



LAND SURVEYING BRANCH : ENGINEERING SURVEYS – Draughting Guidelines

1. Scale

- (a) Appropriate drawing scales to be used eg. 1:100, 1:200, 1:250, 1:500. (Dependant on the amount of detail surveyed). Scale to be shown in Title Block.

2. Buildings

- (a) Formal and Informal Buildings to be clearly differentiated and hatched accordingly.

3. Roads / Pathways / Driveways

- (a) Gravel / Tar / Paved etc. to be clearly differentiated and labelled.

4. Embankments

- (a) Embankment lines between top and bottom of banks to be shown.

5. Contour Lines

- (a) To be smooth/splined (ie. remove jagged lines etc.), and labelled. Incorrect contour lines to be removed/corrected eg. Contour lines through buildings and incorrect heights.
- (b) Contours should be @ 1m intervals unless otherwise specified.

6. Labelling

- (a) All details / features (eg. roads, kerbs, buildings, services etc.) to be labelled on drawing.
- (b) All fences to be differentiated and labelled. (eg. Wire, Precast etc.)
- (c) All walls to be differentiated and labelled. (eg. Brick, Block etc.)
- (d) All retaining walls to be differentiated & labelled (eg. Loffelstein, Gabion, Concrete etc.)

7. Manhole Information

- (a) Sewer and Stormwater manholes : Type of manhole, Cover Levels and Invert Levels to be clearly shown, together with pipe sizes, and direction of flow, and, to be placed in a rectangular box, for ease of reference. Additional manhole comments to be noted on drawing (eg. blocked, sealed etc.)
- (b) All other manholes to be labelled accordingly.

8. Pattern and Symbols

- (a) Appropriate patterns and symbols to be placed, where applicable. (eg. Light Poles, Water Meters, Trees etc.) Note patterns to be exploded when exporting to electronic format.

9. Legend & Code Descriptions

- (a) Legend and a clear description of codes to be shown, and tabulated on the drawing. Note an independent code description document is not acceptable.

10. Survey Control Points

- (a) All control points to be clearly marked and tabulated on drawing, together with descriptions, and the survey system should be specified.

11. Title Block

- (a) Include Company name, Title of Survey, Date of Survey, Scale of Drawing and our reference numbers (SR. No. and WO No.)

12. North Point

- (a) North Point to be shown on all drawings.

13. Grids

- (a) Grid intersection points (cross hairs), with values to be shown on all drawings.

14. Cadastral Boundaries and GIS Data

- (a) All boundaries and GIS data to be shown clearly, and as a background. (ie. This info should be in lighter colours, in thinner lines and a legend showing the different linetypes used, positioned on the drawing)

15. Shading / Hatching

- (a) Features / Details to be hatched using your discretion, although as a guideline, Buildings and Roads should be prioritised.

16. General

- (a) Please refer to the notes table on the PDF file .am1 for survey requirements.
- (b) All cad entities to be in specific layers and appropriately named, to enable easy editing.
- (c) Overlapping cad lines, and text to be deleted.
- (d) Plans to be legible and all clutter / duplicated points & heights to be removed.
- (e) All annotations to be clearly labelled.

17. Deliverables

- (a) Ensure electronic files are exported to the correct survey co-ordinate system / grid values (not inverted, upside down or in the wrong place)
- (b) Patterns / blocks to be exploded when exporting drawing to electronic format.

The following should be supplied :

- i. Hard Copy drawings (1 Set)
- ii. *.dxf* file - **compulsory**
- iii. Ascii file (eg. *.csv* / *.txt* / *.dat* / *.lst*) - **compulsory**
- iv. PDF files of all sheets – original paper size to be specified in file name (eg. E2012-001_A0.pdf) - **compulsory**
- v. *.dwg* file - **compulsory**
- vi. *.tot* file (only if using Modelmaker Software)
- vii. *.mal* file (only if using Modelmaker)
- viii. *.drg* file (only if using Allycad)
- ix. *.cdp* & *.dtm* files (only if using Civil Designer)
- x. *.dr4* file (only if using Civil Designer 2011)

Please refer to the following link on our website for samples of final completed drawings :

http://www.durban.gov.za/City_Services/engineering%20unit/Surveying_Land_Information/Pages/default.aspx