

**U.S.A.C.E.**

**ALBUQUERQUE DISTRICT**

**A/E/C CADD STANDARD**

**SUPPLEMENTAL STANDARD**

(FOR USE WITH THE A/E/C CADD STANDARDS RELEASE 4.0)

24 March 2009

## PURPOSE AND SCOPE

The purpose of this document is to provide information for the production of CAD design files and CADD models for design files. It acts as a supplement to the A/E/C CADD Standards Release 4.0. It is the intent of this document to do the following:

1. Provide information not covered by A/E/C CADD Standard Release 4.0 for all drawings.
2. Provide clarification or interpretation of A/E/C CADD Standard Release 4.0 for all drawings.
3. Act as a guide for employees of the Albuquerque District Design Branch Team members or entities outside of the Albuquerque District that are performing design work contracted through the Albuquerque District.
4. In a few cases, supersedes the A/E/C CADD Standard whereas the Standard is inappropriate or inadequate for the needs of the Albuquerque District and its various customers.
5. Provides the settings, utilities, resources, and subroutines utilized by Microstation<sup>1</sup> and the Albuquerque District in the production of CADD designs.
6. Aid the user in the implementation of A/E/C CADD Standard for the Albuquerque District Design Branch.

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<sup>1</sup> MicroStation is the CADD software utilized by the Albuquerque District and is the registered trademark of Bentley Systems Inc. All CADD contract deliverables regardless of origin shall be compatible with the latest version of this software and the latest version of A/E/C CADD Standard and this document.

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# PREFACE

This Document will follow as closely as possible the format used by A/E/C CADD Standard. For most of the sections listed in the Table of Contents of this document the A/E/C CADD Standard Release 4.0 will be referenced. It is the responsibility of the user to obtain a copy of this standard. For other sections of this document, the A/E/C CADD Standard will be referenced but supplemental or replacement information as described in the Purpose and Scope statement of this document may be included. The A/E/C CADD Standard may be obtained at <http://tsc.wes.army.mil>.

The Albuquerque District CADD Manager (Lance Faerber, lance.r.ferber@usace.army.mil) and the Project Engineer or the Contracting Official must approve any deviations from this document.

## CHAPTER 1 – INTRODUCTION

Please reference A/E/C CADD Standard Chapter 1, pp.1-5.

## CHAPTER 2 – DRAWING FILE ORGANIZATION

Please reference A/E/C CADD Standard Chapter 2, pp.6-23.



“xx##” is the root directory and the number will assigned by the Project Manager. All model files (reference files) will be located in this directory. All sheet files are to be located in their respective directories. (xx = project location; ## = project number).

## ***BUILDING INFORMATION MODELING (BIM) MODEL FILES AND SHEET FILES***

Please reference A/E/C CADD Standard Chapter 2, pg. 8.

The Design Branch of the Albuquerque District complies strictly with the definitions and use of sheet files and model files as defined in the A/E/C CADD Standard. Each sheet file will have its own electronic file. Having several sheet files in one electronic file will not be permitted.

## **ELECTRONIC DRAWING FILE NAMING CONVENTIONS**

Please reference A/E/C CADD Standard Release 4.0, Chapter 2, pp. 10-18.

### **Model file naming convention**

The model file designator shall be in accordance with Table 2-1 “Discipline Designators” on page 13 and Table 2-2 “Model File codes” on page 13 (i.e. xx##s-fp.dgn: where xx=project location; ##=project code; s=discipline designator; and fp=model type – in this case framing plan). Other model file types are to be named with the designators specified in Tables 2-1 and 2-2. If additional Codes are needed it is up to the user to coordinate with the Albuquerque District CADD Manager and the Project Engineer or the Contracting Officer in selecting and documenting logical codes.

### **Sheet file naming convention**

The sheet file designator shall be in accordance with Table 2-3 on page 17 (i.e. xx##s-001.dgn: where xx=project location; ##=project code; s=discipline designator; and 001=sheet number).

## **COORDINATION BETWEEN SHEET FILE NAME AND SHEET IDENTIFIER**

The sheet number in the bottom right hand corner of the title block for each sheet file shall be in numerical order starting with G-001 as the cover sheet file of the project and increasing by a value of one for each subsequent sheet file by discipline. The sheet number for any particular sheet file shall be equal to the sheet designator code and sheet number combined (i.e. for the sheet file named “xx##s-001.dgn” the sheet number will be “S-001”). Figure 2-6 pg. 23

(However, the sequence number for S-001 will depend upon the total number of sheets preceding this sheet. The sequence numbers will start at 1 for the cover sheet and continue to the end of the drawing set.)

## **CHAPTER 3 GRAPHIC CONCEPTS**

Please reference A/E/C CADD Standard Release 4.0, Chapter 3, pp. 24-41.

### **Screening**

Screening or using gray scales is not permitted by the Albuquerque District.

### **Text styles/fonts**

For design files the proportional font (Working in MicroStation and Romans in AutoCAD) is sufficient for all text. All text shall be UPPERCASE. For text height/width/lineweight ratios use the following as a guideline (with all values given shown as measured from full-size plot of the sheet file):

1. General text: 1/8” (.125) x 1/8” (.125); LW=2
2. Subtitles: 3/16” (.188) x 3/16” (.188); LW=2

3. Titles: 1/4" (.250) x 1/4" (.250); LW=3

Any deviations from the information provided above shall be the approved by the Albuquerque District CADD Manager and the Project Engineer and the Contracting Officer and documentation of the change shall be provided with the design file upon delivery.

## ***BORDER SHEETS***

### **Title block**

The Albuquerque District Office will provide a title block with the border in MicroStation or AutoCAD format for every project. The title block will include the Text Style for each portion of the title block. Any deviations shall be approved by the Albuquerque District CADD Manager and Project Engineer and the Contracting Officer and documentation of the change shall be provided with the design file upon delivery.

## ***DRAWING SCALES***

All drawing scales shall be inch-pound measurements. Dual units will not be used. Any deviations shall be approved by the Albuquerque District CADD Manager and Project Engineer and/or the Contracting Officer and documentation of the change shall be provided with the design file upon delivery.

## **CHAPTER 4 LEVEL/LAYER ASSIGNMENTS**

### ***LEVEL/LAYERS***

Please reference A/E/C CADD Standard Chapter 4, pp. 42-48.

#### **Level/layer naming conventions**

The Albuquerque District provides Microstation level name tables for each of the design file types listed in the A/E/C CADD Standards Release 4.0 (please reference Appendices "A" and "B" of the A/E/C CADD Standards Release 4.0) on the Albuquerque District CADD Standards web page. The Albuquerque District complies with Chapter 4 and related appendices of the A/E/C CADD Standard with limited exceptions, contact the Albuquerque District CADD Manager for details.

The leveling schemes suggested shall be followed as closely as possible, but it is recognized that they may be inadequate in some instances. In such cases, additional levels needed shall be added and the change documented by modifying the attached level names table. New Level/layer names shall match the format as shown in the A/E/C CADD Standard. Any deviations shall be the approved by the Albuquerque District CADD Manager and Project Engineer and the Contracting Officer and documentation of the change shall be

provided with the design file upon delivery all new level/layers shall follow the format shown in Chapter 4 Level/Layer Assignments.

### ***Model Files***

Please reference A/E/C CADD Standard Chapter 4, pp. 45-48.

### **Reference files (XREFS)**

Please reference A/E/C CADD Standard Chapter 4, pp. 48 and 49.

All Reference (model) files shall be at 1" = 1". Borders shall be scaled up on the Sheet Files to fit around the Reference files. Reference files shall contain graphics with minimal text.

The Albuquerque District does not accept design files that do not take full advantage of referencing.

## **CHAPTER 5 STANDARD SYMBOLOGY**

Please reference A/E/C CADD Standard Chapter 5, pp. 52-53.

### ***Deliverables***

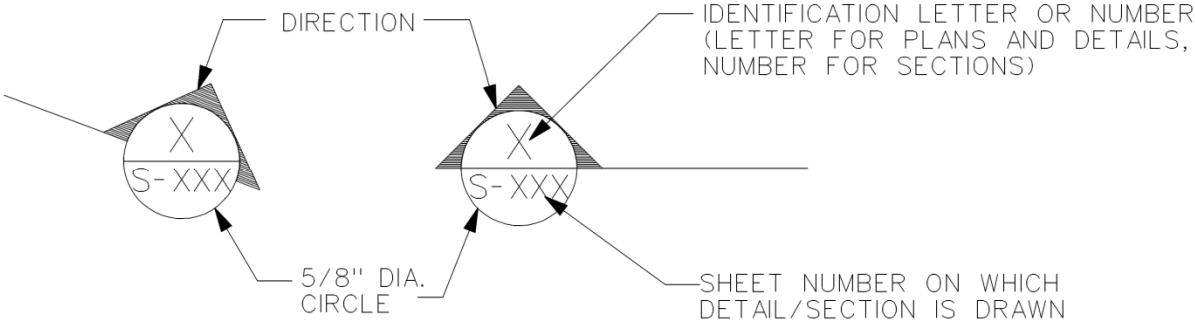
The Albuquerque District does not accept design files that are not compliant with the standards addressed by the A/E/C CADD Standard Release 4.0, the guidelines set forth in the Albuquerque District web page, the scope of work, and this document. Additionally, the Albuquerque District does not accept design files that are not compatible with the current version of MicroStation.

MicroStation design files should be reviewed for content and standards compliance prior to the acceptance of the contract drawings. MicroStation design files should be produced along with hard copies of the design drawings. Also the "Quality Control Checklist for CADD Files" located at <http://www.spa.usace.army.mil/EC/cadd/index.htm> shall be completed for each discipline and delivered to the Project Manager. Any deviations shall be approved by the Albuquerque District CADD Manager and Project Engineer and the Contracting Officer and documentation of the change shall be provided with the design file upon delivery.

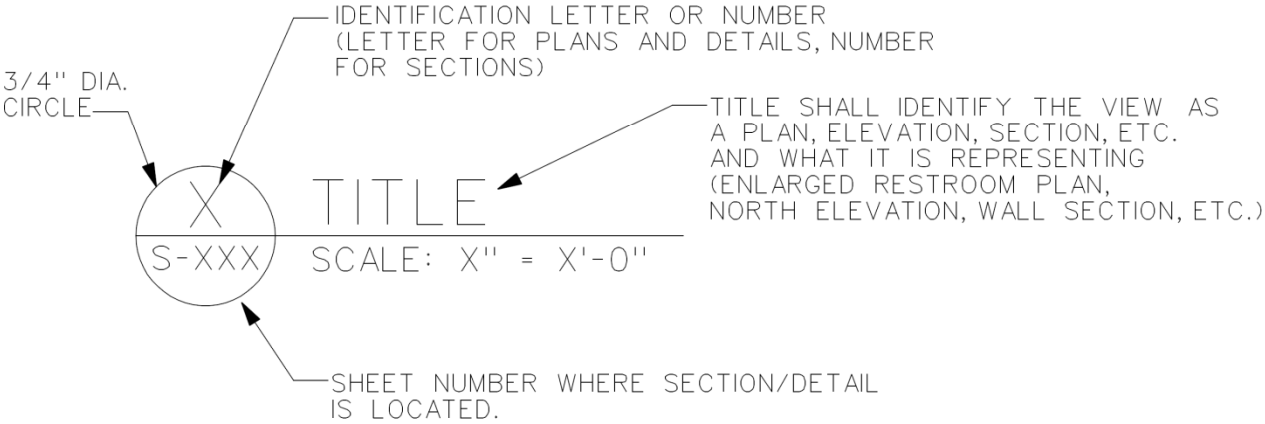
## **REFERENCE SECTION/DETAIL BUBBLES**

# ELEVATION, SECTION AND DETAIL CROSS REFERENCES

THE FOLLOWING SECTION/DETAIL CONVENTIONS  
SHALL BE USED ON ALL WORKING AND FINAL DRAWINGS.



## SECTION/DETAIL REFERENCE BUBBLE



## REFERENCE BUBBLE ON THE SHEET WHERE THE SECTION/DETAIL IS DRAWN