



CON20040566405
Change to (03-10)
No Changes to (11-12)

Resource Consent

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

FAR NORTH DISTRICT COUNCIL, PRIVATE BAG 752, KAIKOHE 0440

FAR NORTH HOLDINGS LIMITED, P O BOX 7, OPUA 0290

CON20020566403 TO 10: COASTAL PERMITS

- (03) Construction and use of an approximately 400 square metre extension to the existing wharf structure.
- (04) Erection and use of an approximately 135 square metre building on the existing wharf for maritime related businesses and management purposes, along with two storage containers and an ice plant.
- (05) Construction of a new jetty and addition of vessel fuelling facilities on it.
- (06) Alterations to existing reclamation and associated seawall and carry out dredging for purposes of creating improved berthing facilities for oyster barges and other craft.
- (07) Alterations to an existing boat launching ramp arising from the proposed reclamation.
- (08) Discharge of up to 300 litres per second of treated stormwater, from a vehicle parking area and toilet building, a boat washdown area and a fuel storage area to the coastal marine area, via an outfall.
- (09) (Not used).
- (10) Occupation and use of the various structures, works and services identified above and associated parts of the coastal marine area for a period of 35 years,

subject to the following conditions:

- 1 The Consent Holder shall ensure that the works are constructed generally in accordance with the following plans:
 - Northern Civil Consulting Engineers Limited Figure 1: "Concept Plan of Proposed Facilities" (NRC Plan No. 3404 B), Figure 9: "Plan of Proposed Services" (NRC Plan No. 3404 - 1a), dated May 2003, Job 1088, Sheet 2, Revision No. 2, and Figure 9a: "Plan of Proposed Services" (NRC Plan No. 3404/2), dated May 2003, Job 1088, Sheet 3, Revision 1,

- Richardson and Stevens Consultants (1996) Limited Figure 6: "Plan of Reclamation and Wharf Extensions" (NRC Plan No. 3404 - 3a), dated August 2002, Reference: 2650, Sheet 1, and Figure 8: "Plan of New Fuel Jetty and Sheet Piled Seawall" (NRC Plan No. 3404/4), dated October 2002, Sheet 2, as amended by Bellingham Marine Far North Figure PJ 2: "Pukenui Fuel Jetty Plan and Elevation" (NRC Plan No. 3404 - 4a)
- Butt Design Group, Figure 10: "Plan of New Wharf Building" (NRC Plan No. 3404/5), Job No. 1995, Sheet 01 and Figure 11: "Plan of New Amenities Building" (NRC Plan No. 3404/6), Job No. 2006, Sheet 01(**attached**).

- 2 Notwithstanding Condition 1 above, the Consent Holder shall ensure that the invert levels specified in the plans referred to in Condition 1 shall not deviate by more than 10 mm.
- 3 The Consent Holder shall notify the Council in writing of the date construction work is to commence at least two weeks beforehand. At the same time, the Consent Holder shall contact the Harbourmaster (the Maritime Manager, Northland Regional Council) to initiate the issue of any Notice to Mariners regarding navigation warning arising from construction activities.
- 4 The Consent Holder shall ensure that during construction of the facilities, the site is regularly visited by a Registered or Chartered Engineer, who is independent of the contractor, to ensure that the works are being carried out in accordance with the information submitted with the application, and also with the conditions of this consent. This engineer shall supervise the positioning of all structures in the coastal marine area to ensure that they are positioned in accordance with the plans specified in this consent. Within one month of completion of works the registered engineer shall provide a report to the Northland Regional Council on compliance with the consent conditions.
- 5 Dredging operations shall be carried out so as to minimise contamination of coastal water as a result of discharges to coastal water from the operation of dredging plant and equipment. Notwithstanding the generality of the above, silt screening shall be used to prevent the escape of suspended silt from the dredging area. The silt screening shall be located no further than approximately 5 metres from the perimeter of the area to be dredged, provided that the distance to the silt screening may be increased to suit the dredging method, with the prior written approval of the Regional Council.
- 6 The Consent Holder shall minimise contamination of surface water by ensuring that slash, soil, debris and detritus are not placed in a position where it may enter any coastal marine area.
- 7 The works associated with this consent shall be adequately maintained. Replacement of timber piles covered by this consent may be carried out during the term of this consent without further approval being required under the Resource Management Act 1991 provided:
 - (a) The position of replaced piles is not altered from the original position; and,

- (b) No significant discharge or deposition of contaminants occurs into the coastal marine area; and,
- (c) There is no use of explosives.

8 Prior to completing the construction of the wharf, the Consent Holder shall obtain approval for any required navigation lights at the facility from the Director of Maritime Safety, by making application through the Regional Harbourmaster (Northland Regional Council).

9 The Consent Holder shall, as indicated on NRC Plan No. 3404A, provide a sewage pump out facility on the floating pontoon.

10 Immediately upon completion of the installation of all works associated with this consent the Consent Holder shall, in writing, notify:

The Hydrographer
RNZ Navy
P O Box 33-341
Takapuna

Maritime Safety Authority
P O Box 27-006
Wellington

Far North District Council
Private Bag 752
Kaikohe

Northland Regional Council
Private Bag 9021
Whangarei

The Consent Holder shall include a plan of the completed works with the notification.

11 **Monitoring**

Monitoring of the consent shall be carried out by the Consent Holder. Various elements of the monitoring may be carried out by the Council, after discussion with the Consent Holder.

The sampling and testing programme associated with the monitoring shall generally follow that set out in Schedule 3, **attached**. The sampling and testing programme may, as a result of consultation between the Regional Council and the Consent Holder, be amended, subject to the written approval of the Regional Council.

12 Other than lighting required by the Director of Maritime Safety for navigational safety purposes, lighting in and around the facility shall not create light spill to surrounding areas, in such a manner as to create nuisance in the opinion of an enforcement officer of the Regional Council.

13 The Consent Holder shall permit the public to access and use the site, comprising Lot 1 DP 159832 and the reclamation, and the facilities, comprising wharf, dinghy ramp, dinghy racks, boat ramp, floating fuel and sewage pumpout facility and access jetty and ablution block (as qualified below), at all times, except when such access and use should be restricted because of operational safety. Where access and use is restricted, it shall be for the minimum time necessary and the restriction shall apply over the minimum area necessary. In the case of ablution block, the Consent Holder shall provide public access to and use of, at least, one (disabled persons) toilet, outside of normal hours.

- 14 The Consent Holder shall ensure that the operation of the floating fuel and sewage pontoon and the washdown facility is under the supervision of suitably skilled persons on site, to ensure spillage of contaminants is minimised.

The Consent Holder shall keep the Council informed of the name and contact details of the floating fuel and sewage pontoon supervisor and the boat haulout facility operator.

- 15 The Consent Holder shall prepare a Management Plan, covering both the construction and the operation of the facilities, and monitoring. A copy of this plan shall be forwarded to the Council at least one month prior to the commencement of any construction activity. The Management Plan shall generally follow the guidelines set out in Schedule 2, **attached**.

- 16 The Consent Holder shall ensure that the construction of the stormwater system is supervised by a suitably qualified person. The Consent Holder shall submit to the Council a certification of compliance or produce a statement from that qualified person prior to the exercise of this consent. The certification of compliance shall include assessment of compliance with Conditions 1 and 2 of these consents

- 17 The Consent Holder shall maintain and repair the stormwater system where necessary to ensure that it operates effectively and efficiently.

Advice Note: Any sludge or similar fine particle size material removed from the stormwater treatment system should be disposed of in accordance with Condition 1 of general conditions for all consents.

- 18 There shall be no discharge of any contaminants from the vessel refuelling and pump-out facilities to any adjacent coastal marine area as a result of the exercise of this consent.

- 19 The Consent Holder shall keep and maintain a written record of all servicing and maintenance carried out on the vessel refuelling, pump-out facilities and stormwater system, and shall supply a copy of this record to the Council upon request.

- 20 The concentration of the following metals in the sediments at any point within a radius of 15 metres of the discharge points in the CMA shall not, as a result of the exercise of this consent, exceed the following limits:

Metal	Limit in Milligrams per Kilogram (dry weight)
Copper	65
Lead	50
Zinc	200
Total PAH	4000

- 21 The concentration of the contaminants in the discharge outfalls at any point within a radius of 15 metres downcurrent mixing zone of the discharge points in the CMA shall not, as a result of the exercise of this consent, exceed the following limits:

Contaminants	Level in Milligrams per Cubic Metre
Total Copper	1.3
Total Lead	4.4
Total Zinc	15
Total Petroleum Hydrocarbon	20

(95%ile values)

When the background water quality in the coastal marine area does not meet the above standards, then the discharge shall not cause the water quality in the river at the sampling point to be lower than the background water quality.

- 22 The concentration of sediments (suspended solids) in the discharge from each stormwater outfall shall not exceed 100 grams per cubic metre.
- 23 The outlet from all the stormwater systems shall effectively dissipate the energy of the stormwater to prevent scouring of the seabed or foreshore.
- 24 Notwithstanding any other conditions of this consent, the discharge shall not cause the water quality of Houhora Harbour immediately outside a 30 metres radius mixing zone measured from the discharge point to fall below the following standards:
- (a) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials.
 - (b) any conspicuous change in the colour or decrease in the visual clarity of the receiving waters.
 - (c) any emission of objectionable odour.
 - (d) accumulation of debris on the foreshore or seabed underlying or adjacent to the discharge point.
 - (e) any significant adverse effects on aquatic life or public health.

EXPIRY DATE: 30 MAY 2038

CON20020566411 & 12: DISCHARGES TO LAND AND ASSOCIATED DISCHARGES TO AIR

- (11) To discharge treated wastewater to land on Pukenui Wharf Road Reserve BLK XI Houhora East SD at or about Map Reference N03:218-098; and
- (12) To discharge contaminants (primarily odours) to air from a wastewater treatment and disposal system on Lot 1 DP 159832 BLK XI Houhora East SD at about Map Reference N03:218-098 and N03:218-097.

(11) Discharge to Land

- 25 The quantity of treated wastewater discharged shall not exceed 5 cubic metres per day.
- 26 Only wastewater from toilets, showers, laundry and kitchen facilities, and the sewage pump out facility for boats shall enter the wastewater treatment system.
- 27 The Consent Holder shall install a flow meter with an accuracy of $\pm 5\%$ on the outlet of the irrigation tank to measure the quantity of treated wastewater discharged to land.
- 28 The Consent Holder shall keep written records of the weekly quantity of treated wastewater discharged to land. The Consent Holder shall supply to the Northland Regional Council by 1 May each year, and also immediately on written request, details of the weekly quantities of treated wastewater discharged to land from the wastewater treatment system.
- 29 The wastewater shall be treated by an aerated treatment system capable of providing at least secondary treatment of up to 5 cubic metres of wastewater per day prior to being discharged to land. The design of the treatment plant shall be generally in accordance with Figure 12, entitled "Plan of Sewage Treatment Facilities" (NRC Plan No. 3404/7), of the Far North Holdings Ltd Pukenui Wharf Redevelopment Assessment of Environmental Effects Figures.

Advice Notes: 1 Secondary treatment involves the aerobic biological processing and settling or filtering of wastewater received from a primary treatment unit. Wastewater quality following secondary treatment is expected to be equal to or better than 30 grams per cubic metre 5 day biochemical oxygen demand (BOD₅) and 45 grams per cubic metre total suspended solids.

2 The design of the treatment plant does not include the design of disposal system, which is covered by other Consent Conditions.

- 30 The Consent Holder shall ensure that the locations of the wastewater treatment and disposal system are generally in accordance with NRC Plan 3404A (**attached**).

- 31 Notwithstanding Condition 6, the Consent Holder shall ensure that no wastewater soakage trench is installed within 20 metres of the cliff edge of Pukenui Wharf Road Reserve. For the purposes of this condition, the cliff edge is defined as any point where the slope of the land first exceeds an angle of 5 degrees, sloping towards the mean high water spring mark.
- 32 The Consent Holder shall ensure that a minimum of 476 metres of soakage trench is installed and used for the disposal of treated wastewater. Each soakage trench that is installed shall have a depth no greater than 300 millimetres, a basal width not less than 300 millimetres, and there shall be a minimum horizontal separation distance of 1 metre between any two adjacent soakage trenches.
- 33 The Consent Holder shall ensure that the construction of the treatment and disposal system is supervised by a suitably qualified person. The Consent Holder shall submit to the Council a certification of compliance or produce a statement from that qualified person prior to the exercise of this consent.
- 34 The Consent Holder shall notify the Council in writing of the date that construction of the treatment and disposal system is intended to commence, at least five working days beforehand.
- 35 To provide evidence of compliance with Conditions 5, 6, 7 and 8 the Consent Holder shall submit final "as built" plans that show detail of the design, construction and siting, including a survey plan, of the wastewater treatment and disposal system to the Council within one month of completion of construction.
- 36 Stormwater from all roofed or paved areas shall be diverted away from the wastewater treatment area. In addition, the Consent Holder shall also, as far as is practicable, prevent stormwater from surrounding areas entering the wastewater treatment and disposal systems.
- 37 There shall be no ponding or surface runoff of any contaminants from the wastewater disposal area as a result of the exercise of this consent.
- 38 The Consent Holder shall enter into a maintenance contract with a suitably qualified person to maintain the treatment and disposal system to a satisfactory standard. Copies of maintenance records shall be forwarded to the Council within one week of their receipt by the Consent Holder.
- 39 The Consent Holder shall ensure that the treatment and disposal system is adequately maintained including regular desludging of the wastewater treatment tanks and maintenance of any plants within the wastewater disposal area.
- Advice Note:** All sludge removed from the treatment system should be disposed off in accordance with Condition 1 of general conditions for all consents.
- 40 The Consent Holder shall ensure that access to the wastewater disposal area by unauthorised vehicles is prevented.

(12) Discharge to Air

- 41 The Consent Holder's operations shall not give rise to any discharge of contaminants at or beyond the property boundary, which is deemed by a suitably trained and experienced Enforcement Officer of the Council to be noxious, dangerous, offensive or objectionable to such an extent that it has, or is likely to have, an adverse effect on the environment.

EXPIRY DATE: 30 NOVEMBER 2013

GENERAL CONDITIONS APPLYING TO ALL CONSENTS ISSUED BY THE NORTHLAND REGIONAL COUNCIL

- 42 The Consent Holder shall ensure that all used washdown water, sludges and similar fine particle size materials collected in any stormwater device, washdown water treatment device and/or wastewater treatment system are taken off-site and disposed of at a facility that has been approved by the Northland Regional Council. The Consent Holder shall notify the Northland Regional Council in writing of the proposed location of the off-site disposal site at least two weeks beforehand and shall forward a copy of tracking verification to the Northland Regional Council following disposal.
- 43 The Consent Holder shall, for the purposes of adequately monitoring the consent as required under Section 35 of the Act, on becoming aware of any contaminant associated with the Consent Holder's operations escaping otherwise than in conformity with this consent:
- (a) Immediately take such action, or execute such work as may be necessary, to stop and/or contain such escape; and
 - (b) Immediately notify the Council by telephone of an escape of contaminant; and
 - (c) Take all reasonable steps to remedy or mitigate any adverse effects on the environment resulting from the escape; and
 - (d) Report to the Council in writing within one week on the cause of the escape of the contaminant and the steps taken or being taken to effectively control or prevent such escape.
- 44 The Regional 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 of this consent. Such notice may be served twelve months after the date of commencement of the consent, and thereafter at yearly intervals during the month of May. The review may be initiated for any one or more of the following purposes:
- (a) To deal with any adverse effects on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or to deal with any such effects following assessment of the results of the monitoring of the consent and/or as a result of the Regional Council's monitoring of the state of the environment in the area;

- (b) To require the adoption of the Best Practicable Option to remove or reduce any adverse effect on the environment;
- (c) To provide for compliance with rules in any regional plan that has been made operative since the commencement of the consent;
- (d) To deal with any inadequacies or inconsistencies the Regional Council considers there to be in the conditions of the consent, following the establishment of the activity the subject of the consent;
- (e) To deal with any material inaccuracies that may in future be found in the information made available with the application. (Notice may be served at any time for this reason.); and
- (f) To change existing, or impose new limits on conditions.

The Consent Holder shall meet all reasonable costs of any such review.

- 45 This consent shall lapse on the expiry of five years after the date of commencement of the consent, unless the consent is given effect to before the expiry of this period or such longer period as may be granted under Section 125 of the Act.

ISSUED at Whangarei this Twentieth day of May 2004

TRANSFERRED TO: FAR NORTH DISTRICT COUNCIL
TRANSFERRED ON: 24 January 2012

SCHEDULE 1

ENVIRONMENTAL STANDARDS – NOISE

CONSTRUCTION

Based on Table 2, NZS 6803: 1999 “Acoustics – Construction Noise”, Standards New Zealand.

Time Period	Weekdays (dBA)		Saturdays (dBA)		Sundays & Public Holidays (dBA)	
	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
0630 - 0730	65	75	45	75	45	75
0730 - 1800	80	95	80	95	55	85
1800 - 2000	75	90	45	75	45	75
2000 - 0630	45	75	45	75	45	75

Note: The definitions of L_{eq} and L_{max} are given in NZS 6801:1991.

OPERATION

Noise emitted from any activity, when measured at the boundary of the zone (as defined below), shall not exceed the following noise levels.

Time Period	Noise Limit
0700 hrs to 2200 hrs	50 dBA L_{10}
2200 hrs to 0700 hrs the following day	45 dBA L_{10} 65 dBA L_{max}

Note: The boundary of the zone shall be the line of mean high water springs and the radius, within the Coastal Marine Area, of 100 metres of the source of the noise.

Sound levels shall be measured in accordance with New Zealand Standard NZS 6801:1991 Measurement of Sound and assessed in accordance with NZS 6802:1991 Assessment of Environmental Sound.

SCHEDULE 2

MANAGEMENT PLAN

OPERATION OF FACILITIES AT PUKENUI WHARF (INCLUDING, BOAT WASHDOWN, FUEL, SEWAGE AND STORMWATER TREATMENT SYSTEMS)

This is a consolidated management plan incorporating both land and sea.

While the details of the Management Plan need to be derived according to the particular circumstances, it should include the principal matters set out below where relevant and any other matters that are required by conditions of consent:

1 Statement of Management Goals

2 Management Structure and Accountability

- During operation.

3 Environmental Policies and Objectives

- General operational management;
- Environmental;
- Public safety;
- Maintenance; and
- Public relations.

4 Procedures

- Monitoring, for consent compliance (including Monitoring Plan)

Day to Day

- General daily operation, including maintenance;
- Compliance with resource consent conditions;
- Inspection and maintenance of facilities and utility services;
- Identifying and dealing with activities with potential to cause adverse environmental effects;
- Rubbish collection and disposal (including interceptor drains and sumps clean-out);
- Emergencies (per identified emergency e.g. fuel/sewage spill); and
- Monitoring and review of these procedures.

5 Control of Activities

- Rules for the operation and use of the wash-down and haul-out facility;
- Compliance standards; and
- Resource consent conditions.

6 Management Plan Review

- Frequency of review;
- Review method; and
- Approval of changes to plan.

SCHEDULE 3

SAMPLING AND TESTING PROGRAMME

Testing for metals (copper, lead and zinc) in water are to be carried out annually on the discharges from the southern drain to the coastal marine area and from the northern outlet. Testing for concentrations of metals (copper, lead and zinc) in marine sediments near the discharges from the southern drain and northern outlet are to be carried out every two years.

PHYSICO-CHEMICAL WATER QUALITY

The discharge is to be sampled at least once a year, on a rain-free/fine day at a time when a vessel is being washed down and once a year on a wet day when no vessel is being washed down. Three samples of the discharge are to be taken on each occasion. The samples are to be tested for metals: copper, lead and zinc.

Three water quality samples are to be collected from a point 15 metres radius from the discharge and are to be tested for the metals: copper, lead and zinc.

SEDIMENTS

Discharge Outfall

Sediment samples are to be collected from three sites adjacent the stormwater discharge point (2 metres, 5 metres and 15 metres seaward from the discharge point). Each sediment sample is to be a composite sample, comprised of three sub samples. Samples are to be analysed for the metals Cu, Pb and Zn.

Baseline Monitoring

Prior to the exercise of the consent, baseline monitoring, involving the collection and analyses of water and sediments samples from 2 metres, 10 metres and 15 metres radius from the stormwater outlets, shall be carried out.

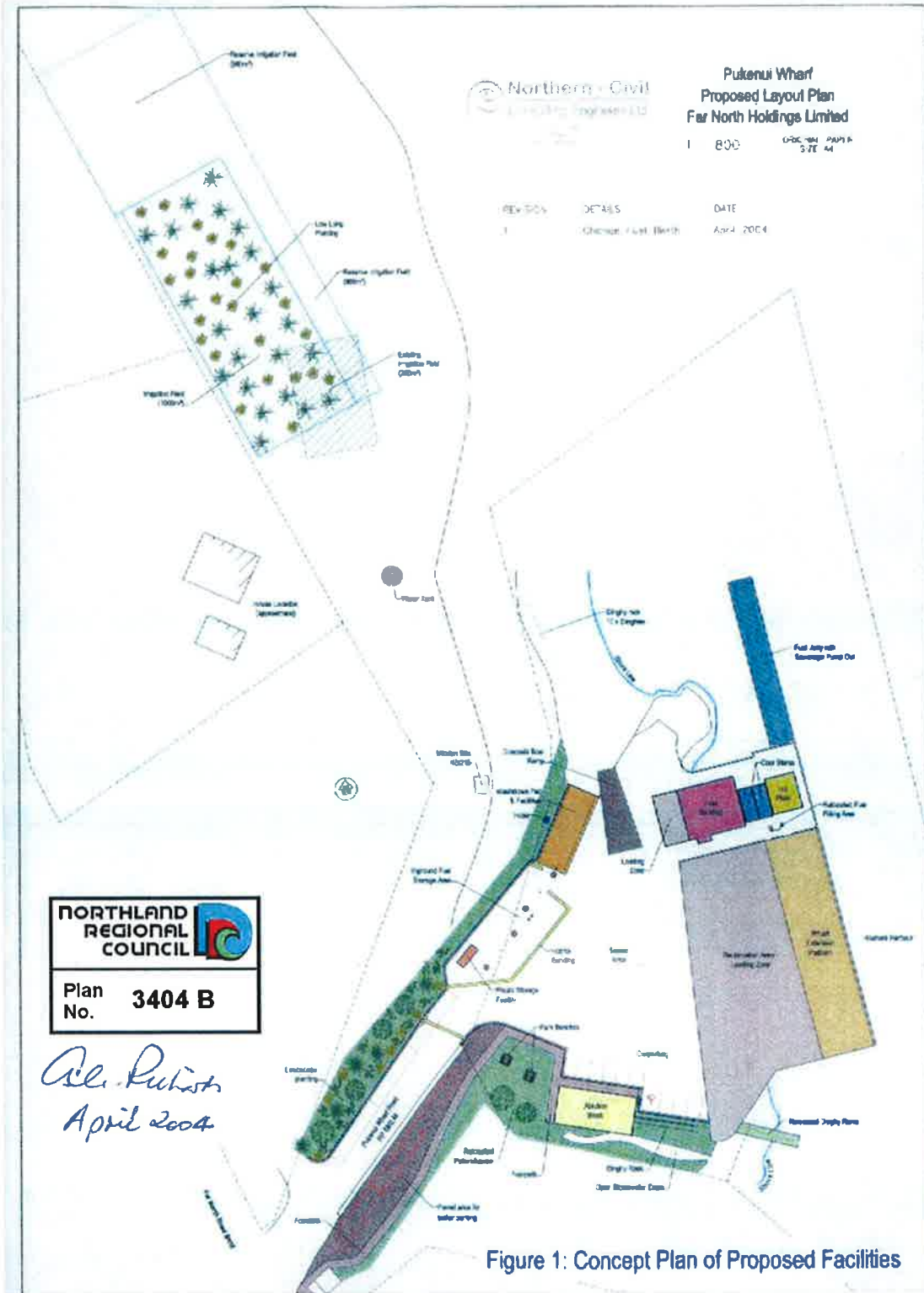
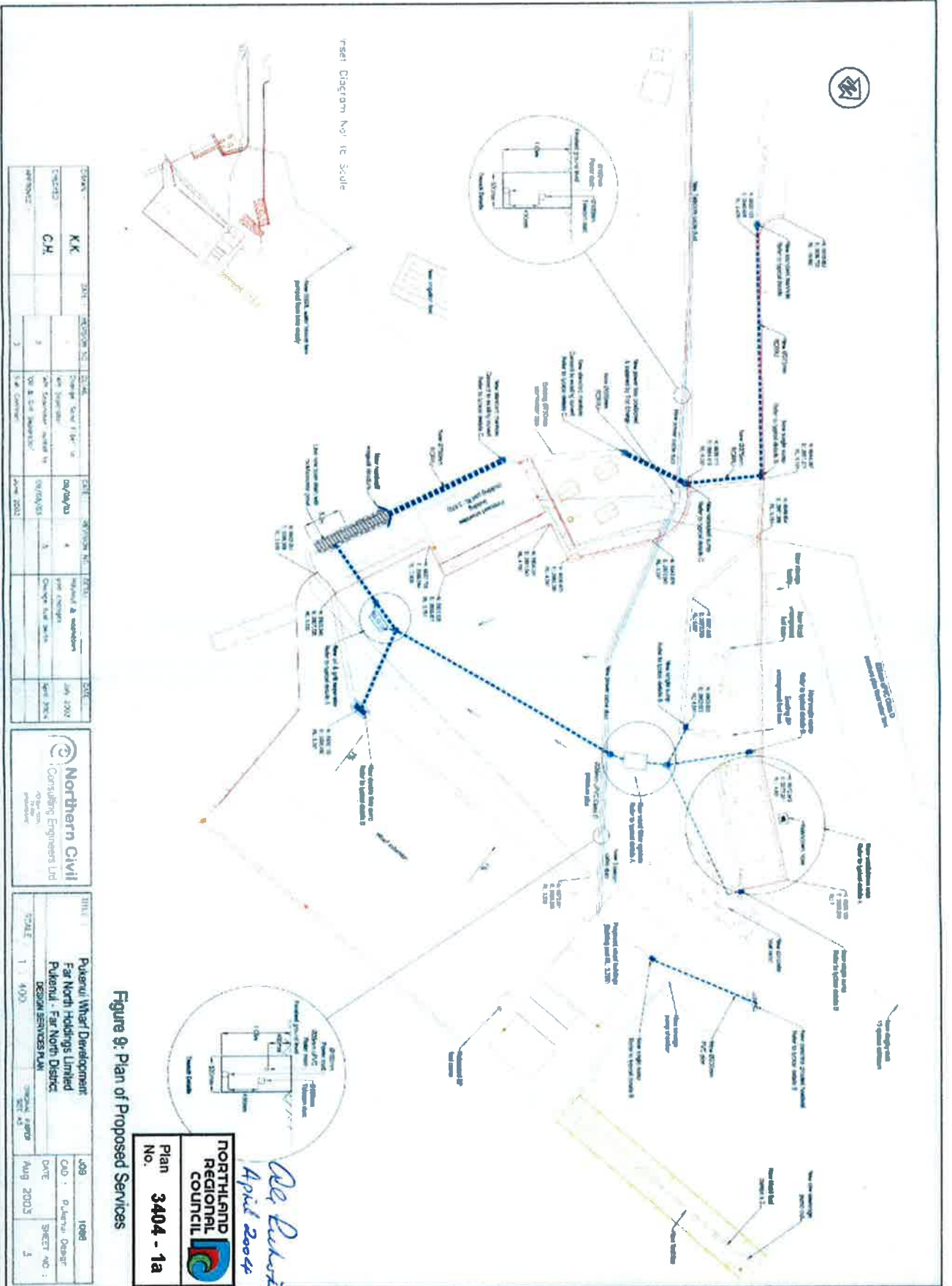


Figure 1: Concept Plan of Proposed Facilities



DATE	REVISION NO.	BY	DESCRIPTION
10/04/03	1	CH	Initial design
10/04/03	2	CH	Revised design
10/04/03	3	CH	Final design

Northern Civil
Consulting Engineers Ltd
100, The Quadrant, Ipswich, Suffolk, IP1 1AA
Tel: 01473 210000
Fax: 01473 210001
www.northern-civil.co.uk

TITLE	Puterill Wharf Development Far North Holdings Limited Puterill - Far North District DESIGN SERVICES PLAN
SCALE	1:400
JOB	1068
CAD	P. Puterill
DATE	Aug 2003
SHEET NO.	5

NORTHLAND REGIONAL COUNCIL
Plan No. 3404 - 1a

As Elected April 2004

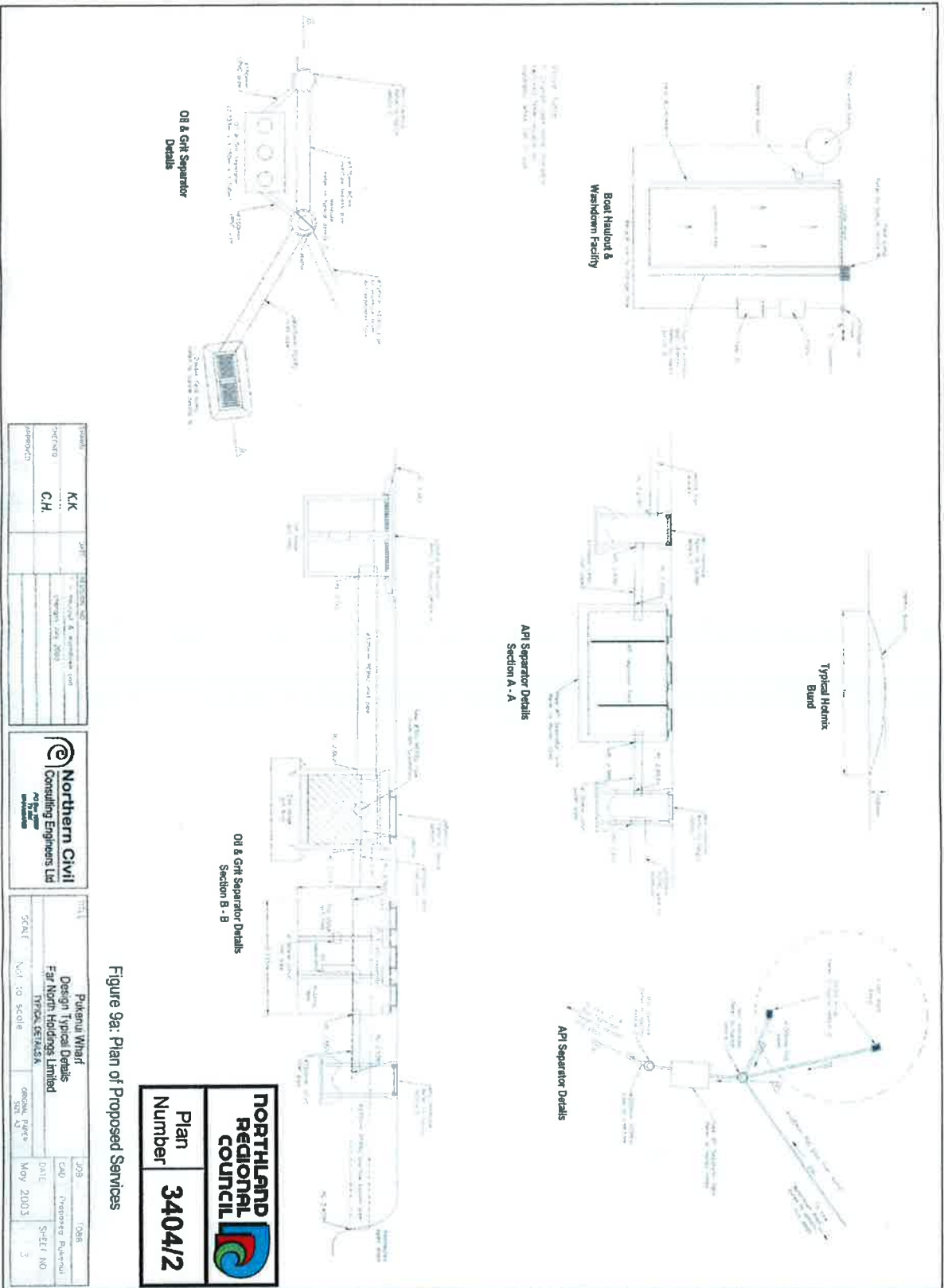


Figure 9a: Plan of Proposed Services

DESIGNED	K.K.	DATE	12/12/2003
CHECKED	C.H.	DATE	12/12/2003
APPROVED		DATE	



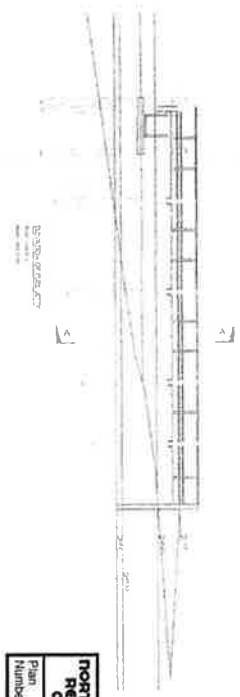
PROJECT	Pukenu Wharf	DRAWN	CH
CLIENT	Design Typical Details	CHECKED	CH
LOCATION	Far North Holdings Limited	DATE	May 2003
SCALE	1:10 Scale	SHEET NO	3

NORTHLAND REGIONAL COUNCIL
 Plan Number **3404/2**



PROPOSED WHARF IMPROVEMENTS AT PUKENUI
 A PROJECT OF THE PORT OF PUKENUI
 PROJECT NO. PUK/01/01
 DESIGN NO. PUK/01/01/01
 DATE: 2007

PROPOSED WHARF IMPROVEMENTS AT PUKENUI.

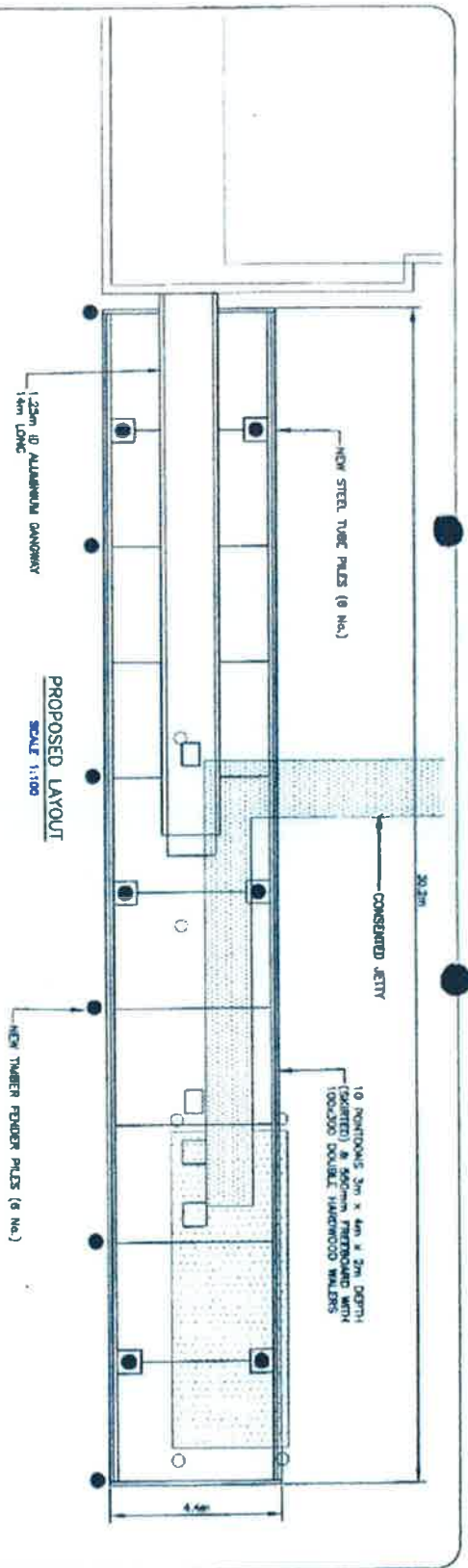


NORTHLAND REGIONAL COUNCIL
 Plan Number **3404/4**

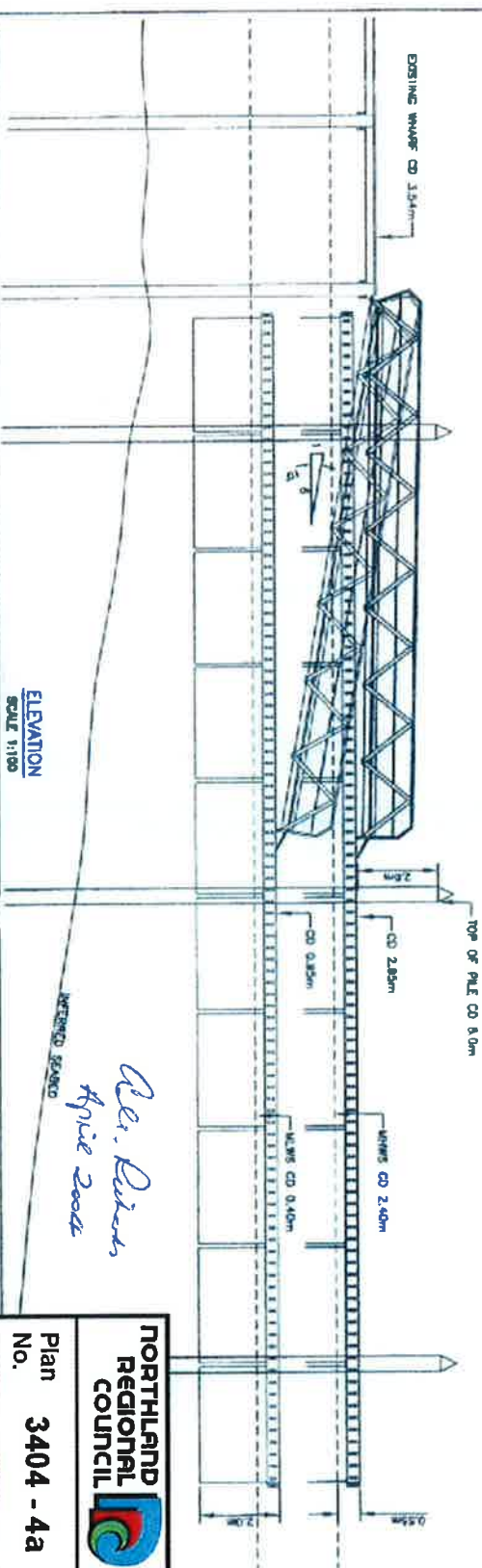
CROSS SECTION THROUGH SHEET PILED SEAWALL.
 SCALE: 1/200 AT A
 SCALE: 1/100 AT B



Figure 8 : Plan of New Fuel Jetty & Sheet Piled Seawall



PROPOSED LAYOUT
SCALE 1:100



ELEVATION
SCALE 1:100

*Ala. Rivers
Hyvie 2004*



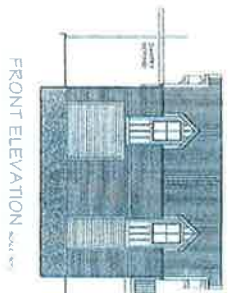
Plan No. 3404 - 4a

Bellingham FAR NORTH
UNIFLOAT
 Precision engineering for float systems

REV.	DATE	DESCRIPTION
1.		

CLIENT: FAR NORTH HOLDINGS LTD (FNHL)
 PROJECT: PUKENUI FUEL JETTY
 TITLE: PLAN & ELEVATION

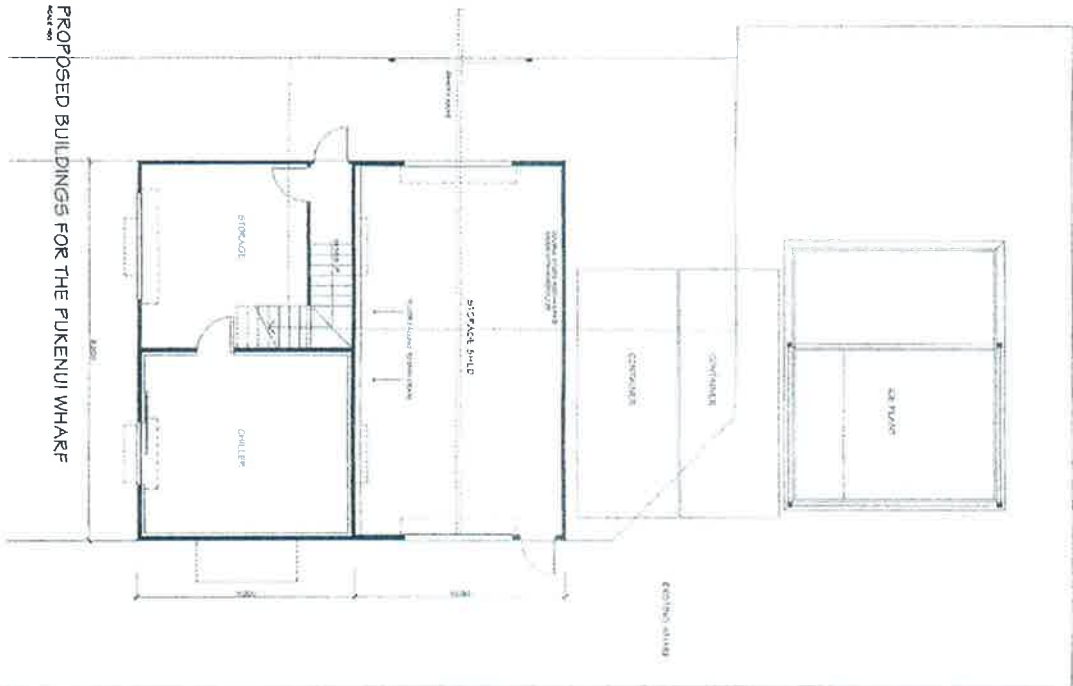
Date: 08/04
 Figure: Fiq PJ 2
 Revision No.: 0
 Scale: 1:100 @A3
 Drawn by: JP
 App'd by:



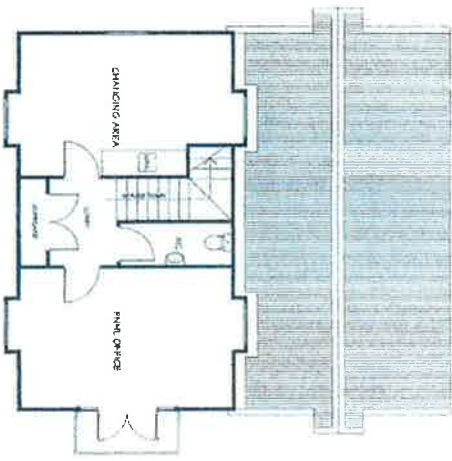
FRONT ELEVATION 1:100



SIDE ELEVATION 1:100



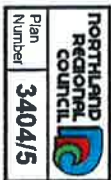
PROPOSED BUILDINGS FOR THE PUKENUI WHARF



FIRST FLOOR PLAN



SCALE



Plan Number 3404/5

BUTT DESIGN GROUP
ARCHITECTURAL DESIGNERS

PUKENUI WHARF BUILDINGS

REDUCED COPY
SCALE AS ABOVE
1995
01

Figure 10 : Plan of New Wharf Building

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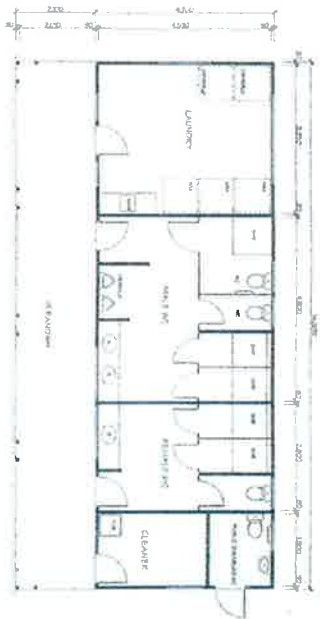


Figure 11 : Plan of New Amenities Building

BUTT DESIGN GROUP
ARCHITECTURAL DESIGNERS

PUKENUI W/C BLOCK		DATE	2006	NO	01
		SCALE	AS ABOVE		
		PROJECT NO.	2006		
		CLIENT			
		DESIGNER			
		DATE			

REVISED COPY

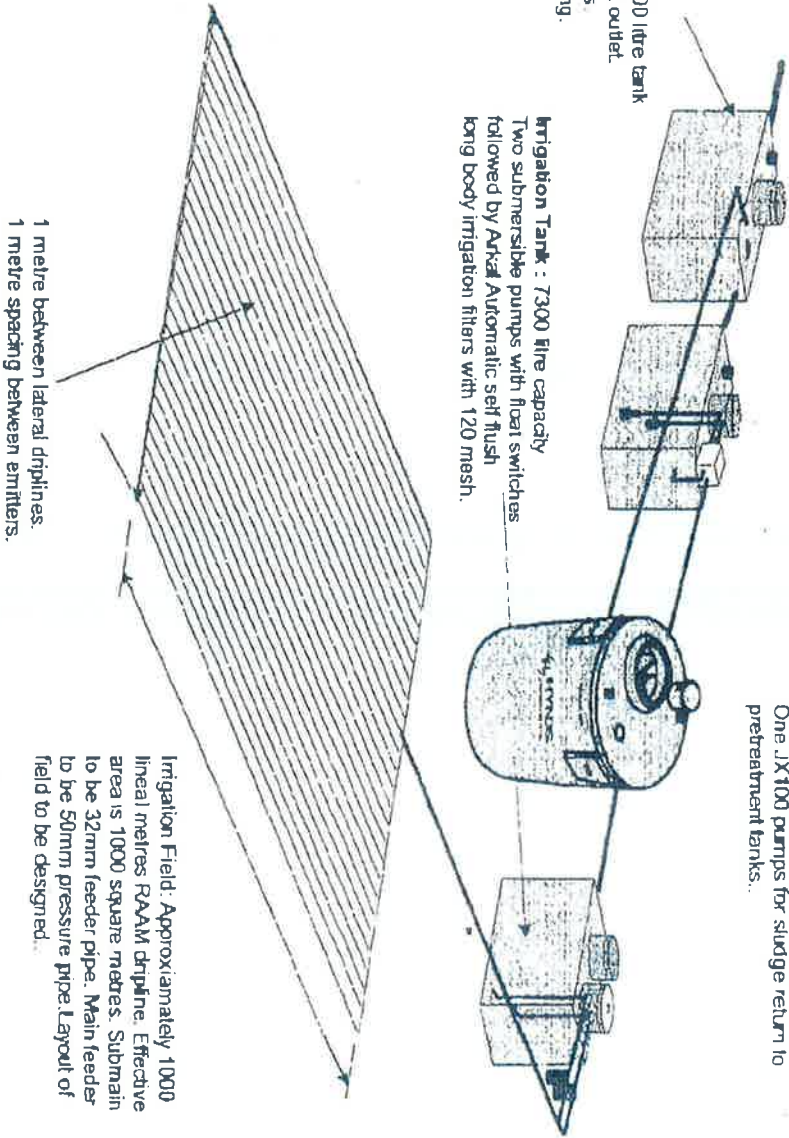
ALL RIGHTS RESERVED. PHOTOGRAPHY BY JAMES WILSON. THIS DRAWING AND THE DESIGN IS THE PROPERTY OF BUTT DESIGN GROUP. NO PART OF THIS DRAWING OR DESIGN IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM BUTT DESIGN GROUP.

Pretreatment Tank : Hynds 7300 litre tank
 Zabel A100 filter to be placed at outlet.
 Opening above zabel for access.
 Two openings at entry for rodding.

Balance Tank : 7300 litre capacity
 Two JX100 pumps with float switches
 fed into splitter box

Aeration Tank : 8500 litre capacity
 One JX100 pumps for sludge return to
 pretreatment tanks.

Irrigation Tank : 7300 litre capacity
 Two submersible pumps with float switches
 followed by Arkaf Automatic self flush
 long body irrigation filters with 120 mesh.



1 metre between lateral drip lines.
 1 metre spacing between emitters.

Irrigation Field: Approximately 1000
 lineal metres RAAM drip line. Effective
 area is 1000 square metres. Submain
 to be 32mm feeder pipe. Main feeder
 to be 50mm pressure pipe. Layout of
 field to be designed.

		TITLE		First Stage Hohoura Wharf - 5000 litre Capacity				SCALE		N 1 S		DATE		1:100		DATE		1:100		DATE		1:100		DATE	
PROJECT		Hynds Commercial Wastewater System				SCALE		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100	
CLIENT		HYNDS ENVIRONMENTAL				SCALE		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100	
DATE		31/03/07				SCALE		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100	
DATE		31/03/07				SCALE		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100		1:100	
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