

Policy 11: Land Development Guidelines

SS16

Specification for Foreshore Seawall and Dune Fencing Construction

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1.0 General

- 1.1 This specification covers the construction of foreshore seawalls and dune fencing. The specification applies to the supply, delivery and installation of boulders, clay/shale, geotextile, fencing materials, including excavation, back filling and restoration.

2.0 Acts, Regulations and Local Laws

- 2.1 The Contractor shall comply with all Acts, Local laws and Regulations having jurisdiction over the work under the Contract, and shall be fully responsible for any breaches thereof.

3.0 Location and Setting Out

- 3.1 The location of the seawall for all properties shall be shown on the drawings, described in the Contract Documents and/or as directed by the Superintendent.

All seawalls shall be set out by a registered surveyor, who shall establish adequate control, including line, level and offset pegs necessary for the construction of the seawall.

4.0 Existing Services and Work by Others

- 4.1 Before undertaking any foreshore work, which may interfere with any existing drain, public utility watercourse or tidal waters or with any structure, the Contractor shall give the required notice in writing to the Authority concerned. The Contractor shall not commence the work until it has received any necessary permit and it shall carry out the work in accordance with the conditions set out in the permit. A copy of the permit shall be submitted to the Superintendent.

- 4.2 Where the design of the Works requires alterations to existing services, the Principal may arrange with the Department or Authority concerned to make such alterations. If the Principal elects to have such work carried out by the particular Department or Authority and pays the required fees and charges then such work shall be excluded from this Contract

Where however, the Superintendent instructs the Contractor in writing to arrange such alterations, the Contractor shall make all necessary arrangements to either carry out the work or have same performed by the relevant Department or Authority. Costs incurred by the Contractor will, in these circumstances, be reimbursed under Provisional Sum Items unless provided for otherwise in the Contract.

- 4.3 All fees and charges (other than those arising from the requirements of **Clause 4.2** herein), the cost of restoration of existing services damaged by the Contractor's activities and the cost of alterations to suit the Contractor's methods of construction shall be borne by the Contractor.

- 4.4 Should the Contractor elect to vacate the Site while public utilities or other services are being installed by others, no adjustment to the Contract Sum will be made. Any reasonable delays caused by such early vacation will be considered by the Superintendent in respect of an extension to the Date for Practical Completion. All costs associated with de-establishment and re-establishment shall be borne by the Contractor.

5.0 Excavation

- 5.1 Excavation includes all operations necessary to excavate earth from the works irrespective of sub-surface conditions and to shape and trim the base and slope to the levels and profiles shown on the drawing prior to construction of the boulder wall. Prior to commencing any other works the Superintendent shall inspect and certify the excavation conforms to the requirement of the drawings.

- 5.2 Where an existing unapproved seawall exists, the existing rocks shall be stockpiled and inspected by the Superintendent, to confirm suitability for incorporation into the new works.

All material not certified for inclusion by the Superintendent shall be removed from site.

Payment shall be at the rate nominated in the schedule.

- 5.3 The use of explosives shall not be permitted.

6.0 Method of Construction

- 6.1 The Contractor shall construct foreshore seawalls as detailed on the drawings.
- 6.2 Type 1 walls incorporating clay/shale shall be constructed as follows:
- i) The clay/shale layer from RL 0.60 m AHD to RL 4.9 m (min) AHD shall be installed as a single layer. The layer shall be compacted to ensure stability. The Superintendent shall inspect and certify that the compacted layer complies with the requirements of the specification and the drawings.
 - ii) The rock fill layer from RL 0.00 m AHD to RL 4.9 m (min) AHD shall be installed as a single layer. Rocks shall be laid to ensure maximum interlock. The Superintendent shall inspect and certify that the rock layer complies with the requirements of the specifications and the drawings.
 - iii) The boulder armour layer from RL 0.00 m to RL 4.9 m (min) AHD shall be installed as a single layer. Boulders shall be laid to ensure maximum interlock. The Superintendent shall inspect and certify that the boulder layer complies with the requirements of the specification and the drawings.
 - iv) After certification has been provided for the rock fill layer, sand from the excavation shall be flooded into the voids. Water used for flooding shall be sourced from the nearest Council hydrant, using a Council approved hydrant stand after paying the appropriate fees.
- 6.3 Type 2 walls incorporating geotextile material shall be constructed in accordance with the requirements of **Clause 6.2 ii), iii) and iv)** herein.

7.0 Materials

- 7.1 The clay/shale fill shall consist of a mixture of 50% clay and 50% shale and be free of organic matter. The Contractor shall submit a sample of the material proposed to be used to the Superintendent for approval prior to commencing works.
- 7.2 Rock fill and boulders shall consist of sound igneous, metamorphic or approved sedimentary rock which will not disintegrate in water. The grading of the material shall be in accordance with the details shown on the drawings. The Contractor shall submit a sample of the material proposed to be used to the Superintendent for approval before commencing works.
- 7.3 Geotextile for Type 2 wall shall meet the requirements detailed on the drawing.
- 7.4 Fencing materials for the 'Dune Protection Fence' shall meet the requirements detailed on the drawings.

8.0 Restoration and Dune Stabilisation

- 8.1 All excess sand shall be sieved to remove all contaminants greater than 20 mm. After sieving the excess sand shall be placed over and seaward of the boulder wall and profiled as directed by the Superintendent.
- 8.2 Fencing and the extent of fencing to any restored dunal area shall comply with the requirements of the Specifications and as shown on the drawings or as directed by the Superintendent.
- 8.3 The restored dunal area shall be planted with spinifex. Spinifex runners, 750 mm long with a minimum of three (3) nodes (unstruck buds) shall be planted parallel to the water line at 500 mm centres. Rows shall be one (1) metre apart, with runners planted vertically to a minimum depth of 450 mm.
- The spinifex runners shall be harvested from an area identified by the Superintendent. After striking, the spinifex shall be fertilised using 'Crop King 600 Fertiliser' as approved equivalent. Subsequent fertiliser applications shall be made at intervals of three (3) and six (6) months after the first application.

9.0 Completion

Upon completion of the works, the Contractor shall remove all plant, equipment, excess materials, waste materials and refuse from the site and leave the works and the site in a clean and tidy condition to the Superintendent's satisfaction.

10.0 Measurement and Payment

10.1 General

The cost of all works required by this specification including supply of all materials plant, tools, labour and all expenses necessary for the satisfactory completion of the works shall be deemed to be included in the relevant Bill Items (if part of the Contract) and/or the Lump Sum of the Contract generally.

11.0 Maintenance Of Works

11.1 The contractor shall be responsible for the stability of all embankments, excavations and construction layers under the Contract until final acceptance of the work. The Contractor shall replace at its expense any sections or layers which have become displaced due to carelessness or negligence on the Contractors part or to damage resulting from natural causes such as storms etc. and not attributable (in the opinion of the Superintendent) to unavoidable movement of the foreshore ground after the seawall is constructed.