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COMPUTER AIDED DRAFTING & DESIGN SPECIFICATION

TOWNSVILLE CITY COUNCIL



DOCUMENT AMENDMENT REGISTER

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COMPUTER AIDED DRAFTING & DESIGN SPECIFICATION

OVERVIEW

Townsville City Council drawings shall conform to “Australian Standards 1100.101 Technical Drawing General Principles” unless otherwise stated in this guideline.

This document specifies Parks Services, Townsville City Council requirements for Standardised Detail Design, Survey and As Constructed electronic CAD Drawings.

Project specific requirements may at times require special consideration; any project specific requirements will be detailed and issued to the contractor in the Design/Survey brief.

Any non compliance of this specification will require written approval from Parks Services, Townsville City Council prior to submission. Any non compliance without written prior approval will result in the non acceptance of drawings issued to Parks Services, Townsville City Council. Any such drawings will need to be redrawn and resubmitted at the contractor’s/consultants expense.

DIGITAL DATA STANDARDS

Computer Aided Design Software

Townsville City Council, Parks Services are current subscribers / licensees to Autodesk Software, AutoCAD.

All drawings should be submitted in AutoCAD .DWG file format. It is required that DWG files not be saved in the latest version release. They should be saved in the previous version release file type to allow back version compatibility.

All Construction & As Constructed Drawings should be issued electronically on CD in the following formats:

- AutoCAD - A1 size and,
- PDF colour A1 size.

All information presented on these drawings is to be legible when plotted to a reduced size on A3 paper. (Scaled line weights shall be selected in the Plot Manager).

Drawing File Name

Each design drawing name should start with the prefix of that particular Discipline:

AR	=	Architectural	CI	=	Civil
EL	=	Electrical	EN	=	Environmental
GI	=	GIS	ME	=	Mechanical
IR	=	Irrigation	LA	=	Landscape
ST	=	Structural	SU	=	Survey

This should be followed by the Project Name issued by Parks Services.

This should be then followed by the Issue Status:

IS	=	Initial Survey (Only used by survey consultant)
PD	=	Preliminary Design
DI	=	Design Issue
TI	=	Tender Issue
FC	=	For Construction
AC	=	As Constructed

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Then should be followed by the Issue Date in the following format

Day -Month -Year - without using spaces. 250507 = 25th of May 2007

An example of this file naming is as follows

LA-CBD GATEWAY ST4-FC-250507.

LA represents Landscape Drawing
CBD GATEWAY ST4 represents Project Name issued by Parks Services
FC represents For Construction
250507 represents Issue Date on the 25th of May 2007

When a revision is made to any drawing in the drawing file then the issue date would only change. This maintains a complete set of digital drawings together.

A Drawing Transmittal should be updated reflecting the revised individual Drawings and their new drawing revision.

Pen Colours

Pens from 1-9 shall all use the colour Black. (Pen number 7).

Pens from 10-255 shall all use their object colour.

All light colours when plotted are difficult to read are to be avoided.

Pen Thickness

Colour	Thickness
1	0.20
2	0.30
3	0.40
4	0.50
5	0.60
6	0.70
7	0.25
8	0.20
9	0.15
10-249	0.35
250-255	0.25

Text & Fonts

All documentation should be produced on A1 size plans unless mentioned otherwise. These plans should still be readable if reduced to A3 size paper. When documenting design plans on A1 size plan / title blocks, the minimum text height should be 3mm when the width factor of text style is not less than 1. (Exception to this would be for survey data due to the nature of levels and the congestion of details measured. Written approval should be sought from the Council for a suitable size of text).

Use only Standard AutoCAD fonts.

All Fonts are to be clearly readable and to be free of line work clashes. No line work is to be broken to accommodate text.

To mask text, text should be written using the Mtext function within the Text Formatting / Background Mask function. Avoid using the Wipeout Function.

Where this is sometimes unachievable, for example detailed surveys, the Consultant would be exempt from this requirement in only the areas where absolutely unavoidable and accepted by Parks Services

Text Orientation

No text or notation shall be written upside down from the title block orientation. Exceptions to this are;

- Chainages for a road / path / drain etc. alignment; or
- Contour levels shown on contour lines.
- Gridline co-ordinates.

Drawing Scales

The following numbers may be multiples of 10, 100, 1000;

1, 1.25, 1.5, 2, 2.5, 5, 7.5.

Unless otherwise approved by Parks Services, Townsville City Council.



Model & Paper Space

All drawings should be drawn in the Model Space. Multiple copies of different versions of the drawings in the same model space are not acceptable.

Paper space should be used to display all design layouts through a viewport window, with the exception of Detail Drawings which maybe drawn in the Paper Space area.

Drawings should be positioned and rotated within View Ports to keep sheet quantities to a minimum. The drawing should not be rotated in model space.

All View Ports must be locked once correctly position, rotated and scaled.

Revisions

All revisions shall be noted and referenced in alphabetical order beginning with A for the first amendment.

The consultant's title block shall make provision of noting the revision in the following format or similar approved.

A	25-10-07	Water Assembly position moved	JB
<i>Rev Letter</i>	<i>Date Made</i>	<i>Description</i>	<i>Approved.</i>

Each revision shall be identified on the drawing by a cloud encompassing the revision. Each cloud shall be accompanied by the letter of that revision.

When a new revision is made to a drawing which has a previous revision, then the previous revision letter and cloud shall be removed from the plan.

Standard Notes / Icons

Each drawing must show identifiable notes / icons;

Street Names

Park Names

Lot Number &/or Property Survey Descriptions

North Point

Legend (may be shown on one plan and referred to on all other plans)

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Drawing Units

The following Drawing Units should be standard.

Length

Type = Decimal

Precision = 0.000

Angle

Type = Deg/Min/Sec

Precision = 0d00'00"

Clockwise = Tick Box

Insertion Scale = Unitless (Preferred)

Direction

Base Angle = North

Co-Ordinates & Levels (x,y,z)

All drawing co-ordinates are to be relative to;

Meridian = MGA Zone 55/ GDA 94

Level Datum = AHD (Australian Height Datum)

All drawings must be drawing in metres ie 3.455m not 3455mm.

External Referenced Drawings

Consultants are to correctly insert external reference drawing files into their design drawing.

For example, survey, landscape, engineering, electrical or other reference drawings should be inserted as an External Reference (Xref).

"Relative Path" is to be selected when inserting Xref's using the drop down "Path type" within the "Attach External Reference" dialogue box.

The layer name by which the Xref is inserted should start with the prefix "XREF" for ease of identification. For example a Layer called XREF-SURVEY would be used to attach the external referenced survey file, likewise XREF-CIVIL would be for the civil file and so on.

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Drawings that are to be emailed or saved to CD, are to be packaged using the AutoCAD E-Transmit function for final delivery to the council.

AutoCAD drawing exchange

The following requirements are designed to simplify and improve drawing exchange and referencing between consultants.

When drawings contain external reference drawings (Xrefs), an initial structured setup of directories will provide problem free file operations, and updating of new Xrefs as drawings proceed through the design and As Constructed phases.

The following directory file structure should be followed.

All Xrefs should be placed in a sub-folder immediately below the folder in which the Main Drawing is located. Below is an example of a file structure for an Irrigation Design Consultant.

(Folder) - **"STUART DR A"** (Project Name)

(Drawing Files) IR-STUART DR A-AC-DATE.DWG
IR-STUART DR A-FC-DATE.DWG
IR-STUART DR A-PD-DATE.DWG

(Sub Folder) - **"XREF"**

(Sub-Sub Folder) - **"CIVIL"**

(Drawing Files) CI-STUART DR A-AC-DATE.DWG
CI-STUART DR A-FC-DATE.DWG

(Sub-Sub Folder) - **"LANDSCAPE"**

(Drawing Files) LA-STUART DR A-AC-DATE.DWG
LA-STUART DR A-FC-DATE.DWG
LA-STUART DR A-PD-DATE.DWG

(Sub-Sub Folder) - **"SURVEY"**

(Drawing Files) SU-STUART DR A-AC-DATE.DWG
SU-STUART DR A-IS-DATE.DWG

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Below is an example of the same file structure as before but without the notes.

```
C:\STUART DR \ IR-STUART DR A-AC-DATE.DWG
      \ IR-STUART DR A-FC-DATE.DWG
      \ IR-STUART DR A-PD-DATE.DWG
```

```
C:\STUART DR \ XREF \ CIVIL          \ CI-STUART DR A-AC-DATE.DWG
                                         \ CI-STUART DR A-FC-DATE.DWG
```

```
C:\STUART DR \ XREF \ LANDSCAPE     \ LA-STUART DR A-AC-DATE.DWG
                                         \ LA-STUART DR A-FC-DATE.DWG
                                         \ LA-STUART DR A-PD-DATE.DWG
```

```
C:\STUART DR \ XREF \ SURVEY       \ SU-STUART DR A-AC-DATE.DWG
                                         \ SU-STUART DR A-IS-DATE.DWG
```

This file structure will allow for quick and easy house keeping of incoming and out-going files while assisting the user to locate the latest issued Xref received from a particular consultant.

For updating drawings with Xrefs in sub-folders already loaded into the design drawing and with their path already saved, it is a simple matter to re-path the Xref file by browsing, locating the new design drawing and saving the updated path. It is important to always ensure the External Reference Name is updated to reflect the same name as the updated file.