

FACILITIES PROJECTS RECORD BUILDING MODELS AND DRAWINGS HANDOVER REQUIREMENTS AND STANDARDS

FACILITIES MANAGEMENT – FACILITIES SYSTEMS & SUPPORT (FSS)

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TABLE OF CONTENTS

GENERAL INFORMATION	2
Purpose	2
Use	2
Deliverable Ownership	2
Not for use with BIM Projects	2
Disclaimer on Record Drawing Use by Facilities Management	3
DEFINITIONS	4
Project Record Drawings	4
3D Models	4
CAD Floor Plan Drawings	4
CAFM Floor Plan Drawings	4
BIM Models	4
PROJECT HANDOVER REQUIREMENTS	5
Deliverables Required for Floor Plan Drawings	5
Deliverables Required for Project Record Drawings	5
Project Closeout Requirements	6
Project Closeout Steps	7
PROJECT INFORMATION CHECKLIST	8
RECORD MODEL AND DRAWING STANDARDS AND SUBMISSION GUIDELINES ...	9
File Sharing	9
3D (Revit) Model File Format	10
CAD Drawing File Format	10
External Reference Files (XREF)	11
Model Space and Paper Space	11
Title Blocks	11
Drawing Layer Standards	12
Scale, Units and Tolerances	15
Fonts, Text and Plot Styles	15
Blocks and Attributes	15
FSS DRAWING SERVICES NAMING CONVENTIONS	16
Introduction	16
Discipline List	16
Floor Codes	17
APPENDIX - FSS CAD CORE LAYERS (EXPANDED LIST)	18

GENERAL INFORMATION

1. PURPOSE

The Facilities Management Facilities Systems and Support (FSS) Space Information & Drawing Services Team facilitates the continuity, quality control, and communication of Computer Aided Drafting (CAD) & Computer Aided Facility Management (CAFM) for over 2.6 million square metres (28 million square feet) of space across the Lower Mainland, which is critical to managing the Health Authorities' property and capital assets.

By the standardized collection of information for all owned and leased property through close contact with consultants and Facilities Services, FSS Drawing Services will:

- Consult on and monitor compliance with the FSS Drawing Services Standards & Requirements.
- Integrate Project Record Drawings into the existing condition drawings and update department changes to the CAFM system.
- Provide consultants with access to the current Record drawings (or Models) for use as a base for future facility projects.
- Provide customers with updated information on the Facilities as requested.

2. USE

This document has specific instructions to consultants for producing and delivering Record Drawings, and establishes the standards and guidelines to organize the data captured in the drawings.

It is necessary to establish these standards to promote the sharing of information and to maintain the integrity of the CAFM system. CAD drawings are required for all CAD based projects, regardless of the size, or complexity of the project.

In some instances, the Project Record drawings and CAD floor plans are extracted from a Revit Model and in these cases, the 3D (Revit) Model should be included in the submission package.

3. DELIVERABLE OWNERSHIP

FSS hold the rights to use the CAD drawings, PDF files and Revit models including all inventions, ideas, designs, and methods contained within the deliverables. This includes, but is not limited to; the content submitted as part of the Revit model itself. If some CAD drawings cannot be submitted due to Intellectual Property rights, they must be submitted in PDF. However, all floor plans MUST be submitted in CAD (DWG) format. NO EXCEPTIONS!

4. NOT FOR USE WITH BIM PROJECTS

Note that there is a separate document and process for BIM (Building Information Modelling) Projects and this document should not be used for these projects.

5. DISCLAIMER ON RECORD DRAWING USE BY FACILITIES MANAGEMENT

FSS Drawing Services requires that all consultants provide Record Drawings at the completion of each project. FSS recognizes that these files should not be used in whole or in part for the design and construction of other projects. The consultants are not responsible for any subsequent changes made to the files by FSS. However, FSS does reserve the right to use these files as a source to generate floor plans for Facilities Management's purposes.

DEFINITIONS

1. PROJECT RECORD DRAWINGS

A final, complete set of drawings at the completion of a project that have been field verified after completion of the construction of the project and then revised as required to accurately incorporate any changes that were made to the original design during the construction period. These drawings are considered the archived record of the actual design and construction of the project and are saved in their original format as a historical record of the project.

2. 3D MODELS

3D Models are created using parametric objects and drafting to display a building for a Project. In this document, 3D Models will also be referred to as Revit Model (from the Autodesk software).

3. CAD FLOOR PLAN DRAWINGS

CAD Floor Plan Drawings are a “stripped down” version of the Project Record Drawings and typically contain only 20% to 30% of the information on the project drawings. A basic architectural layout – including but not limited to walls, doors, windows, and room numbers are shown. The CAD Floor Plans of a building are maintained and updated with the information from the consultant's project Record Drawings as construction projects are completed.

4. CAFM FLOOR PLAN DRAWINGS

CAFM Floor Plan Drawings are overlay drawings that contain only ARCHIBUS Facility Asset Information and are updated by using referenced (XREF) information from the CAD Floor Plans. The Simplified Floor Plans can then be provided back to the consultants for use as background information for future construction projects.

5. BIM MODELS

BIM (Building Information Management) Models are 3D Models with additional Building Information embedded in the model by use of tags or named fields.

PROJECT HANDOVER REQUIREMENTS

1. DELIVERABLES REQUIRED FOR FLOOR PLAN DRAWINGS

Architectural Floor Plans in CAD format when available, must be provided by the design consultants either in IFC or Construction drawing issue. These CAD drawings shall be provided when a new building or renovation project is in the Construction Phase. These drawings must be submitted to the Health Authorities' Project Manager (PM) which in turn will be forwarded to the FSS Drawing Services Team.

2. DELIVERABLES REQUIRED FOR PROJECT RECORD DRAWINGS

The following deliverables are to be provided by design consultants for Project Record drawings. A full set of field verified Project Record drawings for all disciplines must be submitted to the Project Manager upon project completion and are required for all projects, regardless of the size, or complexity of the project. An As-Built or Record date stamp on all drawings is MANDATORY.

As more consultants are utilizing Revit models to design, coordinate and collaborate Health Authority projects, FSS is mandating the collection of the 3D models for all Projects used to export the CAD drawings as a part of the Deliverables.

Any other version or issuance of drawings other than RECORD (e.g.: Issued for Construction, Issue for Tender, etc.) will NOT BE ACCEPTED and will be returned to the consultant to resolve and to re-submit the RECORD drawing.

Summary of Deliverables shown in the table below:

TYPE	DELIVERABLES
Record 3D (Revit) Model	BIM Model*** v2021+ for all disciplines
Record CAD Drawing Files	Export Drawing Sheets from the Revit Model or from CAD drawing file for all disciplines
Record PDF Files	Export Drawing Sheets from CAD file or from Revit Model for all disciplines. All PDF drawings and info should be identical with the CAD drawing file
Drawing Catalog Info (list what they're submitting to us)	Completed Catalog in Excel format
Closeout Checklist	Signed Closeout Checklist from Consultant

3. PROJECT CLOSEOUT REQUIREMENTS

a. Project Deliverables

- Revit Model per discipline.
- All project Record CAD Drawings.
- All project Record Drawings in Raster Format (PDF format).

b. Drawing Catalog excel file.

- File Format and Setup
- Electronic File Format for Cloud.

c. FSS Drawing Services Naming Conventions

- Project Information.
- Discipline Identification Codes.
- Floor Naming Codes.
- Room Naming Codes.

d. CAD Drawing Quality Assurance

- Full AutoCAD Compliance (CAD and Revit)
- External Reference Files (XREFs) (Attached and Bound)
- Model Space and Paper Space (One Paper Space tab containing one drawing sheet for each CAD file)
- Title blocks
- Drawing Layer Names
- Scale, Units and Tolerances
- Standard AutoCAD Fonts, Text & Plot Styles
- Blocks and Attributes

Note: CAD and PDF files must have identical drawings and information.

e. Attach a signed & dated copy of the checklist found in with the project deliverables. See [Project Information Checklist](#).

4. PROJECT CLOSEOUT STEPS

Before a project can be closed out all specified materials must be submitted to the Project Manager or Health Authority representative in accordance with production standards and specific instructions. A signed copy of the Project Information Checklist must also be submitted with the Project Deliverables at the closeout phase of all projects. When a Project Information Checklist has been signed and submitted, the vendor (architect, engineer, contractor, etc.) is assuring that all materials adhere to the standards and guidelines set forth in this document.

- Send the Project Information Checklist, signed and dated with the above submittals.
- The Project Manager will forward the Project Deliverables and Project Information Checklist to the FSS Drawing Services Team for compliance to the FSS Drawing Standards & Requirements and for inclusion into the existing condition drawings.

PROJECT INFORMATION CHECKLIST

The consultant should complete this checklist to ensure that submitted drawings conform to FSS Drawing Standards & Requirements

<p>Health Authority Project No : _____</p> <p>Project Name: _____</p> <p>Consultant (Company Name): _____</p> <p>Name of Consultant Representative: _____</p> <p>Consultant Phone No: _____</p>	<p>Health Authority Project Manager: _____</p> <p>Position of Consultant Representative: _____</p> <p>Date: _____</p>
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Project Deliverables

YES NO Revit Model
 YES NO All project Record CAD Drawings
 YES NO All project Record Drawings in Raster Format (PDF format)
 Comments: _____

Drawing Quality Assurance

YES NO Full AutoCAD Compliance
 YES NO External Reference Files (XREFs) (Attached and Bound)
 YES NO Model Space and Paper Space (One Paper Space tab containing one drawing sheet for each CAD file)
 YES NO Title blocks
 YES NO Drawing Layer Names
 YES NO Scale, Units and Tolerances
 YES NO Standard AutoCAD Fonts, Text & Plot Styles
 YES NO Blocks and Attributes
 Comments: _____

**Provide reason for none compliance in comments.*

File Submission Method

- Email
- File Transfer Protocol (FTP) Sites. License to Autodesk Construction Cloud.
Email(s) List: _____
- Other (please specify): _____

ATTACH A DATED COPY OF THIS FORM WITH THE PROJECT DELIVERABLES

RECORD MODEL AND DRAWING STANDARDS AND SUBMISSION GUIDELINES

1. FILE SHARING

The practice of sharing or offering access to digital information or resources will be known in this document as File Sharing.

a. Acceptable formats include (but are not limited to):

- Email Attachments
- File Transfer Protocol (FTP) Sites
- Cloud Storage Services (e.g. Dropbox or Autodesk Construction Cloud)

b. Include a transmittal with the following information when sharing the files:

- Health Authority Project Number
- Health Authority Project Name
- Health Authority Project Manager
- Building Name
- Floor Level
- Consultant Name
- Date Submitted
- Content: Record Drawings; CAD; PDF; Excel; Revit. See Section 3.

2. DRAWING CATALOG INFORMATION FORMAT

The Consultant is required to provide drawing catalog information (Drawing List) in a Microsoft Excel spreadsheet file. A separate record or line must be created for each drawing sheet submitted. If a sheet has information for more than one floor or building, create another record. The Excel version used should be compatible with Microsoft Excel 2010 or earlier.

a. Template for Excel spreadsheet format

For more information on the fields in the spreadsheet, see the [Naming Conventions](#) section of this document or contact FM Support (FMsupport@vch.ca).

An example of the Microsoft Excel spreadsheet below with the Project information entered:

HSDA Code	Site Code	Bldg Code	Project Name	Dwg Description	Discipline	Dwg #	File Name	Health Area Project #	Consultant	Dwg Date
FHA	303	0796	EAGLE RIDGE HOSPITAL EXTENDED CARE	DRAWING LIST, LEGEND, INSTALLATION HEIGHTS	ARCH	A-0	A-0	1994-1050	STANTEC	1994-05-30
RHS	650	0050	RICHMOND HOSPITAL PHASE 2 PROJECT	GROUND LEVEL DETAILS	STRUCT	S100	S100	1997-6010	BUSH BOHLMAN	1997-11-12
VA	303	0796	MEDICAL STUDENT & ALUMNI CENTRE	SITE PLAN	MECH	M-1	M-1	1993-3221	KEEN ENGINEERING	1996-10-24

Note:

- Text must be all CAPITALS.
- The HSDA Code, Site Code and Bldg Code - as specified by FM Support.
- Project Name - as provided by the Project Manager.
- Dwg Description or Sheet Contents.
- Discipline Type – see the [Discipline List](#).
- The File Name should have the sheet (Dwg) number.
- Health Area Project # - as provided by the Project Manager.
- The Discipline Consultant name.
- The drawing date is the Record drawing date and not the date drawn.
Format is YYYY-MM-DD.

3. 3D (REVIT) MODEL FILE FORMAT

Revit Models are required if available. Revit Models must be submitted as a required deliverable in Revit 2021 format and in full compliance with Autodesk Revit software (file extension = .RVT). Detach all central models and include all supporting models linked within.

4. CAD DRAWING FILE FORMAT

CAD drawings must be submitted to FM Support (FMsupport@vch.ca) in AutoCAD 2021 format and in full compliance with Autodesk AutoCAD software (file extension = .DWG). Throughout this document, the use of the name AutoCAD always implies “Genuine Autodesk Software” unless otherwise noted.

DXF files submitted in place of DWG files will **NOT BE ACCEPTED** at project closeout as a substitution for DWG CAD file deliverables.

a. CAD File Translation for Error-free AutoCAD Drawing Deliverables

FSS Drawing Services recognizes that many of its construction service providers do not use the same CAD systems as FSS. However, FSS expects that service providers who work with non-AutoCAD file formats will submit DWG formatted CAD files upon project closeout that are fully compliant with all of the standards outlined herein, and which have no significant loss of drawing entities or project data that can result from standard CAD file translation procedures.

All DWG files and CAD drawing entities submitted at the end of a project must be able to be manipulated using standard AutoCAD drafting procedures.

Non-compliance with this policy may result in the rejection of CAD files submitted at project closeout in addition to delayed rendering of final project payment.

For firms translating their native CAD file format into AutoCAD format also concerned about delivering error-free CAD files to FSS 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 for corrective measures to be taken before the project closeout period.

5. **EXTERNAL REFERENCE FILES (XREF)**

FSS will not accept the submission of any CAD drawing deliverable that contains references to external source drawing files. All externally referenced data sources that were used during the CAD drawing production phase should be purged, inserted, bound and retained as a block within a single drawing file, with no loss of layer naming, and include the title block, upon project completion and prior to drawing delivery to FSS.

- a. Any XREF or externally referenced data sources that are not bound and retained in the CAD file and are submitted separately will NOT BE ACCEPTED and will be returned to the consultant to resolve and re-submit.

All file types used as logos; images; excel spreadsheets; pdf underlays, etc. should be embedded into the drawing. Use the Bind Insert command so that XREF layers keep their original name.

6. **MODEL SPACE AND PAPER SPACE**

Ensure that all items (title block, drawing, etc.) in the paper space tab are within the selected paper size.

Each CAD file should only have one paper space tab (referencing one drawing sheet). Files with multiple paper space tabs (referencing multiple drawings) are NOT ACCEPTED.

All paper space viewports should be locked to avoid mistakenly resizing any viewport.

7. **TITLE BLOCKS**

Consultants may use their own title blocks. Ensure any consultant logos are embedded into the title block (or the file referencing the logo is submitted with the project deliverables). Each drawing should have only one title block inserted in paper space, with its lower left hand corner point inserted at a coordinate location of (0,0,0).

- a. Project Information:
 - Name of Consulting Firm - representing the drawing author
 - Project Name - as specified by FM Support
 - Building Code - as specified by FM Support
 - Building & Floor Name - specify only if the project name does not include this information already, and the project is Building specific
 - Health Authority Project Number – as specified by the Project Manager
 - Consultant Project Number - assigned by the Consultant to sub-trades
 - Health Authority Logo

b. Drawing Information:

- Drawing Title - indicate the drawing content, e.g. floor plan, section, detail, etc.
- Cover Page – Provide Drawing Table of Contents with drawings group together according to Discipline, with the Drawing Number and Sheet Contents as per industry standard practice.
- Drawing Number – Use industry standard practice of including the discipline code as a prefix in the file name e.g. A-01, M-01 etc.
- Date of Drawing - original drawing date
- Revisions- information for any significant revision dates
- Record Drawing Stamp – dated and signed
- Drawing Scale - representing the intended plot scale of the drawing with the title block
- North Arrow

8. DRAWING LAYER STANDARDS

FSS Drawing Services has adopted the guidelines for layer name and use rules recommended by the "AIA CAD Layer Guidelines 2005". This manual is published by the American Institute of Architects (AIA) and was developed through a task force comprised of representatives from the AIA, International Facility Management Association (IFMA) the American Consulting Engineers Council (ACEC), the American Society of Civil Engineers (ASCE) and three U.S. Government agencies. It is a guideline for CAD layer designations, which can be used to create drawings suitable for architectural, engineering and facility management applications.

Where noted, FSS Drawing Services has supplemented the AIA guidelines with its own rules and standards. See [Appendix](#).

a. Use

The layering standards have been designed to:

- Ensure that all future CAD based design drawings completed for all facilities are structured and formatted on a consistent basis for archival and retrieval purposes.
- Organize drawing information in layers which can be used for both initial project development and on-going facility management purposes.
- Organize graphical information so that it can be effectively grouped and manipulated for display, editing and plotting purposes.

b. Layer Names

Layers must be identified by name, but may have a numeric suffix. This standard is based on the premise that layer names provide more flexibility in data organization and allow optimum user recognition of the layer content.

c. Layer Formats

Two formats are commonly used to name layers. The long format uses 6 to 16 characters and provides better user recognition of the layer content. The short format uses an abbreviation of the long format within 3 to 8 characters and FSS uses the abbreviated version.

d. Major Groups

Discipline Codes			
A-	Architectural	M-	Mechanical
C-	Civil	P-	Plumbing
E-	Electrical	Q-	Equipment
F-	Fire Protection	S-	Structural
G-	General	T-	Telecommunications
H-	Hazardous Materials	U-	FSS defined
I-	Interiors	X-	Other disciplines
L-	Landscape	Z-	Contractor / shop drawings

e. Minor Groups

This group designation is a four-character designation used to subdivide the major groups based on construction components or building contents.

E.g. walls, doors, ceilings, furniture, equipment, etc.

f. Modifiers

This is an optional, four-character field for further differentiation of major groups. For example, partial height walls (A-WALL-PART) might be differentiated from full height walls (A-WALL-FULL). The use of a modifier is optional and is not required if the major and minor group designations for a layer are sufficient.

Modifiers can also be used to differentiate phases of new construction from remodeling and existing to remain, and can be used in place of or in addition to a minor group designation, such as A-WALL-NEWW or A-WALL-FULL-NEWW. In either case, the modifier is always the last four-characters of the layer name.

g. Information Layers

The layer names for each major group are further divided into two categories for CAD layer management purposes.

h. Building Information layers

The layers generally represent physical aspects of the site and buildings such as walls, doors, site improvements, diffusers, etc. Identification labels such as room numbers are also included in this category. This type of information is often shared between drawings.

i. Drawing Information layers

The layers comprise notes, dimensions, and similar information. This type of information is usually associated with a specific drawing. Other specialty requirements such as riser diagrams and schematic diagrams are also included in this category.

j. Special Groups

Special groups are not used in this layering standard as this information is not required for CAD and CAFM floor plans. However, these special groups may be used by consultants as required for design and construction drawings. The “Read-me” layer (x-RDME) may be used with all major groups to provide reference information on file organization. This layer is for user reference only and is not plotted.

k. Elevations, Sections, and Three-Dimensional Drawings

Minor groups may be added to the major groups or used as modifiers of master layers: elevations, section, details, and three-dimensional views.

e.g. *-DETL-PATT (detail textures & hatch patterns).

*asterisk represents any major group (discipline code)

The minor group ELEV can also be added to any major group layer to identify information only seen in 3D views. This facilitates integrating three-dimensional CAD models with two-dimensional plans.

e.g. A-WALL (walls in plan view) or A-WALL-ELEV (wall surfaces in 3D view).

l. Annotation and Title Blocks

The major group ANNO consisting of Annotation and other elements on CAD drawings that do not represent physical aspects of a building, can be combined with any discipline code.

e.g. *-ANNO-DIMS (dimensions).

*asterisk represents any major group (discipline code)

9. SCALE, UNITS AND TOLERANCES

All CAD drawings must be drafted at full scale in metric units, in that one drawing unit equals one millimeter. Tolerances for the drawings are implicit within professional service contracts. Drawings completed in Imperial units must be “hard converted” to Metric.

e.g. 25.4mm = 1 inch.

10. FONTS, TEXT AND PLOT STYLES

Text styles and fonts may vary, but the use of True Type fonts for most applications is preferred. Non Standard AutoCAD fonts, text styles, and shape files are NOT ACCEPTED. If non-standard fonts are unavoidable, then the font files appearing in the drawing must be included with the Project Deliverables submission.

Include all relevant CTB files and Plot style tables with the Project Deliverables.

11. BLOCKS AND ATTRIBUTES

Consultants may use their own standards for blocks and symbols as long as they are created as follows:

- All entities within a block must be created on layer 0. Entities, which have been translated from non-AutoCAD based CAD systems, often fail to meet this requirement.
- Entities must be assigned colour - By Layer.
- Drawing entities translated into AutoCAD blocks from non-AutoCAD systems must revert to layer 0 when exploded within AutoCAD.
- Nested blocks are NOT ACCEPTED and should not be used.
- Blocks should be inserted onto their appropriate discipline layer.
- Blocks should be created with an insertion angle of 0 degrees and have an insertion point attached appropriately to the block.
- File translations from non-AutoCAD systems, which result in wall blocks within AutoCAD, are NOT ACCEPTED.

FSS DRAWING SERVICES NAMING CONVENTIONS

1. INTRODUCTION

Room numbering (and wayfinding) are essential to any building. Being able to find any space on any floor in any building is critical to the safety and well-being of all occupants and visitors to the space. Therefore, consistency when numbering rooms is critical. This document attempts to provide a standard set of rules that can be applied uniformly to all buildings in any Health Authority.

When this Standard Applies:

a. New Construction

For New Construction follow the standards below.

b. Existing Buildings

For existing buildings, be consistent with the system currently in use, these guidelines should be adhered to as long as they don't conflict.

c. Existing Sites

For existing sites check with maintenance to determine if there is a site wide numbering system.

2. DISCIPLINE LIST

DISCIPLINE	NAME	DESCRIPTION
ARCH	Architectural	Plans, Details, Elevations, Furniture, Millwork, etc.
CAFM	Computer-Aided Facility Management	Archibus Data Floor Plans
CIVIL	Civil	Exterior Utilities/Services, Geo Technical, Survey, Topographical, Roadwork, Paving, etc.
COMM	Telecommunications	Low Power–Telephone, Communications, Security, Nurse Call, etc.
COMPOSITE	Composite	CAD Site Composite (connected buildings) Floor Plans
ELEC	Electrical	Electrical Systems, Single Line Drawings, Schematics, etc.
EQUIP	Equipment	Elevators, Food Services, Radiology, Installations, etc.
FIRE	Fire Protection	Fire Alarm, Sprinklers, Sensors, etc.
LAND	Landscape	Plants, Irrigation, Fencing, etc.
MECH	Mechanical	Heating, Ventilation, Air Conditioning (HVAC), Energy Management, Building Control Systems, etc.
PLUMB	Plumbing	Drainage, Sewage, Medical Gas
SITE	Site	Archibus Site Plans
STRUCT	Structural	Load Bearing Structures – Concrete, Slabs, Beams, Seismic, etc.

3. FLOOR CODES

- a. Each floor code must be unique to the building.
- b. The lowest floor suitable for occupancy shall be the first floor and shall use either '01' or '1'. Floors above will use the next number in the same format. The leading zero may be dropped for buildings with fewer than ten floors.
- c. Buildings with 10 or more floors may omit the leading zero on the lower floor, although sometimes it is desirable to keep the leading zero for wayfinding purposes. That is a site-specific determination.
- d. Labels like Main, Ground, Roof or Penthouse etc. may be applied to floor but the floor code and subsequent room code shall only be numeric. For example, do not use M312 or R07 to designate room numbers on the main floor or roof.
- e. Interstitial floors or mechanical floors are an exception to this. An 'M' suffix can be used along with a repeated floor number. I.e. An interstitial floor above the 1st floor shall be called 1M, the next regular floor above would have a floor code of 2.
- f. Floors below the first floor shall be numbered 1, 2, 3, etc. going down and will always have a prefix designating the type of floor. The basement floor should have the prefix of B, the parking floor should have the prefix of P, and tunnel floors should have a prefix of T. Other prefixes may be possible depending on the circumstances. So, a building with a basement, then a parking level and then a tunnel level would have floor codes of B1, P2, and T3.
- g. All the rooms on a given floor will have the same floor code.
- h. Floors should not be named '0' or '-1' in new construction. See detail below for examples.

	Roof	4
	Third Floor	3
	Second Floor	2
	Mechanical Floor	1M
Grade	Ground/Main Floor	1
	Basement Level	B1
	Parking Level	P2
	Tunnel Level	T3

Section Through Bldg.

NOTE: For Room Numbering, please refer to FSS Room Numbering Standards

APPENDIX - FSS CAD CORE LAYERS (EXPANDED LIST)

The FSS CAD Core Layers are identified below by a diamond symbol (◆) and should be used as the basis for construction drawings and supplemented as necessary by other layers in the expanded list.

CORE	LAYER	
◆	Name	Description
ARCHITECTURAL		
◆	A-ANNO-TEXT	General Text
	A-ANNO-REDL	Redlines
	A-ANNO-SYMB	Symbols
	A-ANNO-LEGN	Legends and schedules
	A-ANNO-DIMS	Dimensions
	A-ANNO-TTLB	Border and Title Block
	A-ANNO-NOTE	Job Notes
	A-ANNO-NPLT	Construction lines, non-plotting information, viewports
	A-ANNO-KEYN	Key notes
	A-AREA	Area calculation boundary lines
	A-AREA-IDEN	Room numbers, tenant identifications, area calculations
	A-AREA-OCCP	Occupant or employee names
	A-AREA-PATT	Area cross hatching
	A-CLNG	Ceiling information
	A-CLNG-GRID	Ceiling grid
	A-CLNG-PATT	Ceiling patterns
	A-CLNG-SUSP	Suspended elements
◆	A-DOOR	Doors
	A-DOOR-IDEN	Door number, hardware group, etc.
◆	A-EQPM	Equipment - built in
	A-EQPM-CLNG	Ceiling-mounted or suspended equipment
	A-EQPM-FIXD	Fixed equipment
	A-EQPM-IDEN	Equipment identification numbers
	A-EQPM-MOVE	Moveable equipment
	A-FLOR	Floor information
	A-FLOR-CASE	Casework (manufactured cabinets)
◆	A-FLOR-EVTR	Elevator cars and equipment
◆	A-FLOR-HRAL	Stair and balcony handrails, guard rails
◆	A-FLOR-IDEN	Room numbers, names, targets, etc.
◆	A-FLOR-LEVL	Level changes, ramps, pits, depressions
	A-FLOR-PATT	Paving, tile, carpet patterns
	A-FLOR-SIGN	Signage
	A-FLOR-SPCL	Architectural specialties (accessories, etc.)
◆	A-FLOR-STRS	Stair treads, escalators, ladders
◆	A-FLOR-TPTN	Toilet partitions
	A-FLOR-WDWK	Architectural woodwork (field-built cabs/counters)
◆	A-GLAZ	Windows, curtain walls, glazed partitions
	A-GLAZ-FULL	Full-height glazed walls and partitions

CORE	LAYER	
◆	Name	Description
	A-GLAZ-IDEN	Window number
	A-GLAZ-PHRT	Windows and partial-height glazed partitions
	A-GLAZ-SILL	Window sills
◆	A-ROOF	Roof
	A-ROOF-LEVEL	Level changes
	A-ROOF-OTLN	Roof outline
	A-ROOF-PATT	Roof surface patterns, hatching
◆	A-WALL	Walls - general
	A-WALL-INTR	Interior Building Wall
	A-WALL-FIRE	Fire wall patterning
	A-WALL-FULL	Full-height walls, stairs and shaft walls
	A-WALL-EXTR	Exterior Building Wall
	A-WALL-HEAD	Door/window headers (on reflected ceiling plans)
	A-WALL-JAMB	Door/window jambs (on floor plans only)
◆	A-WALL-MOVE	Moveable partitions
	A-WALL-PATT	Wall insulation, hatching and fill
	A-WALL-PRHT	Partial-height walls (on floor plans only)
CIVIL		
	C-ANNO-DIMS	Dimensions
	C-ANNO-LEGN	Legends and schedules
	C-ANNO-NOTE	Notes
	C-ANNO-SYMB	Symbols
◆	C-ANNO-TEXT	General Text
	C-ANNO-TTLB	Border and Title Block
◆	C-BLDG	Proposed building footprints
	C-COMM	Site communication/telephone poles, boxes, towers
	C-FIRE	Fire protection - hydrants, connections
	C-NGAS	Natural gas-manholes, meters, storage tanks
	C-NGAS-UNDR	Natural gas - underground lines
◆	C-PKNG	Parking lots
	C-PKNG-ISLD	Parking islands
◆	C-PKNG-STRP	Parking lot striping, handicapped symbol
◆	C-PROP	Property lines, survey benchmarks
	C-PROP-BRNG	Bearings and distance labels
	C-PROP-CONS	Construction controls
	C-PROP-ESMT	Easements, rights-of-way, setback lines
◆	C-ROAD	Roadways
	C-ROAD-CNTR	Center lines
◆	C-ROAD-CURB	Curbs
	C-SSWR	Sanitary sewer-manholes, pumping stations
	C-SSWR-UNDR	Sanitary sewer-underground lines
	C-STRM	Storm drainage catch basins, manholes
	C-STRM-UNDR	Storm drainage pipe-underground

CORE	LAYER	
◆	Name	Description
	C-TOPO	Proposed contour lines and elevations
	C-TOPO-RTWL	Retaining wall
	C-TOPO-SPOT	Spot elevations
	C-WATR	Domestic water - manholes, pumping, storage
	C-WATR-UNDR	Domestic water-underground lines
ELECTRICAL		
	E-ANNO-TEXT	General Text
	E-ANNO-SYMB	Symbols
	E-ANNO-LEGN	Legends and schedules
	E-ANNO-DIMS	Dimensions
	E-ANNO-TTLB	Border and Title Block
	E-ANNO-NOTE	Job Notes
	E-1LIN	One-line diagrams
	E-ALRM	Miscellaneous alarm system
	E-AUXL	Auxiliary systems
	E-CCTV	Closed-circuit TV
	E-COMM	Telephone, communications outlets
	E-CTRL	Electric control system
	E-CTRL-DEVC	Control system devices
	E-CTRL-WIRE	Control system wiring
	E-INTC	Intercom system
	E-LITE	Lighting
	E-LITE-CIRC	Lighting circuits
	E-LITE-CLNG	Ceiling-mounted lighting
	E-LITE-EMER	Emergency lighting
	E-LITE-EXIT	Exit lighting
	E-LITE-FLOR	Floor-mounted lighting
	E-LITE-IDEN	Luminaire identification and text
	E-LITE-JBOX	Junction box
	E-LITE-NUMB	Lighting circuit numbers
	E-LITE-ROOF	Roof lighting
	E-LITE-SPCL	Special lighting
	E-LITE-SWCH	Lighting-switches
	E-LITE-WALL	Wall-mounted lighting
	E-POWR	Power
	E-POWR-BUSW	Busways
	E-POWR-CABL	Cable trays
	E-POWR-CIRC	Power circuits
	E-POWR-CLNG	Power - ceiling receptacles and devices
	E-POWR-EQPM	Power equipment
	E-POWR-FEED	Feeders
	E-POWR-IDEN	Power identification, text
	E-POWR-JBOX	Junction box
	E-POWR-NUMB	Power circuit numbers
	E-POWR-OTLN	Power outline for backgrounds

CORE	LAYER	
◆	Name	Description
	E-POWR-PANL	Power panels
	E-POWR-SWBD	Power switchboards
	E-POWR-URAC	Underfloor raceways
	E-POWR-WALL	Power wall outlets and receptacles
	E-RISR	Riser diagram
	E-SOUN	Sound/PA system
FIRE PROTECTION		
	F-ANNO-TEXT	General Text
	F-ANNO-SYMB	Symbols
	F-ANNO-LEGN	Legends and schedules
	F-ANNO-DIMS	Dimensions
	F-ANNO-TTLB	Border and Title Block
	F-ANNO-NOTE	Job Notes
	F-CO2S CO2	System
	F-CO2S-EQPM	CO2 equipment
	F-CO2S-PIPE CO2	Sprinkler piping
	F-HALN	Halon
	F-HALN-EQPM	Halon equipment
	F-HALN-PIPE	Halon Piping
	F-IGAS	Inert gas
	F-IGAS-EQPM	Inert gas equipment
	F-IGAS-PIPE	Inert gas piping
	F-PROT	Fire protection systems
	F-PROT-ALRM	Fire alarm
	F-PROT-EQPM	Fire system equipment (hose cabinet/extinguishers)
	F-PROT-SMOK	Smoke detectors/heat sensors
	F-SPRN	Fire protection sprinkler system
	F-SPRN-CLHD	Sprinkler head - ceiling
	F-SPRN-OTHD	Sprinkler head - other
	F-SPRN-PIPE	Sprinkler piping
	F-SPRN-STAN	Sprinkler system standpipe
	F-STAN	Fire protection standpipe system
INTERIOR		
	I-ANNO-TEXT	General Text
	I-ANNO-SYMB	Symbols
	I-ANNO-LEGN	Legends and schedules
	I-ANNO-DIMS	Dimensions
	I-ANNO-TTLB	Border and Title Block
	I-ANNO-NOTE	Job Notes
	I-EQPM	Equipment
	I-EQPM-MOVE	Moveable equipment
◆	I-FURN	Furniture
	I-FURN-CASE	Cabinetry/casement
	I-FURN-CHAR	Chairs and other seating
	I-FURN-FILE	File cabinets

CORE	LAYER	
◆	Name	Description
	I-FURN-FREE	Furniture - freestanding (desks, credenzas, etc.)
	I-FURN-IDEN	Furniture numbers
	I-FURN-PLNT	Plants
	I-FURN-PNLS	Furniture system panels
	I-FURN-POWR	Furniture system - power designation
	I-FURN-WKSF	Furniture system work surface components
LANDSCAPING		
	L-ANNO-TEXT	General Text
	L-ANNO-SYMB	Symbols
	L-ANNO-LEGN	Legends and schedules
	L-ANNO-TTLB	Border and Title Block
	L-ANNO-NOTE	Job Notes
	L-PLNT	Plant and landscape materials
	L-PLNT-BEDS	Rock, bark, and other landscaping beds
	L-PLNT-GRND	Ground cover and vines
	L-PLNT-PLAN	Planting plants
	L-PLNT-TREE	Trees
	L-PLNT-TURF	Lawn areas
	L-SITE	Site improvements
	L-SITE-BRDG	Bridges
◆	L-SITE-DECK	Decks
	L-SITE-FENC	Fencing
	L-SITE-FURN	Site furnishings
	L-SITE-PLAY	Play structures
	L-SITE-POOL	Pools and spas
	L-SITE-SPRT	Sports fields
	L-SITE-STEP	Steps
	L-SITE-WALL	Walls
	L-WALK	Walks and steps
	L-WALK-PATT	Walks and steps-cross-hatch patterns
MECHANICAL		
	M-ANNO-TEXT	General Text
	M-ANNO-SYMB	Symbols
	M-ANNO-LEGN	Legends and schedules
	M-ANNO-TTLB	Border and Title Block
	M-ANNO-NOTE	Job Notes
	M-CMPA	Compressed air systems
	M-CMPA-CEQP	Compressed air equipment
	M-CMPA-CPIP	Compressed air piping
	M-CMPA-PEQP	Process air equipment
	M-CMPA-PPIP	Process air piping
	M-CONT	Controls and instrumentation
	M-CONT-THER	Thermostats
	M-CONT-WIRE	Low voltage wiring

CORE	LAYER	
◆	Name	Description
	M-CWTR	Chilled water systems
	M-CWTR-EQPM	Chilled water equipment
	M-CWTR-PIPE	Chilled water piping
	M-EXHS	Exhaust system
	M-EXHS-DUCT	Exhaust system ductwork
	M-EXHS-EQPM	Exhaust system equipment
	M-EXHS-RFEQ	Rooftop exhaust equipment
	M-FUME-EQPM	Fume hoods
	M-FUME-EXHS	Fume hood exhaust system
	M-HOTW	Hot water heating system
	M-HOTW-EQPM	Hot water equipment
	M-HOTW-PIPE	Hot water piping
	M-HVAC	HVAC system
	M-HVAC-CDFF	HVAC ceiling diffusers
	M-HVAC-DUCT	HVAC ductwork
	M-HVAC-EQPM	HVAC equipment
	M-HVAC-ODFF	HVAC other diffusers
	M-HVAC-RDFF	Return air diffusers
	M-HVAC-SDFF	Supply diffusers
	M-MDGS	Medical gas systems
	M-MDGS-EQPM	Medical gas equipment
	M-MDGS-PIPE	Medical gas piping
	M-SPCL	Special systems
	M-SPCL-EQPM	Special equipment
	M-SPCL-PIPE	Special piping
	M-STEM	Steam systems
	M-STEM-CONP	Steam systems condensate piping
	M-STEM-EQPM	Steam systems equipment
	M-STEM-HPIP	High pressure steam piping
	M-STEM-LPIP	Low pressure steam piping
	M-STEM-MPIP	Medium pressure steam piping
PLUMBING		
	P-ANNO-TEXT	General Text
	P-ANNO-SYMB	Symbols
	P-ANNO-LEGN	Legends and schedules
	P-ANNO-TTLB	Border and Title Block
	P-ANNO-NOTE	Job Notes
	P-ACID	Acid, alkaline, oil waste systems
	P-ACID-PIPE	Acid, alkaline, oil waste piping
	P-DOMW	Domestic hot and cold water systems
	P-DOMW-CPIP	Domestic cold water piping
	P-DOMW-EQPM	Domestic hot and cold water equipment
	P-DOMW-HPIP	Domestic hot water piping
	P-DOMW-RISR	Domestic hot and cold water risers
	P-EQPM	Plumbing - miscellaneous equipment

CORE	LAYER	
◆	Name	Description
◆	P-FIXT	Plumbing fixtures, toilets, sinks
	P-SANR	Sanitary drainage
	P-SANR-FIXT	Plumbing fixtures
	P-SANR-FLDR	Floor drains
	P-SANR-PIPE	Sanitary piping
	P-SANR-RISR	Sanitary risers
	P-STRM	Storm drainage system
	P-STRM-PIPE	Storm drain piping
	P-STRM-RFDR	Roof drains
	P-STRM-RISR	Storm drain risers
STRUCTURAL		
	S-ANNO-TEXT	General Text
	S-ANNO-SYMB	Symbols
	S-ANNO-LEGN	Legends and schedules
	S-ANNO-DIMS	Dimensions
	S-ANNO-TTLB	Border and Title Block
	S-ANNO- NOTE	Job Notes
	S-BEAM	Beams
◆	S-COLS	Columns
	S-FNDN	Foundation
	S-FNDN-PILE	Piles, drilled piers
	S-FNDN-RBAR	Foundation reinforcing
	S-GRID	Column grid
◆	S-GRID-DIMS	Column grid dimensions
	S-GRID-EXTR	Column grid outside building
	S-GRID-IDEN	Column grid tags
	S-GRID-INTR	Column grid inside building
	S-WALL	Structural bearing or shear walls
TELECOMM		
	T-ANNO-TEXT	General Text
	T-ANNO-SYMB	Symbols
	T-ANNO-LEGN	Legends and schedules
	T-ANNO-TTLB	Border and Title Block
	T-ANNO-NOTE	Job Notes
	T-CABL	Cable plan
	T-DIAG	Diagram
	T-EQPM	Equipment plan
	T-JACK	Data/telephone jacks
	T-JACK-AP	Wireless Access Point
	T-JACK-CAM	Security camera
	T-JACK-MISC	Nurse call, BMS, elevator phone, meter clock circuit, Hydro utility meter Bell, panic button, etc.
	T-JACK-VD	Voice/Data

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