

Drafting Design and Presentation Standards Manual
Volume 1: Chapter 2 – General Standards
Appendix 2B TMR Guidelines for AutoCAD Drawing Exchange

October 2016

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Amendment Register

Issue / Rev no.	Reference section	Description of revision	Authorised by	Date
1	-	Update to Corporate Template	Owen Arndt	February 2014
2	Chapter 2 Appendix 2B All Sections	Added references to TMR Customisation and minor rewording changes	Director (Road Design) Geospatial, Design and Capability (E&T)	October 2016

Contents

1	AutoCAD external references and drawing exchange.....	1
2	AutoCAD text styles and drawing exchange	1
3	AutoCAD linetypes and drawing exchange	2
4	AutoCAD drawing exchange	2

1 AutoCAD external references and drawing exchange

This section provides detailed guidelines for known issues relating to AutoCAD drawing exchange. These guidelines are designed to make it easier to exchange drawings within the department and with external organisations.

When drawings are created that contain external reference files (XREFS), the initial configuration of the XREFS must be addressed when the drawing is setup to enable the drawing to be exchanged or shared across a network successfully. This is because XREFS are separate AutoCAD drawing files that are read and displayed when the parent drawing is opened.

When you attach XREFS to a drawing, there are methods for pathing the XREF files to ensure problem-free file operations for the life of an AutoCAD project, including when our data is archived to CD. XREFS should be placed in a sub-folder immediately below the folder in which the main (parent) drawing is located. This is good for file housekeeping, and many operators have already identified the benefits of keeping the XREFS separate. This file structure is shown in *Chapter 2*, Figure 2.1.6.4 in Section 2.1.6.4 - 'Project Data File Structure'.

When this sub-folder file structure is used, XREFs should be attached using relative paths. Information on relative paths can be found in the AutoCAD Help file.

If this is done, the XREFS will be found no matter from which computer (and logical drive) the parent drawing is accessed. Another benefit is that after the job is archived on CD (with the same sub-folder structure), any drawing accessed directly from the CD will load the XREFS stored on the CD, rather than a drawing file on the hard disk with the same filename. This is vital to re-create the archived drawing correctly as XREFS may remain as living documents on the hard disk and be loaded instead of the archived copy.

For drawings with XREFS in sub-folders already loaded and with paths already saved, it is a simple matter to re-path the XREFS using this same method.

This method should also be used for image files also i.e. create a sub-folder below the main drawing folder called "Images" (as shown in *Chapter 2*, Figure 2.1.6.4 in Section 2.1.6.4 - 'Project Data File Structure') and edit the path in the same manner as for XREFS.

When you distribute drawing files that contain XREFS, to ensure that the drawing can be read successfully it is important that you do one of the following things:

- path the XREFS correctly and ensure that you include all the XREFS that are used by the drawing
- use the bind option to bind all XREFS into the drawing. The drawing file will no longer depend on external reference files, however the advantages of using XREFS in the drawing will be lost.

2 AutoCAD text styles and drawing exchange

AutoCAD text styles can be created using either AutoCAD SHX fonts, PostScript fonts or TrueType fonts. When AutoCAD opens a drawing file it must have access to the font files that are referenced by the text styles in the drawing. If AutoCAD is unable to locate the font files that are required by a text style then it will display an error message.

The department's TMR AutoCAD Customisation System defines text styles that use fonts supplied with AutoCAD. The creation of additional text styles is strongly discouraged. However should it be necessary to create additional text styles then they should only use fonts which are supplied as standard with AutoCAD. Under no circumstances should third party text fonts be used. The use of third party fonts makes it difficult to exchange drawing files with other parties who do not have access to these fonts. In most situations it is a breach of copyright to distribute the required third party fonts with your drawing.

3 AutoCAD linetypes and drawing exchange

AutoCAD linetypes can be defined using shapes that have been defined in a compiled shape file (e.g. TMR's MRR.shx and MRS.shx). These shape files must be sent with the AutoCAD drawings. If the shape file is not present in the AutoCAD Support File Search Path, opening and working in the drawing becomes very slow. Section 2.2.1 of *Chapter 2* provides important information regarding the line types used in the department's TMR AutoCAD Customisation.

4 AutoCAD drawing exchange

Using the AutoCAD eTransmit command is an easy way of ensuring that all the relevant data (e.g. external references, text style, linotypes and shape files) is included when distributing your drawing file. Furthermore, eTransmit gives you the ability to create a self-extracting executable file (*.exe) or a Zip file containing a folder with all the relevant files.

