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## Section 1 General Requirements

- 1.1 Overview: These standards are issued to promote the development of CAD drawings suitable for use in the Cleveland State Office of the University Architect's record drawings. Consistency and compatibility with existing Cleveland State CAD documents can only be achieved when these standards are strictly adhered to. Electronic drawings produced and submitted in accordance with these standards have significantly greater value to the university, Architects, Engineers and Contractors delivering CAD documentation to Cleveland State. Other Cleveland State contractors or construction guidelines may reference this document.

All design and construction drawings submitted to Cleveland State shall follow the CAD standards outlined in this document. Each of the following sections contains the most essential criteria for developing CAD drawings for use at Cleveland State.

3T5 1 Tf 5e-.00is-39

Construction Drawing Disclaimer: All construction documents must include the following disclaimer: "Warning: This document may contain sensitive and/or proprietary information and therefore must be treated as a confidential document. Acceptance of this document constitutes an agreement that this document and the information contained herein shall be maintained and transmitted in a confidential manner. No part of this document shall be reproduced, distributed, or disseminated without the express written permission of Cleveland State and any distribution to non-CSU entities or persons must be subject to a written confidentiality agreement."

- 1.2

Drawing Format 3.04325 5/7/2015 10:12:04 AM

should be erased, of

Purge each drawing of unused layers prior to submittal. The drawing file should contain only those layers necessary for displaying and plotting the information and drawing entities contained in each drawing. To ensure that subsequent prints made from each CAD drawing match the original, unused or unnecessary layers must be purged from the drawing prior to delivery.

The effective use of CAD layering standards should:

- Allow users to isolate systems and drawing elements by controlling the visibility of objects to improve system performance and eliminating visual clutter.
- Expedite the import process and maintenance requirements for each set of drawings.
- Facilitate the sharing of information between drawings and disciplines.
- Allow users to control display and printing characteristics such as color, line type, line weight etc.

1.7 Entity Properties: To ensure the integrity of the original drawing when viewing or printing, it's essential that CAD entities are created following these standards:

- Entity colors shall be defined by layer, not by entity.
- Blocks shall be defined (created) on layer 0 (zero).
- All attributes shall be defined on layer 0 (zero).

1.8 Model and Paper Space Usage: These guidelines are suggested for using model and paper space effectively:

- Place title blocks, schedules and general notes at full scale in paper space whenever possible.
- Labels scaled viewports with the appropriate scale in model space.
- Do not place or draw model related blocks, tags and objects in paper space.
- Draw all model space objects at full scale.
- Scale objects using paper space viewports – zoom viewport to the appropriate scale

1.9 External References (XREF's)/Image Files: External References (XREF's) contained in CAD drawings created outside of Cleveland State can result in content discrepancies in the delivered drawing set.

To ensure the integrity of the drawing set, and minimize potential problems:

- CAD drawings submitted to Cleveland State shall not contain any XREF's.
- XREF's shall not be "bound" to drawings prior to delivery.
- If drawings contain XREF's they should be inserted as blocks prior to submittal to Cleveland State.
- Layers contained in XREF's inserted as blocks shall conform to Cleveland State standards.
- All images included in a drawing must be cut and pasted into the drawing so that they are embedded within the CAD file. Referenced images will be discarded and therefore might cause incomplete drawings. Please be aware of this when creating your CAD files.

1.10 CAD Drawing Support Files: Drawings created using non standard CAD fonts, linetypes, and hatch patterns can result in content discrepancies in the delivered drawing set. To ensure the integrity of the drawing set, and minimize potential problems:

- Only native CAD fonts, linetypes, and hatch patterns or the CAD Symbology provided by the AIA Standards
- Custom fonts, linetypes, and hatch patterns, including those provided by 3rd party software, shall not be used.
- Only these TrueType fonts shall be used: Arial, Courier New, Times New Roman.
- Postscript fonts shall not be used.

## 1.11 File Transmittal: The content of electronic drawings

Scheme No. – SK+ the number of the scheme+ possible generation letter

Example SK02B Second generation of Scheme No. 2

Date – Corresponding date of final approved schematic

Example 04 15 15

Naming of this file shall be: CSUNo. ASBUILTDate.zip  
 CSUNo. – Cleveland State University Job Number  
 Date – Issuance date for Bidding of Construction Documents  
 Example 04 15 15  
 FileName Example LF1405ASBUILT04 15 15.zip

## Section 2 Layering Standards (General)

2.1 Layer Name Format: The layer naming scheme followed by Cleveland State is organized as a hierarchy. This structure is intuitive, easy to use and sort, and allows for expansion and customization. Layer names are defined using characters identifying disciplines, minor groups and modifiers. Disciplines are always identified by a single character, major groups, minor groups, and modifiers are always identified using four characters and each group is separated by a hyphen.

Discipline Group (Required)	Major Group (Required)	Minor Group (Required)	Status (As needed)
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X-XXXX-XXXX-XXXX

16 major disciplines are defined in these standards:

Major groups subdivide disciplines based on construction systems or type of information. For example: A WALL and C ANNO

Minor groups subdivide major groups to provide additional information about the entities located on the layer. For example: V POLE UTIL indicates that this layer only includes Utility Poles and was surveyed/mapped.

Modifiers are optional, and further subdivide the minor groups. For example: 4 - This layer only for (4 - use U) City Total Ways 60' or



## 2.2 Layer Standards- Detailed: Please refer to the AIA Standards for layering Cleveland State

## Appendix A

General:Use24 x 36 sheetsizefor

oy8/TT1 1 Tf 1.239.961.239.9615Tf .8571 0 TD 0 Tc03ts, TD .0014

# Appendix B

Department of Facilities and Safety  
Office of the University Architect

## ELECTRONIC FILE QUALITY ASSURANCE CHECKLIST

CAD drawings, BIM and image (PDF) files delivered at closeout of project must be accompanied by this checklist. When a checklist has been signed and submitted, the vendor (architect, engineer, contractor, etc.) is assuring that all submitted materials adhere to the standards and guidelines set forth in the Office of the University Architect's CAD Standards. Final payment to vendor is dependent on acceptance of submitted files by CSU PM.

### FILE FORMAT AND SETUP

- ´ Electronic File Format
- ´ Scale, Units, & Tolerances
- ´ Fonts and Text Styles
- ´ Blocks
- ´ Title Blocks
- ´ Policy on Model Space and Paper Space
- ´ Policy on External Reference Files/Image Files (XREFs)

### LAYERING

- ´ Standard Layer List
- ´ Layer Name Formatting
- ´ General Rules about Naming and Uses
- ´ Layer Attributes (Colors, Penweights, Linetypes)

### CAD & PDF NAMING CONVENTIONS

- ´ Building and Floor Identification Codes
- ´ Discipline Identification Codes
- ´ Drawing Type Codes
- ´ Drawing Numbers

Project Number

Project Title

Consultant/Vendor Name  
(Please print)

Name of Accountable Consultant/Vendor Representative  
(Please print)

Signature of Accountable Consultant/Vendor Representative

Date

Phone number: \_\_\_\_\_ Email: \_\_\_\_\_