Technical Report CADD-99-1
October 1999

Tri-Service CADD/GIS Technology Center

A/E/C CADD Standard

Main Text and Appendices A, B, C, and D

Appendix E

The A/E/C CADD Standard is compliant with Version 1.0 of the U.S. National CAD Standard.

The A/E/C CADD Standard contains supplemental materials and DoD specific requirements not addressed in the U.S. National CAD Standard.

Release 1.8

Approved For Public Release; Distribution Is Unlimited

Published by U.S. Army Engineer Research and Development Center
Waterways Experiment Station

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Contents

List of Figures

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List of Tables

Preface

The "A/E/C CADD Standard Manual" has been developed by the Tri-Service CADD/GIS Technology Center (TSTC) to reduce redundant Computer-Aided Design and Drafting (CADD) standardization efforts within the Army, Navy, Air Force, and Corps of Engineers. The manual is part of an initiative to consolidate existing CADD drafting standards and to develop data standards that address the entire life cycle of facilities within the Department of Defense Tri-Services. The A/E/C CADD Standard Manual is part of a set of standards being developed by the TSTC. Additional manuals include the following:

a. A-E Deliverable Guidelines
b. Tri-Service Spatial Data Standards
c. Tri-Service Facility Management Standards

Information on all these documents can be obtained from the TSTC's web page at *http://tsc.wes.army.mil*.

Chapters 1-7 of this manual address topics such as presentation graphics, level/layer assignments, electronic file naming, and standard symbology. Appendices A-E contain tables on model and sheet file level/layer names, color comparisons with associated line widths, as well as A/E/C CADD symbology. As this manual evolves, it will also include nongraphic database standards. The beta release of the nongraphic attributes will be available late in 1999. The TSTC's primary goal is to develop a CADD standard that is generic enough to operate under various CADD software packages (such as MicroStation and AutoCAD) and incorporate existing industry/national standards. In the final phase of developing this standard, platform-specific software will be provided to implement the standard on hardware platforms available through the Navy's Installation Management/Facilities CAD2 (IM/FCAD2) contract.[1]

Mr. Harold L. Smith is Chief of the TSTC, which is located in the Information Technology Laboratory (ITL), U.S. Army Engineer Research and Development Center, Waterways Experiment Station (WES), Vicksburg, MS. The Acting Director of ITL is Mr. Timothy D. Ables. At the time of publication of this report, the Acting Director of WES was COL Robin R. Cababa, EN.

United States National CAD Standard

In 1995, the combined resources of the Tri-Service CADD/GIS Technology Center, the American Institute of Architects (AIA), the Construction Specifications Institute (CSI), the United States Coast Guard, the Sheet Metal and Air Conditioning Contractors National Association (SMACNA), the General Services Administration (GSA), and the National Institute of Building Sciences' (NIBS) Facility Information Council began an effort to develop a single CADD standard for the United States. Working together, these organizations agreed to develop an integrated set of documents that collectively would represent the United States National CAD Standard.

[1] The Installation Management/Facilities CAD2 (IM/FCAD2) contract is a computer hardware/software/services contract awarded to both Tracor Incorporated and Intergraph Corporation in 1993.

The sections of the United States National CAD Standard were developed as follows:

- Layering and model file naming were developed and published by AIA, with assistance from CSI and TSTC.
- Drawing set organization and sheet file naming were developed and published by CSI, assisted by TSTC, and reviewed by AIA.
- Sheet organization was developed and published by CSI, with assistance from AIA and TSTC.
- Schedules were developed and published by CSI, assisted by TSTC, and reviewed by AIA.
- Plotting guidelines (colors and line weights) were developed by TSTC and the United States Coast Guard, published by TSTC, and reviewed by CSI and AIA.
- Drafting conventions including notations, symbols, diagrams, scales, and line types were developed by CSI, TSTC, the United States Coast Guard, and SMACNA; assisted by AIA; and published by CSI.
- Nongraphic attributes will be developed and published by TSTC, the International Alliance for Interoperability (IAI), vendors, and trade associations, with review by CSI and AIA.

A Memorandum of Understanding (MOU) was signed on August 8, 1997. In accordance with that MOU, Release 1.8 of the A/E/C CADD Standard follows, utilizes, or references the work developed by each of the signatories. The two main documents referenced within Release 1.8 of the A/E/C CADD Standard are

- "The Uniform Drawing System"
  The Construction Specifications Institute
  601 Madison Street
  Alexandria, VA 22314-1791
  http://www.csinet.org
- "CAD Layer Guidelines"
  The American Institute of Architects Press
  1735 New York Avenue, N. W.
  Washington, DC 20006
  http://www.aiaonline.com/

Each of these documents can currently be obtained from the authoring agency or can be purchased together as part of the United States National CAD Standard. Additional information on the United States National CAD Standard can be obtained from

- NIBS Facility Information Council
  National Institute of Building Sciences
  1090 Vermont Avenue, N. W., Suite 700
  Washington, DC 20005-4905
  http://www.nationalcadstandard.org

Subsequent releases of the A/E/C CADD Standard will become an appendix (or supplement) to the United States National CAD Standard and will address DoD specific requirements that are not covered in the United States National CAD Standard.