

SOUTHERN REGIONAL PLANNING PANEL

RPP No	PPSSTH-103
DA Number	DA-2021/1071
Local Government Area	Southern Regional Panel - Wollongong
Proposed Development	Cliff stabilisation coastal protection works
Street Address	1 Craig Street, Thirroul
Applicant/Owner	Jarrod Etherington
Lodgement date	21 September 2021
Recommendation	Approval
Number of Submissions	None
Regional Development Criteria (Schedule 7 of the SEPP (State and Regional Development) 2011	Coastal Protection Works
List of All Relevant s4.15(1)(a) Matters	<u>s4.15 (1)(a)(i) Any environmental planning instruments:</u> <i>Acts</i> - Coastal Management Act 2016 No. 20 - The Coastal Management Amendment Act 2021 <i>State Environmental Planning Policies (SEPPs)</i> - State Environmental Planning Policy No. 55 – Remediation of Land - State Environmental Planning Policy (Infrastructure) 2007 - State Environmental Planning Policy (State and Regional Development) 2011 - State Environmental Planning Policy – (Coastal Management) 2018 <i>Local Environmental Planning Policies</i> - Wollongong Local Environmental Plan 2009 <i>Other policies:</i> - Wollongong Coastal Zone Management Plan - Wollongong City-Wide Development Contributions Plan 2021 - Wollongong Community Participation Plan 2019 <u>s4.15(1)(a)(ii) Any proposed instrument that is or has been the subject of public consultation under the Act and that has been notified to the consent authority:</u> N/A <u>s4.15(1)(a)(iii) Any development control plan:</u> - Wollongong Development Control Plan 2009 <u>s4.15(1)(a)(iii)(a) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4</u> N/A

	s4.15(1)(a)(iv) the regulations: e.g. Regs 92, 93, 94, 105 N/A
List all documents submitted with this report for the panel's consideration	Attachments Attachment 1 Survey and Reports Attachment 2 Applicant's SoEE Attachment 3 Minister's Advice Attachment 4 Draft Conditions
Clause 4.6 request	N/A
Summary of key submissions	N/A
Report prepared by	Sharyn Grant – Development Project Officer
Report Date	1 February 2022

Summary of s4.15 matters

Have all recommendations in relation to relevant s4.15 matters been summarised in the Executive Summary of the assessment report?

Yes

Legislative clauses requiring consent authority satisfaction

Have relevant clauses in all applicable environmental planning instruments where the consent authority must be satisfied about a particular matter been listed, and relevant recommendations summarized, in the Executive Summary of the assessment report?

Yes

Clause 4.6 Exceptions to development standards

If a written request for a contravention to a development standard (clause 4.6 of the LEP) has been received, has it been attached to the assessment report?

Not applicable

Special Infrastructure Contributions

Does the DA require Special Infrastructure Contributions conditions (S7.24)?

Not applicable

Conditions

Have draft conditions been provided to the applicant for comment?

No

Assessment Report and Recommendation Cover Sheet

Executive Summary

Reason for consideration by Southern Regional Planning Panel

The Southern Sydney Regional Planning Panel is the determining authority for the development pursuant to Part 4 of the SEPP Regional Development 2011 and Schedule 7.

8A Certain coastal protection works

(1) The following development on land within the coastal zone that is directly adjacent to, or is under the waters of, the open ocean, the entrance to an estuary or the entrance to a coastal lake that is open to the ocean—

(a) development for the purpose of coastal protection works carried out by a person other than a public authority, other than coastal protection works identified in the relevant certified coastal management program.

The proposed development is for coastal protection works to be undertaken on private land. Whilst Council does have a certified coastal zone management plan, the identified actions within the plan for this locality are for a seawall.

Proposal

The application proposes to undertake cliff stabilisation works to prevent further erosion, particularly from wave action.

Permissibility

The site is zoned E4 Environmental Living pursuant to Wollongong Local Environmental Plan (LEP) 2009. The proposed development, *Coastal Protection Works*, is not permissible under the WLEP2009, however is permitted with consent under the State Environmental Planning Policy (SEPP) Coastal Management 2018.

Consultation

The proposal was notified in accordance with Council's Community Participation Plan 2019 and received no submissions.

Council's Geotechnical, Development Engineering, Heritage and Environment sections have reviewed the proposed works with conditionally satisfactory referral advice received subject to conditions.

The Natural Resource Access Regulator and NSW Fisheries have both advised no objections to the proposal with no required additional referral agency permits or conditions to be imposed.

RECOMMENDATION

DA-2021/1071 be approved subject to conditions as provided for at Attachment 4.

1 APPLICATION OVERVIEW

1.1 PLANNING CONTROLS

The following planning controls apply to the development

Acts

- Coastal Management Act 2016 No. 20
- The Coastal Management Amendment Act 2021

State Environmental Planning Policies

- State Environmental Planning Policy No. 55 – Remediation of Land
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy (State and Regional Development) 2011
- State Environmental Planning Policy —Coastal Management 2018

Local Environmental Plans

- Wollongong Local Environmental Plan (WLEP) 2009

Development Control Plans

- Wollongong Development Control Plan (WDCP) 2009

Other Policies/Regulations

- Wollongong Coastal Zone Management Plan
- Wollongong Community Participation Plan 2019
- Wollongong City Wide Development Contributions Plan 2021

1.2 DETAILED DESCRIPTION OF PROPOSAL

The proposal involves coastal protection works to the east of the site (the rear) to stabilise the cliff/ rock platform area.

The works include;

- Site preparation works
- Rock bolting to secure individual sandstone blocks in undercut areas at the base of the outcrop face (see Figure 2-1 for existing undercutting).
- Infilling of open joints along the outcrop crest area with concrete or grout and rock bolts to prevent wave overtopping, rainfall, surface run-off and stormwater discharges from entering the joint planes and possibly imparting additional destabilising hydrostatic pressures on individual blocks.
- Repairing the existing steeply sloping concrete face with shotcrete and rock bolts along the extent of the existing cliff face of the property.
- The works would be sequenced to ensure a safe area for work to be undertaken subject to appropriate tidal and sea conditions.

BACKGROUND

A pre-lodgement meeting (PL-2020/180) was held on 23 October 2020 to discuss proposed stabilisation works at 1 Craig Street, Thirroul, assessment pathways to undertake works the site as a result of erosion of the foreshore area.

Application	Type	Comment
DA-2017/862/A	Modification A – relocate swimming pool and deck and associated retaining to southern side boundary	Currently under assessment – 13 October 2021
DA-2017/862	Alterations and additions to existing dwelling, retaining walls and swimming pool	Approved - 18 August 2017

PC- 2017/1232	Construction Certificate – alterations and additions to dwelling	Approved – 28 September 2021
PL-2017/ 53	Residential - alterations and additions to dwelling house and swimming pool	Completed
DA-2016/ 749	Residential - demolition of dwelling house and construction of dwelling house, garage and swimming pool	Approved – 18 August 2016
PL-2015/25	Construction of new dwelling	Completed
DA-2015/1276	Residential - demolition of existing dwelling house and construction of dwelling house, detached garage, retaining walls, swimming pool and spa	Withdrawn
DA-2017/1232	Residential - demolition of existing dwelling and construction of dwelling	Rejected
BA-1989/ 1446	Aluminium carport to dwelling	Approved
BA-1979/ 1874	Additions and garage	Approved
BA-1966/ 2143	Conversion to 2 flats	Approved

Customer service actions

There are no outstanding customer service requests of relevance to the development.

SITE DESCRIPTION

The site comprises of a single lot that contains a two storey dwelling with attached garage and approval for a future swimming pool. The site contains part of the coastal foreshore area to the rear and has direct access via concrete stairs and a concrete wall used to mitigate impact of waves

The lot reference is Lot 1 Sec 2 DP 5828, known as 1 Craig Street, Thirroul. The site is somewhat regular in shape with a splay to the rear over the adjoining rear cliff/ rock platform, foreshore and sand interface area as depicted in the cadastre lines of Figure 1. The site has a total area of 1249.5sqm. The site is 19m in width with a variable depth of up to 64m. The site has a relatively level building platform area with steep fall to the rear towards the foreshore area with a fall of approximately 10m from the rear of the property towards the rear foreshore area. Due to the lot boundaries extending over the foreshore area this area is used at low tide by the public to access along the foreshore area noting no fencing in this area can be installed, most lots bounding the rock platform have fencing at the top of the cliff/ rock platform area for privacy and defining yard area.

To the North of the site is a dwelling which is listed as Local Heritage item - *Wyewurk*. Other similar style residential dwellings with some dwellings also presented with ancillary retaining and wave/tidal barriers continue along Craig Street. The site directly to the South is a Council Reserve known as DH Lawrence Reserve which has provided beach and rock platform access. The reserve access was closed for a period of time after heavy tides dislodged sand and rock from beneath the stair area making it unsafe for public use and access. The heavy tides have also eroded the sand and rock area to the rear of the subject site triggering the need for stabilisation works to prevent further land recession and property damage. It is noted Council has now undertaken stabilisation works to the rock platform area in the reserve by way of rock-bolting and shotcrete to a stormwater outlet headwall. A decision is pending regarding works to enable safe public access.

To the West and South of the site are primarily low density residential dwellings that are a mix of single, two and three storey dwellings. Sites to the West are zoned R2 Low density residential lots adjoining the coastal foreshore are primarily zoned E4 Environmental Living.



Figure 1 Aerial photo WCC Mapping

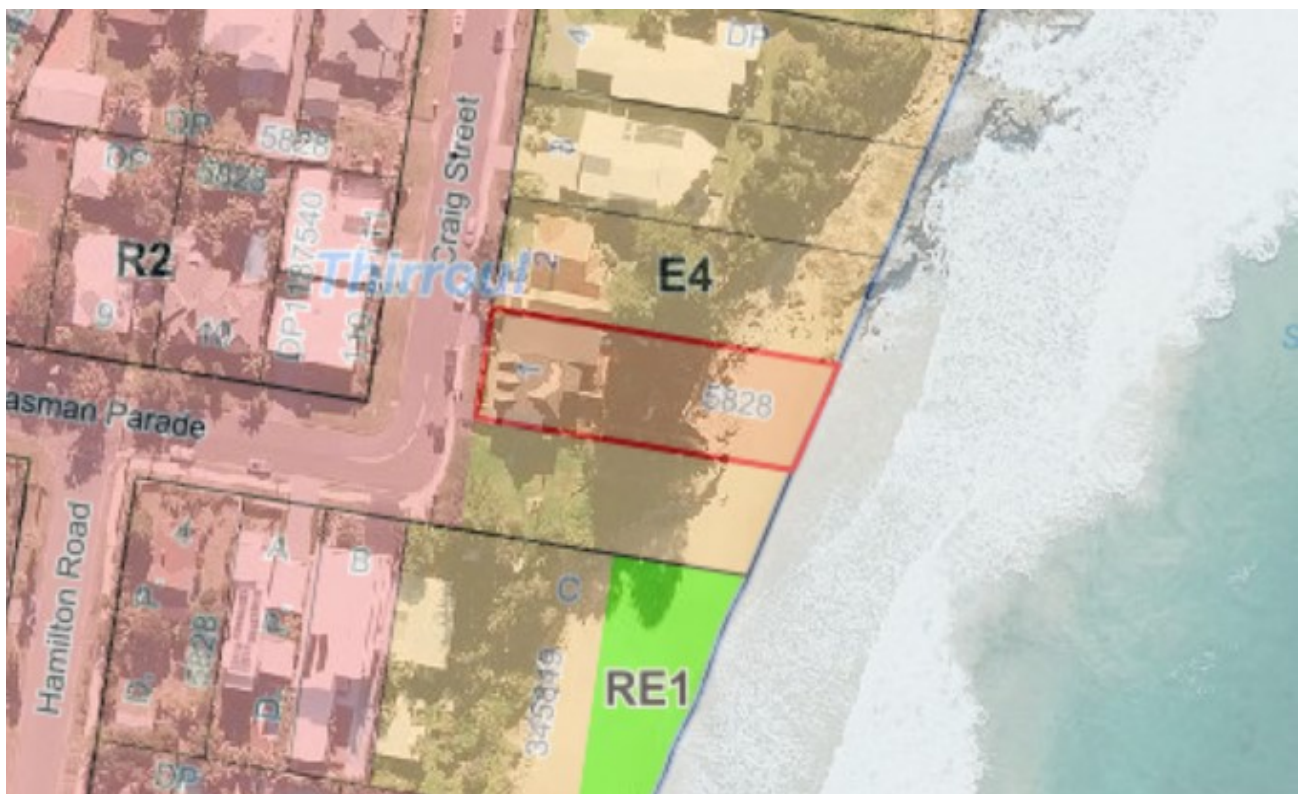


Figure (2) WLEP 2009 Zoning Map

Property constraints

Council records identify the land as being impacted by the following constraints:

- Foreshore Area – Mapped under Coastal Management SEPP and further discussed below.
- Foreshore Building Line – Mapped area in WLEP 2009 and further discussed below.
- Coastal Hazard Area – Geotechnical Risk; considered by Council's Geotechnical Officer who provided conditionally satisfactory comments.
- Coastal Zone Study – Ocean inundation and reduced foundation capacity
- SEPP – Coastal Management 2018
- Unstable Land – Landslip area identified in mapping, considered by Council's Geotechnical Officer who provided conditionally satisfactory comments.
- Acid Sulphate Soils – Class 5 – the site is heavily disturbed it is unlikely acid sulfate soils would be disturbed by the proposal.
- Key Fish Habitat area identified in the adjacent ocean area; no foreseeable impact on fish habitat as works are above the mean high water mark.

There are no restrictions on Title that would preclude the proposal.

SUBMISSIONS

The application was exhibited in accordance with Council's Community Participation Plan 2019 from 6 October to 12 November 2021 with no submissions were received.

CONSULTATION

INTERNAL CONSULTATION

Council's Geotechnical, Development Engineering, Heritage and Environment Officers reviewed the application and provided conditionally satisfactory referral comments. There are no outstanding matters.

EXTERNAL CONSULTATION

NRAR – Water

The Natural Resource Access Regulator provided comment on 6 November 2021 indicating that under the Water Management Act no Controlled Activity Permit was not required.

Department of Fisheries

The Department of Fisheries provided the following comment via email on 15 November 2021 and did not accept the formal referral request;

Because the works appeared to be occurring above the mean high water mark – therefore they are not considered to be key fish habitat and a permit under the Fisheries Management Act is therefore not required.

COASTAL MANAGEMENT ACT 2016 NO.20

Clause 27- Granting of development consent relating to coastal protection works

- (1) Development consent must not be granted under the *Environmental Planning and Assessment Act 1979* to development for the purpose of coastal protection works, unless the consent authority is satisfied that—
 - (a) the works will not, over the life of the works—
 - (i) unreasonably limit or be likely to unreasonably limit public access to or the use of a beach or headland, or
 - (ii) pose or be likely to pose a threat to public safety, and
 - (b) satisfactory arrangements have been made (by conditions imposed on the consent) for the following for the life of the works—

- (i) the restoration of a beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by the presence of the works,
 - (ii) the maintenance of the works.
- (2) The arrangements referred to in subsection (1) (b) are to secure adequate funding for the carrying out of any such restoration and maintenance, including by either or both of the following—
- (a) by legally binding obligations (including by way of financial assurance or bond) of all or any of the following—
 - (i) the owner or owners from time to time of the land protected by the works,
 - (ii) if the coastal protection works are constructed by or on behalf of landowners or by landowners jointly with a council or public authority—the council or public authority,
 - (b) by payment to the relevant council of an annual charge for coastal protection services (within the meaning of the *Local Government Act 1993*).
- (3) The funding obligations referred to in subsection (2) (a) are to include the percentage share of the total funding of each landowner, council or public authority concerned.

Comment – The works associated with the coastal protection works will not unreasonably limit public access to or the use of the beach, or impact on adjoining properties. The works are not considered to cause a threat to public safety.

Conditions relating to works and any ongoing maintenance have been included at Attachment 4.

COASTAL MANAGEMENT AMENDMENT ACT 2021

The *Coastal Management Amendment Act 2021* commenced on 1 November 2021, to give coastal councils until 31 December 2023 to implement their CZMPs. By effect this enables a continuation of the current certified CZMP (20 December 2017) whilst Council undertakes further studies and community consultation for a transition to a new Coastal Management Plan. A copy of the Minister's advice is provided at Attachment 3.

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

SECTION 4.15(1)(A)(1) ANY ENVIRONMENTAL PLANNING INSTRUMENT

State Environmental Planning Policy No. 55 – Remediation of Land (1) *A consent authority must not consent to the carrying out of any development on land unless—*

(a) *it has considered whether the land is contaminated, and*

- Nothing to suggest that the land might be contaminated or that further enquiry is warranted. The site is not identified as contaminated and no change of use from residential is indicated in council records online mapping data.

(b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*

- NA

(c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

- NA

(2) *Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the*

findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

- As noted above no change of use is noted.

(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.

- Preliminary investigation does not warrant further detail.

(4) The land concerned is—

(a) land that is within an investigation area,

(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,

(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital—land—

(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and

(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

The application has been reviewed by Council including Council's Environmental Officer. A desktop audit of previous land uses does not indicate any historic use that would contribute to the contamination of the site. Clause 7 is therefore considered satisfied.

STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011

Part 4 Regionally significant development

The Southern Sydney Regional Planning Panel is the determining authority for the development pursuant to Part 4 of the SEPP and Schedule 7.

8A Certain coastal protection works

(1) The following development on land within the coastal zone that is directly adjacent to, or is under the waters of, the open ocean, the entrance to an estuary or the entrance to a coastal lake that is open to the ocean—

(a) development for the purpose of coastal protection works carried out by a person other than a public authority, other than coastal protection works identified in the relevant certified coastal management program.

The proposed development is for coastal protection works undertaken on private land. Whilst Council does have a certified coastal zone management plan, the identified actions within the plan for this locality are for a seawall.

STATE ENVIRONMENTAL PLANNING POLICY COASTAL MANAGEMENT 2018

The site is identified as being within the Coastal Use and Coastal Environment Areas in the SEPP Coastal Management Maps as shown below in Figure 3.



Figure 3 - NSW DOIE SEPP Coastal Management 2018 - Coastal Use Area and Environment Maps

Division 3 Coastal environment area	
13 Development on land within the coastal environment area	
(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—	
(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,	No foreseeable impact.
(b) coastal environmental values and natural coastal processes,	No foreseeable impact.
(c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,	Not applicable
(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,	As the proposal involves rock bolting to stabilise the area there is no foreseeable impact on vegetation, fauna or their habitats. The application was referred to NSW Department of Fisheries however they rejected the referral on the basis the works were above the mean high water mark and therefore unlikely to impact any fish habitat.
(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,	The adjoining lot DH Lawrence reserve provides public access to the foreshore area. Similar stabilisation works have been undertaken by Council to enable safe public access to continue. No foreseeable impact on existing public access to the foreshore area as a result of the proposed works. Existing rear access from the property is private. The current site extends into the foreshore area which is used by locals as a connection from Thirroul beach to McCauley's beach stabilisation of this area will enable informal access to be improved in this area at low tide.
(f) Aboriginal cultural heritage, practices and places,	No foreseeable impact on local Aboriginal cultural heritage, practices and places. None noted in proximity to the site. Council's Heritage officer has reviewed the application and not raised any concerns
(g) the use of the surf zone.	The works will be carried out at suitable times and with review dependant on local tides and wave action. Unlikely to impact any surf zones.

(2) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that—	
(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subclause (1), or	Subclause 1 is considered above, no foreseeable impacts.
(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or	The proposed development is considered relatively minor in scale and can be effectively managed to mitigate impacts.
(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.	Work to be undertaken would need to be considered appropriate tides, wave action and weather conditions. This has been considered and can also be conditioned for.
(3) This clause does not apply to land within the Foreshores and Waterways Area within the meaning of <i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005</i> .	
Division 4 Coastal use area	
14 Development on land within the coastal use area	
(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—	
(a) has considered whether the proposed development is likely to cause an adverse impact on the following—	
(i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,	Currently the lot boundary cadastre extends into the rear foreshore area and incorporates a rock platform and the beach interface. This area, whilst on private land, is not fenced and has been used by the general public to access the coastal strip in this area. The works seek to stabilise the rock/ cliff in this area to ensure erosion and rock fall is mitigated in turn seeking to make this area safer for use by the owners and the general public.
(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,	No foreseeable impact on dwellings or view loss.
(iii) the visual amenity and scenic qualities of the coast, including coastal headlands,	No foreseeable impact on visual or scenic coastal amenity. The existing area is covered in dilapidated concrete, Shotcrete treatment will improve the safety of the area and natural hues of finish colours and materials to be conditioned for.
(iv) Aboriginal cultural heritage, practices and places,	No foreseeable impact on locale Aboriginal cultural heritage, practices and places. None noted in proximity to the site. Council's Heritage

	officer has reviewed the application and not raised any concerns.
(v) cultural and built environment heritage, and	The adjoining site to the North contains a dwelling listed as a Local Heritage item. The proposed works are not in close proximity to the heritage item and the works are not expected to have adverse impacts on the lot. Council's Heritage officer has reviewed the application and not raised any concerns
(b) is satisfied that—	
(i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or	No foreseeable impact.
(ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or	No foreseeable impact.
(iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and	Work to be undertaken would need to be considered i.e. appropriate tides and wave action. This has been considered and can be conditioned for.
(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.	The proposed development is considered relatively minor in scale with works effectively managed to mitigate impacts.
(2) This clause does not apply to land within the Foreshores and Waterways Area within the meaning of <i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005</i> .	
Division 5 General	
15 Development in coastal zone generally—development not to increase risk of coastal hazards	
Development consent must not be granted to development on land within the coastal zone unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land.	The proposed works are required for stabilisation purposes and are not envisaged to result in increased coastal hazards on the lot, adjoining lots or local area.
16 Development in coastal zone generally—coastal management programs to be considered	
Development consent must not be granted to development on land within the coastal zone unless the consent authority has taken into consideration the relevant provisions of any certified coastal management program that applies to the land.	The Wollongong Coastal Zone Management Plan (WCZMP) applies to the site and has been considered. The proposal is not inconsistent with the general objectives of the WCZMP. Under the plan the ultimate outcome is identified to be a seawall coordinated amongst several adjoining properties at the landowners expense.

	The proposed works are considered an interim measure and would not preclude the construction of a seawall at a future time.
17 Other development controls not affected	
Subject to clause 7, for the avoidance of doubt, nothing in this Part—	
(a) permits the carrying out of development that is prohibited development under another environmental planning instrument, or	Comment - The proposed development, <i>Coastal Protection Works</i> , is not permissible under the WLEP2009 however is permitted with consent under Division 5 Part 3 Clause 19 of the State Environmental Planning Policy (SEPP) Coastal Management 2018, as discussed above.
(b) permits the carrying out of development without development consent where another environmental planning instrument provides that the development may be carried out only with development consent.	Not applicable
18 Hierarchy of development controls if overlapping	
If a single parcel of land is identified by this Policy as being within more than one coastal management area and the development controls of those coastal management areas are inconsistent, the development controls of the highest of the following coastal management areas (set out highest to lowest) prevail to the extent of the inconsistency—	The lot is within the Coastal Use and Coastal Protection Area, both have been considered accordingly and works proposed are considered to be consistent with the objectives of both.
(a) the coastal wetlands and littoral rainforests area,	Not applicable
(b) the coastal vulnerability area	No mapping available however, as noted in Council's Coastal Hazard Study records identifying the subject lot as being impacted by coastal hazard geotechnical instability and ocean inundation. Council's Geotechnical Officer has reviewed the proposal and provided conditionally satisfactory comments.
(c) the coastal environment area,	Considered to be consistent with the objectives and no foreseeable impact on the coastal environment area.
(d) the coastal use area.	Considered to be consistent with the objectives and no foreseeable impact on the coastal use area.

WOLLONGONG LOCAL ENVIRONMENTAL PLAN 2009

Part 2 Permitted or prohibited development

Clause 2.2 – Zoning of land to which Plan applies

The zoning map identifies the land as being zoned E4 Environmental Living.

Clause 2.3 – Zone objectives and land use table

The objectives of the zone are as follows:

- To provide for low-impact residential development in areas with special ecological, scientific or aesthetic values.
- To ensure that residential development does not have an adverse effect on those values.

The land use table permits the following uses in the zone.

Bed and breakfast accommodation; Business identification signs; Community facilities; Dwelling houses; Environmental facilities; Environmental protection works; Home-based child care; Home businesses; Home industries; Oyster aquaculture; Pond-based aquaculture; Recreation areas; Roads; Secondary dwellings; Tank-based aquaculture

Comment - The proposed development, *Coastal Protection Works*, is not permissible under the WLEP2009, however, is permitted with consent under Division 5 Part 3 Clause 19 of the State Environmental Planning Policy (SEPP) Coastal Management 2018, as discussed above.

Part 4 Principal development standards

Not applicable

Part 5 Miscellaneous provisions

Clause 5.7 Development below the mean high water mark

- (1) The objective of this clause is to ensure appropriate environmental assessment for development carried out on land covered by tidal waters.
- (2) Development consent is required to carry out development on any land below the mean high water mark of any body of water subject to tidal influence (including the bed of any such water).

The proposed development is above the mean high water mark.

Part 7 Local provisions – general

Clause 7.5 Acid Sulphate Soils

The site is listed as being impacted by Acid Sulphate Soils. The area relating to this application is unlikely to encounter or disturb any soil. There are no concerns raised in relation to this clause.

Clause 7.7 Foreshore Building Line

7.7 Foreshore building line

- (1) The objective of this clause is to ensure that development in the foreshore area will not impact on natural foreshore processes or affect the significance and amenity of the area.
- (2) Development consent must not be granted for development on land in the foreshore area except for the following purposes—
 - (a) the extension, alteration or rebuilding of an existing building wholly or partly in the foreshore area,
 - (b) the erection of a building in the foreshore area, if the levels, depth or other exceptional features of the site make it appropriate to do so,
 - (c) development for the purposes of boat sheds, sea retaining walls, wharves, slipways, jetties, waterway access stairs, swimming pools, fences, cycleways, walking trails, picnic facilities or other recreation facilities (outdoor).
- (3) Development consent must not be granted under subclause (2) unless the consent authority is satisfied that—
 - (a) the development will contribute to achieving the objectives for the zone in which the land is located, and
 - (b) the appearance of any proposed structure, from both the waterway and adjacent foreshore areas, will be compatible with the surrounding area, and
 - (c) the development will not cause environmental harm such as—

- (i) pollution or siltation of the waterway, or
- (ii) an adverse effect on surrounding uses, marine habitat, wetland areas, flora or fauna habitats, or
- (iii) an adverse effect on drainage patterns, and
- (d) the development will not cause congestion of, or generate conflicts between, people using open space areas or the waterway, and
- (e) opportunities to provide continuous public access along the foreshore and to the waterway will not be compromised, and
- (f) any historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance of the land on which the development is to be carried out and of surrounding land will be maintained, and
- (g) in the case of development for the alteration or rebuilding of an existing building wholly or partly in the foreshore area, the alteration or rebuilding will not have an adverse impact on the amenity or aesthetic appearance of the foreshore.

The site is mapped as containing a coastal foreshore area which generally follows the line of the foreshore area. This area is intended to restrict structures that would likely be impacted by coastal processes and or may have adverse visual impact when viewed from the foreshore. The proposal does include works within this zone however, the works are considered ancillary and to ensure the stability of the lot and existing dwelling.



Figure 4 Foreshore Building Line WLEP 2009 online mapping

SECTION 4.15(1)(A)(II) ANY PROPOSED INSTRUMENT

Draft Environment SEPP

The Explanation of Intended Effect for the Environment SEPP was on exhibition from 31 October 2017 until the 31 January 2018.

This consolidated SEPP proposes to simplify the planning rules for a number of water catchments, waterways, urban bushland, and Willandra Lakes World Heritage Property.

Changes proposed include consolidating the following seven existing SEPPs:

- State Environmental Planning Policy No. 19 – Bushland in Urban Areas
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011
- State Environmental Planning Policy No. 50 – Canal Estate Development
- Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment
- Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No.2-1997)

- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- Willandra Lakes Regional Environmental Plan No. 1 – World Heritage Property.

Changes are also proposed to the Standard Instrument – Principal Local Environmental Plan. Some provisions of the existing policies will be transferred to new Section 9.1 Local Planning Directions where appropriate.

Engagement is now closed and feedback is being considered by the Department.

Draft Remediation of Land SEPP

The Explanation of Intended Effect for the Remediation of Land SEPP and the Managing Land Contamination guidelines were exhibited between 25 January 2018 and 13 April 2018.

The proposed SEPP: provides a state-wide planning framework for the remediation of land requires consent authorities to consider the potential for land to be contaminated when determining development applications clearly lists the remediation works that require development consent introduces certification and operational requirements for remediation works that can be undertaken without development consent.

Engagement is now closed and feedback is being considered by the Department.

Draft Design and Place SEPP

Public exhibition of the Design and Place SEPP Explanation of Intended Effect closed in April 2021.

The Design and Place SEPP will establish principles for the design and assessment of places in urban and regional NSW: PRINCIPLE 1. Design places with beauty and character that people feel proud to belong to PRINCIPLE 2. Design inviting public spaces to support engaged communities PRINCIPLE 3. Design productive and connected places to enable thriving communities PRINCIPLE 4. Design sustainable and greener places for the wellbeing of people and the environment PRINCIPLE 5. Design resilient and diverse places for enduring communities

The draft Design and Place SEPP will go on public exhibition later in 2021 to provide more opportunities for feedback. Supporting guidance and tools, drafts of which will also go on exhibition with the draft SEPP. These guides include revisions to the Apartment Design Guide and improvements to the Building Sustainability Index (BASIX), as well as the proposed Urban Design Guide, and Design Review Guide. The Department is currently conducting workshops with Council's around the State.

SECTION 4.15(1)(A)(III) ANY DEVELOPMENT CONTROL PLAN

WOLLONGONG DEVELOPMENT CONTROL PLAN 2009

Whilst the site is used for residential purposes the proposal has been assessed on merit - predominantly using the SEPP Coastal Management 2018, however, Council has also considered the proposal against the objectives of the Wollongong Coastal Zone Management Action Plan which is further discussed below. The following DCP Chapters have also been considered and are relevant.

Chapter E7 WASTE MANAGEMENT

The proposal includes waste mitigation and describes the waste to be generated and associated control measures. Appropriate conditions have been included at Attachment 4.

Chapter E12 GEOTECHNICAL ASSESSMENT OF SLOPE

Councils Geotechnical officer has reviewed the submitted reports and made conditionally satisfactory comment. The proposed works are required as a result of hydraulic action and wave pounding. The proposed works seek to stabilise the area. Appropriate conditions relating to geotechnical processes and certification have been included at Attachment 4.

Chapter E18 THREATENED SPECIES

The work footprint area is small, and the proposed scope of works considered minor. There are no foreseeable impacts upon vegetation as a result of the works. The works would be unlikely to significantly affect threatened species or ecological communities, or their habitats.

Chapter E22 Soil Erosion and Sediment Control

The proposal includes measure to control sediment during works. Council's Environment Officer has reviewed the proposal and provided satisfactory comment. Appropriate conditions relating to sedimentation and erosion control have been included at Attachment 4.

WOLLONGONG COASTAL ZONE MANAGEMENT PLAN: IMPLEMENTATION ACTION PLAN

NSW Coastal Management Act 2016 and Wollongong Coastal Zone Management Plan

On 30 October 2017, Council endorsed the final draft of the Wollongong Coastal Zone Management Plan for resubmission to the NSW Minister for Environment for certification. The draft Plan was certified on 20 December 2017.

At the Council meeting of 19 February 2018, Council resolved that the certified final draft be adopted. Council's Notice was published in the NSW Gazette No 25 of 9 March 2018 and a community briefing on the implications arising from Council adopting and gazetting the plan have been undertaken.

The NSW Coastal Management Act 2016 came into force on 3 April 2018. Under the Act any existing certified CZMP's continue in force until 31 December 2021.

The *Coastal Management Amendment Act 2021* commenced on 1 November 2021, to give coastal councils until 31 December 2023 to implement their CZMPs. By effect this enables a continuation of the current certified CZMP WHISLY Council undertakes further studies and community consultation for a transition to a new Coastal Management Plan.

A review of Council's associated CZMP coastal hazard mapping extents identifies that the subject site and specifically the building envelope is impacted by coastal inundation/ coastal geotechnical risk/ reduced foundation capacity at the 2010/ 2015/2100 timeline.

Note refer to Chapter E12 controls for risk management for coastal geotechnical risk/ reduced foundation capacity management and Chapter E13 controls for coastal inundation.

Minimal adverse impact on the coastal environment is anticipated as a result of the proposed development.

Minimal adverse impacts on the development are expected as a result of coastal processes

The proposal is therefore considered satisfactory with regard to the aims outlined in clause 3 of this policy and the matters outlined for consideration.

Councils Environment Officer has reviewed the Wollongong CZMP which identifies the site as having coastal geotechnical risk. The Wollongong CZMP indicates a seawall would be necessary to mitigate coastal impacts at this location due to this risk, however the implementation of development controls is recommended before doing this. As these works are outside of the scope of a new seawall the proposal was considered Coastal Protection Works and subsequently required reporting to the SRPP for determination.

Thirroul	Planning controls should apply to development that reflect the level of risk to the property and expected functional life of the development. DCP controls will apply to affected land prior to implementation of any seawall options, should seawalls be maintained or implemented in the future.	The existing Flood DCP chapter is to be applied to those areas identified at risk from coastal inundation outside of the existing Flood Planning Area at the "low risk" level, until Flood Studies are completed and updated for Flanagans Creek and Thomas Gibson Creek, respectively. The majority of properties affected by coastal inundation in the Thomas Gibson catchment are also within the existing Flood Planning Area, therefore this strategy would have no additional effect on existing development restrictions.
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Figure 5 Excerpt Wollongong CZMP

WOLLONGONG CITY WIDE DEVELOPMENT CONTRIBUTIONS PLAN 2021

There is no contribution applicable under this plan as the threshold value is \$100,000 and the value of the proposed works is approximately < \$45,000.

SECTION 4.15(1)(A) (IIIA) ANY PLANNING AGREEMENT THAT HAS BEEN ENTERED INTO UNDER SECTION 7.4, OR ANY DRAFT PLANNING AGREEMENT THAT A DEVELOPER HAS OFFERED TO ENTER INTO UNDER SECTION 7.4

There are no planning agreements entered into or any draft agreement offered to enter into under S7.4 which affect the development.

SECTION 4.15(A)(IV) THE REGULATIONS (TO THE EXTENT THAT THEY PRESCRIBE MATTERS FOR THE PURPOSES OF THIS PARAGRAPH)

Clause 92 What additional matters must a consent authority take into consideration in determining a development application?

Not applicable.

Clause 93 Fire safety and other considerations

Not applicable.

Clause 94 Consent authority may require buildings to be upgraded

Not applicable.

Clause 105 Approval Bodies for Integrated Development

These have been considered and are discussed above.

SECTION 4.15(1)(B) THE LIKELY IMPACTS OF DEVELOPMENT

<u>Context and Setting:</u> The site is within a predominantly residential area with public recreation land uses and beach foreshore/ rock platform areas to the north and south.
<u>Access, Transport and Traffic:</u> There is no foreseeable impact on access, transport or traffic. No proposed change to existing car parking.
<u>Public Domain:</u> While the siteworks by cadastre is not in the public domain the foreshore area has long been used by locals to walk between Thirroul and McCauley's beaches. Notably any works to stabilise the area could potentially improve the use and safety of this area. Proposed shotcrete works are conditioned to contain a natural colour oxide additive to reflect surrounding geology.
<u>Utilities:</u> The proposal would not be envisaged to place unreasonable demands on utilities supply.
<u>Heritage:</u> The proposal is not expected to impact on any heritage items. It is noted a Local Heritage item a dwelling referred to as <i>Wyewurk</i> (item 5925) is adjacent to the North of the site, however, the works are contained to the rear foreshore area and there is no foreseeable impact on the heritage item. Council's Heritage officer has reviewed the application and not raised any concerns.
<u>Other land resources:</u> The proposal would not be envisaged to impact upon valuable land resources.
<u>Water:</u> The site is presently serviced by Sydney Water. The proposal would not be envisaged to have an impact on water use.
<u>Soils:</u> No concerns are raised with impact on soils. All works are to be undertaken with geotechnical supervision and certification with appropriate soil and sediment erosion controls at favourable tidal and wave action extent conditions.

<u>Air and Microclimate:</u> The proposal would not be expected to result in negative impact on air or microclimate.
<u>Flora and Fauna:</u> There are minimal foreseeable impacts on flora and fauna.
<u>Waste:</u> A condition that an appropriate receptacle be in place for any waste generated during the process is provided for at Attachment 4.
<u>Energy:</u> The proposal would not be expected to have unreasonable energy consumption.
<u>Noise and vibration:</u> A condition that nuisance be minimised during any construction/ rectification works is provided for at Attachment 4.
<u>Natural hazards:</u> There are natural hazards identified on the site however these have been considered as identified throughout the report and would not preclude the proposed works.
<u>Technological hazards:</u> There are no technological hazards identified on site that would preclude the proposed works.
<u>Safety, Security and Crime Prevention:</u> There are no concerns with regard to safety and security.
<u>Social Impact:</u> The proposal would not be envisaged to result in negative social impacts.
<u>Economic Impact:</u> The proposal is not expected to create negative economic impact.
<u>Site Design and Internal Design:</u> The proposal is considered compliant. The proposed works are to be undertaken be in accordance with specialist recommendations and subject to certification.
<u>Construction:</u> To be managed via proposed conditions at Attachment 4.
<u>Cumulative Impacts:</u> There are no foreseeable adverse cumulative impacts as a result of the proposed works.

SECTION 4.15(1)(C) THE SUITABILITY OF THE SITE FOR THE DEVELOPMENT

Does the proposal fit in the locality?

The proposal is considered appropriate with regard to the use of the site and the existing site conditions.

Are the site attributes conducive to development?

The site can accommodate the proposed works and is not considered likely to impact the built or natural environment.

SECTION 4.15(1)(D) ANY SUBMISSIONS MADE IN ACCORDANCE WITH THIS ACT OR THE REGULATIONS

No submissions were received as a result of public exhibition.

SECTION 4.15(1)(E) THE PUBLIC INTEREST

The application is not expected to have unreasonable impacts on the environment or the amenity of the locality. It is considered appropriate with consideration to the use of the site and the character of the area and is therefore considered to be in the public interest.

CONCLUSION

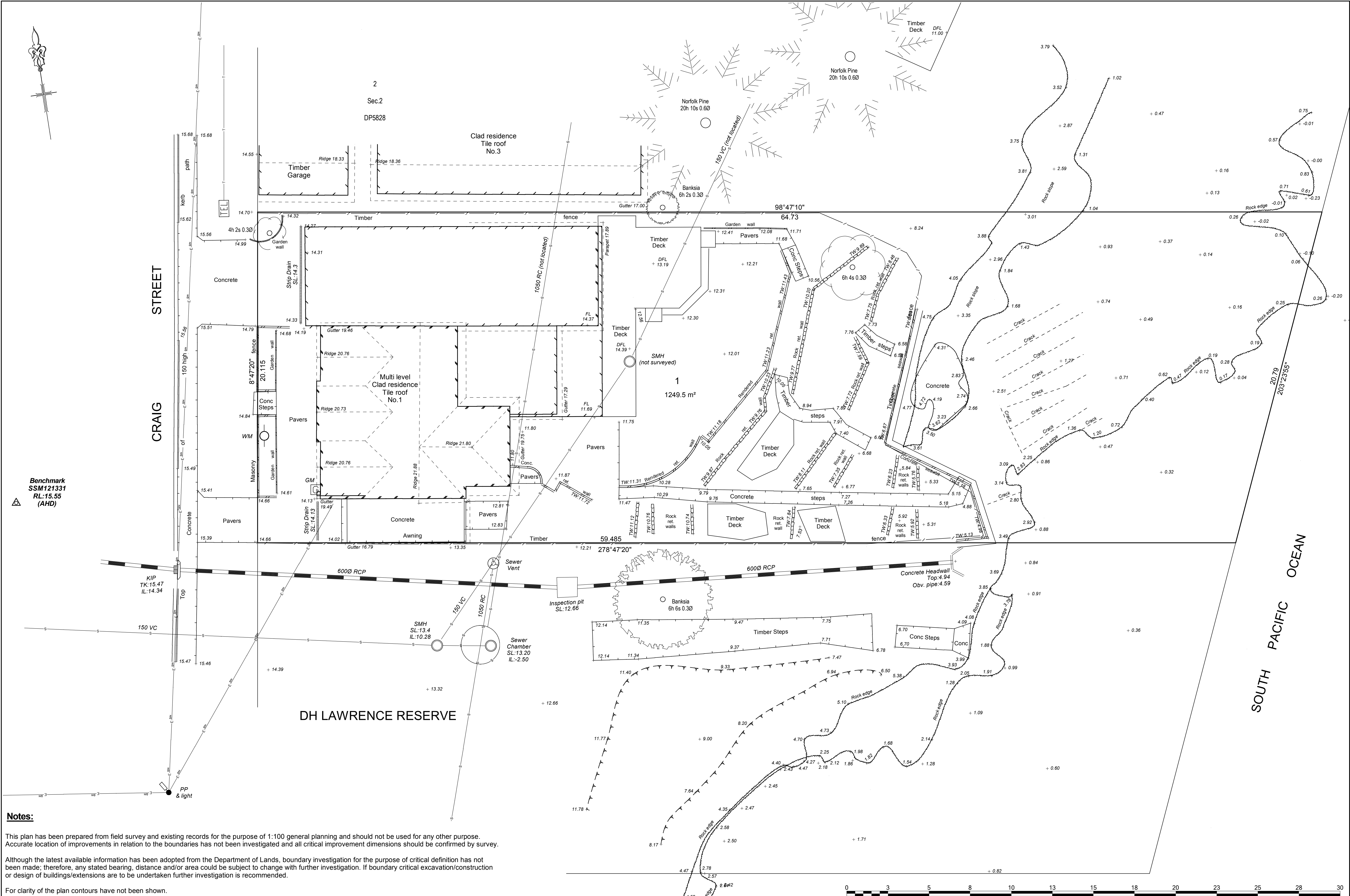
This application has been assessed as satisfactory having regard to the Heads of Consideration under Section S4.15(1) of the Environmental Planning and Assessment Act 1979, the provisions of Wollongong Local Environmental Plan 2009 and all relevant Council DCPs, Codes and Policies.

RECOMMENDATION

DA-2021/1071 be approved subject to conditions as provided for at Attachment 4.

ATTACHMENTS

Attachment 1	Plans
Attachment 2	SoEE
Attachment 3	Minister's Advice
Attachment 4	Conditions



Notes:

This plan has been prepared from field survey and existing records for the purpose of 1:100 general planning and should not be used for any other purpose. Accurate location of improvements in relation to the boundaries has not been investigated and all critical improvement dimensions should be confirmed by survey.

Although the latest available information has been adopted from the Department of Lands, boundary investigation for the purpose of critical definition has not been made; therefore, any stated bearing, distance and/or area could be subject to change with further investigation. If boundary critical excavation/construction or design of buildings/extensions are to be undertaken further investigation is recommended.

For clarity of the plan contours have not been shown.



SPECIFICATION

FOR FORESHORE CLIFF FACE STABILISATION MEASURES

AT
1 CRAIG STREET, THIRROUL, NSW

Date: 29 June 2020

Ref: 31735R spec

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ATTACHMENTS

Table A: Pricing Schedule

Figure 1: Rock Bolt Detail

Figure 2: Typical Detail: Rock Bolt Supporting Shotcrete

Figure 3: Shotcrete Reinforcing and Strip Drain Detail

Figure 4: Typical Detail: Underpin Support to Undercut at Base of Cliff Face

1 INTRODUCTION

This specification presents the extent and location of recommended stabilisation measures (referred to as the works) as outlined in our report (Ref: 31735Rlet) dated 18 December 2018. The extent of the works is an approximately 20m length of foreshore cliff face on the seaward side of the property at No. 1 Craig Street; see Plate 1.



Plate 1: Approximate Extent Of The Works

At this stage it is assumed that the stabilisation measures will include:

- Underpinning of the current undercut areas at the base of the outcrop face. Locally there may be a need for rock bolts to secure individual blocks although we consider this to be unlikely.
- Infill open joints along the outcrop crest area with concrete or grout to prevent wave overtopping, rainfall, surface run-off and stormwater discharge from entering the joint planes and possibly imparting additional destabilising hydrostatic pressures on individual blocks.
- Repair the steeply sloping concrete face with shotcrete and rock bolts.

The purpose of the stabilisation measures is to protect the current foreshore outcrop face and thereby the property landward of the outcrop face within the site (No. 1 Craig Street).

2 SCOPE OF WORKS AND SEQUENCING

2.1 Scope Of Works

The scope of the stabilisation measures covered by this specification are summarised on the attached Figures 1 to 4 and Table A, and will be as follows:

1. Remove loose debris, damaged shotcrete and fractured rock from the section of cliff face covered by The Works.
2. Complete a detailed geotechnical inspection to confirm the scope and extent of stabilisation measures. At this stage the extent of repairs to the existing shotcrete will be confirmed as well as identifying the extent of underpinning of cliff face undercuts, any blocks that require stabilisation and the extent of infilling of open joints.
3. Provide reinforced shotcrete supported by rock bolts (3m and 4m long) installed at about 1.0m lateral spacing and 1.5m vertical spacing staggered over the full height and length of the damaged shotcrete face.
4. Construct cliff face underpins.
5. Install individual rock bolts to support unstable blocks (where required) and infill open joints in the cliff face crest.

The Works are expected to be completed from the beach and rock platform with due regard for tidal levels.

The Contractor must allow for appropriate traffic/pedestrian control using an accredited RMS traffic control company and in accordance with Council requirements, such as submission of a traffic control plan to Council for approval, permit to work on the beach etc.

2.2 Sequencing Of The Works

The above works will require pedestrian and traffic control measures which will need to be provided to the satisfaction of Council. Once the pedestrian and traffic control measures are in place, the sequence of works will be as follows:

1. A site inception meeting must be held at the commencement of the works attended by the stabilisation contractor and the Geotechnical Consultant. The purpose of the inception meeting is to outline and confirm the scope of works and determine the stabilisation contractors work methods.
2. Clear loose debris, damaged shotcrete and fractured rock from the cliff face.
3. Provide reinforced shotcrete supported by rock bolts, cliff face undercuts, rock bolts to support individual blocks (where required) and infill open joint planes in the cliff face crest.
4. Stabilisation measures must be installed in accordance with the Specification. Periodic site inspections must be undertaken by the Geotechnical Consultant during the course of the works. This is a HOLD point and the final shotcrete faces must not to be applied until approval is given by the Geotechnical Consultant.

The final works must be inspected by the Geotechnical Consultant and stabilisation contractor. This is a HOLD point. Plant and equipment can be de-commissioned and pedestrian/traffic control measures removed, once the Geotechnical Consultant has confirmed that the works have been satisfactorily completed.

At least 24 hours notice must be given by the stabilisation contractor when a geotechnical inspection is required.

3 STABILISATION CONTRACTORS ROLE

The stabilisation contractor must supply all materials, plant and labour for treatment of the potential geotechnical hazards as indicated in this specification and on the drawings herein to the entire satisfaction of the Geotechnical Consultant.

The works must be carefully planned and scheduled to avoid breaks for holidays during construction and should preferably be undertaken during dry weather.

The stabilisation contractor must provide a Safe Work Method Statement (SWMS) and construction program with their Tender. The SWMS and construction program will need to be approved by the Geotechnical Consultant.

The stabilisation contractor must have a skilled and competent foreman on site continuously for all of the required works. The stabilisation contractor foreman must be available daily for joint site inspections and/or site meetings related to the works. If any major issues arise, then the project manager representing the stabilisation contractor must be available for any relevant meetings at short notice.

The stabilisation contractor is required to have current public liability and contractors all risk insurance policy appropriate for The Works and to the satisfaction of The Owner. Copies of these policies must be forwarded and approved by The Owner before the commencement of any site work.

All other statutory insurance policies, including workers compensation cover, must be held by the stabilisation contractor.

The stabilisation contractor must allow for determination of the location of any buried services affecting the proposed works. If any buried services do affect the work then the installation angle of rock bolts may need to be adjusted so as to avoid the buried services. The adjusted rock bolt installation angle must be agreed by the Geotechnical Consultant, Council and the owner of the utility, if appropriate.

Every care must be taken during the work to protect any existing structures and services from damage. Any damage which, in the opinion of The Owner or the Geotechnical Consultant has been caused as a result of incorrect workmanship or inadequate precautions by the stabilisation contractor must be repaired or replaced at the stabilisation contractor's expense.

Stripping of vegetation, clearance of loose debris, installation of rock bolts, reinforced shotcrete etc must be completed in a manner which will prevent uncontrolled down slope movement of any materials. The stabilisation contractor must maintain site safety for site personnel and users of the road below.

4 POLLUTION AND ENVIRONMENTAL MANAGEMENT

The stabilisation contractor must plan and carry out the works to avoid erosion, contamination, or sedimentation within the site and its immediate environs. Appropriate control measures must be defined in the stabilisation contractor's tender and be implemented and maintained by the stabilisation contractor for the stabilisation works period. The control measures must also include clean-up and emergency measures.

The works must be completed in accordance with the appropriate Council environmental policies and/or guidelines and in accordance with existing legislation.

5 DRILLING ROCK BOLT HOLES, WATER TESTING AND CLEANING HOLES

- (a) Holes are to be drilled using rotary (i.e. non-percussive) techniques at spacings and/or locations nominated in the appropriate Figures, Plates and/or as directed on site.
- (b) Required hole lengths are as shown in Table A and/or as directed on site. Drill holes must be over-drilled by an additional 500 millimetres (mm) such that incomplete cleaning does not affect the bond length of the rock bolts.
- (c) The minimum acceptable hole diameter for installation of 25mm diameter size rock bolts must be 60mm.
- (d) Holes must be drilled at not less than 15° below the horizontal and in accordance with the details provided in Table A, on the appropriate Figures and/or as directed on site.
- (e) Each of the holes must be water tested to ensure that the water loss is not greater than 0.5 litres per minute. If water loss is found to be in excess of this criterion, the hole must be initially grouted and then redrilled and retested until a satisfactory test result is obtained. Supervision of the grouting and retesting procedure by the Geotechnical Consultant must be carried out to assess the need for grouting and redrilling. All holes with an unsatisfactory water loss are to be identified to the representative within 24 hours of the initial water test.
- (f) Prior to installation, all holes must be flush cleaned by clean water passing through a hose or delivery pipe inserted to the base of the hole. The hole must be pronounced clean once clear or almost clear water is being returned out of the hole opening. This procedure must be supervised by the Geotechnical Consultant or the Council representative to ensure it is being carried out correctly.
- (g) On completion of drilling and flushing, all holes must be plugged or otherwise protected to prevent entry of foreign matter.
- (h) The stabilisation contractor must record for each hole the date drilled, length drilled, orientation of hole, time of water test, water test result, details of grouting and redrilling, if required. The details are to be provided to the Geotechnical Consultant prior to installation of the rock bolt.

6 ROCK BOLTS

- (a) Rock bolts are to consist of DSI “THREADBAR” Double Corrosion Protection (DCP) rock bolts (or similar). Unless otherwise specified, bolts must be locked off against a 200mm square anchor plate with a head assembly provided in accordance with the supplier’s specifications (see Figure 1).
- (b) Total in hole length of rock bolts must be as shown in Table A and/or as directed on site. However, it is possible that subsurface conditions encountered during drilling of the rock bolt holes may differ from those expected and therefore some allowance must be made for adjustments in bolt lengths (that is, they may need to be longer).
- (c) Care must be taken to prevent damage, kinking or bending of bolts. Any bolts sustaining damage must not be used.
- (d) Bolts must be kept free from oil, grease, mud or any other deleterious substances. The steel must not be visibly pitted or rusted.

7 INSTALLATION AND GROUTING

- (a) Spacers or spiders must be provided along the length of the rock bolts to maintain them centrally within the drill hole.
- (b) Grout mix to surround the rock bolt is to have a target water/cement ratio of 0.45. A target laboratory test criterion would be an average grout strength of 25MPa at seven days. (No single test to be less than 20MPa). A minimum sampling and test ratio must be one set of three test specimens per three mix batches. All grout testing must be completed by a NATA registered laboratory and the cost of testing must be paid by the stabilisation contractor. Confirmatory test results need to be provided to the Geotechnical Consultant.
- (c) Grout must be pumped to the base of the hole through hoses or grout tubes until the consistency of the grout mix escaping at the hole openings is the same as that being pumped in. Once this is the case, the grout tube must be withdrawn slowly such that the rate of grout exiting the hole is virtually maintained. Only when the tube is completely removed from the hole should the pumping mechanism be switched off.
- (d) If the grout level drops below the drill hole opening whilst still wet, it must be topped up until loss of grout is negligible. If the grout level cannot be maintained, then the rock bolt must be withdrawn and the hole treated as per Item 5 (e).
- (e) Once grout is dry or almost dry, a thick, non-shrink topping grout must be packed into the hole until the grout completely covers the rock bolt up to the drill hole opening. The grout must be finished flush with the surrounding rock face.
- (f) Unless otherwise specified, bolts must be locked off as per Item 6 (a).
- (g) Where mortar pads are required, the mortar must be non-shrink and of a strength at least equal to the grout. The mortar pad must be formed to the required size and the bearing plate seated to provide uniform bearing.
- (h) The end plates must be fitted and nuts nipped tight no sooner than four days after grouting.

8 MESH AND SHOTCRETING

- (a) One layer of hot dipped galvanised reinforcing, SL61 mesh must be used at locations nominated on the appropriate Figures, Plates and/or as directed on site by the Geotechnical Consultant. Four additional N12 bars (1.0m long) to be installed at each of the rock bolt head assembly-reinforcement interfaces; 2 vertical and 2 horizontal; see Figure 3.
- (b) The mesh must be held to the rock face by DSI “THREADBAR” DCP rock bolts (or similar) at horizontal and vertical spacings as indicate on Figure 2, or as directed on site by the Geotechnical Consultant. Typically, 1.0m lateral and 1.5m vertical spacings are anticipated although actual spacings must be confirmed by the Geotechnical Consultant and some additional rock bolts or irregular spacings may be required.
- (c) Chairs must be provided to maintain a clear gap of 50mm between the rock face and the mesh.
- (d) The mesh must be kept free from oil, grease, mud or any other deleterious substances. The steel must not be visibly pitted or rusted.
- (e) The shotcrete must have a thickness of at least 160mm, providing minimum covers of 50mm to the front of the rock bolt, and 65mm to the rear of the reinforcing mesh.
- (f) All shotcrete must be in accordance with “Recommended Practice Sprayed Concrete” prepared by the Concrete Institute of Australia.
- (g) All shotcrete must have a characteristic strength ($F'c$) of 50MPa.
- (h) Shotcrete may be stencilled and stained with an appropriate colour to provide a ‘sandstone’ like surface colour, if required by The Owner.

9 UNDERPINS

- (a) N12-200 hot dipped galvanised reinforcing mesh must be used as indicated on Figure 4 and/or as directed on site.
- (b) The underpins must be founded on sandstone bedrock as indicated on Figure 4 and/or as directed on site. The bedrock foundation must be confirmed by the Geotechnical Consultant.
- (c) Formwork must be provided and a minimum 200mm cover to the outer face of the underpin reinforcement.
- (d) The mesh and shotcrete must also be installed in compliance with Items 8 (d) and 8 (f) to (h).

10 DRAINAGE

- (a) Geotextile enclosed drainage strips or other drainage medium approved by the Geotechnical Consultant must be placed against the rock face at the rear of the shotcrete as nominated in Figure 2.
- (b) The strip drains must be discharged in a controlled manner beyond the toe of the shotcrete face.

11 LOAD TESTING OF ROCK BOLTS

- (a) Load testing of rock bolts to 1.3 times the working load [100kN] will be required as directed by the Geotechnical Consultant prior to shotcrete placement. The stabilisation contractor must allow for at least 20% of rock bolts to be tested at locations to be determined by the Geotechnical Consultant.

The load testing must be witnessed by the Geotechnical Consultant. Any rock bolts failing the test must be replaced at the stabilisation contractor's expense.

12 SITE CLEAN UP

- (a) All vegetation and material removed from the site must be taken off site to an authorised landfill.

13 RECORDS TO BE SUPPLIED BY THE CONTRACTOR

The stabilisation contractor must supply the following records to the Geotechnical Consultant prior to the commencement of the works:

1. Calibration charts for the jack and gauges to be used for the rock bolt load testing.

Following the installation of the rock bolts, the stabilisation contractor must supply the following records to the Geotechnical Consultants:

1. Details of each rock bolt as outlined in Item 5 (h);
2. Results of the water test, grouting and redrilling (if required) for each rock bolt hole as outlined in Section 5;
3. Grout strength tests; and
4. The results of load testing of rock bolts must be supplied to the Geotechnical Consultant within 24 hours of completing the tests. If the rock bolt fails during testing then the Geotechnical Consultant will immediately advise on the new rock bolt location. A new rock bolt installed in a separate drill hole will be required with all the information outlined in Sections 1, 2 and 3, above provided. The replacement rock bolt must also be load tested in the presence of the Geotechnical Consultant.

14 AUSTRALIAN STANDARDS

Wherever Australian Standards exist with regard to the materials and workmanship referred to in this specification then they must be deemed to apply.

15 REFERENCE TABLE, DRAWINGS AND PLATES

The following table, drawings and photographic plates are attached and form part of this specification.

TABLE A:	Pricing Schedule
Figure 1:	Rock Bolt Detail
Figure 2:	Typical Detail: Rock Bolt Supporting Reinforced Shotcrete
Figure 3:	Shotcrete Reinforcing and Strip Drain Detail
Figure 4:	Typical Detail: Underpin Support to Undercut at Base of Cliff Face

16 GENERAL COMMENTS

This Specification has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. Copyright in this Specification is the property of JK Geotechnics. We have used a degree of care, skill and diligence normally exercised by consulting engineers in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this Specification. The Specification shall not be reproduced except in full.



TABLE A
PRICING SCHEDULE

	PRELIMINARIES			
ITEM	PROVISIONAL QUANTITY	UNIT	RATE	TOTAL
Establishment/De-establishment (includes all plant, equipment & personnel)	1	LS		
Provision of Environmental Controls	1	LS		
Provision of Pedestrian/Traffic Control	1	LS		
Provision of Work As Executed Details	1	LS		
Sub Total				

Proposed Stabilisation Measures (No. 1 Craig Street)	Expected Volume	Number of Rock Bolts	Expected Length of Rock Bolts	UNIT	RATE	TOTAL
Remove loose rock and damaged shotcrete from the cliff face.	1m ³	-	-	m ³		
Provide reinforced shotcrete to cover approximately 5m long section of cliff face and damaged shotcrete. Supported by two rows of rock bolts installed at about 1m lateral and 1.5m vertical spacing; and positioned to have staggered centres.	2.5m ³ (based on 0.2m thick shotcrete)	3 3	4m (upper row) 3m (lower row)	ea ea m ³		
Provide continuous underpins to support cliff face undercuts; approximately 20m long, max. 1m high and 1.3m depth.	25m ³			m ³		
Infill open joints in the cliff face crest with concrete.	0.5m ³			m ³		
Contingency for additional rock bolts to support potentially unstable blocks.		6	5m	ea		
Sub Total						



Pricing Schedule Summary		
General items	Sub Total	
Proposed Stabilisation Measures	Sub Total	
Contingency for additional 25mm diameter rock bolts	Sub Total	
	10% GST	
	FINAL TOTAL	

NOTES

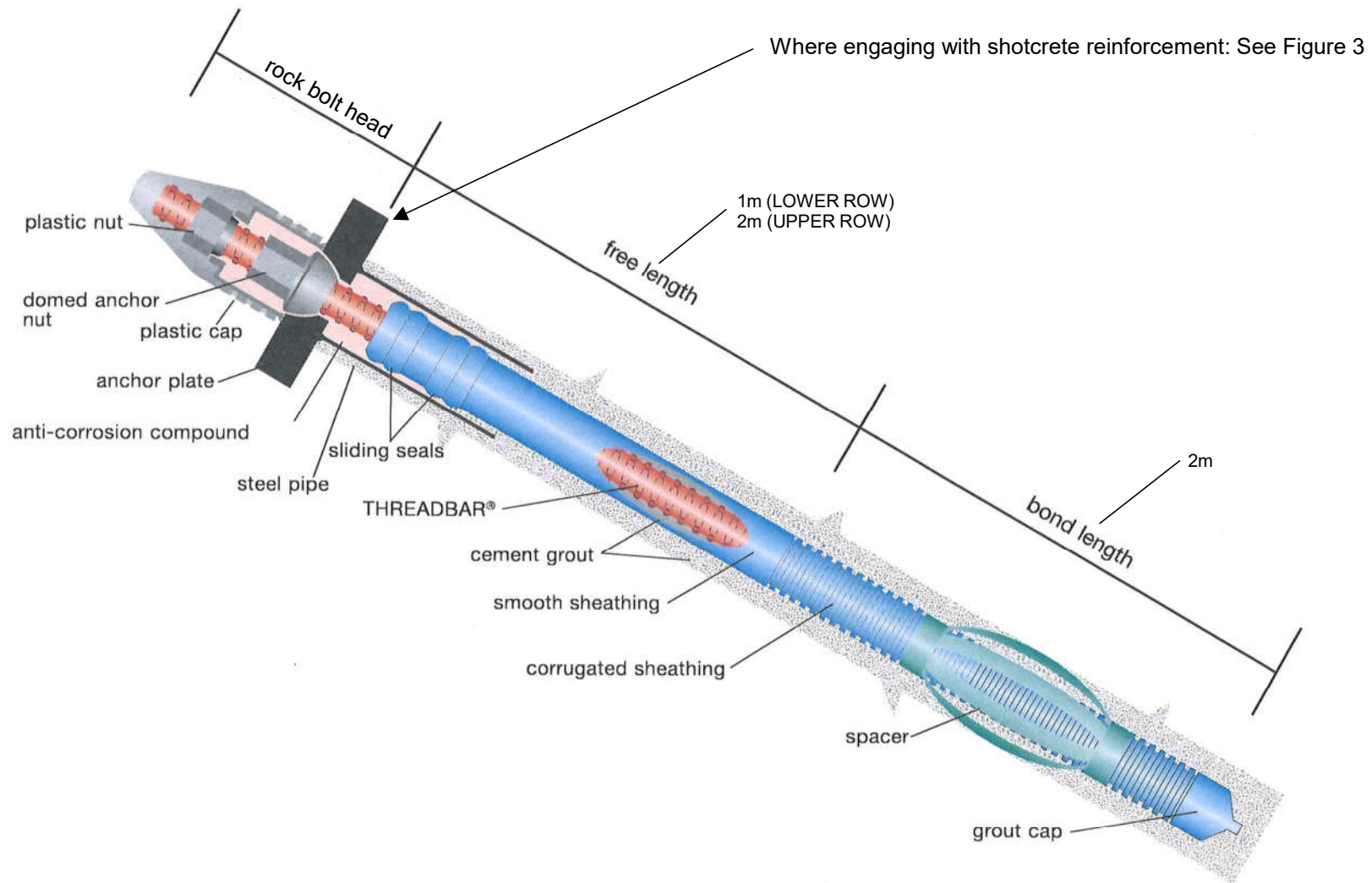
Rate for removing debris, tree stumps/root balls, blocks etc from rock face based on material placed and densely packed in skip bins before removal from site.

Rate for additional works in Council reserve to be based on being completed whilst on site for The Works at

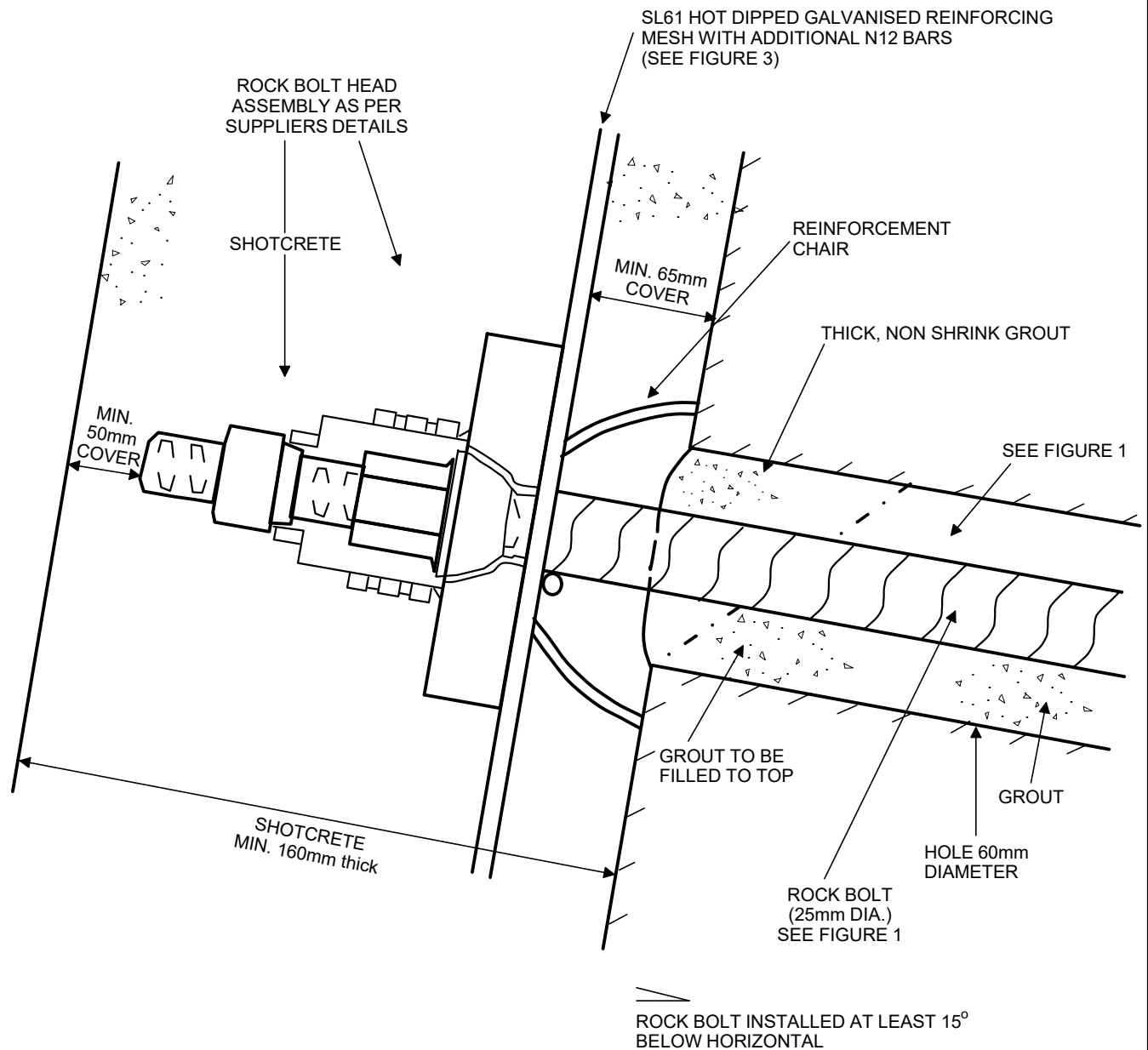
Work As Executed details to include photographs of rock bolts and strip drains prior to placement of shotcrete to clearly indicate location and number of rock bolts. Photographs to be labelled accordingly.

All item rates deemed to include for all requirements of the specification.

Unit rates will be used as basis for costing variations where not covered by the contingency quantities outlined in the table.



ROCK BOLT DETAIL
THREADBAR® with Double Corrosion Protection (DCP)
 (Details courtesy of DSI)



TYPICAL ROCK BOLT HEAD DETAIL: ROCK BOLT SUPPORTING REINFORCED SHOTCRETE

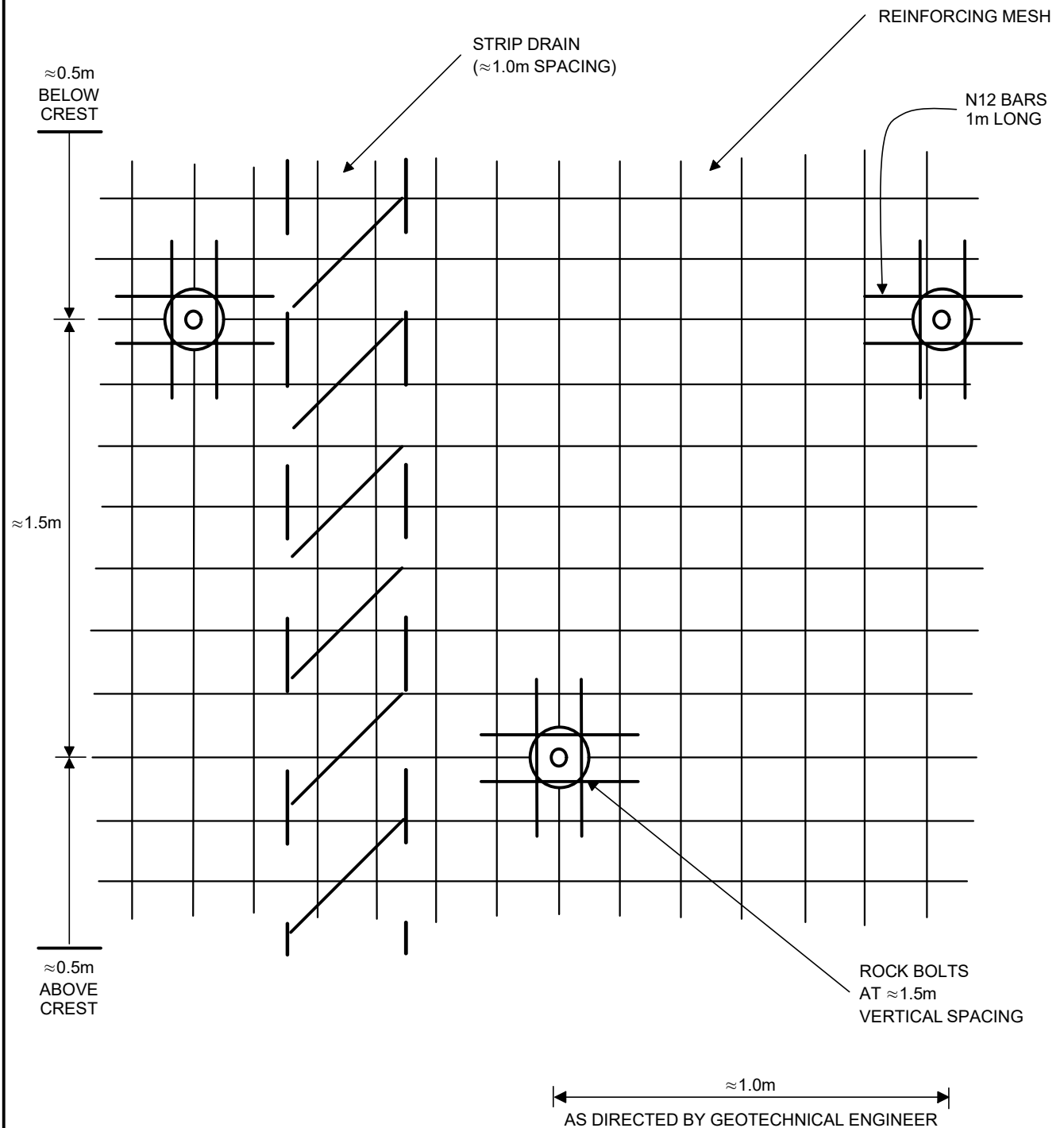
NOT TO SCALE

JKGeotechnics

Report No. 31735R spec

Figure No. 2





SHOTCRETE REINFORCING AND STRIP DRAIN DETAIL

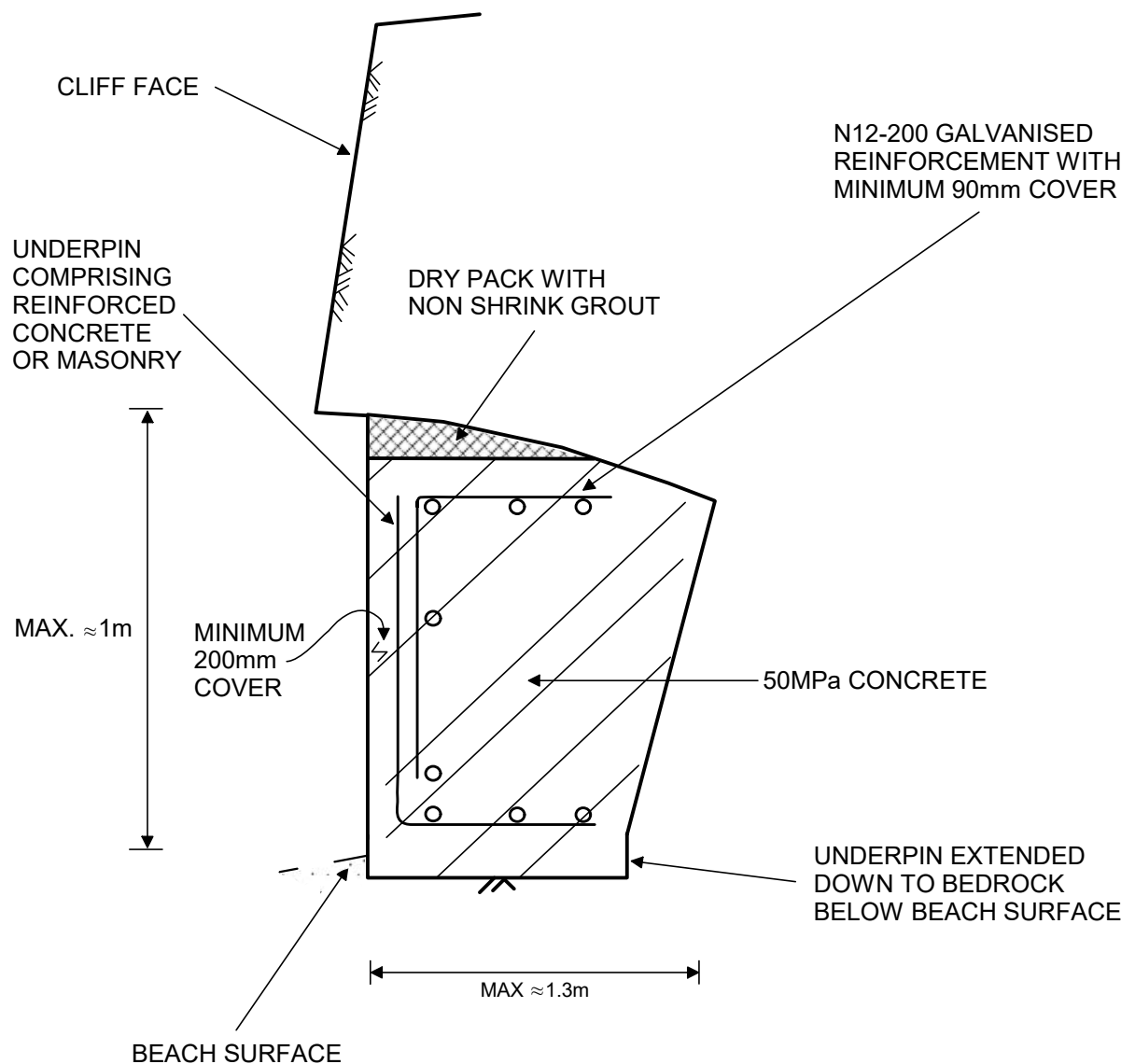
NOT TO SCALE

JKGeotechnics

Report No. 31735R spec

Figure No. 3





NOTES:

- 1) MAXIMUM WIDTH OF UNDERPIN 1.5m
- 2) DO NOT EXTEND HORIZONTAL REINFORCEMENT THROUGH VERTICAL JOINTS AND STOP 90mm FROM EDGE.

TYPICAL DETAIL:
UNDERPIN SUPPORT TO UNDERCUT
AT BASE OF CLIFF FACE

NOT TO SCALE

JKGeotechnics

Report No. 31735R

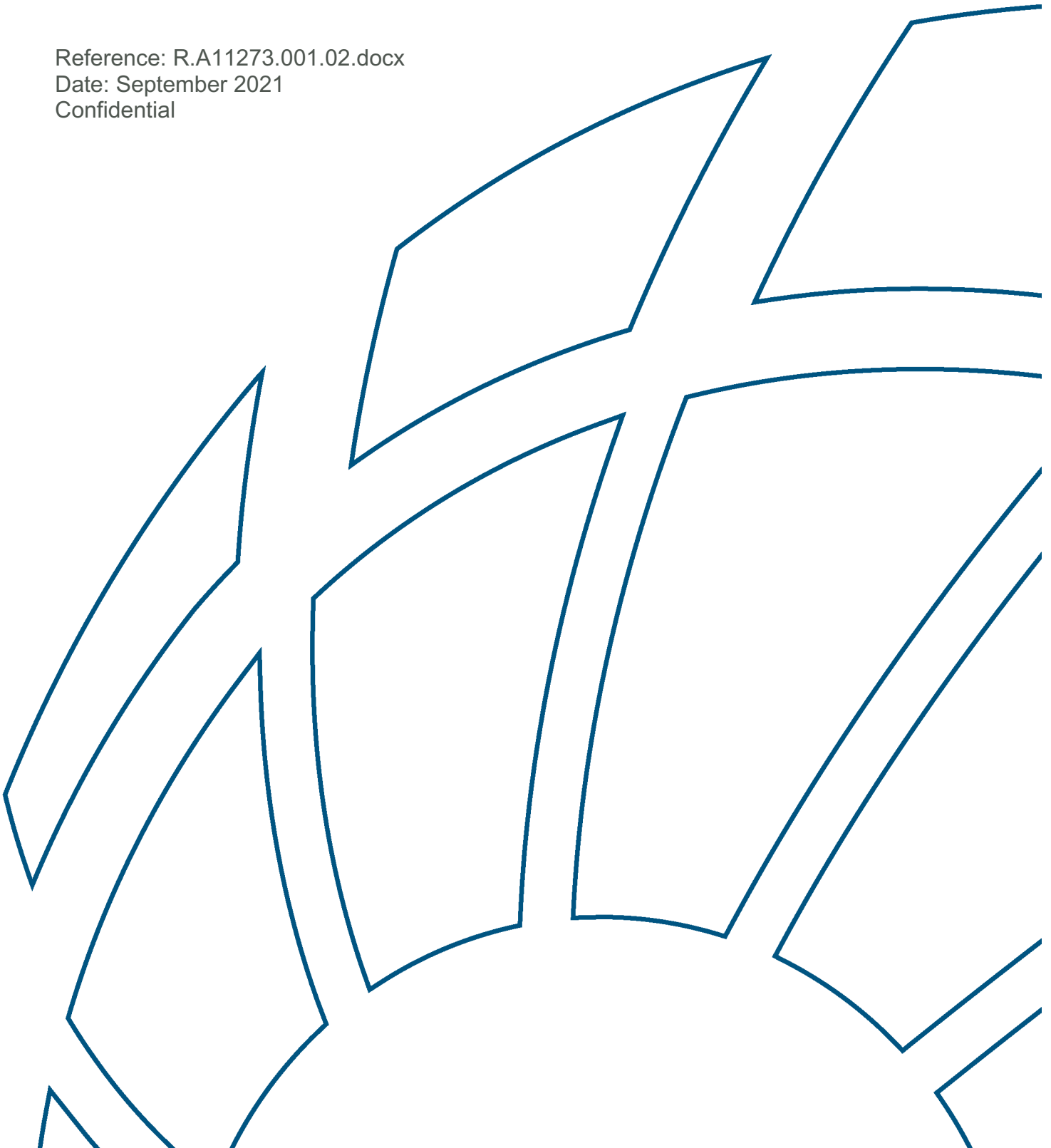
Figure No. 4





Cliff Stabilisation Works - 1 Craig Street, Thirroul, NSW: Development Applications and Statement of Environmental Effects

Reference: R.A11273.001.02.docx
Date: September 2021
Confidential



Document Control Sheet

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	Project Manager:	Jeremy Visser
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	Client:	D. and N. Burroughs
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	Client Reference:	
Synopsis: Development Application and Statement of Environmental Effects (SoEE) for cliff stabilisation works at 1 Craig Street, Thirroul, NSW.		

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BMT requests the ability to discuss and negotiate in good faith the terms and conditions of the proposed terms of engagement, to facilitate successful project outcomes, to adequately protect both parties and to accord with normal contracting practice for engagements of this type.

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Introduction

1 Introduction

This Statement of Environmental Effects (SoEE) has been prepared on behalf of the owners of 1 Craig Street, Thirroul in support of proposed cliff stabilisation works along the seaward frontage of the property. This SoEE presents all relevant planning and environmental assessments for the works, including proposed management arrangements. It forms part of an approval application package alongside site drawings and geotechnical specifications for the works.

Note that the works proposed for the property are the same as those recently undertaken by Wollongong City Council (WCC) on DH Lawrence Reserve with adjoins the property.

This application is being made under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and will be assessed by the Southern Regional Planning Panel as the consent authority (see Section 3.1.2). The works will also be integrated development requiring assessment by the Department of Primary Industries – Fisheries (DPI Fisheries) (see Section 3.1.5).

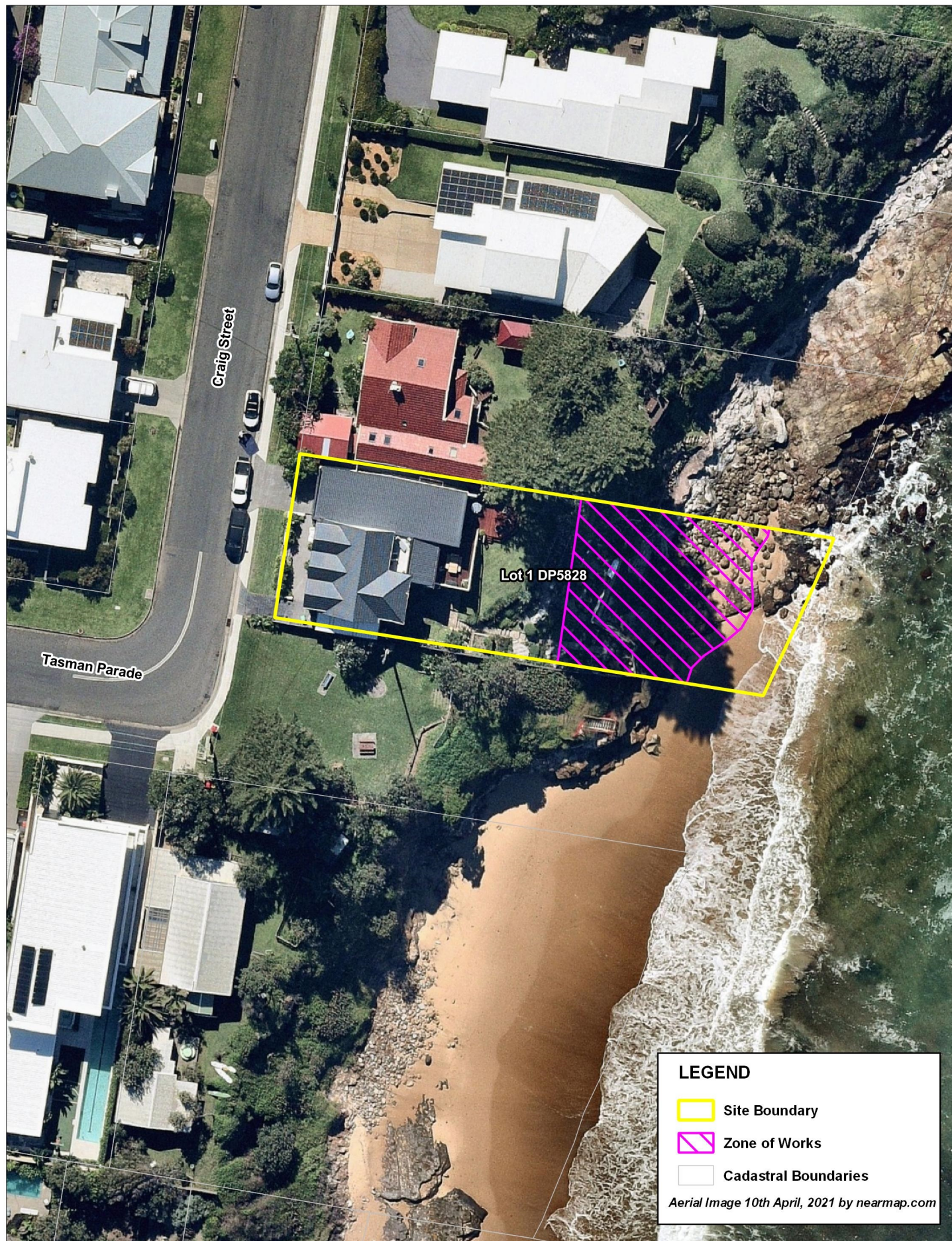
1.1 Site Description

The project site (the property) is located a 1 Craig Street, Thirroul (Lot 1/2, DP 5828). The address is a private residence, adjoining council land (DH Lawrence Reserve) to the south, and neighbouring private residence (3 Craig Street) to the north. The extent of works will occur over an approximately 20 m length of foreshore cliff face on the seaward side of the property (Figure 1-1).

Key state and local planning controls relevant to the works and this property are shown in Table 1-1.

Table 1-1 Planning Controls

Panning Control	Type
Local Environment Plan (LEP)	Wollongong Local Environmental Plan 2009
Development Control Plan	Wollongong Development Control Plan 2009
Land Zoning	E4 Environmental Living
Acid Sulfate Soils	Class 5
State Environment Planning Policies	Coastal Management - Coastal Environment Area - Coastal Use Area



Title:
Site Locality and Zone of Works

Figure:

1-1

Rev:

A

BMT endeavours to ensure that the information provided in this map is correct at the time of publication. BMT does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.



0 12 24 m



Introduction

1.1.1 Coastal Processes

The property is located on a rocky bluff adjacent to Thirroul Beach, which is a high energy coastal zone (BMT WBM, 2017a). This portion of coastline is largely developed for residential and community purposes. Interactions between natural coastal processes and development on the shoreline are the principal source of hazard within the coastal zone (BMT WBM, 2017a).

This coastal zone is dominated by waves from the south-southeast however north swell does occur during summer months (BMT WBM, 2017a). Higher energy waves are typically influenced by storm systems in the Southern and Tasman oceans during winter, tropical cyclones from Queensland in the summer and east coast lows cyclones during autumn which are typically the most damaging due to how close these systems form to the coastline (BMT WBM, 2017a). As the coastline is highly exposed to these systems, large erosion events are caused by wave action. Both long- and cross-shore sediment transport is experienced in this area of the Wollongong coastline, largely driven by the dominant south easterly wave action (BMT WBM, 2017a). Offshore sediment transport generated under storm wave conditions is typically retained within the embayment and will be returned to beach face under regular swell waves (BMT WBM, 2017a).

The Wollongong Coastal Zone Management Plan (CZMP) (BMT WBM, 2017a and 2017b) indicates that the stretch of Thirroul Beach where the property is located has a 'High' erosion risk as of 2010, and 'Extreme' erosion risk as of 2050/2100. The CZMP indicated that a seawall would be necessary to mitigate coastal impacts at this location due to these risks however the implementation of development controls is recommended in the meantime (BMT WBM, 2017b).

2 Project Description

2.1 Context for Development

The cliff stabilisation works are required at the property to reduce ongoing cliff recession. Cliff recession at the property is a public safety issue, as the public uses the site for access along the top of cliff, with the property not fenced off to the seaward property boundary and poses a risk of damage to the property. If works were not to proceed and cliff line recession continued to occur, several negative impacts would occur as a result including:

- Limiting the capacity to use and access the foreshore by both residents and visitors of the foreshore
- Possible risk of severe injury to members of the public and other users of the property
- Possible risk of damage to property and loss of useable land.

Cliff-line recession at the property has been evident from January 2010 to March 2020. Analysis of cliff recession was undertaken by Horton Coastal Engineering (2020), depicting cliff-line recession in a series of aerial photographs is shown in Appendix A. The results of the analysis indicate the following areas of cliff-line recession at the property:

- **Location A:** A length of ~7 m over the southern portion of the property and another 5 m to the south, with recession of up to ~5 m.
- **Location B:** Recession of up to ~3 m¹.
- **Location C:** Recession of ~3 m (on average) over a length of ~40 m to the north of the property.

Results of the analysis also concluded that there was significant recession of the cliff-line due to detachment of blocks from the cliff from March 2020 to June 2020 at two locations south of the property on Council land, including:

- **Location D:** Recession of up to ~1 m.
- **Location E:** Recession of up to ~2 m.

The cliff recession mechanism at and adjacent to the subject property appears to be as follows:

- Preferential erosion of a thinly bedded siltstone band located ~1.5 m below the top of the sandstone cliff, when sand levels are sufficiently low to expose this band.
- Preferential erosion leads to undercutting (JK Geotechnics, 2020) (Figure 2-1)
- Undercutting then leads to detachment of sandstone blocks above the undercuts, along sub-vertical joint planes. See Figure 2-2 for example of sub vertical joints at subject property).

This mechanism has led to detachment of blocks both at the subject property and at the adjacent Council land at DH Lawrence Reserve to the east of Tasman Parade. The block detachment on the Council land has led to the closure of the stairway at this location by WCC.

¹ The recession over the northern portion of Location B is uncertain due to wave action at the time of the 18 March 2020 photograph.

Near identical works including rock bolting and rockface stabilisation have been undertaken by WCC to repair this section of cliff line within the DH Lawrence Reserve. These works were completed following assessment via a Review of Environmental Factors (REF) developed by WCC².



Figure 2-1 Examples of undercut areas (yellow arrows) at subject property (2 January 2018)

Source: Horton Coastal Engineering (2020)

² These works were assessable under Part 5 of the Environmental Planning and Assessment Act 1979 as development permitted without consent.



Figure 2-2 Examples of sub-vertical joints (extending between arrows) at subject property (26 August 2020)

Source: Horton Coastal Engineering, 2020

2.1.1 Description of Proposed Works

As per the geotechnical specification prepared by JK Geotechnics (2020), the following works are proposed:

- Rock bolting to secure individual sandstone blocks in undercut areas at the base of the outcrop face (see Figure 2-1 for existing undercutting).
- Infilling of open joints along the outcrop crest area with concrete or grout and rock bolts to prevent wave overtopping, rainfall, surface run-off and stormwater discharges from entering the joint planes and possibly imparting additional destabilising hydrostatic pressures on individual blocks (see existing exposed joints as per Figure 2-2).
- Repairing the existing steeply sloping concrete face with shotcrete and rock bolts along the extent of the existing cliff face of the property

Typical detail plans for the following works components are provided in Appendix B:

- Rock bolt
- Rock bolt supporting reinforced shotcrete
- Shotcrete reinforcing and strip drain detail.

2.1.2 Sequencing of Works

The sequence of works will be as follows:

- (1) Implementation of pedestrian and traffic control measures as required.
- (2) A site inception meeting will be held at the commencement of the works attended by the stabilisation contractor and the Geotechnical Consultant. The purpose of the inception meeting will be to outline and confirm the scope of works and determine the stabilisation contractors work methods.
- (3) Clear loose debris, damaged shotcrete and fractured rock from the cliff face.
- (4) Provide reinforced shotcrete supported by rock bolts, cliff face undercuts, rock bolts to support individual blocks (where required) and infill open joint planes in the cliff face crest.
- (5) Stabilisation measures must be installed in accordance with the Specification. Periodic site inspections must be undertaken by the Geotechnical Consultant during the course of the works. Final shotcrete faces must not be applied until approval is given by the Geotechnical Consultant.
- (6) The final works will be inspected by the Geotechnical Consultant and stabilisation contractor.
- (7) Decommissioning of plant and equipment and removal of pedestrian/traffic control measures post sign off by the Geotechnical Consultant. All vegetation and material removed from the site must be taken off site to an authorised landfill.

Works will be completed from the beach and rock platform with regard for tidal levels (i.e. works to occur at low tide).

Equipment used will likely include handheld drills, shotcrete delivery system, and other hand tools rather than large machinery.

Works are expected to take approximately 2-3 weeks, with works occurring between 7.00am and 6.00pm Monday to Friday, 8.00am and 1.00pm Saturday.

3 Planning And Approvals

The works are assessable under Part 4 of the EP&A Act as development requiring consent. As identified in pre-lodgement with WCC, the works are considered coastal protection works based on definitions provided within the *Coastal Management Act 2016* (Coastal Act).

3.1.1 Coastal Management Act 2016

The works are located within the coastal management area and are therefore subject to the Coastal Act, and subsequent State Environmental Planning Policy (Coastal Management) 2018 (Coastal SEPP). The works are consistent with the definition of coastal protection works as defined in the Coastal Act as:

Activities or works to reduce the impact of coastal hazards on land adjacent to tidal waters, including (but not limited to) seawalls, revetments and groynes.

Coastal protection works are permitted with development consent on coastal land as per Part 3 Clause 19 of the Coastal Management SEPP which states:

Development for the purpose of coastal protection works may be carried out on land to which this Policy applies by a person other than a public authority only with development consent.

As works are located in both the coastal environment and coastal use area as defined under the Coastal SEPP, an assessment has been made below in Table 3-1. This also includes assessment against Part 5 Clause 27 of the Coastal Act relating to safety and maintenance of coastal protection works.

Works are generally consistent with the outcomes of the both the coastal environment and coastal use zones as works are proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, mitigating risk to both people and property. The works involve minor geotechnical stabilisation methodologies which are unlikely to cause impact to the surrounding environment including coastal processes and amenity values, particularly with the use of mitigation measures proposed. The works area is not recognised as an environmentally or culturally significant area. As per Part 5 Clause 27, the property owners will make a commitment to maintain the works within the intended design life.

3.1.2 Coastal Zone Management Plan and Regional Development SEPP

The certified action for the areas as identified the CZMP implementation plan (BMT WBM, 2017b) is as follows:

Undertake detailed design, site investigations, approvals and works associated with the construction of new seawall sections connecting along the headland from Thirroul to McCauleys Beach. The seawall design shall provide for protection from wave overtopping. Design and approvals shall also describe ongoing maintenance arrangements and management of offsite impacts from the structure'

While the current proposed works are not a seawall structure and therefore not a certified action under the CZMP, they are consistent with the intent of this provision and represent a lower impact and 'no regrets' alternative to constructing a seawall.

The works are also generally consistent with the current coastal hazards of the property and are proposed to halt cliff line recession occurring on site. Works are not expected to impact coastal processes including sand supply within the coastal zone. Works will not protrude past the current natural cliff face (i.e. works will be restricted to repair current cliff face). The works are also of a small footprint and are in line with best practice approach consistent with actions taken at the neighbouring council reserve by WCC.

Under the State Environmental Planning Policy (State and Regional Development) 2011 (Regional Development SEPP) Schedule 7 Item 8A, coastal protection works not covered by a certified Coastal Management Program (which includes a certified CZMP where a Coastal Management Program is not in place) are considered regional development and require assessment by a regional planning panel.

As the works are not a seawall (as per the CZMP), the consent authority therefore will be the Southern Regional Planning Panel.

3.1.3 Wollongong Local Environmental Plan

The relevant Local Environmental Plan (LEP) for the works is the Wollongong LEP 2009. The only relevant provisions of the LEP for the works are Part 7 Local Provisions. Under these, Part 7.7 Foreshore Building Line applies to the work. Assessment against these provisions shows development is permissible with consent (Table 3-1).

No other elements of Part 7 apply (note that Part 7.5 Acid Sulfate Soils is not applicable as the works do not include any excavations and/or change to the water table).

No other parts of the LEP are relevant to the works.

3.1.4 Wollongong Development Control Plan

The Wollongong Development Control Plan 2009 (DCP) provides additional detail for applications and development.

The most relevant chapter of the DCP is Chapter E12: Geotechnical Assessment of Slope Instability. This chapter sets out the specific requirements for geotechnical investigations for lands within the local government area known or suspected to be subject to slope instability and geotechnical hazards.

The study site is considered to be an area subject to slope instability based on assessments within the CZMP (BMT WBM, 2017a). Recognising this, the works to be undertaken are intended to remedy this geotechnical risk and have been designed based on the geotechnical advice of JK Geotechnics – see geotechnical specifications provided with this application.

However, as the geotechnical risk relates to coastal processes rather than geological or drainage concerns, no geotechnical hazard impact assessment has been undertaken. This reflects the intent of the DCP which primarily addresses ‘pure’ geotechnical risks rather than mixed coastal-geotechnical risks. This was also identified in the CZMP (BMT WBM, 2017b), noting that an action of the implementation strategy was to update the DCP to provide for specific assessment methodology for coastal-based impacts to land stability.

Planning And Approvals

Table 3-1 Coastal Management Assessment – Coastal Environment and Coastal Use Area SEPP and Coastal Act

Matters for Consideration under the State Environmental Planning Policy (Coastal Management) 2018	Response
Is the proposal within the Coastal Environment Area? SEPP (Coastal Management) 2018, Division 3, cl 13. (1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following	Yes
(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,	No impact - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. No impacts are expected to occur given the mitigation measures proposed.
(b) coastal environmental values and natural coastal processes,	No impact - The works are proposed to halt cliff line recession occurring on site. Works are not expected to impact coastal processes including sand supply within the coastal zone. Works will not protrude past the current natural cliff face (i.e. works will be restricted to repair current cliff face). The proposed works align with cliff line recession works undertaken by Council within the DH Lawrence Reserve directly adjacent to the property. No impacts are expected to occur given the mitigation measures proposed.
(c) the water quality of the marine estate (within the meaning of the <i>Marine Estate Management Act 2014</i>), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,	No impact – No impacts are expected to occur given the mitigation measures proposed.
(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,	No impact - No flora or fauna will be impacted by the proposed works.
(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,	No impact - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. During works access will be temporarily restricted for safety. Post works there will be no further restrictions to access.
(f) Aboriginal cultural heritage, practices and places,	No impact - There are no known heritage sites at or adjacent the proposed work site, however mitigation for chance finds has been included.
(g) the use of the surf zone.	No impact – works will not be undertaken within the surf zone.
Is the proposal within the Coastal Use Area? SEPP (Coastal Management) 2018, Division 4, cl 14. Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:	Yes

Planning And Approvals

Matters for Consideration under the State Environmental Planning Policy (Coastal Management) 2018	Response
(a) has considered whether the proposed development is likely to cause an adverse impact on the following: (i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,	No impact - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. During works access will be temporarily restricted for safety. Post works there will be no further restrictions to access.
(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,	No impact – there will be no visual impact from the works.
(iii) the visual amenity and scenic qualities of the coast, including coastal headlands,	No impact – there will be no visual impact from the works.
(iv) Aboriginal cultural heritage, practices and places,	No impact - There are no known heritage sites at or adjacent the proposed work site, however mitigation for chance finds has been included
(v) cultural and built environment heritage, and	No impact - There are no known heritage sites at or adjacent the proposed work site, however mitigation for chance finds has been included
(b) is satisfied that: (i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or	No impact - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. No impacts are expected to occur given the mitigation measures proposed.
(ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or	N/A
(iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and	N/A
(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.	No impact – there will be no visual impact from the works.
Coastal Act – Part 5 Clause 27	
(1) Development consent must not be granted under the Environmental Planning and Assessment Act 1979 to development for the purpose of coastal protection works, unless the consent authority is satisfied that—	
(a) the works will not, over the life of the works— i. unreasonably limit or be likely to unreasonably limit public access to or the use of a beach or headland, or ii. pose or be likely to pose a threat to public safety, and	No impact - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. During works access will be temporarily restricted for safety. Post works there will be no further restrictions to access.
(b) satisfactory arrangements have been made (by conditions imposed on the consent) for the following for the life of the works—	Complies - The property owners will make a commitment to maintain the works within the intended design life.

Planning And Approvals

Matters for Consideration under the State Environmental Planning Policy (Coastal Management) 2018	Response
i. the restoration of a beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by the presence of the works, ii. the maintenance of the works.	
(2) The arrangements referred to in subsection (1) (b) are to secure adequate funding for the carrying out of any such restoration and maintenance, including by either or both of the following— (a) by legally binding obligations (including by way of financial assurance or bond) of all or any of the following— i. the owner or owners from time to time of the land protected by the works, ii. if the coastal protection works are constructed by or on behalf of landowners or by landowners jointly with a council or public authority—the council or public authority,	Complies - Development consent will act as the binding arrangement for the works as this will set the requirements for the landholder to build and maintain the works. Therefore, there is no requirement for further financial assurance for works of this nature.
(b) by payment to the relevant council of an annual charge for coastal protection services (within the meaning of the Local Government Act 1993).	N/A – works are undertaken solely by the landowner.
(3) The funding obligations referred to in subsection (2) (a) are to include the percentage share of the total funding of each landowner, council or public authority concerned.	N/A - There is no requirement for further financial assurance for works of this nature.

Planning And Approvals

Table 3-2 Wollongong LEP Assessment

Matters for Consideration under the Wollongong LEP	Response
(1) The objective of this clause is to ensure that development in the foreshore area will not impact on natural foreshore processes or affect the significance and amenity of the area.	No impact - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. No impacts are expected to occur given the mitigation measures proposed.
Development consent must not be granted for development on land in the foreshore area except for the following purposes:	
(a) the extension, alteration or rebuilding of an existing building wholly or partly in the foreshore area,	N/A – the works are not building works.
(b) the erection of a building in the foreshore area, if the levels, depth or other exceptional features of the site make it appropriate to do so,	N/A – the works are not building works.
(c) development for the purposes of boat sheds, sea retaining walls, wharves, slipways, jetties, waterway access stairs, swimming pools, fences, cycleways, walking trails, picnic facilities or other recreation facilities (outdoor).	Complies – the works are defined as coastal protection works and are intended to provide a similar function to the defined ‘sea retaining wall’.
Development consent must not be granted under subclause (2) unless the consent authority is satisfied that—	
(b) the development will contribute to achieving the objectives for the zone in which the land is located, and	Complies -The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. No impacts are expected to occur given the mitigation measures proposed.
(c) the appearance of any proposed structure, from both the waterway and adjacent foreshore areas, will be compatible with the surrounding area, and	Complies - there will be no visual impact from the works.
(d) the development will not cause environmental harm such as— (i) pollution or siltation of the waterway, or (ii) an adverse effect on surrounding uses, marine habitat, wetland areas, flora or fauna habitats, or (iii) an adverse effect on drainage patterns, and	Complies - No impacts are expected to occur given the mitigation measures proposed. No flora or fauna will be impacted by the proposed works.
(e) the development will not cause congestion of, or generate conflicts between, people using open space areas or the waterway, and	Complies - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. During works access will be temporarily restricted for safety. Post works there will be no further restrictions to access.
(f) opportunities to provide continuous public access along the foreshore and to the waterway will not be compromised, and	Complies - The project is proposed to be undertaken to improve stability of the cliff line ensuring no further recession occurs, to mitigate risk to both people and property. During works access will be temporarily restricted for safety. Post works there will be no further restrictions to access.

Planning And Approvals

Matters for Consideration under the Wollongong LEP	Response
(g) any historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance of the land on which the development is to be carried out and of surrounding land will be maintained, and	Complies - There are no known heritage sites at or adjacent the proposed work site, however mitigation for chance finds has been included
(h) in the case of development for the alteration or rebuilding of an existing building wholly or partly in the foreshore area, the alteration or rebuilding will not have an adverse impact on the amenity or aesthetic appearance of the foreshore.	N/A – the works are not building works.

3.1.5 Integrated Development

The site is identified as being within a mapped area of Key Fish Habitat as such is considered integrated development and concurrence from the DPI Fisheries is required. However, works will not impact on fish habitat or adjacent values (i.e. water quality) with appropriate mitigation measures in place (Table 5-1).

Furthermore, the DPI Fisheries confirmed that application of this mapping overlay was not applicable to the adjacent stabilisation works undertaken within the DH Lawrence Reserve by WCC.

4 Environmental Impacts Identification

The following environmental impacts have been identified relevant to the works, property and planning context Table 4-1.

Table 4-1 Environment Impact Identification

Impacts/Risks	Identification	Mitigation
Acid Sulfate Soils (ASS)	The area is mapped as Class 5 acid sulfate soils however works will not include extraction or excavation of soil and therefore soil/ASS disturbance is unlikely	N/A
Foreshore Management and Water Quality	- Works are within the foreshore area and have a potential to cause impacts to water quality from the following: - Flushing of pilot holes drilled for the rock bolts. - Placement of shotcrete - Uncontrolled spills - Uncontrolled resale of waste/garbage	See Items 1, 3 and 6 of Table 5-1.
Traffic and Access	Although works are located on private property, the works site can be accessed by members of the public, causing potential impacts with/between site staff/works.	See Item 2 of Table 5-1.
Amenity	The works have the potential to cause noise, air and visual impacts to adjacent property owners and members of the public.	See Items 7, 8 and 9 of Table 5-1.
Heritage	There are no known heritage sites at or adjacent the proposed work site, however mitigation for chance finds has been included.	See Item 10 of Table 5-1.
Flora and Fauna	- No vegetation will be impacted as part of the works. - Threatened species listed under the NSW <i>Biodiversity Conservation Act 2016</i> and Commonwealth <i>Environmental Protection and Biodiversity Conservation (EPBC) Act 1999</i>, within a 2 km radius include: - green and golden bell frog (<i>Litoria aurea</i>) - grey-headed flying-fox (<i>Pteropus poliocephalus</i>) - regent honeyeater (<i>Anthochaera phrygia</i>) - However, given there is no suitable habitat for any of the listed fauna, and there is a small works footprint, it is unlikely fauna will be impacted as part of the works.	N/A
Coastal Process	- The works are proposed to halt cliff line recession occurring on site. Works are not expected to impact coastal processes including sand supply within the coastal zone. Works will not protrude past the current natural cliff face (i.e. works will be restricted to repair current cliff face). - The proposed works align with cliff line recession works undertaken by Council within the DH Lawrence Reserve directly adjacent to the property.	N/A

5 Mitigation Measures/Controls

5.1 Management Actions

Relevant mitigation measures/controls to be implemented by the contractor for the works are shown in Table 5-1.

NOTE: the mitigation measures proposed are intended to provide coverage as both the site management plan, and site waste management plan.

Table 5-1 Mitigation Measures/Controls

Item	Mitigation Measures
1.0 Foreshore Management	
1.1 Extent of works	The proposed works must be contained within defined works area. Works are not to spread out over the foreshore.
1.2 Work in waters	- Machinery is not to enter, or work from waterway. - Prior to use at the site, machinery is to be appropriately cleaned, degreased and serviced. Spill kits are to be available on site at all times during the works. - No sediment plumes are to be caused in the waterway outside the immediate works area. - At the end of each work period, ensure the site is clean so no materials will enter the marine environment during high tides.
1.3 Time of works for low flows	Works are to be undertaken only during low tide.
1.4 Avoiding harm to natural areas	- When working near beach or rock platform these areas need to be identified and appropriately delineated as "no Go" areas (with the aim of avoiding harm to these areas). - Material storage and stockpiling is not to be undertaken on beach, rock platform or adjacent to watercourse.
1.5 Clean up and site restoration	- On completion of the works the site is to be rehabilitated and stabilised including: - Surplus construction materials and temporary structures installed during the course of the works are to be removed.
1.6 Working on rock platform	- During the construction phase the following safeguards should be implemented. - Works to be carried out at low tide. - Vehicle and plant access to the foreshore, if necessary, will be along a nominated track only. - All vehicles and plant on the rock platform must have soft tyres. - All major and minor plant to be re-fuelled and preventative maintenance tasks to be carried out prior to their location onto the work site. - A spill kit is to be kept on site for duration of works for potential fuel/hydraulic spillages. - If absorbent materials are utilised they will be bagged and removed off-site to an appropriate waste disposal facility. - Beach sands and sediment generated from the works will be left on the rock platforms. The natural tidal movements will disperse the material over time. - If required, a floating silt curtain shall be provided that encompasses and encloses the work site.
1.7 Chemical storage	No storage of chemicals or fuel on site

Item	Mitigation Measures
1.8 Materials	Materials used will be resistant to corrosion and applicable to use in marine environments.
1.9 Shotcrete	- Shotcreting to be undertaken by suitably qualified personnel. - Define areas to be shotcreted and limit overspray of shotcrete outside of these areas. - Ensure an adequate shutoff procedure is established for shotcreting works in the event of uncontrolled releases. - Clean up any overspray immediately.
2.0 Traffic and Access	
- Appropriate traffic management will be implemented as required for example: - A traffic route for all site vehicles is to be nominated. - Temporary fencing installed to ensure no public access during works. - If access is required through the adjoining reserve, consent will be obtained from WCC's Property Section.	
3.0 Water Quality	
- At no time shall any material, soluble or non-soluble, be allowed to enter the waterway - A fully equipped spill kit is to be kept on site at all times and, if used, restock spill kit. - No storage of chemicals or fuel on site - Relevant Material Safety Data Sheets (MSDS) to be kept on site	
4.0 In-Situ Waste	
The desktop investigation has not identified any potential contamination however any chance find of potential contaminants or contamination include asbestos containing material; coal tar; oils; and other chemicals causing discolouration and/or emitting strong odours will be reported to Council.	
5.0 Waste	
- General waste (rubbish) is not to be allowed to lie or accumulate on the site. - Provide appropriate receptacles (bins) to store all general wastes generated from the works. The receptacles are to be emptied immediately at works.	
6.0 Air Quality	
- The machinery chosen is to have been well maintained and is to be operated in a proper and efficient manner to minimise fumes and energy consumption. - Dust emissions from drilling should be minimised as far as reasonably practicable (i.e. wet drilling to minimise dust).	
7.0 Visual Amenity	
During the work period, the work site and site compound should be maintained in a neat and tidy condition.	
8.0 Noise and Vibration	
- If there is to be any significant noise impacts, neighbouring residents are to be notified. - The machinery chosen is to have been well maintained and is to be operated in a proper and efficient manner to minimise noise. - Works are only to occur between Monday to Friday 7 am to 6 pm, Saturday 8 am to 1 pm. No work on Sundays or public holidays.	
9.0 Aboriginal Heritage	
If any previously undetected archaeological site, object or artefact is uncovered or unearthed during the course of any works or activities associated with the proposal, works should cease in the vicinity of that site, object or artefact. Council should be contacted immediately to define the management scenario of the chance find.	

5.2 Contractor Obligations

The following obligations must be met by the stabilisation contractor:

- The stabilisation contractor must supply all materials, plant and labour for treatment of the potential geotechnical hazards as indicated in this specification and on the drawings herein to the entire satisfaction of the Geotechnical Consultant.
- The works must be carefully planned and scheduled to avoid breaks for holidays during construction and should preferably be undertaken during dry weather.
- The stabilisation contractor must provide a Safe Work Method Statement (SWMS) and construction program before starting works. The SWMS and construction program will need to be approved by the Geotechnical Consultant.
- The stabilisation contractor must have a skilled and competent foreman on site continuously for all of the required works. The stabilisation contractor foreman must be available daily for joint site inspections and/or site meetings related to the works. If any major issues arise, then the project manager representing the stabilisation contractor must be available for any relevant meetings at short notice.
- The stabilisation contractor is required to have current public liability and contractors all risk insurance policy appropriate for the works. All other statutory insurance policies, including workers compensation cover, must be held by the stabilisation contractor.
- The stabilisation contractor must allow for determination of the location of any buried services affecting the proposed works. If any buried services do affect the work then the installation angle of rock bolts may need to be adjusted so as to avoid the buried services. The adjusted rock bolt installation angle must be agreed by the Geotechnical Consultant, Council and the owner of the utility, if appropriate.
- Every care must be taken during the work to protect any existing structures and services from damage.
- Clearance of loose debris, installation of rock bolts and reinforced shotcrete must be completed in a manner which will prevent uncontrolled down slope movement of any materials. The stabilisation contractor must maintain site safety for site personnel and members of the public.

It is understood that if the stabilisation contractor has a suitably qualified in-house geotechnical consultant, they can be used.

6 References

BMT WBM (2017), *Wollongong Coastal Zone Management Plan: Management Study*, Prepared for Wollongong City Council

BMT WBM (2017a), *Wollongong Coastal Zone Management Plan: Implementation Action Plan*, Prepared for Wollongong City Council

Horton Coastal Engineering, 2020, *Information on Proposed Cliff Stabilisation Works at 1 Craig Street Thirroul for Pre-Lodgement Meeting*, Doc Ref: IrJ0134-1 Craig St Thirroul PLM-v3.docx

JK Geotechnics, 2020, *Specification for Foreshore Cliff Stabilisation Measures at 1 Craig Street, Thirroul, NSW*, Doc ref: 31735R

Appendix A Aerial Photography and Cliffline Recession



Aerial photograph of 1 Craig Street Thirroul on 12 January 2010, with seaward edge of cliffline delineated in blue

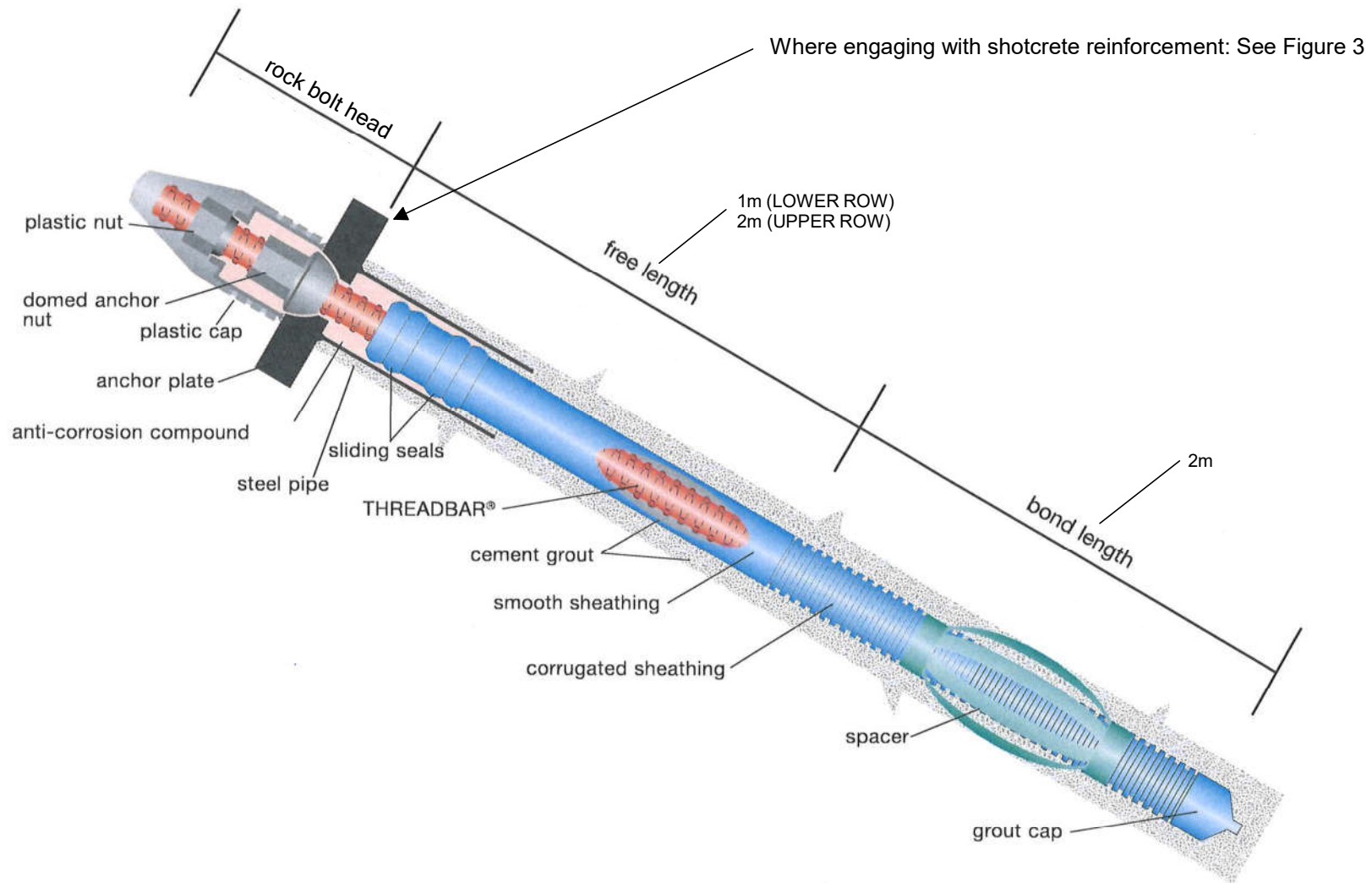


Aerial photograph of 1 Craig Street Thirroul on 18 March 2020, with seaward edge of cliffline delineated in green (12 January 2010 cliffline in blue)

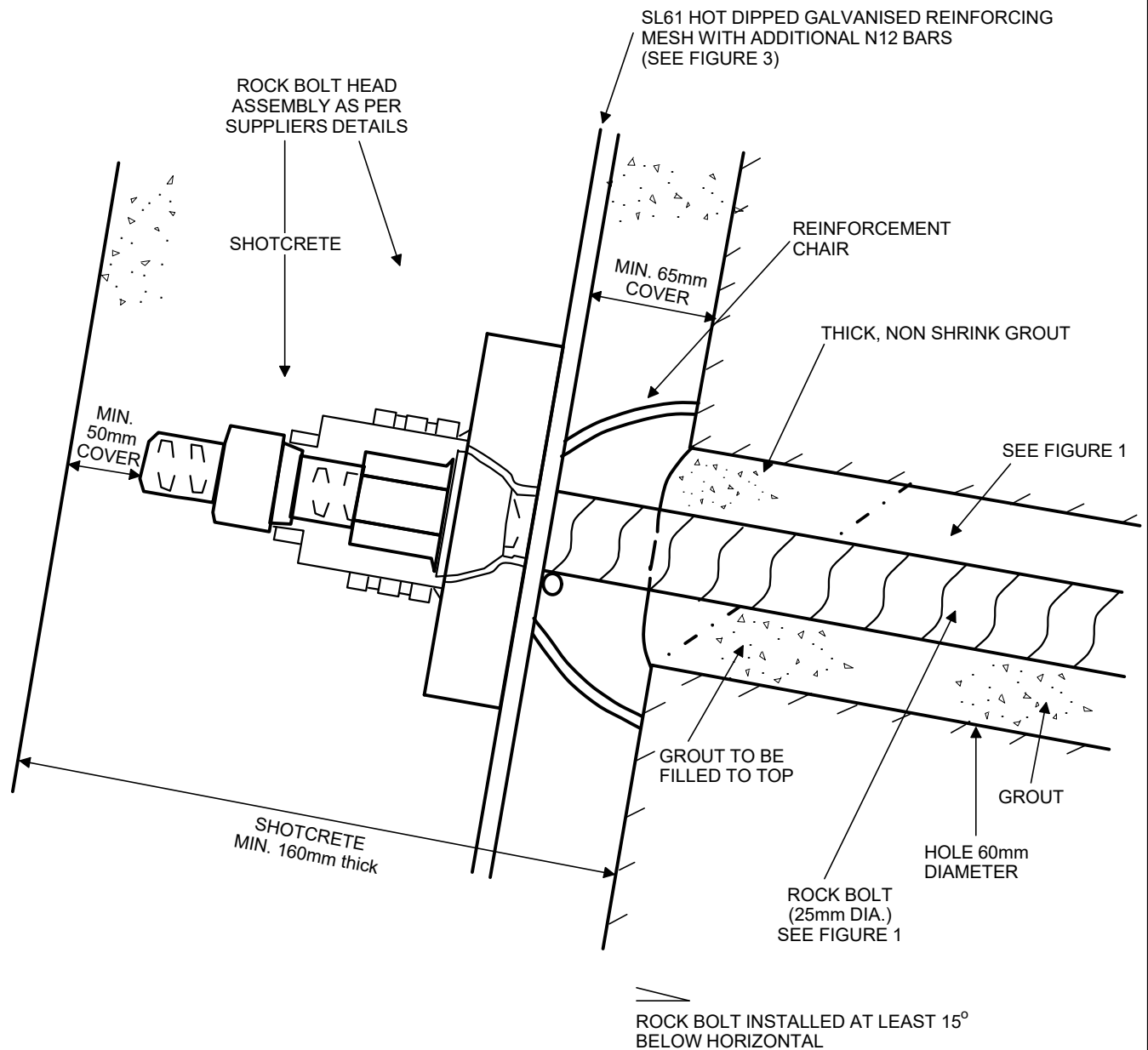


Aerial photograph of 1 Craig Street Thirroul on 26 June 2020, with seaward edge of cliffline delineated in yellow (12 January 2010 cliffline in blue, and 18 March 2020 cliffline in green)

Appendix B Typical Details



ROCK BOLT DETAIL
THREADBAR® with Double Corrosion Protection (DCP)
 (Details courtesy of DSI)



TYPICAL ROCK BOLT HEAD DETAIL: ROCK BOLT SUPPORTING REINFORCED SHOTCRETE

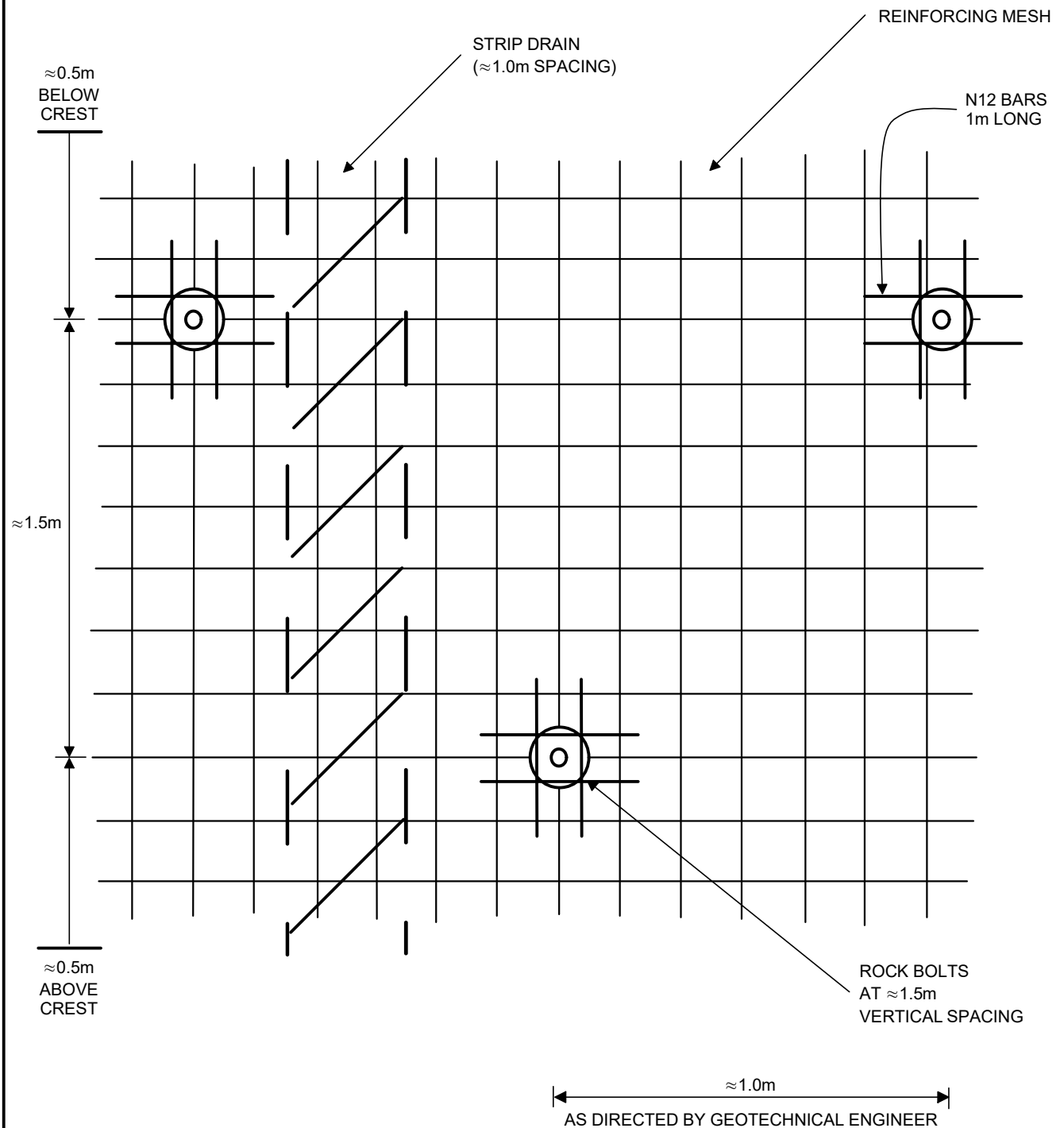
NOT TO SCALE

JKGeotechnics

Report No. 31735R spec

Figure No. 2





SHOTCRETE REINFORCING AND STRIP DRAIN DETAIL

NOT TO SCALE

JKGeotechnics

Report No. 31735R spec

Figure No. 3



Appendix C AHIMS Search

Aus Support

Date: 17 August 2021

Level 8 200 Creek Street
Brisbane Queensland 4000

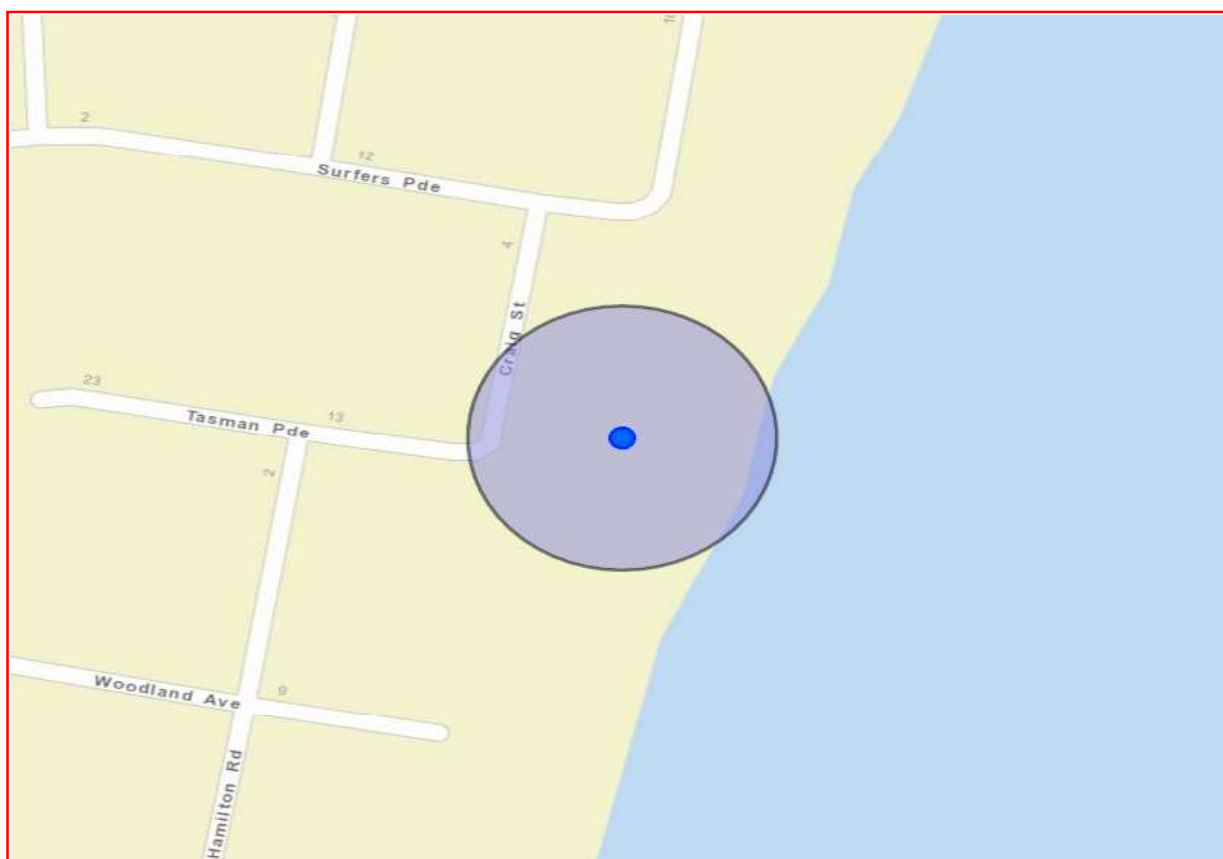
Attention: Aus Support

Email: aus-support@bmtglobal.com

Dear Sir or Madam:

AHIMS Web Service search for the following area at Address : 1 CRAIG STREET THIRROUL 2515 with a Buffer of 50 meters, conducted by Aus Support on 17 August 2021.

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. *

If your search shows Aboriginal sites or places what should you do?

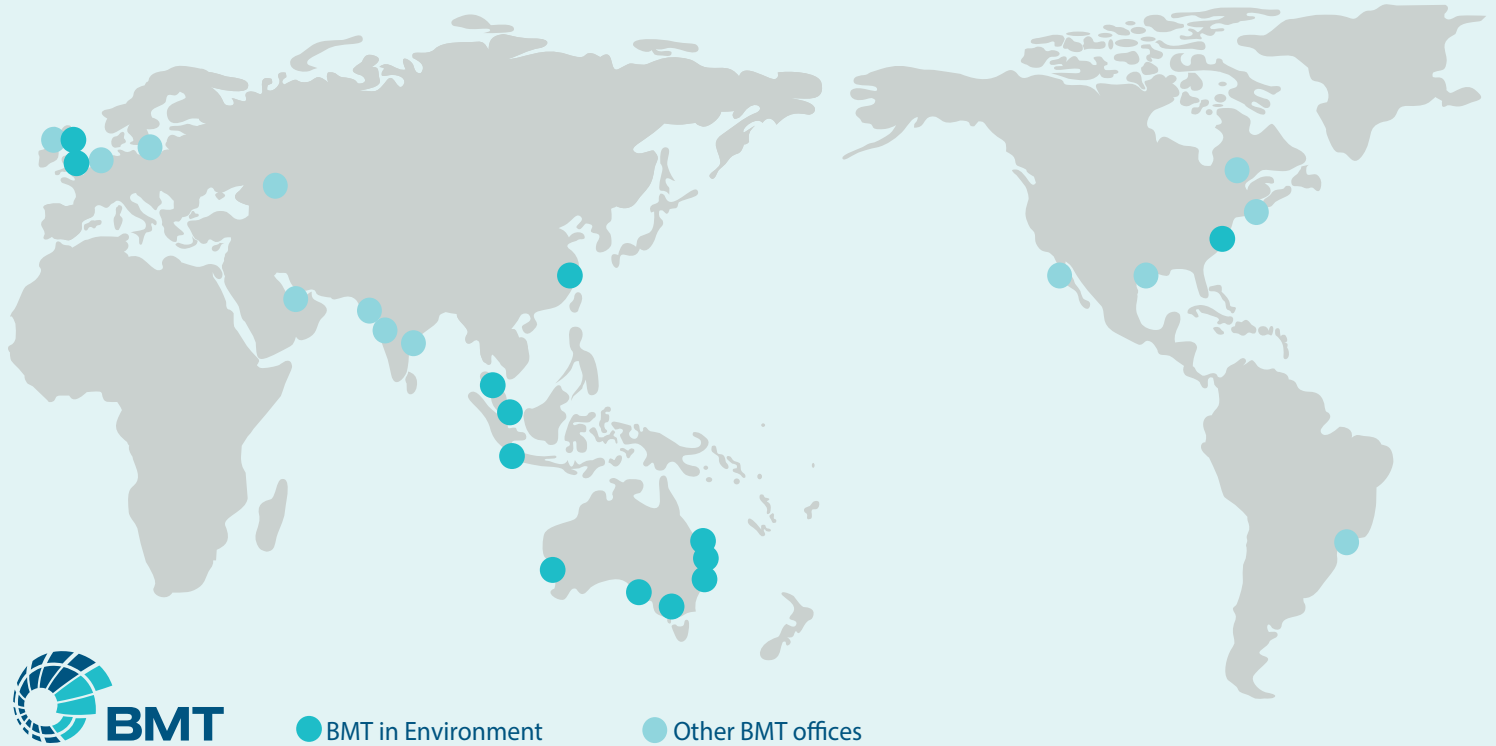
- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

BMT has a proven record in addressing today's engineering and environmental issues.

Our dedication to developing innovative approaches and solutions enhances our ability to meet our client's most challenging needs.



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The Hon. Shelley Hancock MP
Minister for Local Government

MD21/6803

Clr Gordon Bradbery
Lord Mayor
Wollongong City Council
Locked Bag 8821
WOLLONGONG DC NSW 2500

By email: cr.gbradbery@wollongong.nsw.gov.au

Dear Clr Bradbery

I am pleased to advise you that the NSW Government has extended the timeline by two years for councils to implement actions in their Coastal Zone Management Plans (CZMPs) while they continue to prepare their Coastal Management Programs (CMPs).

The *Coastal Management Amendment Act 2021* commenced on 1 November 2021, to give coastal councils until 31 December 2023 to implement their CZMPs.

The extension gives councils the continued opportunity to apply for funding under the Coastal and Estuary Grants Program to implement their CZMPs and carry out emergency works during major coastal erosion events in accordance with their Coastal Erosion Emergency Action Sub Plans.

The extension also provides councils additional time to transition to the new framework under the *Coastal Management Act 2016* and prepare their CMPs.

CMPs provide a framework for councils, government agencies and local communities to work together to set a long-term strategy to manage coastal and estuary areas.

A major benefit of transitioning to a CMP is that councils can apply for 2:1 grant funding under the Coastal and Estuary Grants Program to prepare their CMPs and implement actions, rather than the 1:1 funding available for CZMPs.

I encourage councils to take this opportunity to progress the preparation of CMPs as soon as possible to help ensure our coast is managed for the social, cultural and economic well-being of the people of NSW.

Please also find enclosed a copy of the Future Directions Statement for the NSW Coastal and Estuary Management Program, which outlines the Government's commitment to continuing to support local government to manage the coast so that we can address priority issues and leave our coastal environment in a better state for future generations.

Yours sincerely

The Hon. Shelley Hancock MP
Minister for Local Government

Enclosure

CONDITIONS FOR: DA-2021/1071

Approved plans and documents

The development shall be implemented substantially in accordance with the details and specifications set out on Drawing No. P.R.12668 dated 29 April 2021 prepared by Dennis Smith Surveys and the report dated 29 June 2020 by JK Geotechnics and Statement of Environmental Effects Ref. R.A11273.001.02 Rev.2 dated 1 September 2021 by BMT Commercial Australia Pty Ltd and any details on the application form, and with any supporting information received, except as amended by the conditions specified and imposed hereunder.

General Matters

1 Timing of Works

Works shall only be undertaken when weather, wave action and tidal influences permit safe access to the area subject to this approval. The works should be completed within an eight week period from the time of commencement.

2 Materials

Schedule of materials shall be in accordance with approved plans and documents and not result in adverse visual impact on the foreshore area. Shotcrete colour finish should reflect the surrounding geology by use of oxides in the mix or insitu concrete staining.

3 Geotechnical

1. All work is to be in accordance with the geotechnical recommendations contained in the report dated 29 June 2020 by JK Geotechnics.
2. All remediation works are to be subject to geotechnical supervision. Where necessary amendments are to be made to the designs during construction based on supplementary geotechnical advice given during the supervision to ensure that the completed works accommodates all encountered geotechnical constraints.
3. At the completion of the remedial works, the geotechnical consultant is to prepare a works-as-executed report detailing encountered geotechnical conditions and how the remedial works addressed these conditions.

4 Maintenance of Access to Adjoining Properties

Access to all properties not the subject of this approval must be maintained at all times and any alteration to access to such properties, temporary or permanent, must not be commenced until such time as written evidence is submitted to Council indicating agreement by any affected property owners.

5 Final Geotechnical Remediation Certification

Remediation of the site and related land must be validated to a tolerable risk as defined by Council's Geotechnical Chapter of the DCP at the end of stage of the development. The applicant must submit to Council, a final remediation certificate verifying that the remediation of the site to an acceptable risk has been carried out in accordance with the requirements of the geotechnical report. The form of the verification must be consistent with form M15 of Council's Geotechnical DCP bearing the original signature of the author or verifier of the geotechnical report.

Prior to the Commencement of Works

6 Work Area

The proposed work must be undertaken in a safe manner and to ensure no unauthorised access temporary fencing of the area and work area signage shall be provided for to Council's satisfaction

During Demolition, Excavation or Construction

7 Environmental Mitigation Measures/Controls

During works, the contractor must ensure the environmental mitigation measures/controls described in the Statement of Environmental Effects prepared by BMT Commercial Australia Pty Ltd dated 1 September 2021 are implemented and maintained.

8 Waste Management

During works, the contractor must ensure all wastes are disposed of or re-used lawfully.

9 Access

Access to the work areas shall be through the subject lot only.

10 Restricted Hours of Construction Work

The developer must not carry out any work, other than emergency procedures, to control dust or sediment laden runoff outside the normal working hours, namely, 7.00 am to 5.00 pm, Monday to Saturday, without the prior written consent of Council. No work is permitted on public holidays or Sundays.

Allowable construction activity noise levels must be within the limits identified in the NSW EPA Interim Construction Noise Guidelines (ICNG) July 2009. ICNG are also applied for blasting, rock hammer and drilling, external plant and equipment.

<https://www.environment.nsw.gov.au/resources/noise/09265cng.pdf>

Any request to vary these hours shall be submitted to the **Council** in writing detailing:

- a the variation in hours required (length of duration);
- b the reason for that variation (scope of works);
- c the type of work and machinery to be used;
- d method of neighbour notification;
- e supervisor contact number;
- f any proposed measures required to mitigate the impacts of the works.

Note: The developer is advised that other legislation may control the activities for which Council has granted consent, including but not limited to, the Protection of the Environment Operations Act 1997.

Operational

- 11 Council shall be provided with the Final Geotechnical Remediation Certification within six (6) weeks of the completion of the works.

Reasons

The reasons for the imposition of the conditions are:

- 1 To minimise any likely adverse environmental impact of the proposed development.
- 2 To ensure the protection of the amenity and character of land adjoining and in the locality.
- 3 To ensure the proposed development complies with the provisions of Environmental Planning Instruments and Council's Codes and Policies.
- 4 To ensure the development does not conflict with the public interest.