



REQUEST FOR PROPOSAL

FOR

HIMATANGI BEACH COMMUNITY

SEWERAGE SCHEME

CONTRACT No. C4/1201



Contract No C4/1201
Himatangi Beach Community Sewerage Scheme

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Contract No C4/1201
Himatangi Beach Community Sewerage Scheme

INTRODUCTION

Background

The Himatangi Beach Community except for the Sandown subdivision which has its own private sewerage system is currently serviced by individual on-site septic tanks and disposals fields for the collection, treatment and disposal of household sewage. The township comprises approximately 400 properties, a camp site and several community facilities.

Following extensive and prolonged consultation with the community Council adopted a resolution to proceed with the implementation of a community sewerage scheme conditional on the availability of a 50% subsidy from the Ministry of Health. The availability of the subsidy which is capped at \$3.73m (inclusive of GST) was subsequently confirmed. The subsidy is only available until 30 June 2013 and requires the system to have been commissioned and operated in accordance with the resource consents for a period of at least 1 month prior to this date.

Currently approximately 200 property owners have indicated their support for the scheme. It is expected that over time the remaining 200 or so property owners will connect as their private systems will require upgrading or replacement to meet the Regional Council's One Plan rules for on-site wastewater systems.

The scheme will comprise the installation of on lot pump stations, a community reticulation network, a rising main, and if required a pump station, linking the community reticulation to a new treatment facility and treated wastewater storage pond located within the forested area to the north-east of the township. The treated wastewater will be used to irrigate land around the treatment works site. The irrigation component does not form part of this contract.

Purpose of this tender

The purpose of this tender in particular is to secure an integrated and qualified design, supply and construction team who will work in a collaborative way with MDC to deliver a whole of life best value community sewerage scheme for the Himatangi Beach community.

Tenderers should align their proposals and methodologies to achieve these outcomes.

Tender Structure

A design / build approach has been adopted by MDC due to the remaining available time left to qualify for the maximum amount of available MOH subsidy. The conditions of contract will be NZS 3910: 2003 with latest amendments and additional/modified clauses relating to the design elements included in the contract.

The contract has been split into the following 5 separable portions:

- Separable Portion A – Design of the total community system from the boundary valve box to the treatment facility and treated wastewater storage pond, including specification of on lot works.
- Separable Portion B – Construction and commissioning of the community reticulation, rising main and pump station if required, access track including stream crossing and utility extensions, and wastewater treatment facility and treated effluent storage.

- Separable Portion C - The supply and installation of approximately 200 on lot pump stations, and associated on lot upstream and downstream pipe work and decommissioning of existing on lot facilities.
- Separable Portion D – ongoing supply and installation of approximately 200 additional on-lot pump stations and associated works following completion of separable portions A to C.
- Separable Portion E – a 4 year Supervision and Operational Performance Proving period on completion of the Defects Liability Period.

Key Milestones for the Project are:

- Tender documents issued to selected tenderers- 18 November 2011
- Tenders close – 22 December 2011
- Evaluation commences – 4 January 2012
- Evaluation ends – 31 January 2012
- Negotiations commence (if required) – 1 February 2012
- Contract award (if any) – 17 February 2012
- Contract commences 27 February 2012

SECTION 1

INVITATION TO TENDERERS AND CONDITIONS OF TENDERING

Part 1A. INVITATION TO TENDERERS

CONTRACT: C4/1201- for The Design and Building of a Community Sewerage Scheme at Himatangi Beach, Manawatu

PRINCIPAL: Manawatu District Council

Tenders closing at **4.00pm on 22 December, 2011**

are invited for **The design and building of a community sewerage Scheme at Himatangi Beach, Manawatu**

The works are described in the Contract Documents, but are summarised briefly as follows:

The design and building of on lot waste water collection, public reticulation and piping to a treatment facility, provision of the treatment facility, all at Himatangi Beach, Manawatu. The project includes professional design services, supply of all materials, construction and commissioning of the system.

Contract Documents are obtainable from the **Manawatu District Council offices (Mr M Fletcher)**
Direct dial: 06 323 0818 or email: mike.fletcher@mdc.govt.nz.

Conditions of Tendering shall be in accordance with NZS3910:2003 as modified or extended by the Schedule to Conditions of Tendering within the Contract Documents. A formal tender requires the submission in a sealed envelope of a completed and signed Tender Form, Schedule of Prices, and the non priced attributes and other supplementary information required by the Conditions of Tendering.

Tenders shall be marked at the bottom left hand corner with the Contract description and number.

Tenders shall be deposited in the **Tender Box at Manawatu District Council offices, 135 Manchester St, Feilding so as to be received before closing time.**

For further enquiries contact Mike Fletcher
Manawatu District Council
135 Manchester St
FEILDING
Telephone 06 323 0818

Part 1B CONDITIONS OF TENDERING

The conditions of tendering are those set out in NZS3910:2003 except as modified or extended in the following Schedule to Conditions of Tendering.

Part 1C SCHEDULE TO CONDITIONS OF TENDERING

Clause numbers refer to Conditions of Tendering clauses.

102.2

(a) A Tender Documents deposit is not required.

103.1

An appointment shall be made to view the site.

105.1

Tenders shall close at the Tenders Box, Manawatu District Council offices, 135 Manchester St, Feilding At 4 pm on the 22nd day of December, 2011.

a) Fax or other electronic transmission of tenders will not be acceptable

105.2

Tenders shall be lodged by the Closing Time. The Closing Time may be extended by the Principal at its absolute discretion by providing written notice to Tenderers.

The Principal may accept or reject tenders lodged after the Closing Time or lodged at a location or in a manner that is contrary to that specified in these Conditions of Tendering at its absolute discretion. The Principal may require a Tenderer to demonstrate to the Principal's reasonable satisfaction that the late lodgement of the tender:

- a) resulted from the mishandling of the tender by the Principal or the Engineer; or
- b) was hindered by a major incident and the integrity of the tendering process would not be compromised by accepting a tender after Closing Time.

The determination of the Principal as to the actual time that a tender was lodged is final.

105.3

- a) The percentage for On-Site Overheads shall be nominated in the tender.
- b) The percentage for Off-Site Overheads and Profit shall be nominated in the tender.

The rate per Working Day in compensation for time related Cost and Profit incurred in relation to an extension of time shall be nominated in the tender.

Supplementary information required to be submitted with the tender, in addition to the completed and signed, Tender Form, Schedule and any other information specified in the Invitation To Tender is:

- A list of all subcontractors to be engaged by the Tenderer on the Contract. The list should also note the type and extent of work proposed for each subcontract.

- The name of the insurance company or companies the Tenderer proposes to effect the insurances required under the Contract.
- The name of the financial institution being used to post the Bond.
- The name and relevant experience of the Engineering consultants providing the professional design services, the scope of their services and the level of Professional Indemnity liability and insurance that will be incorporated in the contract between the Tenderer and Consultant. Tenderers will be expected to ensure that their Consultants are engaged under contracts incorporating the same levels of Professional Indemnity liability and insurances as are required of the Contractor by these Contract Documents.
- The Tenderer's proposed methodology incorporating both the design and construction phases: Refer also under the requirements of the non-priced attributes covered below in these Tender Conditions.
- The "Preliminary Design Information Required From Tenderers" as described in Part 1F of these Conditions of Tendering.
- The Tenderer's proposed quality management and assurance system: a preliminary quality plan outlining how the Tenderer will ensure that the specified standards of work in both the design and construction phases will be achieved and how the project work is to be completed in accordance with the programme. Confirmation of Quality Assurance standards held by the Company.
- The Tenderer's proposed programme: an outline construction programme based on their proposed design and construction phases and identifying the critical path and key milestones.
- The Tenderer's "Confirmation of Health and Safety Management Plan" (copy enclosed for completion by the Tenderer).
- The name qualifications and experience of the person nominated as site safety officer who will be responsible for Health and Safety on the site.
- The Tenderer's preliminary site specific Health & Safety Plan including identification of expected site hazards and methods for managing such hazards.
- The Tenderers preliminary Environmental Management Plan describing how potentially adverse environmental effects will be managed.
- Specific technical information required by the contract documents
- Non priced attributes in full detail as described elsewhere in these tender conditions
- An acknowledgment of receipt of any Notices to Tenderers received during the Tender period

105.7

Where a tender has been submitted with any endorsement (tags, contractor proposed conditions etc), the Engineer may at his/her sole discretion take one or more of the following measures:

- a) Treat the tender as a non complying bid and remove it from tenders to be evaluated.

Require the Tenderer to withdraw the endorsement without any adjustment of the tender price.

Require the Tenderer to withdraw the endorsement with adjustment to the tender price, provided that the adjustment is for an amount that, in the Engineers opinion, would have been reasonably expected if the tender had been submitted without endorsement.

If in withdrawing any endorsement, the Tenderer alters the price and the Engineer considers that the alteration is not an amount that he/she would have reasonably expected, then the Principal reserves the right to no longer consider that tender.

Make an Engineer's estimate of the likely cost impact on the contract and adjust the tendered sum accordingly. This adjusted sum will then be used for the purposes of comparing and evaluating tenders. For the avoidance of doubt this means that tender evaluators may use the tender sums adjusted by this method,

as inputs into any evaluation formula being used to rank Tenderers. This Engineers estimate and price adjustment may be undertaken without the Engineer advising or making any recourse to, the affected Tenderer.

106.1

The Principal reserves the right to accept or reject Tenders without explanation.

106.3

The Principal is not entering into the Contract otherwise than in trade. The separate agreement required to satisfy Section 11 of the Arbitration Act 1996 is not therefore required.

107.1

Tenders shall remain open for a period of **13 weeks** from the closure of tenders.

107.2

No reason will be given for the acceptance or non-acceptance of any tender. The winning tender price may be divulged to unsuccessful Tenderers at the Principal's sole discretion.

108 New Clauses

108.1 Interviews, negotiations

The Engineer and evaluation team may at their sole discretion negotiate with or interview any of the Tenderers as part of the evaluation process. The undertaking of negotiations or interviews shall not be taken by Tenderers as being any indication of being an accepted or preferred Tenderer, and Tenderers shall not read into anything said at an interview or during negotiations, any indication of acceptance or otherwise of their Tender.

The accepted Tenderer will be that advised in writing at the end of the evaluation process.

108.2 Privacy Act

Submitting a tender for this Contract authorises the person(s) evaluating the tender to contact any referees nominated within the tender or any other persons whom the evaluators may consider are able to provide opinions on the suitability of the Tenderer or the Tenderer's staff or nominated consultants, suppliers or subcontractors to undertake the project. The Evaluators may discuss any aspects of the performance and experience of the companies or personnel proposed.

108.3 Health and Safety Plan and Commitment

Tenderers shall provide with their Tender the enclosed "Confirmation of Health and Safety Management Plan" completed and signed by an authorised signatory.

109 New Clauses

109.1 Special Tender Evaluation Methods

Tenders for this contract will be evaluated by reference to non priced attributes along with the price all as described in the following paragraphs.

109.2 Attribute Requirements

Tenderers shall provide information about the following non priced attributes :

- a) Relevant Skills. Confirmation that Professional consultants and specialist product suppliers are same as nominated in the EOI process. Alternative Tenders may be submitted based on different consultants or specialist product suppliers but these will be considered as non-conforming tenders which the Council reserves the right to reject.
- b) Resources
- c) Management Skills
- d) Methodology. Include for design, construction and procurement methodology.
- e) Proposed scheme details
- f) Alignment to MDC's objectives (refer Introduction)

The information required under items a) to f) is detailed below.

109.3 Relevant Skills (of personnel)

Tenderers shall confirm that nominated personnel for each of the key positions within the project are as per their EOI submission or if not state in no more than a half page per person the key relevant experience, training and qualifications of each.

The Tenderer shall state the percentage of time and over what duration each of the nominated people will be allocated to the contract and whether they will be based on site.

Curriculum vitae (CV) for each person where different to those nominated in the EOI shall be appended (alphabetically by surname and no more than two A4 pages for each).

Information provided shall demonstrate experience relevant to the project and separately identify technical and managerial skills as appropriate..

As a minimum the following people shall be covered within Relevant Skills.

- The Project Manager - this person is responsible for the overall implementation and management of the total design and build phases of the project
- The Contract Manager-this person is responsible for the construction phase of the work
- The Contractors site representative - this person is a key Contractors person who will be on site for all or most of the Contract Duration. The person will have delegated authority to receive and implement instructions from the Engineer and to control all aspects of the Contractors operations on site
- The Quality Manager - this person is responsible for the preparation or the contract Quality Plan along with the implement and management of all quality matters relevant to the project
- The Traffic and Safety Manager - this person is responsible for the TMP's preparation, implement and management and for all safety related matters. This may be more than one person
- The Certified Laboratory, this laboratory must be IANZ or equivalent

- The design key personnel- key persons leading and providing input into the design and commissioning phases.
- Any other key personnel required by the Contract Documents or considered necessary by the Contractor to satisfactorily undertake the project

109.4 Resources

Tenderers shall submit details of the resources they will use to complete the Contract Works and demonstrate their suitability for the activity proposed.

Tenderers shall submit details of the labour resources and backup that will be provided along with the following information on plant items to be used:

- Information on the availability of backup plant
- Age, condition and capacity of the plant
- Details of whether the plant is leased or owned or partially owned by the Tenderer.
- Information on additional resources available to the contractor should breakdowns or lack of progress necessitates the use of additional resources.

109.5 Management Skills

Tenderers shall describe the management methods and skills they will use to successfully complete the Contract Works.

The description shall include:

- a) A management tree. This tree shall show all nominated personnel including design specialists and their role within the project team
- b) All the nominated personnel's attributes and management skills (unless already presented under Relevant Skills)
- c) Lines of communication within the contract management team and with the Engineer
- d) Delegation of duties and authority
- e) Management systems in place and how they will be implemented during the project.
- f) Training and management of staff at various levels
- g) Procurement methodology and processes for sub-contractors, plant and materials (from both local and international suppliers).

109.6 Methodology

Tenderers shall provide a comprehensive methodology statement that describes how they will undertake the design, construction and commissioning of the works so they are completed in accordance with the specifications and within the time specified. This statement should list the key staff to be engaged on the works and their particular roles and also include such aspects as the use of subcontractors, the plant and equipment to be employed, and communication recording and report procedures, both internally and with the Engineer. It shall include how project risks such as component procurement, groundwater, soil permeability (with respect to any pond design) buoyancy, etc will be designed for and managed. . The methodology shall include a discussion on arrangements for undertaking the on-demand supply and installation of the on lot components after the initial design and construction contract, Separable Portions A, B and C have been completed. (Refer to Conditions of Contract clause 17.2 "Extent of Contract" for a description of the Separable Portions of the works, and their phasing.) including details of locally available and fully trained resources to manage the proposed plant and on-lot pumping installations.

109.9 Proposed Scheme details

Tenderers shall outline the type of scheme they are proposing including:

- The type of on lot collection, preliminary treatment and pumping facilities and associated controls
- Reticulation alignments and preliminary sizing, including comments on design velocities, pressure heads etc
- Details of any public pump station, if required.
- Details of the type of wastewater treatment and storage facility proposed
- An outline of ongoing Operational and Maintenance costs expected and benefits from the system proposed including its suitability for the wide ranging loads between holiday seasons and the balance of the year.
- An outline of their ongoing arrangements for the supply and installation of future on lot facilities as required within Separable portion D of the contract.
- Addressing all items raised in Part 1F of these Conditions of Tendering, “Preliminary Design information required from Tenderers”.
- Any other design and performance information of relevance.

109.10 Tender Evaluation Team

A tender evaluation team (TET) selected by the Principal will consider the non-priced attributes and the prices tendered along with the supporting product information and whole of life estimates, their own judgements of the Contractors suitability and their own estimates of short and long term costs that may be associated with the schemes proposed by Tenderers.

The TET, if they consider it necessary, may use advisers to assist them in reviewing general or specialist technical issues associated with the Tenderers and the Contract needs.

109.11 Tender Evaluation Procedure

The general evaluation process is as outlined below.

In tendering for this project Tenderers shall be deemed to be accepting that the TET may have knowledge of all tendered prices during their evaluation of non-priced attributes.

The general evaluation process is as follows:

Initial ranking of tenders

The TET will read, evaluate and rank the Tenderers (including their various subcontractors, suppliers, key plant proposed and Consultants) based on their review of non-priced attributes and the tendered price.

For the evaluation of, technical and relevant and management skills they will take into account:

- Their personal views about the Tenderer’s proposed team and experience
- Information from referees and organisations the Tenderer’s proposed team have worked for

In addition, to evaluate the Tenderer’s

- Resources; they will take into account their personal view about the Tenderers resources and the systems suitability to complete the work
- Methodology; they will take into account their personal views about best practice and the appropriate methodology to complete the work

- Proposed scheme details-they will take into account their assessment of the quality and suitability of the scheme proposed along with short and long term costs associated with the proposals as assessed by the Evaluators and provided by Tenderers.
- Understanding - overall alignment to MDC's objectives

Interviews and negotiations

If the TET considers it desirable, they may choose to interview or negotiate with one or more of the Tenderers. Such interviews may be used as an input into final decisions on ranking of Tenderers.

Ranking review and modification

Preliminary rankings may be modified between initial and final assessments of the TET. Such modifications may arise out of interviews or negotiations with one or more Tenderers, information being received from referees or reconsideration of initial rankings as consensus is developed by the TET.

Final Tender Ranking

The final ranking of tenders will be based on the TETs subjective weighting of the priced and non-priced attributes, recognising the Principals need to have the completed work achieve its objectives the specified performance standards, provide a robust long term solution and value, be done to time and budget, and in a collaborative manner

Tender Award Rights Reserved by the Principal

Upon completion of the evaluation the Principal reserves the right to:

- Award the Contract to the highest ranked or other than the highest ranked Tenderer.
- Not award the Contract to any Tenderer.
- Not award the Contract to any Tenderer and readvertise the Contract in the same or amended form, immediately or at some other time in the future.

Without any obligation to give reasons for the decision and without any entitlement on the part of any Tenderer to compensation, damages or recompense of any kind.

Part 1D FORM OF TENDER

Project: Contract C4/1201 for **The Design and Building of a Community Sewerage Scheme at Himatangi Beach, Manawatu**

To: **Manawatu District Council, 135 Manchester St, Feilding**

Having examined the Contract Documents and the Site, for the construction of the above-named works, we offer to supply, construct, complete and maintain the whole of the said Works in conformity with the said Contract Documents, for the sum of (in words):

excluding GST, or such other sums as may be ascertained in accordance with the said Contract Documents.

For the purpose of this Tender, Contract Documents shall comprise the following:

- The Invitation to Tenders and Conditions of Tendering
- The General and Special Conditions of Contract along with any associated Schedules.
- The Specifications and Drawings
- Any Addenda issued prior to the closing of tenders
- The Schedule, with the tendered rates and amounts
- This Tender inclusive of all specified supplementary information

The Tenderer's GST registration number is _____

Unless and until a formal Agreement is prepared and executed, this Tender, together with your written acceptance thereof, shall constitute a binding Contract between us.

We further acknowledge and accept that the Principal reserves the right to:

- a) Extend the closing time for tenders, by giving notice to Tenderers or intending Tenderers of the new closing time, with such notice being given either before or after the existing closing time.
- b) Reject any or all tenders.
- c) Negotiate with or interview any Tenderer to the exclusion of any other Tenderers.
- d) Withdraw this tender at any time
- e) Re-advertise for tenders.
- f) Request any rejected registrant of interest to lodge a late tender for consideration in this tender.
- g) Waive any minor irregularities or informalities in the tendering process.
- h) Accept other than the lowest tender.

All without any entitlement on the part of any Tenderer or prospective Tenderer to compensation damages or recompense of any kind.

The name of our surety is for the performance bond is:



Our Insurance Company's Name and Address is:

Our completed Schedule is enclosed.

Our proposed Commencement Date for this Contract is: _____

We realise the importance of these works and if our Tender is accepted we undertake to complete them within the time shown in the Special Conditions.

We acknowledge receipt of Notice to Tenderers No's: _____

Our list of subcontractors and the work that they are performing is: (Tenderer may supply this information as a separate list if preferred)

Other conditions relating to our tender are as below or provided as separate attachments:

Our completed and signed "Confirmation of Health and Safety Management Plan" sheet is enclosed.

Yours faithfully:

Signature: _____

Position: _____

Company Name: _____

Address for Service: _____

Telephone No: _____ **Fax No:** _____

Date: _____

Part 1E CONFIRMATION OF HEALTH AND SAFETY MANAGEMENT PLAN

Contract No: _____

Contract Title: _____

Principal: _____

To: (Client) _____

(Address) _____

On behalf of our Company _____, I confirm the following:

- We have a formal and written document covering the Company's Health and Safety policies and standards
- We have a project specific Health and Safety Plan for this project and a copy is enclosed
- The above mentioned documents recognise the provisions of the Health and Safety in Employment Act 1992. They apply to this site and its environs and manage the safety of both staff employed by us and any outside people entering or passing through or near the site.
- We will maintain the above Health and Safety documents throughout the length of the project and be responsible for actively managing and operating them. Active management of the Health and Safety documents includes for modifying them and their implementation as and when circumstances dictate.

The following is also confirmed:

- | | YES |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| a) Hazards are regularly review and monitored including consideration at management/employee team meetings. | <input type="checkbox"/> |
| b) A Company system is in place for recording hazards and accidents. | <input type="checkbox"/> |
| c) A company emergency plan is in place for dealing with accidents | <input type="checkbox"/> |
| d) Our Company carries out regular health and safety training for employees on a minimum _____ monthly basis. | <input type="checkbox"/> |
| e) Our Company regularly inspects the workplace to ensure compliance with current safety procedures. | <input type="checkbox"/> |
| f) Our Company has issued to all staff a Company Health and Safety Manual. | <input type="checkbox"/> |
| g) Our Company employs a supervisor (or supervisors) who has attended appropriate training course and who will be responsible for Health and Safety of the site. | <input type="checkbox"/> |

His/her name is: _____

Authorised signatory _____

Printed name: _____

Signature: _____

Part 1F: PRELIMINARY DESIGN INFORMATION REQUIRED FROM TENDERERS

1. Requirements for on lot facilities

Tenderers shall complete the Pump Unit Specification Schedule, PSU Quality of Service Offered Schedule.

2. Requirements for public reticulation

Tenders shall provide information on:

- a) Whether their proposal will utilise a public pump station and if so, its proposed location, operational and emergency volumes provided, pump types and number. As a minimum requirement a standby pump is required in addition to the duty pump(s). A general outline of controls and telemetry systems shall be given.
- b) Reticulation pipe types and indicative sizes and pressure ratings.
- c) Intended pipelaying method (eg open trench, trenchless methods).
- d) Indicative pipe alignments (berms or roads).
- e) Indicative lifetime O & M costs including parts, labour and power based on assumptions as covered under the "Requirements for Wastewater Treatment Facility".

3. Requirements for wastewater treatment facility

Tenderers shall provide a detailed description of the process they propose to provide for treatment of the wastewater from the Himatangi Beach community. The description may be in words but should preferably be provided as a draft process flow diagram or P&ID diagram that shows all the components of the proposed treatment facility.

- a) The process description shall include the design parameters adopted by the Tenderer including, but not limited to, such parameters as the sludge age, hydraulic retention time, F/M ratio, and aeration input.
- b) Tenderers shall explain how the process they propose will be able to manage variable wastewater flows and loads and how it will be able to treat the flow and load expected by 2041.
- c) Information shall be provided on how the proposed treatment facility can be expanded in future to treat flows and loads beyond that anticipated in 2041.
- d) Tenderers shall provide a drawing showing the proposed layout and dimensions of the treatment facility they propose to construct including the building(s) that will be constructed to house screening (if needed) and sludge processing machinery and the MCC room. The drawing shall include dimensions of all components and show the location of all components of the treatment facility on the designated site.
- e) The layout drawing shall show where expansion can be accommodated in future as referred to in clause 3.4.
- f) For all ponds included within the buffer storage or treatment facility, the type of liner proposed shall be stated.
- g) If the treatment process includes a separate clarifier the Tenderer shall provide information on the proposed design of the clarifier including the dimensions and method of sludge withdrawal.

- h) Details shall be provided of any balance tanks and the proposed effluent storage pond.
- i) Tenderers shall provide a description and/or drawings of the proposed sludge management system including but not limited to any sludge storage or thickening equipment, the proposed sludge de-watering equipment and equipment for conveyance to a disposal bin(s).
- j) Design information shall be provided for the proposed odour extraction and treatment system including but not limited to the fans or blowers to be used and the method of odour treatment. If the method of odour treatment is to be a biofilter, the design parameters, materials and dimensions of the proposed biofilter shall be given. If some other method of odour treatment is proposed full technical information about the process or equipment shall be provided.
- k) Tenderers shall describe the materials to be used for construction of all components of the treatment facility including buildings and the finish to be applied in each case.
- l) Tenderers shall provide technical information on all items of equipment that will be supplied as part of the treatment facility including but not limited to the aeration equipment, pumps, valves, instruments, controls and SCADA interface.
- m) Tenderers shall supply a breakdown of the components that will be included in the treatment facility they propose to construct in fulfilment of this contract by completing a Schedule of Prices. This schedule will be used as a check list of the components of the proposed treatment facility and in the case of the successful tender will be used by Council as the basis of their depreciation schedule.
- n) The locations of operational and security lighting shall be shown on the drawing along with a general description of the lighting.
- o) Information shall be provided on the proposed materials and method of construction of the security fence and gates around the treatment facility.
- p) Tenderers shall provide technical information on the back-up power supply they propose to supply (if needed at all) to ensure that the treatment facility can continue to operate if there is a failure in mains power supply to the site.
- q) Tenderers shall indicate in their tenders what features and/or mitigation measures have been incorporated to minimize or eliminate the potential attraction of birds.
- r) Tenderers shall describe the construction method and finished surface of the access road.
- s) Tenderers shall detail the methodology and confirm the design of the crossing over the Kaikokopu Stream.
- t) Tenderers shall allow for provision of a temporary power supply as they may require until a permanent power supply is connected to the site.
- u) Tenderers shall include in their tender a price for the purchase and installation of a suitable size of transformer on the site.
- v) Tenders shall include in their tender a price for installing a power cable duct to the transformer from the point of power supply along the easement as shown on LEI drawing 10040-103. The duct shall be laid in the trench excavated by the pipeline contractor at the same time as the wastewater pipeline is laid. Included will also be the laying of a water service pipe for the proposed treatment facility.

- w) Tenderers shall describe the source and volume of clean water required at the site, along with the proposed water reticulation within the site.
- x) Tenderers shall identify any other services they require to be supplied by Council.
- y) Tenderers shall provide information on the proposed construction and finish of roads and parking areas within the designated treatment facility site.
- z) A methodology shall be given for the control of dust on the site during construction.

4. Operation of the Treatment Facility

- a) Tenderers shall indicate the hours of staff input they anticipate being required at the treatment facility each week during the defects liability period and the four year operational supervision period.
- b) Information shall be provided about the staff proposed to operate the facility including their required experience and qualification.
- c) The MDC laboratory will be used for analysis of monitoring and operational samples.

5. Operating, maintenance and life-cycle costs

- a) Tenderers shall provide an estimate of the annual operating costs of the entire sewerage scheme that they are offering. This should include project costs projected out to 2041, including but not limited to the following cost items:
 - Operational labour requirements at an FTE of \$60,000
 - Power for aeration based on power at 20c/kWh
 - Power for pumping based on power at 20c/kWh
 - Maintenance costs for mechanical equipment items (such as belts for a belt press or centrifuge parts) expressed as an annual cost
 - Sludge generation and disposal costs based on disposal to land fill at a cost of \$150/tonne of sludge at 20% solids. Where it is proposed to dewater the sludge to a higher % solids the cost should be reduced pro rata
 - Chemical costs
- b) Tenderers shall provide an assessment of the whole of life costs over the period to 2041 of the completed wastewater collection, reticulation and treatment scheme they are offering in their tender. This assessment shall include a table listing the mechanical components of entire sewerage scheme (such as aerators or blowers, air diffusers, pumps etc) and the guaranteed and expected lifetimes for each item. Whole of life cost estimates shall utilise a discount rate of 7.5% per annum.
- c) Tenderers shall provide replacement costs (in 2011 \$NZ) for equipment items that are expected to have to be replaced over the period to 2041, expressed as an annual cost.
- d) Tenders shall provide an estimate for ongoing O&M needs and costs for the typical on lot system being proposed. As a minimum this shall cover:
 - Likely maintenance needs and associated costs over a typical year.
 - Expected life expectancy of main plant (pump, switchboards, filter media, etc);
 - Expected daily power needs;
 - Testing of recommended O&M inspections/ checks and by whom;

- e) If a public pump station is proposed O&M needs and costs for the system shall also be provided. As minimum information as noted for the on lot facilities above shall be provided along with the provision of a whole of life cost estimate based on the same base assumptions as given above.

SECTION 2

GENERAL CONDITIONS OF CONTRACT

Except where modified or extended by the following Schedules to the General Conditions of Contract, the Contract shall be governed by the document published by the Standards Association of New Zealand and entitled

“Conditions of Contract for Building and Civil Engineering Construction, NZS3910:2003”

including all amendments issued by Standards New Zealand up to the time of closing of tenders.

Copies of this document are available for inspection at the office of the Engineer during business hours. The Contractor shall familiarise itself with the provisions of this document which shall form part of the Contract.

SECTION 3

SCHEDULES TO GENERAL CONDITIONS OF CONTRACT

Schedule 1 – Special Conditions of Contract

Schedule 1 - Part A – Specific Conditions of Contract

(Clause numbers refer to General Conditions)

1.2

The Principal is Manawatu District Council of 135 Manchester Street, Feilding

- (a) There are Separable Portions A, B, C, D and E as described in the Specification entitled “Extent of Contract

2.1.1

This contract is a:

- (a) Lump sum contract with some measurable items;

2.5

This contract is:

A construction contract in public roads. Whilst the contract is not a term maintenance contract the provisions of section C3 of Appendix C “Underground and Above ground Utilities” shall apply to this contract

2.6.1

This contract is:

- a) A local authority contract;

2.6.3

Clauses B1 and B2 of Appendix B:

- a) Shall apply to this contract;

2.6.4

- a) A site safety plan is required and requirements are detailed within the Preliminary and General Specifications.
- b) A traffic management plan is required and requirements are detailed within the Preliminary and General Specifications.

2.8.1

Three sets of Contract Documents shall be supplied free of charge to the Contractor upon the acceptance of tender in addition to tender, consent and Contract Agreement sets.

2.9.2

Three sets of Contract Documents shall be supplied free of charge to the Engineer upon completion of the design phase of the project in addition to the Consent and master set provided to the Principal.

3.1.1

A Contractor's bond:

- a) Is required;

3.1.2

The Contractor's bond shall be for the sum of \$ 300,000.00. The bond surety shall be a bank or financial institution approved by the Principal. At Practical Completion of Separable Portions A to C inclusive the bond sum shall be reduced to a Residual Bond sum of \$100,000.00 and this bond shall be retained until the end of Separable Portion E the Operational Performance Proving Period. Once the proving criteria have been met and the proving period satisfactorily completed this Residual Bond shall be released.

3.2.1

A Principal's bond:

- a) Is not required;

5.4.1

The Contractor shall be given possession of the site on:

- a) A date agreed between the Contractor and Principal after completion of the Contractor's design, presentation of full design and construction documentation to the Principal and the issuing by the Principal of a letter of "no objection" to the design received. For purposes of this contract the contract Commencement Date is prior to possession of the site being issued. Refer definition in clause 10.1.1 of these Special Conditions.

5.6.6

- (g) Risks specifically excepted are: - Nil

5.11.1

- a) The Contractor is to be responsible, for and on behalf of the Principal, for obtaining project information memoranda, building consents and code compliance certificates under the Building Act 1991 for the carrying out of the following parts of the Contract Works to which Appendix D applies.
- (i) All parts of the work for which building or other Council consents are required.

5.17.1

Quality management systems:

- a) Are required prior to commencement of work on site and details of requirements are described in the "Preliminary & General" specification.

5.18.1(a)

a) As-built drawings, are required, as set out in the Contract Documents:

5.18.1(b)

(a) Operation and maintenance manuals are required as set out in the Contract Documents:

6.1.2

The Engineer is Mr Andrew Higgs

whose professional qualification is B.E (Hons), MIPENZ, MICE(UK), C Eng (UK))

6.3.1

The Engineer's Representative is Mr Mike Fletcher

whose professional qualification is BSc.Eng (Hons), MICE(UK), Chartered Civil Engineer (UK)

6.3.3

Powers of the Engineer's Representative shall be limited as per NZS 3910

8.1 and 8.6

a) The Contractor shall insure as provided in 8.1

8.1.2 or 8.6.1

The amount of the insurance to be effected in respect of the Contract Works and Materials shall be for not less than the sum of the following:

- a) The Contract Price, after the acceptance of the tender or other offer, excluding any additions or deductions which may be required to be made during the course of the contract.
- b) For the Cost of demolition, disposal and preparation for replacement work, the sum of:
 - (i) 5% of the Contract Price as described in (a) above;

For professional fees including the Cost of clerks of works and inspectors, the sum of

10% of the Contract Price as described in (a) above;

The value of items incorporated, or to be incorporated, in the Contract Works, the Cost of which is not included in the Contract Price, the sum of \$Nil.

For increased construction costs not already provided for in the Contract price during the period from the acceptance of the tender or other offer until the issue of the Defects Liability Certificate for the Contract Works, the sum of

- (ii) 10% of the Contract Price as described in (a) above;

The insurance shall make provision for automatic change of cover for items (a) to (e) above, to provide insurance for any additions to or deductions from the Contract Price which occur after acceptance of the tender or other offer.

8.2.1

Contractor's Plant insurance is required for each item of construction machinery on the Site owned by the Contractor that has a market value of more than:

- a) \$50,000;

8.3 and 8.7

- a) The Contractor shall insure as provided in 8.3;

8.3.1 or 8.7.1

Public liability (PL) insurance shall be effected for an amount not less than \$5.0 million

8.3.2

Motor vehicle third party liability insurance shall be effected for an amount not less than \$500,000

8.3.4

The risks of fire and explosion, damage to property and land by removal of support or by vibration and liability for property damage shall not be exceptions to the liability.

8.4.1

- a) Professional indemnity insurance for design by the Contractor shall be effected for an amount not less than \$2.0 million. The Contractor shall ensure that any contract between the Contractor and any consultant providing professional design services incorporates back to back liability and P I insurance provisions as required of the Contractor by this contract. Evidence of such arrangements shall be provided to the Principal.

10.1

Delete clause 10.1.1 and substitute:

The contract period under this contract is not linked to the Contractor being given Possession of the Site. The initial phase of the contract is preparation of the design and this phase does not necessitate the Contractor having possession of the site. Thus the contract period shall commence at a Commencement Date mutually agreed between the Contractor and Principal but not later than 20 days after the date of the letter of acceptance of tender: Possession of the site for Separable Portions B to D will be given on receipt by the Principal of all design documentation and the issue by the Principal of a letter of "no objection" to the design submitted by the Contractor.

Subject to provision of appropriate design documentation, possession of the site may be given separately for discrete Portions of the contract if such a split provides benefits to the construction phase without putting the totality of the design at risk. Such a decision will be at the sole discretion of the Principal.

10.2.1

The time for completion shall start at the Commencement Date as defined in clause 10.1 above (i.e. the commencement of the design phase) except as noted otherwise below. The periods to be used for calculating the Due Date for Completion are:

- a) in respect of Separable Portions

- i. Separable Portion A: Design phase: 3 months from the Commencement date
- ii. Separable Portion B: Public works phase: 14 months from the Commencement date
- iii. Separable Portion C: Initial on lot works: 21 months from the Commencement date
- iv. Separable Portion D: Ongoing supply of on lot facilities: 5 years from the date of Practical Completion of Separable Portion C
- v. Separable Portion E: Operational Performance Proving period: 4 years from the date of Defects Liability certification of Separable Portion B

Clause 10.3.1

The provisions of clause 10.3.1 shall be modified by the following:

The design phase of the contract shall not be subject to any claims for weather related extensions of time.

For the construction phase, the Contractor shall provide for “average” weather conditions expected over the construction period. Claims for extension of time caused by inclement weather will only be considered when the following two conditions can be met:

- Actual rainy days over the period in question exceed the average number of rainy days expected over the same period for this area. The base statistics used shall be those held by NIWA and a rainy day shall be defined as a day when at least 3mm of rain has fallen.
- The progress of the works shall be shown to have been interfered with.

For purposes of Section 10.3 of these Conditions of Contract inclement weather shall be considered as:

“Weather sufficiently inclement to prevent continuation of work on site where such continuation would present a hazard to people on the site, where such continuation would damage work already in place, or where it would create site conditions that would be detrimental to the ongoing quality of the work output”.

10.4.5

Prior to the issue of the Certificate of Practical Completion:

- a) A producer statement in the form of the Sixth Schedule is required for each separable Portion.

10.5.1

Liquidated damages shall be applied as follows:

- a) In respect of Separable Portions
 - i. Separable Portion A: \$...3,000.00 per week
 - ii. Separable Portion B: \$...see below
 - iii. Separable Portion C: \$...see below
 - iv. Separable Portion D: \$...see below
 - v. Separable Portion E: N.A. subject to performance bond described under clause 3.1.2

For Separable Portions B, C and D liquidated damages are not quantified but the Principal may seek to recover through the Legal System any costs or losses incurred as a result of the Contractor failing to deliver products and services to the specified standards and time frame.

In particular the Contractor is advised that the works are subject to a Government subsidy of up to \$ 3.73M (incl GST), as outlined in the Tender Introduction. This subsidy which is for the council funded components of the scheme only covers works completed by 30 June 2013 including a one month commissioning period for the treatment facility. Any part of it not expended by that date will be lost. If the design/build contract is not completed in time for the Principal to legally claim all subsidy available the Principal reserves the right to commence legal proceedings against the Contractor to recover the lost balance of subsidy along with any other costs caused by the delay and all associated professional costs and damages legally claimable as a result of the failure to complete the works on time.

In addition any such delays caused by the Contractor will form a basis for the Principal to terminate the Contract in terms of Section 14 of the General Conditions of Contract "Frustration and Default".

11.1.1

The Periods of Defects Liability shall be:

In respect of Separable Portions

- i. Separable Portion A: Refer clause 8.4 regarding Professional Indemnity Insurance for Contractor's design
- ii. Separable Portion B: 12 months
- iii. Separable Portion C: 12 months
- iv. Separable Portion D: 2 months following delivery of products and services specified by any individual Works Order (refer Specification "Extent of Contract" for details of procedures for Separable Portion D)
- v. Separable Portion E: Not applicable

11.3.2

Prior to the issue of the Defects Liability Certificate:

- a) A producer statement in the form of the Sixth Schedule is required for each construction Separable Portion:

Other completion documents are required as set out in the Contract Documents:

11.5.1

- (a) The Contractor shall provide guarantees as set out in the Contract Documents.

11.5.2

The form of guarantee shall be in the form annexed as Schedule 12 within the contract documents.

12.1.2(b)

- (b) Advances for Temporary Works, Plant or Materials not yet on Site shall not be made to the Contractor.

12.1.2(b)

- (c) (iii) No payment will be made for materials delivered to site but which have not been incorporated into the contract works at the date of the claim.

12.3.1

The percentage to be retained from each progress payment and the limit of the total sums retained shall be:

In respect of Separable Portions A , B and C, the following retentions apply to each individual Separable Portion.:

Total retention
10% of first \$1,000,000. plus
5% of next \$2,000,000. plus
2.5% of amount in excess of \$3,000,000 plus
with maximum of \$300,000-00 when aggregated

Defects liability retention
50% of total retention

For Separable Portion D retention shall be at 10% of each Works Order and shall be released in full two months after the completion of the work specified in the Works Order, subject to the Contractor remedying any defects identified within the works during the two month period.

12.3.3

A bond in lieu of retention will not be accepted.

12.8.2

Cost fluctuation adjustments:

- a) Shall not be paid on Separable Portions A, B and C, but foreign exchange rate adjustments on key imported/indented items listed by the Contractor at Tender and agreed with the Principal on tender acceptance will be made. Refer clause 12.8 for details;
- b) Shall be paid for Separable Portions D and E as set out in clause 12.8.

12.9.1

- a) Provisional Sums are included in the schedule of quantities.

12.10.1

- a) Prime Cost Sums are not included in the schedule of quantities.

12.11.1

The contingency sum to be included in the contract is \$.....NIL.....

15.1.2

For the purpose of service of payment claims or notices, the postal address of:

- a) The Principal is: Manawatu District Council, 135 Manchester St, Feilding
- b) For the attention of: Mr Mike Fletcher

Email mike.fletcher@mdc.govt.nz

The Engineer is: Mr Andrew Higgs

Email andrew.higgs@mdc.govt.nz

The Contractor is: _____

For the attention of: _____

Fax No. _____

Schedule 1 - Part B Other Special Conditions of Contract

SECTION 1 INTERPRETATION

1.2 Definitions

Add to NZS 3910 subclause 1.2 the following items:

CONTRACTOR'S PROPOSED METHODOLOGY means those parts of Contractor's proposal and other proposals by the Contractor to satisfy the Specifications which are incorporated into the Contract.

CONTRACT SITES subject clause 1.7.2, are those areas of land owned or controlled by the Principal upon or under which the individual assets comprising any Contract Facilities are located together with any areas of land on which the Contractor is required to carry out work under the Contract.

1.7 No Waiver

1.7.1 None of the provisions of this contract shall be regarded as waived or amended by either the Principal, any representative of the Principal, or the Contractor unless the same is agreed in writing and signed as a separate memorandum. No waiver by either the Principal or the Contractor of any right of default under this contract shall be deemed a waiver of any subsequent right or default whether of a like or different character.

1.8 Entire Agreement

1.8.1 The contract shall constitute the entire agreement between the parties hereto for the performance of the Contract Works by the Contractor. This contract supersedes all negotiations, representations, and warranties except insofar as the same are expressly incorporated herein.

SECTION 2 THE CONTRACT

2.8.3

Parts of the General Conditions relating to Protection of Persons and property (including Health and Safety matters), Compliance with laws (including requirements relating to Resource and other Consents), Quality Management and Inspection Recording Measuring and Testing, may be extended or modified by various clauses within those parts of the Specifications entitled "Particular Requirements" and "Preliminary and General". The Contractor shall ensure familiarity with these Specifications in so far as they may extend or modify the General Conditions.

2.8.4

The Contract Documents shall be taken as mutually explanatory. Ambiguities or omissions shall not invalidate the contract. In the event of ambiguity or conflict between the Contract Documents, the order of precedence of the Contract Documents shall be as stated in the Contract Agreement.

2.10 Partnering

Add the following new clauses

2.10.1

Both parties agree that where practical their relationship under this contract will be characterised by partnering attitudes.

2.10.2

Partnering is a method of operating a contractual relationship to promote prompt and constructive communication and a problem solving approach between the parties. Partnering has two primary objectives:

- Ensuring that the contract operates smoothly;
- To facilitate the prompt and constructive resolution of disputes.

2.10.3 Partnering attitudes

A partnering philosophy requires each party to utilise key staff who have collaborative approaches to the project and relationships and who will work together to understand the needs and agendas of each party and focus on the common goal of delivering the project in accordance with the Contract Documents.

Common goals and commitments to be acknowledged by the parties include:

- a) To complete the project in accordance with the contract
- b) To maintain quality control
- c) To carry out and administer the Contract so that all parties are treated fairly and contractual confrontation minimised
- d) To minimise loss of time through injuries
- e) To resolve disputes as quickly as possible
- f) To meet all environmental requirements
- g) To bring up issues of concern or potential cost at the earliest opportunity to enable earliest possible consultation and resolution.

2.10.6 Partnering involvement

For the purposes of this Contract no attendance at special partnering meetings will be required but a partnering item will be incorporated in the Agenda of all project meetings. The partners to the Contract will review each others performance under the general partnering attitudes as detailed above.

2.10.7

The use of partnering techniques and the adoption of partnering does not in any way imply any fiduciary obligations, obligation of good faith, partnership and/or joint venture between the parties.

2.10.8

The partnering information set out above and any partnering charter or protocol developed by the parties are subordinate to the provisions of this contract and shall not be construed as overriding, amending or waiving any contractual rights of obligations.

2.11 Contractor's Warranties

2.11.1 The Contractor warrants to the Principal that:

- (a) it has full legal power and capacity to enter into and perform its obligations under this Contract, and
- (b) it has the working capital, resources and capability to perform its obligations under the Contract, and it has the requisite skill, judgement, ability, capacity and experience to meet the Specification, and
- (c) it has fully examined, informed and appraised itself of the contents of the Contract including all the attached documents and other information made available in writing by the Principal or its agents in connection with the request for proposal for the Contract, and it has used its best endeavours to satisfy itself as to the accuracy, completeness and adequacy of the contents of all such documents, and
- (d) before entering into the Contract it carried out its own analysis and investigations as well as analysing the information supplied by the Principal and obtained any other necessary information as to the risks which may affect its ability to satisfy its obligations under the Contract, and it has fully examined, informed, satisfied itself and allowed for all relevant risks, contingencies and other circumstances having or likely to have an effect on the performance of the services and works required under the Contract,
- (e) it has satisfied itself as to the correctness and sufficiency of the Contract Prices to allow for the cost of complying with all of the Contractor's obligations under the Contract, and
- (f) it has satisfied itself that the Contract Facilities are capable of being operated and maintained in accordance with the Contract.

SECTION 3 BONDS

3.1 Contractor's Bond

3.1.2 *Delete the words "two months" and replace with "one month."*

SECTION 4 SUBCONTRACTS

4.1 General

4.1.3 *Add to end of clause:*

The Contractor shall be responsible for the acts, defaults, and neglects of any subcontractor or subcontractor's agents, employees, or consultants as fully as if they were the acts, defaults, and neglects of the Contractor or the Contractor's agents, employees, or consultants.

4.1.4 *Add new clause:*

All subcontracts let by the Contractor shall be by written agreement signed by the Contractor and the Subcontractor under which the Subcontractor contracts with the Contractor to perform the part or parts of the works specified in such agreement for performance by the Subcontractor in the same manner in each and every respect as the Contractor is bound to perform in this contract.

SECTION 5 GENERAL OBLIGATIONS

5.1 General Responsibilities

5.1.2 *Delete the word “proper” and add a new sentence.*

“Such instructions shall not be deemed to constitute Variations solely by virtue of having been instructed.”

5.4 Possession of the Site

5.4.2 *Delete the phrase “the Engineer shall suspend” and replace with “the Engineer may suspend”.*

5.5 Separate Contractors

5.5.1 Remove from the first sentence “Where provided for in the Contract Documents.”

5.7 Protection of Persons and Property

Add the following new clauses:

5.7.8

The Contractor shall comply with its obligations and shall ensure that all subcontractors comply with their obligations, under the Health & Safety in Employment (HSE) Act and all regulations made under the HSE Act and all approved Codes of Practice under Section 20 of the HSE Act.

5.7.9

The Contractor acknowledges that, as between the Contractor and the Principal, as the occupier and person in possession of the Site under Section 16 of the HSE Act, the Contractor has the primary responsibility for the health and safety of Persons in and about the Site, in addition to its own employees. This shall include for management of traffic and pedestrian flows through and around the site to standards required by the contract documents and all requirements of the applicable road controlling authorities.

5.7.10

The Contractor shall submit with its Tender the completed form “Confirmation of Health & Safety Management Plan” forming part of the Conditions of Tendering, along with a preliminary project specific Health & Safety Plan. A full project specific Health & Safety plan shall be provided to the Engineer by the Contractor prior to commencing work on site. Further requirements for Health & Safety planning and management are covered in the Preliminary & General Specification.

5.7.11

The Contractor acknowledges that it has allowed for the requirements of this Contract in relation to health and safety both as to inclusion in the Contract Price and the Programme. The Contractor shall not be entitled to claim for an adjustment to the Contract Price arising in relation to health and safety issues or in connection with any improvement or prohibition notice, enforcement or proceedings under the Health and Safety in Employment Act.

5.7.12

To the extent permitted by law the Contractor shall indemnify the Principal, employees of the Principal, and the Engineer for any costs incurred, reparations awarded against it or them or legal costs incurred arising directly or indirectly as a result of any breaches by the Contractor of the health and safety provisions of this

Contract or any provision of the Health and Safety in Employment Act 1992 or any relevant regulations. In addition the Contractor shall pay any costs incurred by the Engineer and Principal for attendances and extra administrative obligations caused by any breach by the Contractor of its obligations under the health and safety requirements of this contract.

5.7.13

Where by reason of activities of the Contractor, damage results to any public or private property including roads, footpaths, structures, trees, or gardens such damage shall be made good by the Contractor to the satisfaction of the affected party without extra payment.

The Contractor shall minimize any inconvenience to parties affected by the work and shall not unduly delay the legal passage of persons or vehicles through or within the site of the works. Where the Contractor considers it is necessary to restrict access to public or private property, approval shall be sought from the Engineer whose decision as to acceptability will be final.

If at any stage during the contract the Engineer determines that ongoing work has the potential to damage any completed work or adjoining public or private property the Engineer may require the Contractor to carry out measures to prevent such damage occurring. Where such measures are, in the opinion of the Engineer, beyond the requirements of the contract then the costs of the work will constitute a variation.

5.9 Material, Labour and Plant

Add the following additional clauses:

- 5.9.4 The Contractor shall engage the employees which are required for carrying out of obligations under the Contract, ensuring the availability of sufficient numbers with the required skills. The Contractor shall ensure that employees hold the necessary qualifications and permits and are adequately trained and competent to carry out their required duties.
- 5.9.5 The Contractor shall at its own cost remove from the provision of works and services under the Contract any person employed by the Contractor or any sub-contractor who is or who is in the Engineer's reasonable opinion incompetent or negligent in the performance of their duties or who misconducts themselves.
- 5.9.6 The Contractor shall be responsible for industrial relations in relation to its employees, shall carry the cost of any industrial disputes and pay all salaries, wages, levies and taxes. The Contractor shall be responsible for complying with the requirements of the Employment Relations Act, for achieving and maintaining good industrial relations, for establishing and maintaining good order and good conduct among its and its subcontractor's employees associated with the Contract, for directing and controlling all such persons and for taking appropriate corrective action where necessary. The Contractor shall implement such management practices as will minimise the potential for industrial conflict during the contract period.
- 5.9.7 The Contractor shall keep the Engineer fully informed of all claims made or other industrial relations matters which may affect the Contractor within 5 working days of any event being notified or undertaken and shall take all reasonable steps to avoid actions or inactions that may prejudice the position of the Principal.
- 5.9.8 The Contractor shall provide or procure training for its own employees in relation to duties required to be performed by them in relation to the Contract and in relation to health and safety.

5.9.9 Where instructed by the Engineer, the Contractor shall also involve members of the Principal's staff in such training. Any additional costs incurred in training for the Principal's staff shall be a Variation.

5.9.10 The Contractor shall maintain records of all training undertaken during the contract period.

5.10 Programme:

Add the following additional clause:

The Contractor shall supply to the Principal a project programme in accordance with the requirements of the "Preliminary & General" specification.

5.11 Compliance with Laws

Add the following additional clauses:

Resource Consents and other Consents have been obtained for the wastewater treatment facility and the Consents with all conditions are appended.". The Contractor shall meet the requirements of all Consent conditions as they relate to both design and construction.

5.11.8 The Contractor warrants to the Principal that the Contractor shall not do anything or omit to do anything, or use materials, substances or processes which:

- (a) would or could discharge a contaminant into the environment that is not in compliance with resource consents held by the Principal; or would cause the total emission of noise from the Site to exceed prescribed boundary noise levels; or that would or could cause any adverse effect on the environment; or
- (b) is a breach of any duty or obligation of the Contractor under the Resource Management Act 1991 (RMA); or
- (c) does or is likely to give rise to the issue of an abatement notice; enforcement proceedings or an excessive noise direction under the Resource Management Act 1991 against the Principal, Contractor, or Subcontractor.

5.11.9 The Contractor undertakes that before a Subcontractor commences work the Contractor shall obtain similar warranties and undertakings as those stated in 5.11.8 from that Subcontractor in relation to the subcontract works.

5.11.10 The Contractor shall comply with all the requirements of the Health and Safety in Employment Act 1992, including any regulations made pursuant to Section 21 of the Act. The Contractor warrants to the Principal that the Contractor shall take all practicable steps to ensure that no act or omission:

- (a) causes a hazard, significant hazard, harm, or serious harm to any employee of the Contractor or any person at the place of work or in the vicinity of the place of work; or
- (b) is a breach of duty or obligation of the Contractor under the Health and Safety in Employment Act 1992; or

- (c) does or is likely to give rise to the issue of an improvement or prohibition notice, enforcement proceedings or a prosecution under the Health and Safety in Employment Act 1992 against the Principal, the Contractor, his/her Subcontractor or Separate Contractors.
- 5.11.11 The Contractor undertakes that before a Subcontractor commences work the Contractor shall obtain similar warranties as those stated in 5.11.10 from the Subcontractor in relation to the subcontract works.
- 5.11.12 The Contractor shall indemnify and keep indemnified the Principal from all costs, damages, fines, penalties, loss and expense incurred or suffered by the Principal in respect of any breach of the Resource Management Act directly or indirectly related to a breach by the Contractor of any of the warranties set out in 5.11.8 and 5.11.10.
- 5.11.13 If the Contractor becomes aware that it is or may be in breach, or is likely to be in breach of any of the warranties in 5.11.8 and 5.11.10 or any Subcontractor is or may be in breach of or is likely to breach the matters set out in the agreement between the Contractor and Subcontractors pursuant to 5.11.9 and 5.11.11 then the Contractor shall immediately notify the Principal of such breach in connection with the Contract Works, Subcontract Works or Separate Contract Works. The Contractor shall follow the directions, if any, of the Engineer to avoid, remedy or mitigate such breach or anticipated breach.
- 5.11.14 The Contractor shall have a written Health and Safety in Employment Policy which has been approved by the Principal and which satisfies both Department of Labour and/or occupational health and safety standards.
- 5.11.15 The words and phrases used in clause 5.11 shall have meaning as is ascribed to them in the Health and Safety in Employment Act 1992.

5.13.5 Underground and Above Ground Utilities

Add the following additional clause:

Unless specified otherwise within the contract documents or specifically approved by the Engineer all work necessary on existing live utility services shall be carried out by the respective network utility operator (NUO). The Contractor shall be responsible for the coordination of all such specialist NUO works. This shall include obtaining prior written agreement from the NUO on the nature and programme of the works to be undertaken. The Contractor shall provide access to the site, cooperate with and attend upon all such NUO works during the contract.

SECTION 6 ENGINEER'S POWERS AND RESPONSIBILITIES

6.4 Inspection, Recording, Measuring, and Testing

Add new clause:

- 6.4.8 Review, inspection, approval, or permission to proceed by the Engineer or the Engineer's representative does not relieve the Contractor from full compliance with its contractual or legal obligations.

6.4.9 Inspection, Monitoring, Measuring and Testing

In addition to the requirements of Section 6.4 of the General Conditions, specific minimum requirements for compliance testing are covered in the Preliminary and General section of the Specification.

6.6 Certification

6.6.3 Delete and replace with:

The Engineer may by any Payment Schedule or any other certificate, correct an amount previously certified by the Engineer in a previous Payment Schedule, or correct any other certificate, which has been issued by him or her or by any previous Engineer, provided he or she notifies the Contractor in writing of his or her reasons for so doing.

6.7 Suspension of Work

6.7.1 Delete the phrase “the Engineer shall” and replace with the phrase “the Engineer may” and to the end of the clause add:

“No suspension of the Contract Works shall in any way invalidate the Contract.”

SECTION 7 INDEMNITY

7.1.1(d) – Indemnity

The risks of fire and explosion, damage to property and land by removal of support or vibration and liability for property damage, shall be included in the Contractors liability to indemnify the Principal.

7.1.2 Delete entire clause.

7.1.3 Delete entire clause.

7.1.5 Add new clause

To the extent permitted by law the Contractor shall indemnify the Principal from all costs, damages, fines, penalties, losses and expenses incurred by the Principal in respect of any failure by the Contractor to comply with the provision of any statute, regulation bylaw, consent condition or other requirement of government or local or public authority that may be applicable to the Contract works.

SECTION 9 VARIATIONS

9.1 Variations Permitted

Amend 9.1.1 (b) to read:

9.1.1 (b) Omit any work, whether or not any such work omitted is then carried out by a Separate Contractor or by the Principal itself.

Add new clause:

9.2.2 Variation Orders

Delete the clause and substitute the following:

Where an instruction is given by the Engineer or the Engineer's Representative which is not in writing or is not expressly stated to be a Variation, and the Contractor considers that the instruction involves a Variation, it shall within five working days of receiving the instruction give written notice to the Engineer to that effect along with a price for the work. Where it is not feasible to provide a firm price for the work within this timeframe the notice shall advise the shortest reasonable timetable for provision of the price. Notices given outside this time limit will not be considered. The Engineer by notice in writing to the Contractor within a reasonable time thereafter shall advise whether or not the claim is to be accepted or whether further consideration is being given to the claim.

9.2.5 Contractor's Proposal for a Variation

- (a) The Contractor may at any time submit to the Engineer for consideration details of a proposed change to the specification which in the Contractor's opinion may reduce the cost or improve the efficiency or value to the Principal of the Contract Facilities.
- (b) The Engineer shall not be obliged to agree to such a proposal or to order a Variation

9.3 Valuation of Variations

9.3.5 to 9.3.9 and 9.3.15

Delete the clauses and substitute the following:

The Contractor shall not be entitled to the cost of processing any Variation whether they proceed or not.

Where the Schedule of Prices contains rates or amounts that are applicable to the variation being considered then no on or off site overheads or profit shall be applied to the variation regardless of whether or not they are provided in the Tender. Where no tendered Schedule rates are reasonably applicable to a variation and the Base Value is required to be developed on a net value basis then on and off site overheads and profit may be included. Where the Base Value is a negative figure then the Contractor shall not retain any allowance for on or off site overheads or profit relating to that figure.

9.3.14

Delete the clause and substitute the following:

Processing fees shall not be payable on variations (up or down) that can be made by modifying scheduled quantities at scheduled rates. No processing fee will be payable for variations priced but not proceeded with regardless of reasons.

9.4 Daywork

Add new clause:

9.4.4 ADD NEW CLAUSE

The proposed Daywork rates for Labour and Plant in the Schedule of Prices shall be inclusive of all on costs noted below:

- (a) The rates for Labour shall include the cost of wages paid inclusive of the penal portion of overtime payments and standby allowances, together with all the contractor's costs, insurance, supervision, accommodation, travelling, holidays with pay, profit, time keeping, clerical and office work, use of all small tools and minor equipment (such as drills, chainsaws, levels, locators, concrete vibrators,

pumps, generators, lighting sets, water-blasters, root cutters, drain rods, weed sprayers, weed eaters etc) and all incidental charges.

The time that foreman or supervisors are physically working on site with the labour gangs will be certified and paid for at the appropriate scheduled rate. Only the time that labour is directly engaged in work ordered by the Engineer will be certified.

- (b) The rates for Plant shall include the total cost per working hour for the use of each item of Plant including the operator, all on-costs including insurance, maintenance, wear and tear, spare parts, the cost of repairs and renewals, transport, standing time, the cost of all fittings and equipment required for the efficient operation of the plant, all fuel and consumables, electric power, supervision, profit and all incidental charges.

If, in the opinion of the Engineer, the use of an unusual type of plant is necessary for the execution of any work carried out on a Daywork basis, the Contractor shall hire such plant, and the rates payable for the use of the plant for such periods as it may be required shall be the sum of the hire rate, including operator if hired with the plant, plus 5%. An unusual type of plant shall not include any plant used by the Contractor during the course of the Contract, other than as Daywork, or any plant which the Contractor could have been reasonably expected to use.

- (c) The net cost of materials shall be the actual net cost inclusive of all trade discounts at the site of the works. The Contractor shall be entitled to apply an agreed margin of on-cost to all Materials supplied to the site under Daywork. The on-cost shall cover all overhead charges, profit and incidental costs.
- (d) If, in the opinion of the Engineer, the use of a subcontractor is necessary for the execution of any work carried out on a Daywork basis, the Contractor shall engage such subcontractors at rates agreed with the Engineer, plus an agreed Contractor's mark-up on subcontractors invoice.

APPENDIX C6 DEFECT LIABILITY

11.2 Defects Liability

11.2.1 Add the following sentences:

The Contractor shall remedy any defect within five working days of receipt of notice under this clause, or other such reasonable time as agreed by the Engineer in writing.

11.2.4 Delete entire clause and replace with:

Where the Contractor is required in terms of 11.2.1 to remedy defects and the Contractor fails to complete the remedial works within the time required under 11.2.1, the Principal shall be entitled, after giving the Contractor notice, to employ others to carry out such remedial work. The cost will be deducted from the Contract Defects Liability Retention specified in the Special Conditions of Contract.

SECTION 12 PAYMENTS

12.1 Contractor's payment claims

12.1.2 (b) (iii) *Add to the end of the clause:*

“... for which payment is provided for in the Special Conditions.”

Add new clause:

12.1.5 Where the Contractor wishes to make a claim for additional payment by the Principal, whether as a Variation or otherwise, the Contractor shall submit a claim in respect of the same, together with supporting documents to substantiate the additional payment claimed, within two months of the occurrence of the event or events giving rise to that claim. No claim may be accepted or considered if the Contractor fails to submit the claim within that time.

12.2 Progress Payment Schedules

Delete the entire clause and replace with:

- 12.2.1 The Contractor shall make application to the Engineer for progress payments by providing the specified reports and data, together with a calculation of the sums and adjustment to which the Contractor is entitled or deductions made in accordance with the Contract
- 12.2.2 The Contractor may make application to the Engineer for progress payment for the construction of any New Facilities or capital projects not more frequently than once per month with a final application for the balance of construction price after the issue of a Completion Certificate.
- 12.2.3 Within 10 working days after the receipt of the Contractor's claim the Engineer shall issue a progress payment certificate for a sum comprising the value of the Contractor's claim amended as necessary under 12.3, less previous payments certified, and less any other deductions which are required by the terms of the Contract or by law. The certificate shall show details of any amendments and deductions.
- 12.2.4 If any item of the Contractor's claim cannot be verified within the time prescribed in clause 12.2.1, then the Engineer shall within that time certify a reasonable estimate of the amount due.
- 12.2.5 The Engineer shall send the original of each payment certificate to the Principal and a duplicate copy of each certificate to the Contractor.
- 12.2.6 Every amount certified by the Engineer in a progress payment certificate together with the amount of good and services tax payable shall be paid by the Principal to the Contractor within seven working days of the date of the certificate.
- GST invoices shall be provided prior to release of payments. The actual method used in generating the invoices shall be agreed between the Principal and Contractor from the two alternatives given in clause 12.12.2 of these Special Conditions.
- 12.2.7 Progress payments shall be valued and the payment certified by the Engineer on the basis of the agreed price less the estimated cost to complete the work, with all such progress payments being subject to a retention as outlined in clause 12.3.1 above.

- 12.2.8 50% of the retention money held by the Principal shall be paid to the Contractor 10 working days after the date of the Completion Certificate issued by the Engineer in relation to each Separable Portion. The balance of the retention money shall be paid to the Contractor when the Defect Liability period for that Separable Portion is expired and all the omissions and defects have been rectified and are deemed acceptable.

12.6 Effect of Final Payment Certificate

Add new clause:

- 12.6.2 Notwithstanding the issue of the Final Payment Schedule, the Contractor shall remain liable for fulfilment of any obligation of the Contractor under the Contract Documents which then remains unperformed or not properly performed.

12.8 Cost Fluctuations

Delete this section and substitute the following:

- a) Fluctuations on foreign exchange rates will be paid for imported plant units provided under Separable portions B to D of the contract. In order to claim this component the Contractor shall at the time of tender provide full cost details of all imported plant units and the exchange rate applicable at the date of tender. The items subject to exchange rate fluctuations shall be confirmed or declined by the Principal with reasons at the time of tender acceptance. For those items agreed as subject to foreign exchange rate fluctuations, the exchange rate used shall be the "midrate" for the relevant currency as defined by the NZ Reserve Bank or IRD or other agreed "High St" bank. The exchange rate fluctuation payable or deductible shall be based on the difference between the rate at the date of invoicing a works order and the rate at the date of tender where this is outside the range +/- 5% of the rate at the time of tender. No additional interest or time based payment will be made beyond the sums derived under a) and b) herein. The exchange rate adjustments will not apply to normal Contractor costs that may have a foreign component, Examples include petroleum products, bituminous products, plant and vehicles etc..
- b) New Zealand based Cost Fluctuations will be payable only on Separable Portion D of the contract. They will be paid on the following basis.

Where invoices are submitted based on rates and amounts originally tendered cost fluctuations will be paid on total invoiced sums in accordance with Appendix A as amended herein.

The base indices L' and M' shall be those applying at the end of the quarter immediately prior to the issue of the Practical Completion Certificate for Separable Portion C.

Cost fluctuations will only be paid quarterly in arrears. Fluctuations for any quarter shall be derived based on the indices L and M at the start of the quarter and not the indices at the end of the quarter. By example and for clarification, cost fluctuation payments for the March-June quarter will be based on the indices for the quarter ending on March 31.

Payments of the adjustment sums will be made only after the relevant indices become available and will therefore be in arrears. No interest sums or further adjustment will be payable for the fact that the cost fluctuation payments will lag accordingly.

- c) For avoidance of doubt no New Zealand market fluctuations will be payable on any part of the work within Separable Portions A, B and C.

12.12.2 Goods and Services Tax

Delete the clause and substitute the following:

Payment claims or final payment claims shall only be formed into GST invoices after the Engineer has issued his/her Payment Schedule in terms of clause 12.2.4(b).

The GST invoice may then be issued in (either of) the following ways to be agreed between the Contractor and Principal at commencement of the contract.

Alternative 1:

On receipt of the Engineers Payment Schedule as required by clause 12.2.4(b) the Contractor shall immediately issue a GST invoice in the sum approved by the Engineer's Schedule and submit it along with the Schedule to the Principal with a copy to the Engineer.

Alternative 2:

Where the Principal has IRD approval to issue "customer generated" GST invoices and the principal on receipt of the Engineers Payment Schedule as required by clause 12.2.4(b) shall issue a 'customer generated" GST invoice for the sum and forward this with a copy of the Engineers Payment Schedule and a cheque, to the Contractor.

12.13 Set Off

Add new clause:

The Principal shall be entitled to set off against sums that would otherwise be due to the Contractor amounts in respect of any claims against the Contractor including for damages for breach of contract by the Contractor.

SECTION 13 DISPUTES

13.1 General

13.1.1 *Add the following sentence:*

Every decision, valuation, or certificate of the Engineer shall be final and binding if neither party has referred it to the Engineer under 13.2.1 or to Adjudication within three months after it has been given, unless notice has been given to the Engineer within that time.

13.2 **Change heading to: Engineer's Review and Adjudication**

13.2.1 *Add the following sentence:*

Every Final Payment Statement shall be final and binding if neither party has referred it to the Engineer under 13.2.1 or to Adjudication within one month after it has been issued.

Extensions of time may be granted as provided for in the Special Conditions of Contract and as provided in Amendments to the General Conditions of Contract, Section 10.3.

SECTION 16 MISCELLANEOUS CLAUSES

Add new clauses as follows:

16.1 Official Information Act 1982 and Provision of Assistance and Information to the Principal

16.1.1 The Contractor acknowledges that the Principal is subject to the Official Information Act 1982, and that pursuant to a request made under that Act, the Principal may disclose information relating to or arising out of the Contract Works, the Contractor or this Contract Agreement to the requestor. The Contractor further acknowledges that in accordance with section 2(5) of the Official Information Act 1982, all information it holds in its capacity as Contractor for the Principal shall be deemed to be held by the Principal for the purposes of that Act.

The Contractor shall immediately refer to the Principal for response any request made by a third party for information about the Contract Works or this Contract Agreement, regardless of whether or not the request to the Contractor is stated to be made under the Official Information Act 1982.

16.1.2 The Contractor shall provide assistance and information to the Principal upon request in order to:

- (a) fulfill the Principal's responsibilities under the Ombudsmen Act 1975, the Official Information Act 1982, the Public Audit Act 2001, the Public Finance Act 1989 and any other legislation relevant to the Contract Works or this Contract Agreement.
- (b) fulfill any information requirements of Council as may be requested to enable Council to respond to queries or incorporate information into public information or annual reporting requirements, insofar as they relate to the Contract Works or this Contract Agreement; and
- (c) enable the Principal to comply with any other statutory obligations or internal business obligations insofar as they relate to the Contract Works or this Contract Agreement.

16.1.3 The Contractor shall not charge or otherwise make a claim on the Principal for assistance and/or information provided by it under this clause 16.4.

16.2 Local Authorities (Members Interests) Act 1968

16.2.1 **Background:** The Local Authorities (Members Interest) Act 1968 requires Councilors to declare their interests in companies that may have an involvement with Council's works. Council must obtain approval from the Office of the Controller and Auditors General (Audit Office) for a particular contract in which a Councilor has an interest, prior to the contract being awarded.

16.2.2 **Contractor Action:** This contract requires the form "elected Members Register of Interests" to be completed and submitted with the Tender returns. The value stated on this form should be the maximum value likely to be paid during the contract. If at any stage the value stated is anticipated to be exceeded, or if another company on the list is to be used by the contractor, the Engineer's approval must be obtained prior to any engagement or purchase of materials beyond that stated so that the appropriate approval from the Audit Office can be sought. Monthly updates of expenditure accrued compared with that stated shall be provided to the Engineer.

16.3 Intellectual Property

16.3.1 Rights to the design, all calculations and intellectual property associated with the design and construction shall vest in Council upon delivery of the works. The rights vested shall relate only to the facilities supplied but shall enable Council to modify, add, or extend the works to the same or

similar design philosophy without any obligations or recompense to the Contractor. Accordingly, the Contractor will not have any liability for any such subsequent changes that may be made by the Principal or its agents.

At any time after the Practical Completion of Separable Portions A to C, the Principal shall be entitled to source and utilize without recourse to the Contractor any parts or components necessary to complete or extend the system within the Himatangi Beach area.

SECTION 17 DESIGN AND BUILD CONTRACT

17.1 General Scope of works

This contract is for the design and building of a community sewerage system at Himatangi Beach. It shall consist of a pressure sewer system capable of servicing the approximate 400 existing residential titles, the camp ground and other community facilities plus an allowance for growth over the next 30 years. Components shall include on lot collection, pre-treatment as applicable and pumping to a community reticulation system which is to discharge to a new treatment facility. All the above components are described in more detail below and shall be designed and built by the Contractor. Discharge from the treatment facility to land is NOT part of this contract and will be designed and undertaken by others.

All works shall be designed and built to the performance standards and requirements of the drawings and Specifications provided within these Contract Documents.

The system shall consist of the following main components:

On lot works on private property

Existing household sewer drains shall be connected to on lot pre-treatment (if applicable) and pump system that discharges the on-lot wastewater to a valve box (to be provided as part of the community reticulation works) on the public street side of each lot boundary. The pipe termination at the valve box shall in turn be connected to a common pressurised community reticulation system described further below.

In a small number of cases it may be possible to utilise existing private piping and septic tanks, but decisions on this will be made by Council prior to construction commencement. The normal situation and that provided for within the Schedule of Quantities is that existing septic tank systems will be replaced with new tankage and pumps. Variances from this situation will be treated as provisional items and covered by variation procedures.

Where not needed, existing on-lot infrastructure shall be decommissioned.

The placement and location of on-lot works shall be determined by the Council in conjunction with the lot owner to meet the predetermined design, component types and specifications nominated by the successful Contractor. The contract shall be priced based on the assumption that on lot works to the number Scheduled shall be installed by the Contractor as part of this design and build contract.

As these works are on private property the Principal cannot require all property owners to utilise the Contractor and hence some owners may wish to engage their own drainlayer to do the on lot works. In such cases proposals will be passed to the Contractor for approval that they meet the overall project design assumptions. Oversight of any such owner managed arrangements shall be undertaken by the Contractor to

ensure that the Contractor is satisfied that the capture and resulting characteristics of on-lot wastewater is compatible with both the reticulation and treatment facility design assumptions and performance and does not adversely impact on their respective performance.

The provision of on lot facilities will occur in two phases; the installation as part of the main contract of those facilities for which the Principal has received the property owner's agreement and the separate but ongoing installation on a Works Order basis of extra on lot installations as agreements are reached between Council and owners.

a) **Community Reticulation Works**

The Contractor shall design and install community pressurised reticulation pipework which shall be installed in public streets or areas with legal rights of access given to Council throughout the area served by the community sewerage scheme with the exception of the Sandown Park subdivision which is already reticulated. Effort should be given to minimise disturbance of existing infrastructure including carriageways and driveways.

The community reticulation shall include for individual laterals from the mains to a new valve terminal box (to be installed as part of the public reticulation works) on the public street side of each lot boundary.

The community reticulation shall be designed to satisfy either of the following requirements:

- to continue directly to the proposed treatment facility; OR
- to terminate at a new public pump station which shall then pump the collected sewage to the new treatment facility. Should a pump station be needed, consideration shall be given to its footprint, emergency storage and location. All pump stations, rising main and associated controls, telemetry, etc, shall be designed and built by the Contractor.

b) **Wastewater Treatment Facility**

A treatment facility shall be designed and built in the location indicated on the contract drawings. The method of treatment shall be determined by the Contractor as part of the design/build contract. The influent could be classed as 'medium strength' domestic wastewater (as described in the latest edition of the Metcalfe & Eddy Wastewater Design Manual). The treatment facility design shall ensure that the seasonal nature of the community is taken into account, with a requirement for consistent effluent quality being produced despite highly variable influent flow rates and composition. The characteristics of the discharge are indicated in the performance specifications within the Contract Documents and Discharge to Land resource consent.

The design shall make provision, and set aside a location for future disinfection.

In addition to the treatment facility, the Contractor shall design and construct a 6,500 m³ buffer storage pond to enable treated wastewater to be retained during times that land discharge is not possible.

All structures shall meet the requirements of the various industry codes, including the Building Act and Resource Management Act. The Contractor will be responsible for obtaining any building consents, etc, as required.

The design and construction shall provide for easy separation and collection of any sludge produced which will in the future be transported to the Feilding WWTP for treatment as required.

A telemetry interface capable of linking the treatment facility to Feilding WWTP control and monitoring system via a telemetry system installed by others shall be provided.

The Contractor shall extend the power supply from the nearest available point, to the treatment facility site. Negotiations over the extent and cost of this work will be undertaken by the Council, and will be dependent on treatment facility design and requirements, to be provided by the Contractor.

c) Discharge of treated wastewater

Discharge of treated wastewater from the treatment facility to land does not form part of the contract. However the Contract shall incorporate the design and construction of a discharge well into the treatment facility outlet structure. The wet well structure will be the termination point for this contract. Design capacity for the well is to be provided by the Principal.

17.2 Description of Separable Portions

The contract is a single Design and Build contract consisting of five separable portions:

a) Separable Portion A – Design of the total community system from the on lot works to the treatment facility.

The Contractor shall be responsible for all design of the system. To this end the Contractor shall engage suitably skilled consultant designers to be approved by the Principal and carrying Professional Indemnity insurances as required elsewhere within the Contract Documents.

The design shall include the undertaking of all analyses as necessary to support the design along with the preparation of construction drawings and specifications covering work standards.

All documentation (including analysis and calculations) shall be provided to the Principal for review before authority to commence construction will be given.

The Contractor shall receive and respond to any queries and concerns expressed by the Principal and where applicable modify drawings and /or specifications or construction sequences.

A PS1 Producer statement shall be provided to the Principal covering the total system design.

The design phase will be considered complete and in a position to move forward to construction when the Principal issues a letter of “no objection” to the design received. Such a letter is not to signify an approval of the design or imply any checking of the design, the responsibility of which rests solely with the Contractor.

b) Separable Portion B – Construction of public reticulation and treatment facility:

This phase involves the construction of:

- The wastewater treatment facility
- The public pressure reticulation including laterals and valve termination boxes and any public pump station
- The commissioning of all of the above parts of the total system

Boundary valve terminal box (kit) to treatment facility discharge

This component is the main body of the contract. It includes the treatment facility, all public reticulation, to and provision of each boundary kit at all existing residential and commercial properties (irrespective of lot owner approval).

The rising main component of the contract will require the crossing of the Kaikokopu Stream. The construction methodology used for the pipe crossing will be at the Contractor's discretion, and obtaining the necessary consents and approvals within the project timeframe will be the Contractor's responsibility. A provisional sum shall be provided for consent processing of any pipeline crossing consent.

The Council will obtain a consent from the regional council for a generic design for the access road stream crossing. The construction of the access road stream crossing, and any modifications to the generic design including consent variations, will be the responsibility of the Contractor.

An access track shall be provided along the route indicated on the tender drawings, along with fencing as required. Where the route coincides with the existing access track this track shall be upgraded. Fencing shall also be provided around the treatment facility as required by the MDC Land Use consent included in Section 8.

Commissioning, defects and completion documentation

Upon completion of construction works the reticulation and treatment facility shall be commissioned. This is required by the end of May 2013.

Guarantees shall be provided as required in these Contract Documents including the twelfth Schedule of this Contract.

The Contractor shall provide construction Producer Statements in the form required by the Sixth Schedule of NZS 3910.

The Design Consultant shall provide construction Producer Statements PS4 confirming their involvement in construction oversight of the Treatment facility and the reticulation works, confirming their construction meets the design intent and confirming the compatibility of all Separable Portions with the overall project design and construction.

The Contractor shall provide two Operation and Maintenance manuals for the public works:

- One covering the wastewater treatment and buffer storage system
- One covering the public reticulation including any public pump station

A Defects Liability period shall apply covering Separable Portion B for 12 months from the date of its Practical Completion.

An Operational Supervision and Performance Proving period (refer Separable Portion E, below) for the wastewater treatment facility and buffer storage facilities shall apply for a period of 4 years from Practical Completion of Separable Portion B, or until at least three months of consistently complying effluent standards are met, whichever is longer. This Operational Supervision and Performance Proving period forms Separable Portion E described further below.

c) Separable Portion C - Provision of initial phase of on lot facilities

This consists of the supply and installation, or supply and supervision of installation (as identified in 1.1.a above) of approximately 200 on lot pretreatment/pump systems controls and on lot gravity and pressure piping.

Installation locations will be based on specific site requirements which will be agreed with each owner and provided to the Contractor by the Principal. These requirements will reflect the design specifications of the Contractor and the location preferences of the property owner.

The costs for this portion of work shall be based on a house rate whereby all work is undertaken by the Contractor.

There will be a need to have the network reticulation and treatment facility installed and operational before many residences under occupation can have the new system fully installed and connected up and hence completion of this Separable Portion will lag behind Separable Portion B.

Commissioning, defects and completion documentation

Upon completion of construction works in accordance with Separable Portion B, all on lot systems in Separable Portion C shall be individually commissioned, as soon as they are installed.

Guarantees shall be provided as required in these Contract Documents including the twelfth Schedule of this Contract.

The Contractor shall provide construction Producer Statements in the form required by the Sixth Schedule of NZS 3910.

The Design Consultant shall provide construction Producer Statements PS4 confirming their involvement in construction oversight of the On lot Separable Portion and confirming the compatibility of the on lot systems with the overall project design and construction.

An Operation and Maintenance manual shall be provided covering:

- A generic description of the on lot systems and their associated controls.
- Detailed information on the location, layout, size of the specific equipment provided on a lot by lot basis including maintenance recommendations and agent contacts. Refer also to As built requirements under the Preliminary and General Specification.
- A copy of the above manual with details relevant to each house will be provided by Council to each owner.

A Home Owner's manual shall also be provided for each lot where an on lot system has been installed. Refer to Preliminary and General Specification.

d) Separable Portion D – Ongoing supply and installation of on-lot components

For a period of five years after completion of the Separable Portions A, B and C, the Contractor shall undertake the supply and installation of additional on lot collection and pretreatment facilities, pumps and pump controls and pipework, on receipt of Works Orders from the Principal. Works orders will be issued by the Principal as and when individual ratepayers apply to connect to the public system.

The Contractor shall supply and install all orders within two months of receipt of the Works Order. To this end the Contractor may combine orders such that installations are undertaken for more than one lot at a time. However the overall time limit of two months for completed installation shall still apply.

The installation of these units will be at a varying frequency as the remaining individual lot owners sign up to join the scheme. A minimum of 150 units is expected to be made available for installation over a period of five years following completion of Separable Portion C

Information relevant to each lot as noted for the Operation and Maintenance manual under Separable Portion C above shall be provided to the Principal as each installation is completed.

e) Separable Portion E – Operational Supervision and Performance Proving Period

After the Defects Liability Period for Separable Portion B a four year Operational Supervision and Performance Proving Period will apply. At the end of the Defects Liability Period the Contractor shall hand over day to day operation of the treatment facility to the Manawatu District Council. The Contractor will provide on-going support for the total system (ie including on lot facilities, public reticulation and treatment facilities) on an as needed basis for the duration of the Operational Supervision and Performance Proving Period. During this time they will be responsible for instructing council operational staff and ensuring that performance specifications are met. Failure to meet performance specifications will see the Operational Supervision and Performance Proving period extended and the consequence of potential non-compliance action from failure to meet resource consent requirements.

It will be the Contractor's responsibility to ensure and demonstrate compliance with the relevant standards and resource consents over the Operational Supervision and Performance Proving period.

The discharge from the treatment facility to either irrigation or storage shall be the point of compliance for the treatment facility and a sampling facility shall be provided at this location.

In addition, the Contractor shall demonstrate over this period that the reticulation network and pump chambers, are not subject to I&I. Should I&I be detected, it shall be demonstrated and proven by the Contractor that it is a result of on-lot connections.

17.3 Role of Contractor's Designer

As a design/build contract the Contractor shall engage a suitably qualified design professional (the "Designer") employed by a reputable Consulting Engineering company, carrying as a minimum the Professional Indemnity insurance levels required by these Contract Documents, to undertake the project design. This "Designer" person shall be named by the Contractor and lead all design liaison meetings and other communications with the Engineer or Principal.

During the construction phase of the works the "Designer" or his/her nominee shall be responsible for undertaking regular project observation and testing oversight to ensure the Contract works are being built in accordance with the Designer's drawings, specifications and design intent.

All instructions or communications between the Designer and Contractor relating to technical or programme matters shall be copied to the Engineer. On completion of the construction works the Designer shall oversee the quality and lodging of all completion documentation required by this Contract including but not limited to

- As built drawings
- Operation and Maintenance manuals
- Wastewater quality information and summary reports for the duration of the Defects Liability and Performance Proving periods
- Provision of Engineers PS4 Producer Statements.

The Designer shall be expected to work with the Contractor as necessary to address with urgency any concerns made by the Engineer to the Contractor from time to time and achieve resolution to the Engineers satisfaction.

Second Schedule – Contract Agreement

CONTRACT FOR _____

THIS AGREEMENT is made on _____

BETWEEN _____
("the Contractor")

AND _____
("the Principal").

IT IS AGREED as follows:

1. **THE** Contractor shall carry out the obligations imposed on the Contractor by the Contract Documents.
2. **THE** Principal shall pay the Contractor the sum of \$_____ or such greater or less sum as shall become payable under the Contract Documents together with Goods and Services Tax at the times and in the manner provided in the Contract Documents.
3. **EACH** party shall carry out and fulfil all other obligations imposed on that party by the Contract Documents.
4. **THE** Contract Documents are this Contract Agreement and the following which form part of this agreement:
 - (a) The Conditions of Tendering;
 - (b) Notices to Tenderers (give details with dates);
 - (c) The Contractor's tender;
 - (d) The notification of acceptance of tender;
 - (e) The General Conditions of Contract, NZS 3910:2003;
 - (f) The Special Conditions of Contract;
 - (g) Specifications issued prior to the Date of Acceptance of Tender;
 - (h) Drawings issued prior to the Date of Acceptance of Tender;
 - (i) The Schedule of Prices;
 - (j) The following additional documents: (Identify any additional documents to be included for example agreed correspondence.)

PRINCIPAL

The Common Seal of the _____ Council was affixed in the presence of:

Councillor/Mayor _____

Chief Executive _____

NOTE: This agreement must be executed by the Contractor and the Principal in the manner required for execution of a deed. Any of these parties which is a company or body corporate must execute by affixing its seal, which must be attested to in the manner provided in its Articles of Association or other constitution. In the case of a party who is an individual, the party must sign and the signatory must not only sign but must also add his or her occupation and address.

Signature of the **CONTRACTOR**:

WITNESS to the signature of the Contractor

Print name

Print name

Signature

Signature

Occupation

Address

Signature of the **PRINCIPAL**:

WITNESS to the signature of the Principal

Print name

Print name

Signature

Signature

Occupation

Address

Third Schedule – Form of Contractor’s performance bond

Contract for _____

THIS DEED is made on _____

BY _____

of _____
 (“the Contractor”)

AND _____

of _____
 (“the Sureties”)

IT IS MADE IN THE FOLLOWING CIRCUMSTANCES

- A** The Contractor has entered into an agreement with _____
 of _ (“the Principal”) to carry out and fulfil the obligations imposed on the Contractor by the Contract Documents.
- B** The Contract Documents require the Contractor to provide the Principal with security in the form of a bond to ensure performance of the Contractor’s obligations under the Contract Documents.
- 1. THE** Contractor and Sureties are jointly and severally held and bound to the Principal in the sum of \$NZ _____ and bind themselves, their successors and assigns jointly and severally for the payment of that sum.
- 2. THE** condition of this bond is that it shall be null and void if:
- (a) The Contractor duly carries out and fulfils all the obligations imposed on the Contractor by the Contract Documents prior to the commencement of the Period of Defects Liability referred to in the Contract Documents; or
 - (b) The Contractor satisfies and discharges the damages sustained by the Principal in respect of all defaults by the Contractor up to the commencement of the Period of Defects Liability or the termination of the contract; or
 - (c) The Sureties satisfy and discharge up to the amount of the bond the damages sustained by the Principal in respect of all defaults by the Contractor up to the commencement of the Period of Defects Liability or the termination of the contract; or
 - (d) A Practical Completion certificate has been issued in respect of the Contract Works in accordance with clause 10.4 of the General Conditions of Contract.
- 3. EXCEPT** as provided in clause 2 above this bond shall be and remain in full force and effect.
- 4. THE** Sureties shall not be released from any liability under this bond:
- (a) By any alteration in the terms of the contract between the Principal and the Contractor;

- (b) By any alteration in the extent or nature of the Contract Works to be completed, delivered and having defects remedied;
- (c) By any allowance of time by the Principal or by the Engineer appointed by the Principal under the Contract Documents;
- (d) By any forbearance or waiver by the Principal or by the Engineer in respect of any of the Contractor's obligations or in respect of any default on the part of the Contractor.

5. **THIS** bond shall be governed by New Zealand law.

THE COMMON SEAL of
was affixed in the presence
of: }

THE COMMON SEAL of
was affixed in the presence
of: }

SIGNED by
in the presence of: }

SIGNED by
in the presence of: }

NOTE – This bond must be executed by the Contractor and by the Surety or Sureties in the manner required for execution of a deed. Any of these parties which are a company must execute the bond by having it signed, under the name of the company, by two or more directors. If there is only one director, it is sufficient if the bond is signed under the name of the company by that director, but the signature must be witnessed by another person. The witness must not only sign but must also add his or her occupation and address. Alternatively, companies may execute under power of attorney. Any party which is a body corporate (other than a company) must execute by affixing its seal, which must be attested in the manner provided for in the rules of, or applicable to, the body corporate. In the case of a party who is an individual, the party must sign and the signature must be witnessed by another person. The witness must not only sign but must also add his or her occupation and address.

Sixth Schedule – Form of producer statement – construction

ISSUED BY: *(Contractor)* _____

TO *(Principal)* _____

IN RESPECT OF: *(Description of Contract Works)* _____

AT: *(Address)* _____

has contracted to *(Principal)* _____ to carry out and complete certain building works in accordance with a contract, titled _____ *(Project)* _____ (“ the contract”)

I *(Duly Authorised Agent)* _____ duly authorized representative

of *(Contractor)* _____ believe on reasonable grounds that

(Contractor) _____ has carried out and completed

All Part only as specified in the attached particulars of the building works in accordance with the contract.

(Signature of Authorized Agent on behalf of)

Date: _____

(Contractor)

(Address)

Seventh Schedule – Information as to Contract Works insurance

To Whom It May Concern:

From: _____
 (Name of Insurance Company)

 (Branch)

 (Address)

We confirm having effected contract works insurance for:

 (The Contractor)

 (The Principal)

In respect of: _____
 (Project title)

8.1.2	The sums insured are:		
	(a) Contract price	\$	(Plus GST)
	(b) Costs of demolition	\$	(Plus GST)
	(c) Professional fees	\$	(Plus GST)
	(d) Value of items incorporated or to be incorporated	\$	(Plus GST)
	(e) Increased construction costs	\$	(Plus GST)
	TOTAL SUM INSURED	\$ 0	(Plus GST)

The policy deductibles are:

Non earthquake	(GST inclusive)	\$
Earthquake	(GST inclusive)	\$
Other: (name) _____	(GST inclusive)	\$

We advise the 'special' terms, copy attached, have been applied to this policy Yes / No

8.5.3, 8.8.4	Policy cover terms included are:	
	(a) Automatic reinstatement	Yes / No
	(b) No cancellation for non-payment without prior notification	Yes / No
	(c) Severally insured	Yes / No
	(d) No settlement delay due to exercise of subrogation	Yes / No
	Project specific policy	Yes / No

8.1.3 Construction period _____
 Defects liability period _____
 (both subject to alteration under construction)

Annual run-off policy Yes / No

8.1.5 Annual cut-off policy Yes / No
 Policy expiry date _____

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

The insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2003.

Insurance Company Stamp _____ **Date** _____
(Or name of insurance broking company confirming cover)

SIGNED BY _____

SIGNATORY TITLE _____

(Clause numbers refer to NZS 3910:2003 and are for information only)

Eighth Schedule – Information as to public liability insurance

To Whom It May Concern:

From: _____
(Name of insurance company)

(Branch)

(Address)

We confirm having effected public liability insurance for:

(The Contractor)

(The Principal)

In respect of _____

(Project title)

Annual policy
 Policy expiry date:

8.3.1 The limit of indemnity	\$	(Plus GST)
Sub limit insured for vibration, removal or weakening of support	\$	(Plus GST)
Deductible is	\$	
Deductible for vibration, removal or weakening of support	\$	(GST inclusive)

We advise that “additional” terms, copy attached, have been specifically Applied to this project Yes / No

The policy covers liability arising out of:

The ownership / use of construction machinery not required to be registered for road use	Yes / No
The use of hired plant	Yes / No
The ownership / use of watercraft up to 8 m	Yes / No
The ownership / use of aircraft	Yes / No
The use of explosives	Yes / No

8.5.3, 8.8.4 Policy cover terms included are:

(a) Automatic reinstatement	Yes / No
(b) No cancellation for non-payment without prior notification	Yes / No
(c) Severally insured	Yes / No
(d) No settlement delay due to exercise of subrogation	Yes / No

We undertake that this policy will not be cancelled or amended by us without written advice to the insured party which has arranged the insurances.

The insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2003.

Insurance Company Stamp _____ **Date** _____
(Or name of insurance broking company confirming cover)

SIGNED BY _____

SIGNATORY TITLE _____
(Clause numbers refer to NZS 3910:2003 and are for information only)

Ninth Schedule – Information as to the Contractor’s construction machinery insurance

To Whom It May Concern:

From: _____
(Name of insurance company)

_____ *(Branch)*

_____ *(Address)*

We confirm having effected construction machinery insurance for:

_____ *(The Contractor)*

_____ *(The Principal)*

In respect of _____ *(Project title)*

Annual policy
Policy expiry date:

8.2.1 The sums insured are:
Schedule of construction machinery attached \$ (Plus GST)

The policy deductible is (GST inclusive) \$

We advise that “special” terms, copy attached, have been applied to this policy

8.5.3 Policy cover terms included are:
(a) Automatic reinstatement
(b) No cancellation for non-payment without prior notification
(c) No settlement delay due to exercise of subrogation

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

The insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2003.

Insurance Company Stamp _____ **Date** _____

(Or name of insurance broking company confirming cover)

SIGNED BY _____

SIGNATORY TITLE _____

(Clause numbers refer to NZS 3910:2003 and are for information only)

Tenth Schedule – Information as to the Contractor’s motor vehicle insurance

To Whom It May Concern:

From: _____
(Name of insurance company)

(Branch)

(Address)

We confirm having effected motor fleet insurance for:

(The Contractor)

In respect of _____

(Project title)

Annual policy
Policy expiry date:

8.3.1 The sums insured are:
Section 2 - liability \$ (Plus GST)

The policy deductibles are:
Section 2 (GST inclusive) \$

We advise that “special” terms, copy attached, have been applied to this policy

8.5.3 Policy cover terms included are:
(a) Automatic reinstatement
(b) No cancellation for non-payment without prior notification
(c) No settlement delay due to exercise of subrogation

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

The insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2003.



Insurance Company Stamp _____ **Date** _____
(Or name of insurance broking company confirming cover)

SIGNED BY _____

SIGNATORY TITLE _____

(Clause numbers refer to NZS 3910:2003 and are for information only)

Eleventh Schedule – Information as to Contractor’s professional indemnity insurance

To Whom It May Concern:

From: _____
(Name of insurance company)

(Branch)

(Address)

We confirm having effected professional indemnity insurance for:

(The Contractor)

In respect of _____
(Project title)

Annual policy
Policy expiry date:

8.4.1	The limit of indemnity	\$	(Plus GST)
	Deductible (GST inclusive)	\$	

The policy covers:
The number of automatic reinstatements

We advise that additional terms, copy attached, have been specifically applied to this project

We undertake that this policy will not be cancelled or amended by us within the period of insurance without written advice to the insured party which has arranged the insurances.

The insurance issued is subject to the terms and conditions of the policy. We do not warrant that this policy complies with the requirements of NZS 3910:2003.

Insurance Company Stamp _____ **Date** _____
(Or name of insurance broking company confirming cover)

SIGNED BY _____

SIGNATORY TITLE _____

(Clause number refers to NZS 3910:2003 and is for information only)

Twelfth Schedule – Guarantee

This Guarantee is to be executed as a Deed

This Deed is dated the _____ day of _____ 2012

BETWEEN _____ (“Principal”)

AND _____ (“Contractor”)

AND _____ (“Subcontractor”)

WHEREAS

- A. By a Contract Agreement dated the _____ day of _____ 2012 (“the Contract”) made between the Principal and the Contractor, the Contractor agree to construct, commission, test and complete _____
- B. Part of the Contract Works to be carried out and which is more particularly specified in the schedule to this agreement has been carried out by the Subcontractor.
- C. Pursuant to the provisions of the Contract, it is a condition that the Contractor and the Subcontractor enters into this guarantee with the Principal.

NOW THIS DEED WITNESS as follows:

1. For the Purposes of this deed:
 - (a) the expression “defects” shall extend to include all defects, faults, omissions, shrinkages, undue deterioration, failure to perform to the Specification in the Contract or the manufacturer’s specification and other faults which are due to materials or workmanship (and includes defects in design) not being in accordance with the Contract and/or warranty conditions contained in this Deed.
 - (b) the expression “repair” shall include and extend to renewal and/or replacement necessary to remedy defects;
 - (c) references to buildings, structures or works which have been built under the Contract shall be deemed to include all fittings, fixtures or other improvements forming part of or situated within or appended to any such buildings, structures or works and which have been first built, erected, placed in or appended to such buildings, structures or works at any time as may be required by the Contract or any subsequent repair works.

- (d) any notice required to be given by the Principal to the Contractor and the Subcontractor pursuant to the provisions of this deed shall be deemed to have been validly and effectually given by leaving the same at or posting it to the registered office of the Contractor and the Subcontractor (as appropriate) or, if there is no such registered office, then by leaving it at or posting it to the business address of the Contractor and the Subcontractor (as appropriate) last known to the Principal and in the event of such notice being given by post the same shall be deemed to have been received on the day after the posting thereof;
 - (e) the undertakings, warranties, covenants, agreements and other obligations of the Contractor and Subcontractor shall bind and be deemed to have been given or assumed by each of them severally and by both of them jointly and severally;
 - (f) except as herein modified or where inconsistent with the context reference and terms herein shall have the same meaning as is ascribed to them in the Contract.
2. The Contractor and the Subcontractor warrant and covenant with the Principal that:
- (a) all materials will comply with the Contract Documents;
 - (b) all materials supplied by the Contractor/Subcontractor will be new and of good, merchantable and acceptable quality and in accordance with the provisions of the Contract;
 - (c) all work involved in carrying out the Subcontract Works will be carried out in a good and workmanlike manner and in accordance with the provisions of the Contract;
3. The Contractor and/or the Subcontractor shall at its own expense:
- (a) repair all defects in the Subcontract Works;
 - (b) make good any damage to buildings, structures or works in which the Subcontract Works are performed or situated caused by any defect or repairs or replacement sin or to the Subcontract Works; and
 - (c) make good and indemnify the Principal in respect of all consequential losses of whatsoever nature occasioned by or arising out of any defect in the Subcontract Works; occurring during the period specified in the schedule to this agreement.
4. If the Contractor and/or Subcontractor do not promptly, adequately and satisfactorily repair any defect or make good any damage or loss the Principal may carry out the work and/or make good the damage or loss specified in the notice and recover all costs thereby incurred from the Contractor and/or the Subcontractor but without releasing the Contractor or Subcontractor from any obligation or liability. Such costs may include the cost of all labour, material, travelling and other charges incurred by the Principal in repairing such defect or making good any such damage or loss.

Where the repair, defect or damage or loss is causing or may cause environmental damage or non-compliance with Resource Consent conditions the Contractor/Subcontractor shall respond and undertake the remedial work within 24 hours of notice. When the repair defect, damage or loss does not create an immediate environmental risk the Contractor/Subcontractor shall respond and undertake the remedial work within 10 days of notice.

When considered necessary by the Principal for any reason the Principal may take immediate measures to make the site safe or otherwise mitigate damage and any associated costs will be paid by the Contractor/Subcontractor under the Guarantee obligations.

5. Neither the Contractor or the Subcontractor shall be liable for any defect loss or damage solely attributable to:
 - (a) Any wilful act or negligence of the Principal;
 - (b) Accidental fire, earthquake, war;
 - (c) any forces of nature which reasonable foresight and ability on the part of the Contractor and the Subcontractor could not foresee or provide against.
6. Neither the Contractor nor the Subcontractor shall be liable for any defect, loss or damage resulting from any neglect or delay on the part of the Principal to give notice of any defects, loss or damage within a reasonable time of such defects loss or damage becoming apparent.
7. This deed shall be deemed to be a continuing guarantee so that the Principal shall be entitled from time to time and at all times during the guarantee period to give notice of any defect or damage or loss (or any one or more of the same), notwithstanding that on any other occasion prior to giving such notice, the Principal may have already given notice to the Contractor and/or the Subcontractor in respect of such defects, damages or losses or any other defects, damage or losses to which this deed applies.
8. The covenants on the part of the Contractor and the Subcontractor contained in this deed:
 - (a) shall not be deemed to be in substitution for or limit in any way the Subcontractor's liability to the Principal or to the Contractor as a Subcontractor under the Contract or the Contractor's liability to the Principal pursuant to the Contract;
 - (b) are in addition to the obligations of the Contractor under the Contract and accordingly:
 - i) the Principal shall not be precluded from exercising any rights it may have against the Contractor in respect of any defects or damages or losses to which this deed may apply, nor shall the exercise of the Principal's rights hereunder be conditional upon the exercise of those rights; and
 - ii) neither the Contractor nor the Subcontractor shall be excused in whole or in part in respect of its liability under this deed by reason of any default on the part of either of them, or any other subcontractor, whether or not such default caused or contributed to the defects, damage or losses complained of by the Principal hereunder.
9. This Deed of Guarantee shall be executed before the Defects Liability Certificate will be issued and before release of any Defects Liability retention money will be made.
10. The Contractor and the Subcontractor agree that the rights contained in this deed shall enure for the benefit of any company or joint venture in which the Principal has an interest.
11. The Contractor and the Subcontractor agree that the Principal shall be entitled to assign the benefit of this guarantee and that the benefit of this guarantee shall ensure for the benefit of the registered proprietor of the Contract Works for the time being during the continuance of this guarantee.

12. The Subcontractor acknowledges that it has read the Contract Documents attached to and forming part of the Contract and that it is fully conversant with the provisions thereof.

Description of Works for which the Guarantee is supplied:

The Contractor acknowledges as follows:

- that as required by Clause 1(e) all guarantees are given jointly and severally by the Contractor and applicable Subcontractor;
- that where separate guarantees are provided by separate Subcontractors then Guarantee deeds shall be signed by both the Contractor and Subcontractor for each Subcontractor's Guarantee.

Description of Work being guaranteed:

Period: _____ years from the signing of this Guarantee.

EXECUTION (As a Deed)

SIGNED by: _____ **(Contractor)**

Witnessed by:

by:

_____ Director

_____ Director

SIGNED by: _____ **(Subcontractor)**

Witnessed by:

by:

_____ Director

_____ Director

SECTION 4 - THE SPECIFICATIONS

1 Particular requirements

1.1 Scope

This Specification extends and amends requirements of the other Specifications and drawings within the Contract documents and shall be read along with the other Contract documents

1.2 Standards

The Himatangi Beach Community Sewerage Scheme shall be designed and constructed to the latest versions of the following standards and shall comply with accepted international wastewater industry practices

The Tenderer/Contractor is expected to purchase and be familiar with all of these documents for the purpose of tendering/administering the contract.

Unless specified in the Special Requirements the Specification shall be read in conjunction with the following:

WSA 04-2005 Sewage Pumping Station Code of Australia V1.1

WSA 07-2007 Pressure Sewerage Code of Australia V1.1

New Zealand Building Code (Building Regulations 1992)

Local Government Act 2002 and its 2006 amendments

NZS 3106:1986 Design of concrete structures for the storage of liquids

NZS 3910:2003 - Conditions of contract for building and civil engineering construction

NZS 4203 General Structural design and design loading for buildings•

NZS 4219 Specification for Seismic Resistance of Engineering Systems in Buildings

NZS 3101:1995 The Design of Concrete Structures

NZS 4404:2010 - Land development and subdivision infrastructure standard with MDC amendments

NZS 4442-1988 Welded steel pipes and fittings for water, sewage and medium pressure gas.

AS/NZS 1170:2002 Structural Design Actions

AS/NZS 1657:1992 Fixed Platforms, Walkways, Stairways and ladders. Design, Construction and Installation.

AS/NZS 2312:2002 Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings.

AS/NZS 4130:2003 – Polyethylene (PE) pipes for pressure applications.

AS/NZS 4131:2003 – Polyethylene (PE) compounds for pressure pipes and fittings.

AS/NZS 2566:1998 – Buried flexible pipelines – structural design.

AS/NZS 2566, 1 Supplementary 1 1998 Commentary.

AS/NZS 2566.2:2002 Installation

NZS/BS 750:1984 – Specification for underground fire hydrants and surface box frames and covers and its amendments.

NZS/BS 5163:1986 – Specification for predominantly key operated cast iron gate valves for waterworks purposes and its amendments.

BS 5154:1991 – Specification for copper alloy globe, globe stop and check, check and gate valves.

AS/NZS 3000:2007 Wiring Rules.

AS/NZS 3500:2003 Plumbing and Drainage

AS/NZS 4331.1:1995 – Steel flanges.

AS/NZS 4331.2:1995 – Cast-iron flanges.

AS/NZS 4331.3:1995 – copper alloy and composite flanges.

AS 2280: 2004– Ductile iron pressure pipes and fittings and its amendments

AS 4129:2000 Fittings for polyethylene (PE) pipes for pressure applications and its amendments
Seismic design of storage tanks, 2009, New Zealand Society for Earthquake Engineering.

This Specification is divided into various sections for convenience and reference only. No claims will be admitted in respect of work not specifically mentioned in a particular section but which is provided for, expressed or implied elsewhere in the Specification, Basis of Payment, Schedule of Prices or Drawings.

These documents are prepared by, and intended to be used by, practitioners in the building and construction industry, and should be interpreted accordingly. Except where indicated otherwise; all work shall be in accordance with this Specification

Any conflict between NZS, NZTA, LA Standards, Contract Drawings, Contract Specifications, Plans and documents, or any other reference document, shall be referred to the Engineer for clarification before any relevant work proceeds.

For the purpose of tendering, contract specifications and drawings shall take precedence. Where General Clauses and Special Clauses/Requirements are in conflict, the Special Clause/Requirement shall override the General Clause.

1.3 Resource Consent

The following Resource Consents have been obtained for the project:

A resource consent from Manawatu District Council covering land use activities for the Treatment facility.

A resource consent from Horizons Regional Council covering the discharge of treated wastewater to land.

The Resource Consents form part of the Contract Documents and are appended. The Contractor shall familiarise itself with the Consents and meet all conditions set down for the works.

Manawatu District Council is the Resource Consent holder and as such is liable for compliance with all the various conditions in the consents for the HBCSS. The aim of the Specifications in this contract is to ensure that the Contract Works will deliver a practical and reliable reticulation and treatment system that will comfortably meet council objects of a system that has low whole of life costs and can achieve all the requirements of the Resource Consent conditions.

The Contractor is required to ensure that the Contract Works and his construction practices comply with all relevant conditions in the consent except where consent conditions are modified by specifications in the Contract.

1.4 Warranties and Guarantees

On-lot pumping systems shall have a warranty period of at least 5 years. All other components shall have a stated operational life and be accompanied by relevant warranties.

Other critical components requiring guarantees are the volume of water captured and the performance of the treatment facility. No allowance has been provided for inflow and infiltration, the basis of which is discussed in the Flow Model Report included in Section 8. The contractor shall provide a programme which monitors and clearly demonstrates that inflow and infiltration is not occurring within the network. Should inflow and infiltration be detected, it shall be demonstrated and proven by the Contractor that it is a result of on-lot connections.

Discharge resource consent compliance is critical. Treatment facility effluent criteria have been identified in the Contract Specifications. A robust monitoring programme, incorporating the specifications of this contract, shall be provided by the contractor to demonstrate compliance.

It should be noted that given the likely progressive nature of on-lot connections, and the seasonal nature of the community, it may be several years after initial commissioning that the system comes under full load. Further, there will only be a small opportunity of a few weeks each year during the summer holiday period when the system will be under full load. Consequently performance and compliance of the system shall be the Contractor's responsibility for a period of five years from the date of commissioning.

1.5 Design Period and Component Life

Component life shall be consistent with that stated in the relevant standards, or as nominated by the Council.

1.6 Compliance

It will be the Contractor's responsibility to ensure and demonstrate compliance with the relevant standards and resource consents over the one year Defects Liability Period and also the four (4) year Operational Supervision and Performance Proving Period. The discharge from the treatment facility to either irrigation or storage shall be the point of compliance for the treatment facility and a sampling facility shall be provided at this location.

The discharge from the treatment facility to either irrigation or storage shall be the point of compliance for the treatment facility.

1.6.1 Consent compliance reporting

The contract Specifications require the Contractor to carry out testing and reporting to the Principal. The Contractor shall also prepare reports which will be issued by the Manawatu District Council to Horizons Regional Council as required by the consent conditions. After the four (4) year Operational Supervision and Performance Proving Period, the Principal will take over responsibility for the performance of the treatment facility.

2 Preliminary and General

2.1 General

This contract is for design and building and the clauses shall relate to both design and building phases where applicable.

2.2 Site Location

The location of the Site and means of access are indicated on the Drawings. Tenderers shall, before submitting tenders, inspect the site and shall satisfy themselves as to the suitability of their design for the size and nature of the land areas on which it is to be built.

The Contractor shall be responsible for the provision of suitable access to and through the Site, and shall make all arrangements necessary with adjacent property owners and with Local and Statutory Authorities.

The Contractor shall limit the areas occupied whether with huts, plant, storage, earthworks or by entering upon land with staff to the areas defined by the Drawings as areas upon which work is to be carried out and agreed with the Principal before construction commencement.

2.3 Technical Information Available to the Contractor

The following reports and drawings are held by the Principal and available to the Contractor:

- a) Flow model report
- b) District Council Land use consent for the Treatment facility
- c) Regional Council discharge consent for the Treatment facility
- d) Stream crossing consent - pending
- e) Bridge design details – pending
- f) Geotechnical Report - Ormiston and Associates

LEIL figures including:

10040-101 – Wastewater Treatment System Master Plan

10040-102 – Sewer Reticulation

10040-103 – Rising Main Plan & Long Section

10040- 104 – Wastewater Treatment facility Site Plan

10040-105 – Schematic Treatment facility and Pond Layout

10040-106 – Stream crossing concept bridge design

2.4 Site Office, Power, Water and Conveniences

The Contractor shall erect, maintain and, at the completion of the works remove any necessary site offices and other accommodation for Contractor's staff and workmen, and shall make these facilities available for use by the Engineer's Representative during site meetings and inspections.

The Contractor shall make its own arrangements for the supply of power and water for construction purposes. Conveniences for work people shall be provided by the Contractor in accordance with any appropriate by-laws and awards.

2.5 Requirements of Authorities

The work is to be carried out in accordance with the Contractor's design and the requirements of Territorial Authorities having jurisdiction over the area in which the work is located and utility operators having jurisdiction over utilities in or around the site. The Contractor shall ascertain and become familiar with any such requirements prior to undertaking the design and commencing work on site.

The Contractor shall obtain and uplift such permits/consents as may be required by Local or other Authorities and allow for the payment of all such fees or levies in the tender rates.

Authorities or utility operators may require inspections of the work at various stages of construction to ensure their requirements are being satisfied. The Contractor shall establish which inspections are required, and shall arrange for the inspections to take place. Failure to arrange inspections may result in work being rejected or delays until such inspections take place.

Should the Authorities or utility operators request modifications to the Work specified in the Contract Documents, the Contractor shall notify the Engineer before proceeding. Where the Contractor considers such modifications may constitute an extra payment under the terms of the Contract, any claim will be considered only when the modifications have been approved by the Engineer, prior to their being undertaken.

The approval of the work by the Authorities and utility operators will be required before the issue of the Certificate of Practical Completion.

2.6 Noticeboards and Publicity

The Contractor shall erect and maintain in a prominent position a signboard displaying the name of the project, the name of the Principal, Engineer and Contractor, and telephone numbers indicating where the Contractor's Representative may be contacted after working hours.

The signs shall be erected within one week of commencement of work, at a location to be approved by the Engineer, and removed off site at the end of the project.

The Contractor shall not make statements to the media regarding policy, contractual matters. All enquiries are to be directed to the Engineer or Principal.

2.7 Road Reinstatement

Materials and workmanship for all reinstatement on public roads and for the formation/upgrading of the treatment facility access road shall comply with MDC's Specification for Reinstatement for Road Openings included in Section 8.

2.8 Underground and overhead services

No service locations are shown on the drawings supplied by the Principal. The provision of section C3 of Appendix C of the General Conditions of Contract shall apply requiring the Contractor to locate and manage the protection of existing services. The Contractor shall notify the relevant utility operator, search all records and be satisfied as to the location of all services at least one week in advance of the work, and shall be responsible for their protection, and for the cost of repair or replacement of any services damaged by neglect of this requirement. The Contractor shall provide written notification to the Engineer before commencement of the work that he has obtained all information available from the utility operator.

2.9 Health and Safety (H & S) Plan

Prior to commencement of work the Contractor shall supplement the H & S information provided in the tender with the provision of a full project specific H & S Plan. The plan shall cover the safety of both Contractors staff and any other people or vehicles that may be on the site or pass through or adjacent to the site during the period of the Contract works. The Contractor shall implement, actively manage and adhere to the H & S Plan at all times.

Without limiting the Contractor's obligation to identify and manage all safety issues the H & S Plan should cover as a minimum, the following:

- Specific hazards and methods of dealing with them
- A process of identification and management of new and existing hazards
- Safety equipment that will be provided and used
- A copy of the accident reporting process
- Arrangements for consideration of issues arising between Contractors and Subcontractors on site
- A schedule of health and safety meetings
- Nominated site staff with day to day health and safety responsibilities
- Staff with overall responsibility for health and safety
- Procedures for dealing with visitors to the place of work
- Procedures for employee participation in health and safety on site
- Audit procedures
- Procedures for dealing with public movements on or around the project site.

The following hazards are identified but the list is not exclusive and the Contractor shall satisfy itself of all hazards on the site and include these within its Health and Safety Plan. Site hazards may include:

- Trench excavations
- Construction plant
- Culverts
- Fences
- Trees
- Motor vehicles on adjacent public road
- Public moving adjacent to or through the site
- Above ground cables
- Above ground pipes
- Below ground services
- Open storm drains or streams
- Open silt ponds
- Ground water in excavations

The Engineer reserves the right to withhold approval to commence work if in his/her opinion the H & S plan is not provided or not appropriate to the specific site works. The Engineer reserves the right to stop site works at any time if in his/her opinion the H & S plan is not being followed or there is a risk of harm to people. Any approval to commence work given or implied by the Engineer shall not be taken as an approval of the contents of the H & S plan, the preparation and management of which shall be the responsibility of the Contractor.

2.10 Health and Safety compliance

For the period between being given access to the site and the issue of the Defects Liability Certificate, the Contractor shall fulfil its obligations under the Health & Safety in Employment Act 1992.

a) General

The Contractor shall take all practicable steps to ensure the safety of its employees while at work, and to ensure that no action or inaction of its employees while at work harms any other person.

In particular, the Contractor shall take all practicable steps to:

- Provide and maintain a safe working environment at all times
- Provide and maintain facilities and protective equipment for the safety and health of its employees while they are at work
- Ensure that plant used by an employee at work is designed, made and maintained so that it is safe for use and stored in an appropriate secure environment when not in use
- Ensure that all work carried out for or by the Contractor and all practises and procedures comply with all applicable legal specifications, Acts of Parliament, Regulations and Codes of Practice
- Ensure that while at work its employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working or use of things in their workplace or under the Contractor's control
- Ensure that all employees are adequately trained and supervised in safety procedure relevant to the work being undertaken
- Ensure that emergency response procedures are in place at all times and there is suitable first aid equipment and suitably trained first aid personnel on site at all times.

The Contractor's Health and Safety systems shall also ensure that all practicable steps are taken to ensure the safety of others including:

- Its Subcontractors and the Subcontractors employees
- Other Contractors working at the place of work
- Members of the public or any other persons or vehicles who may be within or in the vicinity of the site.

b) Public safety

Without limiting the Contractors Health & Safety obligations the Contractor shall take all sufficient precautions for the safety of the public, vehicles, livestock in and around any work site. Where the work is being carried out on or near streets or thoroughfares the Contractor shall:

- provide fences, barriers, signs lights and other devices as necessary to allow for safe movement of traffic and persons
- fill, cover, enclose and light all holes, ponds or excavations that could cause a safety risk
- enclose the contract works by suitably secure fencing whenever necessary to ensure public safety
- where agreed with the Engineer as being necessary for public safety, close off the site and/or adjacent areas to the public
- where such closure requires public notification, work with the Engineer to arrange such notification and meet any legal timing requirements.
- remove all barriers, signs, lights devices, etc, once the work for which they have been erected is complete.

2.11 Protection of Property

The Contractor shall minimise any inconvenience to any persons affected by the work and shall prevent nuisance by dust, mud, stockpiled materials or noise. Unless otherwise specified the Contractor shall not unduly delay the legal passage of persons or vehicles through or within the site of the works. Where it is necessary to restrict access to public or private property prior notice shall be given to persons affected. Access shall not be completely restricted for longer than 24 hours without prior approval of the Engineer.

Where by reason of activities of the Contractor damage results to any public or private property including roads, footpaths, structures, trees or gardens, such damage shall be made good by the Contractor without extra payment to the satisfaction of the property owner.

If, at any stage during the work, the Engineer determines by inspection that further work in accordance with the Contract is likely to damage any work or adjoining public or private property, the Engineer may require the Contractor to carry out adequate measures to prevent such damage occurring. Where such measures are, in the opinion of the Engineer, beyond the requirements of the original Contract, additional payment will be made for such work.

2.12 Work in Private Property

The Contractor's performance will be assessed in relation to working in private property, in the following areas:

- Resident's satisfaction regarding the amount and accuracy of information supplied by the Contractor
- Resident's satisfaction regarding the attentiveness of the Contractor to complaints and/or requests
- Resident's satisfaction regarding the standard of reinstatement by the Contractor, and
- Resident's satisfaction regarding the general conduct of the Contractor's staff whilst on their land

After award of Contract and prior to commencement on any private property the Contractor, Engineer's Representative and Resident are to agree the programme and reinstatement standards for work on the property.

The following are default conditions:

- The Contractor shall notify private property owners at least one week prior to starting construction on their property
- No trench shall be open for longer than one week on an individual property
- The Contractor is to inform all residents in the event of a variation to the original programme of works, in writing within 24 hours of the variation
- All requests for information by the Resident shall be attended to by the Contractor within 24 hours
- The Contractor is to complete all works in private property by the deadlines supplied on the submitted programme of works or agreed with the property owner
- There shall be no instances where unreasonable actions on the part of the Contractor may prejudicially affect the goodwill and reputation of the Council
- Reinstatement's shall be completed in accordance with the standards agreed with the owner or defined within the Contract Documents
- All reinstatements shall be completed within 2 weeks of the excavation being backfilled and a signed a private property reinstatement condition form shall be obtained from the owner.

2.13 Quality Management

Design phase:

A Project Quality Plan shall be prepared by the Contractor covering the design phase prior to commencement of design with a copy provided to the Engineer.

Physical works:

The Contractor is responsible for quality control measures which shall incorporate all techniques including checking and testing required to ensure construction meets all the requirements of the design drawings and specifications.

The Contractor shall employ a Quality Manager who is not to be on the Project Management team or engaged in the day-to-day operations on the site.

The Quality Manager is responsible for producing and managing the Quality Control Plan, certifying all Quality Control documentation, maintaining a file of all Quality Control documentation, communications and test results and liaison with the Engineer on all matters relating to Quality Control.

All necessary producer statements and Contract Quality documentation including Inspection Checklists shall be provided by the Contractor before the Certificate of Practical Completion is issued. The Engineer will not issue a Certificate of Practical Completion until all the requirements of the Contract Quality Plan have been complied with.

Quality Plan and checklists

The Contractor shall prepare and submit to the Engineer, a Construction Quality Plan for the works which shall be submitted at least 10 days prior to commencement of the construction works. The Contractor shall ensure that the “Designer” has input into the Quality Plan as it relates to methods to ensure that technical standards are met.

While the Contract Quality Control is the full responsibility of the Contractor a list of recommended Inspection Checklists is provided. The Contractor’s Quality Plan may be more comprehensive and detailed than the checks specified.

The Contractor shall complete and provide Checklists for critical phases of the works at the minimum frequency specified in the contract, or if not specified, at a frequency nominated by the Contractor to provide a transparent audit trail showing testing/inspections being undertaken, and complying results are being achieved and recorded.

Inspections/testing/checklists may only be certified by the Quality Representative/Manager. They are to be forwarded to the Engineer to enable an audit of the Contractor’s Quality Control. Any inspection and complying checklist which indicates non-conforming materials, work outside of tolerance, unacceptable work methods shall be accompanied by a Non-Conformance Report (NCR) covering the non-compliance and works undertaken to remedy the matter.

Recommended check/inspection/tests, etc

Check/inspection/tests and their regularity shall be identified by the Contractor in the Quality Plan but as a minimum the following shall be included:

- Programming and performance against programmes
- Health and Safety status and issues
- Traffic and pedestrian control
- Landowner liaison
- Survey and setout
- Daily site weather and activity summary
- Procedures for sourcing and field checking of utility service location

- Recording of pipe sizes, strengths testing regimes as applicable
- Pressure testing of pipelines
- Compaction testing regimes for earthworks, pavements, trench reinstatement
- Material specifications, sources and how ongoing quality is to be controlled, including type and regularity of field laboratory testing and recording – Refer also the section on “Compliance Testing by Contractor” within this specification
- Construction tolerances, check levels for pavement layers, drains, etc.
- Seal materials and binder application rates, including design basis and weather conditions during sealing.
- Pond liner weld and permeability testing.

Sampling and testing materials, and measurement checks on completed layers shall be carried out by a registered laboratory engaged by the Contractor at its cost.

Where NZS test or other recognised test method is not applicable the Contractor shall detail the equipment to be employed and prescribe the method to be used to show compliance with the contract documents.

The Engineer shall not be bound to accept any work where QA results indicate non-conforming materials, work outside of tolerance or unacceptable work methods. The Engineer shall also not be bound to accept any QA results if independent verification checks, tests or measurements show a variation to those submitted by the Contractor.

No payment will be certified for scheduled items claimed by the Contractor until the Contractor has submitted completed compliance documentation to the Engineer for such completed work.

2.14 Setting Out

The Contractor shall set out all the work in accordance with the pegs and levels shown on the Drawings or Instructions supplied by the Engineer, and to do so shall employ suitable qualified personnel equipped with all necessary instruments.

Pipelines with grade and level requirements shall not be set out with the use of laser equipment unless regular checks against reduced level by conventional survey methods are also made. Such checks against design Reduced Level (RL) at manholes not exceeding 100m apart shall be undertaken to ensure cumulative deviations from the design reduced level do not occur. For pipelines without manholes such checks shall be undertaken at distances not exceeding 100m.

The Contractor shall not disturb or interfere with boundary and survey pegs. If any pegs are in the way of the Contractor's operations, the Engineer shall be informed who will advise on action to be taken.

2.15 Extras

The Contractor's attention is drawn to the General Conditions, NZS 3910, Clause 9.2 and associated special condition, which requires any variations in the character, quantity or dimensions of any work to be the subject of an order in writing by the Engineer. The Contractor shall not accept any direction from the Local Authority or network utility operator as authorisation for the payment of an extra unless confirmation approval is sought and received from the Engineer.

Payment for authorised extras will only be made if a claim is submitted in accordance with the Contract Documents.

2.16 Compliance Testing by Contractor

The Contractor shall be responsible for compliance testing on materials and work standards used in the Contract.

Fills

The Contractor shall engage a suitably qualified independent testing laboratory or Consulting Engineer to monitor the any part or other fill preparation and placement and provide a certificate confirming that the compaction works have met the Specification standards at the end of the project. The certificate shall include suitable drawings to show the position (location and level) and results of all testing undertaken.

Sub-basecourse and basecourse

The Contractor shall provide tests from an approved laboratory on the materials in the stockpile to be used in the project before any placement is undertaken. They shall be tested for the material parameters covered in NZTA M/3 and M/4 and the results passed to the Engineer.

Further samples shall be taken at the site from either trucks or the road during placement of the sub-basecourse and basecourse. One sample shall be taken for every 500m³ (insitu measure) of sub-basecourse/basecourse placed. Testing shall be carried out as for the initial stockpile samples for conformance with NZTA M/3 and M/4 and the results passed to the Engineer. Compaction testing shall be undertaken and a Compliance Certificate supplied as required for bulk fill.

Sealing or paving

The Contractor shall provide full information on the components of the sealing and or paving work, namely:

Chip compliance testing (both seal coats)

Binder mix used, its relationship to weather and base conditions (both seal coats)

Asphaltic concrete mix type, asphalt content and mix design information (grading, stiffness, etc)

Pipe testing

The Contractor shall pressure test all pipes as laid, record results and provide them to the Engineer.

Pond Linings

The Contractor shall undertake weld and leak testing of any pond liners to ensure welds are suitable and to prove that pond leakage is not occurring. Test standards shall be set by the Designer in conjunction with the liner supplier.

2.17 Engineer's Verification and Inspections

From time to time the Engineer may without advance notification arrange for his/her own testing or inspection of any part of the works or plant or materials being used in the works. When requested, the Contractor shall facilitate access for the Engineer or the Engineer's advisers and attend on them as required, all at no extra cost to the Contract.

Should the Engineer find evidence of non-conforming materials or workmanship or results at variance with any certified Quality Control Checklist, the Quality Representative/Manager, on request from the Engineer, shall supply within one working day a Non-Conformance Report (NCR) including a written explanation for the variance detailing what remedial action has been taken.

Where the Contract Documents provide for inspections by the Engineer, or the Engineer has given notice of a wish to inspect items of work, the Contractor shall give the Engineer at least 24 hours' notice of the need for the inspection.

The Engineer accepts no responsibility for being unable to attend the site if inadequate notice is given. In such cases no work on the particular aspect of the project will be allowed until the inspection has been made and no time extensions will be allowed for the delay.

Where the Engineer carries out inspections or testing and finds the work inspected or tested has not been completed in accordance with the specification, thereby requiring further involvement of the Engineer or specialist testers or advisers then the Engineer reserves the right to charge all such extra work to the cost of the Contractor.

Where the Engineer identifies non-compliance even where the contractors Quality Assurance shows complying work, the Engineer may stop the work until it is confirmed that work standards or materials comply. In such cases all costs associated with the stop work and all remedial measures required to achieve compliance shall be borne by the Contractor.

2.18 Engineers' Charges

Where the Engineer incurs costs associated with addressing issues relating to non-conforming work or additional inspections as provided for within this Specification and Contract Conditions, costs will be deducted from money due or becoming due to the Contractor.

Costs will be based on time and expense based on the following rates:

- Engineer to the Contract	\$220/hour
- Engineer's Representative	\$150/hour
- Other Professional Personnel	\$130/hour
- Vehicle	\$1.00/km
- Expenses	\$ as incurred

(All costs exclusive of GST). Expenses will include costs such as specialist laboratory or field testing services and use of specialist advisers where deemed necessary by the Engineer.

2.19 Noise

The Contractor shall minimise noise generated during this project and arrange the works so as to minimise the effects of any noise on the public. Construction noise shall comply with noise limits as stated in any Resource Consent conditions, the District Plan, the requirements of NZS 6803, the requirements of the Resource Management Act sections 326, 327 and 328 and the Health and Safety in Employment Regulations Clause 11.

The Contractors shall ensure that all items of noise producing plant on site are equipped with silencers and noise insulation to reduce noise at source to the lowest levels achievable in terms of the best of current low noise equipment design. The Engineer has the right to order the removal and replacement of plant at no cost to the Principal, if the Contractor has not complied with this clause and better low-noise plant is available.

2.20 Dust

The Contractor shall be responsible to ensure that adjacent residents, business proprietors or other members of the public suffer no inconvenience or hardship from dust arising by any means whatsoever

from the works during the course of the Contract. The Contractor shall allow for the prevention of such a dust nuisance in its scheduled rates.

2.21 Construction programmes

The Contractor shall, at the time of preparing their tenders, prepare an outline construction programme and satisfy themselves of the feasibility of constructing the Work with the plant, labour and materials available within the specified time.

Within fourteen days following the date of the Letter of Acceptance of Tender the Contractor shall submit for the Engineer's review a detailed Construction Programme showing the proposed sequence for carrying out the work and the construction methods, plant and labour to be employed, all in accordance with the Contract Documents. The Engineer will have the right to reject or modify any such programme which is not in the interests of the Principal, and the first progress payment will not become due until a satisfactory modified programme has been received.

2.22 Hours of work

No construction work under the Contract, other than emergency or maintenance work, shall be undertaken outside the hours stipulated in relevant consent conditions for the treatment facility or between the hours of 9:00 p.m. and 7:00 a.m., nor at any time on a Sunday or Easter Friday, Easter Sunday, Anzac Day and Christmas Day without the prior permission of the Engineer and of any Public Authority whose consent may be required.

2.23 Site reports and meetings

Unless otherwise directed, at all times when work is in progress at the site, the Contractor shall arrange for the telephoning of daily reports by the Contractor's Representative to the Engineer's Representative. These reports which shall be made before 10:00 a.m. shall advise of the Contractor's intended programme for the coming day, in order to assist the Engineer in arranging site visits, inspection and testing. Where the Contractor fails to provide these reports requiring the Engineer to instigate enquiries as to the work status such costs will be deducted from Contract sums owing.

The Contractor shall arrange for the attendance of its Representative and key Sub-contractors at regular site meetings with the Engineer for the purpose of reviewing the progress and quality of the work. Unless otherwise directed, site meetings shall be held each week at a venue and time approved by the Engineer.

2.24 Traffic Control

General

Traffic control for the Contract shall be in accordance with NZTA Specification G/1. Schedule 1 from NZTA G/1 is appended to these documents as Section I.

To ensure the safety of Contractors staff and road users, a high standard of traffic control complying as a minimum with the NZTA "Working on the Road" handbook will be required with amendments from the "Manual of Traffic Signs and Markings" Part 1 - Traffic Signs. In areas where work is likely to have the potential to disrupt traffic the Contractor shall submit in writing a Traffic Management Plan detailing the methodology for traffic control including a plan of the proposed sign placements and the name of the Traffic Control Supervisor who will be responsible for Traffic Control on a day to day basis.

No work shall commence on the site prior to the Engineer's written agreement that the Contractor's Traffic Management Plan has been accepted. The Contractor is to advise all staff and subcontractors working on the site of their responsibilities to the Traffic Control Supervisor.

The TMP shall be considered a living document through the project. Where problems on the site or ongoing experience with a TMP indicates changes or improvements should be made the TMP shall be modified and resubmitted to the Engineer with reasons for the proposed changes costs associated with any changes shall be borne by the Contractor.

Traffic control inspections

Traffic control inspections shall be undertaken at least once daily by the Contractor seven days per week and more frequently should faults occur. Any identified non-compliance to the Traffic Management Plan shall be rectified immediately. The Contractor is to pay particular attention to the condition of all temporary and permanent traffic signs, edge marker posts and raised pavement markers within the Site. These should be checked as part of the daily traffic control inspection and any identified as missing or damaged shall be replaced within two hours (applies 24 hours a day, 7 days per week). All signs and delineation devices shall be regularly cleaned to be free of grime and dust.

Non-conforming traffic control

In accordance with clause 6 of NZTA G/1, if during the course of the Contract the Engineer is required to investigate complaints of inadequate traffic control by the Contractor, then, if it is found to be non-conforming, the Engineer shall be reimbursed by the Contractor for the costs and disbursements for such investigation. Reimbursements shall be set out in the section of this specification entitled "Engineers' Charges".

2.25 Notification of Works

At least 5 days prior to commencement of work on public road carriageways the Contractor shall notify landowners affected by the works of the likely start of the physical works.

The Contractor shall also notify:

- New Zealand Police
- Ambulance Service
- New Zealand Fire Service

The Contractor shall either send a copy of letters sent out to the Engineer, or shall write to the Engineer certifying that such notification has been made.

2.26 Cleanliness of Site

The Contractor shall take precautions to keep the site and adjacent roads etc free of debris and mud. Adequate vehicle washing facilities shall be provided at all times on the construction site and all vehicles shall be cleaned free of mud and debris prior to passage on to public streets.

The Contractor shall programme such work accordingly and allow in the Contract rates for all such costs which may be necessary to meet these requirements. If the measures taken by the Contractor are not adequate the associated work shall cease and remedial measures may be taken by the Engineer at the Contractor's expense.

2.27 Removal of Materials

Unless approved otherwise by the Engineer all surplus material shall be moved from the site immediately as it becomes surplus. Where trenches are backfilled each particular area shall be tidied up immediately so that the whole area generally is kept in a tidy condition.

2.28 Clean Up and Maintenance

On completion of the work, the Contractor shall remove all construction plant, buildings, surplus materials and garbage, and leave the site clean and tidy to the satisfaction of the Engineer.

The work shall be maintained for the length of the Defects Liability period and this shall include the repair of damaged road surfacing whether the result of faulty material, workmanship, vandalism or wear and tear.

2.29 As Built Information

As built layout plans shall be provided in addition to other completion documentation such as O&M manuals for key facilities as described elsewhere within these Specifications.

As built layout plans shall cover as a minimum

On lot work

- The location of the pre-treatment / pump chamber with details of sizes inverts and pump type
- The lot boundaries and house extent where a house exists
- The gravity sewer location pipe type and size
- The pressure discharge pipe location pipe type and size

Public reticulation works

- Location, alignment depth, size, pipe type, pressure rating of all reticulation pipes
- Levels on all MHs, or where no manholes exist, spot levels and position coordinated on pipes at approx. 100m intervals and at all street intersections.
- Location (x,y,z) of all boundary valve boxes and position of junction between house lead and reticulation main
- A separate schedule of all MH, valve and boundary valve box coordinate (x,y,z)
- Details of any pump station including position of all buildings, valve boxes, wet and dry well, wet well invert levels associated inlet outlet and manifold pipework.

Wastewater treatment facility

- Layout of all buildings, tanks, ponds and associated features including as built batter slopes base and top levels etc. Details of any clay or membrane liners and any preparatory and cushioning underlayers.
- Alignments of all incoming and outgoing pipes. Note that more extensive details are required to be provided as part of the O&M manual document

As built information shall be submitted on A3 size paper copies in triplicate along with digital originals in ACAD, 12D or similar approved software format and be of a format/standard to be incorporated into the Council GIS system.

The as built shall be in terms of the standard 1949 geodetic datum and mean sea level. Position shall be to plus/minus 100mm and level to plus/minus 50mm.

Scales shall be:

- For public reticulation – not smaller than 1:500 at A1 = 1:1000 at A3
- For on lot locations – not smaller than 1:250 at A3 or 1:500 at A4

Certification by a Chartered Professional Engineer or Registered Surveyor that the information supplied on the “As Built” is accurate within normal acceptable engineering and survey tolerances. The Engineer will accept ‘As Built’ prepared by a person holding a New Zealand certificate in Engineering and/or Surveying provided the person is working under the direction of a Chartered Professional Engineer or Registered Surveyor.

The Contractor shall accompany each drawing with a signed AS BUILT VERIFICATION sticker, provided by the Engineer, verifying the information.

2.30 Payment

The costs associated with complying with these Preliminary and General requirements of the Specification shall be included in the rates and amounts tendered in the Schedule.

2.31 Community Liaison

The Contractor shall nominate a member of his site based construction team to be a first point of contact for liaising with residents regarding all construction related matters and for liaising with the Council’s nominated representatives.

3 Environmental Management during Construction

3.1 Preliminary

Refer to the Preliminary and General section of the Specifications and to the Conditions of Contract, which are equally binding on all Trades. This section of the Specification shall be read in conjunction with all other sections.

3.2 Scope

This Specification covers the precautions to be taken by the Contractor to control erosion and sediment effects and minimise related damage or environmental deterioration to the Works, surrounding property, or receiving environment during the period of the Contract including the Defects Liability period and any longer period when required by the Contract Documents.

The Contractor shall supply all plant, labour, materials and supervision necessary to ensure that the requirements of this Specification are satisfied.

3.3 Design methodology

Design and construction management techniques for avoiding adverse effects from the earthworks or general construction shall be in accordance with the design codes adopted by the controlling environmental authority. Detailed design of mitigation measures such as fences, cut off ditches, detention ponds etc shall be undertaken by a suitably qualified person employed by the Contractor.

An earthworks management plan and/or environmental management plan and associated design calculations shall be provided to the Engineer before commencement of any earthworks, or work with potential to have adverse effects if not properly managed.

3.4 Techniques for managing adverse effects

Although the Contractor shall retain responsibility for environmental protection during the works a number of basic management principles shall be implemented. In particular:

- a) Areas being earthworked or otherwise disturbed at any one time shall be kept to a minimum.
- b) As soon as any reasonable sized earthworked or disturbed area has been completed to final grade or a stage where it will be left for two months or more it shall be surfaced or topsoiled and sown with grass to minimise runoff, erosion, dust nuisance and improve appearance.
- c) Light soil or sand areas may require coating with mulch or similar to avoid wind blown nuisance.
- d) Surfaces of fills in progress shall be shaped to prevent materials yet to be compacted from becoming saturated, to prevent erosion and to prevent ponding on the fills (except where the areas are designed as ponding or settlement areas).
- e) Diversion ditches and catch drains shall be used to divert upslope catchments around areas of earthworks.
- f) Catch drains shall be used where feasible to intercept stormwater from earthworked areas and divert it to designed settlement areas and ponds before providing for managed discharge to land, natural gullies or waterways.
- g) Temporary riprap or other anti-erosion methods shall be used where discharges could erode natural slopes.
- h) Brush or filter mesh fences, hay bales, detention ponds and other techniques shall be used as necessary to limit erosion and collect water borne soil in a way that manages adverse downstream effects on streams and water bodies.

- i) Stockpiles of topsoil, excavated soil or other material shall not be located in a position where they can be eroded or washed into nearby water bodies. They shall be isolated by methods such as silt fences or cut off swales/ditches.
- j) Dewatering of trenches and excavations shall be passed across or through settlement facilities before being discharged to public drainage systems or receiving waters.

3.5 Management of protection systems

Prior to, during, and following rain the Contractor shall arrange for attendance by plant, labour and supervision to ensure safe operation of environmental management facilities including ponds, catch drains, detritus fences, outlets etc.

Detention and interception facilities shall be cleaned and maintained regularly to insure they perform in accordance with their design throughout the contract period and beyond the contract period until any made land and permanent drainage works are to a standard where risk of adverse effects from the works are minimal. Silt, debris, etc, removed from interception and settlement works shall be spread to dry in areas approved by the Engineer and disposed of as directed, either as material for use in the construction of earth fill or by removal to dumps away from the site.

3.6 Modification to protection systems

If at any time during the contract the performance of the stormwater and silt control works, or ongoing review of them, indicates that they need to be extended or modified the design modification and construction shall be undertaken by the Contractor at no extra cost to the Principal.

3.7 Environmental or property damage

Where environmental or property damage occurs to any party as a result of works being undertaken or not undertaken by the Contractor such damage shall be repaired by the Contractor to the satisfaction of the property owner or authority involved, without additional payment.

3.8 Measurement and payment

The cost of complying with these requirements of the Specification shall be included in the amounts tendered for this item in the Schedule or, if no separate item is shown, in the rates and amounts for the various items of earthworks construction.

Where the Engineer directs that material won from settlement ponds be removed from the site, such cartage and disposal will be measured and paid for as a variation.

4 On lot Pressure Sewer Units Supply and Construction

4.1 Scope of Work

This specification covers the manufacture, supply, installation and service of packaged domestic sewage pressure pump station units and associated supply and installation of the on-lot facilities along with the decommissioning of existing on lot facilities.

4.2 Technical Specification

On lot pressure sewer units

The on lot units may be by either septic tank effluent pump or grinder pump systems. Contractors are to complete the Pump Unit Specification Schedule with their tender and provide any additional information required to demonstrate the suitability of the unit type and size proposed for the purpose.

Minimum Requirements

For any system the following minimum requirements apply:

- (a) A fully enclosed purpose built storage vessel and housing for the pump/s.
- (b) A single phase sewage pump, or pump and filtration system, with solids handling capability, complete with control float switch.
- (c) Inlet and outlet pipework and fittings including non-return valve, isolating valve and quick-release coupling.
- (d) Control box complete with incoming and outgoing terminals, audible and visual alarms and overload reset button. Control box to be rated not less than IP66. The Control unit shall be capable of supporting an optional Telemetry system.
- (e) Level control system to pressure switches.

Installation of the boundary valve box will form part of Separable Portion B – Construction and Commissioning of the community reticulation

Storage Chambers

Storage chambers shall be fabricated of durable materials that shall meet the service life requirement specified herein and shall be of lightweight construction for ease of handling and installation in accordance with AS/NZS1546.1:1998. The storage chamber shall meet the following requirements;

- (a) Constructed from polyethylene or fibre reinforced plastic.
- (b) Minimum tank storage capacity for single pump installations shall be 600 litres with 400 litres minimum above the alarm level emergency storage capacity.
- (c) The design of the tanks shall allow for ease of installation in sandy ground with provision and design criteria for a ballast or other such devices to prevent floatation.
- (d) The access cover shall be lockable with a 500kg minimum loading capacity providing a water-tight seal.
- (e) All pipework and ducts entering the storage chamber wall shall be located above the ground water level.
- (f) The storage chamber must be certified as being leak proof and structurally adequate in accordance with the Contractor's quality system, and the requirements of this specification.

If septic tank effluent pump units are proposed larger volumes shall be provided to include the required treatment volume and concrete tanks will be accepted.

Pumps/Pump Performance

Pumps shall be semi-positive displacement type units with cutter, grinder or maceration capability suitable for raw domestic wastewater applications. Alternatively pumps shall be supplied with a filtration system to prevent solids greater than 3mm being passed forward to the community reticulation. . They shall meet the service life requirements specified herein.

The pumps shall meet the following minimum specification;

- Single phase 240 volt, 50 Hz.
- To be set by the “Designer” but unless alternative rates can be justified the following apply
Discharge flow rates of 0.4 l/s @ 45m head and 0.75 l/s @ 0m head
- Rated for 10 starts per hour.
- Discharge flow rates to be nominated by Contractor
- Submersible pumps rated to IP68.
- Dry-well pumps rated to IP55.
- Pumps fitted with thermal and overload protection with automatic reset.
- Non-corrosive construction.
- DN 40 discharge outlet.
- The minimum and maximum permissible velocity in the rising main while pumping for each application shall be as per the requirements of WSA 07.

Pipework, Valves and Fittings

All pipework, valves and fittings included in the packaged units shall be fabricated from durable materials that shall meet the service life requirements specified herein. Specific requirements are as follows:

- All aperture fittings and connections made through the wall of the storage vessel shall be water tight with approved flexible connections to allow for ground movement.
- Discharge pipework to incorporate non-return valve, check valve and anti-siphon device.
- Float switch, pressure switch or probe.
- Lifting chain or rope for pump removal.
- Construction using durable low maintenance materials (PVC, PE, ABS and/or stainless steel).
- All items and materials shall be manufactured to recognised Australian and/or New Zealand standards.

Electrical & Controls

The pump control unit shall incorporate the following features:

- Control cabinet to be manufactured from durable all weather materials (non corroding, UV resistant) rated to IP65 and be lockable.
- Enclosure shall be suitable to terminate both a supply and connecting cable/cables to the pump.
- Protection from thermal overload, over pressure, run dry and current surges with automatic re-set.
- Audible alarm with auto shut-off after ten minutes.
- Visual alarm (red flashing light) continual with manual shut-off.
- Adjustable time delay (ten minute intervals) upon start-up after an electricity outage.
- Hours run meter or data logging facility.
- Remote (Telemetry) monitoring option available.
- Full wiring diagram and operational manual supplied with unit.
- Supplied with a minimum of 15metres of electrical control cable complete with quick release plug (to pump).
- An insulated cover shall be provided inside all control panels over the electrical components to protect against electrical shocks. Refer AS/NZS 3000.2000 - Wiring rules 2.9.6 'Access to live parts' and 1.4.14 'Authorised persons'.
- All electrical components to be protected against electrical surges.

On lot pipework

All on lot pipework shall be as per the requirements of WSA 07.

Operation Manuals

The Contractor shall supply to the Principal three hard copies and digital ('.pdf') format copy of the following support data:

Detailed installation instructions and drawings including but not limited to;

- Site location requirements
- Excavation requirements
- Installation tools
- Ballast requirements
- Service connection details
- Electrical installation
- Mechanical equipment installation

- Testing and commissioning
- Hazard identification and risk management assessment for installation and commissioning activities

Operation, Servicing and Maintenance Manuals including but not limited to;

- General operating instructions
- Detailed maintenance regime
- Servicing intervals
- Servicing agent
- Detailed parts list.

4.3 National/International Standards

The overall design standards applicable, where not specifically cover herein, shall meet the requirements of WSA 07.

All materials to be supplied and items to be manufactured including pumps, electrical and controls, valves, fittings and pipework shall comply with the relevant New Zealand (NZS), Australian (AS) or British (BS) Standard Specification and an ISO9001 or equivalent certified Quality Assurance programme

4.4 Design Life

The design life for each of the pump station units shall be as per Table 1.1 of WSA 07. The Contractor shall submit suitable evidence with regard to verification of the design life of the units.

4.5 On lot construction works

Minimum Requirements

All work within private property shall meet the standards set down by the contract and the requirements of the Building Code

On lot layout

The location of all units will be pre-agreed between the Principal and the property owner and advised to the contractor who shall confirm the acceptability of the layout, or advise reasons it does not suit. Reason for unacceptable siting shall be based solely on aspects detrimental to the system rather than construction or re-instatement difficulties that may arise.

The Contractor shall ensure that private property is thoroughly photographed prior to accessing the property for construction, and shall ensure that a plan of the property clearly indicating the location of any components or lateral termination points is agreed to and signed off by the property owner. Reinstatement of private properties shall be to an equivalent standard to that which exists prior to construction. Where reinstatement is to be undertaken by the property owner, the extent of such works shall be confirmed in writing and signed by the property owner.

On lot Installation works

- (a) The Principal will systematically make his way through the community preparing and providing each property owner with a preliminary design and quote to install private property sewer laterals, new PSU units, upgrade existing gravity drainage and upgrade existing electrical systems. Included will also be reinstatement of disturbance and decommissioning of existing facilities. The Principal shall gain approval and sign-off from each property owner for the works to be undertaken and the cost of the works. Where possible, and without compromising standards and the project outcome, the property owner shall be given the opportunity to undertake some of the work themselves, or by their nominated contractor, e.g. reinstatement works. Where different to the nominated rate the Contractor shall agree the extent and payment for any such work with the property owner.

(b) The Contractor shall prepare a strategy for communications with the residents and property owners regarding the timing and the nature of the work to be carried out including investigations, survey, construction, restoration, testing, commissioning and operation in any areas affecting residents movements. The strategy shall include training for all of the workers involved, provision of Identity Cards for each worker and a single point of contact, 24 hours per day.

The Principal shall prepare a scale plan of the proposed works on each property for Building Consent purposes. Such plans shall be based on specifications provided by the Contractor. The Principal's agent shall also submit Building Consent applications for the work proposed.

- (b) Once building consent has been granted the Contractor shall in conjunction with the Principal' liaise with the property owner to arrange the system installation.
- (c) Installation shall involve the gradual installation of private property PSUs (anticipated 150 to 250 units under Separable Portion C and the remaining units as owners sign up to the scheme under Separable Portion D up to 400 units in total). . Included in the two Separable Portions are the packaged sewage pump station units, pipework, fittings and valves, control panel, float switch and high-level alarm float switch with audio-visual alarm, and interconnecting pipework between the units and the boundary kits. . The boundary kits shall be installed as part of the public reticulation works (Separable Portion B).
- (d) Provide 100NB pipework from agreed point on private property pipework to the newly installed pressure sewer units
- (e) Provide access to private property at all times.
- (f) Backfill all trenches as specified and restore any disturbed road surfaces as specified and make good any settlement for the duration of the works and the defects liability period.
- (g) Pressure testing in accordance with the manufacturer's specifications.
- (h) All associated work indicated, described or implied on the drawings, and in the specification.
- (i) Preparation and submission of As-Built drawings and Operations and Maintenance manuals to the property owner and the MDC to achieve Certificates of Compliance.
- (j) Maintenance of the works in good order and repair for the full extent of the Defects Liability Period.
- (k) Decommission existing redundant on lot facilities as agreed with the property owner by:
- Pumping clean any redundant septic tanks and backfilling with compacted sand or equivalent fill
 - Abandoning redundant pipes seal off by providing mass concrete plug seals
 - Top soil and grass over decommissioned facilities as necessary

Minimum location requirements

Unless otherwise specified by the Principal following property owner negotiations, the pump unit shall be installed at a location and at a depth that facilitates the collection of every existing sanitary line leaving the existing building(s) on the site. The pumping unit shall be located as close as possible to the existing septic tanks or other on-site disposal systems, preferably one metre upstream or alternatively further upstream along the sanitary drain to assist property connection.

Where possible, the pumping unit shall be located within 12 metres of the electrical control / alarm panel due to the standard pump control cable length (15m). Longer length control cables can be used where necessary.

Where possible, the collection/pump unit shall be installed with a minimum separation of:

1. 2 metres from building walls or other structures (including retaining walls) to clear the '45 degree zone of influence' on the foundation (for a 2000 mm pressure sewer collection tank depth).
2. 3 metres from opening windows.
3. 1.5 metres from the side boundary of the property.

Ensure adequate access for maintenance is available at all times. Where possible, provide the collection pump unit cover with a minimum 1 metre clearance all around the outer circumference of the collection unit for at least 270 degrees on plan, with 2.5 metres clearance above.

Install the collection/pump unit clear of local ground depressions and areas which tend to flood during inclement weather. If such installation cannot be avoided, seal the vent and position a new vent point near the top of the collection unit sidewall with a vent pipe routed to the building wall and up to a vent point above the existing roofline, in accordance with the NZ/AS 3500.

Locate collection pump unit so that any potential overflow would cause minimal environmental impact and restoration can be readily implemented.

Do not locate the collection pump unit at location subject to vehicular traffic, within buildings or other enclosed areas. If the location may be subject to vehicular traffic, design a suitable cover arrangement.

4.6 Property Access

The Contractor shall maintain vehicle and pedestrian access to and within all private properties during the works unless the agreed work location effects such access. In such cases clear pedestrian movement shall be provided at all times and the length of inconvenience pre-agreed and between the Contractor and Property Owner.

4.7 Surface Reinstatement

Surface reinstatement through private property shall be at least equal to the original conditions. In this regard the Contractor is to ensure that a photographic record of original conditions is taken as a basis for comparison with final surface reinstatement on completion of works. The Contractor shall develop a works completion and approval certificate that shall be signed by the property owner on completion of the works.

4.8 Site and size requirements to be provided by the Contractor

To enable the Principal to undertake negotiations with owners to define preferred on lot layout, the Contractor shall provide the Principal with scale plans of their key facilities proposed in their generic design. These shall include preferred layouts and spaces between individual components.

4.9 Information to be provided by Principal

Subject to component information as required by clause 5.8 above being provided to the Principal by the Contractor in a timely manner the Principal will undertake all negotiations with property owners. From the negotiations the Principal will provide an information package to the Contractor covering the following;

- A plan of each property with an aerial photograph
- Existing drainage plans (where available)
- Property owner contact details
- Building and rating records
- Copy of signed agreement, with the property owner showing the agreed location of the new lot units

4.10 Building Consents

The Principal shall apply for Building Consents for each on lot unit using the information package based on the Contractor's specifications. .

No on lot work shall start before consents are received and they shall be held on site during construction. The Contractor will be responsible for submitting as built plans of a minimum scale 1:50 A4 for each lot. . The Contractor shall be responsible for obtaining Code of Compliance Certificates from the Council, with assistance where needed from the Principal's agent Training

4.11 Training

Installation Training

The Contractor shall provide a minimum of two days on-site installation training to at least one approved local installer, the Council's Utility Contractor (CityCare) and Council staff using a suitably qualified Trainer conversant with all aspects of the equipment supplied under this Contract. At the conclusion of the training session the Contractor shall provide the approved installation Contractor with "Accredited Installer" status. This shall be done regardless of whether the Contractor is to undertake the initial construction itself or utilise the trained local installers.

Operation Training

During the final testing and commissioning stage of the pressure system the Contractor shall provide the following;

- A minimum of 2 days on-site operational training and guidance to Council staff ensuring that a sound knowledge is gained for the correct functioning and operation of the pump units. The training shall extend to not only the individual pump units but also the pressure system as a whole including identifying and trouble-shooting problems that may be encountered during the initial commissioning of the pressure sewer system.

4.12 Testing and Commissioning

Upon completion and connection to the Boundary Kit, the Contractor shall commission the pressure sewer units, including controls automation and visual and audio fault alarms. A record sheet or form to be proposed in the Project Quality Plan, shall be used to neatly record commissioning date and results. The record sheet shall form part of the Operation and Maintenance Manual lodged with the Principal and the Home Owners Manual provided for each lot.

4.13 Operation and Maintenance manual

An Operational and Maintenance Manual shall be prepared and provided to the Principal covering:

- Generic system description
- Details of the facilities installed on each particular lot
- Hazards issues relating to owners risks
- Commissioning results
- Site wiring controls diagram
- Nature of Defects Liability/Warranty Service
- Recommended Maintenance regime
- Name and contact of authorised maintenance agent

4.14 Home Owners Manual

A Home Owners Manual shall be prepared by the Contractor for issue to each property owner by the Principal covering:

- System description
- Details of the facilities installed on property owner's lot
- Hazards issues relating to owners risks
- Access requirements
- Commissioning results
- Site wiring controls diagram
- Nature of Defects Liability/Warranty Service
- Recommended Maintenance regime
- Name and contact of authorised maintenance agent
- Frequently Asked Questions

4.15 Defects Liability Service

For the extent of the Defects Liability Period the Contractor shall provide a full repairs and maintenance service to the Principal with all costs of doing so covered within the Design Build Contract sum.

During the Defects Liability Period all resident complaints will be made to the Council's Call Centre who will contact the Contractor for repair action. Such repair and maintenance works shall be undertaken by the Contractor within the response times noted below.

The Contractor shall provide to the Principal a history of the routine maintenance during this period for each pump unit documenting any problems and shall provide assurance that each pump unit has been checked "fit for purpose" no greater than 30 days prior to the completion of the Defect Liability servicing period.

The level of service during the Defects Liability Period shall mirror the maintenance services provided for Council's more traditional wastewater collection services, particularly during business hours. Typically where contacted by the Council's call centre during the working day the Contractor shall be expected to have that work carried out on the sameday. For after hour's service, the Contractor or their nominated Service Agent shall specifically provide the following additional services:

- Next day repairs or replacement of the pumps for alarm activations with the repairs to occur before midday on the next day.
- Immediate response to any overflow situation.

Council's requirement is that the repair service be available 24 hours per day, 7 days per week throughout the year.

The property owner is expected to enable the Contractor to gain reasonable access to the on lot facility at all times. and the requirements in respect to access shall be set out in the Home Owner's Manual.

The Contractor or their nominated Service Agent shall provide contact details of the Council's call centre to all property owners or residents to contact if their alarm activates. The Contractor or their nominated Service Agent shall fix a sticker providing this Call Centre Number to the outside of the control panel. This information shall also be included in the Home Owner's Manual. Any Contractor or their nominated Service Agent employee entering private property must have photographic identification and appropriate authorisation from the Council to enter the property. This must be readily visible at all times.

Upon request the Contractor shall negotiate with the Council an ongoing service arrangement for 4 years minimum beyond the end of the Defects Liability Period. Parties shall negotiate in good faith to agree on mutually acceptable conditions for such an extension.

4.16 Call outs and Servicing

The Contractor shall reimburse the Principal for any call-out related expenses during the Defects Liability Period resulting from defective materials, faulty equipment and poor installation methodology and procedure.

4.17 Ongoing maintenance and service obligations

At the end of the defects Liability period the Contractor shall negotiate with the Council an ongoing service arrangement for 4 years minimum beyond the end of the Defects Liability Period. This may include utilising the Council's Utility Contractor. Parties shall negotiate in good faith to agree on mutually acceptable conditions for such an extension. This shall cover advice as required by Council and call outs and repairs occurring that are not the result of non performance of the products or services supplied under the contract e.g. owner discharge of unsuitable product.

In addition the Contractor shall provide a 4 year guarantee with the same start date, the guarantee covering all repairs and maintenance required as a result of faults or problems attributable to the performance of the products, materials and workmanship provided under the contract. The Contractor shall provide the name and location of their local service centre facility for procedures and repairs during the Defects Liability Period. The service centre must be prepared to take care of the normal problems that can be encountered with the PSU and ensure security and safety of the Council paid asset at all times. The Contractor shall nominate the stock of spare parts that will be available at the service centre and ensure that they are available at all times at the service centre facility.

4.18 Measurement and payment

The cost of complying with these requirements of the Specification shall be included in the amounts tendered for this item in the Schedule or, if no separate item is shown, in the rates and amounts for the various items of construction.

5 Pressure Sewer Reticulation

5.1 Scope

This specification covers the design and construction of Pressure Sewer System (PSS) public reticulations to collect wastewater from the Himatangi Beach community and transfer it to the proposed Himatangi Wastewater treatment facility.

5.2 System Requirements

The public pressure sewer reticulation shall be designed and built as a system integrated and compatible with the design of the on lot facilities proposed and capable of delivering design wastewater flows to the proposed treatment facility.

Overall performance standards

The pressure sewer system (PSS) shall:

- be capable of servicing the full area shown on drawing no 10040-102, including all current dwellings, and the projected future development of vacant lots including the future connection of the Sandown Subdivision (130 lots) assuming that individual pressure sewer pumping units will eventually be provided for all present and future residential and non-residential allotments;
- be able to successfully operate during low and high flow periods;
- be suitable to handle house connections and lines with no flow or limited flow for substantial periods;
- require minimal ongoing maintenance issues for Council and property-owners;
- be a durable product providing an asset life consistent with WSA 07;
- be compatible with existing household plumbing and drainage performance requirements;
- cause minimal septicity attack to receiving structures;
- achieve self-cleansing velocities for at least 30 minutes daily even during periods of low flow; where this is not achievable flushing points shall be provided;
- minimise infiltration/inflow in the design, materials selected and construction;
- cause no detectable odour at ground level within the area served by the PSS; and not cause noise levels within the sewerage reticulation and transportation system to exceed the levels nominated in the Manawatu District Plan;
- Ensure that design and construction is to recognised latest industry standards. In particular the Australian document: WSA-07-2007 "Pressure Sewerage Code" shall be used as a design basis. All pipework, valving, jointing, specials, etc, shall be designed and constructed to the current relevant New Zealand or Australian standards.

Specific requirements

- The public reticulation works shall start at, and include the supply and installation of a boundary assembly kit approximately 600mm on the road side of every property boundary and 1.5m from the lowest of the property side boundaries.
- The boundary kits shall meet the following minimum specification:
- Boundary kits shall be delivered as one unit
- The boundary kit boxes shall be manufactured from polyethylene. Lids to be coloured red and labelled "SEWER - DO NOT BURY".

- Unless specifically altered by the Contractor's design the kit shall comprise of 1¼" BSP (32mm) check valve, flushing tee and isolating valve. All components to be stainless steel (A316) with a DZR brass tee plug.
- Both ends of the boundary kit shall have 300mm of 40mm PE PN16 pipe with the male electrofusion couplings fitted.
- All fittings shall be rated to 13.8 bar (200psi) and pressure tested to 16 bar (232psi).
- All PSS reticulation mains shall be laid in public road reserves, parallel to property frontages and in berms where practicable.
- Bends shall be used at changes of direction.
- Pipe material shall be capable of withstanding shut off head of the pumping station. Pipelines including within property boundaries shall be HDPE with fusion weld joints.
- Pipe class shall be PE-PN16 as a minimum, unless a higher class is required to meet design criteria.
- A minimum horizontal clearance between underground water supply mains and any PSS component of 300mm shall be maintained. Where the crossing of an underground water line is required, route the property discharge or service line below the water line with a minimum vertical clearance of 100mm. The preferred crossing angle is 90 degrees.
- Unless specified otherwise, all fittings shall be fully moulded PE-PN16 as a minimum equal to or greater than the pipe material rating.
- Tracer wire or detectable tape shall be installed as per clause 18.10 of WSA 07.

5.3 Design

The design shall be undertaken to provide a comprehensive and cohesive design from and including on lot units, through the public reticulation to the wastewater treatment of plant.

As noted under Particular Requirements the design shall be undertaken in three phases to enable the Principal to be continually appraised of the intent and to comment and when necessary request adjustment to the design.

The design shall be supported at all phases by appropriate assumptions and analysis. At each phase of the design a report and design documents appropriate to the design to that point shall be lodged with the Principal prior to the meeting to discuss the work.

The Contractor shall provide as a minimum the following documentation with the final submission before the Principal will provide a letter of "no objection" to enable construction to commence:

- a) Full at scale working drawings in ACAD or other approved digital format covering:
 - full system layout including all laterals from mains to household boundary kits
 - pipe sizes, classes, grades, valves, fittings, etc.
 - pipe laying methods including bedding backfill and surface reinstatement details
 - details of any special crossings under roads/drives waterways, etc
 - details of any public pump stations.
- b) Full specifications setting materials and construction standards.
- c) Schedules (in electronic format) covering the lengths of various pipes used. This shall be updated by the Contractor on completion of the work and provided with unit rates and extended totals to be used by MDC for updating their asset register.

- d) A PS 1 Producer Statement as to design.
- e) The final design report covering as a minimum:
- Design criteria and assumptions
 - Design loads expressed as dwelling equivalents (DE) for each section of the sewerage reticulation including any pumping stations
 - Results of fatigue and transient pressures (water hammer) analysis and proposals to manage transient pressures
 - Details of the assessment of the sources of noise and proposals to mitigate noise
 - Details of the assessment of odour production and proposals to mitigate odours, including during the early stages after commissioning when connections are being made
 - Verification that any preliminary information provided by the Principal, that is proposed to be used by the Contractor, has been checked and satisfies the requirements of the Contract
 - Details of any new and/or innovative components
 - Details of lower cost options adopted in the design
 - Operation, maintenance and safety factors and requirements
 - Details of any additional investigations undertaken
 - Any other relevant design information
 - Calculations associated with the work shall be provided in Appendix form.
- f) Updated construction programme, Traffic, Environmental and Quality Management plans relevant to the design as completed updated construction intent.

5.4 Construction

All construction shall be undertaken in accordance with the plans and specifications lodged with the Principal.

Construction shall be programmed and undertaken in such a way as to minimise public inconvenience.

The Contractor shall check groundwater depths as necessary before work commencement and dewater trenches to enable all pipe laying to be done in dry conditions.

Trenches and work areas shall be kept safe at all times and backfilled as soon as practicable after any length of pipe laying is completed.

Full surface reinstatement shall follow within 5 days but in all cases the surfaces shall be retained flush and safe until the final reinstatement is completed.

In no case shall more than 100m of trench be left unreinstated in any public street.

5.5 As Built Plans

As built plans shall be prepared and provided to the Principal as required within the Preliminary and General Specifications.

5.6 Measurement and Payment

Payment shall be made based on lump sums provided in the Schedule of Prices.

6 Wastewater Treatment Facility

6.1 Scope

This specification covers the design and construction of a wastewater treatment facility to treat wastewater from the Himatangi Beach community and produce a treated effluent that complies with the Specifications of this Contract.

It further covers the Contractor's obligation to operate and maintain the facility for the duration of the twelve month Defects Liability period and to provide operational support and ongoing performance proving for the Operational Supervision and Performance Proving Period of four years from the end of the Defects Liability Period in accordance with Separable Portion E of the contract.

6.2 General

Wastewater is to be collected from on lot pumping facilities via a public Pressure Sewerage System reticulation and delivered to the new wastewater treatment facility. The treated effluent will be discharged to a land application system adjacent to the treatment facility that will be constructed as a separate contract.

To achieve this, the Contractor shall provide all services to design and build the wastewater treatment facility.

6.3 Design Performance Requirements

Flows

The facility shall be capable of treating estimated flows across the range as detailed in the flow model report included in Section 8. The estimated current peak summer flow, the 2041 peak summer flow and Off-peak weekday flows are contained within the Flow Model Report

Treatment performance standards

The treatment facility shall be capable of treating all wastewater flows from the Himatangi community, including the flows that may occur in the worst case situation of a peak population (allowing for future growth at 2041). Consideration may be given to modulate the system to allow for growth and system expansion over time.

It shall be the Contractor's responsibility to interpret this data and to design the treatment facility to produce the specified effluent quality based on this data.

The treatment facility shall be capable of accepting and treating a maximum instantaneous wastewater inflow rate as determined by the Contractor as a result of their reticulation design. This flow rate can make allowance of the use of buffer tanks.

It shall be the Contractor's responsibility to identify and interpret treatment influent data, and to design the treatment facility to produce the specified effluent quality based on this data.

The treatment facility shall produce a treated effluent that complies with the following limits expressed as 50%ile values determined from composite samples of the effluent collected on one day during the first week of each month over the year. The way that the composite sample is collected shall be agreed with the Engineer once the nature of the treatment facility is known. The 50%ile shall be calculated over the past 12 monthly samples as a rolling 50%ile:

- BOD₅ < 50mg/L
- SS < 50mg/L
- Total nitrogen <30mg/L
- Total phosphorus <10mg/L

The treatment facility shall produce a treated effluent that complies with the following limits expressed as 95%ile values determined from composite samples of the effluent collected on one day during the first week of each month over the year. The 95%ile shall be calculated over the past 12 monthly samples as a rolling 95%ile. In order to comply with the 95%ile limits, no more than one result out of the 12 results for each parameter shall exceed the 95%ile limit for that parameter:

- Total nitrogen <35mg/L
- Total phosphorus <22mg/L

The design and layout of the treatment facility shall make provision for the future installation of a UV disinfection system which will result in the median concentration of total coliform bacteria not exceeding a most probable number of 23 per 100 ml based on a 7 day period or a maximum number of 240 per 100 ml over a 30 day period.

In addition to allowing for the treatment facility to be modulated if needed, the Contract shall ensure that the treatment facility shall be capable of being expanded in the future to provide for a further 50 % flow allowance while maintaining compliance with the same effluent quality standards. Information shall be provided in tenders on how the treatment facility can be expanded and what works would be involved.

Following the end of the Defects Liability Period for the wastewater treatment facility construction (separable Portion B) the Contractor shall ensure that the treatment facility produces a treated effluent that complies with the quality parameters set out above for a period of four years. This four year period is the Operational Supervision and Performance Proving period termed Separable Portion E of the Contract.

Resource Consent quality standards

The Contractor should note that effluent quality performance standards required by this Contract are higher than that required by the Resource Consent conditions so as to ensure there is a margin of safety between what the Contractor has to achieve under the contract and what Council has to achieve in order to comply with the Resource Consent. The specified and Resource Consent values are as summarised in Table 6.1.

Table 6.1: Consent conditions relating to effluent quality and the effluent quality specifications in the DBO contract.

Parameter	Consent conditions	Contract specifications
Total nitrogen (TN)	< 40mg/L	<35 mg/L
Total phosphorus (TP)	< 24mg/L	< 22mg/L

Note: Both the consent conditions and the contract specification limits are to be measured as 95%ile values over the past 12 months of testing and based on composite samples collected monthly

The above information is provided to make it clear that the Contractor is expected to provide a plant achieving the higher quality wastewater standards set by these Contract standards and NOT the standards set in the Resource Consent.

In the event of any ambiguity between the quality specified in the Resource Consent conditions and those in the Specifications, the quality of the Specifications shall prevail.

HAZOPS Meeting

On completion of the design and prior to construction of the treatment facility the Contractor shall attend and record the agreed outputs from a HAZOPS meeting with Council operational staff at the Council's offices. The Contractor shall incorporate the agreed outputs in the design of the treatment facility.

6.4 General Scope and Componentry of the Treatment Facility

The treatment facility has the following scope and componentry requirements:

- It is the responsibility of the Contractor to include any and all components as necessary to enable the wastewater treatment facility to achieve the Contract performance standards.
- The wastewater treatment facility shall include but shall not necessarily be limited to the components detailed in the following clauses. All components shall be of sufficient size or capacity for the design flow and load given in the specified performance standards.
 - An inlet milliscreen with 3mm slots or holes. The milliscreen shall include a screenings washing system and a screenings press to minimise the water content of the screenings and a skip or bin into which the screenings shall be discharged and held for transport to disposal;
 - A building to house the milliscreen and contain odour with a ventilation system to extract and deliver foul air to an odour treatment system;
 - The provision of an influent flow meter to measure the entire volume of wastewater reaching the treatment facility. The flow meter(s) shall be traceably calibrated to +/- 10 % or better and capable of providing an analogue signal of daily outflow records as well as having a pulse counter output. The flow meter(s) shall be capable of providing total daily inflow volume as well as providing a pulse counter output. The meter shall be placed prior to any balance tanks to allow inflow peaks to be assessed;
 - A biofilter or other odour treatment system capable of reducing any odour generated at the facility to a level that does not cause odour nuisance at the boundary of the designated site;
 - A treatment facility comprising such items as an aeration basin and clarifier, or equivalent equipment as provided for in the tender, including all sensors and controls as may be required for automatic plant operation;
 - A MCC room to house all electrical supply, control and monitoring equipment;
 - A sludge thickener tank or holding tank as required for the practical and effective operation of the sludge de-watering equipment;
 - Sludge de-watering equipment to reduce the moisture content of the sludge to <80% at all times, including all ancillary equipment such as polymer storage and dosing and conveyance systems to discharge the de-watered sludge to a storage and transport bin;
 - A building to house the sludge processing equipment with a ventilation system to extract and deliver foul air to an odour treatment system;

- Safety fences and/or walls around all water containing basins and pits and pump wells to ensure the treatment facility complies with all health and safety requirements and all OSH requirements;
- Security and operational lighting sufficient to ensure the safe operation of the facility at night time. The security lighting shall be motion activated with manual over-ride so that the security lights only operate when needed and are not normally lighted at night;
- An effluent storage pond of 6,500 m³ capacity with a minimum freeboard of 500mm. Design considerations as highlighted in the Ormiston and Associates report included in Section 8 shall be taken into account;
- A wet well pump station meeting the general concept proposed in the LEI drawing 10040-105.
- Irrigation pumps and head works are not included in this contract, but space for them should be provided adjacent to the wet well on a concrete pad no less than 3 m x 3m;
- Allowance and capacity for irrigation pump controls (and telemetry) within the MCC room which also houses the treatment facility controls;
- A back up power supply (if needed) capable of maintaining the treatment facility in operation and producing the specified effluent quality if there is a failure of the mains power supply to the site. The back up power supply generator system shall be housed in a suitably sound-proofed enclosure to ensure the noise level does not exceed the allowable level for a rural area;
- All buildings and structures above ground including railings and the like shall be finished in one of the following Resene colours: 'Karaka', 'Lignite', 'Charcoal' or 'Iron sand'

No provision is required for receiving septage from septic tank cleaning trucks to be discharged into the subject treatment facility. All septage shall be transported to the Feilding WWTP.

6.5 Control System and SCADA

The Contractor shall design and install a mimic panel within the MCC room at the treatment facility site that displays all the operating parameters of the facility including, but not limited to, the level of the inlet well, the screen operation, the operational status of all pumps, the dissolved oxygen concentration in the aeration basin(s), the operational status of equipment such as the clarifier or an SBR, flow readings, and the level of effluent in the storage pond.

The Contractor is to ensure that the operating and performance requirements of the works are met by employing a modern industrial supervisory, control and data acquisition (SCADA) system. The SCADA system is to be provided with appropriate emergency power supply, such that critical plant operations can continue and alarm conditions reported in the event of a mains supply failure for up to eight hours

Sufficient information is to be monitored and recorded to ensure that the works can be remotely managed and operated effectively and efficiently by the Manawatu District Council

All data required for regulatory reporting is to be recorded at appropriate intervals to ensure that accurate trends can be produced that adequately demonstrate compliance. The SCADA system is to be configured so that the data is stored locally before being transmitted to a remote location once an hour

Alarm indication is to be provided such that the facility can be managed proactively rather than reactively. Each alarm point is to be fully described and to be accompanied with a fully documented response procedure, which must include the required response time. Sufficient alarms are to be defined such that it is possible for the appropriate personnel to be called directly without prior investigation by some other personnel.

Provide treatment facility control using approved make and model of PLC, configured for modbus polling by telemetry RTU carried by RS485 with optoisolation for surge protection.

Provide all I/O register maps for MDC access as required, to be agreed with MDC. Allow to attend and assist the Telemetry Contractor on commissioning of the PLC-RTU interface and proving of interface register points functionality and scaling.

6.6 Description of the Site

The site on which the wastewater treatment facility shall be constructed is located within land currently under survey and will be subdivided with the owner being Manawatu District Council. The site is approximately 7.5km west of State Highway 1 as shown in the LEI drawing 10040-101, 103 and 104. The facility shall be located within the designated land area in conformation with the specifications

The land at the site is currently in pasture and flat with a variation in level from RL 7.0 at the highest point (east of the site) to RL 6.0 at the lowest point (west of the site).

The soil at the site comprises a shallow (200mm) layer of very light topsoil overlaying sand to a depth in excess of 5 m.

6.7 Site Features and Restrictions

The land use consent conditions issued by Manawatu District Council included in Section 8 includes a number of restrictions. In addition, Council wish the facility to be as unobtrusive as possible to neighbouring properties.

Because the wastewater treatment facility will be located close to the Himatangi Beach community there is a need to consider the impact of odours from the facility. Accordingly, the design of the wastewater treatment facility shall incorporate features as necessary to minimize any potential odours. Tenderers shall indicate in their tenders what features and/or mitigation measures have been incorporated to minimize odours.

6.8 Access to the Site

Access to the site is via a right of way from Himatangi Beach Road.

The Contractor shall upgrade and in some cases construct, the access road along the alignment shown in LEI drawing 10040-103. This shall be a 4 m minimum width unsealed carriage way consisting of 200 mm of compacted base course shaped to encourage rainfall runoff.

The Contractor shall install a stream crossing across Kaikokopu Stream. Concept design details of the proposed bridge is provided in Section 8. Consent for this crossing is currently being sought from the Regional Council.

If access to the treatment facility site is not possible whilst the sewer pipe and power and water supply are being laid the Contractor shall either divert around the obstruction or may temporarily use the access route along Lake Road.

6.9 Supply of Services to the Site

No services are currently available at the site and the Contractor is to provide for following new services to be supplied. The Contractor shall decide how many trenches will be used for the services but in reaching this decision all requirements of the relevant Network Utility Operators relating to depths and clearances from other services shall be met.

Services to be provided in addition to the wastewater delivery main include:

a) **Water**

The Contractor shall lay a water supply pipe for clean water purposes adjacent to the wastewater delivery pipeline. The supply shall be sourced/connected to the Council's current reticulated supply. The size and capacity of this pipeline shall be sufficient for wash down and other incidental use at the wastewater treatment facility.

b) **Power**

The Contractor shall liaise with Powerco (the local area power supply company) to arrange the installation of a power supply cable in buried ducting from an existing transformer, adjacent to the site's access easement, along an easement through the property to the treatment facility site (see LEI drawing 10040-103). The power supply shall be sufficient to meet the power requirements at the site for the capacity of the treatment facility including the future provision of a UV treatment facility, with expected power demands (but no detailed design or construction) to be derived by the Contractor. The Powerco work shall include the provision of a new transformer at the wastewater treatment facility site.

The Contractor shall design, trench, lay and backfill the wastewater and water mains for which Council is the utility owner.

For the power work the Contractor shall liaise with Powerco regarding their needs and requirements, undertake all required duct and draw pit installation, organisation and attend on the applicable utility operator whilst they install their cable and upon completion backfill all excavations and provide surface reinstatement.

The Contractor shall notify the Principal of the agreed scope of works to be undertaken by Powerco and the order for these works shall be placed by the Council.

The Contractor's tendered price shall cover the cost of all work associated with liaising with Powerco and the Principal during the planning and installation of the power supply.

6.10 Earthworks and Ponds

All earthworks shall be carried out so as to achieve the Design standards to be specified by the Designer, in a manner that manages potential adverse effects relating to dust, noise, erosion and sediment.

Where pond linings are required they shall be designed to best current standards incorporating under layers and cushioning as appropriate to minimise risks from loss of mobile undersoils or stone damage to the liner.

All welds shall be tested and ponds checked for water loss as part of the commissioning process

6.11 Commissioning

As soon as the treatment facility is completed and wastewater is available to the facility through the pipeline from the community, the Contractor shall start commissioning the facility. However, commissioning shall not have been deemed to have been completed until at least 50 properties are connected. It is appreciated that the full extent of property connection may take several years and it would be unreasonable to expect commissioning to span this period, hence the Defects Liability Period followed by an Operational Performance Proving Period.

Commissioning shall incorporate checks on all treatment facility, pumps and controls and instrumentation, including checking of the remote controls/information provided by the SCADA/Telemetry system.

6.12 Defects Liability

Following successful commissioning, the Contractor shall operate the facility for a Defects Liability Period of 12 calendar months to demonstrate that the facility can comply with the performance standards and that all defects are remedied such that the facility is capable of routine, reliable and effective operation by Council's operations staff.

The operation of the facility by the Contractor through the Defects Liability Period shall include but shall not be limited to:

- Provision of all operating labour, vehicle(s) and supplies including chemical and polyelectrolytes for sludge de-watering;
- Payment for the costs of all services including power, water, telecommunications;
- Payment of all maintenance and repair costs (if any) that may be required during the period of operation;
- Processing of sludge and disposal to Feilding Wastewater Treatment facility in Feilding, including the costs of transport of the sludge and disposal fees;
- Collection of a composite sample of the final treated effluent just prior to the discharge wet well on one day within the first week of each month for consent compliance purposes. The method of collection of the composite sample shall be agreed with the Engineer when the nature of the treatment facility is known. The Contractor shall dispatch the samples to the analysing laboratory and pay all costs for shipment and analysis of the concentrations of BOD5, TSS, TN, total ammoniacal nitrogen, TP, DRP and E coli in the samples;
- The collection and analysis of wastewater and/or effluent samples as may be necessary to define and control or adjust the operation of the treatment process including all shipment and analysis costs;
- In order to prove that the facility can comply with the performance specifications, over short peak summer periods and in addition to monthly consent compliance monitoring, there shall be the collection of composite samples of treated effluent on one day each week between 7am and 9pm over a three-month period including December, January and February. The method of collection of the composite samples shall be agreed with the Engineer when the nature of the treatment facility is known. The 12 samples shall be analysed for the parameters listed in Section 6.3.2. The results of the analyses shall be used, in addition to monthly compliance monitoring, to further verify compliance with the specifications.

- Compliance shall be deemed to have been achieved if no more than one measurement of each parameter exceeds the specified limit for that parameter.

Recording the daily volume of wastewater received by the treatment facility;

Providing a written report at 6 monthly intervals comparing flows and out puts with the performance requirements and stating any remedial actions taken or needing to be taken. Any such actions will be undertaken by the Contractor without further payment and shall be taken as soon as practicable after the non compliances have been identified.

Testing the moisture content of the dewatered sludge prior to transport to the Fielding Wastewater Treatment facility to verify that the moisture content is <80%. If the test shows that the moisture content exceeds 80% the sludge shall be returned to the de-watering process for further treatment.

- Prior to the completion of the twelve months Defects Liability Period the Contractor shall prepare and provide to Council a preliminary Operations and Management Manual. The manual shall include the following information:
 - A description of the entire treatment system, including a site map showing the locations of the various components of the treatment system and monitoring points;
 - A description of the process of wastewater treatment including design and operating parameters and a process flow diagram and P and ID;
 - Specific management procedures for key components of the system;
 - As built drawings as specified within the Preliminary and General Specification;
 - Procedures to be utilised to monitor the operation and performance of the system;
 - Monitoring and reporting procedures including but not limited to contingency plans for system malfunction and breakdowns and plans for maintaining effluent quality during peak flows;
 - Details of the measures to be taken to meet the specified effluent quality;
 - Technical specifications and performance of all equipment and instruments included in the facility; and
 - Maintenance requirements for all equipment and instruments.
 - Lists of key mechanical and electrical equipment, the suppliers and contact names and numbers of agents for future repairs and maintenance.
 - If the treatment facility is not operating successfully at the end of the Defects Liability Period, including operating without causing odour beyond the boundary of the site and not producing effluent which complies with the required standards, the contractor shall at its own cost define and undertake remedial measures as necessary and continue to operate and maintain the plant at its own cost into the Operational Performance Proving Period.
- After the treatment facility has been commissioned and prior to the end of the Defects Liability Period the Contractor shall train the Council operations staff who will undertake the operation of the treatment facility under the supervision of the Contractor following handover in the operation and maintenance of the facility.

6.13 Operational Supervision and Performance Proving Period

Once the 12 month Defects Liability period is completed and not less than three consecutive months of complying wastewater quality met, the plant shall be handed over to Council for day to day operations. During this period Council will arrange for and undertake all testing regimes and pay costs associated with its routine operation in terms of the design parameters.

The Contractor obligations during the Operational Supervision and Performance Proving period shall include:

- Provision of operator training and supervision, including emergency on-call assistance, such work to be paid for at reasonable charge rates where the Contractor involvement was not the result of treatment facility malperformance or non compliance in terms of the Contract performance standards.
- Payment of all maintenance and repair costs (if any) that may be required during the period of operation arising from the non-performance of the treatment facility in terms of either effluent output quality or plant componentry performance and reliability against specified and guaranteed standards.
- Receiving from Council monthly test results and reviewing them against the specified performance standards.
- Receiving from Council operational inputs and costs to enable the Contractor to provide the Operating log at the end of the Operational Supervision and Performance Proving period as specified below.
- Providing 6 monthly formal reports as a minimum but if non compliances occur reporting shall be more frequently identifying remedial measures to be undertaken. Such measures to be undertaken within the Contract price.

During the Operational Supervision and Performance Proving Period the Contractor shall in addition to the monthly test results undertaken by Council undertake at its own expense the following extra testing to check performance during the short peak summer periods.

- Collect on one day each week between 7am and 9pm over a three-month period including December, January and February in either the third or fourth years of the operations period. Compliance shall be deemed to have been achieved if no more than one measurement of each parameter exceed the specified limit for that parameter.
- The results of this testing and analysis along with the monthly results and any other measurements as necessary, shall be used to calibrate a whole of works BIOWIN model to demonstrate that the treatment facility should be capable of achieving the specified performance when the flow and load reach the 2041 design horizon values. The results of the modelling shall be provided to the Engineer no later than 4 weeks prior to the end of the Operational Supervision and Performance Proving Period. Should modelling not be able to demonstrate future targets can be met, then the Contractor shall propose adjustments to the plant and forward schedule to remedy design limitations. This work and adjustments will be at the expense of the Contractor. The Contractor shall arrange further testing to demonstrate the effectiveness of any required adjustments.
- As an alternative to the above, or to support the modelling, if the design of the facility is based on a wastewater treatment facility elsewhere that treats a wastewater volume and load similar to the estimated 2041 flow, and if operating data are available on this facility, the operating data may be used to demonstrate the capability of the facility proposed for the Himatangi Community.

At the end of the four year Operational Supervision and Performance Proving Period provided that the treatment facility has operated correctly and complied with the performance specifications, the Contractor will be relieved of its obligations under this phase of the Contract.

If the treatment facility is not operating successfully at the end of the Operational Supervision and Performance Proving Period including not producing effluent which complies with the required standards, the period shall be extended, at the cost of the Contractor, until such time as the treatment facility is proven to be operating successfully and in accordance with the contract Specifications.

At hand over the Contractor shall provide Council with an operating log for the past four years that lists all supplies used, costs incurred and records of the plant operation over the period. The list shall be sufficient to enable the operating costs of the treatment facility to be identified and compared against the predicted operating costs as given in the tender submitted by the Contractor.

At hand over the Contractor shall also provide a final operations and maintenance manual that contains updated information on how the treatment facility should be operated, monitored and maintained. The manual shall include technical information on all machinery and equipment and the recommended servicing and maintenance of the same. The final operations and maintenance manual shall incorporate any changes that have been made to the operation or equipment of the treatment facility during the past four years of operation.

Payment

Payment for the wastewater treatment facility design and construction shall be as per the lump sum items provided by the Contractor in the Schedule of Prices.

Payment for work during the Operational Supervision and Performance Proving Period shall be in terms of the lump sum items tendered except for services rendered in assisting Council's operations or responding to requests relating to matters that are not relating to non-compliances or faulty design or workmanship. Such response and assistance work shall be reimbursed at agreed charge out rates.

SECTION 5 – INDEX OF DRAWINGS

5.1 INDEX OF DRAWINGS

The following drawings form part of the contract and are

- Bound into these contract documents

Drawing No.	Title	Revision No.
10040-101	Wastewater Treatment System Master Plan	
10040-102	Sewer Reticulation	
10040-103	Rising Main Plan & Long Section Wastewater	
10040 -104	Treatment facility Site Plan	
10040 -105	Schematic Treatment Facility and Pond Layout	

SECTION 6 - THE SCHEDULES

6.1 THE PRICE SCHEDULE

This Contract is a Lump Sum Contract with some measureable and provisional items - Refer Cl 2.2 of NZS 3910.

Preamble

The description of work given for the various items in the Price Schedule are not necessarily complete in all respects, and reference should be made to the Specification and Drawings which are to be read in conjunction with the Schedule.

The rates and amounts to be inserted in the Price Schedule shall be the full inclusive value of the work described under the several items, including all costs and expenses required for all construction of the work described and any temporary works, together with all general risks, liabilities and obligations set out or implied in the Contract Documents. Unless stated to the contrary within the documents, all volume measures are “tight” (in place) measures.

A rate or amount shall be entered against every item shown in the Price Schedule. The cost of any incidental work necessary for the proper completion of the Contract but not shown separately in the Price Schedule shall be included in the rate or amount for the item to which it appropriately relates, but if any incidental work cannot be readily included under a scheduled item it shall be added to the Price Schedule by the Contractor as a new item. Any item left unpriced by the Tenderer will be deemed to be included in the prices tendered for other items.

Tenderers shall enter quantities of pipework under items 2.2.2.1 to 12.

Summary of Amounts

ITEM	AMOUNT
SUB-TOTAL SEPARABLE PORTION A - DESIGN PHASE	
SUB-TOTAL SEPARABLE PORTION B - SUPPLY AND CONSTRUCTION PHASE	
SUB-TOTAL SEPARABLE PORTION C - SUPPLY AND INSTALLATION ON-LOT FACILITIES CONSTRUCTION PHASE	
SUB-TOTAL SEPARABLE PORTION D - ONGOING SUPPLY AND INSTALLATION OF ON-LOT FACILITIES	
SUB-TOTAL PORTION E - OPERATIONAL SUPERVISION AND PERFORMANCE PROVING PERIOD	
SUB-TOTAL UNSCHEDULED ITEMS (TENDERER TO SPECIFY)	
TOTAL AMOUNT OF TENDER	\$

Signature _____

Name of Tenderer _____

Date _____

PRICE SCHEDULE

HIMATANGI BEACH COMMUNITY SEWERAGE SCHEME

1.0 SEPARABLE PORTION A - DESIGN PHASE

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	<p>Design</p> <p>Undertake comprehensive design and documentation of all parts of the wastewater collection, reticulation and treatment system. Design to be undertaken in three parts</p>				
1.1	<p>Concept Design</p> <p>Concept design with full system description, preliminary layout, sizes and proposed key components. Preliminary analysis, calculations and concept design report submit to Principal and meet to discuss issues.</p>	LS	1		
1.2	<p>Developed (80%) Design</p> <p>Developed design calculations, drawings, specification including separate specification for on lot works . Product names, suppliers, etc</p> <p>Developed design report, submit to Principal and meet to discuss issues.</p>	LS	1		
1.3	<p>100% Design and Documentation</p> <p>Prepare final construction drawings and specification incorporating all agreed issues arising out of items 1.1 and 1.2.</p> <p>Provision of final design report, analysis and calculations and PS1 Design Producer Statement</p>	LS	1		
SUB-TOTAL SEPARABLE PORTION A - DESIGN PHASE					\$

HIMATANGI BEACH COMMUNITY SEWERAGE SCHEME

2.0 SEPARABLE PORTION B – SUPPLY AND CONSTRUCTION PHASE

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2.1	Preliminary and General		1		
2.1.1	Insurances, bonds, fees, permits, etc	LS	1		
2.1.2	Setting out	LS	1		
2.1.3	Establishment and disestablishment	LS	1		
2.1.4	Engineering Observation oversight by Designer at a level to adequately control and monitor construction standards and provide Producer Statement PS4 on completion	LS	1		
2.1.5	Provision of all other items required by the Preliminary and General clauses of the Contract Documents or otherwise needed to complete the project in accordance with the Contract Documents	LS	1		
2.1.6	Attendance at HAZOPS meeting in MDC offices with Operational Staff	LS	1		
	Sub-Total - Preliminary and General				\$

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2.2	Public Reticulation – Separable Portion B				
2.2.1	Supply and install rising main boundary kits comprising non-return valve, flushing tee and isolation or stop valve, contained within a valve box with lid, allow for connection to individual property pipework	No	400		
2.2.2	Supply and lay reticulation in public streets and other public areas (berms, parks etc) Allow for valves, tees, bends etc to provide services to individual lots. Pipe sizes and lengths to be defined by Contractor				
2.2.2.1	DN 40 by trenching	m			
2.2.2.2	DN 40 by other method	m			
2.2.2.3	DN 50 by trenching	m			
2.2.2.4	DN 50 by other method	m			
2.2.2.5	DN 63 by trenching	m			
2.2.2.6	DN 63 by other method	m			
2.2.2.7	DN 75 by trenching	m			
2.2.2.8	DN 75 by other method	m			
2.2.2.7	DN 90 by trenching	m			
2.2.2.8	DN 90 by other method	m			
2.2.2.7	DN 110 by trenching	m			
2.2.2.8	DN 110 by other method	m			
2.2.2.9	Other size DN by trenching	m			
2.2.2.10	Other size DNby other method	m			
2.2.2.11	Other size DN by trenching	m			
2.2.2.12	Other size DNby other method	m			

2.2.3	E/O for reinstatement in public streets				
	Concrete driveway areas	LS	1		
	Asphalt driveway areas	LS	1		
	Grassed areas	LS	1		
	Concrete footpath areas	LS	1		
2.2.4	Supply and lay reticulation from Koputara/Himatangi Beach Road to proposed treatment facility. Allow for valves, tees, bends, stream crossing, all consents for stream crossing, and all reinstatement. Pipe sizes and lengths to be defined by Contractor				
2.2.4.1	DN by trenching	m			
2.2.4.2	DNby other method	m			
2.2.4.3	DN by trenching	m			
2.2.4.4	DNby other method	m			
2.2.5	Public Pump Station (if required)	LS	1		
	Supply and install pump station including operational and emergency storage, pumps and all controls and instrumentation				
Sub-total Public Reticulation					\$

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2.3	Wastewater Treatment facility - - Separable Portion B				
2.3.1	Construct 6,500 m ³ buffer storage pond, including lining as applicable and all associated pipework	LS	1		
2.3.2	Supply and construct wastewater treatment facility including all associated site works, telemetry interface, controls and instrumentation, pumps, pipework, etc	LS	1		
2.3.3	Construct discharge wet well chamber	LS	1		
2.3.4	Supply and lay 150mm duct for power supply cable and associated pits and draw wire along access track from existing transformer pole to WWTP site	LS	1		
2.3.5	Supply of potable water to the treatment facility	LS	1		
2.3.6	Construct access road from Koputara/Himatangi Beach Road to proposed treatment facility, excluding stream crossing	LS	1		
2.3.7	Construct stream crossing Kaikokopu Stream for access road from Koputara/Himatangi Beach Road to proposed treatment facility	LS	1		
Sub-total Wastewater Treatment facility					\$

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2.4	Commissioning of Public Works - - Separable Portion B				
2.4.1	Commission all public reticulation and confirm its operation meets the design standards proposed	LS	1		
2.4.2	Commission Wastewater Treatment facility	LS	1		
2.4.3	Defects Liability Period Maintain and operate the facilities for the duration of the Defects Liability Period. Contractor to arrange for wastewater quality testing for the period and provide 6 month and 12 month status reports on test results, comparison with performance requirements and comment on results.	LS	1		
	Sub-total Commissioning Public Works				\$

SUMMARY

ITEM	DESCRIPTION	AMOUNT
2.1	Sub-Total - Preliminary and General	\$
2.2	Sub-total Public Reticulation	\$
2.3	Sub-total Wastewater Treatment facility	\$
2.4	Sub-total Commissioning Public Works	\$
	SUB-TOTAL SEPARABLE PORTION B – SUPPLY AND CONSTRUCTION PHASE	\$

HIMATANGI BEACH COMMUNITY SEWERAGE SCHEME

3.0 SEPARABLE PORTION C – SUPPLY AND INSTALLTION ON-LOT FACILITIES CONSTRUCTION PHASE

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3.1	Preliminary and General - - Separable Portion C				
3.1.1	Insurances, bonds, fees, permits, etc	LS	1		
3.1.2	Setting out	LS	1		
3.1.3	Establishment and disestablishment	LS	1		
3.1.4	Engineering Observation oversight by Designer at a level to adequately control and monitor construction standards and Producer Statement PS4 on completion	LS	1		
3.1.5	Provision of all other items required by the Preliminary and General clauses of the Contract Documents or otherwise needed to complete the project in accordance with the Contract Documents	LS	1		
3.1.6	Community and property owner liaison	LS	1		
	Sub-Total - Preliminary and General				\$

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3.2	On lot Works – Separable Portion C				
3.2.1	Supply and delivery to site of packaged domestic sewage pump station or package pre-treatment units (as applicable) complete with holding tank with lid, pump, pipework, fittings and valves, control panel, float switch and high-level alarm float switch with remote audio-visual alarm, (MEASUREABLE ITEM)				
3.2.1.1	Single pump units (Upper limit 250 Units Lower limit 150 Units)	No.	200		
3.3.1.2	Install unit for Camp Site and connected community facilities including all modifications to existing Camp Site drainage required	PS	1		75,000.00
3.2.1.3	Spare Pumps for domestic packaged pump stations	No.	3		
3.2.2	Install packaged domestic sewage pump station or package pre-treatment units, allow for any construction dewatering, reinstatement of all surfaces, pressure main to boundary, and appropriately sized power supply cabling between the property switchboard and the PSU Control Unit and connection to property switchboard. (boundary box installation to be part of public reticulation works) Single pump units (Upper limit 250 Units Lower limit 150 Units) Duplex units (Upper limit 10 Units Lower limit 0 Units). (MEASUREABLE ITEM)	No.	200		
3.2.3	Anti Flotation E/O Item 3.2.2 for provision of anti-floatation measures as per manufacturer's specifications (such areas to be identified by Contractor during Design Phase) - (MEASUREABLE ITEM)	No.	200		

3.2.4	Concrete Reinstatement E/O Item 3.2.2, 3.2.7 and 3.2.8 for reinstatement of concrete areas, Reinstatement to of min width 100mm beyond each side of trench, all edges to be saw cut and reinforced with 335 mesh min 100 mm thick or to match existing where existing exceeds 100 mm (MEASUREABLE ITEM)	m ²	500		
3.2.5	Bituminous Surfacing Reinstatement E/O Item 3.2.2, 3.2.7 and 3.2.8 for reinstatement of bituminous surfaced areas, Reinstatement to of min width 100mm beyond each side of trench, all edges to be saw cut, min 25 mm thick over min 150 mm AP40 basecourse, or to match existing where existing exceeds these thicknesses (MEASUREABLE ITEM)	m ²	50		
3.2.6	Grass Reinstatement E/O Item 3.2.2, 3.2.7 and 3.2.8 for reinstatement of grassed areas, Reinstatement to of min width 100mm beyond each side of trench, min 100 mm topsoil. (MEASUREABLE ITEM)	m ²	1500		
3.2.7	Supply and install DN100 gravity sewer connections including all fittings from private property gully traps to new on-lot units, allow up to 3 m per property. (MEASUREABLE ITEM)	No.	200		
3.2.8	E/O Item 3.2.7 for additional length of gravity sewer connection (MEASUREABLE ITEM)	m	500		
3.2.9	Pump out, decommission and fill in with sand or other material existing septic tanks (where applicable). Cut off existing inlet/outlet pipes and plug with concrete all pipes left in ground and abandoned. (MEASUREABLE ITEM)	No.	180		
3.2.10	Post completion commissioning all units including control, instrumentation and pump capacity checks	LS	1		
3.2.11	Maintain at no cost to Principal for duration of defects liability period	LS	1		
3.2.12	Provide generic Operation and Maintenance manual including all commission information, products incorporated in system, recommendations for regular maintenance, names and contacts of local repair and maintenance agents and As Builts of each unit	LS	1		
3.2.13	Provide Home Owners Manual to each property owner	No.	200		
3.2.14	Provide guarantees for system for total four (4) years from end of Defects Liability Period	LS	1		
	Sub-total On lot works				\$

SUMMARY

ITEM	DESCRIPTION	AMOUNT
3.1	Sub-Total - Preliminary and General	\$
3.2	Sub-total - On lot works	\$
	SUB-TOTAL SEPARABLE PORTION C – SUPPLY AND INSTALLTION ON-LOT FACILITIES CONSTRUCTION PHASE	\$

HIMATANGI BEACH COMMUNITY SEWERAGE SCHEME

4.0 SEPARABLE PORTION D – ONGOING SUPPLY AND INSTALLTION OF ON-LOT FACILITIES

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4.1	Preliminary and General – Separable Portion D				
4.1.1	Insurances, bonds, fees, permits, etc	LS	1		
4.1.2	Setting out	LS	1		
4.1.3	Establishment and disestablishment	LS	1		
4.1.4	Engineering Observation oversight by Designer at a level to adequately control and monitor construction standards and Producer Statement PS4 on completion	LS	1		
4.1.5	Provision of all other items required by the Preliminary and General clauses of the Contract Documents or otherwise needed to complete the project in accordance with the Contract Documents	LS	1		
4.1.6	Community and property owner liaison	LS	1		
	Sub-Total - Preliminary and General				\$

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4.2	On lot Works – Separable Portion D				
4.2.1	Supply and delivery to site of packaged domestic sewage pump station or package pre-treatment units (as applicable) complete with holding tank with lid, pump, pipework, fittings and valves, control panel, float switch and high-level alarm float switch with remote audio-visual alarm, Single pump units (Upper limit 250 Units Lower limit 150 Units)	No.	200		
4.2.2	Install packaged domestic sewage pump station or package pre-treatment units, allow for any construction dewatering, reinstatement of all surfaces, pressure main to boundary, and appropriately sized power supply cabling between the property switchboard and the PSU Control Unit and connection to property switchboard. (boundary box installation to be part of public reticulation works) (Upper limit 250 Units Lower limit 150 Units).	No	200		
4.2.3	Anti Flotation E/O Items 4.2.2 for provision of anti-floatation measures as per manufacturer's specifications (such areas to be identified by Contractor during Design Phase) - (MEASUREABLE ITEM)	No.	200		
4.2.4	Concrete Reinstatement E/O Item 4.2.2, 4.2.7 and 4.2.8 for reinstatement of concrete areas, Reinstatement to of min width 100mm	m ²	500		

	beyond each side of trench, all edges to be saw cut and reinforced with 335 mesh min 100 mm thick or to match existing where existing exceeds 100 mm (MEASUREABLE ITEM)				
4.2.5	Bituminous Surfacing Reinstatement E/O Item 4.2.2, 4.2.7 and 4.2.8 for reinstatement of bituminous surfaced areas, Reinstatement to of min width 100mm beyond each side of trench, all edges to be saw cut, min 25 mm thick over min 150 mm AP40 basecourse, or to match existing where existing exceeds these thicknesses (MEASUREABLE ITEM)	m ²	50		
4.2.6	Grass Reinstatement E/O Item 4.2.2, 4.2.7 and 4.2.8 for reinstatement of grassed areas, Reinstatement to of min width 100mm beyond each side of trench, min 100 mm topsoil. (MEASUREABLE ITEM)	m ²	1500		
4.2.7	Supply and install DN100 gravity sewer connections from private property gully traps to new on-lot units, allow 3 m per property. (MEASUREABLE ITEM)	No.	200		
4.2.8	E/O Item 4.2.7 for additional length of gravity sewer connection. (MEASUREABLE ITEM)	m	500		
4.2.9	Pump out, decommission and fill in with sand or other material existing septic tanks (where applicable) Cut off existing inlet/outlet pipes and plug with concrete all pipes left in ground and abandoned- (MEASUREABLE ITEM)	No.	180		
4.2.10	Post completion commissioning all units including control, instrumentation and pump capacity checks	LS	1		
4.2.11	Maintain at no cost to Principal for duration of Defects Liability Period	LS	1		
4.2.12	Update generic Operation and Maintenance manual including all commission information, products incorporated in system, recommendations for regular maintenance, names and contacts of local repair and maintenance agents and As Builts of each unit	LS	1		
4.2.13	Provide Home Owners Manual to each property owner	No.	200		
4.2.14	Provide guarantees for system for total five (5) years from end of Defects Liability Period	LS	1		
	Sub-total On lot works				\$

SUMMARY

ITEM	DESCRIPTION	AMOUNT
4.1	Sub-Total - Preliminary and General	\$
4.2	Sub-total On lot works	\$
	SUB-TOTAL SEPARABLE PORTION D – ONGOING SUPPLY AND INSTALLTION OF ON-LOT FACILITIES	\$

HIMATANGI BEACH COMMUNITY SEWERAGE SCHEME

5.0 SEPARABLE PORTION E – OPERATIONAL SUPERVISION AND PERFORMANCE PROVING PERIOD

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5.1	Supervision of day to day operation and all laboratory testing undertaken by Principal during this period. Contractor to provide on call assistance to Principal as requested	PS	1		
5.2	Contractor to receive performance information, including wastewater inflow and outflow (quality and quantity) information from Principal and provide 6 monthly analyses of results and reporting to Principal. Contractor to address non-compliance at no extra cost to Principal.	LS	1		
5.3	Provision of all information required prior to handover including BIOWIN model	LS	1		
SUB-TOTAL PORTION E – OPERATIONAL AND PERFORMANCE PROVING PERIOD					\$

HIMATANGI BEACH COMMUNITY SEWERAGE SCHEME

6.0 UNSCHEDULED ITEMS (TENDERER TO SPECIFY)

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
6.1					
6.2					
6.3					
6.4					
SUB-TOTAL UNSCHEDULED ITEMS (TENDERER TO SPECIFY)					\$

6.2 SCHEDULE OF DAYWORKS AND MARGINS

To be used when the engineer authorises variations that cannot be priced based on schedule rates or pre-agreed quotations.

	Unit	Quantity	Rate	Amount
Supply of manpower/equipment on a dayworks basis (rate only) (exclusive of GST). All rates shall be inclusive of all supervision, administration, disbursements and overhead costs.				
Project Manager	Hr			
Technical Leader	Hr			
Senior Engineer	Hr			
Intermediate Engineer	Hr			
Graduate Engineer	Hr			
CAD Technician	Hr			
Planner	Hr			
Survey Team	Hr			
Supervisor/foreman	Hr			
Site Labourer	Hr			
Plant inclusive of operator				
Truck 6m ³	Hr			
Truck 8m ³	Hr			
Truck 10m ³	Hr			
Hitachi 200 Excavator (or equivalent)	Hr			
Rubber tyred loader	Hr			
Grader	Hr			
Small trench excavator suitable for cabling	Hr			

Percentage of on and off site overheads and profit and rate per working day. Ref. NZS 3910 Clause 1.2 and 9.3.

On-Site Overheads	%
Off-Site Overheads and Profit	%
Rate per working day	\$
Margin on Subcontractors	%
Margin on Materials	%
Other	

6.3 PUMP UNIT SPECIFICATION SCHEDULE

(to be completed by Tenderer)

Specification Topic	Specification Minimum	Specification of Tendered Unit	Meet Minimum Compliance	Better than Minimum Compliance - Explanation
Single Pump Unit				
Pump	Single phase motor		Yes / No	
Pump	Semi-positive displacement type		Yes / No	
Pump EQD - electrical quick disconnect	Ease of maintenance requirements		Yes / No	
Pump delivery (minimum)	0.40l/s at 45m head		Yes / No	
Grinder pump and control panel	Conform to AS/NZS 3350.2.41		Yes / No	
Motor	Capacitor start, capacitor run. Submersible options must be rated to IP68, submersible to 5m		Yes / No	
Motor capacity (hp)	1		Yes / No	
Motor size (kW) - minimum	0.45		Yes / No	
Motor (rpm)	1450		Yes / No	
Motor power supply	240 volts		Yes / No	
Motor power supply	50 Hz		Yes / No	
Motor power supply cable - not less than	15m		Yes / No	
Starting current - not greater than	30 amperes		Yes / No	
Starting torque - not less than	15.6 Nm		Yes / No	
Protection against running overloads or locked rotor conditions	Automatic reset		Yes / No	
Grinder impellor mechanism - not greater than	1500 rpm		Yes / No	
Maximum flow rate through cutting mechanism - not greater than	1.2 m/2		Yes / No	
Storage capacity - total (litres) - minimum	600		Yes / No	
Active storage capacity - pump on to pump off (litres) - minimum	25		Yes / No	
Storage volume - alarm to overflow (litres) - minimum	400		Yes / No	

Specification Topic	Specification Minimum	Specification of Tendered Unit	Meet Minimum Compliance	Better than Minimum Compliance - Explanation
Retained storage volume - volume remaining when pump turns off (litres) - maximum	100		Yes / No	
General				
Storage tank material	High density polyethylene or FRP (state which) to AS/NZS 1546.1.1998		Yes / No	
Storage tank protection against flotation	Designed for concrete ballast		Yes / No	
Operating head	40m		Yes / No	
Maximum head	55m		Yes / No	
Check valve	Swing or ball type		Yes / No	
Anti-siphon valve	No holes in discharge piping. A dedicated anti-siphon device must be provided.		Yes / No	
Cover	Lockable		Yes / No	
Cover - resistant loading capacity - minimum	500 kg		Yes / No	
Minimum depth of inlet connection below cover level	Min: 600mm		Yes / No	
Controls	Float switch, pressure switch or poles		Yes / No	
Control panel	Rated IP65		Yes / No	
Control panel	Insulated cover		Yes / No	
Control panel	Detailed specification		Yes / No	
Control panel	Installation drawings		Yes / No	
Control panel	Wiring drawings		Yes / No	
Alarm	Manual reset capacity		Yes / No	
Alarm	Audible alarm with auto reset and visual red light, with manual reset mounted on control panel		Yes / No	
Manual	Detailed installation instructions		Yes / No	
Manual	Operations instructions		Yes / No	
Manual	Maintenance instructions		Yes / No	

6.4 PUMP UNIT QUALITY OF SERVICE OFFERED SCHEDULE

(to be completed by Tenderer)

Service Topic	Intent	Minimum Offering	Meets Minimum Compliance	Tender Offering Above Minimum Compliance - Explanation
Standard delivery time	No hold up in construction	Pumps will normally be delivered within 30 days of being ordered and will be discounted by 10% if delivered late	Yes / No	
Breakdown and repair delivery time	Customer satisfaction	Pumps will be delivered within three days of a breakdown occurring regardless of the reason for the breakdown	Yes / No	
Performance guarantee	Customer satisfaction	Provide a written Performance guarantee, guaranteeing that the pump units offered are designed to give a 25 year service life.	Yes / No	
Training services	Accredited staff	Training and accreditation session/s required as per tender requirement	Yes / No	
Spare parts	Future	Spare parts will be available for a period of at least 20 years from the date of signing of the contract	Yes / No	
Financial viability	Pre-requisite	Bank Guarantee Indemnity	Yes / No	
Testing and commissioning	Quality control	Tenderer to supply typical test and commissioning checklist and assist with testing and commissioning of individual units post installation, prior to issue of Certificate of Completion to accredited Contractor	Yes / No	

Service Topic	Intent	Minimum Offering	Meets Minimum Compliance	Tender Offering Above Minimum Compliance - Explanation
Commercial viability	Clear accountability	If the Tenderer is not the Manufacturer, Manawatu District Council requests that the Tenderer should provide written confirmation of unconditional support from the Manufacturer signed by the most Senior Manager of the Manufacturer or as delegated in writing	Yes / No	

SECTION 7 - DRAWINGS PROVIDED BY TENDERER

The Tenderer shall list all drawings provided with his tender here:

SECTION 8 - APPENDICES

The following appendices are attached herein

1. Geotechnical report entitled: Shallow Groundwater and Geotechnical Assessment for Proposed Sewer reticulation at Himatangi Beach Manawatu issued by Ormiston Associates Ltd and dated 9 November 2011.
2. Land Use Consent No LC7607 for proposed Wastewater Treatment Site at Himatangi Beach road.
3. Resource Consent No – to follow
4. Himatangi Beach Wastewater Flow Model dated 16 November 2011 by Aurecon New Zealand Ltd.
5. MDC's Specification for Reinstatement for Road Openings.
6. Details of Stream Crossing Bridge Concept Design – to follow



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SECTION 9 - ADDENDA AND POST TENDER CORRESPONDENCE

- 9A Notices to Tenders
- 9B Post Tender correspondence and meeting records



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SECTION 10 - LETTER OF ACCEPTANCE OF TENDER



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SECTION 11 - CONTRACTORS SUPPLEMENTARY TENDER INFORMATION

The Contractor's tender information including all non priced attributes, etc as submitted with the tender shall be considered as part of the contract documents.



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Himatangi Beach Community Sewerage Scheme

TENDER DRAWINGS

Drawing No.	Title	Revision No.
10040-101	Wastewater Treatment System Master	
10040-102	Plan	
10040-103	Sewer Reticulation	
10040 -104	Rising Main Plan & Long Section	
10040 -105	Wastewater Treatment facility Site Plan Schematic Treatment Facility and Pond Layout	