Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

CAD & Image Standards for Construction Projects & Facility Documentation

Version 4.0

Appears next to an internal or external hyperlink.

September 29, 2020

Beth Israel Deaconess Medical Center
Facilities Planning, Design and Construction
330 Brookline Ave (OV-400B)
Boston, MA 02215
BIDMC_DCG@bidmc.harvard.edu

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

TABLE of CONTENTS

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

1.0 INTRODUCTION

1.1 Overview: This document outlines how to produce and deliver as-built construction documents as CAD drawings and images (PDF format) to the Beth Israel Deaconess Medical Center (BIDMC) Facilities Department in a way that maximizes the short- and long-term utility of CAD data and ensures the integrity of our archives.

The Facilities Planning, Design and Construction department at BIDMC maintains this document as a means to standardize incoming CAD data and ensure an unimpeded transfer of information to the Medical Center's space inventory database.

All materials specified in this document must be provided in compliance with the BIDMC CAD standards at the time of project close out. Final payment from BIDMC will only be rendered upon the delivery of said materials.

The BIDMC CAD standards comply with *The United States National CAD Standard® Version 5.0* (USNCS). If formatting information not outlined in this document is required, refer to the USNCS for guidance.

Questions or comments regarding the information in this document can be directed to:

Beth Israel Deaconess Medical Center
Facilities Planning, Design and Construction
330 Brookline Ave (OV-400B)
Boston, MA 02215
(p) 617.975.9910
(f) 617.975.9900
bidmc_dcg@bidmc.harvard.edu

1.2 Review Process: This section contains a workflow required for review of CAD drawing submissions to BIDMC during the design and construction phases.

Design Phase
- The lead designer is responsible for ensuring that all members of the A/E design team comply with the BIDMC CAD Standards.
- Room Numbers: The lead designer shall submit a PDF of the proposed new work plan with room numbers to BIDMC for review and approval.
- Construction Drawing Review: The lead designer shall submit CAD and PDF files of the final Construction Documents for review and approval.
- Construction Drawing Distribution: The lead designer shall issue BIDMC-approved CAD and PDF files to the selected/awarded contractor
    .

Construction Phase
- The BIDMC Close-Out Checklist and CAD Standards are reviewed during the kick-off meeting.
- A/E team incorporates any changes from construction (RFI's, Bulletins, etc) into the drawings (aka the "Backgrounds").
- BIDMC reviews modified Background Drawings for compliance. Drawings that do not conform to BIDMC standards are returned for revision.
- A/E team provides approved Background Drawings to the Contractor for As-Builts.
- Contractor submits As-Builts to BIDMC for review and approval. Drawings that do not conform to BIDMC standards are returned for revision.

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

2.0 FILE FORMAT and SETUP

2.1 File Format

2.1.1 Archival File Format (PDF): An image in PDF format must be submitted for each drawing sheet. PDF files must comply with the BIDMC CAD & Image Standards 4.0 and will be reviewed against the BIDMC Standards by a member of the BIDMC DCG Team.

- Sections 2.2.3 Title Block, 4.1 Sheet Identification, and 6.0 Space Identification & Use Data from the BIDMC CAD & Image Standards are the only applicable sections for PDF compliance.

2.1.2 Electronic File Format: The following pages must also be submitted in CAD format, compatible with AutoCAD® 2020:

- All Architectural plans, including but not limited to: floor plans, reflected ceiling plans, furniture, and equipment plans
  - o Architectural plans must comply with BIDMC CAD & Image Standards 4.0 and will be reviewed against the BIDMC Standards by a member of the BIDMC DCG Team.
- Plans for all other disciplines - such as Mechanical, Electrical, Plumbing, Fire Protection, Structural - and Riser diagrams
  - o These plans and riser diagrams will <u>not</u> be reviewed against BIDMC CAD & Image Standards 4.0, but are expected to be submitted to a BIDMC DCG Team Member for archival purposes.

2.1.3 Revit: BIDMC does not assist with translation from Revit to AutoCAD, nor does BIDMC provide assistance with layer conversion. If the consultant produces a Revit file, please submit the file during closeout as a .ZIP folder along with all linked files. The Revit file will not be reviewed for standards at this time.

2.2 File Setup

2.2.1 Scale, Units and Tolerances: Drawing models in CAD should be in architectural units and drafted at full scale. One drawing unit is to equal one inch. Drawing tolerances should be consistent with industry standards.

2.2.2 Text Styles and Fonts: Arial is the preferred text font, but other TrueType fonts packaged with the AutoCAD® software are allowed. Special fonts not part of the AutoCAD software package are not allowed. Any printed text (labels, dimensions or notes) must be a minimum of 1/8" in height.

2.2.3 Title Block: Each file should have a title block that contains the following information:

Project Information	BIDMC Logo*	Provided by BIDMC
	Project Name	Provided by BIDMC
	CTS Number	Provided by BIDMC
	Firm Name	Provided by consultant
Sheet Information	Drawing Title	Identifies drawing content
	Building Name	Identifies drawing content
	Floor Number	Identifies drawing content
	Phase Number	Identifies drawing content (if applicable)
	Sheet ID	Unique sheet number (see section 4.1)
	As-Built Stamp*	If applicable
	Drawing Scale*	If applicable
	Key Plan*	Indicate scope of work and drawing view if applicable

* Recommended but not required for CAD files

2.2.4 Blocks: All entities within a block must be on Layer 0 and set to ByLayer properties.[1]

2.2.5 AutoCAD Model/Paper Space: All building information and associated annotation should be drawn in model space at full scale. One drawing unit equals one inch or one millimeter. Only the title block may be drawn in paper space. Please include a construction limit line in model space outlining the scope of work. BIDMC will accept files formatted in any North American architectural paper size; ARCH C, ARCH D, or ARCH E preferred.

2.2.6 External Reference Files: BIDMC will not accept the submission of any CAD drawing deliverable that contains unbound external references to drawing source files. All externally referenced data sources should be inserted and retained as a block within a single drawing file prior to drawing delivery. The resulting self-contained drawing file is an acceptable deliverable to BIDMC.

2.2.7 Image Files (JPGs, BMPs, PNGs): BIDMC will not accept the submission of any CAD drawing deliverable with referenced images. All images included in a drawing must be cut-and-pasted into the drawing so that they are embedded within the CAD file. If it is not possible to embed the images, please contact the BIDMC Facilities staff to determine an alternative. This also applies to consultant logos.

2.2.8 File Naming Conventions: All CAD & PDF files should be named with the following information:
- Sheet ID number
- Drawing title
- Phase number (if submitting separate drawing sets for each phase)
- Both the CAD & PDF files should have the same name if they represent the same content. File names should be formatted in the following way:

Discipline Code	-	Sheet ID	Drawing Title

*Refer to 4.1 Sheet Identification

Example: A-100 FIRST FLOOR PLAN.dwg and A-100 FIRST FLOOR PLAN.pdf

---

[1] *Note: If exporting AutoCAD files from Revit, adjust the export settings under the *Layers* tab of the *Export layer options* menu. Select *Export all properties BYLAYER, but do not export overrides*. According to AUTODESK, "this option results in a lower number of layers and provides by-layer control over the exported DWG/DWF file." Source: AUTODESK "Layer Mapping for DWG/DXF Export

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

3.0 LAYER STANDARD

BIDMC has adopted the layer naming conventions defined in *The United States National CAD Standard version 5.0* (USNCS). The rules and layer names listed in this section are a subset of those found in the standard that shall suffice for most projects. Consult the USNCS for more a more detailed layer list and complete coverage of the layer naming rules.

Design teams provided with historical CAD files at the beginning of a project are responsible for ensuring that any incorrect layers and lineweights are addressed and not carried over into the new project. BIDMC's archival CAD files may contain errors from past design teams.

3.1 Layer Name Formatting

A layer name consists of four hyphen-separated fields. The first two (discipline code and major group) are mandatory. The second two (minor group and status code) are optional. A layer name may include both optional fields, just one, or none. They combine in the following format, with the optional fields in grey:

A-FLOR-HRAL-E = **Discipline Code + Major Group** + Minor Group + Status Code

3.1.1 Discipline Code: This is a one letter field that designates the discipline or trade that the layer belongs to. The USNCS provides for an optional second character that may be useful on large, complex projects. For most projects the one letter discipline code will be plenty. The following table shows the allowed values.

Discipline Code Table

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

3.1.2 Major Group: This four-letter field designates the major building system. Items such as doors, walls, floors, and glazing each have a major group. Any major group defined in the USNCS can be paired with any discipline code, but use combinations that make logical sense like A-WALL.

Major groups must come from the list contained in the USNCS. User defined major groups are not allowed. To ensure you comply with the standard use names from the layer list in Appendix A.

3.1.3 Minor Group: This optional four-letter field further defines the major group designation. For example, A-GLAZ-FULL would designate full height glazing as opposed to partial height (-PRHT).

Any minor group can be used with any major group and, while optional, they should be used as often as possible.

New minor groups can be defined as needed, but consult the list in the USNCS before doing so to ensure that none of the predefined values meets your needs. *Always prefer the predefined values*.

3.1.4 Status Code: This is an optional single letter field that designates the status of work. Design teams may add these designations to layers during the design process, but should remove them when submitting final as-builts for review.

Choose from the table below:

Status Code Values

E	Existing to Remain
N	New Work
X	Not in Contract
1-9	Phase Numbers
D	Demo Work

3.1.5 Sections, Elevations, and Details: In addition to major groups that designate major building systems, there are major groups defined for sections, elevations, and details. They are as follows, with commonly associated minor groups (where □ is any discipline code).

□-DETL-IDEN	Identification tags	
□-DETL-MBND	Material beyond section cut	Only to be used on detail sheets; do not use on as-built plans.
□-DETL-MCUT	Material cut in section	
□-DETL-PATT	Textures and hatch patterns	
□-ELEV-IDEN	Identification Tags	
□-ELEV-OTLN	Outline	Only to be used on elevation sheets; do not use on as-built plans.
□-ELEV-PATT	Textures and hatch patterns	
□-SECT-IDEN	Identification tags	
□-SECT-MBND	Material beyond section cut	Only to be used on section sheets; do not use on as-built plans.
□-SECT-MCUT	Material cut by the section	
□-SECT-PATT	Textures and hatch patterns	

3.1.6 Annotation Layers: The ANNO major group is for annotative information. This includes notes, leaders, symbols, and drawing elements that do not represent the physical aspects of a building, such as schedules, title blocks, and logos.

The ANNO major group should be used with all discipline codes for annotative information. The annotation layers listed in Appendix A show minor groups typically used with ANNO. These can also be used to modify any major or minor group in the list. In particular, IDEN can be used on layers for ID tags that identify specific equipment or building elements like E-LITE-IDEN, or A-FLOR-IDEN.

3.1.7 Revisions: There should be no revision layers on the final as-built submission. The as-built should have all final architectural changes that were made throughout the project and match what is built.

3.2 Layer Attributes

BIDMC assigns attributes per layer. All drawing entities should have their line weight, line type, and color set to "ByLayer."

3.2.1 Line Weight: BIDMC no longer uses line weight dependent layer standards. All line weights should be set to Default.

3.2.2 Layer Color: Appendix A specifies the color for each layer and contains a table equating colors to their plot properties.

3.2.3 Line Type: These should be Continuous for all layers, unless specified otherwise in Appendix A.

3.3 Plotting

All electronic drawing deliverables must be able to accurately reproduce hard copy deliverables when plotted from AutoCAD using one of the given BIDMC plot style tables.

3.3.1 Plot Styles: The most current plot style, BIDMC pens 2017, is available for download on the BIDMC Facilities website.

4.0 DRAWING SET ORGANIZATION

BIDMC has adopted the sheet identification and organization standards defined in *The United States National CAD Standard version 5.0* (USNCS). We recommend the format outlined below, but you may deviate from this structure as long as sheet identification is logically organized.

4.1 Sheet Identification

The sheet identifier has three parts. The discipline designator, sheet type designator, and the sheet sequence number. They combine in the following format, where A is a letter and N is a number.

A □ N N N	A □ N N N	A □ N N N
Discipline	Sheet Type	Sequence Number

4.1.1 Discipline Designator: This is a single character, always followed by a hyphen, which designates the discipline of the content in the drawing. Acceptable values are the same as those used for layer names. See section 3.2.1 for a list.

4.1.2 Sheet Type Designator: This is a single numerical character that identifies the sheet type, as defined in the following table. On small projects where more than one type may be placed on the same sheet the lowest applicable sheet type should be used.

Sheet Type Designators

0	General	Symbols legend, notes, drawing list, etc.
1	Plans	Horizontal views
2	Elevations	Vertical views
3	Sections	Sectional views, wall sections
4	Large-Scale Views	Drawings from 1, 2, or 3 at larger scale
5	Details	Non-typical details
6	Schedules & Diagrams	
7	User Defined	Typical details or types that do not fall in other categories
8	User Defined	Types that do not fall in other categories
9	3D Representations	Isometrics, perspectives, photographs

4.1.3 Sheet Sequence Number: This is a two digit number that identifies each sheet in a particular discipline and sheet type. Each sequence begins with **01** (do not use 00) and runs through **99**. Always use both digits, regardless of the number of sheets required in a sequence.

Sheet numbers need not be sequential. Gaps in the sequence can accommodate the insertion of additional sheets as the project matures, and allow for further organization within sheet types. Sub-sequences created in this way should begin on the tens, i.e. at 10, 20, 30, etc.

5.0 DELIVERABLES

5.1 Required Documents: At project closeout, the following information should be submitted:

- One PDF file per drawing sheet (see **2.1.1 Archival File Format)**
- One DWG file for each plan and riser diagram (see **2.1.2 Electronic File Format**)

5.2 Error-free AutoCAD® Drawing Deliverables: BIDMC recognizes that many of its architects, engineers and construction managers do not use the same version of AutoCAD®. However, BIDMC requires that firms who work with other file formats shall submit DWG formatted CAD files that are fully compliant with BIDMC CAD standards outlined herein. Drawings that have significant loss of drawing entities or project data resulting from standard CAD file translation procedures will not be accepted.

All DWG files and CAD drawing submissions must be able to be manipulated using standard AutoCAD® drafting procedures. Non-compliance with this policy will result in the rejection of CAD files. In addition, rejection of drawings submitted at project closeout could delay final project payment. Note: DXF files will not be accepted at project closeout as a substitution for DWG CAD file deliverables.

5.3 Translation Testing: For firms translating their native CAD file format into AutoCAD® format and concerned about delivering error-free CAD files to BIDMC upon project closeout, it is strongly recommended that thorough file translation testing be conducted **before** the drawing development phase of the project. This will assure early detection of file conversion issues, if any, and allow corrective measures to be taken before the project closeout period.

5.4 Review Period: BIDMC reserves the right to review the final submission for up to one year after delivery and resubmit the files to the consultant for correction *at no charge* to BIDMC.

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center

6.0 SPACE IDENTIFICATION & USE DATA

Room numbers and space usage shall be reviewed by BIDMC and updated by the design team accordingly prior to issuing As-Built drawings.

6.1 Room Numbering: The design team should submit a PDF of the proposed plan during the design phase so that BIDMC can generate room numbers based on existing conditions and the BIDMC room numbering standards. All room numbers on subsequent CAD plans should be on the A-FLOR-IDEN layer. In case of layout changes, please consult with BIDMC prior to renumbering.

6.2 Space Use Information: All spaces in scope should have an area polyline on the A-AREA layer, and should appear only in model space (no plot). Each space should have its use clearly labelled, and in the case of complex projects, the name of department using the space. If using Revit, please provide BIDMC with the room schedule.

APPENDIX A

BIDMC CAD Layer List 4.0

Linetypes are continuous unless noted otherwise. Custom linetypes are allowed as long as the linetype definition is embedded in the file. See the table in this list for Linetype Codes.

□ = any discipline code

Linetype Codes			
1 - DOT		7 - CENTER	
2 - HIDDEN		8 - 1HR_Fire_Barrier	
3 - DASHED		9 - 2HR_Fire_Barrier	
4 - DASHDOT		10- Smoke_Barrier	
6 - DIVIDE2			
Lineweights			
Display Color	**No.**	**Width**	**Plot Color**
Red	1	0.25	Black
Yellow	2	0.5	Black
Green	3	0.25	Black
Cyan	4	0.18	Black
Blue	5	0.15	Black
Magenta	6	0.25	Black
White	7	0.6	Black
Dark Gray	8	0.15	Dark Gray
Light Gray	9	0.18	Light Gray
Medium Red	10	2	Red
Light Red	11	0.18	Black
Bright Blue	170	2	Bright Blue
Bright Yellow	50	0.18	Bright Yellow
Light Green	71	0.18	Light Green

Layer Name	Color	Linetype Code	Description
Annotation			
□-ANNO-DIMS	4		Dimensions
□-ANNO-HTCH	any		Colored hatches for diagrammatic purposes
□-ANNO-IDEN	3		Identification tags, room numbers
□-ANNO-KEYN	4		Keynotes
□-ANNO-LABL	4		Labels
□-ANNO-LEGN	4		Legends, symbol keys
□-ANNO-LOGO	4		Company logos
□-ANNO-MARK	4		Markers, break marks, leaders
□-ANNO-MATC	4	7	Match lines
□-ANNO-NOTE	4		Notes
□-ANNO-NPLT	4		Non-plotting graphic information
□-ANNO-PROS	4		Date / Time / File name stamp
□-ANNO-RDME	4		Read-me layer (not plotted)
□-ANNO-REFR	4		Reference, external files
□-ANNO-REVS	3		Revision clouds
□-ANNO-SCHD	4		Schedules
□-ANNO-STMP	4		Professional stamps
□-ANNO-STRS	50		Hatch over fire rated stairs (if needed)
□-ANNO-SYMB	4		Reference symbols
□-ANNO-TABL	4		Data tables
□-ANNO-TEXT	4		Text
□-ANNO-TITL	4		Drawing or detail titles
□-ANNO-TTLB	7		Border and title block
Flexible Minor Groups			
□-□□□□-PATT	8		Cross-Hatching, poché
□-□□□□-IDEN	7		Identification tags
□-□□□□-ELEV	2		Elevation (Vertical Surfaces in 3D)
□-□□□□-NEWW			New Work
□-□□□□-EXST			Existing to Remain
□-□□□□-DEMO			Demolition
□-□□□□-FUTR			Future Work
□-□□□□-TEMP			Temporary work
□-□□□□-MOVE			Items to be Moved
□-□□□□-RELO			Relocated Items
□-□□□□-NICN			Not in Contract
□-□□□□-PHS1-9			Phase Numbers (choose 1 through 9)
X-RDME	1		
Architectural			
A-AREA	8		Area: boundary calculation lines by room
A-AREA-IDEN	4		Area: space use information
A-AREA-OCCP	3		Area: occupant or employee names
A-AREA-PATT	8		Area: hatching

A-CLNG	5		Ceiling
A-CLNG-ACCS	5		Ceiling: access
A-CLNG-GRID	1		Ceiling: grid
A-CLNG-OPNG	4		Ceiling: openings and penetrations
A-CLNG-SUSP	6		Ceiling: suspended elements
A-CLNG-TEES	1		Ceiling: main tees
A-COLS	8		Columns
A-COLS-ENCL	2		Columns: enclosures
A-DOOR	1		Doors
A-DOOR-GLAZ	11		Doors: glass
A-DOOR-OVHD	1	2	Doors: overhead and garage doors
A-DOOR-PRHT	1		Doors: partial height (swing and leaf)
A-EQPM	6		Equipment
A-EQPM-ACCS	6		Equipment: access
A-EQPM-FIXD	6		Equipment: fixed
A-EQPM-IDEN	3		Equipment: identification numbers
A-EQPM-MOVE	5		Equipment: moveable
A-EQPM-NICN	8		Equipment: not in contract
A-EQPM-OVHD	5	2	Equipment: overhead
A-FLOR	8		Floor
A-FLOR-CASE	1		Casework
A-FLOR-CASE-HIDD	9	3	Casework: hidden
A-FLOR-CASE-OVHD	1	2	Overhead wall cabinets
A-FLOR-EVTR	3		Floor: elevator cars and equipment
A-FLOR-HRAL	5		Floor: handrails / guard rails
A-FLOR-FIXT	6		Floor: miscellaneous fixtures
A-FLOR-IDEN	3		Floor: identification tags; room numbers
A-FLOR-LEVL	1		Floor: level changes (ramps, pits, depressions)
A-FLOR-OTLN	1		Floor: outline
A-FLOR-OVHD	8	2	Floor: overhead conditions
A-FLOR-PATT	8		Floor: paving, tile, carpet patterns
A-FLOR-RAIS	9		Floor: access (raised) flooring
A-FLOR-RISR	8		Floor: risers
A-FLOR-SIGN	8		Floor: signage
A-FLOR-SPCL	3		Floor: specialties (toilet room accessories, display cases)
A-FLOR-STRS	1		Flor: stair treads, escalators, ladders
A-FLOR-TPTN	1		Floor: toilet partitions
A-FLOR-WDWK	3		Floor: architectural woodwork
A-FURN	8		Furniture to be provided in architectural contract
A-FURN-FILE	8		Furniture: file cabinets
A-FURN-FIXD	1		Furniture: fixed
A-FURN-FREE	8		Furniture: free standing
A-FURN-PNLS	8		Furniture Component System: panels
A-FURN-SEAT	8		Furniture: seating
A-FURN-STOR	8		Furniture Component System: storage
A-FURN-WKSF	8		Furniture Component System: work surface

Layer			Description	
A-GLAZ	11		Glazing: Windows, Window Walls, Curtain Walls, Glazed Partitions	
A-GLAZ-FRAM	11		Glazing: window frame	
A-GLAZ-FULL	11		Glazing: full-height	
A-GLAZ-PRHT	11		Glazing: partial-height	
A-GLAZ-SILL	11		Glazing: window sills	
A-HVAC-RDFF	6		HVAC systems: return air diffusers	
A-HVAC-SDFF	5		HVAC systems: supply diffusers	
A-LITE	3		Lighting	
A-ROOF-HRAL	5		Roof: handrails / guardrails	
A-ROOF-LEVL	1		Roof: level changes	
A-ROOF-OTLN	8		Roof: outline	
A-ROOF-RFDR	1		Roof: roof drains	
A-ROOF-RISR	1		Roof: risers	
A-ROOF-STRS	1		Roof: stair treads, ladders	
A-ROOF-WALL	6		Roof: parapet walls and wall caps	
A-WALL-SMOKE-1HR~	170	10	Walls: fire protection: 1 hour barrier line	*[2]
A-WALL-FENC	8		Walls: fence	
A-WALL-FIRE-1HR~	10	8	Walls: fire protection: 1 hour barrier line	*[1]
A-WALL-FIRE-2HR~	10	9	Walls: fire protection: 2 hour barrier line	*[1]
A-WALL	2		Walls: full-height	
A-WALL-HEAD	2		Walls: door / window headers (on reflected ceiling plans)	
A-WALL-HRAL	5		Walls: mounted handrails	
A-WALL-JAMB	2		Walls: door / window jambs	
A-WALL-MOVE	2		Walls: moveable partitions	
A-WALL-PATT	8		Walls: insulation, hatching and fill	
A-WALL-PRHT	11		Walls: partial-height (on floor plans only)	
Civil				
C-BLDG-DECK	2		Buildings: decks (attached, no roof overhead)	
C-BLDG-OTLN	2		Buildings: outline	
C-BLDG-OVHD	1	2	Buildings: overhead	
C-BLDG-PRCH	2		Buildings: porch (attached, roof overhead)	
C-CATV-OVHD	1	2	Cable TV system: overhead	
C-CATV-POLE	3		Cable TV system: pole	
C-CATV-UNDG	6	4	Cable TV system: underground	
C-COMM-OVHD	1	2	Telephone communications: overhead	
C-COMM-POLE	3		Telephone communications: pole	
C-COMM-UGND	6	4	Telephone communications: underground	
C-DFLD-OTLN	9		Drain fields: outline	
C-DFLD-PROF	9		Drain fields: profile	
C-FENC-GRAL	1		Fences: guard rail	
C-FENC-POST	1		Fences: post	
C-FENC-STEL	1		Fences: steel (chain link)	
C-FENC-WOOD	1		Fences: wood	
C-FIRE-HYDT	6		Fire protection: hydrants and connections	

---

[2] Please adjust Global Width to 1'

Code			Description
C-FIRE-PIPE	6		Fire protection: piping
C-FIRE-UGND	6	4	Fire protection: underground
C-LOCN	7		Limits of construction
C-PROP-LINE	7	6	Property boundary: lines
C-ROAD	11		Road
C-ROAD-CURB	11		Road: curbs
C-ROAD-FLNE	1		Road: fire lane
C-ROAD-FLNE-MRKG	3		Road: fire lane: pavement markings
C-ROAD-FLNE-SIGN	3		Road: fire lane: signage
Structural			
S-ALGN	1	4	Alignments
S-BEAM	2		Beams
S-BEAM-CNTR	11	7	Beams: center
S-BEAM-CONC	2		Beams: concrete
S-BEAM-CONC-PRIM	2		Beams: concrete: primary
S-BEAM-CONC-SECD	1		Beams: concrete: secondary
S-BEAM-STEL	2		Beams: steel
S-BEAM-STEL-PRIM	2		Beams: steel: primary
S-BEAM-STEL-SECD	1		Beams: steel: secondary
S-BRCG-METL	6		Bracing: metal
S-BRCG-STEL	6		Bracing: steel
S-BRCG-STEL-HORZ	6		Bracing: steel: horizontal
S-BRCG-STEL-VERT	6		Bracing: steel: vertical
S-COLS-ABLT	6		Columns: anchor bolts
S-COLS-CNTR	11	7	Columns: center
S-COLS-CONC	1		Columns: concrete
S-COLS-STEL	1		Columns: steel
S-DECK-FLOR	1		Deck: floor
S-DECK-FLOR-OPNG	1		Deck: floor: openings
S-DECK-ROOF	1		Deck: roof
S-DECK-ROOF-OPNG	1		Deck: roof: openings
S-FNDN-CNTR	11	7	Foundation: center
S-FNDN-FTNG	3		Foundation: footings
S-FNDN-GRBM	2		Foundation: grade beams
S-FNDN-PCAP	3		Foundation: pile caps
S-FNDN-PIER	2		Foundation: drilled piers
S-FNDN-PILE	3		Foundation: piles
S-FNDN-RBAR	7		Foundation: reinforcing bar
S-FNDN-RBAR-BOT1	7		Foundation: reinforcing bar: bottom group 1
S-FNDN-RBAR-BOT2	7		Foundation: reinforcing bar: bottom group 2
S-FNDN-RBAR-TOP1	7		Foundation: reinforcing bar: top group 1
S-FNDN-RBAR-TOP2	7		Foundation: reinforcing bar: top group 2
S-FSTN	6		Fasteners and connections
S-GATE	1		Gate
S-GRID	11	7	Column grid
S-GRID-EXTR	11	7	Column grid: exterior

Code			Description
S-GRID-INTR	11	7	Column grid: interior
S-GRLN	3		Grade line
S-GRLN-SURF	3		Grade line: surface areas
S-GRTG	1		Grating
S-GRTG-OVHD	1	2	Grating: overhead
S-JNTS-CNTJ	6		Joints: construction joints
S-JNTS-CTLJ	6		Joints: control joints
S-JNTS-EXPJ	6		Joints: expansion joints
S-JOIS	1		Joists
S-JOIS-BRGX	1		Joists: bridging
S-PADS	1		Pads
S-PADS-EQPM	3		Pads: equipment
S-PLAT	1		Platform
S-PLAT-FRMG	1		Platform: framing
S-PLAT-GRTG	11		Platform: grating
S-SIGN-BUOY	6		Sign: buoy
S-SIGN-FRMG	6		Sign: framing
S-SIGN-GAGE	6		Sign: gauge (staff)
S-SIGN-TEXT	6		Sign: signage text
S-SIGN-XTRU	6		Sign: extrusion
S-SLAB-CONC	1		Slab: concrete
S-SLAB-EDGE	1		Slab: edge
S-SLAB-OPNG	1		Slab: opening
S-SLAB-OPNX	11		Slab: opening indication ("x")
S-SLAB-STEL	1		Slab: steel
S-STIF	6		Stiffener
S-STIF-LONG	6		Stiffener: longitudinal
S-STIF-TRAV	6		Stiffener: transverse
S-STRS	1		Stairs
S-STRS-LADD	1		Stairs: ladders and ladder assemblies
S-TRUS	1		Trusses
S-WALL-CMUW	1		Walls: concrete masonry unit
S-WALL-CONC	1		Walls: concrete
S-WALL-MSNW	1		Walls: masonry
S-WALL-PCST	1		Walls: pre-cast concrete
S-WALL-SHEA	2		Walls: structural bearing or shear walls
S-WALL-STEL	1		Walls: steel stud
S-WALL-WOOD	1		Walls: wood