

# 8501 Handrail Beside Shared Path / Footpath

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REVISION 24/01/2024

## 8501.1 Introduction

This Supplementary Specification refers to the supply and installation of handrails beside shared paths and footpaths, as detailed on the Project Drawings.

This Specification does not refer to the construction and installation of concrete footpaths, signage, tactile ground surface indicators.

### 8501.1.1 Definitions of Terms

This section describes any term which are specific to this specification or requires clarification due to an ambiguous understanding.

Term	Definition
Handrail	For the purposes of this specification is taken as being posts and railings with or without panels or fencing

## 8501.2 Referenced Documents

This supplementary specification shall be read in conjunction with the following:

- MRS01 and MRTS01 *“Introduction to Technical Specifications”*;
- MRS14 and MRTS14 *“Road Furniture”*,
- MRS50 & MRTS50 *“Specific Quality System Requirements”*
- MRS70 & MRTS70 *“Concrete”*
- Mackay Regional Council Standard Drawing A4-00126 *“Bikeway/Footpath Barrier Fence”*
- Austroads Guide To Road Design; Part 6A – Paths for Walking and Cycling
- DTMR – Fencing & Edging Treatments for Cycling Infrastructure
- AS1428.1 Design for access and mobility, Part 1: General requirements for access — New building work
- AS/NZS 1163 *“Cold-formed structural steel hollow sections”*;
- AS/NZS 4680 *“Hot-dip galvanized (zinc) coatings on fabricated ferrous articles”*; and
- the project Drawings.



### 8501.3 Description of Works

Work items incorporated by this supplementary specification are identified in Section 8501.6 and 8501.7 with individual activities/tasks for measurement and payment sourced from the Bill of Quantities and listed in MRC Supplementary Specification Annexure 8501\_1 Handrail Beside Shared Path/Footpath Section 1.

### 8501.4 Quality Systems Requirements

#### 8501.4.1 Std Test Methods (Testing Regime)

The following minimum testing regime applies to this specification:

Civil works activities associated with the footings and concrete pours shall be tested as per the relevant MRTS specification MRTS04 and MRTS70 unless otherwise approved by the Superintendent.

Geometric requirements of the fence installation shall be surveyed to ensure compliance with the design drawings and AS1428.1

#### 8501.4.2 Hold Points, Witness Points and Milestones

The following table represents the minimum inspection requirements for this specification.

Activity	Inspection Type	When
Construction Procedure and Traffic Management Plan and other submissions as required by Clause 8501.5	Milestone	4 Weeks prior to works commencing
Inspection of delivered items	Hold Point	At delivery time for each item.
Final location of handrail and site works extents	Hold Point	During site survey layout.
Excavation of footing to floor	Hold Point	At completion of excavation and compacting
Supporting formwork/falsework held rigidly in place and surveyed for alignment as required by the design drawings	Hold Point	At completion of placing of footing assembly or anchors
Surveyed level of railing compliant with design drawings	Hold Point	At completion of placing of footing assembly or anchors
Formwork and reinforcing prepour Inspection	Hold point	Prior to concrete pour proceeding
Placing of Concrete	Witness Point	During pour activities
Posts/Railings on correct alignment and level	Hold Point	Post pour prior to concrete setting
Finishing of concrete	Witness Point	Prior to concrete hardening
Curing of Concrete	Witness point	Immediately after pouring of concrete setting
Approval by Superintendent to strip formwork	Hold Point	Minimum 72 hours after pouring



Fabrication and installation of railing/s, panels, fencing, kick rail	Hold Point	After all other site works are completed and prior to clean up and turfing disturbed areas
Works as Executed documentation	Hold Point	4 weeks prior to practical completion being requested.

### 8501.4.3 Construction Tolerances

Unless otherwise approved by the Superintendent the following construction tolerances shall apply to this Specification;

The construction activity outcome shall not depart from the widths, lengths, heights, and shapes specified by the relevant specifications as applies to this specification;

- Concrete tolerances in accordance with MRTS70 Concrete.
- Fencing/Handrail tolerances in accordance with AS1428.1 Design for access and mobility, Part 1: General requirements for access — New building work

Tolerances specific to the project are detailed on the design drawings and are included in Clause 2 of MRC Supplementary Specification Annexure 8501\_1 Handrail Beside Shared Path/Footpath.

### 8501.5 Preliminary

The Contractor is to submit the following documentation 4 weeks prior to commencing work or a prestart is conducted. (MILESTONE):

- Works procedure
- Traffic Management Plan and TGS's

Other requirements unique to the project will be listed in the MRC Supplementary Specification Annexure 8501\_1 (MILESTONE)

#### 8501.5.1 Materials

Supply of all materials to site is the responsibility of the Contractor at their cost, where items are Principal supplied the nominated storage site shall be obtained from MRC Supplementary Specification Annexure 8501\_1 Handrail Beside Shared Path/Footpath Section 3 and shall be the point of supply.

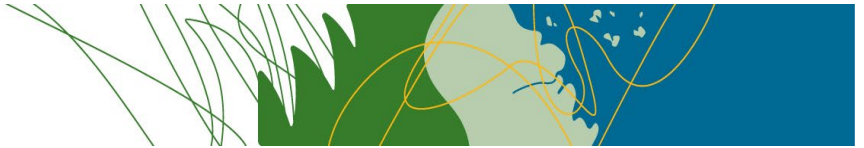
Existing handrails, panels, fencing to be salvaged will be detailed in MRC Supplementary Specification 8503.1 Section 4 including the nominated storage site. This will also detail any reuse of existing items as required by the design drawings.

All civil items and materials shall be supplied in accordance with their relevant MRTS Specification.

Materials manufactured from steel as well as protective coatings shall be delivered with accompany certifications to their relevant Australian Standard.

### 8501.6 Construction

This section lays out the works operations with more detail based on specific requirements of this supplementary specification. Some activities may appear to include items which are stated within other specifications, the purpose is to reinforce that requirement specific to this supplementary specification.



### 8501.6.1 Work Operations

Work operations incorporated in this item will include:

**a) Work operations listed in Clause 2.1.5 of MRS01 "Introduction to Specifications";**

**b) Supply of all materials.**

All materials, plant, and labour required to carry out the works including site fabrication under this Specification is to be supplied by the Contractor, where materials are Principal supplied the designated storage site will be the point of supply for the purposes of this Specification.

All items shall be inspected at delivery to site prior to use. Any items which are damaged are not to be used and are to be returned to the supplier. (HOLD POINT)

**c) Site layout with Superintendent**

The final location of the footing/s is to be marked out on site and shall be inspected and approved by an MRC representative prior to excavation commencing. (HOLD POINT)

**d) Carrying out excavations for foundation/s (as required)**

Excavation of material to level and grade, dimensional tolerances to be compliant with the design drawings.

Excavation floor is to be inspected for unsuitable material, if unsuitable material is identified this is to be removed and replaced with approved material as per the instructions of the Superintendent (HOLD POINT)

**e) Utilising or disposing of excavated material**

Excess excavated materials shall be disposed of by the contractor or utilised as per Superintendents instructions. Material stockpiled shall ensure that all Environmental ESC measures are in place and maintained.

**f) Bottom of Excavations (as required)**

Where project drawings require an excavated footing, the bottom of the excavation shall be firm and be representative of the surrounding material. All loose material is to be removed from footing/s floor.

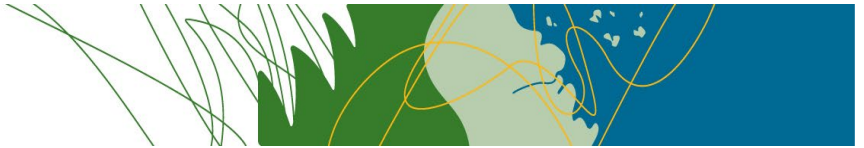
Excavated floor preparation is to be carried out as per MRTS04 and is to be presented for inspection by the Superintendent with inspections, geotechnical testing and geometric requirements applying unless stated otherwise in MRC Supplementary Specification Annexure 8501\_1 Handrail Beside Shared Path/Footpath Annexure. (HOLD POINT)

**g) Installation of footings (as required)**

All concrete works associated with the footings of the handrail or fencing shall be carried out in accordance with MRTS70, MRC standard drawings, and the design drawings with inspections, geotechnical testing and geometric requirements applying unless stated otherwise in MRC Supplementary Specification Annexure 8501\_1 Handrail Beside Shared Path/Footpath. (HOLD POINT)

**h) Installation of handrail.**

Handrail and/or assembly shall be supplied and installed as detailed in the design drawings. If required and in conjunction with the footing concrete pour the handrail posts and/or assembly shall be braced in place to ensure no movement laterally or vertically.



Where design drawings require poured concrete footings, prior to the concrete setting the handrail posts and/or assembly shall be surveyed and checked for alignment and level to ensure no movement has occurred. Any movement will require rectification to ensure the finished handrail meets the requirements of the design drawings and AS1428.1 (HOLD POINT)

Handrails posts which are fixed other than in situ poured concrete shall be installed as required by the design drawings or manufacturers requirements.

Site fabrication of the handrail to posts shall be carried out as required by the design drawings and manufacturers requirements. Where pouring of a concrete footing is required then the site fabrication shall not commence until after the Superintendent has approved removal of the formwork and/or bracing.

The handrail installation shall ensure there is a kick rail installed which complies with AS1428.1 (HOLD POINT)

#### **Finishing and curing of concrete**

Concrete is to be finished in accordance with the design drawings. (WITNESS POINT)

Immediately after the initial set of the concrete, curing shall commence and continue for a minimum of seven days. Plastic sheeting shall not be used as part of the curing process. (WITNESS POINT)

#### **i) Stripping formwork and clean up**

Formwork or bracing is not to be stripped for a minimum 72 hours after pouring of concrete or as detailed in the design drawings with approval by the Superintendent granted. (HOLD POINT).

#### **j) Clean up, backfilling, and turfing;**

Any disturbed areas are to be backfilled, turfed, and made good. The site is to be cleaned of all debris, excavated material, and construction materials

### **8501.7 Post construction**

#### **a) Collection and submission of all As Constructed data including QA data requirements.**

Contractor is to supply and submit Works as Executed documentation as required by *MRC D20 - Drawings and Documentation* for approval by the Superintendent 4 weeks prior to requesting a practical completion inspection.

Certification of works to AS1428.1 shall be submitted with the "Works as Executed" Plans and documentation.

Format of submitted "As Constructed" documentation shall be compliant with MRC Supplementary Specification 8919.

### **8503.8 Measurement and Payment**

Provision for these works shall be included in the scheduled unit rate for the items show in Clause 8501.3 of this Supplementary Specification and Annexure. No separate payment will be made for the works specified within this Supplementary specification or it's annexure.



Version Control:

<b>Version</b>	<b>Description</b>	<b>Reviewed / Endorsed</b>	<b>Date</b>
1.0	Original issue	MRC	07.01.2022
2.0	Review of specification	C Sultana	24.01.2024