

3.8. Electrical

3.8.1. Approval Sheet

TITLE:	Electrical
VERSION NUMBER:	3
REVISION NUMBER:	2
APPROVED BY:	SIGNED: Con Shakas DATED: 12 th July 2005 MANAGER TRAFFIC ENGINEERING TECHNOLOGY

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3.8.3. Overview

3.8.3.1. Scope

This document sets out the Authority's requirements for the organisation of CADD data and the presentation of Electrical Design Drawings for the installation or modification of Electrical Equipment for Traffic Control Signals and other Traffic Control Installations.

3.8.3.2. Objective

The objective of this guideline is to provide Electrical Design Drawings for Traffic Control Signals and other Traffic Control Devices in a format that can be read by the Authority on its equipment and stored.

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

3.8.3.3. Document Status

This is a controlled document, which is the responsibility of the RTA CADD Advisory Group. Submissions to amend this document are to be forwarded to The Secretary, RTA CADD Advisory Group.

Interpretation and clarification of issues contained within this document can be obtained by contacting the Secretary, RTA CADD Advisory Group.

3.8.4. Standards

3.8.4.1. Reference Documents

The following documents are to be read in conjunction with this Guideline.

DESIGN BRIEF FOR THE WORK

CADD DATA EXCHANGE STANDARDS

TRAFFIC SIGNAL PRACTICE - DESIGN

SPECIFICATION INSTALLATION AND RECONSTRUCTION OF TRAFFIC LIGHT SIGNALS AND ITS ASSOCIATED DRAWINGS

STANDARDS AUSTRALIA PUBLICATIONS:

AS1100 TECHNICAL DRAWING

AS1102 GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

AS/NZS4383 PREPARATION OF DOCUMENTS USED IN ELECTROTECHNOLOGY

AS3000 SAA WIRING RULES

AS3008 SELECTION OF CABLES

AS3100 ELECTRICAL EQUIPMENT

3.8.5. Drawings

3.8.5.1. General

3.8.5.1.1. Component Drawings for Traffic Control Signals and other Traffic Control Installations

Electrical Design for installation or reconstruction of Traffic Control Signals and other Traffic Control Installations usually require two or three component drawings as follows:

- a. CABLE INSTALLATION
- b. CABLE CONNECTION CHART
- c. DUCT LAYOUT (Optional)

NOTE: The Duct Layout plan is optional and is usually only required at sites with major roadworks.

Standard equipment and installation methods are utilised in the majority of installations but on rare occasions additional drawings may be required for the installation of special hardware:

- d. MANUFACTURING DETAILS OF EQUIPMENT
- e. INSTALLATION DETAILS OF EQUIPMENT
- f. CIRCUITS AND CONNECTION DIAGRAMS

3.8.5.1.2. Drawing Media

Both hard and electronic copies of the specified drawings are to be supplied.

Electronic CADD files shall be in Microstation or AutoCAD format, reduced to a manageable size and free of all redundant data.

3.8.5.1.3. Available Templates

For the Cable Installation and Duct Layout; an electronic copy of all the information contained in Levels (Layers) 1 and 2.

For the Cable Connection Chart, an electronic copy of all the information contained in Level (Layer) 1.

3.8.5.2. Specification for Drawings

3.8.5.2.1. *Sheet Size*

The most common sheet size is A1 but may vary through the range A0, A1, A2, A3, A4 and is to be in accordance with the ISO-A series specified in ASI 100.

3.8.5.2.2. *Scales*

Scales to be used for various plans:

Cable Installation drawings and Duct Layout drawings shall be prepared and submitted in real world coordinates 1:1 using metres as the unit of measurement and plotted at a scale of 1:200, unless otherwise agreed by the Liaison Officer.

Drawings of Manufacturing Details of Equipment shall be prepared and submitted in real world coordinates 1:1 using millimetres as the unit of measurement and may be plotted at various scales of 1:1 to 1:10 depending on which is the most practical.

Drawings of Installation Details of Equipment shall be prepared and submitted in real world coordinates 1:1 using metres or millimetres as the unit of measurement and may be plotted at various scales of 1:2 to 1:20 depending on which is the most practical.

Cable Charts are not to scale and shall be prepared and submitted in paper size.

Circuits and Connection Diagrams are not to scale and shall be prepared and submitted in paper size.

3.8.5.2.3. *Drawing Registration and CADD File Naming Convention*

The registration number of a group of drawings for a traffic signal installation comprises 6 parts:

The first 4 digits represent the main road number

The next 3 digits represent the council number

The 2 letters represent the series

The next 4 digits represent the unique Traffic Signal Site number

The sheet number in the group is shown in a separate box

The alphabetical letter representing issue of that sheet is also shown in a separate box

A typical example registration: 0164.479.VV.1000 Sheet 11 Issue B

The first 3 parts of the registration number, the main road number, the council number and the series are usually evident.

The Traffic Management Centre or their delegate issues the unique Traffic Signal Site number.

The sheet number is issued consecutively from the RTA CARMS plan-registering database and the sheet number is available from regional offices.

The next alphabetical issue letter is used for each revision of an existing drawing.

The CADD file name is derived from the registration number, the first 2 letters of the file name is the series, the next four digits is the unique Traffic Signal Site number, then an underscore followed by 2 digits representing the sheet number and a letter representing the current issue, then an underscore followed by 3 letters which is an abbreviation for the plan type. The abbreviated plan type is shown in all cases except for the Traffic Signal Civil Design where these 3 letters are omitted. The file name is ended with a dot and file extension, .DGN or .DWG depending on the file type.

The following are hypothetical examples of file names:

Traffic Signal Civil Design VV1000_10A.dgn

Cable Installation VV1000_11B_INS.dgn

Cable Connection Chart VV1000_12C_CHT.dgn

Duct Layout VV1000_13A_DCT.dgn

3.8.5.2.4. *Font and Line Styles*

Refer to CADD Data Exchange Standards, Section 2.1 of CADD Manual.

3.8.5.2.5. *Symbols (Cells)*

Refer to RTA CADD Cell Library.

3.8.6. Functional Grouping of Information

3.8.6.1. Composition of Component Drawings for Traffic Control Signals and Other Traffic Control Installations

3.8.6.1.1. *Cable Installation*

Will comprise the following groupings:

- LEVEL (LAYER) 1
- LEVEL (LAYER) 2
- LEVEL (LAYER) 3
- LEVEL (LAYER) 4 (OPTIONAL)

3.8.6.1.2. *Cable Connection Chart*

Will comprise the following groupings:

- LEVEL (LAYER) 1
- LEVEL (LAYER) 2
- LEVEL (LAYER) 3

3.8.6.1.3. *Duct Layout*

Will comprise the following groupings:

- LEVEL (LAYER) 1
- LEVEL (LAYER) 2 (OPTIONAL)
- LEVEL (LAYER) 3
- LEVEL (LAYER) 4 (OPTIONAL)

3.8.6.1.4. *Manufacturing Details of Equipment*

Will comprise the following groupings:

- LEVEL (LAYER) 1
- LEVEL (LAYER) 2
- LEVEL (LAYER) 3

3.8.6.1.5. Installation Details of Equipment

Will comprise the following groupings:

LEVEL (LAYER) 1

LEVEL (LAYER) 2

LEVEL (LAYER) 3

3.8.6.1.6. Circuits and Connection Diagrams,

Will comprise the following groupings:

LEVEL (LAYER) 1

LEVEL (LAYER) 2

LEVEL (LAYER) 3

3.8.6.2. Composition of Groupings in Component Drawings for Traffic Control Signals and Other Traffic Control Devices

3.8.6.2.1. Cable Installation, Level (Layer) 1

Title Block and Border template

Completed details in the Title Block and Border as called for:

Plan Registration Number and Issue

File Number

Scale

Site Location and Plan type

Designed by

Checked by

Approved by

Reference plans

Road, island and property outlines including: utilities, street names and north point.

3.8.6.2.2. Cable Installation, Level (Layer) 2

Post types and locations

Post number assigned to each post

Detector location, width and identifying number

Electric supply point

Location and type (graphical representation) of Controller

3.8.6.2.3. *Cable Installation, Level (Layer) 3*

This group shows the additional information necessary for the "CABLE INSTALLATION" which is not shown in the preceding groups. Typically it will contain

Cable and duct locations

Cable and duct depths

Pit types and locations

Dimensions

Labels and leaders

Cable Layout Diagram.

All notes

Job Instruction issue change notes

3.8.6.2.4. *Cable Installation, Level (Layer) 4*

This group is an optional Group.

This group contains the outlines of existing road and island channelisation before any modifications due to roadworks. If the outline is not modified, it is not required.

3.8.6.2.5. *Cable Connection Chart, Level (Layer) 1*

Cable Connection Chart Title Block, Border and Grid Template

Completed details in the Title Block and Border as called for:

Plan Registration Number and Issue

Site Location and Plan type

Designed by

Checked by

Approved by

Reference plans

3.8.6.2.6. *Cable Connection Chart, Level (Layer) 2*

All connection information needed in grid:

Names of Signal Facilities

Housing Terminals

Cable labels and size

Post numbers

Lines to define post width in columns

Number of Post Terminals

Post Terminals

Cable Cores

Number of Spares

Detector labels and terminations

All notes

Job Instruction issue change notes

3.8.6.2.7. *Cable Connection Chart, Level (Layer) 3*

All information contained in the 'CABLE LAYOUT' sketch

3.8.6.2.8. *Duct Layout, Level (Layer) 1*

Title Block and Border template

Completed details in the Title Block and Border as called for:

Plan Registration Number and Issue

File Number

Scale

Site Location and Plan type

Designed by

Checked by

Approved by

Reference plans

Road, island and property outlines including: utilities, street names and north point.

3.8.6.2.9. *Duct Layout, Level (Layer) 2*

This group is an optional Group.

Post types and locations

Post number assigned to each post

Electric supply point

Location and type (graphical representation) of Controller

3.8.6.2.10. *Duct Layout, Level (Layer) 3*

This group shows the additional information necessary for the "DUCT LAYOUT" which is not shown in the preceding groups. Typically it will contain

Duct size and locations

Non-standard duct depths

Pit types and locations (Optional)

Dimensions

Labels and leaders

All notes

Job Instruction issue change notes

3.8.6.2.11. *Duct Layout, Level (Layer) 4*

This group is an optional Group.

This group contains the outlines of existing road and island channelisation before any modifications due to roadworks. If the outline is not modified, it is not required.

3.8.6.2.12. *Manufacturing Details of Equipment, Level (Layer) 1*

Title Block and Border template

Completed details in the Title Block and Border as called for:

Plan Registration Number and Issue

File Number

Scale

Site Location and Plan type

Designed by

Checked by

Approved by

Reference plans

3.8.6.2.13. *Manufacturing Details of Equipment, Level (Layer) 2*

Outlines of actual components

3.8.6.2.14. *Manufacturing Details of Equipment, Level (Layer) 3*

Hatching

Dimensions

Labels and leaders

All notes

Job Instruction issue change notes

3.8.6.2.15. *Installation Details of Equipment, Level (Layer) 1*

Title Block and Border template

Completed details in the Title Block and Border as called for:

Plan Registration Number and Issue

File Number

Scale

Site Location and Plan type

Designed by

Checked by

Approved by

Reference plans

3.8.6.2.16. *Installation Details of Equipment, Level (Layer) 2*

Outlines of actual components

3.8.6.2.17. *Installation Details of Equipment, Level (Layer) 3*

Background details to location of component

Hatching

Dimensions

Labels and leaders

All notes

Job Instruction issue change notes

3.8.6.2.18. *Circuits and Connection Diagrams, Level (Layer) 1*

Title Block and Border template

Completed details in the Title Block and Border as called for:

Plan Registration Number and Issue

File Number

Site Location and Plan type

Designed by

Checked by

Approved by

Reference plans

3.8.6.2.19. *Circuits and Connection Diagrams, Level (Layer) 2*

Outlines of actual electrical components including terminators

3.8.6.2.20. *Circuits and Connection Diagrams, Level (Layer) 3*

Background details to location of components

Wiring and connections

Hatching

Labels and leaders

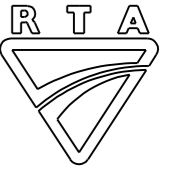
All notes

Job Instruction issue change notes

3.8.7. Appendix A Standard AI Border for Cable Installation and Duct Layout Drawings

DRAWN BY CADD
DO NOT AMEND MANUALLY

DATE IN SERVICE : 08/07/57



0000.000.VV.0000

A ORIGINAL ISSUE

PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. MAP 138 F4	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6	I.S.G. E: 319 080	
STOP VALVE	▲	STD POSIT	VD001-5	CO-ORDS N: 1 263 210	
GAS VALVE	#	DET SCHED EXP	VD018-10	DESIGNED	
SEWER MANHOLE	⊙	PRES. DETECT	VC005-17	CHECKED	
TELECOM PIT	⊙	SSG DIS. SEQ.	VD018-8		
ELECT LIGHT POLE	○				
POWER POLE	○				
STAY POLE	○				
TELEPHONE BOX	Ⓜ	SURVEYOR ± ?			
TELECOM PILLAR	⊙	DATE ± ?			

APPROVED
.....
DESIGN ENGINEER
.....
DATE
.....
ACCEPTED
.....
DATE
.....
RECOMMENDED
.....
DATE
.....

Roads and Traffic Authority, N.S.W

COUNCIL AREA
TRAFFIC SIGNALS AT
MAJOR ROAD AND MINOR STREET
SUBURB

CABLE INSTALLATION TCS No 0000

DESIGN OFFICE PARRAMATTA - SYDNEY TECHNICAL SERVICES
CADD FILE: ?
SCALE 5 0 (1:200) 5 10
FILE 000 TS 000 SUPERSEDES SHEET/ISSUE -
REGN. 0000.000.VV.0000
ISSUE B
SHEET 1

3.8.8. Appendix B Standard A3 Cable Connection Chart Border and Grid

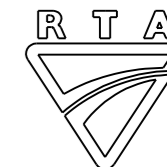
3.8.9. Appendix C Standard A2 Cable Connection Chart Border and Grid

3.8.10. Appendix D Standard AI Cable Connection Chart Border and Grid

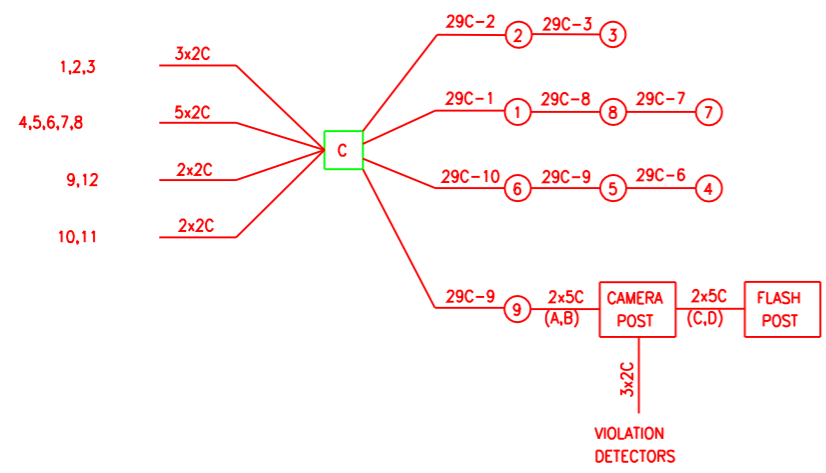
3.8.11. Appendix E Standard Cable Installation Drawing

DRAWN BY CADD
DO NOT AMEND MANUALLY

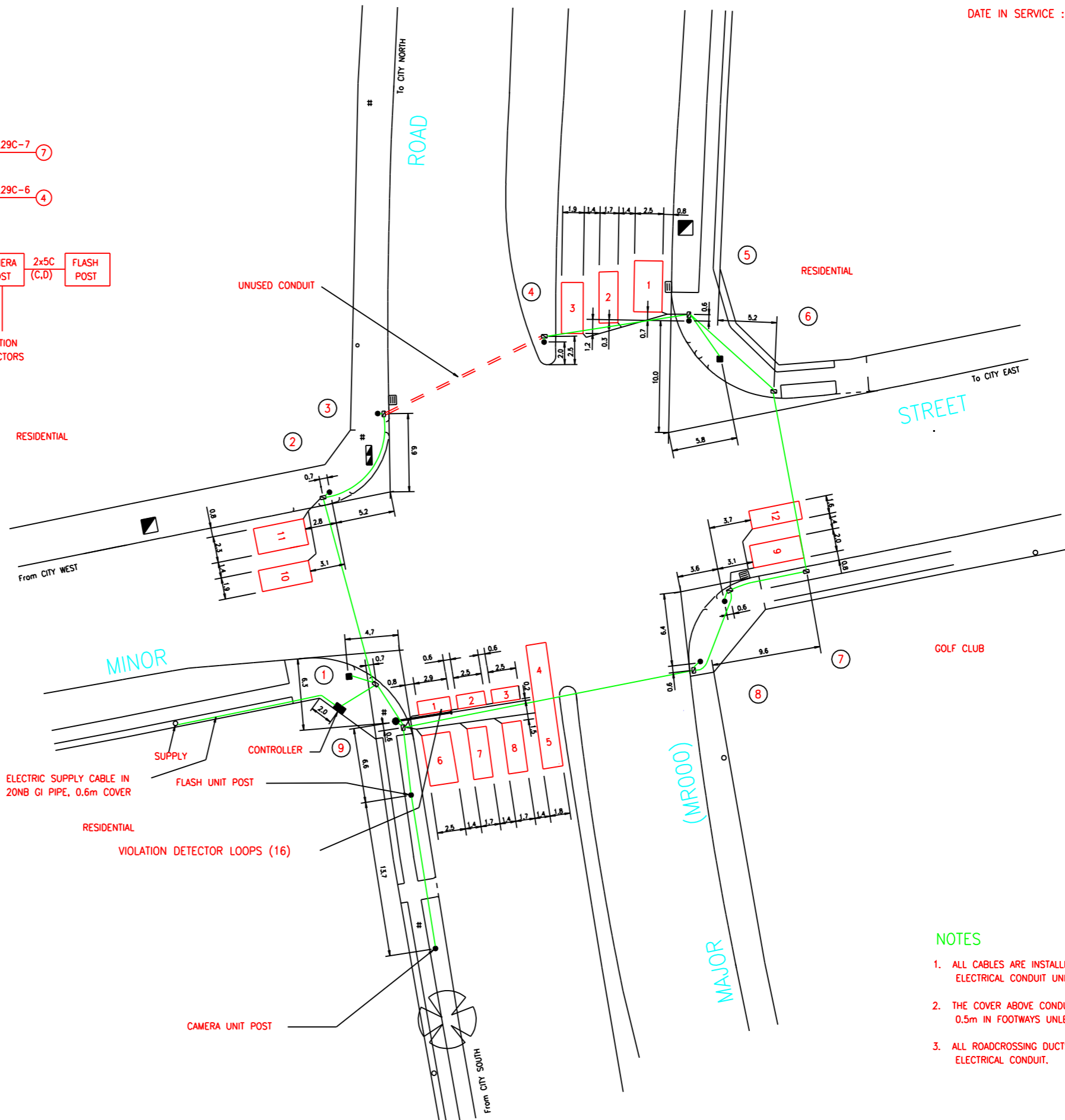
DATE IN SERVICE : 08/07/57



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CABLE LAYOUT



NOTES

1. ALL CABLES ARE INSTALLED IN 1 X 80mm HEAVY DUTY PVC ELECTRICAL CONDUIT UNLESS OTHERWISE STATED.
2. THE COVER ABOVE CONDUITS IS 0.75m IN ROADWAYS AND 0.5m IN FOOTWAYS UNLESS OTHERWISE STATED.
3. ALL ROADCROSSING DUCTS ARE 2 X 80mm HEAVY DUTY PVC ELECTRICAL CONDUIT.

A ORIGINAL ISSUE
B Issue at SW4695 3/7/95
Added :- Red light camera
Altered:- Median nose in
Major Road.
-Controller Location.
MUM 30/8/95 LC

PUBLIC UTILITY LEGEND	REFERENCE PLANS	U.B.D. Ref.	MAP 138 F4
HYDRANT	□ SYMBOLS/ABBS.	V0003-6	
STOP VALVE	▲ STD POSIT	V0001-5	
GAS VALVE	## DET SCHED EXP	V0018-10	DESIGNED
SEWER MANHOLE	⊙ PRES. DETECT	V0005-17	
TELECOM PIT	⊙ SSG DIS. SEQ.	V0018-8	CHECKED
ELECT LIGHT POLE	○ DESIGN LAYOUT	W0000-1B	
POWER POLE	○ CABLE CHART	W0000-3B	
STAY POLE	○		
TELEPHONE BOX	Ⓜ SURVEYOR : Surveyors		
TELECOM PILLAR	⊙ DATE : July 1995		

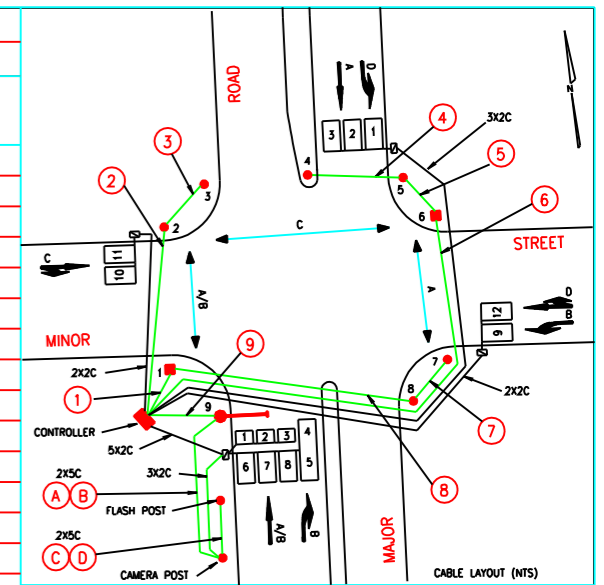
APPROVED
ELECTRICAL DESIGN MANAGER
DATE

Roads and Traffic Authority, N.S.W.
SYDNEY CITY COUNCIL AREA
TRAFFIC SIGNALS AT INTERSECTION OF
MAJOR ROAD (MR000) AND MINOR STREET
SYDNEY
CABLE INSTALLATION LAYOUT
TCS No 0000

REGION: SYDNEY	BRANCH: CONSULTANT SERVICES
DOCS DRAWING FILE: W0000_2B.INS	
SCALE 5 0 (1:200) 5 10	ISSUE B
FILE 000 TS 000	SUPERSEDES SHEET/ISSUE -
REGN. 0000.000.VV.0000	SHEET 2

3.8.12. Appendix F Standard Cable Connection Chart Drawing

POST NO	CONTROLLER HOUSING		1	2	3	4	5	6	7	8	9	CAMERA POST	FLASH POST
NO OF TERMINALS			28	28	28	28	28	28	28	28	28		
CABLE NO	TERM	(1)(2)(6)(9)	(1)(8)	(2)(3)	(3)	(4)	(5)(4)	(6)(5)	(7)	(8)(7)	(9)(A)(B)	(A)(B)(C)(D)	(C)(D)
NO OF CORES		29 29 29 29	29 29	29 29	29	29	29 29	29 29	29	29 29	29 5 5	5 5 5 5	5 5
GREEN	A	A3	2	2	2	2	2	2		2	2		
YELLOW	A	A4	3	3	3	3	3	3		3	3		
RED	A	A5	4	4	4	4	4	4		4	4		
GREEN	A/B	B3		5	5	5			5	5	5	5	5
YELLOW	A/B	B4		6	6	6			6	6	6	6	6
RED	A/B	B5		7	7	7			7	7	7	7	7
RTGA	B	A12								18	18		
RTYA	B	A13								19	19		
RTRA	B	A14								20	20		
LTGA	B	B6	5		21					5	5		
LYTA	B	B7	6		22					6	6		
GREEN+RTGA	C	A6	18	18	23					23	23		
YELLOW	C	A7	19	19						19	19		
RED	C	A8	20	20						20	20		
GREEN+RTGA	D	A9	21	21						21	21		
YELLOW	D	A10	22	22						22	22		
RED	D	A11	23	23						23	23		
LTGA	D	B9	24		24	24	24			24	24		
LYTA	D	B10	25		25	25	25			25	25		
LTRA	D	B11	26		26	26	26			26	26		
WALK	A	C3	14	14						14	14		
DONT WALK	A	C5	15	15						15	15		
WALK	A/B	C6	16	14						16	16		
DONT WALK	A/B	C8	17	15						17	17		
WALK	C	C9		16	16	16	16	16		16	16		
DONT WALK	C	C11		17	17	17	17	17		17	17		
PUSH BUTTON	A	E5	10	10						10	10		
PUSH BUTTON	A-B	E6	12	10						12	12		
PUSH BUTTON	C	E7		12	12					12	12		
FLASH ACTIVE												11	W 1 W
FLASH RETURN												12	B 2 B
CAMERA ALARM MONITOR ACTIVE	E20			10						10	10	W W W	
240V CAMERA ACT	A15			17						17	17	R R R	4 R
LAMP ACTIVE	A2,B2	9	9	9	9	9	9	9	9	9	9	9	9
LAMP RETURN	A1,B1	BK	BK	BK	BK	N	BK	BK	N	BK	BK	N	BK
PB RETURN	E3,E4	GY	GY	GY	GY	C	GY	GY	C	GY	GY	C	GY
EARTH	E/L	G/Y	G/Y	G/Y	G/Y	E	G/Y	G/Y	E	G/Y	G/Y	E	G/Y
NO OF SPARES		5	10	4	14	5	8	10	19	19	15	10	15



NOTES:

- 1) ALL SIGNAL CABLES ARE 29 CORE.
- 2) SCREENS OF VIOLATION CAMERA 2C FEEDER CABLES TO BE CONNECTED TO CAMERA HOUSING TERMINALS 3 & B. CAMERA HOUSING TERMINALS 3,8 & 19 TO BE BRIDGED TO EARTH THE SCREENS.
- 3) CAMERA HOUSING TERMINAL 18 & 21 TO BE BRIDGED.

DET NO	DETECTOR FUNCTION	HOUSING TERMINALS	A ORIGINAL ISSUE
1	'A' L	1 - 1	B ISSUE JI SW4695
2	'A' C	2 - 2	ADDED RED LIGHT CAMERA
3	'A' R	3 - 3	ALTERED:- MEDIAN NOSE IN MAJOR ROAD.
4	'A-B1' DEP	4 - 4	- CONTROLLER LOCATION.
5	'A-B1' APP	5 - 5	30/08/95 LC
6	'A-B2' L	6 - 6	
7	'A-B2' C	7 - 7	
8	'A-B2' R	8 - 8	
9	'B-D'	9 - 9	
10	'C1'	13 - 13	
11	'C2'	14 - 14	
12	'D'	10 - 10	

DET NO	DETECTOR FUNCTION	HOUSING TERMINALS
16	1	1 - 2
16	2	4 - 5
16	3	6 - 7

DESIGN LAYOUT	SHEET NO
DESIGN LAYOUT	SHEET NO 1
CABLE INSTALLATION	SHEET NO 2
CAMERA LAYOUT	V0002-3B
AUDIO TACTILE	VE530-7

CONTROLLER TYPE: PSC MK2

REFERENCE PLANS

DESIGN LAYOUT SHEET NO 1

CABLE INSTALLATION SHEET NO 2

CAMERA LAYOUT V0002-3B

AUDIO TACTILE VE530-7

APPROVED: _____

DATE: _____

ROADS AND TRAFFIC AUTHORITY NSW
REGION: SYDNEY

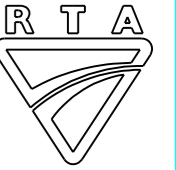
SYDNEY CITY COUNCIL AREA
TRAFFIC SIGNALS AT INTERSECTION OF
MAJOR RD.(MR000) AND MINOR ST.
SYDNEY

CABLE CONNECTION CHART TCS _0000_

SUPERSEDES: - ISSUE A B

REGN 0000.000.VV.0000 SHEET 3

3.8.13. Appendix G Standard Duct Layout Drawing



DRAWN BY CADD
DO NOT AMEND MANUALLY

NOTES

- 1) ALL WORK CARRIED OUT AND MATERIALS USED SHALL BE IN ACCORDANCE WITH THE AUTHORITY'S SPECIFICATION "REQUIREMENTS FOR THE INSTALLATION OF UNDERGROUND CABLE DUCTS FOR TRAFFIC LIGHT SIGNALS". THIS DOCUMENT IS AVAILABLE FROM THE TRAFFIC TECHNOLOGY BRANCH (No.1 OXFORD STREET, SYDNEY).
- 2) ALL DUCTS TO BE 2 X 80 mm HEAVY DUTY PVC ELECTRICAL CONDUITS UNLESS OTHERWISE STATED.
- 3) THE COVER ABOVE CONDUITS IS 0.75m IN ROADWAYS AND 0.5 m IN FOOTWAYS UNLESS OTHERWISE STATED.

LEGEND

2 X 80mm HEAVY DUTY PVC ELECTRICAL CONDUIT TO AS2053 UNLESS OTHERWISE STATED.



RESIDENTIAL

From CITY WEST

To CITY NORTH
ROAD

RESIDENTIAL

STREET

To CITY EAST

MINOR

RESIDENTIAL

GOLF CLUB

(MR000)
MAJOR

From CITY SOUTH



0000.000.VV.0000

A ORIGINAL ISSUE

B ISSUE: JI SW4695 3/7/95
ALTERED MEDIAN NOSE IN
MAJOR ROAD
M.M 30/08/95 LC

PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. MAP 138 F4	
HYDRANT	□	SYMBOLS/ABBS.	V0003-6	I.S.G. E:	319 080
STOP VALVE	▲	STD POSIT	V0001-5	CO-ORDS N:	1 263 210
GAS VALVE	##	DET SCHED EXP	V0018-10	DESIGNED	
SEWER MANHOLE	⊙	PRES. DETECT	V0005-17	CHECKED	
TELECOM PIT	⊙	SSG DIS. SEQ.	V0018-8	SITE CHECKED	
ELECT LIGHT POLE	⊙	DESIGN LAYOUT	W0000-1B	RECOMMENDED	
POWER POLE	⊙				
STAY POLE	⊙				
TELEPHONE BOX	⊙	SURVEYOR :	Surveyors		
TELECOM PILLAR	⊙	DATE :	July 1995		

APPROVED
ELECTRICAL DESIGN MANAGER
DATE

Roads and Traffic Authority, N.S.W.
SYDNEY CITY COUNCIL AREA
TRAFFIC SIGNALS AT INTERSECTION OF
MAJOR ROAD (MR000) AND MINOR STREET
SYDNEY
DUCT LAYOUT TCS No 0000

REGION:	SYDNEY	BRANCH:	CONSULTANT SERVICES
DOCS DRAWING FILE:	W0000_4B.DUC		
SCALE	5 0 (1:200) 5 10		
FILE	000 TS 000	SUPERSEDES SHEET/ISSUE	-
REGN.	0000.000.VV.0000		
ISSUE	B		SHEET
			4

3.8.14. Appendix H Glossary