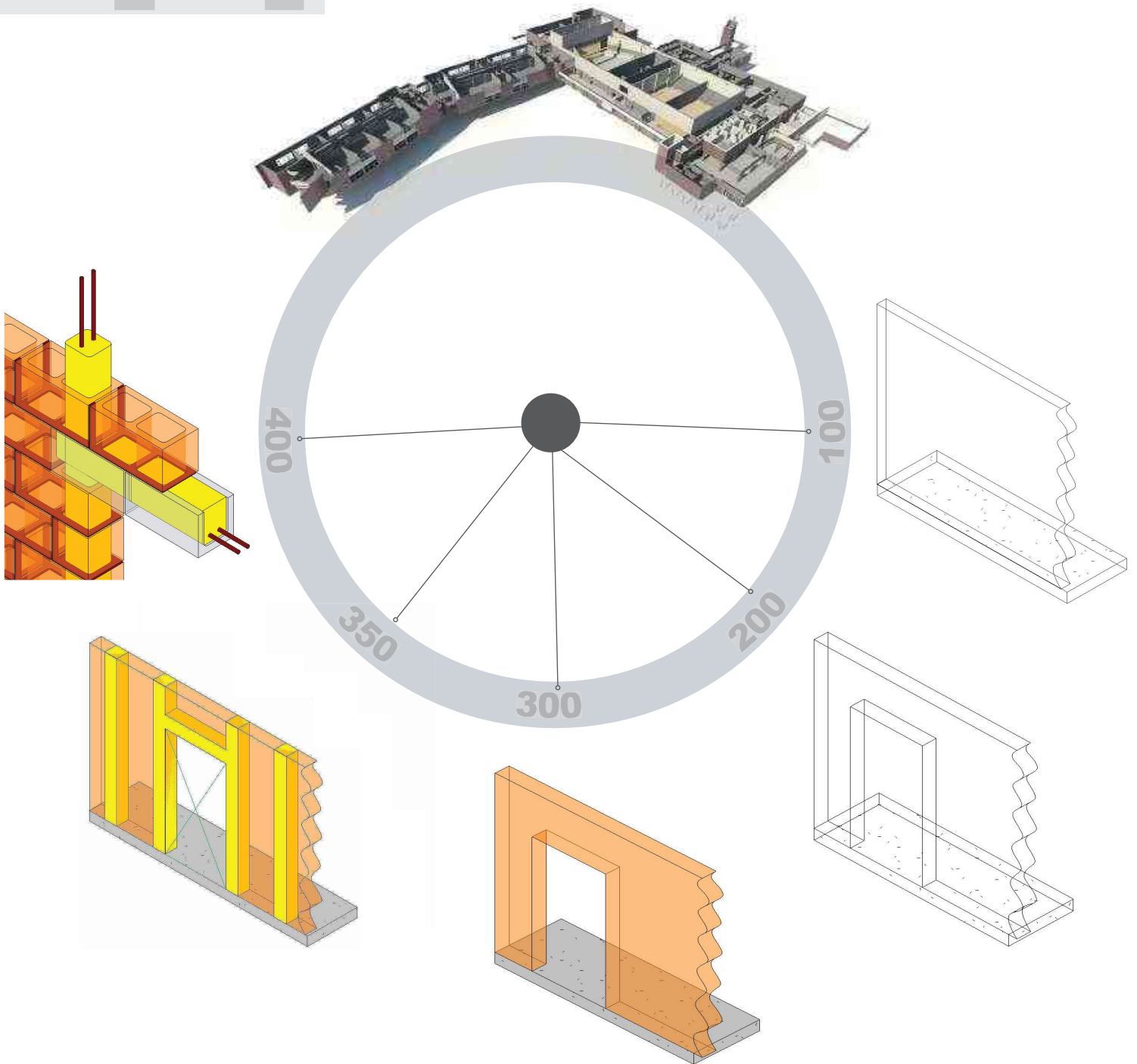


# 2014

## LEVEL OF DEVELOPMENT SPECIFICATION

# BIMFORUM



# Level of Development Specification

Version: 2014

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For Building Information Models

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# Level of Development (LOD) Specification Introduction

## 1 Overview

The *Level of Development (LOD) Specification* is a reference that enables practitioners in the AEC Industry to specify and articulate with a high level of clarity the content and reliability of Building Information Models (BIMs) at various stages in the design and construction process. The *LOD Specification* utilizes the basic LOD definitions developed by the AIA for the *AIA G202-2013 Building Information Modeling Protocol Form*<sup>1</sup> and is organized by CSI Unifomat 2010<sup>2</sup>. It defines and illustrates characteristics of model elements of different building systems at different Levels of Development. This clear articulation allows model authors to define what their models can be relied on for, and allows downstream users to clearly understand the usability and the limitations of models they are receiving.

The intent of this Specification is to help explain the LOD framework and standardize its use so that it becomes more useful as a communication tool. It does not prescribe what Levels of Development are to be reached at what point in a project but leaves the specification of the model progression to the user of this document. To accomplish the document's intent, its primary objectives are:

- To help teams, including owners, to specify BIM deliverables and to get a clear picture of what will be included in a BIM deliverable
- To help design managers explain to their teams the information and detail that needs to be provided at various points in the design process
- To provide a standard that can be referenced by contracts and BIM execution plans.

It should be noted that this Specification does not replace a project BIM Execution Plan (BIMXP), but rather is intended to be used in conjunction with such a plan, providing a means of defining models for specific information exchanges, milestones in a design work plan, and deliverables for specific functions.

*All images are intended to illustrate building conditions in compliance with common building codes. However, the images do not take into account site specific conditions, regional building codes and other important information that may have a material change to specific projects. These illustrations are not making representation for fitness for a particular project nor represent code or design compliance.*

## 2 Background

In 2011 the BIMForum initiated the development of this LOD Specification and formed a working group comprising contributors from both the design and construction sides of the major disciplines. The working group first interpreted the AIA's basic LOD definitions for each building system, and then compiled examples to illustrate the interpretations. Because BIM is being put to an ever increasing number of uses, the group decided that it was beyond the initial scope to address all of them. Instead, the definitions were developed to address model element geometry, with three of the most common uses in mind – quantity take-off, 3D coordination and 3D control and planning. The group felt that in taking this approach the interpretations would be complete enough to support other uses.

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<sup>1</sup> AIA Contract Document *G202-2013, Building Information Modeling Protocol Form* is part of a new series of digital practice documents the AIA published in June 2013. The AIA's updated digital practice documents consist of *AIA E203™–2013, Building Information Modeling and Digital Data Exhibit*, *AIA G201™–2013, Project Digital Data Protocol Form*, and *AIA G202™–2013, Project Building Information Modeling Protocol Form*. For general information on the documents and downloadable samples see [www.aia.org/digitaldocs](http://www.aia.org/digitaldocs). For executable versions of the documents see <http://www.aia.org/contractdocs>.

<sup>2</sup> UniFormat™ Numbers and Titles used in this publication are from UniFormat™, published by CSI and Construction Specifications Canada (CSC), and are used with permission from CSI. For a more in-depth explanation of UniFormat™ and its use in the construction industry visit <http://www.csinet.org> or contact CSI, 110 South Union Street, Suite 100, Alexandria, VA 22314. (800) 689-2900.

## 3 Levels of Development

The Level of Development (LOD) framework addresses several issues that arise when a BIM is used as a communication or collaboration tool, i.e., when someone other than the author extracts information from it:

- During the design process, building systems and components progress from a vague conceptual idea to a precise description. In the past there has been no simple way to designate where a model element is along this path. The author knows, but others often don't.
- It's easy to misinterpret the precision at which an element is modeled. Hand drawings range from pen strokes on a napkin to hard lines with dimensions called out, and it's easy to infer the precision of the drawing from its appearance. In a model though, a generic component placed approximately can look exactly the same as a specific component located precisely, so we need something besides appearance to tell the difference.
- It is possible to infer information from a BIM that the author doesn't intend – unstated dimensions can be measured with precision, assembly information often exists before it's been finalized, etc. In the past, this issue has been sidestepped with all-encompassing disclaimers that basically say, "Since some of the information in the model is unreliable, you may not rely on any of it." The LOD framework allows model authors to clearly state the reliability of given model elements, so the concept becomes "Since some of the information in the model is unreliable, you may only rely on it for what I specifically say you can."
- In a collaborative environment, where people other than the model author are depending on information from the model in order to move their own work forward, the design work plan takes on high importance – it is necessary for the model users to know when information will be available in order to plan their work. The LOD framework facilitates this.

The LOD Framework addresses these issues by providing an industry-developed standard to describe the state of development of various systems within a BIM. This standard enables consistency in communication and execution by facilitating the detailed definition of BIM milestones and deliverables.

### 3.1 Level of Development vs. Level of Detail

LOD is sometimes interpreted as Level of *Detail* rather than Level of *Development*. This Specification uses the concept of Levels of *Development*. There are important differences.

Level of *Detail* is essentially how *much* detail is included in the model element. Level of *Development* is the degree to which the element's geometry and attached information has been thought through – the degree to which project team members may rely on the information when using the model. In essence, Level of Detail can be thought of as input to the element, while Level of Development is reliable output.

## 4 LOD Definitions

In 2008, the AIA developed its first set of Level of Development definitions in AIA Document *E202™-2008 Building Information Modeling Protocol*. Due to the rapidly evolving nature of the use of BIM, the AIA evaluated the AIA E202–2008, including the LOD definitions. The result is the updated and reconfigured Digital Practice documents, *AIA E203™–2013, Building Information Modeling and Digital Data Exhibit*, *AIA G201™–2013, Project Digital Data Protocol Form*, and *AIA G202™–2013, Project Building Information Modeling Protocol Form*, which are accompanied by a detailed guide document entitled *Guide and Instructions to the AIA Digital Practice Documents*. The AIA's updated Digital Practice documents include revised LOD definitions.

To help further the standardization and consistent use of the LOD concept, and to increase its usefulness as a foundation for collaboration, the AIA agreed to allow the BIMForum to utilize its latest LOD definitions in this Specification. The LOD definitions that are used in this Specification are identical to those published in the AIA's updated Digital Practice Documents, with two exceptions.

First, the working group identified the need for an LOD that would define model elements sufficiently developed to enable coordination between disciplines – e.g. clash detection/avoidance, layout, etc. The requirements for this level are higher than those for 300, but not as high as those for 400, thus it was designated LOD 350. The AIA documents do not include LOD 350, but the associated *Guide and Instructions* references it.

Second, while LOD 500 is included in the AIA's LOD definitions, the working group did not feel it was necessary to further define and illustrate LOD 500 in this Specification because it relates to field verification. Accordingly the expanded descriptions and graphic illustrations in this Specification are limited to LOD 100-400.

## 4.1 Fundamental LOD Definitions<sup>3</sup>

<b>LOD 100</b>	The Model Element may be graphically represented in the Model with a symbol or other generic representation, but does not satisfy the requirements for LOD 200. Information related to the Model Element (i.e. cost per square foot, tonnage of HVAC, etc.) can be derived from other Model Elements.
<b>LOD 200</b>	The Model Element is graphically represented within the Model as a generic system, object, or assembly with approximate quantities, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.
<b>LOD 300</b>	The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of quantity, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.
<b>LOD 350</b>	The Model Element is graphically represented within the Model as a specific system, object, or assembly in terms of quantity, size, shape, orientation, and interfaces with other building systems. Non-graphic information may also be attached to the Model Element.
<b>LOD 400</b>	The Model Element is graphically represented within the Model as a specific system, object or assembly in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly, and installation information. Non-graphic information may also be attached to the Model Element.
<b>LOD 500</b>	The Model Element is a field verified representation in terms of size, shape, location, quantity, and orientation. Non-graphic information may also be attached to the Model Elements.

### Example – light fixture:

- 100 cost/sf attached to floor slabs
- 200 light fixture, generic/approximate size/shape/location
- 300 Design specified 2x4 troffer, specific size/shape/location
- 350 Actual model, Lightolier DPA2G12LS232, specific size/shape/location
- 400 As 350, plus special mounting details, as in a decorative soffit

### Glossary

The expanded definitions use the following interpretations of these terms:

- **Specific:** The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension call-outs.
- **Actual:** The model element includes all the qualities of a specific element and is representative of the manufacturer's model to be installed or the construction intent of an assembly.

### Order of Precedence

The body of this Specification expands on these Fundamental Definitions as they apply to specific building systems and sub-systems. In the event of any conflict, more specific expansions take precedence over less specific expansions and Fundamental Definitions, e.g. the expanded definitions for C1010 take precedence over those for C10, which in turn take precedence over the Fundamental Definitions.

### LOD Definitions as Minimum Requirements

The LODs provide five snapshots of the progression of an element from conceptual to specified –there are many steps in this progression between the defined LODs. The LOD definitions, then, should be considered minimum requirements – i.e. an element has

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<sup>3</sup> The definitions for LOD 100, 200, 300, 400, and 500 included in this Specification represent the updated language that appears in the AIA's most recent BIM protocol document, *G202–2013, Building Information Modeling Protocol Form*. The LOD 100, 200, 300, 400 and 500 definitions are produced by the AIA and have been used by permission. Copyright © 2013. The American Institute of Architects. All rights reserved. LOD 350 was developed by the BIMForum working group. Copyright © 2013. The BIMForum and the American Institute of Architects. All rights reserved.

progressed to a given LOD only when all the requirements stated in the definition have been met. It should also be noted that the requirements are cumulative – for a given element each LOD definition includes the requirements of all previous LODs. Thus for an element to qualify for LOD 300 it must meet all the requirements for 200 and 100 as well as those stated in the LOD 300 definition.

#### Model Element Author

This document does not prescribe who the author of a particular component at a certain LOD should be – the sequence of responsibility for modeling various systems will vary from one project to another. To accommodate this variation this document defers to the concept of Model Element Author (MEA) as defined in the *AIA E203-2013*: “The Model Element Author is the entity (or individual) responsible for managing and coordinating the development of a specific Model Element to the LOD required for an identified Project milestone, regardless of who is responsible for providing the content in the Model Element.”<sup>4</sup>

#### 2D Supplementary Drawings

In current practice models are often supplemented with 2D information such as detail drawings. This Specification does not address this supplementation, but rather deals only with what is actually modeled in 3D and any non-graphic information associated with the modeled elements.

## 4.2 Caveats

**There is no strict correspondence between LODs and design phases.** Building systems are developed at different rates through the design process – for example, design of the structural system is usually well ahead of the design of interior construction. At completion of the schematic design phase, for example, the model will include many elements at LOD 200, but will also include many at LOD 100, as well as some at LOD 300, and possibly even LOD 400.

**Similarly, there is no such thing as an “LOD \_\_\_ model”.** As previously stated, project models at any stage of delivery will invariably contain elements and assemblies at various levels of development. As an example, it is not logical to require an “LOD 200 model” at the completion of the schematic design phase. Instead, the “schematic design model deliverable” may contain modeled elements at various levels of development.

## 4.3 Project-Specific Information

As mentioned in the Overview above, this Specification is intended to be used in conjunction with a project BIMXP. Many information needs will vary from project to project, even for identical elements. This kind of information is therefore not included in the LOD definitions specified here, but rather is left to be addressed in individual BIMXPs. The following are some notable examples.

#### Size Thresholds

In most projects a determination is made to model certain elements only if they are over a specified size – e.g. conduit less than 1/2” (10 mm) diameter is not modeled. These size thresholds do not consistently correspond to certain LODs, and they vary from project to project. Thus they are not specified in the LOD definitions but rather in the project’s BIMXP, for example through the “Notes” cells in the Model Element Table of the *AIA G202-2013*.

#### Clearances

Clearances such as door swings, maintenance access zones, and accessibility requirements can be critical design issues and in many cases are geometrically modeled to reserve the space. The implementation of this type of spatial coordination can be accomplished in various ways; therefore it is neither practical nor useful for this Specification to dictate particular requirements, for example, *all door swings to be modeled as quarter-cylinder solids*. Implementation of required clearances is to be established with individual BIMXPs.

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<sup>4</sup> AIA Document *E203-2013 Building Information Modeling and Digital Data Exhibit*. Copyright © American Institute of Architects 2013. All rights reserved. Definition quoted here by permission.

## 5 Updates of This Document

While this document is intended as a reference that can be cited in agreements such as contracts and BIM execution plans, it is recognized that the use of BIM in design and construction is evolving. To accommodate this evolution this document will be updated periodically in clearly identifiable versions. Initially the target frequency is annually, but that may change in the future. In addition, interim updates may be issued if needed.

### Revision History

12/30/14	Level of Development Specification 2014	New changes are noted with a bold bar. Definitions have not been changed except for minor grammatical corrections and formatting. Images and image notes have been added in <i>blue italics font</i> .
8/22/13	Level of Development Specification 2013	
4/24/13	Initial draft for public review	

## A: SUBSTRUCTURE

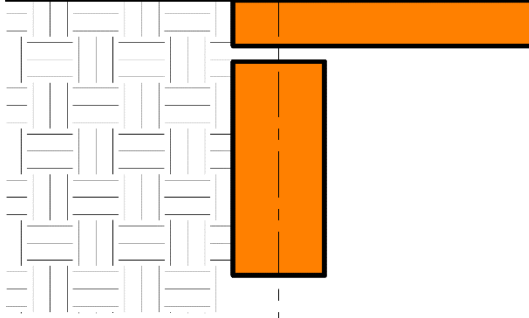
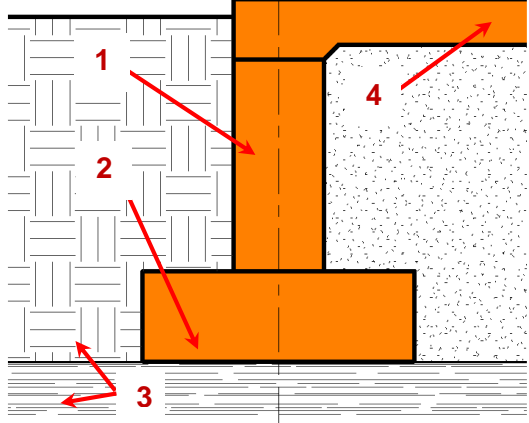
### A10 Foundations

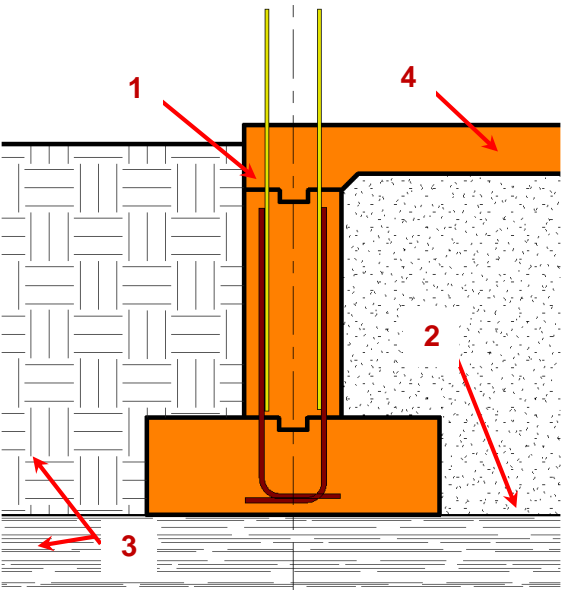
100	<p>Assumptions for foundations are included in other modeled elements such as an architectural floor element or volumetric mass that contains layer for assumed structural framing depth.</p> <p>Or, schematic elements that are not distinguishable by type or material. Assembly depth/thickness and locations still flexible.</p>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Approximate size and shape of foundation element</li> <li>• Structural building grids for local project coordinate system are defined in model and coordinated with global civil coordinate system (State Plane Coordinate System, etc).</li> </ul>	

### A1010 – Standard Foundations

100	See <a href="#">A10</a>	
200	See <a href="#">A10</a>	
300	<p>Elements are modeled to the design-specified size and shape of the foundation.</p> <p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Overall size and geometry of the foundation element</li> <li>• Sloping surfaces or floor depressions</li> <li>• External dimensions of the members</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Concrete strength</li> <li>• Reinforcing strength</li> </ul>	

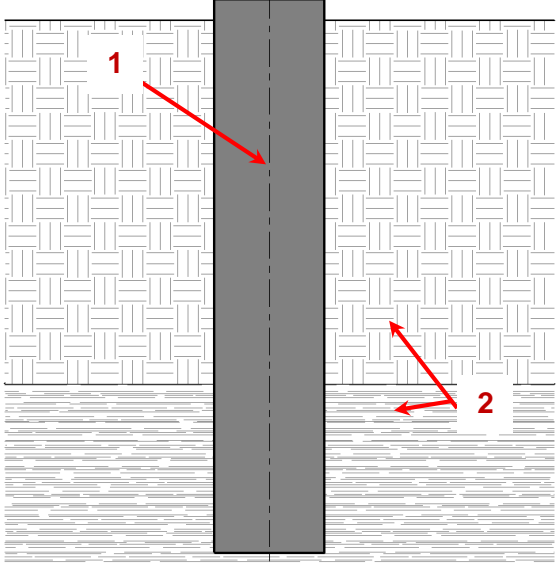
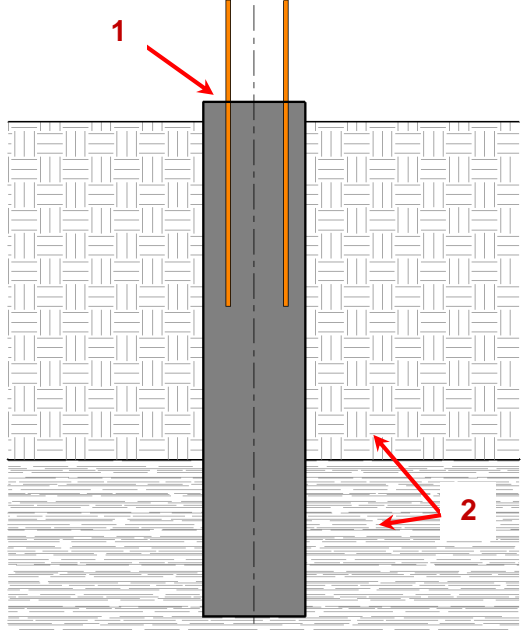
## A1010.10 – Wall Foundations (Shallow Foundations)

100	See <a href="#">A10</a>	
200	<p>See <a href="#">A10</a></p> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>1) <i>Generic wall foundation is modeled.</i></li> <li>2) <i>Site is generically modeled from geotechnical information in geotechnical report.</i></li> </ol>	 <p>1 A1010.10-LOD-200 Wall Foundation</p>
300	<p>See <a href="#">A1010</a></p> <p>Element modeling to include:</p> <ol style="list-style-type: none"> <li>1) Overall size and geometry of the foundation element</li> <li>2) Sloping surfaces.</li> <li>3) External dimensions of the members</li> </ol> <p>Required non-graphic information associated with model elements includes:</p> <ol style="list-style-type: none"> <li>4) Concrete strength</li> <li>5) Reinforcing strength</li> <li>6) Geotechnical bearing strata elevation is modeled from geotechnical report.</li> </ol> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>1) <i>Wall foundation sizes are accurately modeled with footings where applicable.</i></li> <li>2) <i>Bearing elevation is modeled from the geotechnical report.</i></li> <li>3) <i>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</i></li> <li>4) <i>See slab on grade for related conditions at this LOD.</i></li> </ol>	 <p>2 A1010.10-LOD-300 Wall Foundation</p>

<p>350</p>	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Location of sleeve penetrations</li> <li>• Pour joints</li> <li>• Moisture retarder</li> <li>• Dowels</li> <li>• All exposed embeds or reinforcement such as lintels</li> <li>• Expansion joints</li> <li>• Geotechnical Bearing Strata is modeled from geotechnical report estimates.</li> </ul> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>1) <i>Grade beam sizes are modeled with interfaces to other systems such as but not limited to slab turn downs, key-ways between concrete pours, construction joints and reinforcing dowels into adjacent pours.</i></li> <li>2) <i>Bearing elevation is modeled from the geotechnical report with the addition on interface elements such as void boxes where applicable.</i></li> <li>3) <i>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</i></li> <li>4) <i>See slab on grade for related conditions at this LOD.</i></li> </ol>	 <p>3 A1010.10-LOD-350 Wall Foundations (Shallow Foundations)</p>
<p>400</p>	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Rebar including hooks and lap splices</li> <li>• Dowels</li> <li>• Chamfer</li> <li>• Finish</li> <li>• Coursing for unit masonry defined</li> <li>• Waterproofing</li> </ul>	



## A1010.30 – Column Foundations (Deep Foundations)

100	See <a href="#">A10</a>	
200	See <a href="#">A10</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Assumed bearing depth per geotechnical report with designed penetration geometry modeled.</li> <li>Top of Pier</li> <li>Size of Pier</li> </ul> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>Pier sizes are accurately modeled with top of pier elevation, estimated depth to bearing and specified depth of penetration into bearing strata.</li> <li>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</li> </ol>	 <p>4 A1010.30-LOD-300 Column Foundations (Deep Foundations)</p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Actual Top of Pier (TOP) and expected Bottom of Pier (BOT) modeled per engineers review of site conditions</li> <li>Foundation dowel locations and anchor rods if applicable.</li> </ul> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>Pier sizes are accurately modeled with interfaces to other systems such as but not limited to slab turn downs, key-ways between concrete pours, construction joints and reinforcing dowels into adjacent pours.</li> <li>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</li> </ol>	 <p>5 A1010.30-LOD-350 Column Foundations</p>

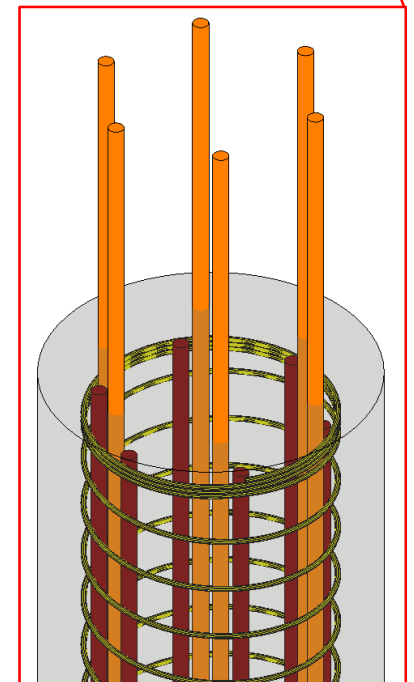
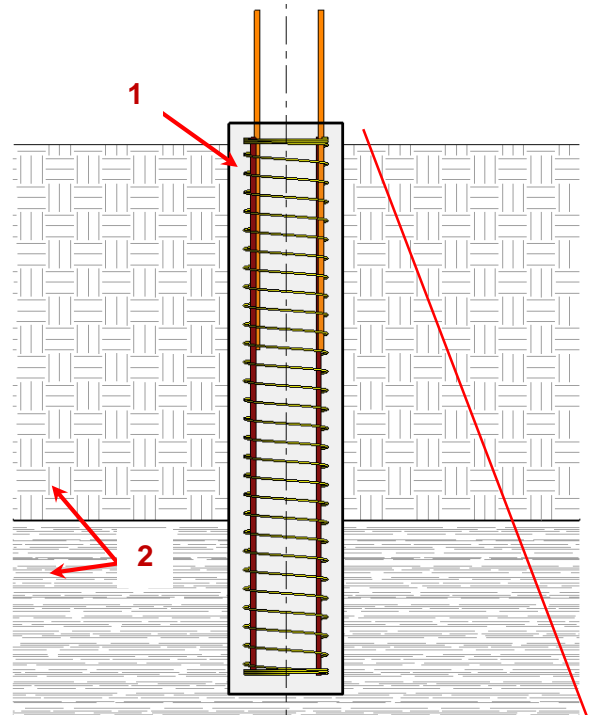
400

Element modeling to include:

- Depth to bearing stratum
- Penetration into bearing stratum
- Locations of lap splices
- Rebar detailing including hooks and lap splices
- Dowels
- Pier sled or Pier wheel for side clear cover
- Pier bolster for bottom clear cover

*Image Notes:*

- 1) *Pier modeling is developed to include all fabrication content that is part of the element.*
- 2) *Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.*
- 3) *Pier sled, pier wheel, pier bolsters and other related items are not shown in image for clarity.*



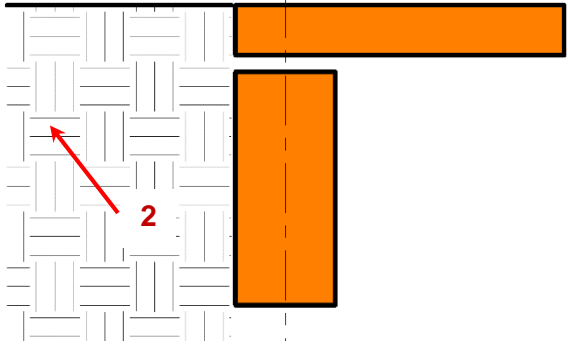
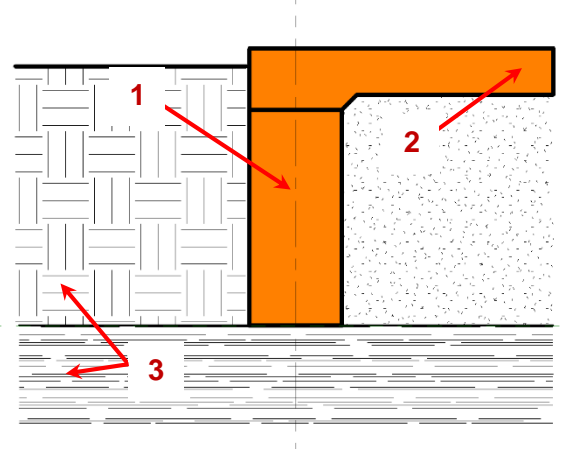
6 A1010.30-LOD-400 Column Foundations

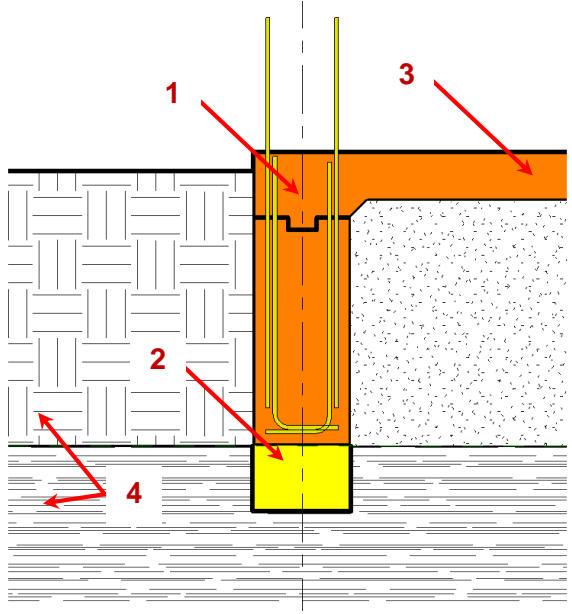
## A1020 – Special Foundations

*Includes: Drilling, casing, bell bottom, excavation, dewatering, removal of excavated, materials, reinforcing, and concrete. Drilled Piers, Driven Piles, Mat Foundation.*

100	See <a href="#">A10</a>	
200	See <a href="#">A10</a>	
300	See <a href="#">A1010</a>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Location of sleeve penetrations</li> <li>• Pour joints</li> <li>• Moisture retarder</li> <li>• Dowels</li> <li>• All elements needed for cross-trade collaboration are to be modeled</li> <li>• Actual location and shape of structural element</li> <li>• Exposed embeds or reinforcement such as lintels</li> <li>• Penetrations detailed and modeled</li> <li>• Expansion joints</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Rebar detailing including hooks and lap splices</li> <li>• Dowels</li> <li>• Chamfer</li> <li>• Finish</li> <li>• Coursing for unit masonry defined</li> <li>• Waterproofing</li> </ul>	

## A1020.80 – Grade Beams

100	See <a href="#">A10</a>	
200	<p>See <a href="#">A10</a></p> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>1) <i>Generic beam geometry is shown.</i></li> <li>2) <i>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</i></li> </ol>	 <p>7 A1020.80-LOD-200 Grade Beams</p>
300	<p>See <a href="#">A1010</a></p> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>1) <i>Grade beam sizes are shown accurately.</i></li> <li>2) <i>See slab on grade for related conditions at this LOD.</i></li> <li>3) <i>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</i></li> </ol>	 <p>8 A1020.80-LOD-300 Grade Beams</p>

<p>350</p>	<p>Element modeling to include:</p> <ol style="list-style-type: none"> <li>1) Water stops</li> <li>2) Pour joints and sequences required to identify reinforcing lap splice, scheduling, etc.</li> </ol> <p>Required non-graphic information associated with model elements includes:</p> <ol style="list-style-type: none"> <li>3) Post-tension profile and strands if required by the BIMXP.</li> </ol> <p><i>Image Notes:</i></p> <ol style="list-style-type: none"> <li>1) <i>Grade beam sizes are modeled with interfaces to other systems such as but not limited to slab turn downs, key-ways between concrete pours, construction joints and reinforcing dowels into adjacent pours.</i></li> <li>2) <i>Interface elements such as void boxes are modeled where applicable.</i></li> <li>3) <i>See slab on grade for related conditions at this LOD.</i></li> <li>4) <i>Geotechnical regions are shown for context and not required to be modeled as part of this element at this LOD.</i></li> </ol>	 <p>The diagram shows a cross-section of a grade beam (orange) embedded in a concrete slab (grey). A yellow U-shaped post-tensioning profile is shown within the beam. Red arrows point to: 1) the interface between the beam and the slab above; 2) the interface between the beam and the slab below; 3) the top surface of the beam; and 4) the bottom surface of the beam. A dashed vertical line indicates the centerline of the beam.</p> <p>9 A1020.80-LOD-350 Grade Beams</p>
<p>400</p>	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Detailed post-tensioned components</li> </ul>	

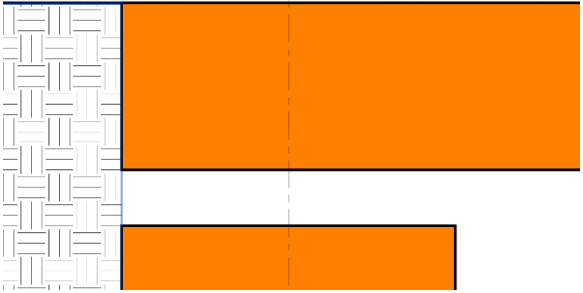
## A20 Subgrade Enclosures

<p>100</p>	<p>Solid mass model representing overall building volume; or, schematic wall elements that are not distinguishable by type or material.</p> <p>Assembly depth/thickness and locations still flexible.</p>	
<p>200</p>	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Approximate size and shape of the subgrade enclosure element.</li> <li>• Structural building grids for local project coordinate system are defined in model and coordinated with global civil coordinate system (State Plane Coordinate System, etc).</li> </ul>	

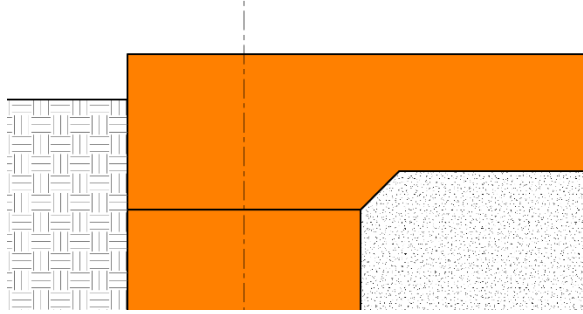
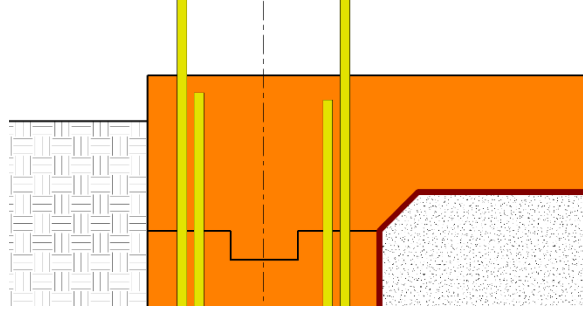
## A2010 – Walls for Subgrade Enclosures

100	See <a href="#">A20</a>	
200	See <a href="#">A20</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Overall size and geometry of the subgrade element</li> <li>• Sloping surfaces</li> <li>• External dimensions of the element</li> <li>• Material strength</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Concrete strength</li> <li>• Reinforcing Strength</li> <li>• Air entrainment</li> <li>• Finishes</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Chamfers</li> <li>• Sleeve penetrations</li> <li>• Pour joints</li> <li>• Rebar and any embedded elements modeled at congested areas where specified by project BIMXP which is typically within a set distance from the area of congestion.</li> <li>• Any permanent shoring or forming structures such as void boxes</li> <li>• Interior finish and/or insulation</li> <li>• Expansion joints</li> <li>• Moisture retarder</li> <li>• Exposed embeds or reinforcement such as lintels</li> <li>• Penetrations detailed and modeled</li> <li>• Expansion joints</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Rebar including hooks and lap splices</li> <li>• Dowels</li> <li>• Chamfer</li> <li>• Finish</li> <li>• Coursing for unit masonry defined</li> <li>• Waterproofing</li> </ul>	

## A40 Slabs-on-Grade

100	Assumptions for slabs are included in other modeled elements such as a volumetric mass or architectural floor element that contains a layer for assumed structural framing depth.	
200	<p>Element modeling to include</p> <ul style="list-style-type: none"> <li>• Generic slab with approximate thickness.</li> <li>• Structural building grids for local project coordinate system are defined in model and coordinated with global civil coordinate system (State Plane Coordinate System, etc).</li> </ul>	 <p>10 A40-LOD-200 Slabs-on-Grade</p>

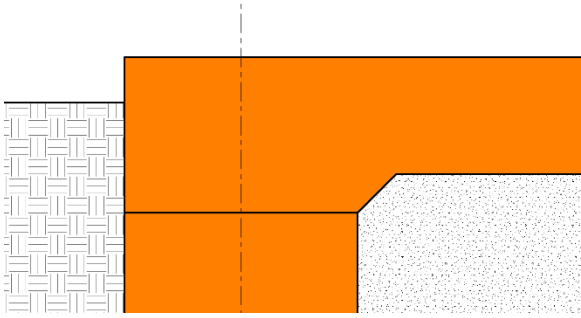
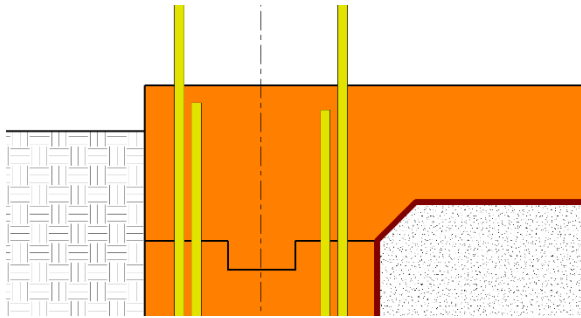
## A4010 – Standard Slabs-on-Grade

100	See <a href="#">A40</a>	
200	See <a href="#">A40</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Overall size, thickness and geometry of the slab</li> <li>• Slab depressions</li> <li>• Edge turn downs</li> <li>• Material strength</li> <li>• All sloping surfaces included in model element with exception of elements affected by manufacturer selection.</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Moisture retarder</li> <li>• Air entrainment</li> </ul>	 <p>11 A4010-LOD-300 Standard Slabs-on-Grade</p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Sleeve penetrations</li> <li>• Pour joints</li> <li>• Control joints</li> <li>• Expansion joints</li> <li>• Water stops</li> <li>• Rebar and any embedded elements modeled at congested areas where specified by project BIMXP which is typically with in a set distance from the area of congestion.</li> <li>• Void boxes</li> <li>• Anchor rods</li> <li>• Moisture retarder</li> <li>• Dowels</li> <li>• Post-tension profile and strands if required by the BIMXP.</li> </ul>	 <p>12 A4010-LOD-350 Standard Slabs-on-Grade</p>

400	Element modeling to include: <ul style="list-style-type: none"><li>• Actual slab dimensions and profiles with fully modeled rebar</li><li>• Post tensioning components</li><li>• All joints</li><li>• Water proofing</li><li>• Finish</li></ul>	
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## A4020 – Structural Slabs-on-Grade

100	See <a href="#">A40</a>	
200	See <a href="#">A40</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Overall size, thickness and geometry of the slab-on-grade</li> <li>• Slab depressions</li> <li>• Edge turn downs</li> <li>• Material strength</li> <li>• All sloping surfaces included in model element with exception of elements affected by manufacturer selection which are not known at this LOD. Such conditions could include floor geometry differences where different <u>specified</u> manufacturers will not be known until the <u>actual</u> system is selected.</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Concrete strength</li> <li>• Reinforcing strength</li> <li>• Air entrainment</li> <li>• Moisture Retarder</li> <li>• Slab penetrations</li> </ul>	 <p><i>13 A4020-LOD-300 Structural Slabs-on-Grade</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Sleeve penetrations</li> <li>• Pour joints</li> <li>• Control joints</li> <li>• Expansion joints</li> <li>• Water Stops</li> <li>• Rebar and any embedded elements modeled at congested areas where specified by project BIMXP which is typically within a set distance from the area of congestion.</li> <li>• Void boxes</li> <li>• Anchor rods</li> <li>• Moisture retarder</li> <li>• Dowels</li> <li>• Post-tension profile and strands modeled if required by the BIMXP</li> </ul>	 <p><i>14 A4020-LOD-350 Structural Slabs-on-Grade</i></p>
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Actual slab dimensions and profiles with fully modeled rebar</li> <li>• Post tensioning components</li> <li>• All joints</li> <li>• Water proofing</li> <li>• Finish</li> </ul>	

## B: SHELL

### B10 Superstructure

100	<p>Assumptions for structural framing are included in other modeled elements such as an architectural floor element that contains a layer for assumed structural framing depth; or, schematic structural elements that are not distinguishable by type or material.</p> <p>Assembly depth/thickness or component size and locations still flexible.</p>	
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### B1010 – Floor Construction

100	See <a href="#">B10</a>	
200	<p>Model elements to include:</p> <ul style="list-style-type: none"> <li>• Floor with approximate dimensions</li> <li>• Approximate supporting framing members</li> <li>• Structural grids defined</li> </ul>	

### B1010.10 – Floor Structural Frame

*Description: Structural elements required for support of floor construction within basements and above grade. Includes columns, girders, beams, trusses, joists. Includes cast-in-place concrete, precast concrete, unit masonry, metal framed, and wood framed systems. Includes framed and sleeved openings for services. Includes Floor Construction Supplementary Components as appropriate.*

Specific structural systems within this section are listed as follows:

- [Concrete](#)
- [Masonry](#)
- [Steel Framing Columns](#)
- [Steel Framing Beams](#)
- [Steel Framing Bracing Rods](#)
- [Steel Joists](#)
- [Cold-Formed Metal Framing](#)
- [Wood Floor Trusses](#)

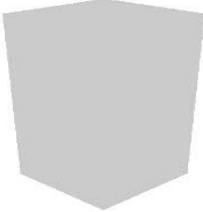
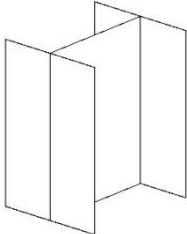

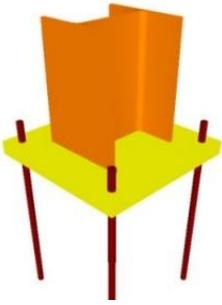
## B1010.10 – Floor Structural Frame (Concrete)


100	See <a href="#">B10</a>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Type of structural concrete system</li> <li>Approximate geometry (e.g. depth) of structural elements</li> </ul>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Specific sizes and locations of main concrete structural members modeled per defined structural grid with correct orientation</li> <li>Concrete defined per spec (strength, air entrainment, aggregate size, etc.)</li> <li>All sloping surfaces included in model element with exception of elements affected by manufacturer selection</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>Penetrations for items such as MEP</li> <li>Finishes, camber, chamfers, etc.</li> <li>Typical details</li> <li>Embeds and anchor rods</li> <li>Aggregate, clear cover</li> <li>Reinforcing spacing</li> <li>Reinforcing</li> <li>Live loads</li> <li>Shear reinforcing and stud rails</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Reinforcing Post-tension profiles and strand locations</li> <li>Reinforcement called out, modeled if required by the BIMXP, typically only in congested areas</li> <li>Pour joints and sequences to help identify reinforcing lap splice locations, scheduling, etc.</li> <li>Expansion Joints</li> <li>Embeds and anchor rods</li> <li>Post-tension profile and strands modeled if required by the BIMXP</li> <li>Penetrations for items such as MEP</li> <li>Any permanent forming or shoring components</li> <li>Shear reinforcing and stud rails</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>All reinforcement including post tension elements detailed and modeled</li> <li>Finishes, camber, chamfer, etc.</li> </ul>	

## B1010.10 – Floor Structural Frame (Masonry)

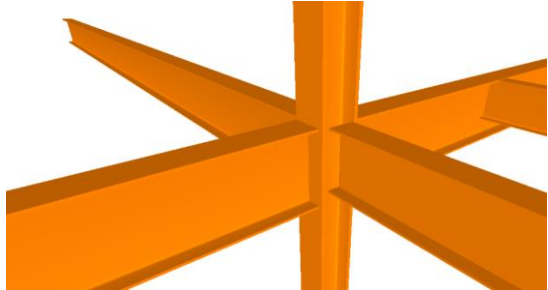
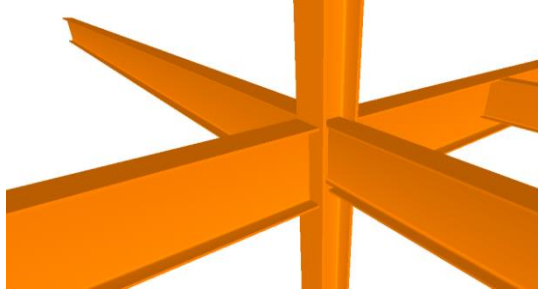
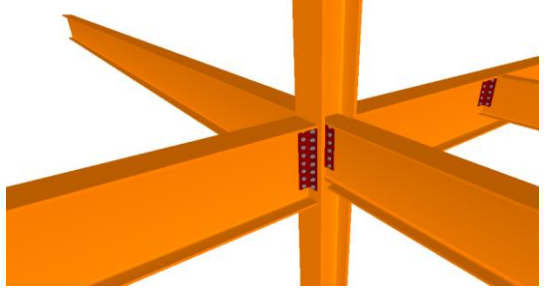
100	See <a href="#">B10</a>	
200	Element modeling to include: <ul style="list-style-type: none"> <li>Type of structural masonry system</li> </ul>	
300	Element modeling to include: <ul style="list-style-type: none"> <li>Specific sizes of main structural elements modeled per defined structural grid with correct dimensions</li> <li>Rough openings with reinforcement and lintels called out</li> </ul> Required non-graphic information associated with model elements includes: <ul style="list-style-type: none"> <li>Reinforcing</li> <li>Mortar and grout defined</li> <li>Reinforcement and steel lintels required at openings</li> <li>Penetrations for items such as MEP</li> </ul>	
350	Element modeling to include: <ul style="list-style-type: none"> <li>Actual location and shape of structural masonry element</li> <li>All exposed embeds or reinforcement such as lintels</li> <li>All penetrations detailed and modeled</li> <li>Expansion joints</li> </ul>	
400	Element modeling to include: <ul style="list-style-type: none"> <li>Waterproofing</li> <li>Coursing</li> <li>Reinforcing</li> <li>Grout</li> </ul>	

## B1010.10 – Floor Structural Frame (Steel Framing Columns)

100	Generic column element, See <a href="#">B10.</a>	 <p><i>15 B1010.10-LOD-100 Floor Structural Frame (Steel Framing Columns)</i></p>
200	See <a href="#">B1010</a>	 <p><i>16 B1010.10-LOD-200 Floor Structural Frame (Steel Framing Columns)</i></p>
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Specific sizes of main vertical structural members modeled per defined structural grid with correct orientation</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Structural steel materials defined.</li> <li>• Connection details</li> <li>• Finishes, i.e. painted, galvanized, etc.</li> </ul>	 <p><i>17 B1010.10-LOD-300 Floor Structural Frame (Steel Framing Columns)</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Actual elevations and location of member connections</li> <li>• Large elements of typical connections applied to all structural steel connections such as base plates, gusset plates, anchor rods, etc.</li> <li>• Any miscellaneous steel members with correct orientation</li> <li>• Any steel structure reinforcement such as web stiffeners, sleeve penetrations, etc.</li> </ul>	 <p><i>18 B1010.10-LOD-350 Floor Structural Frame (Steel Framing Columns)</i></p>

400	<p>Element modeling to include:</p> <ul style="list-style-type: none"><li>• Welds</li><li>• Coping of members</li><li>• Cap plates</li><li>• Washers, nuts, etc.</li><li>• All assembly elements</li></ul>	 <p><i>19 B1010.10-LOD-400 Floor Structural Frame (Steel Framing Columns)</i></p>
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### B1010.10 – Floor Structural Frame (Steel Framing Beams)

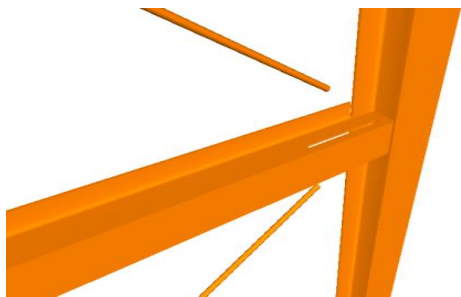
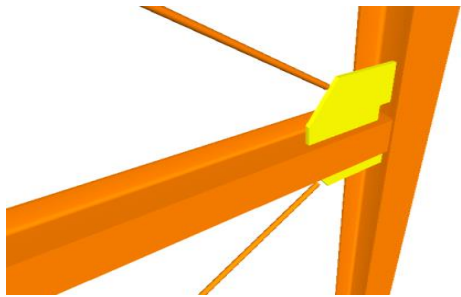
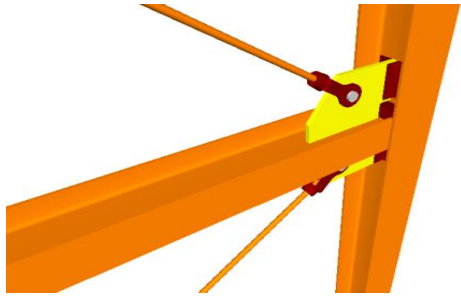
100	See <a href="#">B10</a>	
200	See <a href="#">B1010</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Specific sizes of main horizontal structural members modeled per defined structural grid with correct orientation, slope and elevation</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Structural steel materials defined</li> <li>• Connection details</li> <li>• Finishes, i.e. painted, galvanized, etc.</li> </ul>	 <p><i>20 B1010.10-LOD-300 Floor Structural Frame (Steel Framing Beams)</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Actual elevations and location of member connections</li> <li>• Large elements of typical connections applied to all structural steel connections such as base plates, gusset plates, anchor rods, etc.</li> <li>• Any miscellaneous steel members with correct orientation</li> <li>• Any steel structure reinforcement such as web stiffeners, sleeve penetrations, etc.</li> </ul>	 <p><i>21 B1010.10-LOD-350 Floor Structural Frame (Steel Framing Beams)</i></p>
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Welds</li> <li>• Coping of members</li> <li>• Bent plates, cap plates, etc.</li> <li>• Bolts, washers, nuts, etc.</li> <li>• All assembly elements</li> </ul>	 <p><i>22 B1010.10-LOD-400 Floor Structural Frame (Steel Framing Beams)</i></p>

**B1010.10 – Floor Structural Frame (Steel Framing Miscellaneous Members)**

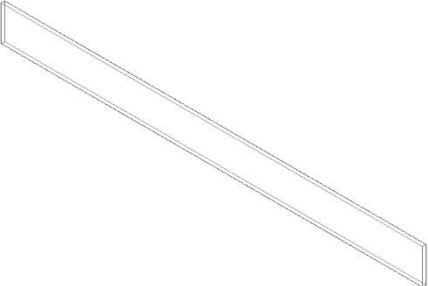
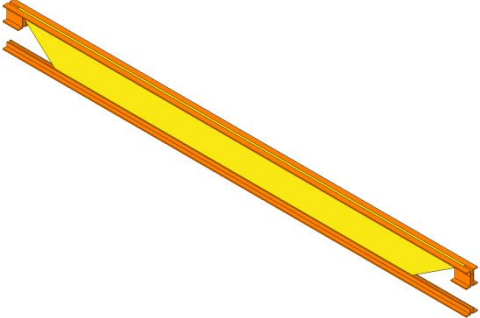
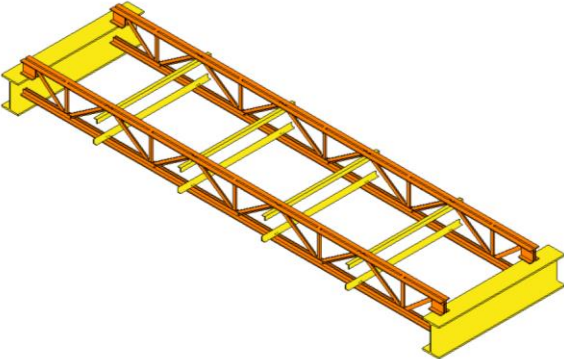
100	See <a href="#">B10</a>	
200	See <a href="#">B1010</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Specific sizes of main horizontal structural members modeled per defined structural grid with correct orientation, slope and elevation</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Structural steel materials defined</li> <li>• Connection details</li> <li>• Finishes, i.e. painted, galvanized, etc.</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Actual elevations and location of member connections</li> <li>• Large elements of typical connections applied to all structural steel connections such as base plates, gusset plates, anchor rods, etc.</li> <li>• Any miscellaneous steel members with correct orientation</li> <li>• Any steel structure reinforcement such as web stiffeners, sleeve penetrations, etc.</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Welds</li> <li>• Coping of members</li> <li>• Cap plates</li> <li>• Washers, nuts, etc.</li> <li>• All assembly elements</li> </ul>	



### B1010.10 – Floor Structural Frame (Steel Framing Bracing Rods)

100	See <a href="#">B10</a>	
200	See <a href="#">B1010</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Specific sizes of main structural braces modeled per defined structural grid</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Structural steel materials</li> </ul>	 <p><i>23 B1010.100-LOD-300 Floor Structural Frame (Steel Framing Bracing Rods)</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Connection details</li> <li>• Actual elevations and location of member connections</li> <li>• Large elements of typical connections applied to all structural steel connections such as base plates, gusset plates, anchor rods, etc.</li> <li>• Any miscellaneous steel members with correct orientation</li> </ul>	 <p><i>24 B1010.100-LOD-350 Floor Structural Frame (Steel Framing Bracing Rods)</i></p>
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Welds</li> <li>• Clevis</li> <li>• Bolts, washers, nuts, etc.</li> <li>• All assembly elements</li> </ul>	 <p><i>25 B1010.100-LOD-400 Floor Structural Frame (Steel Framing Bracing Rods)</i></p>

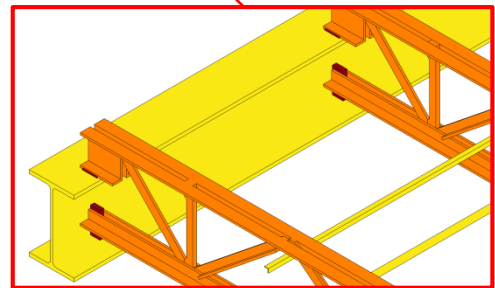
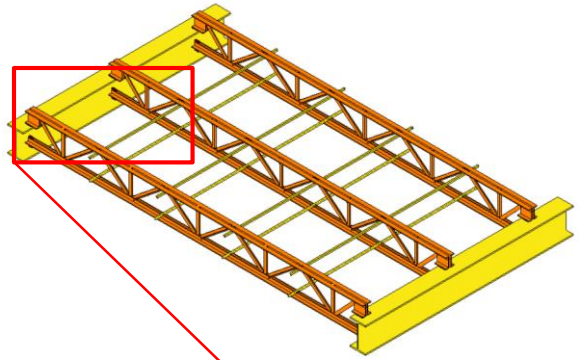
## B1010.10 – Floor Structural Frame (Steel Joists)

100	See <a href="#">B10</a>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Approximate depth</li> </ul>	 <p><i>26 B1010.10-LOD-200 Floor Structural Frame (Steel Joists)</i></p>
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Joist size, depth, slope, and material</li> <li>• Spacing and end elevations</li> <li>• Joist seat depth</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Non-standard joist seat depths and/or sloping joist seat</li> <li>• Member designation, load capacity and deflection criteria</li> <li>• Design loads and location of concentrated loads</li> <li>• Material requirements</li> </ul>	 <p><i>27 B1010.10-LOD-300 Floor Structural Frame (Steel Joists)</i></p>
350	<p>Element modeling to include, information needed for cross trade collaboration such as:</p> <ul style="list-style-type: none"> <li>• Actual final joist profile locations with accurate panel points</li> <li>• Joist bridging and lateral braces.</li> <li>• Fire protection coating</li> <li>• Any miscellaneous steel pertaining to the joist</li> <li>• Joist seat width</li> <li>• Erection details for installation</li> <li>• Chord and web member section profiles are defined</li> <li>• Joist layout in coordination with metal deck fasteners would be confirmed</li> <li>• Non-standard joist seat depths and/or sloping joist seat</li> </ul>	 <p><i>28 B1010.10-LOD-350 Floor Structural Frame (Steel Joists)</i></p>

400

Element modeling to include:

- Welds
- Connection plates
- Member fabrication part number
- Quantity
- Spacing
- Anchorage
- Material required for proper installation
- Mark identification that correlates with bill of material
- Type of shop paint if required

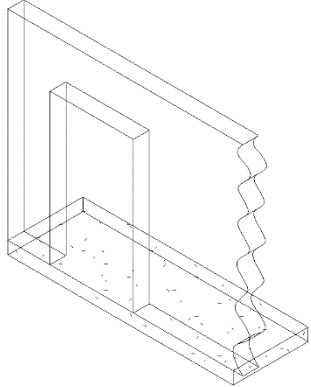
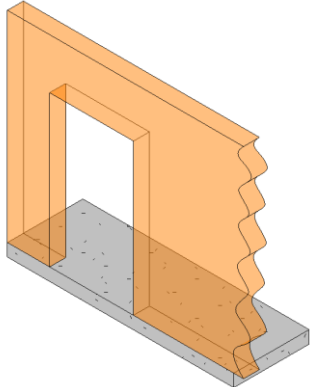
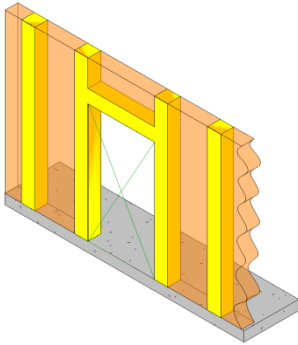


29 B1010.10-LOD-400 Floor Structural Frame (Steel Joists)

### B1010.10 – Floor Structural Frame (Cold-Formed Metal Framing)

100	See <a href="#">B10</a>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Rough architectural masses</li> <li>• Approximate member depth</li> <li>• Desired member spacing</li> </ul>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• floor element with design-specified locations and geometries</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Member size, depth, and material with sloping geometry</li> <li>• Spacing and end elevations</li> <li>• Design loads</li> <li>• Deflection criteria</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Members modeled at any interface with wall edges (top, bottom, sides) or opening through wall</li> <li>• Bridging or straps</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Welds</li> <li>• Connections</li> <li>• Member fabrication part number</li> <li>• Any part required for complete installation</li> </ul>	

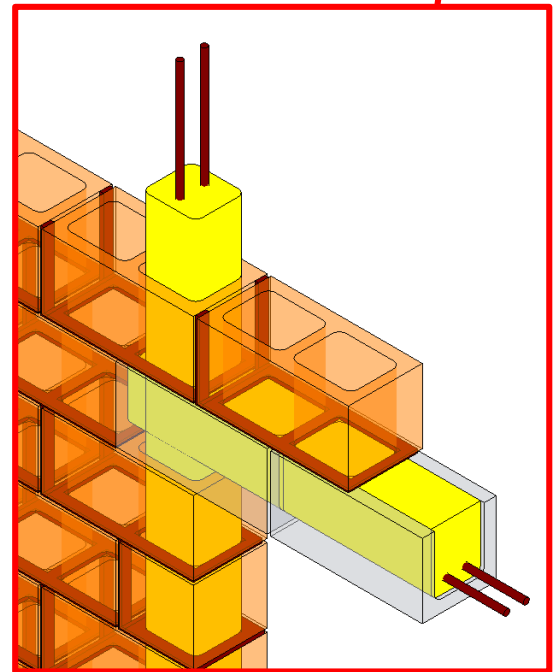
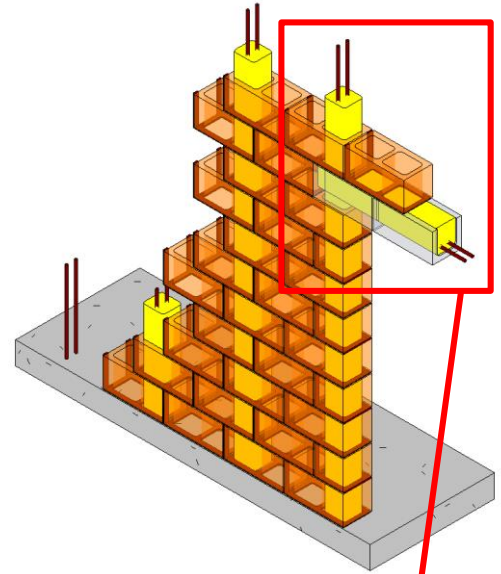
### B1010.10 – Floor Structural Frame (Masonry Framing)

100	See <a href="#">B10</a>	
200	See <a href="#">B10</a>	 <p data-bbox="980 800 1471 852"><i>30 B1010.10-LOD-200 Floor Structural Frame (Masonry Framing)</i></p>
300	<p data-bbox="228 884 537 909">Element modeling to include:</p> <ul data-bbox="277 926 837 982" style="list-style-type: none"> <li>• floor element with design-specified locations and geometries</li> </ul> <p data-bbox="228 999 927 1052">Required non-graphic information associated with model elements includes:</p> <ul data-bbox="277 1073 919 1182" style="list-style-type: none"> <li>• Member size, depth, and material with sloping geometry</li> <li>• Spacing and end elevations</li> <li>• Design loads</li> <li>• Deflection criteria</li> </ul>	 <p data-bbox="980 1341 1471 1394"><i>31 B1010.10-LOD-300 Floor Structural Frame (Masonry Framing)</i></p>
350	<p data-bbox="228 1425 537 1451">Element modeling to include:</p> <ul data-bbox="277 1472 919 1665" style="list-style-type: none"> <li>• Members modeled at any interface with wall edges (top, bottom, sides) or opening through wall</li> <li>• Any regions that would impact coordination with other systems such as but not limited to: <ul data-bbox="370 1581 740 1665" style="list-style-type: none"> <li>○ Bond Beam &amp; Lintel Regions</li> <li>○ Reinforcing &amp; Embed Regions</li> <li>○ Jam Regions</li> </ul> </li> </ul>	 <p data-bbox="980 1803 1471 1856"><i>32 B1010.10-LOD-350 Floor Structural Frame (Masonry Framing)</i></p>

400

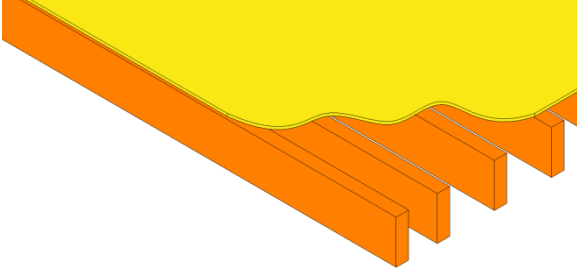
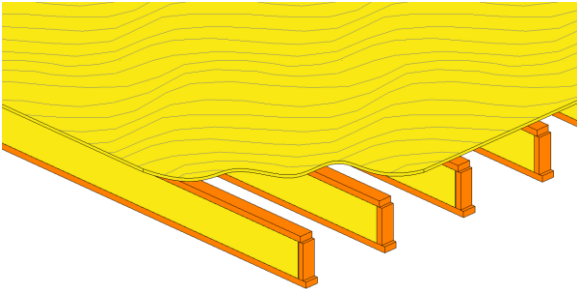
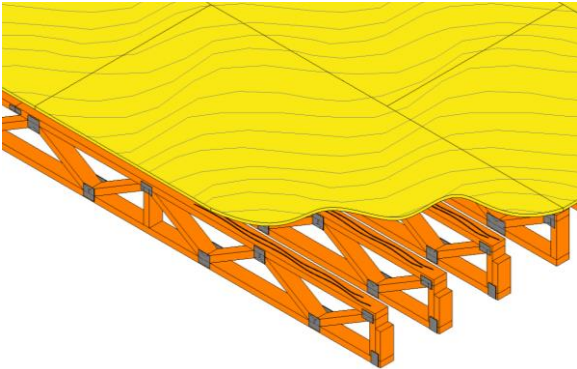
Element modeling to include:

- Reinforcing
- Connections
- Grouting Material
- Jams
- Bond Beams
- Lintels
- Member fabrication part number
- Any part required for complete installation



33 B1010.10-LOD-400 Floor Structural Frame  
(Masonry Framing)

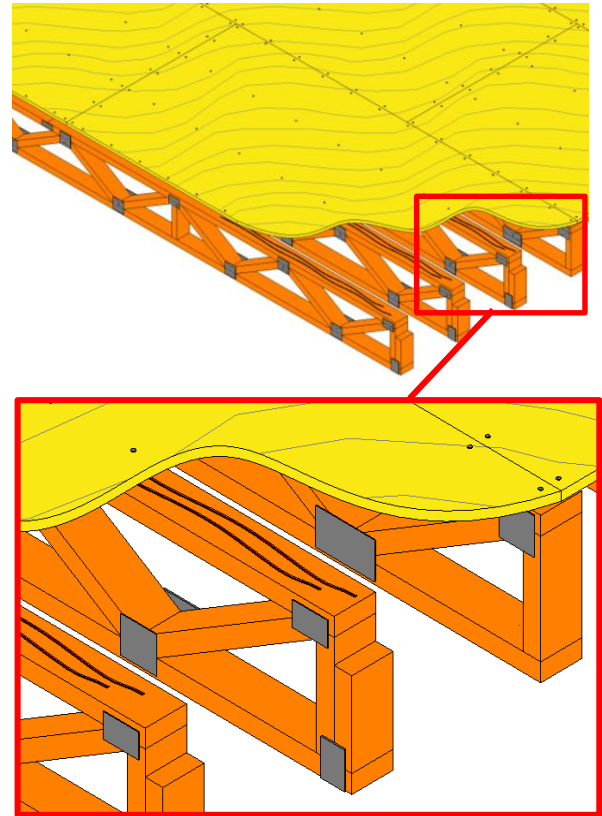
## B1010.10 – Floor Structural Frame (Wood Floor Trusses)

100	See <a href="#">B10</a>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Approximate depth</li> <li>• Top chord or bottom chord bearing</li> <li>• Truss orientation</li> <li>• Approximate depth</li> <li>• Approximate width</li> <li>• Truss orientation</li> <li>• Approximate centerline location of individual trusses</li> </ul>	 <p><i>34 B1010.10-LOD-200 Floor Structural Frame (Wood Floor Trusses)</i></p>
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Truss size, depth, and material with sloping geometry</li> <li>• Spacing and end elevations</li> <li>• Support locations</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Member designation, load capacity and deflection criteria</li> <li>• Design loads</li> </ul>	 <p><i>35 B1010.10-LOD-300 Floor Structural Frame (Wood Floor Trusses)</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Actual final truss profile with accurate panel points</li> <li>• Bridging and lateral braces</li> <li>• Fire protection coating</li> <li>• Any miscellaneous framing pertaining the truss</li> <li>• Erection details for installation</li> <li>• Chord and web member section profiles are accurately defined</li> <li>• Truss layout in coordination with deck fasteners would be confirmed</li> <li>• Hold down locations for large bolts.</li> </ul>	 <p><i>36 B1010.10-LOD-350 Floor Structural Frame (Wood Floor Trusses)</i></p>

400

Element modeling to include:

- Fasteners
- Sealant
- Truss plates and connection material
- Nails and fasteners
- Truss plates.
- Deck patterns and joints



37 B1010.10-LOD-400 Floor Structural Frame (Wood Floor Trusses)



## B1010.20 – Floor Decks, Slabs, and Toppings

*Description: Structural slab, deck, and sheathing floor construction at intermediate floors of basement construction and above grade. Includes cast-in-place concrete, precast concrete, cementitious decks and toppings, metal decking, wood sheathing, and wood decking. Includes framed and sleeved penetrations for services and housekeeping pads for equipment. Includes Floor Construction Supplementary Components as appropriate.*

Specific structural systems within this section are listed as follows:

- [Wood Floor Deck](#)
- [Metal Floor Deck](#)
- [Composite Floor Deck](#)
- [Concrete](#)

### B1010.20 – Floor Decks, Slabs, and Toppings (Wood Floor Deck)

100	See <a href="#">B10</a>	
200	See <a href="#">B10</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Applicable slopes</li> <li>• Expected framing member profiles, spacing, and material</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Deck orientation</li> <li>• Deck material layer thicknesses</li> <li>• Diaphragm load and deflection criteria</li> <li>• Deck Material</li> <li>• Deck fasteners</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Deck edge location</li> <li>• Actual framing member and location per manufacture</li> <li>• All miscellaneous framing including braces, kickers, etc.</li> <li>• Deck openings modeled with support framing around openings</li> <li>• Point load locations</li> <li>• Actual opening locations and sizes defined</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• All framing accessory and fasteners modeled per expected installation</li> <li>• Waterproofing</li> </ul>	

**B1010.20 – Floor Decks, Slabs, and Toppings (Metal Floor Deck)**

100	See <a href="#">B10</a>	
200	See <a href="#">B10</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Deck thickness</li> <li>• Specific Framing member profiles, spacing, and material</li> <li>• Opening locations are prescriptively defined with notes for additional miscellaneous framing</li> <li>• Point load locations</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Diaphragm load and deflection criteria</li> <li>• Deck material</li> <li>• Deck fasteners</li> <li>• Typical weld specifications</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Deck edge location</li> <li>• Deck splice and end lap locations</li> <li>• Actual deck profile and flute locations per manufacturer</li> <li>• All miscellaneous framing including braces, kickers, etc.</li> <li>• Deck openings modeled with support framing</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• All framing accessory and fasteners modeled per expected installation</li> <li>• Welds</li> <li>• Waterproofing</li> </ul>	

**B1010.20 – Floor Decks, Slabs, and Toppings (Composite Floor Deck)**

100	See <a href="#">B10</a>	
200	See <a href="#">B10</a>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Specific deck thickness</li> <li>• Specific Framing member profiles, spacing, material</li> <li>• Opening locations are prescriptively defined with notes for additional miscellaneous framing</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Specific deck material</li> <li>• Deck fasteners</li> <li>• Typical weld specifications</li> <li>• Camber</li> <li>• Shear studs</li> <li>• Toppings</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Deck edge location</li> <li>• Actual deck profile and flute locations per manufacture</li> <li>• Deck splice and end lap locations</li> <li>• Actual framing member and location per manufacture</li> <li>• All miscellaneous framing including deck support, deck closure, shear studs, etc.</li> <li>• Slab openings modeled with support framing around openings</li> <li>• Point load locations</li> <li>• Slab reinforcing modeled if specified in BIMXP</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• All framing accessory and fasteners modeled per expected installation</li> <li>• All slab reinforcing</li> <li>• Welds</li> <li>• Waterproofing</li> </ul>	

## B1010.20 – Floor Decks, Slabs, and Toppings (Concrete)

100	See <a href="#">B10</a>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Type of structural concrete system</li> <li>Approximate geometry (e.g. depth) of structural elements</li> </ul>	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Specific sizes and locations of main concrete structural members modeled per defined structural grid with correct orientation</li> <li>All sloping surfaces included in model element with exception of elements affected by manufacturer selection</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>Concrete strength,</li> <li>Reinforcing strength</li> <li>Air entrainment,</li> <li>Aggregate size</li> <li>Typical details</li> </ul>	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>Reinforcement called out, modeled if required by the BIMXP, typically only in congested areas</li> <li>Pour joints and sequences to help identify reinforcing lap splice locations, scheduling, etc.</li> <li>Expansion Joints</li> <li>Embeds and anchor rods</li> <li>Post-tension profile and strands modeled if required by the BIMXP</li> <li>Penetrations for items such as MEP</li> <li>Any permanent forming or shoring components</li> <li>Shear reinforcing and stud rails</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>Embeds and anchor rods</li> <li>Aggregate, clear cover</li> <li>Reinforcing spacing</li> <li>Reinforcing</li> <li>Live loads</li> <li>Shear reinforcing and stud rails</li> <li>Reinforcing post-tension profiles and strand locations</li> <li>Penetrations for items such as MEP</li> <li>Finishes, camber, chamfers, etc.</li> </ul>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>All reinforcement including post tension elements detailed and modeled</li> <li>Finishes, camber, chamfer, etc.</li> </ul>	

## B1020 – Roof Construction

[See [B1010](#)]

### B1020.10 – Roof Structural Frame

*Description: Structural elements required for support of floor construction within basements and above grade. Includes columns, girders, beams, trusses, joists. Includes cast-in-place concrete, precast concrete, unit masonry, metal framed, and wood framed systems. Includes framed and sleeved openings for services. Includes Floor Construction Supplementary Components as appropriate.*

[See [B1010.10](#)]

### B1020.20 – Roof Decks, Slabs, and Sheathing

*Includes: Structural roof deck, slab, and sheathing construction. Includes cast-in-place concrete, precast concrete, cementitious decks and toppings, metal decking, wood sheathing, wood decking, timber decking and expansion control. Includes framed and sleeved penetrations for services and housekeeping pads for equipment. Includes Roof Construction Supplementary Components as appropriate.*

[See [B1010.20](#)]

### B1020.30 – Canopy Construction

*Includes: Structural frame and decks, slabs, and sheathing for canopy construction.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

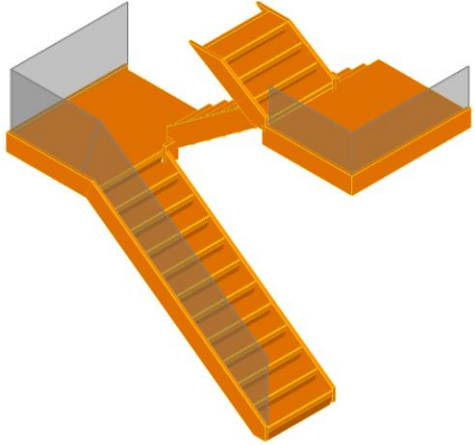
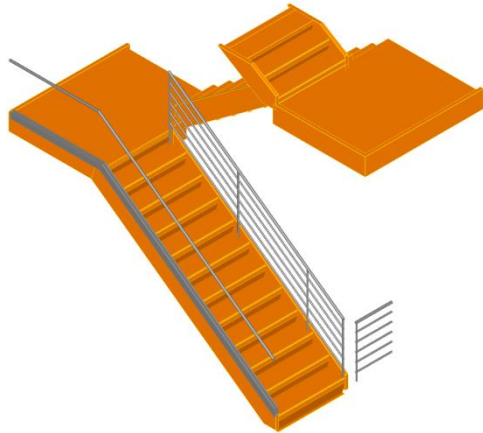
[See [B1010.20](#)]

## B1080 – Stairs

100	Assumptions for all stair systems (including railings, fire escapes, walkways, and ladders) are included in other modeled elements such as a spatial or massing element; or, schematic model element that indicates the approximate overall dimensions of the stair layout.	
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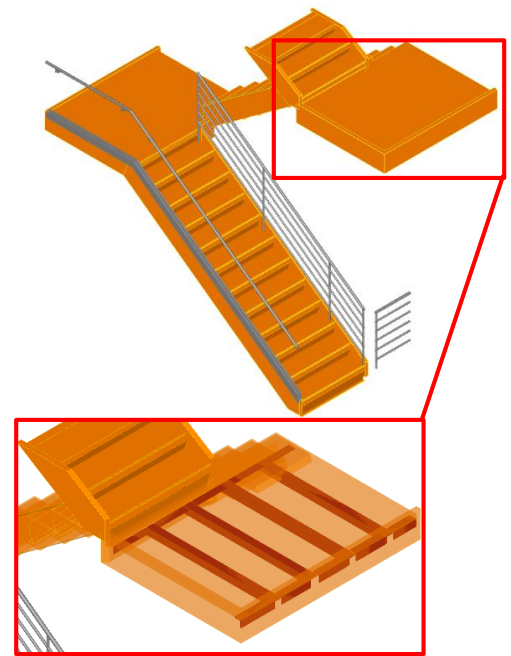
### B1080.10 – Stair Construction

*Includes: Structural framing for exterior and interior stairs including treads, risers, and landings. Includes fire escapes and ladders.*

100	See <a href="#">B1080</a>	
200	<p>Generic model element with simplified treads and risers.</p> <p>Nominal overall unit scope shall include:</p> <ul style="list-style-type: none"> <li>• Nominal plan dimensions (length, width)</li> <li>• Nominal vertical dimensions (levels, landings)</li> </ul>	 <p>38 B1080.10-LOD-200 Stair Construction</p>
300	<p>Major stair support elements are modeled (stringers).</p> <p>Treads and risers are modeled to indicate design-specified nosing conditions.</p>	 <p>39 B1080.10-LOD-300 Stair Construction</p>

350

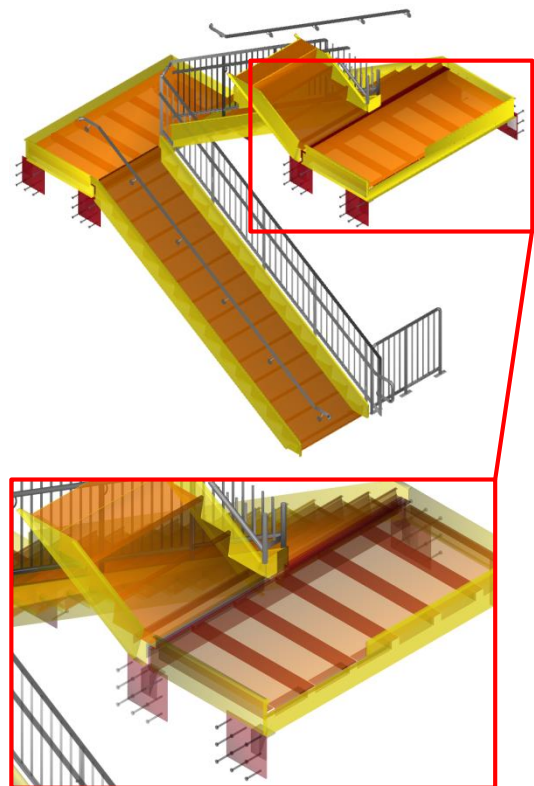
Secondary stair support elements are modeled (hangers, brackets, etc.).  
Required clearance/code zones are modeled.



40 B1080.10-LOD-350 Stair Construction

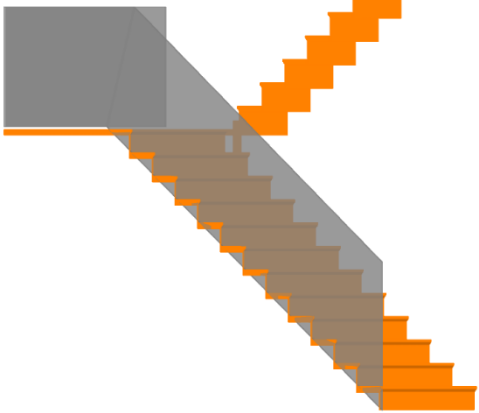
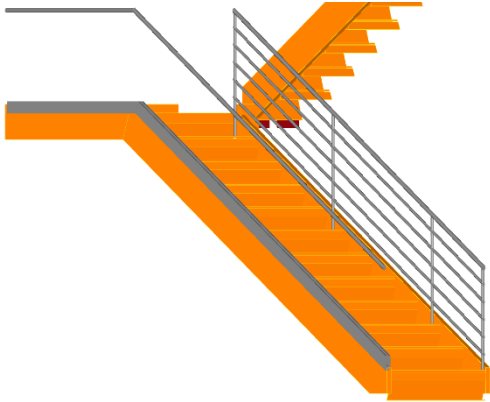
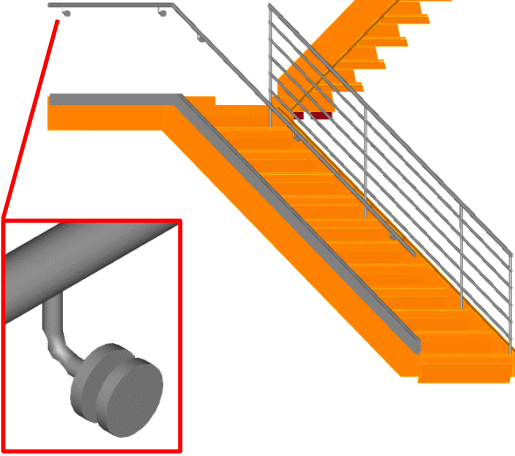
400

All stair elements are modeled to support fabrication and installation.

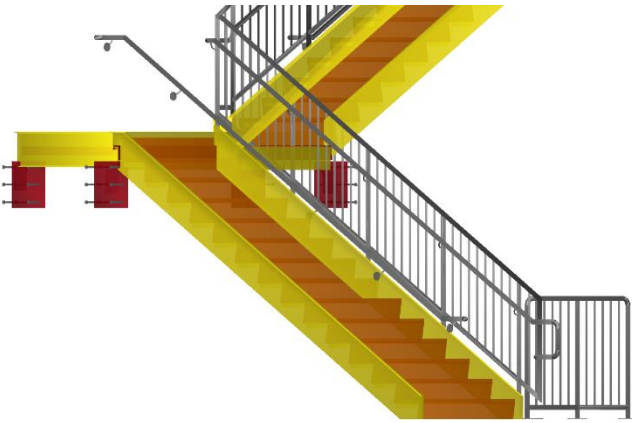


41 B1080.10-LOD-400 Stair Construction

## B1080.50 – Stair Railings

100	See <a href="#">B1080</a>	
200	Generic model elements without articulation of material or railing structure such as balusters, posts, or supports.	 <p data-bbox="899 758 1289 785"><i>42 B1080.50-LOD-200 Stair Railings</i></p>
300	<p>Modeled assemblies by type to include:</p> <ul style="list-style-type: none"> <li>• Railings</li> <li>• Balusters</li> <li>• Posts</li> <li>• Supports for wall mounted railings</li> </ul> <p>Required non-graphic information associated with model element includes:</p> <ul style="list-style-type: none"> <li>• Material</li> </ul>	 <p data-bbox="899 1251 1289 1278"><i>43 B1080.50-LOD-300 Stair Railings</i></p>
350	<p>Secondary railing support elements are modeled including:</p> <ul style="list-style-type: none"> <li>• Bracing or backing for supports</li> </ul>	 <p data-bbox="915 1808 1305 1835"><i>44 B1080.50-LOD-350 Stair Railings</i></p>



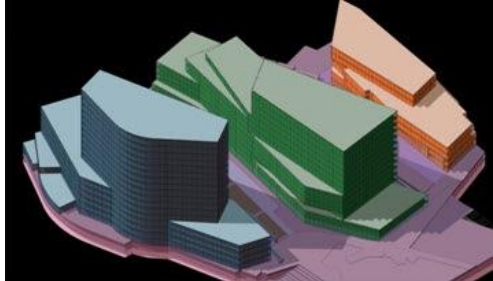
400	[See <a href="#">Fundamental LOD Definitions</a> ]	 <p data-bbox="889 703 1282 735"><i>45 B1080.50-LOD-400 Stair Railings</i></p>
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**B1080.60 – Fire Escapes**  
[See [B1080.10](#) and [B1080.50](#)]

**B1080.70 – Metal Walkways**  
[See [B1080.10](#) and [B1080.50](#)]




**B1080.80 – Ladders**  
[See [B1080.10](#) and [B1080.50](#)]

## B20 Exterior Vertical Enclosures

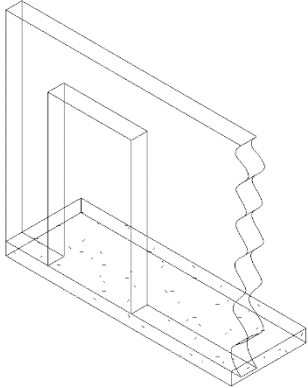
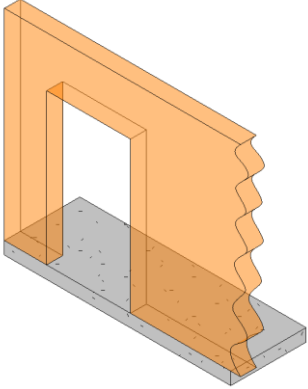
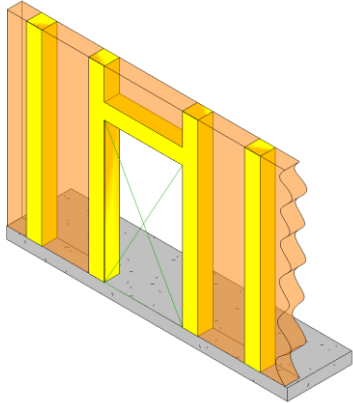
100	<p>Solid mass model representing overall building volume; or, schematic wall elements that are not distinguishable by type or material.</p> <p>Assembly depth/thickness and locations still flexible.</p>	
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## B2010 – Exterior Walls

*Solid wall construction that is composite in nature; in other words, multiple layers of materials to form an overall assembly.*

100	See <a href="#">B20</a>	
200	<p>Generic wall objects separated by type of material (e.g. brick wall vs. terracotta).</p> <p>Approximate overall wall thickness represented by a single assembly.</p> <p>Layouts and locations still flexible.</p>	 <p style="text-align: center;"><i>46 B2010-LOD-200 Exterior Walls</i></p>
300	<p>Composite model assembly with specific overall thickness that accounts for veneer, structure, insulation, air space, and interior skin specified for the wall system. (Refer to LOD350 and LOD400 for individually modeled elements)</p> <p>Penetrations are modeled to nominal dimensions for major wall openings such as windows, doors, and large mechanical elements.</p> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Wall type</li> <li>• Materials</li> </ul>	 <p style="text-align: center;"><i>47 B2010-LOD-300 Exterior Walls</i></p>
350	<p>A composite wall assembly may be considered for LOD350 only if hosted objects such as windows and doors are provided at a minimum of LOD350.</p> <p>Main structural members such as headers and jambs at openings are modeled within the composite assembly.</p>	 <p style="text-align: center;"><i>48 B2010-LOD-350 Exterior Walls</i></p>

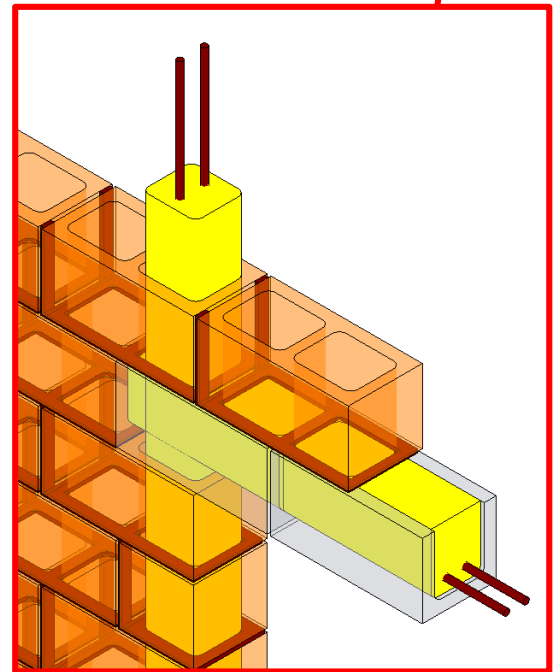
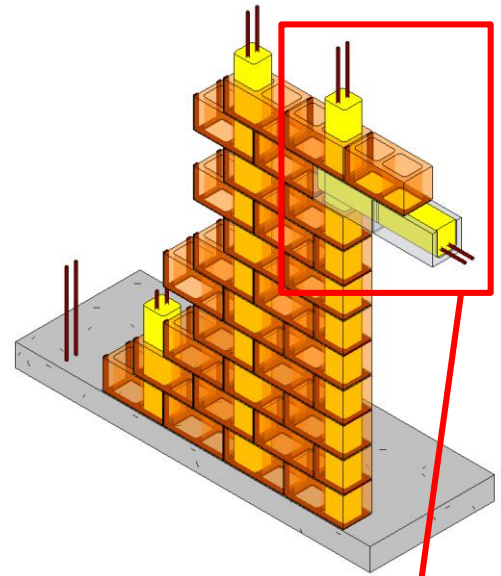
## B2010 – Exterior Wall (Masonry)

100	See <a href="#">B10</a>	
200	See <a href="#">B2010</a>	 <p data-bbox="980 779 1479 808"><i>49 B2010.04-LOD-200 Exterior Wall (Masonry)</i></p>
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Element with design-specified locations and geometries</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Member size, depth, and material with sloping geometry</li> <li>• Spacing and end elevations</li> <li>• Design loads</li> <li>• Deflection criteria</li> </ul>	 <p data-bbox="980 1289 1479 1318"><i>50 B2010.04-LOD-300 Exterior Wall (Masonry)</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Members modeled at any interface with wall edges (top, bottom, sides) or opening through wall</li> <li>• Any regions that would impact coordination with other systems such as but not limited to: <ul style="list-style-type: none"> <li>○ Bond Beam &amp; Lintel Regions</li> <li>○ Reinforcing &amp; Embed Regions</li> <li>○ Jam Regions</li> </ul> </li> </ul>	 <p data-bbox="980 1787 1479 1816"><i>51 B2010.04-LOD-350 Exterior Wall (Masonry)</i></p>

400

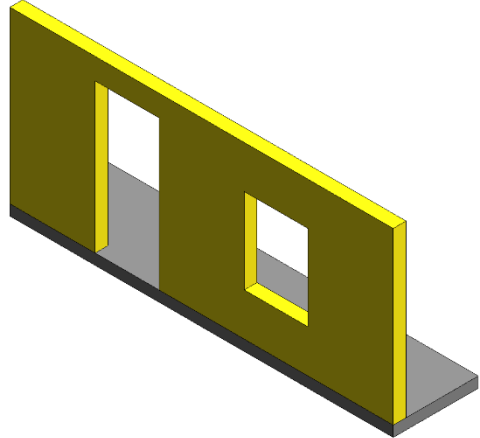
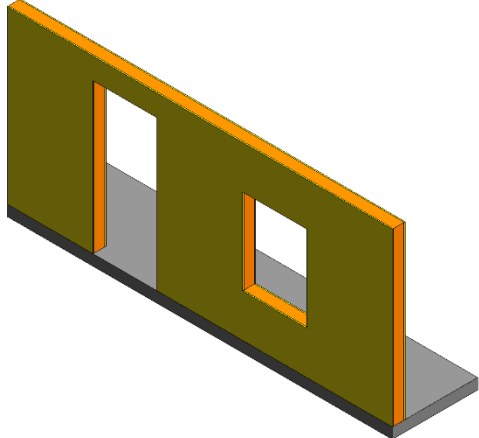
Element modeling to include:

- Reinforcing
- Connections
- Grouting Material
- Jams
- Bond Beams
- Lintels
- Member fabrication part number
- Any part required for complete installation



52 B2010.04-LOD-400 Exterior Wall (Masonry)

### B2010 – Exterior Wall (Cold-Form Metal Framing)

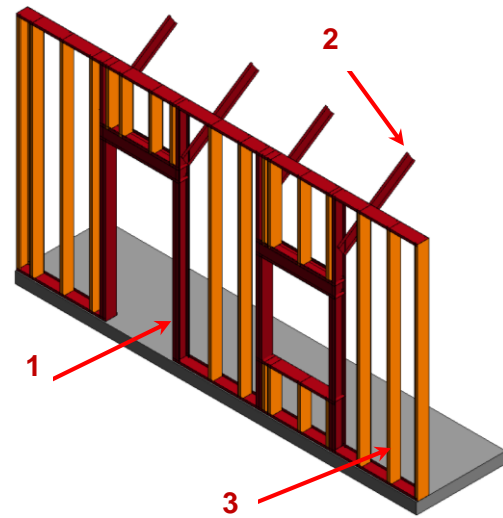
100	See <a href="#">B20</a>	
200	See <a href="#">B2010</a>	 <p data-bbox="915 772 1430 831"><i>53 B2010.05-LOD-200 Exterior Wall (Cold-Form Metal Framing)</i></p>
300	See <a href="#">B2010</a>	 <p data-bbox="911 1367 1430 1425"><i>54 B2010.05-LOD-300 Exterior Wall (Cold-Form Metal Framing)</i></p>

350

Cold formed metal framing is developed with sufficient elements to support detailed interface coordination with other systems such as MEP.

*Image notes:*

- 1) *Elements in red are critical wall support elements that cannot be easily cut for coordination of MEP opening through the walls.*
- 2) *Diagonal bracing (kickers) that may be in the above ceiling space are modeled for coordination with other building content such as MEP passing along the wall in the above ceiling spaces.*
- 3) *Infill cold formed metal framing modeling (Orange) may be omitted at this LOD if stated in the BXP.*
- 4) *Cladding and sheathing are not shown for clarity in this image.*



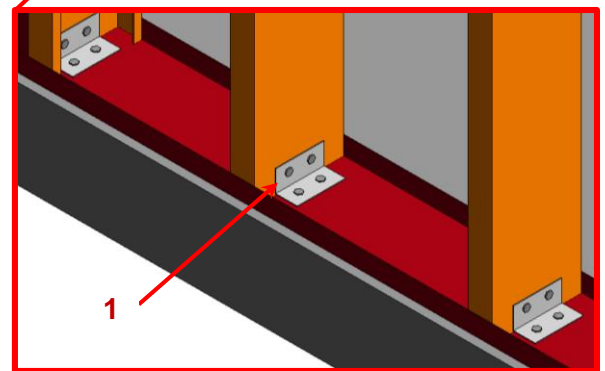
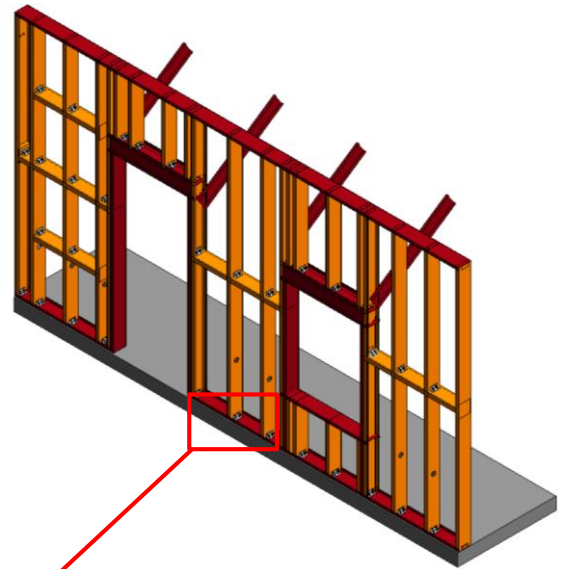
55 B2010.05-LOD-350 Exterior Wall (Cold-Form Metal Framing)

400

Cold formed metal framing is developed with sufficient elements that support the fabrication of the CFMF system.

*Image notes:*

- 1) *Connection content is development in the wall elements. This includes but is not limited to fasteners, clips, and other related hardware.*
- 2) *Cladding and sheathing are not shown for clarity in this image.*

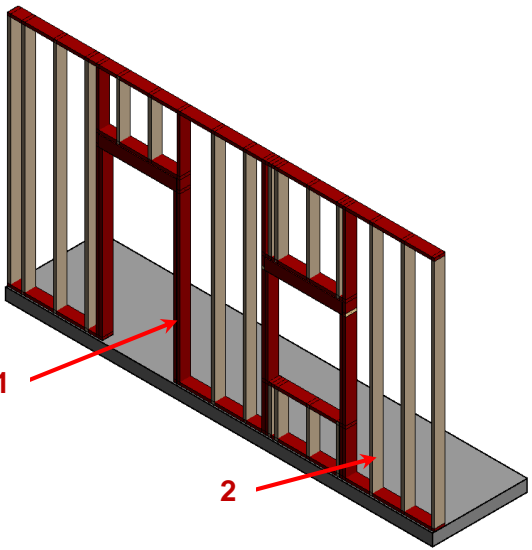
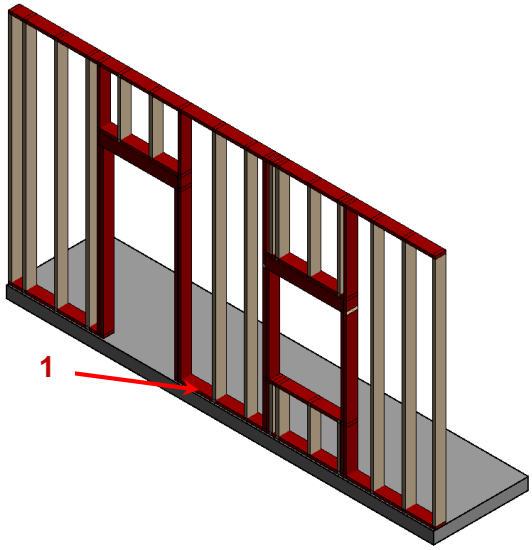


56 B2010.05-LOD-400 Exterior Wall (Cold-Form Metal Framing)

### B2010 – Exterior Wall (Wood)

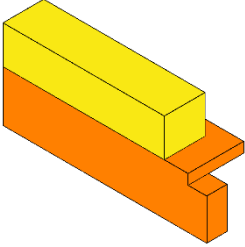
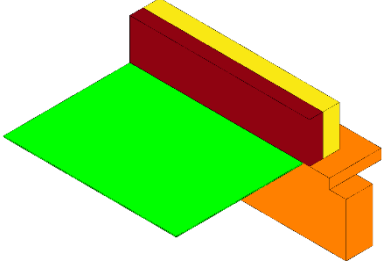
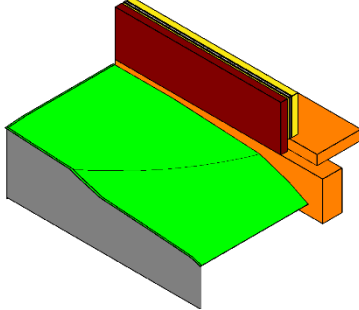
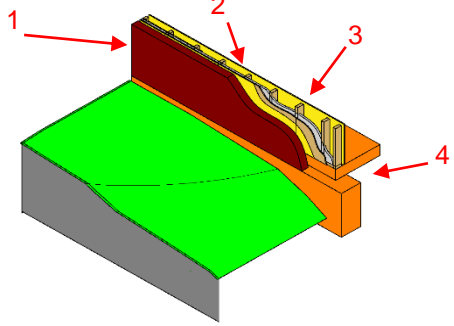
100	See <a href="#">B20</a>	
200	See <a href="#">B2010</a>	 <p data-bbox="915 793 1386 825"><i>57 B2010.06-LOD-200 Exterior Wall (Wood)</i></p>
300	See <a href="#">B2010</a>	 <p data-bbox="922 1371 1393 1402"><i>58 B2010.06-LOD-300 Exterior Wall (Wood)</i></p>



<p>350</p>	<p>Wood framing is developed with sufficient elements to support detailed interface coordination with other systems such as MEP.</p> <p><i>Image notes:</i></p> <ol style="list-style-type: none"><li>1) Elements in red are critical wall support elements that cannot be easily cut for coordination of MEP opening through the walls.</li><li>2) Infill wood framing modeling may be omitted at this LOD if stated in the BXP.</li><li>3) Cladding and sheathing are not shown for clarity in this image.</li></ol>	 <p>59 B2010.06-LOD-350 Exterior Wall (Wood)</p>
<p>400</p>	<p>Wood framing is developed with sufficient elements that support the fabrication of the wood framing system.</p> <p><i>Image notes:</i></p> <ol style="list-style-type: none"><li>1) Connection content is development in the wall elements. This includes but is not limited to fasteners, anchor rods, and other related hardware.</li><li>2) Cladding and sheathing are not shown for clarity in this image.</li></ol>	 <p>60 B2010.06-LOD-400 Exterior Wall (Wood)</p>

## B2010.10 – Exterior Wall Veneer

*Description: Nonstructural outside face elements of exterior walls. Includes precast concrete, unit masonry, EIFS, manufactured siding, and stucco.*

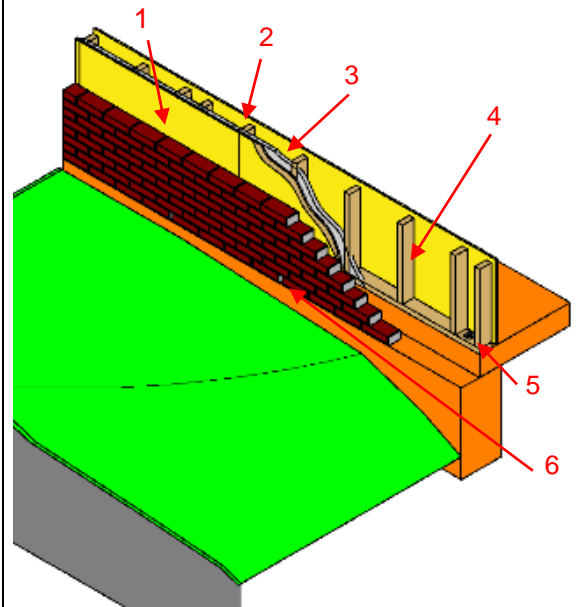
<p>100</p>	<p>See <a href="#">B20</a></p>	 <p>61 B2010.10-LOD-100 Exterior Wall Veneer</p>
<p>200</p>	<p>See <a href="#">B2010</a></p>	 <p>62 B2010.10-LOD-200 Exterior Wall Veneer</p>
<p>300</p>	<p>See <a href="#">B2010</a></p>	 <p>63 B2010.10-LOD-300 Exterior Wall Veneer</p>
<p>350</p>	<p>Exterior wall veneer modeled as a separate element. All openings modeled to rough dimensions. Precast concrete panels are individually modeled. Connection points are specified.</p> <p><i>Images notes:</i></p> <ol style="list-style-type: none"> <li>1) Wall veneer element</li> <li>2) Skin layers</li> <li>3) Core framing</li> <li>4) Concrete slab edge</li> </ol>	 <p>64 B2010.10-LOD-350 Exterior Wall Veneer</p>

400

Element modeling includes:

*Image notes:*


- 1) *Individual masonry units*
- 2) *Skin layers including*
- 3) *Moisture barrier, sheathing, and insulation*
- 4) *Core framing*
- 5) *Bolt*
- 6) *Concrete slab edge*
- 7) *Weep holes*



65 B2010.10-LOD-400 Exterior Wall Veneer

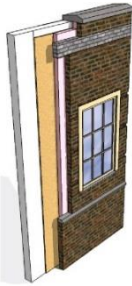
## B2010.20 – Exterior Wall Construction

Description: Exterior wall construction including backup systems for wall veneer. May be vertical load bearing. Includes cast-in-place concrete walls, precast concrete walls, unit masonry walls, metal framed wall systems, and wood framed wall systems.

100	See <a href="#">B20</a>	
200	See <a href="#">B2010</a>	
300	See <a href="#">B2010</a>	
350	Exterior wall construction modeled as a separate element. All openings modeled to rough dimensions. Headers and jamb framing are modeled.	 <p>66 B2010.20-LOD-350 Exterior Wall Construction</p>
400	Element modeling to include: <ul style="list-style-type: none"> <li>• Studs and tracks</li> <li>• Individual masonry units</li> <li>• Reinforcing</li> <li>• Sheathing</li> <li>• Insulation</li> </ul>	

## B2010.30 – Exterior Wall Interior Skin

Description: Materials to provide finish or protective covering on inside of face of exterior walls. May include insulation and vapor retarder.

100	See <a href="#">B20</a>	
200	See <a href="#">B2010</a>	
300	See <a href="#">B2010</a>	
350	Exterior wall interior skin modeled as a separate element. All openings modeled to rough dimensions.	 <p>67 B2010.30-LOD-350 Exterior Wall Interior Skin</p>
400	Element modeling to include: <ul style="list-style-type: none"> <li>• Studs and tracks</li> <li>• Individual masonry units</li> <li>• Reinforcing</li> <li>• Wall board</li> <li>• Insulation</li> </ul>	

## B2010.50 – Parapets

*Exterior wall construction above plane of roof.*

[See [B2010](#), [B2010.10](#), [B2010.20](#), and [B2010.30](#)]

## B2010.60 – Equipment Screens

*Exterior wall construction to screen equipment from public view.*

[See [B2010](#), [B2010.10](#), [B2010.20](#), and [B2010.30](#)]

## B2020 – Exterior Windows

100	See <a href="#">B20</a>	
200	Windows approximate in terms of location, size, count and type. Units are modeled as a simple, monolithic component; or represented with simple frame and glazing.  Nominal unit size is provided.	


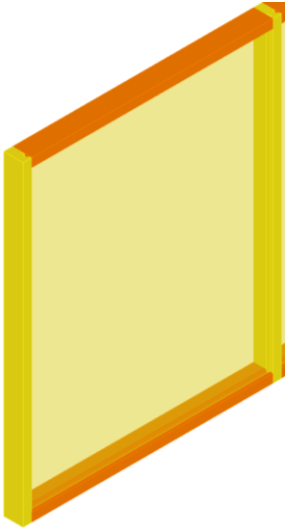
### B2020.10 – Exterior Operating Windows

100	See <a href="#">B20</a>	
200	See <a href="#">B2020</a>	
300	Units are modeled based on specified location and nominal size. Outer geometry of window frame elements and glazing modeled to within 1/8" [3 mm] precision.  Operation is indicated.  Required non-graphic information associated with model elements includes: <ul style="list-style-type: none"> <li>• Aesthetic characteristics (finishes, glass types)</li> <li>• Performance characteristics (i.e. U-value, wind loading, blast resistance, structural, air, thermal, water, sound)</li> <li>• Functionality of the window (fixed, casement, double/single hung, awning/project out, pivot, sliding)</li> </ul>	
350	Rough opening dimensions  Attachment method of window to structure  Embed geometry	
400	Frame profiles  Glazing sub-components (gaskets)  Attachment components	

### B2020.20 – Exterior Fixed Windows

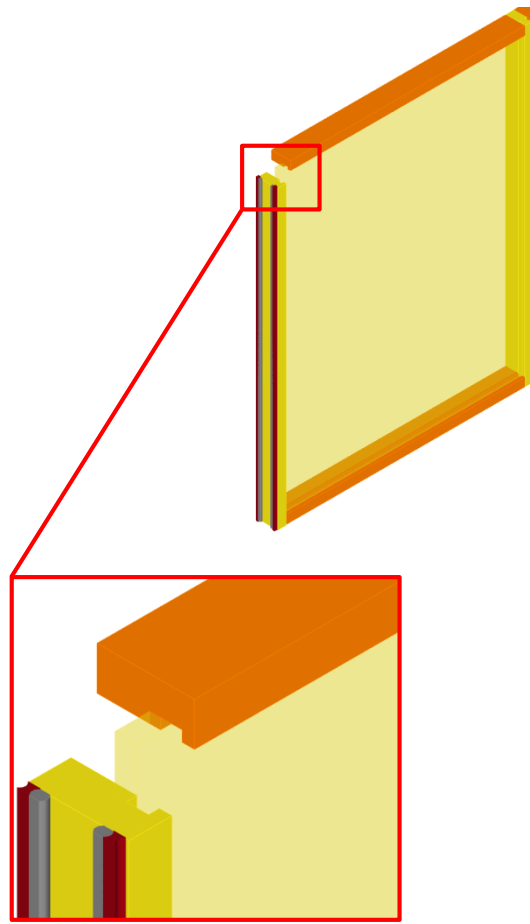
[See [B2020.10](#)]

## B2020.30 – Exterior Window Wall

100	See <a href="#">B20</a>	
200	<p>Generic wall objects representing major types of proposed window wall assemblies.</p> <p>Overall window wall assembly depth represented by a single model object.</p> <p>Layouts and locations still flexible.</p>	 <p><i>68 B2020.30-LOD-200 Exterior Window Wall</i></p>
300	<p>Specified location and orientation of face of glass.</p> <p>Nominal face dimensions and thickness of glazing.</p> <p>Structural support systems of wall to be modeled.</p> <p>Spacing, location, size and orientation of mullions.</p> <p>Operable components defined (windows, louvers and doors) and included in model.</p>	 <p><i>69 B2020.30-LOD-300 Exterior Window Wall</i></p>

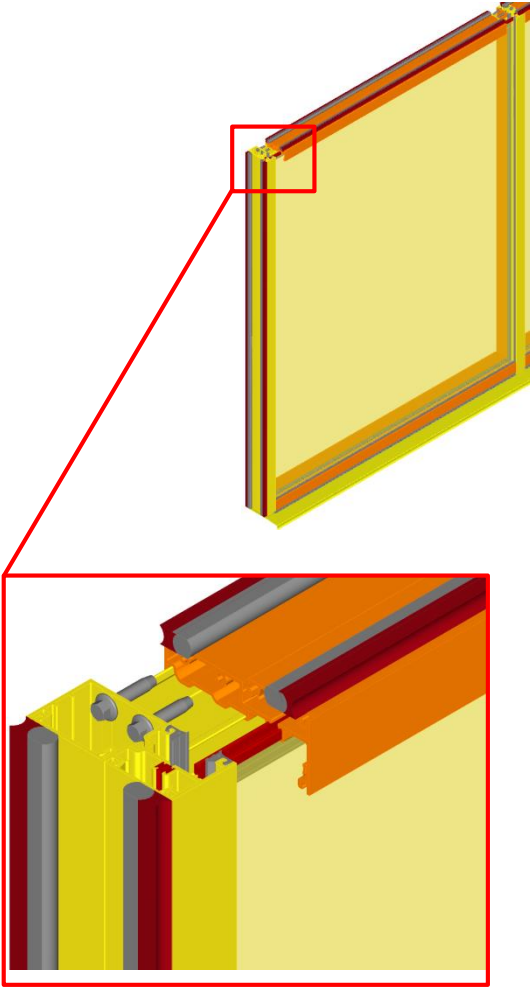
350

Mullion shapes and geometry defined.  
Actual anchorage layouts and types defined.  
Actual panel dimensions (including seating).



70 B2020.30-LOD-350 Exterior Window Wall



<p>400</p>	<p>Complete mullion extrusion profiles.                  Interface details between wall systems (within) and wall and support systems including sealants, end dams, flashings and membranes.</p>	 <p>71 B2020.30-LOD-400 Exterior Window Wall</p>
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**B2020.50 – Exterior Special Function Windows**

[See [B2020.10](#)]

**B2050 – Exterior Doors and Grilles**

<p>100</p>	<p>Simple representation of a door unit. Size, count, and location are approximate.</p>	
<p>200</p>	<p>Units are modeled as a simple, monolithic component; or represented with simple frame and panel.                  Nominal unit size is provided.</p>	

## B2050.10 – Exterior Entrance Doors

*Exterior personnel door assemblies at main entrances. Includes automatic, revolving, balanced, and other special operating entrance doors, and sliding storefront wall systems.*

100	See <a href="#">B20</a>	
200	See <a href="#">B2050</a>	
300	<p>Entrance door assemblies modeled by type to include the following:</p> <p>Specific door panels and frames (if applicable).</p> <p>Hardware set functionality and types are specified in non-graphic information.</p> <p>Operation is specified .Spatial requirements for operation are modeled.</p>	
350	<p>Rough opening is modeled (if applicable).</p> <p>Major framing elements are modeled at jambs and head.</p> <p>Operation or mechanism enclosures are modeled.</p>	
400	<p>Actual frame/mullion extrusions.</p> <p>Actual panel size dimensions.</p> <p>All connections and interfaces modeled including brackets, supports, sealants, and thresholds.</p>	

## B2050.20 – Exterior Utility Doors

*Exterior personnel door assemblies other than at main entrances.*

100	See <a href="#">B20</a>	
200	See <a href="#">B2050</a>	
300	<p>Entrance door assemblies modeled by type to include the following:</p> <p>Specific door panels and frames (if applicable).</p> <p>Hardware set functionality and types are specified in non-graphic information.</p> <p>Operation is specified graphicly and with non-graphic information.</p> <p>Spatial requirements for operation are provided.</p>	
350	<p>Rough opening is modeled</p> <p>Major framing elements are modeled at jambs and head</p>	
400	<p>All connections and interfaces modeled including brackets, supports, sealants, and thresholds.</p>	

## B2050.30 – Exterior Oversize Doors

*Large exterior door assemblies to allow for passage of large objects involving various operating methods.*

100	See <a href="#">B20</a>	
200	See <a href="#">B2050</a>	
300	Oversize door assemblies modeled by type to include the following:  Door panels with nominal dimensions. Frames with nominal dimensions. Hardware set functionality and types included in non-graphic information. Clearance zones are modeled for operation of overhead doors. Enclosures and motor housings are modeled with overall nominal dimensions.	
350	Rough opening is modeled (if applicable).  Major framing elements in wall are modeled at jambs and head.  Other major structural support elements are modeled such as support posts and beams.	
400	All connections and interfaces modeled including brackets, supports, sealants, and thresholds.	

## B2050.40 – Exterior Special Function Doors

[See [B2050.20](#) or [B2050.30](#)]

## B2050.60 – Exterior Grilles

*Exterior devices of open construction to provide moveable barrier to provide access through wall or other divider.*

100	See <a href="#">B20</a>	
200	See <a href="#">B2050</a>	
300	Grille assemblies modeled by type to include the following:  Nominal size of unit. Required openness provided as non-graphic information. Operation is specified.	
350	Rough opening is modeled (if applicable).  Major framing elements are modeled at jambs and head.	
400	All connections and interfaces modeled including brackets, supports, sealants, and thresholds.	

## B2050.70 – Exterior Gates

*Exterior devices of solid or open construction to provide moveable barrier to provide access through wall or other divider.*

[See [B2050.60](#)]

## B2050.90 – Exterior Door Supplementary Components

*Includes frames, hardware, glazing and louvers that are part of door to be included with exterior door elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

## B2070 - Exterior Louvers and Vents

100	See <a href="#">B20</a>	
200	Generic model element that is indicative of approximate area and location of intended louver/vent.	

## B2070.10 – Exterior Louvers

100	See <a href="#">B20</a>	
200	See <a href="#">B2070</a>	
300	Louver assembly modeled by type, indicative of area and location of intended louver/vent.  Includes accurate frame (boundary dimensions) and blades.  Opening for louver is cut from host wall  Performance level defined in non-graphic information associated with model elements (e.g. storm proof or not, free air)	
350	Rough opening is modeled (if applicable)  Major framing elements are modeled at connection points.  Connection points are modeled.	
400	All connections and interfaces modeled including brackets, supports, and sealants.	

## B2070.50 – Exterior Vents

[See [B2070.10](#)]

## B2080 - Exterior Wall Appurtenances

[See [B2050](#)]

## B2080.10 – Exterior Fixed Grilles and Screens

*Exterior enclosures, grilles and screens of wood, metal, plastic, and other materials for a variety of purposes including screening of equipment.*

[See [B2050.60](#)]

## B2080.30 – Exterior Opening Protection Devices

*Manufactured items such as louvers, fins, shutters, demountable panels, awnings, and sun screens to provide sun control, privacy, security, insulation, and storm protection on exterior of windows, skylights, and entrances. Includes fixed and moveable, manually and electrically operated, and automatically controlled devices.*

[See [B2010.60](#)]

## B2080.50 – Exterior Balcony Walls and Railings

[See [B2010.50](#)]

## B2080.70 – Exterior Fabrications

Fabrications of a variety of materials formed to various profiles for a variety of purposes including column covers, decorative metal, ornamental woodwork, and plaster fabrications.

[See [Fundamental LOD Definitions](#)]

## B2080.80 – Bird Control Devices

[See [Fundamental LOD Definitions](#)]

## B2090 – Exterior Wall Specialties

Complete fabrication of metal, wood, and fiberglass, including accessories and appurtenances. For example, clocks, below-grade egress assemblies, and window wells.

[See [Fundamental LOD Definitions](#)]

## B30 Exterior Horizontal Enclosures

100	Solid mass model representing overall building volume; or, schematic wall elements that are not distinguishable by type or material.  Assembly depth/thickness and locations still flexible.	
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## B3010 – Roofing

100	See <a href="#">B30</a>	
200	Generic assembly that contains spatial (layer) allowance for structural slab/deck and/or framing system.	
300	Individual substrate layers are not separately modeled, but they are specified within a composite assembly.  Roof structure is modeled separately.	

### B3010.10 – Steep Slope Roofing

*Lapped roofing shingles, shakes and roofing tiles, including fastening and flashing products and methods.*

[See [B1020](#)]

**Steep slope roofing material is often modeled as a layer within the overall roof structure assembly.**

### B3010.50 – Low Slope Roofing

*Includes membrane roofing of various types and protected membrane roofing, including fastening and flashing products.*

100	See <a href="#">B30</a>	
200	See <a href="#">B3010</a>	
300	Specific material thickness, openings are subtracted from solid. Framing is a separate assembly, see <a href="#">B10</a> .  Drainage pitches are modeled.	

### B3010.70 – Canopy Roofing

[See [B3010.10](#) or [B3010.50](#)]

## B3010.90 – Roofing Supplementary Components

*Includes substrate boards, vapor retarder, air barriers, deck insulation, flashing and sheet metal, and expansion joints to be included with roofing elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.**

## B3020 – Roof Appurtenances

*Roof specialties and accessories installed on or in roofing or traffic bearing horizontal enclosure systems. Includes components for the management of rainwater, but excludes mechanical and structural items.*

100	See <a href="#">B30</a>	
200	See <a href="#">Fundamental LOD Definitions</a>	

## B3020.10 – Roof Accessories

*Includes ladders, curbs, vents, walkways, and snow guards.*

100	See <a href="#">B30</a>	
200	See <a href="#">Fundamental LOD Definitions</a>	
300	<p><u>Ladders</u>: Specific assemblies indicating length and width.</p> <p><u>Walkways</u>: Specific assemblies indicating length, width, and rail/guard height.</p> <p><u>Vents</u>: Specific assemblies indicating roof opening size. Roof opening element is included.</p>	
350	<p><u>Ladders</u>: Specific assemblies indicating length, width, and attachment/anchoring members. Required access/clearance space is modeled.</p> <p><u>Walkways</u>: Specific assemblies indicating length, width, rail/guard height, and support/attachment/anchoring members. Required access/clearance space is modeled.</p> <p><u>Vents</u>: Specific assemblies indicating roof opening size and attachment/anchoring members if applicable. Required service access space is modeled.</p>	

## B3020.30 – Roof Specialties

*Includes cupolas, spires, steeples, and weathervanes.*

[See [Fundamental LOD Definitions](#)]

## B3020.70 – Rainwater Management

*Includes conductor heads, gutters, downspouts, scuppers, and splash blocks.*

[See [D2030.10](#) and [D2030.20](#)]

## B3040 – Traffic Bearing Horizontal Enclosures

100	See <a href="#">B30</a>	
200	Modeled as part of other composite assembly. See <a href="#">B3010</a> .	

### B3040.10 –Traffic Bearing Coatings

*Includes surface applied waterproofing exposed to weather and suitable for pedestrian or vehicular traffic.*

[Not Modeled]

### B3040.30 – Horizontal Waterproofing Membrane

*Includes substrate board, deck insulation, vapor retarder, sheet metal flashing and trim, flexible flashing, and expansion joints.*

100	See <a href="#">B30</a>	
200	See <a href="#">B3040</a>	
300	Membrane assembly modeled by type to specified thickness. Major openings such as shafts and hatches are modeled.	
350	Individual material layers of membrane assembly are modeled separately. All openings and penetrations are modeled. Expansion joints are modeled indicating specific width.	

### B3040.50 – Wear Surfaces

*Wearing surfaces on top of horizontal waterproofing membrane that are suitable for pedestrian or vehicular traffic.*

100	See <a href="#">B30</a>	
200	See <a href="#">B3040</a>	
300	Wear surface system modeled by type to specified thickness/depth. Major openings such as shafts and hatches are modeled.	
350	Individual system elements are modeled separately. Pedestals are modeled and located properly, if applicable. Expansion joints are modeled indicating specific width.	

### B3040.90 – Horizontal Enclosure Supplementary Components

*Includes substrate board, deck insulation, vapor retarder, sheet metal flashing and trim, flexible flashing, and expansion joints to be included with horizontal enclosure elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.**

### B3060 – Horizontal Openings

100	See <a href="#">B30</a>	
200	See <a href="#">B2020</a>	

### B3060.10 – Roof Windows and Skylights

[See [B2020.10](#)]

### B3060.50 – Vents and Hatches

*Other roof openings such as roof hatches, smoke vents, and gravity roof ventilators.*

[See [B3020.10](#)]

## B3060.90 – Horizontal Opening Supplementary Components

*Includes: Frames, hardware, glazing, flashing, and joint sealants to be included with horizontal opening elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

## B3080 – Overhead Exterior Enclosures

100	See <a href="#">B30</a>	
200	Generic assemblies indicative of overall scope and approximate thickness/system depth of overhead enclosure.	

## B3080.10 – Exterior Ceilings

100	See <a href="#">B30</a>	
200	See <a href="#">B3080</a>	
300	Overall assembly modeled to specific system thickness including structural backing.  Location of expansion or control joints indicated, but not modeled.	
350	Face material modeled to specific thickness.  Structural backing members including bracing/lateral framing/kickers are modeled.  Expansion or control joints are modeled to indicate specific width.	
400	Individual elements of face material are modeled.  Structural backing members and all support members (kickers) are modeled including all connections.  Expansion or control joints are modeled.	

## B3080.20 – Exterior Soffits

[See [B3080.10](#)]

## B3080.30 – Exterior Bulkheads

[See [B3080.10](#)]



## C: INTERIORS

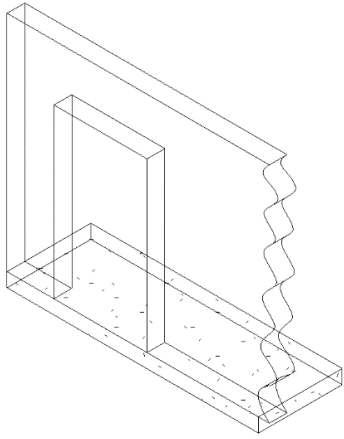
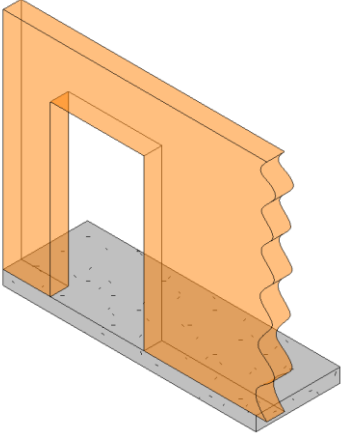
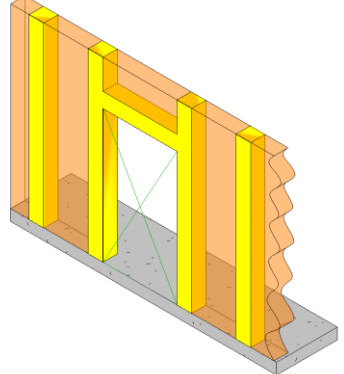
### C10 Interior Construction

100	A schematic model element or symbol that is not distinguishable by type or material. Types, layouts, and locations are still flexible.	
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### C1010 – Interior Partitions

100	See <a href="#">C10</a>	
200	Generic wall objects separated by type of material (e.g. gypsum board vs. masonry). Approximate overall wall thickness represented by a single assembly. Layouts, locations, heights, and elevation profiles are still flexible.	

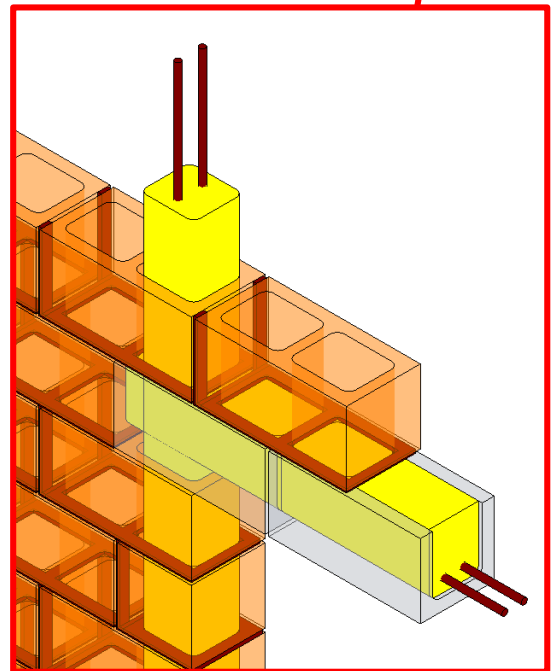
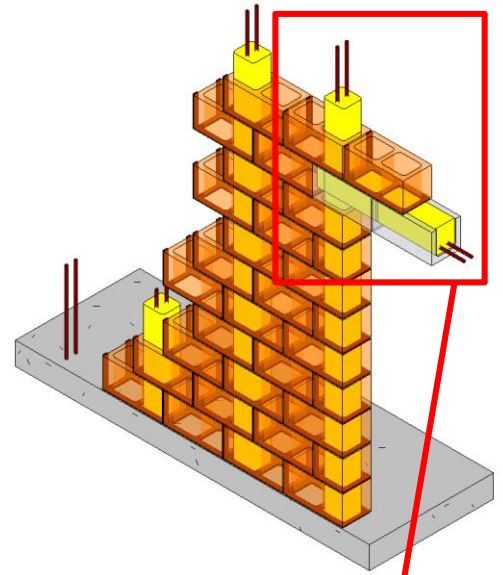
### C1010 – Interior Wall (Masonry)

100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	 <p data-bbox="979 789 1471 821"><i>72 C1010.04-LOD-200 Interior Wall (Masonry)</i></p>
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• floor element with design-specified locations and geometries</li> </ul> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Member size, depth, and material with sloping geometry</li> <li>• Spacing and end elevations</li> <li>• Design loads</li> <li>• Deflection criteria</li> </ul>	 <p data-bbox="979 1320 1471 1352"><i>73 C1010.04-LOD-300 Interior Wall (Masonry)</i></p>
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Members modeled at any interface with wall edges (top, bottom, sides) or opening through wall</li> <li>• Any regions that would impact coordination with other systems such as but not limited to:                             <ul style="list-style-type: none"> <li>○ Bond Beam &amp; Lintel Regions</li> <li>○ Reinforcing &amp; Embed Regions</li> <li>○ Jam Regions</li> </ul> </li> </ul>	 <p data-bbox="979 1803 1471 1835"><i>74 C1010.04-LOD-350 Interior Wall (Masonry)</i></p>

400

Element modeling to include:

- Reinforcing
- Connections
- Grouting Material
- Jams
- Bond Beams
- Lintels
- Member fabrication part number
- Any part required for complete installation



75 C1010.04-LOD-400 Interior Wall (Masonry)

### C1010 – Interior Wall (Cold-Form Metal Framing)

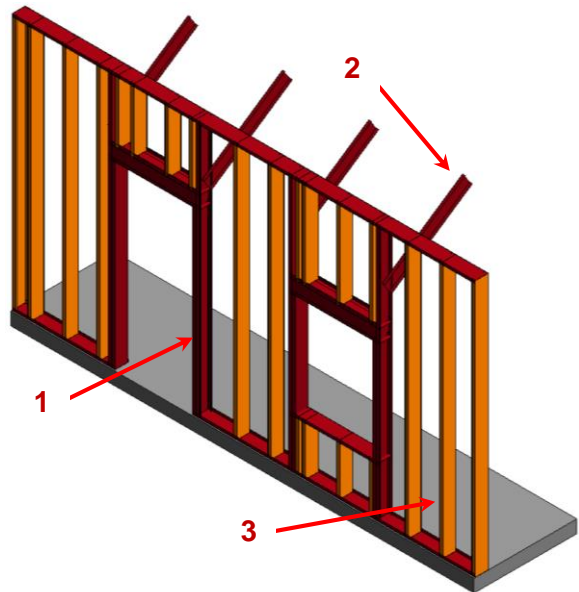
100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	 <p data-bbox="885 735 1461 787"><i>76 C1010.05-LOD-200 Interior Wall (Cold-Form Metal Framing)</i></p>
300	See <a href="#">C1010</a>	 <p data-bbox="893 1291 1469 1344"><i>77 C1010.05-LOD-300 Interior Wall (Cold-Form Metal Framing)</i></p>

350

Cold formed metal framing is developed with sufficient elements to support detailed interface coordination with other systems such as MEP.

*Image notes:*

- 1) *Elements in red are critical wall support elements that cannot be easily cut for coordination of MEP opening through the walls.*
- 2) *Diagonal bracing (kickers) that may be in the above ceiling space are modeled for coordination with other building content such as MEP passing along the wall in the above ceiling spaces.*
- 3) *Infill CFMF modeling (Orange) may be omitted at this LOD if stated in the BXP.*
- 4) *Cladding and sheathing are not shown for clarity in this image.*



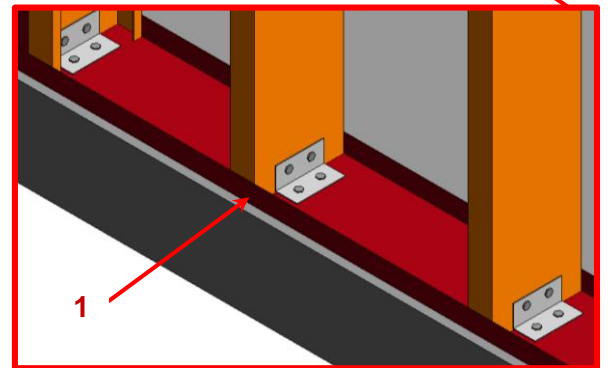
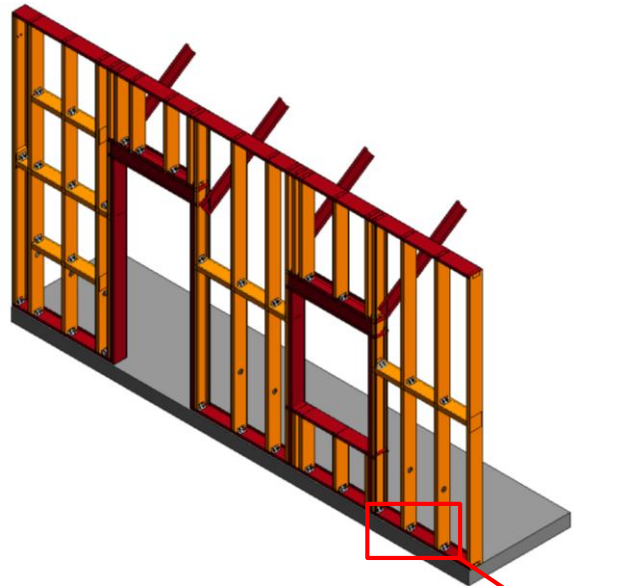
78 C1010.05-LOD-350 Interior Wall (Cold-Form Metal Framing)

400

Cold formed metal framing is developed with sufficient elements that support the fabrication of the CFMF system.

*Image notes:*

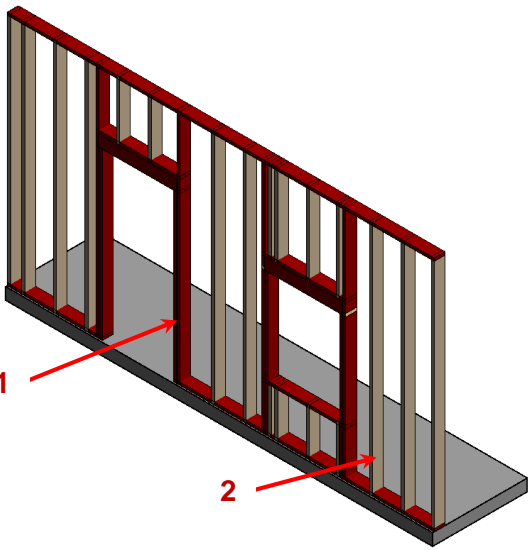
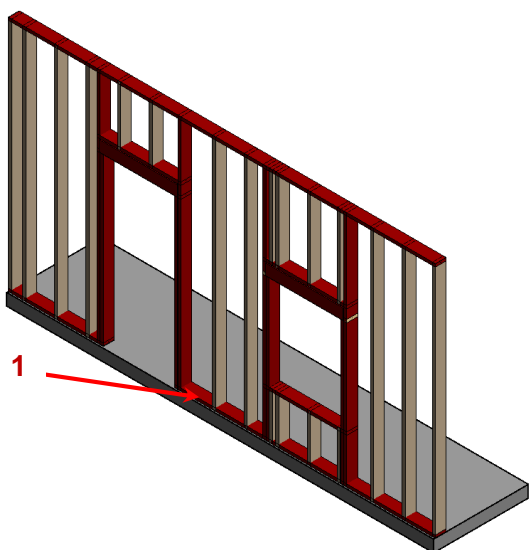
- 1) *Connection content is development in the wall elements. This includes but is not limited to fasteners, clips, and other related hardware.*
- 2) *Cladding and sheathing are not shown for clarity in this image.*



79 C1010.05-LOD-400 Interior Wall (Cold-Form Metal Framing)

### C1010 – Interior Wall (Wood)

100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	 <p data-bbox="915 768 1377 800"><i>80 C1010.06-LOD-200 Interior Wall (Wood)</i></p>
300	See <a href="#">C1010</a>	 <p data-bbox="922 1398 1383 1430"><i>81 C1010.06-LOD-300 Interior Wall (Wood)</i></p>

<p>350</p> <p>Wood framing is developed with sufficient elements to support detailed interface coordination with other systems such as MEP.</p> <p><i>Image notes:</i></p> <ol style="list-style-type: none"><li>1) Elements in red are critical wall support elements that cannot be easily cut for coordination of MEP opening through the walls.</li><li>2) Infill wood framing modeling may be omitted at this LOD if stated in the BXP.</li><li>3) Cladding and sheathing are not shown for clarity in this image.</li></ol>		 <p>82 C1010.06-LOD-350 Interior Wall (Wood)</p>
<p>400</p> <p>Wood framing is developed with sufficient elements that support the fabrication of the wood framing system.</p> <p><i>Image notes:</i></p> <ol style="list-style-type: none"><li>1) Connection content is development in the wall elements. This includes but is not limited to fasteners, anchor rods, and other related hardware.</li><li>2) Cladding and sheathing are not shown for clarity in this image.</li></ol>		 <p>83 C1010.06-LOD-400 Interior Wall (Wood)</p>



### C1010.10 – Interior Fixed Partitions

100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	
300	<p>Composite model assembly by type with overall thickness that accounts for framing and finish specified for the wall system. (Refer to LOD350 and LOD400 for individually modeled elements)</p> <p>Wall elements are modeled to specific layouts, locations, heights, and elevation profiles. Penetrations are modeled to nominal dimensions for major wall openings such as windows, doors, and large mechanical elements.</p> <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> <li>• Wall type</li> <li>• Fire rating</li> </ul>	
350	<p>Structure and finish layers of partition assembly modeled as separate elements.</p> <p>All openings modeled to rough dimensions.</p> <p>Major framing elements such as king studs, kickers, diagonal bracing, and headers are modeled.</p>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Studs and tracks</li> <li>• Bracing</li> <li>• Insulation</li> <li>• Sheathing or wall boards</li> <li>• Openings/penetrations</li> </ul>	

### C1010.20 – Interior Glazed Partitions

100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	
300	<p>Specified location and orientation of face of glass.</p> <p>Nominal face dimensions and thickness of glazing.</p> <p>Structural support systems of wall to be modeled.</p> <p>Spacing, location, size and orientation of mullions.</p> <p>Operable components defined (doors) and included in model.</p>	
350	<ul style="list-style-type: none"> <li>• Mullion shapes and geometry defined.</li> <li>• Actual anchorage layouts and types defined.</li> <li>• Actual panel dimensions (including seating).</li> </ul>	
400	<ul style="list-style-type: none"> <li>• Complete mullion extrusion profiles.</li> <li>• Interface details between wall systems (within) and wall and support systems.</li> </ul>	

### C1010.40 – Interior Demountable Partitions

100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	
300	See <a href="#">C1010.10</a>	
350	See <a href="#">C1010.10</a> – also include hardware, accessories, and support structure.	
400	See <a href="#">C1010.10</a>	

### C1010.50 – Interior Operable Partitions

100	See <a href="#">C10</a>	
200	See <a href="#">C1010</a>	
300	Operable partition system modeled to include spatial requirements for open/storage position and closed position.  Spatial requirements for structure (overhead or below) to be modeled.	
350	Major support elements (overhead or below)  Mechanical connections	
400	All assembly components including tracks, panels, hardware and supports.	

### C1010.70 – Interior Screens

*Portable and open dividers.*

[See [C1010.10](#)]

### C1010.90 – Interior Partitions Supplementary Components

*Sound isolation components, firestopping, and expansion control to be included with interior partition elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

## C1020 – Interior Windows

100	See <a href="#">C10</a>	
200	Windows approximate in terms of location, size, count and type. Units are modeled as a simple, monolithic component; or represented with simplified frame and glazing.  Nominal unit size is provided.	

### C1020.10 – Interior Operating Windows

100	See <a href="#">C10</a>	
200	See <a href="#">C1020</a>	
300	Units are modeled based on specified location and nominal size. Outer geometry of window frame elements and glazing modeled to within 1/8" [1 mm] precision.  Operation is indicated.  Non-graphic information associated with model element: <ul style="list-style-type: none"> <li>• Aesthetic characteristics (finishes, glass types)</li> <li>• Performance characteristics (i.e. U-value, wind loading, blast resistance, structural, air, thermal, water, sound)</li> <li>• Functionality of the window (fixed, casement, double/single hung, awning/project out, pivot, sliding)</li> </ul>	
350	Rough opening dimensions Attachment method of window to structure Embed geometry	
400	Frame profiles Glazing sub-components (gaskets) Attachment components	

### C1020.20 – Interior Fixed Windows

[See [C1020.10](#)]

### C1020.50 – Interior Special Function Windows

[See [C1020.10](#)]

### C1020.90 – Interior Window Supplementary Components

*Frames, sills, operating hardware, glazing to be included with interior window elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

## C1030 – Interior Doors

100	See <a href="#">C10</a>	
200	Units are modeled as a simple, monolithic component; or represented with simple frame and panel.  Nominal unit size is provided.	

### C1030.10 – Interior Swinging Doors

100	See <a href="#">C10</a>	
200	See <a href="#">C1030</a>	
300	Door assemblies modeled by type to include the following: <ul style="list-style-type: none"> <li>• Specific door panels and frames (if applicable).</li> <li>• Hardware set functionality and types are specified in non-graphic information.</li> <li>• Operation is specified</li> <li>• Spatial requirements for operation are modeled.</li> </ul>	
350	Rough opening is modeled in containing wall.  Major framing elements are modeled at jambs and head in containing wall.  Operation or mechanism enclosures are modeled, if applicable.	
400	Actual frame/mullion extrusions.  Actual panel size dimensions.  All connections and interfaces modeled including brackets, supports, sealants, and thresholds.	

### C1030.20 – Interior Entrance Doors

*Exterior personnel door assemblies at interior main entrances. Includes automatic, revolving, balanced, and other special operating entrance doors, and sliding storefront wall systems. Includes Interior Door Supplementary Components as appropriate when not part of storefront system.*

[See [B2050.10](#)]

### C1030.25 – Interior Sliding Doors

[See [C1030.10](#)]

### C1030.30 – Interior Folding Doors

[See [C1030.10](#)]

### C1030.40 – Interior Coiling Doors

100	See <a href="#">C10</a>	
200	See <a href="#">C1030</a>	
300	Coiling door assemblies modeled by type to include the following: <ul style="list-style-type: none"> <li>• Door panels with nominal dimensions.</li> <li>• Frames with nominal dimensions.</li> <li>• Hardware set functionality and types included in non-graphic information.</li> <li>• Clearance zones are modeled for operation of overhead doors.</li> <li>• Enclosures and motor housings are modeled with overall nominal dimensions.</li> </ul>	
350	Rough opening is modeled (if applicable). Major framing elements in wall are modeled at jambs and head. Other major structural support elements are modeled.	
400	All connections and interfaces modeled including brackets, supports, sealants, and thresholds.	

### C1030.50 – Interior Panel Doors

*Interior large opening doors constructed of panels that move.*

[See [C1030.40](#)]

### C1030.70 – Interior Special Function Doors

*Interior door assemblies for a variety of special functions and applications involving a variety of operating methods. Includes Interior Door Supplementary Components as appropriate.*

[See [C1030.40](#)]

### C1030.80 – Interior Access Doors and Panels

[See [C1030.40](#)]

### C1030.90 – Interior Door Supplementary Components

*Frames, hardware, glazing, and louvers that are part of door to be included with interior door elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

## C1040 – Interior Grilles and Gates

100	See <a href="#">C10</a>	
200	See <a href="#">C1030</a>	

### C1040.10 – Interior Grilles

100	See <a href="#">C10</a>	
200	See <a href="#">C1030</a>	
300	Grille assemblies modeled by type to include the following: <ul style="list-style-type: none"> <li>Nominal size of unit.</li> <li>Required openness provided as non-graphic information.</li> <li>Operation is specified graphically and with non-graphic information, if applicable.</li> </ul>	
350	Rough opening is modeled (if applicable). Major framing elements are modeled at jambs and head.	
400	All connections and interfaces modeled including brackets, supports, sealants, and thresholds.	

### C1040.50 – Interior Gates

[See [C1040.10](#)]

## C1060 – Raised Floor Construction

100	See <a href="#">C10</a>	
200	Generic assembly that contains spatial (layer) allowance for support system and flooring material.	

### C1060.10 – Access Flooring

100	See <a href="#">C10</a>	
200	See <a href="#">C1060</a>	
300	Overall flooring assembly modeled by type to specified thickness/depth. Major openings such as shafts are modeled.	
350	Individual layers of assembly are modeled separately. All openings and penetrations are modeled. Expansion joints are modeled indicating specific width. Pedestals are modeled and located properly, if applicable.	
400	All assembly components are modeled including frame, floor tiles, pedestals, and cross bracing.	

### C1060.30 – Platform/Stage Floors

[See [C1060.10](#)]

## C1070 – Suspended Ceiling Construction

100	Ceiling construction is represented in other composite objects such as floors or rooms; or, schematic model elements that are not distinguishable by type or material.  Assembly depth/thickness and locations still flexible.	
200	Generic assemblies indicative of overall scope and approximate thickness/system depth of suspended ceiling.	

### C1070.10 – Acoustical Suspended Ceilings

100	See <a href="#">C1070</a>	
200	See <a href="#">C1070</a>	
300	Overall assembly modeled to specific system thickness including structural backing.  Location of expansion or control joints indicated, but not modeled.	
350	Ceiling suspension grid is modeled.  Structural backing members including bracing/lateral framing/kickers are modeled.  Expansion or control joints are modeled to indicate specific width.	
400	All assembly components are modeled including tees, hangers, support structure, and tiles.	

### C1070.20 – Suspended Plaster and Gypsum Board Ceilings

100	See <a href="#">C1070</a>	
200	See <a href="#">C1070</a>	
300	Overall assembly modeled to specific system thickness including framing.  Major penetrations are modeled.	
350	Major bracing elements or kickers.	
400	All assembly components including furring channels, hangers, lath, plaster coats, and gypsum boards.	

### C1070.50 – Specialty Suspended Ceilings

[See [C1070.10](#) or [C1070.20](#)]

### C1070.70 – Special Function Suspended Ceilings

[See [C1070.10](#) or [C1070.20](#)]

### C1070.90 – Ceiling Suspension Components

*Hangers and framing to suspend ceiling and sound isolation components to be included with suspended ceiling construction elements above as appropriate.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.**

## C1090 – Interior Specialties

100	See <a href="#">C10</a>	
200	Generic model elements with approximate nominal size. Placement and quantity remains flexible. Required non-graphic information associated with model elements includes included with element: <ul style="list-style-type: none"><li>• Type of object</li></ul>	

### C1090.10 – Interior Railings and Handrails

100	See <a href="#">C10</a>	
200	Generic model element representing approximate overall height and location of railing/handrail.	
300	Railing/handrail systems modeled by type to include: <ul style="list-style-type: none"><li>• All horizontal rails</li><li>• All vertical posts/balusters</li></ul>	
350	Mounting/attachment components	
400	All assembly components including fasteners and supports.	



## C1090.15 – Interior Louvers

*Interior louvers, and other items for ventilation which are not an integral part of the mechanical system. Includes operable and stationary louvers.*

100	See <a href="#">C10</a>	
200	Generic model element that is indicative of approximate area and location of louver.	
300	Louver assembly modeled by type, indicative of area and location of intended louver/vent.  Includes accurate frame (boundary dimensions) and blades.  Opening for louver is cut from host wall.  Performance level defined in non-graphic information (e.g. storm proof or not, free air).	
350	Rough opening is modeled (if applicable)  Major framing elements are modeled at jambs and head.  Connection points are modeled.	
400	All connections and interfaces modeled including brackets, supports, and sealants.	

## C1090.20 – Information Specialties

*Visual display units, display cases, directories, interior signage, telephone specialties, and informational kiosks.*

[See [Fundamental LOD Definitions](#)]

## C1090.25 – Compartments and Cubicles

*Manufactured compartments and cubicles for specific purposes. Includes toilet compartments, shower stalls, etc.*

[See [Fundamental LOD Definitions](#)]

## C1090.30 – Service Walls

*Wall assemblies and wall-mounted units incorporating services.*

[See [C1010.10](#)]

## C1090.35 – Wall and Door Protection

*Manufactured protective devices for walls and doors. Includes corner guards, bumper guards, and protective wall covering.*

[See [Fundamental LOD Definitions](#)]

## C1090.40 – Toilet, Bath and Laundry Accessories

*Manufactured items for use in conjunction with toilets, baths, and laundries.*

[See [Fundamental LOD Definitions](#)]

## C1090.45 – Interior Gas Lighting

[See [Fundamental LOD Definitions](#)]

## C1090.50 – Fireplaces and Stoves

[See [Fundamental LOD Definitions](#)]

### C1090.60 – Safety Specialties

[See [Fundamental LOD Definitions](#)]

### C1090.70 – Storage Specialties

[See [Fundamental LOD Definitions](#)]

### C1090.90 – Other Interior Specialties

[See [Fundamental LOD Definitions](#)]

## C20 Interior Finishes

100	Non-graphic information attached to model elements providing assumptions about proposed finish materials.	
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### C2010 – Wall Finishes

100	See <a href="#">C20</a>	
200	Generic materials by type (e.g. tile or paneling), approximate thickness and scope in elevation.  Generally, materials over 0.25" (10mm) thick are modeled.	
300	Materials are modeled based on specific types (e.g. Tile type CT-1).  Thickness and scope are accurately modeled.	
350	Additional non-graphic information to include: <ul style="list-style-type: none"> <li>• Manufacturer</li> <li>• Model</li> </ul>	
400	Pattern layouts Expansion/control joints Edges	

#### C2010.10 –Tile Wall Finish

[See [C2010](#)]

#### C2010.20 – Wall Paneling

[See [C2010](#)]

#### C2010.30 – Wall Coverings

[See [C2010](#)]

#### C2010.35 – Wall Carpeting

[See [C2010](#)]

#### C2010.50 – Stone Facing

[See [C2010](#)]

#### C2010.60 – Special Wall Surfacing

[See [C2010](#)]

#### C2010.70 – Wall Painting and Coating

[See [C2010](#)]

#### C2010.80 – Acoustical Wall Treatment

[See [C2010](#)]

#### C2010.90 – Wall Finish Supplementary Components

*Furring to be included with wall finish elements above as appropriate.*

[See [C1010](#)]

## C2020 – Interior Fabrications

[See [Fundamental LOD Definitions](#)]

## C2030 – Flooring

[See [C2010](#)]

## C2040 – Stair Finishes

[See [C2010](#)]

## C2050 – Ceiling Finishes

[See [C1070](#)]

## D: SERVICES

### D10 Conveying

100	Schematic model elements that are not distinguishable by type or material.  Component sizes and locations still flexible.	
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### D1010 – Vertical Conveying Systems

100	See <a href="#">D10</a>	
200	Generic representation of the system envelope, including critical path of travel zones.	

### D1010.10 – Elevators

100	See <a href="#">D10</a>	
200	See <a href="#">D1010</a>	
300	Specific system elements modeled by type, including all path of travel zones.  Pits and/or control rooms and associated equipment to be modeled if applicable.  Major structural support elements modeled.  Connections to mechanical or electrical services.  Non-graphic information to be included with modeled elements: <ul style="list-style-type: none"> <li>• Type code (referenced in specifications)</li> <li>• ClearWidth</li> <li>• ClearDepth</li> <li>• ClearHeight</li> </ul>	
350	Sizing adjusted to the actual manufacturer specifications.  Guiding tracks/rails  Service/access zones	
400	All connections, supports, framing, and other supplementary components.	

### D1010.20 – Lifts

[See [D1010.10](#)]

### D1010.30 – Escalators

[See [D1010.10](#)]

### D1010.50 – Dumbwaiters

[See [D1010.10](#)]

### D1010.60 – Moving Ramps

[See [D1010.10](#)]

## D1030 – Horizontal Conveying

[See [D1010.10](#)]

### D1030.10 – Moving Walks

[See [D1010.10](#)]

### D1030.30 – Turntables

[See [D1010.10](#)]

### D1030.50 – Passenger Loading Bridges

[See [D1010.10](#)]

### D1030.70 – People Movers

[See [D1010.10](#)]

## D1050 – Material Handling

100	See <a href="#">D10</a>	
200	Generic representation of the material handling system envelope, including critical path of travel zones.	

### D1050.10 – Cranes

100	See <a href="#">D10</a>	
200	See <a href="#">D1050</a>	
300	<p>Specific system elements modeled by type, including all path of travel/boom swing zones.</p> <p>Lay-down/pick-up zones are modeled.</p> <p>Major structural support elements modeled.</p> <p>Connections to mechanical or electrical services.</p> <p>Non-graphic information to be associated with modeled elements:</p> <ul style="list-style-type: none"> <li>Type code</li> </ul>	
350	<p>Sizing adjusted to the actual manufacturer specifications.</p> <p>Guiding tracks/rails</p> <p>Service/access zones</p>	
400	All connections, supports, framing, and other supplementary components.	

### D1050.20 – Hoists

[See [D1050.10](#)]

### D1050.30 – Derrecks

[See [D1050.10](#)]

### D1050.40 – Conveyors

[See [D1050.10](#)]

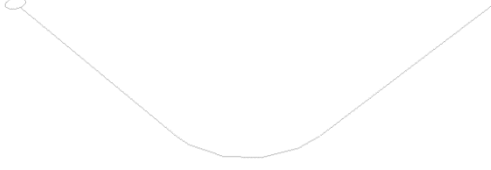
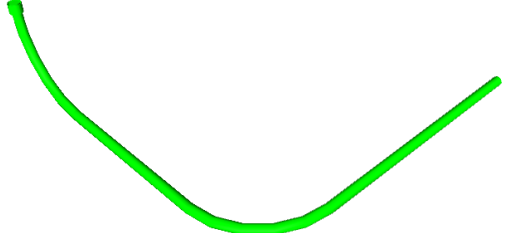
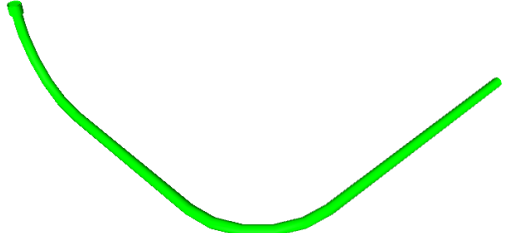
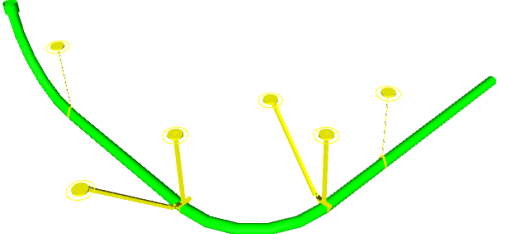
### D1050.50 – Baggage Handling Equipment

100	See <a href="#">D10</a>	
200	See <a href="#">D1050</a>	
300	See <a href="#">Fundamental LOD Definitions</a>	
350	See <a href="#">Fundamental LOD Definitions</a>	
400	See <a href="#">Fundamental LOD Definitions</a>	

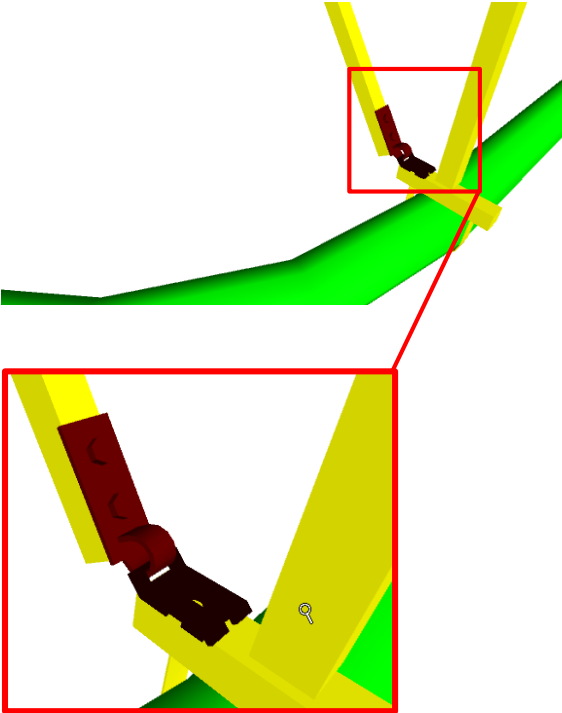
### D1050.60 – Chutes

[See [D1050.10](#)]

## D1050.70 – Pneumatic Tube Systems

<p>100</p>	<p>Diagrammatic elements or quantitative call outs; conceptual and/or schematic flow diagrams; Non-graphic information associated with model elements includes minimal design performance information.</p>	 <p>84 D1050.70-LOD-100 Pneumatic Tube Systems</p>
<p>200</p>	<p>Generic elements; schematic layout with approximate size, shape, and location of equipment and tubing; Non-graphic information associated with model elements includes design performance information.</p>	 <p>85 D1050.70-LOD-200 Pneumatic Tube Systems</p>
<p>300</p>	<p>Modeled as design-specified elements; specified size, shape, spacing, and location of equipment and tubing; approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all equipment and tubing; actual access/code clearance requirements modeled.</p>	 <p>86 D1050.70-LOD-300 Pneumatic Tube Systems</p>
<p>350</p>	<p>Modeled as <i>actual construction</i> elements; actual size, shape, spacing, and location/connections of equipment and tubing; actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all equipment and tubing; floor and wall penetrations modeled.</p>	 <p>87 D1050.70-LOD-350 Pneumatic Tube Systems</p>



400	Supplementary components added to the model required for fabrication and field installation	 <p data-bbox="971 976 1494 1003">88 D1050.70-LOD-400 Pneumatic Tube Systems</p>
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## D1080 – Operable Access Systems

[See [Fundamental LOD Definitions](#)]

### D1080.10 – Suspended Scaffolding

[See [Fundamental LOD Definitions](#)]

### D1080.20 – Rope Climbers

[See [Fundamental LOD Definitions](#)]

### D1080.30 – Elevating Platforms

[See [Fundamental LOD Definitions](#)]

### D1080.40 – Powered Scaffolding

[See [Fundamental LOD Definitions](#)]

### D1080.50 – Building Envelope Access

[See [Fundamental LOD Definitions](#)]

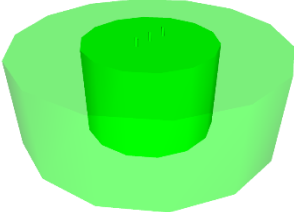
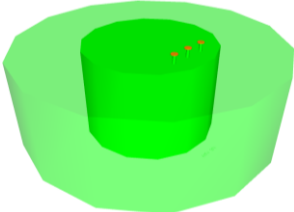
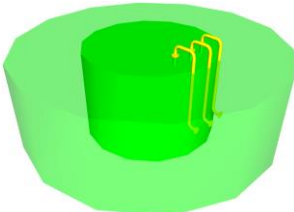
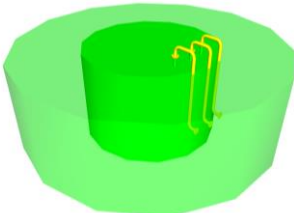
## D20 Plumbing

100	Diagrammatic or schematic model elements; conceptual and/or schematic layout/flow diagram; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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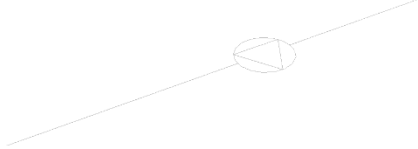
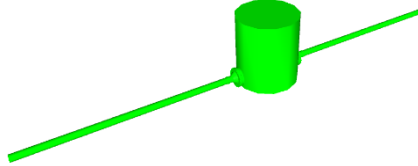

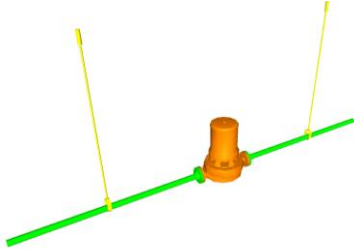
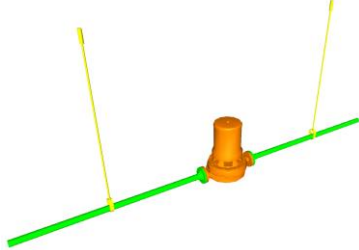
## D2010 – Domestic Water Distribution

100	See <a href="#">D20</a>	
200	Schematic layout of generic model elements with approximate size, shape, and location of elements; approximate access/code clearance requirements; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

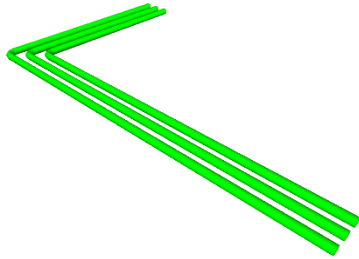
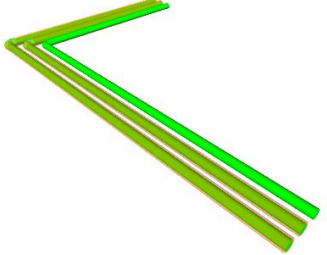
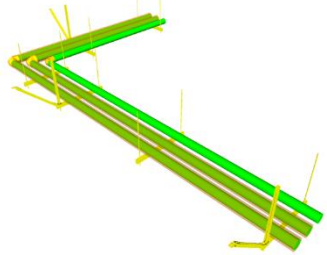
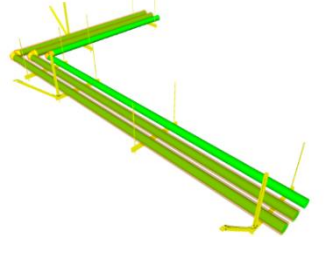
## D2010.10 – Facility Potable-Water Storage Tanks

100	See <a href="#">D20</a>	
200	<p>Schematic layout with approximate size, shape, and location of tank(s);</p> <p>approximate access/code clearance requirements modeled;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>89 D2010.10-LOD-200 Facility Potable-Water Storage Tanks</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of tank(s);</p> <p>approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of tanks(s);</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>90 D2010.10-LOD-300 Facility Potable-Water Storage Tanks</i></p>
350	<p>Modeled as actual construction elements <i>size and shape, spacing, and location</i>/connections of tank(s) actual size and shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of tanks(s).</p>	 <p><i>91 D2010.10-LOD-350 Facility Potable-Water Storage Tanks</i></p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p><i>92 D2010.10-LOD-400 Facility Potable-Water Storage Tanks</i></p>

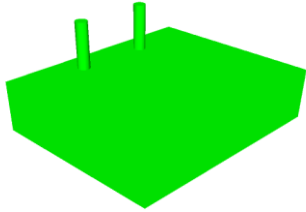
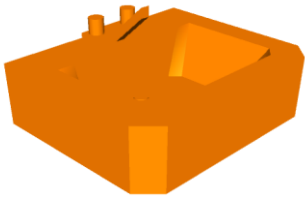


## D2010.20 – Domestic Water Equipment

100	See <a href="#">D20</a>	 <p><i>93 D2010.20-LOD-100 Domestic Water Equipment</i></p>
200	<p>Schematic layout with approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>94 D2010.20-LOD-200 Domestic Water Equipment</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of equipment;</p> <p>approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>95 D2010.20-LOD-300 Domestic Water Equipment</i></p>
350	<p>Modeled as actual construction elements size, shape, spacing, and location/connections of equipment;</p> <p>actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment.</p>	 <p><i>96 D2010.20-LOD-350 Domestic Water Equipment</i></p>
400	See <a href="#">D2010.10</a>	 <p><i>97 D2010.20-LOD-400 Domestic Water Equipment</i></p>

## D2010.40 – Domestic Water Piping

100	<p>Diagrammatic or schematic model elements; conceptual and/or schematic flow diagrams; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	
200	<p>Schematic layout with approximate size, shape, and location of mains and risers; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>98 D2010.40-LOD-200 Domestic Water Piping</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of pipe, valves, fittings, and insulation for risers, mains, and branches; approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches; actual access/code clearance requirements modeled.</p>	 <p><i>99 D2010.40-LOD-300 Domestic Water Piping</i></p>
350	<p>Modeled as actual construction elements; actual size, shape, spacing, and location/connections of pipe, valves, fittings, and insulation for risers, mains, and branches; actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches; actual floor and wall penetrations modeled.</p>	 <p><i>100 D2010.40-LOD-350 Domestic Water Piping</i></p>
400	<p>See <a href="#">D2010.10</a></p>	 <p><i>101 D2010.40-LOD-400 Domestic Water Piping</i></p>

## D2010.60 – Plumbing Fixtures

100	See <a href="#">D20</a>	
200	<p>Schematic layout with approximate size, shape, and location of fixtures;</p> <p>carrier and wall width requirements modeled;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>102 D2010.60-LOD-200 Plumbing Fixtures</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of fixtures;</p> <p>approximate allowances for spacing and clearances required for all specified supports that are to be utilized in the layout of all fixtures;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>103 D2010.60-LOD-300 Plumbing Fixtures</i></p>
350	<p>Modeled as actual construction elements size, shape, spacing, and location/connections of fixtures/carriers;</p> <p>actual size, shape, spacing, and clearances required for all supports that are utilized in the layout of all fixtures.</p>	 <p><i>104 D2010.60-LOD-350 Plumbing Fixtures</i></p>
400	See <a href="#">D2010.10</a>	 <p><i>105 D2010.60-LOD-400 Plumbing Fixtures</i></p>

## D2010.90 – Domestic Water Distribution Supplementary Components




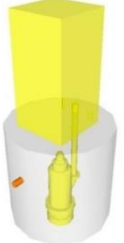
*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.***

## D2020 – Sanitary Drainage

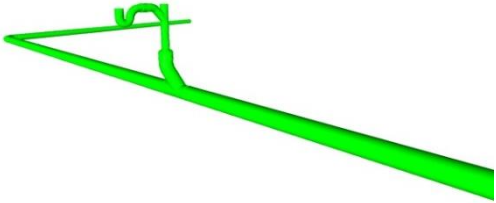
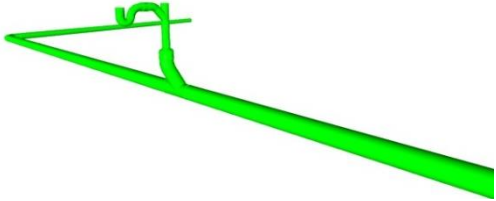
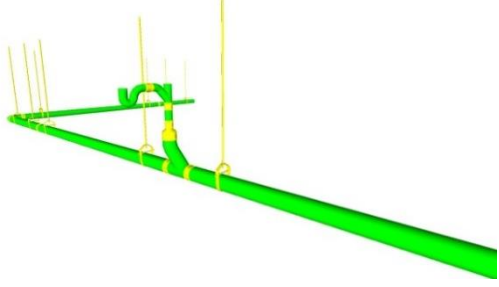
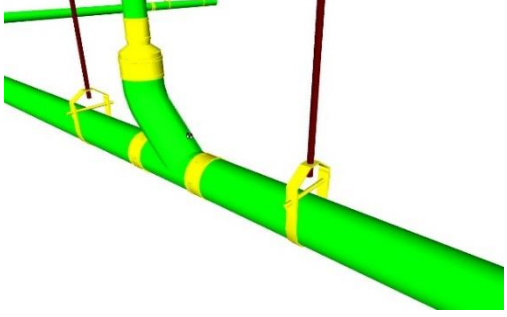
100	See <a href="#">D20</a>	
200	See <a href="#">D2010</a>	

## D2020.10 – Sanitary Sewerage Equipment

100	See <a href="#">D20</a>	
200	Schematic layout with approximate size, shape, and location of equipment;  design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	 <p><i>106 D2020.10-LOD-200 Sanitary Sewerage Equipment</i></p>
300	Modeled as design specified size, shape, spacing, and location of equipment;  approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment; actual access/code clearance requirements modeled.	 <p><i>107 D2020.10-LOD-300 Sanitary Sewerage Equipment</i></p>
350	Actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment;  actual access/code clearance requirements modeled.	 <p><i>108 D2020.10-LOD-350 Sanitary Sewerage Equipment</i></p>
400	Supplementary components added to the model required for fabrication and field installation	 <p><i>109 D2020.10-LOD-400 Sanitary Sewerage Equipment</i></p>



### D2020.30 – Sanitary Sewerage Piping

100	See <a href="#">D20</a>	
200	Schematic layout with approximate size, shape, and location of mains and risers; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	 <p>110 D2020.30-LOD-200 Sanitary Sewerage Piping</p>
300	Modeled as design-specified size, shape, spacing, location, and slope of pipe, valves, fittings, and insulation for risers, mains, and branches;  approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;  actual access/code clearance requirements modeled	 <p>111 D2020.30-LOD-300 Sanitary Sewerage Piping</p>
350	Modeled as actual construction elements;  actual size, shape, spacing, location, connections, and slope of pipe, valves, fittings, and insulation for risers, mains, and branches;  actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;  actual floor and wall penetrations modeled.	 <p>112 D2020.30-LOD-350 Sanitary Sewerage Piping</p>
400	See <a href="#">D2020.10</a>	 <p>113 D2020.30-LOD-400 Sanitary Sewerage Piping</p>

## D2020.90 – Sanitary Drainage Supplementary Components





*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.***

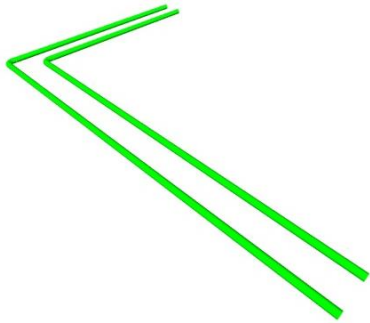
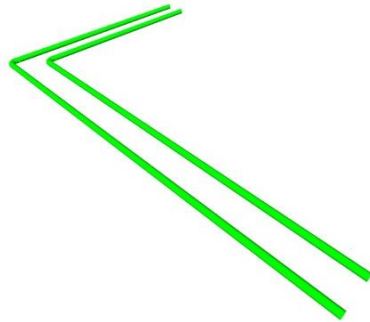
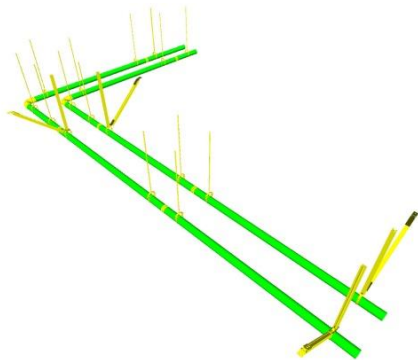
## D2030 – Building Support Plumbing Systems

100	See <a href="#">D20</a>	
200	See <a href="#">D2010</a>	

## D2030.10 – Stormwater Drainage Equipment

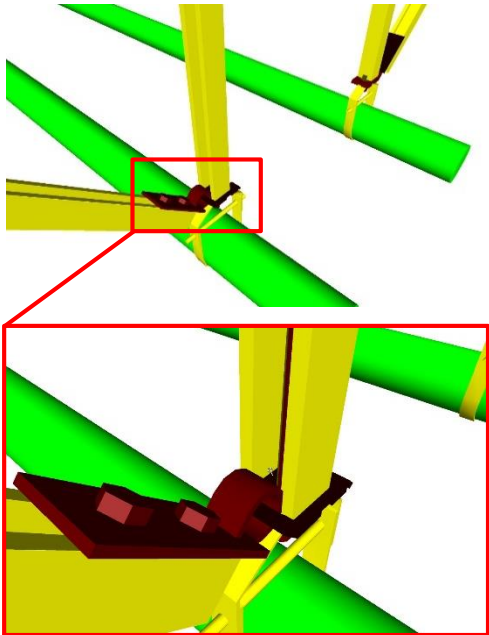
100	<p>Diagrammatic or schematic model elements; conceptual and/or schematic layout; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	
200	<p>Schematic layout with approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>114 D2030.10-LOD-200 Stormwater Drainage Equipment</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of equipment; approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment; actual access/code clearance requirements modeled.</p>	 <p><i>115 D2030.10-LOD-300 Stormwater Drainage Equipment</i></p>
350	<p>Modeled as actual construction elements size, shape, spacing, and location/connections of equipment, actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment; actual access/code clearance requirements modeled.</p>	 <p><i>116 D2030.10-LOD-350 Stormwater Drainage Equipment</i></p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p><i>117 D2030.10-LOD-400 Stormwater Drainage Equipment</i></p>

## D2030.20 – Stormwater Drainage Piping

100	See <a href="#">D20</a>	
200	<p>Schematic layout with approximate size, shape, and location of mains and risers;</p> <p>shaft requirements modeled;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>118 D2030.20-LOD-200 Stormwater Drainage Piping</i></p>
300	<p>Modeled as design-specified size, shape, spacing, location, and slope of pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p>approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>119 D2030.20-LOD-300 Stormwater Drainage Piping</i></p>
350	<p>Modeled as actual size, shape, spacing, location, connections, and slope of pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p>actual size and shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;</p> <p>actual floor and wall penetrations modeled.</p>	 <p><i>120 D2030.20-LOD-350 Stormwater Drainage Piping</i></p>

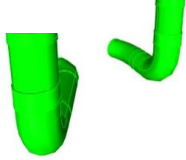

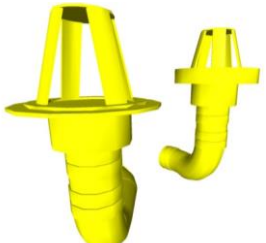

400

See [D2030.10](#)



*121 D2030.20-LOD-400 Stormwater Drainage Piping*

## D2030.30 – Facility Stormwater Drains

100	See <a href="#">D20</a>	
200	<p>Schematic layout with approximate size, shape, and location of components;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	 <p><i>122 D2030.30-LOD-200 Facility Stormwater Drains</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of components;</p> <p>approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all components;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>123 D2030.30-LOD-300 Facility Stormwater Drains</i></p>
350	<p>Modeled as actual construction elements size, shape, spacing, and location/connections of components;</p> <p>actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all components.</p>	 <p><i>124 D2030.30-LOD-350 Facility Stormwater Drains</i></p>
400	See <a href="#">D2030.10</a>	 <p><i>125 D2030.30-LOD-400 Facility Stormwater Drains</i></p>

## D2030.60 – Gray Water Systems

[See [D2030.20](#)]

## D2030.90 – Building Support Plumbing System Supplementary Components

*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.***

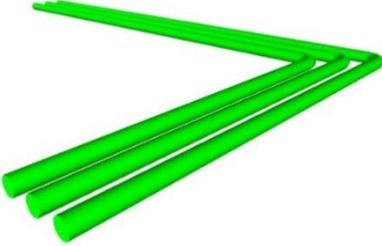
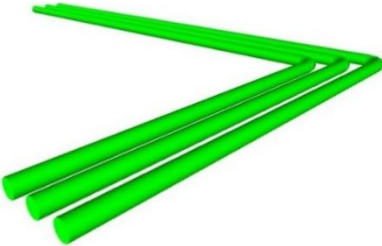
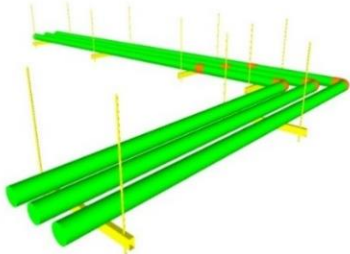
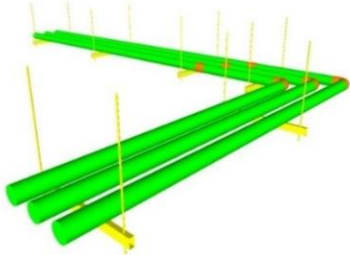
## D2050 – General Service Compressed-Air

[See [D2060.10](#) – Compressed-Air Systems]

## D2060 – Process Support Plumbing Systems

100	See <a href="#">D20</a>	
200	Schematic layout with approximate size, shape, and location of mains and risers; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

## D2060.10 – Compressed-Air Systems

100	See <a href="#">D20</a>	
200	See <a href="#">D2060</a>	 <p data-bbox="961 648 1490 676"><i>126D2060.10-LOD-200 Compressed-Air Systems</i></p>
300	<p data-bbox="253 709 930 787">Modeled as design-specified size, shape, spacing, location, and slope of equipment/pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="253 806 930 911">approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="253 930 818 957">actual access/code clearance requirements modeled.</p>	 <p data-bbox="961 1029 1490 1056"><i>127D2060.10-LOD-300 Compressed-Air Systems</i></p>
350	<p data-bbox="253 1092 930 1169">Modeled as actual size, shape, spacing, location, connections, and slope of equipment/pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="253 1188 930 1266">actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="253 1285 709 1312">actual floor and wall penetrations modeled.</p>	 <p data-bbox="961 1428 1490 1455"><i>128D2060.10-LOD-350 Compressed-Air Systems</i></p>
400	<p data-bbox="253 1486 894 1539">Supplementary components added to the model required for fabrication and field installation.</p>	 <p data-bbox="961 1827 1490 1854"><i>129D2060.10-LOD-400 Compressed-Air Systems</i></p>



## D2060.20 – Vacuum Systems

[See [D2060.10](#)]

## D2060.30 – Gas Systems

[See [D2060.10](#)]

## D2060.40 – Chemical-Waste Systems

[See [D2060.10](#)]

## D2060.50 – Processed Water Systems

[See [D2060.10](#)]

## D2060.90 – Process Support Plumbing System Supplementary Components

*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.***

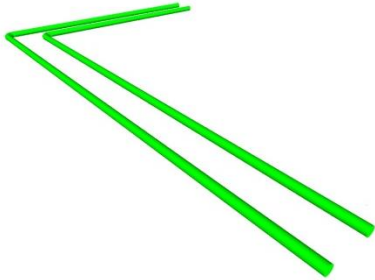
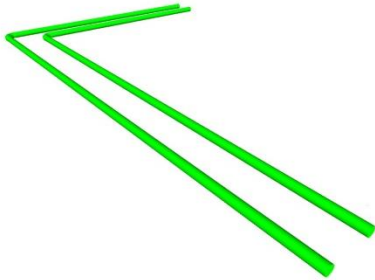
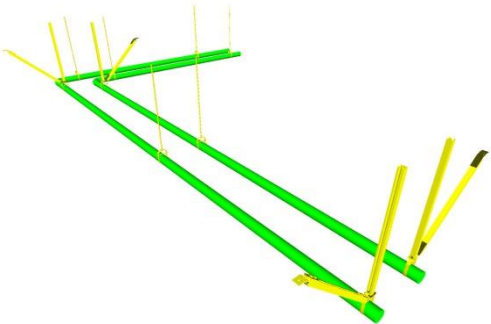
## D30 HVAC

100	Diagrammatic or schematic model elements; conceptual and/or schematic layout/flow diagram; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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## D3010 – Facility Fuel Systems

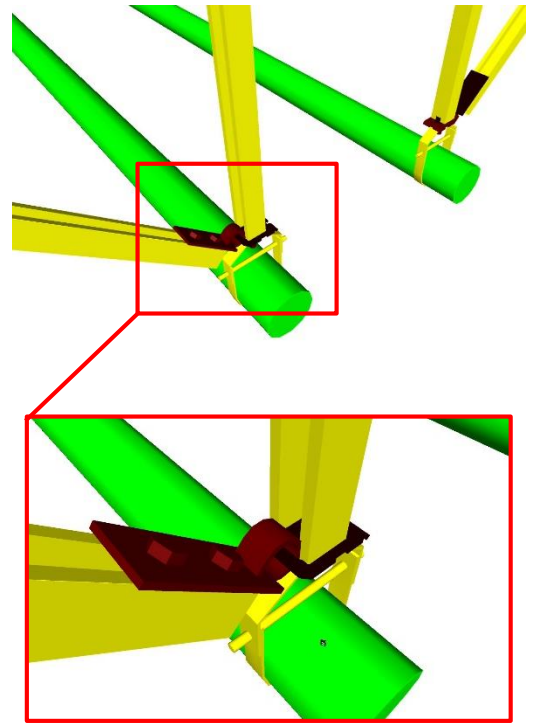
100	See <a href="#">D30</a>	
200	Schematic layout with approximate size, shape, and location of element(s); approximate access/code clearance requirements modeled; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

### D3010.10 – Fuel Piping

100	See <a href="#">D30</a>	
200	See <a href="#">D3010</a>	 <p data-bbox="940 667 1266 695"><i>130 D3010.10-200 Fuel Piping</i></p>
300	<p data-bbox="250 724 846 804">Modeled as design-specified size, shape, spacing, and location of pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="250 823 898 930">approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="250 947 818 974">actual access/code clearance requirements modeled.</p>	 <p data-bbox="940 1075 1266 1102"><i>131 D3010.10-300 Fuel Piping</i></p>
350	<p data-bbox="250 1129 909 1209">Modeled as actual size, shape, spacing, and location/connections of pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="250 1228 876 1308">actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="250 1325 708 1352">actual floor and wall penetrations modeled.</p>	 <p data-bbox="940 1524 1266 1551"><i>132 D3010.10-350 Fuel Piping</i></p>

400

Supplementary components added to the model required for fabrication and field installation

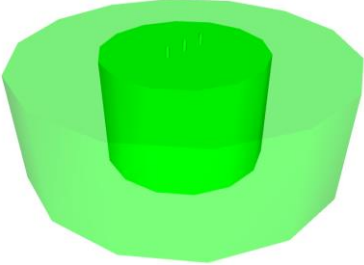
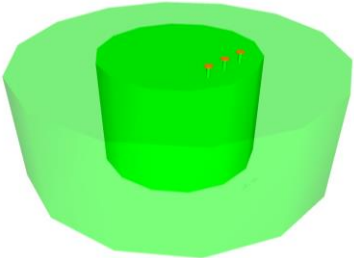
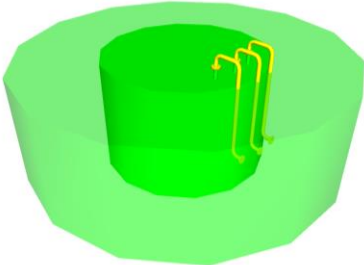


*133 D3010.10-400 Fuel Piping*

### D3010.30 – Fuel Pumps

100	See <a href="#">D30</a>	
200	See <a href="#">D3010</a>	
300	Modeled as design-specified size, shape, spacing, and location of equipment; approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment; actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location/connections of equipment; actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment.	
400	See <a href="#">D3010.10</a>	

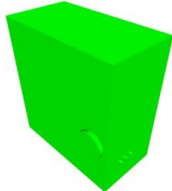
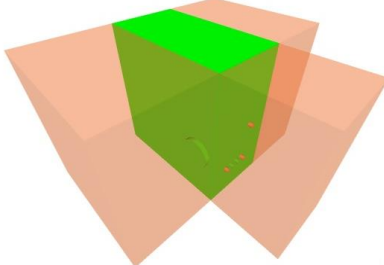
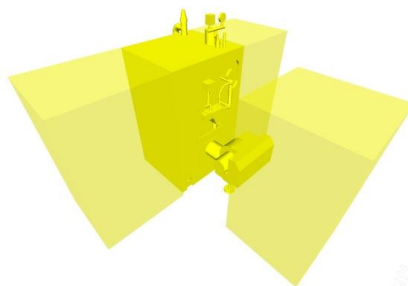
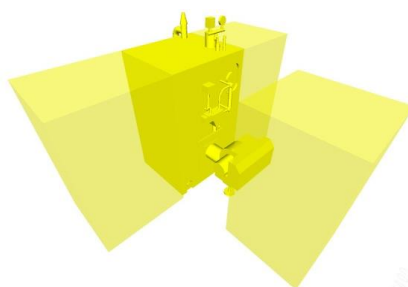
### D3010.50 – Fuel Storage Tanks

100	See <a href="#">D30</a>	
200	See <a href="#">D3010</a>	 <p data-bbox="959 646 1433 674"><i>134 D3010.50-LOD-200 Fuel Storage Tanks</i></p>
300	<p data-bbox="253 705 930 758">Modeled as design-specified size, shape, spacing, and location of tank(s);</p> <p data-bbox="253 779 930 856">approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of tanks(s);</p> <p data-bbox="253 877 821 905">actual access/code clearance requirements modeled.</p>	 <p data-bbox="959 1045 1433 1073"><i>135 D3010.50-LOD-300 Fuel Storage Tanks</i></p>
350	<p data-bbox="253 1104 727 1157">Modeled as actual size, shape, spacing, and location/connections of tank(s);</p> <p data-bbox="253 1178 911 1255">actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of tanks(s).</p>	 <p data-bbox="959 1451 1433 1478"><i>136 D3010.50-LOD-350 Fuel Storage Tanks</i></p>
400	See <a href="#">D3010.10</a>	 <p data-bbox="959 1839 1433 1866"><i>137 D3010.50-LOD-400 Fuel Storage Tanks</i></p>

## D3020 – Heating Systems

100	See <a href="#">D30</a>	
200	Schematic layout with approximate size, shape, and location of element(s); approximate access/code clearance requirements modeled; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

### D3020.10 – Heat Generation

100	See <a href="#">D30</a>	
200	See <a href="#">D3020</a>	 <p><i>138 D3020.10-LOD-200 Heat Generation</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of equipment;</p> <p>approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>139 D3020.10-LOD-300 Heat Generation</i></p>
350	<p>Modeled as actual size, shape, spacing, and location/connections of equipment,</p> <p>actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment.</p>	 <p><i>140 D3020.10-LOD-350 Heat Generation</i></p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p><i>141 D3020.10-LOD-400 Heat Generation</i></p>



## D3020.30 – Thermal Heat Storage

[See [D3020.10](#)]

## D3020.70 – Decentralized Heating Equipment

[See [D3020.10](#)]

## D3020.90 – Heating System Supplementary Components

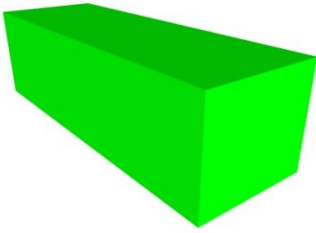
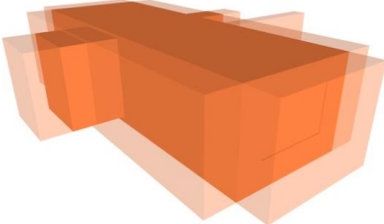
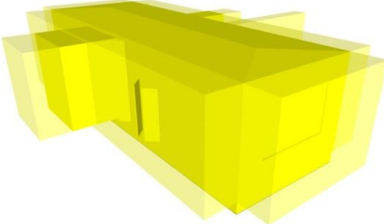
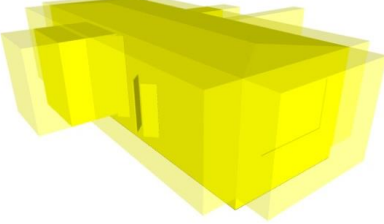
*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.***

## D3030 – Cooling Systems

100	See <a href="#">D30</a>	
200	Schematic layout with approximate size, shape, and location of element(s); approximate access/code clearance requirements modeled; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

## D3030.10 – Central Cooling

100	See <a href="#">D30</a>	
200	See <a href="#">D3030</a>	 <p><i>142 D3030.10-LOD-200 Central Cooling</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of equipment;</p> <p>approximate allowances for spacing and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>143 D3030.10-LOD-300 Central Cooling</i></p>
350	<p>Modeled as actual size, shape, spacing, and location/connections of equipment;</p> <p>actual size, shape, spacing, and clearances required for all specified anchors, supports, vibration and seismic control that are utilized in the layout of equipment.</p>	 <p><i>144 D3030.10-LOD-350 Central Cooling</i></p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p><i>145 D3030.10-LOD-400 Central Cooling</i></p>

### D3030.30 – Evaporative Air-Cooling

100	See <a href="#">D3030.10</a>	
200	See <a href="#">D3030.10</a>	 <i>146D3030.30-LOD-200 Evaporative Air-Cooling</i>
300	See <a href="#">D3030.10</a>	 <i>147D3030.30-LOD-300 Evaporative Air-Cooling</i>
350	See <a href="#">D3030.10</a>	 <i>148D3030.30-LOD-350 Evaporative Air-Cooling</i>
400	See <a href="#">D3030.10</a>	 <i>149D3030.30-LOD-400 Evaporative Air-Cooling</i>

### D3030.50 – Thermal Cooling Storage

[See [D3030.10](#)]

### D3030.70 – Decentralized Cooling

[See [D3030.10](#)]

### D3030.90 – Cooling System Supplementary Components

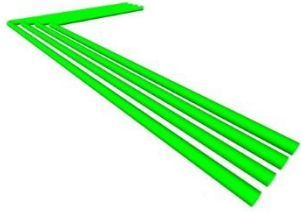
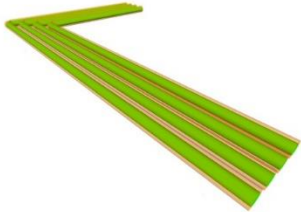
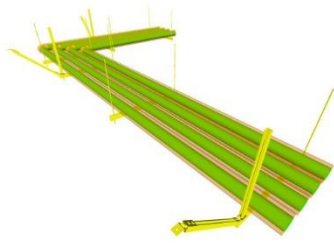
*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.***

### D3050 – Facility HVAC Distribution Systems

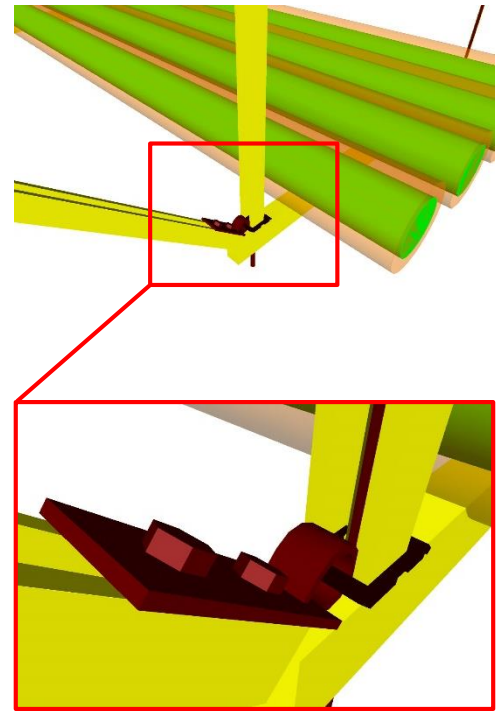
100	See <a href="#">D30</a>	
200	Schematic layout with approximate size, shape, and location of element(s); approximate access/code clearance requirements modeled; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

### D3050.10 – Facility Hydronic Distribution

100	See <a href="#">D30</a>	
200	See <a href="#">D3050</a>	 <p data-bbox="963 655 1523 684"><i>150 D3050.10-LOD-200 Facility Hydronic Distribution</i></p>
300	<p data-bbox="251 781 933 861">Modeled as design-specified size, shape, spacing, location, and slope of pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="251 877 933 957">approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="251 974 820 1003">actual access/code clearance requirements modeled.</p>	 <p data-bbox="963 1043 1523 1073"><i>151 D3050.10-LOD-300 Facility Hydronic Distribution</i></p>
350	<p data-bbox="251 1169 917 1249">Modeled as actual size, shape, spacing, location, connections, and slope of pipe, valves, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="251 1266 933 1346">actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="251 1362 711 1392">actual floor and wall penetrations modeled.</p>	 <p data-bbox="963 1507 1523 1537"><i>152 D3050.10-LOD-350 Facility Hydronic Distribution</i></p>

400

Supplementary components added to the model required for fabrication and field installation.



*153 D3050.10-LOD-400 Facility Hydronic Distribution*

## D3050.30 – Facility Steam Distribution

[See [D3050.10](#)]

## D3050.50 – HVAC Air Distribution

100	See <a href="#">D30</a>	
200	See <a href="#">D3050</a>	
300	<p>Modeled as design-specified size, shape, spacing, and location of duct, dampers, fittings, and insulation for risers, mains, and branches;</p> <p>approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;</p> <p>actual access/code clearance requirements modeled.</p>	
350	<p>Modeled as actual size, shape, spacing, and location/connections of duct, dampers, fittings, and insulation for risers, mains, and branches;</p> <p>actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;</p> <p>actual floor and wall penetrations modeled.</p>	
400	See <a href="#">D3050.10</a>	

## D3050.90 – Facility Distribution Systems Supplementary Components

*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

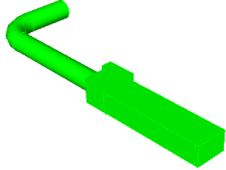
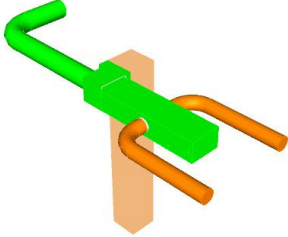
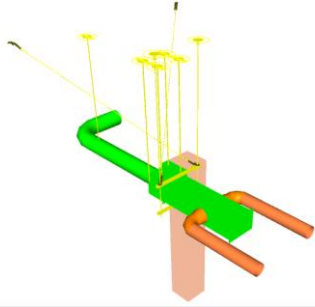
***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.***

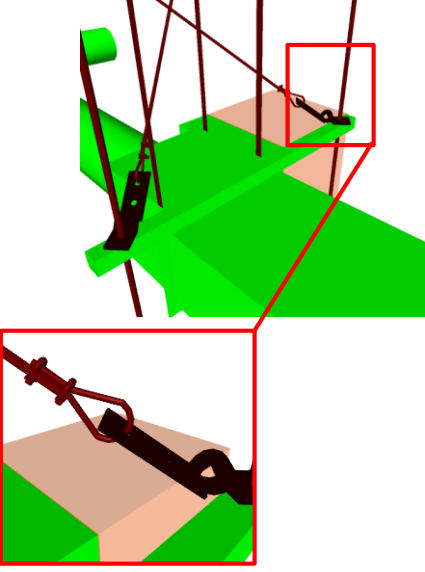
## D3060 – Ventilation

100	See <a href="#">D30</a>	
200	<p>Schematic layout with approximate size, shape, and location of mains and risers;</p> <p>shaft requirements modeled;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	



### D3060.10 – Supply Air

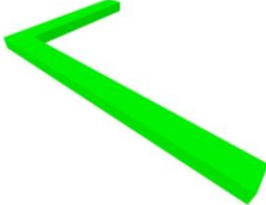
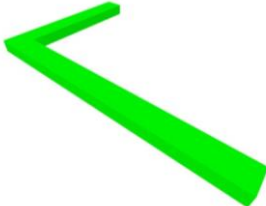

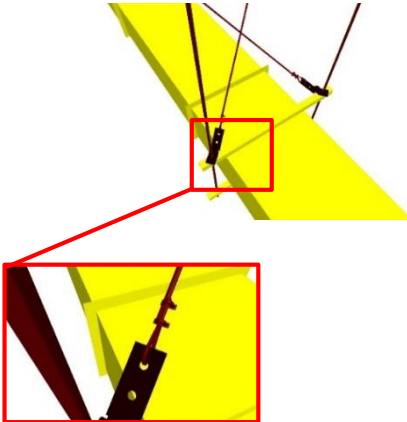
100	See <a href="#">D30</a>	
200	See <a href="#">D3060</a>	 <p data-bbox="976 621 1344 646"><i>154D3060.10-LOD-200 Supply Air</i></p>
300	<p data-bbox="256 678 927 758">Modeled as design-specified size, shape, spacing, and location of duct, dampers, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="256 779 927 884">approximate specified allowances for spacing and clearances required for all hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="256 905 821 930">actual access/code clearance requirements modeled.</p>	 <p data-bbox="976 999 1344 1024"><i>155D3060.10-LOD-300 Supply Air</i></p>
350	<p data-bbox="256 1056 927 1136">Modeled as actual size, shape, spacing, and location/connections of duct, dampers, fittings, and insulation for risers, mains, and branches;</p> <p data-bbox="256 1157 927 1241">actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches;</p> <p data-bbox="256 1262 711 1287">actual floor and wall penetrations modeled.</p>	 <p data-bbox="976 1440 1344 1465"><i>156D3060.10-LOD-350 Supply Air</i></p>

400	Supplementary components added to the model required for fabrication and field installation.	 <p>157D3060.10-LOD-400 Supply Air</p>
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### D3060.20 – Return Air

[See [D3060.10](#)]

D3060.30 – Exhaust Air

100	See <a href="#">D30</a>	
200	See <a href="#">D3060</a>	 <p data-bbox="1049 611 1430 638"><i>158 D3060.30-LOD-200 Exhaust Air</i></p>
300	<p data-bbox="250 669 1019 863">Modeled as design-specified size, shape, spacing, location, duct slope (if required), dampers, fittings, insulation for risers, mains, and branches; approximate specified allowances for spacing and clearances required for all hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches; actual access/code clearance requirements modeled.</p>	 <p data-bbox="1049 953 1430 980"><i>159 D3060.30-LOD-300 Exhaust Air</i></p>
350	<p data-bbox="250 1014 1019 1236">Modeled as actual size, shape, spacing, location, and slope(if required)/connections of duct, dampers, fittings, and insulation for risers, mains, and branches; actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches; actual floor and wall penetrations modeled.</p>	 <p data-bbox="1049 1346 1430 1373"><i>160 D3060.30-LOD-350 Exhaust Air</i></p>
400	See <a href="#">D3060.10</a>	 <p data-bbox="1049 1835 1430 1862"><i>161 D3060.30-LOD-400 Exhaust Air</i></p>

## D3060.40 – Outside Air

[See [D3060.10](#)]

## D3060.60 – Air-to-Air Energy Recovery

[See [D3060.10](#)]

## D3060.70 – HVAC Air Cleaning

[See [D3060.10](#)]

## D3060.90 – Ventilation Supplementary Components

*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

***These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.***

## D3070 – Special Purpose HVAC Systems

100	See <a href="#">D30</a>	
200	Schematic layout with approximate size, shape, and location of components;  design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

## D3070.10 – Snow Melting

100	See <a href="#">D30</a>	
200	See <a href="#">D3070</a>	
300	Modeled as design-specified size, shape, spacing, and location of supplementary components;  approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all supplementary components;  actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location/connections of supplementary components;  actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all supplementary components.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D40 Fire Protection

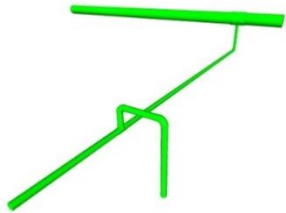
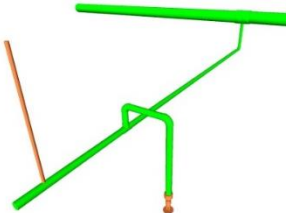
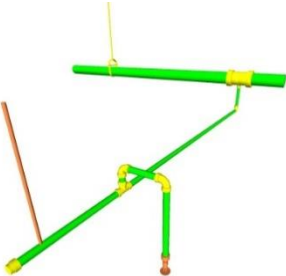

100	Diagrammatic or schematic model elements;  conceptual and/or schematic layout/flow diagram;  design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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## D4010 – Fire Suppression

100	See <a href="#">D40</a>	
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200	Schematic layout with approximate size, shape, and location of mains and risers; approximate access/code clearance requirements modeled; shaft requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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## D4010.10 – Water-Based Fire-Suppression

100	See <a href="#">D40</a>	
200	See <a href="#">D4010</a>	 <p data-bbox="992 594 1446 646"><i>162 D4010.10-LOD-200 Water-Based Fire-Suppression</i></p>
300	<p data-bbox="240 680 964 758">Modeled as design-specified size, shape, spacing, and location of pipe/slope(if required)/valves/fittings/insulation for risers, mains, and branches/standpipes;</p> <p data-bbox="240 779 951 884">approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all risers, mains, and branches/standpipes;</p> <p data-bbox="240 905 808 926">actual access/code clearance requirements modeled.</p>	 <p data-bbox="992 947 1446 999"><i>163 D4010.10-LOD-300 Water-Based Fire-Suppression</i></p>
350	<p data-bbox="240 1031 911 1108">Modeled as actual size, shape, spacing, and location/ slope(if required)/connections of pipe, valves, fittings, and insulation for risers, mains, and branches/standpipes;</p> <p data-bbox="240 1129 943 1207">actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all risers, mains, and branches/standpipes;</p> <p data-bbox="240 1228 699 1249">actual floor and wall penetrations modeled.</p>	 <p data-bbox="992 1367 1446 1419"><i>164 D4010.10-LOD-350 Water-Based Fire-Suppression</i></p>
400	Supplementary components added to the model required for fabrication and field installation.	 <p data-bbox="992 1776 1446 1829"><i>165 D4010.10-LOD-400 Water-Based Fire-Suppression</i></p>

## D4010.50 – Fire-Extinguishing

[See [D4010.10](#)]

## D4010.90 – Fire Suppression Supplementary Components

*Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.*

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.**

## D4030 – Fire Protection Specialties

100	See <a href="#">D40</a>	
200	Schematic layout with approximate size, shape, and location of components;  design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

## D4030.10 – Fire Protection Cabinets

100	See <a href="#">D40</a>	
200	See <a href="#">D4030</a>	
300	Modeled as design-specified size, shape, spacing, and location of components;  approximate allowances for spacing and clearances required for all specified hangers, supports, vibration and seismic control that are to be utilized in the layout of all components;  actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location/connections of components;  actual size, shape, spacing, and clearances required for all hangers, supports, vibration and seismic control that are utilized in the layout of all components.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D4030.30 – Fire Extinguishers

[See [D4030.10](#)]

## D4030.50 – Breathing Air Replenishment Systems

[See [D4030.10](#)]

## D4030.70 – Fire Extinguisher Accessories

[See [D4030.10](#)]

## D50 Electrical

100	Diagrammatic or schematic model elements: conceptual and/or schematic layout; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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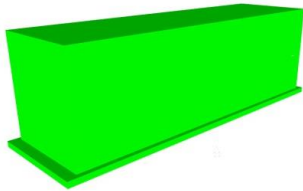
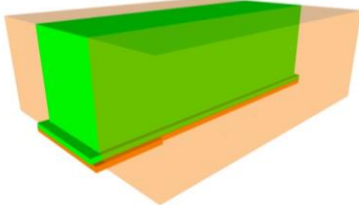
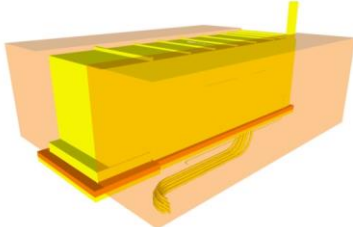
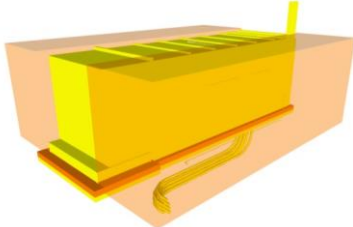
## D5010 – Facility Power Generation

100	See <a href="#">D50</a>	
200	Schematic layout with approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	



## D5010.10 – Packaged Generator Assemblies

*Description: Generator, frequency changers, and rotary converters and uninterruptible power units.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5010</a>	 <p><i>166 D5010.10-LOD-200 Packaged Generator Assemblies</i></p>
300	<p>Modeled as design-specified size, shape, spacing, and location of equipment and associated components;</p> <p>approximate allowances for spacing and clearances required for all specified supports and seismic control;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>167 D5010.10-LOD-300 Packaged Generator Assemblies</i></p>
350	<p>Modeled as actual size, shape, spacing, and location of equipment and associated components;</p> <p>actual size, shape, spacing, and location for supports and seismic control;</p> <p>actual size, shape, and location/connections of equipment and support structure/pads.</p>	 <p><i>168 D5010.10-LOD-350 Packaged Generator Assemblies</i></p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p><i>169 D5010.10-LOD-400 Packaged Generator Assemblies</i></p>

### D5010.20 – Battery Equipment

*Description: Batteries, battery racks, battery chargers, static power converters, uninterruptible power supplies, and accessories.*

[See [D5010.10](#)]

### D5010.30 – Photovoltaic Collectors

*Description: Solar cells to convert sunlight to electricity.*

[See [D5010.10](#)]

### D5010.40 – Fuel Cells

*Description: Fuel cell electricity generating equipment.*

[See [D5010.10](#)]

### D5010.70 – Transfer Switches

*Description: Switches that transfer from one source of electricity to another.*

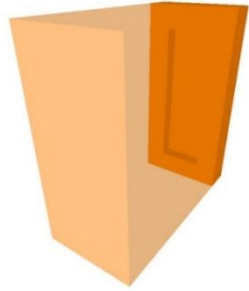
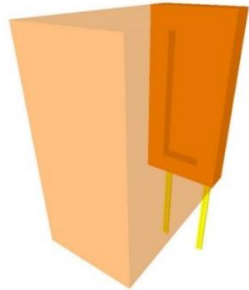
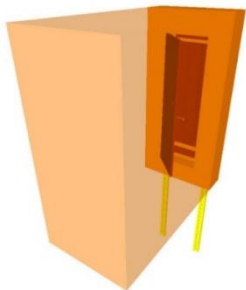
[See [D5010.10](#)]

## D5020 – Electrical Service and Distribution

100	See <a href="#">D50</a>	
200	Schematic layout with approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

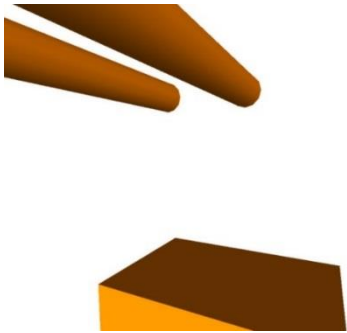
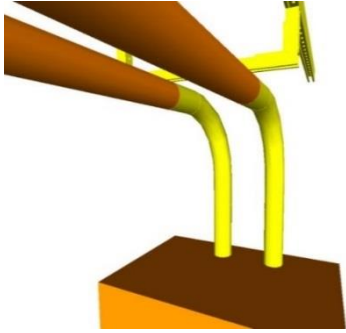
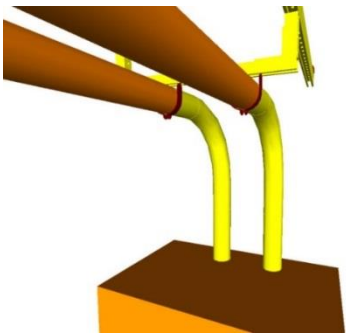
## D5020.10 – Electrical Service Entrance

*Description: Meters, substations, transformers, switchgear, switchboards, and protective devices where electrical power enters structure.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5020</a>	
300	<p>Modeled as design-specified size, shape, spacing, and location of equipment and associated components;</p> <p>approximate allowances for spacing and clearances required for all specified supports and seismic control;</p> <p>actual access/code clearance requirements modeled.</p>	 <p><i>170 D5020.10-LOD-300 Electrical Service Entrance</i></p>
350	<p>Modeled as actual size, shape, spacing, and location of equipment and associated components;</p> <p>actual size, shape, spacing, and location for supports and seismic control;</p> <p>actual size, shape, and location/connections of equipment and support structure/pads.</p>	 <p><i>171 D5020.10-LOD-350 Electrical Service Entrance</i></p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p><i>172 D5020.10-LOD-400 Electrical Service Entrance</i></p>

## D5020.30 – Power Distribution

*Description: Bus assemblies, distribution equipment, and electrical wiring system to distribute electrical power to switchboards, panelboards, and motor control centers.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5020</a>	
300	<p>Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures, and equipment; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; actual access/code clearance requirements modeled.</p>	 <p>173 D5020.30-LOD-300 Power Distribution</p>
350	<p>Modeled as actual size, shape, spacing, and location of raceways, boxes, and enclosures; actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads; actual floor and wall penetrations are modeled.</p>	 <p>174 D5020.30-LOD-350 Power Distribution</p>
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	 <p>175 D5020.30-LOD-400 Power Distribution</p>

## D5020.70 – Facility Grounding

*Description: Raceways, wiring and devices for grounding and bonding an electrical distribution system.*

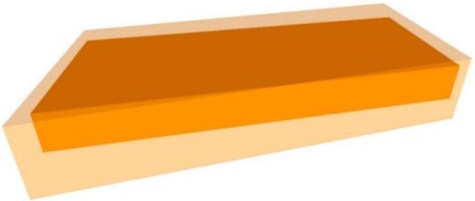
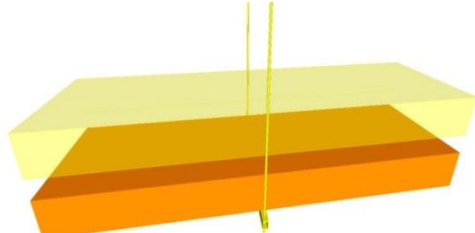
100	See <a href="#">D50</a>	
200	See <a href="#">D5020</a>	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures, and the electrical equipment and end-devices served;  approximate allowances for spacing and clearances required for all specified hangers, supports, and seismic control;  actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, enclosures, and the electrical equipment and end-devices served;  actual size, shape, spacing, and location for supports and seismic control;  actual floor and wall penetrations are modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D5030 – General Purpose Electrical Power

100	See <a href="#">D50</a>	
200	Schematic layout with approximate size, shape, and location of equipment;  approximate access/code clearance requirements modeled;  design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

## D5030.10 – Branch Wiring System

*Description: Raceways, ducts, cable trays, and wiring to deliver power from branch panelboards to the point of use.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5030</a>	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, and enclosures;  approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control;  actual access/code clearance requirements modeled.	 <p>176 D5030.10-LOD-300 Branch Wiring System</p>
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, enclosures;  actual size, shape, spacing, and location for supports and seismic control;  actual floor and wall penetrations are modeled.	 <p>177 D5030.10-LOD-350 Branch Wiring System</p>
400	Supplementary components added to the model required for fabrication and field installation.	

## D5030.50 – Wiring Devices

*Description: Electrical devices at point of use including electrical outlets and switches.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5030</a>	
300	Modeled as design-specified size, shape, spacing, and location of outlet boxes and devices;  actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of outlet boxes and devices.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D5040 – Lighting

100	See <a href="#">D50</a>	
200	Schematic layout with approximate size, shape, and location of equipment;  approximate access/code clearance requirements modeled;	

	design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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### D5040.10 – Lighting Control

*Description: Clock and calendar, photoelectric switches, occupancy sensors, and light-leveling control devices.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5040</a>	
300	Modeled as design-specified size, shape, spacing, and location of enclosures, equipment, and devices; actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of enclosures, equipment, and control devices; actual size, shape, and location/connections of equipment and control devices.	
400	Supplementary components added to the model required for fabrication and field installation.	

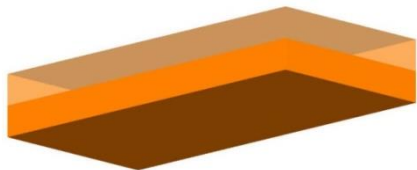
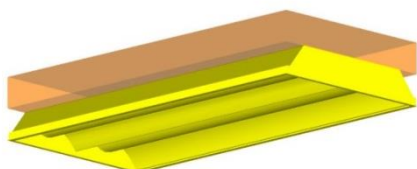
### D5040.20 – Branch Wiring for Lighting

*Description: Raceways, ducts, trays, and wiring beyond branch circuit panelboards to lighting fixtures.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5040</a>	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, and enclosures to fixture locations; approximate allowances for spacing and clearances required for all specified hangers, supports, and seismic control.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, and enclosures to fixture locations; actual size, shape, spacing, and location for supports and seismic control; actual floor and wall penetrations are modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D5040.50 – Lighting Fixtures

*Description: Luminaires, lighting equipment, ballasts, and accessories. Includes fluorescent, high intensity discharge, incandescent, mercury vapor, neon, and sodium vapor lighting.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5040</a>	
300	Modeled as design-specified size, shape, spacing, and location of lighting fixtures; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; actual access/code clearance requirements modeled.	 <p>178 D5040.50-LOD-300 Lighting Fixtures</p>
350	Modeled as actual size, shape, spacing, and location of lighting fixtures. actual size, shape, spacing, and location for supports and seismic control.	 <p>179 D5040.50-LOD-350 Lighting Fixtures</p>
400	Supplementary components added to the model required for fabrication and field installation.	

## D5080 – Miscellaneous Electrical Systems

100	See <a href="#">D50</a>	
200	Schematic layout with approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	



## D5080.10 – Lightning Protection

*Description: Wiring and equipment for lightning protection.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5080</a>	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures including the electrical equipment and end-devices served; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, enclosures including the electrical equipment, fixtures, and end-devices served actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads; actual floor and wall penetrations are modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D5080.70 – Transient Voltage Suppression

*Description: Devices to protect against voltage surges on electrical distribution systems.*

100	See <a href="#">D50</a>	
200	See <a href="#">D5080</a>	
300	Modeled as design-specified size, shape, spacing, and location of equipment; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of the equipment; actual size, shape, spacing, and location for supports and seismic control.	
400	Supplementary components added to the model required for fabrication and field installation.	

## D60 Communications

[See [Fundamental LOD Definitions](#)]

### D6010 – Data Communications

[See [Fundamental LOD Definitions](#)]

### D6020 – Voice Communications

[See [Fundamental LOD Definitions](#)]

### D6030 – Audio-Video Communication

[See [Fundamental LOD Definitions](#)]

### D6060 – Distributed Communications and Monitoring

[See [Fundamental LOD Definitions](#)]

### D6090 – Communications Supplementary Components

[See [Fundamental LOD Definitions](#)]

## D70 Electronic Safety and Security

[See [Fundamental LOD Definitions](#)]

### D7010 – Access Control and Intrusion Detection

[See [Fundamental LOD Definitions](#)]

### D7030 – Electronic Surveillance

[See [Fundamental LOD Definitions](#)]

### D7050 – Detection and Alarm

[See [Fundamental LOD Definitions](#)]

## D7070 – Electronic Monitoring and Control

[See [Fundamental LOD Definitions](#)]

## D7090 – Electronic Safety and Security Supplementary Components

**These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.**

## D80 Integrated Automation

[See [Fundamental LOD Definitions](#)]

## D8010 – Integrated Automation Facility Controls

[See [Fundamental LOD Definitions](#)]

## E: EQUIPMENT & FURNISHINGS

### E10 Equipment

100	Diagrammatic or schematic model elements: conceptual and/or schematic layout; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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### E1010 – Vehicle and Pedestrian Equipment

100	See <a href="#">E10</a>	
200	Schematic layout with approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	

### E1010.10 – Vehicle Servicing Equipment

100	See <a href="#">E10</a>	
200	See <a href="#">E1010</a>	
300	Modeled as design-specified size, shape, spacing, and location of equipment and associated components; approximate allowances for spacing and clearances required for all specified supports and seismic control; actual access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of equipment and associated components; actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads.	
400	Supplementary components added to the model required for fabrication and field installation.	

### E1010.30 – Interior Parking Control Equipment

[See [E1010.10](#)]

### E1010.50 – Loading Dock Equipment

[See [E1010.10](#)]

### E1010.70 – Interior Pedestrian Control Equipment

[See [E1010.10](#)]

### E1030 – Commercial Equipment

[See [E1010](#)]

E1030.10 – Mercantile and Service Equipment

[See [E1010.10](#)]

E1030.20 – Vault Equipment

[See [E1010.10](#)]

E1030.25 – Teller and Service Equipment

[See [E1010.10](#)]

E1030.30 – Refrigerated Display Equipment

[See [E1010.10](#)]

E1030.35 – Commercial Laundry and Dry Cleaning Equipment

[See [E1010.10](#)]

E1030.40 – Maintenance Equipment

[See [E1010.10](#)]

E1030.50 – Hospitality Equipment

[See [E1010.10](#)]

E1030.55 – Unit Kitchens

[See [E1010.10](#)]

E1030.60 – Photographic Processing Equipment

[See [E1010.10](#)]

E1030.70 – Postal, Packaging and Shipping Equipment

[See [E1010.10](#)]

E1030.75 – Office Equipment

[See [E1010.10](#)]

E1030.80 – Foodservice Equipment

[See [E1010.10](#)]

## E1040 – Institutional Equipment

[See [E1010](#)]

### E1040.10 – Educational and Scientific Equipment

[See [E1010.10](#)]

### E1040.20 – Healthcare Equipment

[See [E1010.10](#)]

### E1040.40 – Religious Equipment

[See [E1010.10](#)]

### E1040.60 – Security Equipment

[See [E1010.10](#)]

### E1040.70 – Detention Equipment

[See [E1010.10](#)]

## E1060 – Residential Equipment

[See [E1010](#)]

### E1060.10 – Residential Appliances

[See [E1010.10](#)]

### E1060.50 – Residential Stairs

[See [B1080](#)]

### E1060.70 – Residential Ceiling Fans

[See [E1010.10](#)]

## E1070 – Entertainment and Recreational Equipment

[See [E1010](#)]

### E1070.10 – Theater and Stage Equipment

[See [E1010.10](#)]

### E1070.20 – Musical Equipment

[See [E1010.10](#)]

### E1070.50 – Athletic Equipment

[See [E1010.10](#)]

### E1070.60 – Recreational Equipment

[See [E1010.10](#)]

## E1090 – Other Equipment

[See [E1010](#)]

### E1090.10 – Solid Waste Handling Equipment

[See [E1010.10](#)]

### E1090.30 – Agricultural Equipment

[See [E1010.10](#)]

### E1090.40 – Horticultural Equipment

[See [E1010.10](#)]

### E1090.60 – Decontamination Equipment

[See [E1010.10](#)]

## E20 Furnishings

100	A schematic model element or symbol that is not distinguishable by type or material.  Types, layouts, and locations are still flexible.	
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## E2010 – Fixed Furnishings

100	See <a href="#">E20</a>	
200	Generic model elements with approximate nominal size.  Placement and quantity remains flexible.  Required non-graphic information associated with model elements includes included with element: <ul style="list-style-type: none"> <li>Type of object</li> </ul>	

### E2010.10 – Fixed Art

100	See <a href="#">E20</a>	
200	See <a href="#">E2010</a>	
300	Modeled types with specific dimensions, locations, and quantities.	
350	Include any applicable service or installation clearances.  Include any applicable support or connection points.	
400	Supplementary components added to the model required for fabrication and field installation.	

### E2010.20 – Window Treatments

[See [E2010.10](#)]

### E2010.30 – Casework

[See [E2010.10](#)]

### E2010.70 – Fixed Multiple Seating

[See [E2010.10](#)]

### E2010.90 – Other Fixed Furnishings

[See [E2010.10](#)]

## E2050 – Movable Furnishings

[See [E2010](#)]

### E2050.10 – Movable Art

[See [E2010.10](#)]

### E2050.30 – Furniture

[See [E2010.10](#)]

### E2050.40 – Accessories

[See [E2010.10](#)]

### E2050.60 – Movable Multiple Seating

[See [E2010.10](#)]

### E2050.90 – Other Movable Furnishings

[See [E2010.10](#)]



## F: SPECIAL CONSTRUCTION & DEMOLITION

### F10 Special Construction

#### F1010 – Integrated Construction

[See [Fundamental LOD Definitions](#)]

#### F1020 – Special Structures

[See [Fundamental LOD Definitions](#)]

#### F1030 – Special Function Construction

[See [Fundamental LOD Definitions](#)]

#### F1050 – Special Facility Components

[See [Fundamental LOD Definitions](#)]

#### F1060 – Athletic and Recreational Special Construction

[See [Fundamental LOD Definitions](#)]

#### F1080 – Special Instrumentation

[See [Fundamental LOD Definitions](#)]

### F20 Facility Remediation

#### F2010 – Hazardous Materials Remediation

[See [Fundamental LOD Definitions](#)]

### F30 Demolition

#### F3010 – Structure Demolition

[See [Fundamental LOD Definitions](#)]

#### F3030 – Selective Demolition


[See [Fundamental LOD Definitions](#)]

#### F3050 – Structure Moving

[See [Fundamental LOD Definitions](#)]

## G: BUILDING SITEWORK

### G10 Site Preparation

100	A simple topographic surface is provided.	 <p><i>180 G10-LOD-100 Site Preparation</i></p>
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Approximate size and shape of foundation element</li> <li>• Approximate size/location of utilities and structures</li> <li>• Approximate code and clearance requirements</li> <li>• Approximate pipe material</li> <li>• Rough modeling of site grading</li> </ul>	

G1010 – Site Clearing

G1020 – Site Elements Demolition

G1030 – Site Element Relocations

G1050 – Site Remediation

G1070 – Site Earthwork

## G1070.10 – Grading

100	<p>Existing Surface: 3D surface generated from site topography, with grade breaks and lines as needed to define accurate surface. 3D site features included if provided by surveyor (i.e. walls, signage, stairs, etc., as defined in Survey LOC-Grade)</p> <p>Proposed Surface: Generic Surface Interpolation between the following elements: Building Envelope at Finish Floor, Finish Grade at Retaining Walls, Grading Limits</p> <p>Local Coordinate Control. Shared Coordinate from Building Grid base point to real-world project control</p>	
200	<p>Existing Surface: Added definition from supplemental survey, revised limits of work</p> <p>Proposed Surface: Added definition including curbs, hardscape, finish surface at building envelopes (to correspond to stem walls/deepened footings).</p>	
300	<p>Existing Surface: Added definition from supplemental survey, revised limits of work</p> <p>Proposed Surface: Complete and accurate surface definition based on defined fine grading, grade breaks, curbs, hardscape, buildings, swales, etc.</p>	

## G20 Site Improvements

100	Diagrammatic or schematic model elements.	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> <li>• Approximate size and shape of foundation element</li> <li>• Approximate size/location of utilities and structures</li> <li>• Approximate code and clearance requirements</li> <li>• Approximate pipe material</li> <li>• Rough modeling of site grading</li> <li>• Local structural building grids defined in model and coordinated with global state plane coordinate system for site model.</li> </ul>	

## G2010 – Roadways

[See [Fundamental LOD Definitions](#)]

## G2020 – Parking Lots

[See [Fundamental LOD Definitions](#)]

## G2020.10 – Parking Lot Pavement

100	See <a href="#">G20</a>	
200	See <a href="#">G20</a>	
300	Specific thickness of pavement and substrate modeled. All drainage slopes modeled.	
350	Openings for drains and other services modeled.	

## G2020.20 – Parking Lot Curbs and Gutters

100	See <a href="#">G20</a>	
200	See <a href="#">G20</a>	
300	Full extents of curbs and gutters (above and below grade) are modeled.	
350	Element modeling to include: <ul style="list-style-type: none"><li>• Reinforcing</li><li>• Pour stops</li><li>• Expansion joints</li></ul>	

## G2020.40 – Parking Lot Appurtenances

*Includes traffic signals, signage, striping.*

[See [Fundamental LOD Definitions](#)]

## G2030 – Pedestrian Plazas and Walkways

## G2040 – Airfields

## G2050 – Athletic, Recreational, and Playfield Areas

## G2060 – Site Development

[See [Fundamental LOD Definitions](#)]

## G2080 – Landscaping

[See [Fundamental LOD Definitions](#)]

## G30 Liquid and Gas Site Utilities

100	Horizontal Pipe Alignment, assumed elevation and sizing	
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## G3010 – Water Utilities

100	See <a href="#">G30</a>	
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### G3010.10 – Site Domestic Water Distribution

100	See <a href="#">G30</a>	
200	Added materials, sizes, vertical control and appurtenances (valves, hydrants, BFP, FDC, PIV, BOV, ARV)	

### G3010.30 – Site Fire Protection Water Distribution

100	See <a href="#">G30</a>	
200	Added materials, sizes, vertical control and appurtenances (valves, hydrants, BFP, FDC, PIV, BOV, ARV)	

## G3020 – Sanitary Sewerage Utilities

100	See <a href="#">G30</a>	
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### G3020.20 – Sanitary Sewerage Piping

100	See <a href="#">G30</a>	
200	Horizontal alignment, elevations and sizing, generic materials	
300	Specific elevations, sizes, materials	

### G3020.50 – Sanitary Sewerage Structures

100	See <a href="#">G30</a>	
200	Added specific structure types, sizes and materials approximate, all locations	
300	Added specific structure elements at all locations, specific sizes and materials	

## G3030 – Storm Drainage Utilities

100	See <a href="#">G30</a>	
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## G3050 – Site Energy Distribution

100	See <a href="#">G30</a>	
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## G3060 – Site Fuel Distribution

100	See <a href="#">G30</a>	
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## G3090 – Liquid and Gas Site Utilities Supplementary Components


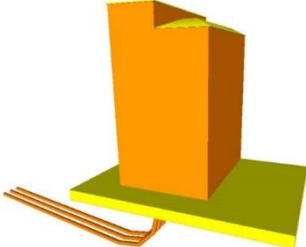
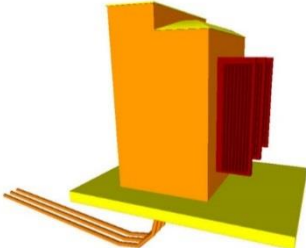
*These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.*

## G40 Electrical Site Improvements

100	Diagrammatic or schematic model elements: conceptual and/or schematic layout; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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## G4010 – Site Electric Distribution Systems

*Description: Electrical wiring systems to distribute electrical power to on the Site. Includes Duct Banks, Pullboxes, vaults and transformers from the utility point of connection, to the building's main electric room.*

100	See <a href="#">G40</a>	
200	Generic model elements in schematic layout with: approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
300	Modeled as design-specified size, shape, spacing, and location of raceways/ boxes/enclosures/duct banks in the power distribution system  specified size, shape, spacing, and location of equipment and associated components;  approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control  access/code clearance requirements modeled	 <p><i>181 G4010-LOD-300 Site Electric Distribution Systems</i></p>
350	Modeled as actual size, shape, spacing, and location of raceways/ boxes/enclosures/duct banks in the power distribution system;  actual size, shape, spacing, and location for supports and seismic control;  actual size, shape, and location/connections of equipment and support structure/pads.	 <p><i>182 G4010-LOD-350 Site Electric Distribution Systems</i></p>
400	Supplementary components added to the model required for fabrication and field installation.	 <p><i>183 G4010-LOD-400 Site Electric Distribution Systems</i></p>

## G4050 – Site Lighting

*Description: Luminaires, lighting equipment, ballasts, and accessories. Includes fluorescent, high intensity discharge, incandescent, mercury vapor, neon, and sodium vapor lighting. Includes Pole Mount, Building Mount and on-grade fixtures for exterior lighting.*

100	See <a href="#">G40</a>	
200	Generic elements in schematic layout with: approximate size, shape, and location of equipment; approximate access/code clearance requirements modeled; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
300	Modeled as design-specified size, shape, spacing, and location of lighting fixtures; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; required pole bases and footing elements; access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of lighting fixtures; actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads.	
400	Supplementary components added to the model required for fabrication and field installation.	



## G50 Site Communications

100	<p>Diagrammatic or schematic model elements:</p> <p>conceptual and/or schematic layout;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	
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## G5010 – Site Communications Systems

*Description: Conduit Systems for routing of Communication trunk systems.*

100	See <a href="#">G50</a>	
200	<p>Generic elements in a schematic layout with:</p> <p>approximate size, shape, and location of equipment;</p> <p>approximate access/code clearance requirements modeled;</p> <p>design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.</p>	
300	<p>Modeled as design-specified size, shape, spacing, and location of raceways, boxes, and enclosures in the power distribution system;</p> <p>size, shape, spacing, and location of equipment and associated components;</p> <p>approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control;</p> <p>access/code clearance requirements modeled.</p>	
350	<p>Modeled as actual size, shape, spacing, and location of raceways, boxes, and enclosures in the power distribution system;</p> <p>size, shape, spacing, and location for supports and seismic control;</p> <p>size, shape, location, and connections of equipment and support structure or pads;</p> <p>floor and wall penetrations are modeled.</p>	
400	Supplementary components added to the model required for fabrication and field installation.	

## G90 Miscellaneous Site Construction

### G9010 – Tunnels

[See [Fundamental LOD Definitions](#)]

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