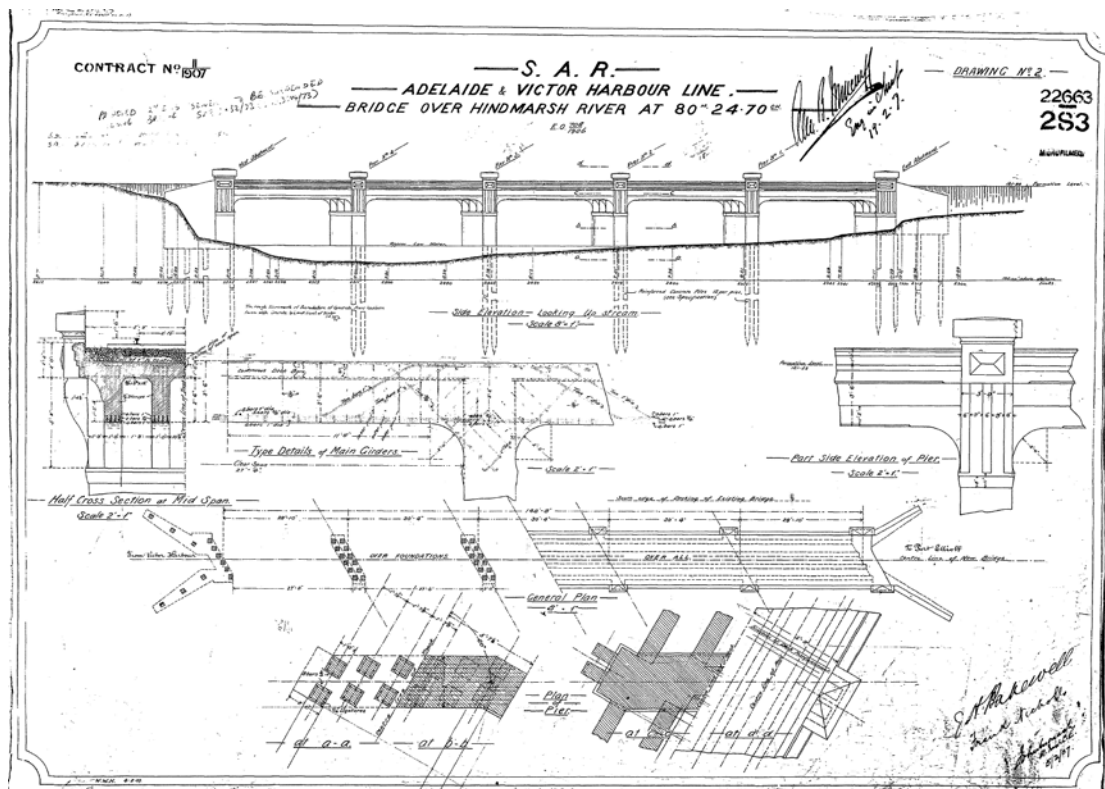


# INFRASTRUCTURE PLAN ROOM

## Preparation & Approval of Drawings

Document: SHRI-004-WPQA-05



### Track & Infrastructure Services

Issue date: 7th August 2006

Issued By: TC Barker  
Infrastructure Standards

[Electronic Portable Document Format]

Authorised by:

Troy Barker,  
Signal & Telegraph Coordinator

**UNCONTROLLED WHEN PRINTED**



**AMENDMENTS REGISTER**

<b>Issue Date</b>	<b>Summary of Change</b>	<b>Change Authorised By</b>
7/8/2006	New document	TC Barker

## **CONTENTS**

<b>1.0 PURPOSE</b>	<b>Page 3</b>
<b>2.0 SCOPE</b>	<b>Page 3</b>
<b>3.0 REFERENCES</b>	<b>Page 3</b>
<b>4.0 PROCEDURE</b>	<b>Page 3</b>
<b>4.1 PREPARATION OF ENGINEERING DRAWINGS</b>	<b>Page 3</b>
<b>4.1.1 Drawing Numbers</b>	<b>Page 3</b>
<b>4.1.2 Drawing Sheets</b>	<b>Page 3</b>
<b>4.2 DRAWING APPROVAL</b>	<b>Page 4</b>
<b>4.2.1 Approval of New Drawings</b>	<b>Page 4</b>
<b>4.2.2 Revision of Drawings</b>	<b>Page 4</b>
<b>4.3 CANCELLED DRAWINGS</b>	<b>Page 5</b>
<b>4.4 SUPERSEDED DRAWINGS</b>	<b>Page 5</b>
<b>4.5 ALTERATION OF SIGNAL DRAWINGS</b>	<b>Page 6</b>
<b>4.6 DESIGN OUTPUT CHECKING AND VALIDATION</b>	<b>Page 7</b>
<b>4.6.1 Purpose and Scope</b>	<b>Page 7</b>
<b>4.6.2 Checking</b>	<b>Page 7</b>
<b>4.6.3 Validation</b>	<b>Page 7</b>

## **1.0 PURPOSE**

To describe the method for the preparation and approval of engineering drawings produced in the Track, Civil and Signals disciplines.

## **2.0 SCOPE**

This procedure is applicable to new and revised engineering drawings produced after January 2006

## **3.0 REFERENCES**

Australian Standard AS 1100 Technical Drawings  
Australian National Railroad Engineering document 11WI-0027H

## **4.0 PROCEDURE**

### **4.1 PREPARATION OF ENGINEERING DRAWINGS**

#### **4.1.1 Drawing Numbers**

Drawings will be identified by a unique number as detailed in this section. The Plan Room Coordinator will provide the new Drawing Number from the Drawing Register.

The drawing number allocated will be used as the drawing file name. The number is derived by the following method:

A0 Sheet Size	09400100	
A1 Sheet Size	19400202	
A2 Sheet Size	29400303	
A3 Sheet Size	39400404	
	?	Sheet Size
	??	Year Drawing Produced
	??	Sequential Drawing Number
	??	Sheet Number

All track and civil plans will be preceded by a letter C with a hyphen. eg C-A094001. Foreign prints shall be identified by a letter 'p' as follows: Cp-A094001 or Ap094001.

The sheet size is already included in the title block and the sheet number is located in the space provided below the drawing number.

#### **4.1.2 Drawing Sheets**

Design output comprising drawing work whether carried out manually or by means of the CAD system must be prepared in one of four standard sizes of drawing sheets for all engineering disciplines.

The standard sizes of drawing sheets used will be:

	<b>Sheet ID</b>	<b>Sheet Size</b>	<b>Frame Size</b>
1.	A0	1189x841mm	1133x801mm
2.	A1	841x594mm	801x566mm
3.	A2	594x420mm	566x400mm
4.	A3	420x297mm	400x283mm

## **4.2 DRAWING APPROVAL**

### **4.2.1 Approval of New Drawings**

The following instructions apply to the approval of all new drawings.

- a) Prior to the drawings being submitted for checking, the draftsman must
  - Complete the appropriate Hazard Control Checklist
  - Fill out the appropriate section of a Drawing Movement Form XXXX for each drawing
  - Fill out the appropriate sections of a Document Transmittal Form XXX
  - Submit the forms, checklist (if applicable) and the drawing(s) to the personnel assigned to check the drawing(s).
- b) The personnel assigned to checking the drawing(s) will check the drawing(s) in accordance with the instructions in Section XX of this document, Design Output Checking, Verification and Validation and when satisfied must:
  - Initial the drawing
  - Submit the forms, Checklist (if applicable) and the drawing(s) to the appropriate Senior Engineer for the verification of drawing(s)
- c) The Senior Engineer will verify the drawing(s) in accordance with Section XX of this document, Design Output Checking, Verification and Validation and when satisfied must:
  - Sign the drawing
  - check and sign the Hazard Control Checklist (if applicable)
  - forward the forms, Checklist (if applicable) and the Drawings to the relevant SHR functional manager.
- d) The Functional Manager will:
  - Sign the drawings when satisfied
  - Forward the Checklist (if applicable), forms and the drawings to the Plan Room Coordinator
- e) The Plan Room Coordinator will:
  - Supply copies of the drawings as detailed in the Document Transmittal Form
  - Index and file original drawings in the Plan Room
  - Issue copies of the revised drawings as request on the Document Transmittal Form
  - Initial and File the Drawings Movement Form

### **4.2.2 Revision of Drawings**

- a) The draftsman will:
  - Obtain and complete the appropriate section of the Drawing Movement Form XXX for each Drawing
  - Submit the form to the Plan Room Coordinator
- b) The Plan Room Coordinator will:
  - Sign out the original copy(s) of the drawings requested for revision
  - Issue the original copy(s) to the draftsman
  - Initial and return the Drawing Movement Form(s) to the draftsman
- c) The draftsman will:
  - Amend the drawings as required

**INFRASTRUCTURE PLAN ROOM - Preparation & Approval of Drawings**

**Document No: SHRI-004-WPQA-05**

- Fill out a Document Transmittal Form XXXX
- Submit the revised drawings, Drawing Movement Form(s) and the Document Transmittal Form to the appropriate Checking personnel
- d) The Checking person will:
  - Check and initial the revised drawings when satisfied they meet the requirements of Section XX of this document
  - Forward the revised drawings and forms to the Plan Room Coordinator
- e) The Plan Room Coordinator will:
  - Sign the revised drawings back into the Plan Room
  - Supply copies of the revised drawings as requested on the Document Transmittal Form
  - Complete and initial the Drawing Movement Form(s) as applicable
  - File the Drawing Movement Form(s) in the Plan Room

### **4.3 CANCELLED DRAWINGS**

- 4.3.1** Drawings to be cancelled and retained will be retrieved from the Plan Room with the Drawing Movement Form XXXX. The drawings will be marked (in red) with the word "CANCELLED" as near to the drawing number as practical. The drawings are then refiled in the Plan Room.
- 4.3.2** Drawings to be cancelled and not retained will be destroyed by the Plan Room Coordinator. The Draftsperson will notate on the Drawing Movement Form whether the drawing is to be filed or destroyed.
- 4.3.3** The Drawing Index shall be updated by the Plan Room Coordinator

### **4.4 SUPERSEDED DRAWINGS**

- 4.4.1** Drawings to be superseded and retained will be retrieved from the Plan Room with the Drawing Movement Form XXXX. The drawings will be marked (in red) with the word "SUPERSEDED by (new drawing number)" as near to the drawing number as practical. The drawings are then to be re-filed in the Plan Room.
- 4.4.2** Drawings to be superseded and not retained are to be destroyed by the Plan Room Coordinator.
- 4.4.3** The Drawing Index shall be updated by the Plan Room Coordinator.

## **4.5 ALTERATION OF SIGNALS DRAWINGS**

The personnel assigned to the project will:

- Complete a Document Transmittal Form XXXX to obtain the appropriate prints from the plan room if required.
- Mark up alterations to prints of existing drawings in the form of 'reds and yellows' (red denoting circuits to be installed, yellow denoting circuits to be removed, blue for existing and green for testing).
- Prepare new drawings if required in accordance with clause 4.2.1.
- When 'red and yellow' drawings and any new drawings are completed, the 'red and yellow' drawings shall be stamped with the "Approval Signature" stamp.
- Complete WHS-4 Hazard Control Checklist form.
- Relevant drawings and forms will be submitted to the competent person assigned to check the drawings.
- The checking will be carried out in accordance with Section XX, Design Output, Checking, Verification and Validation.
- After the drawings and forms are checked and initialled as required, they are to be submitted to the Senior Engineer for verification in Accordance with Section XX, Design Output Checking, Verification and Validation.
- After verification and initialling by the Senior Engineer, the drawings and forms are to be submitted to the S&T Coordinator for approval and return to the Project Manager.
- A duplicate copy of the 'red and yellow' drawings will be prepared by the designer and stamped with the "COMMISSIONING COPY" stamp.
- The COMMISSIONING COPY is retained in the Signals Office until required for commissioning. The other 'reds and yellows' are to be forwarded to the Plan Room with the Document Transmittal Form.
- The Plan Room Coordinator must tag the original drawings and issue the drawings as specified on the Document Transmittal Form XXX as either UNCONTROLLED documents or INSTALLATION COPY.
- After installation and commissioning, the COMMISSIONING COPY (used for testing) is to be returned to the Project Manager to allow the original drawings to be updated including any as built amendments and for any new drawings to be prepared.
- The Plan Room Coordinator will complete Document Transmittal Form XXX to issue the INTERIM MAINTENANCE copies, using the relevant stamp.
- The Drawing Index will be updated by the Plan Room Coordinator.
- All revision and new drawings work will be performed in accordance with relevant clauses within this document.



## **4.6 DESIGN OUTPUT CHECKING & VALIDATION**

### **4.6.1 PURPOSE & SCOPE**

To ensure that the design and development output is free from errors and deficiencies, are technically correct, meet customer requirements, conform to the relevant Standards.

The design output may include but is not limited to designs, drawings, calculations, scope of works, bill of materials and specifications etc.

### **4.6.2 CHECKING**

Where nominated, independent checking of design and development output activities will be carried out by the person designated on the project brief.

Where no person is assigned for the checking of design output, the Project Manager or Relevant Functional Manager will perform the checking process (usually small projects).

The checking process will be at the completion of the output process and prior to the verification process and it includes checking of associated paperwork. Progress checking may be required during the progress of the output activities and where this is required, it would normally be part of the Design Review Process and be specified in the Project Plan.

The person assigned to the checking process will give specific attention to the technical correctness of the output and ensure that the output meets requirements.

If the output is unsatisfactory, the checker will notate on the document or attachment the required amendments, extra information etc and return it to the Project Manager for remedial action.

When satisfied that the output is technically correct and meets project and customer requirements, the checker will sign or initial the output as appropriate and forward it together with the documentation to the Project Manager.

### **4.6.3 VALIDATION**

Validation of drawings is a similar process to checking with emphasis placed on ensuring that the output conforms to the defined needs and or requirements. This will usually occur once As-Built updating of drawings has been completed.

Both these processes will be conducted simultaneously by the same person who is designated on the Project Brief to undertake these duties.