

# Resource Consent

FILE: 43619  
(01 to 06)  
Change to Conditions

Document Date: 16.08.2022

*Pursuant to the Resource Management Act 1991, the Northland Regional Council (hereinafter called "the council") does hereby grant a Resource Consent to:*

## **FAR NORTH HOLDINGSLIMITED**

To undertake the following activities on the Paihia waterfront adjacent to Lot 1 DP 74742 at or about location co-ordinates 1699390E 6095200N:

*Note: All location co-ordinates in this document refer to Geodetic Datum 2000, New Zealand Transverse Mercator Projection.*

- AUT.043619.01.02**      **Occupy space in the coastal marine area with and use a rock abutment (Eastern Abutment) for the purpose of beach protection at or about location coordinates 1699290E 6095294N.**
- AUT.043619.02.02**      **Occupation area within the coastal marine area.**
- AUT.043619.03.02**      **Capital dredging of the coastal marine area for the construction of a rock abutment and scour protection for the stormwater outlet structure.**
- AUT.043619.04.02**      **Deposit dredged material in the coastal marine area for purposes of beach re-nourishment.**
- AUT.043619.05.02**      **Discharge decant water to the coastal marine area from dredged material placed on the beach as part of beach replenishment activities.**
- AUT.043619.06.02**      **Construct a rock abutment (Eastern Abutment) in the coastal marine area.**

Subject to the following conditions:

### **AUT.043619.01 – Occupy Space with Structures**

- 1      This consent applies only to the 'Eastern Abutment' identified on the Shorewise Engineering Consultants drawing referenced as Northland Regional Council Plan Number 5091/4.

### **AUT.043619.02 – Occupation Area**

- 2      This consent only applies to the area occupied by the 'Eastern Abutment' identified on the **attached** Shorewise Engineering Consultants drawing referenced as Northland Regional Council Plan Number 5091/4.

- 3 The occupation of space is not an exclusive occupation of space. All areas authorised by this consent that are located in the coastal marine area shall be available for public pedestrian access and use, free of charge, at all times, other than times when it is necessary to limit public pedestrian access for reasons of safety or operational necessity. Any limitation of public access for reasons of safety or operational necessity shall be over the minimum area and for the minimum time necessary.

**AUT.043619.03 to AUT.043619.05 – Capital Dredging, Deposition of Dredged Material and Discharge of Decant Water**

- 4 Capital dredging shall be confined to the abutment footprints and depths identified on the **attached** Shorewise Engineering Consultants drawings referenced as Northland Regional Council Plan Numbers 5091/4, 5091/5, 5091/6, 5091/7 and 5091/8.

- 5 The Consent Holder shall notify the council's assigned monitoring officer, in writing of the date dredging is intended to commence, at least two weeks beforehand, on each occasion. The notification shall include details of method of dredging, the disposal site for dredged spoil, and duration of the planned work.

**Advice Note:** *Notification of the commencement of works may be made by email to [info@nrc.govt.nz](mailto:info@nrc.govt.nz).*

- 6 As part of the written notification required by Condition 29, the council's assigned monitoring officer shall be provided with written certification from a suitably qualified and experienced person that all plant and equipment entering the coastal marine area associated with the exercise of these consents are free from unwanted or risk marine species.

- 7 A copy of the consents shall be provided to the person who is to carry out the dredging works. A copy of the consents shall be held on site, and available for inspection by the public, during dredging.

- 8 Capital dredging for construction of the Eastern Abutment shall not exceed 2.5 metres below Chart Datum.

- 9 Works associated with these consents shall only be carried out between 7.00 a.m. and sunset or 6.00 p.m., whichever occurs earlier, and only on days other than Sundays and public holidays.

- 10 Dredging works shall only be carried out between 1 March and 15 December.

- 11 Dredging operations shall not result in the complete blockage of navigation channels at any time.

- 12 The exercise of these consents shall not cause any of the following effects on the quality of the receiving waters, as measured at or beyond a 100 metre radius from the dredger or deposition area:

- (a) The visual clarity, as measured using a Secchi disk, shall not be reduced by more than 50% of the background visual clarity at the time of measurement;
- (b) The turbidity of the water (Nephelometric Turbidity Units (NTU)) shall not be increased by more than 50% of the background turbidity at the time of measurement;

- (c) The Total Suspended Solids shall not exceed 40 grams per cubic metre above the background measurement;
  - (d) The production of any conspicuous oil or grease film, scums or foams, or floatable or suspended materials, or emissions of objectionable odour; and
  - (e) The destruction of natural aquatic life by reason of a concentration of toxic substances.
- 13 Monitoring of dredging shall be undertaken in accordance with the **attached Schedule 2**.
- 14 Other than disposal of suitable dredged material to the renourished beach identified on the drawing referenced as Northland Regional Council Plan Number 5091/1 as part of authorised beach replenishment and reclamation activities, no disposal of dredged material shall take place to the coastal marine area.
- 15 All of the capital dredged material that is suitable for constructing the base layer of the nourished beach is to be used for this purpose. All dredged material from maintenance dredging shall be disposed of to an authorised land based site.
- 16 The council's assigned monitoring officer shall be notified in writing as soon as capital dredging is completed.
- 17 Following completion of dredging, a bathymetric survey of the dredged area shall be carried out at, or better than, the following specifications:
- (a) Sample rate: Maximum of 2 Hz;
  - (b) Survey line spacing: Maximum of 20 metres, located perpendicular to the dredged channel;
  - (c) Accuracy: RTK-GPS or similar methodology that can provide equivalent or higher accuracy;
  - (d) Datum: Datum 2000, NZTM projection, with elevations referenced to OTP1964 vertical datum or Chart Datum;
  - (e) Data Supply: ASCII X, Y, Z file in csv format.

A copy of the ASCII X, Y, Z file, referred to in (e) above shall be provided to the council's assigned monitoring officer at the same time as the bathymetric plan. The datum used for the bathymetric survey shall be the applicable Chart Datum at the site.

- 18 Immediately upon completion of the bathymetric survey, the Consent Holder shall notify the following organisations in writing, providing details of the survey. Evidence of this notification shall be provided to the council's assigned monitoring officer.

Hydrographic Surveyor  
Land Information New Zealand  
PO Box 5501  
Wellington 6145

Far North District Council  
Private Bag 752  
Kaikohe 0440

The Maritime Safety Inspector  
Maritime New Zealand  
PO Box 195  
Ruakākā 0151

The Consent Holder shall include a scale plan of the bathymetric survey with the notification.

**AUT.043619.06 – Construction of the Eastern Abutment**

- 19 The Eastern Abutment shall be constructed in general accordance with the **attached** Shorewise Engineering Consultants drawings and documents referenced as Northland Regional Council Plan Numbers 5091/4, 5091/5, 5091/6, 5091/7, 5091/9, 5091/10, 5091/11, 5091/12 and 5091/13.
- 20 The Consent Holder shall notify the council's assigned monitoring officer, in writing of the date construction of the Eastern Abutment is intended to commence, at least 15 working days beforehand. The Consent Holder shall arrange for a site meeting between the Consent Holder's contractor(s) and the council's assigned monitoring officer prior to the commencement of the works.

**Advice Note:** *Notification of the commencement of works may be made by email to [info@nrc.govt.nz](mailto:info@nrc.govt.nz).*

- 21 As part of the written notification required by Condition 20 the council's assigned monitoring officer shall be provided with written certification from a suitably qualified and experienced person that all plant and equipment entering the coastal marine area associated with the exercise of this consent are free from unwanted or risk marine species.
- 22 At least 15 working days prior to the commencement of works associated with this consent, the Consent Holder shall provide a detailed Construction Management Plan (CMP) to the council's assigned monitoring officer for certification by the council's Compliance Manager.

The CMP shall specify, but not necessarily be limited to, the following matters:

- (a) A construction timetable and updated copies of any construction plans and sediment controls to be implemented.
- (b) Site management, including details of:
  - Site access.
  - Storage of fuels and lubricants.

**(Advice Note:** *These should be banded or contained in such a manner so as to prevent the discharge of contaminants from spillages).*

  - Maintenance of machinery and plant to minimise the potential for leakage of fuels and lubricants.
  - Confirmation that no equipment or machinery is cleaned, or refuelled in any part of the coastal marine area, except for machinery operating on the barge that may require refuelling.
- (c) Methods to minimise discolouration of the coastal marine area during construction and dredging activities.
- (d) Methods to ensure compliance with noise standards.
- (e) Methods to remedy any disturbance to the foreshore during works.
- (f) A contingency plan in the event that there is any discharge to the coastal marine area.
- (g) Measures to provide for public safety.

(h) A Construction Traffic Management Plan, prepared in consultation with the New Zealand Transport Agency and Far North District Council, which shall include, but not by way of limitation, specific details relating to avoiding, remedying or mitigating any adverse effects of:

- Machinery during site works.
- Proposed numbers and timing of truck movements throughout the day and the proposed routes including the identification of heavy vehicle routes which avoid residential streets.
- Safe and clear pedestrian access and thoroughfare on roads and footpaths adjacent to the site.
- Storage of materials and loading and unloading of equipment.

(i) Measures to address biosecurity.

23 The Consent Holder shall undertake the activities authorised by this consent in accordance with the certified CMP. Certification and compliance with the CMP does not override the requirement to comply with any/all other conditions of this consent.

**Advice Note:** *The council's Compliance Manager's certification of the CMP is in the nature of certifying that adoption of the CMP is likely to result in compliance with the conditions of this consent. The Consent Holder is encouraged to discuss its proposed CMP with council monitoring staff prior to finalising this plan.*

24 A copy of these consents shall be provided to the person who is to carry out the construction works. A copy of these consents shall be held on site, and available for inspection by the public, during construction.

25 The exercise of this consent shall not result in any of the following effects on coastal water quality, as measured at any point 50 metres from location of the works:

	Standard
Natural visual clarity	Not reduced more than 20%.
Oil/grease film, scum, foam, odour	No conspicuous oil or grease film, scums or foams, floatable or suspended materials, or emissions of objectionable odour.

26 All vehicles or equipment entering the coastal marine area associated with the exercise of this consent shall be in good state of repair and free of any leaks e.g. oil, diesel etc.

27 The Consent Holder shall ensure that an oil spill kit, appropriate to the equipment being used, is provided and maintained on site during dredging and earthworks activities.

28 No machinery operating from the land shall be left within the intertidal zone during high tide periods, or in a position where it could come into contact with coastal water.

29 The council's assigned monitoring officer shall be notified in writing as soon as the construction has been completed.

- 30 A certificate of compliance, or a written statement, from an independent Chartered Professional Engineer that the works are constructed in general accordance with the drawings identified in Condition 44 shall be provided to the council's assigned monitoring officer within two weeks of completion of the works.
- 31 Immediately upon completion of the installation of the Eastern Abutment, the Consent Holder shall notify the following organisations in writing of its completion. Evidence of this notification shall be provided to the council's assigned monitoring officer.

Hydrographic Surveyor  
Land Information New Zealand  
PO Box 5501  
Wellington 6145

Far North District Council  
Private Bag 752  
Kaikohe 0440

The Maritime Safety Inspector  
Maritime New Zealand  
PO Box 195  
Ruakākā 0151

A scale plan of the completed works shall be included with the notification.

- 32 In the event of archaeological sites or kōiwi being uncovered, activities in the vicinity of the discovery shall cease and the Consent Holder shall contact Heritage New Zealand Pouhere Taonga. Work shall not recommence within the area of the discovery until the relevant Heritage New Zealand Pouhere Taonga approval has been obtained.

**Advice Note:** *The Heritage New Zealand Pouhere Taonga Act 2014 makes it unlawful for any person to destroy, damage or modify the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga.*

- 33 The Consent Holder shall not damage State Highway 11 nor any Crown owned infrastructure, or adversely affect State Highway drainage during construction activities, beyond those activities specifically authorised by resource consent or otherwise agreed with the land owner. Should damage occur, then the Consent Holder shall promptly advise this to the land owner.

#### **General Conditions – Applying to all Consents**

- 34 Noise levels associated with the exercise of these consents shall not exceed those set out in **Schedule 1 attached.**
- 35 The Consent Holder shall ensure that an oil spill kit, appropriate to the equipment being used, is provided and maintained on site during dredging and earthworks activities.
- 36 The coastal marine area shall be kept free of debris resulting from the Consent Holder's activities.
- 37 The Consent Holder shall, on becoming aware of any discharge associated with the Consent Holder's operations that is not authorised by these consents:
- (a) Immediately take such action, or execute such work as may be necessary, to stop and/or contain the discharge; and
  - (b) Immediately notify the council by telephone of the discharge; and

- (c) Take all reasonable steps to remedy or mitigate any adverse effects on the environment resulting from the discharge; and
- (d) Report to the council's Compliance Manager in writing within one week on the cause of the discharge and the steps taken or being taken to effectively control or prevent the discharge.

For telephone notification, during the council's opening hours, the council's assigned monitoring officer for these consents shall be contacted. If that person cannot be spoken to directly, or it is outside of the council's opening hours, then the Environmental Emergency Hotline shall be contacted.

**Advice Note:** *The Environmental Emergency Hotline is a 24 hour, seven day a week, service that is free to call on 0800 504 639.*

- 38 These consents shall not lapse until 31 March 2030.
- 39 The council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions annually during the month of March to deal with any adverse effects on the environment that may arise from the exercise of these consents and which it is appropriate to deal with at a later stage. The Consent Holder shall meet all reasonable costs of any such review.

**EXPIRY DATE: 31 MARCH 2044**

The original resource consent AUT.043619.01.01 dated 14 December 2021 was authorised by Stuart Savill under delegated authority from the council. This change to consent conditions 1, 2, 4, 14 and 19 is granted this Sixteenth day of August 2022 under delegated authority from the council by:



.....

Paul Maxwell  
Coastal & Works Consents Manager



- NOTES:**
1. LEVELS ARE IN METRES RELATIVE TO PAINA SOUNDING DATUM (PSD)
  2. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE
  3. HORIZONTAL COORDINATE SYSTEM IS IN TERMS OF MT EDN 2000
  4. COASTAL STRUCTURE OUTLINES SHOWN ARE APPROXIMATE ONLY
  5. BATHYMETRY SHOWN IS BASED ON SURVEYS FROM DATA DATED 21 24 SEPTEMBER 2020 AND WILLIAMS & WAG DATED SEPTEMBER 2020
  6. REFER TO DRAWING CA01 FOR SURVEY CONTROL POINT LOCATION, COORDINATES AND ELEVATION IN TERMS OF PSD
  7. DIMENSIONED DIMENSIONS OR VERTICAL DIMENSIONS SHOW MINIMUM REQUIREMENTS. REFER TO LANDSCAPE ARCHITECTURE DRAWING FOR DETAILED REQUIREMENTS.

**NORTH AND SOUTH PACIFIC COUNCIL**  
 Plan Number 5091/1

REV	DETAILS	DATE	PROJECT	STATUS
0	ISSUED FOR TENDER	22/12/2021	20-0057 PAIHA WATERFRONT	FOR CONSENT
1	RE-ISSUED FOR TENDER	09/02/2022	SHEET DESCRIPTION	DRAWN BY MW
2	RE-ISSUED FOR CONSENT	29/03/2022	BEACH AND ABUTMENTS LAYOUT PLAN	APPROVED BY RB
				PROJECT NO. 20-0057
				SHEET NO. CA-011
				REV. 2

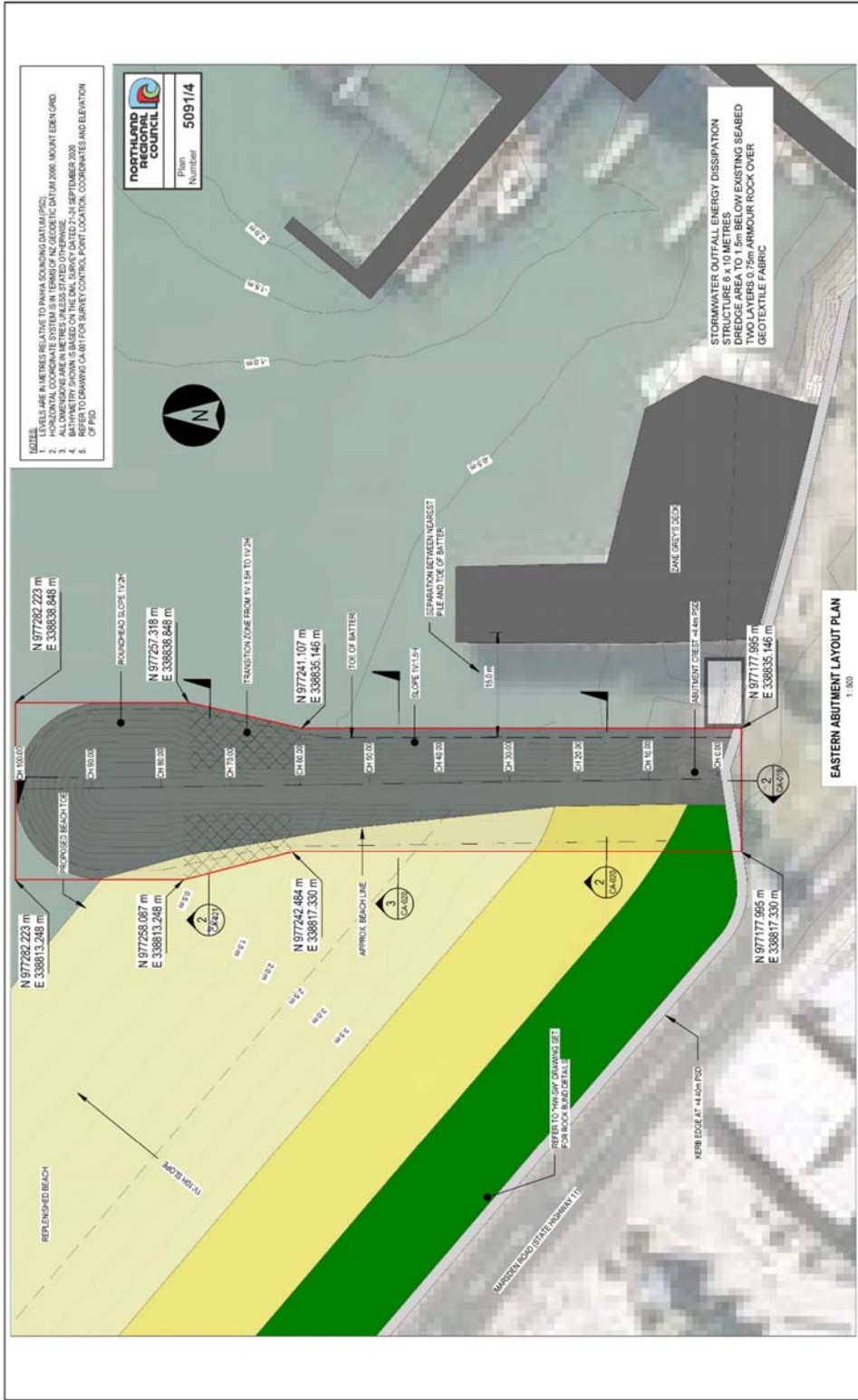
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**CLIENT**  
**BECA LITTORALIS**  
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**NOTES:**

- LEVELS ARE IN METRES RELATIVE TO PAIHIA SOUNDING DATUM (PSD);
- HORIZONTAL COORDINATE SYSTEM IS IN TERMS OF NZ GEODETIC DATUM 2000, MOUNT EREN GOND; (NORTHING, EASTING);
- BATHYMETRY SHOWN IS BASED ON THE DIAL SURVEY DATED 2-24 SEPTEMBER 2008;
- REFER TO DRAWING CA-017 FOR SURVEY CONTROL POINT LOCATION, COORDINATES AND ELEVATION OF PSD;

**NORTHLAND REGIONAL COUNCIL**  
Plan Number: 5091/14

STATUS	
FOR CONSENT	FOR CONSENT
DRAWN BY: MW	APPROVED BY: RB
PROJECT NO.: 20-0057	SHEET NO.: CA-018
	REV: 2

PROJECT	
20-0057 PAIHIA WATERFRONT	PROJECT
EASTERN ABUTMENT LAYOUT PLAN	SHEET DESCRIPTION

REV	DETAILS	DATE
0	ISSUED FOR TENDER	22/12/2021
1	RE-ISSUED FOR TENDER	09/02/2022
2	RE-ISSUED FOR CONSENT	01/04/2022

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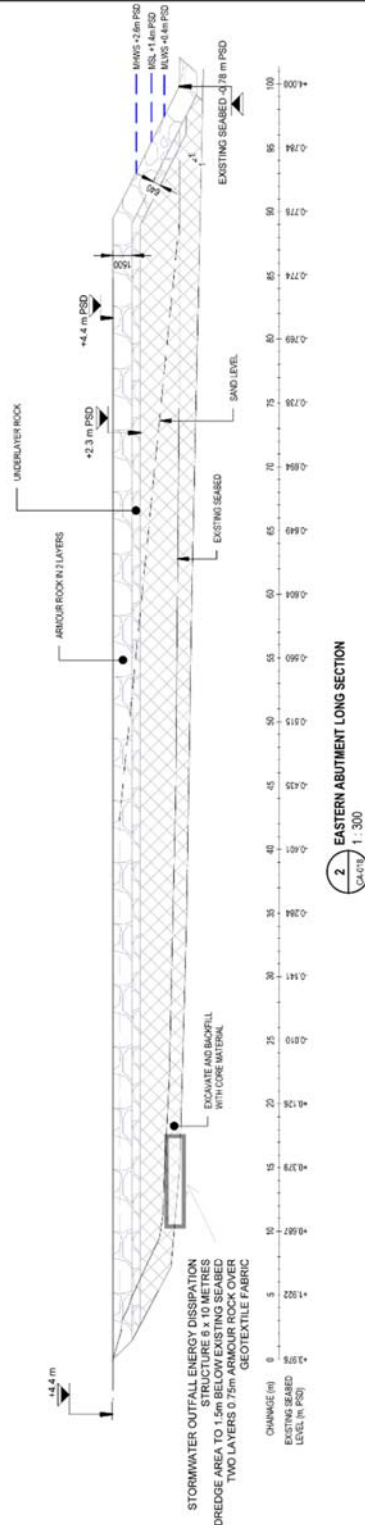
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**PRELIMINARY ONLY - DESIGN AND DRAWINGS WILL BE REFINED DURING DETAILED DESIGN, CONSISTENT WITH STANDARD DESIGN PRACTICE**

**NOTES**

- LEVELS ARE IN METRES RELATIVE TO PAPA SOUNDING DATUM (PSD)
- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE
- BATHYMETRY SHOWN IS BASED ON THE DTM SURVEY DATED 24-04 SEPTEMBER 2020
- TO BE BUILT IN ACCORDANCE WITH THE ROCK SPECIFICATION (DRAWING 2030461 CA.005)
- GEOTEXTILE AS SHOWN ON DRAWING CA.020 AND CA.021
- EXISTING ROCK SEAWALL TO BE REMOVED PRIOR TO CONSTRUCTION OF THE ABUTMENT AND EXISTING ROCK TO BE REUSED WHERE POSSIBLE
- THE OUTER LAYER OF ARMOUR ROCK ABOVE MWS IS TO BE STANDED ROCK SOURCED FROM THE SPECIFIED QUARRY AND PLACED AS DIRECTED BY THE ENGINEER
- THE OUTER LAYER OF ROCK (APPROXIMATELY 0.1m TO 0.147m) IS TO BE PLACED WITH OUTER ROCK FACES ORIENTATED TO FORM A SMOOTH SURFACE

**NORTHLAND REGIONAL COUNCIL**  
 Plan Number **5091/15**



**2 EASTERN ABUTMENT LONG SECTION**  
 SCALE 1:300

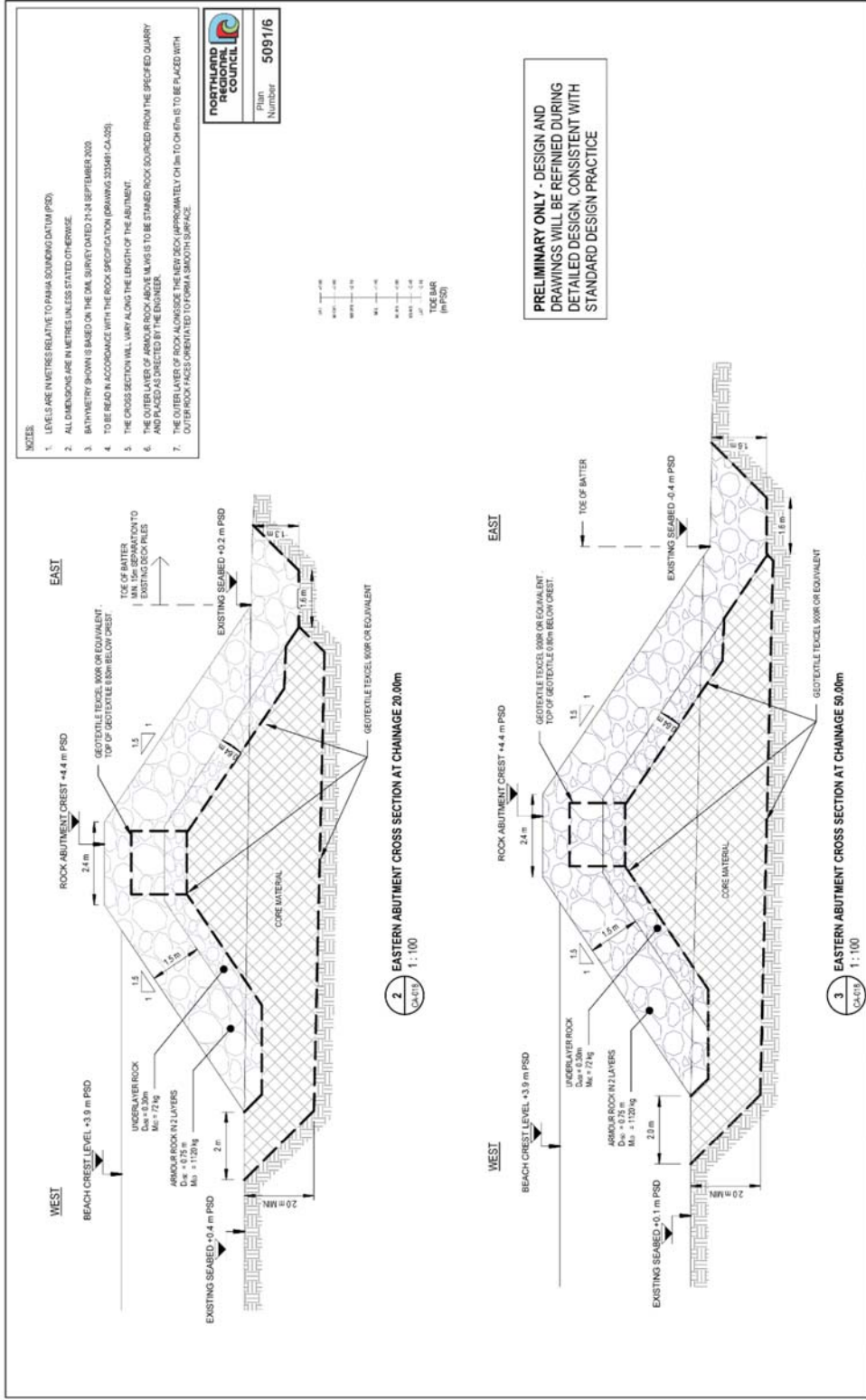
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REV	DETAILS	DATE	PROJECT	STATUS
0	ISSUED FOR TENDER	22/12/2021	20-0057 PAIHA WATERFRONT	FOR CONSENT
1	RE-ISSUED FOR TENDER	09/02/2022	SHEET DESCRIPTION	
2	RE-ISSUED FOR CONSENT	01/04/2022	EASTERN ABUTMENT LONG SECTION	

DRAWN BY	APPROVED BY	SHT
M/W	RB	A3
PROJECT NO.	SHEET NO.	REV
20-0057	CA-019	2



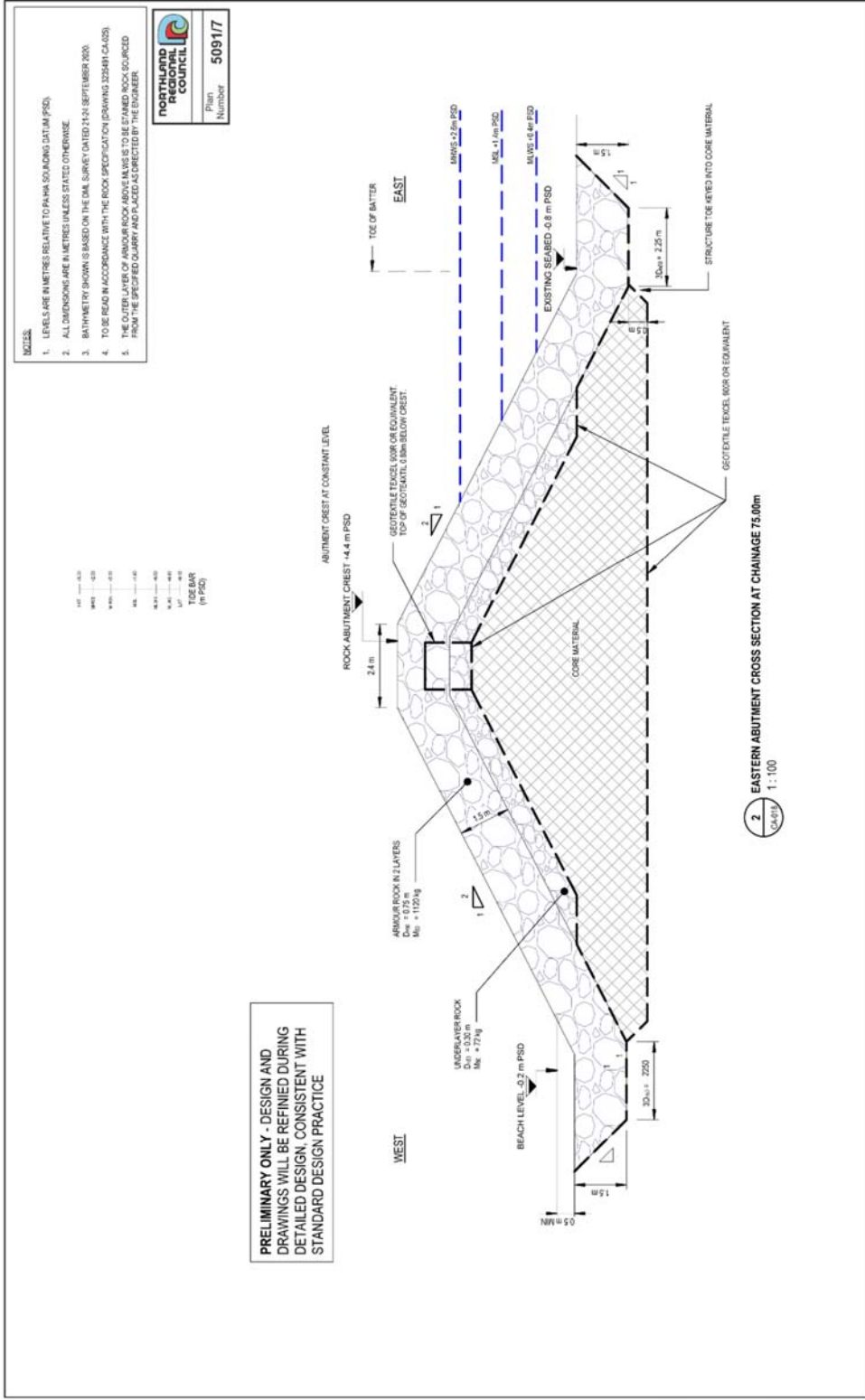
REV	DETAILS	DATE	PROJECT	STATUS
0	ISSUED FOR TENDER	22/12/2021	20-0057 PAHIA WATERFRONT	FOR CONSENT
1	RE-ISSUED FOR TENDER	09/02/2022	EASTERN ABUTMENT CROSS SECTIONS (SHEET 1 OF 2)	DRAWN BY RB
2	RE-ISSUED FOR CONSENT	01/04/2022		APPROVED BY A3
				PROJECT NO. 20-0057
				SHEET NO. CA-020
				REV. 2

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**BEACH SAND SPECIFICATION**

- 1. BEACH SAND
  - 1.1 OBJECTIVE

The objective of this specification is to define the characteristics of beach sand to be used in the beach area of the project in accordance with the contract documents.

- 1.2 SCOPE OF CONTRACT

The scope of this contract includes but is not necessarily limited to:  
 SUPPLY AND PLACEMENT OF APPROXIMATELY 4500m<sup>3</sup> OF SAND IN ACCORDANCE WITH THE SAND SPECIFICATION.

- 1.3 RESOURCE CONSENT REQUIREMENTS

THE CONTRACTOR SHALL COMPLY WITH THE RESOURCE CONSENTS - PERMIT NO. CONT19/041/18 AND CONT19/041/18.

- 1.4 BEACH SAND CHARACTERISTICS

THE SAND SHALL COMPLY WITH THE SPECIFICATION PARAMETERS AS DESCRIBED IN THE RESOURCE CONSENTS. PERMIT NO. CONT19/041/18. IN ADDITION TO THE CONSENT CONDITIONS THE SAND SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS.

BEACH SAND SHALL BE CLEAN, ANGULAR SAND FROM APPROVED LOCATIONS. SAND SHALL CONTAIN NO OBSERVABLE OR MICROSCOPICALLY DETECTABLE IMPURITIES OR FOREIGN MATTER. THE ENGINEER'S PRIOR APPROVAL OF SAND SAMPLES TO BE USED FOR ANALYSIS AND PHYSICAL CHARACTERISTICS SHALL BE OBTAINED.

BEACH SAND SHALL COMPLY WITH THE PARTICLE SIZE DISTRIBUTION GRAPHICAL ENVELOPE SHOWN IN FIGURE 1. IN ADDITION, THE SORTING COEFFICIENT, S, SHALL BE LESS THAN 2, WHERE:

$$S = \frac{D_{75}}{D_{15}} < 2$$

THE CONTRACTOR MUST SUBMIT FOR APPROVAL SANDS WHICH UNUSUALLY LIE OUTSIDE THE SPECIFIED GRAPHICAL ENVELOPE. SANDS WHICH UNUSUALLY LIE OUTSIDE THE SPECIFIED GRAPHICAL ENVELOPE AND THAT FRACTIONS ARE ACCEPTABLE FOR SANDS WHICH OTHERWISE COMPLY WITH THE SPECIFIED GRAPHICAL ENVELOPE. THE CONTRACTOR SHALL NOT AVOID, HOWEVER, THAT SUCH SANDS, WHICH DO NOT LIE COMPLETELY WITHIN THE GRAPHICAL ENVELOPE, WILL BE ACCEPTABLE.

BEACH SAND SHALL NOT CONTAIN MORE THAN 20% BY VOLUME OF SHELL MATERIAL OR CHALK.  
 SANDS FROM AN OFFSHORE SOURCE SHALL BE SCREENED TO REMOVE COARSE SHELLS AND MARINE ORGANISMS GREATER THAN 50MM IN SIZE.  
 BEACH SAND SHALL BE OF AN APPROVED PINK/RED/BROWN OR LIGHT GREY COLOUR. SAND WHICH IS DARK COLOURED WHEN DRY WILL NOT BE ACCEPTABLE.

- 1.5 BEACH SAND SAMPLING AND TESTING

BEACH SAND SHALL BE SAMPLED AT RANDOM LOCATIONS IN THE SCREENED STOCKPILES AND SUBJECTED TO TESTING TO CONFIRM THE ABOVE DETAILS OF THE REQUIRED PHYSICAL CHARACTERISTICS. SAMPLING OF ONE BEACH SAND SAMPLE FOR EACH 1000M<sup>3</sup> STOCKPILED OR PLACED IN THE BEACH AREAS. WHOEVER IS THE RESPONSIBLE PARTY FOR THE SAMPLING AND TESTING SHALL SUBMIT THE RESULTS OF THE TESTING TO THE ENGINEER'S APPROVAL. OF THE PROVIDED SAND SAMPLES AND CONFORM WITH ALL APPLICABLE BEACH SAND TESTING METHODS AND TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPROPRIATE METHODS OF TESTING.

- 1.6 TRANSPORTATION OF BEACH SAND

BEACH SAND SHALL BE TRANSPORTED TO THE SITE OF USE BY THE CONTRACTOR'S OWN VEHICLES OR BY THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER AND THE APPROVAL AUTHORIZED BEFORE ANY SAND IS TRANSPORTED TO THE SITE. THE CONTRACTOR SHALL AVOID DAMAGE TO PUBLIC ROADS AND SHALL BEWARE OF DAMAGE TO THE ENVIRONMENT.

- 1.7 BEACH SAND PLACING

THE CONTRACTOR SHALL CLEAR OR OTHERWISE DEAL WITH WEEDS AND THE LAKE WITHIN THE BEACH AREA. AN ELEVATION WATER LEVEL PRIOR TO PLACING TO THE EXTENT THAT NOTHING SHALL BE LEFT IN THE BEACH AREA UNLESS OTHERWISE AUTHORIZED TO CAUSE A HAZARD IN THE SAND PLACEMENT.

BEACH SAND SHALL BE PLACED ON THE BEACH TO THE PLAN SHOWN AND PROFILE DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE BEACH SAND PLACEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE BEACH SAND PLACEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE BEACH SAND PLACEMENT.

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- 1.8 PLACEMENT TOLERANCE

THE PLACEMENT TOLERANCE SHALL BE ±50mm AND ±50mm. THE FINAL PROFILE SHALL BE FREE FROM UNIFORM CHANGES IN LEVEL AND LOCAL HIGH OR LOW SPOTS.

- 1.9 UNSUITABLE MATERIAL

ANY SPECIFIED MATERIAL THAT ACCORDING TO THE ENGINEER IS UNSUITABLE FOR BEACH REPLENISHMENT I.E. BEACH SAND SHALL NOT BE PLACED ON THE BEACH UNLESS IT IS APPROVED BY THE ENGINEER. THE DISPOSAL OF UNSUITABLE SPECIFIED MATERIAL WILL BE THE CONTRACTOR'S RESPONSIBILITY.

- 1.10 METHOD OF MEASURE

VOLUME OF SAND IS TO BE MEASURED IN SITU PLACED ON THE BEACH. THE UNIT OF MEASURE WILL BE M<sup>3</sup>.

- 1.11 DRAINAGE CURVE



FIGURE 1: GRADING CURVE

CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	SAND	FINE	MEDIUM	COARSE	GRAVEL

STATUS: FOR CONSENT

PROJECT: 20-0057 PAHIIA WATERFRONT

SHEET DESCRIPTION: BEACH SAND SPECIFICATION

DATE: 22/12/2021

ISSUED FOR TENDER: 29/03/2022

RE-ISSUED FOR CONSENT

REVISIONS: 1

APPROVED BY: RB

APPROVED BY: A3

PROJECT NO.: 20-0057

SHEET NO.: CA-022

REV: 1

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 LANDSCAPE ARCHITECTURE

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**CEMENT STABILISED MATERIAL (CSM) SPECIFICATION**

**1. DESCRIPTION**

THE MARINE SOILS TO BE CEMENT STABILISED WILL BE OBTAINED FROM THE PAHIA WATERFRONT CHANNEL AND STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING.

DESIGNER'S INVESTIGATIONS WHICH INDICATE THAT STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING. THE STABILISED MARINE SEDIMENTS WILL BE OBTAINED FROM THE PAHIA WATERFRONT CHANNEL AND STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING. THE STABILISED MARINE SEDIMENTS WILL BE OBTAINED FROM THE PAHIA WATERFRONT CHANNEL AND STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING.

**2. PURPOSE FOR STABILISATION**

THE REASON FOR STABILISING THE MARINE SEDIMENTS IS TO PRODUCE A UNIFORM STABILISED MATERIAL WITH THE STRENGTH AND DURABILITY REQUIRED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING.

**3. MATERIALS**

3.1 **STABILISING AGENT**

THE STABILISING AGENT SHALL BE GENERAL PURPOSE PORTLAND CEMENT COMPLYING IN EVERY RESPECT WITH THE REQUIREMENTS OF NZS 101.

THE USE OF ANY OTHER STABILISING AGENTS INCLUDING PROPORTIONS OF OTHER INGREDIENTS SUCH AS FOSCOLAN IN EXCESS OF THAT PERMITTED BY NZS 101, WILL NOT BE ACCEPTABLE.

3.2 **MARINE SOILS**

THESE TYPICALLY COMBINE RECENTLY DEPOSITED MARINE MARINE SEDIMENTS OF VARIABLE PARTICLE SIZE AND VARYING CONTENT PAHIA WATERFRONT CHANNEL MATERIAL, TYPICALLY COMPOSED OF MARINE MANUFACTURED CLAY, SAND AND SILT. THE MARINE SEDIMENTS SHALL BE OBTAINED FROM THE PAHIA WATERFRONT CHANNEL AND STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING.

**4. PROPORTION OF STABILISING AGENT REQUIRED**

THE AMOUNT OF STABILISING AGENT ADDED TO THE SEDIMENTS SHALL BE SUFFICIENT FOR THE SEDIMENTS TO BE STABILISED TO THE POINT WHERE THEY CAN BE HANDLED AND PLACED IN THE MOUND. THE AMOUNT OF STABILISING AGENT ADDED TO THE SEDIMENTS SHALL BE SUFFICIENT FOR THE SEDIMENTS TO BE STABILISED TO THE POINT WHERE THEY CAN BE HANDLED AND PLACED IN THE MOUND.

**5. CONSOLIDATION REQUIREMENTS OF STABILISED MARINE SEDIMENTS**

5.1 **REQUIRED STRENGTHS**

THE STABILISED SEDIMENTS SHALL ATTAIN THE FOLLOWING MINIMUM AND AVERAGE COMPRESSIVE STRENGTHS:

ZONE	TEST	MINIMUM FREQUENCY OF TESTING
RESTRICTION ADJUTMENT	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS	1 SAMPLE
	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS	1 SAMPLE
	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS	1 SAMPLE

UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS. THE TEST RESULTS SHALL BE USED TO DETERMINE THE AVERAGE SWELL OF THE STABILISED MARINE SEDIMENTS. THE AVERAGE SWELL SHALL BE USED TO DETERMINE THE AVERAGE SWELL OF THE STABILISED MARINE SEDIMENTS.

**6. TEST STABILISATION**

FOR EACH CLASS OF STABILISED MARINE SEDIMENT, A TRIAL COMPRESSIONS A MINIMUM OF 200 CUBIC METRES OF STABILISED MARINE SEDIMENT SHALL BE OBTAINED FROM THE PAHIA WATERFRONT CHANNEL AND STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING.

4. FROM SAMPLES WHICH CONSTITUTE ONE SET SHALL BE OBTAINED FROM A MINIMUM OF 10 DIFFERENT MARINE SEDIMENTS AND BLENDED MATERIAL OPERATING IN THE MOUND IN THE AREA OF THE TRIAL. THE TRIAL SHALL BE OBTAINED FROM A MINIMUM OF 10 DIFFERENT MARINE SEDIMENTS AND BLENDED MATERIAL OPERATING IN THE MOUND IN THE AREA OF THE TRIAL.

5. THE TRIAL SHALL BE OBTAINED FROM A MINIMUM OF 10 DIFFERENT MARINE SEDIMENTS AND BLENDED MATERIAL OPERATING IN THE MOUND IN THE AREA OF THE TRIAL. THE TRIAL SHALL BE OBTAINED FROM A MINIMUM OF 10 DIFFERENT MARINE SEDIMENTS AND BLENDED MATERIAL OPERATING IN THE MOUND IN THE AREA OF THE TRIAL.

**7. STABILISING MARINE SEDIMENTS**

DESIGNER'S INVESTIGATIONS WHICH INDICATE THAT STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING. THE STABILISED MARINE SEDIMENTS WILL BE OBTAINED FROM THE PAHIA WATERFRONT CHANNEL AND STABILISED MARINE SEDIMENTS WILL BE USED FOR THE REVISION PROJECT AS SHOWN ON THIS DRAWING.

IF ANY OTHER STABILISING AGENTS INCLUDING PROPORTIONS OF OTHER INGREDIENTS SUCH AS FOSCOLAN IN EXCESS OF THAT PERMITTED BY NZS 101, WILL NOT BE ACCEPTABLE.

**8. STRENGTH TESTING REQUIREMENTS**

THE STRENGTH TESTING REQUIREMENTS SHALL APPLY TO MATERIAL USED ON LAND AND IN THE MOUND. THE STRENGTH TESTING REQUIREMENTS SHALL APPLY TO MATERIAL USED ON LAND AND IN THE MOUND.

10. **STRENGTH TESTING REQUIREMENTS**

AS A MINIMUM, THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8. THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8.

**11. METHOD OF CALCULATION OF VOLUMES**

VOLUMES OF MATERIAL PRODUCED BY AND USED OPERATION WILL BE BASED ON THE AREA OF THE MOUND. THE VOLUMES OF MATERIAL PRODUCED BY AND USED OPERATION WILL BE BASED ON THE AREA OF THE MOUND.

**8. STRENGTH TESTING OF STABILISED SOILS**

THE RATE OF STRENGTH GAIN WITH TIME AND THE ULTIMATE BEARING CAPACITY OF THE STABILISED SEDIMENTS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8.

AS A MINIMUM, THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8. THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8.

UNSATURATED SWELL TEST (AS PER NZS 101)	UNSATURATED SWELL TEST (AS PER NZS 101)	UNSATURATED SWELL TEST (AS PER NZS 101)
RESTRICTION ADJUTMENT	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS
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	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS	UNSATURATED SWELL TEST (AS PER NZS 101) AT 28 DAYS

IN ADDITION, THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8. THE CONTRACTOR SHALL COMPLY WITH THE STRENGTH TESTING REQUIREMENTS SPECIFIED IN CLAUSE 8.

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PROJECT	20-0057 PAHIA WATERFRONT
SHEET DESCRIPTION	CEMENT STABILISED MATERIAL (CSM) SPECIFICATION
DATE	22/12/2021
ISSUED FOR TENDER	09/02/2022
RE-ISSUED FOR CONSENT	29/03/2022

STATUS	FOR CONSENT
DRAWN BY	MW
APPROVED BY	RB
PROJECT NO.	20-0057
SHEET NO.	CA-024
REV	2

**SHOREWISE ENGINEERING CONSULTANTS**

**CLIENT**

**Beca LITTORALIS**

**Far North Holdings Limited**

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**ARMOUR ROCK SPECIFICATION**

**GENERAL**

THIS SPECIFICATION SHALL BE READ IN CONJUNCTION WITH THE STANDARD CONDITIONS OF CONTRACT, THE ROCK MANUAL, THE USE OF ARMOUR ROCK AND THE ROCK MANUAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITIES.

THE CONTRACTOR SHALL PREPARE A METHOD STATEMENT FOR THE ENGINEERS REVIEW INCLUDING IDENTIFICATION OF ALL HAZARDS AND RISK ASSESSMENT. THE CONTRACTOR SHALL PROVIDE A RISK ASSESSMENT TO THE ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL PROVIDE A RISK ASSESSMENT TO THE ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL PROVIDE A RISK ASSESSMENT TO THE ENGINEERS FOR REVIEW AND APPROVAL.

**ROCK QUANTITY, ARMOUR ROCK AND UNDERLAYER**

ROCK QUANTITY: QUANTITY OF ROCK SHALL BE AS PER THE QUANTITY LISTED IN THE QUANTITY LIST. QUANTITY OF ROCK SHALL BE AS PER THE QUANTITY LISTED IN THE QUANTITY LIST.

ARMOUR ROCK AND UNDERLAYER SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING TABLE:

ROCK SIZE (mm)	QUANTITY (m <sup>3</sup> )	UNDERLAYER (m <sup>3</sup> )
150	100	100
200	200	200
250	300	300
300	400	400
350	500	500
400	600	600
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**REV**

REV	DETAILS	DATE
0	ISSUED FOR TENDER	22/12/2021
1	RE-ISSUED FOR CONSENT	29/03/2022

**PROJECT**

20-0057 PAIHA WATERFRONT

**PROJECT NO.** 20-0057

**PROJECT NO.** CA-025

**STATUS**

FOR CONSENT

**APPROVED BY** RB

**APPROVED BY** A3

**REVISION** 1

**REVISION** 1



Plan Number 5091/111

PHD Date: 29/03/2022 2:44:37 PM



