EWB-Ecuador CAD Overview

Project Folder Structure and Content

A project CAD folder structure helps facilitate ease of use and promotes relative pathing of files. Consider creating clear categories and subcategories to create a logical flow of information. Below are some suggested folder names with a description of their content:

ADMIN — Supporting files such as templates, title blocks, logos and plot styles

DRAWINGS — Deliverable Drawings

FIGURES — Figures created for reports or presentations

MODELS — Files created at full scale (1:1) and containing graphical data as well as the attribute data associated with each element for use among design disciplines in producing drawings. A model file typically contains elements of a facility that are created by one designer and referenced, but not modified, by another.

XREF — All Base and other reference files used in the drawings

PROGRESS SETS — PDF files of current versions of the files within the Drawings folder for internal review

SUBMITTALS — Drawing files, both in CAD and PDF, for each phase during the project design

Project Drawing Template

The Project Drawing Template files, EWB-Ecuador Drawing Template ISO A1 (Metric).dwg and EWB-Ecuador Drawing Template ISO A3 (Metric).dwg, are located in the Admin\Support\Templates folder.

Use the Template to create the Base and reference files and Deliverable Drawings. The project title block, some basic layers, annotation styles, symbols and plot style are available within the Template.

Deliverable Drawings

The Deliverable Drawing is the file that assembles a complete drawing by referencing relevant Base and reference files and serves as a vehicle for plotting Sheets.

Sheet size for full size Deliverable Drawings is in either standard "A1" or "A3" size format with outside cut line dimensions of 594mm x 841mm or 297mm x 420mm, respectively. Create each sheet as an individual .dwg file using the Project Drawing Template.

The Table below compares ISO 216 with North American (ANSI) drawing sheets:

ISO					USA Sizes	
Letter	Width		Length		Letter	inches
	mm	*inches*	*mm*	*inches*		
					F	28.0 x 40.0
A0	841	33.11	1189	46.81	E	34.0 x 44.0
A1	594	23.39	841	33.11	D	22.0 x 34.0
A2	420	16.54	594	23.39	C	17.0 x 22.0
A3	297	11.69	420	16.54	B	11.0 x 17.0
A4	210	8.27	297	11.69	A	8.5 x 11.0

Use Paper Space to create a finished layout for printing and plotting the Deliverable Drawing. Place borders with title and revision blocks, vicinity maps, general notes, graphic bar scales and viewports in Paper Space. For all other work such as referenced Base files and annotation, use Model Space.

File Naming

Files should be named following an agreed upon convention to promote consistency when saving or retrieving files. Ideally, file names will explain the file's content with components describing what the file pertains to, including the project name and document type.

Coordinate System

All models and drawings showing proposed or existing structures and alignments to scale should be positioned horizontally with reference to the following Geographic Coordinate System:

UTM Zone 17N Ecuador (N), Columbia 84-78d W, SIRGAS datum (Code SA-SIR-17N)

The Project Drawing Templates, EWB-Ecuador Drawing Template ISO A1 (Metric).dwg and EWB-Ecuador Drawing Template ISO A3 (Metric) are set up with this coordinate system.
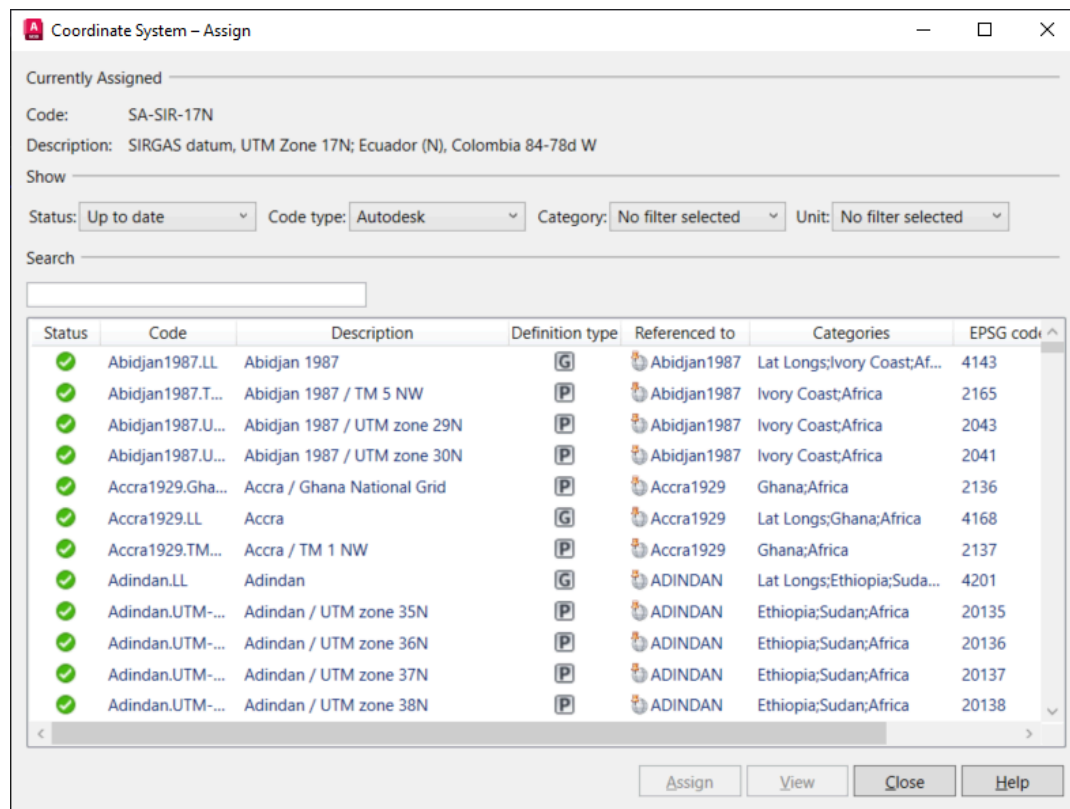
External References (Xrefs)

Base and other reference files should be saved and used from a dedicated Xref folder.

All xrefs should be inserted at 0,0,0 and set to relative path and overlay. The xref should be placed on a dedicated xref layer to allow turning off or freezing the entire xref (rather than freezing/turning off each individual layer associated with a particular xref.). If several xrefs are inserted, layer names can have identifiers added such as xref-site, xref-util, xref-topo.
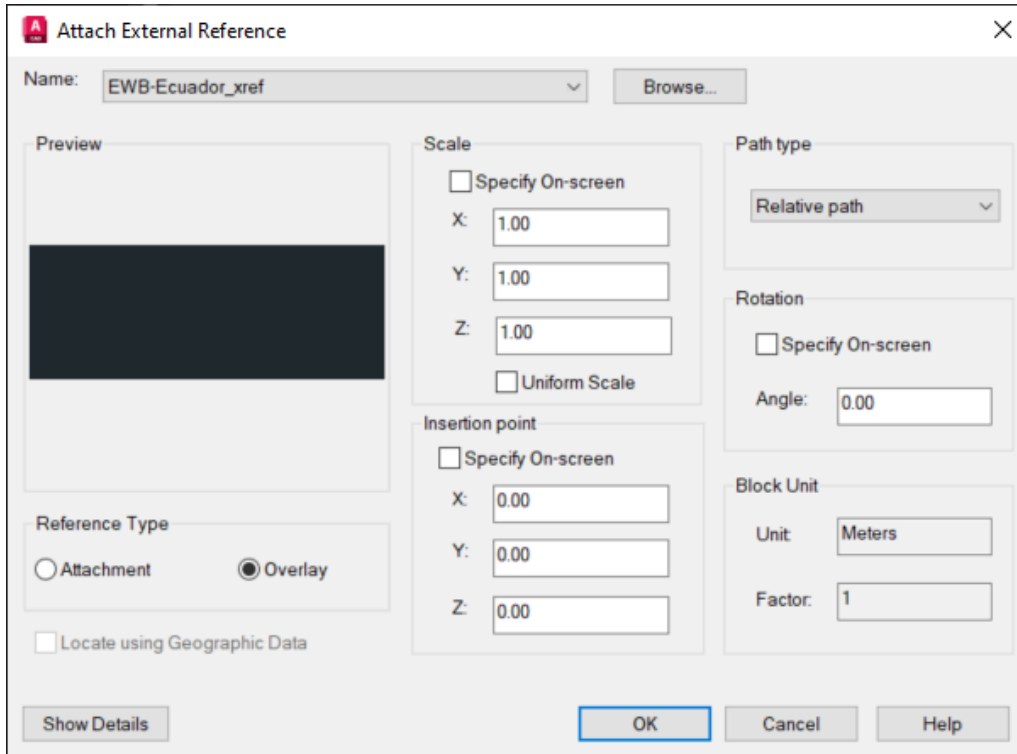
All base files are drawn 1:1 and should be named following an agreed upon convention.

Layers

Layers are the basic tool used in CAD for managing graphic information and should be named following an agreed upon convention. Layers contained in the project drawing template are based on the recommendations set forth in the US National CAD Standard. Refer to United States National CAD Standard, v5 - Layer Name Format for Layer Guidelines.

If your drawing requires a layer that is not contained in the Template, create and name a new layer consistent with the agreed upon convention.

Separate all entities or classes of objects on distinct layers with *By Layer* properties.

Place all externally referenced files on a "xref" layer. (See **External References** above.)

Define block entities on layer 0 and place on the respective layer for the entity when inserting into the drawing.

Do not use the Defpoints layer for work.

Plotting

Plot all drawings in Paper Space using the Page Setup Name EWB-Ecuador ISO A1 (or A3) and color-dependent pen table *EWB-Ecuador.ctb* (located in the Admin/Support/Plot Styles folder). The full-size plot scale should be set at 1:1. Verify also that the paper size is set to ISO full bleed A1 (or A3), the plot offset is set to Center the Plot, and the drawing orientation at the 90-degree position for all plotting purposes.

Full Size A1 page with correct options selected:
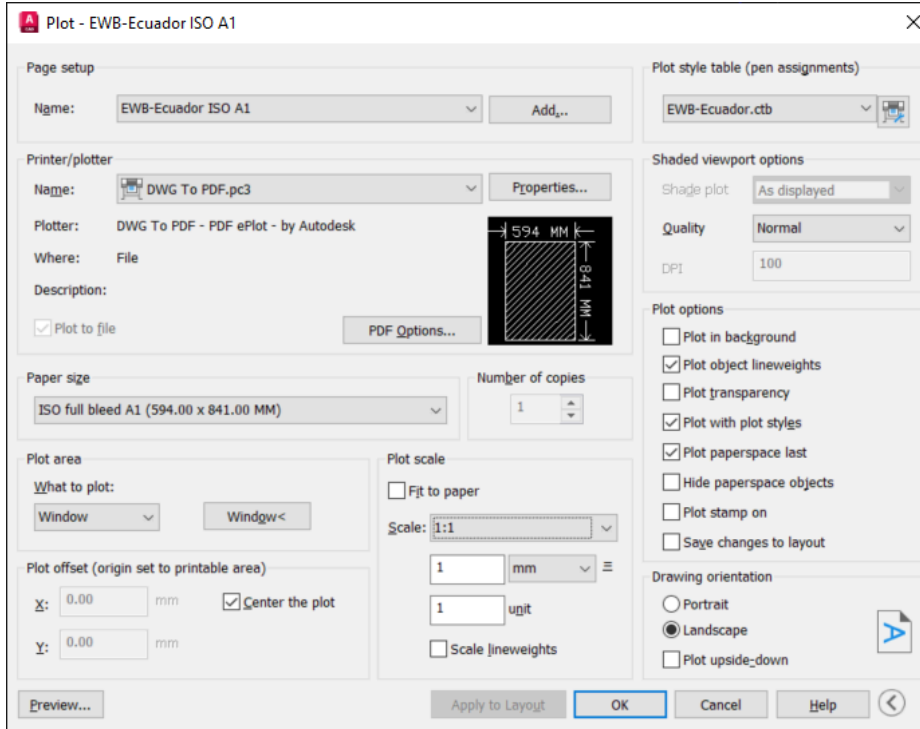
Full Size A3 page with correct options selected:
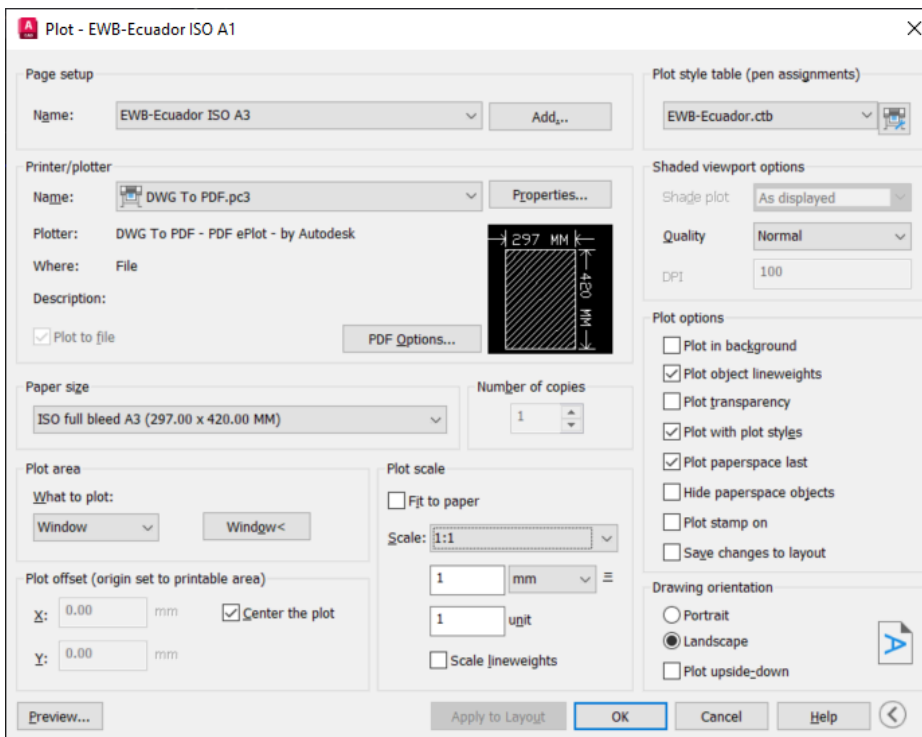
Plot Stamp

The plot stamp is a block embedded in the project title block drawing and updates automatically whenever files are opened and plotted. The stamp indicates the time and date of plot, the path to the source file, and the user login name current at the time the plot command is executed.

Closing a Drawing

Save drawings in a view showing the entire drawing.

Set view to *zoom extents* in both Model Space and in Paper Space.

Set the UCS World coordinate to *World*.

Layer 0 should be white and set as the *current* layer.

Purge drawing of empty, unused, or non-essential drawing data prior to the final submittal.

Revisions

Revision clouds are not to be used to indicate additions/changes to drawings during the design phases.

Revisions made after the Final Drawing Submittal should be tracked and clouded with revision clouds and delta tags. Changes will appear in the revision box on the title block. For each revision, include a revision number (1, 2, 3, etc), description and date in the revision box on the title block.

Before making any revisions to the drawings, ensure that all submitted drawings are properly archived.

Incorporate all revisions in the original design drawing file. Revisions should be made by either crossing out unwanted information, adding new or revised information, or redrawing.

Indicate all new revisions by placing a cloud around the extent of each change and a delta, with the corresponding revision number inside, next to that cloud. Place revision clouds and deltas in Paper Space on a layer,

G-ANNO-REV-[revision number].

If a drawing has several revisions, do the following:

Remove the previous cloud, leaving only the delta and revision number as an indicator of the previous revision.

Place a new cloud around the revised area with a consecutive revision numbered delta.

Enter the change information into the Title Block revision box.