

**REVIEW OF ENVIRONMENTAL FACTORS (REF)
SOUTHERN BOAT RAMP UPGRADE – ULLADULLA HARBOUR
ULLADULLA**

Contents

1. PROPOSAL AND LOCATION	5
1.1 Overview.....	5
1.2 Location	8
1.3 Background and justification of proposal.....	11
2. EXISTING ENVIRONMENT.....	12
2.1 Topography, geology, and soils	12
2.2 Habitat and vegetation assessment	13
2.3 Photos.....	13
3. ASSESSMENT OF LIKELY IMPACTS ON THE ENVIRONMENT.....	16
3.1 Direct and indirect impacts associated with the proposal.....	16
3.2 Threatened species impact assessment (NSW).....	16
3.2.1 Part 7A <i>Fisheries Management Act 1994</i>	16
3.2.2 Part 7 <i>Biodiversity Conservation Act 2016</i>	20
3.3 Threatened species impact assessment (Commonwealth EPBC Act 1999)	22
3.4 Indigenous heritage.....	22
3.5 Non-indigenous heritage.....	24
3.6 Acid Sulfate Soils.....	27
3.7 Access Restrictions and Interruptions	28
3.8 Excavation, dredging and reclamation within a waterway (Ulladulla Harbour)	29
3.9 Potentially Contaminated Land	30
3.10 EP&A Regulation – Section 171 matters of consideration	31
4. PERMISSIBILITY – STATUTORY AND PLANNING CONTEXT	36
4.1 NSW <i>Environmental Planning & Assessment Act 1979</i> (EP&A Act)	36
4.2 <i>Crown Land Management Act 2016</i> (CLM Act)	36
4.3 <i>Local Government Act</i> (LG Act).....	37
4.4 <i>Fisheries Management Act 1994</i> (FM Act)	38
4.5 <i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> (Resilience & Hazards SEPP).....	38
4.6 NSW <i>Aboriginal Land Rights Act 1983</i>	39
4.7 Commonwealth Native Title Act 1993.....	40
4.8 Other.....	41
5. CONSULTATION.....	43
5.1 Transport & Infrastructure SEPP	43
6. COMMUNITY ENGAGEMENT	48
7. SAFEGUARDS AND MITIGATION MEASURES TO MINIMISE IMPACTS ON THE ENVIRONMENT	49

8. SIGNIFICANCE EVALUATION & DECISION STATEMENT.....	55
9. REFERENCES	56
APPENDIX A – The Proposed Activity.....	57
APPENDIX B – Design Report	58

Document control

Item	Details
Project	Review of Environmental Factors – Southern Boat Ramp Upgrade – Ulladulla Harbour
Client	City Services, Shoalhaven City Council
Prepared By	City Services, Shoalhaven City Council

Document status

Version	Author / Reviewer*	Name	Signed	Date
V1.0	Author	Geoff Young		02/07/2026
	Reviewer	Jeff Bryant		07/07/2026

*Review and endorsement statement:

"I certify that I have reviewed and endorsed the contents of this REF document and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading".

Assessment and approvals overview

Item	Details
Assessment type	Division 5.1 (EP&A Act) - Review of Environmental Factors (REF)
Proponent	Shoalhaven City Council
Determining authority / authorities	Shoalhaven City Council
Required approvals (consents, licences and permits)	"Fisheries Permit" – Section 200 of the NSW <i>Fisheries Management Act 1994</i> for dredging / reclamation in the harbour. "Crown Lands Licence" – Section 2.18 of the NSW <i>Crown Land Management Act 2016</i>
Required publication	Yes: publishing of this REF on the determining authority's (Shoalhaven City Council) website or the NSW planning portal, is required as per section 171(4)(b)(i) of the NSW <i>Environmental Planning and Assessment Regulation 2021</i> and the guidelines published under s.170.

1. PROPOSAL AND LOCATION

1.1 Overview

This Review of Environmental Factors (REF) addresses the potential environmental and heritage impacts of – and provides mitigation measures for – a proposal by Shoalhaven City Council (SCC) for the upgrade of the Southern Boat Ramp in Ulladulla Harbour (Figure 1 below).

The proposed activity would be the replacement of the existing boat ramp with a new boat ramp, approaches, and gangway leading to the central floating pontoon. The width of the proposed ramps and pontoon will match the existing boat ramp. A 16.5 metre long by 1.2 metre clear width aluminium gangway leading up the central pontoon would be installed. Prior to the boat ramp installation, a 20 metre asphalt lead up to the boat ramp will be constructed. The new boat ramp would extend at 1:8 grade for 31 metres down to RL-2.1 m AHD. The construction sequence would be generally as follows (SLR 2023):

- Site establishment (including installing site office, amenities, storage facilities, compound fencing, temporary barriers, pedestrian management and signage).
- Implementation of sediment and erosion control measures.
- Installation of silt curtain and floating hydrocarbon boom.
- Removal of existing pontoons and guides and stockpiling on-site for potential re-use.
- Demolition of existing boat ramp and boxing out and milling of existing pavement as required. This includes disposal of all demolition waste at a licenced waste facility.
- Site preparation including grading for proposed ramp and lead up.
- Installation of piles including pile protection and HDPE cap driven into sand.
- Installation of 200mm thick base course of 50 to 100mm sized basalt rock on non-woven geotextile underlay.
- Installation of cast in-situ concrete slab to approximately mean water level including raised central concrete plinth and kerbs through proposed pavement.
- Installation of 700mm x 200mm x 5.7 metre long precast planks below mean water level to base of ramp.
- Installation of 300 to 600mm diameter armour rock scour protection around constructed ramp on geotextile underlay.
- Installation of 39 metre long and 3 metre wide plastic floating pontoon.
- Construction of asphalt lead up.

Although the width of the ramp remains similar to the existing ramp, the ramp and floating pontoon extends past the existing ramp by 14 metres and 6 metres respectively. The scour protection would also increase the footprint of the facility.

Construction methodology has yet to be determined but this may involve the installation, dewatering and subsequent decommissioning of a cofferdam, or it may involve working within the

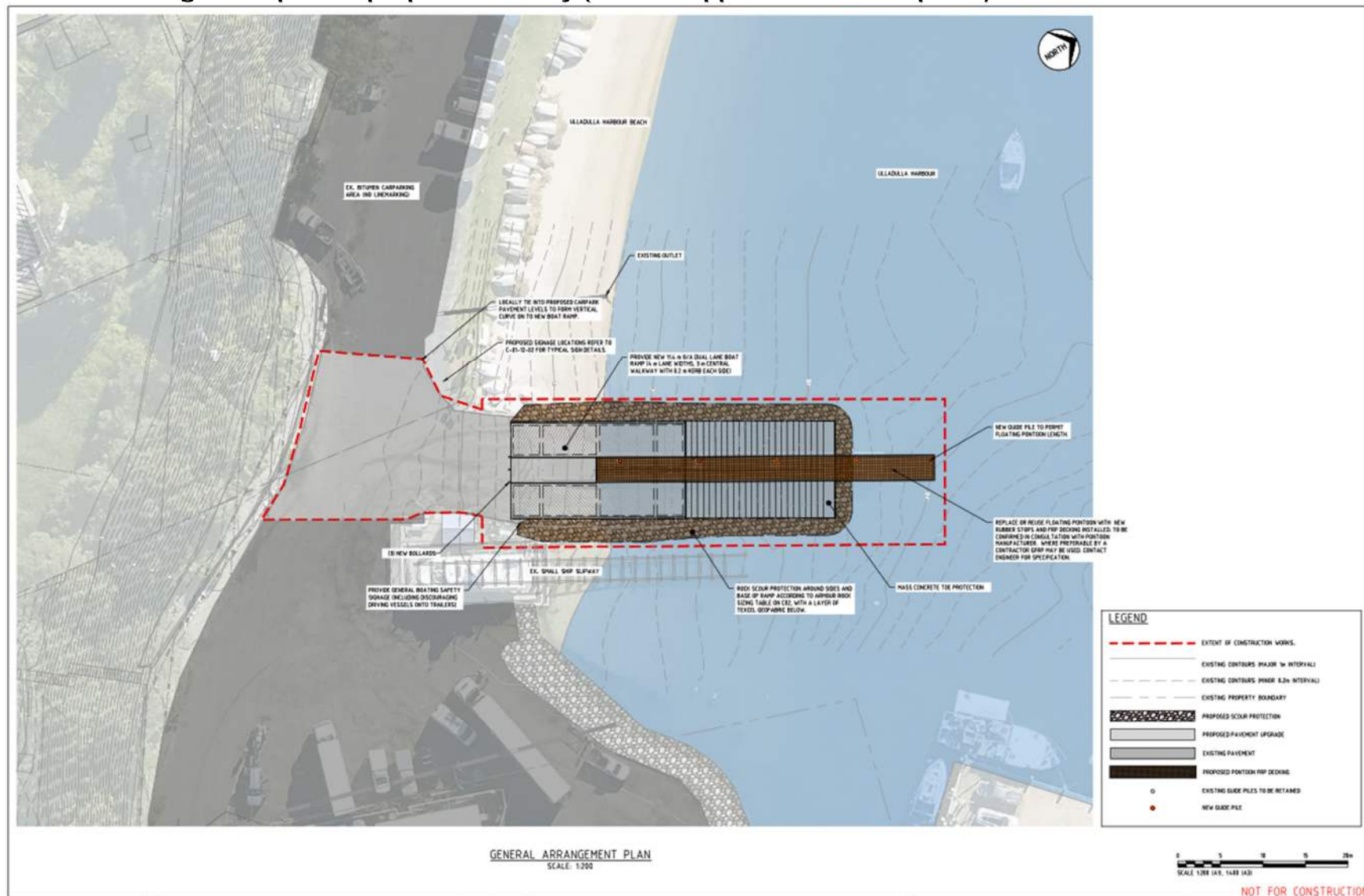
waterway. Once known, this REF shall be updated to reflect the methodology proposed by the construction contractor when engaged.

Refer to Figure 1 below for concept general arrangement plan. For detailed information refer to Appendix A for plans and Appendix B for design report.

The proposed activity would also include the environmental impact mitigation measures and safeguards prescribed in Section 7 of this REF.

Shoalhaven City Council (SCC) is the proponent and the determining authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This Review of Environmental Factors (REF) provides an assessment of the proposed activity and associated impacts on the environment, in the context of Division 5.1 of the Act and section 171 of the *Environmental Planning and Assessment Regulation 2021*, and in doing so, satisfies the requirement of section 5.5 of the Act, that SCC examines all matters affecting or likely to affect the environment by reason of the activity.

Figure 1: General arrangement plan of proposed activity (refer to Appendix A for full plans)



1.2 Location

The proposed activity would occur predominantly within the waters of Ulladulla Harbour (Part Lot 1 DP612935) and the adjacent terrestrial properties approaching the boat ramp, being (Figure 2 below):

- Lot 7313 DP1166835 – which is Crown Land Reserve R1011528 (SCC is not the appointed Crown Land Manager)
- Lot 7040 DP1045201 – which is Crown Reserve R67780 to which SCC is the appointed Crown Land Manager

SCC has a Crown Land Licence (LI 479959) over the area of the existing boat ramp, pontoons and terrestrial approaches (SCC document reference LD4445). As the new boat ramp would extend beyond the existing footprint, a new licence or an amendment to the existing licence will however be required (refer to Section 4.2 of this REF for information).

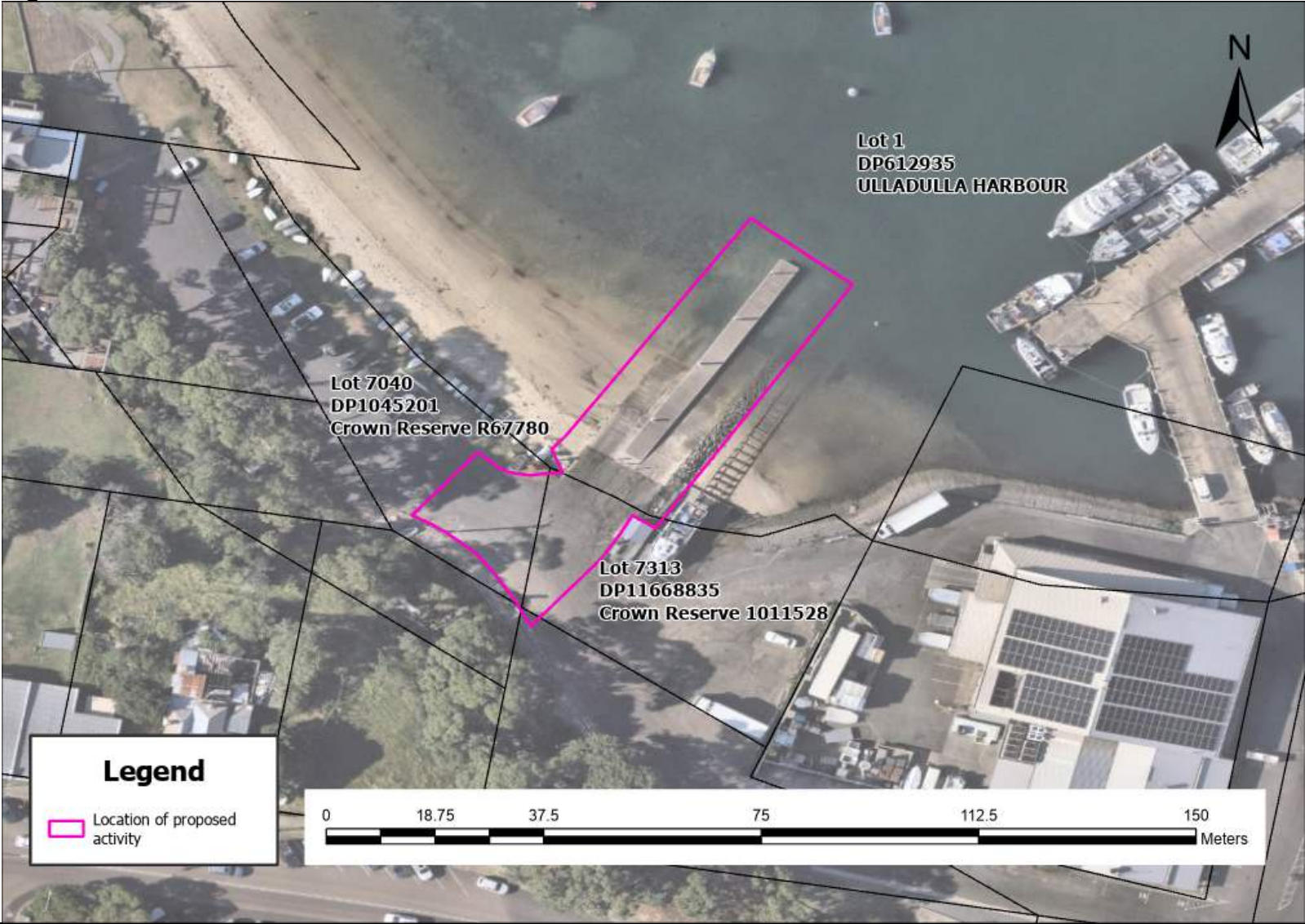
Details of affect lands are provided in Table 1 below

Table 1. Property affected by the proposal

Lot / DP	Description	Landowner / manager	Other pertinent information
Part Lot 1 DP612935 (Ulladulla Harbour)	Demolition of existing boat ramp infrastructure and installation of new boat ramp, pontoon, piles, bollards, scour protection, approaches to the ramp and tie-in with carpark / Wason Street	NSW - Crown Land	Crown Reserve 1011528. Subject of an undetermined Aboriginal Land Claim and Native Title Claim. SCC has a current Crown Land licence (LI 479959) within this property covering the existing boat ramp and adjacent slipway (SCC document reference LD4445). Key Fish Habitat for the purposes of the NSW <i>Fisheries Management Act 1994</i>
Lot 7313 DP11668835	Pavement works on the approaches to the boat ramp. Fenced compound during works.	NSW - Crown Land	Crown Reserve 1011528. SCC is not the appointed Crown Land Manager. Subject of an undetermined Aboriginal Land Claim and Native Title Claim. SCC has a current Crown Land licence (LI 479959) within this property covering the approaches to the boat ramp and adjacent slipway (SCC document reference LD4445).
Lot 7040 DP1045201	Pavement works to tie in with existing carpark. Fenced compound during works.	NSW - Crown Land / SCC	Crown Reserve R67780 to which SCC is the appointed Crown Land Manager.

Lot / DP	Description	Landowner / manager	Other pertinent information
			Subject of an undetermined Aboriginal Land Claim and Native Title Claim.

Figure 2: Site location



1.3 Background and justification of proposal

SCC is proposing an upgrade to the Southern Boat Ramp at Ulladulla Harbour to improve safety, functionality and accessibility for users.

The upgrade of the existing dual-lane ramp has been identified as necessary due to its deteriorating condition and insufficient length, which currently renders it unusable at low tide (Westlake Punnett 2023). The limited extent of the ramp also results in vessel wash and propeller turbulence to scour material at the toe, forming a void that presents a safety hazard to users as boat trailer wheels may fall in and become trapped. Additionally, the current ramp grade of approximately 1:10 is non-compliant and creates operational difficulties for boaters. To achieve a compliant 1:8 grade down to the required level, a raised flat lead is required, hence the need to adjust the lead up and approach to the ramp.

Justification for the proposed plans is summarised below (in Westlake Punnett 2023).

PROPOSED BOAT RAMP	PROPOSED SOLUTION	JUSTIFICATION
	Replace the existing boat ramp and jetty with new boat ramp with gangway leading to central floating pontoon (existing pontoon shall be reused). Width of proposed ramps and pontoon to match existing.	<i>The existing boat ramp is deteriorated and requires replacement. Existing pontoon and lane widths are compliant in accordance with the requirements of the NSW Boat Ramp Facility Guidelines.</i>
	Utilize 16.5 m long by 1.2m clear width aluminium gangway leading up to central pontoon.	<i>The existing jetty is non-compliant as an accessible marina berth (per AS 3962:2020). The proposed gangway would classify as an accessible marina berth at a maximum 1:14 slope for a minimum of 80% of the time and maximum 1:8 slope for 20% of the time (in accordance with AS3962:2020). The maximum 1:14 slope is achieved for down to a tide of RL -0.39m AHD and this relates approximately 87% of the time. Having an accessible gangway will allow more of the community to utilize this facility.</i>
	Proposed boat ramp shall commence after asphalt lead up and shall extend at 1:8 grade for 32 m down to RL-2.08m AHD.	<i>The 1.2m width of gangway has been selected based on the requirements of AS3962.</i> <i>The boat ramp has been designed in accordance with the NSW Boat Ramp Facility Guidelines at a slope of 1:8 down to a level of 1.2m below design low water level (LAT). This option was chosen in accordance with NSW Boat Ramp Facility Guidelines and through community consultation.</i>
	Proposed boat ramp and pontoon shall be designed for a 7.5 metre vessel.	<i>Proposed vessel length has been increased through community consultation</i> <i>Based on design vessel length the boat ramp has been designed to have a clearance of 1.2 metres at lowest astronomical tide to according to AS3962:2020 90% vessel boat draughts of 0.9 m for power boats and 0.3 m minimum depth according to NSW Boat Ramp Facility Guidelines.</i>

2. EXISTING ENVIRONMENT

Photos of the site are provided in Section 2.3 below

The site is located north of Wason Street, Ulladulla Harbour Beach, with the existing ramp extending northeast into the harbour (Figure 2 p. 10). The immediate surrounds comprise:

- North – Ulladulla Harbour Beach
- South – Ulladulla commercial areas fronting Wason Street and the Princes Highway
- East – Fish Co-op (Fisherman's Warf Seafood), tuna Wharf, and Ulladulla Harbour car park
- West – public recreation area being an extension of Apex Park.

The site was assessed by a SCC Environmental Officer multiple times in June 2026.

Investigations involved vegetation and habitat assessment, recording flora species (particularly protected marine vegetation) within and immediately adjacent to the proposed activity, investigation of habitat availability for flora and fauna species, and searching for Aboriginal heritage objects.

2.1 Topography, geology, and soils

The existing boat ramp is a concrete slab-on ground, connecting with the bitumen seal of Wason Street.

The 1:250,000 Ulladulla geology map documents the area to be covered by Quaternary age coastal deposit sands, underlain by Permian age Snapper Point formation bedrock and part of the Shoalhaven Group, comprising sandstone and shale (ACT Geotechnical Engineers 2022).

Soils under the boat ramp were found to be as follows (ACT Geotechnical Engineers 2022):

Subsurface Profile

Geological Profile	Typical Depth Interval	Description
CONCRETE SLAB	0m to 0.6m	Concrete Slab of existing Boat Ramp.
ASPHALT COAT/ CEMENTED BASE COARSE	0m to 0.2m	Asphalt Coat/ Cemented base coarse. Carpark Area.
FILL	0.2m to 0.5m	Gravelly Silty SAND: fine to coarse gravels, fine to coarse grained sand, low plasticity, brown, pale brown mottled yellow, dry to moist, loose to dense. Not encountered in A3 and A4.
AEOLIAN COASTAL DEPOSITS	0m/0.2m to >1.5m	Silty SAND; fine to coarse grained sand, low plasticity, traces of medium gravels, dry to wet, loose to very dense.

The subgrade of the carpark comprises gravelly silt sand fill to a 0.5 metre depth, underlain by silty sand coastal deposits.

The proposed activity is unlikely to encounter acid sulfate soils (ASS) or potential acid sulfate soils (PASS) (refer to Section 3.6 of this REF for more information).

2.2 Habitat and vegetation assessment

The site and surrounding land are predominantly cleared and hardstand (bitumen, concrete with subbase material). There is no terrestrial vegetation to be affected by the proposed activity.

At the time of site investigations there were no mangroves, seagrass, or other estuarine macrophytes observed in the vicinity of the proposed activity.

Very few fish species were observed, *i.e.* Yellowfin Bream *Acanthopagrus australis*, Glassy Perchlet *Ambassis sp.*, Gudgeon (Eleotridae family), and Toadfish *Tetractenos hamiiltoni*. Other fish species and invertebrates would be expected to utilise the area from time to time including Snapper *Pagrus auratus*, Glass Perchlet *Ambassis jacksoniensis*, and Luderick *Girella tricuspidata*, Silver Biddy *Gerres ovatus*.

In the sediment adjacent to the existing boat ramp, burrows of crustaceans and worms were common.

2.3 Photos

Photo 1. Existing boat ramp and associated pontoon



Photo 2. Beach foreshore to the north of the boat ramp shown in the foreground



Photo 3. The existing boat ramp taken from the pontoon. The slipway and existing rock scour protection shown in the left of the photo.



Photo 4. Existing boat ramp approaches to be replaced and slightly raised



3. ASSESSMENT OF LIKELY IMPACTS ON THE ENVIRONMENT

3.1 Direct and indirect impacts associated with the proposal

The proposed activity would have the following direct impacts:

- Closure of the boat ramp during construction works.
- Potential short-term closure and disruption of access to the carpark area to the north of the boat ramp and the adjacent slipway.
- Dredging and reclamation works within a harbour waterway.
- Likely construction of cofferdam and subsequent dewatering of the construction area.

Potential impacts on the environment, including indirect impacts have been considered and assessed, including:

- Impacts on threatened species;
- Impacts on indigenous and non-indigenous heritage;
- Impacts on water quality and key fish habitat;
- Impacts associated with flood liable land.

Each direct, non-direct, and potential impacts are discussed and assessed below.

3.2 Threatened species impact assessment (NSW)

Section 1.7 of the EP&A Act 1979 applies the provisions of Part 7 of the NSW *Biodiversity Conservation Act 2016* and Part 7A of the *NSW Fisheries Management Act 1994* that relate to the operation of the Act in connection with the terrestrial and aquatic environment. Each are addressed below.

3.2.1 Part 7A Fisheries Management Act 1994

Part 7A relates to threatened species conservation. Section 221ZV of the FM Act provides an assessment of significance to determine whether a proposed development or activity is likely to significantly affect a threatened species, population or ecological community. Each Part is addressed below:

Part 1 In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is to be placed at risk of extinction.

There are no freshwater threatened fish species listed under the Act which are mapped as occurring in proximity to the site, or which are likely to occur in proximity to the site.

Several threatened species listed in the schedules of the FM Act are known to occur or have occurred on the south coast of NSW¹, these are:

- Grey Nurse Shark (*Carcharias taurus*) and Marine Slug (*Smeagol hilaris*) are listed as Critically Endangered.

¹ All threatened species information in Section 3.2.1 sourced from NSW DoPI Threatened Species database:
<https://www.dpi.nsw.gov.au/fishing/threatened-species/what-current>

- Australian Grayling (*Prototroctes maraena*), Scalloped Hammerhead Shark (*Sphyrna lewini*), Southern Bluefin Tuna (*Thunnus maccoyii*) and White's Seahorse (*Hippocampus whitei*) are listed as Endangered.
- Great White Shark (*Carcharodon carcharia*) and Black Rockcod (*Epinephalus daemeli*) are listed as Vulnerable.
- Green Sawfish (*Pristis zijsron*) is listed as Presumed Extinct.

Populations of these species have primarily been reduced by over-harvesting, habitat degradation and human interference or hazards (e.g. nets) in habitat.

Grey Nurse Shark

Grey Nurse Sharks are found predominantly in inshore coastal waters. They have been recorded at various depths, but mainly found in waters between 15 and 40 metres deep. Grey Nurse Sharks gather at a number of key sites along the coast of NSW and southern Queensland. These sites have gravel or sand filled gutters, rocky reefs or caves, and are called aggregation sites. The site does not provide suitable habitat for this species. As such, the proposed activity would have no effect on the life cycle of the species.

Marine Slug

This is a pulmonate (with lung) slug. It has only been collected from a small, isolated location at Merry Beach, south of Ulladulla. The species lives in gravel and cobble filled rocky crevices and beaches at Merry Beach. The proposal would therefore have no effect on the lifecycle of this species.

Australian Grayling

Australian Grayling is a migratory species that spawns between late summer and winter in the lower freshwaters of coastal rivers and spends approximately 4-6 months in coastal seas as larvae/juveniles before migrating back into lower altitude freshwater reaches of both large rivers and smaller streams, where they remain for the rest of their lives. Barriers to fish passage is a major threat to the species. The current proposal would not impact on any habitat utilised by the species and would not involve barriers to fish passage. The proposal would therefore have no effect on the lifecycle of this species.

White's Seahorse

White's Seahorse is considered to be endemic to the waters of southern Queensland (Hervey Bay) to Sussex Inlet NSW where it can be found occurring in coastal embayments and estuaries. It is known to occur from depths of 1 m to 18 m. Habitats that are considered important habitat for the White's Seahorse include natural habitats such as sponge gardens, seagrass meadows and soft corals. The proposal would therefore have no effect on the lifecycle of this species.

Southern Bluefin Tuna

The Southern Bluefin Tuna are pelagic fish occurring in oceanic waters normally on the seaward side of the continental shelf. The proposal would therefore have no effect on the lifecycle of this species.

Scalloped Hammerhead Shark

The Scalloped Hammerhead Shark is a coastal pelagic species with a circum-global distribution in warm temperate and tropical coastal areas. They are known to form large migratory schools and in Australia tend to move as far south as Sydney during the warmer months. The proposal would therefore have no effect on the lifecycle of this species.

Great White Sharks

Great White Sharks are normally found in inshore waters around rocky reefs and islands and often near seal colonies. They have been recorded at varying depths down to 1,200 metres. The proposal would therefore have no effect on the lifecycle of this species.

Black Rockcod

Black Rockcod live in relatively shallow rocky reefs where they are usually found in caves, ledges, gutters and beneath bommies. Small juveniles are often found in coastal rocky pools, and larger juveniles around rocky shores in estuaries. The site of the proposed activity does not provide suitable habitat for any life stage of the Black Rockcod.

Green Sawfish

Green Sawfish (presumed extinct in NSW) are bottom dwelling rays commonly found in near-coastal environments including estuaries, river mouths, embankments and along sandy and muddy beaches. It has been recorded in Jervis Bay, but the last confirmed sighting of the species in NSW was in 1972 from the Clarence River at Yamba. It is unlikely that the Green Sawfish would occur within or in proximity to the site. The proposal would not directly impact the species, would not remove habitat, and is unlikely to negatively affect suitable habitat for the Green Sawfish, such that the species (if not already extinct) would be impacted.

Part 2 In the case of an endangered population, whether the proposed development or activity is likely to have an adverse effect on the lifecycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

The endangered populations listed under the Act are:

- Western population of Olive Perchlet (*Ambassis agassizii*);
- Darling River Hardyhead (*Craterocephalus amniculus*) population in the Hunter River catchment;
- Snowy River population of River Blackfish (*Gadopsis marmoratus*);
- Murray-Darling Basin population of Eel-tailed Catfish (*Tandanus tandanus*);
- *Posidonia australis* seagrass – Port Hacking, Botany Bay, Sydney Harbour, Pittwater, Brisbane Waters and Lake Macquarie populations.

None of these populations occur in proximity to the site. No endangered populations would therefore be affected by the proposed activity.

Part 3 In the case of an endangered ecological community or critically endangered ecological community whether the proposed development or activity:

- I. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or***
- II. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.***

The endangered ecological communities listed under the Act are:

- Aquatic ecological community in the natural drainage system of the lower Murray River catchment
- Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River
- Aquatic ecological community in the natural drainage system of the lowland catchment of the Lachlan River
- Aquatic ecological community in the catchment of the Snowy River in NSW

These areas would be unaffected by the proposed activity.

Part 4 In relation to the habitat of a threatened species or ecological community:

I. The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

II. Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

III. The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

The area affected by the activity does not provide habitat for threatened species, populations or ecological communities (refer responses to Part 1 through Part 3 above)

Part 5 Whether the proposed development or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

The only critical habitat currently on the register is “Critical Habitat of Grey Nurse Shark” with listed and mapped areas of:

1. Bass Point (Shellharbour)
2. Big and Little Seal Rocks
3. Fish Rock (South West Rocks)
4. Green Island (South West Rocks)
5. Julian Rocks (Byron Bay)
6. Little Broughton Island (Port Stephens)
7. Magic Point (Maroubra)
8. Montague Island (Narooma)
9. The Pinnacle (Forster)
10. Tollgate Islands (Batemans Bay)

These areas would be unaffected by the proposed activity.

Part 6 Whether the proposed development or activity is consistent with a Priorities Action Statement

Of the species listed in Part 1 above, Priority Action Statements (PAS) have been prepared for Grey Nurse Sharks, Blind Slug, Scalloped Hammerhead, Southern Bluefin Tuna, Black Rockcod, and Great White Shark. As demonstrated in Part 1 above, the proposed activity would have no

effect on these species. Similarly, the proposed activity is unlikely to be inconsistent with relevant PASs.

Part 7 Whether the proposed development constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process

An assessment of the proposal against Key Threatening Processes (KTP) listed under the FM Act is provided in Table 2 below.

Table 2. Key threatening processes – Fisheries Management Act 1994

Key Threatening Process (KTP)	Assessment
Degradation of native riparian vegetation along the NSW water courses	No removal of vegetation would occur. The proposal is therefore unlikely to result in degradation of riparian vegetation.
Hook and line fishing in areas important for the survival of threatened fish species.	Not applicable – the proposed activity does not involve hook and line fishing.
Human-caused climate change.	Not applicable – the proposed activity would not contribute significantly to climate change and would not prevent implementation of the relevant Priorities Action Statement.
Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams.	Not applicable – the proposal would not involve the installation or operation of in-stream structures or other mechanisms that alter natural flow regimes of rivers and streams.
Introduction of fish to waters within a catchment outside their natural range.	Not applicable – the proposed activity does not involve the introduction and movement of fish.
Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales.	Not applicable – the proposed activity does not involve the introduction and movement of non-indigenous fish or marine vegetation.
Removal of large wood debris from New South Wales and rivers and streams.	Not applicable – the proposal does not involve the removal of woody debris.
The current shark meshing program in New South Wales waters	Not applicable – the proposed activity does not involve shark meshing.

Summary of FM Act assessment of significance

The proposal would not involve direct impacts – and is unlikely to result in any indirect impact – on threatened entities or their habitat, and would not substantially constitute, involve or exacerbate any key threatening processes, as listed under Part 7A of the Act.

The proposed activity therefore does not require an Environmental Impact Statement (EIS) or Species Impact Statement (SIS) under the Act.

3.2.2 Part 7 Biodiversity Conservation Act 2016

Section 7.3 of the Act provides a ‘five-part’ test to determine whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

No threatened species or endangered ecological communities are known to occur on-site or are considered to have some potential to occur on-site or be otherwise impacted by the proposal.

Part A - In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the lifecycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

No breeding, refuge or foraging habitat important for any threatened fauna species, was found to occur within or in close proximity to the site.

No suitable habitat for any locally occurring threatened flora species occurs within the site.

Highly mobile threatened species such as birds and microbats may occur transiently within or in proximity to the site but are unlikely to utilise the site for sustenance or breeding purposes.

The proposal is therefore unlikely to impact on any threatened species or their habitats, such that a viable local population of any threatened species is placed at risk of extinction.

Part B - In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

- (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or***
- (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction***

There are no endangered ecological communities (EEC) or critically endangered ecological communities present at the site.

The proposal would therefore not result in the fragmentation or isolation of areas of any EEC and is unlikely to adversely affect the extent or composition of any EEC such that a local occurrence of the EEC would be placed at risk of extinction.

Part C - In relation to the habitat of a threatened species or ecological community:

- (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity***
- (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and***
- (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.***

No important habitat for threatened species would be removed or otherwise significantly impacted (see Part A).

No EEC would not be fragmented or isolated, nor removed or modified to an extent that would affect the long-term survival of the EEC occurring in the locality (refer to Part B).

The proposal will therefore not affect the long-term survival of any threatened species or endangered ecological community in the locality.

Part D – Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

No “areas of outstanding biodiversity values” have been declared in the City of Shoalhaven.

Part E – Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

No key threatening processes listed in the NSW *Biodiversity Conservation Act 2016* are considered relevant to the proposed activity.

3.3 Threatened species impact assessment (Commonwealth EPBC Act 1999)

A Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Report was generated on 1 July 2026. An EPBC Protected Matters Report provides general guidance on matters of national significance and other matters protected by the EPBC Act in the area selected. Of those threatened species and endangered ecological communities reported as likely occurring or having habitat within the area of the report, none were considered to have potential habitat on the site, requiring of further assessment.

Additional species listed under the Act, including marine and migratory species, may occur occasionally within the vicinity of the proposed activity but would not be affected by the proposal.

The proposal is therefore unlikely to have an adverse effect on a vulnerable, endangered, critically endangered or migratory species or its habitat, nor on the extent or integrity of an endangered ecological community such that its local occurrence is likely to be placed at risk of extinction.

No other matters of significance, i.e.:

- Ramsar wetlands of international importance;
- Commonwealth marine environment;
- world heritage properties;
- national heritage places;
- the Great Barrier Reef Marine Park;
- nuclear actions; or
- a water resource, in relation to coal seam gas development and large coal mining development;

would be affected as a result of the proposed activity.

Further assessment and referral to the Commonwealth is therefore not required.

3.4 Indigenous heritage

Under Section 86 of the NSW *National Parks and Wildlife Act 1974* (NPW Act) it is an offence to disturb, damage, or destroy any Aboriginal object without an Aboriginal Heritage Impact Permit (AHIP). The Act, however, provides that if a person who exercises 'due diligence' in determining that their actions will not harm Aboriginal objects has a defence against prosecution if they later unknowingly harm an object without an AHIP (Section 87(2) of the Act). To effect this, the NSW Department of Environment, Climate Change and Water have prepared the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (hereafter referred to as the 'Due Diligence Code of Practice') to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for an AHIP.

A search on the Aboriginal Heritage Information Management System (AHIMS) on 05 June 2026 returned no records of Aboriginal sites or objects within or in close proximity to the site of the proposed activity (refer to Figure 3 below).

The Due Diligence Code of Practice lists certain landscape features that are regarded as indicating a higher propensity for Aboriginal objects which require a more thorough investigation. These are:

- within 200m of waters, or
- located within a sand dune system, or
- located on a ridge top, ridge line or headland, or
- located within 200m below or above a cliff face, or within 20m of or in a cave, rock shelter, or a cave mouth.

Although the site is within 200m of waters the site can be described as “disturbed land” as defined by the Due Diligence Code of Practice, *i.e.*:

“Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, being changes that remain clear and observable. Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.”

The majority of site of the proposed activity has a long history of disturbance, use and modification including the construction and maintenance of the existing boat ramp, slipway, carparks, and stormwater systems. Artefacts are not expected to be within the sediments forming the bed of the harbour.

As the proposal would occur on disturbed land and would not impact any recorded Aboriginal sites or places, the Due Diligence Code of Practice requires no further assessment, and the activity can proceed without an AHIP.

Figure 3 Results of AHIMS Aboriginal heritage search



**AHIMS Web Services (AWS)
Search Result**

Your Ref/PO Number : Ulladulla harbour BR

Client Service ID : 1139365

Shoalhaven City Council - Nowra

Date: 05 June 2026

PO Box 42 Bridge Rd

Nowra New South Wales 2541

Attention: Geoffrey Young

Email: geoff.young@shoalhaven.nsw.gov.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 270599.0 - 270728.0, Northings : 6084288.0 - 6084413.0 with a Buffer of 0 meters, conducted by Geoffrey Young on 05 June 2026.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

3.5 Non-indigenous heritage

Within the Shoalhaven Local Environmental Plan 2014 (SLEP 2014

<https://legislation.nsw.gov.au/view/html/inforce/current/epi-2014-0179#sch.5>) the site of proposed

activity is partially mapped as part of Heritage Item 494 being the “Ulladulla Harbour including Old pier and stone pier, step and walls” (Figure 4 below).

Ulladulla Harbour was commenced in 1837 following gazettal under the name “Boat Harbour” in 1829. A temporary timber jetty was built in 1858. Construction of a stone pier was undertaken by builders Elphinstone and Shand in 1863.

The development of Ulladulla Harbour is of considerable significance as evidence of the actions of the local community and the NSW Government in the establishment of a safe port facility when water transport was the basis for a viable community in early NSW. Ulladulla Harbour is of high historical significance as a key port in the development of NSW, Sydney and Ulladulla regions, before road, rail and air connections were established. The harbour was important for transportation, communication, industry and agriculture (fishing, leather-making. Ship-building, shipping, shell grit and silica mining, sawmilling, starch, and tourism).

There are only a few remaining significant heritage elements, *i.e.*:

- The stone jetty
- Breakwaters (northern and southern)
- Lighthouse (relocated from stone jetty to Wardens Head).

The proposed activity would be located more than 100 metres from the stone jetty, 200 metres from the southern and northern breakwater, and 1.5 kilometres from the relocated lighthouse on Warden Head (Figure 5 below). The proposed activity is therefore unlikely to have any direct impacts on these features.

The proposed activity would not have any negative indirect effect on the heritage significance of Ulladulla Harbour. The Conservation Management Plan (PoPW and Services Heritage Group 1997) recommends that development options include options to “*optimise port efficiency and to allow future growth in both the fishing and tourism industries while at the same time ensuring public open space is extended and not alienated from generally use.*” In this regard, the proposed activity would contribute to the livelihood and support the ongoing survival of the site as a working port. The proposed activity is an appropriate fit in allowing future growth in both the fishing and tourism industries without significantly impacting the fabric of the stone jetty, lighthouse and breakwaters. The proposed activity is another asset to the changing culture of Ulladulla Harbour by servicing the demand for boating, fishing and tourism. No further consideration or assessment is required.

Figure 4 Heritage Item 494

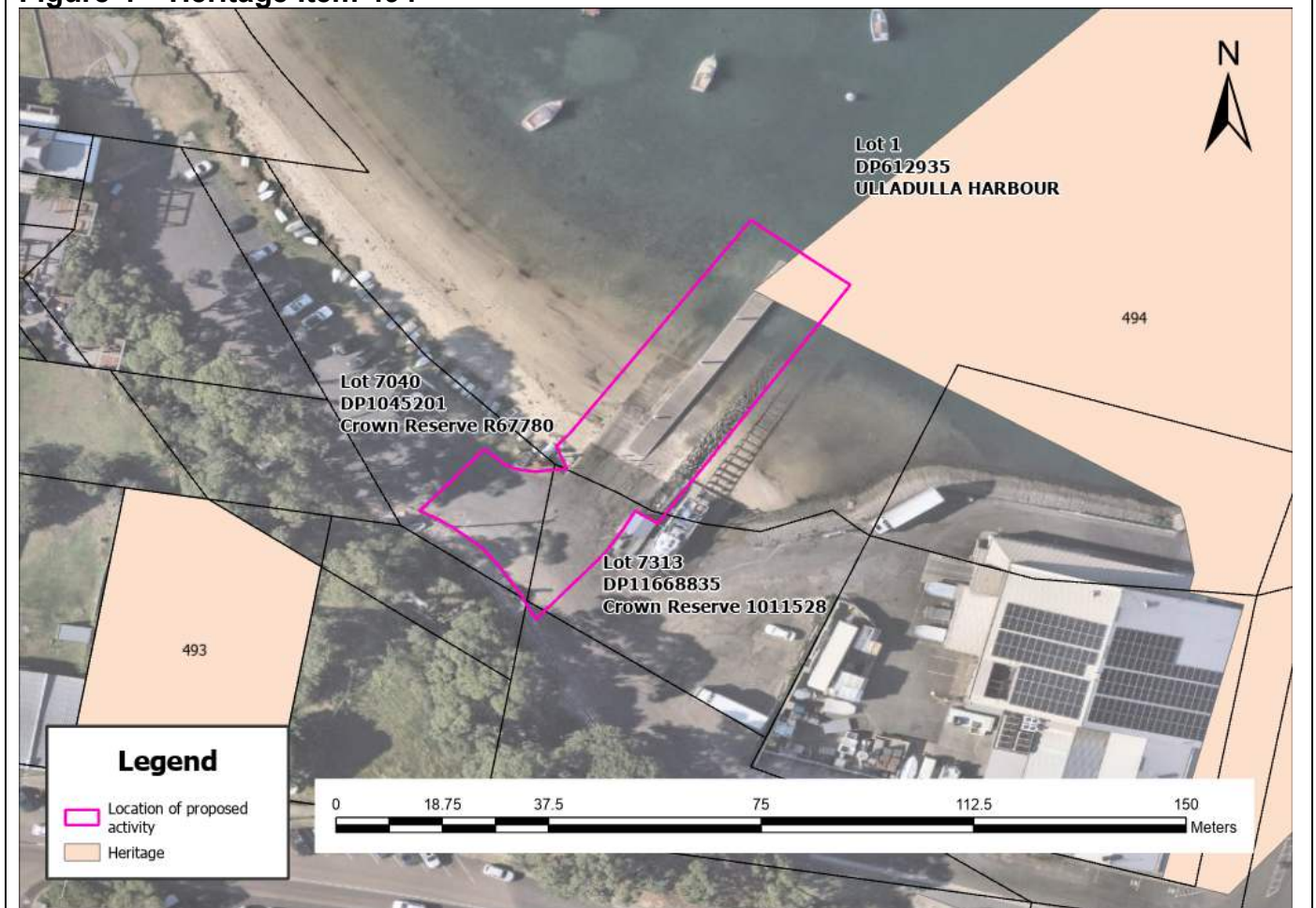


Figure 5 Location of high heritage significant features



3.6 Acid Sulfate Soils

Acid sulfate soils (A.S.S) are the common name given to sediments and soils containing iron sulfides which, when exposed to oxygen generate sulfuric acid. The majority of acid sulfate sediments were formed by natural processes in the Holocene geological period (the last 10,000 years). Formation conditions require the presence of iron-rich sediments, sulfate (usually from seawater), removal of reaction products such as bicarbonate, the presence of sulfate reducing bacteria and a plentiful supply of organic matter. These conditions tend to exist in mangroves, salt marsh vegetation or tidal areas, and at the bottom of coastal rivers and lakes. The relatively specific conditions under which acid sulfate soils are formed usually limit their occurrence to low lying parts of coastal floodplains, rivers and creeks. This includes areas with saline or brackish water such as deltas, coastal flats, backswamps and seasonal or permanent freshwater swamps that were formerly brackish. Due to flooding and stormwater erosion, these sulfidic sediments may continue to be re-distributed through the sands and sediments of the estuarine floodplain region. Sulfidic sediment may be found at any depth in suitable coastal sediments – usually beneath the watertable (ASSMAC 1998).

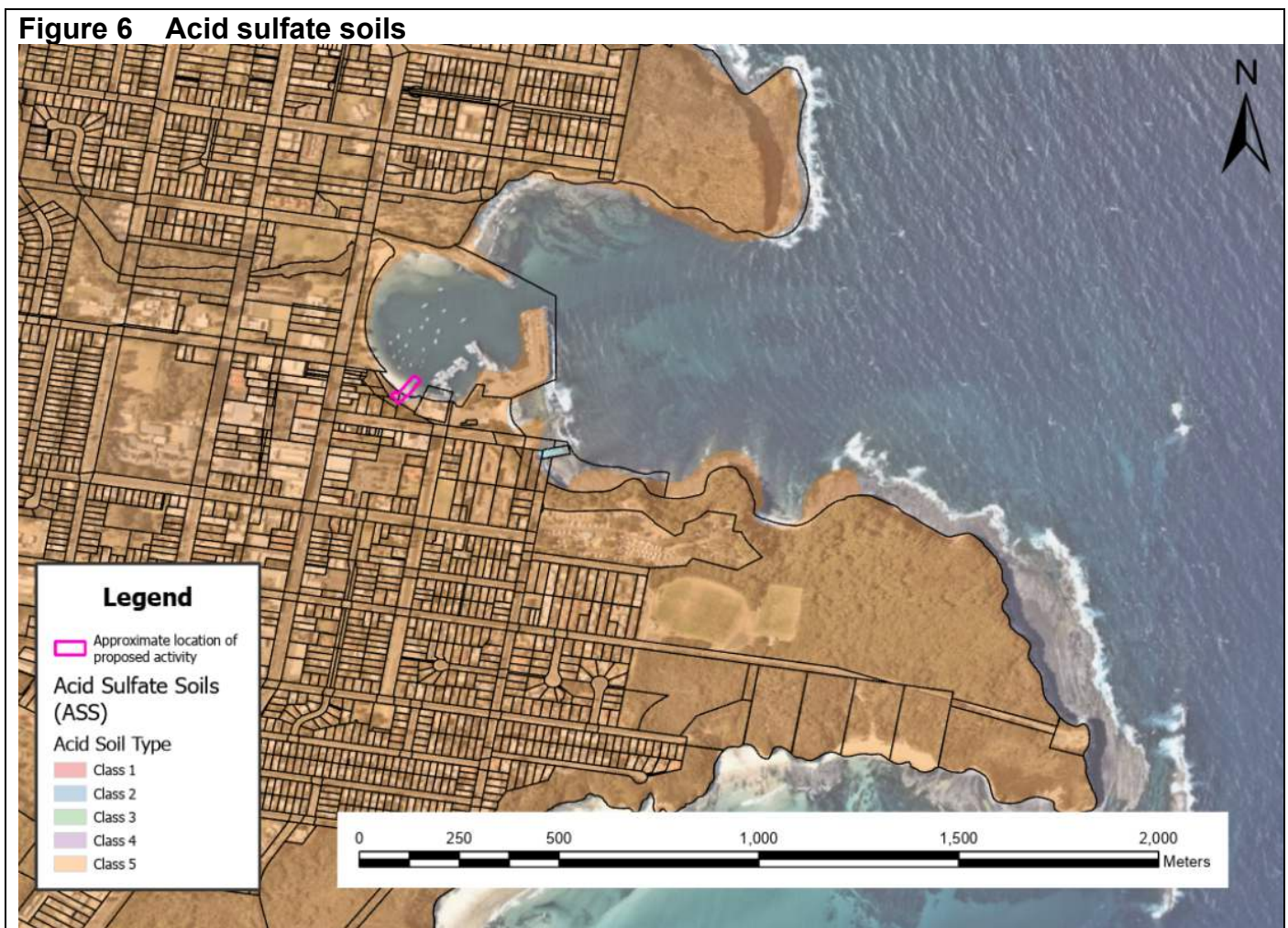
The *Shoalhaven Local Environment Plan 2014* (SLEP) maps the site and the entire surrounding areas as Class 5 (refer to Figure 6 below). The SLEP indicates that a risk of exposure of Acid

Sulfate Soil exists on land mapped as Class 5 where works would occur within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum (AHD) and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land. This does not apply for the proposed activity.

Earth2Water Pty Ltd (2020) found that the pH of the harbour sediments was consistently alkaline (pH = 8.5 to 8.6) showing only minor pH change with oxidation. Based on the sediment pH and visible shell grit in samples Earth2Water Pty Ltd (2020) interpreted that the presence of sulfide ores is adequately neutralised by the sediment geochemistry and it was interpreted that treatment/liming is unnecessary.

It is therefore unlikely that Acid Sulfate Soil exposure would occur. No further consideration is warranted.

Figure 6 Acid sulfate soils



3.7 Access Restrictions and Interruptions

The proposed activity would obviously prevent access to the boat ramp and pontoons. The proposed activity may also impact access and operation of the following:

- The carpark to the north of the boat ramp which includes the storage (albeit unlawful) of bins owned by nearby cafes as well as LPG gas bottles,

- The slipway, and
- Numerous Ulladulla Game Fishing Club structures.

Effective communication and coordination with affected entities will need to occur to minimise disruption to business and operations This is to include:

- Notification to the community of the boat ramp's closure and identification of alternative ramps at least two weeks prior to its closure through:
 - social media posts e.g. Facebook, Instagram
 - SCC website – "latest news"
 - VMS board at the existing boat ramp
- Direct communication (e.g. letter, email, or meeting) with the Ulladulla Game Fishing Club to notify of the closure of the boat ramp and any access restrictions to their structures.
- Direct communication (e.g. letter, email or meeting) with the Café owners regarding the management of bin collections and gas bottle refills during the construction period.
- Direct communication with the Ulladulla Slipway Committee and Operator to get usage details and outline potential closure / restriction of use of the slipway.

These engagement requirements are included in the environmental impact mitigation measures prescribed in Section 7 of this REF.

3.8 Excavation, dredging and reclamation within a waterway (Ulladulla Harbour)

The proposed activity would involve substantial excavation, dredging and reclamation works within the Ulladulla Harbour waterway.

The Ulladulla Harbour is mapped as 'Key Fish Habitat' by the NSW Department of Primary Industries and Regional Development – NSW Fisheries for the purpose applying the reclamation and dredging provisions of the NSW *Fisheries Management Act 1994*. An approval from the Department would be required (refer to Section 4.4 of this REF for more information).

The works in the waterway have the potential to degrade water quality through disturbance of bottom sediment and potentially through inadvertent spillage or leakage of fuels, oils and hydraulic fluids. Sediment and pollution controls would be installed and continually maintained including:

- installation of floating hydrocarbon boom with silt curtain,
- provision of a spill kit at all times at the construction site, and
- maintenance and cleaning of plant and earthmoving equipment prior to entering the construction site and waterway.

These actions are included in the environmental impact mitigation measures prescribed in Section 7 of this REF.

It is likely that a cofferdam would be utilised to create a drier, out-of-water environment for demolition and construction works. This would be advantageous for the management of sediment dispersal in the harbour. Environmental impact measures would need, however, to be provided including:

- having a 6mm mesh screen or filter sock on the intake to prevent fish entering the pump system,
- catching and relocating any trapped fish,
- utilising floats for the intake to prevent the drawing up of bottom sediments, and
- discharging 'clean' water between the cofferdam and the floating hydrocarbon boom and silt curtain
- utilising physical filtration system to completely drain the construction area where muddy water is encountered requiring removal. This may include specialised dewatering bags or geotextile-lined basins.

These actions are included in the environmental impact mitigation measures prescribed in Section 7 of this REF.

Marine vegetation was not located during site investigations and is therefore unlikely to be harmed.

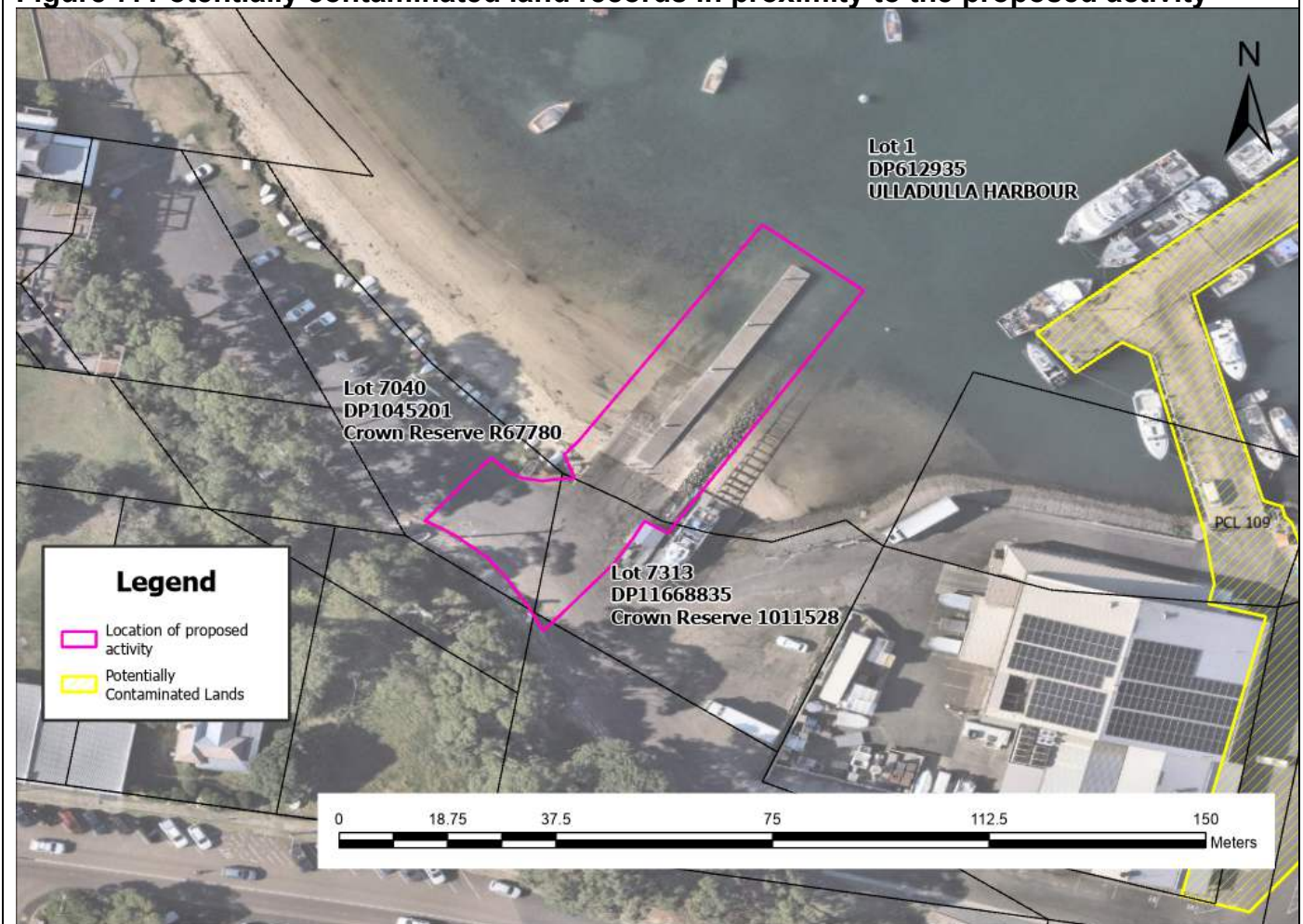
3.9 Potentially Contaminated Land

The proposed activity would occur adjacent to land mapped as being potentially contaminated (Figure 7 below).

This contamination relates to the Ulladulla Fishermen's Co-operative Society's use of the wharf to the east of the boat ramp, particularly the storage and supply of fuel - possibly including an underground storage tank (SCC reference PCL109E).

The proposed activity would not affect this area.

Figure 7: Potentially contaminated land records in proximity to the proposed activity



3.10 EP&A Regulation – Section 171 matters of consideration

Section 171(2) of the *Environmental Planning and Assessment Regulation 2021* lists the factors to be taken into account when consideration is being given to the likely impact of an activity on the environment under Part 5 of the EP&A Act. The following assessment in Table 3 below deals with each of the factors in relation to the proposed activity.

Table 3. Section 171 Matters of Consideration

Does the proposal:	Assessment	Reason
a) Have any environmental impact on a community?	Positive – long term Short term – medium adverse	The proposed activity would adversely impact the community's access to the boat ramp facility for the duration of the construct. The proposed activity would however deliver a better and safer facility when completed (refer to Section 1.3 of this REF for more information). Parts of the community may be impact with the temporary closure or other access restrictions to the carpark area north of the construction area. This includes café owners with bins that need collecting and LPG bottles requiring refilling, Ulladulla Game Fishing Club, and the operator/s of the slipway. Direct communication with these entities will

Does the proposal:	Assessment	Reason
		occur to minimise disruption to their business and operations (refer to Section 3.7 of this REF for more information). The proposed activity would not have any impact on other community services and infrastructure such as water supply, educational, medical or social services.
b) Cause any transformation of a locality?	Positive	The locality's current use (carpark, boat ramp, pontoon and approaches) would remain relatively unchanged but with improved functionality.
c) Have any environmental impact on the ecosystem of the locality?	Negligible	Ecosystem impact assessment (Section 3.2 of this REF) concludes that the proposed activity would not have a significant impact upon threatened species or endangered ecological communities. No significant vegetation or habitat features would be removed or otherwise impacted. No food resources critical to the survival of a particular species would be removed. Aquatic ecosystems are not likely to be significantly impacted on by the proposed activity and there is not likely to be any long-term or long-lasting impact through the input of sediment and nutrient into the ecosystem. Refer to Sections 3.2 and 3.3 of this REF for more information. Environmental safeguards and mitigation measures (Section 7 of this REF) would be employed to minimise risk of impacts to ecosystems in the locality.
d) Cause a diminution of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	Positive – long term Short term – medium adverse	The proposed activity would adversely impact the community's access to the boat ramp facility for the duration of the construct. The proposed activity would however deliver a better and safer facility when completed (refer to Section 1.3 of this REF for more information). Parts of the community may be impact with the temporary closure or other access restrictions to the carpark area north of the construction area. The site has minimal aesthetic, scientific or other environmental qualities or values. Negligible impact would occur in this regard.
e) Have any effect on a locality, place or building having aesthetic, anthropological, archaeological,	Negligible	The site of the proposed activity has no significant aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social values.

Does the proposal:	Assessment	Reason
architectural, cultural, historical, scientific, or social significance or other special value for present or future generations?		No impact on heritage values or listed items associated with the site would occur. Refer to Section 3.4 and 3.5 for more information. The site is not within an Aboriginal Place declared under the <i>National Parks and Wildlife Act 1974</i>. In accordance with the NSW Department of Environment, Climate Change and Water's Due Diligence Code of Practice, the proposed activity does not require an Aboriginal Heritage Impact Permit as the activity is unlikely to harm an Aboriginal artefact (refer to Section 3.4 of this REF).
f) Have any impact on the habitat of protected fauna (within the meaning of the Biodiversity Conservation Act 2016)?	Low-adverse	No important habitat would be removed or otherwise impacted. The proposed activity would not have an impact upon fauna. The specified environmental mitigation measures (Section 7 of this REF) would mitigate indirect impacts to fauna and habitat including through control of sediment.
g) Cause any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	Low-adverse	There are no species likely to rely on the site of the proposed works to the extent that modification would put them further in danger. The prescribed environmental safeguards and mitigation measures (Section 7 of this REF) would minimise the risk of impact on resident fauna, fish, and flora. Refer to Sections 3.2 and 3.3 of this REF for more information.
h) Have any long-term effects on the environment?	Positive	Works would be relatively short term and the noise generated will occur during normal working hours. The proposed activity replaces and existing facility with improved functionality. The proposed activity would not use hazardous substances or use or generate chemicals which may build up residues in the environment. The possible impacts have been discussed in detail under Section 3. Refer also to the conclusions and recommendations in Section 7.
i) Cause any degradation of the quality of the environment?	Short-term Low adverse / Long-term Positive	Potential impacts associated with sediment movement during works would be managed with sediment and erosion controls to minimise risks of impacts.

Does the proposal:	Assessment	Reason
		The proposal is unlikely to introduce noxious weeds, vermin, or feral animals into the area or contaminate the soil. Environmental safeguards and mitigation measures (Section 7 of this REF) would be employed to minimise risk of impacts.
j) Cause any risk to the safety of the environment?	Positive	The new boat ramp would be safer to use (refer to Section 1.3 of this REF for more details). The proposed activity would not involve hazardous wastes and would not lead to increased bushfire risks. The proposal is not anticipated to adversely affect flood or tidal regimes or exacerbate flooding risks.
k) Cause any reduction in the range of beneficial uses of the environment?	Short-term Low adverse / Long-term Positive	The site and local environment will remain relatively unchanged. The proposal is consistent with the existing land use. The proposed activity would adversely impact the sites use as a the boat ramp for the duration of the construction. The proposed activity would however deliver a better and safer facility when completed (refer to Section 1.3 of this REF for more information).
l) Cause any pollution of the environment?	Low adverse	The proposal would involve a temporary and local increase in noise during the construction phase due to the use of machinery. Minor sediment disturbance may result from works, but this is anticipated to be minimal and would be captured and managed during works and stabilised following works. Sediment and erosion control in accordance with the Blue Book will be implemented to minimise movement of sediment into and throughout the harbour. It is unlikely that the activity (including the environmental impact mitigation measures) would result in water or air pollution, spillages, dust, odours, vibration or radiation. Acid sulfate soils are unlikely to be exposed (refer to Section 3.6 of this REF). The risk of contamination and spills from machinery including fuel and hydraulic fluids would be minimised through safeguards and mitigation measures (refer to Section 7 of this REF).
m) Have any environmental problems associated with	Low adverse	The waste that would be disposed off-site can be recycled or re-used in accordance with resource recovery exemptions or taken to a licensed waste facility. Acid sulfate soils are unlikely to be involved.

Does the proposal:	Assessment	Reason
the disposal of waste?		There would be no trackable waste, hazardous waste, liquid waste, or restricted solid waste as described in the <i>NSW Protection of the Environment Operations Act 1997</i> .
n) Cause any increased demands on resources (natural or otherwise) which are, or are likely to become, in short supply?	Low adverse	The amount of resources that would be used are not considered significant and would not increase demands on current resources such that they would become in short supply.
o) Have any cumulative environmental effect with other existing or likely future activities?	Negligible	The assessed low adverse or negligible impacts of the proposal are not likely to interact. Mitigation measures (refer to Section 7 of this REF) shall be implemented to minimise the risk of cumulative environmental effects.
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	Low adverse	The proposed activity would have no effect on coastal processes including those projected under climate change conditions. The site is not located in a coastal hazard area.
q) Any applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act	Positive	The proposed activity meets Planning Priority 2 (Delivering Infrastructure) of the <i>Shoalhaven 2040 Strategic Land-use Planning Statement</i> https://doc.shoalhaven.nsw.gov.au/displaydoc.aspx?record=D20/437277 The proposed activity is consistent with the Illawarra Shoalhaven Regional Plan 2041 (ISRP): https://www.planning.nsw.gov.au/sites/default/files/2023-03/illawarra-shoalhaven-regional-plan-2041.pdf particularly Objective 6 (<i>Activate the region's harbour to promote a blue highway</i>)
r) Any other relevant environmental factors	N/A	Environmental factors have been addressed in Section 3 of this REF.

4. PERMISSIBILITY – STATUTORY AND PLANNING CONTEXT

4.1 NSW Environmental Planning & Assessment Act 1979 (EP&A Act)

The EP&A Act is the principal land-use planning statute in NSW. It regulates development and associated environmental assessment.

Section 4.1 (Development that does not need consent) of the EP&A Act states that:

“If an environmental planning instrument provides that specified development may be carried out without the need for development consent, a person may carry the development out, in accordance with the instrument, on land to which the provision applies.”

In this regard, section 2.80(4) of the NSW State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport & Infrastructure SEPP) provides that:

“Development for the purpose of wharf or boating facilities may be carried out by or on behalf of a public authority without consent on any land.”

The proposal constitutes an ‘activity’ for the purposes of Part 5 of the EP&A Act and can be carried out by (or on behalf of) a public authority as development without consent. Environmental impact assessment under Part 5 of the EP&A Act is required, including consideration of matters outlined in Section 171 of the EP&A Regulation 2021. This REF provides this assessment and ensures that Council as determining authority in consideration of the activity, meets its obligation under s5.5 of the EP&A Act, to examine and take into account all matters affecting or likely to affect the environment by reason of the activity.

4.2 Crown Land Management Act 2016 (CLM Act)

The CLM provides the framework for the management of Crown Land in NSW. Land regulated by CLM Act includes tidal waterway land below the mean high water mark (MHWM).

The proposed activity would be undertaken on the following Crown lands to which SCC is not the appointed Crown land manager:

- Part Lot 1 DP612935 – which is the bed of the Ulladulla Harbour below Mean High Water Mark and Crown Land Reserve R1011528 (SCC is not the appointed Crown Land Manager)
- Lot 7313 DP1166835 – which is Crown Land Reserve R1011528 (SCC is not the appointed Crown Land Manager)

Under Section 9.2 and Section 9.22 of the CLM Act, a person must not “*erect a structure on Crown land*” or “*interfere within any substance on, in or forming part of Crown land*” without “*lawful authority*” such as a licence, lease, permit, etc (Section 2.18 of the Act). Section 5.21 of the Act provides for licences to conduct activities and use of Crown land.

SCC currently holds a licence over:

- The existing boat ramp, pontoon and adjacent slipway – Licence 479959 (SCC document reference LD4445)

- The approaches and carpark within Lot 7313 DP1166835 – Licence 673911 (SCC document D25/201336)

The proposed boat ramp and pontoons would, however, extend significantly beyond the current area of Licence 479959. Rock scour protection would be added to the north side of the ramp and the ramp and floating pontoon would extend past the existing footprint by approximately 14 metres and 6 metres respectively. To allow for the new facility, A Revocation and Renewal (R&N) licence application was recommended by Crown Lands, *i.e.*:

- Revoke existing licences 479959 and 673911
- Apply for new licence to amalgamate licences 479959 and 673911 and include the additional area of the new boat ramp, pontoons and scour protection

This requirement is included in the environmental impact mitigation measures listed in Section 7 of this REF.

Works would also be undertaken Lot 7040 DP1045201 which is Crown Reserve R67780 to which SCC is the appointed Crown Land Manager (CLM) under the Act. Section 3.21 of the CLM Act provides that a Council manager can manage its appointed Crown land as if it were public community land within the meaning of the NSW *Local Government Act 1994* (LG Act). Compliance with the LG Act is addressed in Section 4.3 below.

4.3 Local Government Act (LG Act)

The LG Act provides the legal framework for the system of local government for NSW.

Part of the proposed activity would be undertaken on Crown Reserve R67780 (Lot 7040 DP1045201) to which SCC is the appointed Crown Land Manager (CLM). This land is managed by SCC as “Community Land” pursuant to the LG Act.

Community Land is defined by the LG Act as “*land which is set aside for community use, such as parks, sportsgrounds, beaches, community centres and walking tracks*”. Under Section 35 of the LG Act, community land is required to be used and managed in accordance with the plan of management (PoM) applying to the land, any laws permitting the use of the land for a specified purpose or otherwise regulating the use of the land, and any other relevant clause in Part 2, Division 2 of the Act.

Despite the land comprising almost entirely a car park, Crown Reserve R67780 is managed under the *Plan of Management – Park* (<https://www.shoalhaven.nsw.gov.au/Council/Publicly-available-information/Infrastructure/Plans-of-Management>). The proposed activity is consistent with the core objectives for Parks as stated in the PoM *i.e.*

- To encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and
- To provide for passive recreational activities or pastimes and for the casual playing of games, and
- To improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management.

The PoM also does not preclude the proposed activity from occurring.

4.4 Fisheries Management Act 1994 (FM Act)

The FM Act regulates the management of fishery resources, including protection of threatened species and aquatic habitats, and regulation of activities which may impact on aquatic habitats, such as dredging and reclamation.

Under the *Policy and guidelines for fish habitat conservation and management* (DPI 2013), the NSW Department of Primary Industries - Fisheries focuses the application of the FM Act and FM Regulations and associated policies and guidelines on “key fish habitat”. Issue of a Fisheries Permit is typically required for activities constituting dredging or reclamation within or with potential to impact areas identified as Key Fish Habitat.

The proposed activity would involve dredging and reclamation on water land within a waterway mapped as Key Fish Habitat. A Fisheries Permit for the proposed dredging/reclamation will be required prior to commencement of works.

Other activities which are regulated under the FM Act are applicable, as the proposed activity:

- would not affect declared aquatic reserves (Part 7, Division 2 of the Act)
- would not involve blocking the passage of fish (s.219)
- would not impact mangroves and marine vegetation (Part 7, Division 4)
- would not involve disturbance to gravel beds where salmon or trout spawn (s.208 of the Act)
- does not involve the release of live fish (Part 7, Division 7)
- does not involve the construction of dams and weirs (s.218)
- would not impact declared threatened species of endangered ecological communities (Part 7A);
- does not constitute a declared key threatening process (Part 7A), and
- would not use explosives in a watercourse (Clauses 70 and 71 of the *Fisheries Management (General) Regulation 2019*).

A permit for these types of works / impacts is therefore not required. A permit is only required for the dredging / reclamation works.

4.5 State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience & Hazards SEPP)

The Resilience & Hazards SEPP provides development controls and land-use planning frameworks associated with coastal management (consistent with the objectives of the *Coastal Management Act 2016* (CM Act)); in addition to hazardous and offensive development; and remediation of land.

The site is mapped in part as Coastal Environment Area for the purpose of the Resilience & Hazards SEPP. Development controls under the SEPP for this management zone do not apply to development which can be carried out without consent.

No areas identified as Coastal Wetlands or Littoral Rainforest on the *Coastal Wetlands and Littoral Rainforests Area Map* occur in proximity to the site.

The proposal does not constitute activities or works to reduce the impact of coastal hazards. As such, the controls of section 2.16(2) of the Resilience & Hazards SEPP do not apply and the works can be carried out without the requirement for development consent or identification in a certified Coastal Management Program.

Other activities and issues addressed by the Resilience & Hazards SEPP are not applicable to the proposal.

4.6 NSW Aboriginal Land Rights Act 1983

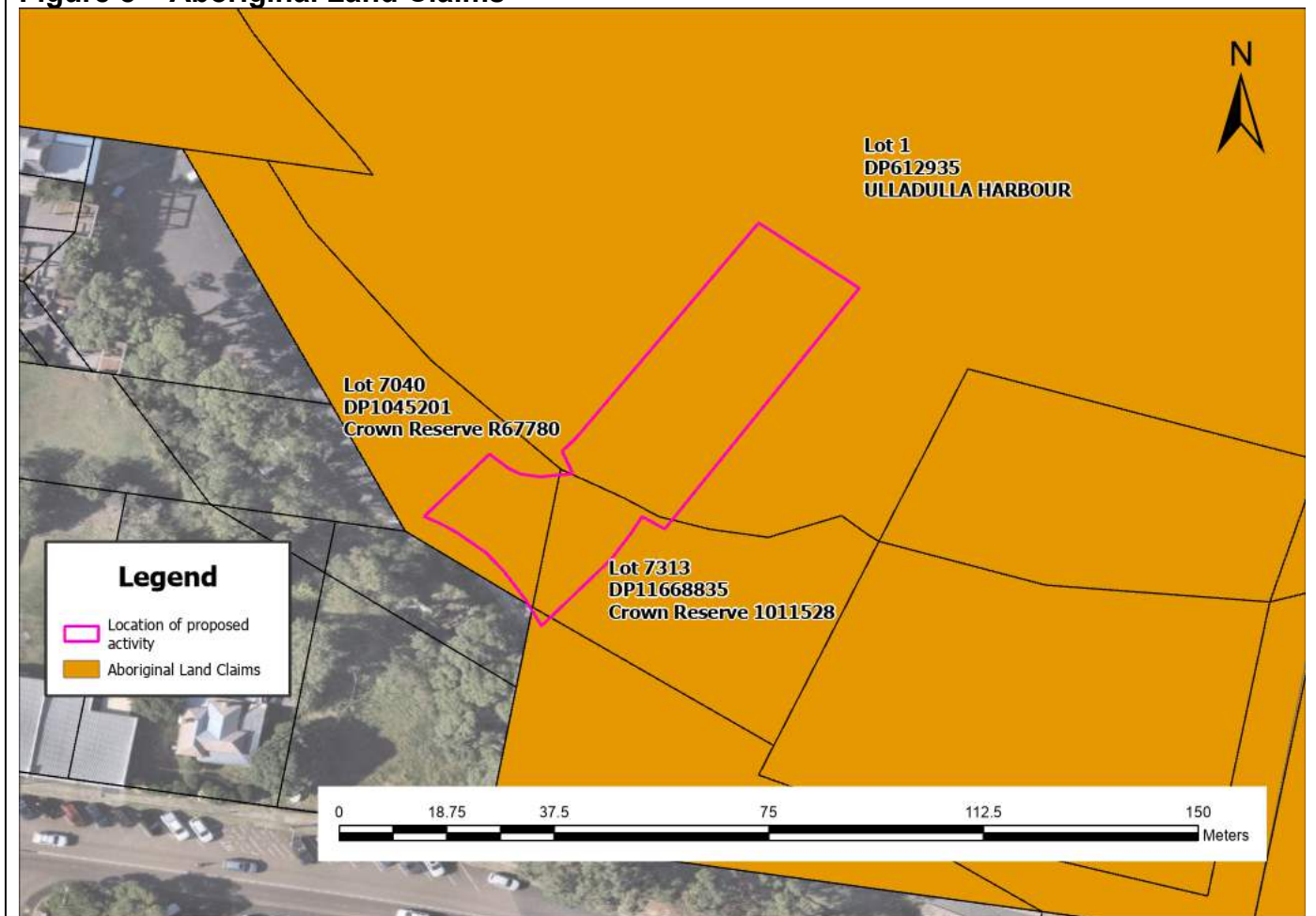
The proposed activity would be undertaken on land subjected to the blanket and multiple Aboriginal Land Claims made in 2017.

The Act does not preclude the proposed activity.

The lands are also unlikely to be “claimable Crown lands” as defined in the Act (<https://legislation.nsw.gov.au/view/html/inforce/current/act-1983-042#sec.36>) as they are, and have been prior to the 2017 claim, lawfully used and needed for essential public purposes. The likelihood that the lands are granted in favour of the claimants is therefore considered low. The decision to grant the claim, however, rests with the Aboriginal Land Claim Assessment Team and the NSW Minister for Lands and Water and not with SCC.

By proceeding, SCC acknowledges the risk (albeit low) that if the claim is granted, SCC would either lose the asset or have to enter negotiations with the claimants to continue the boat ramp’s use by the public (e.g. acquisition, easements, etc).

Figure 8 Aboriginal Land Claims



4.7 Commonwealth Native Title Act 1993

The Commonwealth *Native Title Act 1993* provides a framework for the determination of native title claims within Australia, and for negotiations and decision making regarding the use and management of native title lands and waters.

The applicable future act was determined to be permissible under Subdivision K (Facilities for Services to the Public as (refer to SCC document reference D26/247046):

- The Crown Land reservation was undertaken after the 23 December 1996 – So subdivision J does not apply.
- The future act relates to an onshore place.
- The works are similar to the list of works prescribed in subsection 2 i.e.:
 - “(a) road, railway, bridge or other transport facility” – the carpark upgrade
 - (b) a jetty or wharf” – the boat ramp and pontoon
- Apart from the period of construction, the proposed activity would not prevent native title holders access to the land or waters in the vicinity.

A Native Title Future Act Assessment was sent to SCC's Native Title Manager on 10 June 2026 (SCC document reference D26/247046). The works can proceed once the appropriate legislative procedures have been complete (likely notification to any Native Title claimants).

4.8 Other

A summary of other relevant legislation and permissibility is provided in Table 4 below.

Table 4. Summary of other relevant legislation and permissibility

NSW STATE LEGISLATION	
<i>Shoalhaven Local Environmental Plan 2014 (SLEP)</i>	
Permissible ✓ Not permissible ☐	
Justification: Under the SLEP the proposed activity may have required development consent. The provisions of SEPP Infrastructure, however, prevail over the SLEP where there is an inconsistency by virtue of Section 3.28 of the EP&A Act. Consequently, development consent is not required.	
<i>Protection of the Environment Operations Act 1997</i>	
Permissible ✓ Not permissible ☐	
Justification: The proposed activity does not constitute scheduled development work or scheduled activities as listed in Schedule 1 of the Act. The proposed activity therefore does not require an environmental protection licence. A Waste Management Plan shall be prepared by the construction contractor to ensure waste is managed in accordance with the Act and associated Waste Regulation.	
<i>National Parks and Wildlife Act 1974 (NP&W Act)</i>	
Permissible ✓ Not permissible ☐	
Justification: - The proposed activity would not encroach into National Park estate. - The Act provides the basis for the legal protection and management of Aboriginal sites in NSW. Under Sections 86 and 90 of the Act it is an offence to disturb an Aboriginal object or knowingly destroy or damage, or cause the destruction or damage to, an Aboriginal object or place, except in accordance with a permit of consent under section 87 and 90 of the Act. As there are no recorded sites or visible objects and as the site is on 'disturbed land', the Due Diligence Guidelines requires no further assessment as it is reasonable to conclude that there is a low probability of objects occurring in the area of the proposed activity and an AHIP is not required. Refer to Section 3.4 of this REF for more information.	
<i>Heritage Act 1977</i>	
Permissible ✓ Not permissible ☐	

Justification:

- The proposed activity would not disturb an item of state heritage significance.
- The Act also provides statutory protection to relics, archaeological deposits, artefacts or deposits. Section 139 to 146 of the Act require that excavation that is likely to contain, or is believed may contain, archaeological relics is undertaken in accordance with an excavation permit issued by the Heritage Council. The Act defines an archaeological relic as *“any deposit, artefact, object or material evidence that:*

a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; or

b) is of state and local heritage significance”

Archaeological artefacts are unlikely to be uncovered at the site.

Local Land Services Act 2013

Permissible ☒ Not permissible ☐

Justification:

Any clearing of vegetation would be of a kind authorised under Section 60O(b)(ii) of the Local Land Services Act 2016 (“an activity carried out by a determining authority within the meaning of Part 5 of the Act after compliance with that Part.”). No separate authorisation under the Act is required.

Water Management Act 2000

Permissible ☒ Not permissible ☐

Justification:

- Local councils are exempt from s.91E(1) of the Act in relation to all controlled activities that they carry out in, on or under waterfront land by virtue of clause 41 of the *Water Management (General) Regulation 2018*.
- The proposal would not interfere with the aquifer and therefore an interference licence is not required (s.91F).

5. CONSULTATION

5.1 Transport & Infrastructure SEPP

Section 2.10 – Consultation with councils – Development with impacts on council-related infrastructure or services

The proposed activity would involve the installation of a temporary structure on and the enclosing of a public place that is under SCC's management that is likely to cause a disruption to pedestrian and vehicle traffic that is not minor or inconsequential. The works may require closure of the carpark to the north of the boat ramp. This public area accesses carparks, the adjacent Apex Park, Ulladulla Game Fishing Club structures (A-frame building, weigh-in station and associated signage), garbage bins owned by nearby café owners, and LPG gas cylinders owned by nearby property owners. So, in accordance with Section 2.10 a notice of intention was sent to SCC's Functional Asset Managers for the area (City Services Civil Operations Manager – South and Southern Recreational Manager) on 10 June 2026 (SCC reference D26/246835). There were no responses received within the 21-day comment period prescribed in Section 2.10 of the SEPP.

Parts of the community affected by the closure, *i.e.*, Ulladulla Game Fishing Club, Café owners and owners of the LPG cylinders would be engaged to limit disruption of business and operations. Staging will need to be incorporated into the scope of works, requiring the carpark to remain operational through out construction. Only minor temporary closures would be permitted to facilitate activities such as asphalt works and material load-out. Any closures would need to be well-coordinated, with the construction contractor responsible for communicating with local business and the Ulladulla Game Fishing Club regarding access to bins, parking, LPG bottles, Club assets *etc.*

Regarding the other consultation triggers in Section 2.10 of the SEPP, the proposed activity would:

- (a) not have a substantial impact on stormwater management services
- (b) unlikely generate traffic to an extent that it would strain the capacity of the road system
- (c) not involve connection to, or have a substantial impact on the capacity of the sewerage system
- (d) not involve connection to, and use of a substantial volume of water from the water supply system.
- (e) not involve the excavation of, or a footpath adjacent to, a road for which the proponent is not responsible for the maintenance of the road or footpath.

No further consultation is therefore required.

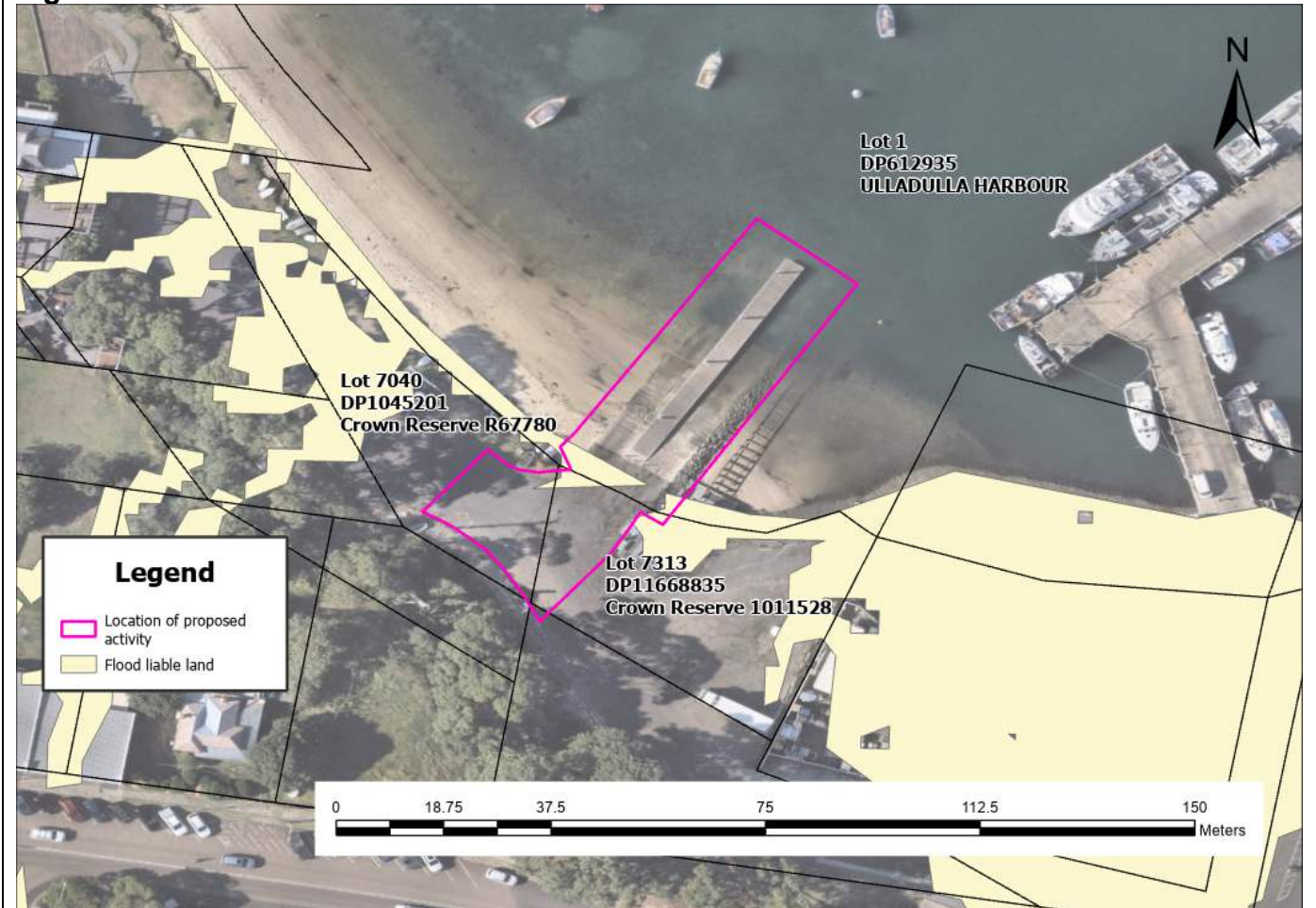
Section 2.11 – Consultation with councils – Development with impacts on local heritage

No impacts to any local heritage item would occur (refer to Section 3.5 of this REF for more information). Consultation under Section 2.11 of this SEPP is therefore not required.

Section 2.12 – Consultation with councils – Development with impacts on flood liable land

A small part of the proposed activity would be undertaken on flood liable land (Figure 9 below). The proposed activity, being the replacement of an existing asset with commensurate size and geometry, is unlikely to change flood patterns other than to a minor extent. Consultation under Section 2.12 of this SEPP is therefore not required.

Figure 9 Flood liable land



Section 2.13 – Consultation with State Emergency Service—development with impacts on flood liable land

A small part of the proposed activity would be undertaken on flood liable land (Figure 9 above). The proposed activity, being the replacement of an existing asset with commensurate size and geometry, is unlikely to change flood patterns other than to a minor extent.

The proposed activity is also not a “*relevant provision*” listed in subsection (2) <https://legislation.nsw.gov.au/view/html/inforce/current/epi-2021-0732#sec.2.13>.

Consultation under Section 2.13 of this SEPP is therefore not required.

Section 2.14 – Consultation with councils – Development with impacts on certain land within the coastal zone

The proposal would not occur within a coastal vulnerability area. Consultation is therefore not required.

Section 2.15 – Consultation with public authorities other than councils

The proposed activity would comprise a fixed or floating structure in or over navigable waters. In accordance with Section 2.15 a notice of intention was sent to Transport for NSW on 10 June 2026 (SCC reference D26/246394). Although, there were no responses received within the 21-day comment period prescribed in Section 2.15 of the SEPP, TfNSW (through the Maritime Infrastructure Delivery Office, MIDO) made comments on the draft construction drawings (SCC document D26/269839). As demonstrated in Table 5 below, these comments have been / will be considered/addressed.

Table 5. Consideration of TfNSW comment

TfNSW comment	SCC consideration response
Drawing C-01-00-02 The construction drawings refer to "the contractor" both as the "CONSTRUCTOR" and the "CONTRACTOR"? Please clarify in the drawings consistency throughout and refer to the party that has won the contract to build the boat ramp as "the contractor" and not to interchange throughout the drawings, contractual documents and specifications. There needs to be consistency in the drawings and specification of the roles of the CONSTRUCTING AGENT & Head Contractor.	The design consultant has been requested to make terminology consistence throughout the drawings to be "the contractor".
Structural Steel Notes In the construction drawings the use of dissimilar grades of stainless steel has not been identified to ensure that a 25-year design life is achieved (nuts and threads) similar corrosion rates that will freeze nuts to the threads Please confirm if timber piles are to be used and remove updated notes that reference timber piles if they are not being installed.	The design consultant has been requested to include the full description and clarify abbreviations for stainless steel (SS) to include the grade 316 for all SS elements. The design consultant has been requested to remove all notes and comments that are related to timber piles. Steel piles are to be provided.
ARMOUR ROCK WORKS The specification does not appear to address the durability requirements for sandstone armour in a marine environment, Has Council and the design consultant confirmed that the proposed sandstone meets minimum durability requirements for use in the coastal/tidal zone? Given the relatively low wave exposure at this location, sandstone may well be	The design consultant has been requested to confirm that the proposed sandstone meets durability requirements or replace with a rock that does.

TfNSW comment	SCC consideration response
appropriate, but the specification should demonstrate this rather than leave it implicit and consider adding durability test requirements in a marine environment.	
PLAN VIEW OF BOAT RAMP The drawings do not specify the size, dimensions and finish of the bollards either in the General notes or in the drawings for the facility and their position with respect to the concrete lead-up of the facility. If the bollard is to be painted so that it is more identifiable by the driver.	SCC has provided the design consultant with the preferred bollard design, with the design consultant to incorporate this into the design.
PILE SCRAPERS Has Council or the designer considered pile scrapers to ensure that floating decking and guides are not damaged by marine organisms' post construction as they attach themselves to the piles after installation which could then stop the smooth movement of the floating pontoon along the piles?	The design consultant has nominated that the pile guides are proprietary items and will depend on the supplier.
Drawing C-01-12-02 TfNSW-Maritime suggests that the General Boating Safety information is the preferred option is lieu of the 'Do not drive on trailers' sign.	A request for clarification was sent to TfNSW on 25 June 2026. It stated: <i>"Could you please provide clarification regarding the design and supply of the "General Boating Safety Information" sign? My understanding, based on a previous project and advice from Tim Woolnough (TfNSW - Grants and Projects Maritime Infrastructure Delivery Office NSW Maritime), is that the messaging and panels for this signage are developed and supplied by Maritime South (and is site specific) – these Symbols come from Maritime's signage options and do not necessarily include council management or regulatory responsibilities for the facility i.e. it is for Boating Safety Information (compliance or regulatory signage is normally kept separate)."</i>

Regarding the other consultation requirements specified under Section 2.15, the proposed activity:

- would not be undertaken adjacent to land reserved under the NSW *National Parks and Wildlife Act 1974* or to land acquired under Part 11 of that Act
- would not be undertaken in Zone C1 or an in equivalent zone

- would not increase the amount of artificial light in the night sky and located on land within the dark sky region as identified on the dark sky region map
- would not be undertaken within Defence communications facility buffer (only relevant to the defence communications facility near Morundah)
- would not be undertaken on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*
- would not be development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property
- would not be development within a Western City operational area specified in Schedule 2 of the *Western Parkland City Authority Act 2018*.

No further consultation is required under Section 2.15 of the SEPP.

Section 2.16 – Consideration of Planning for Bush Fire Protection (PBP)

The proposed activity is not a type applicable to this clause *i.e.* health services facilities, correctional centres and residential accommodation. Consideration of PBP is therefore not required.

Summary

No further consultation with government agencies under Part 2.2, Division 1 of the Transport & Infrastructure SEPP is required.

6. COMMUNITY ENGAGEMENT

The community has been engaged and invited to provide comment on a consultation package of drawings through SCC's 'Get Involved' webpage. Through this exercise a range of community feedback was received which has been broken down into the following design comments issued by SCC (Westlake Punnett 2023):

- The grade of the ramp to be designed to meet current guidelines.
- The depth of the ramp toe has been extended

All community consultation points stated above have been addressed. The slope of the boat ramp has been increased from 1:11 to 1:8 in accordance with the *NSW Boat Ramp Facility Guidelines*. To account for a design vessel of 7.5 metres a minimum of 1.2 metre depth of water at the lowest astronomical tide is required for 90th percentile of motor boats. This is in accordance with AS3962:2020 0.9 metre vessel draught and 0.3 metres minimum water depth below the draught (Westlake Punnett 2023).

The community would be continually informed of the progress of the proposed activity through SCC's 'Major Projects' webpage (<https://www.shoalhaven.nsw.gov.au/Council/Projects-and-works/Major-projects/Ulladulla-Harbour-Southern-Boat-Ramp-Replacement>).

The proposed activity would obviously result in the closure of the boat ramp. The community shall be notified of the closure and informed on the location of alternative ramps at least two weeks prior to its closure through:

- Social media posts e.g. Facebook, Instagram
- SCC website – "latest news"
- VMS board at the existing boat ramp
- Direct communication (e.g. letter or email) with the Ulladulla Game Fishing Club and the Ulladulla Slipway Committee.

The proposed activity may also require short-term closure or restricted access of the carpark and public area to the north of the boat ramp. This public area accesses carparks, the adjacent Apex Park, Ulladulla Game Fishing Club structures (A-frame building, weigh-in station and associated signage), garbage bins owned by nearby café owners, and LPG gas cylinders owned by nearby property owners. People affected by this closure (predominantly the café owners, Ulladulla Game Fishing Club, and owners of the gas cylinders) would need to be engaged to minimise disruption to their operations and access. *NB: the café owners do not have legal authority to have bins in this location.*

7. SAFEGUARDS AND MITIGATION MEASURES TO MINIMISE IMPACTS ON THE ENVIRONMENT

Note that safeguards and mitigation measures are mandatory unless stated otherwise (recommended).

Safeguard / Measure	Responsibility
<i>Works planning, approvals, consultation & notification</i>	
1. Publishing of this REF on the determining authority's (Council's) website or the NSW Planning Portal, is required in accordance with clause 171(4) EP&A Regulation 2021.	SCC Environmental Officer
2. A Crown Land Licence shall be obtained prior to any works within the Ulladulla harbour waterway. This shall include: - The revoking of existing Licences 479959 and 673911 - A new licence to amalgamate licences 479959 and 673911 and include the additional area of the new boat ramp, pontoons and scour protection.	SCC Environmental Officer, SCC Property Services and SCC Project Manager.
3. This REF shall be reviewed when the Construction Contractor is engaged, and methodology is agreed and finalised.	SCC Environmental Officer and SCC Project Manager.
4. Native Title notification procedures shall be completed prior to works.	SCC Native Title Manager
5. Consideration of TfNSW's comments on the draft plans is recommended (refer to Section 5.1 of this REF for details).	SCC Project Manager and Consultant Designer
6. A Fisheries Permit (Section 200 of the NSW Fisheries Management Act 1994) shall be obtained prior to any dredging and reclamation works.	SCC Environmental Officer
7. The community shall be regularly updated on the progress of the proposed activity through SCC website and through any relevant community consultative body.	SCC Project Manager
8. The Ulladulla Game Fishing Club, café owners with bins in the carpark area, and the owners of the gas cylinders shall be engaged to minimise impacts caused by the closure of the car park area to the north of the boat ramp.	SCC Project Manager and Construction Contractor
9. Community engagement of the proposed activity shall continue and be extend to: - media releases - social media posts - SCC's website project page Information to be conveyed shall include the name of the company undertaking the works, what is proposed, the commencement and anticipated finishing dates, and traffic arrangements.	SCC Project Manager

Safeguard / Measure	Responsibility
10. The community shall be notified of the closure of the boat ramp and location of alternative ramps at least two weeks prior to its closure through: a. Social media posts e.g. Facebook, Instagram b. SCC website – “latest news” c. VMS board at the existing boat ramp d. Direct communication (e.g. letter or email) with the Ulladulla Game Fishing Club and the Ulladulla Slipway Committee.	SCC Project Manager and the Construction Contractor
11. A construction environmental management plan (CEMP) shall be developed by the Construction Contractor and must be approved by SCC Project Manager, SCC Environmental Officer prior to commencement of works. The CEMP shall include (but not be limited to): • environmental management structure, responsibilities and contacts, • relevant approvals and permits, • site plan showing construction compound, machinery, vehicles, equipment storage, port-a-loos, and emergency items including first-aid and spill kits, • environmental management activities and controls, • staged sediment and erosion control plans, • emergency and incident procedures, • Unexpected finds procedures.	Construction Contractor
12. A Waste Management Plan shall be prepared and submitted to SCC’s Project Manager for review and approval.	Construction Contractor
13. A Traffic Management Plan shall be prepared and submitted to SCC’s Project Manager and Traffic Engineer for review and approval.	Construction Contractor
14. A waterway traffic management plan shall be prepared to safely manage public use of this part of the Ulladulla Harbour (including the slipway)	Construction Contractor
15. Emergency services (State Emergency Service, Marine Rescue Police), through the Local Emergency Management Committee, shall be notified of the works and closure of boat ramp.	SCC Project Manager and SCC representative on the Local Emergency Management Committee
Site Establishment and General Safeguards	
16. Any construction compound, machinery, vehicles and stockpiles shall be located within existing cleared areas.	Construction Contractor
17. The conditions of the Fisheries Permit and Crown Licence shall be complied with.	Construction Contractor

Safeguard / Measure	Responsibility
18. Services within and in close proximity to the site shall be located, delineated and protected during works.	Construction Contractor
19. All machinery to be used shall be cleaned, degreased and in good working order prior to entering the site.	Construction Contractor
20. The contractor shall keep an emergency spill kit on-site at all times with procedures to contain and collect any leakage or spillage of fuels, oils and greases from plant and equipment.	Construction Contractor
21. No major equipment maintenance works shall be undertaken on-site.	Construction Contractor
22. To avoid the risk of pollution from machinery, refuelling shall generally be done off site, however if refuelling on site is required, due care shall be taken to avoid spilling fuel and a tray shall be used to catch any accidentally spilt fuel.	Construction Contractor
23. Erosion and sediment controls in accordance with the 'Blue Book' (Landcom 2004) shall be installed and maintained to prevent the entry of sediment into waterways i.e. water diversion, minimising disturbance, erosion control, sediment capture and rapid re-establishment.	Construction Contractor
24. Sediment controls shall include a hydrocarbon floating boom with turbidity curtain shall be installed in the harbour surrounding the work site and: a. The curtain shall be installed prior to the activity. b. A minimum of one curtain shall be installed to form a perimeter around the works site. c. The turbidity curtain shall be affixed so that there are no breaches or gaps between the curtain, hydrocarbon boom, and shoreline interface. d. The curtain shall be appropriately managed throughout the duration of the works. The curtain shall continually be monitored for visible signs of fuel spills or turbidity plumes, the perimeter of the curtain shall be inspected prior to undertaking works each day and following a major rainfall or storm event. e. If the turbidity curtain is damaged and/or breached and pollution of the surrounding waters is imminent, all work shall immediately cease. Works shall not recommence until turbidity in the vicinity of the works has returned to baseline conditions, the curtain repaired or replaced and the cause of the damage/breach is established and preventative measures implemented. f. Prior to the removal of the turbidity curtain and hydrocarbon floating boom, any sediment / turbidity shall be allowed to settle to further minimise the dispersion of suspended sediment.	Construction Contractor

Safeguard / Measure	Responsibility
25. Any waste material shall be contained within the land-based site during construction and then be removed to an authorised waste disposal facility or an appropriate storage area for reuse elsewhere. No material shall be placed in any location or in any manner that would allow it to enter the harbour waters.	All Contractors
26. Any waste generated on site shall be reused in accordance with relevant Resource Recovery Orders and Exemptions, or otherwise disposed of at a licenced waste facility and in accordance with the approved waste management plan.	All Contractors
27. Remediation of construction compound areas shall involve removal of all stockpiled material, dressing and turfing or seeding of grassed areas, as required to return the area to its existing state prior to establishment of the compound.	Construction Contractor
Construction works	
28. The approved Waste Management Plan, CEMP, and waterway traffic management plan shall be implemented.	Construction Contractor
29. Any seaweed wrack shall be left on-site (can be moved from the construction footprint though)	Construction Contractor
30. If cofferdam is utilised to dewater the construction area: a. The pump inlet pipe shall be covered with a 6 millimetre mesh screen or filter sock to prevent fish being drawn into the pump. b. Float shall be utilised for the intake to prevent the drawing up of bottom sediments c. The area shall be monitored and any aquatic fauna shall be relocated by a suitably experienced and qualified ecologist within the harbour beyond the coffer dam wall d. Physical filtration system shall be utilised for the dewatering of dirty or muddy water from the base of the construction area; otherwise water shall be discharged between the cofferdam and floating hydrocarbon boom and silt curtain.	Construction Contractor
31. Waste: a. Pouring of concrete shall be undertaken in such a way as to minimise runoff. Any runoff shall be captured, contained and removed from site for appropriate disposal b. Any excess grout / concrete, including was-down sludge, shall be contained and removed from site for appropriate reuse elsewhere, or otherwise shall be disposed of at a licenced waste facility. c. Any waste material shall be contained within the land-based site during construction and then be	Construction Contractor

Safeguard / Measure	Responsibility
managed / reused / disposed of in accordance with the approved Waste Management Plan. d. No waste material shall be placed in any location or in any manner that would allow it to enter the harbour waterway.	
32. All parties must comply with any lawful direction given by authorised Officers of the Transport for NSW Maritime, NSW Department of Primary Industries, and NSW Environment Protection Authority with regard to safe navigation and the prevention of pollution.	Construction Corridor and SCC Project Manager
33. Erosion and sediment controls shall be maintained in good working order for the duration of works and subsequently until the site has been stabilised and the risk of erosion and sediment movement is minimal.	Construction Contractor
34. Reflective strips shall be installed on the piles under the white pile caps and a white edge to the pontoons shall be provided.	Construction Contractor
35. If engineering fill sourced or recovered from waste material is imported to the site, all conditions prescribed in the applicable Resource Recovery Exemptions shall be complied with, including: - ensuring the producer of the waste has complied with the applicable Order such as testing and validation; - ensuring the material has met all chemical and other material requirements specified in the applicable Order; - keeping a written record of the following for a period of six years: - the quantity of material received - the name and address of the supplier.	Construction Contractor
36. If Virgin Excavated Natural Material (VENM) is taken to the site (i.e. without chemical testing and validation): - the material must meet the definition of VENM; - the supplier must fill out and complete the <i>VENM Certificate</i> (http://www.epa.nsw.gov.au/waste/virgin-material.htm); - The completed <i>VENM Certificate</i> shall be kept for at least six years and provided to the EPA upon any request.	Construction Contractor
Post construction	
37. An asset form shall be trimmed to file 44574E on commissioning of the new infrastructure in accordance with POL15/8 Asset Accounting Policy section 3.1.4 and POL16/79 Asset Management Policy section 3.3.	SCC Project Manager

Safeguard / Measure	Responsibility
38. Any post construction conditions of Fisheries Permit and Crown Land licence shall be accomplished.	SCC Project Manager and SCC Environmental Officer

8. SIGNIFICANCE EVALUATION & DECISION STATEMENT

This Review of Environmental Factors has assessed the likely environmental impacts, in the context of Part 5 of the NSW *Environmental Planning and Assessment Act 1979*, of a proposal by Shoalhaven City Council for the upgrade (by renewal) of the Ulladulla Harbour Southern Boat Ramp.

In consideration of the proposal as described in Section 1, in accordance with any design plans referred to in this report, and assuming the implementation of all proposed safeguards and mitigation measures (Section 7), it is determined that:

1. The land is subject to undetermined Aboriginal Land Claims and SCC is accepting of any consequences if the claim is granted.
2. It is unlikely that there will be any significant environmental impact as a result of the proposed activity and an Environmental Impact Statement is not required.
3. The proposed activity will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats, and a Species Impact Statement or Biodiversity Development Assessment Report is not required.
4. The proposed activity would require a Crown Lands Licence and a Fisheries Permit.
5. The proposed activity may proceed.

In accepting and adopting this REF, Shoalhaven City Council commits to ensuring the implementation of the proposed safeguards and mitigation measures identified in this report (Section 7) to minimise and/or prevent detrimental environmental impacts.

Determined by:



Craig Exton
Manager Technical Services
Shoalhaven City Council

Date: 13/07/2026

9. REFERENCES

- ACT Geotechnical Engineers 2022 *Southern Boat Launching Ramp and Carpark Design. Ulladulla Harbour, Wason Street, Ulladulla, NSW. Geotechnical Investigation Report*. Unpublished report for Westlake Punnett and Associates on behalf of Shoalhaven City Council (Document reference D23/44099)
- ASSMAC (Acid Sulfate Soil Management Advisory Committee, NSW) 1998 *Acid Sulfate Soil Manual ISBN 0 7347 0000 8*
- DAWE (Department of Agriculture, Water and the Environment, Australian Government). 2021. *Species Profiles and Threats Database* (online database). Available at <https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>
- DECCW (Department of Environment, Climate Change and Water, NSW) 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.
- DoE (Department of Environment, Commonwealth of Australia). 2013. *Matters of National Environmental Significance Significant Impact Guidelines 1.1*. Available at: <http://155.187.2.69/epbc/guidelines-policies.html>
- DoPW (NSW Department of Public Works) and Services Heritage Group 1999 *Ulladulla Harbour: Conservation Management Plan*. Prepared for Department of Land and Water Conservation (South Coast Region) SCC document reference D21/289326.
- DPI (Department of Primary Industries, NSW) 2013 *Policy and Guidelines for Fish Habitat Conservation and Management*. https://www.dpi.nsw.gov.au/data/assets/pdf_file/0005/634694/Policy-and-guidelines-for-fish-habitat.pdf
- Earth2Water Pty Ltd 2020 *Environmental Investigation Report – in situ characterisation of sediment and rock at Ulladulla Harbour Marina*
- EES (Environment, Energy and Science – NSW Department of Planning, Industry and the Environment). 2020. *Surveying threatened plants and their habitats*.
- MinView 2026 <https://minview.geoscience.nsw.gov.au/#/?lon=148.5&lat=-32.5&z=7&l=>
- SLR 2023 *Draft Review of Environmental Factors – Ulladulla Boat Ramp*. Unpublished report for Westlake Punnett and Associates on behalf of Shoalhaven City Council (Document reference D23/44099)
- Westlake Punnett and Associates Pty Ltd 2023 *Ulladulla Boatramp – Justification Report for Final Concept Plan*. Unpublished report for Shoalhaven City Council (Document reference D23/44099)

APPENDIX A – The Proposed Activity

SCC Document Reference D26/215113

ULLADULLA HARBOUR SOUTHERN BOAT RAMP REPLACEMENT

25 WASON STREET, ULLADULLA NSW 2539



DRAWING SCHEDULE		
PLAN No.	DRAWING TITLE	REV
C-01-00-01	COVER SHEET AND LOCALITY PLAN	2
C-01-00-02	GENERAL NOTES	2
C-01-02-01	DEMOLITION PLAN	2
C-01-03-01	GENERAL ARRANGEMENT PLAN	2
C-01-04-01	BOAT RAMP LAYOUT PLAN AND LONG SECTIONS	2
C-01-04-02	LONGITUDINAL SECTIONS	2
C-01-05-01	CROSS SECTIONS (SHEET 1 OF 2)	2
C-01-05-02	CROSS SECTIONS (SHEET 2 OF 2)	2
C-01-04-05	TYPICAL CROSS SECTIONS	2
C-01-07-01	CONCRETE SLAB PLAN AND DETAILS	2
C-01-07-02	CONCRETE DETAILS (SHEET 1 OF 2)	2
C-01-07-03	CONCRETE DETAILS (SHEET 2 OF 2)	2
C-01-12-01	SEDIMENT AND EROSION CONTROL PLAN	2
C-01-12-02	LINEMARKING DETAILS	2

LOCALITY PLAN
SCALE 1:1500



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REV.	AMENDMENTS	APPROVED	DATE
1	ISSUED FOR COMMENT	J.RITTER	20.04.2026
2	ISSUED FOR 95% REVIEWAL	J.RITTER	15.05.2026



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COVER SHEET AND LOCALITY PLAN

CLIENT: SHOALHAVEN CITY COUNCIL
PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT
ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539

APPROVED	Designed: B.HAUVILLE				
	Drawn: J.NUNES				
	Checked: J.RITTER				
J.RITTER	Datum	Size	Scale	Date	
	A.H.D	A1	1:1500	15.05.2026	
	Project No. W26022		Drawing No. C-01-00-01		Rev. 2

NOT FOR CONSTRUCTION

GENERAL NOTES

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO COUNCIL'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.

2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING REPORTS:

2.1 GEOTECHNICAL INVESTIGATION REPORT PREPARED BY ACT GEOTECHNICAL ENGINEERS REPORT NUMBER 80/C12835 DATED 16/06/2022

2.2 SURVEY DRAWINGS PREPARED BY SHOALHAVEN CITY COUNCIL DRAWING NUMBER II-2026 REV 2 DATED 18/03/2026

2.3 REVIEW OF ENVIRONMENTAL FACTORS (REF) REPORT PREPARED BY SLR CONSULTING AUSTRALIA REPORT NUMBER 623-30210-R01-V0.1 DATED 21/10/2022

3. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT AUSTRALIAN STANDARDS AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.

4. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE CONSTRUCTOR ON SITE. ENGINEERS' DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.

5. DURING CONSTRUCTION EXISTING STRUCTURES SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONSTRUCTOR TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.

6. THE CONSTRUCTOR SHALL GIVE 48 HOURS NOTICE FOR ALL ENGINEERING INSPECTIONS.

7. SLABS BEAMS AND WALLS SHALL BE POURED ON THE DAY OF APPROVAL UNLESS PERMISSION IS GIVEN OTHERWISE.

8. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.

9. ALL SERVICE LOCATIONS ON PLANS ARE SCHEMATIC ONLY.

10. CONSTRUCTOR TO DETERMINE AND/OR CONFIRM LOCATION AND DEPTH OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORK. ENGINEER TO BE NOTIFIED.

11. PROPRIETARY PRODUCTS MAY BE REPLACED WITH EQUIVALENT PRODUCTS, ONLY FOLLOWING REVIEW AND WRITTEN APPROVAL BY COUNCIL'S REPRESENTATIVE. CONSTRUCTOR TO PROVIDE SUPPORTING DOCUMENTATION INDICATING EQUIVALENT PROPERTIES FOR COUNCIL'S REVIEW.

12. THIS SITE IS IN A COASTAL ZONE AND THE EFFECTS OF TIDE AND WAVE ACTION MUST BE CONSIDERED. NOTE LEVEL ON DRAWINGS.

13. REFERENCES TO SUPERINTENDENT OR PRINCIPAL SHALL BE TAKEN AS COUNCIL'S REPRESENTATIVE.

14. CONSTRUCTOR OR CONTRACTOR IS RESPONSIBLE FOR ENSURING BUILDING WORKS ARE UNDERTAKEN IN ACCORDANCE WITH THE RELEVANT STANDARDS. PROPRIETARY ITEMS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND ALL STRUCTURES ARE SEALED TO PREVENT THE INGRESS OF RAIN DURING STORM EVENTS

15. REFERENCES TO CONSTRUCTOR, SUPPLIER OR OTHER PARTIES INVOLVED IN CONSTRUCTION SHALL HAVE THE SAME MEANING AS CONTRACTOR.

16. THE CONTRACTOR IS RESPONSIBLE FOR ALL TESTING AS SPECIFIED IN THE CONTRACT DOCUMENTS TO DEMONSTRATE COMPLIANCE. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH COMPLIANCE TESTING.

17. A SECTION 138 APPLICATION AND APPROVAL IS REQUIRED PRIOR TO ANY OCCUPATION OF COUNCIL'S ROAD OR FOOTPATH. THIS IS THE RESPONSIBILITY OF THE CONSTRUCTING AGENT.

18. A TRANSPORT FOR NSW ROAD OCCUPANCY LICENCE APPLICATION AND APPROVAL IS REQUIRED TO BE OBTAINED BY THE CONSTRUCTOR PRIOR TO ANY OCCUPATION OF STATE ROADS OR PROPERTY.

19. ALL WORKS SHALL BE SUPERVISED BY PERSONS EXPERIENCED AND QUALIFIED IN THE TYPE OF WORK BEING CARRIED OUT.

SAFETY NOTES

1. THE CONSTRUCTOR IS REQUIRED TO PREPARE A SAFETY MANAGMENT PLAN FOR THE WORK SITE. THE SAFETY MANAGEMENT PLAN IS TO BE SUBMITTED TO COUNCIL'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF ANY WORKS ON SITE

2. CONTRACTOR TO ERECT SIGNAGE ADVISING OF CONSTRUCTION ACTIVITIES PRIOR TO COMMENCEMENT OF WORKS ON SITE. SIGNAGE SHALL BE PLACED AS NECESSARY TO ENSURE CLEAR VISIBILITY TO SIGNAGE FROM ANY ROUTE BY WHICH MOTORISTS, CYCLISTS, OR PEDESTRIANS MAY APPROACH THE WORK SITE.

3. THE CONTRACTOR IS TO CLEARLY DISPLAY THE NOMINATED CONSTRUCTION MANAGERS' CONTACT DETAILS ON THE SITE ACCESS SIGNAGE.

4. THE CONSTRUCTOR IS TO COMPLY WITH ALL WHBS REQUIREMENTS IN ACCORDANCE WITH THE 'WORK HEALTH AND SAFETY ACT 2011' AND RELEVANT ACCOMPANYING REGULATIONS. SAFETY SYSTEMS AND DOCUMENTATION SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTOR AND SHALL COMPLY WITH SPECIFIC REQUIREMENTS AS DETAILED IN RELEVANT PROJECT DOCUMENTATION.

5. THE CONTRACTOR SHALL ADHERE TO SAFEWORX NSW CODES OF PRACTICE FOR ALL RELEVANT CONSTRUCTION ACTIVITIES.

6. SITE FACILITIES AND ACCESS TO BE MAINTAINED IN A NEAT AND TIDY CONDITION AT ALL TIMES.

7. THE CONSTRUCTOR SHALL OBTAIN AND KEEP ON SITE ALL RELEVANT MATERIAL SAFETY DATA SHEETS (MSDS) FOR ANY MATERIALS THAT ARE USED IN THE WORKS. ALL TRANSPORTATION, STORAGE AND USE OF THESE MATERIALS SHALL BE IN ACCORDANCE WITH MSDS.

8. THE CONSTRUCTOR IS TO PREPARE A SITE SPECIFIC RISK MANAGEMENT PLAN TAKING INTO ACCOUNT ALL FORSEABLE RISKS INCLUDING MANAGEMENT OF ALL RESIDUAL RISKS IDENTIFIED IN THE SAFETY IN DESIGN REPORT.

9. THE CONSTRUCTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING OR BENCHING OF EXCAVATIONS. THE CONSTRUCTOR IS TO PROVIDE DESIGN AND CERTIFICATION OF ALL TEMPORARY SHORING SYSTEMS FOR APPROVAL BY COUNCIL'S REPRESENTATIVE.

10. TRAFFIC MANAGEMENT MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH 'TFNSW. TRAFFIC CONTROL AT WORK SITES' TECHNICAL DIRECTON AND AS 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES'. A TRAFFIC MANAGEMENT PLAN IS TO BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO COUNCIL'S REPRESENTATIVE FOR APPROVAL

11. PEDESTRIAN CONTROL MEASURES ARE REQUIRED TO BE IMPLEMENTED AND MAINTAINED DURING CONSTRUCTION IN ACCORDANCE WITH AS 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.'

TIDAL PLANES	
TIDAL PLANE	LEVEL (m AHD)
HAT	1.080
HHWSS	0.958
MHWSS	0.617
MHW	0.509
MHWN	0.401
MSL	0.041
MLWN	-0.319
MLW	-0.427
MLWS	-0.536
ISLW	-0.779
LAT	-0.880

TIDAL PLANE VALUES TAKEN FROM AWR/C 216471 FROM MANLY HYDRAULICS LAB ON THE 17/11/2022.

ENVIRONMENTAL CONTROLS

1. EROSION & SEDIMENT CONTROLS TO BE INSTALLED IN ACCORDANCE WITH COUNCIL'S SPECIFICATION & THE NSW DEPARTMENT OF HOUSING 'BLUE BOOK' - SOILS AND CONSTRUCTION - MANAGING URBAN STORMWATER, 2004. REFER TO THE BLUE BOOK FOR STANDARD DRAWINGS "SD".

2. SEDIMENT & EROSION CONTROLS MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OR DEMOLITION ACTIVITY. THE LOCATION OF SUCH DEVICES IS INDICATIVE ONLY AND FINAL POSITION SHOULD BE DETERMINED ON SITE.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL MEASURES ARE TAKEN DURING THE COURSE OF CONSTRUCTION TO PREVENT SEDIMENT EROSION AND POLLUTION OF THE DOWNSTREAM SYSTEM. SUPERVISING ENGINEER SHOULD BE CONTACTED IF IN DOUBT. ALL SEDIMENT CONTROL STRUCTURES TO BE INSPECTED AFTER EACH RAINFALL EVENT FOR STRUCTURAL DAMAGE AND ALL TRAPPED SEDIMENT TO BE REMOVED TO A NOMINATED SOIL STOCKPILE SITE.

4. RETAIN ALL EXISTING GRASS COVER WHEREVER POSSIBLE. TOPSOIL FROM ALL AREAS THAT WILL BE DISTURBED TO BE STRIPPED AND STOCKPILED AT THE NOMINATED SITE. A SEDIMENT FENCE TO BE PLACED DOWNHILL OF STOCKPILE.

5. AREAS OF SITE REGRADING ARE TO BE COMPLETED PROGRESSIVELY DURING THE WORKS AND STABILISED AS EARLY AS POSSIBLE. COUNCIL'S REPRESENTATIVE MAY DIRECT THE CONTRACTOR TO HAVE AREAS OF DISTURBANCE COMPLETED AND STABILISED DURING THE COURSE OF THE WORKS.

6. ALL DISTURBED AREAS ARE TO BE TRIMMED, LEVELED, TURFED & FERTILISED WITHIN 14 DAYS OF EXPOSURE.

7. ALL EXISTING TREES TO BE RETAINED UNLESS SHOWN OTHERWISE ON APPROVED DRAWINGS. TREES RETAINED ARE TO BE PROTECTED WITH A HIGH VISIBILITY FENCE, PLUS FLAGGING TO INDIVIDUAL TREES AS NECESSARY.

8. INSTALL TEMPORARY SEDIMENT BARRIERS TO ALL INLET PITS LIKELY TO COLLECT SILT LADEN WATER, UNTIL SURROUNDING AREAS ARE PAVED OR REGRASSED. GRAVEL OR GEOTEXTILE INLET FILTERS TO S06-11 & S06-12

9. ALL SILT FENCES & BARRIERS ARE TO BE MAINTAINED IN GOOD ORDER & REGULARLY DESILTED DURING THE CONSTRUCTION PERIOD. SILT FENCES TO S06-8 OR S06-9.

10. STOCKPILES OF LOOSE MATERIALS SUCH AS SAND, SOIL, GRAVEL MUST BE COVERED WITH GEOTEXTILE SILT FENCE MATERIAL. PLASTIC SHEETING OR MEMBRANE MUST NOT BE USED. SAFETY BARRICADING SHOULD BE USED TO ISOLATE STOCKPILES OF SOLID MATERIALS SUCH AS STEEL REINFORCING, FORMWORK AND SCAFFOLDING.

11. WASTE MATERIALS ARE TO BE STOCKPILED OR LOADED INTO SKIP-BINS LOCATED ON SITE.

12. NO MORE THAN 150 m OF TRENCHING TO BE OPEN AT ANY ONE TIME. IMMEDIATELY AFTER TRENCH BACKFILLING, PROVIDE SANDBAGS OR SAUSAGE FILTERS ACROSS EACH TRENCH AT MAXIMUM 20 m SPACINGS. FILTERS TO REMAIN IN PLACE UNTIL REVEGETATION HAS OCCURRED.

13. ALL VEHICLES LEAVING THE SITE MUST PASS OVER A STABILISED SITE ACCESS BALLAST AREA (SIMILAR TO S06-14) TO SHAKE OFF SITE CLAY AND SOIL. IF NECESSARY WHEELS AND AXLES ARE TO BE HOSED DOWN. BALLAST IS TO BE MAINTAINED & REPLACED AS NECESSARY DURING THE CONSTRUCTION PERIOD.

14. THE HEAD CONTRACTOR IS TO INFORM ALL SITE STAFF AND SUB-CONTRACTORS OF THEIR OBLIGATIONS UNDER THE EROSION AND SEDIMENT CONTROL PLAN.

15. ANY SEDIMENT DEPOSITED ON THE PUBLIC WAY, INCLUDING FOOTPATH RESERVE AND ROAD SURFACE, IS TO BE REMOVED IMMEDIATELY.

16. PROVIDE BARRIERS AROUND ALL CONSTRUCTION WORKS WITHIN THE FOOTPATH AREA TO PROVIDE SAFE ACCESS FOR PEDESTRIANS.

17. CONCRETE PUMPS AND CRANES ARE TO OPERATE FROM WITHIN THE BALLAST ENTRY DRIVEWAY AREA AND ARE NOT TO OPERATE FROM THE PUBLIC ROADWAY UNLESS SPECIFIC COUNCIL PERMISSION IS OBTAINED.

18. DELIVERY VEHICLES MUST NOT STAND WITHIN THE PUBLIC ROADWAY FOR MORE THAN 20 MINUTES AT A TIME.

19. TRUCKS REMOVING EXCAVATED / DEMOLISHED MATERIAL SHOULD TRAVEL ON STABILISED CONSTRUCTION PATHS. MATERIAL TO BE TAKEN TO THE TRUCK TO REDUCE TRUCK MOVEMENT ON SITE. TRUCKS TO BE LIMITED TO SINGLE UNIT HEAVY RIGID VEHICLES. (NO SEMITRAILERS).

20. ANY EXCAVATION WORK ADJACENT TO ADJOINING PROPERTIES OR THE PUBLIC ROADWAY IS NOT TO BE COMMENCED UNTIL THE STRUCTURAL ENGINEER IS CONSULTED AND SPECIFIC INSTRUCTIONS RECEIVED FROM COUNCIL'S REPRESENTATIVE.

21. SITE COMPOUND SHALL PROVIDE FOR ADMINISTRATION FACILITIES, TOILETS AND STORAGE AREAS SUFFICIENT FOR THE PROPOSED CONSTRUCTION OPERATION. THE COMPOUND SHALL BE FENCED AND SECURE.

22. TOILET FACILITIES MUST BE EITHER A FLUSHING TYPE OR APPROVED PORTABLE CHEMICAL CLOSET. CHEMICAL CLOSETS ARE TO BE MAINTAINED & SERVICED ON A REGULAR BASIS SO THAT OFFENSIVE ODOUR IS NOT EMITTED.

23. DURING TRENCH EXCAVATION ALL SPOIL SHALL BE MOUNDED ON THE UPHILL SIDE OF TRENCHES AND PLACEMENT IS TO COMPLY WITH COUNCIL'S REPRESENTATIVES REQUIREMENT.

24. DIVERSION BANKS SHOULD BE CONSTRUCTED BY MOUNDING STRIPPED TOPSOIL (MIN HEIGHT 600 mm) WHERE DIRECTED. MATERIAL TO BE RE-SPREAD ON FOOTWAYS AFTER FINAL TRIMMING.

25. THE SITE MANAGEMENT PLAN IS INDICATIVE ONLY BASED ON PRELIMINARY INFORMATION. THE FINAL SITE MANAGEMENT PLAN IS TO BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO COUNCIL'S REPRESENTATIVE FOR APPROVAL PRIOR TO UNDERTAKING ANY WORKS.

ARMOUR ROCK WORKS

1. GROUND TO BE ADEQUATELY EXCAVATED AND SHAPED WITH REMOVAL OF ANY ROCKS WITH SHARP EDGES PRIOR TO LAYING OF GEOTEXTILE FILTER UNDERLAY.

2. CLEAR BEACH IN FRONT OF PROPOSED ROCK WALL OF ALL LOOSE AND SCATTERED CONCRETE BLOCKS.

3. ROCKS USED IN THE CONSTRUCTION OF THE WORKS SHALL COMPRISE SANDSTONE, MEETING THE FOLLOWING SPECIFICATION:

(i) ROCK SHALL BE ROUGH AND ANGULAR

(ii) ROCK SHALL HAVE A MINIMUM DRY DENSITY OF 2,300kg/m3

(iii) SATURATED POINT LOAD STRENGTH INDEX (Is50) GREATER THAN 1.5MPa

4. THE DIAMETER AND GRADING OF THE ARMOUR ROCK USED IN THE WORKS SHALL BE AS FOLLOWS:

MINIMUM DIAMETER	0.3m
MEDIUM (50%aile) DIAMETER	0.45m
MAXIMUM DIAMETER	0.6m
THICKNESS	0.9m

THE DIAMETER OF THE ROCK SHALL BE DEFINED AS THE AVERAGE OF THE MAXIMUM DIMENSION OF THE ROCK TO THE MINIMUM DIMENSION, MEASURED AT RIGHT ANGLES TO THE MAXIMUM DIMENSION. THE RATIO OF MAXIMUM TO MINIMUM DIMENSIONS OF ANY ROCK SHALL NOT EXCEED 2

5. ROCK ARMOUR UNITS SHALL BE CAREFULLY PLACED IN A SOUND INTERLOCKING ARRANGEMENT.

6. ALL PLACEMENT SHALL BE SUPERVISED BY PERSON OR PERSONS EXPERIENCED IN THIS TYPE OF WORK.

SIGNAGE AND LINEMARKING:

1. LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS. AS1742 AND AS 4049.

2. PAINT SHALL BE TYPE 3, CLASS A AND THE COLOUR SHALL BE WHITE AND NOT SUBJECT TO DISCOLOURATION BY BITUMEN FROM THE ROAD SURFACE. EACH LINE SHALL BE 80mm WIDE. ALL PAINT SHALL BE APPLIED BY MECHANICAL SPRAYER.

3. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.

4. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm TO 0.40mm.

5. PAINT 80mm LINEMARKING TO CARPARK PAVEMENT.

6. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS.

DEMOLITION

1. THE CONTRACTOR IS TO CARRY OUT ALL DEMOLITION WORK IN ACCORDANCE WITH AS2601 AND THE SAFE WORK NSW CODE OF PRACTICE FOR DEMOLITION WORK.

2. PRIOR TO REMOVAL OF ANY STRUCTURAL SUPPORT:

- PROVIDE TEMPORARY SUPPORT FOR ALL STRUCTURES WHICH ARE TO BE ALTERED AND WHICH NORMALLY RELY FOR SUPPORT ON WORK TO BE DEMOLISHED.

- SUPPORT EXCAVATIONS FOR DEMOLITION OF UNDERGROUND STRUCTURES.

- PROVIDE SUPPORT TO ADJACENT STRUCTURES WHERE NECESSARY, SUFFICIENT TO PREVENT DAMAGE RESULTING FROM THE WORKS.

- LATERAL SUPPORTS: PROVIDE LATERAL SUPPORT AT LEAST THAT GIVEN BY THE STRUCTURE TO BE DEMOLISHED, USING SHORING.

- VERTICAL SUPPORTS: PROVIDE SUPPORT WHERE NECESSARY USING PILING OR, UNDERPINNING OR BOTH.

3. THE CONTRACTOR IS NOT PERMITTED TO USE EXPLOSIVES.

4. THE CONTRACTOR SHALL GIVE NOTICE IMMEDIATELY IF UNKNOWN HAZARDOUS MATERIALS OR CONDITIONS ARE FOUND DURING DEMOLITION, INCLUDING THE FOLLOWING:

- ASBESTOS OR MATERIAL CONTAINING ASBESTOS.

- FLAMMABLE OR EXPLOSIVE LIQUIDS OR GASES.

- TOXIC, INFECTIVE OR CONTAMINATED MATERIALS.

- RADIATION OR RADIOACTIVE MATERIALS.

- NOXIOUS OR EXPLOSIVE CHEMICALS.

- TANKS OR OTHER CONTAINERS WHICH HAVE BEEN USED FOR STORAGE OF EXPLOSIVE, TOXIC, INFECTIVE OR CONTAMINATED SUBSTANCES.

5. IT IS THE RESPONSIBILITY OF THE BUILDER TO REMOVE FROM SITE AND DISPOSE OF ALL ITEMS TO BE DEMOLISHED IN AN APPROPRIATE MANNER.

6. ALL ASBESTOS MATERIALS TO BE REMOVED IN LINE WITH WORK COVER CODES OF PRACTICE. PROVIDE RECORDS OF DISPOSAL. PROVIDE AIR MONITORING DURING REMOVAL & CLEARANCE CERTIFICATION ON COMPLETION & PRIOR TO OCCUPATION.

EARTHWORKS

1. PROVIDE PROTECTION BARRIERS TO PROTECTED/SENSITIVE AREAS PRIOR TO ANY BULK EXCAVATION.

2. THE CONTRACTOR IS TO CLEAR AND GRUB OVER THE FULL EXTENTS OF EARTHWORKS. CLEARING AND GRUBBING SHOULD GENERALLY BE UNDERTAKEN IN ACCORDANCE WITH COUNCIL'S CONSTRUCTION SPECIFICATION C212.

3. THE CONTRACTOR IS TO STRIP TOPSOIL, CUT TO FILL OVER THE SITE TO SUBGRADE LEVEL AND STOCKPILE ANY SURPLUS MATERIAL ON SITE. EARTHWORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH COUNCIL'S SPECIFICATION C213.

4. PRIOR TO PLACEMENT OF ANY FILL, THE CONTRACTOR IS TO PROOF ROLL THE EXPOSED FILL AREA SURFACE WITH A ROLLER OF MINIMUM WEIGHT OF 5 TONNES WITH A MINIMUM OF 10 PASSES.

5. ALL ORGANIC, SATURATED, YIELDING OR OTHERWISE UNSUITABLE MATERIAL SHALL BE EXCAVATED AND REMOVED IF ENCOUNTERED DURING PROOF ROLLING. UNSUITABLE MATERIAL IS TO BE REPLACED WITH APPROVED FILL AND COMPACTED IN LAYERS. THE WHOLE OF THE EXPOSED SUBGRADE AND FILL SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2%. COUNCIL'S REPRESENTATIVE IS TO BE NOTIFIED PRIOR TO UNDERTAKING OF FINAL PROOF ROLLING. THIS CONSTITUTES A MANDATORY HOLD POINT.

6. FOR ALL FILL AREAS, THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING OF TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.

7. WHERE ROCK IS EXPOSED IN THE EXCAVATED SUB-GRADE, THE CONTRACTOR IS TO NOTIFY COUNCIL'S REPRESENTATIVE AND A DECISION MADE ON THE LEVEL TO WHICH EXCAVATION IS TAKEN. EXCAVATION IN ROCK IS NOT TO BE UNDERTAKEN PRIOR TO THE RECEIPT OF WRITTEN APPROVAL FROM COUNCIL'S REPRESENTATIVE.

8. ROCK IS DEFINED AS MATERIAL THAT CANNOT BE RIPPED BY A 30 TONNE EXCAVATOR WITH A SINGLE TYNE RIPPER ATTACHMENT. ISOLATED SINGLE BOULDERS OR ROCK FRAGMENTS SMALLER THAN 1.5 m³ IN VOLUME DO NOT CONSTITUTE EXCAVATION IN ROCK. THE PRESENCE OF ISOLATED BOULDERS OR ROCK FRAGMENTS LARGER THAN 1.5 m³ IN VOLUME DOES NOT WARRANT THE CHANGE IN CLASSIFICATION OF THE SURROUNDING MATERIAL.

9. ALL FILL IS TO BE PLACED IN MAXIMUM 200 mm (LOOSE THICKNESS) LAYERS TO SUBGRADE LEVEL USING SUITABLE MATERIAL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2%. SHOULD THERE BE INSUFFICIENT SUITABLE MATERIAL FROM SITE OWN EXCAVATIONS, IMPORT SUITABLE MATERIAL AS NECESSARY TO ACHIEVE SUBGRADE LEVELS. THE CONTRACTOR IS TO PROVIDE TEST RESULTS FOR ALL IMPORTED MATERIAL FOR APPROVAL BY THE CONTRACTOR'S REPRESENTATIVE.

10. FILLING SHALL CONSIST OF SUITABLE SELECTED FILL MATERIAL THAT MEETS THE REQUIREMENTS OF COUNCIL'S CONSTRUCTION EARTHWORKS SPECIFICATION C213.

11. SHOULD FILLING BELOW PAVEMENTS OCCURS OVER NATURAL GRANULAR SUBGRADE, INSTALL BIDIM A64 SEPARATION GEOTEXTILE LAYER AT THE SUBGRADE/SELECTED FILL INTERFACE.

12. COMPACTION TESTING SHALL BE CARRIED OUT AT THE RATE OF 2 TESTS PER 1000SQ. METRES PER LAYER BY A REGISTERED NATA LABORATORY. THE COSTS OF TESTING AND RE-TESTING ARE TO BE ALLOWED FOR BY THE CONTRACTOR.

13. BATTER SLOPES TO BE AS SHOWN, OR MAXIMUM 1 VERT : 4 HORIZ. ALL CONDUITS AND SERVICES SHALL BE LAID PRIOR TO LAYING OF FINAL PAVEMENT.

14. ALL BATTERS AND FOOTPATHS ADJACENT TO ROADS SHALL BE TOP SOILED WITH 150 mm THICK LAYER OF APPROVED LOAM AND SEEDED UNLESS OTHERWISE SPECIFIED.

15. THE ADEQUACY OF THE SUBGRADE SHALL BE DETERMINED ON SITE BY COUNCIL'S REPRESENTATIVE.

ACCESS AND SAFETY

1. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.

2. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO ALL BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.

3. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.

4. TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH AS1742.3 ARE TO BE IN PLACE AND MAINTAINED AT ALL TIMES. (TRAFFIC CONTROL PLANS TO BE SUBMITTED PRIOR TO COMMENCEMENT OF WORK.)

TRAFFIC MANAGEMENT

1. PARKING OF VEHICLES OR LOADING/UNLOADING OF VEHICLES ON ROADWAYS MAY CAUSE A TRAFFIC HAZARD. DURING CONSTRUCTION, MAINTENANCE OR DEMOLITION DESIGNATED PARKING FOR WORKERS AND LOADING AREAS SHOULD BE PROVIDED. TRAINED TRAFFIC MANAGEMENT PERSONNEL SHOULD BE RESPONSIBLE FOR THE SUPERVISION OF THESE AREAS. DELIVERY OF CONSTRUCTION MATERIALS SHOULD BE WELL PLANNED TO AVOID CONGESTION OF TRAFFIC AREAS AND TRAINED TRAFFIC MANAGEMENT PERSONNEL SHOULD BE USED TO SUPERVISE LOADING/UNLOADING AREAS.

2. BUSY CONSTRUCTION AND DEMOLITION SITES PRESENT A RISK OF COLLISION WHERE DELIVERIES AND OTHER TRAFFIC ARE MOVING WITHIN THE SITE. A TRAFFIC CONTROL PLAN SUPERVISED BY TRAINED TRAFFIC MANAGEMENT PERSONNEL SHOULD BE ADOPTED FOR THE WORK SITE.

CONCRETE

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 AND AS 3610 CURRENT EDITIONS WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

2. CONCRETE QUALITY

- ALL CEMENT TO BE TYPE GP, GENERAL PURPOSE CEMENT IN ACCORDANCE WITH AS3972.

3. CLEAR CONCRETE COVER TO ALL REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE:

CONCRETE SCHEDULE							
ELEMENT	EXPOSURE CLASS	STRENGTH GRADE (MPa)	SLUMP (mm)	MAX. AGGREGATE SIZE (mm)	COVER		
					TOP (mm)	BOTTOM (mm)	SIDES (mm)
BOAT RAMP SLAB	C2	50	135	20	65	65	65
PRECAST PLANKS	C2	50	135	20	35	35	35
TOE PROTECTION	C2	25	135	20	65	65	65

4. PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 3600.

THE CONTRACTOR SHALL FORWARD TO COUNCIL DELIVERY DOCKETS IDENTIFYING CONCRETE PROPERTIES, STRENGTH GRADE AND COMPLIANCE WITH AS 3792 FOR EACH CONCRETE TRUCK DELIVERY TO SITE. CONCRETE SLUMP TEST SHALL BE CARRIED OUT ON EACH CONCRETE TRUCK DELIVERY. DOCKETS AND TEST RESULTS SHALL BE PROVIDED BY THE CONTRACTOR TO COUNCIL WITHIN ONE WORKING DAY OF THE RESPECTIVE TRUCK DELIVERY.

PAIRS OF STANDARD CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED (AT 7 AND 28 DAYS) BY THE CONTRACTOR FOR EACH CONCRETE PLACEMENT UNLESS OTHERWISE DIRECTED BY COUNCIL. TEST RESULTS SHALL BE PROVIDED BY THE CONTRACTOR TO COUNCIL WITHIN THREE WORKING DAYS OF COMPLETING THE TESTING OF PAIRED CYLINDERS.

5. CONCRETE SHALL BE PROPORTIONED TO LIMIT DRYING SHRINKAGE TO 600 MICROSTRAIN AT 56 DAYS IN ACCORDANCE WITH AS 1012.13. WHEN REQUESTED BY COUNCIL, TESTING SHALL BE CARRIED OUT FOR EACH CONCRETE BATCH TO BE PLACED ONSITE AS PART OF THE WORKS AND FOR EACH CONCRETE COMPRESSIVE STRENGTH GRADE AND TESTED IN ACCORDANCE WITH AS1012. TESTING RESULTS ARE TO BE FORWARDED TO COUNCIL.

6. DETAILS OF THE PROPOSED MIX TO BE SUBMITTED & APPROVAL OBTAINED PRIOR TO POURING ANY CONCRETE.

7. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.

8. CONCRETE SIZES SHOWN DO NOT INCLUDE THICKNESS OF APPLIED FINISHES. NO FINISH WHICH DECREASES COVER IS ALLOWED WITHOUT THE WRITTEN APPROVAL OF COUNCIL'S REPRESENTATIVE.

9. DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.

10. FOR CHAMFERS, DROP GROOVES, REGLETS, ETC. MAINTAIN COVER TO REINFORCEMENT AT THESE LOCATIONS.

11. NO HOLES, CHASES, BLOCKOUTS, DUCTS OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF COUNCIL'S REPRESENTATIVE.

12. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF COUNCIL'S REPRESENTATIVE.

13. THE FINISHED CONCRETE SHALL BE MECHANICALLY VIBRATED TO ACHIEVE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.

14. CURING SHALL COMMENCE AS SOON AS PRACTICABLE AFTER THE FINISHING OF ANY UNFORMED SURFACE HAS BEEN COMPLETED. CONCRETE CURING SHALL COMPLY WITH AS 3600, SECTION 17 EXCEPT WHERE VARIED BY THE DRAWINGS. CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 7 DAYS, AND THE PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 14 DAYS, FOLLOWED BY A GRADUAL DRYING OUT. POLYTHENE SHEETING OR WET HESSIAN SHALL BE USED TO PROVIDE ADEQUATE PROTECTION FROM WIND AND TRAFFIC. APPROVED SPRAYED ON CURING COMPOUNDS MAY BE USED WHERE NO FLOOR FINISHES ARE PROPOSED.

15. REPAIRS TO CONCRETE SHALL NOT BE ATTEMPTED WITHOUT THE PERMISSION OF COUNCIL'S REPRESENTATIVE.

16. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL SEVEN DAYS AFTER PROPPING HAS BEEN REMOVED AND THE SLAB PRE-LOADED WITH THE BRICKS OR UNITS TO BE USED IN THE WALL.

17. CAST-IN FIXINGS, BOLTS ETC. SHALL NOT BE ALTERED WITHOUT THE PERMISSION OF COUNCIL'S REPRESENTATIVE.

18. THE CONCRETE SHALL BE PLACED IN SUCH A MANNER TO AVOID SEGREGATION OR LOSS OF MATERIALS. MAXIMUM FALL OF CONCRETE = 1500 mm OR USE ENCLOSED CHUTES OR SIMILAR.

19. SULPHATE RESISTANT CONCRETE TO BE USED IN ALL FOOTINGS, PILES AND PILE CAPS. PROVIDE ADMIXTURE FOR WATERPROOFING IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION XYPEX OR EQUIVALENT.

20. FOR CONCRETE FINISHES REFER CONCRETE FINISHES NOTES. COORDINATE WITH LANDSCAPE ARCHITECT.

STRUCTURAL STEEL NOTES

1. ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS4100, AS1554 AND AS/NZS5131 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.

2. CONSTRUCTION CATEGORY IN ACCORDANCE WITH AS/NZS5131 TO BE:

- IMPORTANCE LEVEL -3

- SERVICE CATEGORY -1

- FABRICATION CATEGORY -1

- CONSTRUCTION CATEGORY -2

3. UNLESS NOTED OTHERWISE, ALL STEEL SHALL BE C350 GRADE.

4. UNLESS NOTED OTHERWISE ALL BOLTS SHALL BE M16 CATEGORY 8.8/S. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS. ALL BOLTS AND WASHERS SHALL BE 316 GRADE STAINLESS STEEL.

5. FABRICATION SHALL COMPLY WITH AS/NZS5131.

6. ERECTION SHALL COMPLY WITH AS/NZS5131.

7. UNLESS NOTED OTHERWISE, ALL FILLET WELDS SHALL BE 6mm CONTINUOUS CATEGORY GP USING E41XX ELECTRODES. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION BUTT WELDS TO AS 1554.1.

8. PROVIDE SEAL PLATES TO THE ENDS OF ALL HOLLOW SECTIONS.

9. ALL STEELWORK SHALL BE SECURELY TEMPORARILY BRACED BY THE ERECTOR AS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.

10. IT IS THE BUILDERS RESPONSIBILITY TO PROVIDE ALL CLEATS AND HOLES AS REQUIRED FOR ALL CONNECTIONS, WHETHER OR NOT THEY ARE DETAILED ON THESE DRAWINGS.

11. ALL HOLDING DOWN BOLTS TO BE STAINLESS STEEL.

12. ALL CONNECTION DETAILS ARE TO BE IN ACCORDANCE WITH AISC STANDARDISED STRUCTURAL CONNECTIONS UNLESS NOTED OTHERWISE.

PILING NOTES

1. PILES ARE DESIGNED IN ACCORDANCE WITH AS2159-2009 - PILING - DESIGN AND INSTALLATION FOR THE LOADS SPECIFIED IN THE PILING SCHEDULE PROVIDED IN DETAIL DESIGN PHASE.

2. PILING INSTALLATION TO FOLLOW THE REQUIREMENTS PROVIDED BY THE FOLLOWING REPORTS:

- 80/C12835 BY ACT GEOTECHNICAL ENGINEERS PTY LTD.

3. AT THE COMPLETION OF THE WORK DEEMED SATISFACTORY BY THE ENGINEER, AN INSPECTION/PILE CERTIFICATE SHALL BE PROVIDED.

4. THE CONTRACTOR SHALL UTILISE A 'PILING INSTALLATION LOG-BOOK' DURING PILE INSTALLATION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO:

- PILE FOUNDING DEPTH

- PILE EMBEDMENT DEPTH INTO ROCK

- PILE CUT OFF LENGTH

- INNER PILE VOLUME (WHEN COREFILLING IS REQUIRED)

5. SEALED LEVELS ARE APPROXIMATE ONLY & IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM ALL LEVELS PRIOR TO CONSTRUCTION. ANY VARIATION TO THOSE LEVELS SHOWN ON THE DRAWINGS IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION.

6. THE CONTRACTOR IS TO TAKE PRECAUTIONS WHEN HANDLING PILES TO AVOID ANY DAMAGE TO PILES. PILES ARE TO BE HANDLED IN ACCORDANCE WITH AS2159. PILES THAT ARE DAMAGED DURING HANDLING OR STORAGE MAY BE REJECTED.

7. THE WEIGHT OF THE HAMMER IS TO BE SELECTED IN ACCORDANCE WITH AS2159. MAXIMUM DROP HEIGHT SHALL NOT EXCEED 15m. THE CONTRACTOR IS TO PROVIDE THE ENGINEER WITH THEIR RIGS HAMMER MASS SO THAT THE SET CRITERIA CAN BE DETERMINED PRIOR TO PILING.

8. THE CONTRACTOR SHALL ALLOW FOR SUFFICIENT PILE LENGTH TO ACHIEVE THE PILE LENGTH DETAILED BY STRUCTURAL DRAWINGS.

9. PILE DRIVING SHALL BE CARRIED OUT CONTINUOUSLY UNTIL THE REQUIRED DEPTH IS ACHIEVED. PILES NOT DRIVEN CONTINUOUSLY AND LEFT FOR LONG PERIODS OF TIME MAY NEED TO BE LOAD TESTED.

10. STEEL PILES MAY BE DRILLED DIRECTLY TO ROCK EMBEDMENT DEPTH. THE CONTRACTOR IS TO PROVIDE SUFFICIENT TEETH ON EACH PILE TOE TO ENSURE MINIMUM DRILL TIMES. TEETH MAY BE SPLAYED OUTSIDE THE PILE DIAMETER A MAXIMUM OF 15 mm AND INSIDE THE PILE DIAMETER A MAXIMUM OF 30 mm.

11. PILES ARE TO BE DRIVEN SO THAT THEIR AXIS IS WITHIN 50mm OF THE SPECIFIED PLAN POSITION. TOPS OF ALL PILES SHALL BE CUT OFF WITHIN 15mm OF LEVEL SHOWN ON THE DRAWINGS. VARIATION OF THE PILE AXIS FROM VERTICAL SHALL NOT EXCEED 1 IN 75. ANY PILE OUTSIDE THESE TOLERANCES MUST BE RECTIFIED BY THE CONTRACTOR.

12. THE CONTRACTOR IS TO CONFIRM THE LAYOUT OF ALL PILES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR & MUST ENSURE THAT ALL PILES ARE LOCATED CENTRALLY WITHIN THE PILE COLLARS UPON COMPLETION OF CONSTRUCTION. THE CONTRACTOR SHALL NOTE THAT LAYOUT & SITUING DIMENSIONS WILL VARY DEPENDING ON EXACT PONTON DIMENSIONS & SHALL ADJUST LAYOUT DIMENSIONS ON SITE TO SUIT.

13. FOR TIMBER PILES, ALL SAW CUTS, CHECKOUTS AND BOLT HOLES ARE TO BE TREATED IMMEDIATELY WITH 'KOPPER'S C&N EMULSION WHERE THE TIMBERS ARE ABOVE THE TIDAL ZONE AND VESSEY VEPOX CC57 IN AND BELOW THE TIDAL ZONE.

14. THE TOPS OF ALL TIMBER PILES UNDER THE JETTY ARE TO BE CUT OFF TO SUIT BOLT CLEARANCES AS SHOWN ON THE DRAWINGS. PILES ARE TO HAVE THEIR TOPS TRIMMED TO FORM A SLOPE SO THAT THE PILE CAN SHED WATER. FLOOD COAT THE TRIMMED TOP OF PILE WITH 2 COATS OF C&N EMULSION ABOVE THE TIDAL ZONE OR VESSEY VEPOX CC57 IN THE TIDAL ZONE. WHERE VOIDS APPEAR IN THE TOPS OF PILES, FILL THIS VOID WITH EPIREX 633 UP TO THE NATURAL SLOPE OF THE TRIMMED PILE TOP AND THEN TREAT AS ABOVE.

15. PILES SHALL BE CIRCULAR, NATURALLY TAPERED AND STRAIGHT. PILES ARE TO BE FREE FROM SHAKES, FRACTURES, SPLITS, DECAY, DECAY POCKETS AND ALL OTHER DEFECTS LIKELY TO IMPAIR THE PILES' STRENGTH AND SERVICEABILITY.

16. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 1538, AS 4100 AND AS 1554.1, 2 OR 5 AS APPROPRIATE AS 1250 MAY BE USED IN LIEU OF AS 4100 WITHIN THE RESTRICTIONS SPECIFIED UNDER PART B13 (C) (1) OF THE BUILDING CODE OF AUSTRALIA.

17. THE CONTRACTOR IS TO ENSURE THE INSTALLATION EQUIPMENT IS CALIBRATED REGULARLY AT NO GREATER THAN SIX (6) MONTH INTERVALS.

18. ALL PILES SHALL HAVE HOLES CORED TO A DIAMETER AT LEAST MATCHING THAT OF THE PROPOSED PILE SLEEVE.

19. HDPE PILE SLEEVES TO EXTEND MINIMUM 1m BELOW FINISHED ROCK SURFACE.

20. PILE SHAFTS TO BE INSTALLED AND HELD PLUMB TO CONTRACTORS DETAIL DURING INSTALLATION AND GROUTING.

21. THE PILING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION AND INSTALLATION OF THE PILES IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS.

DURABILITY OF PILES

1. PILES HAVE BEEN DESIGNED FOR A DESIGN LIFE OF 25 YEARS.

PONTON TOON NOTES

1. PONTONTOONS DESIGN LOADS IN THE FOLLOWING SECTION ARE TO BE BASED OFF THE FOLLOWING PARAMETERS:

- APPROACH VELOCITY OF 0.3 m/s (BASED ON MILD EXPOSURE CONDITIONS UP TO 10 TONNE VESSEL).

- WIND LOAD IN ACCORDANCE WITH AS1170.2 TERRAIN CATEGORY 1.

2. RUBBER FENDERING IS TO BE FIXED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN SPECIFICATIONS.

3. CLEATS ARE TO BE LOCATED BY THE CONTRACTOR IN CONSULTATION WITH COUNCIL & THE DESIGN ENGINEER.

4. CLEATS ARE TO HAVE A SAFE WORKING LOAD OF NO LESS THAN 3.5 TONNE.

DESIGN LOADS

5. SUPERIMPOSED LOADS ARE GENERALLY IN ACCORDANCE WITH AS1170.1 WITH TYPICAL LIVE LOADS OF 5kPa for PONTONTOONS/FINGERS & 3kPa FOR FLOATATION/STABILITY

6. DESIGN LIFE = 25 YEARS

7. ENVIRONMENTAL LOADS

(i) WIND LOADS ARE IN ACCORDANCE WITH AS1170.2 AND AS3962-2020 AND AS FOLLOWS:

- WIND REGION - A2

- TERRAIN CATEGORY - TC1.0

- IMPORTANCE LEVEL - 3

- ANNUAL PROBABILITY OF EXCEEDANCE - 1/1000

- REGIONAL WIND VELOCITY (VR) - 46 m/s

- CONSIDERATION HAS BEEN MADE FOR THE FORCES OF DRAG ON VESSELS AND STRUCTURES.

(ii) WAVE LOADS ARE IN ACCORDANCE WITH 14.2 OF AS3962-2020 FOR A 'MODERATE' WAVE CLIMATE FOR BEAM SEAS:

- WAVE AREA UTILISED - 1/50

- SIGNIFICANT WAVE HEIGHT, Hs - 0.31m

- MINIMUM HORIZONTAL FORCE - 2kN/m

CONSIDERATION FOR SEICHING AND MEASURED SIGNIFICANT WAVE HEIGHTS HAVE BEEN ANALYSED IN ACCORDANCE WITH REPORT NO. MHL1632 (DATED MAY 2007) AND MHL2592 (DATED JUNE 2018) BY MANLY HYDRAULICS LABORATORY.

(iii) BERTHING LOADS WERE TAKEN FOR A 7.5m VESSEL LENGTH WITH AN APPROACH VELOCITY OF 0.3m/s RESULTING IN A BERTHING ENERGY OF 0.18kNm & ABNORMAL BERTHING ENERGY OF 0.37kNm

4. LOAD COMBINATIONS

(i) THE ABOVE LOADS HAVE BEEN ANALYSED WITH COMBINATIONS IN ACCORDANCE WITH AS1170.0 AND AS4997-2005.

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AMENDMENTS

1

ISSUED FOR COMMENT

2

ISSUED FOR 95% REVIEWAL

APPROVED

DATE

J.RITTER

20.04.2026

J.RITTER

15.05.2026

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ADDRESS

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GENERAL NOTES

CLIENT: SHOALHAVEN CITY COUNCIL

PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT

ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539

APPROVED

Designed: B.HAUVILLE

Drawn: J.NUNES

Checked: J.RITTER

Datum

A.H.D

Size

A1

Scale

N.A.

Date

15.05.2026

Project No.

W26022

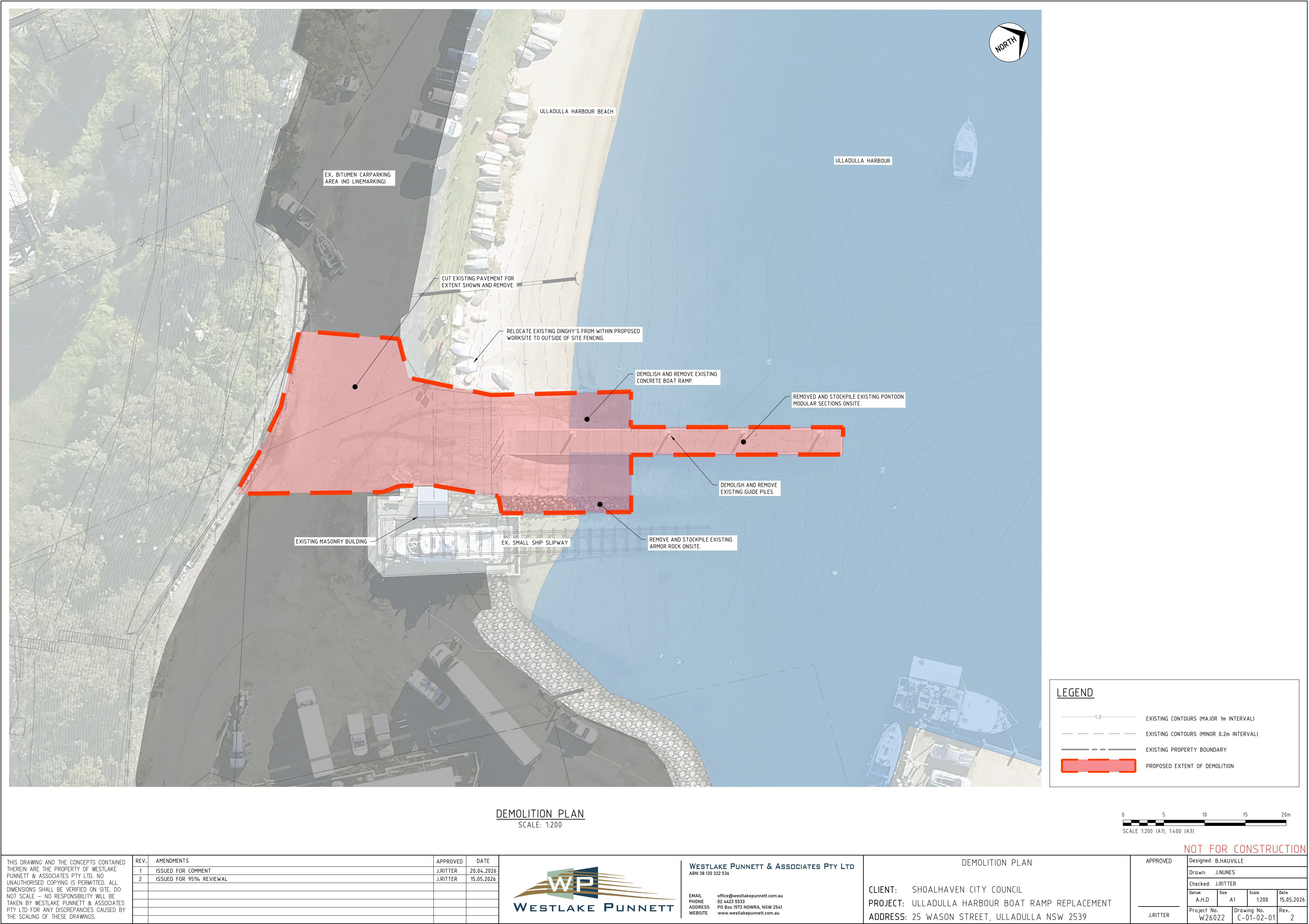
Drawing No.

C-01-00-02

Rev.

2

NOT FOR CONSTRUCTION



DEMOLITION PLAN
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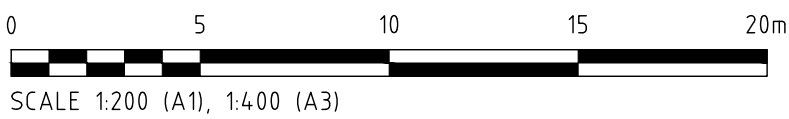
LEGEND

— 1.0 — EXISTING CONTOURS (MAJOR 1m INTERVAL)

- - - - - EXISTING CONTOURS (MINOR 0.2m INTERVAL)

- - - - - EXISTING PROPERTY BOUNDARY

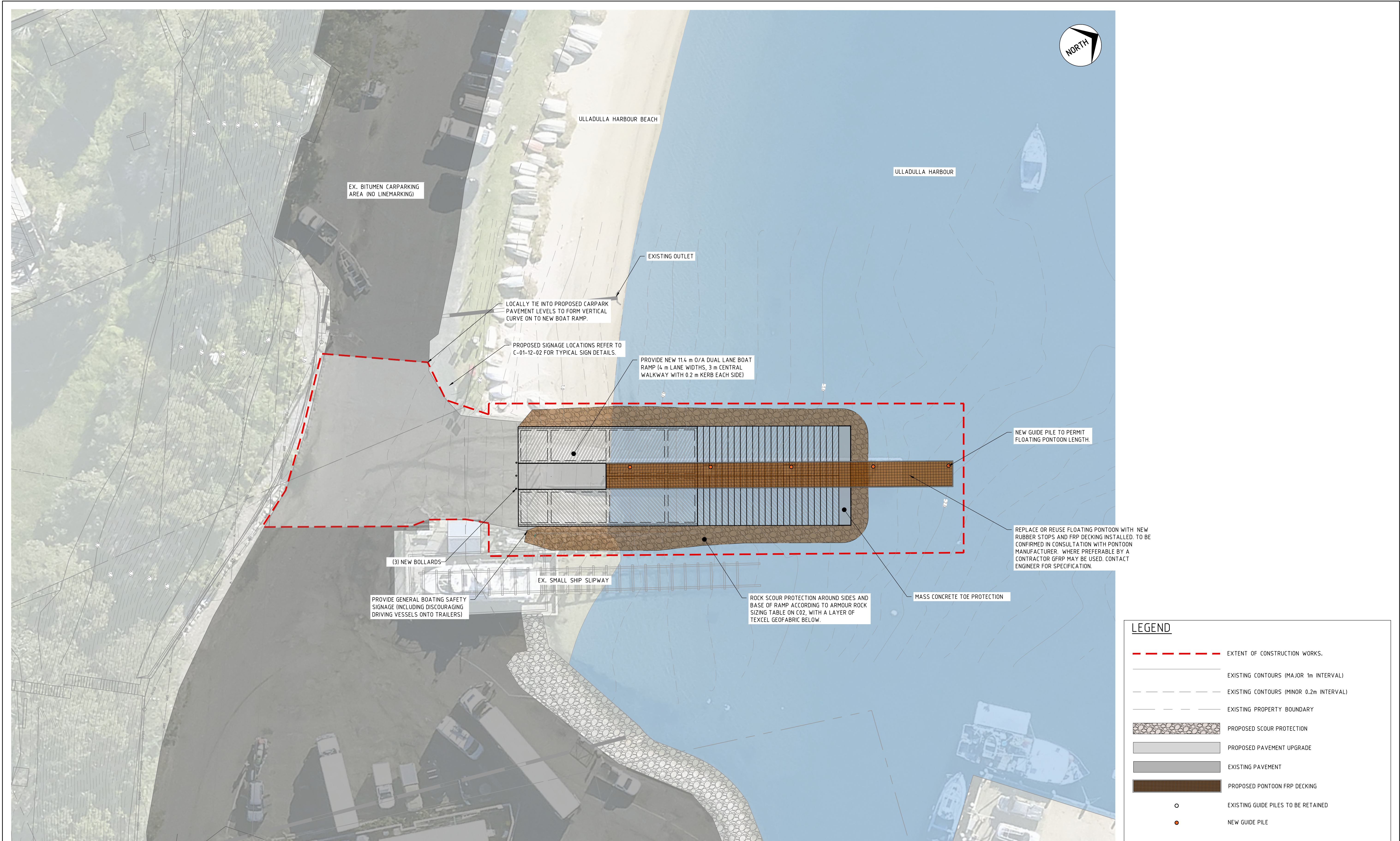
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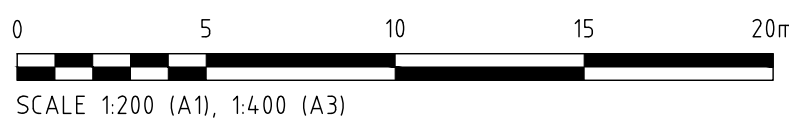
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	1	ISSUED FOR COMMENT	J.RITTER	20.04.2026		Drawn: J.NUNES									
	2	ISSUED FOR 95% REVIEWAL	J.RITTER	15.05.2026		Checked: J.RITTER									
						Datum	Size	Scale	Date						
						A.H.D	A1	1:200	15.05.2026						
											J.RITTER	Project No.		Drawing No.	
												W26022		C-01-02-01	
													Rev.		
													2		

CLIENT: SHOALHAVEN CITY COUNCIL
PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT
ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539

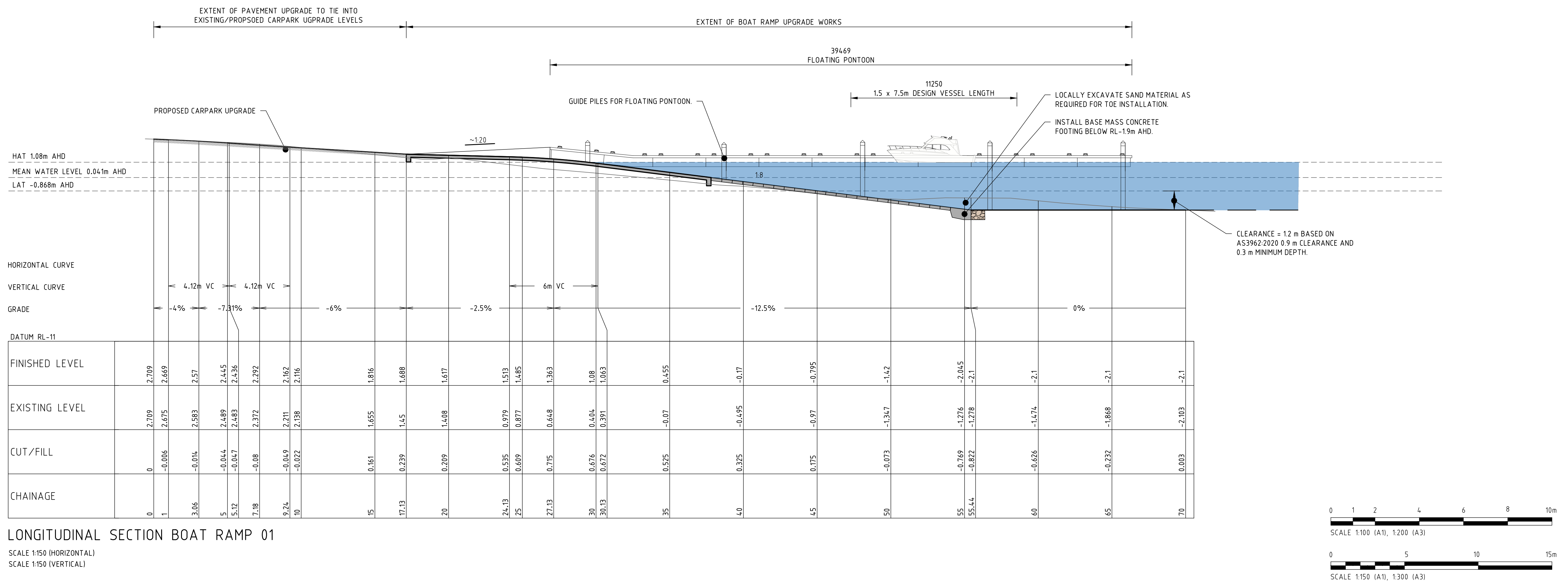
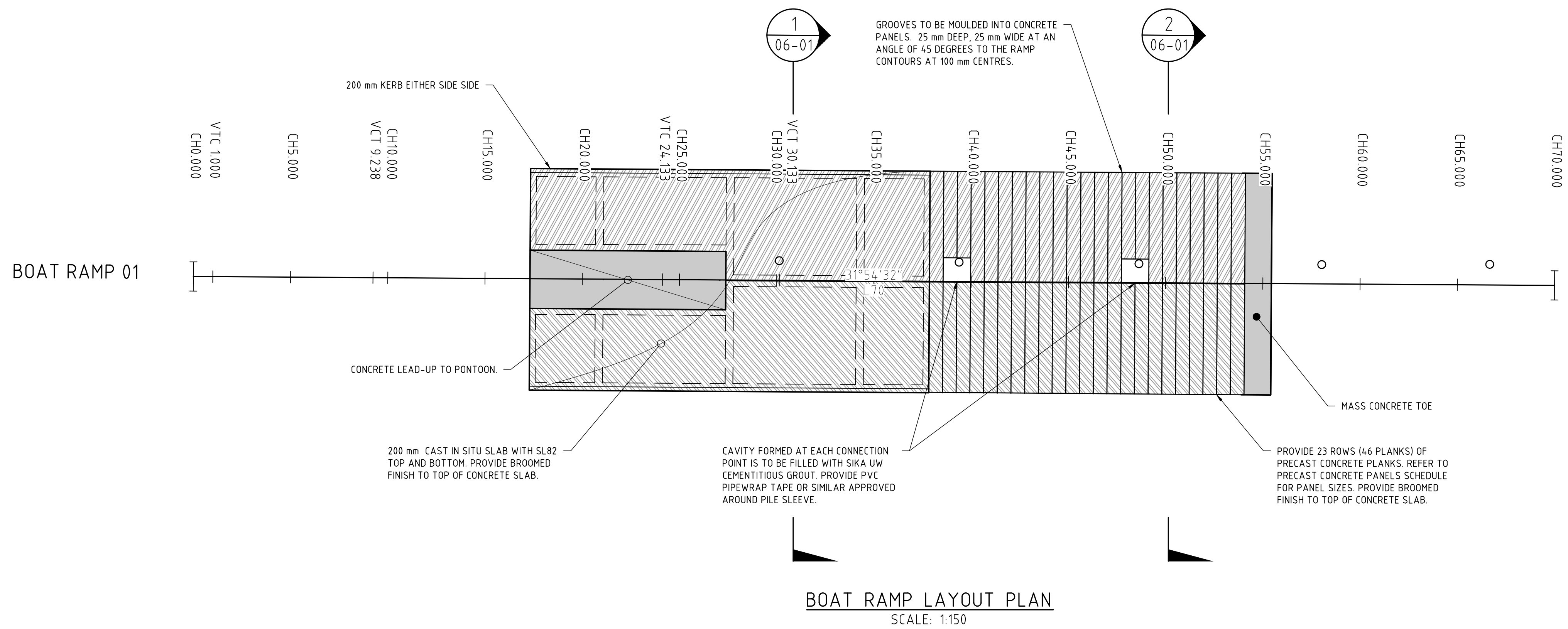


GENERAL ARRANGEMENT PLAN
SCALE: 1:200



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	1	ISSUED FOR COMMENT	J.RITTER	20.04.2026			CLIENT: SHOALHAVEN CITY COUNCIL					Drawn: J.NUNES					
	2	ISSUED FOR 95% REVIEWAL	J.RITTER	15.05.2026			PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT					Checked: J.RITTER					
							ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539					Datum	Size	Scale	Date		
												A.H.D	A1	1:200	15.05.2026		
															Project No.	Drawing No.	Rev.
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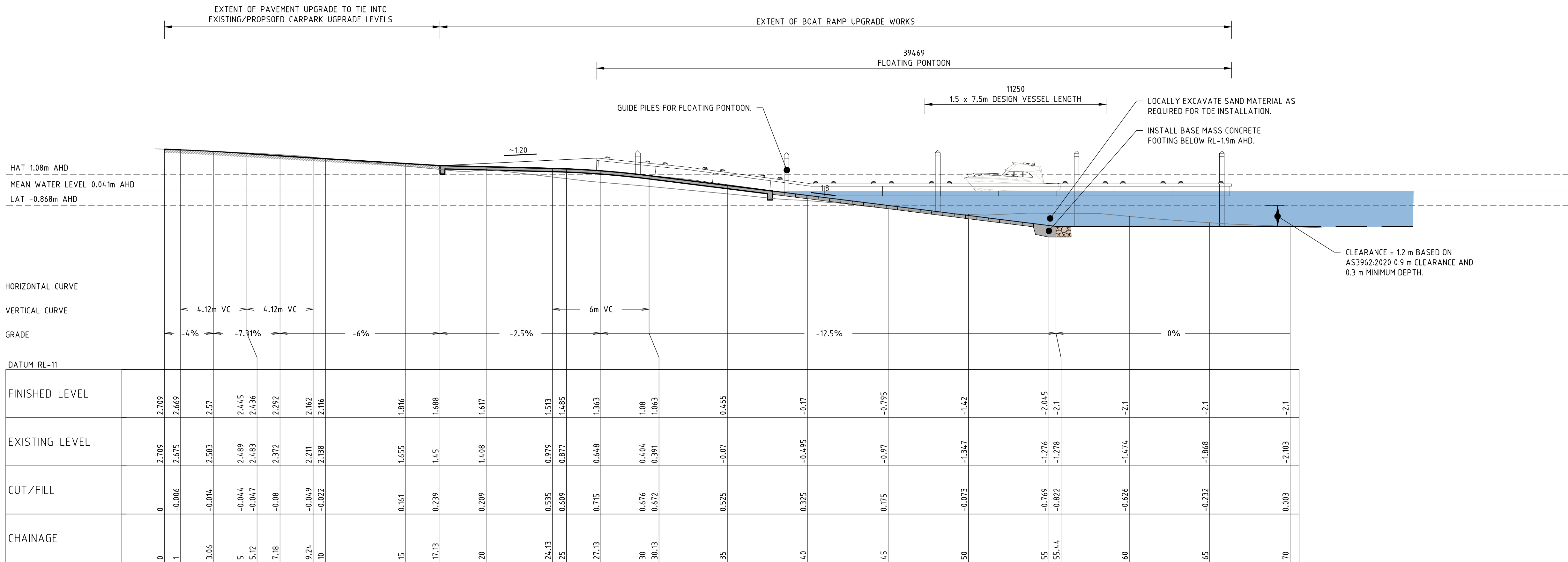
BOAT RAMP LAYOUT PLAN
AND LONGITUDINAL SECTION

CLIENT: SHOALHAVEN CITY COUNCIL

PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT

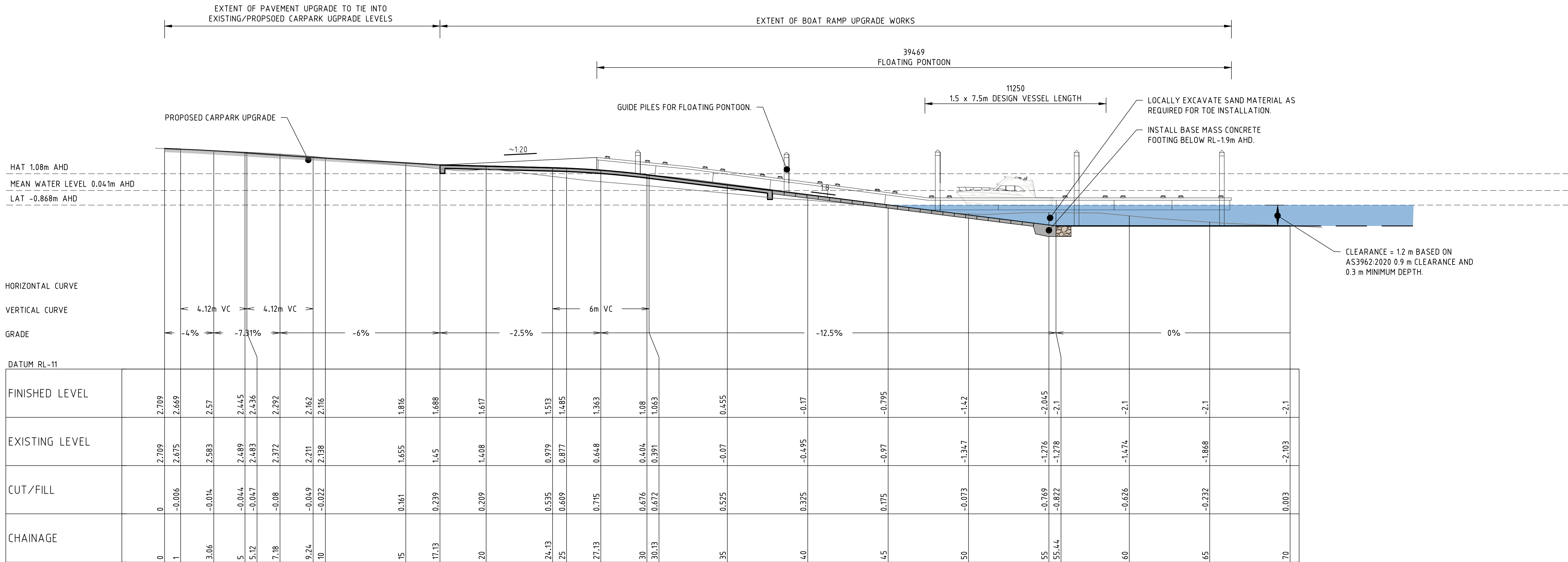
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J.RITTER	Project No.	Drawing No.	Rev.	
	W26022	C-01-04-01	2	



LONGITUDINAL SECTION BOAT RAMP 01

SCALE 1:150 (HORIZONTAL)
SCALE 1:150 (VERTICAL)



LONGITUDINAL SECTION BOAT RAMP 01

SCALE 1:150 (HORIZONTAL)
SCALE 1:150 (VERTICAL)



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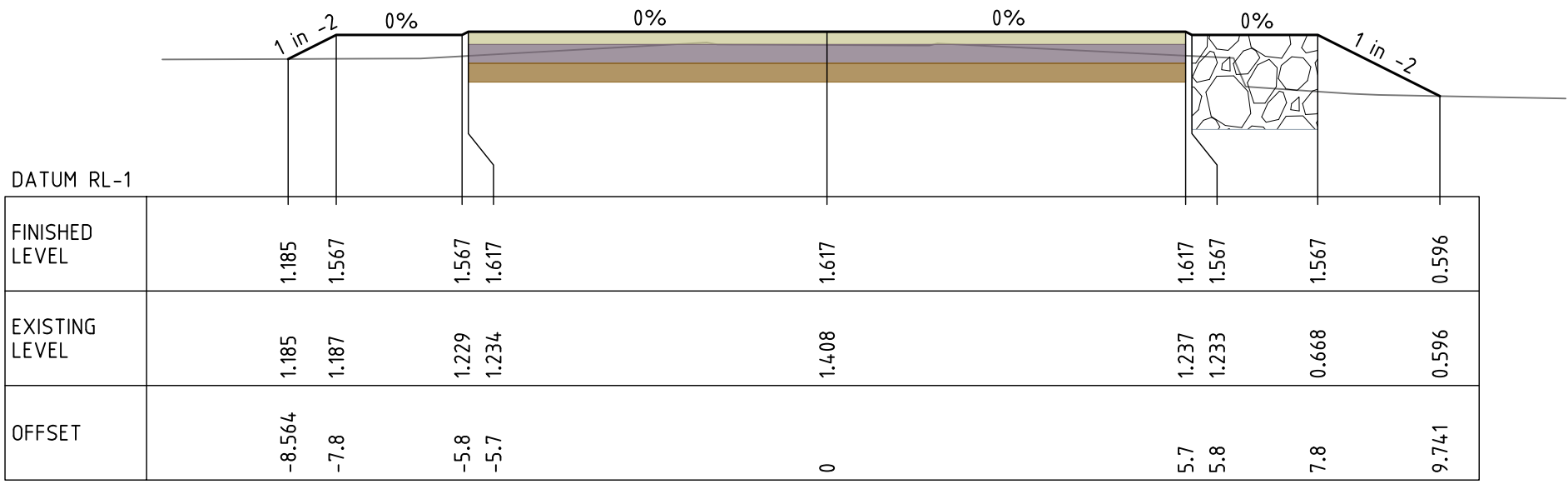
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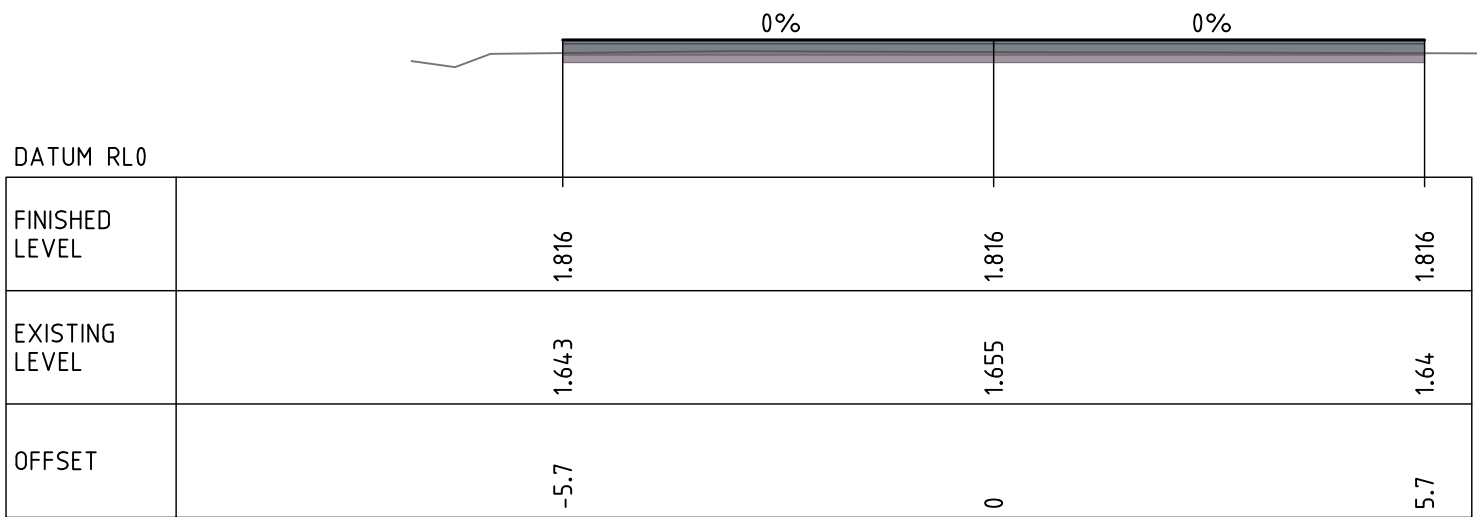
LONGITUDINAL SECTIONS

CLIENT: SHOALHAVEN CITY COUNCIL
PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT
ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539

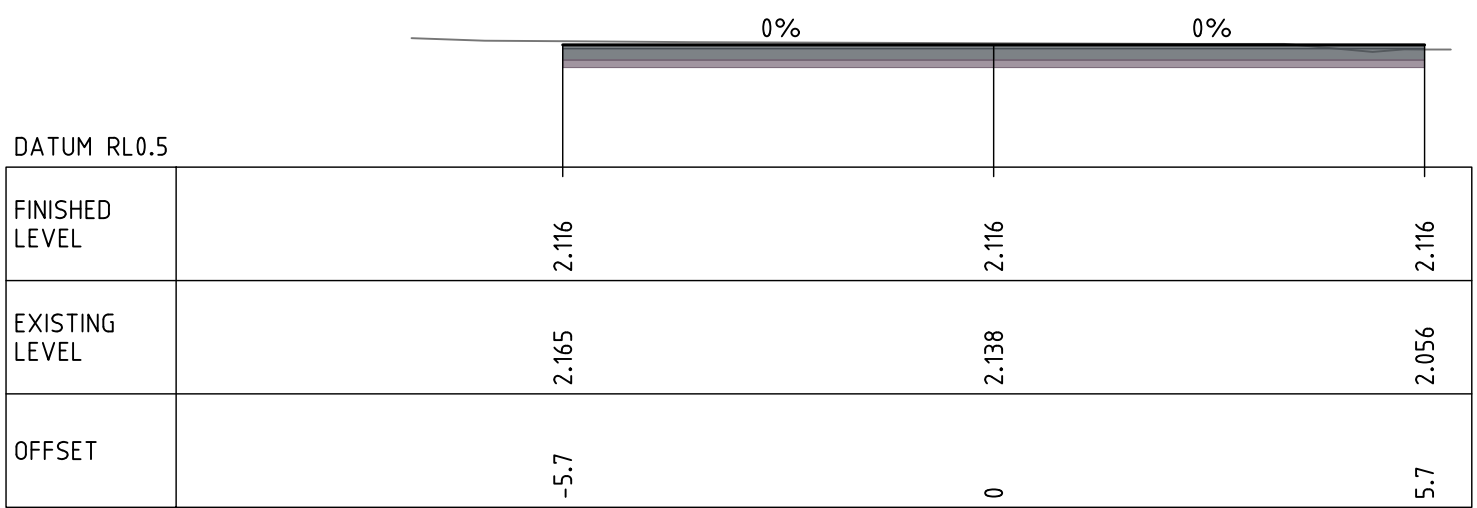
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J.RITTER	Project No.		Drawing No.	Rev.
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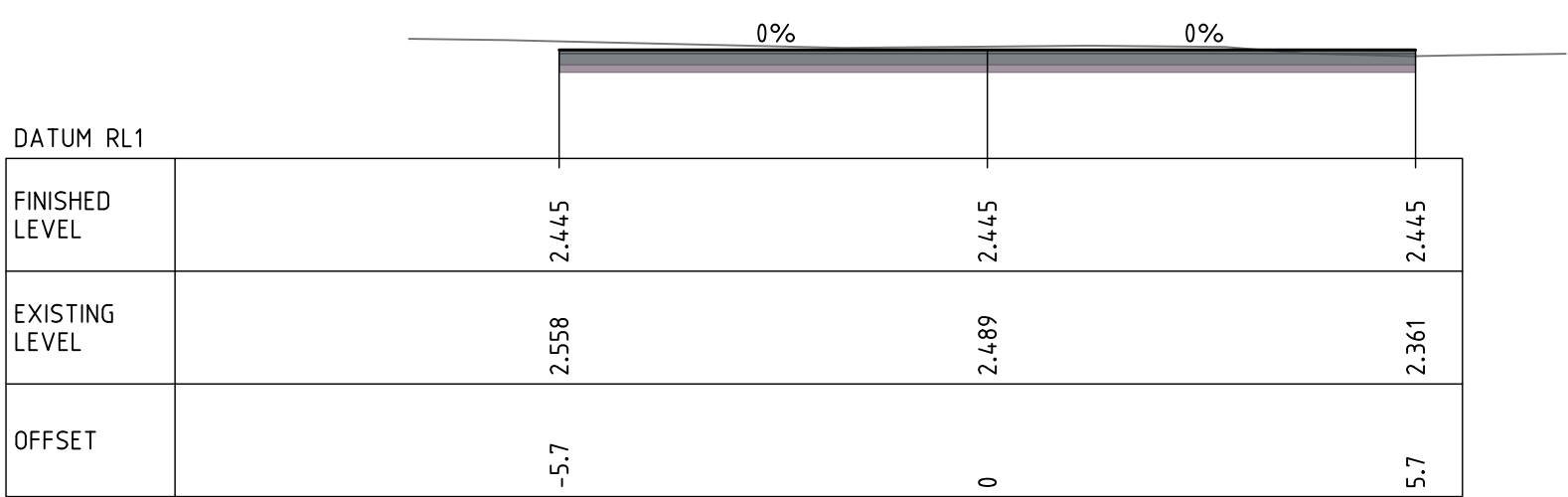
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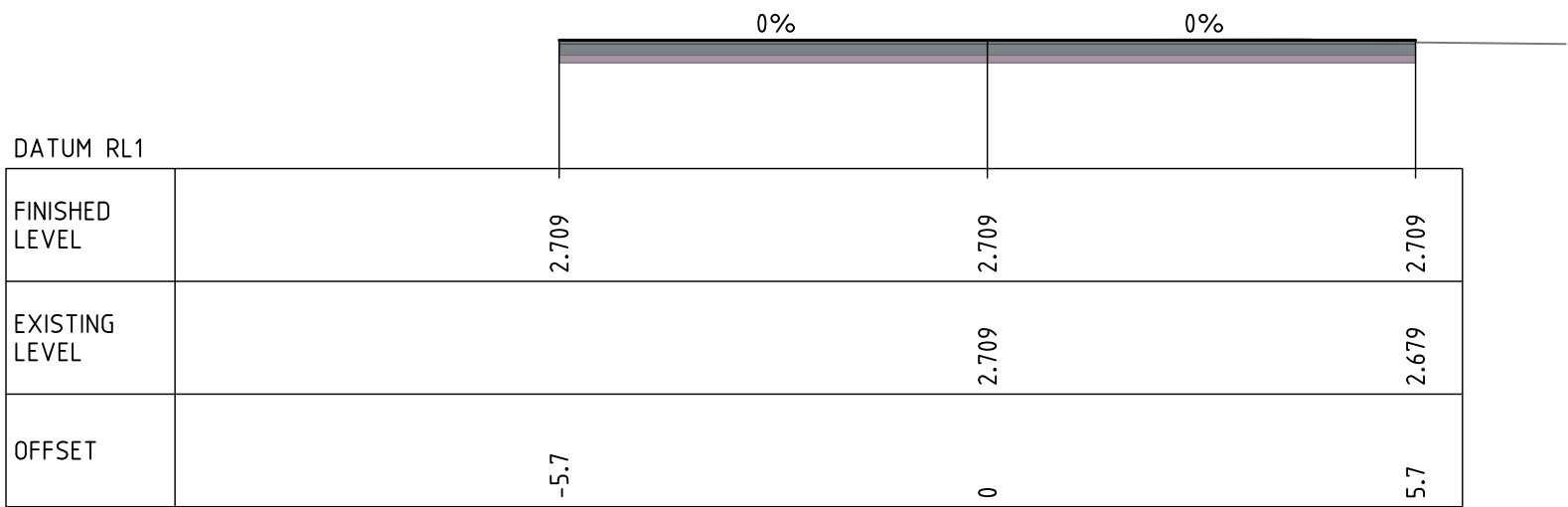
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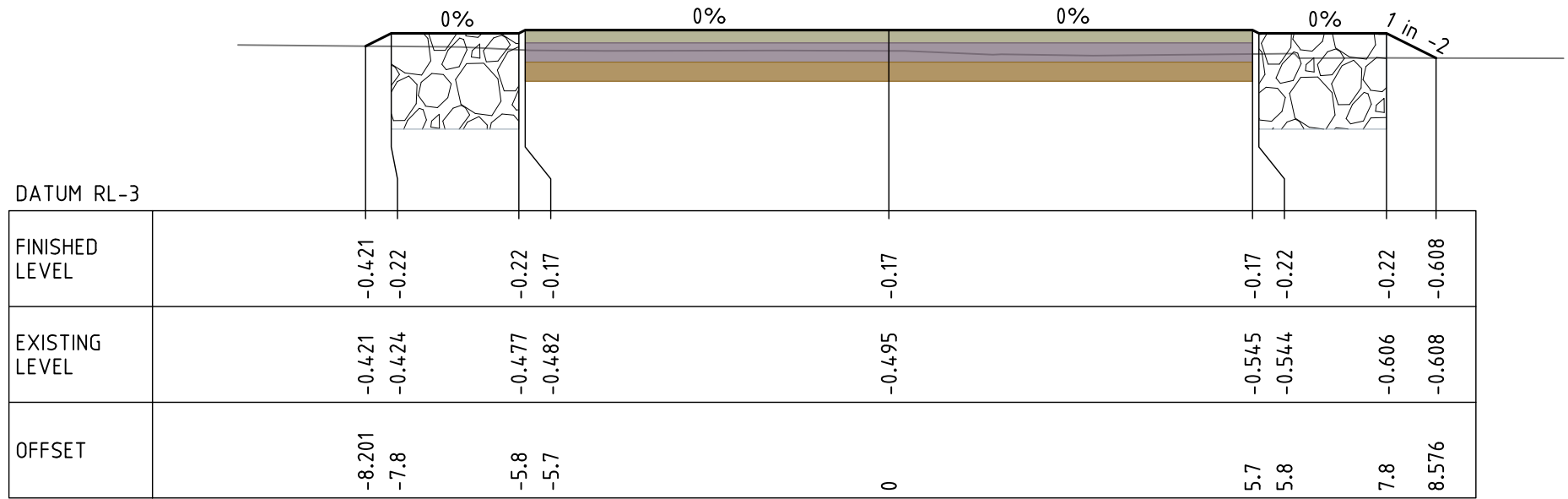
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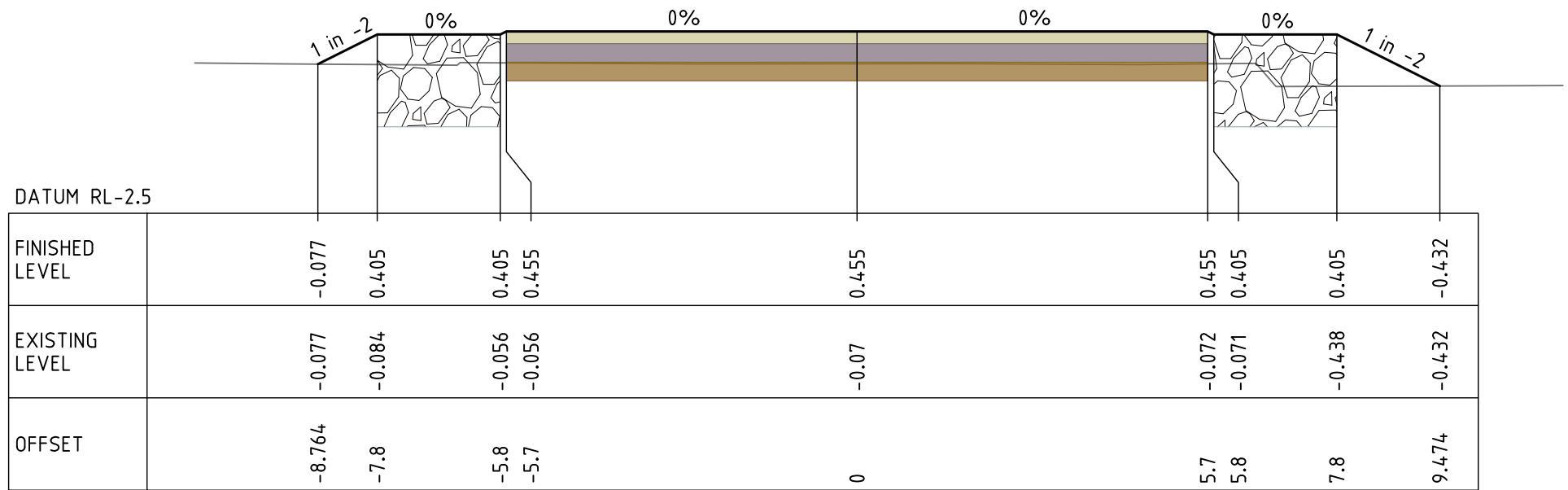
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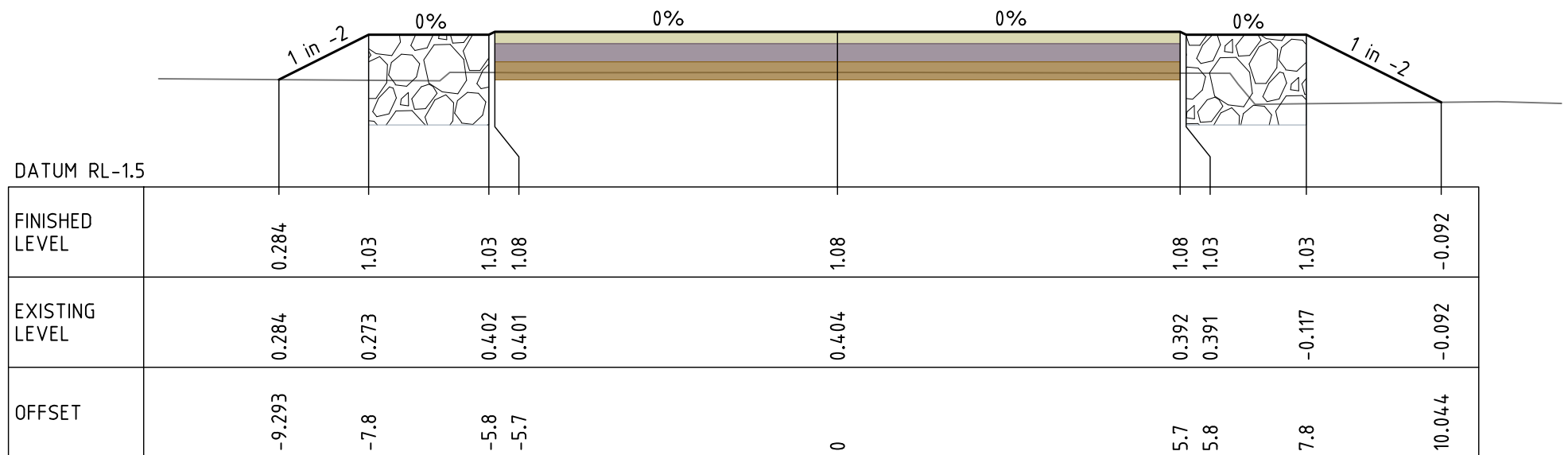
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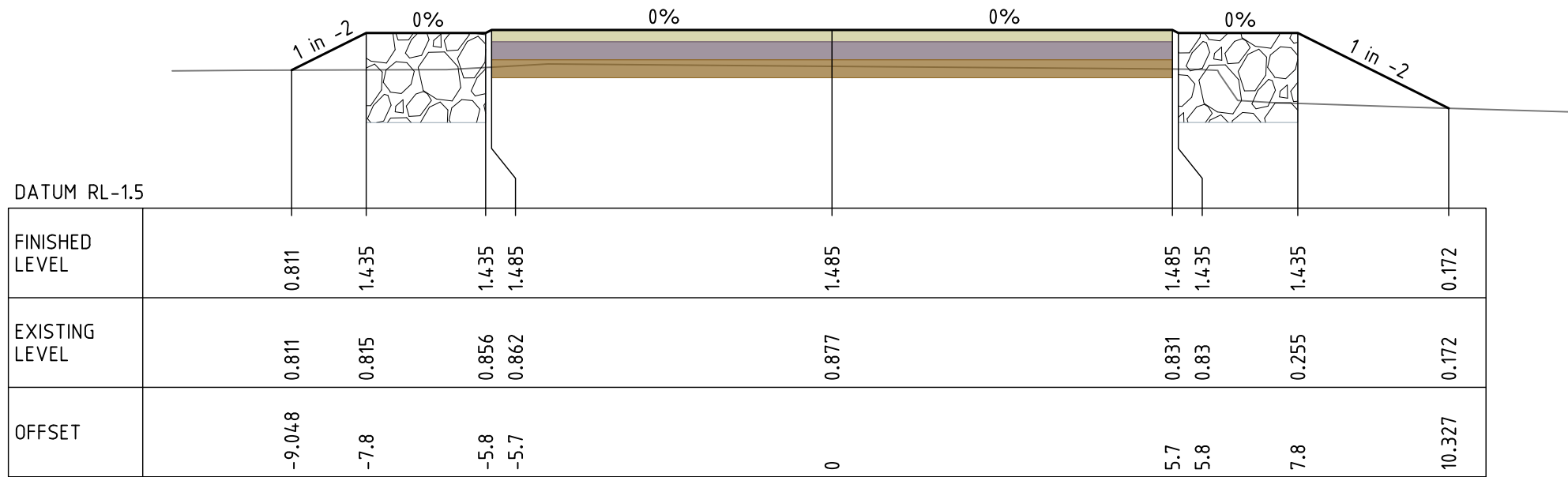
CH 40



CH 35



CH 30



CH 25



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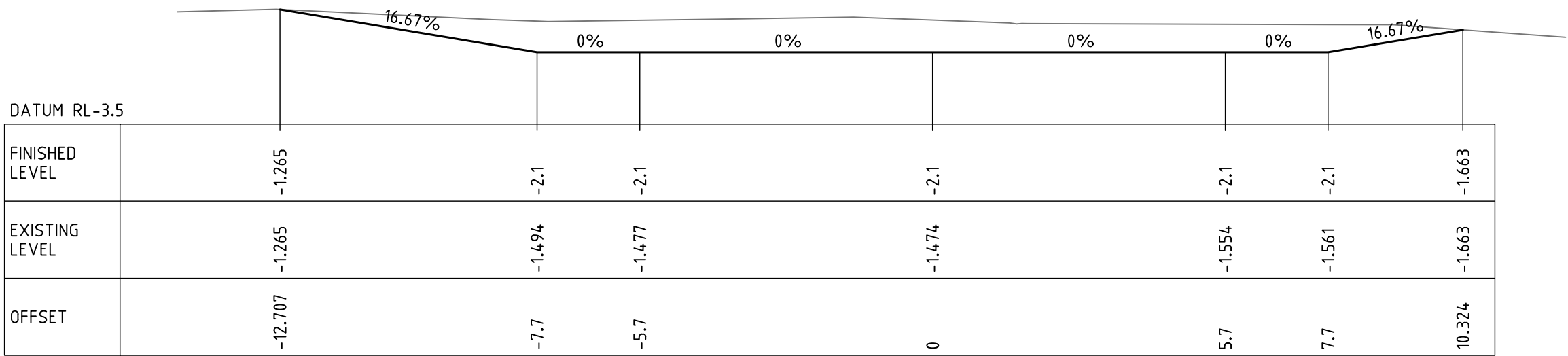


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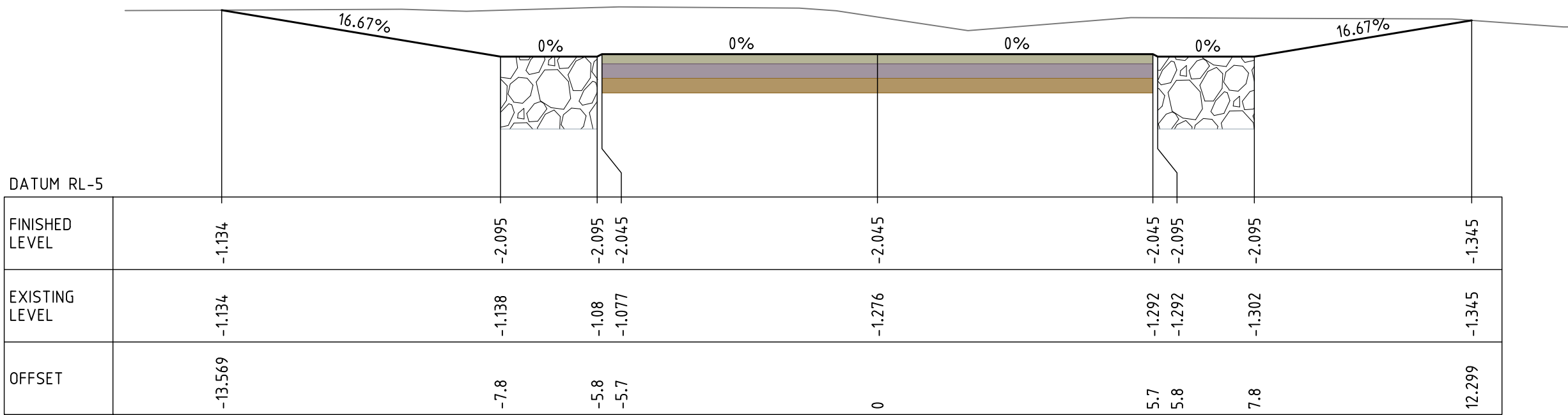
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CROSS SECTIONS
SHEET 1 OF 2
CLIENT: SHOALHAVEN CITY COUNCIL
PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT
ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539

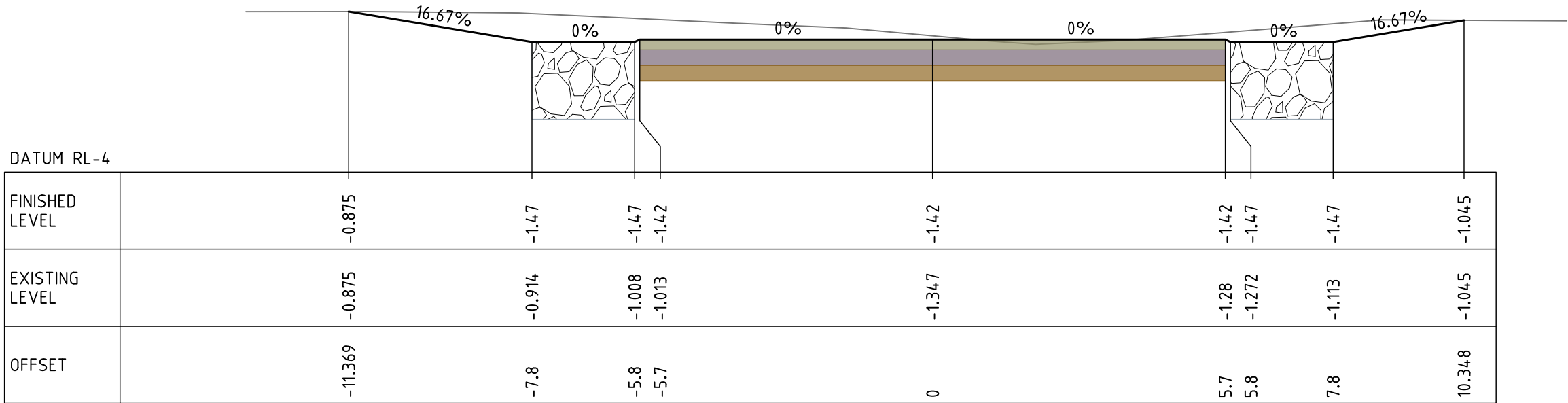
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	Drawn: J.NUNES			
	Checked: J.RITTER			
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J.RITTER	Project No.		Drawing No.	Rev.
	W26022		C-01-05-01	2



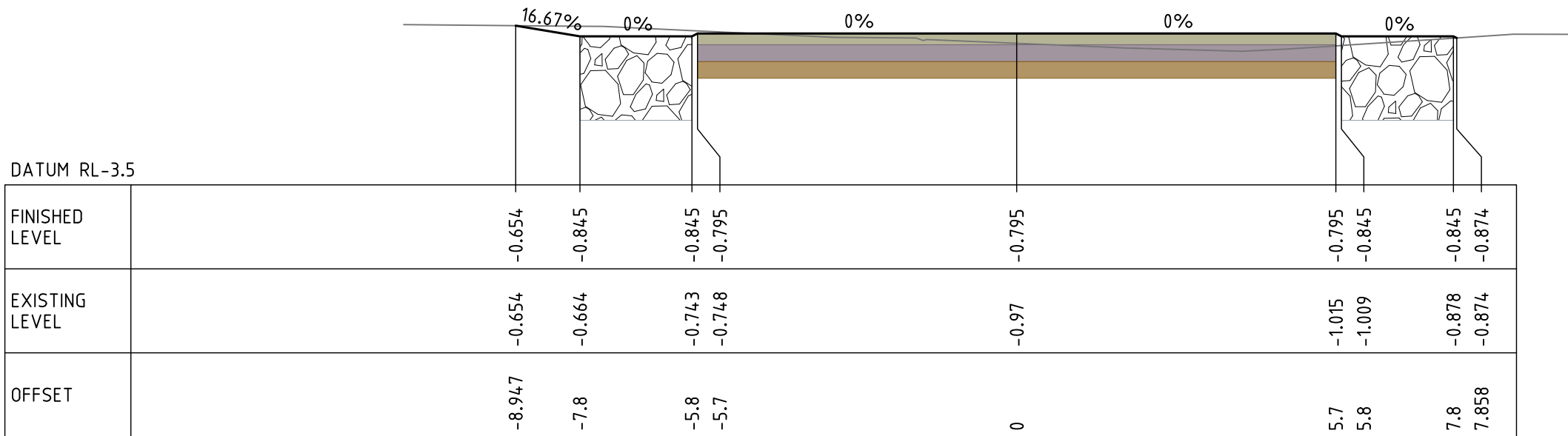
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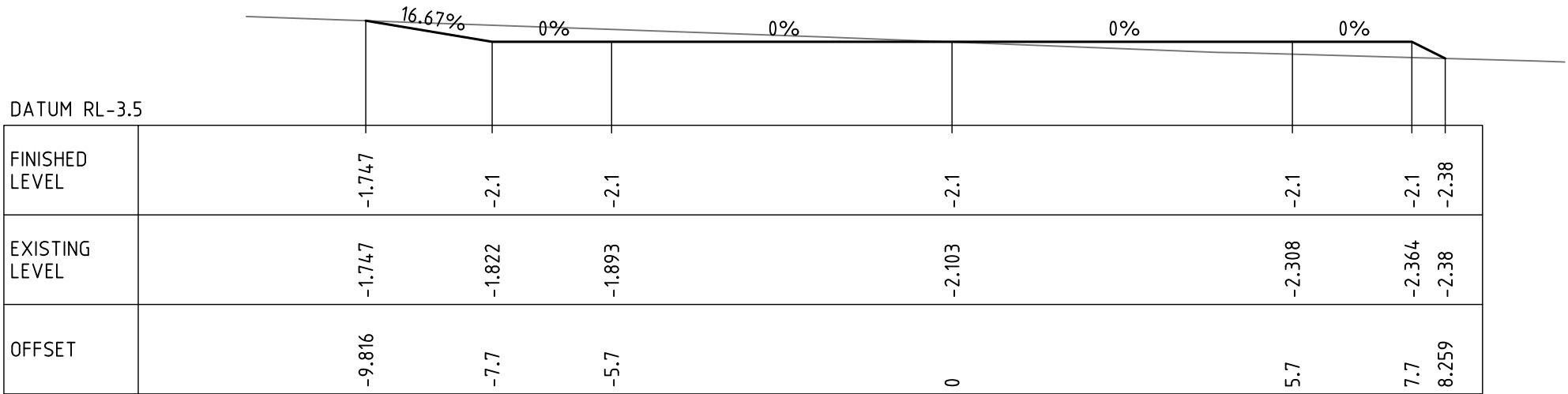
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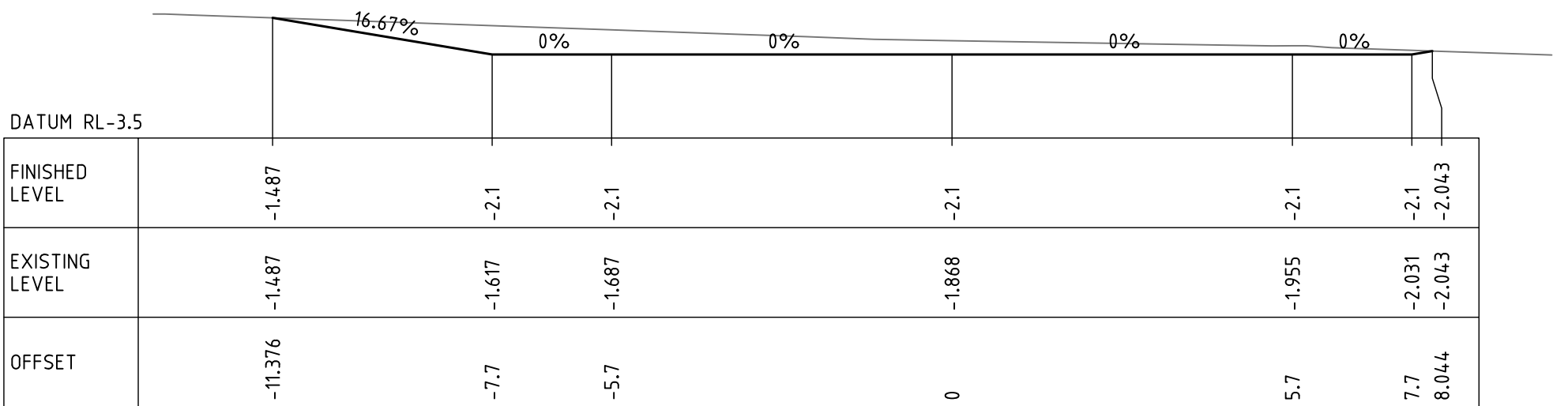
CH 50



CH 45



CH 70



CH 65



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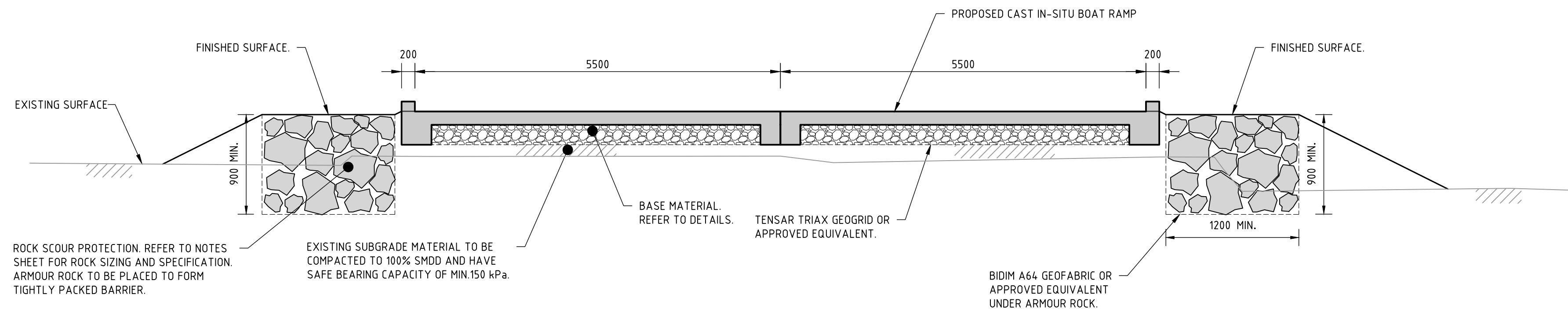


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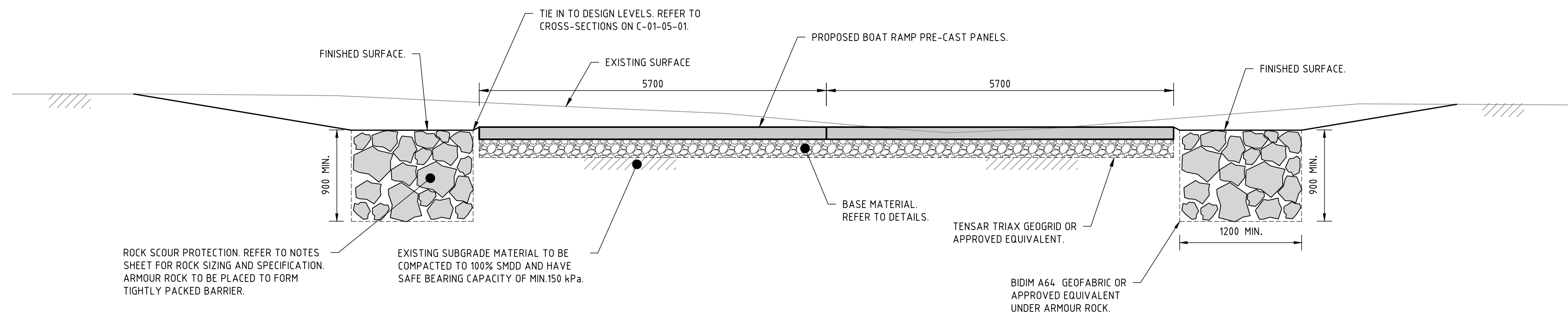
CROSS SECTIONS
SHEET 2 OF 2
CLIENT: SHOALHAVEN CITY COUNCIL
PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT
ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539

APPROVED	Designed: B.HAUVILLE			
	Drawn: J.NUNES			
	Checked: J.RITTER			
	Datum	Size	Scale	Date
	A.H.D	A1	1:100	15.05.2026
J.RITTER	Project No.	Drawing No.		Rev.
	W26022	C-01-05-02		2



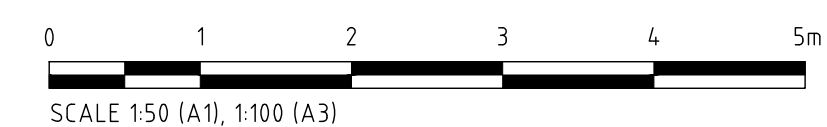
SECTION 1
BOAT RAMP CROSS SECTION

SHEET 04-01
SCALE 1:50



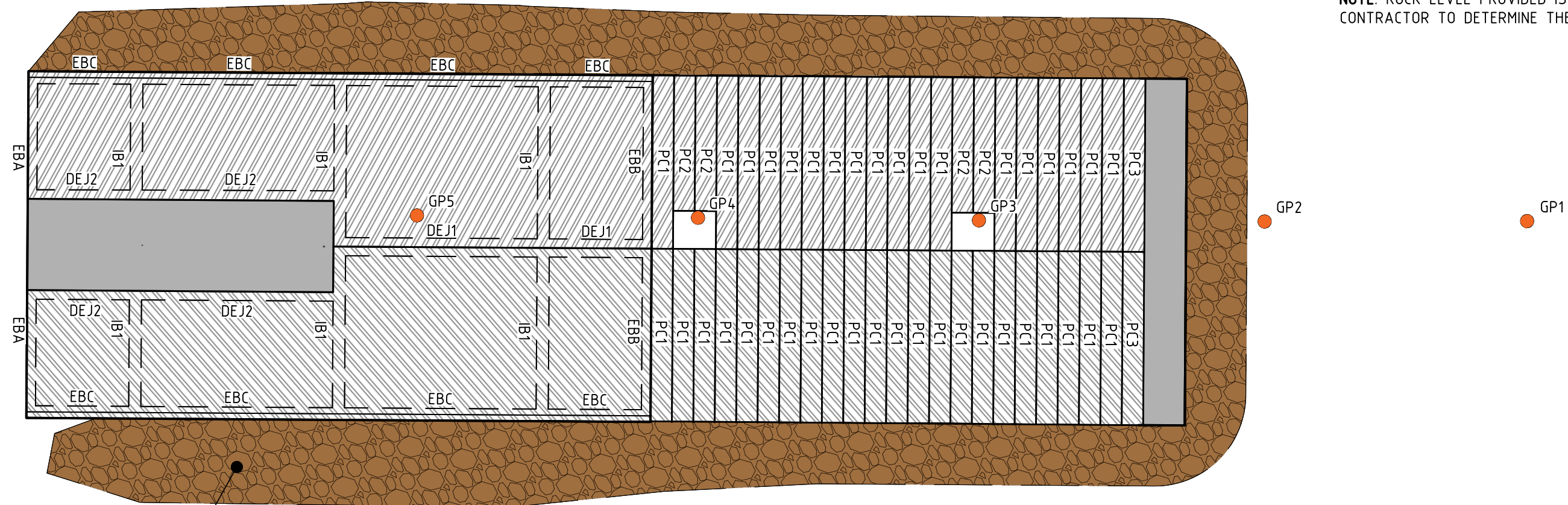
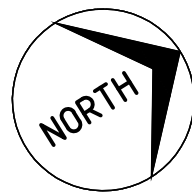
SECTION 2
BOAT RAMP CROSS SECTION

SHEET 04-01
SCALE 1:50



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	1	ISSUED FOR COMMENT	J.RITTER	20.04.2026						Drawn: J.NUNES			
	2	ISSUED FOR 95% REVIEWAL	J.RITTER	15.05.2026						Checked: J.RITTER			
										Datum	Size	Scale	Date
										A.H.D	A1	1:50	15.05.2026
							CLIENT: SHOALHAVEN CITY COUNCIL			Project No.	Drawing No.	Rev.	
							PROJECT: ULLADULLA HARBOUR BOAT RAMP REPLACEMENT			W26022	C-01-06-01	2	
							ADDRESS: 25 WASON STREET, ULLADULLA NSW 2539						



ROCK SCOUR PROTECTION AROUND SIDES AND BASE OF RAMP ACCORDING TO ARMOUR ROCK SIZING TABLE ON C02, WITH A LAYER OF BIDIM A64 GEOFABRIC BELOW.

PILE SCHEDULE

PILE NO.	PILE SIZE	PILE SLEEVE SIZE	TOP OF PILE RL (m AHD)	ASSUMED ROCK RL (m AHD)	EMBEDMENT LENGTH (m)	BASE OF PILE RL (m AHD)	CONTRACT PILE LENGTH (m)
GP1	355.6x9.5 CHS	450Ø PE100 SDR17 PN10 BLACK	2.53	-3.50	2.50	-6.00	8.53
GP2	355.6x9.5 CHS	450Ø PE100 SDR17 PN10 BLACK	2.53	-3.50	2.50	-6.00	8.53
GP3	355.6x9.5 CHS	450Ø PE100 SDR17 PN10 BLACK	2.53	-3.50	2.50	-6.00	8.53
GP4	355.6x9.5 CHS	450Ø PE100 SDR17 PN10 BLACK	2.53	-3.50	2.50	-6.00	8.53
GP5	355.6x9.5 CHS	450Ø PE100 SDR17 PN10 BLACK	2.53	-3.50	2.50	-6.00	8.53

NOTE: ROCK LEVEL PROVIDED IS ASSUMED BASED ON INVESTIGATIONS CONDUCTED NEARBY. THESE LEVELS SHOULD BE CONFIRMED BY THE CONTRACTOR TO DETERMINE THE REQUIRED PILE LENGTHS. IF ROCK IS BELOW -4m CONTACT THIS OFFICE.

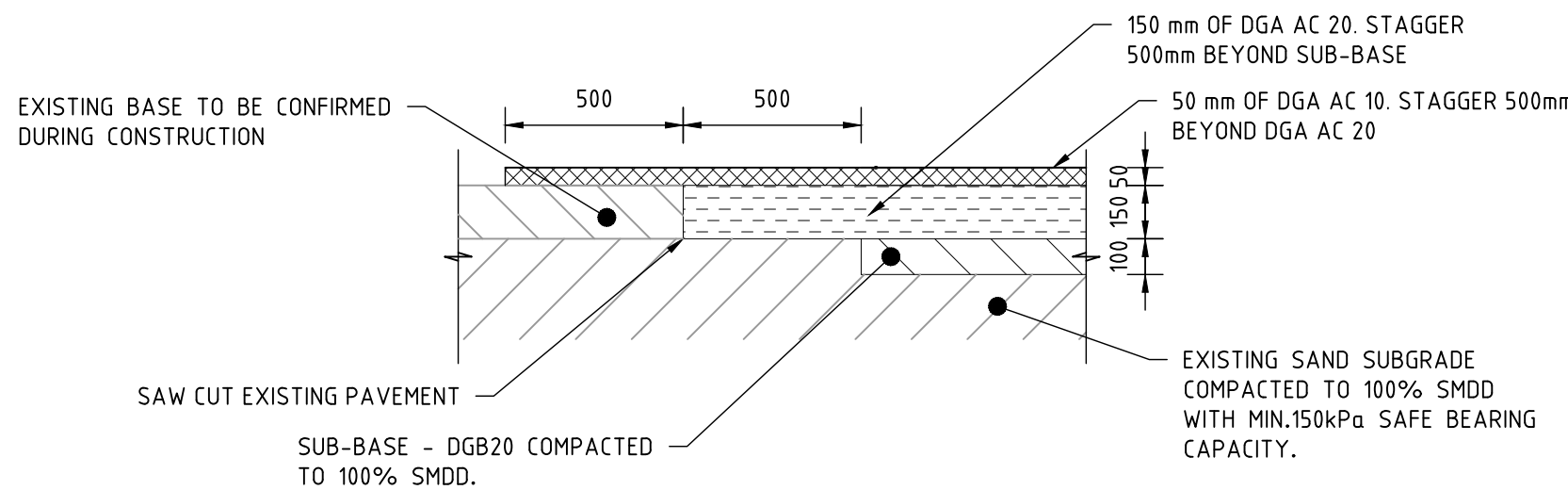
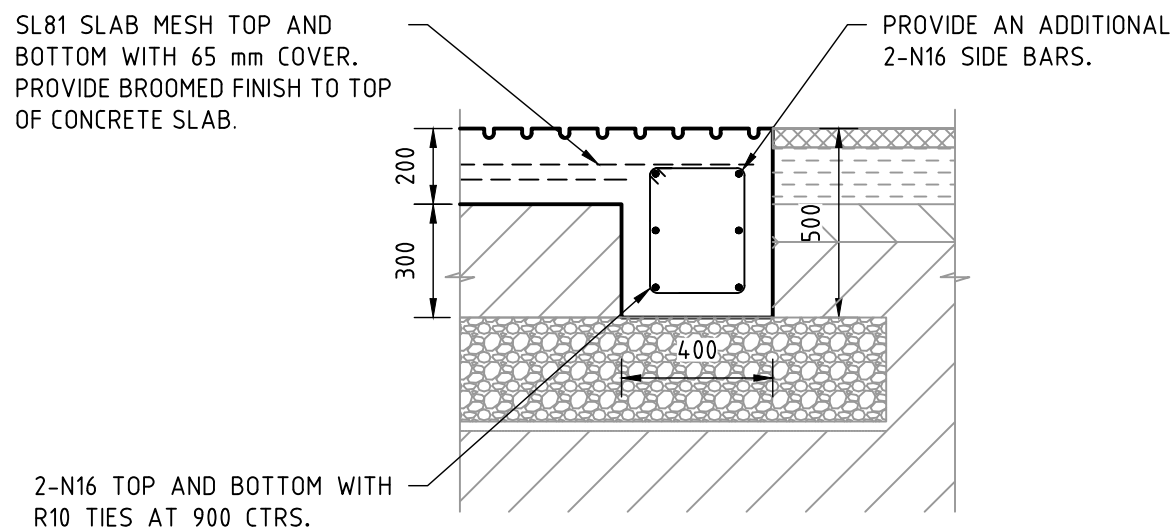
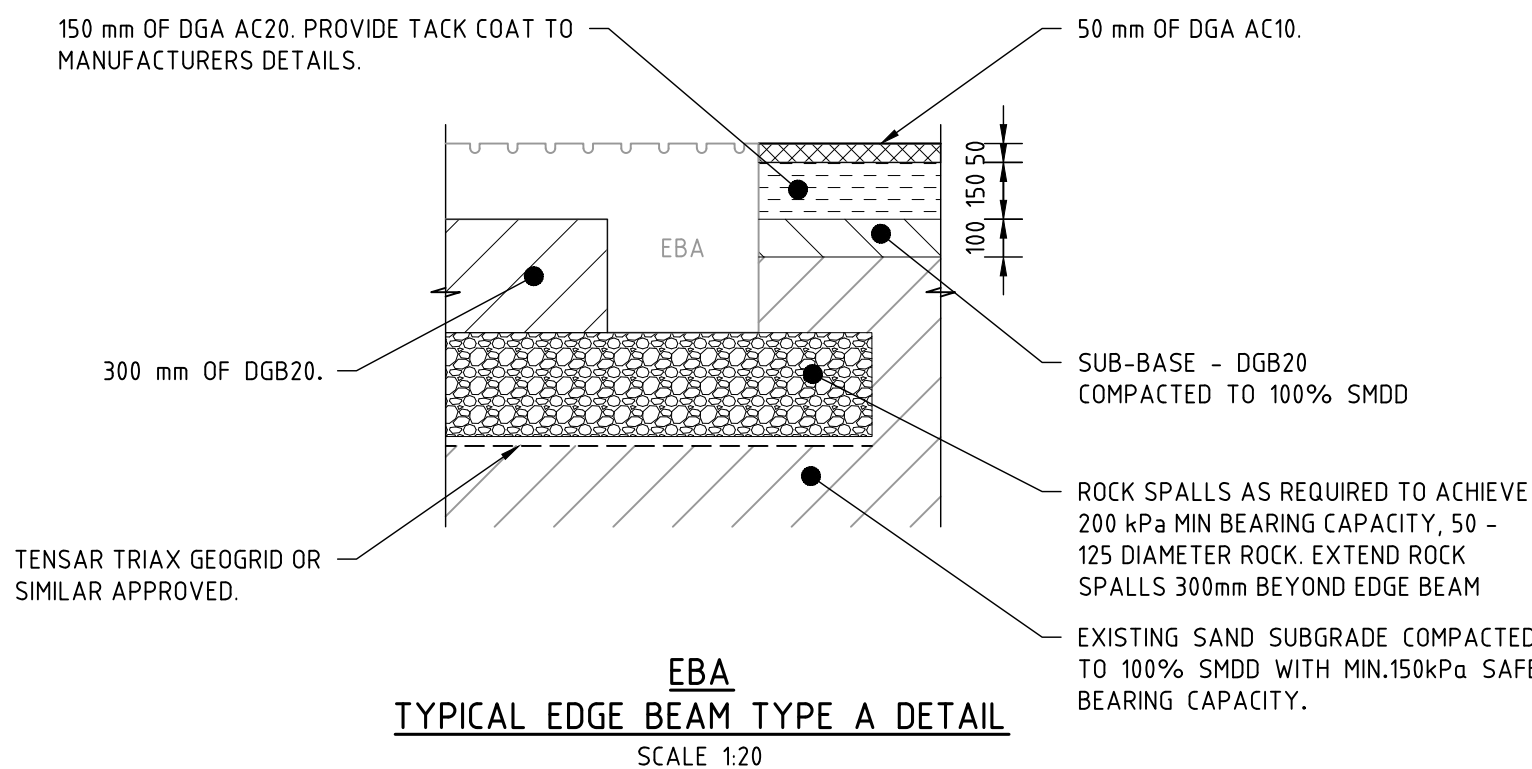
PRECAST CONCRETE PANELS SCHEDULE

PANEL NO.	PANEL SIZE	NUMBER OF PANELS
PC1	5700x700x200mm	36
PC2	4450x700x200mm	4
PC3	5700x700x200mm	2

NOTE: REFER C-01-07-03 FOR PRECAST PANEL DETAILS

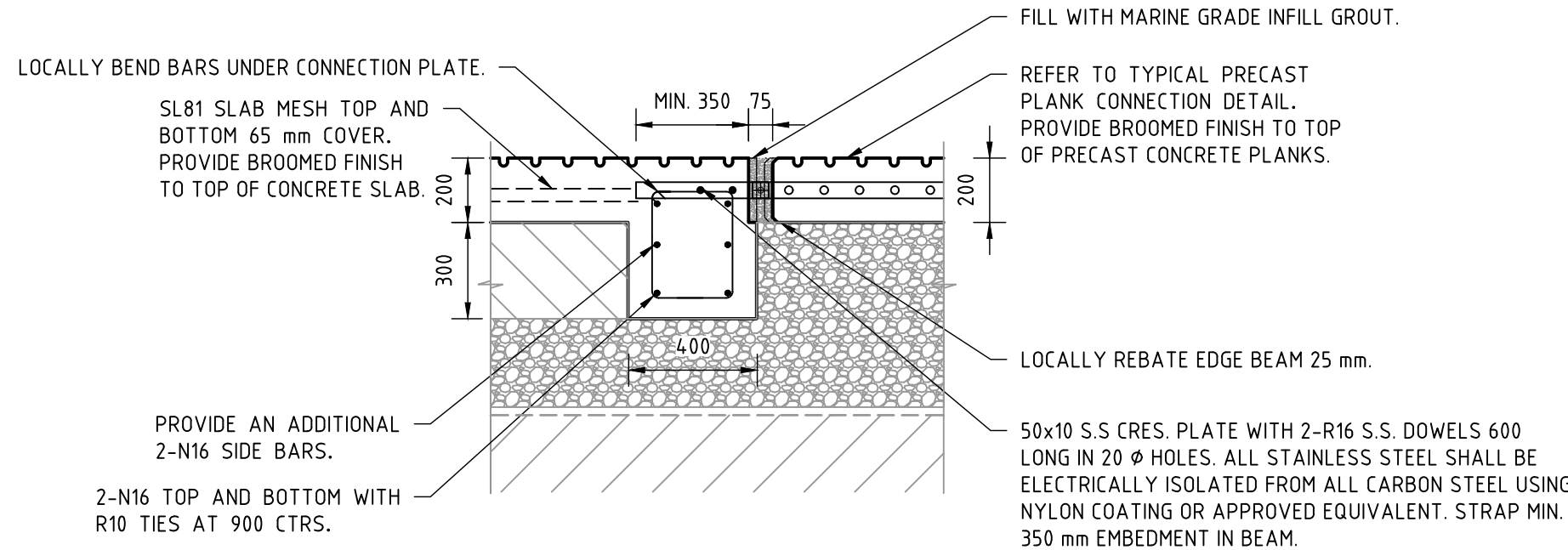
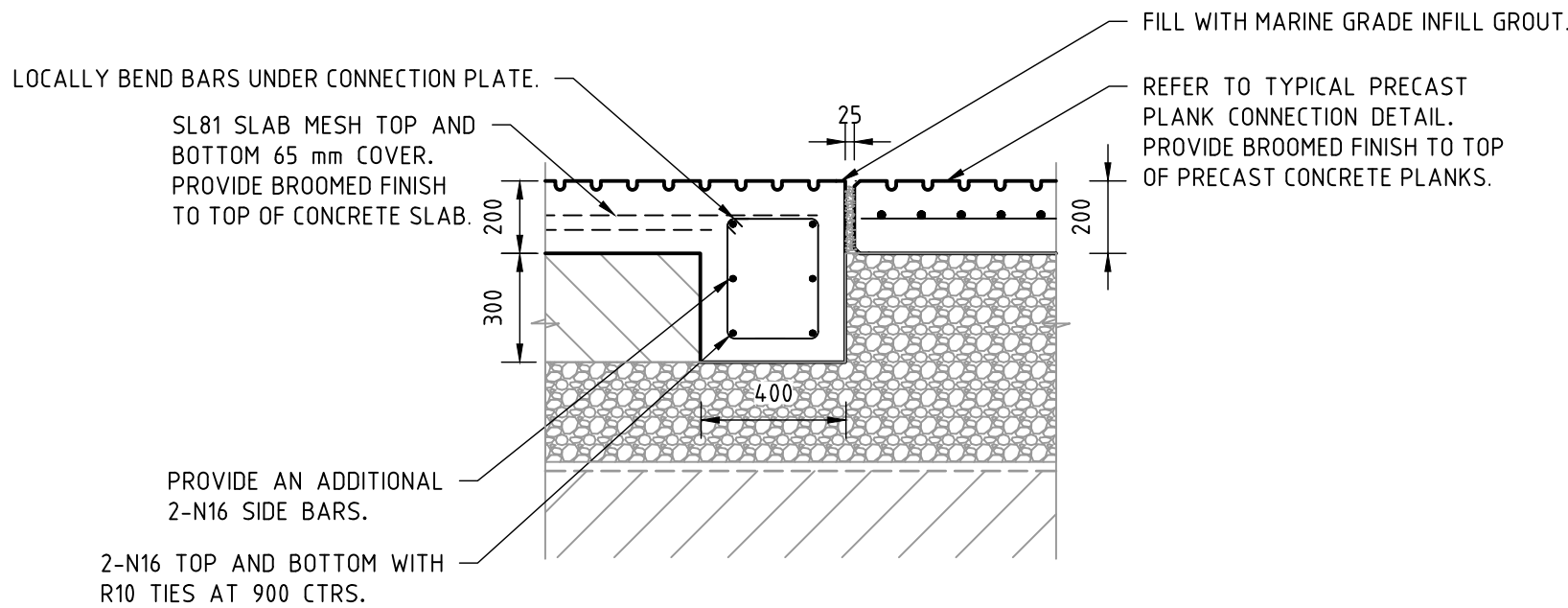
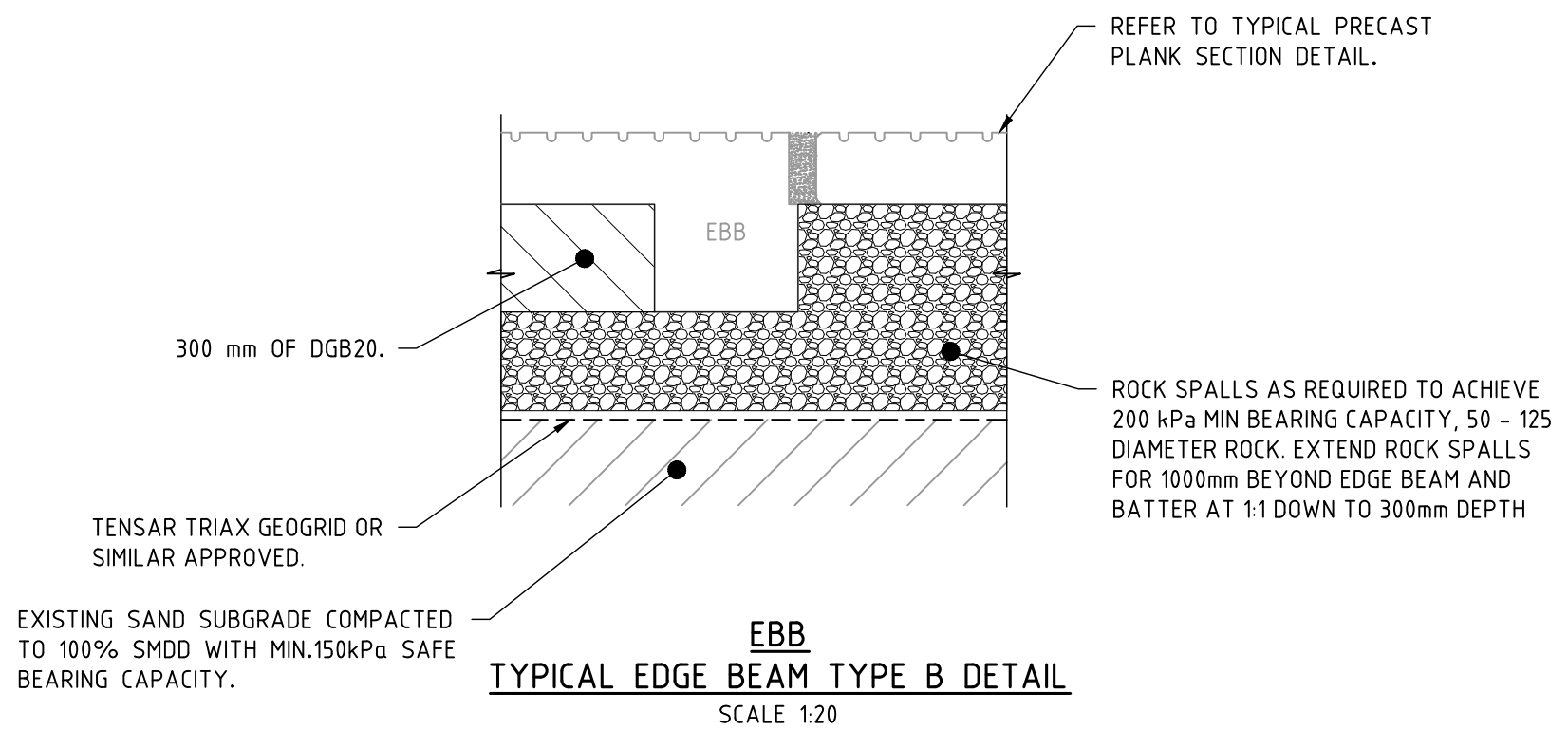
BOAT RAMP CONCRETE SLAB PLAN

SCALE: 1:150



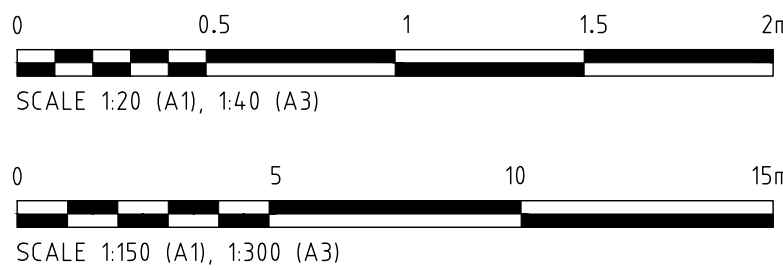
TYPICAL EXISTING TO PROPOSED SEAL TIE IN DETAIL

SCALE 1:20



ALT - EBB ALTERNATIVE TYPICAL EDGE BEAM TYPE B REINFORCEMENT DETAIL

SCALE 1:20



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2	ISSUED FOR 95% REVIEWAL	J.RITTER	15.05.2026



Westlake Punnett & Associates Pty Ltd
ABN 38 120 322 536

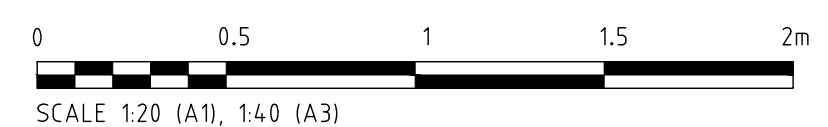
EMAIL office@westlakepunnett.com.au
PHONE 02 4423 5533
ADDRESS PO Box 1573 NOWRA, NSW 2541
WEBSITE www.westlakepunnett.com.au

CONCRETE SLAB PLAN AND DETAILS

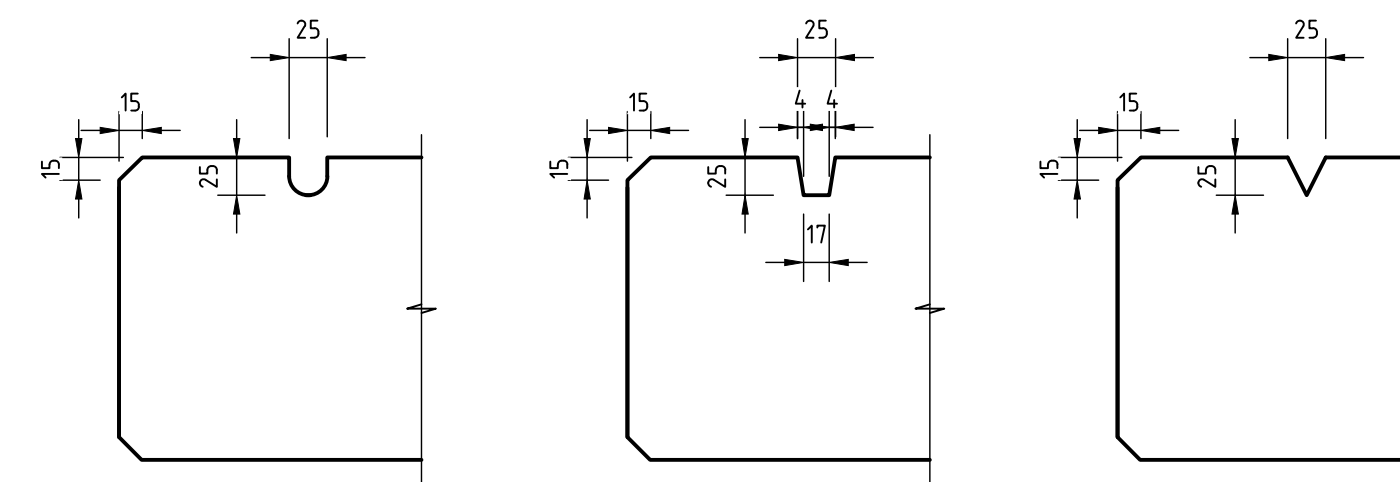
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APPROVED	Designed: B.HAUVILLE
	Drawn: J.NUNES
	Checked: J.RITTER
	Datum A.H.D. Size A1 Scale VARIES Date 15.05.2026
J.RITTER	Project No. W26022 Drawing No. C-01-07-01 Rev. 2

NOT FOR CONSTRUCTION



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	Drawn: J.NUNES			
	Checked: J.RITTER			
	Datum A.H.D	Size A1	Scale VARIES	Date 15.05.2026
J.RITTER	Project No. W26022		Drawing No. C-01-07-02	Rev. 2



5700

300 2550 2550 300

N20 S.S. BARS AT 110 CTRS.

N16 S.S. BARS AT 200 CTRS.

SEE TYPICAL PLANK LIFTING DETAIL.

50x10 S.S. STRAP FOR FIXING PLANKS OFF SET TOP AND BOTTOM BY 10 mm TO FACILITATE SMOOTH CONNECTION. REFER TO TYPICAL PLANK DETAILS.

700

350 350

2550 2550 310

290 140 160 1000

1000

INTERMEDIATE AND START PLANK PLAN
(PC1)

50x10 S.S STRAP FOR FIXING PLANKS REFER TO TYPICAL PLANK DETAILS.

300

2550

4450

150 150

N20 S.S BARS AT 110 CTRS.

N16 S.S BARS AT 200 CTRS.

SEE TYPICAL PLANK LIFTING DETAIL.

700

350

350

140 160

1000

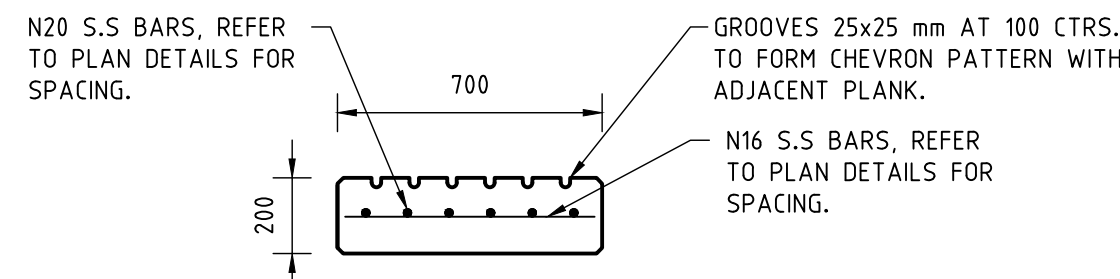
290

2550

1000

Diagram showing the elevation view of a concrete plank with reinforcement details. The overall length is 5700. The top reinforcement consists of N20 S.S. bars at 110 CTRS. (center-to-center) and N16 S.S. bars at 200 CTRS. The bottom reinforcement consists of N16 S.S. bars at 200 CTRS. The plank has a total height of 700, with a top flange height of 350 and a bottom flange height of 500. The top flange is 300 wide, and the bottom flange is 1000 wide. The main body of the plank is 2550 wide. The diagram also shows a 50x10 S.S. strap for fixing planks, with a reference to typical plank lifting details. The diagram includes dimensions for the top flange (300), the main body (2550), and the bottom flange (1000). It also shows the spacing of the reinforcement bars (110 CTRS. for N20, 200 CTRS. for N16) and the height of the flanges (350 for top, 500 for bottom). The overall height is 700. The diagram includes a note: "SEE TYPICAL PLANK LIFTING DETAIL." and another note: "50x10 S.S. STRAP FOR FIXING PLANKS REFER TO TYPICAL PLANK DETAILS."

1500 mm N16 S.S TIE IN
BARS AT 500 CTRS.
ELECTRONICALLY INSULATED
FROM OTHER
REINFORCEMENT.



6-25 mm $\varnothing$ HOLES AT 110 CTRS.
FOR N20 BARS

37.5

25

50

2-50x10 S.S. STRAPS.

18 mm $\varnothing$ HOLE FOR M1 BOLTS EITHER END.

200

650

Technical drawing of a 18 mm thick steel plate. The plate has a total width of 650 mm and a total height of 200 mm. It features a central rectangular cutout with a width of 375 mm and a height of 87.5 mm. The distance from the left edge of the plate to the left edge of the cutout is 325 mm. The distance from the right edge of the cutout to the right edge of the plate is 37.5 mm. The plate has 3-25 mm diameter holes at 110 mm centers for N20 bars. The holes are located within the cutout. The plate is 18 mm thick. The drawing includes the following annotations:

- 3-25 mm $\varnothing$ HOLES AT 110 CTRS. FOR N20 BARS.
- 18 mm $\varnothing$ HOLE FOR M16 BOLTS.
- STRAP NOT REQUIRED FOR END PLANKS.

Technical drawing showing a cross-section of a composite floor system connection. The drawing includes dimensions and callouts for materials and construction details:

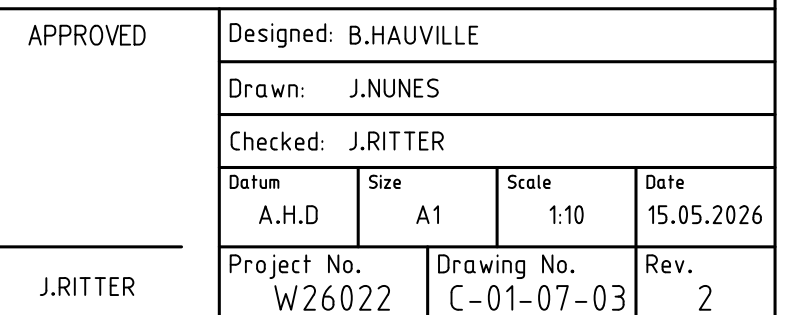
- Overall width: 300
- Width of the top concrete slab: 300
- Width of the bottom concrete slab: 25
- Width of the steel deck: 25
- Width of the intermediate plank: 150
- Width of the intermediate plank: 160
- Width of the intermediate plank: 10
- 50x10 S.S. STRAP. ENSURE 10 mm OFFSET IN INTERMEDIATE PLANKS TO FACILITATE SMOOTH CONNECTION.
- 1-M16 S.S. BOLT.
- FILL VOID WITH SIKAGROUT U.W. APPLICATION OF GROUT TO MANUFACTURERS SPECIFICATION.

Technical drawing of a wall anchor installation. The drawing shows a cross-section of a wall with a horizontal reinforcement bar. A vertical anchor is installed through the wall, with a 160 mm diameter hole. The anchor has a 20 mm diameter top section and a 16 mm diameter bottom section. The bottom section is labeled "16 mm LIFTING LUG. (ALTERNATIVELY UTILIZE FOOT ANCHOR OF MIN. 1.3t SWL TO MANUFACTURER'S SPECIFICATION)". The top section is labeled "BACKFILL WITH GROUT AFTER INSTALLATION." The dimensions are: 160 mm for the hole diameter, 20 mm for the top section diameter, 150 mm for the distance from the wall face to the center of the anchor, 80 mm for the distance between the two lifting lugs, and 150 mm for the distance from the center of the anchor to the wall face.

0 0.2 0.4 0.6 0.8 1m
SCALE 1:10 (A1), 1:20 (A3)

0 0.5 1 1.5 2m
SCALE 1:20 (A1), 1:40 (A3)

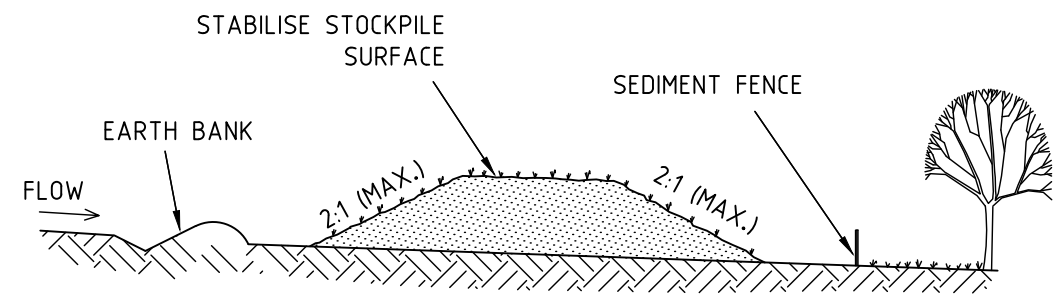
REV.	AMENDMENTS	APPROVED	DATE
1	ISSUED FOR COMMENT	J.RITTER	20.04.2026
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CONTRACTOR'S SITE MAINTENANCE PLAN IS INTENDED TO REPLACE THIS SITE MANAGEMENT PLAN TO SUIT THE CONTRACTORS PROPOSED METHODOLOGY AND SPECIFIC STORAGE REQUIREMENTS.



SEDIMENT AND EROSION CONTROL PLAN
SCALE: 1:200

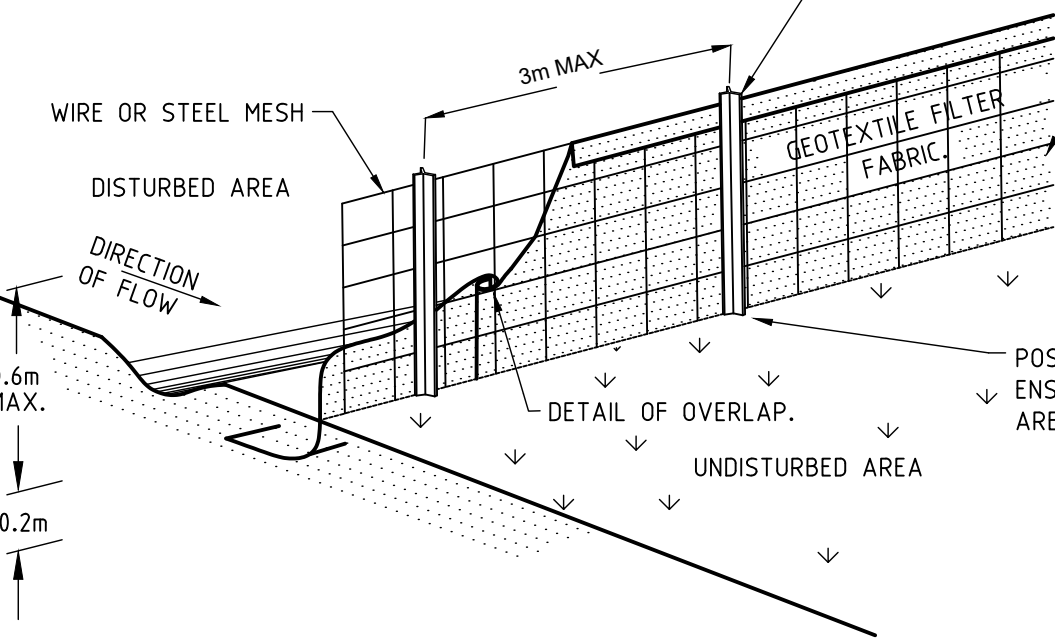


STOCKPILES (SD 4-1)
NTS

CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2 METRES DOWNSLOPE.

DRAINAGE AREA MAXIMUM 0.6HA SLOPE GRADIENT
MAXIMUM 1:2 SLOPE LENGTH MAXIMUM 60m



SILT FENCE DETAIL (SD 6-8)
NTS

STANDARD SCHEDULE OF EROSION & SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION.

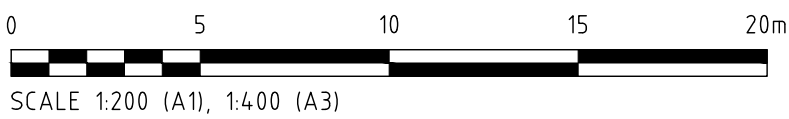
1. ALL EROSION SEDIMENT AND POLLUTION CONTROLS ARE TO BE IN ACCORDANCE WITH "SOILS AND CONSTRUCTION - MANAGING URBAN STORMWATER", 4th EDITION, LANDCOM, MARCH 2004 (THE BLUE BOOK).
2. CONSTRUCTION SHALL BE PHASED SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE. THIS WILL LIMIT THE DURATION DISTURBED AREAS ARE TO BE EXPOSED TO EROSION. PERIMETER/DIVERSION BANKS ARE TO BE STABILISED IMMEDIATELY AFTER THEY ARE CONSTRUCTED.
3. TOPSOIL STOCKPILES ARE TO BE LOCATED AS DIRECTED BY SUPERVISING ENGINEER OR SURVEYOR. STOCKPILES ARE TO BE IMMEDIATELY VEGETATED BY SEED AND FERTILIZER APPLICATION FOLLOWING FINAL PLACEMENT AND WATERING TO PROMOTE REVEGETATION. HAYBALES OR SEDIMENT FILTER FENCES ARE TO BE PLACED AROUND THE PERIMETER OF THE STOCKPILES TO ACT AS EROSION AND SEDIMENT CONTROLS.
4. SEDIMENT AND DEBRIS ARE TO BE REMOVED FRO ARE 60% FULL. ALL SEDIMENT REMOVED SHALL BE DISPOSED OF AS DIRECTED BY SUPERVISING ENGINEER OR SURVEYOR.
5. ALL CUT AND FILL BATTERS SHALL HAVE A GRADE OF 4H:1V OR AS SHOWN. ANY WITH A SLOPE LENGTH IN EXCESS OF 7 METRES SHALL HAVE A 1.5m WIDE BERM CONSTRUCTED INTO THE TOE OR THE TOP OF THE BATTER AND TEMPORARY BARRIERS OF HAY BALES SHALL BE CONSTRUCTED TO DIVERT THE WATER EITHER DOWN HALF ROUND PIPES AND INTO DRAINAGE STRUCTURES OR ALONG DIVERSION DRAINS. UPON COMPLETION OF SHAPING AND DRAINAGE WORKS BATTERS AND DRAINAGE LINES SHALL BE TOPSOILED TO A MINIMUM DEPTH OF 100mm (MAX 125mm) SEEDED AND MULCHED WITH ANY FAILED AREA RESOWN.
6. TEMPORARY EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED DURING CONSTRUCTION. THESE CONTROLS ARE TO INCLUDE -
 - A. PLACING OF TEMPORARY CROSS BANKS OF EARTH, SANDBAGS AND HAYBALES ACROSS DISTURBED ROAD SURFACES. THESE ARE TO BE CHECKED AND REPAIRED IF NECESSARY AT THE END OF EACH WORKING DAY.
 - B. PLACING OF SANDBAGS AROUND INLET PITS AND HEADWALLS DURING CONSTRUCTION TO TRAP SEDIMENT AND ALSO TO PREVENT WATER FROM BY-PASSING THE INLET.
 - C. BY PLACING OF SEDIMENT TRAPS AT KERB INLETS.
7. ANY CONSTRUCTION EXITS SHALL BE CONSTRUCTED USING SHAKER GRID.
8. ALL SEDIMENT CONTROL DEVICES SHALL BE RETAINED WHILE ANY DISTURBED AREAS REMAIN OR ARE CONTRIBUTING SEDIMENT TO STORMWATER SYSTEM. NO DEVICES SHALL BE REMOVED UNTIL SUPERVISING ENGINEER OR SURVEYOR GIVES DIRECTION.
9. ADDITIONAL SEDIMENT & EROSION CONTROL MEASURES TO BE PROVIDED AS PER SHOALHAVEN CITY COUNCILS REQUIREMENTS.

AIR & NOISE POLLUTION CONTROL

1. SUPPRESS DUST BY THE FOLLOWING METHODS WHERE APPLICABLE:
 - a) STAGE WORKS TO LIMIT THE EXTENT OF EXPOSED AND UNPROTECTED AREAS.
 - b) CONDUCT REGULAR SPRAYING OF WATER.
 - c) COVER AND SECURE VEHICULAR LOADS ENTERING/EXITING THE SITE.
 - d) USE AN ENVIRONMENTALLY FRIENDLY CHEMICAL SPRAY TO BIND SOIL TOGETHER THUS STABILISING UNUSED SOIL.
 - e) RESTRICT SPEED OF VEHICLES ONSITE.
 - f) COVER STOCKPILES TO PROTECT THEM FROM WIND.
 - g) PROVIDE 1.8m HIGH DUST SCREENS; SHADE CLOTH, PVC BANNER OR POLYESTER MESH; SECURELY FIXED TO PERIMETER FENCE.
2. IMPLEMENT MEASURES TO LIMIT AIR POLLUTION BY VEHICLES AND PLANT WORKING ON OR PASSING THROUGH THE SITE.
3. MAINTAIN POLLUTION CONTROL MEASURES DURING CONSTRUCTION AND UNTIL FULL STABILISATION. ROUTINELY INSPECT EACH WEEK AND AFTER SIGNIFICANT RAINFALL EVENTS. REPAIR AND REINSTATE WORKS AS NEEDED TO MAINTAIN PROTECTION. RECORD MAINTENANCE ACTIVITIES AND DETAILS AND PROVIDE TO EPA FOR INSPECTION WHEN REQUESTED.
4. ENSURE ALL CONSTRUCTION WORK THAT GENERATES NOISE TAKES PLACE ONLY WITHIN THE PRE-APPROVED OPERATING HOURS FOR THE PROJECT:
-MONDAY TO FRIDAY, BETWEEN 7A.M. & 6P.M.
-SATURDAY, BETWEEN 8A.M & 3P.M.

LEGEND

- EXTENT OF CONSTRUCTION WORKS.
- 1:0 --- EXISTING CONTOURS (MAJOR 1m INTERVAL)
- EXISTING CONTOURS (MINOR 0.2m INTERVAL)
- EXISTING PROPERTY BOUNDARY
- PROPOSED SCOUR PROTECTION
- PROPOSED PAVEMENT UPGRADE
- EXISTING GUIDE PILES TO BE RETAINED (TBC)
- NEW GUIDE PILE
- / --- TEMPORARY SITE FENCE
- TYPE 3 SOT SILT CURTAIN
- SILT STOP FENCE (SD 6-5)



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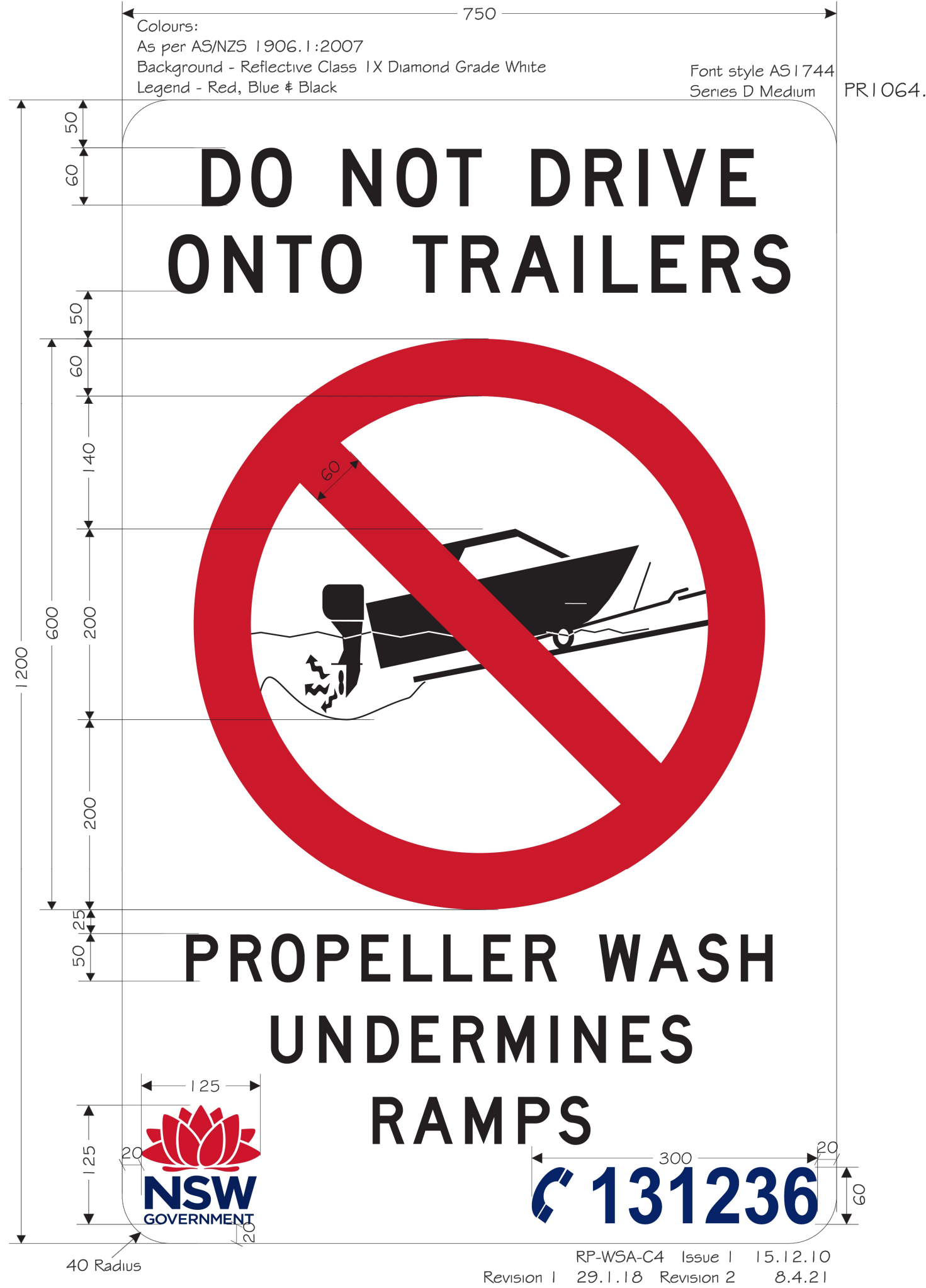
SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

CLIENT: SHOALHAVEN CITY COUNCIL

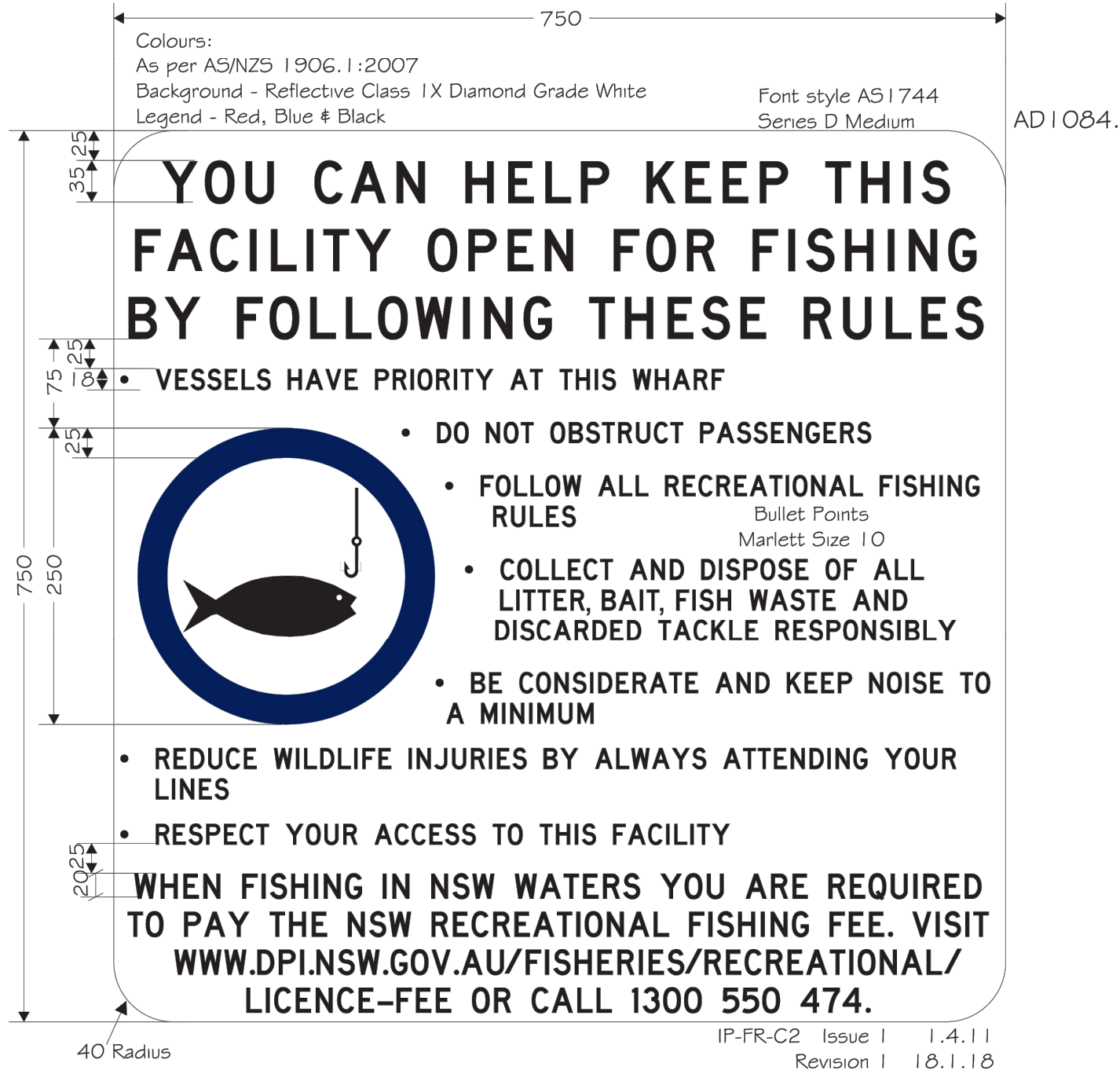
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	W26022	C-01-12-01	2	



DRIVING ONTO TRAILERS SIGN DETAIL
SCALE 1:5



FISHING SIGN DETAIL
SCALE 1:5

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APPENDIX B – Design Report

SCC Document Reference D26/215121