

York University
CAMPUS SERVICES AND BUSINESS OPERATIONS
PLANNING AND RENOVATION



DRAWING STANDARDS AND PROCEDURES

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DRAWING STANDARDS AND PROCEFURES

1. Introduction

The purpose of this Document is to serve as a guideline specification for producing & delivering CAD drawings for York University.

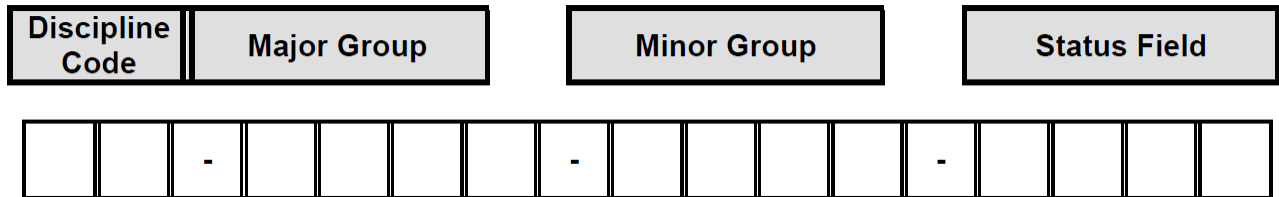
2. AutoCAD Drawing Standards Compliance

Drawings submitted to York University shall comply with the OAA standard which complies with the AIA CAD Layer Guidelines of the United States National CAD Standard-Version 4.0 that is available at <http://www.buildingsmartalliance.org/ncs/>.

3. Layer Name Format

York University Layer standard is based on the “American Institute of Architects (AIA) and the United States National CAD Standard NCS Version 4.0.

The Layer Name Format is organized as a hierarchy with **four** defined Layer Name Data fields, separated from one another by dashes: *(bet. 6 to 15 Characters)*



NOTE: The Discipline Designator and the Major Group are mandatory fields. The Minor Groups and the Status fields are optional.

3.1. The Discipline Designator-Level 1

The Discipline Designator denotes the category of subject matter contained on the specified layer. It is a two-character field. The first character is the discipline character, and the second character is an “optional” modifier.

NOTE: The Discipline Designators for the Layer Names and File Names are the same.

3.2. The Discipline Designator-Level 2

The optional second character is used to further define the discipline character.

LEVEL 1 DISCIPLINE DESIGNATION	
G	General
H	Hazardous Materials
V	Survey/ Mapping
B	Geotechnical
W	Civil Works
C	Civil
L	Landscape
S	Structural
A	Architectural
I	Interiors
Q	Equipment
F	Fire Protection
P	Plumbing
D	Process
M	Mechanical
E	Electrical
T	Telecommunications
R	Resource
X	Other Discipline
Z	Contractor/ Shop Drawings
O	Operations

Discipline Designation –Level 2

DESIGNATOR	DESCRIPTION
A	
AS	
AD	
AE	
AI	
AF	
AG	
AJ	
AK	

3.3. Major Group

The Major Group is a four-character field that identifies a major building system, such as doors, walls, windows, etc. Although most major groups are logically associated with specific discipline codes, it is possible to combine Major Group with any Discipline Designator.

EXAMPLE: **A-WALL** OR **I-WALL**

3.4. Minor Group

This is an optional four-character field to further define the Major Groups.

EXAMPLE: **IDEN** for Identification tags & **PATT** for Texture or Hatch patterns

3.5. Status Field

The status field is an optional single-character field that distinguishes the data contained on the layer according to the status of the work or the construction phase.

STATUS FIELD CODES	
N	New work
E	Existing to remain
D	Existing to demolish
F	Future work
T	Temporary work
M	Items to be moved
X	Not in contract
1-9	Phase Numbers

3.6. Annotation Layers

Annotation comprises Text, Dimensions, Sheet Borders, Detail References and other elements on CAD drawings that do not represent physical aspects of a building. It is designated by the major group “ANNO”.

4. Technical Requirements for CAD Standards

4.1. Drawing Units

The drawing must be drawn in full scale. Objects created in model space shall be drawn at 1:1 scale.

4.2. Drawing Origin and Registration

The origins of CAD files shall be defined at coordinates (0,0,0). This is typically the lower left corner of the building. The model shall be oriented so North is either to the top or left on the drawing document.

The origin point shall remain consistent between all CAD files in a Project.

4.3. Entity Properties

Color, line weight and line type shall be set to “BYLAYER”, for purposes of clarity. Utilizing line weights is an effective means of communicating important information about the facility and the design Project.

NOTE: Consultants shall select line weights and colors that promote effective use of CAD data, in both plotted and electronic formats.

PEN #	COLOR	CORE DRAWING ELEMENTS
1	RED	Furniture, fixed/movable equipment
2	YELLOW	Stairs, details, doors, windows, glazing, elevator cars, toilet partitions, partial walls
3	GREEN	Toilets, Plumbing Fixtures
4	CYAN	Text, dimensions, legends, area polylines, room numbers
5	BLUE	Space Hatching
6	MAGENTA	Structural columns, Gross floor polyline
7	WHITE	Walls, Exteriors
8	DARK GREY	60% screening
9	LIGHT GREY	Interior Walls, Fire wall pattern, stairs

4.4. Text Requirements

Text height in Paper Space shall be set to **2.5mm**, if the drawing's unit is Metric and to **1/10"** if the drawing's unit is Imperial. Text shall be in Upper Case, except for symbols with lower case.

4.5. Dimensions

Annotative Dimensions shall be used and Dimension Style Names shall be consistent between CAD files within a Project.

4.6. Blocks

Any graphic entity that repeats in the drawing shall be made into a block with a consistent Insertion point. Blocks Names shall be simple and Descriptive.

4.7. Hatching

Polylines with increased widths shall not be used for hatching purposes.

4.8. Title Blocks

Each CAD Drawing shall have a title block in Paper space, that shall be placed with its lower left hand corner point inserted at a coordinate location of (0,0,0).
Consultants shall use the York University title block template.

Title block required Information:

- 1) Project Name
- 2) Building Number and Alpha Code
- 3) Building Name
- 4) Drawing Title
- 5) Drawing Number
- 6) Drawing's Date & Revisions table
- 7) Drawing Scale and a Graphic Scale in Paper space
- 8) North arrow

4.9. X-refs Files

Xrefs may be used to reduce drawing size. All Xrefs shall reside in the same directory as the drawing files.

5. Layer Management for FM

A single Layer named “RM” shall be created in each drawing of plans. This layer contains “only” Polylines that outline each room in the drawing following the wall surface (link to FM program).

6. Sheet Identification and Delivery

6.1. Naming Construction Drawings

The file naming convention follows the Sheet Identification section of the US NCS Version 4.0.

6.2. Sheet Identification

The Sheet Identification format is applicable to both manual and CAD drawing production. It contains three components:

1. The Discipline Designator
2. The Sheet Type Designator
3. The Sheet Sequence Number

Discipline Designator				
A	A	N	N	N

Sheet Type Designator				
A	A	N	N	N

Sheet Sequence Number				
A	A	N	N	N

SHEET TYPE DESIGNATORS	DRAWING ELEMENTS/REVIEWS
0- General	Symbols, Legends, Notes
1- Plans	Horizontal Views
2- Elevations	Vertical Views
3- Sections	Sectional Views, Wall Sections
4- Large Scale Views	Plans, Elevations, Stair Sections
5- Details	-
6- Schedules and Diagrams	-
7- User Defined	For Types that don't fall in other categories

6.3. Submittal Delivery Requirements

1. Drawings in AutoCAD format (saved down to 2010, if higher versions are used).
2. PDFs
3. All Xrefs, fonts, hatches, line types and plot styles
4. All Manuals
5. Specifications
6. A Hardcopy of the Project including all Change Orders and Site Instructions

York University requires DWG files to be submitted using **eTransmit**.

