



CAD STANDARD 2022

Introduction

Multnomah County Oregon (hereafter referred to as the County) establishes these standards to provide general directions and minimum requirements for producing Computer-Aided Drafting (CAD) documents for Multnomah County Facilities and Property Management Division's projects. Organizations contracted to provide such services are hereafter referred to as the AE Service Provider. AE Service Providers are organizations contracted to provide planning and/or design services and shall include, but are not limited to, architects, engineers, consultants, drafting services, furniture installers, interior designers, space planners, or design-build contractors (who have professional liability insurance and the capability to produce digital documents).

General Objectives

The County issues these standards to:

1. Ensure the successful use and control of CAD systems and building data for all Multnomah County owned and leased facilities.
2. Establish minimum requirements for consistent format, professional appearance, and data interchangeability among CAD files and drawing documents.
3. Create accurate, accessible, and current documentation.
4. Expedite project delivery.

Cross-Reference

1. [National CAD Standard - United States® Version 6](#)
2. [Multnomah County Specifications Standards \(May 2020\)](#)
3. [Multnomah County Signage Standards \(June 2016\)](#)

Changes from Previous Version

1. Updated the Naming Conventions
2. Removed Outdated Cross-References

Issues

If the AE Service Provider has a question, finds a conflict, believes that these standards do not address a particular need or issue, or is requesting a deviation from these standards, the AE Service Provider must contact the County Building Data Management Center to seek a resolution.

Contact Information

Building Data Management Center
fpm.bdmc@multco.us
Multnomah County Oregon
Facilities and Property Management Division
401 N. Dixon Street
Portland, OR 97227-1865

Supplemental Material

The County issues the Multnomah County CAD Templates Package. The AE Service Provider is responsible for obtaining a copy of the National CAD Standard Version 6 (NCS) available for purchase at the National Institute of Building Sciences (NIBS) website www.nationalcadstandard.org

Compliance Guidelines

1. Comply with AIA(American Institute of Architects) Guidelines.
2. Comply with the most recent National CAD Standard where requirements are not provided by the County.
3. Adhere to the Multnomah County AE Project Document Standard.

Drafting

The County will not accept As-Built mark-ups to fulfill the “Record Set” requirement of project deliverables. Changes made at the construction phase of a project must be updated in record documents.

A. Basic Drafting Guidelines

1. Avoid redundant lines resulting where multiple line segments are drawn over each other.
2. Include building grids, overall dimensions, room name and room number in each plan and section view. For elevations include building grid and overall dimensions.
3. Standardize View Scale for full plans, partial plans (e.g. restrooms), interior and exterior elevations and wall and building sections.
4. Standardize, where possible, the view size of each drawing type (e.g. plans, elevations and sections).
5. On Project Drawings, clearly differentiate between existing and new features in the drawing (and between background and foreground elements). Use half tone and screening to achieve this clarity.
6. Ensure that only one insertion occurs for each block location.
7. Produce clean and closed line intersections.

B. Cad Format

1. Use the Multnomah County CAD Template package (<https://multco.us/facilities-and-property-management/doing-business-facilities-property-management>).
2. Produce drawings in **AutoCAD 2019** or later.
3. Package files and deliver via **E-Transmit**.
4. Use the Title Block Template and Title Attributes.
5. **WARNING: DO NOT EXPLODE** Title Block and Title Attribute Block.
6. Use full scale for all elements in Model Space at 1' = 1'-0".

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7. Match the annotation scale in Paper Space to the viewport scale.
8. Assign the “BYLAYER” setting to all elements for object color.
9. Use the same Architectural Base Floor Plan for each discipline.
10. Use the entire existing base floor plan to generate the project drawings.
11. Locate elements in the correct space, Paper Space or Model Space.
 - a. Model Space Elements include:
 - i. Base Floor Plans
 - ii. Callouts and Symbols
 - iii. Drafting Specific Elements (Walls, Doors, Windows, Equipment, Lighting, etc.)
 - b. Paper Space Elements include:
 - i. Title Block
 - ii. Title Block Attributes
 - iii. Title Marks.
 - iv. Notes (General, Sheet Specific, etc.)
 - v. Symbol Lists, Schedules, or any other text that is not directly related to drafting specific elements.
12. Use Paper Space for all Title Marks from the County Template.
13. Use the Room Naming Conventions for all Spaces and Objects.
14. Clearly differentiate between existing, demo and new features.
15. Purge unused elements and layers.
16. Use only one insertion for each block location.
17. Do not use nested blocks or references.

External references (xref)

1. Insert all external references at (0, 0).
2. “ATTACH” xref to the drawing file. Do not use the BIND function.
3. Set the “XREFCTL” system variable to “1” to automatically create the log file (.xlg) to track external reference operations.

Base plan components

Architectural Base (AB)

1. Grids (Marks, Lines, Dimensions, Ceiling Systems, Floor Systems)

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2. Tags (Rooms, Doors, Windows, Finishes)
3. Enclosures (Columns, Walls, Partial Walls, Railings, Fences, Headers, Soffits)
4. Elevations (Ramps, Steps, Slopes, Directional Arrows)
5. Openings (Doors, Windows, Roof Hatches, Skylights)
6. Fixed Furniture (Benches, Lockers, Toilet Compartments); Fixed Fixtures (Casework, Bollards, Pallet Racks); Fixed Equipment (Garment Conveyors, Motorized Projection Screens, Waste Compactors)
7. MVP (Dumbwaiters, Elevators, Stairs, Atriums, Shafts)

Base Plans DO NOT include project-specific information, such as:

1. Title blocks
2. Schedules and diagram
3. Construction lines and guidelines
4. Objects in the file associated with demolition
5. General notes, keynotes, and symbol legends
6. Notes and annotations that give specific direction for construction
7. Polylines that inscribe areas for area calculations
8. Hatches used to distinguish new work from existing conditions
9. Duplicate items such as grid bubbles and room tags
10. Detail, section, elevation, and reference tags associated with construction
11. Drawings other than floor plans (e.g. wall sections, door details, elevations)

C. Cad Layers

1. Layers shall be named according to the AIA CAD Layer Guidelines.
2. Assign elements to correct layers.
3. Insert all blocks on Layer "0".

D. File Naming

1. Confirm that the File Name is the same as the Sheet Identification.
2. Name external reference files correctly.
3. Note: Delete all nested references.
4. Note: Delete unused blocks and external references.
5. External Reference File Naming:
 - a. Name the external reference floor plan base drawing using the following format:
 - i. Building Code-FP-Floor Level.dwg (e.g.:X-101-FP-01).
 - b. Simplify the external reference file naming with prefix X and an unique sheet identification to comply with merging layer standards.
 - c. The Sheet Identification has three designators: Discipline [XX], Abbreviation Terms [XXXX] and Floor Level [XXX].
 - i. Separate each level with a placeholder (hyphen) for clarity or
 - ii. Omit the level if it's not applicable.
6. Reference External Base Designators:

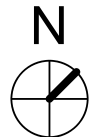
a. Floor Plan Base	= FP
b. Architectural Site Base	= AS
c. Civil	= CB
d. Landscape	= LB
e. Architectural	= AB
f. Interiors	= IB
g. Plumbing	= PB
h. Mechanical	= MB
i. Electrical	= EB

FILE NAMING			
NOTE: USE THE SHEET IDENTIFICATION AS THE FILE NAME FOR THE DRAWING SHEET			
SHEET ID	SHEET NAME		
SHEET IDENTIFICATION	DISCIPLINE DESIGNATOR	SHEET TYPE DESIGNATOR	SHEET CONTENT DESCRIPTION
G-001	General	(leave blank)	Cover Sheet
A-001	Architectural	(leave blank)	Title Sheet
A-101-0A	Architectural	Plans	Lower Level One
A-102-00	Architectural	Plans	Basement
A-103-M2	Architectural	Plans	Second Floor Mezzanine
A-601	Architectural	Schedules	Door and Finish

EXTERNAL REFERENCE NAMING				
PREFIX	SHEET NAME			SHEET CONTENT DESCRIPTION
	DISCIPLINE DESIGNATOR	ABBREVIATION TERMS	FLOOR LEVEL	
X-	[XX]	[XXXX]	[XXX]	Follow character limits indicated by X's
X-	A	FP	A01	First Floor Architectural Partial First Floor Plan
X-	A	ELEV	BLANK	Elevation Plan
X-	M	HVAC	01	First Floor Mechanical HVAC Plan
X-	A	ROOF	BLANK	Architectural Roof Plan
X-	EL	BLANK	01	First Floor Electrical Lighting Plan
X-	BLANK	ANNO	BLANK	Annotation

Sheet Format Requirements

1. Use Sheet Size ARCH D (24" x 36"). Contact BDMC at fpm.bdmc@multco.us for an exemption of this requirement.
 - a. ARCH A-E sizes in 4:3 and 3:2 aspect ratios will be allowed as alternatives
2. Use Font Style Arial and Uppercase
3. Use Font Size 3/32"
4. Project Sheet Contents
5. Project Team
6. Project Sheet Index
7. General Notes
8. Project Description
9. Project Location
10. Vicinity Map
11. Key Plan
12. Format Discipline Sheet Contents (Reference to be inserted)
13. Discipline Sheet Index
14. General [Discipline] Notes
15. Abbreviations
16. Graphic Legend
17. Include General Notes
18. Express scale both numerically and graphically for all drawings.
19. Place the North Arrow at the lower right of the drawing. Use the Title Mark and North Arrow tags provided in the Multnomah County CAD Template. Plan "N" always points to the top of the drawings. The thick line should be rotated within the family to True North.
20. Orient the view to maximize the size of the floor plan.
21. Cover Sheet is optional.



Title Block Requirements

1. Use the Title Block in the template which includes the Title Block Attributes already placed.
2. Place the AE Service Provider Identification. (Insert in Template)
3. Populate Project Number and other corresponding information to Title Block.

Note: The County Project Manager will provide the County Building Number and Project Number (E.g. 614 – CP14.01.01)

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- a. County Project Number
- b. Date
- c. Drawn By/Checked By/Approved By
- d. County Building Number – Project Number
- e. Populate the Sheet Title Block with the Discipline, Sheet Type, and Specific Contents for the Sheet.
- f. Populate the Sheet Identification with the Date of Drawing, Sheet Number, Discipline Designator

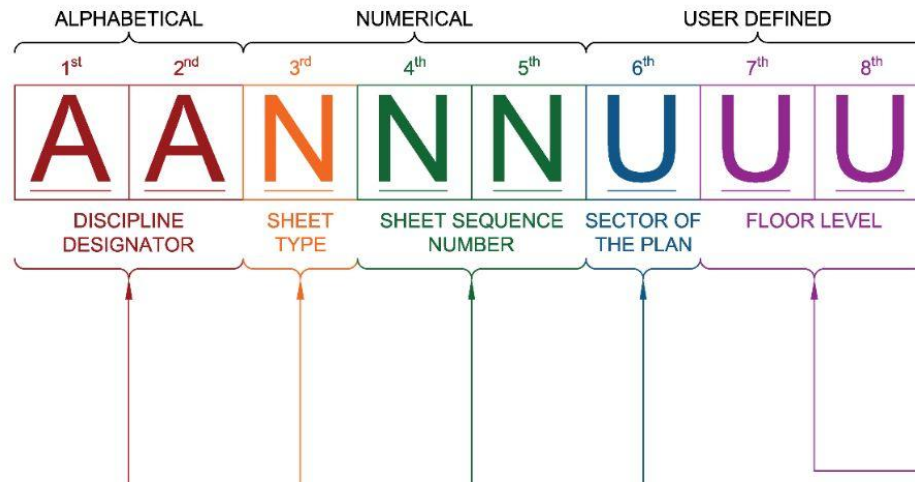
D-D. Sheet Naming

1. Sheets are grouped by discipline.
2. Name sheets following the sheet naming chart. (follow guidelines on page 11)

MULTNOMAH COUNTY SHEET IDENTIFICATION



Discipline Designator (1 st & 2 nd Characters)			
Discipline (1 st Character)	Designator	Sub Discipline (2 nd Character)	Designator
G	General	I	Information
A	Architectural	D	Demolition
M	Mechanical	H	HVAC
E	Electrical	P	Power
P	Plumbing	E	Elements
S	Structural	F	Framing
V	Survey/Mapping	S	Site
B	Geotechnical	G	Grading
C	Civil	A	Alarm
L	Landscape	L	Lighting
Y	Security	P	Piping
F	Fire Protection	Q	Equipment
T	Telecom	-	No Sub Discipline
Exceptions To Assigned Discipline Designators			
Discipline Designator		Use	
H - Hazardous Materials		Do Not Use	
B - Geotechnical		Do Not Use	
W - Civil Works		Do Not Use	
D - Process		Do Not Use	
Z - Contractor/Shop		Do Not Use - Incorporate the discipline subset in which the work is associated.	
O - Operations		Do Not Use	



DWG File Naming (Matches Sheet Identification)	
Sheet ID	Filename (.dwg)
G-001	G-001.dwg
A-101-01	A-101-01.dwg
MH101-01	MH101-01.dwg
Base Floor Plan	101-FP-01.dwg

Floor Level Designator (7 th & 8 th Characters)	
Floor Level (7 th & 8 th Characters)	Designator
0A	Lower Level 1
00	Basement
01	First Floor
02	Second Floor
M2	Second Floor Mezzanine
03	Roof (the next number from the top floor plan)
<i>NOTE: Use only when floor plan is present on sheet.</i>	
Floor Number/Floor Prefix	Floor Level Description
01	First Floor (or ground level) that directly accesses grade
00	One level below the first floor will be Basement (or grade level)
0A, 0B, 0C	Multi-Levels below the first floor will be Lower Level 1, Lower Level 2, Lower Level 3,...
02, 03, 04,...	All floor levels above first floor shall be numbered sequentially starting with the second, third, fourth floor,...
M1, M2, M3,...	Partial levels such as Mezzanine will be numbered with a preceding letter "M" followed by the number of the floor below
The next number in sequence from the floor below. Do not use "R" as a prefix.	Roof Level
The next number in sequence from the floor below. Do not use "M" or "P" as prefix.	Any mechanical or penthouse

Sheet Type Designator (3 rd Character)	
Sheet Type (3 rd Character)	Designator
0	General (Symbols, legend, note, etc.)
1	Plans (Horizontal Views)
2	Elevations (Vertical Views)
3	Sections (Sectional Views)
4	Large Scale Views (Plans, elevations or sections that are not details)
5	Details
6	Schedules & Diagrams
7	User Defined (or Type that does not fall in other categories)
8	User Defined (or Type that does not fall in other categories)
9	3D Representations (Isometric, perspectives, photographs)

Sheet Sequence Number (4 th & 5 th Characters)	
Sequence Number	Notes
00	00 Is Not Permitted (i.e. G-000, A-000,...)
01	The sheet sequence number is a two-digit number that identifies each sheet in a series of the same discipline and sheet type. Sequence numbering starts with 01...
02, 03, 04,...	and continues with 02, 03, 04,...
99	Up to 99

Plan Sector Designator (6 th Character)			
Sheet ID	Sheet Name		
Sheet Identification (6 th Character)	Discipline Designator	Sheet Type Designator	Sheet Content Description
AD101A00	Architectural Demolition	Plans	Basement - Sector A
AD101B00	Architectural Demolition	Plans	Basement - Sector B
AD101-00	Architectural Demolition	Plans	No Sector
The plan is separated into sectors when the plan is too large to fit on a single drawing sheet at a readable scale.			

D-E. Sheet Content

1. Populate Room Names (Reference the Naming Convention chart below.)
2. Drawing Numbering format is from top-down, right to left. The lowest numbers appear first as the sheet is opened.
3. Place a Hazardous Materials stamp in the lower right-hand corner on all demolition drawings.
4. Record Drawings are Construction Documents revised to show significant changes made during the construction process, usually based on the marked-up prints, drawings, and another date furnished by the contractor to the architect. (NO REDLINES)
5. Populate the Sheet Content appropriately for the Sheet Type.
6. Each Floor requires its own individual sheet.
7. Floor Levels, Room Numbers, and Door Numbers should be correctly assigned.
8. A Key Plan is required for all partial floor plans. For entire floor plans identify the work area.

Naming Convention

1. Multnomah County standardizes names for functional locations and equipment in County-owned and leased space as described below.
2. Multnomah County assigns a name for each room (e.g. Conference). Label each room in accordance with its primary function. The table below lists "Room Name" labels to be indicated on drawings and specifications.

APPROVED ROOM NAME	ROOM DESCRIPTION
ACCESS	Space to access or service building systems.
ACTIVITY	Room designed for programmed and extracurricular activities. [See WELLNESS]
AISLE	Office area that exceeds the requirements for OFFICE.
ALCOVE	A recess, typically in the wall of a room or hall.
ARCADE	Exterior covered passageway between buildings or entry to a building.
ATM	Separate space for an automatic teller machine.
ATRIUM	A many storied court in a building usually with a skylight.
ATTIC	Unused, accessible space above occupied room or area.
AUDITORIUM	Large meeting space with fixed podium, or raised stage.
BEDROOM	Room with 1 -2 beds. [See DORM]
BED BUG REMEDIATION	Room with specially designed equipment to raise the temperature to kill the bed bugs.
BIKE	Bike storage.
BIOMEDICAL WASTE	Room containing infectious (or potentially infectious) materials waste.
BOILER	Room for boiler equipment.
BREAK	Separate room with tables, chairs, appliances or vending machines for employee use.
CATTERY	A boarding or breeding establishment for cats.
CELL	Single, group or special purpose detention room.
CHAPLAIN	Room assigned to house a chaplain or related activities.
CHILLER	Room for chiller equipment.
CITY OF PORTLAND	City of Portland.

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CLINIC	An establishment or hospital department where outpatients are given medical treatment or advice, especially of a specialist nature.
CLOSED STACKS	Contains books and other items that are not available for viewing or browsing by the general public.
COMMAND	A space for overseeing and directing inmates.
COMMONS	Primary flexible space for resident activities, and socializing. May include non-dedicated dining (Primarily for Shelters)
COMPRESSOR	Room dedicated to compressor equipment.
CONFERENCE	6 person or more meeting area.
CONTROL	Room with multiple control systems (e.g. DDC and Fire Control Panel).
COOLER	Room to store refrigerated food storage or material (e.g. evidence).
COPY	Room for copiers only with associated supplies or copier/mail arrangements [See MAIL].
COURTROOM	Court space including bench, jury box, tables, and public area.
COURTYARD	Open uncovered space unobstructed to sky, bounded on three or more side.
CRY ROOM	A support room where parents may sit with their infants.
CUSTODIAL	Room for custodial service or custodial supply storage.
DATA CENTER	A data center also called a server farm, is a facility used to house computer systems and associated components, such as telecommunications and storage systems.
DAY CARE	Room to oversee child care.
DAY ROOM	Common area for detainees to mingle outside of individual cells.
DINING	Separate eating area associated with cafeteria or kitchen.
DISPATCH	Room for organizing and conveying the delivery goods or services. (E.g. FPM Dispatch, Help Desk)
DOCK	Specialty space designed to load and unload material.
DORM	Three or more beds in a single room [See BEDROOM].
DRESS	Room for disrobing and gowning.
DROP	Specialty space designed for collection and sorting of deposits (E.g. ballots, books).
ELECTRICAL	Room for gear, panels, and other electrical equipment.

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ELEVATOR	Room for elevator only.
ELEVATOR EQUIPMENT	Room for elevator related equipment only.
ELEVATOR LOBBY	A centrally located room at the entrance of an elevator or elevators that serves as a waiting area for elevator rides.
ELEVATOR PIT	That portion of an elevator shaft or hoistway extending below the level of the bottom landing saddle to provide for bottom over-travel and clearance, and for elevator parts that require space below the bottom limit of car travel.
EXAM	Space designed for dental or health examination.
EXERCISE	Space designed for fitness or wellness sessions, including gymnasiums.
FIRE CONTROL	Room for the fire alarm control panel.
FIRE PUMP	Room for the building master fire pump and main shut-off.
FIRING RANGE	A shooting range or firing range or archery range or pistol range or rifle range or shooting gallery or shooting ground is a specialized facility designed for archery or firearms practice.
FOYER	An entrance hall or other open area in a building used by the public. [Use HALL for a main or intermediate room for passage between rooms.]
FREEZER	Specialty space designed to store frozen material. (e.g. evidence)
FUEL STORAGE	Room housing main fuel tank for emergency generator. [See BOAT STORAGE, GENERATOR, STORAGE]
FUTURE ELEVATOR	Room for a future elevator.
GARAGE	A shelter for automotive vehicles (includes carport and indoor parking). [See BOAT STORAGE]
GENERATOR	Room for emergency generator and related equipment only.
GRAND JURY	Room assigned to Grand Jury proceedings.
GREASE TRAP	A grease trap is a plumbing device (a type of trap) designed to intercept most greases and solids before they enter a wastewater disposal system.
GUARD STATION	Occupied room designed to secure populations.
HALL	Main or intermediate passageway between rooms. [Use FOYER for a transitional space from the exterior to the interior of a building. Do not use Vestibule.]
HEARING	Specially-designed 10-20 person space for public appeal or informal proceedings.

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HOISTWAY	Shaft for the travel of elevators or dumbwaiters (includes pit).
HUDDLE	Less than 6 person meeting area.
INTERVIEW	Specially-designed 3-4 person meeting space. (e.g. depositions, counsel)
JUDGE CHAMBER	Private and secure office area for judge.
JURY ROOM	Separate private and secure deliberation room used by Jury.
KENNEL	Shelter for animals.
KITCHEN	Room to prepare meals.
LAB	Specialty space designed for testing and analysis.
LACTATION	A private space where a nursing mother can use a breast pump.
LAUNDRY	Specialty space designed to wash and dry clothing or linens (includes garment conveyors).
LIBRARY	A depository built to contain books and other materials for reading and study.
LIVING	Separate space for congregation in a residential facility.
LOBBY	A centrally located room at the entrance of a building, office or elevator that serves as a gathering or waiting area.
LOCKER	Locker and storage area.
LOUNGE	Room designated for a specific function. (e.g. Victim's Lounge)
MAIL	Room for mail collection and distribution only. [See COPY]
MECHANICAL	Room for fans, pumps, and other HVAC equipment.
MEETING	A room in a building, such as an office building, set aside for the use of people to hold meetings.
MEN	Toilet area or space for urine sample collection for men only.
MULTIMEDIA	A room in which the equipment or media for mass communication (as telephone, fax, computer, etc.) is fitted.
MULTIPURPOSE	Large space usable or modifiable for more than one purpose.
NURSE STATION	Separate room for nurses and practitioners to collaborate in a semi-private atmosphere.
OBSERVATION	A separate room from which doctors can observe the patient without disturbing them.
OFFICE	Rooms less than 1,000 SF and less than 5 desks or workstations used for bureaucratic and clerical functions as opposed to specific programmed functions. (e.g. exam, shop, retail, storage, or judge chambers)

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OPEN BELOW	Indicates an open area, such as an atrium space or major vertical penetration.
OPEN OFFICE	Office area that exceeds the requirements for OFFICE.
OPEN STACKS	Having or being a system of library management in which patrons have direct access to stacks for browsing and selecting books.
PAINT SHOP	The part of a building where goods are painted, typically by spraying.
PARKING	A covered parking area inside the footprint of a building.
PHARMACY	Specialty space designed for drug storage and dispensing.
PREP	A room for organization and preparation.
PUMPHOUSE	A building where pumps and other pumping equipment have been installed.
QUIET	A room that provides a quiet space.
READING	Room designated for reading material or records (adjacent to RECORDS or RESOURCE).
RECEPTION	Separate room for employee-occupied built-desk or counter area (use HALL or LOBBY for public side).
RECORDS	Separate file storage area or secured file storage room.
RECYCLE	Separate material recycling storage area only. [Use WASTE for a separate room for waste containment and recycling.]
REFRIGERATOR	A storage area used to keep food or medical supplies cool.
RESCUE	Separate room used as an area of Rescue Assistance.
RESOURCE	Separate material and equipment resource storage and use area.
RESTROOM	Gender inclusive toilet area or space for urine sample collection.
RETAIL	Multiple areas, spaces or rooms (leased out space only, not contracted services).
SALLYPORT	Specially spaces designed for secure vehicle loading/unloading.
SAUNA	Separate room for spa or sauna.
SECURITY CONTROL	Unoccupied room for security system building controls.
SERVERY	Room for Food Service.
SHAFT	Interior vertical penetration for air movement, piping or conduits.

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SHELTER	A space to provide temporary housing for the city's homeless.
SHOP	Shared workspace for manufacture, repair, test, & maintenance.
SHOWER	Shower area.
SPRINKLER	Sprinkler main, riser, shut off, or emergency fire pump.
STAGE	Space within building utilized for entertainment and presentations.
STAIRS	Separate room for each floor-to-floor vertical stair run.
STORAGE	Space designed to store material (including coats) or equipment (room, shed, trailer). [See FUEL STORAGE, BOAT STORAGE]
TANK	Cell or enclosure used especially for receiving inmates.
TELECOM	Separate room for telephone, data, and network equipment.
TRAINING	Specially-equipped room (e.g. computer, presentation). Includes classroom.
TRASH	Separate room for waste containment, or waste containment and recycling. [Use RECYCLE for a separate room for recycling only.]
UNUSABLE	Unused, inaccessible space above or below occupied space.
UPS	Separate room for uninterruptible power supplies.
UTILITY	Separate space that houses more than one building support function. For example, custodial sink, telecom, fire pump and/or sprinkler valve.
VAULT	A room or compartment, often built of steel, for the safekeeping of valuables.
VENDING	Vending machine area.
VESTIBULE	An antechamber, hall, or lobby next to the outer door of a building. [Use HALL for a main or intermediate room for passage between rooms.]
VISITING	Specialty spaces designed for secure visitations.
WAITING	A room for people to wait.
WELLNESS	Room designed for programmed and extracurricular activities. See ACTIVITY.
WOMEN	Toilet area or space for urinal sample collection for women only.
WORKROOM	A room that is not task specific and may accommodate multiple tasks (e.g. sorting records, project planning, etc.)

Space Management

S-A. Floor, Room, And Door Numbering

Floor Level Numbering And Floor Level Prefix

Assign floor level numbers using this guideline. The floor level number also acts as a prefix for suite and room numbers. The only exceptions for using the floor level number as a prefix for suite and room numbering are for partial floor levels such as mezzanines (or sectors and common areas that are described later).

1. The First Floor (or Ground Level) shall be 01 for the highest floor level that directly accesses grade.
2. The Basement (or Grade Level) shall be 00 for the floor directly below the First Floor Level. Where the floor below the First Floor can be directly accessed from grade (as in a sloping site), it will be referred to as the Grade Level. Otherwise, it will be referred to as the Basement.
3. All floor multi levels below the First Floor shall be labeled alphabetically, with the floor level closest to the First Floor always being "0A (Lower Level 1), 0B (Lower Level 2), etc."
4. All floor multi-levels above the First Floor shall be numbered sequentially; starting with the Second Floor shall be 02, 03, 04...
5. Any Mechanical (or Penthouse Level) shall be numbered as the next number in sequence from the floor below. Do not use "M" or "P" as prefixes.
6. Any Roof Level shall be numbered as the next number in sequence from the floor below. Do not use "R" as a prefix.
7. Any Mezzanine Level shall be labeled with a preceding letter "M" followed by the number of the floor below, the Mezzanine shall be M1, M2, M3, ...

Sector Approach

In linear buildings, it may be appropriate to divide a floor into multiple sectors. In linear buildings where the quadrant approach is ineffective, determine the minimum number of sectors desired to clearly delineate the space. The intent of the sectors is to divide the facility into discrete, recognizable building areas, such as wings or annexes. The sector model provides for unlimited tenant assignable room numbers per floor. Begin room numbering in the NW corner of each sector and proceed to number rooms in a counterclockwise direction. The following is a sample of the sector approach:

1. Sector A: Rooms A100 through A199
2. Sector B: Rooms B100 through B199
3. Sector C: Rooms C100 through C199

Major Vertical Penetrations

Major Vertical Penetrations are stairwells, elevator shafts, flues, pipe shafts, vertical ducts, and enclosing walls. Atria and similar penetrations above the finished floor are included in this definition. Refer to the Standard Method for Measuring Floor Area in Office Buildings for specific examples. Identify major vertical penetrations with the following significant upper case Letters: "S" for Stairwells, "E" for Elevator shafts, and "X" for other MVP objects. Use a dash after the letter designator.

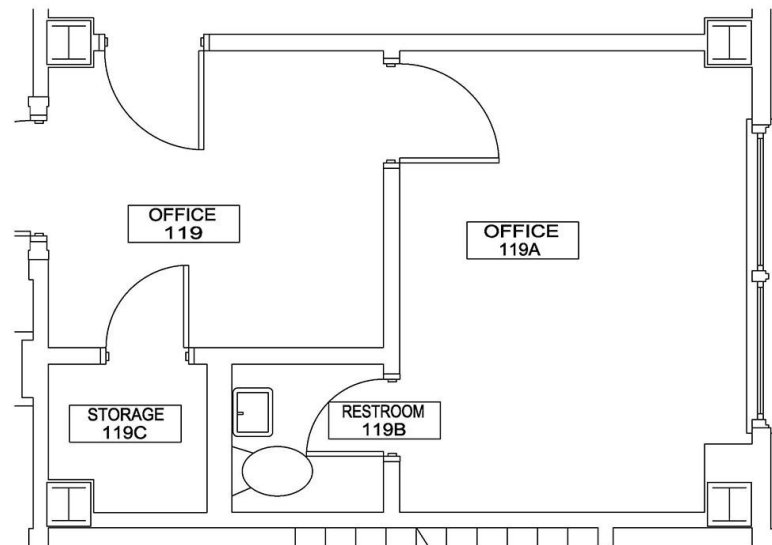
1. For a given floor, assign a unique room number sequence to each elevator hoistway and stairwell. (E.g. S-101, S-102, E-101, E-102, X-101, X-102...)
2. Where possible, assign the same Room-number to all major vertical penetrations that are duplicated from floor to floor (except for the floor level prefix).

Suites

A suite is defined as a group of rooms on any given floor, where those rooms are self-contained (i.e. accessible from one another without leaving the suite) and well defined (e.g. bounded by common and contiguous perimeter walls on all sides). Assign the suite number to the largest area common to the rooms in the suite. Assign the suite numbers with a number divisible by the integer 5 (e.g. Suite 110, Suite 305). Number the remaining rooms sequentially with the suite number plus a capital letter suffix (e.g. 350A, 350B, 350C...), following a clockwise route along the main corridor. Do not use the letters "I" or "O" as a capital letter prefix. Where there are more than 20 rooms in a suite, the Facilities & Property Management Division will customize a numbering scheme.

Examples of rooms that may have inner rooms are:

1. Office Suite
2. Courtrooms with foyers,
3. Restrooms with adjoining locker rooms and shower rooms,
4. Shops with storage rooms and workrooms, and
5. Detention dorms with living rooms and sleeping rooms.



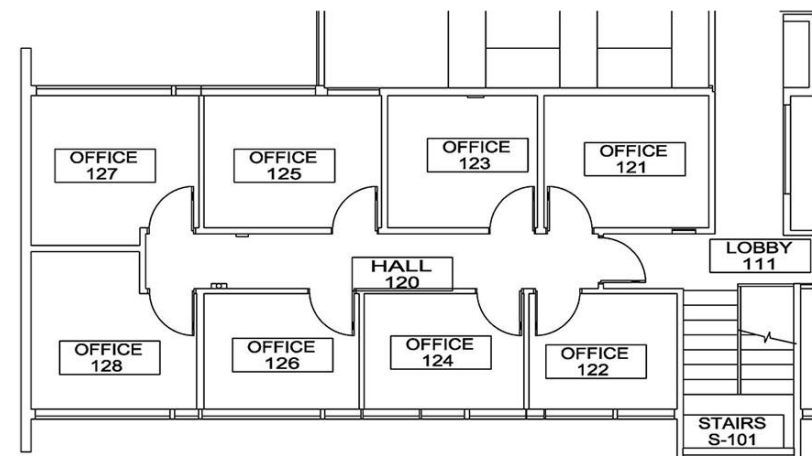
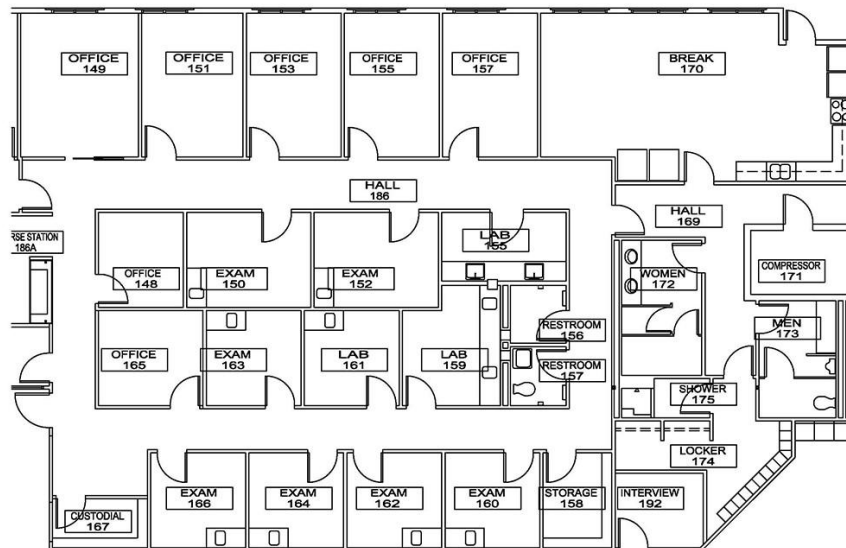
Rooms

A room is defined as a single contiguous space bounded by walls, windows, doors, floor, and sometimes other building elements such as a ceiling or roof. A room must have an entryway that has or could have a door or access panel. The use of floor-to-ceiling casework, built-ins, or partitions may divide an area into two distinct rooms. Assign a room number to every room that has full-height door access, including closets and storerooms. – Reference Figure 7 – Rooms.

Assign room numbers in accordance with this guideline:

The first part of the room identifier should match the floor number. Room numbering consists of a floor number prefix and a 2 digit sequential set of numbers.

1. Evenly distribute room numbers on any given floor to allow possible subdivision into smaller rooms or groups of rooms.
2. Number rooms sequentially (e.g. 101, 102, 103...) following a clockwise route along the main corridors, beginning at the front entrance or lobby of a floor.
3. Note: Along double-loaded corridors, even numbers should be on the left side and odd numbers on the right. In some instances, it may be necessary to skip some room numbers in order to maintain succession with the room numbers on the opposite side of the corridor. When a corridor contains large rooms, such as training rooms or meeting rooms on both sides of the corridor, skip room numbers to allow for future renovation of a large space into smaller spaces. Reserve sufficient numbers to allow for large spaces to be divided into standard size office spaces. – Reference Figure 8 – Double Loaded Corridors.
4. Where practical, assign the same room number to all rooms that are duplicated from floor to floor (except for the floor level prefix). – Reference Figure 9 – Clockwise Room Numbering.



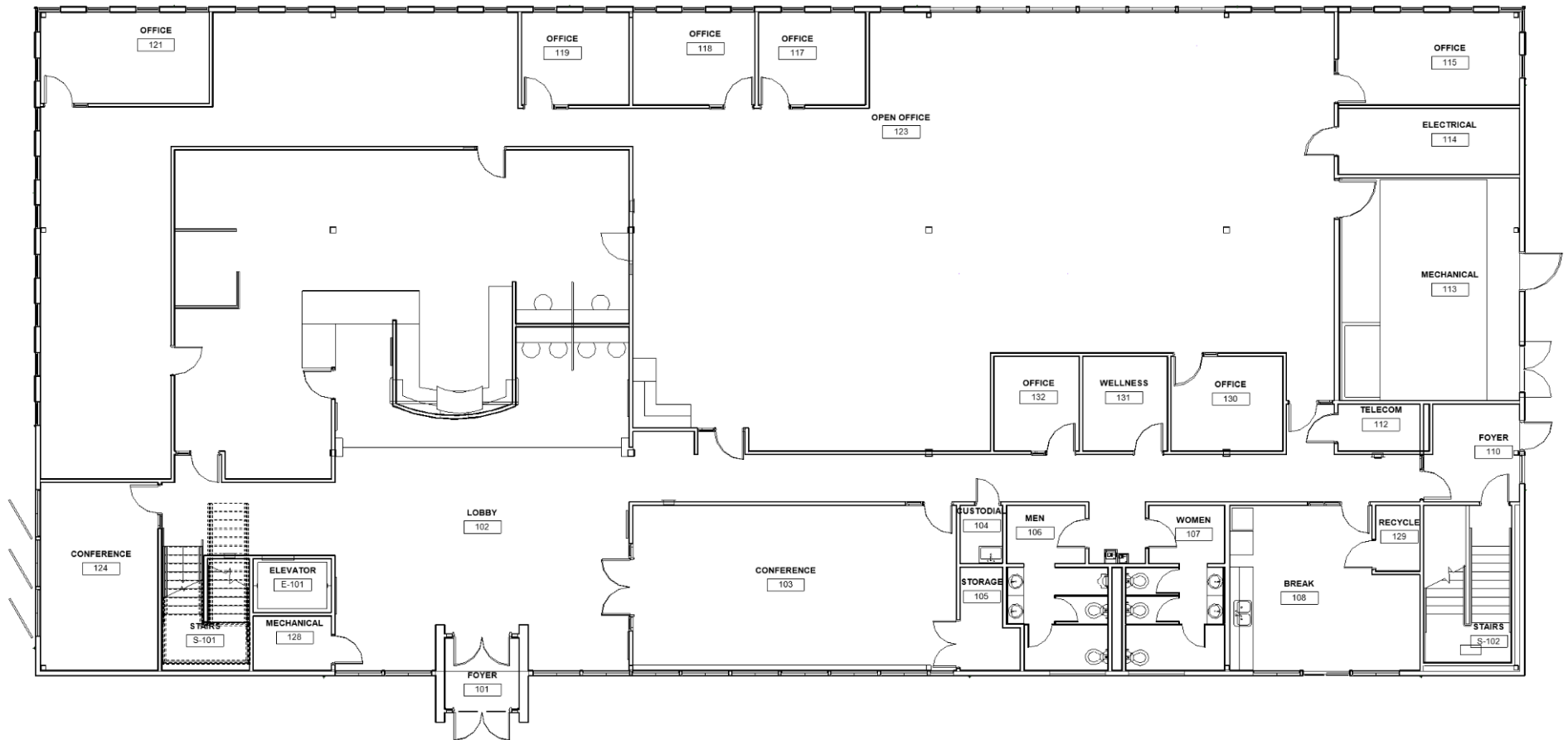
Door Numbering

Each door opening in a building must have a unique identifier. If a room has one door opening, the door opening number is the same as the secure side room number. If more than one door opening in a room exists, door openings within that room are identified by the room number followed by a lower case alpha character starting clockwise from the corridor access door opening.

EXAMPLES

The following pages show examples of what minimum views and properties should look like. Shared parameters have been built into the Multco Revit Template.

Base Plan Example



Family Type Properties Example

Type Properties

Family: HVAC-Heat Pump-Carrier-38AUQA12A0A6-0A0A0

Type: 10 Tons

Load... Duplicate... Rename...

Type Parameters

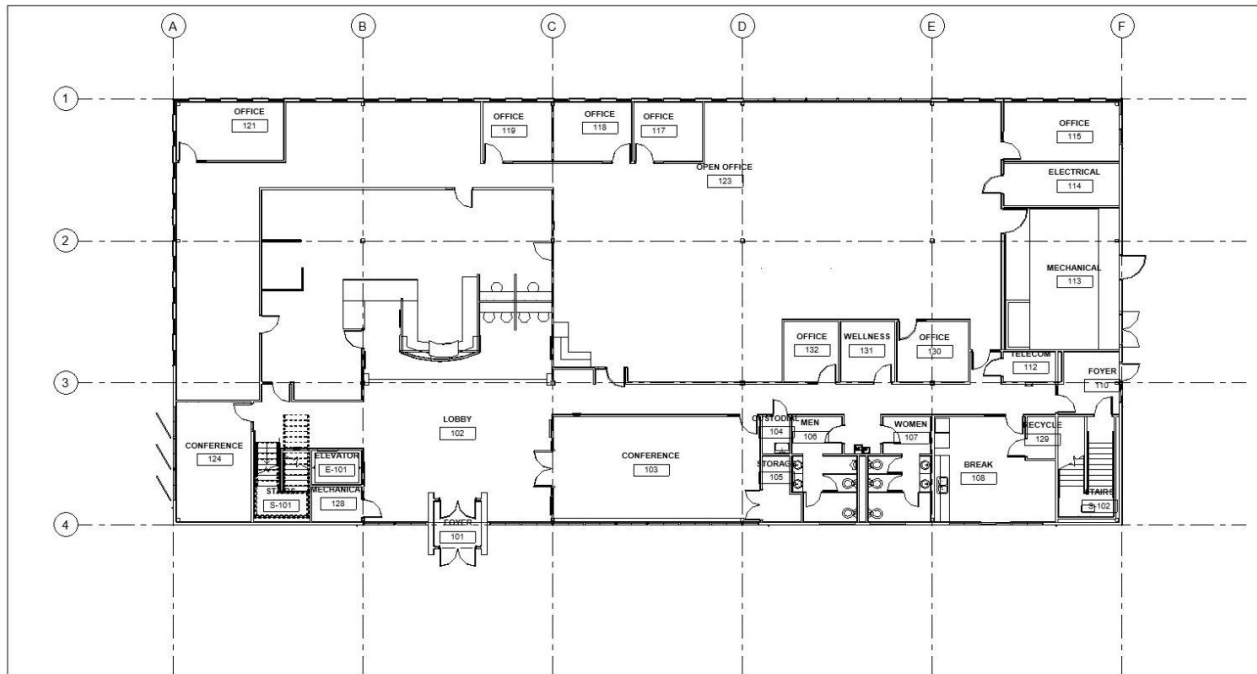
Parameter	Value
Constraints	
Default Elevation	0' 0"
Materials and Finishes	
Electrical	
Voltage	460.00 V
Number of Poles	3
Load Classification	Cooling
Electrical - Loads	
Apparent Load	11190.00 VA
Dimensions	
Mechanical	
Identity Data	
Type Image	
Keynote	
Model	38AUQA12A0A6-0A0A0
Manufacturer	Carrier
Type Comments	
URL	https://www.carrierenterprise.com/product/1409698378110/carrier-10-ton-gemini-heat-pump-cond
Description	10 Ton Heat Pump
Assembly Code	
Cost	
Assembly Description	
Type Mark	
Manual URL	https://ca-manufacturer-documents.s3.amazonaws.com/CarrierDocs/GS-38AUQ-7-25-02PD.docx
Warranty URL	https://ca-manufacturer-documents.s3.amazonaws.com/CarrierDocs/590-033-0509.pdf
Warranty End Date	12/8/2022
As-Built Existing?	<input type="checkbox"/>
OmniClass Number	23.75.10.21.17
OmniClass Title	Water-Source Heat Pumps
Code Name	
Other	

[What do these properties do?](#)

<< Preview OK Cancel Apply

Sheet Example

Area Schedule (Gross Building)					
Level	Area Type	Number	Name	IBB Name	Area
B1 - First Floor	Gross Building Area	01-G BA	01-G BA	01-G BA-A1	11551 SF
B2 - Second Floor	Gross Building Area	02-G BA	02-G BA	02-G BA-A1	11519 SF
					23070 SF



1 01 - First Floor - Electrical
1/8" = 1'-0"



Multnomah County
 Planning & Economic Development
 401 W. Stark Street
 Portland, OR 97207-3900

The Project to End All Projects
 Multnomah County Building
 1234 NW Portland St
 Portland OR 97209

Project Status

PROJECT NO.	000000
PROJECT NAME	000000
PROJECT DATE	000000
PROJECT STATUS	000000

Sheet Test

DATE: 12/08/21
 101-01
 AE Sheet 1 of 20