



# **ELECTRONIC DRAFTING GUIDELINES**

**Edition No. 9**

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Appendix – Typical Title Block Layout

## 1 Definitions

CoA / Corporation	- The Corporation of the City of Adelaide.
As Constructed Drawing	- The drawing prepared and submitted to accurately represent the services and the works encountered, terminated, removed and constructed, in all respects.
CAD Drawing	- The electronic drawing file generated through AutoCAD.
Concept Drawing	- The initial drawing prepared to illustrate the proposed project and its scope, for public display and/or presentation to Council.
Construction Drawing	- The drawing prepared for and issued for and during Construction, to clearly convey the nature, requirements and extent of the works.
Consultant	- The individual or company engaged by the Corporation of the City of Adelaide to undertake aspects of the project.
Contractor	- The individual or company engaged by the Corporation of the City of Adelaide to undertake construction of the project.
Council	- The elected body of the Corporation of the City of Adelaide.
Preliminary Drawing	- The drawing prepared for and issued for Preliminary purposes, to clearly convey the nature, requirements and extent of the works, and brief compliance.
Revision Drawing	- The revised version of the drawing to clearly convey the revised nature, requirements and extent of the works, annotated to advise of the alterations to the drawing and to distinguish the revision from previous versions of the drawing.
Service Authorities	- The authorities having jurisdiction over the services. Including, but not limited to, ETSA, SA Water, Gas, Telecommunications and the Corporation of the City of Adelaide. (SWD, traffic signals, public lighting & irrigation)
Tender Drawing	- The drawing prepared for and issued for Tendering purposes, to clearly convey the location, nature, requirements and extent of the works.

## 2 Drawing Format

### 2.1 Standards and Guidelines

For CoA standard borders, CTB files, linetype files, typical design drawings, Urban Elements Catalogue and City Works Guidelines, refer to City of Adelaide website link below:

<https://www.cityofadelaide.com.au/planning-development/city-infrastructure/resources/standards-guidelines>

Consultants engaged on Corporation projects are hereby advised that attached guidelines and drawing details are provided for use under the following conditions:

- The Consultant shall incorporate the Typical Detail drawings in their documentation wherever appropriate and practicable. The use of the Typical Details does not reduce the Consultant's responsibilities to check the design and provide the Consultancy Services under the Contract for the Consultant's Engagement.
- The Consultant shall note that the Typical Details provided herein are copyright and shall not be copied or used for projects which are unrelated to the Corporation, without the written approval of the Corporation.
- The Typical Details shall be used as a reference document which outlines the general requirements of the Corporation of the City of Adelaide. The Consultant shall be responsible for determining the specific requirements for documentation of the project.
- The Consultant is responsible for ensuring that the final design and installation complies with all relevant and current Australian Standards and Authority requirements.
- The following drafting abbreviations shall be used for all drawings:

WT	Kerb & watertable invert level
TK	Top of kerb level
SD	Spoon-drain invert level
P	Finished pavement level
INV	Stormwater pipe invert level

### 2.2 Survey Plans

The Corporation may request the Consultant to undertake a detail survey to enable the design work to be carried out.

The survey must be in a planar coordinate system, using the MGA94 coordinates of one PSM as a base point.

Elevations must be in AHD, using the elevation of one PSM as a base point.

Horizontal accuracy of all surveyed points shall be better than  $\pm 0.030\text{m}$ .

Vertical accuracy of all surveyed points shall be better than  $\pm 0.010\text{m}$

## **2.3 Underground Services Plans**

Underground services plans, including information verified on-site by service authorities (including existing CoA infrastructure) shall be prepared and consolidated by the Consultant. This information is provided by Dial B4 U Dig upon request. Notation of the underground services shall include the type, number, size and duct/pipe material. Depths of services shall be shown where known and/or applicable.

A services legend containing line styles for the above services will be provided by the Corporation. Refer to section 2.1 for file location.

## **2.4 Drawing format / content for each discipline (Typical design drawings)**

Required drawing formats for each discipline (e.g Lighting, Traffic, Irrigation, Civil) shall be provided and/or advised by the Corporation. Refer to section 2.1 for file location.

For general construction drawings, the plan view and longitudinal section shall be documented in the same orientation to ensure corresponding chainages are shown left to right on the sheet.

## **2.5 Delivery of Drawings**

### **2.5.1 Preliminary Drawings (Phase 01)**

- Preliminary drawings shall be prepared prior to finalisation and subsequent production of the Tender drawings. They shall form a uniform set, consistent in sheet size and general appearance.
- 1 paper copy and PDF shall be provided.

### **2.5.2 Tender Drawings (Phase 02)**

- Tender drawings shall form a uniform set, consistent in sheet size and general appearance.
- Revised Tender drawings, issued after Tenderers have received initial Tender drawings, shall clearly identify amendments and have a sequential revision indicator (T1 onwards). Revisions shall be shown with clouds and stored in a layer of the same name. (e.g REV-A, REV-B etc.)
- Tender drawings shall be provided to the Corporation in “**paper**” format and signed by the Consultant in the Tender Certification area of the title block.
- 1 paper copy, PDF and ACAD file shall be provided.

### **2.5.3 Construction Drawings (Phase 03)**

- Construction drawings shall form a uniform set, consistent in sheet size and general appearance. They shall be issued by the consultant for and during construction and shall be updated (revised) as necessary during construction. Revisions to be identified alphabetically (A onwards).
- Revision A shall be Identified as “Issued for construction” and shall also identify any amendments since the final Tender Copy. Revisions shall be shown with clouds and stored in a layer of the same name. (e.g REV-A, REV-B etc.)
- Construction drawings shall be provided to the Corporation in “**paper**” format and signed by the Consultant in the Construction Certification area of the title block.
- 1 paper copy, PDF and ACAD file shall be provided.

#### **2.5.4 As Constructed Drawings (Phase 04)**

- As Constructed drawings shall form a uniform set and comprise of the latest construction revision drawings as bases. They are to be prepared, “signed – off” and submitted to the Corporation for retention.
- As Constructed drawings shall be provided to the Corporation in “**paper**” format and signed by the Consultant in the As Constructed Certification area of the title block.
- 1 paper copy, PDF and ACAD file shall be provided.
- 

#### **2.6 Submitting Drawings for Review of Corporation Compliance**

Drawings shall be submitted for review with respect to compliance with Corporation formats and standards, prior to “Tender”, “Construction” and “As Constructed” issue.

The Consultant must supply drawings to the Corporation as stated in section 2.1. The naming convention must be as stated in section 3.16. The drawings must comply with (but not limited to):

- all relevant Australian codes;
- all legislative requirements;
- is practical and economical to construct;
- complies with Councils maintenance requirements, standards and practices

#### **2.7 Documents and Electronic Data Files Supplied to the Corporation**

All documents and electronic data files relevant to the project shall be supplied to the Corporation for its retention, ownership and use for its purposes. Copyright shall be deemed to be with the Corporation, unless specifically agreed to otherwise or specifically covered by Patent, Licence, Artistic Licence, Moral Rights, etc., as may apply.

### 3 CAD FORMAT

The following details shall be used and must be adopted when producing and submitting electronic drawings and drawing files. **No other formats will be accepted.**

#### 3.1 Electronic Software

The Corporation has adopted AutoCAD 2018 format, until further notice. The consultant shall prepare its drawings in AutoCAD 2018 format, incorporating CoA pen assigned line thicknesses (CTB). (Supplied by CoA, refer section 2.1)

#### 3.2 Model Space and Paper Space/Layout (AutoCAD)

The project component shall be in *model space* at actual size. Borders and associated text shall be in *layout/paper space* at full size. Viewports in *layout/paper space* shall be set to the appropriate scales.

#### 3.3 Standard Settings

- \* *Layout/paper space* Drawing Units shall be millimetres.
  - \* *Model space* Drawing Units shall be either metres or millimetres, as per the standard for the professional discipline.
- However, drawings using mixed units, shall clearly identify the units on the drawing.
- \* Attribute Dialogue shall be on (Attdia=1).
  - \* Global Linetype Scale shall be set to 1 (Ltyscale=1).
  - \* Newly Created Object Linetype Scale shall be set to 1 (Celtscale=1) on completion of the drawing.
  - \* Paper Space Linetype Scale shall generally be set to 0 (Psltscale=0), however Linetype Scale set to 1 (Psltscale=1) may be used for multiple scale drawings, to show same line appearance at all scales.

#### 3.4 Drawing Scales

The scales at which the drawing elements are displayed shall be appropriate for the project component and conform to those generally recognised within that professional discipline.

All drawings must include scale bars and a North point. (Supplied by CoA, refer to section 2.1)

#### 3.5 Plotting

Electronic copies of finished drawings shall be in the Corporation's format to suit simple plotting, so that the drawing does not need interrogating or modifying to plot using the Corporation's plotting defaults.

Plotting Scale shall be set to 1 plotted unit = 1 drawing unit, and Pen Assignments for plotting (PC3 files or ctb files) shall be set to comply with Pen Assignments specified hereinafter. Plotting shall be in black on white paper unless otherwise specified.

The CTB file for final plotting must be **ACC-BLACK.ctb** (Supplied by CoA, refer to section 2.1)

### 3.6 Pen Assignments (Line Colours)

The following pen numbers and colours shall be used to represent the nominated line thickness (and default CTB for plotting in black on white):

<u>Pen No.</u>	<u>Colour</u>	<u>Plotted Thickness</u>	<u>Plotted Colour</u>	<u>Screening</u>
1	Red	0.50 mm	Black	100%
2	Yellow	0.35 mm	Black	100%
3	Green	0.40 mm	Black	100%
4	Cyan	0.20 mm	Black	100%
5	Blue	0.70 mm	Black	100%
6	Magenta	1.00 mm	Black	100%
7	White/Black	0.25 mm	Black	100%
8	Dark Grey	1.50 mm	Black	100%
9	Light Grey	2.00 mm	Black	100%
10-249	'as ACAD'	0.10 mm	Black	100%
250-255	'as ACAD grey scales'	0.15 mm	Black	100%

**Solid hatching** must not be used for final drawings (Tender / Construction), however it may be used for concept / presentation type drawings.

### 3.7 Line Styles

Standard AutoCAD line styles shall be used for general line work.

However specific services and line styles required by the Corporation will be supplied.

All lines shall have appropriate scale factors to suit the drawing (note: *that globally* LtScale=1).

### 3.8 Text Styles

Arial.ttf (referred to as **ARIAL**) and 'AutoCAD romans.shx' (referred to as **ROMANS**) shall be the only fonts used in *model space* or the drawing area in *paper space or layout* on final drawings.

Romans default height shall be set to zero (height = 0) to suit Corporation supplied linetypes, which have embedded text.

All text shall be of a size determined by function, generally to a (plotted) minimum text height 2.5 mm with a minimum thickness of 0.25 mm.

Generally, text shall be vertical (Oblique = 0) and uncondensed (Width Factor = 1). Text may be italic (Oblique  $\approx 13^\circ$ ) and/or condensed or expanded for emphasis or to fit into the drawing.

Text shall generally be applied, parallel to the bottom of the sheet or the side of the sheet, to be read normally or from the right hand side of the sheet. Text associated with non-horizontal or non-vertical elements of the drawing shall be parallel with those elements, to be read normally or from the right hand side of the sheet.



### 3.9 Hatch Patterns and Shading

Hatch patterns shall comply with Australian Standard AS1100 and/or the appropriate industry standard. Only standard AutoCAD hatch patterns shall be used. All hatching shall have individual scale and rotation factors to suit the drawing. Manually applied shading, toner or colour, pencil work, material indication etc. shall not be used on CAD drawings. All such applications must be applied with AutoCAD software. Hatch patterns shall be applied with appropriate "Draw Order" and appropriate Pen Assignments (Line Colours) as defined in Clause 3.6.

**Solid hatching / Shading** must not be used on any CoA Tender, Construction or As Constructed drawings.

### 3.10 Symbols/Blocks

Generally, standard AutoCAD symbols/blocks shall be used. The Corporation's standard symbols/blocks will be supplied where available. Blocks shall be constructed in 'Layer 0' with the appropriate linetypes, pen assignments, scale factors, etc., and shall be inserted into the appropriate layers in the drawing. Blocks shall only be 1 level deep (i.e no blocks within blocks).

Fonts must not be used / substituted for symbols / blocks.

### 3.11 Layers

Standard CoA layers starting with '0\_' must not be removed, as they are required for various drawing purposes.

Layers shall not be named after any colour or number.

Layers shall be named to simply identify the discipline, nature and content of that layer as outlined below:

#### CoA Standard Layers

0_BORDER_TBLOCK	= 'drawing border and titling' ( <i>paper space or layout</i> )
0_VIEW_PORTS	= 'viewport layer' ( <i>paper space or layout</i> )
0_CONSULT_LOGO_REFS	= 'Consultant's logo and own referencing' within drawing border ( <i>paper space or layout</i> )
0_OPTIONAL_Disclaimer	= Instructions issued with each drawing at Tender and Construction phases.
0_OPTIONAL_Services_Check	= Existing services sign off by consultant only on relevant drawings
0_OPTIONAL_Traffic_Cert	= Traffic Control Certification panel to be used where required to show compliance with SA Code of Practice.
0_PHASE 01_Preliminary	= 'Preliminary issue title block information'
0_PHASE 02_Tender	= 'Tender issue title block information'
0_PHASE 03_Construction	= 'Construction issue title block information'

0\_PHASE 04\_AsConstructed = 'As Constructed issue title block information'

### Drawing Content Layers

ARCH- = 'architectural design information'  
eg. ARCH-WALLS

ENG- = 'civil engineering design information'  
e.g. ENG-KERBLINE

ELEC- = 'electrical design information'  
e.g. ELEC-LIGHTING

SERV- = 'existing services'  
e.g. SERV-ETSA

SUR- = 'existing survey information'  
e.g. SUR-BUILDING LINE

LAND- = 'landscape design information'  
e.g. LAND-IRRIGATION / LAND-WALLS

STRUCT- = 'structural engineering design information'  
e.g. STRUCT-FOOTINGS

TRAF- = 'traffic design information'  
e.g. TRAF-LINEMARKING

The following layers must be frozen for each phase:

#### **LAYERS TO BE FROZEN FOR PRELIMINARY DRAWINGS:**

0\_PHASE 02\_Tender;  
0\_PHASE 03\_Construction;  
0\_PHASE 04\_AS\_Constructed;

#### **LAYERS TO BE FROZEN FOR TENDER DRAWINGS:**

0\_PHASE 01\_Preliminary;  
0\_PHASE 03\_Construction;  
0\_PHASE 04\_AS\_Constructed;

#### **LAYERS TO BE FROZEN FOR CONSTRUCTION DRAWINGS:**

0\_PHASE 01\_Preliminary;  
0\_PHASE 02\_Tender;  
0\_PHASE 04\_AS\_Constructed;

#### **LAYERS TO BE FROZEN FOR AS CONSTRUCTED DRAWINGS:**

0\_PHASE 01\_Preliminary;  
0\_PHASE 02\_Tender;  
0\_PHASE 03\_Construction;

### 3.12 Using External References (Xrefs)

If external references (Xrefs) are used they must be **bound** into the final drawing prior to submitting to the Corporation.  
AutoCad drawings may be submitted by e-mail. **Do not e-mail drawings via Zip file.** Alternatively, drawings may be provided on CD or DVD.

### 3.13 Using Attachments

Attachments (i.e Jpeg, BMP, pictures etc.) shall not be used, as the drawing should be 'stand alone'.

### 3.14 Drawing Borders (Title Blocks)

Final drawings shall be submitted with the Corporation's standard borders (B1, A0, A1, A2, A3).

**For all new Council projects, electronic copies of the title borders must be obtained from Council's website:**

<https://www.cityofadelaide.com.au/planning-development/city-infrastructure/resources/standards-guidelines>

The consultant logo and associated consultant details may be located on the bottom left of the title block. If the consultant logo is not native to AutoCAD fonts etc., then fonts used must be supplied to the Corporation when providing drawing data files. All drawings require a North point and relevant scale bars.

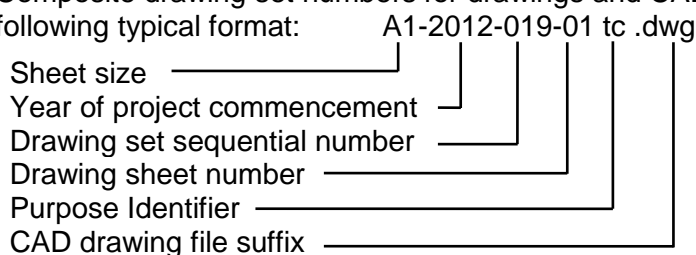
### 3.15 Purging

All CAD drawings must be purged to remove all unused blocks, dimension styles, layers, linetypes, shapes, styles, multi-line styles, text styles, etc., prior to final submission to the Corporation.

All final CAD drawings shall have no layers frozen, other than the viewport layer and border layers for the drawing. However other layers may be frozen in individual viewports.

### 3.16 Drawing Set Numbers and Naming Convention

Composite drawing set numbers for drawings and CAD drawings shall be in the following typical format:



- \* **DRAWING SET NUMBER** comprises of Sheet size-Year-Drawing set sequential number (eg. A1-2012-019 – to be issued by CoA)
- \* **SHEET SIZE** to be determined by the consultant and confirmed by the Corporation, prior to issue of drawing set number. All drawings in the set to be the same size and of uniform appearance.
- \* **DRAWING SHEET NUMBER** to be determined by the consultant, where the sheet numbers must be consecutive (commencing at 01).
- \* **PURPOSE IDENTIFIER** used in CAD file name to identify drawing function. Eg. 'tc', for Tender Copy, 'ci' for Construction Issue and 'ac' for As Constructed.
- \* CAD drawing file suffix used in CAD file name.

Below are examples of naming convention for **single** layout drawings:

A1-2012-019-01tc-T1.dwg / .pdf (Tender drawing)  
A1-2012-019-01ci-A.dwg / .pdf (Construction drawing)  
A1-2012-019-01ac.dwg / .pdf (As Constructed drawing)

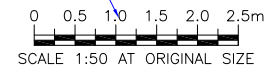
Below are examples of naming convention for **multiple** layout drawings:

A1-2012-019-01tc to 05tc-T1.dwg / .pdf (Tender drawing)  
A1-2012-019-01ci to 05ci-A.dwg / .pdf (Construction drawing)  
A1-2012-019-01ac to 05ac.dwg / .pdf (As Constructed drawing)

All electronic drawings / pdf's must be issued to Council as shown above. No other naming convention will be accepted, as this is a requirement for archiving, record keeping and handover process.

North Point.  
Refer to section 3.4

Scale bar  
Refer to section 3.4



Consultant to sign and date  
Certification. Refer section 2.5  
for phase type.

Construction revision description.  
Refer section 2.5 for phase type.

Secondary address  
(supplied by CoA)

Primary address  
(supplied by CoA)

Purpose identifier

**FOR CONSTRUCTION**

CONSTRUCTION COPY - CERTIFICATION		CONSTRUCTION REVISIONS				CARRINGTON STREET INTERSECTION WITH PRINCESS STREET		CITY OF ADELAIDE	
"I, ..... (Representative's Name) being a duly authorised representative of ..... (Consulting firm or company) hereby: - certify the information in this drawing is an accurate "design" representation of the works. - certify that the "design" is in accordance with the brief and amendments thereto. - accept responsibility for the "design" information contained in this drawing. - acknowledge the "design" information contained in this drawing may be relied on by Council and others. Certification for Stage ..... by ..... on ....." (Stage No.) (Signature) (Date) for: ..... (Company Name)		No.	DESCRIPTION	BY	DATE	CIVIL WORKS GENERAL CONSTRUCTION PLAN		ACC PROJECT NUMBER	T169
		A	ISSUED FOR CONSTRUCTION	G.F	03/07/2017			SCALE	1:50
						ACC USE - SIGHTED FOR CONSTRUCTION		NUMBER OF SHEETS	5
								ORIGINAL SHEET SIZE	A1
								REVISION	A
						PROJECT ASSET MANAGER	DESIGN TEAM LEADER	DRAWING SET NUMBER	A1-2012-019
						PROJECT MANAGER		SHEET	01

CoA project number  
(supplied by CoA)

Scale of drawing

Total number of  
drawings in set

Sheet size

Revision number  
Refer section 2.5  
for phase type

Primary description  
of project

Drawing content  
description

Drawing set number  
(supplied by CoA)

Sheet number

Typical A1 border for "Construction" issue

Naming convention(s) of this drawing for delivery shall be:  
 A1-2012-019-01cl-A.dwg  
 A1-2012-019-01cl-A.pdf

Legend:



Coa to supply



Consultant responsibility