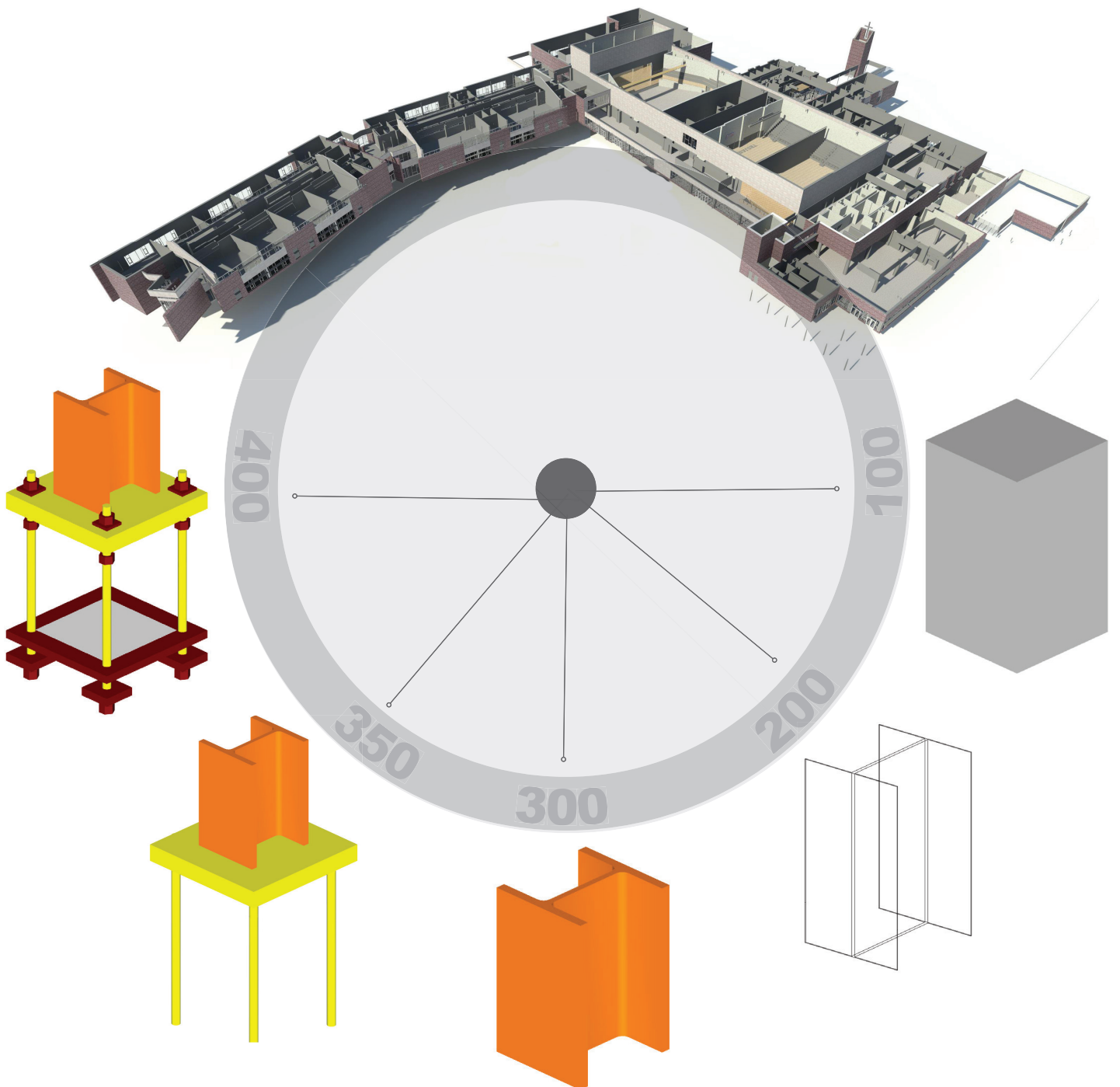


2013

LEVEL OF DEVELOPMENT SPECIFICATION

BIMFORUM

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Level of Development Specification

Version: 2013

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*¹ and is organized by CSI Uniformat 2010². 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.

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.

¹ 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. For executable versions of the documents see <http://www.aia.org/contractdocs>.

² 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 Definitions³

- LOD 100** 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.
- LOD 200** 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.
- LOD 300** 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.
- LOD 350** 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.
- LOD 400** 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.
- LOD 500** 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.

³ 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.

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 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.”⁴

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.

⁴ 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

- 4/24/13 Initial draft for public review
- 8/22/13 Level of Development Specification 2013

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"> • Approximate size and shape of foundation element • Structural building grids for local project coordinate system are defined in model and coordinated with global civil coordinate system (State Plane Coordinate System, etc). 	

A1010 – Standard Foundations

100	See A10	
200	See A10	
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"> • Overall size and geometry of the foundation element • Sloping surfaces or floor depressions • External dimensions of the members <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> • Concrete strength • Reinforcing strength 	

A1010.10 – Wall Foundations (Shallow Foundations)

100	See A10	
200	See A10	
300	See A1010	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Location of sleeve penetrations • Pour joints • Moisture retarder • Dowels • All exposed embeds or reinforcement such as lintels • Expansion joints 	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Rebar including hooks and lap splices • Dowels • Chamfer • Finish • Coursing for unit masonry defined • Waterproofing 	

A1010.30 – Column Foundations (Deep Foundations)

100	See A10	
200	See A10	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Assumed bearing depth noted with anticipated penetrations modeled. • <i>Top of Pier</i> • <i>Size of Pier</i> 	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Actual Top of Pier (TOP) and expected Bottom of Pier (BOT) modeled per engineers review of site conditions 	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Depth to bearing stratum • Penetration into bearing stratum • Locations of lap splices 	

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

A1020.80 – Grade Beams

100	See A10	
200	See A10	
300	See A1010	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Water stops • Pour joints and sequences required to identify reinforcing lap splice, scheduling, etc. <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> • Post-tension profile and strands if required by the BIMXP. 	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Detailed post-tensioned components 	

A20 Subgrade 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>	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Approximate size and shape of the subgrade enclosure element. • Structural building grids for local project coordinate system are defined in model and coordinated with global civil coordinate system (State Plane Coordinate System, etc). 	

A2010 – Walls for Subgrade Enclosures

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

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"> • Generic slab with approximate thickness. • Structural building grids for local project coordinate system are defined in model and coordinated with global civil coordinate system (State Plane Coordinate System, etc). 	

A4010 – Standard Slabs-on-Grade

100	See A40	
200	See A40	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Overall size, thickness and geometry of the slab • Slab depressions • Edge turn downs • Material strength • All sloping surfaces included in model element with exception of elements affected by manufacturer selection. <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> • Moisture retarder • Air entrainment 	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Sleeve penetrations • Pour joints • Control joints • Expansion joints • Water stops • 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. • Void boxes • Anchor rods • Moisture retarder • Dowels • Post-tension profile and strands if required by the BIMXP. 	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Actual slab dimensions and profiles with fully modeled rebar • Post tensioning components • All joints • Water proofing • Finish 	

A4020 – Structural Slabs-on-Grade

100	See A40	
200	See A40	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Overall size, thickness and geometry of the slab-on-grade • Slab depressions • Edge turn downs • Material strength • 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. <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> • Concrete strength • Reinforcing strength • Air entrainment • Moisture Retarder • Slab penetrations 	
350	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Sleeve penetrations • Pour joints • Control joints • Expansion joints • Water Stops • 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. • Void boxes • Anchor rods • Moisture retarder • Dowels • Post-tension profile and strands modeled if required by the BIMXP 	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Actual slab dimensions and profiles with fully modeled rebar • Post tensioning components • All joints • Water proofing • Finish 	

B: SHELL

B10 Superstructure

100	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. Assembly depth/thickness or component size and locations still flexible.	
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B1010 – Floor Construction

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

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](#)

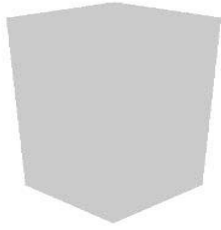
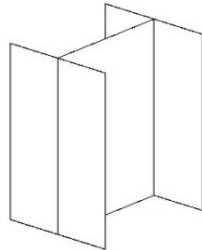

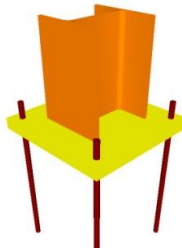
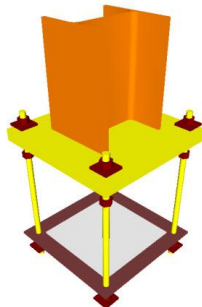
B1010.10 – Floor Structural Frame (Concrete)

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

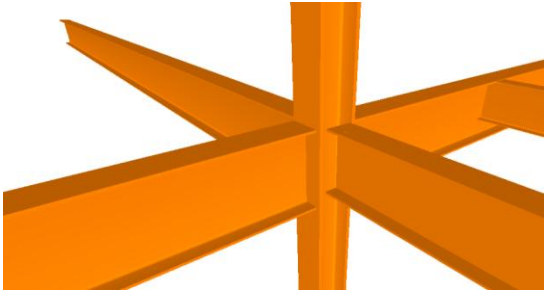
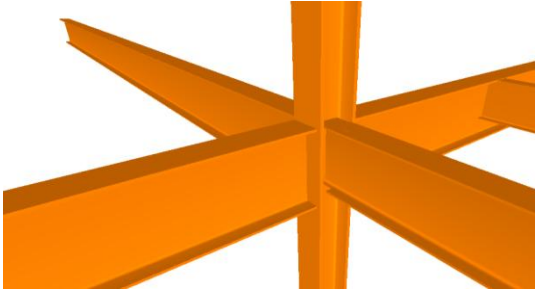
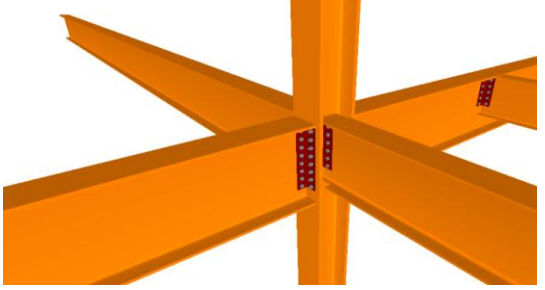
B1010.10 – Floor Structural Frame (Masonry)

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

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

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

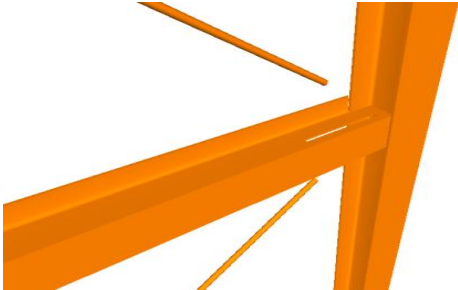
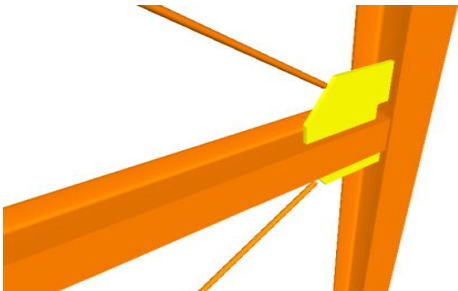
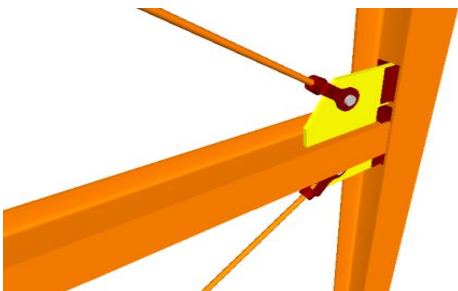
B1010.10 – Floor Structural Frame (Steel Framing Beams)

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

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

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

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

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

B1010.10 – Floor Structural Frame (Steel Joists)

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

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

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

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

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

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

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

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

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

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

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

100	See B10	
200	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Type of structural concrete system • Approximate geometry (e.g. depth) of structural elements 	
300	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Specific sizes and locations of main concrete structural members modeled per defined structural grid with correct orientation • All sloping surfaces included in model element with exception of elements affected by manufacturer selection 	

	<p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> • Concrete strength, • Reinforcing strength • Air entrainment, • Aggregate size • Typical details 	
<p>350</p>	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Reinforcement called out, modeled if required by the BIMXP, typically only in congested areas • Pour joints and sequences to help identify reinforcing lap splice locations, scheduling, etc. • Expansion Joints • Embeds and anchor rods • Post-tension profile and strands modeled if required by the BIMXP • Penetrations for items such as MEP • Any permanent forming or shoring components • Shear reinforcing and stud rails <p>Required non-graphic information associated with model elements includes:</p> <ul style="list-style-type: none"> • Embeds and anchor rods • Aggregate, clear cover • Reinforcing spacing • Reinforcing • Live loads • Shear reinforcing and stud rails • Reinforcing post-tension profiles and strand locations • Penetrations for items such as MEP • Finishes, camber, chamfers, etc. 	
<p>400</p>	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • All reinforcement including post tension elements detailed and modeled • Finishes, camber, chamfer, etc. 	

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 B1080	
200	Generic model element with simplified treads and risers. Nominal overall unit scope shall include: <ul style="list-style-type: none"> • Nominal plan dimensions (length, width) • Nominal vertical dimensions (levels, landings) 	
300	Major stair support elements are modeled (stringers). Treads and risers are modeled to indicate design-specified nosing conditions.	
350	Secondary stair support elements are modeled (hangers, brackets, etc.). Required clearance/code zones are modeled.	
400	All stair elements are modeled to support fabrication and installation.	

B1080.50 – Stair Railings

100	See B1080	
200	Generic model elements without articulation of material or railing structure such as balusters, posts, or supports.	
300	Modeled assemblies by type to include: <ul style="list-style-type: none">• Railings• Balusters• Posts• Supports for wall mounted railings Required non-graphic information associated with model element includes: <ul style="list-style-type: none">• Material	
350	Secondary railing support elements are modeled including: <ul style="list-style-type: none">• Bracing or backing for supports	
400	[See Fundamental LOD Definitions]	

B1080.60 – Fire Escapes

[See [B1080.10](#) and [B1080.50](#)]

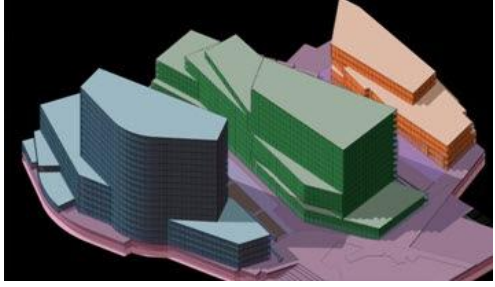
B1080.70 – Metal Walkways

[See [B1080.10](#) and [B1080.50](#)]

B1080.80 – Ladders


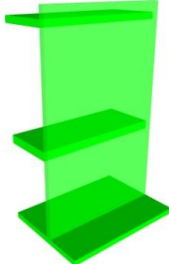
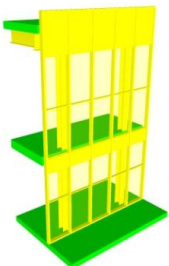
[See [B1080.10](#) and [B1080.50](#)]

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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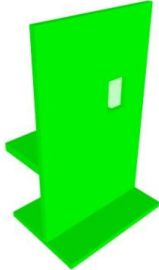


B2010 – Exterior Walls

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

100	See B20	
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>	
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"> • Wall type • Materials 	
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>	

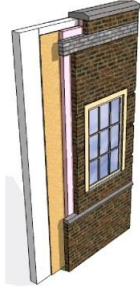
B2010.10 – Exterior Wall Veneer

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

100	See B20	
200	See B2010	
300	See B2010	
350	<p>Exterior wall veneer modeled as a separate element.</p> <p>All openings modeled to rough dimensions.</p> <p>Precast concrete panels are individually modeled. Connection points are specified.</p>	
400	<p>Element modeling to include:</p> <ul style="list-style-type: none"> • Individual masonry units • Reinforcing • Flashing and sealants • Anchors and embeds 	

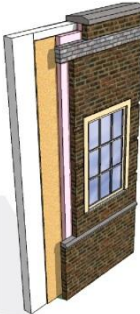
B2010.20 – Exterior Wall Construction

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

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

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 B20	
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 B20	
200	See B2020	
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"> • Aesthetic characteristics (finishes, glass types) • Performance characteristics (i.e. U-value, wind loading, blast resistance, structural, air, thermal, water, sound) • Functionality of the window (fixed, casement, double/single hung, awning/project out, pivot, sliding) 	
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 B20	
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>	
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>	
350	<p>Mullion shapes and geometry defined.</p> <p>Actual anchorage layouts and types defined.</p> <p>Actual panel dimensions (including seating).</p>	
400	<p>Complete mullion extrusion profiles.</p> <p>Interface details between wall systems (within) and wall and support systems including sealants, end dams, flashings and membranes.</p>	

B2020.50 – Exterior Special Function Windows

[See [B2020.10](#)]

B2050 – Exterior Doors and Grilles

100	Simple representation of a door unit. Size, count, and location are approximate.	
200	<p>Units are modeled as a simple, monolithic component; or represented with simple frame and panel.</p> <p>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 B20	
200	See B2050	
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 B20	
200	See B2050	
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 B20	
200	See B2050	
300	<p>Oversize door assemblies modeled by type to include the following:</p> <p>Door panels with nominal dimensions.</p> <p>Frames with nominal dimensions.</p> <p>Hardware set functionality and types included in non-graphic information.</p> <p>Clearance zones are modeled for operation of overhead doors.</p> <p>Enclosures and motor housings are modeled with overall nominal dimensions.</p>	
350	<p>Rough opening is modeled (if applicable).</p> <p>Major framing elements in wall are modeled at jambs and head.</p> <p>Other major structural support elements are modeled such as support posts and beams.</p>	
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 B20	
200	See B2050	
300	<p>Grille assemblies modeled by type to include the following:</p> <p>Nominal size of unit.</p> <p>Required openness provided as non-graphic information.</p> <p>Operation is specified.</p>	
350	<p>Rough opening is modeled (if applicable).</p> <p>Major framing elements are modeled at jambs and head.</p>	
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 B20	
200	Generic model element that is indicative of approximate area and location of intended louver/vent.	

B2070.10 – Exterior Louvers

100	See B20	
200	See B2070	
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 B30	
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 B30	
200	See B3010	
300	Specific material thickness, openings are subtracted from solid. Framing is a separate assembly, see B10 . 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 B30	
200	See Fundamental LOD Definitions	

B3020.10 – Roof Accessories

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

100	See B30	
200	See Fundamental LOD Definitions	
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 B30	
200	Modeled as part of other composite assembly. See B3010 .	

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 B30	
200	See B3040	
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 B30	
200	See B3040	
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 B30	
200	See B2020	

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 B30	
200	Generic assemblies indicative of overall scope and approximate thickness/system depth of overhead enclosure.	

B3080.10 – Exterior Ceilings

100	See B30	
200	See B3080	
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 C10	
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.	

C1010.10 – Interior Fixed Partitions

100	See C10	
200	See C1010	
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"> • Wall type • Fire rating 	
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"> • Studs and tracks • Bracing • Insulation • Sheathing or wall boards • Openings/penetrations 	

C1010.20 – Interior Glazed Partitions

100	See C10	
200	See C1010	
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"> • Mullion shapes and geometry defined. • Actual anchorage layouts and types defined. • Actual panel dimensions (including seating). 	
400	<ul style="list-style-type: none"> • Complete mullion extrusion profiles. • Interface details between wall systems (within) and wall and support systems. 	

C1010.40 – Interior Demountable Partitions

100	See C10	
200	See C1010	
300	See C1010.10	
350	See C1010.10 – also include hardware, accessories, and support structure.	
400	See C1010.10	

C1010.50 – Interior Operable Partitions

100	See C10	
200	See C1010	
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 C10	
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 C10	
200	See C1020	
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"> • Aesthetic characteristics (finishes, glass types) • Performance characteristics (i.e. U-value, wind loading, blast resistance, structural, air, thermal, water, sound) • Functionality of the window (fixed, casement, double/single hung, awning/project out, pivot, sliding) 	
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 C10	
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 C10	
200	See C1030	
300	Door assemblies modeled by type to include the following: <ul style="list-style-type: none"> • Specific door panels and frames (if applicable). • Hardware set functionality and types are specified in non-graphic information. • Operation is specified • Spatial requirements for operation are modeled. 	
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 C10	
200	See C1030	
300	<p>Coiling door assemblies modeled by type to include the following:</p> <ul style="list-style-type: none"> • 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	<p>Rough opening is modeled (if applicable).</p> <p>Major framing elements in wall are modeled at jambs and head.</p> <p>Other major structural support elements are modeled.</p>	
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 C10	
200	See C1030	

C1040.10 – Interior Grilles

100	See C10	
200	See C1030	
300	Grille assemblies modeled by type to include the following: <ul style="list-style-type: none"> Nominal size of unit. Required openness provided as non-graphic information. Operation is specified graphically and with non-graphic information, if applicable. 	
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 C10	
200	Generic assembly that contains spatial (layer) allowance for support system and flooring material.	

C1060.10 – Access Flooring

100	See C10	
200	See C1060	
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 C1070	
200	See C1070	
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 C1070	
200	See C1070	
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 C10	
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">• Type of object	

C1090.10 – Interior Railings and Handrails

100	See C10	
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">• All horizontal rails• All vertical posts/balusters	
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 C10	
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 C20	
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"> • Manufacturer • Model 	
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 D10	
200	Generic representation of the system envelope, including critical path of travel zones.	

D1010.10 – Elevators

100	See D10	
200	See D1010	
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"> • Type code (referenced in specifications) • ClearWidth • ClearDepth • ClearHeight 	
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 D10	
200	Generic representation of the material handling system envelope, including critical path of travel zones.	

D1050.10 – Cranes

100	See D10	
200	See D1050	
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"> Type code 	
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](#)]

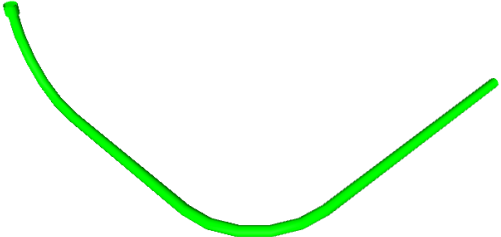
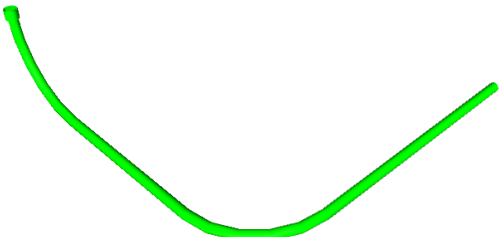
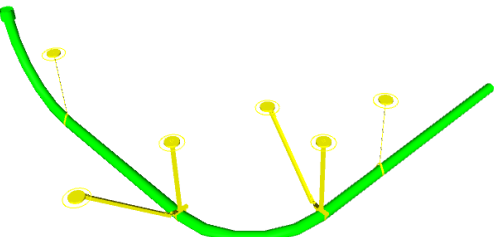
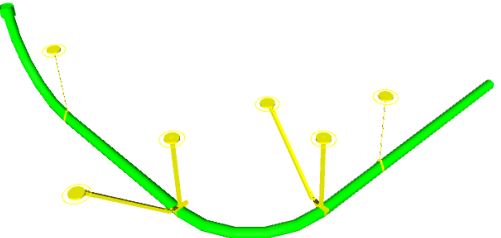
D1050.50 – Baggage Handling Equipment

100	See D10	
200	See D1050	
300	See Fundamental LOD Definitions	
350	See Fundamental LOD Definitions	
400	See Fundamental LOD Definitions	

D1050.60 – Chutes

[See [D1050.10](#)]

D1050.70 – Pneumatic Tube Systems

100	<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>	
200	<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>	
300	<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>	
350	<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>	
400	<p>Supplementary components added to the model required for fabrication and field installation</p>	

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](#)]

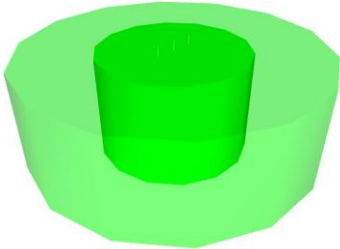
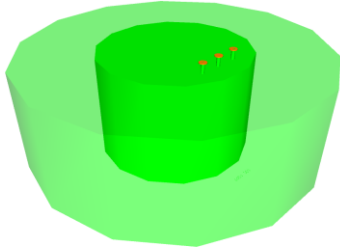
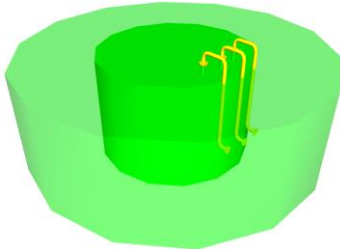
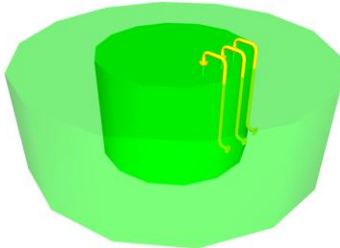
D20 Plumbing

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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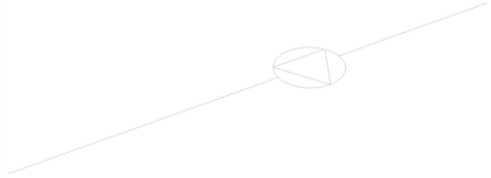
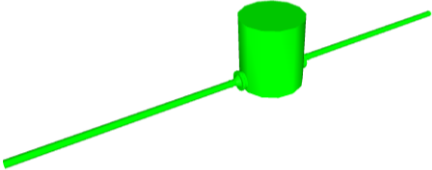

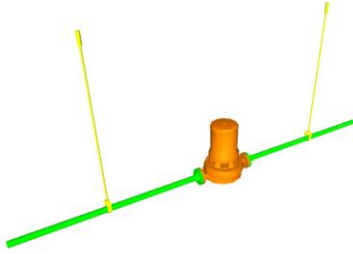
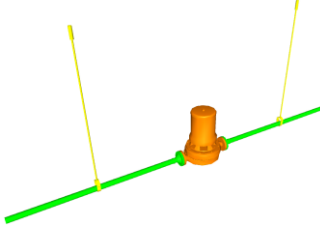
D2010 – Domestic Water Distribution

100	See D20	
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.	

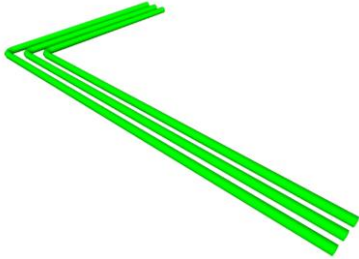
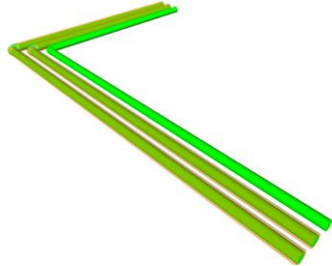
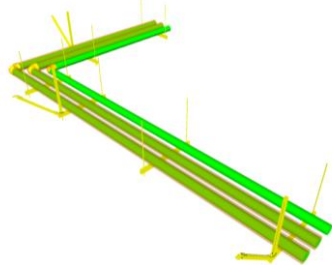
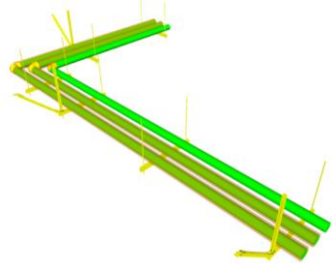
D2010.10 – Facility Potable-Water Storage Tanks

100	See D20	
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>	
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>	
350	<p>Modeled as actual construction elements <i>size and shape, spacing, and location/connections</i> of tank(s)</p> <p>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>	
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	

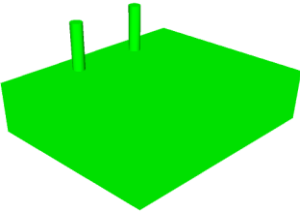
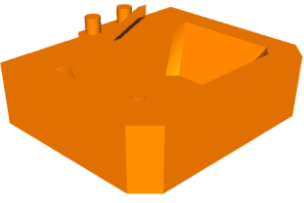


D2010.20 – Domestic Water Equipment

100	See D20	
200	<p>Schematic layout with 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 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>	
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>	
400	See D2010.10	

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>	
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>	
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>	
400	<p>See D2010.10</p>	

D2010.60 – Plumbing Fixtures

100	See D20	
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>	
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>	
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>	
400	See D2010.10	

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.

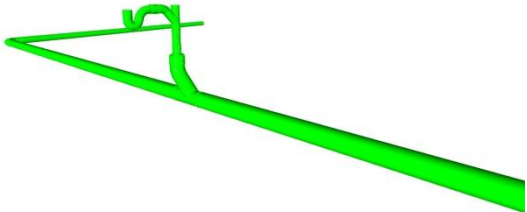
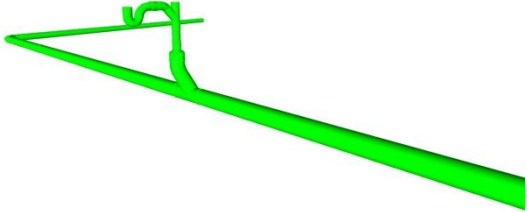
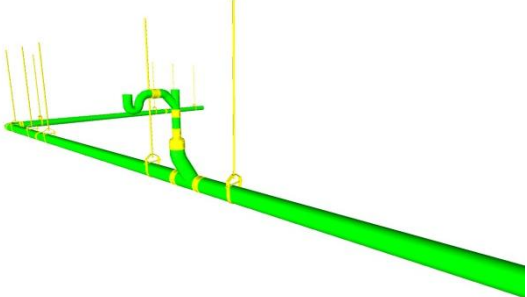
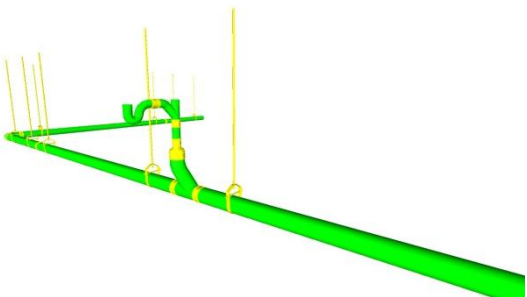
D2020 – Sanitary Drainage

100	See D20	
200	See D2010	

D2020.10 – Sanitary Sewerage Equipment

100	See D20	
200	<p>Schematic layout with approximate size, shape, and location of equipment;</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 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>	
350	<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>actual access/code clearance requirements modeled.</p>	
400	<p>Supplementary components added to the model required for fabrication and field installation</p>	

D2020.30 – Sanitary Sewerage Piping

100	See D20	
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>	
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>	
350	<p>Modeled as actual construction elements;</p> <p>actual size, shape, spacing, location, connections, and slope of pipe, valves, 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 D2020.10	

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 Uniformat classification unless a supplementary component is modeled independently of another assembly.

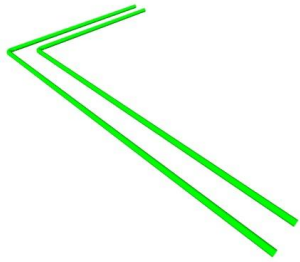
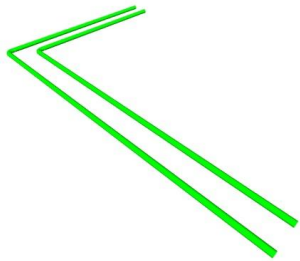
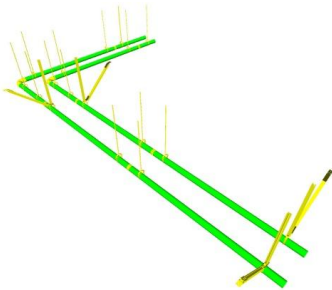
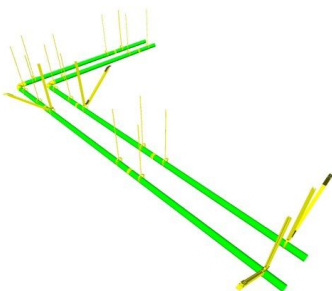
D2030 – Building Support Plumbing Systems

100	See D20	
200	See D2010	



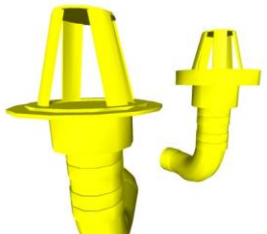
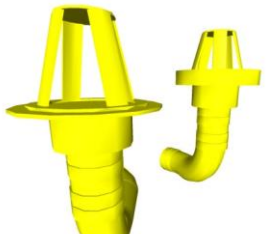
D2030.10 – Stormwater Drainage Equipment

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>	
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>	
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>	
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	

D2030.20 – Stormwater Drainage Piping

100	See D20	
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>	
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>	
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>	
400	See D2030.10	

D2030.30 – Facility Stormwater Drains

100	See D20	
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>	
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>	
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>	
400	See D2030.10	

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.

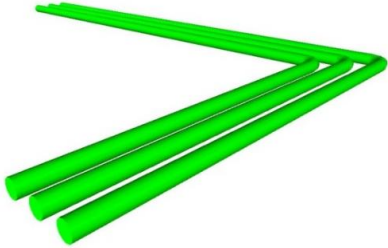
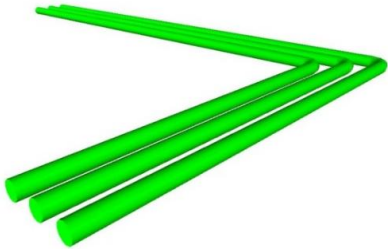
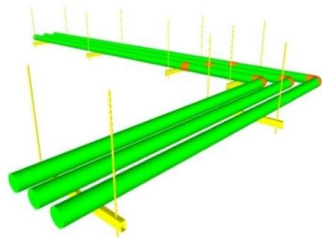
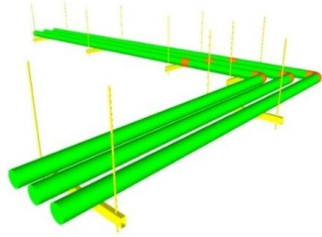
D2050 – General Service Compressed-Air

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

D2060 – Process Support Plumbing Systems

100	See D20	
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 D20	
200	See D2060	
300	<p>Modeled as design-specified size, shape, spacing, location, and slope of equipment/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>	
350	<p>Modeled as actual size, shape, spacing, location, connections, and slope of equipment/pipe, valves, 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	Supplementary components added to the model required for fabrication and field installation.	

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.

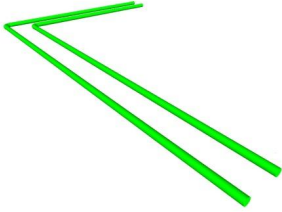
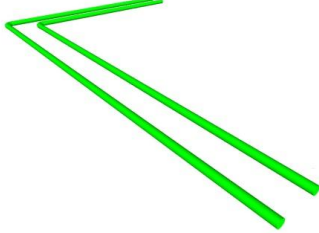
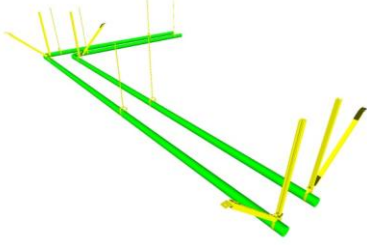
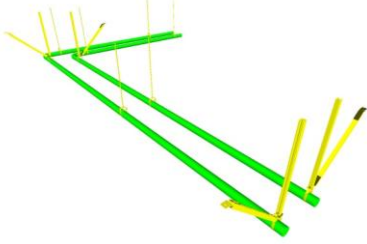
D30 HVAC

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 D30	
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.	

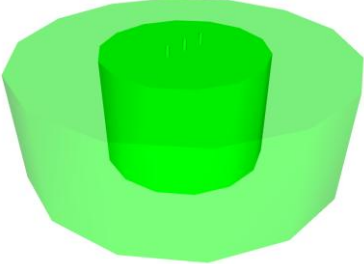
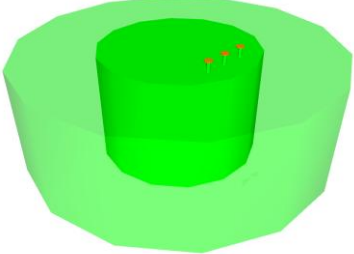
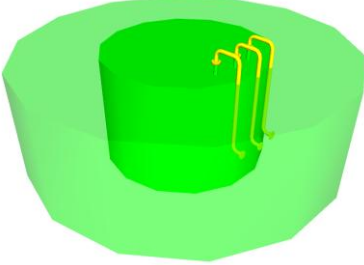
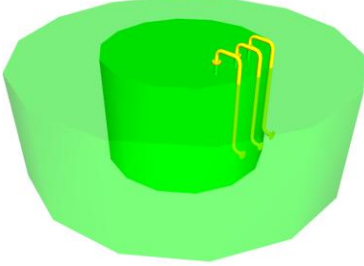
D3010.10 – Fuel Piping

100	See D30	
200	See D3010	
300	<p>Modeled as design-specified size, shape, spacing, and location 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>	
350	<p>Modeled as actual size, shape, spacing, and location/connections of pipe, valves, 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	Supplementary components added to the model required for fabrication and field installation	

D3010.30 – Fuel Pumps

100	See D30	
200	See D3010	
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 D3010.10	

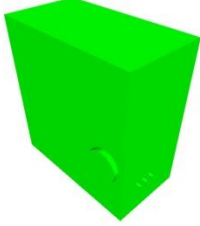
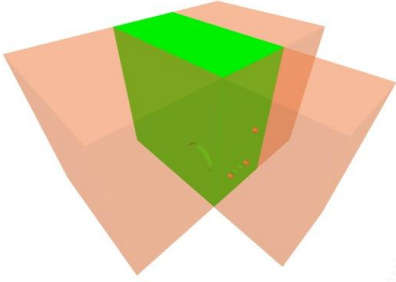
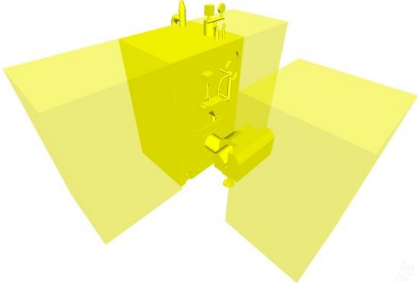
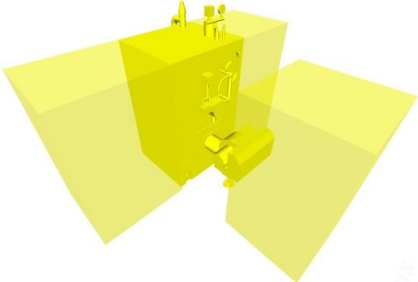
D3010.50 – Fuel Storage Tanks

100	See D30	
200	See D3010	
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>	
350	<p>Modeled as actual size, shape, spacing, and location/connections of tank(s);</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 tanks(s).</p>	
400	See D3010.10	

D3020 – Heating Systems

100	See D30	
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 D30	
200	See D3020	
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>	
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>	
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	

D3020.30 – Thermal Heat Storage

[See [D3020.10](#)]

D3020.70 – Decentralized Heating Equipment

[See [D3020.10](#)]

D3020.90 – Heating System Supplementary Components

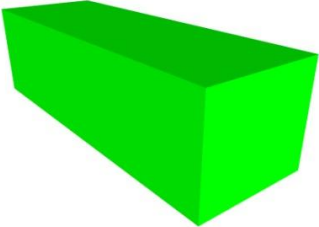
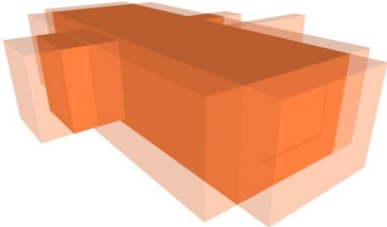
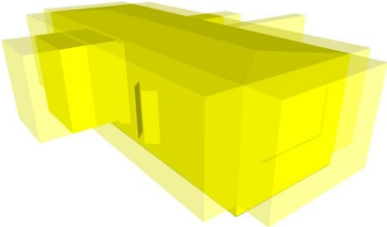
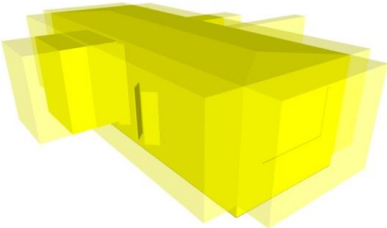
Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.

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 D30	
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 D30	
200	See D3030	
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>	
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>	
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	

D3030.30 – Evaporative Air-Cooling

100	See D3030.10	
200	See D3030.10	
300	See D3030.10	
350	See D3030.10	
400	See D3030.10	

D3030.50 – Thermal Cooling Storage

[See [D3030.10](#)]

D3030.70 – Decentralized Cooling

[See [D3030.10](#)]

D3030.90 – Cooling System Supplementary Components

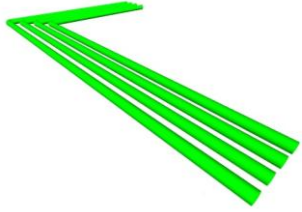

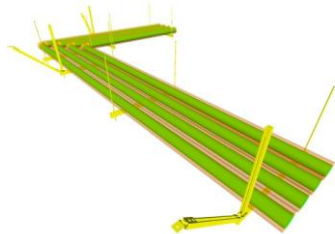
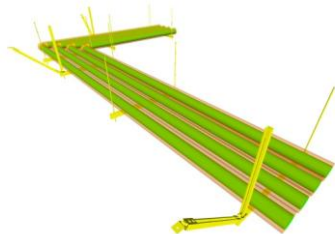
Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.

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 D30	
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 D30	
200	See D3050	
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>	
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, 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	<p>Supplementary components added to the model required for fabrication and field installation.</p>	

D3050.30 – Facility Steam Distribution

[See [D3050.10](#)]

D3050.50 – HVAC Air Distribution

100	See D30	
200	See D3050	
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 D3050.10	

D3050.90 – Facility Distribution Systems Supplementary Components

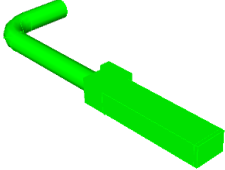
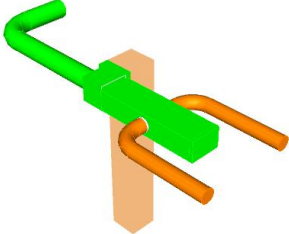
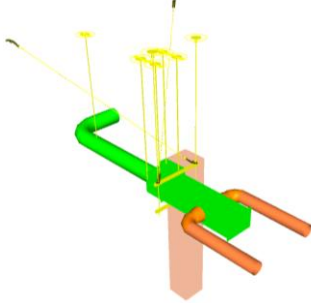
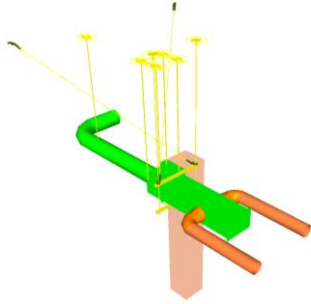
Includes expansion fittings, meters, gages, valves, hangers, supports, heat tracing, vibration and seismic controls.

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 D30	
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>	

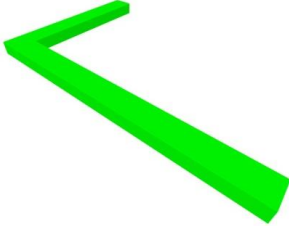
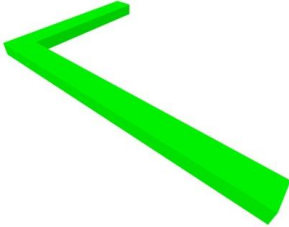

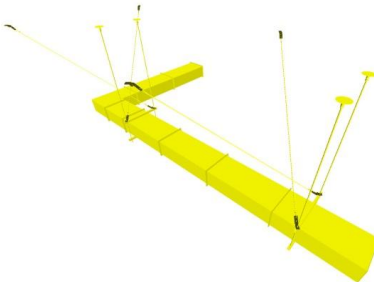
D3060.10 – Supply Air

100	See D30	
200	See D3060	
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 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>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	Supplementary components added to the model required for fabrication and field installation.	

D3060.20 – Return Air

[See [D3060.10](#)]

D3060.30 – Exhaust Air

100	See D30	
200	See D3060	
300	<p>Modeled as design-specified size, shape, spacing, location, duct slope (if required), dampers, fittings, insulation for risers, mains, and branches;</p> <p>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>actual access/code clearance requirements modeled.</p>	
350	<p>Modeled as actual size, shape, spacing, location, and slope(if required)/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 D3060.10	

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 D30	
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 D30	
200	See D3070	
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.	

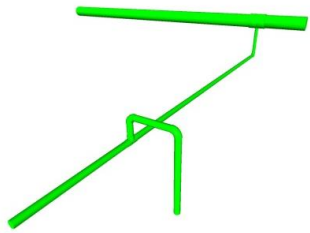
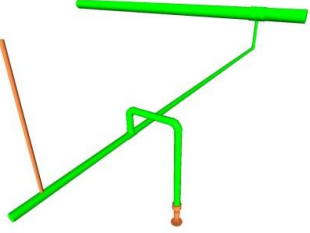
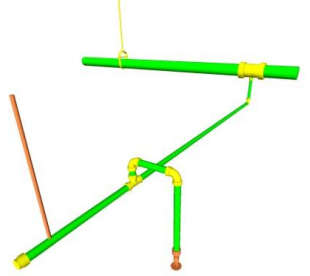

D40 Fire Protection

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 D40	
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.	

D4010.10 – Water-Based Fire-Suppression

100	See D40	
200	See D4010	
300	<p>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>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>actual access/code clearance requirements modeled.</p>	
350	<p>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>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>actual floor and wall penetrations modeled.</p>	
400	Supplementary components added to the model required for fabrication and field installation.	

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 Unifomat classification unless a supplementary component is modeled independently of another assembly.

D4030 – Fire Protection Specialties

100	See D40	
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 D40	
200	See D4030	
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

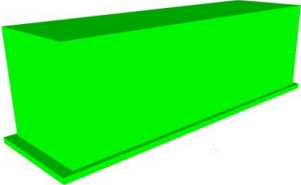
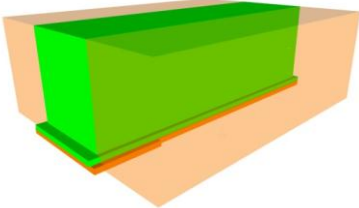
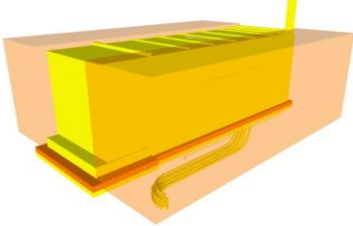
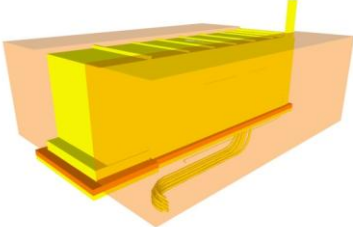
100	Diagrammatic or schematic model elements: conceptual and/or schematic layout; design performance parameters as defined in the BIMXP to be associated with model elements as non-graphic information.	
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D5010 – Facility Power Generation

100	See D50	
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 D50	
200	See D5010	
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>	
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>	
400	Supplementary components added to the model required for fabrication and field installation.	

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.

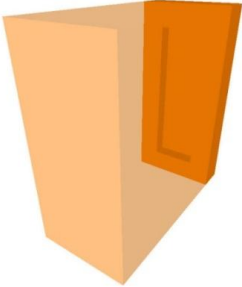
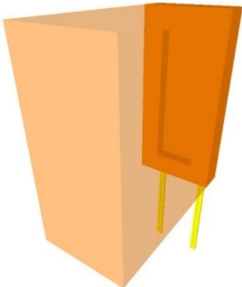
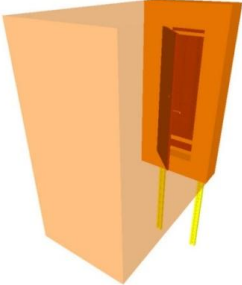
[See [D5010.10](#)]

D5020 – Electrical Service and Distribution

100	See D50	
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.	

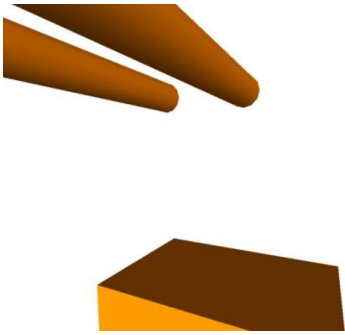
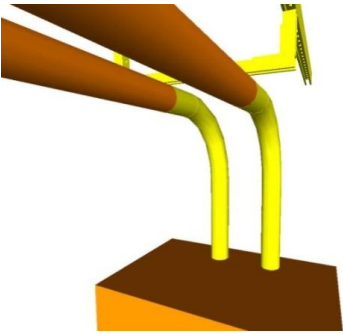
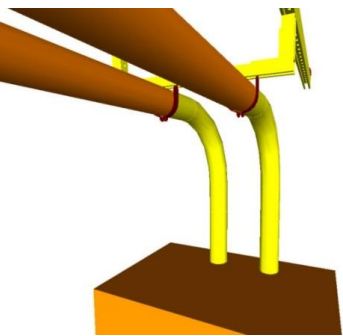
D5020.10 – Electrical Service Entrance

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

100	See D50	
200	See D5020	
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>	
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>	
400	<p>Supplementary components added to the model required for fabrication and field installation.</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 D50	
200	See D5020	
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>	
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>	
400	<p>Supplementary components added to the model required for fabrication and field installation.</p>	

D5020.70 – Facility Grounding

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

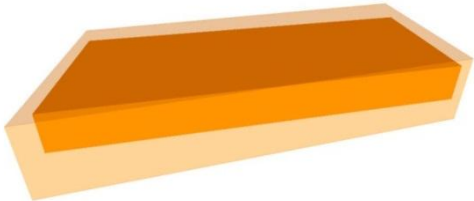
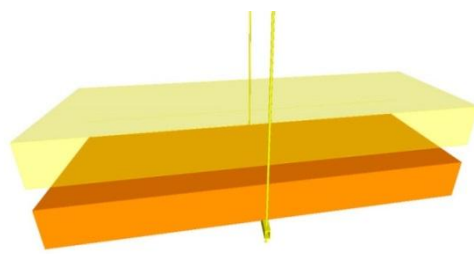
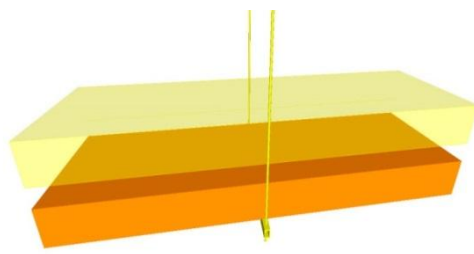
100	See D50	
200	See D5020	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures, and the electrical equipment and end-devices served; approximate allowances for spacing and clearances required for all specified hangers, supports, and seismic control; actual 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 D50	
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 D50	
200	See D5030	
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.	
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.	
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 D50	
200	See D5030	
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 D50	
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.	

D5040.10 – Lighting Control

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

100	See D50	
200	See D5040	
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.	

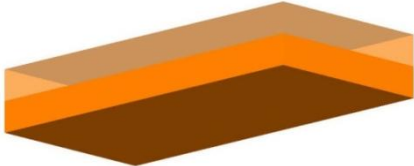
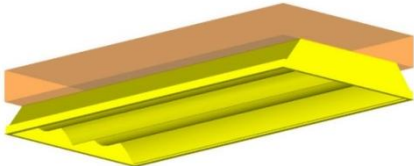
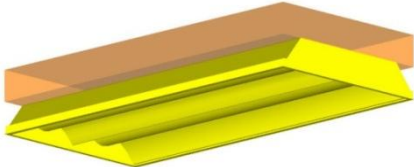
D5040.20 – Branch Wiring for Lighting

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

100	See D50	
200	See D5040	
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 D50	
200	See D5040	
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.	
350	Modeled as actual size, shape, spacing, and location of lighting fixtures. actual size, shape, spacing, and location for supports and seismic control.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5080 – Miscellaneous Electrical Systems

100	See D50	
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 D50	
200	See D5080	
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 D50	
200	See D5080	
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 E10	
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 E10	
200	See E1010	
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 E20	
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"> • Type of object 	

E2010.10 – Fixed Art

100	See E20	
200	See E2010	
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

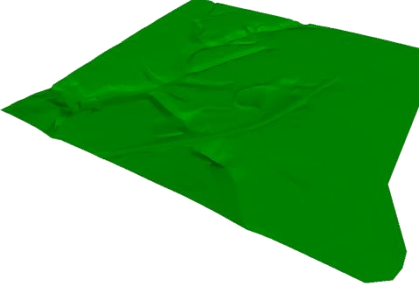
[See [Fundamental LOD Definitions](#)]

F3050 – Structure Moving

[See [Fundamental LOD Definitions](#)]

G: BUILDING SITEWORK

G10 Site Preparation

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

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"> • Approximate size and shape of foundation element • Approximate size/location of utilities and structures • Approximate code and clearance requirements • Approximate pipe material • Rough modeling of site grading • Local structural building grids defined in model and coordinated with global state plane coordinate system for site model. 	

G2010 – Roadways

[See [Fundamental LOD Definitions](#)]

G2020 – Parking Lots

[See [Fundamental LOD Definitions](#)]

G2020.10 – Parking Lot Pavement

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

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 G30	
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G3010.10 – Site Domestic Water Distribution

100	See G30	
200	Added materials, sizes, vertical control and appurtenances (valves, hydrants, BFP, FDC, PIV, BOV, ARV)	

G3010.30 – Site Fire Protection Water Distribution

100	See G30	
200	Added materials, sizes, vertical control and appurtenances (valves, hydrants, BFP, FDC, PIV, BOV, ARV)	

G3020 – Sanitary Sewerage Utilities

100	See G30	
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G3020.20 – Sanitary Sewerage Piping

100	See G30	
200	Horizontal alignment, elevations and sizing, generic materials	
300	Specific elevations, sizes, materials	

G3020.50 – Sanitary Sewerage Structures

100	See G30	
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 G30	
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G3050 – Site Energy Distribution

100	See G30	
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G3060 – Site Fuel Distribution

100	See G30	
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G3090 – Liquid and Gas Site Utilities Supplementary Components

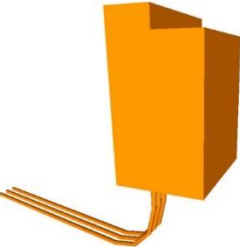
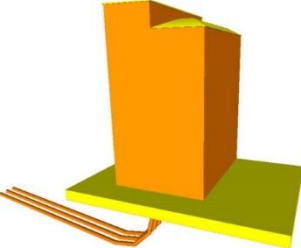
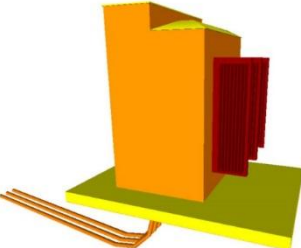
These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Unifomat classification unless a supplementary component is modeled independently of another assembly.

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 G40	
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	
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.	
400	Supplementary components added to the model required for fabrication and field installation.	

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 G40	
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	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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G5010 – Site Communications Systems

Description: Conduit Systems for routing of Communication trunk systems.

100	See G50	
200	Generic elements in a 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, and enclosures in the power distribution system; 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.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, and enclosures in the power distribution system; size, shape, spacing, and location for supports and seismic control; size, shape, location, and connections of equipment and support structure or pads; floor and wall penetrations are modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

G90 Miscellaneous Site Construction

G9010 – Tunnels

[See [Fundamental LOD Definitions](#)]