFER TO DETAIL PLANS FOR BALUSTRADE TYPES AND EXTENT.

1 HANDRAIL TO STAIRS

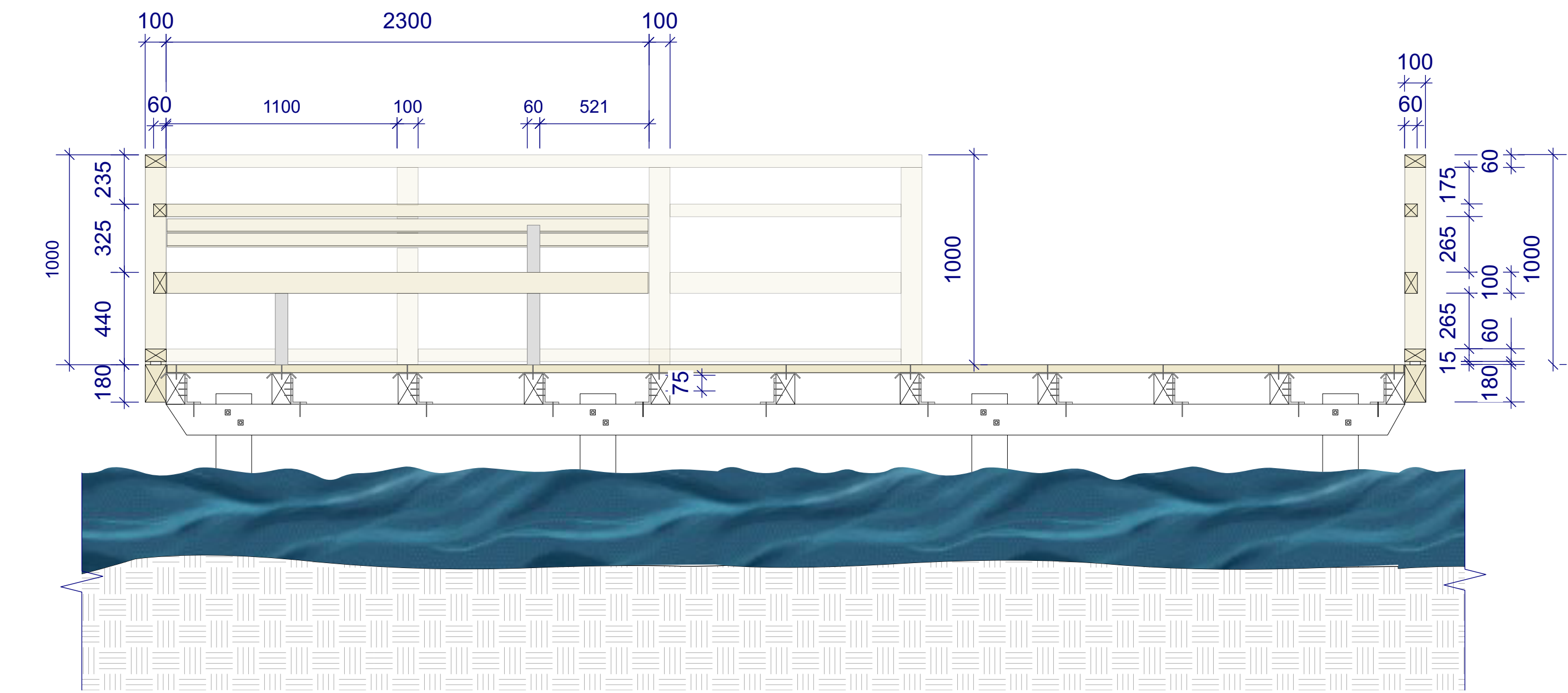


2 BENCH

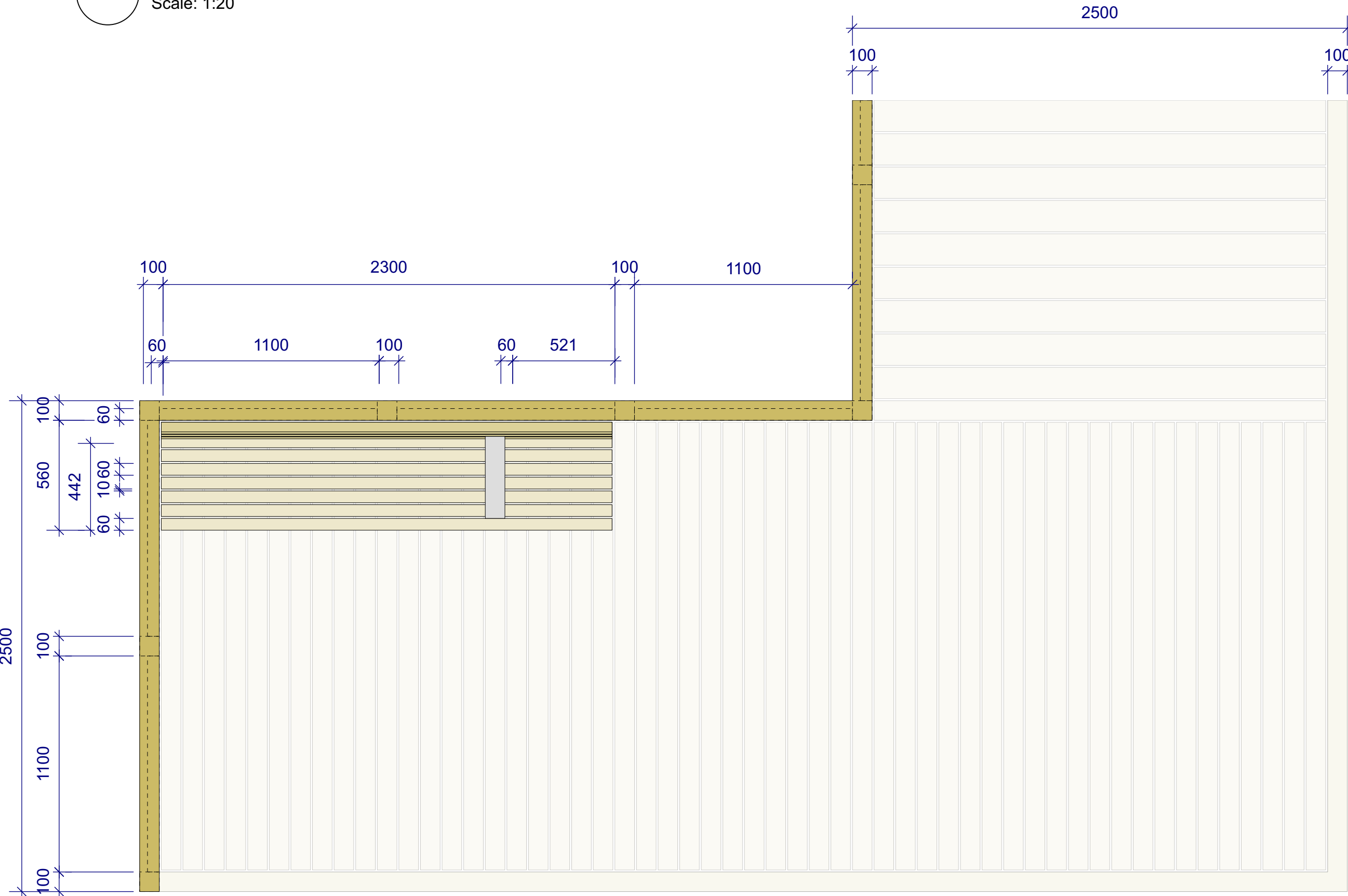


3 TABLE

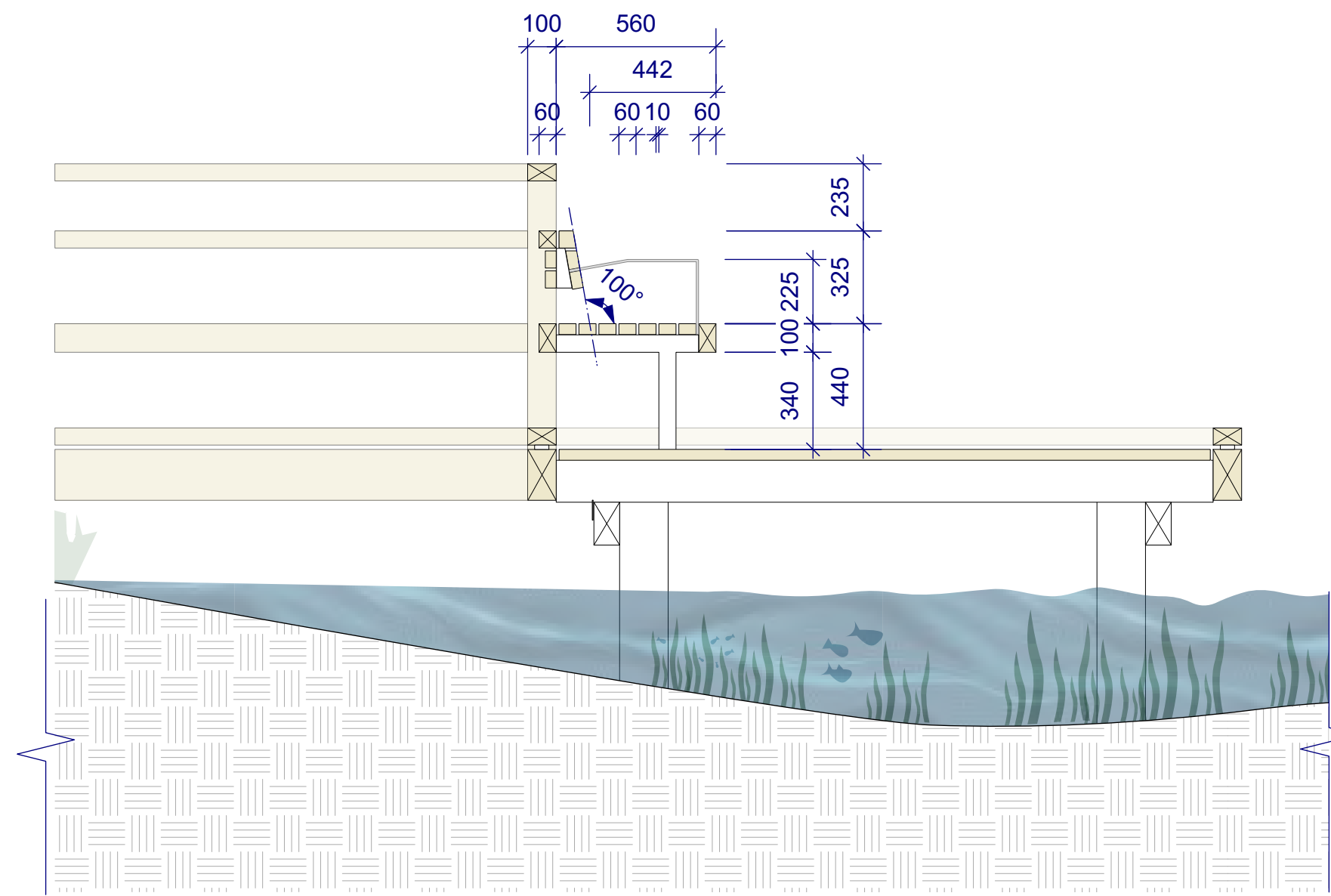
Typical Seat Details 01 - JETTY 01-03



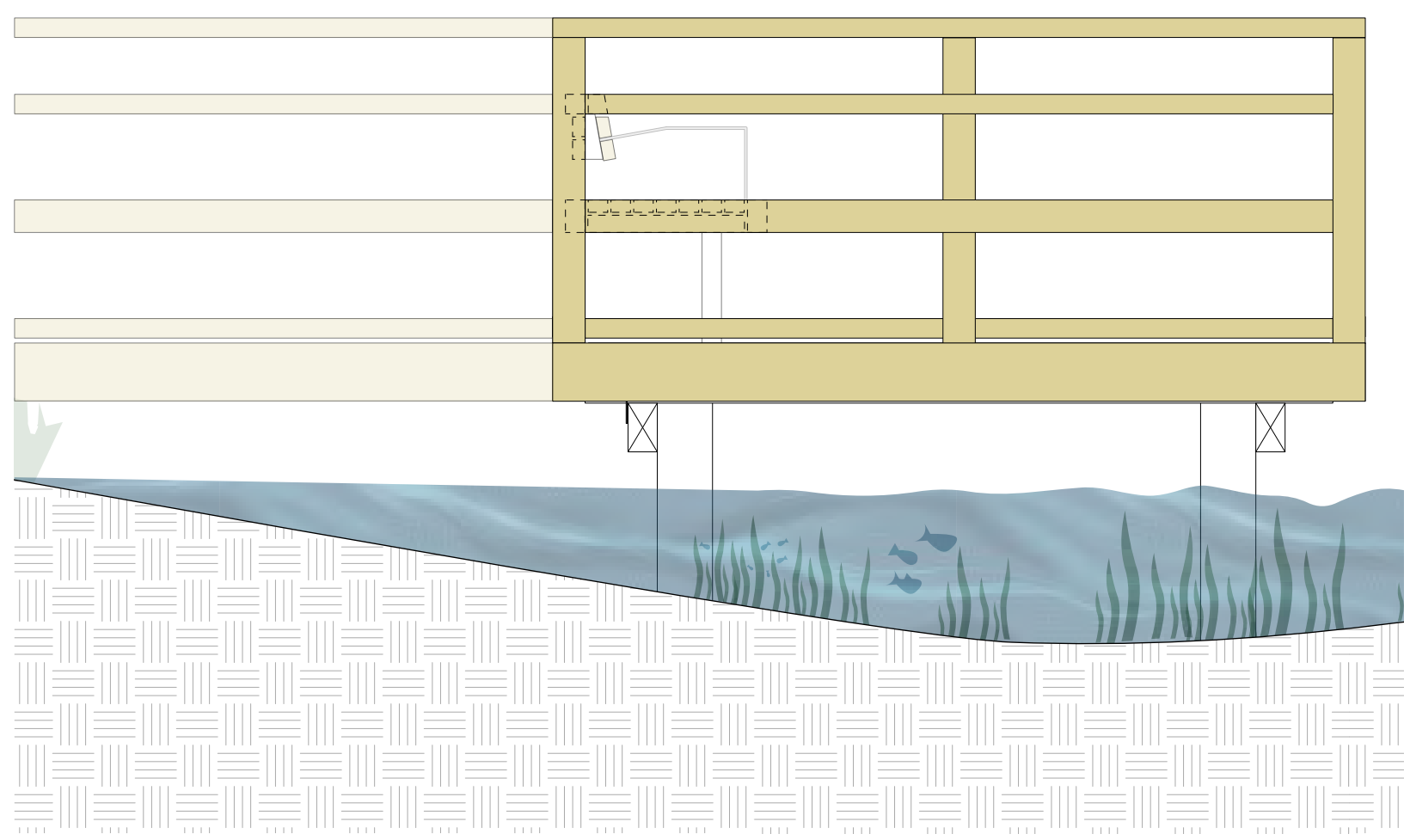
1 LOOKOUT SEAT front elevation
Scale: 1:20



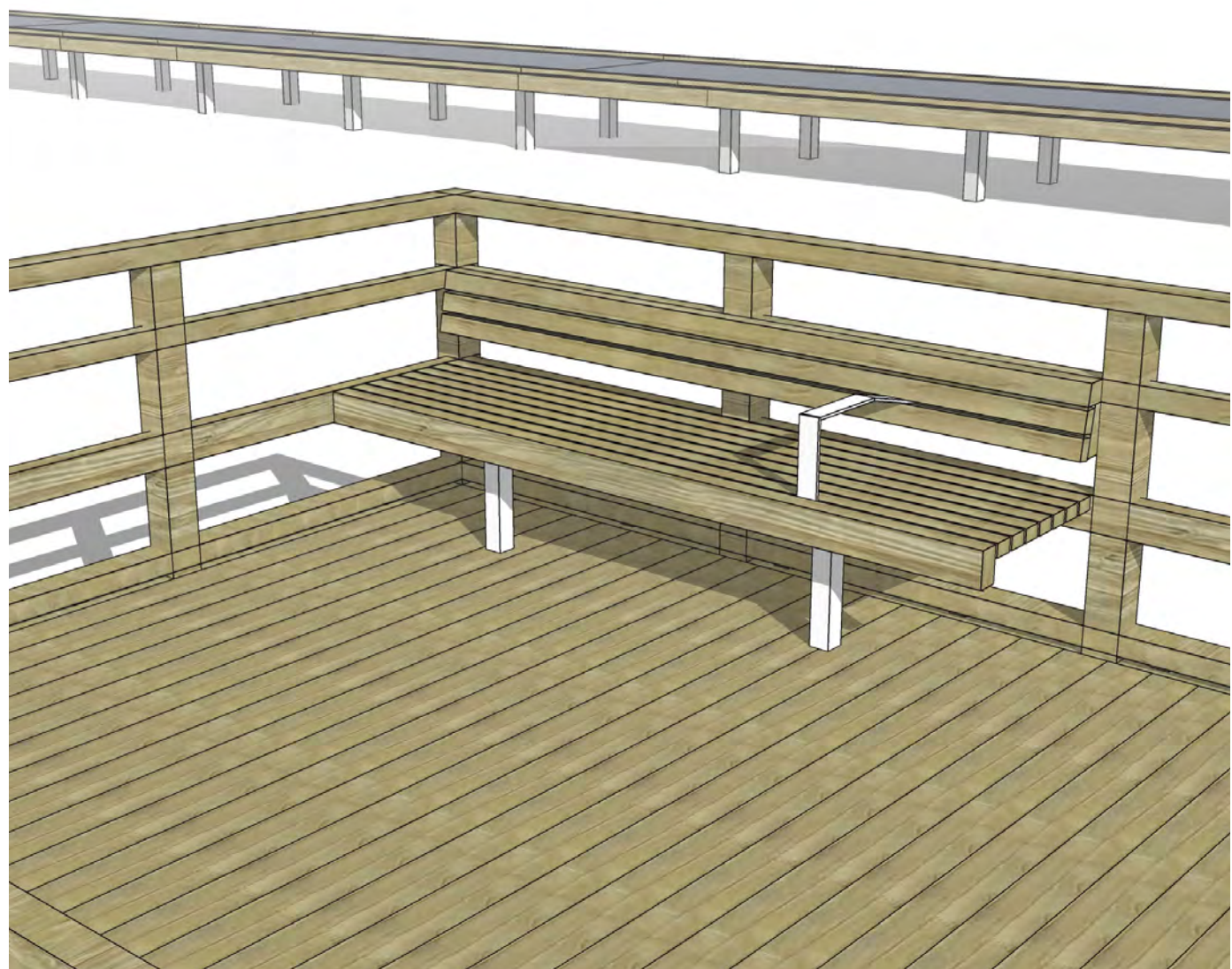
3 LOOKOUT SEAT plan
Scale: 1:20



2 LOOKOUT SEAT section
Scale: 1:20



4 LOOKOUT SEAT side elevation
Scale: 1:20



LOOKOUT SEAT
formal seating on lookout jetty's

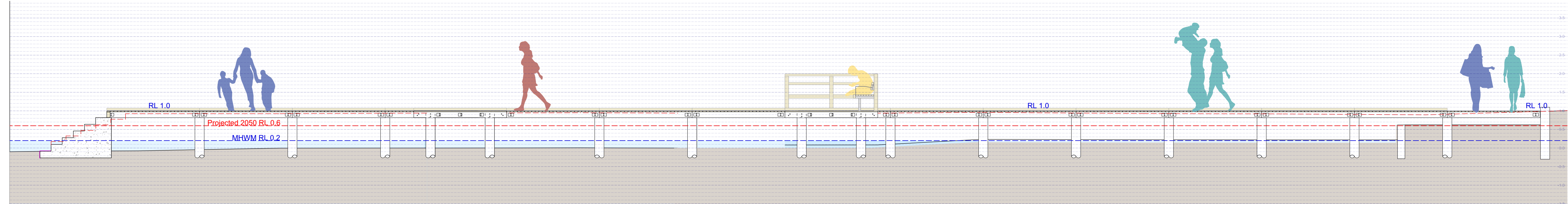
Australian hardwood timber
60 x 38mm battens
60 x 100mm edge rails

Galvanised steel armrest and substructure
8 x 60mm steel flat bar armrest

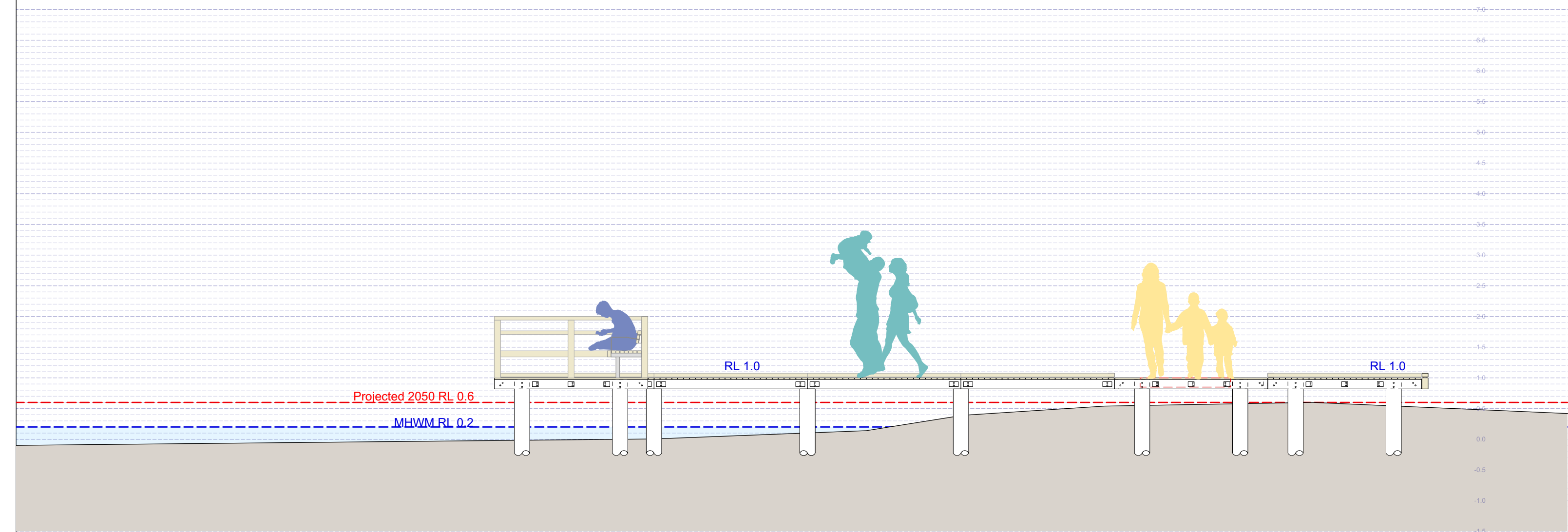
seat height 440mm above boardwalk finish
in line and part of the second horizontal barrier rail

back rest to align with third horizontal barrier rail

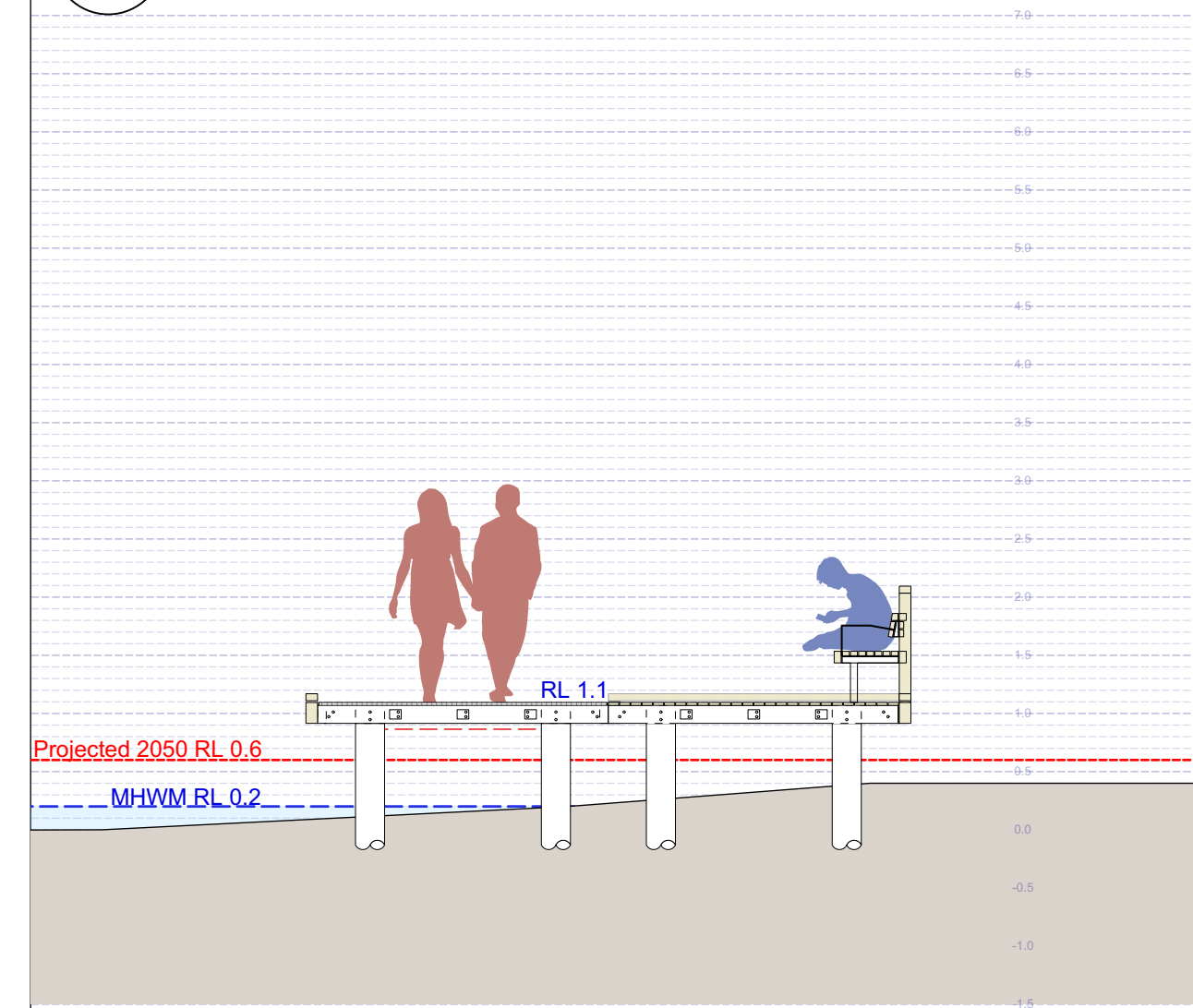
Lookout/ Boardwalk Structures- Key Water levels 01



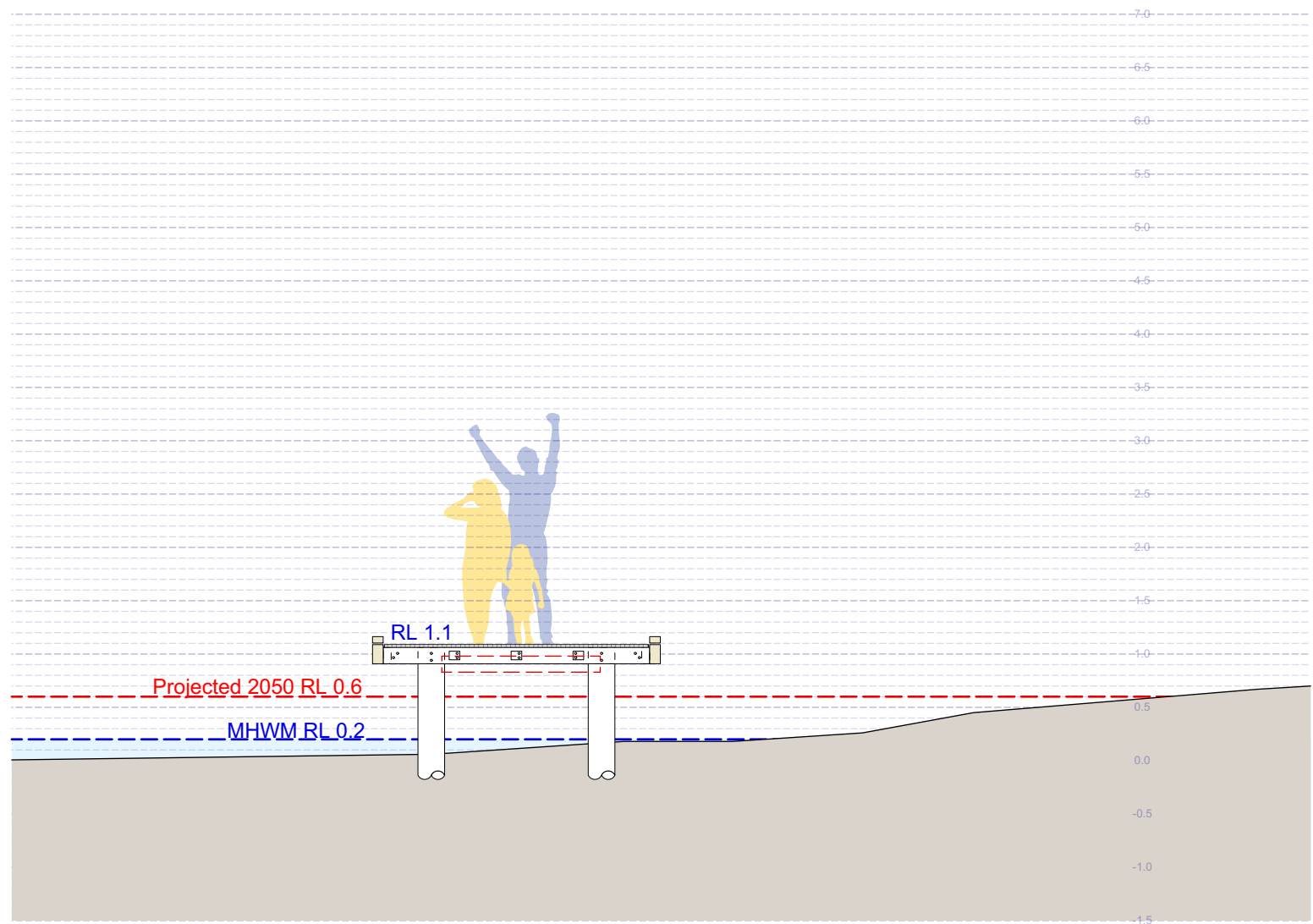
4 SECTION 04
Scale: 1:60



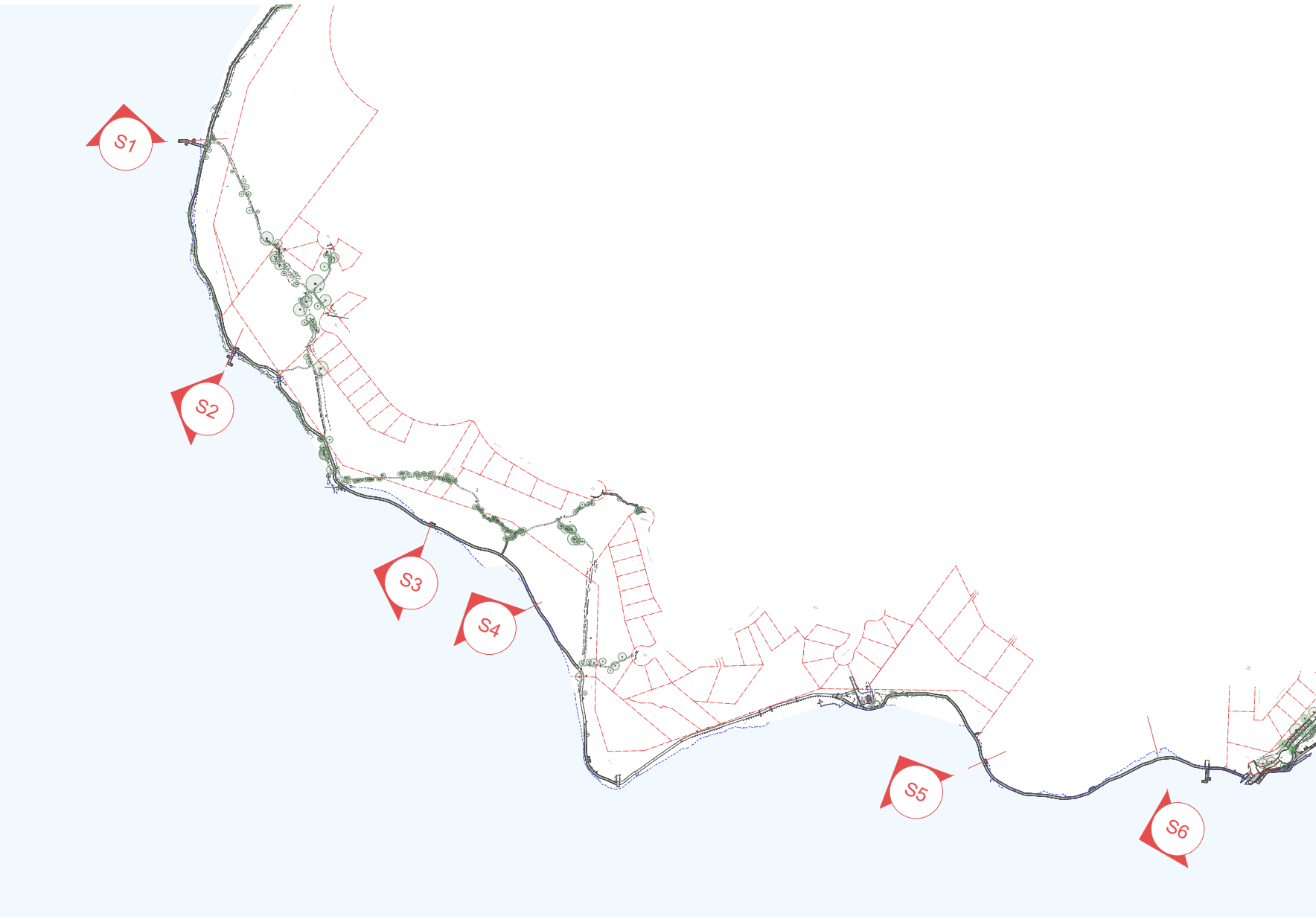
2 SECTION 02
Scale: 1:60



3 SECTION 03
Scale: 1:60



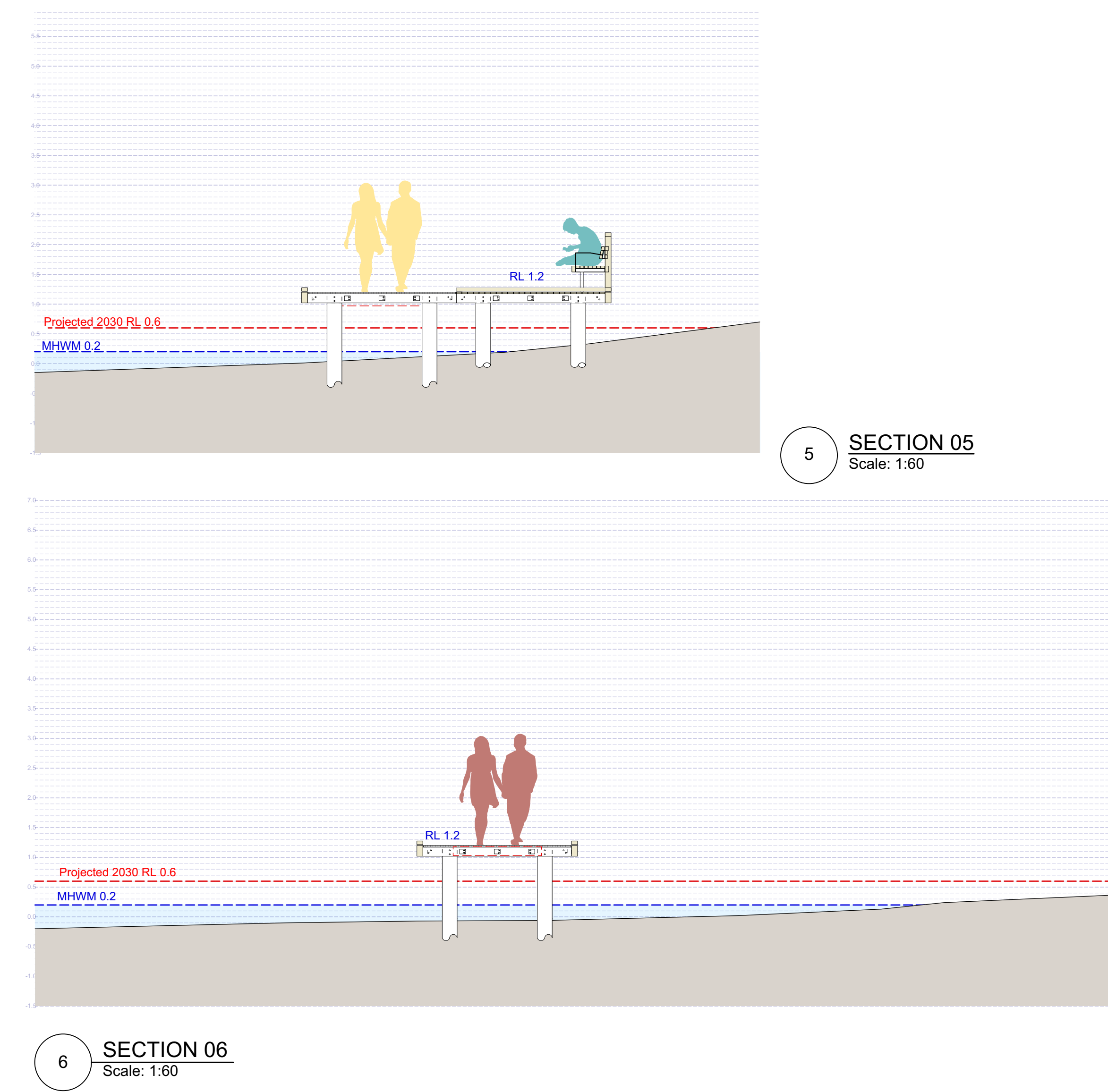
4 SECTION 04
Scale: 1:60



Mean high Water Mark and anticipated seal level rise above the MHW in 2050*

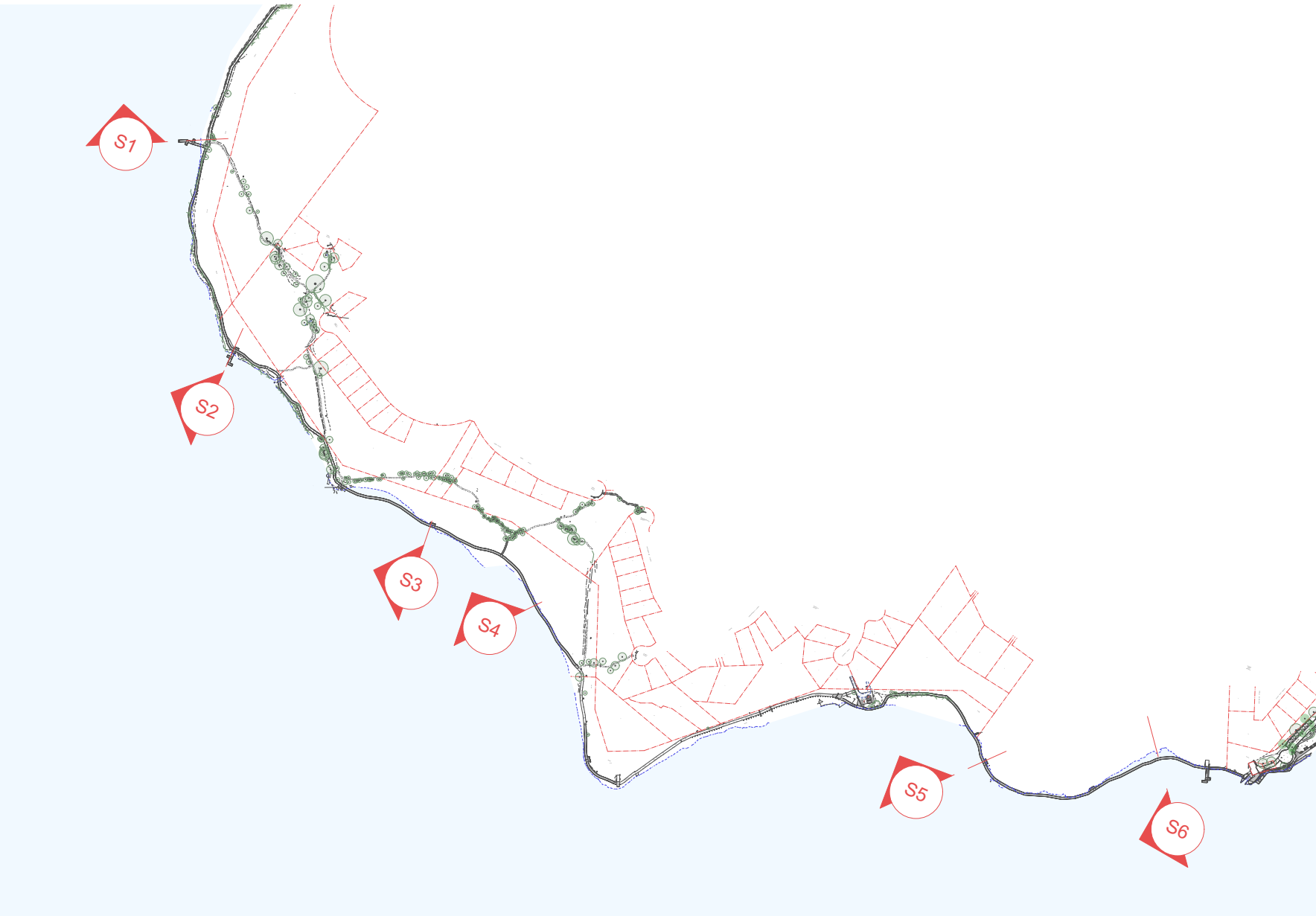
* the sea level rise planning benchmarks provided in the NSW Sea Level Rise Policy Statement (DECCW, 2009) have been adopted for this study. The benchmarks are a projected rise in sea level, relative to the 1990 mean sea level, of 0.4 metres by 2050 and 0.9 metres by 2100 (DECCW, 2009).

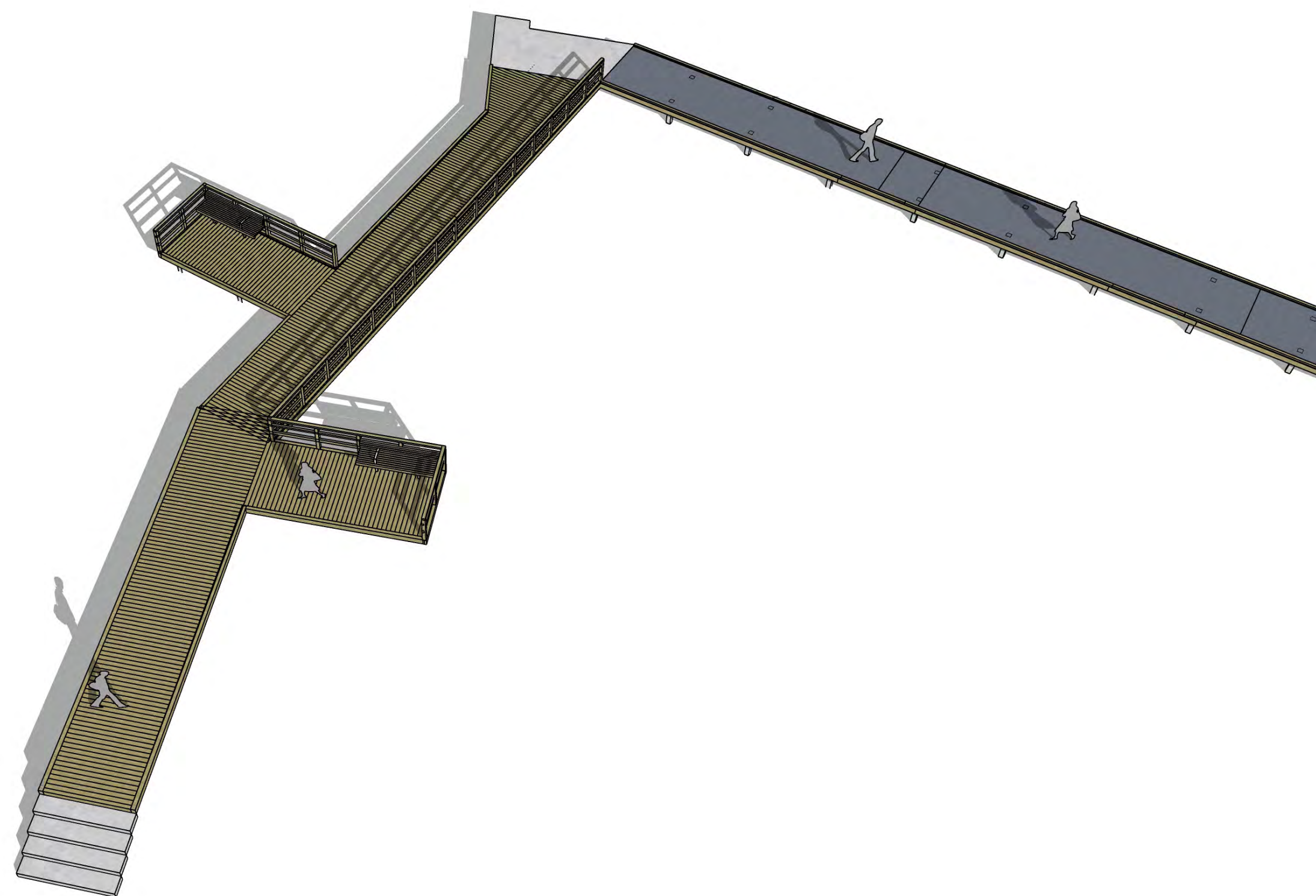
Lookout/ Boardwalk Structures- Key Water levels 02



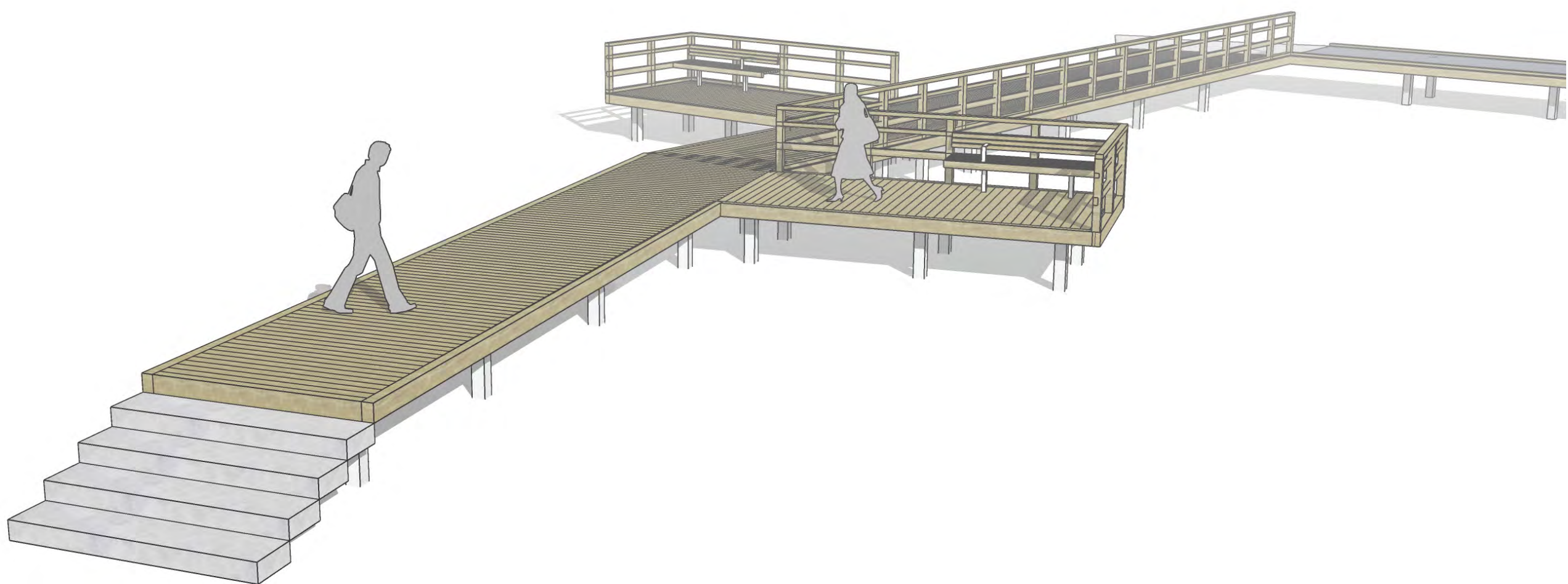
Mean high Water Mark and anticipated seal level rise above the MHW in 2050*

* the sea level rise planning benchmarks provided in the NSW Sea Level Rise Policy Statement (DECCW, 2009) have been adopted for this study. The benchmarks are a projected rise in sea level, relative to the 1990 mean sea level, of 0.4 metres by 2050 and 0.9 metres by 2100 (DECCW, 2009).

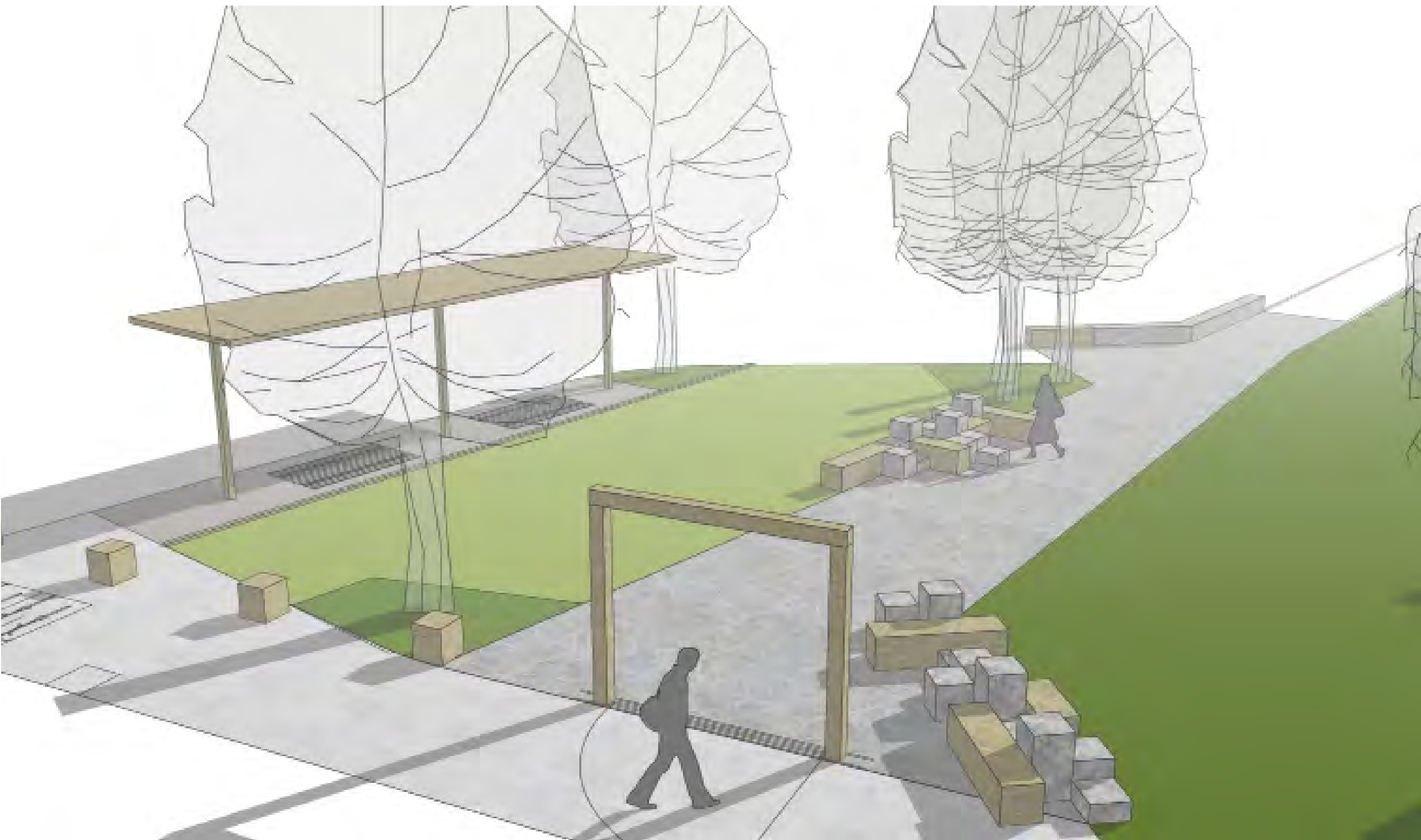




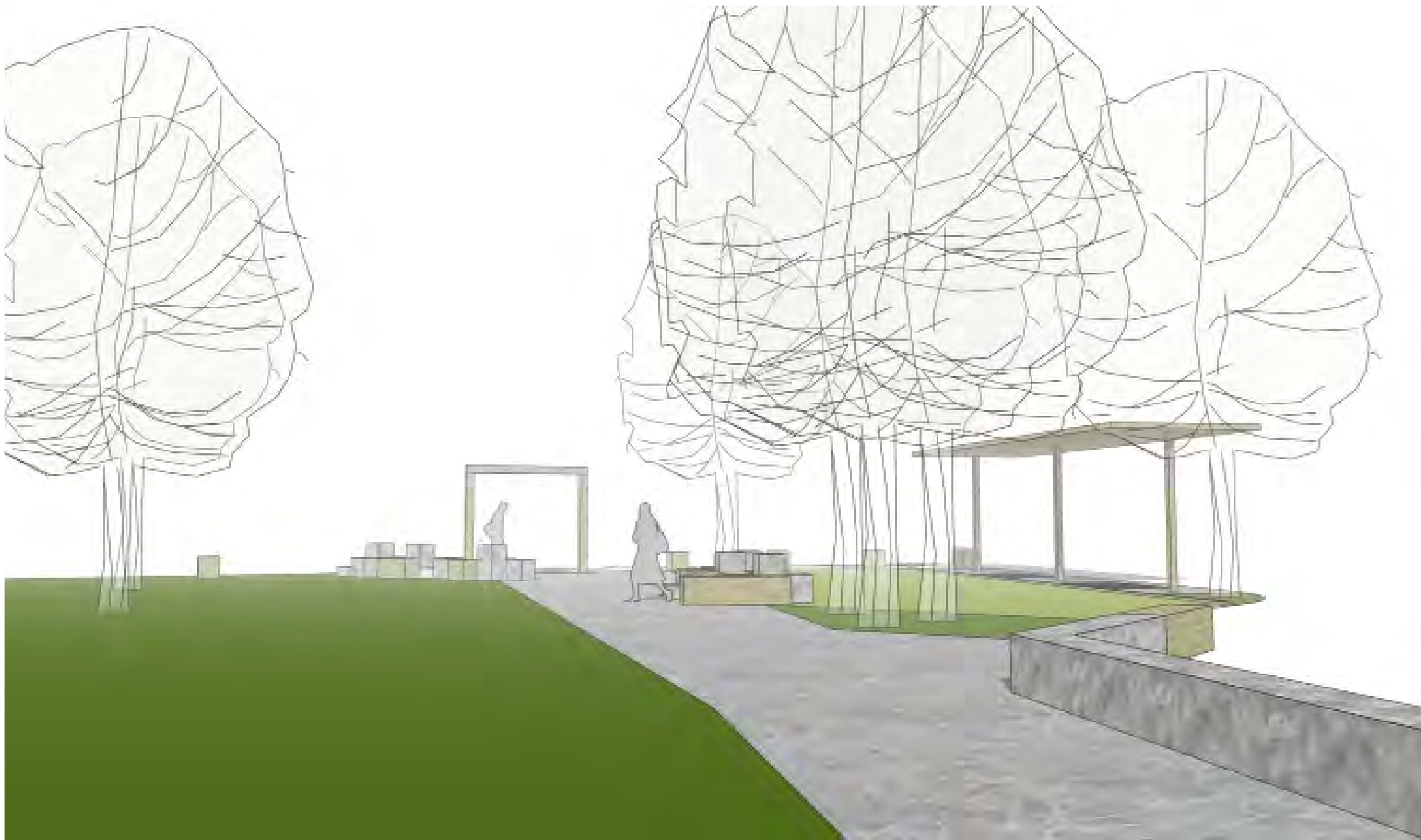
JETTY 03- Western end. Existing jetty rebuilt.



JETTY 03- Western end. Existing jetty rebuilt.



WESTERN ENTRY - Showing 'Parklet' entry artistic interpretative structures and existing gate portal retained.



WESTERN ENTRY - Showing 'Parklet' entry artistic interpretative structures, entry sign and new shade structure.



EASTERN ENTRY - Showing reclaimed 'Parklet' entry artistic interpretative structures and new carpark configuration.



EASTERN ENTRY - Showing 'Parklet' entry artistic interpretative structures, entry sign and signature boardwalk statement.

Proposed Materials

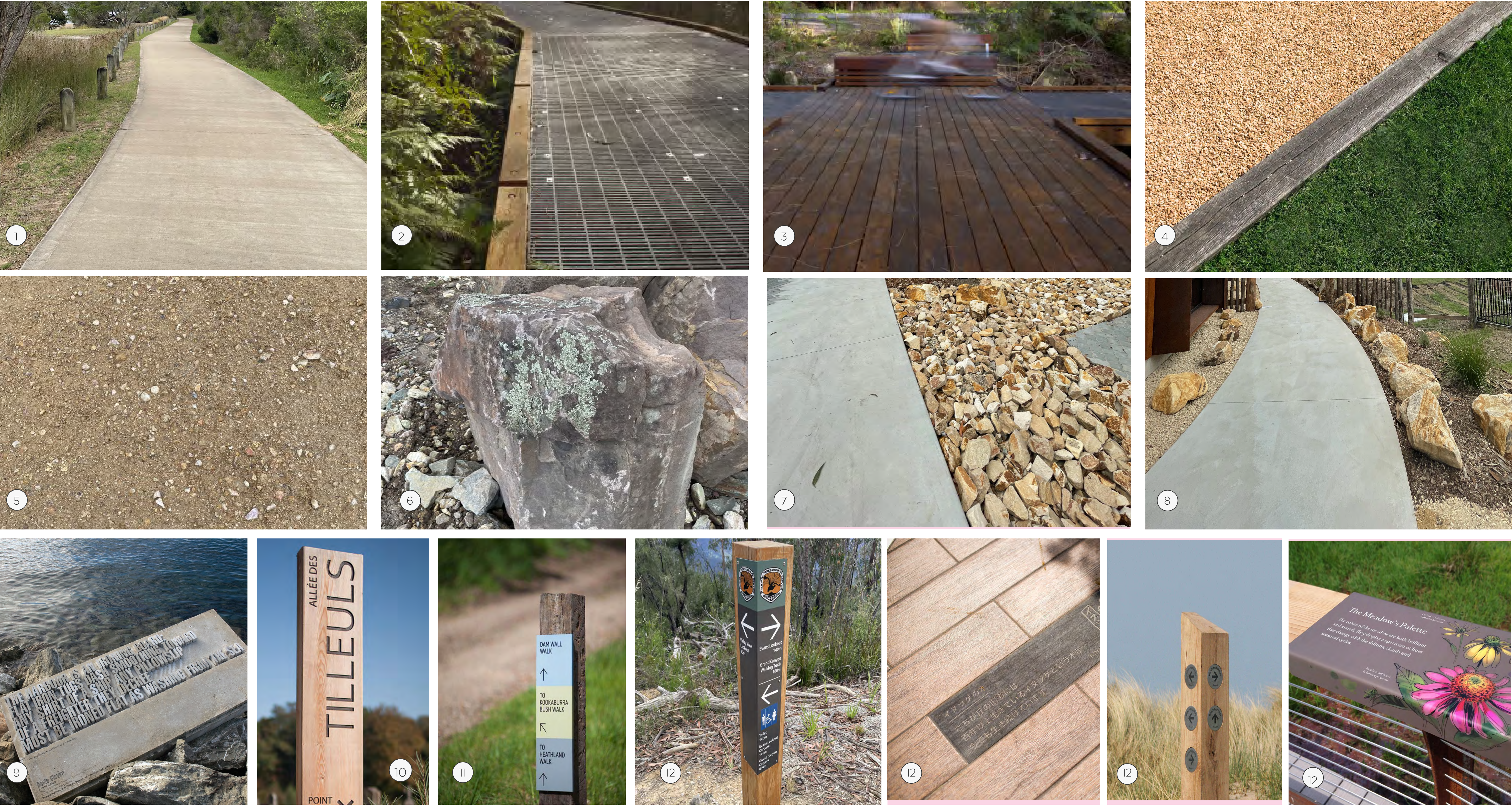


Boardwalk Elements & Trail Paving

- 1. Project specific recycled timber seats and benches. All steelwork to be galvanised for better harmony with the landscape character.
- 2. Potential for Place Making and Interpretation areas at rest stops and lookouts.
- 3. Rectangular forms for interpretive entry features using stone and timber. Stepped forms allow informal play and seating.
- 4. Stone block seats and crazy paving.
- 5. Interpretive forms inspired by bay side and marine structures. Simple and modular.

- 6. Timber leanrail and vertical picket balustrade similar to Type A.
- 7. Hardwood timber lean rail at Western Entry boardwalk. Strategic and measured use of curved timber lean rail. (Terrigal Boardwalk).
- 8. Simple hardwood timber rails for jetties. Traditional timber character. (Tathra Wharf entry).
- 9. Galvanised balustrade and timber detail Type A fence at Western Entry. (Short Point).
- 10. Simple hardwood timber rails for jetties. (Long Jetty).
- 11. Salvage and reinstatement of 'heritage' furniture and details to retain familiar character and celebrate the original boardwalk construction.
- 12. Simple timber benches (Short Point).

Proposed Materials



Boardwalk Elements & Trail Paving

1.

Retention of existing concrete. Full width broom finish for new concrete paving.
2.

Fibreglass Reinforced Polymer deck with timber edging to give a more refined finish..
3.

Timber boardwalk junctions with lookouts (off grade).
4.

Compacted granular paths with timber edge.
5.

Locally sourced screened mine gravel (Rhyolite) for compacted gravel paths.
6.

Locally sourced Nullica Rock (Basalt), interpretive modular structures and formal walls.
7.

Local stone mulch for swales, non trafficable areas.
8.

New concrete paving.
9.

Concrete engrave interpretation (subject to Art Strategy).
10.

Simple timber wayfinding with routed detail (reusing treated pine from existing boardwalk or local recycled hardwood).
11.

Wayfinding plinths with steel plate signage.
12.

Wayfinding plinths with multiple directional information.
13.

Simple steel inlay medallions within timber plinths.
14.

Lean rail interpretive information, to avoid intrusive standalone signs.

Planting Precedents Salt-marsh



1. Aegiceras corniculatum - River Mangrove

2. Avicennia marina - Grey Mangrove

3. Samolus repens - Creeping Brookweed

4. Cotula coronopifolia - Water Buttons

5. Limonium australe- Sea Lavender

6. Tetragonia tetragonioides - New Zealand Spinach

7. Sarcocornia quinqueflora - Beaded Glasswort
8. Suaeda australis - Austral Seablite

9. Tecticornia arbuscula - Shrubby Glasswort

10. Lobelia anceps - Angled Lobelia

11. Selliera radicans - Shiny Swamp-mat

12. Carpobrotus glaucescens - Pigface

13. Disphyma crassifolium - Round-leaved Pigface

14. Brachyscome graminea - Grass Daisy
15. Spargularia tasmanica - Tasmanian Sandspurry

16. Melaleuca armillaris - Bracelet Honey-myrtle (no picture)

17. Rhagodia candolleana - Coastal Saltbush (no picture)

18. Atriplex australasica - Beach Saltbush (no picture)

19. Leptinella longipes - Coast Buttons (no picture)

20. Apium prostratum - Sea Celery (no picture)

21. Baumea juncea - Bare Twig-rush (no picture)
22. Gahnia filum - Chaffy Saw Sedge (no picture)

23. Austrostipa stipoides - Coast Speargrass (no picture)

24. Phragmites australis - Common Reed (no picture)

25. Cynodon dactylon - Green Couch (no picture)

26. Ficinia nodosa - Knobby Club-sedge (no picture)

27. Isolepis cernua - Nodding Club-sedge (no picture)

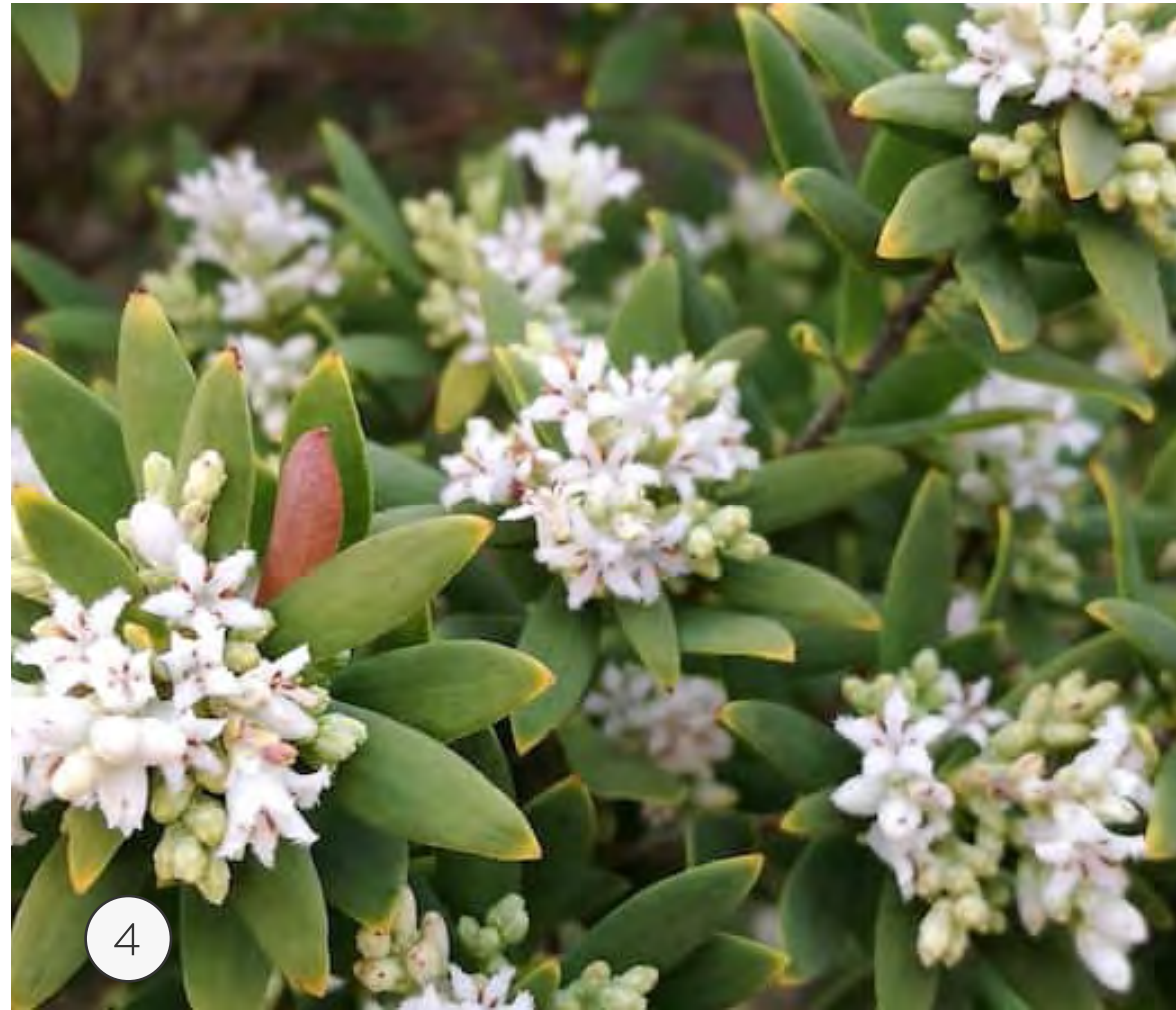
28. Zoysia macrantha - Prickly Couch (no picture)
29. Sporobolus virginicus - Saltwater Couch (no picture)

30. Juncus kraussii - Sea Rush (no picture)

31. Triglochin striatum - Streaked Arrowgrass (no picture)

32. Juncus bufonius - Toad Rush (no picture)

Planting Precedents Swamp oak Forest

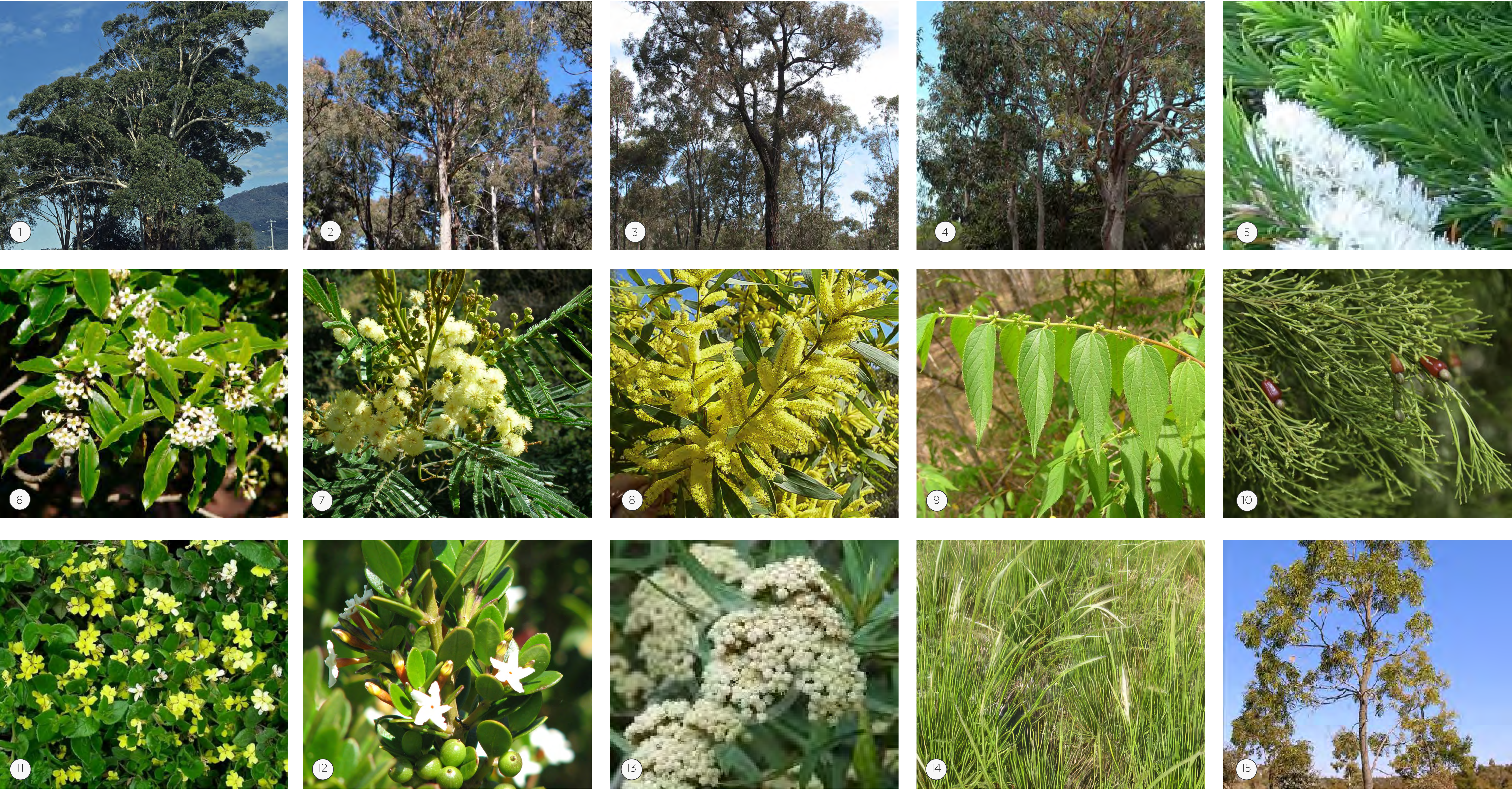


1. Melaleuca armillaris - Bracelet honey myrtle
2. Pittosporum undulatum - Sweet pittosporum
3. Rhagodia candolleana - Seaberry saltbush
4. Leucopogon parviflorus - Coast beard-heath
5. Atriplex australasica - Native orache

6. Acacia subporosa - River wattle
7. Acacia longifolia - Sydney golden wattle
8. Zoysia macrantha - Prickly Couch
9. Plantago coronopus - Buck's-horn plantain
10. Samolus repens - Creeping brookweed
11. Selliera radicans - Swampweed

12. Austrostipa stipoides - Prickly spear-grass
13. Tetragonia tetragonioides - New Zealand spinach
14. Juncus kraussii - Salt marsh rush
15. Machaerina juncea - Bare twig-rush
16. Sporobolus virginicus - Saltwater Couch (no picture)

Planting Precedents Ironbark - Woollybutt - White Stringybark open forest



1.

Eucalyptus botryoides - Bangalay
2.

Eucalyptus bosistoana - Coast grey box
3.

Eucalyptus tricarpa - Red ironbark
4.

Eucalyptus longifolia - Woollybutt
5.

Melaleuca armillaris - Bracelet honey myrtle
6.

Pittosporum undulatum - Sweet pittosporum
7.

Acacia mearnsii - Black wattle
8.

Acacia longifolia - Sydney golden wattle
9.

Trema tomentosa - Poison Peach
10.

Exocarpus cupressiformis - Native Cherry
11.

Goodenia ovata - Hop goodenia
12.

Alyxia buxifolia - Sea box
13.

Ozothamnus argophyllus - Spicy Everlasting
14.

Poa meionectes - Fine-leaved snow grass
15.

Acacia implexa - Hickory Wattle
16.

Rhagodia candolleana - Seaberry saltbush (no picture)
17.

Acacia subporosa- River wattle (no picture)

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PROJECT

Merimbula Boardwalks

PRODUCT

FRP AND TIMBER
BOARDWALK WITH
BALUSTRADE™

3D PRODUCT DRAWING

PAGE SIZE

A3

PAGE NAME

Extent Of Work Plan

11855 03 B

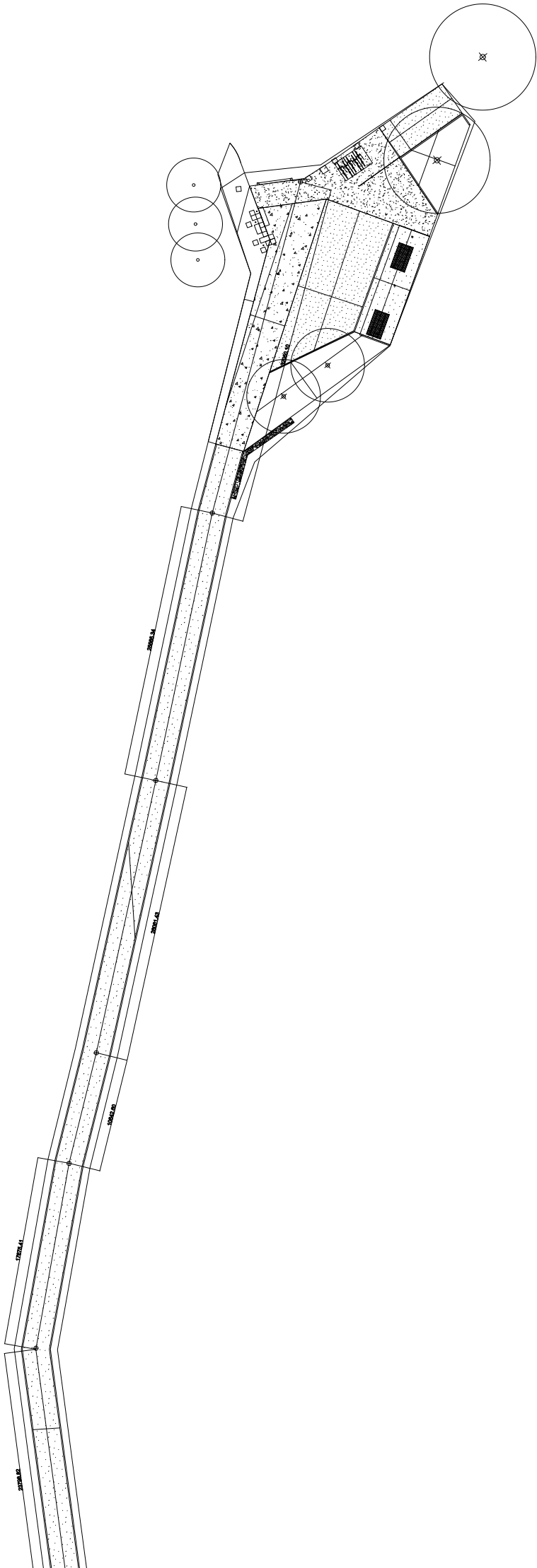


SIDE TRAILS NOT PART OF APPROVAL

A

EXTENSION OF WORKS
scale: 1:5000

DESIGNED TO LANDSCAPE DRAWING:
20240402_L_base PLAN.DWG



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Plan 1

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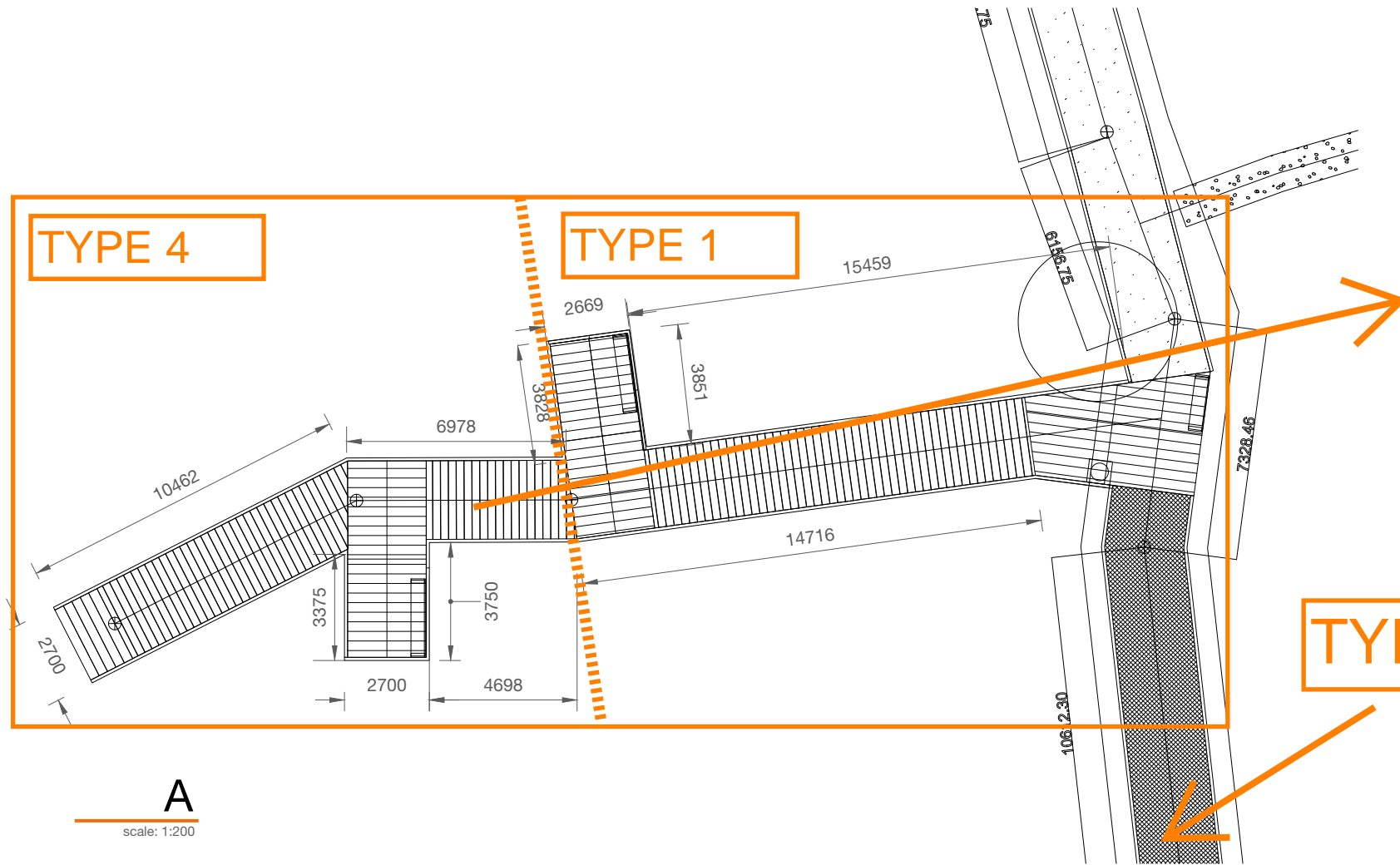
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PAGE NAME

Plan 2

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SIDE TRAILS NOT PART OF APPROVAL

TYPE 1

Methodology broken into 4 types

- 1) Direct drive timber pile – access on ground using bog mats
- 2) Cored hole in rock with pile driven into hole – access on rock and ground using bog mats
- 3) Direct drive timber piles – access on incrementally launched deck structure
- 4) Direct drive timber pile – access from barge

PLAN A2

scale: 1:500

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PLAN A3

scale: 1:500

3

SIDE TRAILS NOT PART OF APPROVAL

TYPE 1

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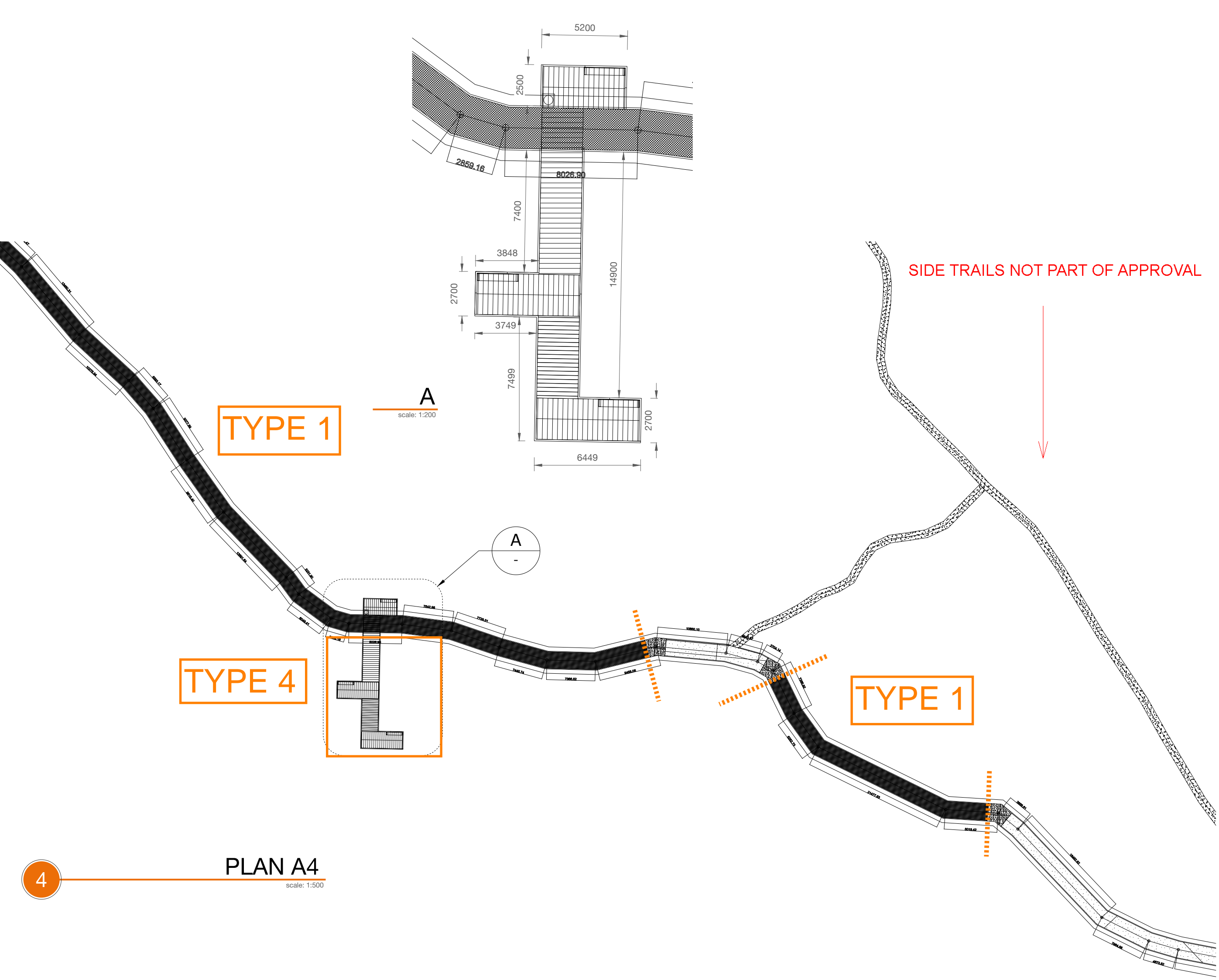
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Plan 4

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PLAN A4

scale: 1:500

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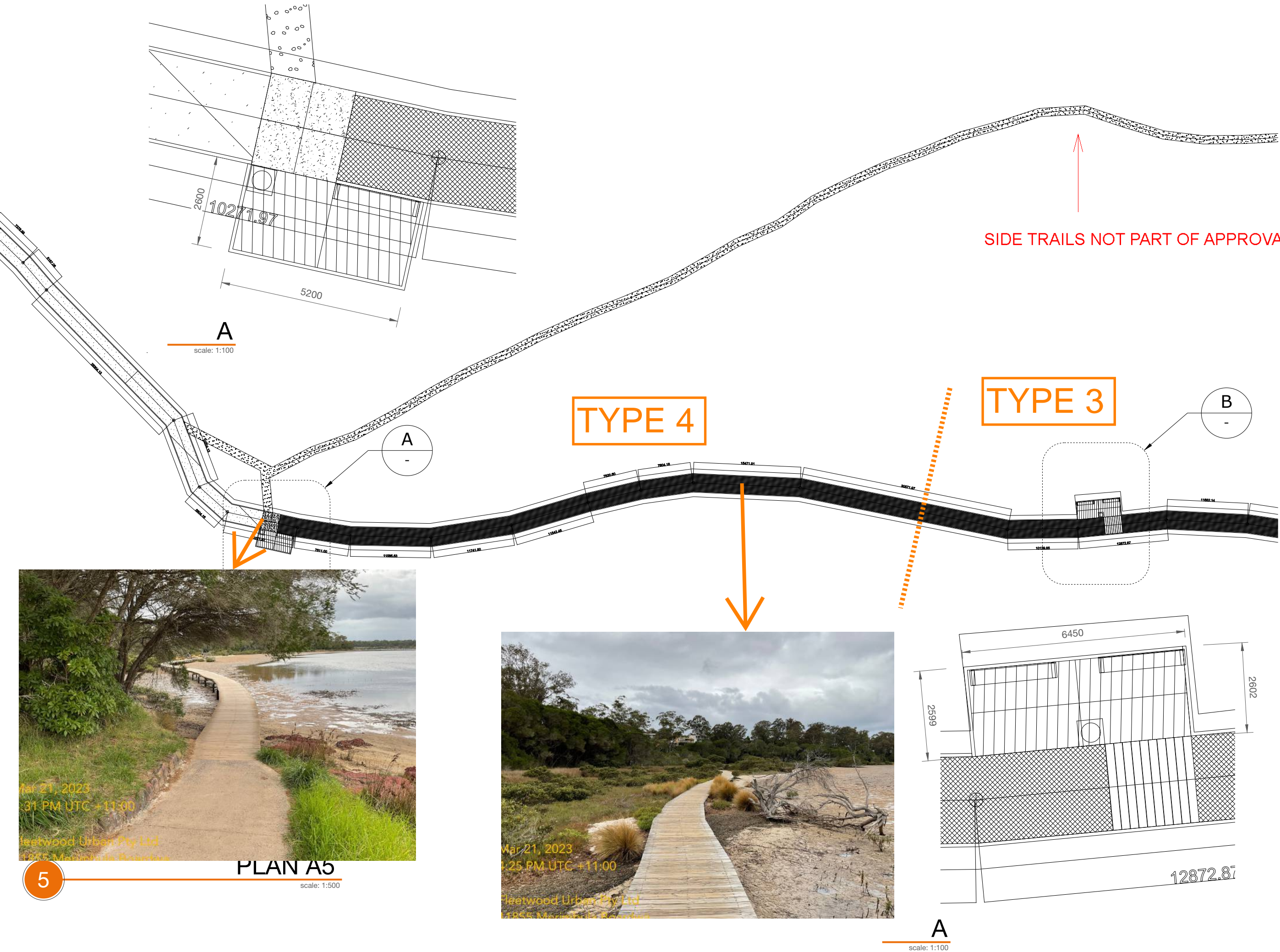
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Plan 5

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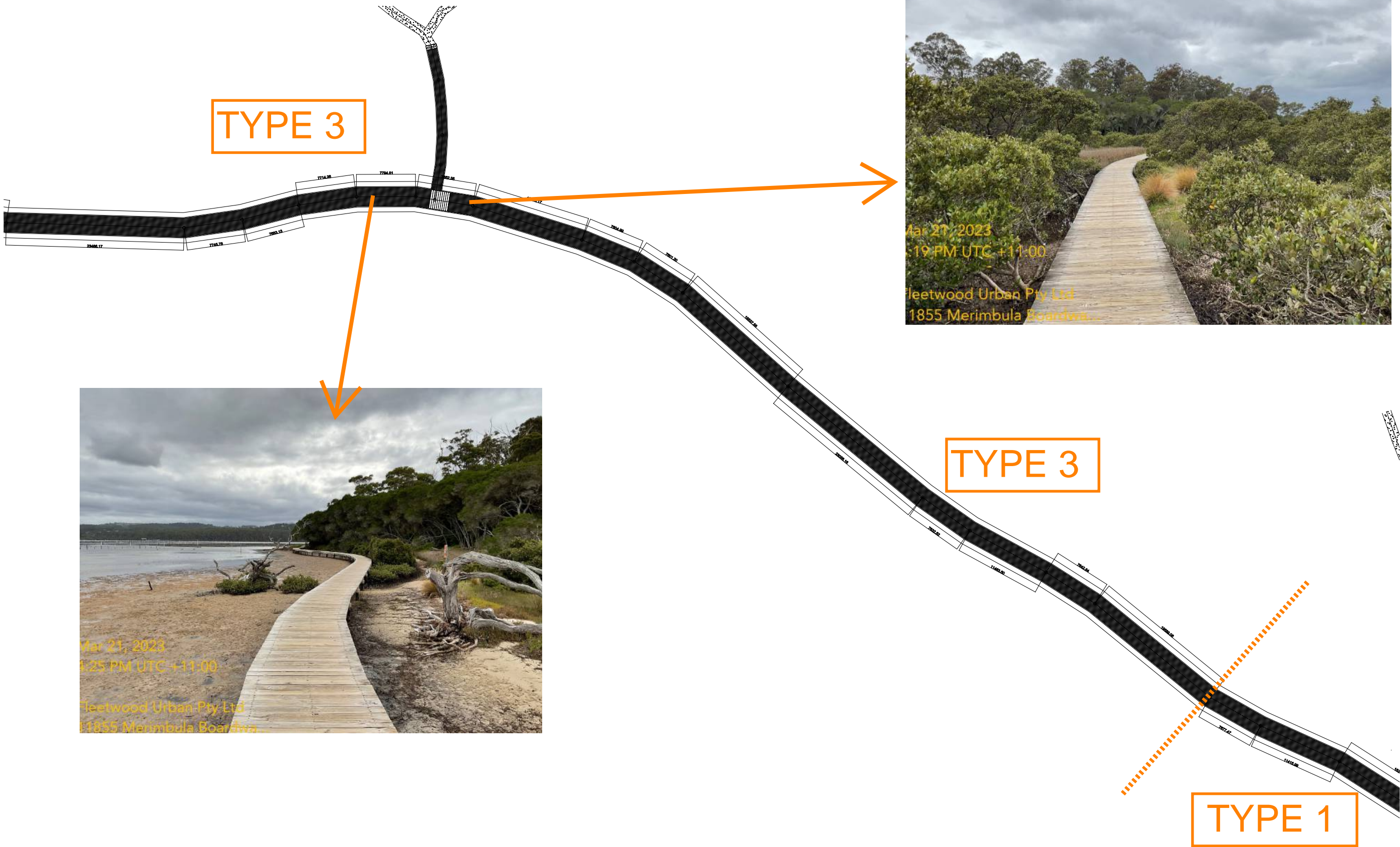
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PAGE NAME

Plan 6

11855 09 B



PLAN A6

scale: 1:500



TYPE 1 - ACCESS
VIA BARGE ONLY
TO UNLOAD
MACHINE

7

PLAN A7

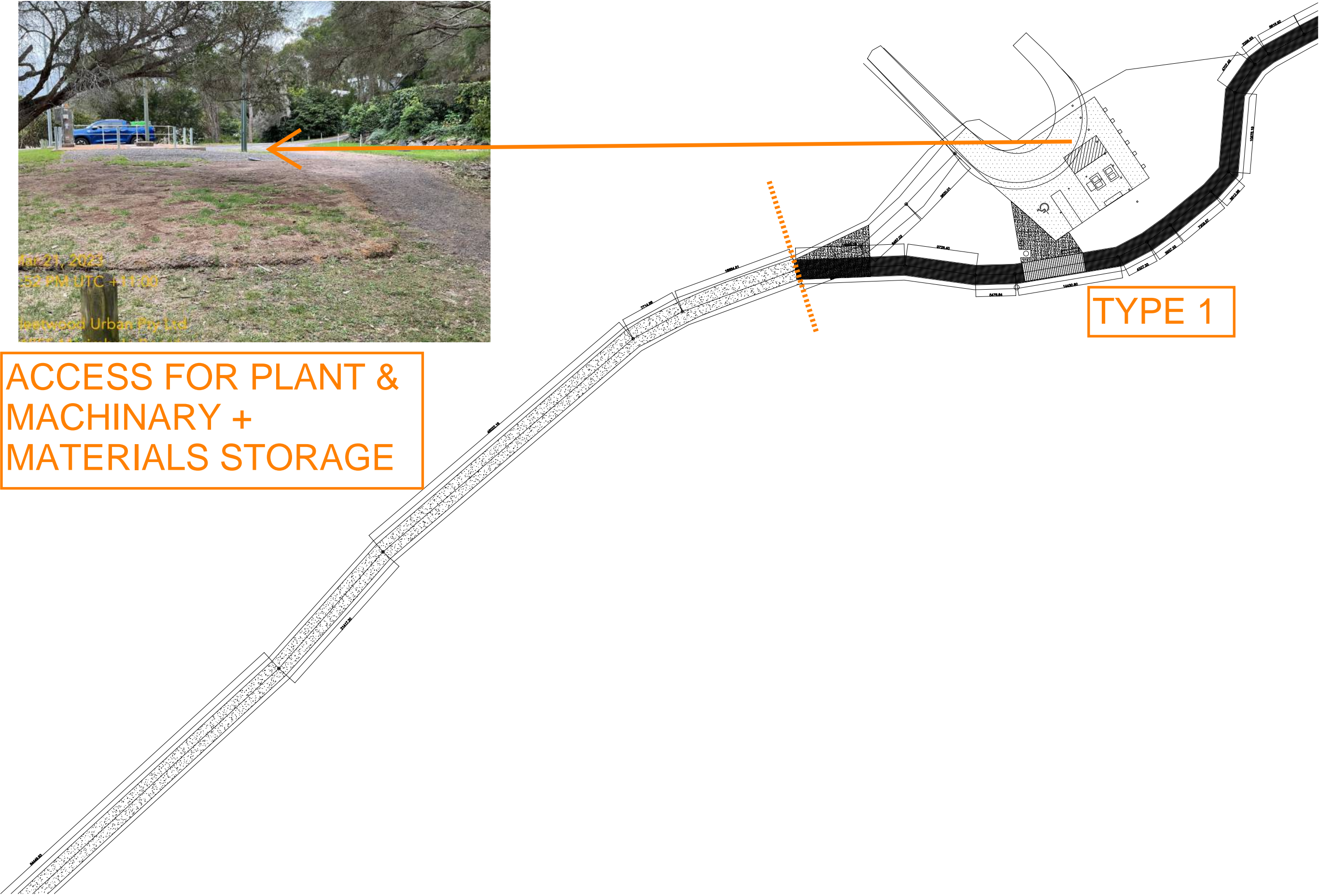
scale: 1:500



A
scale: 1:200



ACCESS FOR PLANT & MACHINERY + MATERIALS STORAGE



PLAN A8

scale: 1:500

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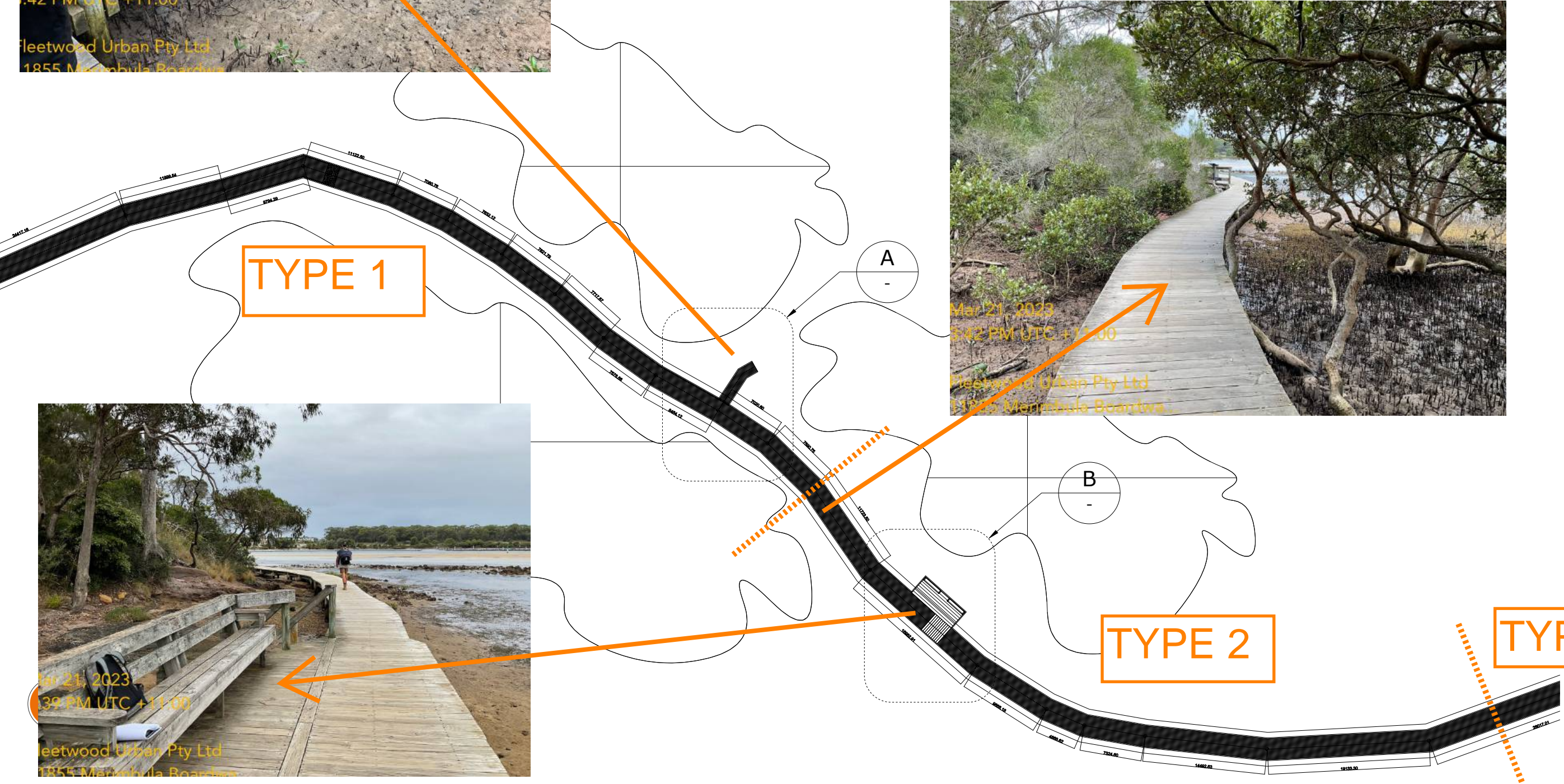
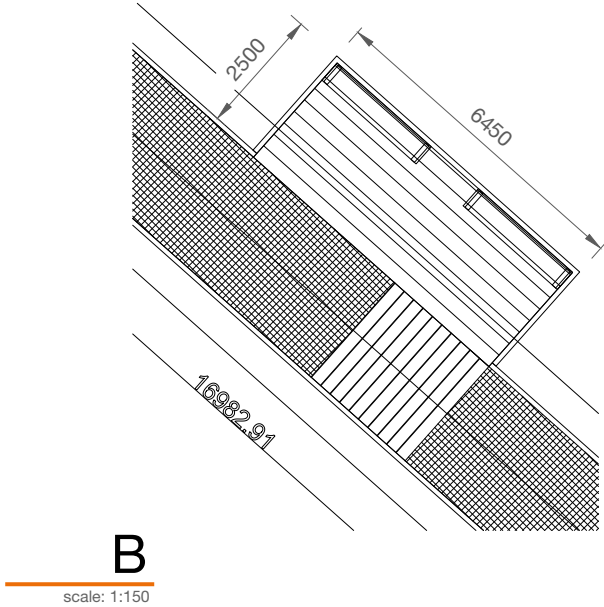
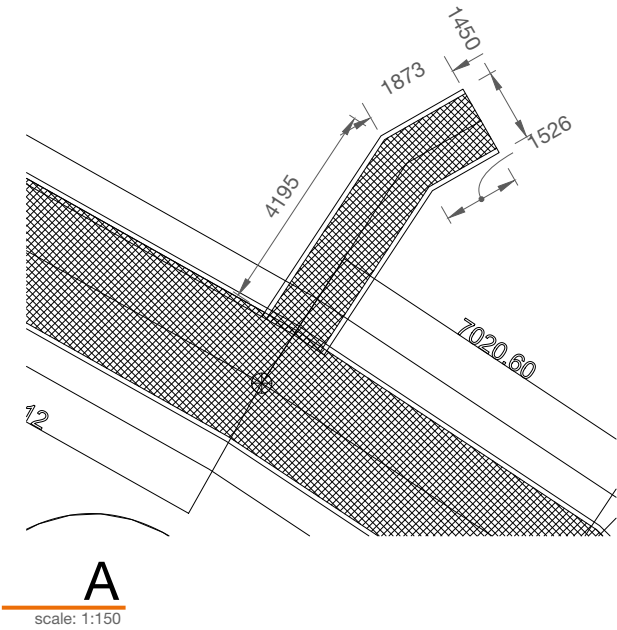
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PAGE NAME

Plan 9

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PRODUCT

FRP AND TIMBER
BOARDWALK WITH
BALUSTRADE™

3D PRODUCT DRAWING

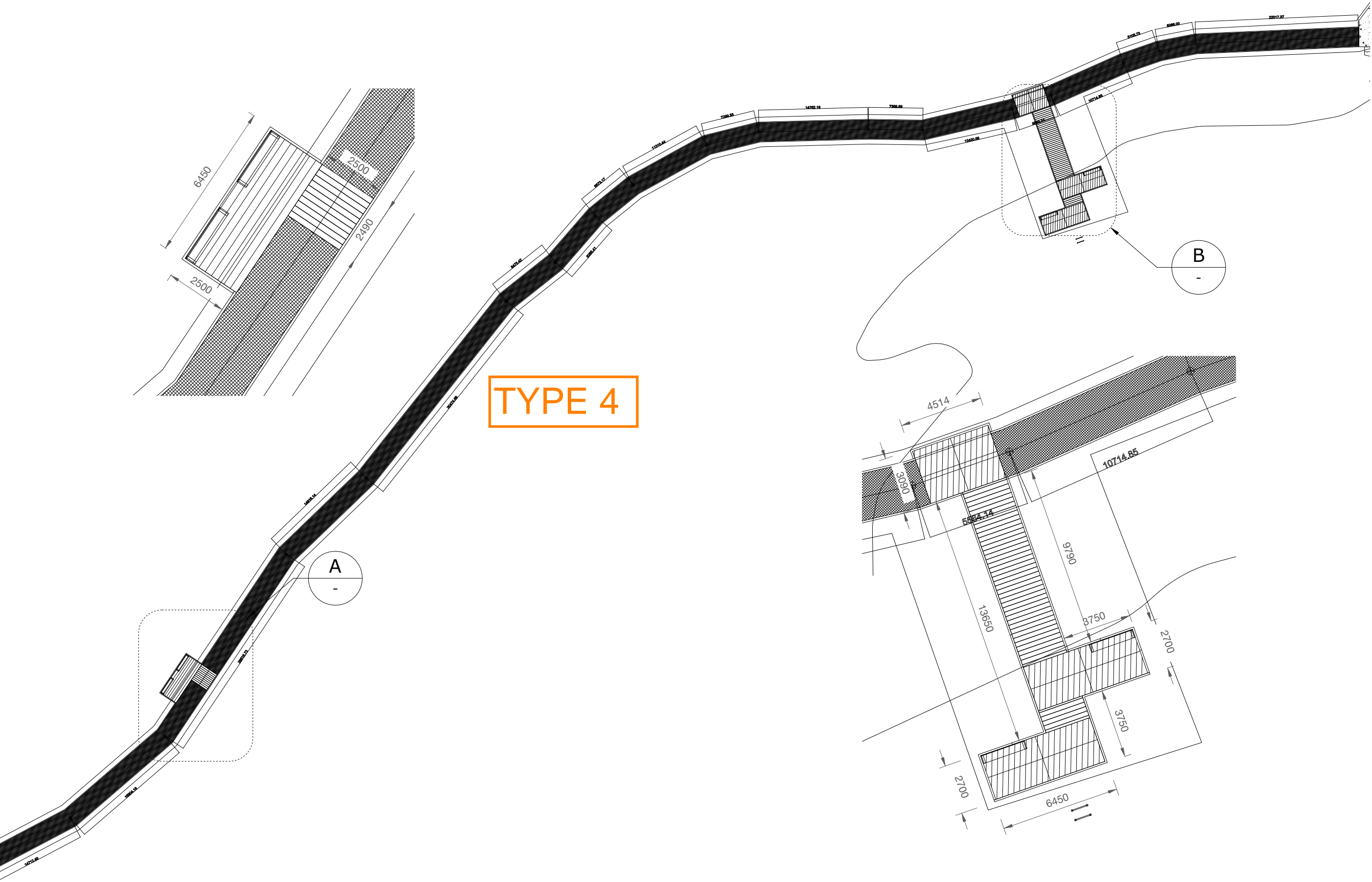
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Plan 10

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PLAN A10

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10

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Images and drawings are for concept purposes only. Changes to structure may occur during detail design. All lighting, shadows and materials are simulated.

DRAWN BY
RP

ISSUE
29/4/ 2024

CLIENT

LOCI DESIGN

LOCI DESIGN
COLLECTIVE

END CLIENT

BEGA VALLEY SHIRE
COUNCIL



DESIGNER

FLEETWOOD URBAN



PROJECT

Merimbula Boardwalks

PRODUCT

FRP AND TIMBER
BOARDWALK WITH
BALUSTRADE™

3D PRODUCT DRAWING

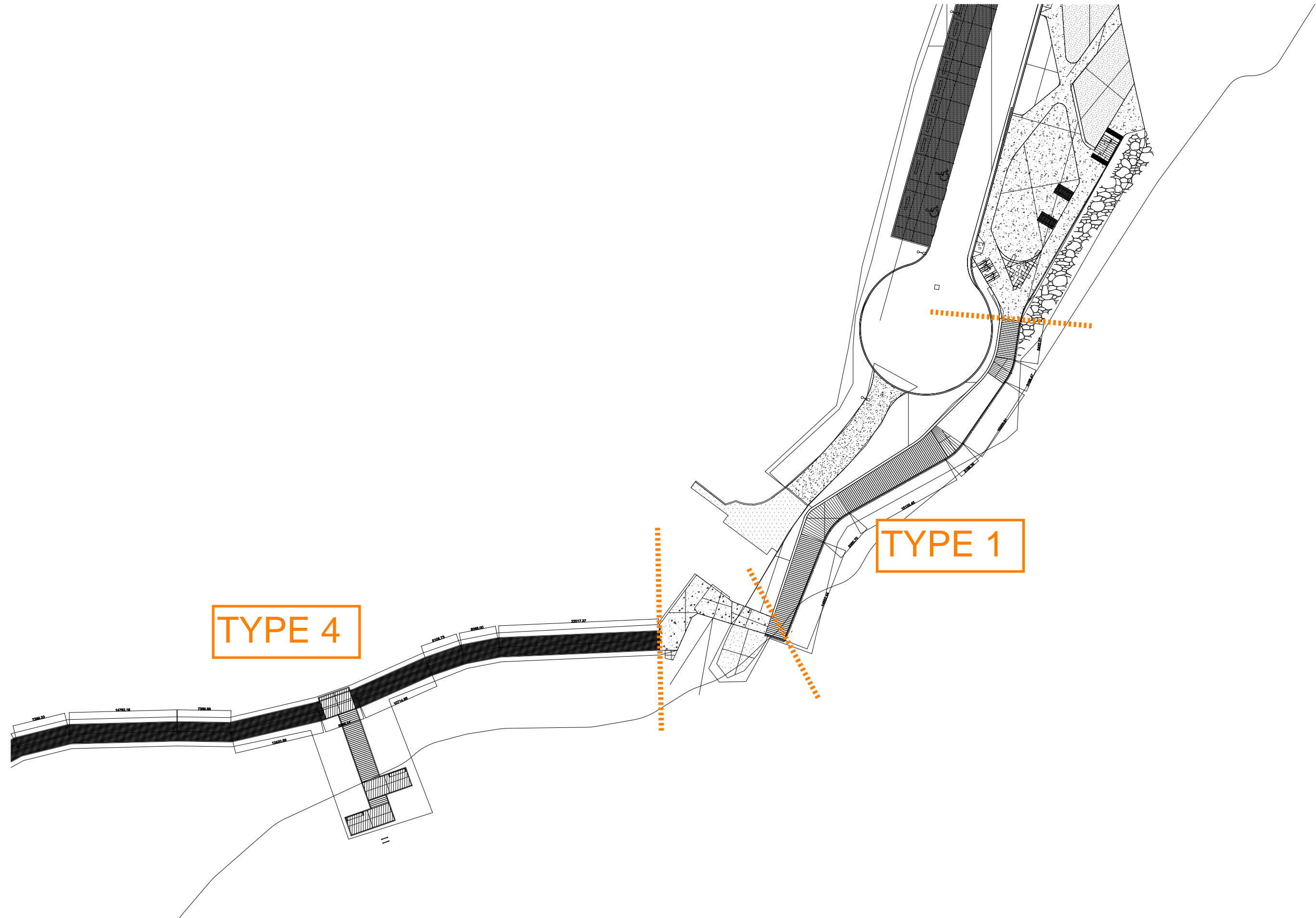
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Plan 11

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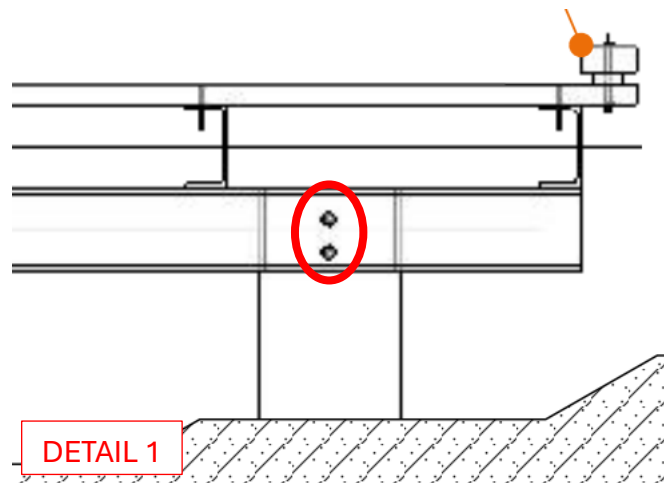


Merimbula Boardwalk – Construction Methodology

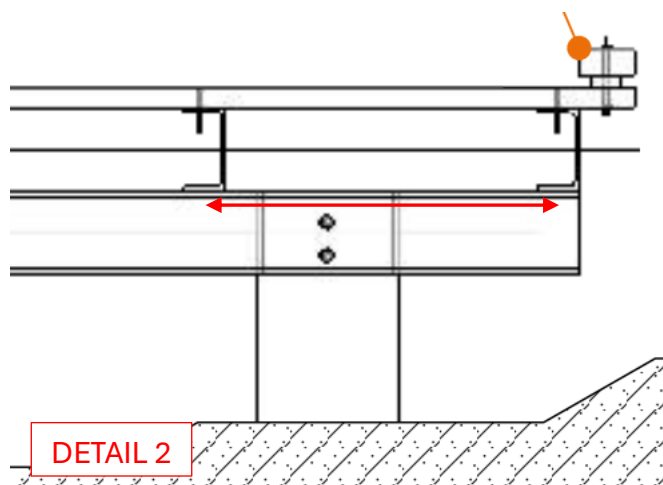
*Note: to be read in conjunction with EFA Piling Methodology & Fleetwood drawings
FWU-V-C-11855-C*

Type 1 & 2 - Boardwalk:

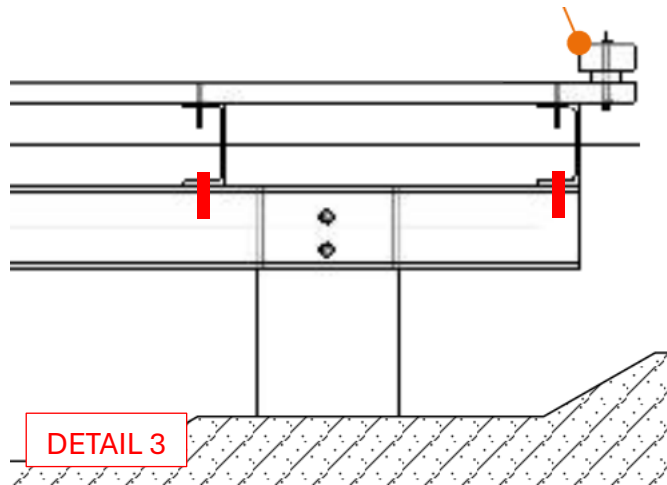
- Survey & setout of timber piles locations using timber stakes with coloured ribbons
- Commence piling as per EFA Piling Methodology – Type 1 and 2
- Once X number of piles have been installed, trim timber piles to finish level using chainsaws (off-cuts to be placed in bulk-a-bags)
- Temporarily clamp headstock onto timber piles and check heights / level
- On timber, mark out through bolts for FRP headstocks (Detail 1)
- Drill out holes using power tools, timber shavings to be vacuumed up
- Connect headstock with permanent structural bolt fixing



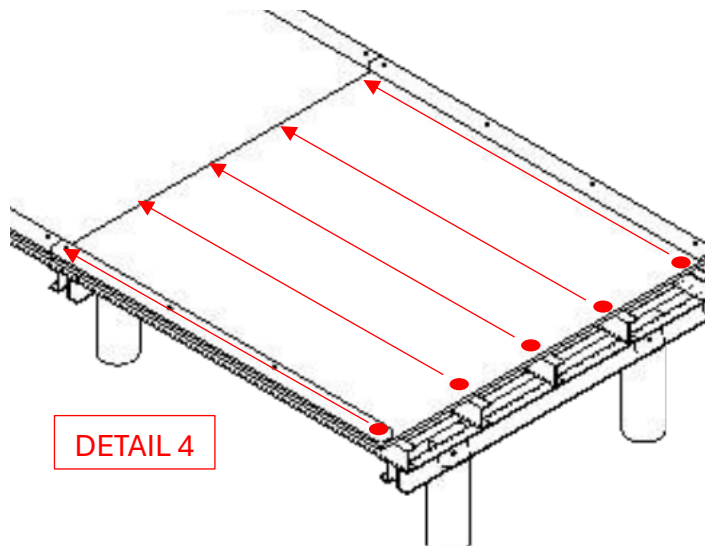
- Repeat process until X number of headstocks have been installed
- Mark out FRP joist centres on top of FRP headstocks (Detail 2)



- Lay out FRP joists (hole in joist to be drilled off site)
- Mark out hole for through bolt that connects FRP joist to FRP headstock
- Slide FRP joist over and drill out hole in FRP headstock (Detail 3)



- Repeat process until X number of holes have been drilled to enable bolt connection to connect FRP joist and FRP headstock
- Once joists have been connected, tightened, and checked, the FRP decking sheets and be laid out onto of the FRP joists
- Ensure overhang of each FRP decking sheet is equal along both sides
- Temporarily clamp the FRP decking sheet to ensure it remains square while screw fixing
- Screw fix each sheet with X number of screws as required, screw type TBC
- Repeat process until all FRP decking sheets have been installed (Detail 4)

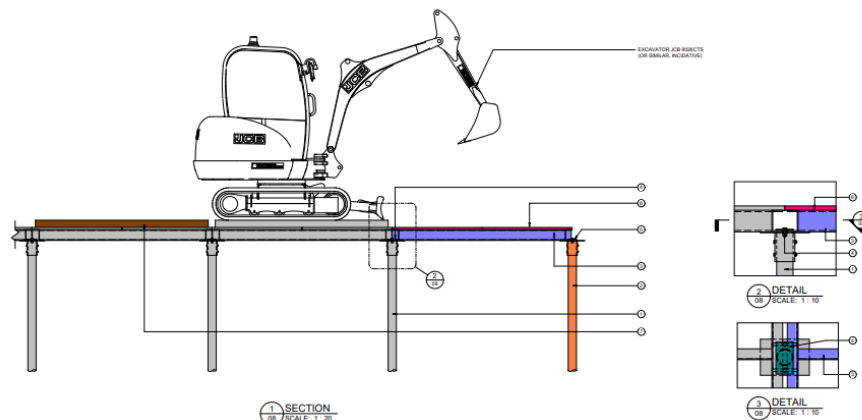


- Cut sheets as required at changes in direction or where a full FRP decking sheet is not required
- Note: all cutting of FRP to be supported by a H-Class rated vacuum as well as mandatory PPE requirements

- Note: FRP materials to be transported using trolleys from approved stockpile locations
- To install the timber kickrail, cut each piece to length.
- Mark out and drill hole through timer kickrail for through bolt
- Loosely place HDPE packers with centre hole along each edge of FRP decking sheet
- Place timber kickrail on top of packers and run bolt through timber, packer, and aperture in FRP decking sheet. Ensure outside edge of kickrail lines up with outside of the deck and tighten.

Type 3 - Boardwalk:

- Survey & setout of timber piles locations using timber stakes with coloured ribbons
- Construct temporary access ramp from transition point between Type 1 and Type 3 to enable the excavator to track on top of the first bay once constructed
- Commence piling as per EFA Piling Methodology – Type 3. Install 2 sets of timber piles to enable install team to commence superstructure installation incrementally

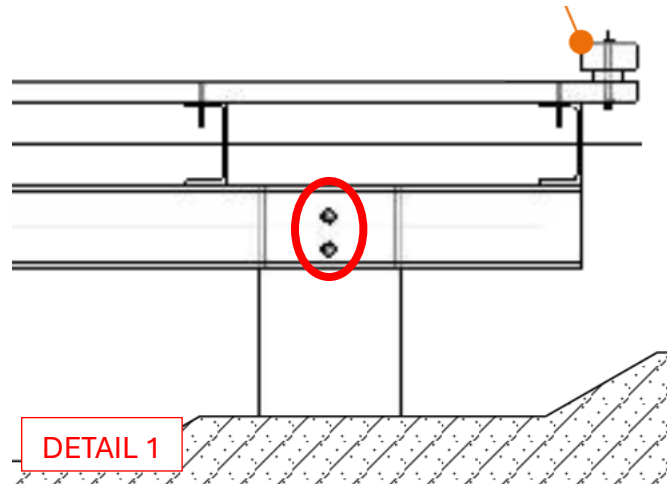


- Construct each bay as per Type 1 and 3 methodology
- Note: material sizes and quantities will need to increase to allow support of required excavator e.g. FRP joists at closer centres
- Once FRP decking sheet is installed, lay out track mats so the machine can track forward and allows protection of the FRP deck from scuffing or chipping
- Repeat process until Type 3 is complete

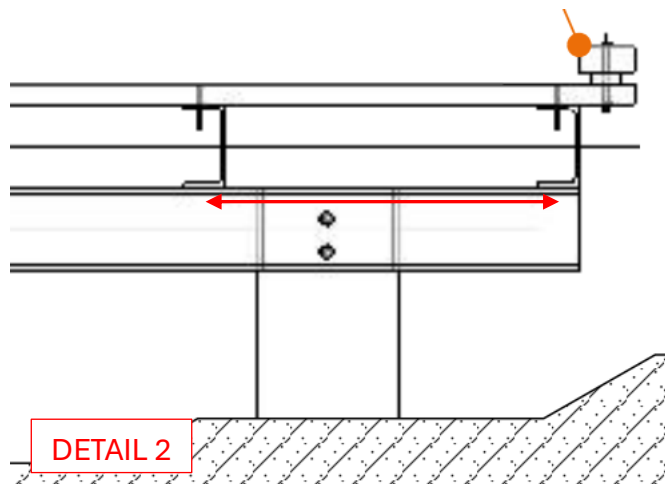
Type 4 - Boardwalk:

- Survey & setout of timber piles locations at each pile location from small, motorised boat alongside barge with plant and equipment
- Commence piling as per EFA Piling Methodology – Type 4
-

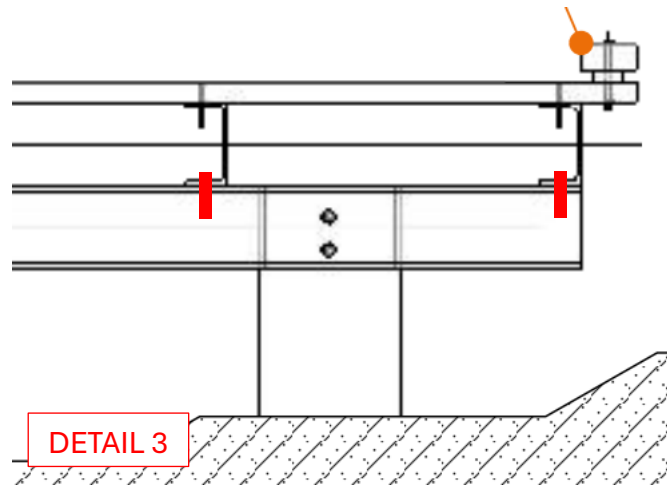
- Note: all headstocks and joists to be installed from small, motorised boat at high tide. Decking sheets and kick rail to be installed from on top of the structure.
- Once X number of piles have been installed, trim timber piles to finish level using chainsaws (off-cuts to be placed in bulk-a-bags)
- Temporarily clamp headstock onto timber piles and check heights / level
- On timber, mark out through bolts for FRP headstocks (Detail 1)
- Drill out holes using power tools, timber shavings to be vacuumed up
- Connect headstock with permanent structural bolt fixing



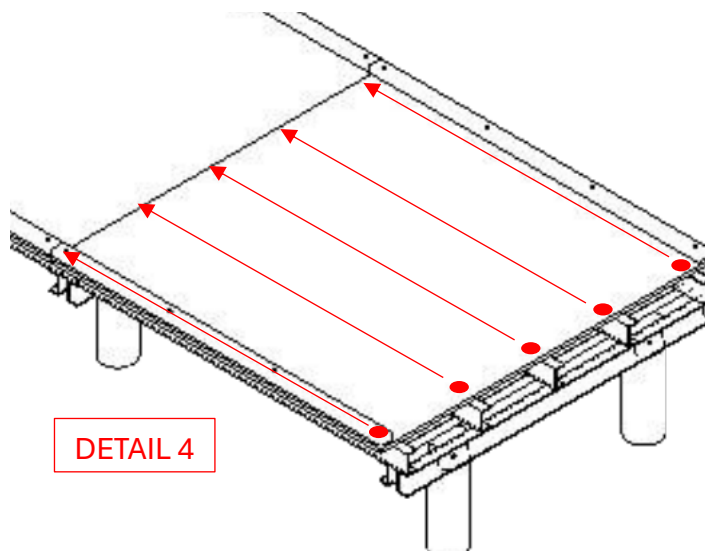
- Repeat process until X number of headstocks have been installed
- Mark out FRP joist centres on top of FRP headstocks (Detail 2)



- Lay out FRP joists (hole in joist to be drilled off site)
- Mark out hole for through bolt that connects FRP joist to FRP headstock
- Slide FRP joist over and drill out hole in FRP headstock (Detail 3)



- Repeat process until X number of holes have been drilled to enable bolt connection to connect FRP joist and FRP headstock
- Once joists have been connected, tightened, and checked, the FRP decking sheets and be laid out onto of the FRP joists
- Ensure overhang of each FRP decking sheet is equal along both sides
- Temporarily clamp the FRP decking sheet to ensure it remains square while screw fixing
- Screw fix each sheet with X number of screws as required, screw type TBC
- Repeat process until all FRP decking sheets have been installed (Detail 4)



- Cut sheets as required at changes in direction or where a full FRP decking sheet is not required
- Note: all cutting of FRP to be supported by a H-Class rated vacuum as well as mandatory PPE requirements
- Note: FRP materials to be transported using trolleys from approved stockpile locations
- To install the timber kickrail, cut each piece to length.
- Mark out and drill hole through timer kickrail for through bolt

- Loosely place HDPE packers with centre hole along each edge of FRP decking sheet
- Place timber kickrail on top of packers and run bolt through timber, packer, and aperture in FRP decking sheet. Ensure outside edge of kickrail lines up with outside of the deck and tighten.