



# Fencing Specification

For more information contact  
Shoalhaven Water

## City Administration Centre

Bridge Road (PO Box 42)  
Nowra NSW Australia 2541

P: (02) 4429 3214

F: (02) 4429 3170

[water@shoalhaven.nsw.gov.au](mailto:water@shoalhaven.nsw.gov.au)

[www.shoalwater.nsw.gov.au](http://www.shoalwater.nsw.gov.au)

Document Number: D21/305363

Date: 22 July 2021

File: 61930E

---

For more information contact Shoalhaven Water

**City Administrative Centre**

Bridge Road (PO Box 42), Nowra NSW Australia 2541

P: (02)4429 3214 F: (02) 4429 3170

[water@shoalhaven.nsw.gov.au](mailto:water@shoalhaven.nsw.gov.au) [www.shoalwater.nsw.gov.au](http://www.shoalwater.nsw.gov.au)

---

**Disclaimer**

Every effort has been made to provide accurate and complete information. However, Shoalhaven City Council assumes no responsibility for any direct, indirect, incidental or consequential damages arising the use of information in this document.

**Copyright Notice**

No part of this publication may be reproduced in any form or stored in a database or retrieval system, or transmitted or distributed in any form by any means, electronic, mechanical photocopying, recording, or otherwise without written permission from Shoalhaven City Council. All rights reserved. Copyright © 2013, Shoalhaven City Council.

---

## Contents

1. General.....	1
1.1. Important Information.....	1
1.2. Electrical Easement Requirements.....	1
2. TYPE 1: High Security Steel Tube Fencing & Gates.....	1
2.1. Panels.....	1
1.1.1. Fittings.....	2
2.2. Fence Posts.....	2
2.3. Kerbing.....	2
2.4. Animal Barrier.....	3
2.5. Gates.....	3
3. TYPE 2: Rural Fencing & Gates.....	4
3.1. Boundary Fencing.....	4
3.2. Internal Fencing.....	4
3.3. Cattle Grid (Where nominated).....	4
4. TYPE 3: Chain-link Fencing & Gates.....	5
5. TYPE 4: Weldmesh Fencing & Gates.....	5
6. TYPE 5: Cantilever Sliding Gate.....	5
Appendix A - TYPE 1: High Security Steel Tube Fencing & Gate Details	6
Appendix B – TYPE 2: Rural Fencing & Gate Details.....	10

# 1. General

## 1.1. Important Information

- Unless otherwise indicated by Shoalhaven Water, the fence shall be placed on the property boundary.
- The site shall be re-established to the state in which it was found
- All excavated holes unless filled with concrete shall be refilled with soil and compacted.
- All soil surrounding the new fence shall be compacted and free of rubble or excavation spills.
- Plant security to be maintained throughout the works.
- Construction work fencing or other security measures are to be implemented to ensure that the site is secure overnight and on weekends
- Transitions between the new and old fencing to be made secure at the end of each workday to prevent access through these transitions.

## 1.2. Electrical Easement Requirements

- Insulated fence posts shall be installed when erecting a fence adjacent to power supply/conductors in accordance with the current version of Endeavour Energy drawing 061674.
- Vertical clearances shall be maintained in accordance with the current version of Endeavour Energy drawing 086232.
- For fencing around electrical sub-stations, fencing shall be constructed in accordance with AS2067, Table 3.1, and Section 5.2.

# 2. TYPE 1: High Security Steel Tube Fencing & Gates

**(also refer Appendix A)**

## 2.1. Panels

Panels made of Decorative Steel Tube Fence manufactured in accordance with AS 1450 2007 and powder coated as per AS 4506 – 2005 (Glossy Black).

- Pickets (verticals) 25mm x 25mm x 1.6mm x 2,100mm high including a crimped Spear at the top.
- Pickets (verticals) space or gap between pickets to be 100mm maximum.
- Top of pickets shall protrude a minimum 150mm above top rail.
- Bottom of picket shall protrude a minimum 100mm below bottom rail.
- Rails 40mm x 40mm x 2.0mm x 2400mm.
- Rail centres shall be 1760mm

- Where ground clearance exceeds 100mm the panels are to be stepped, not raked, to achieve the foregoing level of clearance. Stepped panels must be a minimum width of 1200mm.
- If the ground clearance should exceed 50mm an extension steel infill bar shall be welded between the posts and to the middle picket to insure the max 50mm clearance is maintained and painted to match the power coating (Glossy Black) - See photo below.

### 1.1.1. Fittings

- Panel rails will be fully fixed home to posts with security brackets attached with Hex Socket Button Head Steel screws.
- Fixings are to be on the inside of the fence, where possible, unless prevented by bracket positioning.
- Where changes of direction are not 90°, the bracket is to be reconfigured on site to suit the angle, and the sleeve is to be cut at the required mitre from matching powder coated material. Where necessary, shrouds must be custom made to suit angles where existing shrouds cannot be suitably reconfigured to provide a secure mounting point for the rail.
- Brackets and sleeves must be powder coated to match finished panels and posts.

## 2.2. Fence Posts

Fence Posts made of Decorative Steel Tube manufactured in accordance with AS 1450 - 2007 and powder coated as per AS 4506 – 2005 (Glossy Black).

- 75mm x 75mm x 3mm x 3000mm long with a welded-on steel cap prior to powder coating
- Post spacings are to be 2400mm minimum, 2500mm maximum
- All corner posts will be 100mm x 100mm x 4mm box section.
- Post footings are to be 300mm minimum diameter x 600mm minimum depth with not less than 20Mpa in strength concrete footings. There is to be a minimum of 100mm of concrete below the bottom of each post.

## 2.3. Kerbing

Concrete Kerbing shall be placed over posts footings and 250mm minimum width x 300mm minimum depth and offset to follow natural grade with not less than 20Mpa in strength. Refer Appendix A details A, B, and C.

- Kerbing shall be stepped to match the natural grade with the top of the kerb held horizontal within a maximum of 50mm from the bottom of the fence pickets as per Appendix A Detail A and attached photograph.
- Steel rebar 2 x 8mm Dia. shall be run longitudinally on either side of the posts as shown within Appendix A details B and C.
- A stress relief saw cut shall be made 50mm deep on the top of the kerb midway between all posts as per Appendix A Detail B.

## 2.4. Animal Barrier

Steel mesh animal barrier a minimum 500mm high is to be placed along the bottom of the fence, refer Appendix A.

- Mesh to be 4mm round wire steel with horizontal spacing of 75mm and vertical spacing of 13mm.
- Mesh to be bolted to the fence spears with a minimum spacing of 500mm between bolts. Bolts to have washers to hold mesh in place.
- Mesh to be horizontal with a minimum height of 500mm from ground level and stepped to accommodate sloping ground.

## 2.5. Gates

All gates made of Decorative Steel Tube manufactured in accordance with AS 1450 - 2007 and powder coated as per AS 4506 – 2005 (Glossy Black).

- 50mm x 50mm x 3mm square box section vertical stiles.
- 50mm x 50mm x 3mm square box section horizontal rails.
- 25mm x 25mm x 1.6 vertical pickets to match panels.
- Twin bottom 50mm square box section rails are to be fitted to bottom of gate to provide reinforcing.
- The gap between the bottom parallel rails shall not exceed 100mm.
- There will be no diagonal bracing on gates that will form a foothold for unauthorised access.
- Rail centres will be at 1760mm.
- Picket space (gap) will be 100mm.
- Pickets are to be cut and crimped to form spear point top, steel only.
- Picket length is to be 2100mm.
- Pickets are not required to be punched through the bottom rail but are to meet flush with the rail and welded either side of picket.
- Gates are to be supplied and fitted with hinges as per photos supplied. All hinges will be bolted through steel cleats that are welded to the gate posts prior to powder coating. Top and bottom hinges are to be reversed i.e.: 1 x hinge faced downwards and 1x hinge faced upwards to ensure gates cannot be removed. Photo of acceptable hinge is included within Appendix A. Alternative hinges must be approved by Shoalhaven Water.
- Gates will have internal drop bolts or similar locking mechanism no less than 1200mm in length from bottom of each individual gate. Steel tags are to be welded to the gate to accommodate the drop bolt when in the open and closed position.
- Drop bolts or similar locking mechanism shall have a 20mm diameter steel bar.
- Drop bolt lugs are to be elongated in height and to be bolted to closing post.
- Ground sockets of a size suitable to accommodate the drop bolt are to be provided for each drop bolt. Sockets are to be galvanised steel.

- Locking lugs are to be welded to frame to accommodate the drop bolt in the closed position.

Gate Posts to be made of Decorative Steel Tube manufactured in accordance with AS 1450 - 2007 and powder coated as per AS 4506 – 2005 (Glossy Black).

- Posts are to be 150mm x 150mm x 5mm x 3000mm complete with box steel cap.
- Cap is to be riveted to top of every post.
- Gate post footings are to be 400mm minimum diameter x 800mm minimum depth with not less than 20Mpa in strength concrete footings. Above ground concrete shall have a trowel finish and fall away from the post to eliminate water lying at base of posts. A minimum of 100mm of concrete below the bottom of each post.

## 3. TYPE 2: Rural Fencing & Gates

(also refer Appendix B)

### 3.1. Boundary Fencing

- Gate Posts 100NB (114.3mm OD) Galvanised 1.8m tall with galvanised end cap.
- Intermediate Post 80NB (88.9mm OD) Galvanised Post 1.8m tall with galvanised end cap: 1 every 9m.
- Galvanised star pickets: 1 every 3m.
- 5 runs galvanised barbed wire
- Galvanised cross bracing 50NB (60.3mm OD)
- Large Galvanised stock gate: 4.2m wide
- Small Galvanised stock gate: 3.0m wide

### 3.2. Internal Fencing

- Gate Posts 100NB (114.3mm OD) Galvanised 1.8m tall with galvanised end cap.
- Galvanised star pickets: 1 every 3m.
- 2 runs galvanised barbed wire, 3 runs galvanised plain wire.
- Galvanised cross bracing 32NB (42.4mm OD)
- Large Galvanised stock gate: 4.2m wide
- Small Galvanised stock gate: 3.0m wide

### 3.3. Cattle Grid (Where nominated)

- Cattle Grid: 6.0m wide, 2.1m long x 0.5m deep, Aprilla S6H or equivalent.

## 4. TYPE 3: Chain-link Fencing & Gates

1. **Standard Option:** Fencing to be in accordance with standard Shoalhaven Water drawing G-20855-016, available from Shoalhaven Water's website: <https://shoalwater.nsw.gov.au/planning-building/developers-consultants/guides-resources-standards>
2. **No Barbed Wire Option:** In specific installations, environmental constraints may necessitate the need for fencing to exclude barbed wire, in these instances fencing to be in accordance with standard Shoalhaven Water drawing G-20855-017, available from Shoalhaven Water's website: <https://shoalwater.nsw.gov.au/planning-building/developers-consultants/guides-resources-standards>

## 5. TYPE 4: Weldmesh Fencing & Gates

Fencing to be in accordance with standard Shoalhaven Water drawings G-20855-014 & G-20855-015, available from Shoalhaven Water's website:

<https://shoalwater.nsw.gov.au/planning-building/developers-consultants/guides-resources-standards>

## 6. TYPE 5: Cantilever Sliding Gate

Fencing to be in accordance with standard Shoalhaven Water drawing G-20855-018, available from Shoalhaven Water's website: <https://shoalwater.nsw.gov.au/planning-building/developers-consultants/guides-resources-standards>



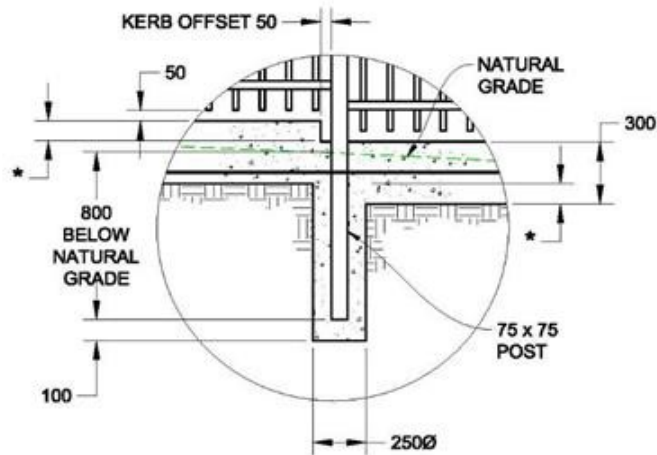
# Appendix A - TYPE 1: High Security Steel Tube Fencing & Gate Details



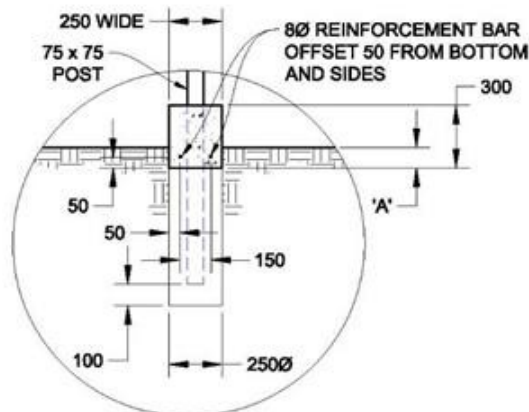
**Fence Panel Detail**



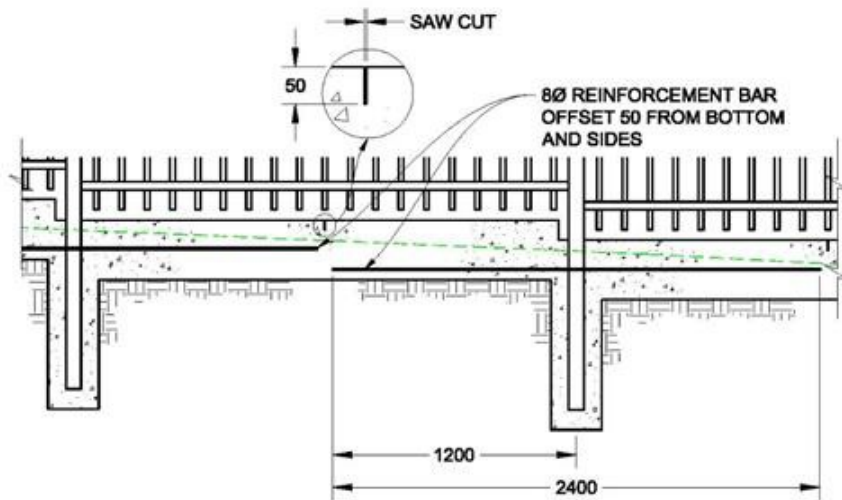
**Bottom Infill Rail Detail**



**DETAIL A**  
NEW FENCE ALONG THE SOUTHERN AND EASTERN BORDER OF SITE  
\*ADJUST TO GRADE CHANGES



**DETAIL B**  
CONCRETE KERB CROSS SECTION  
(POST & POST FOOTING IN BACKGROUND)



**DETAIL C**  
REBAR PLACEMENT AND STRESS RELIEF SAW CUT FOR KERBING  
ADJUST TO GRADE CHANGES



**Details Showing Stepping of Concrete Kerbing**



**Animal Barrier Mesh Detail**



**Gate Detail showing twin bottom rails**



**Gate Hinge Detail**



## Appendix B – TYPE 2: Rural Fencing & Gate Details



**Detail showing stay and gate post connection**



**Galvanised barbed wire runs with star picket**



**Star picket and wire runs for internal fencing**



**Detail showing intermediate post for boundary fencing**



**Detail showing gate post and stay**



**3.0 m galvanized stock gate**



**4.2 m galvanised stock gate**



**Double 4.2 m galvanised stock gate**