



Modular Deliverables and Scope Add Analysis

SD Phase - Modular Feasibility Scorecard *(separate doc)*

DD Phase - Must be completed prior to 100% Arch DD lock.

50% CD Review - Design Charrette Meetings (Model Review)

CD Deliverables - Modular Specific Elements for Final Review

Shop Drawing Predecessors

Shop Drawing Package Content

On-Site Package Content



Modular Deliverables and Scope Add Analysis

DD Phase - Items noted below must be completed prior to 100% Arch DD lock.

- **Architectural**
 - Modular Feasibility Analysis Completed
 - Module ID Layout with Set Direction Established
 - Module Type Analysis – Module Type / Width & Variable Analysis
 - Floor / Wall / Ceiling Assemblies established in DD Set
 - Fire-Rated Floorplan & Cross-Section – Rated Assembly Analysis & Continuity Review
 - Corridor Cross Section
- **MEP & S Deliverables - All in prelim redline or Bluebeam mark-up format**
 - **Mechanical - Type of HVAC System Established**
 - Heating / Cooling
 - Unit / Head locations
 - Duct Routing / Distribution
 - Line-Set Routing (if applicable)
 - Cross-over Points between modules (if applicable)
 - Exhaust
 - Equipment locations (ceiling / drop ceiling)
 - Duct routing / termination
 - Reflected Ceiling Plan analysis & proposed Soffit locations (if applicable)
 - **Electrical - Prelim power distribution plan**
 - Panel Locations
 - Primary EP
 - Sub-Panel
 - Data / Low-Volt Panel Location
 - Primary Power Distribution and cross-over location between modules
 - **Plumbing - Schematic (hand drawn) plumbing layouts**
 - Primary routing / distribution locations
 - Cross-Over / Connection Points
 - Type of access required (*floor / wall / ceiling / chase*)
 - **Structural - Initial Structural Analysis**
 - Proposed Shearwall Locations
 - Initial hold-down types & locations
 - Primary Structural / Framing Elements Established
 - Floor Framing
 - Ceiling Framing
 - Roof Framing
 - Openings / girder framing
 - **FS - Fire Sprinkler (if applicable)**
 - Primary routing / distribution locations
 - Cross-Over / Connection Points



Modular Deliverables and Scope Add Analysis

CD Phase - 50% CD Review - Design Charrette Meetings (Model Review): *To be coordinated with each discipline once primary modeling has been completed - Typically completed at 50% CD development*

- **Mechanical - Model Review / Walk-Through**
 - Heating / Cooling
 - Unit / Head locations
 - Duct Routing / Distribution
 - Line-Set Routing (if applicable)
 - Cross-over Points between modules (if applicable)
 - Exhaust
 - Equipment locations (ceiling / drop ceiling)
 - Duct routing / termination
 - Reflected Ceiling Plan & Soffit locations (if applicable)
 - Exterior Penetration Analysis (clearance validation from openings)
- **Electrical - Model Review / Walk-Through**
 - Panel Locations
 - Primary EP
 - Sub-Panel
 - Data / Low-Volt Panel Location
 - Primary Power Distribution and cross-over location between modules
- **Plumbing - Model Review / Walk-Through**
 - Primary routing / distribution locations
 - Cross-Over / Connection Points
 - Type of access required (*floor / wall / ceiling / chase*)
 - W/H Pan Drain distribution
 - Condensate Line Routing
- **Structural - Model Review / Walk-Through**
 - Shearwall Locations
 - Hold-down types & locations
 - Sequencing / access locations (if applicable)
 - Primary Structural / Framing Elements Established
 - Floor Framing
 - Ceiling Framing
 - Roof Framing
 - Openings / girder framing
 - Initial Truss / Joist Profile Review
 - Rooftop Interface and Loading Plans (Multi-family)
- **FS - Fire Sprinkler (if applicable)**
 - Primary routing / distribution locations
 - Cross-Over / Connection Points



Modular Deliverables and Scope Add Analysis

CD Deliverables - Modular Specific Elements for Final Review

- **All (Architect Lead)**
 - Full Scope Delineation through all disciplines & details
 - Site installed / inspected components
 - MEP Corridor Cross Section (multi-family)
 - Coordinated RCP with FS Head Locations
- **M - Mechanical**
 - Full Scope Delineation through all disciplines & details
 - Sections / Details at Cross-Over Locations (sequencing details)
 - Framing Overlay for Clash Detection Analysis (Internal review only)
 - LOD 200 Model Development on primary components
- **E - Electrical**
 - Full Scope Delineation through all disciplines & details
 - Circuiting identified for each fixture
 - Sections / Details at Cross-Over Locations (sequencing details)
 - Fixture Height Detailing (multi-family / accessible units)
 - LOD 200 Model Development on primary components
- **P - Plumbing**
 - Full Scope Delineation through all disciplines & details
 - Plumbing ISO's
 - Sections / Details at Cross-Over Locations (sequencing details)
 - Framing Overlay for Clash Detection Analysis (Internal review only)
 - LOD 200 Model Development on primary components
- **S - Initial Structural Analysis**
 - Full Scope Delineation through all disciplines & details
 - Final Truss and Joist Profiles
 - Stair Modeling Coordinated and Prep'd for component shop drawings
 - LOD 200 Model Development on primary components
- **FS - Fire Sprinkler (if applicable)**
 - LOD 200 Model Development on primary components



Modular Deliverables and Scope Add Analysis

Shop Drawing Predecessors – Deliverables required for Shop Drawing Development

- Design Deliverables
 - Permit Submittal (Completed Design Documents)
 - Design Coordination Documents
 - Crane-Set Direction / Run Order
 - Floor / Wall / Ceiling Rated Assemblies with UL Listing, fastening requirements & seam offsets
 - MEP Corridor Cross Section
 - MEP Interface & Point of Connection Layout (Access Plan)
 - Sheathing Hold-Back Plans (Floors, Walls & Ceilings)
 - Rooftop Interface & Loading Plan (mechanical equipment, fall protection, window washing, parapet support, etc)
 - Foundation / Podium Interface Plan (bearing plates, hold-down locations, MEP penetrations)
 - Rooftop design (Sheathing hold backs, insulation layout and hold backs, roof drain, etc..)
 - Interior Elevations (Casework) with fixture / hardware locations
 - Exterior MEP Penetration Analysis (Clearance validation)
 - Elevator cut sheet and interface plan
 - Enlarged MEP Chase Layouts for Space & Clearance Review
 - Truss Profiles (height, width, tolerance & bay locations)
 - Joist profiles with structural analysis of penetrations
 - Structural Interface and Hold-Down Locations
 - Fire Sprinkler Head Locations on RCP
 - Fireblocking Layout (mateline gaps)
- Factory Standards
 - Shop Drawing Reference Set
 - Fastening Schedule
 - Electrical Fixture Heights
 - Typical Door R/O's & Framing Details
- Project Specifications
 - Finish Specifications (Flooring type, Locations etc..)
 - Construction specifications
 - Construction Scope Delineation Matrix
- Revit Model Development
 - LOD 350 Model Development & Coordination
- Product Specifications / Cut Sheets
 - "Any" components being installed that need framed around
 - Door & Window RO's
 - Tub / Shower Cut-Sheets
 - Electrical Panel
 - Data Panel
 - Hatches / Access Panels
 - Tub / Shower mixer if located in rated assembly
 - Light cut sheets if located in rated assembly



Modular Deliverables and Scope Add Analysis

Shop Drawing Package Content - Wood-Framed Multi-Family (Industry Standard)

- Floorplan / Wallset Plan
- Floor Framing Plan
- Floor Decking / Covering Plan
- Ceiling Framing Plan
- Ceiling Decking / Gyp Layout
- Electrical Floor Plan
- Electrical Lighting Plan
- Electrical Wiring Plan
- Plumbing Plans (DWV & Water)
- Plumbing ISO's
- Mechanical Plan
- Mechanical ISO
- Soffit Layout & Framing Plans
- Wall Framing Elevations



Modular Deliverables and Scope Add Analysis

On-Site Package Content - Wood-Framed Multi-Family (Industry Standard)

- Design Deliverables
 - Permit Submittal (Completed Design Documents)
 - Design Coordination Documents
 - Crane-Set Direction / Run Order
 - MEP Corridor Cross Section
 - MEP Interface & Point of Connection Layout (Access Plan)
 - Sheathing Hold-Back Plans (Floors, Walls & Ceilings)
 - Rooftop Interface & Loading Plan (mechanical equipment, fall protection, window washing, parapet support, etc)
 - Foundation / Podium Interface Plan (bearing plates, hold-down locations, MEP penetrations)
 - Rooftop design (Sheathing hold backs, insulation layout and hold backs, roof drain, etc...)
 - Elevator cut sheet and interface plan
 - Enlarged MEP Chase Layouts for Space & Clearance Review
 - Structural Interface and Hold-Down Locations
 - Fireblocking Layout (mateline gaps)
- Project Specifications / Reference Docs
 - Finish Specifications (Flooring type, Locations etc..)
 - Construction specifications
 - Construction Scope Delineation Matrix
 - Ship-Loose List - *Component List included with Module delivery*