

iD S MECHANICAL

Graphic Standards

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Mechanical Graphic Standards

Introduction



The IDS mechanical graphic standards book contains IDS standards that are to be used as a guide for mechanical construction documents.

The IDS mechanical standards have been developed so that project information within the construction documents from job to job will not only have organization, but also provide clarity, similarity and understanding of the design intent from each project across the board. Construction documents that are clear, organized and easy to navigate by contractors and members of the construction industry also help avoid inconsistencies and conflicts with the scope of work.

In summary, an organized cohesive set of mechanical construction documents not only make the project more efficient, it improves coordination between other disciplines and alleviates confusion with the owner, contractors, specification writers, consultants, estimators and permit jurisdictions when reviewing the drawings.

Table of Contents



<i>Index</i>	<i>Page</i>
Drawing Development	
Drawing List	M1.1
Drawing Numbering, Drawing Titles, Department Codes - Large Project	M1.2
Drawing Numbering, Drawing Titles, Department Codes - Large Project with Areas	M1.3
Drawing Series, Content, Scale, Department Codes	M1.4
Drawing Information	
Border	M2.1
Client/Consultant Information	M2.1a
Title Block	M2.1b
Plan Guide Points	M2.1c
Reference Information	M2.2
Abbreviations	M2.2a thru M2.2c
Floor Plans	M2.3
Title Block	M2.3a
Key Plan	M2.3b
Plan Guide Points	M2.3c thru M2.3d
Enlarged Plans and Sections	M2.4
Details	M2.5
Schedules	M2.6
Temperature Controls	M2.7
Drawing Guidelines	
Tagging	M3.1
Leader Lines	M3.2
Room Names	M3.3
Column Grid Bubbles	M3.4
Match Lines	M3.5
Drawing Do's and Don'ts	
Mechanical Equipment Schedule Do's and Don'ts	M4.1
Construction Documents Do's and Don'ts	M4.2

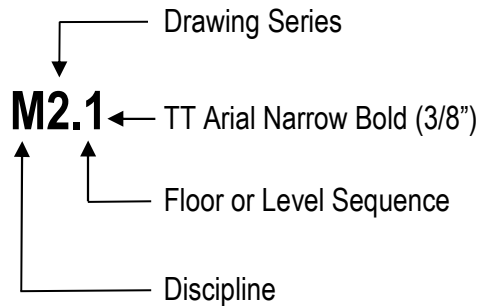
Drawing Development

Drawing List - Mechanical

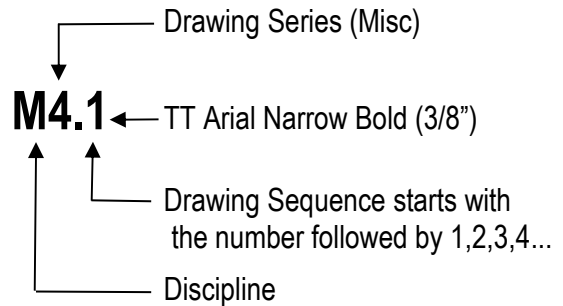


The following describes the way to number Mechanical Drawings and the order the Drawings are placed in a Construction Set:

EXAMPLE (FLOOR PLANS):



EXAMPLE (MISC. DRAWINGS):



MECHANICAL DRAWING DESIGNATOR

MR	Mech Ref Info	FPR	Fire Protection Ref Info
MS	Mech Site	FPS	Fire Protection Site
M	Mechanical	FP	Fire Protection

ORGANIZATION OF DRAWINGS BY DISCIPLINE

C	- Civil	F	- Furniture
L	- Landscape	FS	- Food Service
S	- Structural	M	- Mechanical
A	- Architectural	FP	- Fire Protection
EQ	- Equipment	LS	- Life Safety
E	- Electrical	T	- Technology

MECHANICAL:

MR.0	Mechanical Reference Information	FPR.0	Fire Protection Reference Information
MS._	Mechanical Site Plan (if applicable)	FPS._	Fire Protection Site Plan
M0._	Composite Plans	FP0._	Composite Plans
M1._U	Underground Demolition Plans	FP1._	Demolition Plans
M1._	Demolition Plans	FP2._	Fire Protection Plans
M2._U	Underground Sheet Metal Plans	FP6._	Diagrams
M2._	Sheet Metal Plans	FP7._	Schedules, Sections and Details
M3._U	Underground HVAC Piping Plans		
M3._	HVAC Piping Plans		
M4._U	Underground Plumbing Plans		
M4._	Plumbing Plans		
M5._	Enlarged Plans, Sections		
M6._	Details		
M7._	Schedules		
M8._	Temperature Controls		

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project - Mechanical



The following describes the way to number and name Mechanical Drawings for a Large Project:

- **ALWAYS follow the standard Drawing Numbering and Drawing Title Naming Convention. (Coordinate any modifications to the Drawing Numbering or Drawing Titles with the Project Administrator and all other disciplines)**
- **ALWAYS use upper and lowercase letters in the Title Block**
(View Titles: Details, Elevations, Enlarged Plans etc.. use all Uppercase)
- **Use 'Level' instead of 'Floor' only for specific projects where required**
(Example: University of Michigan Hospital)

		<u>Dept Codes</u>
<u>Mechanical – M Series</u>		
MR.0	Mechanical Reference Information	60
<u>Site (if applicable)</u>		
MS.1	Mechanical Site Plan	61
<u>Composite Plans - M0 Series</u>		
M0.02	Basement 2 (or Lower Level 2) Composite Plan	62.1
M0.01	Basement 1 (or Lower Level 1) Composite Plan	62.2
M0.1	First Floor (or Level 1) Composite Plan	63
M0.2	Second Floor (or Level 2) Composite Plan etc...	63
M0. _	Roof Composite Plan (Last Drawing Number in the 0 Series) - Match Arch	63
<u>Underground Demolition Plans - M1U Series</u>		
M1.02U	Underground Demolition Plan	64.1
M1.01U	Underground Demolition Plan	64.2
M1.1U	Underground Demolition Plan	64.3
<u>Demolition Plans - M1 Series</u>		
M1.02	Basement 2 (or Lower Level 2) Demolition Plan	65.1
M1.01	Basement 1 (or Lower Level 1) Demolition Plan	65.2
M1.1	First Floor (or Level 1) Demolition Plan	66
M1.2	Second Floor (or Level 2) Demolition Plan etc...	66
M1. _	Roof Demolition Plan (Last Drawing Number in the 1 Series) - Match Arch	66
<u>Underground Sheet Metal Plans - M2U Series</u>		
M2.02U	Underground Sheet Metal Plan	67.1
M2.01U	Underground Sheet Metal Plan	67.2
M2.1U	Underground Sheet Metal Plan	67.3

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes
Large Project - Mechanical



		<u>Dept Codes</u>
<u>Sheet Metal Plans - M2 Series</u>		
M2.02	Basement 2 (or Lower Level 2) Sheet Metal Plan	68.1
M2.01	Basement 1 (or Lower Level 1) Sheet Metal Plan	68.2
M2.1	First Floor (or Level 1) Sheet Metal Plan	69
M2.2	Second Floor (or Level 2) Sheet Metal Plan etc...	69
M2._	Roof Mechanical Plan	69
<u>Underground HVAC Piping Plans – M3U Series</u>		
M3.02U	Underground HVAC Piping Plan	70.1
M3.01U	Underground HVAC Piping Plan	70.2
M3.1U	Underground HVAC Piping Plan	70.3
<u>HVAC Piping Plans – M3 Series</u>		
M3.02	Basement 2 (or Lower Level 2) HVAC Piping Plan	71.1
M3.01	Basement 1 (or Lower Level 1) HVAC Piping Plan	71.2
M3.1	First Floor (or Level 1) HVAC Piping Plan	72
M3.2	Second Floor (or Level 2) HVAC Piping Plan etc...	72
<u>Underground Plumbing Plans – M4U Series</u>		
M4.02U	Underground Plumbing Plan	73.1
M4.01U	Underground Plumbing Plan	73.2
M4.1U	Underground Plumbing Plan	73.3
<u>Plumbing Plans – M4 Series</u>		
M4.02	Basement 2 (or Lower Level 2) Plumbing Plan	74.1
M4.01	Basement 1 (or Lower Level 1) Plumbing Plan	74.2
M4.1	First Floor (or Level 1) Plumbing Plan	75
M4.2	Second Floor (or Level 2) Plumbing Plan etc...	75
<u>Enlarged Plans, Sections - M5 Series</u>		
M5.1	Enlarged Plans	76
M5._	Sections	76
<u>Details – M6 Series</u>		
M6.1	Details or Diagrams	76
M6._	Details or Diagrams	76
<u>Schedules – M7 Series</u>		
M7.1	Schedules	76
M7._	Schedules	76

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes *Large Project - Mechanical*



		<u>Dept Codes</u>
<u>Temperature Controls – M8 Series</u>		
M8.1	Temperature Controls	76
M8. _	Temperature Controls	76
<u>Fire Protection - FP Series</u>		
FPR.0	Fire Protection Reference Information	80
<u>Site (If Applicable)</u>		
FPS.1	Fire Protection Site Plan	81
<u>Composite Plans - FP0 Series</u>		
FP0.02	Basement 2 (or Lower Level 2) Composite Plan	82.1
FP0.01	Basement 1 (or Lower Level 1) Composite Plan	82.2
FP0.1	First Floor (or Level 1) Composite Plan	83
FP0.2	Second Floor (or Level 2) Composite Plan etc...	83
FP2. _	Roof Composite Plan (Last Drawing Number in the 2 Series) - Match Arch	83
<u>Demolition Plans - FP1 Series</u>		
FP1.02	Basement 2 (or Lower Level 2) Demolition Plan	84.1
FP1.01	Basement 1 (or Lower Level 1) Demolition Plan	84.2
FP1.1	First Floor (or Level 1) Demolition Plan	85
FP1.2	Second Floor (or Level 2) Demolition Plan etc...	85
FP1._	Roof Demolition Plan (Last Drawing Number in the 1 Series) - Match Arch	85
<u>Fire Protection Plans - FP2 Series</u>		
FP2.02	Basement 2 (Or Lower Level 2) Fire Protection Plan	86.1
FP2.01	Basement 1 (Or Lower Level 1) Fire Protection Plan	86.2
FP2.1	First Floor (Or Level 1) Fire Protection Plan	87
FP2.2	Second Floor (Or Level 2) Fire Protection Plan etc...	87
FP2. _	Roof Fire Protection Plan (Last Drawing Number in the 2 Series) - Match Arch	87

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes
Large Project - Mechanical



		<u>Dept Codes</u>
<u>Enlarged Plans and Sections – FP5 Series</u>		
FP5.1	Enlarged Plans	88
FP5. _	Section	
<u>Diagrams - FP6 Series</u>		
FP6.1	Diagrams	88
FP6. _	Diagrams	88
<u>Schedules and Details - FP7 Series</u>		
FP7.1	Schedules and Details	88
FP7. _	Schedules and Details	88

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



The following describes the way to number and name Mechanical Drawings for a Large Project with Areas:

- **ALWAYS follow the standard Drawing Numbering and Drawing Title Naming Convention. (Coordinate any modifications to the Drawing Numbering or Drawing Titles with the Project Administrator and all other disciplines)**
- **ALWAYS use upper and lowercase letters in the Title Block (View Titles: Details, Elevations, Enlarged Plans etc.. use all Uppercase)**
- **Use 'Level' instead of 'Floor' only for specific projects where required (Example: University of Michigan Hospital)**

		<u>Dept Codes</u>
<u>Mechanical – M Series</u>		
MR.0	Mechanical Reference Information	60
<u>Site (if applicable)</u>		
MS.1	Mechanical Site Plan	61
<u>Composite Plans – M0 Series</u>		
M0.02	Basement 2 (or Lower Level 2) Composite Plan	62.1
M0.01	Basement 1 (or Lower Level 1) Composite Plan	62.2
M0.1	First Floor (or Level 1) Composite Plan	63
M0.2	Second Floor (or Level 2) Composite Plan etc...	63
M0._	Roof Composite Plan (Last Drawing Number in the M0 Series) etc...	63
<u>Underground Demolition Plans – M1U Series with Areas</u>		
Drawing Number followed by the Area (i.e., M1.1UA, M1.1UB, etc...)		
Drawing Title followed by the Area (i.e., Underground Demolition Plan – Area A, Underground Demolition Plan – Area B etc...),		
M1.02UA	Underground Demolition Plan – Area A	64.1
M1.02UB	Underground Demolition Plan – Area B etc...	64.1
M1.01UA	Underground Demolition Plan – Area A	64.2
M1.01UB	Underground Demolition Plan – Area B etc...	64.2
M1.1UA	Underground Demolition Plan – Area A	64.3
M1.1UB	Underground Demolition Plan – Area B etc...	64.3

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



Dept Codes

Demolition Plans – M1 Series with Areas

Drawing Number followed by the Area (i.e., M1.1A, M1.1B, etc...)

Drawing Title followed by the Area (i.e., First Floor Demolition Plan – Area A

First Floor Demolition Plan – Area B etc.)

Separate Piping and Sheet Metal Demolition as needed for larger projects.

M1.02A	Basement 2 (or Lower Level 2) Demolition Plan – Area A	65.1
M1.02B	Basement 2 (or Lower Level 2) Demolition Plan – Area B etc...	65.1
M1.01A	Basement 1 (or Lower Level 1) Demolition Plan – Area A	65.2
M1.01B	Basement 1 (or Lower Level 1) Demolition Plan – Area B etc...	65.2
M1.1A	First Floor (or Level 1) Demolition Plan – Area A	66
M1.1B	First Floor (or Level 1) Demolition Plan – Area B etc...	66
M1.1AP	First Floor (or Level 1) Plumbing & Piping Demolition Plan – Area A	66
M1.1AS	First Floor (or Level 1) Sheet Metal Demolition Plan – Area A	66
M1.1BP	First Floor (or Level 1) Plumbing & Piping Demolition Plan – Area B etc...	66
M1.1BS	First Floor (or Level 1) Sheet Metal Demolition Plan – Area B etc...	66
M1.2A	Second Floor (or Level 2) Demolition Plan – Area A	66
M1.2B	Second Floor (or Level 2) Demolition Plan – Area B etc...	66
M1.2AP	Second Floor (or Level 1) Plumbing & Piping Demolition Plan – Area A	66
M1.2AS	Second Floor (or Level 1) Sheet Metal Demolition Plan – Area A	66
M1.2BP	Second Floor (or Level 1) Plumbing & Piping Demolition Plan – Area B etc...	66
M1.2BS	Second Floor (or Level 1) Sheet Metal Demolition Plan – Area B etc...	66
M1._A	Roof Demolition Plan – Area A (Last Drawing Number in the M1 Series)	66
M1._B	Roof Demolition Plan – Area B (Last Drawing Number in the M1 Series) etc...	66

Underground Sheet Metal Plans – M2U Series with Areas

Drawing Number followed by the Area (i.e., M2.1UA, M2.1UB, etc...)

Drawing Title followed by the Area (i.e., Underground Sheet Metal Plan – Area A,

Underground Sheet Metal Plan – Area B etc...),

M2.02UA	Underground Sheet Metal Plan – Area A	67.1
M2.02UB	Underground Sheet Metal Plan – Area B etc...	67.1
M2.01UA	Underground Sheet Metal Plan – Area A	67.2
M2.01UB	Underground Sheet Metal Plan – Area B etc...	67.2
M2.1UA	Underground Sheet Metal Plan – Area A	67.3
M2.1UB	Underground Sheet Metal Plan – Area B etc...	67.3

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



Dept Codes

Sheet Metal Plans – M2 Series with Areas

Drawing Number followed by the Area (i.e., M2.1A, M2.1B, etc...)

Drawing Title followed by the Area (i.e., First Floor Sheet Metal Plan – Area A,

First Floor Sheet Metal Plan – Area B etc...),

M2.02A	Basement 2 (or Lower Level 2) Sheet Metal Plan – Area A	68.1
M2.02B	Basement 2 (or Lower Level 2) Sheet Metal Plan – Area B etc...	68.1
M2.01A	Basement 1 (or Lower Level 1) Sheet Metal – Area A	68.2
M2.01B	Basement 1 (or Lower Level 1) Sheet Metal Plan – Area B etc...	68.2
M2.1A	First Floor (or Level 1) Sheet Metal Plan – Area A	69
M2.1B	First Floor (or Level 1) HVAC Plan – Area B etc...	69
M2.2A	Second Floor (or Level 2) Sheet Metal Plan – Area A	69
M2.2B	Second Floor (or Level 2) Sheet Metal Plan – Area B etc...	69
M2._A	Roof Mechanical Plan – Area A (Last Drawing Number in the M2 Series)	69
M2._B	Roof Mechanical Plan – Area B (Last Drawing Number in the M2 Series) etc...	69

Underground HVAC Piping Plans – M3U Series with Areas

Drawing Number followed by the Area (i.e., M3.1UA, M3.1UB, etc...)

Drawing Title followed by the Area (i.e., Underground HVAC Piping Plan – Area A,

Underground Piping Plan – Area B etc...),

M3.02UA	Underground HVAC Piping Plan – Area A	70.1
M3.02UB	Underground HVAC Piping Plan – Area B etc...	70.1
M3.01UA	Underground HVAC Piping Plan – Area A	70.2
M3.01UB	Underground HVAC Piping Plan – Area B etc...	70.2
M3.1UA	Underground HVAC Piping Plan – Area A	70.3
M3.1UB	Underground HVAC Piping Plan – Area B etc...	70.3

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



Dept Codes

HVAC Piping Plans – M3 Series with Areas

Drawing Number followed by the Area (i.e., M3.1A, M3.1B, etc...)

Drawing Title followed by the Area (i.e., First Floor HVAC Piping Plan – Area A,
First Floor HVAC Piping Plan – Area B etc...)

M3.02A	Basement 2 (or Lower Level 2) HVAC Piping Plan – Area A	71.1
M3.02B	Basement 2 (or Lower Level 2) HVAC Piping Plan – Area B etc...	71.1
M3.01A	Basement 1 (or Lower Level 1) HVAC Piping Plan – Area A	71.2
M3.01B	Basement 1 (or Lower Level 1) HVAC Piping Plan – Area B etc...	71.2
M3.1A	First Floor (or Level 1) HVAC Piping Plan – Area A	72
M3.1B	First Floor (or Level 1) HVAC Piping Plan – Area B etc...	72
M3.2A	Second Floor (or Level 2) HVAC Piping Plan – Area A	72
M3.2B	Second Floor (or Level 2) HVAC Piping Plan – Area B etc...	72

Underground Plumbing Plans – M4U Series with Areas

Drawing Number followed by the Area (i.e., M4.1UA, M4.1UB, etc...)

Drawing Title followed by the Area (i.e., Underground Plumbing Plan – Area A,
Underground Plumbing Plan – Area B etc...),

M4.02UA	Underground Plumbing Plan – Area A	73.1
M4.02UB	Underground Plumbing Plan – Area B etc...	73.1
M4.01UA	Underground Plumbing Plan – Area A	73.2
M4.01UB	Underground Plumbing Plan – Area B etc...	73.2
M4.1UA	Underground Plumbing Plan – Area A	73.3
M4.1UB	Underground Plumbing Plan – Area B etc...	73.3

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



Dept Codes

Plumbing Plans – M4 Series with Areas

Drawing Number followed by the Area (i.e., M4.1A, M4.1B, etc...)

Drawing Title followed by the Area (i.e., First Floor Plumbing Plan – Area A

First Floor Plumbing Plan – Area B etc...)

M4.02A	Basement 2 (or Lower Level 2) Plumbing Plan – Area A	74.1
M4.02B	Basement 2 (or Lower Level 2) Plumbing Plan – Area B etc...	74.1
M4.01A	Basement 1 (or Lower Level 1) Plumbing Plan – Area A	74.2
M4.01B	Basement 1 (or Lower Level 1) Plumbing Plan– Area B etc...	74.2
M4.1A	First Floor (or Level 1) Plumbing Plan – Area A	75
M4.1B	First Floor (or Level 1) Plumbing Plan – Area B etc...	75
M4.2A	Second Floor (or Level 2) Plumbing Plan – Area A	75
M4.2B	Second Floor (or Level 2) Plumbing Plan – Area B etc...	75

Enlarged Plans, Sections – M5 Series

M5.1	Enlarged Plans	76
M5._	Sections	76

Details, Diagrams – M6 Series

M6.1	Details or Diagrams	76
M6._	Details or Diagrams	76

Schedules – M7 Series

M7.1	Schedules	76
M7._	Schedules	76

Temperature Controls – M8 Series

M8.1	Temperature Controls	76
M8._	Temperature Controls	76

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



		<u>Dept Codes</u>
<u>Fire Protection – FP Series</u>		
FPR.0	Fire Protection Reference Information	80
<u>Site (if applicable)</u>		
FPS.1	Fire Protection Site Plan	81
<u>Composite Plans – FP0 Series</u>		
FP0.02	Basement 2 (or Lower Level 2) Composite Plan	82.1
FP0.01	Basement 1 (or Lower Level 1) Composite Plan	82.2
FP0.1	First Floor (or Level 1) Composite Plan	83
FP0.2	Second Floor (or Level 2) Composite Plan	83
FP0._	Roof Composite Plan (Last Drawing Number in the FP0 Series)	83
<u>Demolition Plans – FP1 Series with Areas</u>		
Drawing Number followed by the Area (i.e., FP1.1A, FP1.1B, etc...)		
Drawing Title followed by the Area (i.e., First Floor Demolition Plan – Area A, First Floor Demolition Plan – Area B etc...),		
FP1.02A	Basement 2 (or Lower Level 2) Demolition Plan – Area A	84.1
FP1.02B	Basement 2 (or Lower Level 2) Demolition Plan – Area B etc...	84.1
FP1.01A	Basement 1 (or Lower Level 1) Demolition Plan – Area A	84.2
FP1.01B	Basement 1 (or Lower Level 1) Demolition Plan – Area B etc...	84.2
FP1.1A	First Floor (or Level 1) Demolition Plan – Area A	85
FP1.1B	First Floor (or Level 1) Demolition Plan – Area B etc...	85
FP1.2A	Second Floor (or Level 2) Demolition Plan – Area A	85
FP1.2B	Second Floor (or Level 2) Demolition Plan – Area B etc...	85
FP1._A	Roof Demolition Plan – Area A (Last Drawing Number in the FP1 Series)	85
FP1._B	Roof Demolition Plan – Area B (Last Drawing Number in the FP1 Series) etc...	85

Drawing Development

Drawing Numbering, Drawing Titles, Department Codes Large Project with Areas - Mechanical



Dept Codes

Fire Protection Plans – FP2 Series with Areas

Drawing Number followed by the Area (i.e., FP2.1A, FP2.1B, etc...)

Drawing Title followed by the Area (i.e., First Floor Fire Protection Plan – Area A,
First Floor Fire Protection Plan – Area B etc...)

FP2.02A	Basement 2 (or Lower Level 2) Fire Protection Plan – Area A	86.1
FP2.02B	Basement 2 (or Lower Level 2) Fire Protection – Area B etc...	86.1
FP2.01A	Basement 1 (or Lower Level 1) Fire Protection Plan – Area A	86.2
FP2.01B	Basement 1 (or Lower Level 1) Fire Protection Plan– Area B etc...	86.2
FP2.1A	First Floor (or Level 1) Fire Protection Plan – Area A	87
FP2.1B	First Floor (or Level 1) Fire Protection Plan – Area B etc...	87
FP2.2A	Second Floor (or Level 2) Fire Protection Plan – Area A	87
FP2.2B	Second Floor (or Level 2) Fire Protection Plan – Area B etc...	87
FP2._A	Roof Fire Protection Plan – Area A (Last Drawing Number in the FP2 Series)	87
FP2._B	Roof Fire Protection Plan – Area B (Last Drawing Number in the FP2 Series) etc...	87

Enlarged Plans, Sections – FP5 Series

FP5.1	Enlarged Plans	88
FP5.	Sections	88

Diagrams – FP6 Series

FP6.1	Diagrams	88
FP6.	Diagrams	

Schedules and Details – FP7 Series

FP7.1	Schedules and Details	88
FP7._	Schedules and Details	88

Drawing Development

Drawing Series, Content, Scale - Mechanical



The following describes the information that is contained on each Drawing in the drawing series:

<u>Series</u>	<u>Scale</u>
MR.0 <u>Mechanical Reference Information</u> • Drawing Index • Symbols • General Notes	No Scale
MS.0 <u>Mechanical Site Plan</u> • Entire Floor Plan • Mech Building Information	As Required
M0._ <u>Composite Plans</u> • Entire Floor Plan • Locate Matchlines and/or Areas (if applicable)	Same Scale as Arch Life Safety Plan
M1._U <u>Underground Demolition Plans</u> • Entire or Partial Floor Plan • Show Matchlines (if applicable) • Demo Underground Mech Items • Demolition General Notes, Demo Keynotes	Same Scale as Arch Floor Plans
M1._ <u>Demolition Plans</u> • Entire or Partial Floor Plan • Demo Keynotes (if applicable; limit as much as possible, specific to sheet only) • Demo Mech Items • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
M2._U <u>Underground Sheet Metal Plans</u> • Entire or Partial Floor Plan • Keynotes (if applicable; limit as much as possible, specific to sheet only) • Underground Ductwork: Supply, Return, Exhaust, Outdoor Air, and Relief Air • General Notes • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans

Drawing Development

Drawing Series, Content, Scale - Mechanical



Series

Scale

M2._	<u>Sheet Metal Plans</u> • Entire or Partial Floor Plan • Keynotes (if applicable; limit as much as possible, specific to sheet only) • Ductwork: Supply, Return, Exhaust, Outdoor Air, and Relief Air • HVAC Airside Equipment • Enlarged Plan Callouts • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
M3._ U	<u>Underground HVAC Piping Plans</u> • Entire or Partial Floor Plan • General Notes • Underground Piping • Underground Piping Equipment • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
M3._	<u>HVAC Piping Plans</u> • Entire or Partial Floor Plan • General Notes • HVAC Piping • Piping Equipment • Thermostats • Enlarged Plan Callouts • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
M4._ U	<u>Underground Plumbing Plans</u> • Entire or Partial Floor Plan • Keynotes (if applicable; limit as much as possible, specific to sheet only) • Underground Plumbing • Underground Plumbing Equipment • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
M4._	<u>Plumbing Plans</u> • Entire or Partial Floor Plan • General Notes • Plumbing: Domestic, Storm, Waste, Vent, Compressed Air, Natural Gas, Lab/Med Gas • Plumbing Equipment • Enlarged Plan Callouts • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans

Drawing Development

Drawing Series, Content, Scale - Mechanical



<u>Series</u>		<u>Scale</u>
M5._	<u>Enlarged Plans, Sections</u> - Enlarged Mechanical Plans (Enlarged plans are to be located first in 5 series) - Mechanical Sections (Sections to follow enlarged plans)	1/4"=1'-0"
M6._	<u>Details or Diagrams</u> - Mechanical Diagrams – Order Diagrams as followed (Sheet Metal, HVAC Piping and Plumbing) (Combine Details and Diagrams for smaller projects) - Mechanical Details	No Scale
M7._	<u>Schedules</u> Mechanical Schedules	No Scale
M8._	<u>Temperature Controls</u> - Temperature Control Diagrams - Sequences of Operation	No Scale
FPR.0	<u>Fire Protection Reference Information</u> - Abbreviations - Symbols - Fire Protection General Notes - Fire Protection Drawing Index - Sprinkler Head Legend	No Scale
FPS.1	<u>Fire Protection Site (if Applicable)</u> Entire Floor Plan	As Required
FP0._	<u>Composite Plans</u> - Entire Floor Plan - Show Matchlines and/or Areas (if applicable)	Same Scale as Arch Life Safety Plans

Drawing Development

Drawing Series, Content, Scale - Mechanical



FP1._	<u>Demolition Plans</u> • Entire or Partial Floor Plan • Demo Fire Protection Piping • Demo Fire Protection Sprinkler Heads • Demo Fire Protection Equipment • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
FP2._	<u>Fire Protection Plans</u> • Entire or Partial Floor Plan • Fire Protection Piping • Fire Protection Sprinkler Heads • Fire Protection Equipment • Show Matchlines (if applicable)	Same Scale as Arch Floor Plans
FP5._	<u>Enlarged Plans and Sections</u> • Fire Protection Enlarged Plans • Fire Protection Sections	No Scale
FP6._	<u>Diagrams</u> • Fire Protection Riser Diagrams	No Scale
FP7._	<u>Schedules and Details</u> • Fire Protection Schedules, Details and Diagrams	No Scale

Drawing Information

Border – Client/ Consultant Information



The Border for a Project is pre-loaded into the Architectural, Mechanical and Electrical Models. The Architectural Department will edit the following information for your specific Project.

- **Insert the Client Logo, Edit the Client Name, Project Title, and the Project Address in the locations indicated on the Border Drawing**
- **Edit the Project Consultants (if applicable) address and web page**
- **Coordinate with Architect for correct Border Information.**

Client Logo



Client Name

Romeo Community Schools

Project Title

New Romeo Middle School

Project Address

11091 32 Mile Rd.
Romeo, MI 48065

Project Consultants

DESIGN ARCHITECT

FIRM NAME
FIRM NAME
FIRM ADDRESS
FIRM ADDRESS
XXX-XXX-XXXX
www.XXXXX.com

MEP ENGINEER

FIRM NAME
FIRM NAME
FIRM ADDRESS
FIRM ADDRESS
XXX-XXX-XXXX
www.XXXXX.com

STRUCTURAL ENGINEER

FIRM NAME
FIRM NAME
FIRM ADDRESS
FIRM ADDRESS
XXX-XXX-XXXX
www.XXXXX.com

Border – Title Block



- ## Key Plan



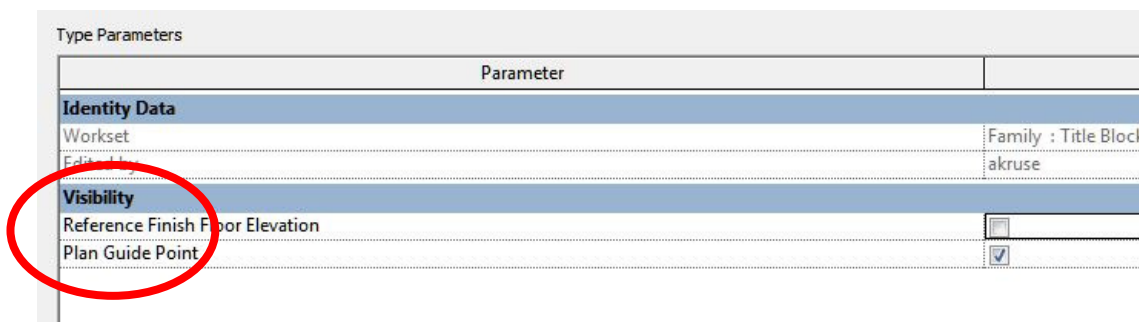
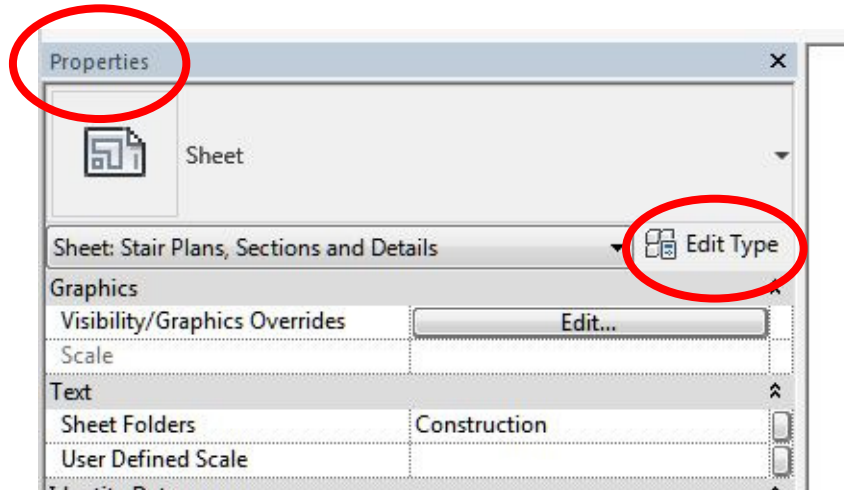
Drawing Information

Border – Plan Guide Points



Floor Plan Views are to be located on Drawings by all Disciplines using 'Plan Guide Points'. The Architectural Department will locate these points when setting up the Drawings for the Project. These points are used to align Floor Plan Views on Drawings so that the location is consistent throughout the project and between Disciplines.

- The 'Plan Guide Points' are located in the Border Family. By default, they are turned off within the Project Model.
- To turn on the 'Plan Guide Points', highlight the Border, and in the Properties Menu select Edit Type. In the Type Parameters under Visibility check the box for 'Plan Guide Point'.
- Place the Floor Plan View on the Drawing at the location of the 'Plan Guide Point'.
- Note: The 'Plan Guide Points' will print. After locating the Floor Plan View, uncheck the box for the 'Plan Guide Point' under Visibility in the Type Parameters Menu.



Drawing Information

Reference Information



The Architectural, Mechanical, Electrical/Technology Reference information drawings are pre-loaded into the project model for each Discipline. The following pages contain the IDS typical reference information for mechanical from the MR.0 drawing

- **Note: IDS abbreviations DO NOT contain periods**
- **Refer to this list when using abbreviations on all drawings. If you need an abbreviation that is not on this list, talk with your department head first, and then it can be determined if it needs to be added to the abbreviations list on the department reference information drawings**

Drawing Information

Reference Information – Abbreviations - Mechanical



A

AAV	AIR ADMITTANCE VALVE
AC	AIR COMPRESSOR
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AE	AIR EXTRACTOR
AFF	ABOVE FINISHED FLOOR
AFT	AIR FLOW TRANSMITTED
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
AL	ACTIVE LENGTH
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASR	AUTOMATIC SPRINKLER RISER

B

BAS	BUILDING AUTOMATION SYSTEM
BBD	BOILER BLOWDOWN
BF	BARRIER FREE
BFP	BOILER FEEDWATER PUMP
BHP	BRAKE HORSEPOWER
BP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
BWV	BACKWATER VALVE

C

CAP	CAPACITY
CC	COILING COIL
CD	COLD DECK
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
COND	CONDENSATE (COOLING)
CONN	CONNECTION
CONT	CONTINUATION
CONTR	CONTRACTOR
CONV	CONVECTOR
CPU	CENTRAL PROCESSING UNIT
CR	CONDENSATE RETURN (STEAM)
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
CW	COLD WATER

D

DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREES
DN	DOWN
D/N	DAY/NIGHT
DPR	DAMPER
D&T	DRIP & TRAP
DTC	DRAIN TILE CONNECTION
DX	DIRECT EXPANSION

E

EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EHC	ELECTRIC HEATING COIL
EIH	ELECTRIC INFRARED HEATER
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELEC	ELECTRICAL
EMCS	ENERGY MONITORING AND CONTROL SYSTEM
ENT	ENTERING
ER	EXHAUST REGISTER
ERU	ENERGY RECOVERY UNIT
ES	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWB	ENTERING WET BULB
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
(E)	EXISTING
EXP	EXPANSION

F

F	FARENHEIT
FA	FACE AREA
F & BD	FACE AND BYPASS DAMPER
FCU	FAN COIL UNIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION

Drawing Information

Reference Information – Abbreviations - Mechanical



F CONT

FDAMP	FIRE DAMPER
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHV	FIRE HOSE VALVE
FL	FIRE LINE
FLA	FULL LOAD AMPS
FMS	FLOW MEASUREMENT STATION
FPM	FEET PER MINUTE
FT	FOOT/FEET
F&T	FLOAT & THERMOSTATIC STEAM TRAP
FTR	FINNED TUBE RADIATION
FVC	FIRE VALVE CABINET

G

GA	GAGE/GAUGE
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
GR	GRILLE
GV	GATE VALVE

H

HUMD	HUMIDIFIER
HB	HOSE BIBB
HD	HOT DECK
HO	HUB OUTLET
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HP STM	HIGH PRESSURE STEAM
HV	HEATING AND VENTILATION UNIT
HVAC	HEATING, VENTILATION & AIR CONDITIONING

I

ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IW	INDIRECT WASTE

L

LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LD	LINEAR DIFFUSER
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE

M

MAT	MIXED AIR TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGV	MASTER GAS VALVE
MH	MAN HOLE
MIN	MINIMUM
MS	MOTOR STARTER
MZ	MULTI-ZONE UNIT

N

NC	NORMALLY CLOSED
NCR	NOISE CRITERION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
No.	NUMBER
NTS	NOT TO SCALE

O

OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OS&Y	OUTSIDE SCREW AND YOKE
OV	OUTLET VELOCITY

Drawing Information

Reference Information – Abbreviations - Mechanical



P

P	PUMP
PA	PIPE ANCHOR
PAC	PACKAGED AIR CONDITIONING UNIT
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PG	PIPE GUIDE
PLBG	PLUMBING
PSI	POUNDS PER SQUARE INCH - GAUGE
PRV	PRESSURE REDUCING VALVE
PVC	POLYVINYL CHLORIDE PLASTIC

R

RA	RETURN AIR
RAD	RADIATOR
RAG	RETURN AIR GRILLE
RCP	RADIANT CEILING PANEL
RH	RELATIVE HUMIDITY
RF	RETURN FAN
RM	ROOM
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	ROOF SUMP
RTU	ROOF TOP UNIT

S

SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
SAN	SANITARY
SAT	SUPPLY AIR TEMPERATURE
SC	STEAM COIL
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SH	SPRING HANGER
SHT	SHEET
SP	SUMP PUMP
SPECS	SPECIFICATIONS
SP HD	SPRINKLER HEAD
SPKR	SPRINKLER
SS	SERVICE SINK
SV	SOLENOID VALVE
SWS	SAFE WASTE SINK

S CONT

ST	STORM
STM	STEAM

T

TC	TEMPERATURE CONTROL
TD	TRENCH DRAIN
TV	TURNING VANES
TW	TEMPERED WATER
TYP	TYPICAL

U

UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UR	URINAL
UV	UNIT VENTILATOR

V

V	VENT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VI	VIBRATION ISOLATOR
VRF	VARIABLE REFRIGERANT FLOW
VS	VENT STACK
VTR	VENT THROUGH ROOF

W

W	WASTE
W&V	WASTE AND VENT
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAUGE
WH	WALL HYDRANT (FREEZE PROTECTED)
WS	WASTE STACK

The Architectural, Mechanical and Electrical model by default is loaded into the project. During the design process, views for different floor levels may be set up for your use or for you to duplicate and create your own.

- Floor plan view locations are located on drawings by the Architectural Department. These locations need to be coordinated with the Mechanical and Electrical department at the beginning of a project so that all the drawing requirements for each discipline are met. Once this location is coordinated, use the 'Plan Guide Points' to align the views from floor to floor or from one Drawing series to the next. Each discipline is to use this location for floor plans*

Architectural, Mechanical and Electrical Departments will have a sheet created for each drawing in a drawing series (Refer to section 1) pre-loaded into the project. Some of these sheets will have views already placed on them with Information pertaining to these sheets. (example: Legend, Notes, Keynotes, Schedules etc..). For smaller projects not all sheets in a drawing's series will be used. Delete the sheets in the drawing series that do not pertain to your project.

The Mechanical model has a feature to help organize the sheets in your project under the project browser. Below the sheets section there are sub folders that can help categories your sheets between, construction and unused sheets. The sheets you will include in your construction set shall be filtered under the properties tab to "Construction" and the sheets that will not be included shall be filtered to "Unused". This helps a lot to simplify the project browser.

The location for a floor plan view will need to allow space in the upper right corner of the sheet for general notes, legend and keynotes. Locate a corner of the floor plan (or column line intersection) in a location that allows all associated floor plan views, (example: new work, demolition, etc..) to fit at this location. Also use this location to align additional floor levels. (Example: basement, second floor, third floor, roof etc..) place a 'Plan Guide Point', located in the border family, at this location (For 'Plan Guide Points' refer to page 2.5c). For floor plans with areas, use 'Plan Guide Points' to locate the Floor Plan View for each area on each sheet.

Drawing Information

Floor Plans – Title Block



For the Floor Plan Drawings each discipline will edit the title block with their department's information. Follow the standard drawing titles and drawing numbering for your drawings.

- **Edit the Project Team Names, Drawing Title and Drawing Number**
- **Everything except 'Drawn by' and 'Scale' are Project wide and do not need to be updated sheet by sheet.**

EDIT THE PROJECT TEAM NAMES
USE FIRST INITIAL AND LAST NAME
USE UPPER AND LOWER CASE →

Project Administrator	Project Administrator
Administrator	Project Designer
Project Designer	Designer By
Project Architect / Engineer	Proj Arch
Drawn By	Drawn By
Q.M. Review	Q.M. Review
OM	Approved
App	Drawing Scale
As Noted	As Noted
Issued for	Issue Date

EDIT DRAWING TITLE
FOLLOW THE STANDARDS
FOR DRAWING TITLES →

© 2018 INTEGRATED TECHNOLOGY SOLUTIONS, LLC	
IDS Drawing Title	
Drawing Title	

EDIT THE DRAWING NUMBER
FOLLOW THE STANDARDS
FOR DRAWING NUMBERS →

101 Project Number	Drawing Number
Project Number	Dwg No

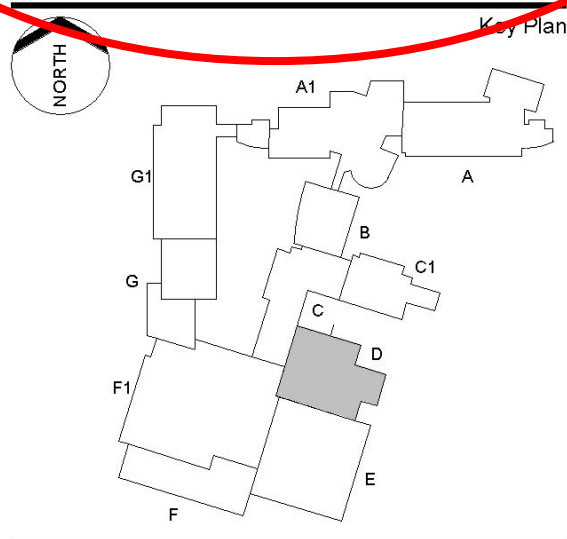
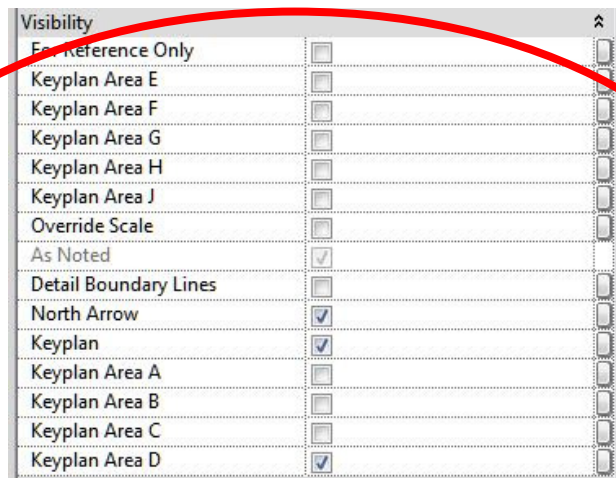
Drawing Information

Floor Plans - Key Plan



A Key Plan is created by the Architectural Department for a Project that is divided into Areas and/or has Matchlines. Smaller Projects where the Project has no Areas or Matchlines do not necessarily require a Key Plan. Edit the Key Plan on all Floor Plan Drawings to match the Floor Plan View that is placed on that drawing.

- Highlight the Border. Under Visibility in the Properties Menu locate the Key Plan Information
- Select the Key Plan, North Arrow, and the Area that applies to the View on the Drawing you are currently in



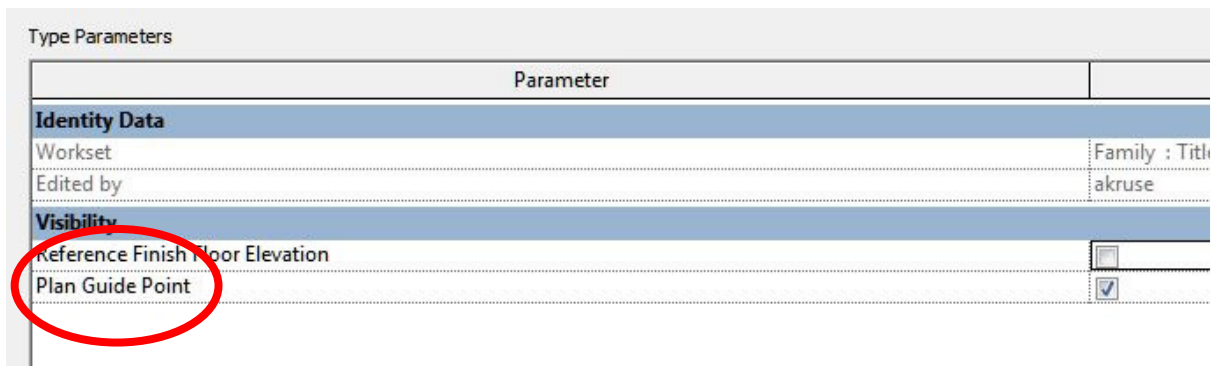
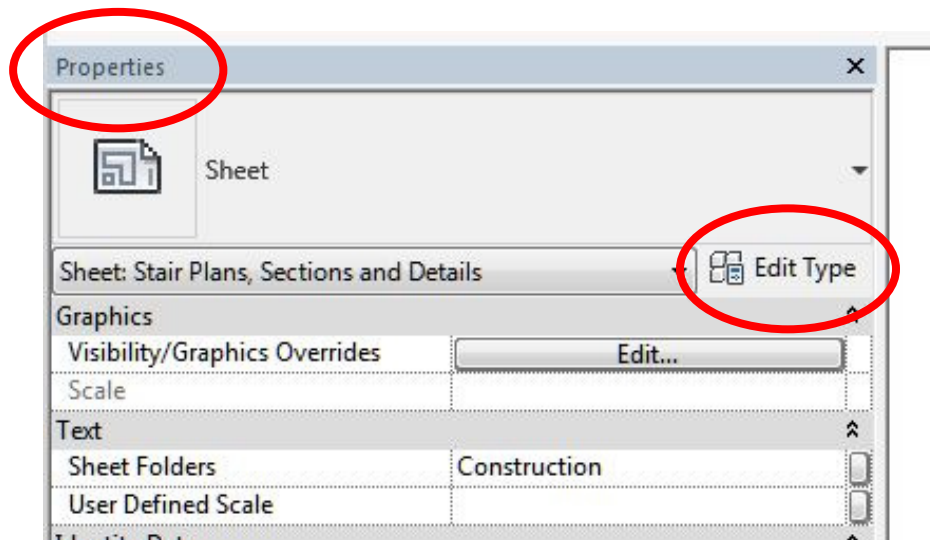
Drawing Information

Floor Plans – Plan Guide Points



Floor Plan Views are located on Drawings by the Architectural Department using 'Plan Guide Points'. These points are used to align Floor Plan Views on drawings so that the location is consistent throughout the project and between Disciplines.

- *The 'Plan Guide Points' are located in the Border Family. By default, they are turned off within the Project Model*
- *To turn on the 'Plan Guide Points', highlight the Border, and in the Properties Menu select Edit Type. In the Type Parameters under Visibility check the box for 'Plan Guide Point'*

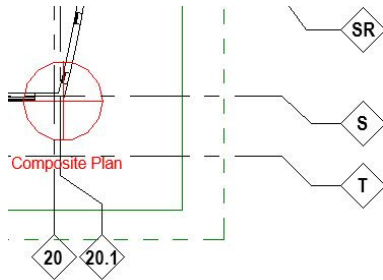


Drawing Information

Floor Plans – Plan Guide Points



- **Locate Floor Plan Views at the location indicated by the 'Plan Guide Points'.**



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IDS Drawing Title

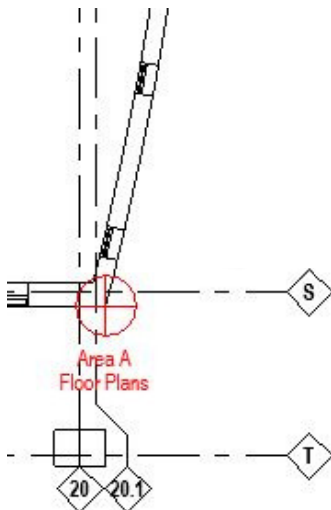
First Floor Composite Life Safety Plan

IDS Project Number

Drawing Number

16175-5000

LS0.1



© 2018 INTEGRATED design SOLUTIONS, LLC

IDS Drawing Title

First Floor New Work Plan - Area A

IDS Project Number

Drawing Number

16175-5000

A2.1A

- **Note: the 'Plan Guide Points' will print. After locating the Floor Plan View, uncheck the box for the 'Plan Guide Point' under Visibility in the Type Parameters Menu.**

Drawing Information

Enlarged Plans and Sections



*The Mechanical discipline utilizes Enlarged Plan views and Sections to better equip the end user with a clearer understanding of the area of concern. Areas that are congested like mechanical rooms typically get a designated enlarged plan. Duct shafts typically get associated sections to paint the picture of what the floor plans are trying to capture. The **Start Location** for all Enlarged Plans and Sections for all Disciplines is the **Lower Right Corner** of the Drawing. Multiple Enlarged Plans and Sections will start at the right side of the Drawing and Move upward. This location keeps all Enlarged Plans and Sections information away from the bound side of the Construction Set.*

Note:

- Notes related to the Enlarged Plans and Sections can be located to the right of the Enlarged Plans and Sections (Match Floor Plan Location) or directly below the Enlarged Plans and Sections.*
- Enlarged plans should only be noted and tagged in the enlarged plan view only. No notes or tags should be inside the callout of the referring sheet.*

Drawing Information

Diagrams and Details



*The Mechanical Department utilizes Diagram and Details to better equip the end user (Contractor, owner, maintenance crew, etc....) with a clearer understanding of the components and the arrangement of components required to build/install the project mechanical systems and equipment. Large system Diagrams that fill an entire sheet should be centered on the sheet. The **Start Location** for small Diagrams and any type of Detail is the **Lower Right Corner** of the Drawing. Multiple Details will start at the right side of the Drawing and Move upward. This location keeps all Details information away from the bound side of the Construction Set*

Note:

- ***When reviewing the needs of details for you project, always start with the IDS Standard Details unless owner has their own standard details.***
- ***The IDS Standard Details are in the path below.***
J:/Standards/Mechanical/Standard Details/Mechanical Revit Details_2016
- ***The How-To, “How to insert standard details” is in the path below.***
J:/Standards/Mechanical/How To's Standard Details
- ***The University of Michigan and Michigan State standard details should NOT be used on any project that is not associated with either client.***

Locate equipment Schedules starting on sheet M7.1 (Refer to Sections 1,1.1). Add additional sheets sequentially if needed to accommodate additional schedules. The **Start Location for all Schedules for all Disciplines is the **Upper Right Corner** of the Drawing. Multiple Schedules will start at the right side of the Drawing and Move downward. This location keeps all Scheduled information away from the bound side of the Construction Set**

Note:

- **Mechanical Equipment Schedules are in Microsoft Excel Format.**
- **When starting a new project, ALWAYS start with IDS standard schedules, avoid copying project to project.**
- **The IDS Standard Schedules are in the path below.**
F:\OVHD\std00\Mech\Equipment Schedules
- **Your Project specific schedules should be saved in the path below.**
F:\20XX\20XXX\1000\Design\Mech\Mechanical Schedules

Drawing Information

Temperature Controls



*The mechanical department has temperature controls engineers that create detailed control diagrams and sequences of operation associated with job specific mechanical equipment. (Examples: air handling unit, chiller, boiler, terminal unit, booster pump etc...) the **start location** for all temperature control diagrams and sequences of operation is the **upper right corner** of the drawing. Multiple diagrams and sequences of operations will start at the right side of the drawing and move downward and then to the left. This location keeps all diagrams or details information away from the bound side of the construction set.*

The following are general guidelines for how to tag pipes and sheet metal:

General Guidelines for Piping and Sheet Metal:

- General intent for tagging a documentation view is to tag and size ductwork and piping placed on a sheet enough to clarify when size changes occur.
- Do not overlap any tags on the architectural background.
- Align notes left and right justified as needed on the drawing.
- Never overlap leader-lines.
- The goal of tagging is to minimize the confusion for owners and contractors.
- On a 1/8th scale plan do not tag any equipment or linework inside of the enlarged plan callouts. Nothing is to be tagged inside the callout. Enlarged plans are only tagged on the M5 series.

Typical HVAC Piping and Plumbing tagging on a Floor Plan

*See the guidelines below on page M3.1d for clarification

- Generally, piping on 1/8th scale floor plans is to be spaced 9" on center from each other. Large piping (larger than 4") shall be spaced per pipe spacing guide based on size of piping and thickness of insulation.
- All existing piping must have (E) in front of each system classification tag on new work sheets.
- All riser tags are to be designated as up, down or both.
- All system types are to be defined. System tags should be added often to keep design clarity. For example:
 - Hot water heating supply and return piping, HWHS/R
 - Chilled water supply and return piping, CHWS/R
 - Condenser water supply and return piping, CWS/R
 - Steam and condensate return piping, STM/CR
 - Sanitary and V piping, SAN/V
 - Storm piping and Overflow piping, ST/OST
 - Domestic cold, hot and hot water return piping, CW/HW/HWR
 - Cooling Condensate drain piping, COND
- Tag all piping with directional flow arrows. In general, pipe flow arrows shall be placed along with and with similar frequency as inline pipe tags.

- The first option and technique of tagging a pipe is to separately tag each piping system and its designated pipes size. Pipe identification shall be in line without a leader while the pipe size shall not be in line and utilize a leader.
- Second option if space is tight, include size and pipe identification in a single tag (not inline) with a leader.
- If pipes are stacked on top of each other, include “below” under the tag of the pipe that is lower.
- If the system has an associated riser diagram, tag associated stack with a riser tag.
- Tag each mechanical piece of equipment associated with HVAC piping and plumbing with an equipment tag.

Typical Sheet Metal tagging on a Floor Plan

*See guidelines below on page M3.1e for clarification

- Generally, on 1/8th scale plans, all ductwork is tagged with in line size tags without system labels
- When tagging ductwork, the first choice is to nest the tag inside the ductwork if the tag does not overlap the line work of the associated duct. If unable to fit within the duct, the tag should be aligned with and located adjacent to the duct without overlapping the line work. If space is severely limited, the last choice for tagging ductwork is to locate the size tag remote from the duct and utilize a leader line.
- All existing sheet metal must have (E) in front of each system classification tag on new work sheets.
- All riser tags shall include the duct size, system type and shall be designated as up, down or both.
- Each duct tag is the size of the free area of airflow. The size does not include the insulation thickness.
- Rectangular, round and oval ductwork have different associated tags.
 - Rectangular, 12”x12”
 - Round, 12”Ø
 - Oval, 12”/12”
- Tag each mechanical piece of equipment associated with sheet metal with an equipment tag.
- If duct runs are stacked on top of each other, include “below” under the tag of the duct that is lower.

Typical tagging on an Enlarged Plan

*See guidelines below on page M3.1f for clarification

- On enlarged plans, ductwork is tagged with size and system classification (example 40"x20" RA). This is done on enlarged plans since there is typically a large amount of ductwork in a relatively small area. Without system classifications tags, it can be difficult to identify the ducts.
- All other mechanical tagging is like that of associated floor plans.
- Tag all Plenums, access doors etc..
- Tag all mechanical equipment.

Typical tagging on a Section

*See snapshot guidelines below on page M3.1g for clarification

- On section views, ductwork is tagged with size and system classification (example 40"x20" RA). This is done on sections plans since there is typically a large amount of ductwork in a relatively small area. Without system classifications tags, it can be difficult to identify the ducts.
- All other mechanical tagging is like that of associated floor plans.

Drawing Guidelines

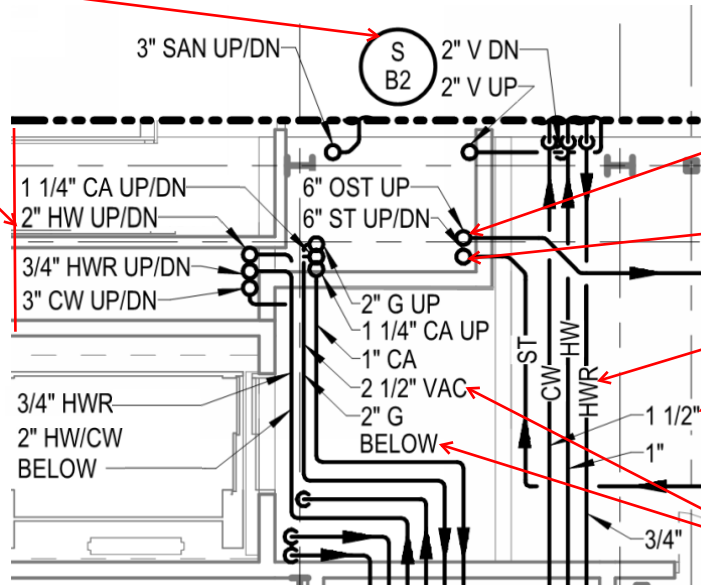
Tagging



The following are guidelines for tagging HVAC Piping and Plumbing:

RISER TAG,
SANITARY RISER "B2"

ALIGN TEXT AND DO
NOT OVERLAP WALLS.



EXAMPLE PLUMBING RISER,
OVERFLOW STORM RISER UP
TO FLOOR ABOVE

EXAMPLE PLUMBING RISER,
STORM RISER GOING UP
AND DOWN.

ALTERNATE PIPE TAGS ON
1/8TH SCALE FLOOR PLANS

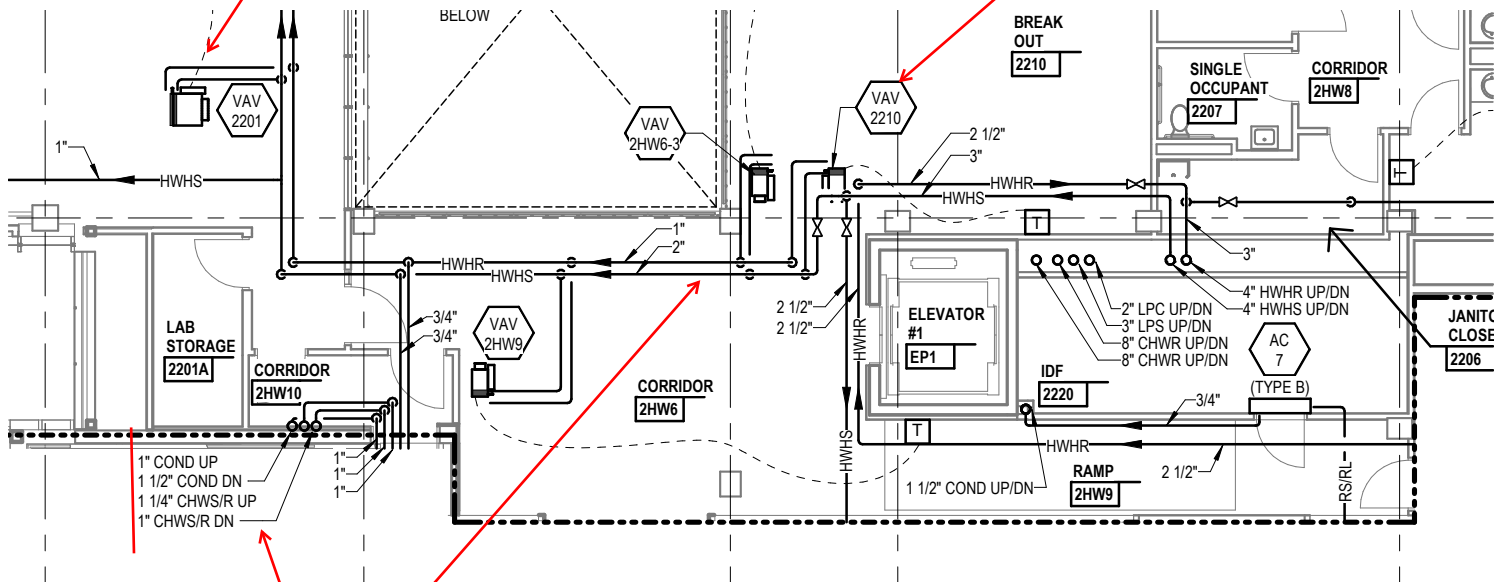
ALIGN TEXT (LEFT JUSTIFIED)
AS MUCH AS POSSIBLE.

EXAMPLE OF STACKED
PIPING, 2" G IS BELOW
2 1/2" VAC

TYPICAL WAY
TO PIPE UP VAV BOXES

Plumbing Floor Plan Example:

EXAMPLED EQUIPMENT
TAG



ALIGN TEXT AND DO
NOT OVERLAP WALLS.

HYDRONIC PIPING TAPS
COME OFF THE BOTTOM

HVAC Piping Floor Plan Example:

EXAMPLE OF RETURN AIR FLOW
ARROW TO RETURN BOOT.

EXAMPLE OF ROUND DUCT SIZE
TAG NESTED ADJACENT TO DUCT

MECHANICAL FLOOR PLAN DETAILS:

- BREAKOUT 2HW6-3A:** SG-A 10"x6" 250 CFM
- CORRIDOR 2HW6-3:** SG-A 10"x6" 250 CFM
- BREAKOUT 2HW6-3B:** SG-A 10"x4" 150 CFM
- BREAKOUT 2HW6-1A:** SG-A 10"x4" 135 CFM (TYP-3)
- CORRIDOR 2HW6-1:** SG-A 10"x4" 135 CFM (TYP-3)
- BREAK OUT 2HW6-A:** VAV 2HW6-3
- BREAK OUT 2HW6-B:** VAV 2HW6-3
- CORRIDOR 2HW6:** SG-A 10"x4" 140 CFM (TYP-2)
- ELEVATOR #1 EP1**
- JANITOR'S CLOSET 2206:** SG-A 10"x4" 120 CFM
- RAMP 2HW9:** AC 7 (TYPE B)
- ELECTRICAL 2208:** SG-A 8"x8" 50 CFM
- SINGLE OCCUPANT 2207:** EG-A 6"x6" 50 CFM
- CORRIDOR 2HW8:** EG-A 8"x6" 100 CFM
- IDF 2220:** M5.7
- MEN'S RESTROOM 2204:** SG-A 6"x6" 115 CFM (TYP-3), SD-A 10"x0" 280 CFM, EG-A 8"x8" 190 CFM (TYP-2), EG-A 8"x8" 190 CFM (TYP-2), SD-A 10"x0" 280 CFM
- BELLMOUTH:** 38"x34" 4185 CFM, 16"x52" SA DN, 26"x22" 16"x46" RA DN
- VAV 2HW7:** 22"x60" RA UP
- RA UP/DN:** 26"x20" SA DN, 38"x20" SA UP, 42"x20" RA UP, 42"x16" SA UP, 46"x20" RA UP, 24"x16" EA UP, 14"x16" EA DN

Sheet Metal Floor Plan Example:

[illegible]

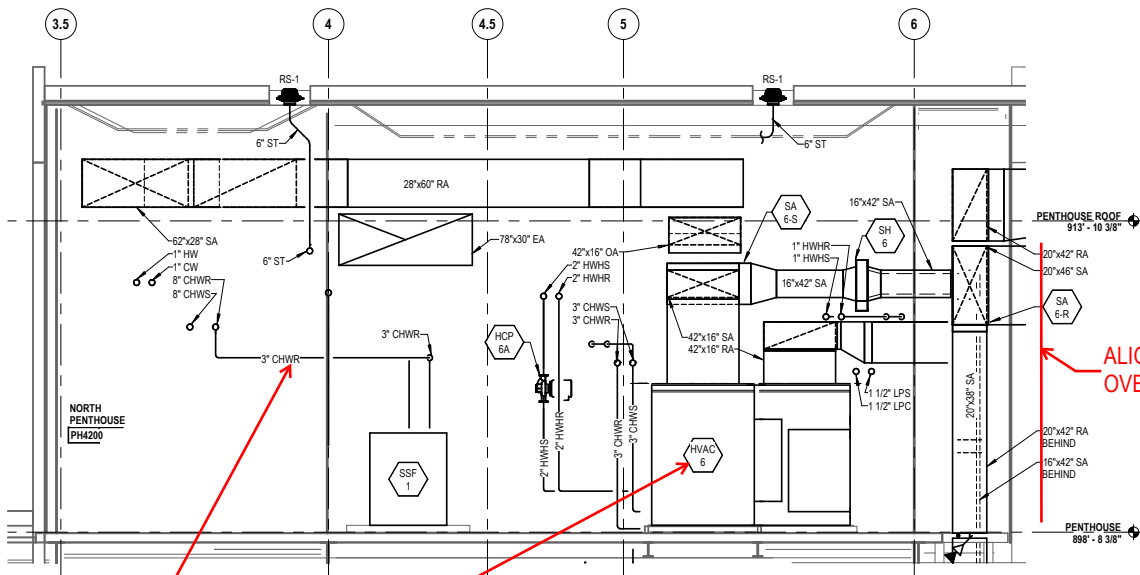
Enlarged Floor Plan Example:

Drawing Guidelines

Tagging



The following are guidelines for tagging Section Views:



ALIGN TEXT AND DO NOT OVERLAP WALLS.

EXAMPLE, INLINE PIPING SIZES ON SECTIONS AND ENLARGED PLANS INCLUDE SYSTEM TYPES (CW/HW/HWS/CHWR) AND SIZES.

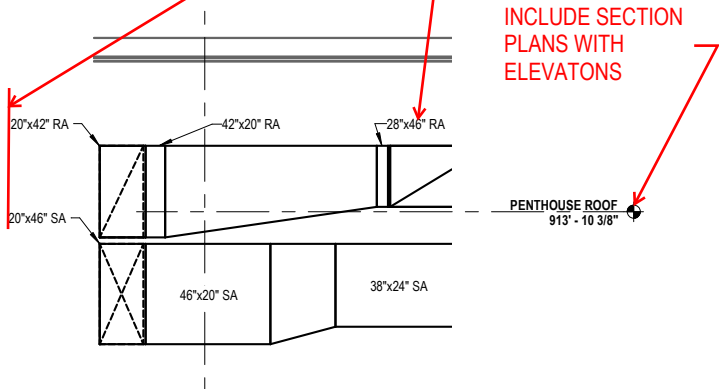
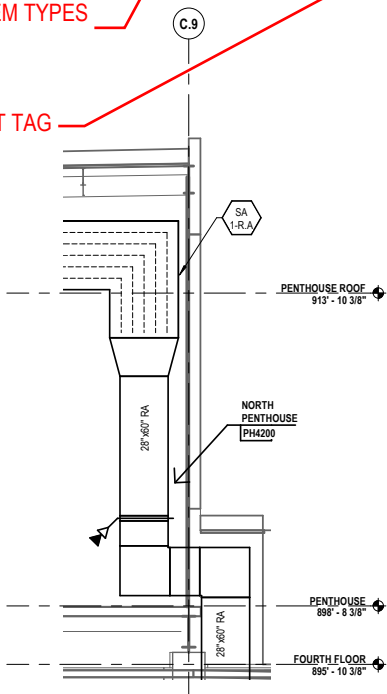
EXAMPLED EQUIPMENT TAG

Section View Example:

ALIGN TEXT AND DO NOT OVERLAP WALLS.

ON SECTIONS AND ENLARGED PLANS INCLUDE SYSTEM TYPES (RA/SA/OA).

INCLUDE SECTION PLANS WITH ELEVATIONS



Section View Example:

Section View Example:

Drawing Guidelines

Leaderlines



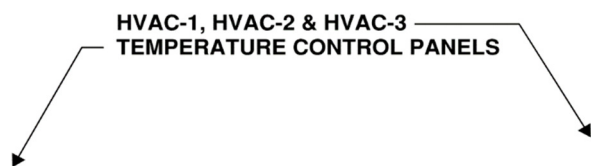
The following describes what is acceptable / unacceptable when drawing leader lines:

A leader line off the left side of a note is to start at the beginning of the note. A leader line off the right side of a note is to start at the end of the note, as shown below.

ACCEPTABLE

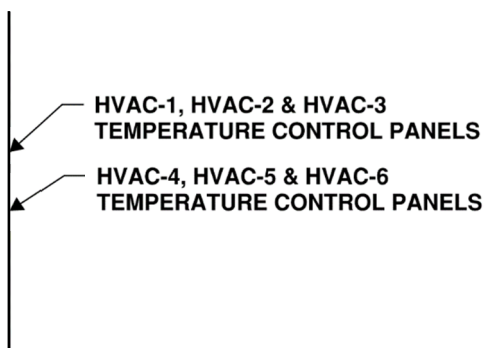


UNACCEPTABLE

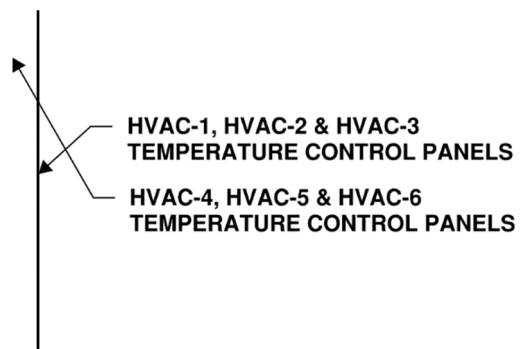


leader lines should NEVER cross:

ACCEPTABLE



UNACCEPTABLE



Drawing Guidelines

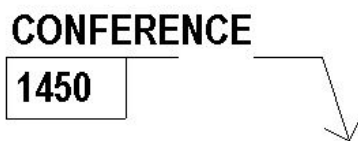
Room Names



There are Standard Room Name Tags to use on Construction Documents; the Standard IDS Room Tag, IDS Room Tag w/ Long Box, and IDS Room Tag for Composite Plans.

- **Example Standard IDS Room Tag. Extend the Line under the Room Title to connect to leader under visibility settings under properties:**

INCORRECT



CORRECT

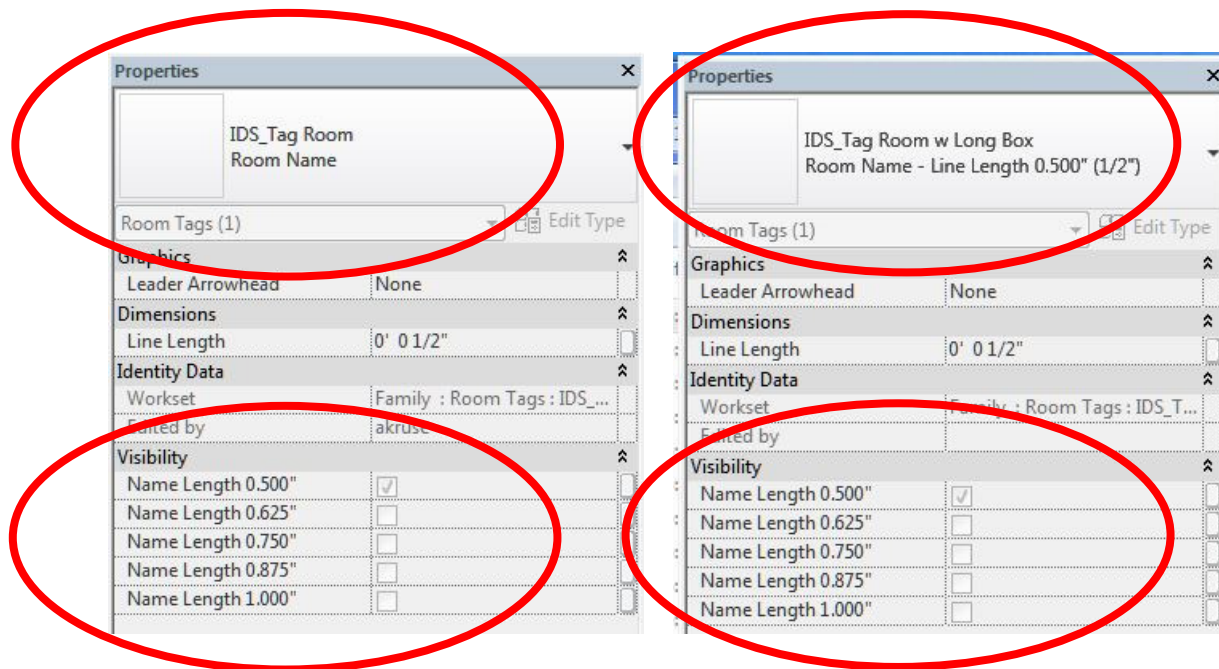


- **Example Standard IDS Room Tag w/ Long Box. Extend the Box w/ Room Number under visibility settings under properties:**

INCORRECT



CORRECT



Drawing Guidelines

Room Names

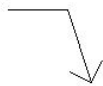


- **Example Standard IDS Room Tag for Composite Plans. Composite Room Tags are reduced in size to accommodate smaller scale Composite Drawings. Extend the Line under the Room Title to connect to leader under visibility settings under properties:**

INCORRECT

CONFERENCE

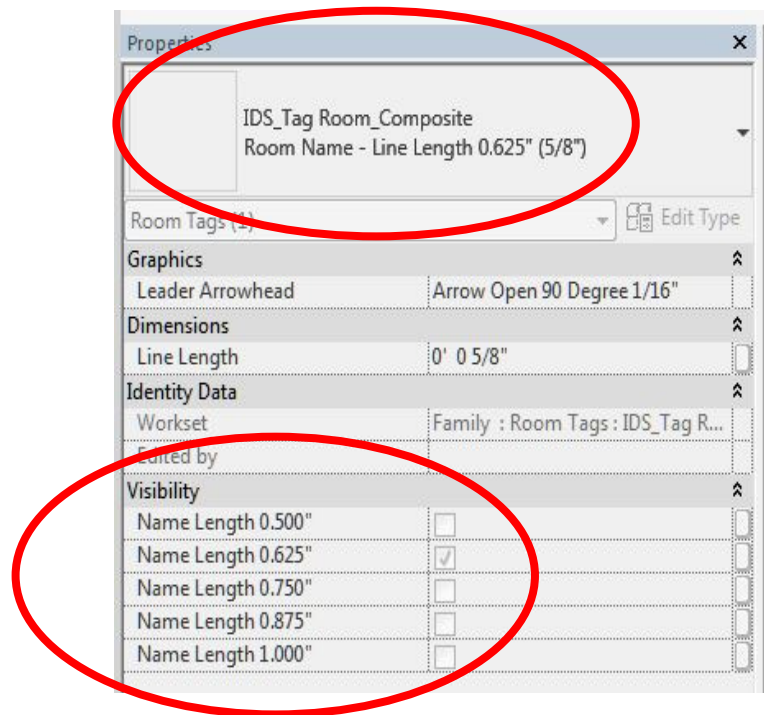
1450



CORRECT

CONFERENCE

1450



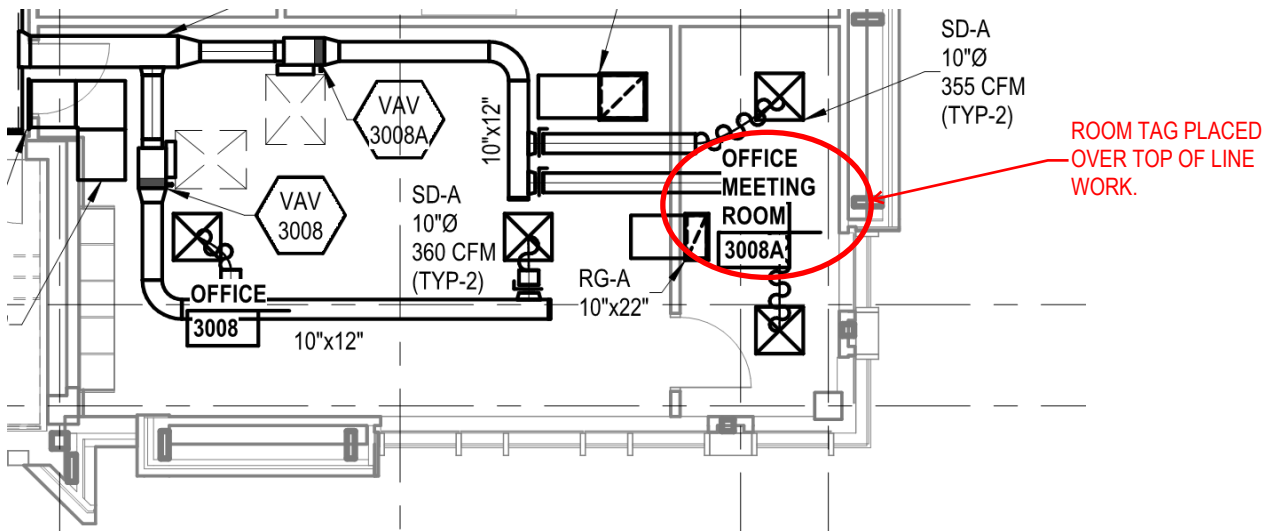
Drawing Guidelines

Room Names

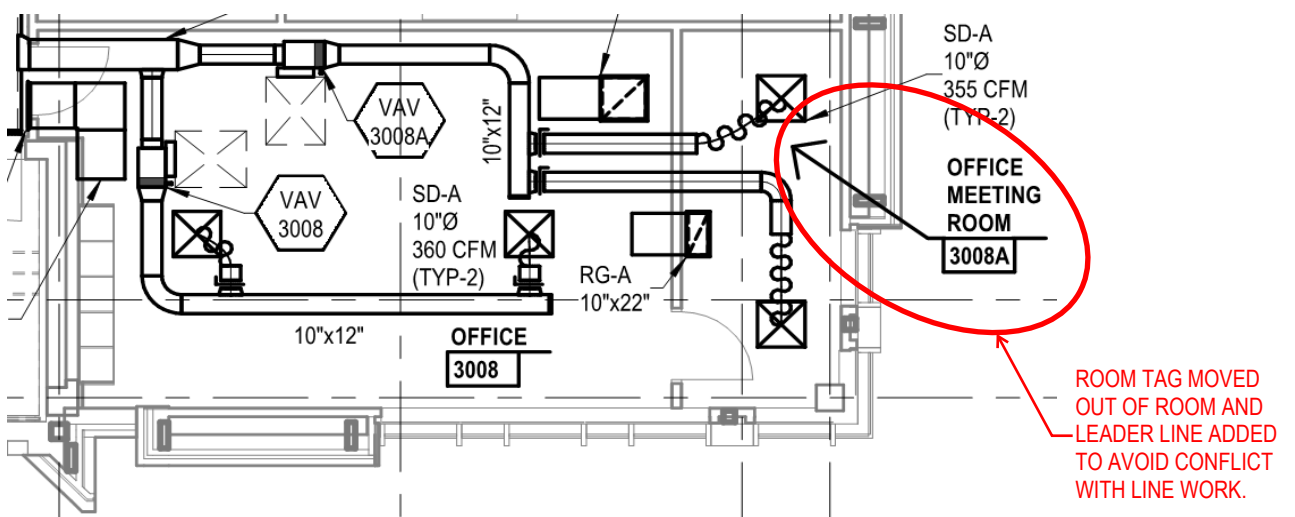


Room Name Tags automatically are placed inside Room Boundaries. In some cases Room Name Tags can interfere with important information you are trying to convey. When this occurs move the Room Name Tag outside the Room, but not in a location that can interfere with other Room information.

INCORRECT



CORRECT

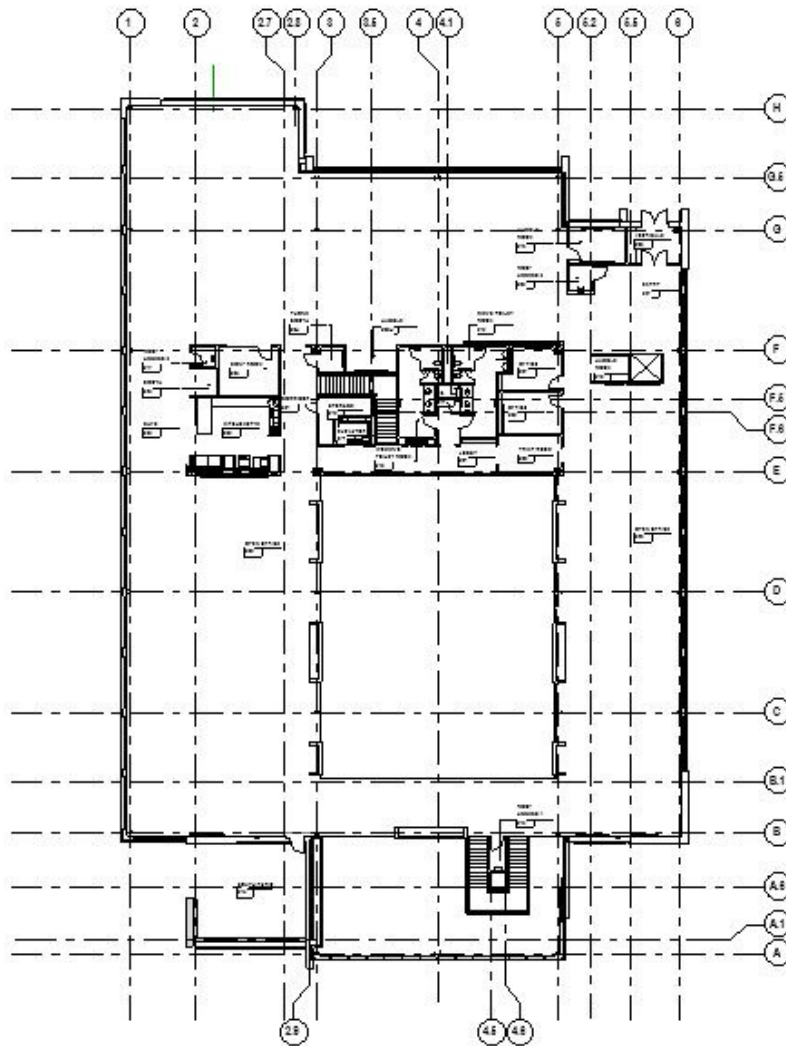


Drawing Guidelines

Column Grid Bubbles



Vertical Column Grid Bubbles are located at the top of the Drawing and numbered consecutively. **Horizontal Column Grid Bubbles** are located at the right of the Drawing and lettered consecutively. Column Grids and Column Grid Bubbles are created by the Architectural Department on the z-Shared Levels and Grids Workset. Grids are visible when linked to other Models. When models are linked together the z-Shared Levels and Grids Workset is turned off so that only the grids that are live within the host model are displayed.



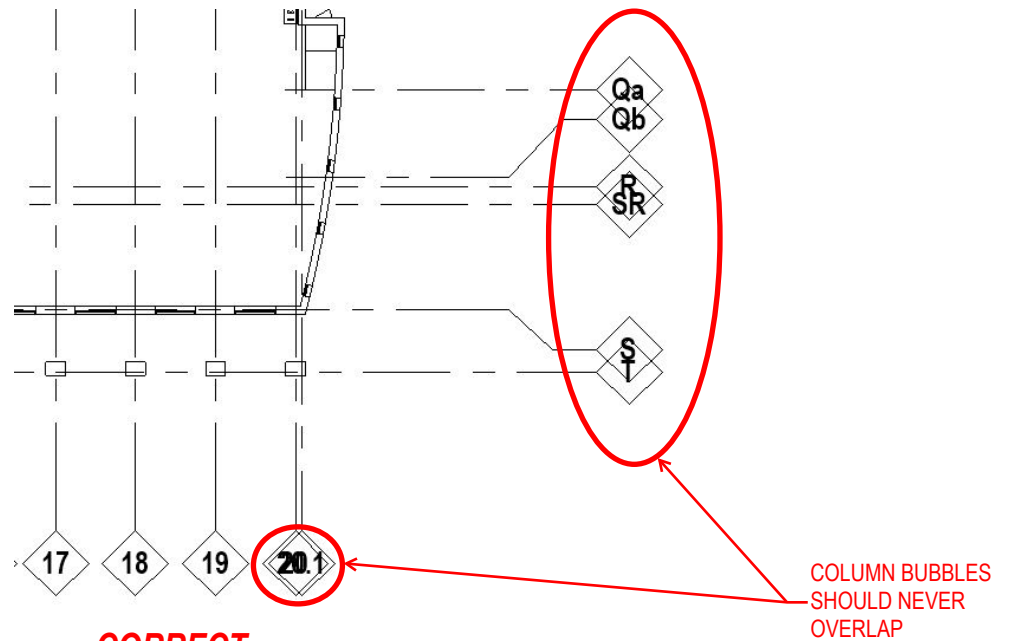
Drawing Guidelines

Column Grid Bubbles

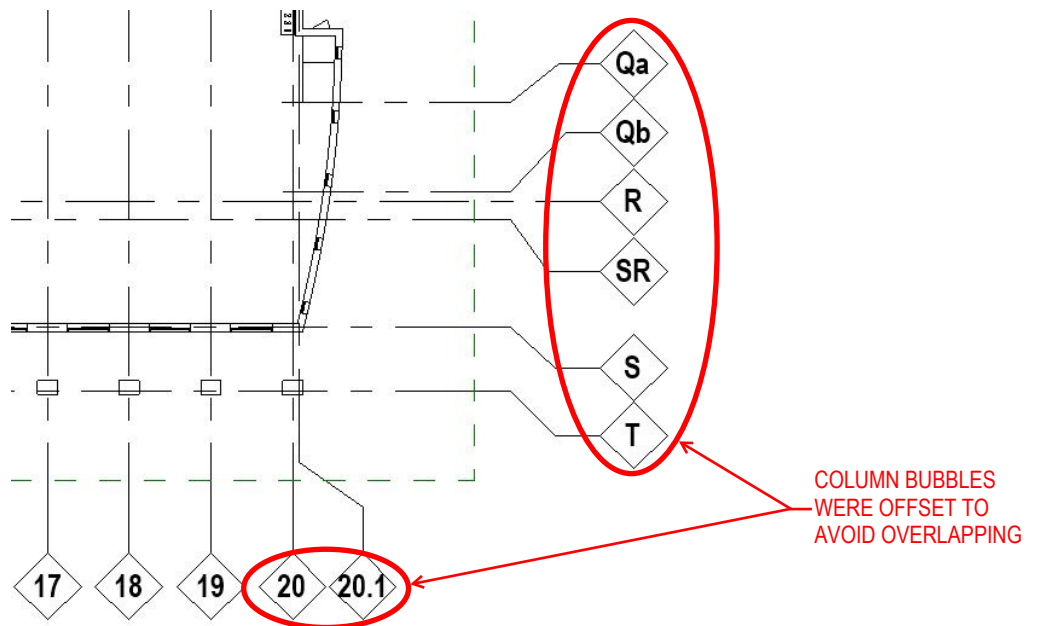


- *Adjust Column Grid Bubbles so they are readable*

INCORRECT

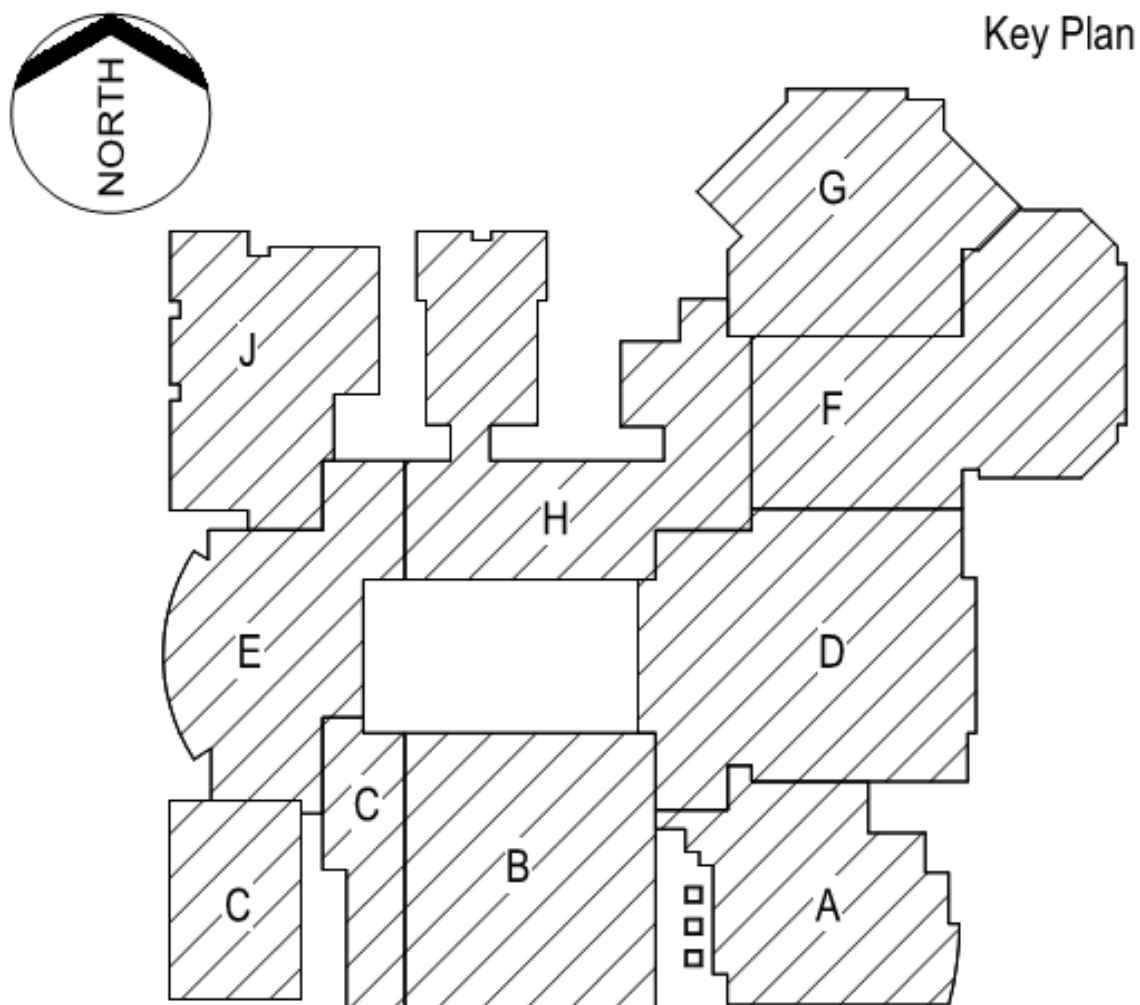


CORRECT



Placing match lines on your sheets are very useful. They are helpful when you want to split up a large view into several different sheets like shown below. Match lines follow scope box boundaries that are created in the architectural models. They help to make it quick and easy when you are flipping through a set of drawings and need to know an adjacent area. Match lines are created by the Architectural Department on the z-Matchline Workset. They are visible when linked to other Models. When models are linked together the z-Matchline workset is turned off so that only the match line that are live within the hosted model are displayed.

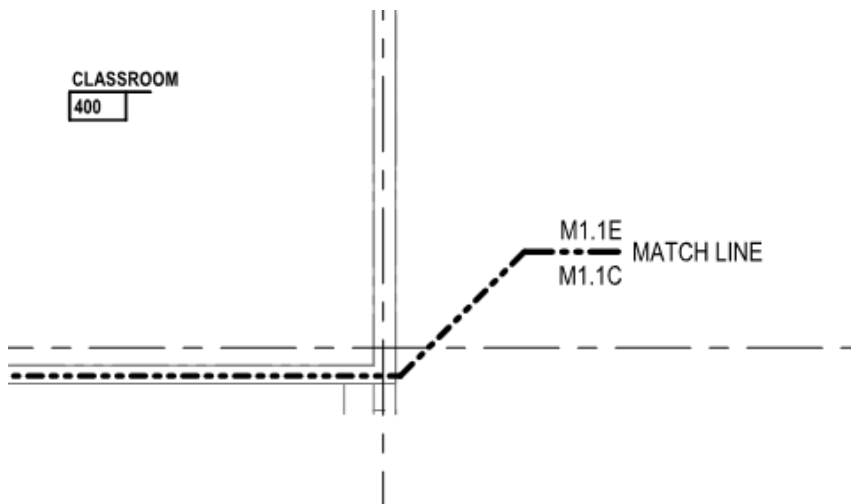
Composite Key Plan



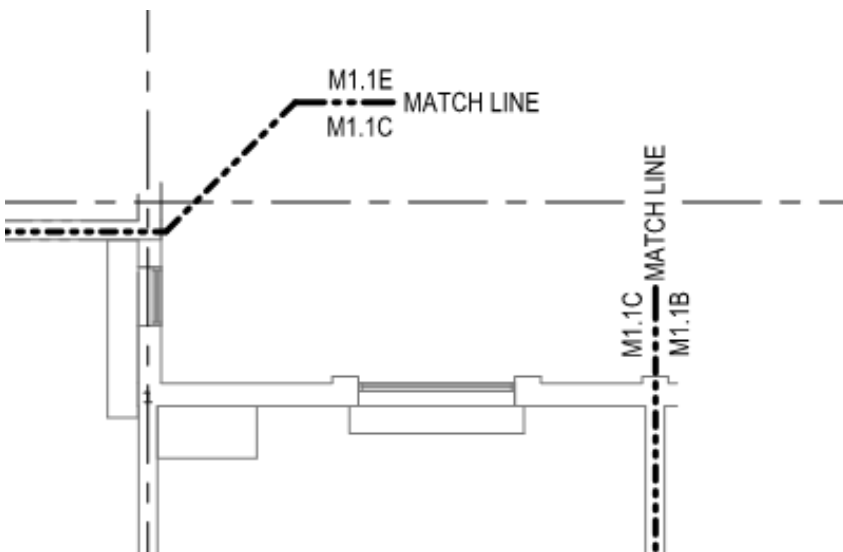
Drawing Guidelines

Match Lines

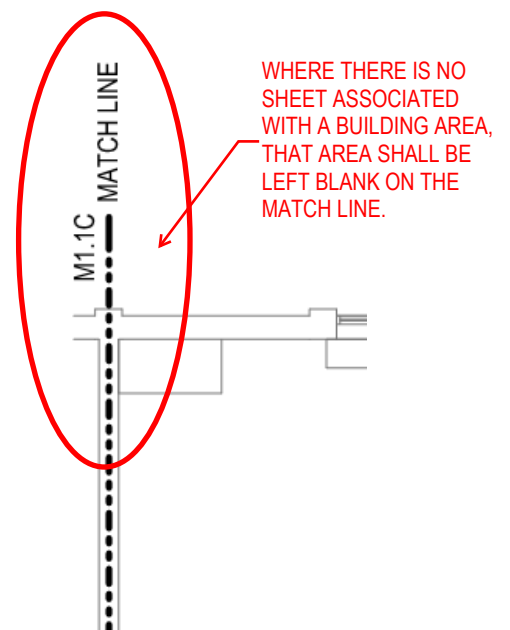
AREA E



AREA C



NO AREA



Drawing Do's and Don'ts

Mechanical Equipment Schedule Do's and Don'ts



The following describes how to number and schedule mechanical equipment:

Floor Plans

DO schedule and tag any piece of mechanical equipment placed on a sheet

DO NOT place multiple tags for one single piece of mechanical equipment

DO place scheduled tags outside of rooms w/ leaderlines for clarity

DO NOT place equipment tags over other annotation or drawing elements

DO place (E) on existing pieces of mechanical equipment clarity on new work floor plans

DO NOT schedule existing equipment, existing equipment tagged on floor plans simply for clarity

Mechanical Equipment Schedules

DO include all tagged pieces of equipment on your schedule sheet(s)

DO alphanumerically sort all scheduled equipment within each equipment schedule.

Redundancies and Over Drawing

- Select the best location for information and show it only once.
- Do not needlessly repeat notes and drawing detail just because CAD makes it easy to do so. This will only lead to mistakes and missed items when revisions have to be made.
- Do not abuse the note “REFER TO...” to reference another disciplines work or item. If it is really important, include a specific detail number and drawing location.

Drawing and Detail Notes

- Use IDS standard abbreviations.
- Do not note portions of details or plans that are drawn and noted elsewhere at a larger scale.
- Use General Notes to simplify demolition and floor plan notes.
- Use Keynotes on plan drawings to reference repetitive items requiring a wordy note.

Detail Titles

INCORRECT

- DETAIL
- ENLARGED PLAN
- SECTION

CORRECT

“PIECE OF EQUIPMENT” DETAIL, “PIECE OF EQUIPMENT” DIAGRAM etc.
Use room name and number, i.e. CLASSROOM 101)
(Use building area/location – direction looking
“i.e. North STEM Southwest Duct Shaft – Looking East”)

Drawing Titles

INCORRECT

- Partial Floor Sheet Metal Plan – Area B
- Mechanical Schedule and Details

CORRECT

First Floor Sheet Metal Plan - Area B
Schedules and Details