3.6. Traffic Control Signal Design (Civil)

3.6.1. Approval Sheet

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<td>1</td>
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<tr>
<td>APPROVED BY:</td>
<td>SIGNED: David Reid</td>
</tr>
<tr>
<td>DATED: 30th April 2004</td>
<td></td>
</tr>
<tr>
<td>MANAGER</td>
<td></td>
</tr>
<tr>
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</table>

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For further information, contact:
CADD Policy Officer
RTA CADD Advisory Group
Telephone: (02) 8837 0522
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3.6.3. Overview

3.6.3.1. Scope

This document sets out the RTA’s requirements for the organisation of CADD data and the presentation of drawings for the installation or modification of Traffic Control Signals.

3.6.3.2. Objective

The objective of this guideline is to provide drawings of TRAFFIC CONTROL SIGNAL sites in a format that can be read by the RTA and electronically stored.

It defines the way in which data is to be organised and how it is to be presented.
3.6.4. Drawings

3.6.4.1. General

3.6.4.1.1. Component Drawings

Designs for installation or reconstruction of Traffic Control Signals sites will require at least three component drawings as follows:

- DESIGN LAYOUT
- CABLE INSTALLATION (Contact Manager Traffic Solutions, Parramatta).
- CABLE CONNECTION CHART (Contact Manager Traffic Solutions, Parramatta).

NOTE: Some sites may require additional drawings dealing with:

- DUCT LAYOUT (Contact Manager Traffic Solutions, Parramatta).
- DETAILED ROAD DESIGN FOR CHANNELISATION AND ASSOCIATED CIVIL WORK (see Section 3.5 of this Manual - Road Design).

NOTE: The Design Brief will specify when these drawings are required.

3.6.4.1.2. Drawing Media

Both hard and electronic copies of the specified drawings are to be supplied. The Design Brief will specify the number of hard copies required. Electronic copies are to be delivered in accordance with Section 2.1 of this Manual - CADD Data Exchange Policy.

3.6.4.1.3. Plan Border

Plan borders are to be in accordance with Australian Standard AS1100, or as supplied by the RTA. Refer to 3.6.6 Appendix A – Standard RTA TCS Border, which gives examples of standard A1 borders, which are supplied by the RTA.

Details such as the project name, design/reviewed/recommendation/approval signatures, plan registration number, file number, amendment block, sheet number and total number of sheets, should be shown. The title block may be altered to include the consultant’s name.

3.6.4.1.4. Drawing Approval

The approval of the drawings is subject to local regional requirements and should include a report and site photos.
3.6.4.1.5. Reference Documents

The primary reference documents are:

TRAFFIC SIGNAL PRACTICE – DESIGN RTA 1992

TRAFFIC SIGNAL DESIGN STANDARDS (RTA-TC-189) RTA 1994

SPECIFICATION SI/TCS/8
INSTALLATION AND RECONSTRUCTION OF TRAFFIC LIGHT SIGNALS

3.6.4.2. Specification for Drawings

3.6.4.2.1. Plan Size

Generally, the RTA prefers its standard presentation sheet for Traffic Control Signals to be A1 format. Other sizes should only be used if requested by client. All plain paper sheets must conform to ISO guidelines - however, concept design may conform to “A0” for height, and width may vary.

3.6.4.2.2. Scales

The drawings shall be prepared in metres as the unit of measurement and plotted at a scale of 1:200.

3.6.4.2.3. Font and Line Styles

Refer to Section 2.1 of this Manual - CADD Data Exchange Standards.

3.6.4.2.4. Additional Sheets

Where all data cannot be contained to a single sheet then additional sheets may be added, such sheets should have the next consecutive available sheet number.

3.6.4.2.5. TCS, Sheet and Issue Numbers

The issue of TCS numbers is controlled by the Traffic Management Centre (TMC) (or their delegates) and is registered on the TMC VAX computer.

Sheet numbers are issued consecutively from the RTA CARMS plan registering system the sheet number is available from regional offices.

Minor changes to the drawing may be authorised by the raising of an issue number only; major changes will require the raising of a new sheet and issue number and re-approval of that sheet by the RTA regional office.

3.6.4.2.6. Symbols (Cells)

Refer to RTA CADD Cell Library.
3.6.5. Functional Grouping of Information

3.6.5.1. Composition of Components

3.6.5.1.1. Design Layout

This drawing will comprise the following Levels:

- Border
- Base
- Posts
- Ancillary detail

3.6.5.1.2. Detailed Road Design For Channelisation And Associated Civil Work

If the Design Brief requires a detailed road design for channelisation and associated civil work the drawing, refer to Section 3.5 of this Manual - ROAD DESIGN.

3.6.5.2. Composition of Groupings

3.6.5.2.1. Border Level (Layer)

Border template
Completed details as called for by the template.

3.6.5.2.2. Base Level (Layer)

This is to show the site at the time when the signals are commissioned.
Detailed Reference: Traffic Signal Practice – DESIGN.

The detailed survey and design (if relevant)
Utilities both overhead and underground
Drainage pits and grates, gutter crossings
Awnings and clearances as required
Trees and other likely sight obstructions
Existing bus stops and street furniture (shelters, seats, gardens etc)
Main Road Nos and street names, “To and From”
Date in Service
Property boundaries where signal hardware is to be placed adjacent to private property
Approach grades on each approach.

The consolidation of these details may require other levels created by a design package to be combined into one Level.
3.6.5.2.3. **Post Level (Layer)**

This is to show those design elements that will form the basis of the Cable Installation sheet
Detailed Reference: Traffic Signal Practice – DESIGN.

Posts types including vertical lengths and / or outreach
Post locations *
Post number assigned to each post
Detector location, width and identifying number
Electric supply point
Controller location.

* If the post location dimension, conflicts with other displayed information an insert- POST LOCATION DIAGRAM could be considered

3.6.5.2.4. **Ancillary Level (Layer)**

This group shows the additional information necessary for the “DESIGN LAYOUT” which is not shown in the preceding Levels.

- Detailed Reference: Traffic Signal Practice – DESIGN.
  Interim Guide To Signs And Markings.
  Regulatory Signs.
- Lantern displays
- Lantern labels
- Lantern monitoring
- Push buttons
- Push button labels
- Detector names
- Detector location (L, C, R etc)
- Regulatory sign posts.
- All longitudinal and transverse line markings including chevrons, arrows, painted medians/islands and logos
- All schedules and specification charts
- Co-ordinate information schedules for kerb adjustments, post positions, where appropriate. ie new sites where post footings, ducts etc will be installed prior to kerbing, pavement etc.
- Movement diagrams
- All notes

3.6.5.2.5. **Hatching Level (Layer)**

This group contains all hatching that forms part of the “DESIGN LAYOUT”(generally turned off following the completion of the WAE issue).
3.6.5.2.6.  **Unmodified Base Level (Layer)**

This level is optional.

This level is a copy of the BASE LEVEL before any modifications, i.e. removal of parts of the BASE LEVEL to clearly display information in other groups, which together form the DESIGN LAYOUT.

Its purpose is to provide the BASE LEVEL that is used in other Component Drawings, obviously if the original BASE LEVEL is not modified, it is not required.
3.6.6. Appendix A  Standard RTA TCS Border
3.6.7. Appendix B Standard TCS Design Drawing
3.6.8. **Appendix C  Standard TCS Level Details**
DETECTOR SPECIFICATION

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COLOURS DENOTE LEVELS

NOTES:
1. Title site to R.T.A.'s network.
2. Roadwork BTOP sign (B1-6) planned on posts 3 and 7.
3. Auxiliary traffic barrier are provided on posts 1, 3, 5, 6, & 7.
4. Medians to be constructed at all pedestrian crossings. 
   (in accordance with manual designs B/D-P777/17A)
5. Provision made in cabling and ducting for future pedestrian
   crossings on pedestrian approach.
6. Control works -
   (i) Standard 24m of SF kerb.
   (ii) Provision to enable regular pedestrian crossing
   (iii) Provision to enable regular pedestrian crossing
   (iv) Provision to enable regular pedestrian crossing
7. Trim trees to improve sight of Post 5.

SPECIAL SIGNAL GROUP DISPLAY SEQUENCE

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ROAD AND TRAFFIC AUTHORITY OF NSW
SYDNEY COUNCIL AREA
TRAFFIC SIGNALS AT
MAJOR ROAD (M.R. 000) AND MINOR STREET
SYDNEY

NOTE:
- Colours denote level
- Existing
- A-B1 Detector
- Z-(A-B1)(B)(NEXT)

DATE IN SERVICE: 08/07/57

DRAWN BY CADD
DO NOT AMEND MANUALLY