



Yorke Peninsula Council

25th January 2017

Chinaman Wells Sea Wall Separate Rate Consultation Report January 2017



DOCUMENT INFORMATION

Document Details

Document Title:	Chinaman Wells Sea Wall Separate Rate Consultation Report
Document Version:	1.0
Document Date:	25/01/2017
File Name:	Consultation Report Chinaman Wells

Document Authorisation

Prepared by:	David Harding – Director Corporate & Community Services
Authorised by:	Andrew Cameron – Chief Executive Officer
Consultation Endorsed by Council:	18/01/2017

Council Details

Name:	Yorke Peninsula Council
ABN:	82 179 825 615
Address:	PO Box 57 Maitland SA
Phone:	+61 8 88320000
Fax:	+61 8 88532494
E-Mail:	admin@yorke.sa.gov.au



Contents

DOCUMENT INFORMATION	2
Document Details	2
Document Authorisation	2
Council Details	2
INTRODUCTION	4
BACKGROUND	5
DISCUSSION	7
ACTIVITY	7
REASONS FOR THE PROPOSED SEPARATE RATE	7
RELATIONSHIP TO COUNCIL'S OVERALL RATES STRUCTURE AND POLICIES	7
LIKELY IMPACT ON RATEPAYERS	8
ISSUES CONCERNING COMMUNITY EQUITY	8
FUNDING PROPOSAL (if approved)	8
AREA	9
BASIS OF CHARGING	9
PERIOD OF RATING	9
POSTPONEMENT OF PAYMENT	10
REMISSION	10
REBATES	10
CONSULTATION PLAN TIMETABLE	10
FEEDBACK ON PROPOSED FUNDING AND PROPOSED SEPARATE RATE(S)	10
APPENDIX 1 – MAGRYN REPORT	12
APPENDIX 2 – SEA WALL PLAN	20
APPENDIX 3 - COST DISTRIBUTIONS	22



INTRODUCTION

Raising of Separate Rate

Section 154 of the act permits Council to raise a separate rate on rateable properties, which will, or which it is intended will, benefit from a project or undertaking. The main legislative features of a separate rate are:

- It can be applied to rateable properties that benefit from the purpose of raising the separate rate;
- Money raised by these means cannot be put to any other use; and
- The separate rate must cease when the purpose has been completed and paid for.

In terms of the process, The Local Government Act, at **Section 151(5)(c)** provides that before the Council changes the imposition of rates on land by declaring a (new) separate rate, it is required to prepare a prescribed report on the proposed change and follow the steps set out in its public consultation policy. The report, which forms the basis of the consultation, is prescribed at Section **151(6)** of the Act and is required to address at least:

- The reasons for the proposed separate rate;
- The relationship of the proposal to the Councils overall rates structures and policies;
- Insofar as is reasonably practicable, the likely impact on the ratepayers; and
- Issues concerning community equity.

This consultation report is provided as information for the proposed specific part funding by Council of the Chinaman Wells Sea Wall project as requested by the Chinaman Wells Shack Owners Group and the subsequent declaration of a separate rate against specific properties within the area impacted as agreed.

In effect this process involves the granting of a fixed rate, fixed term loan by Council to specific shack owners who are unable to, or unwilling to, meet their portion of the costs of construction as determined by the majority of the group with all principal, interest and associated costs to be recovered via a separate rate declared on those same properties.

The separate rate will constitute the mechanism through which Council can recover the principal loaned, interest and associated costs should Council agree to provide the requested funding.



Yorke Peninsula Council

25th January 2017

A public notice has been placed in the YP Country Times advising the proposed declaration of a separate rate and inviting interested parties to:

- Access and consider the content of this report;
- Provide a written submission to Council; and/or
- Provide feedback at a public meeting

The consultation period opens on Wednesday 25th January 2017 at 8.30am with all submissions to be received by Friday 24th February 2017 at 5.00pm.

The public meeting is to be held in the Minlaton Council Chamber at 6.00pm on Wednesday 1st February 2017.

Advice of the consultation will also be made available on Council's web site and social media site as well as letters sent to Progress Associations in the district and to each shack owner at Chinaman Wells.

BACKGROUND

A request has been received from the Chinaman Wells Shack Owners group via their appointed representative Mr. Doug Pritchard in regard to the proposed sea wall construction project for which plans have been submitted compliant with approved Development Application 544224/2010.

This seawall is seen by the vast majority of the shack owners as urgent and mandatory following damage sustained to the foreshore at Chinaman Wells during recent storm events in May and September 2016. The damage suffered is very severe and, in their opinion, threatens the existence of a number of the local dwellings should preventative measures not be undertaken as a matter of urgency. The group is certainly keen to reach a resolution on the matter ahead of the upcoming 2017 storm period.

The group engaged a professional engineer to design the required sea wall and have held several meetings and discussions aimed at gaining agreement on both the sea wall construction and the sharing of all costs. The sea wall is to be constructed on Crown Land and has the approval of the Coastal Protection Board. A copy of the report prepared by the professional engineer is attached as Appendix 1 along with the design document as Appendix 2.

The request from the Shack Owners group to Council is specifically for funding to be provided to certain shack owners who have indicated they cannot, or will not, source their allocated share of the total cost from their own resources at this time. This funding is requested in the form of a fixed interest, fixed term loan over either a 10 or 15 year period to be secured by a separate rate declared by Council on the properties that are unable to meet their agreed share of costs at this time.

From documentation supplied by the Shack Owners representative the total cost of the project is \$722,892.00 inclusive of GST of which the shack owners group have indicated they need to borrow

Yorke Peninsula Council

Chinaman Wells Sea Wall Separate Rate Consultation Report



Yorke Peninsula Council

25th January 2017

a total amount of \$270,890.32 incl. GST across 22 properties – costs for the remaining 16 shacks will be met directly by the shack owners.

The total project cost has been sourced by the group through a tender process and formal quotes have been received.

It should be noted that Council is not being requested to contribute to the project either financially or in a project management, or any other, capacity. Council is not being asked to be responsible for the upkeep of any part of the sea wall in to the future, nor is it requested that Council accept any liability for risk or insurance relating to the sea wall. The request at this stage is simply for funding as outlined.

Details of the cost distribution proposed by the group and agreed by most of the group, is attached as Appendix 3 to this report with Lot numbers and names removed for privacy reasons.



DISCUSSION

ACTIVITY

1. Should Council agree to provide funding as requested (to be decided at Council's March 2017 meeting) a separate rate is proposed to be declared on those properties requiring funding from Council. The purpose of the separate rate will be to recover all principal advanced plus interest at a rate to be determined over either a 10 or 15 year period, plus any agreed associated costs. Should Council agree to provide funding as requested the funds will be borrowed from the LGA Financing Authority at a fixed interest rate to be determined at the time of borrowing over a fixed term to be determined during the consultation with the Chinaman Wells Shack Owners group.

REASONS FOR THE PROPOSED SEPARATE RATE

2. The Chinaman Wells Shack Owners group have approached Council in regard to providing funding to specific shack owners for the purpose of construction of the approved sea wall, which the majority of the group see as urgent and essential to ensure their properties are adequately protected against damage from further storm events.
3. The separate rate on those properties who receive funding from Council will be declared to recover all principal, interest and any associated costs over a period equal to the term of the loan from which funding will be sourced.
4. While the sea wall is to be built on Crown land, Council are assessing how they can assist members of the community by possibly providing funding for the project at no cost to Council.
5. Given the sea wall is to be constructed on Crown land Council will not consider undertaking any role in the construction of the sea wall. Council considers that the existing rates base is inadequate to meet any costs for this project.
6. As such Council looks to the separate rate on affected properties to meet costs of the borrowings in order to protect all existing ratepayers from any excessive rate increases that may evolve should Council consider meeting any costs associated with this project.

RELATIONSHIP TO COUNCIL'S OVERALL RATES STRUCTURE AND POLICIES

7. Council's existing rates structure cannot cater for the proposed build of this sea wall nor costs associated with any borrowings to fund specific shack owner's contributions to the project.
8. Current rating structures have historically funded existing Council services in place today.



9. Council will not accept any responsibility going forward for maintenance, upkeep, rehabilitation, insurance, public liability for the sea wall as to do so would place pressure on Councils financial sustainability and in turn on existing and future ratepayers.
10. The proposed separate rate is independent from, and in addition to, the existing rating structure and is being introduced for the single purpose of recovering all costs of any funding provided for specific shack owners to cover a proportion of overall project costs.

LIKELY IMPACT ON RATEPAYERS

11. The separate rate will be declared only if funding is approved by Council as requested.
12. The separate rate will be declared to apply from 1st July 2017.
13. The separate rate will be declared for a period of 10 or 15 financial years depending on final determination of the term of the loan secured from the LGA Financing Authority.
14. The separate rate will be declared as an amount equal to the amount repayable on the loan from the LGA Financing Authority plus any associated costs agreed with the specific ratepayers requiring funding.
15. Only ratepayers specified in any funding agreement relative to the construction of the Chinaman Wells Sea Wall will be required to pay this separate rate.
16. Should ratepayers dispose of any property which is subject to the separate rate the amount payable for the separate rate shall be apportioned between the seller and the buyer in the normal manner at settlement date. The buyer will then assume liability for the remaining period of the separate rate.

ISSUES CONCERNING COMMUNITY EQUITY

17. Reliance on the Benefits Received principle suggests that (all other things being equal) a person who receives more benefits should pay a higher share of tax. The proposed separate rate will be applicable only to ratepayers who accept funding from Council and will be commensurate with the amount of funding provided to each ratepayer.
18. The current proposed split of costs for the sea wall among the ratepayers situated at Chinaman Wells is based primarily on the frontage of each property protected by the sea wall and an equitable share of all other costs associated with the project as determined by the Chinaman Wells Shack Owners group.
19. The amount of funding required by specific ratepayers is determined by subtracting from the determined share of costs for each ratepayer less any amounts being met directly by each ratepayer.

FUNDING PROPOSAL (if approved)

20. If Council agree to provide the requested funding following the consultation period all advances would be funded via loan from the LGA Finance Authority at fixed interest over a fixed term to be determined during consultation. Council will not need to allocate any amounts from existing reserves or revenue.



21. As is the usual process, interest rates applicable to the loan are to be determined at the time of drawing down of funds however the following table is provided as indicative of repayments per \$10,000 borrowed for 10 and 15 year loans at an indicative rate of 4.35% p.a. and 4.65% respectively. (rates currently on offer)
22. Separate rates, when and if declared, will be calculated to recover 100% of these amounts plus any associated costs. Each separate rate will be declared against each specific property for the determined period as per the final agreed allocation.

Per \$10,000 Borrowed	10 year period Per Annum including Interest	15 year period Per Annum including Interest
\$10,000	\$1,243.89 p.a.	\$933.40 p.a.

AREA

23. The separate rate shall be declared only for ratepayers who agree to specific funding agreements with Council or who decline to meet their designated share of costs for the proposed project.

BASIS OF CHARGING

24. The separate rate will be declared on a per allotment basis.
25. The separate rate will be declared to recover repayments including interest and any agreed associated costs in proportion with the amount of funding provided for each allotment.
26. The current proposed split of costs for the sea wall among the ratepayers situated at Chinaman Wells is based primarily on the frontage of each property protected by the sea wall and an equitable share of all other costs associated with the project as determined by the Chinaman Wells Shack Owners group.
27. The amount of funding required by specific ratepayers is determined by subtracting from the determined share of costs for each ratepayer any amounts being met directly by each ratepayer.

PERIOD OF RATING

28. To be determined during the consultation period and will be equal to the term of any loan sourced from the LGA Financing Authority.
29. The separate rate can be declared for a specified period (e.g. the term applicable to any relevant loan sourced for the purpose) and may be declared for a period exceeding one year.
30. It is proposed that the separate rate will be declared for the duration of the loan sourced to provide agreed funding as an equal charge each financial year.



POSTPONEMENT OF PAYMENT

31. It is not proposed that the separate rate will be postponed. It will be due and payable (annually or quarterly under normal conditions of payment of rates) immediately following declaration.
32. In accordance with usual conveyancing practices, if an allotment over which a separate rate has been declared is sold, the full years rate will be adjusted as between the vendor and purchaser. The purchaser will then assume liability for any remaining separate rate amount for the term of the separate rate under the same conditions.
33. Should any ratepayer liable for the separate rate, at any time, believe that the payment of this rate causes undue hardship for them they can apply to Council for consideration under Section 182 of the Local Government Act 1999. Section 183 details that if Council is satisfied on the application of a ratepayer that payment of rates in accordance with the Act would cause hardship, the Council may postpone payment on whole or in part for such period as the Council thinks fit.
34. This application can only occur after the declaration of the separate rate.

REMISSION

35. No remissions shall apply to the separate rate once it is declared.

REBATES

36. A Council may grant a discretionary rebate of rates or service charges in specific circumstances on such conditions as the Council sees fit. Council will give reasonable consideration to the granting of rebates on merit. Council complies with the provisions in relation to the Local Government Act 1999 in regard to rebates and has an existing policy: PO 060 Rates Relief Policy.

CONSULTATION PLAN TIMETABLE

- | | |
|--|------------------|
| • Council Meeting to endorse Community Consultation | 18 January 2017 |
| • Advertise consultation | 25 January 2017 |
| • Public Meeting as Information Forum and Debate | 1 February 2017 |
| • Additional Public Meeting | TBA if required |
| • Cut-off date for written submissions (at 5.00pm) | 23 February 2017 |
| • Council Meeting to Consider Feedback & Separate Rate | 8 March 2017 |

FEEDBACK ON PROPOSED FUNDING AND PROPOSED SEPARATE RATE(S)

Written submissions are being sought on the proposed declaration of separate rates on rateable land situated at Chinaman Wells identified as requiring funding from Council to assist in meeting of costs as determined by the Chinaman Wells Shack Owners group for the purpose of



Yorke Peninsula Council

25th January 2017

construction of a specified sea wall and associated infrastructure. Such separate rate will only be declared if Council agrees to provide such funding – to be determined at Council's March Council Meeting.

All submissions should be submitted to:

Chinaman Wells Funding Consultation
Yorke Peninsula Council
PO Box 57, Maitland SA 5573

or:

admin@yorke.sa.gov.au With "Attention Director CCS – Chinaman Wells Separate Rate" in the heading

By no later than 5.00pm on 23 February 2017

If you have any queries in relation to this Consultation Report please contact David Harding, Director Corporate & Community Services on 08 8832 000 or email:

david.harding@yorke.sa.gov.au

ANDREW CAMERON

CHIEF EXECUTIVE OFFICER

Yorke Peninsula Council

Chinaman Wells Sea Wall Separate Rate Consultation Report



MAGRYN

COASTAL EROSION REVIEW
SHACKS 1 to 40
CHINAMAN WELLS, YORKE PENINSULA

16237

June 2016

Revision B

For: CHINAMAN WELLS SHACKOWNERS ASSOCIATION

SCOPE

Rock revetment walls and sand drift fencing have previously been installed in front of the shacks at Chinaman Wells.

Recent storm damage on 9 May 2016 has destroyed the sand drift fencing and eroded the beach. Some shacks are being damaged or under threat. Many of the lower lying shacks had water under or around them.

This report is to:

- Review the current situation of erosion protection.
- Review the recent damage.
- Recommend the appropriate works to further protect the shacks from damage and beach erosion.



N:\archives\2016\16237\16237 Documentation\CER Rev A 16237.doc

ENGINEERING CONSULTANTS

267 BRIGHTON ROAD
 SOMERTON PARK SA 5044

TELEPHONE +61 (0)8 8295 8677
 FACSIMILE +61 (0)8 8295 5101,

admin@rnagryn.com.au
 www.magryn.com.au

ABN 64 090 560 099

GENERAL

Chinaman Wells is a group of 40 shacks on the western coast of Yorke Peninsula, between Port Victoria and Balgowan. The shacks are set along the coastal dune, and are experiencing erosion of the dunes in front of them.

Shack 1 is at the southern end, and shack 40 is at the northern end.

Rock revetment walls have previously been installed at shack 33 (1981) and shacks 27 to 30 (2007). Our office undertook a report on erosion of the beach for the shackowners in 2008, and as a result of this, the rock revetment wall was extended in front of the shacks 34 to 40 in 2011 and two lines of sand drift fencing were installed at the top of the beach in front of the northern rock revetment wall and general beach area south of shack 27.

Other measures recommended in our 2008 report had not been undertaken, including:

- rock revetment wall south of shack 27,
- sand bag, groynes, and sand replenishment south of the groynes,
- pedestrian access walkovers to the beach.

COMMENTS FROM SHACKOWNERS

The shackowners provided the following comments.

The storm event was a combination of a high tide and a storm surge, and included locally generated sea waves from the west. The wind was westerly also.

The sand drift net fencing was installed around 2011, however there was generally a gap under the bottom of the drift net fence material. This allowed sand to blow under the fence rather than being trapped by it. This gap under was remedied around 2013, and since that time the sand built up to a typical height of 400mm up the fence in the 3 years since.

The beach was heavily covered in seaweed during the storm. In addition to this, weed was deposited on top of the rock walls, and in low lying areas where the water overtopped the dune, there was weed deposited under and around shacks.

The erosion of the dune and set back of the erosion scarp was typically 3m at shack 6, 9m at shack 10, and 9m north of shack 11.

The owners noted that a large amount of water flooded over the land south of shack 1, over the main access road, and flooded the area behind the shacks. This area is generally low lying.

SITE INSPECTION

A site inspection was undertaken of the beach in front of the shacks on May 26, 2016. Generally it was noted that:

- the beach side of the dune was eroded with a scarp up to 0.8m high
- all the sand drift fencing had been destroyed
- there were extensive amounts of weed across the beach, on top of the rock walls, and under and around shacks in low lying areas.

Particular details noted at each shack were as follows:

- South of shack 1 the land and fore dune is low with some trees planted in the area. There is not scarp on the beach here, as this area is in the lee of a small offshore island.
- Shack 1 is an old two storey sheet metal clad shack, set approximately 10m back from the erosion line. The scarp here is buried in weed, but appears 0.5 to 0.8 m high. There is a large amount of debris at the top of the beach.
- Shack 2 is an old metal sheet clad shack set approximately 20m back from the erosion scarp. The front yard was full of weed. It is reported the front of this shack lost 3m of fore dune. The fore dune is approximately 1m higher than the shack floor level.

Shack 3 is a small shack, set at the top the dune, which is approximately 0.6m high. The erosion scarp here is 0.5m high and 6m from the shack.

- Shack 4 is and old sheet metal clad shack with a newer addition on the southern side. The foredune is 1m higher that the floor level of the old portion of the shack. There is a large amount of vegetation in the front garden. The scarp is 0.8m high and 10m from the shack. The offshore island also provides protection to this area.
- Shack 5 is and old sheet metal clad shack. The fore dune here is 1m high, and the land behind is low. The erosion scarp is approximately 0.8m high and 15m from the shack. There are 8 to 10 large shrubs or trees in the front garden of the shack. The foredune has very little vegetation.
- Shack 6 is a new building on posts, set well above ground level. The dune is 0.5m high and the scarp is 10m from the building. The area in front of the shack, behind the dune, is weed covered.
- Shack 7 is an old shack, set low and is 15m back from the scarp. The front yard is weed covered. The scarp is 0.5m high.
- Shack 8 is a new shack. The scarp was 0.3m high and 4m from the shack. There was no vegetation in front of the shack. This fore dune experienced a major washover, and the front of the yard was weed covered.

- Shack 9 is set low. The fore dune is approximately 0.5m high. The erosion scarp was buried, but is 5m from the shack. There was a major washover of the fore dune, and weed present in the front yard. There is some vegetation in front of the shack.
- Shack 10 is an old shack on poles, set well forward. The porch of the shack was undermined and is collapsing. The water washed under this shack. The scarp is 0.5m high and is at the shack. There was a large amount of weed under and beyond the shack.
- Shack 11 is a new building. The dune here is 0.3m high. The scarp is buried under weed, but is 10m from the shack.
- There is a block of crown land as a major vehicle beach access point located between shacks 11 and 12. This vehicle access ramp was washed over. There was weed located on the ramp, behind the beach. It is proposed to close this vehicle beach access point.
- Shack 12 is set low. The dune is up to 1m high with sparse vegetation. The scarp is 0.5m high and 5m from the shack.
- Shack 13 is a new shack, set above ground level. The dune is 0.3m high, with a 0.3m scarp, 6m from the shack.
- Shack 14 has a slightly higher foredune, with approximately 0.5m of weed. The scarp is 0.5m high, located 3m from the shack.
- Shack 15 is a two storey shack set low. The scarp is 0.5m high, 10m from the building. There is no vegetation in front of the shack. Extensive weed has washed over and behind the dune.
- Shack 16 is an old shack set very low, with some vegetation in front of it. The scarp is 0.5m high, located 8m from the shack.
- Shack 17 is a new house with the land built up. There was nothing in front of the shack, except for compacted fill. The shack has retaining walls along the northern and southern boundaries. There is no dune and no vegetation west of the house. The scarp is 0.8m high, located 8m from the house.
- Shack 18 is well vegetated in front of the shack. The scarp is 0.5m high, located 8m from the shack.
- There is a block of crown land as a beach access point between shacks 18 and 19. The block is vegetated. The old walkover with drift net fencing has been destroyed.
- Shack 19 is a new building. The area west of the shack where the fore dune was has been excavated. There is a narrow strip of vegetation 1m wide between the excavated area and the beach. The scarp is 0.3m high.
- Shack 20 is a vegetated vacant block. The fore dune is 0.2m high with some vegetation. The scarp, at the fore dune, is 0.3m high.

- Shack 21 has a front porch, which is 5m from the erosion scarp. There is a walking track to the beach, which the water overtopped. The scarp is 0.8m high.
- Shack 22 is set on posts with a timber boardwalk to the beach. The scarp is 5m from the shack, under the boardwalk. There is no remaining dune, but some small limestone rocks at the top of the beach.
- Shack 23 has a few small limestone rocks at the top of the beach. The scarp is 0.6m high, and 1m from the shack's porch. The shack had a boardwalk to the beach, but the end of this has been removed by the storm.
- Shack 24 had a boardwalk out over the scarp with steps to the beach. This shack lost 6m of fore dune in front of it. The scarp is 0.8m high, with the shack directly behind.
- Shack 25 has a revetment wall of chained tyres, located 6m west of the shack. These performed poorly, and the scarp is now 0.5m high and 3m from the shack. The top of the fore dune is 0.5m above the floor level of the shack.
- Shack 26 has no fore dune, no vegetation and no revetment wall. The shack has been flooded, and undermined. The porch slab has been destroyed. The erosion is at the front of the shack and the shack is suffering ongoing structural damage. There is an illegal vehicle beach access on the northern side of this allotment. It is proposed to close this.
- Shack 27 has a rock revetment wall in front of it. The wall suffered some storm damage, with some rocks sinking into the sand or moving. A new steel post/concrete sleeper retaining wall is being built along the southern boundary adjacent to the beach access.
- Shack 28 has a rock revetment wall with the shack set well behind the wall.
- Shack 29 has a rock revetment wall with the shack behind. It has steps to the beach over the rock wall.
- Shack 30 has a rock revetment wall with the shack behind. The rock wall here is very steep, being almost vertical. This should have rocks added in front of it to flatten it to a more stable slope.
- Shack 31 has a rock revetment wall with a carport and shack behind. It has steps over the face of the wall to the beach. The rock face here is also steep.
- Shack 32 has a rock revetment wall with shack behind.
- Shack 33 has a rock revetment wall with shack behind.
- Shack 34 is a vacant block. It has a rock revetment wall across the seaward side.

- A vehicle beach access ramp is located on the crown land between shacks 34 and 35. The rock walls in front of the shacks either side return up the ramp access. The fore dune here is high, so the water did not overtop the dune. It is proposed to retain this access ramp.
- Shack 35 had a rock revetment wall with a new shack being constructed behind.
- Shack 36 has a sand covered rock revetment wall, with some planting, and a shack behind.
- Shack 37 has a sand covered rock revetment wall, with some plantings, and a shack behind.
- Shack 38 has a sand covered rock revetment wall, which the owners have attempted to plant out. There is a shack behind.
- Shack 39 has a sand covered rock revetment wall with some plantings, and a sleeper wall at the rear of the rock wall. There is a shack behind the sleeper wall.
- Shack 40 has a rock revetment wall with a shack behind.

DISCUSSION

The rock wall and shacks at 27 to 40 are stable and do not have erosion concerns, with the exception of the steep face on the rock revetment at shacks 29 and 30. The shacks in this group are generally set higher than the others.

The shacks at 12 to 26 are showing damage due to wave attack or the erosion scarp is very close to the front of the shacks. These shacks are in imminent danger of further damage due to wave and water ingress or undermining of footings in any future storm event. These shacks require a rock wall placed in front of them immediately.

Shacks 1 to 11 are generally set low, but the erosion scarp is generally 10m or more for the shack. These blocks are protected from wave action to a minor degree by an offshore island, which will tend to reduce the impact of wave activity. These require protection from erosion in the near future with a rock revetment wall. It should be noted that a single severe storm event coupled with a high water level could erode the top of the beach back to the shacks.

Even with the placement of rock revetment walls in front of all shacks, it would be advantageous to promote sand retention on the beach. This is best done with sand drift fencing, sand bag groynes and sand replenishment. However, it must be noted that these activities are a method of increasing the amount of sand on the beach, and it is likely that this sand (and fencing, and groynes) will be removed by the next major storm. However, having this sand stored on the beach will reduce the overall erosion impact of a future storm.

A rock revetment wall itself will not tend to promote sand retention on the beach, and without the sand drift fencing, groynes, and sand replenishment, the beach may largely disappear in the medium term.

The area south of shack 1 is low lying, and water overtopping the foredune in this area tends to drain through this area and flood around to the rear of the shacks. This flooding could be prevented to a large degree by the construction of a levee across this crown land and across the access road.

RECOMMENDED WORKS

The following works are recommended:


1. Install a rock revetment immediately in accordance with the drawings in front of shacks 12 to 26, including the crown land between shacks 11 and 12.
2. Install a rock revetment wall in the near future in accordance with the drawings in front of the shacks 1 to 11. This is recommended to be prior to the start of winter 2017. Please note that any severe storm event coincident with a high water event prior to the installation of this rock revetment may cause damage to shacks in this area.
3. Add primary armour rocks (700 to 900mm diameter) in front of the existing rock wall at shacks 29 and 30 to reduce the front face steepness of the rock wall to 1:1.75.
4. Construct two new lines of sand drift fencing along the entire top of the beach, in accordance with the drawings. The base of this fencing material should be buried 100mm typically.
5. Construct the three sand bag groynes across the beach and replenish behind the groynes with imported beach sand, in accordance with the drawings.
6. Remove the vehicle beach access on crown land between shacks 11 and 12.
7. Construct a levee bank to RL 3.0m AHO across the crown land south of shack 1, and across the access roadway.
8. Construct pedestrian walkovers over the rock walls on crown land between shacks 6 & 7, and 18 & 19.
9. Retain the vehicle beach access ramp between shacks 34 & 35.

All work is to be undertaken in accordance with the approved drawings 08404-1 and 2, rev G. It is recommended that council contribute to work undertaken on crown land that is not directly in front of a private block.

For Magryn & Associates Pty. Ltd.

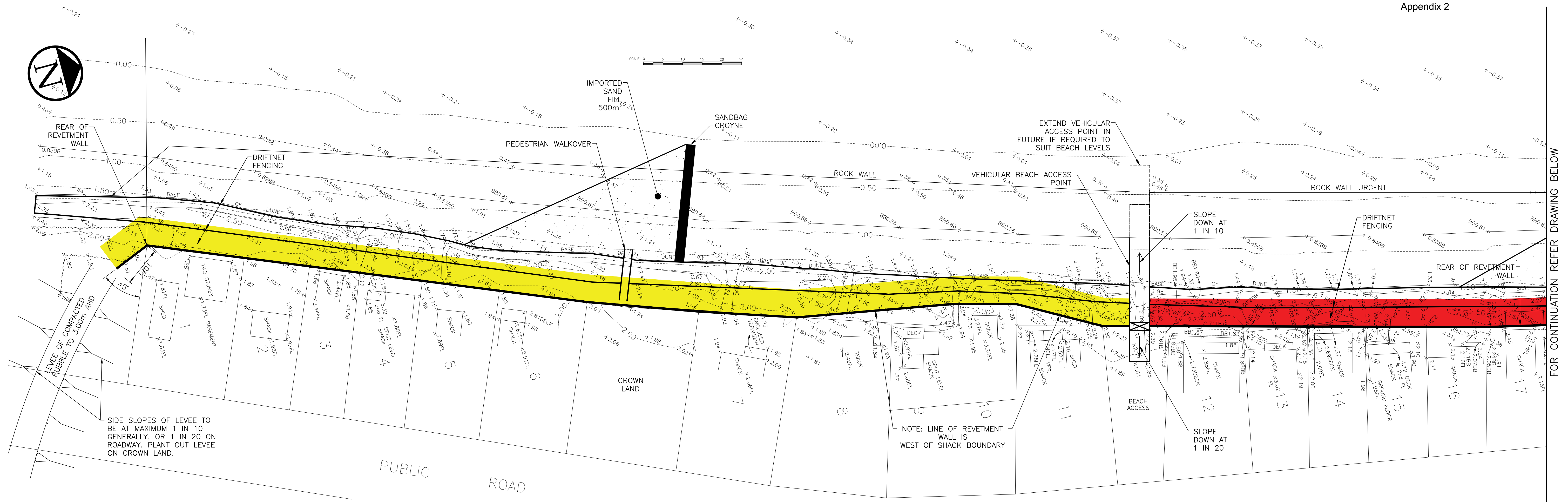


T. Magryn
CPEng.

 Terence Magryn
F.1.E.Aust, M.Eng. Sc
C.P.Eng, (108230)

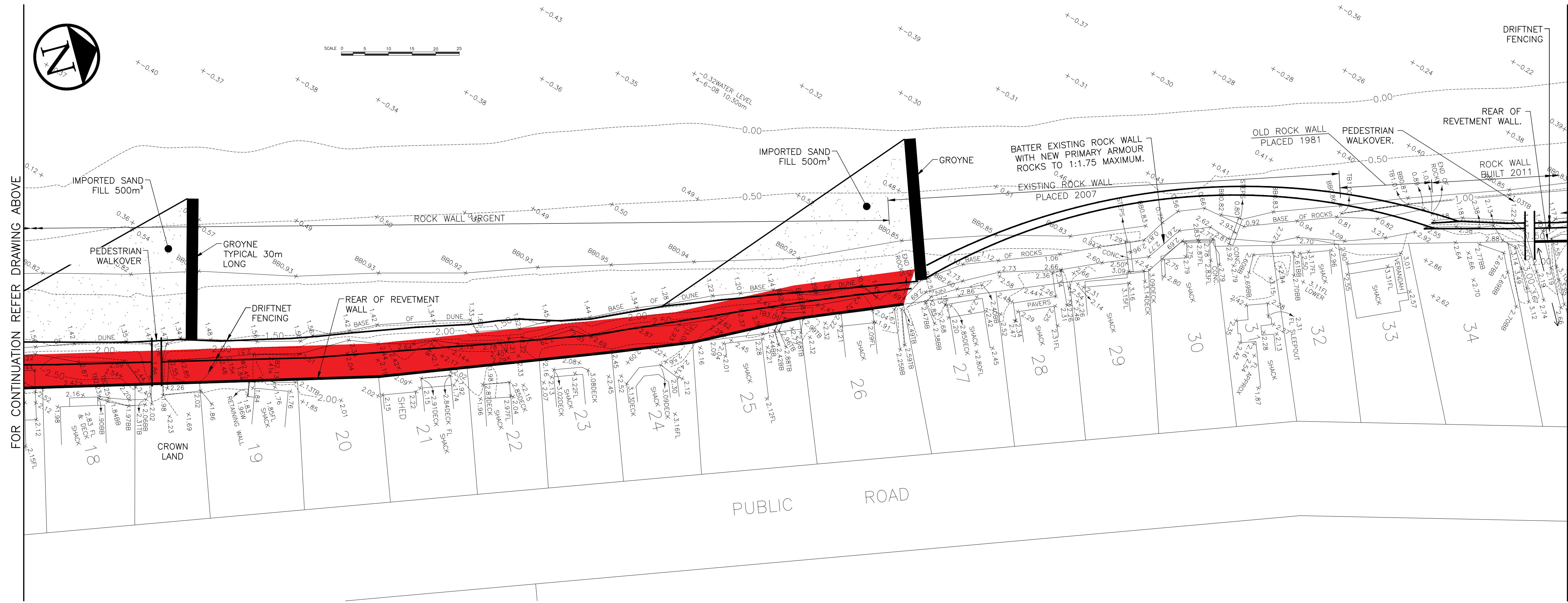
Attachments:

- Photo gallery,
- Drawings 08404-1 & 2 rev G



NOTE: PLANT OUT ALL BARE SPOTS ON FOREDUNE INSIDE OF DRIFTNET FENCED AREAS. REFER DRAWING 2 FOR PLANTING DETAILS.

PLAN - LOTS 1 TO 17
SCALE 1:500



PLAN - LOTS 17 TO 34
SCALE 1:500

LEGEND

- BB - BOTTOM OF BANK
- FL - FLOOR LEVEL
- TB - TOP OF BANK
- ROCK REVETMENT WALL REQUIRED URGENTLY.
- ROCK REVETMENT WALL REQUIRED SOON.

NOTES:
FLOOR LEVELS SHOWN ARE FROM EXTERNAL MEASUREMENTS ONLY.
LEVEL DATUM AUSTRALIAN HEIGHT DATUM
CONTOUR INTERVAL 0.5m

F	REINSPECTED AND NEW REPORT	TH 10.06.16
E	CHANGES TO NOTES	DB 16.06.11
D	CHANGES TO NOTES	TH 14.06.11
C	-	SR 06.06.11
B	GROYNES AND ACCESS POINTS MOVED	CB JUN 2009
A	PRELIMINARY	CB MAY 2009
ISSUE	AMENDMENTS	INT./DATE

Magryn & Associates Pty Ltd

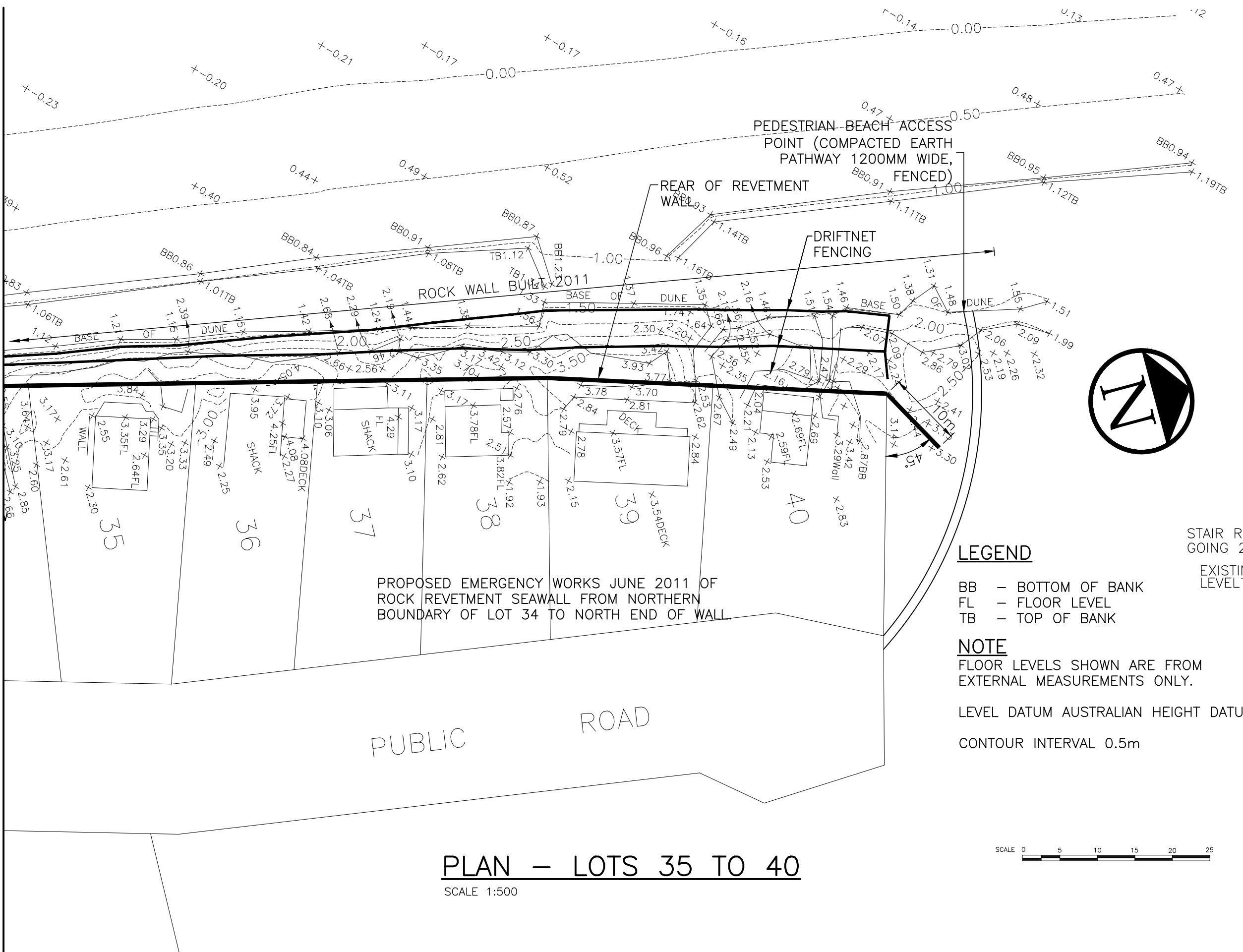
Consultant Civil, Structural & Coastal Engineering.
267 Brighton Road,
Somerton Park, SA 5044
ABN: 651 455 748 34
Telephone: (08) 8295 8677
Facsimile: (08) 8295 5104
www.magryn.com.au

CLIENT:
CHINAMAN WELLS
SHACKOWNERS ASSOCIATION
PROJECT:
FORESHORE PROTECTION
WORKS
PROJECT ADDRESS:
CHINAMAN WELLS,
YORKE PENINSULA

TITLE:
PLANS

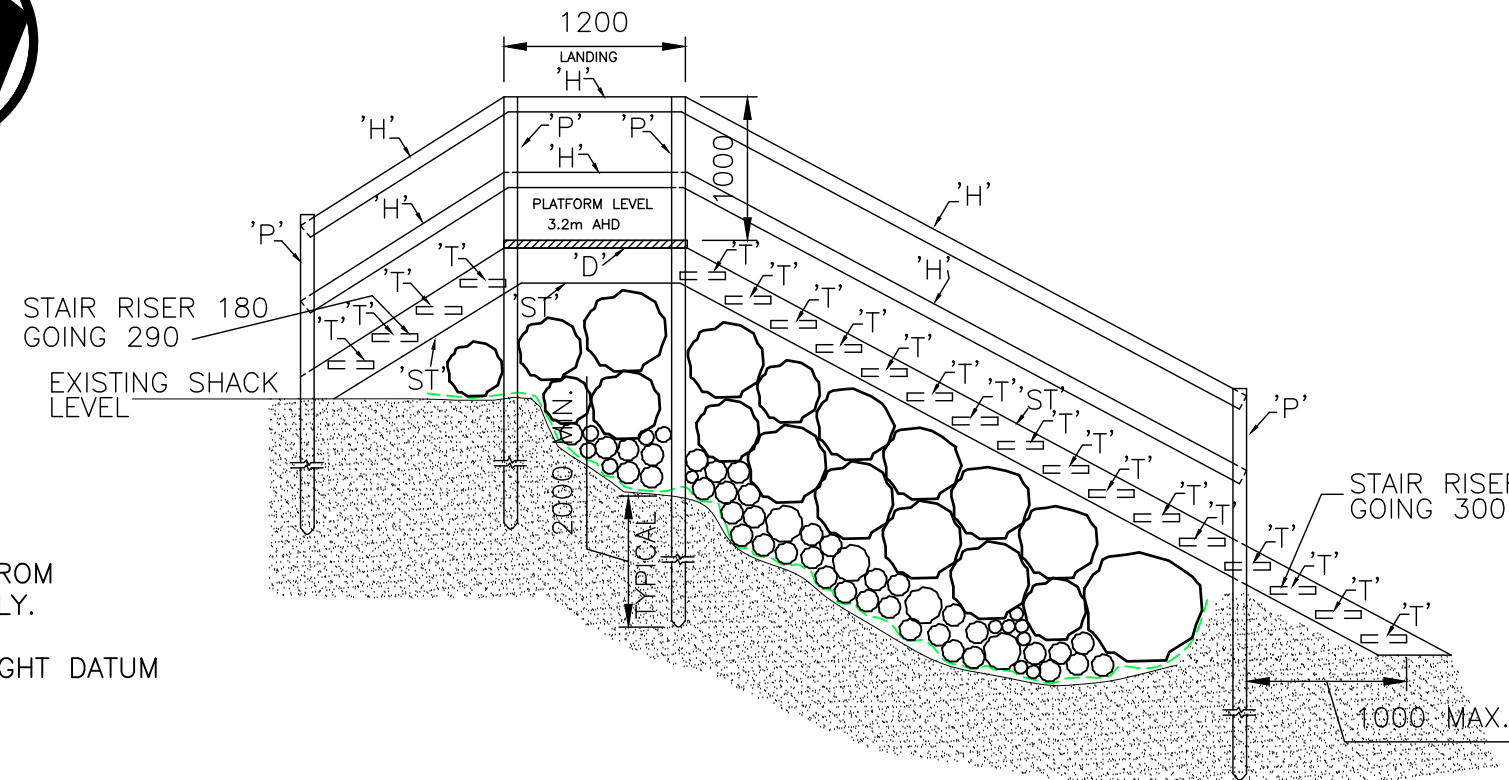
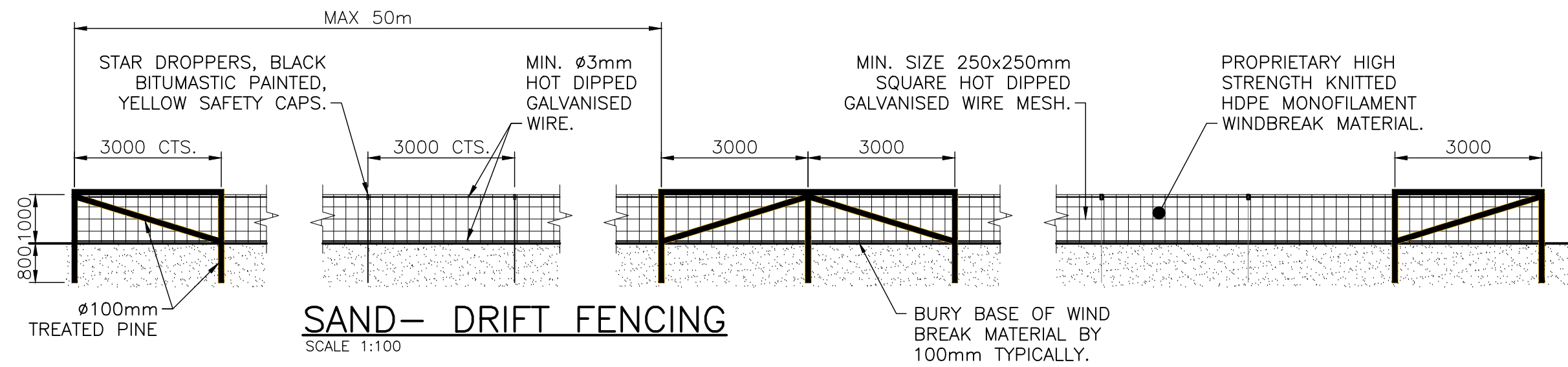
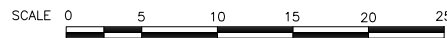
DESIGN: TM	SCALE: AS SHOWN	DATE: JUN 2011
SHEET SIZE: A1	DRAWING NUMBER: 08404-1	REVISION F

FOR CONTINUATION REFER DRAWING 08404-1



PLAN - LOTS 35 TO 40

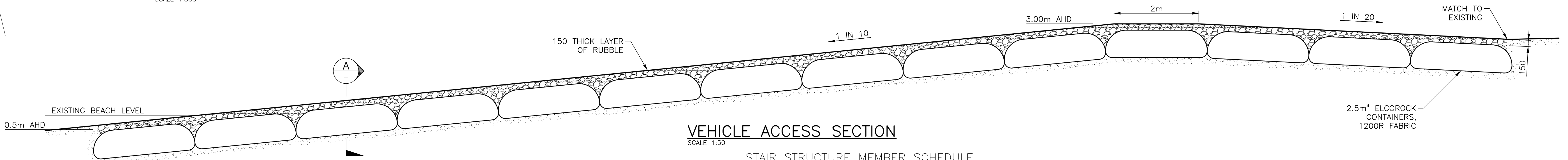
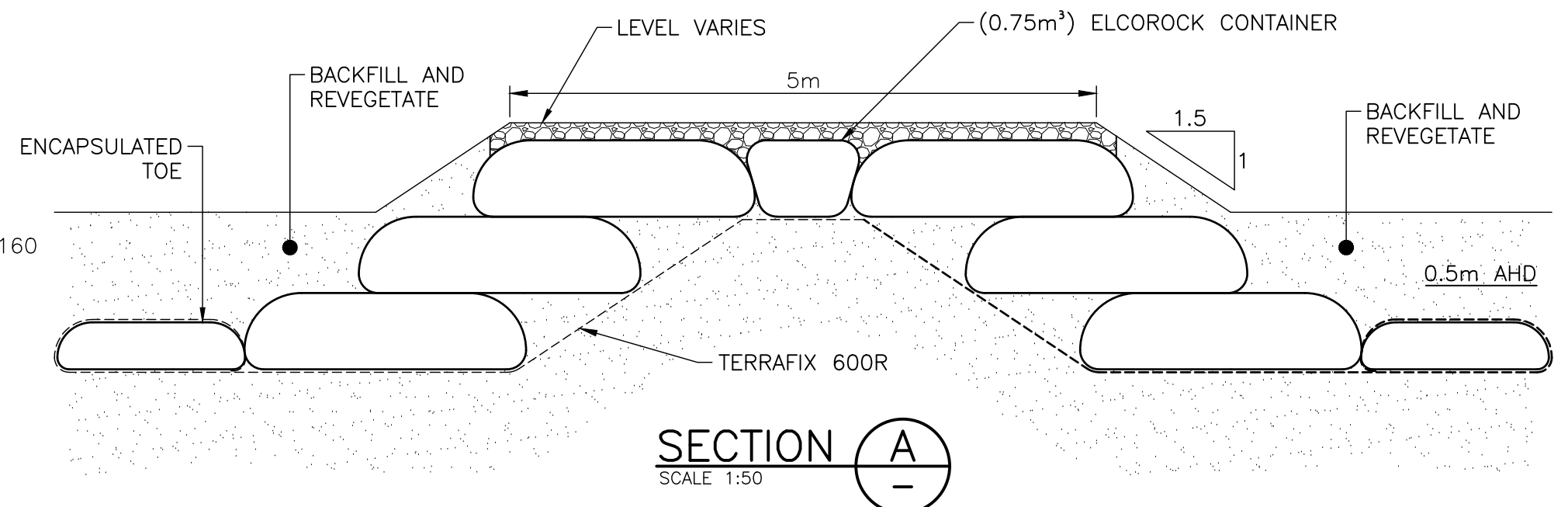
SCALE 1:500



TYPICAL PEDESTRIAN WALKOVER DETAIL

SCALE 1:50

NOTE: STAIRS TO BE 1.2M WIDE (CLEAR)

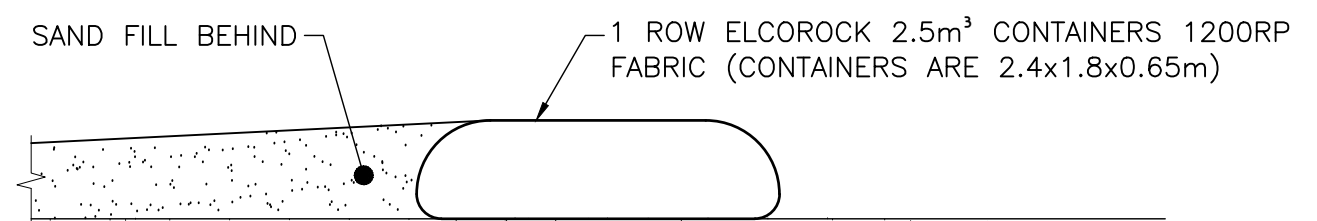


VEHICLE ACCESS SECTION

SCALE 1:50

STAIR STRUCTURE MEMBER SCHEDULE

MARK	SIZE	DESCRIPTION
ST	260X50 F5 TREATED PINE	STRINGER TO SUPPORT STAIR TREADS. FIX TO POST 'P' WITH 2/M20 BOLTS AT EACH CONNECTION.
D	50mm THICK F5 PINE DECKING	DECK ON PLATFORM. SIT ON TOP OF STRINGERS, AND CONNECT WITH GALVANISED SPIKES.
T	300X50 F5 TREATED PINE.	STAIR TREADS. FIX TO STRINGER WITH 1/100X6 EA, 2/M20 BOLTS TO TREADS, AND 2/M20 BOLTS TO STRINGER AT EACH END.
P	90X90 F5 TREATED PINE.	POSTS TO SUPPORT STAIRS. EMBEDED INTO GROUND 2m MIN.
H	100X75 F11 (NOT CCA TREATED)	HAND RAILS SUPPORTED BY POSTS FIX TO POSTS WITH 2/M16 BOLTS AT EACH END.



GROYNE DETAIL

SCALE 1:50

F	REINSPECTED AND NEW REPORT	TH 10.06.16
E	CHANGES TO NOTES	DB 16.06.11
D	CHANGES TO NOTES	TH 14.06.11
C	ROCKWALL AMENDED & NOTES ADDED	SR 06.06.11
B	ALTERNATIVE REVETMENT SECTION ADDED	CB JUN 2009
A	PRELIMINARY	CB MAY 2009
ISSUE	AMENDMENTS	INT./DATE

NOTES

PLANTING

PLANT NAME	TYPE	PERCENTAGE
ADRIANA KLOTZSCHII	(SHRUB 0.5—1.0m)	10%
DIANELLA BREVICAULIS	(SEDEGE TO 0.5m)	5%
DODONAEA VISOSA SSP. SPATULATA	(SHRUB > 2m)	35%
ISOLEPIS NODOSA	(SEDEGE OVER 0.5m)	5%
OLEARIA AXILLARIS	(SHRUB > 2m)	20%
RHAGODIA CANDOLLEANA SSP. CANDOLLEANA	(SHRUB 0.5—1.0m)	5%
KUNZEA POMIFERA	(GROUND COVER)	10%
CARPOBROTUS	(GROUND COVER)	10%

ALL PLANTS ARE TO BE PLANTED AS TUBE STOCK, AND PROTECTED WITH DRY, WELL WASHED SEAWEED MULCH. PLANTS ARE TO BE PLANTED AT A RATE OF TWO PLANTS PER SQUARE METRE ON AVERAGE IN AREAS WITH NO VEGETATION, AND THE NUMBER OF EACH PLANT TO BE USED IS NOMINALLY CALCULATED FROM THE PERCENTAGE SPLIT SHOWN IN THE TABLE ABOVE. ALONG THE NORTHERN END OF THE BEACH INFILL THE PLANTS BETWEEN EXISTING SHRUBS. DO NOT REMOVE OR DAMAGE EXISTING VEGETATION.

ALL PLANTS ARE TO BE WATERED AND TENDERED FOR THE FIRST SIX WEEKS AFTER PLANTING.
ANY PLANTS WHICH ARE DISEASED OR DIE DURING THIS PERIOD ARE TO BE REPLACED.

SOFT ROCK GROUYNE

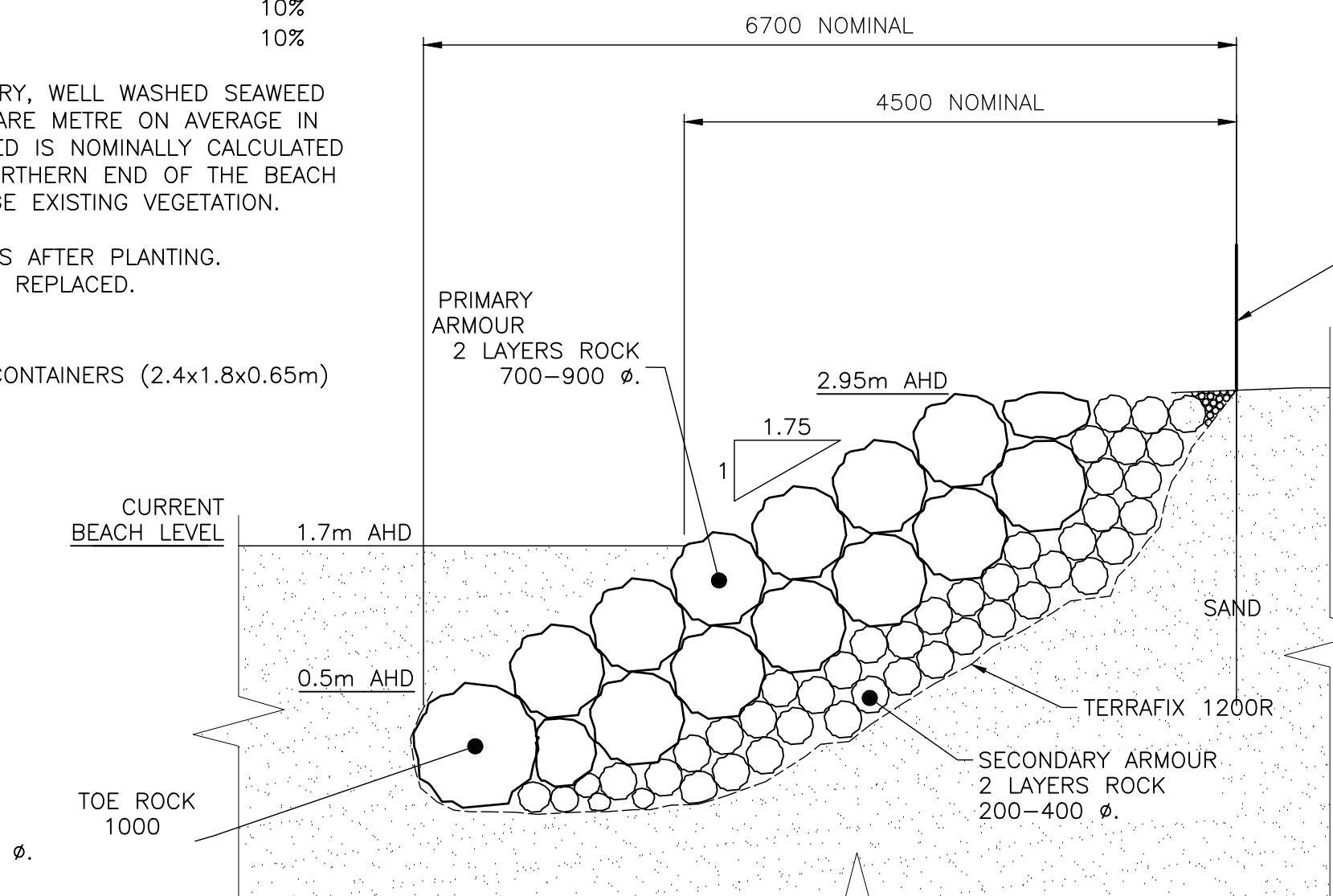
3 GROYNES, EACH TYPICALLY COMPOSED OF 1 ROW OF 2.5m³ ELCOROCK CONTAINERS (2.4x1.8x0.65m)
LAID END TO END (13 BAGS PER GROUYNE)

SAND DRIFT FENCES

FOR SAND DRIFT FENCING REFER TO SPECIFICATIONS.

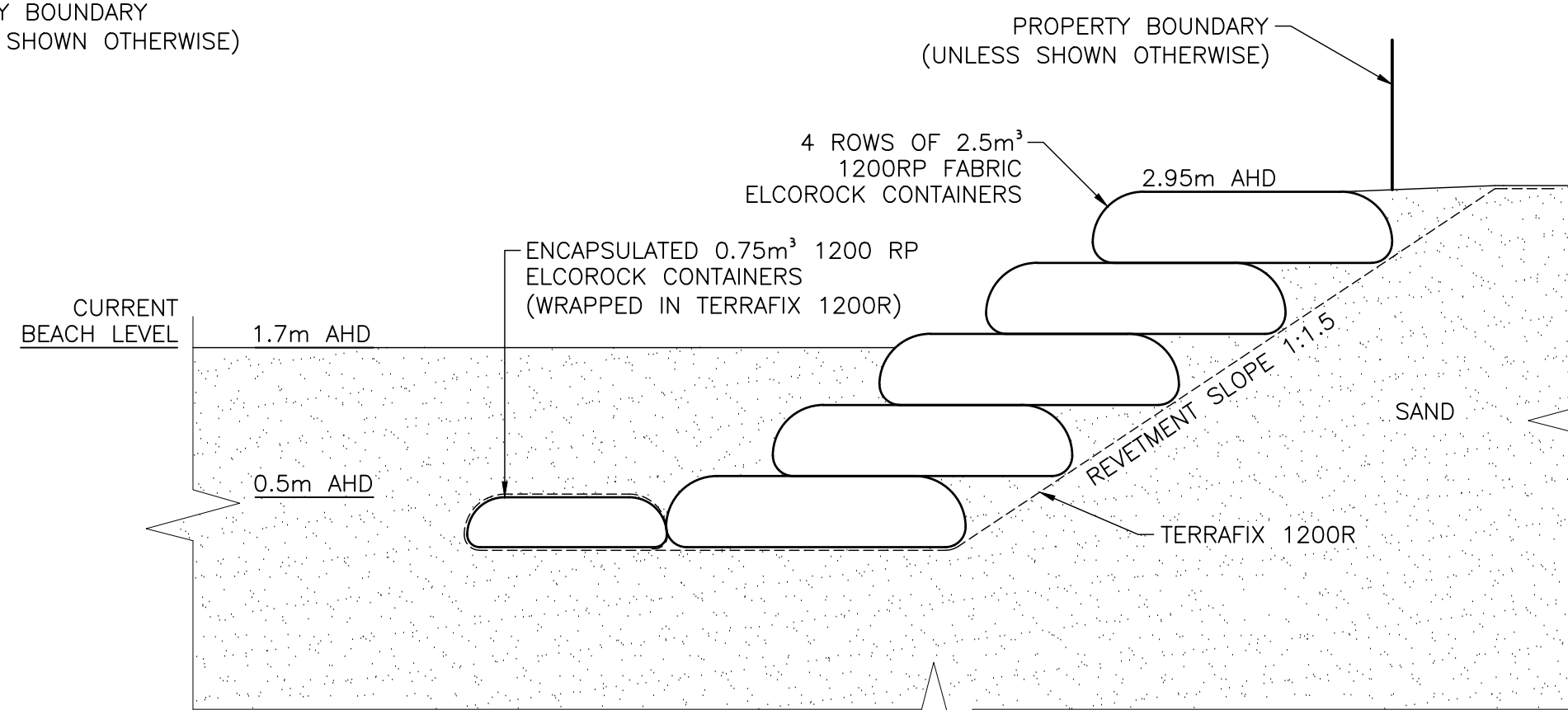
STAIRS

ALL FIXINGS TO BE HOT DIPPED GALVANISED



ALTERNATIVE REVETMENT SECTION – ROCKWALL

SCALE 1:50



REVETMENT SECTION – SANDBAG WALL

SCALE 1:50

Magryn & Associates Pty Ltd

Consultant Civil, Structural & Coastal Engineering.

267 Brighton Road,
Somerton Park, SA 5044
ABN: 64 090 560 099

Telephone: (08) 8295 8677
Facsimile: (08) 8295 5104
www.magrinn.com.au

CLIENT:
CHINAMAN WELLS
SHACKOWNERS ASSOCIATION

PROJECT:
FORESHORE PROTECTION
WORKS

PROJECT ADDRESS:
CHINAMAN WELLS,
YORKE PENINSULA

TITLE:
PLAN & DETAILS

CONTRACTORS MUST VERIFY ALL DIMENSIONS PRIOR TO ANY OFF SITE FABRICATION.		
DESIGN: TM	SCALE: AS SHOWN	DATE: JUN 2011
SHEET SIZE: A1	DRAWING NUMBER: 08404-2	REVISION F

Chinaman Well - Proposed Sea Wall Cost Allocation

Appendix 3

Prepared by: Chinaman Wells Shack Owners Group

** Lot No's and Names have been removed for privacy reasons

Total Shacks	38
Shacks agreed shared Cost A	24
Shacks agreed shared Cost B	38

Individual costs	
Wall per L/M including Geo Mat	\$ 1,200.00

Shared Cost A (new wall)	
Magryn (4 visits @ \$1450)	\$ 5,800.00
Risk	\$ 20,000.00
Cost of shacks not participating	\$ -
	\$ 25,800.00

Shared Cost B (all shacks)	Frontage l/m	Cost
Crown Land Lot 2	16.76	\$ 20,112.00
Crown Land between lots 6 & 7	28.51	\$ 34,212.00
Crown Land between lots 11&12	17.04	\$ 20,448.00
Crown Land between lots 18&19	13.67	\$ 16,404.00
Crown Land between lots 19&21	17.2	\$ 20,640.00
Wall Return at southern end	10	\$ 12,000.00
Crown land wall total length	103.18	
Install Fencing (all shacks)	800m @ \$6 per metre	\$ 4,800.00
Fence Materials	All materials	\$ 6,000.00
Walkovers	2 @ 6000 Worst Case	\$ 12,000.00
Groynes	3	\$ 12,000.00
	Total Cost	\$ 158,616.00

Shared Cost B. Extra cost per shack (1 to 26) if shacks 27 to 40 say no to sharing the costs.	\$ 2,434.89
---	-------------

LOT				Agreed Cost A	Agreed Cost B	Council Funding	Shack Frontage	Wall Construction	Shared A	Shared B	Total	Deposit	Balance	Cost L/M	Council Funding
A				Yes	Yes	Yes	24.99	\$ 29,988.00	\$ 1,075.00	\$ 4,174.11	\$ 35,237.11		\$ 35,237.11	\$ 1,410.05	\$ 35,237.11
B				Yes	Yes		12.86	\$ 15,432.00	\$ 1,075.00	\$ 4,174.11	\$ 20,681.11	\$ 3,000.00	\$ 17,681.11	\$ 1,608.17	\$ -
C				Yes	Yes	Yes	16.11	\$ 19,332.00	\$ 1,075.00	\$ 4,174.11	\$ 24,581.11	\$ 3,000.00	\$ 21,581.11	\$ 1,525.83	\$ 21,581.11
D				yes	Yes		22.55	\$ 27,060.00	\$ 1,075.00	\$ 4,174.11	\$ 32,309.11	\$ 3,000.00	\$ 29,309.11	\$ 1,432.78	\$ -
E				Yes	Yes		24.97	\$ 29,964.00	\$ 1,075.00	\$ 4,174.11	\$ 35,213.11	\$ 3,000.00	\$ 32,213.11	\$ 1,410.22	\$ -
F				Yes	Yes		24.31	\$ 29,172.00	\$ 1,075.00	\$ 4,174.11	\$ 34,421.11	\$ 3,000.00	\$ 31,421.11	\$ 1,415.92	\$ -
G				Yes	Yes		15.8	\$ 18,960.00	\$ 1,075.00	\$ 4,174.11	\$ 24,209.11	\$ 3,000.00	\$ 21,209.11	\$ 1,532.22	\$ -
H				Yes	Yes		15.95	\$ 19,140.00	\$ 1,075.00	\$ 4,174.11	\$ 24,389.11	\$ 3,000.00	\$ 21,389.11	\$ 1,529.10	\$ -
I				Yes	Yes	Yes	21.82	\$ 26,184.00	\$ 1,075.00	\$ 4,174.11	\$ 31,433.11	\$ 3,000.00	\$ 28,433.11	\$ 1,440.56	\$ 28,433.11
J				Yes	Yes		18.66	\$ 22,392.00	\$ 1,075.00	\$ 4,174.11	\$ 27,641.11	\$ 3,000.00	\$ 24,641.11	\$ 1,481.30	\$ -
K				Yes	Yes		16.52	\$ 19,824.00	\$ 1,075.00	\$ 4,174.11	\$ 25,073.11	\$ 3,000.00	\$ 22,073.11	\$ 1,517.74	\$ -
L				Yes	Yes	Yes	14.65	\$ 17,580.00	\$ 1,075.00	\$ 4,174.11	\$ 22,829.11	\$ 3,000.00	\$ 19,829.11	\$ 1,558.30	\$ 19,829.11
M				Yes	Yes		15.61	\$ 18,732.00	\$ 1,075.00	\$ 4,174.11	\$ 23,981.11	\$ 3,000.00	\$ 20,981.11	\$ 1,536.27	\$ -
N				Yes	Yes		15.2	\$ 18,240.00	\$ 1,075.00	\$ 4,174.11	\$ 23,489.11	\$ 3,000.00	\$ 20,489.11	\$ 1,545.34	\$ -
O				Yes	Yes		16.36	\$ 19,632.00	\$ 1,075.00	\$ 4,174.11	\$ 24,881.11	\$ 3,000.00	\$ 21,881.11	\$ 1,520.85	\$ -
P				Yes	Yes	Yes	19.58	\$ 23,496.00	\$ 1,075.00	\$ 4,174.11	\$ 28,745.11	\$ 3,000.00	\$ 25,745.11	\$ 1,468.09	\$ 25,745.11
Q				Yes	Yes		20.76	\$ 24,912.00	\$ 1,075.00	\$ 4,174.11	\$ 30,161.11	\$ 3,000.00	\$ 27,161.11	\$ 1,452.85	\$ -
R				Yes	Yes		18.85	\$ 22,620.00	\$ 1,075.00	\$ 4,174.11	\$ 27,869.11	\$ 3,000.00	\$ 24,869.11	\$ 1,478.47	\$ -
S				Yes	Yes		15.37	\$ 18,444.00	\$ 1,075.00	\$ 4,174.11	\$ 23,693.11	\$ 3,000.00	\$ 20,693.11	\$ 1,541.52	\$ -
T				Yes	Yes	Yes	15.41	\$ 18,492.00	\$ 1,075.00	\$ 4,174.11	\$ 23,741.11	\$ 3,000.00	\$ 20,741.11	\$ 1,540.63	\$ 20,741.11
U				Yes	Yes		17.28	\$ 20,736.00	\$ 1,075.00	\$ 4,174.11	\$ 25,985.11	\$ 3,000.00	\$ 22,985.11	\$ 1,503.77	\$ -
V				Yes	Yes		23.13	\$ 27,756.00	\$ 1,075.00	\$ 4,174.11	\$ 33,005.11	\$ 3,000.00	\$ 30,005.11	\$ 1,426.94	\$ -
X		Has not agreed at this point	Contributions Calculated	Yes	Yes		22.18	\$ 26,616.00	\$ 1,075.00	\$ 4,174.11	\$ 31,865.11		\$ 31,865.11	\$ 1,436.66	\$ 31,865.11
Y		Has not agreed at this point	As if Agreed	Yes	Yes		19.81	\$ 23,772.00	\$ 1,075.00	\$ 4,174.11	\$ 29,021.11		\$ 29,021.11	\$ 1,464.97	\$ 29,021.11
AA				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
BB				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
CC				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
DD				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
EE				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
FF				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
GG				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
HH				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
II				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
JJ				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
KK				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
LL				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
MM				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
NN				N/A	Yes	Yes	0	\$ -	\$ -	\$ 4,174.11	\$ 4,174.11		\$ 4,174.11		\$ 4,174.11
Totals				24	38	20	448.73	\$ 538,476.00	\$ 25,800.00	\$ 158,616.00	\$ 722,892.00	\$ 63,000.00	\$ 659,892.00		\$ 270,890.32