

SECTION 06 41 00 - ARCHITECTURAL CASEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Plastic-laminate (PLAM-#).
2. Solid-surface countertops (SS-#).
3. Wood bench (WOOD BENCH, WD-1).
4. Wood slats (WOOD SLATS, WD-2).
5. Wood panels (WP-#)
6. Cabinet hardware and accessories.
7. Wood furring, blocking, shims, and hanging strips for installing architectural wood cabinets unless concealed within other construction before cabinet installation.

B. Related Requirements:

1. Section 06 10 00 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.
2. Section 23 82 38 "Unit Heaters" for coordination with built in unit heaters at west entry control desk.

1.3 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 SUBMITTALS

- A. Product Data: For each type of product, including panel products, fire-retardant-treated materials, cabinet hardware and accessories, and finishing materials and processes.
 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 1. Show details full size.
 2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.

3. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in architectural wood cabinets.
 4. Show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.
 5. For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.
- C. Samples for Initial Selection:
1. Wood Panels: 6 by 6 inches, with shop-applied finish to match existing wood panels.
- D. Samples for Verification:
1. Plastic Laminates: 6 by 6 inches, for each type.
 2. Solid Surfaces: 6 by 6 inches, for each type.
 3. Wood Panels: 6 x 6 inches, for each type with surface finish.
 4. Wood Trim: 8 inches long with surface finish.
 5. Wood Slats: Mock-Up base connection detail, 8 inches high by 3 slats with surface finish, sized and spaced as indicated on drawings.
- E. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.
- 1.6 QUALITY ASSURANCE
- A. Fabricator/ Installer Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
 - B. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.
 - C. Overage: Ensure appropriate amount of overage to account for quality requirement; for all WD-# types allow for approximately 25 percent additional materials to allow sorting and rejecting to meet quality requirements.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Do not deliver cabinets until painting and similar operations that could damage woodwork have been completed in installation areas. If cabinets must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.
- 1.8 FIELD CONDITIONS
- A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
 - B. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 17 and 50 percent during the remainder of the construction period.
 - C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.

- D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.9 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that wood-veneer-faced architectural cabinets can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL CABINET FABRICATORS

- A. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of architectural wood cabinets with sequence-matched wood paneling, wood doors with face veneers that are sequence matched with woodwork and transparent-finished wood doors that are required to be of same species as woodwork.

2.2 ARCHITECTURAL CABINETS, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Institute (AWI) "Architectural Woodwork Standards" for grades of architectural wood cabinets indicated for construction, finishes, installation, and other requirements.

1. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.

2.3 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

- A. Architectural Woodwork Standards Grade: Cabinets shall be built in conformance to Custom Grade, unless specified otherwise.

- B. Type of Construction: Frameless.

- C. Door and Drawer-Front Style: Flush overlay.

1. Reveal Dimension: As indicated on Drawings.

- D. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.

- E. Laminate Cladding for Exposed Surfaces:

1. Vertical Surfaces: Grade VGS.

- a. PLAM-1:

- 1) Basis-of-Design Manufacturer: Formica; www.formica.com

- 2) Product: High Pressure Laminate

- 3) Color: TBD

- 4) Applications: At control desk as indicated on drawings.

2. Exposed Edges: Same as horizontal surfaces.

3. Pattern Direction: Vertically for doors and fixed panels, horizontally for drawer fronts.

- F. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade CLS.
 - a. Edges of Plastic-Laminate Shelves: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.
 - b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade CLS.
 2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
 3. Drawer Bottoms: Thermoset decorative panels.
 - G. Dust Panels: 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers unless located directly under tops.
 - H. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.
 - I. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
 1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners or glued dovetail joints.
 - J. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 1. As selected by Architect from laminate manufacturer's full range.
- 2.4 COUNTERTOPS AND DESK FRONTS
- A. Quality Standard: Architectural Woodwork Standards Grade: Countertops and casework shall be built in conformance to Custom Grade, unless specified otherwise.
 1. Provide inspections of fabrication and installation indicating that countertops comply with requirements of grades specified.
 2. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.
 - B. SS-1:
 1. Basis-of-Design Manufacturer: Hyundai L&C USA; www.hundailncusa.com.
 2. Product: Hannex Solid Surface.
 3. Color: M-005 Orange.
 4. Thicknesses: 0.25 in for vertical use and 0.5 in for horizontal use.
 5. Applications: West Entry Control Desk.
 - C. SS-2:
 1. [Basis-of-Design Manufacturer: Corian; www.corianquartz.com.](#)
 2. [Product: Corian Quartz.](#)
 3. [Color: Dove Grey.](#)
 4. [Thicknesses:3cm.](#)
 5. [Finish: Leathered](#)
 6. [Applications: West Entry Control Desk.](#)

2.5 WOOD BENCH

A. Wood Bench, WD-1:

1. Grade: Premium.
2. Materials: Solid stock glued to full plywood subdeck
 - a. Species and Cut: Plain sawn maple.
 - b. Thickness: 0.5 in minimum.
 - c. Wood trim as indicated; refer to Wood Trim articles in this Section.
3. Finish: Transparent finish; refer to Finishes articles below.

2.6 WOOD WALL PANEL

A. Wood Wall Panel, WP-1:

1. Veneer Species and Cut: Match existing adjacent wall panels.

B. Wood Wall Panel, WP-2:

1. Grade: Premium.
2. Basis-of-Design Manufacturer: Plyboo; www.plyboo.com
3. Product: Edge Grain Plywood BP-V4896A.
4. Thickness: 0.75 in.
5. Color: Amber.
6. Finish: Transparent finish; refer to Finishes articles below.

2.7 WOOD SLATS

A. Wood Slats, WD-2:

1. Grade: Premium.
2. Materials: Solid-stock lumber; dimensions and profiles indicated on drawings.
 - a. Species and Cut: Maple.

B. Finish: Transparent finish, semi-matte; refer to Finishes articles below.

2.8 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 3 inches wide.
2. Wood Moisture Content: 8 to 13 percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130, unless indicated otherwise.
2. Softwood Plywood: DOC PS 1, medium-density overlay.
3. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.
4. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.9 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
1. Use treated materials that comply with requirements of referenced woodworking standard. Do not use materials that are warped, discolored, or otherwise defective.
 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
 3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
 2. For items indicated to receive a stained or natural finish, use organic resin chemical formulation.
 3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
 4. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.
- C. Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.
1. For panels 3/4 inch thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, 1600 psi; modulus of elasticity, 300,000 psi; internal bond, 80 psi; and screw-holding capacity on face and edge, 250 and 225 lbf, respectively.
 2. For panels 13/16 to 1-1/4 inches thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: modulus of rupture, 1300 psi; modulus of elasticity, 250,000 psi; linear expansion, 0.50 percent; and screw-holding capacity on face and edge, 250 and 175 lbf, respectively.
- D. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

2.10 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 08 71 00 "Door Hardware."

- B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening.
 - C. Back-Mounted Pulls: BHMA A156.9, B02011.
 - 1. Basis-of-Design Product: Model No. DP105A/6 by Doug Mockett; www.dougrockett.com.
 - a. Finish: Satin.
 - b. Application: Lockers and Cabinets.
 - D. Catches: Push-in magnetic catches, BHMA A156.9, B03131.
 - E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
 - F. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.
 - G. Drawer Slides: BHMA A156.9.
 - 1. Grade 1: Side mounted and extending under bottom edge of drawer; full-extension type; zinc-plated steel with polymer rollers.
 - 2. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-overtravel-extension type; zinc-plated-steel ball-bearing slides.
 - 3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
 - 4. For drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
 - 5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
 - 6. For computer keyboard shelves, provide Grade 1HD-100.
 - 7. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-200.
 - H. Aluminum Slides for Sliding Glass Doors: BHMA A156.9, B07063.
 - I. Door Locks: BHMA A156.11, E07121.
 - J. Drawer Locks: BHMA A156.11, E07041.
 - K. Door and Drawer Silencers: BHMA A156.16, L03011.
 - L. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Dark, Oxidized, Satin Bronze, Oil Rubbed: BHMA 613 for bronze base; BHMA 640 for steel base; match Architect's sample.
 - 2. Bright Brass, Clear Coated: BHMA 605 for brass base; BHMA 632 for steel base.
 - 3. Bright Brass, Vacuum Coated: BHMA 723 for brass base; BHMA 729 for zinc-coated-steel base.
 - 4. Satin Brass, Blackened, Bright Relieved, Clear Coated: BHMA 610 for brass base; BHMA 636 for steel base.
 - 5. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
 - 6. Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.
 - 7. Satin Stainless Steel: BHMA 630.
- 2.11 MISCELLANEOUS MATERIALS
- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.

- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
 - 1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.12 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
 - 1. Corners of Cabinets: 1/16 inch unless otherwise indicated.
- C. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
 - 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- D. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.13 SHOP FINISHING

- A. General: Finish architectural wood cabinets at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- B. General: Shop finish transparent-finished architectural wood cabinets at fabrication shop as specified in this Section.
- C. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural wood cabinets, as applicable to each unit of work.
 - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of cabinets.
- D. Transparent Finish:
 - 1. Grade: Premium.
 - 2. Finish: System - 5, conversion varnish.
 - 3. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to cabinets made from closed-grain wood before staining and finishing.
 - 4. Staining: Clear to match Architect's sample.
 - 5. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.

6. Filled Finish for Open-Grain Woods After staining, apply wash-coat sealer and allow to dry. Apply paste wood filler and wipe off excess. Tint filler to match stained wood.
7. Sheen: Flat, 15-30 gloss units measured on 60-degree gloss meter per ASTM D 523 to match Architect's approved sample.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.
- B. Before installing cabinets, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 EXAMINATION

- A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 CABINET INSTALLATION

- A. Grade: Install cabinets to comply with same grade as item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.
- C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.
 1. For shop finished items use filler matching finish of items being installed.
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 2. Maintain veneer sequence matching of cabinets with transparent finish.
 3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.
- G. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.
 1. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are applied in shop.

3.4 COUNTERTOP INSTALLATION

- A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.
- B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- C. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.
- D. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
 - 1. Install metal splines in kerfs in countertop edges at joints. Fill kerfs with adhesive before inserting splines and remove excess immediately after adjoining units are drawn into position.
 - 2. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.
- F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.
- G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.
- H. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
 - 1. Seal edges of cutouts in particleboard subtops by saturating with varnish.
- I. Apply sealant to gaps at walls; comply with Section 07 92 00 "Joint Sealants."

3.5 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

3.6 PROTECTION

- A. Provide protective coverings to prevent physical damage or staining following installation for duration of the project.

END OF SECTION 06 41 00

SECTION 09 51 23 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Acoustical tile ceilings and suspension systems (ACT-#).
2. Trim and miscellaneous accessories.
3. [Noise-control ceiling tiles and fixture covers](#)

B. Related Requirements:

1. Division 21 "Fire Suppression" Sections for coordination with fire suppression sprinklers.
2. Division 23 "Heating, Ventilating and Air Conditioning" Sections for coordination with air diffusers and returns in ceiling.
3. Division 26 "Electrical" Sections for coordination with lighting fixtures in ceiling.
4. Division 27 "Communications" Sections for coordination with audio-visual components in ceiling.
5. Division 28 "Electronic Safety and Security" Sections for coordination with Fire Detection and Alarm System.

1.3 DEFINITIONS

- A. AC: Articulation Class.
- B. CAC: Ceiling Attenuation Class.
- C. LR: Light Reflectance Coefficient.
- D. NRC: Noise Reduction Coefficient.

1.4 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Shop Drawings: Reflected ceiling plans drawn to scale and coordinating penetrations and ceiling-mounted items. Show the following:

1. Ceiling suspension members.
2. Method of attaching hangers to building structure.
 - a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.
3. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

4. Minimum Drawing Scale: 1/8 inch = 1 foot (1:96).
 - C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 1. Acoustical Panel: Set of samples of each type, color, pattern, and texture. Submit full-size for most panel types; submit partial panel sample may be submitted for 24 x 24 inch (600 by 600 mm) for larger panels.
 2. Exposed Suspension System Members, Moldings, and Trim: Set of 12-inch- (long Samples of each type, finish, and color.
 - D. Maintenance Data: For finishes to include in maintenance manuals.
- 1.5 MAINTENANCE MATERIAL SUBMITTALS
- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Acoustical Ceiling Panels: Full-size panels equal to 5 percent of quantity of each type installed. Coordinate with owner's representative and architect.
- 1.6 QUALITY ASSURANCE
- A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory, with the experience and capability to conduct the testing indicated. NVLAP-accredited laboratories must document accreditation, based on a "Certificate of Accreditation" and a "Scope of Accreditation" listing the test methods specified.
 - B. Source Limitations:
 1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
 2. Suspension System: Obtain each type through one source from a single manufacturer.
 - C. Pre-installation Conference: Conduct conference at Project site.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
 - B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
 - C. Handle acoustical panels to avoid soiling exposed surfaces or damaging surfaces and edges.
- 1.8 PROJECT CONDITIONS
- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.
 - B. Sequence work to assure that acoustical ceilings are not installed until building is enclosed, permanent heating system is available, dust generating activities have terminated, wet work is complete and dry, and work above ceilings is complete.

1.9 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.10 WARRANTY

- A. Provide manufacturer's standard written thirty (30) year limited warranty for acoustical panels and suspension grid.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 61 16 "Delegated Design Requirements," to design suspension systems.
- B. Seismic Standard: Provide acoustical panel ceilings conforming to the requirements of Chapter 16 of the Oregon Structural Specialty Code, and designed and installed to withstand the effects of earthquake motions for Seismic Design Category "D", according to the following:
 - 1. ASCE 7, "Minimum Design Loads for Buildings and Other Structures", Section 13 .5 .6 Suspended Ceilings.
 - 2. ASTM C635/C635M, "Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels".
 - 3. ASTM C636/C636M, "Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings".
 - 4. ASTM E580/E580M, "Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions".
- C. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that comply with the following requirements:
 - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance according to one of the following standards, or another testing and inspecting agency acceptable to authorities having jurisdiction:
 - a. ASTM E 119 "Test Methods for Fire Tests of Building Construction and Materials."
 - b. Underwriters Laboratory (UL) "Fire Resistance Directory."
 - 2. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 3. Surface-Burning Characteristics: Provide acoustical panels with the following surface-burning characteristics complying with one of the following:
 - a. ASTM E 1264 "Standard Classification for Acoustical Ceiling Products" for Class A materials as determined by testing identical products per ASTM E 84 "Standard Test Method for Surface Burning Characteristics of Building Materials":
 - 1) Smoke-Developed Index: 50 or less.
- D. Acoustic Performance: Refer to Acoustic Performance at individual Product articles below.

2.2 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Armstrong: www.armstrong.com.

2.3 ACOUSTICAL PANELS, GENERAL

- A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with classifications as designated by types, patterns, acoustical ratings, and light reflectance, unless otherwise indicated. Comply with one of the following standards:
1. ASTM E 1264 "Standard Classification for Acoustical Ceiling Products."
 - a. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 16 inches (400 mm) away from test surface per ASTM E 795 "Standard Practice for Mounting Test Specimens During Sound Absorption Tests."
- B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
1. Appearance characteristics of acoustical panels are indicated by referencing designations of ASTM E 1264 "Standard Classification for Acoustical Ceiling Products." Provide products selected by Architect from manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail and size. Products that do not list ASTM E 1264 characteristics shall be tested by the product manufacturer's laboratory and shall meet comparable ASTM E 1264 standards for country of origin.
- C. Coating-Based Antimicrobial Treatment: Provide acoustical panels with face and back surfaces coated with antimicrobial treatment consisting of manufacturer's standard formulation with fungicide added to inhibit growth of mold and mildew and showing no mold or mildew growth when tested according to one of the following standards:
1. ASTM D 3273 "Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber."

2.4 ACOUSTICAL TILE CEILINGS

- A. Basis-of-Design Acoustical Panel Product, ACT-1: Armstrong Ultima Beveled Tegular 1914.
1. Ceiling Panel:
 - a. Edge Detail: 15/16 in. [beveled tegular square lay-in](#).
 - b. Thickness: 5/8 in.
 - c. Size: 24 x 48 inches.
 - d. Panel Color: "White (WH)".
 - e. Light Reflectance: Not less than 0.80.
 - f. NRC: Not less than 0.55.
 - g. CAC: Not less than 35.
 2. Suspension and Trim System:
 - a. Suspension: 15/16 in. Prelude by Armstrong.
 - 1) Duty Rating: Heavy Duty.
 - b. Color: White, or as selected by Architect.

2.5 METAL SUSPENSION SYSTEMS, GENERAL

- A. Recycled Content: Not less than 70 percent.
- B. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements of one of the following standards:

1. ASTM C 635 "Standard Specification for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings."
- C. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.
1. High-Humidity Finish: Comply with one of the following standards:
 - a. ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
- D. Attachment Devices: Size for five times the design load indicated in one of the following:
1. ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.
 - a. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing per ASTM E 488 "Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements" or ASTM E 1512 "Standard Test methods for Testing Bond Performance of Bonded Anchors" as applicable, conducted by a qualified testing and inspecting agency.
 - b. Type: Cast-in-place anchors.
 - c. Type: Postinstalled expansion anchors.
 - d. Corrosion Protection: Stainless-steel components complying with ASTM F 593 "Standard Specification for Stainless Steel Bolts, Hex, Cap Screws and Studs" and ASTM F 594 "Standard Specification for Stainless Steel Nuts" or ISO 3506-2:1997 "Mechanical Properties of Corrosion-Resistant Stainless Steel Fasteners-Nuts." Group 1 alloy 304 or 316 for bolts; alloy 304 or 316 for anchor.
 2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190 "Standard Test Methods for Strength of Power-Actuated Fasteners Installed in Structural Members", conducted by a qualified testing and inspecting agency.
- E. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
1. Zinc-Coated Carbon-Steel Wire: Comply with one of the following:
 - a. ASTM A 641/A 641M, "Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire", Class 1 zinc coating, soft temper.
 2. Nickel-Copper-Alloy Wire: Comply with one of the following:
 - a. ASTM B 164 "Standard Specification for Nickel-Copper Alloy Rod, Bar and Wire", nickel-copper-alloy UNS No. N04400.
 3. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less 12 gauge.
- F. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
- G. Angle Hangers: Angles with legs not less than 7/8 inch (22 mm) wide; formed with 0.04 inch- (1-mm-) thick, galvanized steel sheet complying with coating designation from one of the following standards; Provide bolted connections and 5/16 inch (8-mm-) diameter bolts.
1. ASTM A 653/A 653M "Standard specification for Sheet Steel, zinc-Coated (Galvanized) or Zinc Iron Alloy-Coated (Galvannealed) by the Hot Dip Process"; Z275.

- H. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- I. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place.
- J. Hold-Down Clips: Where indicated, provide manufacturer's standard hold-down clips spaced 24 inches (610 mm) o.c. on all cross tees.
- K. Impact Clips: Where indicated, provide manufacturer's standard impact-clip system designed to absorb impact forces against acoustical panels.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
 - 1. Edge moldings shall fit acoustical panel edge details and suspension systems indicated and match width and configuration of exposed runners unless otherwise indicated.
 - 2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
 - 3. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
- B. Perimeter Trim: Provide perimeter trim at cloud ceilings and ceilings that do not extend to walls.

2.7 NOISE-CONTROL CEILING TILES

- A. Basis-of-Design Noise Control Product: KINETICS QuietTile.
 - 1. QuietTile:
 - a. Edge Detail: 15/16 in. beveled tegular
 - b. Thickness: 11/16 in (overall thickness based on facing tile selected).
 - c. Size: 24 x 48 inches.
 - d. NRC: Not less than 0.60.
 - e. CAC: Not less than 49.
 - 2. LightHood Fixture Cover
 - a. Quantity: Each light fixture in space shall require a Fixture Cover
 - b. Size: sized to fit light fixture surround
 - c. Acoustical Performance: As tested per ASTM E2611TL minimums are as followed: 500 Hz-9 dB, 1,000 Hz-10 dB, 2,000 Hz- 12 dB, 4,000 Hz- 16 dB. Testing must be conducted by an independent lab.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION, GENERAL

- A. General: Install acoustical panel ceilings to comply with one of the following:
 - 1. ASTM C 636 "Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels" and seismic requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
 - 4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, post installed mechanical, or power-actuated fasteners that extend through forms into concrete.
 - 6. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
- C. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- D. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
 - 1. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
 - 2. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
 - 3. For reveal-edged panels on suspension system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension system surfaces and panel faces flush with bottom face of runners.

4. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
5. Install hold-down clips in areas indicated, in areas required by authorities having jurisdiction, and for fire-resistance ratings; space as recommended by panel manufacturer's written instructions, unless otherwise indicated.
6. Install clean-room gasket system in areas indicated, sealing each panel and fixture as recommended by panel manufacturer's written instructions.
7. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.
8. [Install noise-control tiles and fixture covers in accordance with manufacturer's instructions.](#)

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
- B. Testing Services: Testing and inspecting of completed installations of acoustical panel ceiling hangers shall take place in successive stages, in areas of extent and using methods as follows. Do not proceed with installations of acoustical panel ceiling hangers for the next area until test results for previously completed installations of acoustical panel ceiling hangers show compliance with requirements.
- C. Extent of Each Test Area: When installation of ceiling suspension systems on each floor has reached 20 percent completion but no panels have been installed.
 1. Within each test area, testing agency will select 1 of every 10 power-actuated fasteners and post installed anchors used to attach hangers to concrete and will test them for 890 N of tension; it will also select one of every 2 post installed anchors used to attach bracing wires to concrete and will test them for 1957 N of tension.
 2. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.
- D. Remove and replace acoustical panel ceiling hangers where test results indicate that they do not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 13 42 75 – INTEGRATED INTERIOR ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A . Section Includes:

1. Delegated design of integrated interior assemblies.
2. Structure.
3. Finish panels.
4. Doors and frames.
5. Door hardware.
6. Electrical.
7. Communications.
8. Factory integrated components.
9. Site integrated components.

B . Related Requirements:

1. 08 71 00 - Door Hardware for site integrated components.
2. 08 80 00 – Glazing for integration of glazing.
3. 09 51 23 - Acoustical Tile Ceilings for site integrated components.
4. 09 65 13 - Resilient Flooring for site installed integral cove base at interior assemblies.
5. Division 26 - Electrical for site integrated components and commissioning.
6. Division 27 - Communications for site integrated horizontal cabling.
7. Division 28 - Electronic Safety and Security for site integrated components.
8. OSU Construction Standards.

1.2 DEFINITIONS

- A . Finish Panel: Site installed panels with factory applied final finish and cutouts for accommodation of mechanical, electrical and plumbing components.
- B . Conventional back box: Standard NEC device metallic back box.
- C . Modular back box: Manufacturers standard NEC device metallic back box.
- D . Specialty back box: Proprietary back box required for devices other than those specified in this section.
- E . Modular trim rings: Manufacturers standard plastic trim rings.
- F . Factory Integrated Components: Materials or components specified in other sections for factory assembly within integrated interior assemblies.
- G . Site Integrated Components: Materials or components specified in other sections for site assembly within integrated interior assemblies.

1.3 SUBMITTALS

- A . Submit the following in accordance with section 01 33 00 Submittal Procedures.

- B . Submittals must be reviewed and approved by the Contractor before sending to the Architect for review.
- C . Sample: Submit two samples for verification of selected finish as scheduled upon request unless noted otherwise. All wood veneer and non-standard custom finishes must be reviewed and approved by the Architect.
1. Anodized: 3 x 6 inch (76mm x 153mm) on metal.
 2. Chroma coat:
 - a. Standard Color: 2 x 2 inch (51mm x 51mm) paint chip.
 - b. Custom Color: 4 x 6 (102mm x 153mm) inch on MDF.
 3. Powder Coat: 2 x 4 inch (51mm x 102mm) on metal.
 4. Glass: 4 x 4 inch (102mm x 102mm).
 5. Wood Veneer: 4 x 4 inch (102mm x 102mm) on MDF.
 6. WriteAway Laminate: 4 x 8 inch (102mm x 203mm).
- D . Product Data: Provide manufacturers standard tech sheets as applicable to the project for the following: Structure, Finish Panels, Doors and Frames, Door Hardware, Electrical, Communications, and Accessories.
- E . Pre-Manufacture Submittals: Provide the following information to the manufacturer prior to development of shop drawings.
1. Field measurements of existing construction, future construction, finished width and height of walls and associated components, as well as design team provided plans and elevations.
 - a. Where field measurements are not possible, hold-to and control dimensions must be coordinated and agreed upon by all parties who interface with the integrated interior assemblies through the Shop Drawing process before manufacturing begins.
 2. Structure: Include selected wall types.
 3. Finish Panels: Include finishes and configurations.
 4. Doors and Frames: Include cores, finishes, frames, and operations.
 5. Door Hardware: Include manufacturers standard hardware and site integrated component hardware.
 - a. One sample of each type of Site Integrated Door Hardware that is to be installed in doors included in this section shall be sent to manufacturer for review and approval.
 6. Electrical: Include device type and location, schedules indicating electrical device specifications, amperage, ground pin orientation, type of solution, wiring configuration, receptacle, faceplate and trim ring colors and styles, and any Factory or Site Integrated Components.
 7. Communications: Include product data, fabrication drawings and schematics for any Factory or Site Integrated Components.
 8. Factory Integrated Components: Provide make, model, size, configuration, materials and any additional pertinent product data for factory assembly.
 9. Site Integrated Components: Provide make, model, size, configuration and any additional pertinent product data for site installation.

- F . Shop Drawings: Submit shop drawings for review prior to commencing any fabrication of the integrated interior assemblies. Coordinate as required until scope is confirmed by all affected stakeholders. Include manufacturer provided plans, elevations, sections, schedules and applicable notes per the following:
1. Prior to shop drawing submittal review the drawings for obvious drafting and detailing errors.
 2. Indicate material descriptions, dimensions and profiles of adjacent components and assemblies interfacing with the integrated interior assemblies.
 3. Indicate field measurements of existing construction, future construction, finished width and height of assemblies and associated components.
 4. Structure: Indicate reveal type, profile type, finishes and attachment to base building.
 5. Finish Panels: Indicate finishes, cores, glazing, accessories and configurations.
 6. Doors, Frames and Hardware: Include elevations indicating glazing and finishes, schedules indicating door tags, styles, dimensions, handing, hardware and finishes.
 7. Electrical:
 - a. Coordinate electrical components specified herein with the documents provided by the electrical engineer of record.
 - b. Indicate types and locations of wiring devices, outlet, junction and pull boxes, copper conductors and cables, conduit, electrical branch circuiting, amperage, ground pin orientation, wiring diagrams, and faceplate, receptacle and trim ring colors and styles.
 8. Plumbing Accommodation: Indicate location of chase posts, sink mounting brackets and blocking, and provisions for plumbing fixture carriers.
 9. Communications: Indicate device type and location of components within the integrated interior assembly. See division 27 for additional submittal requirements.
 10. Factory and Site Integrated Components: Indicate device type and location.
- G . Delegated Design Submittals: Provide structural analysis data and calculations for installed products to demonstrate compliance with design loads, signed and sealed by licensed professional engineer registered in the jurisdiction of the project.
1. Include engineering calculations for grid connections, bulkhead connections, and seismic conditions.
- H . Manufacturer's Installation Instructions: Indicate any special preparation of base building conditions, installation and attachment methods.
- I . Qualification Statements.
- J . Operation and Maintenance Data: Provide maintenance data for incorporation into operation and maintenance manuals.
- K . Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- L . Closeout Submittals: Submit copy of packing slip for shipment of re-usable packaging "cookies" and modular electrical dust caps back to manufacturer.
- M . Installer Performed Testing: Submit documentation of installer performed tests and certification for submission to the Authority Having Jurisdiction.

1.4 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section, of the quality and complexity required for this project for a minimum 10 years. Show production facilities capable of meeting contract requirements for single-source responsibilities and warranty.
2. Designer Qualifications: Professional structural engineer with 3 years of documented experience in design of this work and licensed in the location of the project.
3. Wall Installer Qualifications: Company trained and certified by manufacturer and specializing in performing the work of this section.
4. Electrical Installer Qualifications: Installer licensed for the work in the location of the project with 3 years of documented experience.
5. Integrated Electrical Components Installer Qualifications: Connections to the base building electrical system and all field installed electrical components, devices, and accessories require installation by an electrical contractor licensed in the jurisdiction of the project in accordance with applicable building and electrical codes and standards. Such work shall be performed under permit, tested, and inspected to confirm adequacy of final installations to the satisfaction of the Authority Having Jurisdiction.

B. Source Limitations: Obtain integrated interior assemblies from a single source.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver or install integrated interior assemblies until spaces are enclosed and weather-tight, wet work is complete and dry, work above ceilings is substantially complete, and HVAC system is operational and able to maintain ambient temperature and humidity conditions between 60 and 90 degrees F (15.5 and 32.2 C) with Relative Humidity maintained between 25 and 55 percent.
- B. Do not allow packaging to get wet or develop condensation.
- C. Comply with the manufacturer's requirements for a warrantable installation of the installed products to meet the Performance and Design Criteria.
- D. Collect and return re-usable packaging "cookies" and modular electrical dust caps to manufacturer.
- E. Comply with SMACNA (OCC) Chapter 3 and Section 01 57 22 Construction Indoor Air Quality.

1.6 WARRANTY

- A. Manufacturer Warranty: Provide 10 year warranty on walls, doors, door frames, door hardware, electrical, and communications for failures in materials or workmanship as indicated by the manufacturer standard warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design Manufacturer: DIRT Environmental Solutions or approved equal.
- B. Specification is based on products listed below by DIRT Environmental Solutions.

2.2 DESCRIPTION

- A . Factory assembled, site installed, integrated interior assemblies, including Structure, Finish Panels, Doors and Frames, Door Hardware, Electrical, Communications, and Factory and Site Integrated components.

2.3 PERFORMANCE AND DESIGN CRITERIA

- A . Provide integrated interior assemblies that are factory sub-assembled and site installed to integrate with the base building structure, shell, mechanical, electrical and plumbing systems.
- B . Walls shall utilize factory finish site installed panels that mechanically fasten to a factory finished and assembled aluminum structural frame module. Finish panels may be monolithic or segmented with the ability to span off-module, or across multiple frames in segments or monoliths, vertically and horizontally.
- C . Assembly shall allow for independent configuration of structure, finishes and functions relative to each side of the wall.
- D . Assembly shall be comprised of components which can be disassembled, relocated and field cut and substantially reused for future reconfigurations allowing for adaptability and retrofitting of the Structure, Finish panels, Doors and Frames, Door Hardware, Electrical, Communications, and Factory and Site Integrated components.
- E . Structure shall be capable of supporting wall hung accessories including but not limited to: casework, furniture, systems furniture, shelves, countertops and equipment in channels or reveals that are integrated within the structural frame and enable universal horizontal alignment without damaging finishes.
- F . Integrated interior assembly shall provide accommodation or provision for the embedding (fully encased behind glass) of electronics in the wall cavity. Structural framing shall allow for universal non-standard AV display, sound, and various support equipment to be mounted in the cavity of the wall with all required structural brackets, wire management, access and ventilation equipment to prevent overheating.
- G . Integrated interior assembly shall enable access of the internal cavity from either side without the addition of an access panel or need for repairing of finishes.
- H . Provide integrated interior assembly with a continuous open cavity vertically and horizontally free of structural impediments for the routing of mechanical, electrical and plumbing components.
- I . Provide integrated interior assemblies capable of accommodating up to a 1-inch (25 mm) gap between the top, bottom and side edges of the prefabricated assembly and base building elements.
- J . Provide an integrated interior assembly system capable of accepting pressure fit extrusions and co-extrusions to fill voids between finish panels, at ceiling connections, and other base building connections.
- K . Structural Performance:
 - 1. Capable of withstanding the effects of gravity loads, dead loads, and the following loads and stresses within limits and under conditions indicated:
 - a. Transverse Load: Lateral deflection of the overall span when tested under a uniformly distributed load of 5 psf (0.24 kN/m²) in accordance with ASTM E72 where (L) equals wall height:
 - a. Solid Walls: not more than L/120
 - b. Glass Walls: not more than L/175 or 3/4 inch (19 mm) whichever is more stringent.

- b. Mechanical Strength: Capable of withstanding static loads in accordance with ANSI/BIFMA X5.6.
- c. Seismic Performance: Provide integrated interior assemblies capable of withstanding effects of seismic motions determined according to the Authority Having Jurisdiction.

L . Acoustic Attenuation:

- 1. Sound Transmission Class (STC) rating of integrated interior assemblies shall be calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- 2. Interior Walls Indicated as Acoustic: Provide completed assemblies with the following characteristics:
 - a. Four inch (102mm) solid wall: ~~44 STC~~ 40-45 STC.
 - b. Four inch (102mm) single glazed wall: 30-35 STC.

M . Fire Resistance:

- 1. Surface-Burning Characteristics:
 - a. Finish materials shall be tested in accordance with ASTM E84 and NFPA 286 as required by 2018 IBC 803.1.1.
- 2. Integrated Interior Assembly shall be approved for use by a qualified independent testing agency in Types I and II Construction in accordance with 2018 IBC section 603.1 (2) and 603.1 (7).

N . Assembly UL Ratings:

- 1. UL 723; Standard for Test for Surface Burning Characteristics of Building Materials

2.4 STRUCTURE

A . Two sided wall: Fully assembled non-bearing structural frame module with site installed finish panels on both sides.

- 1. Reveal Type and Size: As selected by architect.
- 2. Material: Aluminum extrusions, 6063-T6 aluminum alloy classified as noncombustible in accordance with ASTM E136 per 2018 IBC 703.5.1.
 - a. Thickness: As required to meet performance requirements.
- 3. Wall Thickness: Actual 4 inch (102mm).
 - a. Bracing: as required to meet structural performance requirements
- 4. Bottom Track: Integral with modular frames.
 - a. Provide frame bases with continuous adjustment mechanism for 1-1/2 inch (38mm) height adjustment to accommodate floor slab variances.
- 5. Vertical Element Spacing: As required to meet performance requirements within a minimum of 6 inches (152mm) and a maximum of 48 inches (1219mm).
- 6. Blocking Bracket: Factory mounted **[4 inch (102mm)]** and **[6 inch (152mm)]** concealed structural blocking fabricated of 12 gauge or 16 gauge galvanized steel in a horizontal or vertical orientation between aluminum extrusions for wall mounted components.
- 7. Provide cutouts and support brackets as required for plumbing, electrical and communication pass through from frame to frame.

8. Insulation: UltraTouch Recycled Denim treated with boric acid classified in accordance with ASTM E84 per 2018 IBC 603.1(2).
- B . Glazed wall: Fully assembled non-bearing structural frame module with glass infill and Site assembled non-bearing structural frame module with glass infill.
1. Reveal Type and Size: As selected by architect.
 2. Material: Aluminum extrusions, 6063-T6 aluminum alloy classified as noncombustible in accordance with ASTM E136 per 2018 IBC 703.5.1.
 - a. Thickness: As required to meet performance requirements.
 3. Wall Thickness: Actual 4 inch (102mm).
 - a. Bracing: as required to meet structural performance requirements
 4. Bottom Track: Integral with modular frames.
 - a. Provide frame bases with continuous adjustment mechanism for 1-1/2 inch (38mm) height adjustment to accommodate floor slab variances.
 - b. Accessories: seismic floor anchor attachment.
 5. Vertical Element Spacing: As required to meet performance requirements within a minimum of 6 inches (152mm) and a maximum of 60 inches (1524mm).
 - a. Vertical Element spacing may exceed 60 inches (1524mm) with manufacturer review and approval.
 6. Glazing Finish Panel: Per glazing specifications.
 7. Glazing Gasket Color: As selected by architect.
- C . Structure Exposed Finishes:
1. Clear Anodized Aluminum: AAMA 611, AAM12C22A31, Class I
 2. Powder coat:
 - a. Finish: Per Finish Schedule below.
 3. Wood Veneer: Natural wood laminated to structure.
 - a. Species: Per Finish Schedule below.
 - b. Grade: 1.
 - c. Sheen: Low.
 - d. Grain Direction: Vertical.

2.5 FINISH PANELS

- A . Factory Finished Panel: Finish panels shall meet the finish classification requirement for the proposed location in the building.
1. Core Material: No Added Formaldehyde Medium Density Fiber Core (NAF MDF).
 - a. Features:
 - a. Flame Retardant MDF in accordance with ASTM E84 and TSCA Title VI compliant.
 - b. 1/8 inch (3mm) mass loaded vinyl adhered to back of panel for enhanced acoustic performance as scheduled.
 2. Finish Material: Manufacturer standard options shall be classified in accordance with ASTM E84 as Class A per 2018 IBC 803.1.2 unless

indicated otherwise. See Finish Schedule below for additional information.

- a. Chroma Coat (PNT-#): Water based paint sprayed onto substrate.
 - a. Maximum Size: 60 x 120 inches (1524mm x 3048mm).
 - b. Wood Veneer (VEN-#): Natural and reconstituted wood adhered to substrate.
 - a. Maximum Size: 60 x 120 inches (1524mm x 3048mm).
 - c. WriteAway (MCF-#): Dry Erase 3D laminate film vacuum formed to substrate.
 - a. Maximum Size: 46 x 120 inches (1168mm x 3048mm).
3. Mounting: Face Mounted.
 4. Thickness:
 - a. Typical: 1/2 inch (13mm).
 - b. With integral base: 3/8 inch (9.5mm).
- B. Glass Finish Panel:
1. Glazing Material:
 - a. Tempered glass (GL-#): ASTM C1048, Kind FT (fully tempered), Condition A (uncoated), Type 1, Class 1 (transparent), Quality q3. Complies with CPSC-16 CFR Part 1201 Category II per IBC 2015.2406.2.
 - a. Thickness: 3/8 inch (10mm).
 - b. Finish: Per Finish Schedule below.
 - b. Laminated Glass (GL-#): To AST C1172, Kind LA fabricated from two nominal 1/8 inch (3 mm) pieces of Type 1, Class 1, Quality q3, flat annealed transparent glass conforming to ASTM C1036. Complies with CPSC-16 CFR Part 1201 Category II per IBC 2015.2406.2.
 - a. Thickness: 3/8 inch (10mm).
 - b. Finish: Per Finish Schedule below.
 - c. Specialty Glass (GLS-#): approved by manufacturer prior to procurement or fabrication.
 - a. Finish and Features: Per Finish Schedule below.
 2. Mounting: Center Mounted for glazed walls and doors.
 - a. Face Mounted Features:
 - a. Aluminum mounting rails to maintain alignment with adjacent finishes.

2.6 DOORS AND FRAMES

- A. Coordinate ADA, ANSI, Access Control and Fire Life Safety requirements with drawings and schedules prior to the development of shop drawings per Pre-Manufacture Submittal requirements.
- B. Hardware Preparation and Reinforcement: Factory milled, reinforced, drilled and taped doors and frames by manufacturer to receive Integrated Hardware Components as scheduled.
 1. Factory milled doors and frames with hinge locations and sizes as determined by integrated interior assembly manufacturer; including factory installed steel backer plates.

2. Access Control Components: Factory provided rough in for Site Integrated Components and integrated interior assembly manufacturer provided hardware.
- C . Aluminum Framed Glass Doors:
1. Operation: Swing and sliding.
 2. Door Thickness: 1-11/16 inch (43mm) thick.
 3. Door Size: As indicated on Door Schedule.
 4. Stile Width: As indicated by Door Type on Door Schedule.
 5. Top Rail Height: As indicated by Door Type on Door Schedule.
 6. Bottom Rail Height: As indicated by Door Type on Door Schedule.
 7. Glazing: (GL-1) Tempered] 3/8 inch (10mm).
 8. Finish: As indicated on Door Schedule.
 - a. Clear Anodized Aluminum: AAMA 611, AAM12C22A31, Class I
 - b. Powder coat grade 2.
 - a. Color: Per schedule below.
 - c. Wood Veneer: Natural.
 - a. Species: Per schedule below.
 - b. Grade: 2.
 - c. Grain Direction: Vertical.
 - d. Sheen: Low.
 9. Adjustability: Provide door skirt to accommodate varying floor levels.
- D . Solid Core Wood Doors:
1. Operation: Sliding.
 2. Door Thickness: 1-11/16 inch (43mm).
 3. Door Size: As indicated on Door Schedule.
 4. Door Panel: Factory finished high density fiberboard faces over particleboard core with solid wood edging.
 5. Finish:
 - a. Paint: Manufacturers standard Chroma Coat
 - a. Grade: 2.
 - b. Color: Per Finish Schedule below
 - b. Wood Veneer: Natural.
 - a. Species: Per Finish Schedule below.
 - b. Grade: 2.
 - c. Grain Direction: Vertical.
 - d. Sheen: Low.
 - c. Thermofoil: Manufacturers standard 3D laminate
 - a. Grade: 2.

- b. Color/Pattern: Per Finish Schedule below.
- 6. Vision Lite: Sizes and configurations as indicated on drawings. Provide secure glazing stops on secure side of door.
 - a. Glazing: (GL-#) per Finish Schedule below.
- E. Door Frames:
 - 1. Architectural grade structural aluminum factory finished and integrated with wall structure.
 - 2. Door frames capable of reconfiguration without part replacement or damage to wall components.
 - 3. Frames are shipped knocked down and assembled on site.
 - 4. Jamb shipped over length by 2 inches (50 mm) in height, for field cutting to suit opening height for proper alignment with adjacent frames.
 - 5. Extrusion Profile: Rectilinear.
 - 6. Configuration: As required by door operation or function.
 - 7. Size: As required for doors sizes indicated on Door Schedule.
 - 8. Standard Frame Depth: 4 inches (102mm)
 - a. Wrap Around frame: 4-3/4 inches (121 mm)
 - 9. Finish:
 - a. Clear Anodized Aluminum: AAMA 611, AAM12C22A31, Class I
 - b. Powder coat grade 2.
 - a. Color: Per Finish Schedule below.
 - c. Wood Veneer: Natural.
 - a. Species: Per schedule below.
 - b. Grade: 2.
 - c. Grain Direction: Vertical.
 - d. Sheen: Low.

2.7 DOOR HARDWARE

- A. Site Integrated Components: Provide in accordance with Division 08 Openings and Division 28 Electronic Safety and Security.
- B. All Hardware indicated in this section to be provided by the manufacturer or the manufacturers distribution partner and installed on site unless indicated otherwise.
- C. General Door Hardware: See door hardware specifications.
- D. Sliding Door Hardware: Site installed manufacturer's standard sliding door track, track cover and door roller assembly with alignment pin on floor. Anti-rack and Anti-lift hardware included in track assembly.
 - 1. Floor Track: None; Trackless
 - 2. Positive Latch: Manufacturer's standard non-keyed, spring loaded, latch and strike that can secure sliding door panels to adjacent panels or jambs. Strike shall mount flush to surface of framing. Latch shall engage by closing action of door.
 - 3. Operation:

- a. Soft close mechanism for door weights of 165 pounds (75 kg) or less.
 - b. Pneumatic slow down mechanism for door weight of 165 to 200 pounds (75 to 90 kg).
- E . Hardware Finishes: BHMA Standard finishes provided as follows unless indicated otherwise:
1. 626 - Satin Chrome: lever sets, flush bolt, dead bolt, metal roller catch, bolt, strike plate, dome floor stop and peg floor stop.
 2. 628 - Satin Aluminum: electromagnetic locks,
 3. 630 - Satin Stainless Steel: pulls.
 4. CR Lawrence (CRL) Satin Anodized: Pivot Sets, Pivot Lock Sets.
- F . Keying: Provide in accordance with Section 08 71 ## [door hardware section]

2.8 ELECTRICAL

A . Copper Conductors and Cables:

1. Armored Cable (Type AC): Multi conductor Type AC with 3, 5 or 8 insulated copper conductors in size #12 AWG factory assembled from the pre-terminated device with an additional 10 feet (3.05 m) extending from the top or bottom edge of the frame.
 - a. Features:
 - a. Conventional Wiring: Pig Tail conventional hard wire connection to base building branch circuit conductor per Division 26 requirements.
 - b. Modular Wiring: Quick connect pre-terminated modular system for wiring modular devices per shop drawings.
 - c. Extender Cable: Quick connect pre-terminated at both ends modular system for wiring modular devices per shop drawings.
 - d. Power Whip: Manufacturer standard modular connector at one end and Pig Tail conventional hard wire connection at opposite end for connection to base building branch circuit conductor per drawings and Division 26 requirements.
2. Modular Splitter: Modular cable quick connect device for power distribution to be secured to wall, floor or above ceiling per shop drawings.
3. Conventional Cable: Power conductors and cables not provided by manufacturer are provided in accordance with division 26.

B . Conduit:

1. Typical: Provide Electric Metal Tubing (EMT) conduit pathways 3/4 inch (19 mm) factory mounted within the integrated interior assembly structure, from outlet junction box to top or bottom of assembly to permit wiring installation and connections as specified in Divisions 26, 27, and 28.
 - a. Material: Coated steel.
2. Routing Through Posts Only: Provide UL listed flex conduit per ANSI/UL-1, NEC Type FMC fabricated of lightweight, high-strength aluminum alloy.
3. Refer to Division 26, 27, and 28 for additional conduit raceway and pull-string requirements.

C . Outlet Junction and Pull Boxes

1. Conventional back box and mounting bracket: Factory mounted.
2. Modular back box and mounting bracket: Factory mounted.
3. Specialty Back Box: Provide to manufacturer for factory mount.

D . Face Plates and Trim Rings:

1. Modular faceplates: Factory provided, Factory installed
 - a. Color: Stainless Steel
 - b. Construction: 2 adjustment screws at top and bottom for flush installation.
2. Modular trim rings: Factory provided, site installed.
 - a. Color: Grey.
3. Conventional face plates: Provide in accordance with division 26 requirements.
4. Engraving/Identification: Provide in accordance with division 26 requirements.

E . Wiring Devices

1. Pre-terminated 15 or 20 amp receptacle factory assembled in outlet junction box.
 - a. Color: White except as follows: **[Red for emergency circuits] [Ivory] [Orange] [Grey] [Blue] [Black]**
 - b. Ground Pin Orientation: [Down] [Up]
 - c. USB charging port as located per drawings: Type A, 5 amp, 5 volt

F . Electrical Branch Circuiting:

1. Modular Zone Distribution: Modular Zone boxes designed to hold 12 circuits (independent neutrals) or 16 circuits (shared neutrals) site installed per shop drawings.
 - a. Connections from modular devices to modular zone box with site installed modular splitters and extender cables.
 - b. Connection of modular zone boxes to conventional panel: Home run connections provided in accordance with requirements of Division 26 Electrical and manufacturers installation instructions.
2. Modular Panel Manager Distribution: Electrical distribution panel with 24 or 42 circuits installed inside or just outside the electrical room per shop drawings for full modular power distribution.
 - a. Connection of modular panel manager to conventional panel: Provided in accordance with Division 26 Electrical and manufacturers installation instructions.
 - b. Connections from modular devices to modular panel manager with modular splitters and extender cables in accordance with manufacturers installation instructions.

2.9 COMMUNICATIONS

A . Conduit:

1. Manufacturers proprietary aluminum 1 x 2 inch (25mm x 50mm) rectangular aluminum conduit factory mounted to assembly structure from device box to top or bottom of assembly to permit wiring installation and connections as specified in Division 27.

B . Outlet Junction and Pull Boxes:

1. Conventional back box and mounting bracket: Factory mounted.
2. Modular back box and mounting bracket: Factory mounted.
3. Specialty Back Box: Provide to manufacturer for Factory mounting.

C . Horizontal Cabling:

1. Provide in accordance with Division 27 requirements.

D . Face Plates and Trim Rings:

1. Modular faceplates: Factory provided, Factory installed
 - a. Color: Stainless Steel.
 - b. Construction: 2 adjustment screws at top and bottom for flush installation.
2. Modular trim rings: Factory provided, site installed.
 - a. Color: Grey.
3. Conventional face plates: Provide in accordance with Division 27 requirements.
4. Engraving/Identification: Provide in accordance with Division 27 requirements.

E . Data Jack:

1. 8 pin modular RJ45 jack, CAT cable **[5e] [6] [6A]** factory assembled outlet.
 - a. Color: As selected by architect.

2.10 SITE INTEGRATED COMPONENTS

- A . Door Hardware – per division 08 and 28

2.11 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

B . Manufacturer's accessories required by the project:

1. Manufacturer Standard Wall Base: Mechanically fastened recessed and adjustable Santoprene base.
 - a. Color: As selected by architect.
2. Manufacturer Standard Ceiling Trim: Mechanically fastened recessed and adjustable to accommodate up to a 1/2 inch (13 mm) gap between integrated interior assembly and base building elements
 - a. Color: As selected by architect.
3. Ceiling Perimeter Hanger: Manufacturer provided 1-1/8 inch (29mm) exposed perimeter edge angle extrusion for supporting lay-in panel ceiling systems. Seismic Suspension Edge Clips to meet code required movement without 2 inch (51mm) wall angles and all other acoustical ceiling components per section 09 51 00 Acoustical Ceilings.
4. Opti-filler Pressure Fit Gaskets:
 - a. Wall Panel Seal at Reveal: Provide extrusions and co-extrusions to fill voids between finish panels, at ceiling connections, and at base building connections as required. (both horizontal and vertical gaskets). Coordinate final locations of gaskets with manufacturer through the shop drawing process prior to procurement of fabrication.

PART 3 - EXECUTION

3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work.

1. Floor Levelness:

- a. Contiguous wall lengths less than 40 feet: Base building sub-floor shall be level within 3/8 inch over 10 feet.
 - b. Contiguous wall lengths greater Than 40 feet: Base building sub-floor shall not exceed a maximum total floor flatness deviation greater than 1-1/2 inches.
 2. Vertical leading edge of assembly structure to base building: Where partitions attach to adjacent walls, the finish face shall be plum within 1/2 inch over 10 feet.
 3. Top of assembly structure to base building: Where partitions attach to bulkhead or soffit, the finish face shall be level within 1/2 inch over 10 feet.
 4. Lay in Ceilings: Where partitions attach to lay-in ceiling grid, the grid shall be level within 1/4 inch over 10 feet.
- B . Verify products have been stored, and will be installed, in accordance with project's Construction Indoor Air Quality Management Plan specified in Section 01 57 22 Construction Indoor Air Quality.
- C . Verify field or hold-to control dimensions before fabrication of integrated interior assemblies. Coordinate fabrication schedule with construction schedule and progress to avoid delay in the work.
- D . Examine all adjoining work including work by others.
- E . Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.
- B . Locations to receive integrated interior assemblies shall be inspected for compliance with manufacturers requirements.
- C . Survey floor to determine the nature of floor level and determine where special conditions exist beyond manufacturer's standard leveling capabilities of 1-1/2 inch (38mm) total variation in floor level. Prepare sub-floor per section 03 54 16 – Gypsum Cement Underlayment.
- D . Field conditions and pre-existing installations by others which may adversely affect installation or exceed the manufacturers limitations shall be corrected before installing walls.

3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present and pre-installation meeting.
- B . All miscellaneous installation materials required to comply with EQ credit: Low Emitting Materials, Option 1 in accordance with Section 01 81 13 Sustainability Requirements.
- C . All building services shall be installed and connected to the base building systems by licensed subtrades. All building services shall be inspected by authorized trade representatives and Authority Having Jurisdiction in the presence of a manufacturer representative. Coordinate with all affected parties as required.
- D . Doors and frames
1. Install sliding doors plumb, level, square, and in proper alignment.
 2. Install doors to close against walls without gaps
 3. Install doors to open and close smoothly.
 4. Anchor sliding doors securely to supports.

E . Electrical:

1. Electrical testing requirements provided in accordance with Division 26 Electrical.
2. Grounding paths must be verified in patient care areas.
3. Inspect all electrical installations as part of conventional electrical scope prior to installation of finish panels.
4. Installation sequence as determined by the certified installer and coordinated with the General Contractor based on project conditions.

F . Communications:

1. Communications testing requirements provided in accordance with Division 27 Communications.

3.4 FIELD QUALITY CONTROL

A . Electrical:

1. All building services shall be inspected by authorized trade representatives and the local building authority prior to installation of finishing panels. Refer to Shop Drawings for location of components incorporated into prefabricated walls.
2. In general, installation locations and dimensions are installed a typical distance from prefabricated wall edges, refer to Shop Drawings for more information.

B . Communications:

1. Install communications systems in accordance with Division 27 requirements.

3.5 ADJUSTING

A . Adjust and lubricate hardware for proper operation in accordance with manufacturer's instructions.

B . Doors and Frames

1. Adjust for smooth and balanced door movement in accordance with manufacturer's instructions.
2. Adjust and lubricate hardware for proper operation.

3.6 CLEANING

A . Dispose of all waste material in accordance with Section 01 [74 19](#) - [construction waste management section] and project's Waste Management Plan.

B . Upon completion of installation clean finishes in accordance with the manufacturer's instructions. Avoid alkaline or abrasive agents. Avoid scratching or marring finishes.

3.7 PROTECTION

A . Protect installed work as required by the manufacturer to maintain product performance, design criteria and warranty.

3.8 DEMONSTRATION

A . Manufacturer's representative will be responsible to provide general product training to the Owner or their outsourced operations team at time of installation as well as conduct a comprehensive training session(s) to convey the methodology, and assembly of the walls to sustain general operational maintenance by the Owner's personnel with clearance over the facilities lifetime.

3.9 FINISH SCHEDULE

1. (ANO-1) Anodized:
 - a. Type: Manufacturer Standard
 - b. Color: Clear.
2. (PWD-1): Powder Coat
 - a. Type: Color Match.
 - b. Grade: 2.
 - c. Texture: Smooth.
 - d. Color Manufacturer: DIRTT or approved equal.
 - e. Color Name: 045-17-1507.
 - f. Notes: [insert items like, Doors/ Frames/ Corner Posts].
3. (VEN-1) Wood Veneer:
 - a. Type: Natural.
 - b. Grade: 2.
 - c. Species: Oak.
 - d. Sheen: Low.
 - e. Stain Finish: Clear.
 - f. Grain Direction: Vertical.
 - g. Notes: **[insert items like, Doors/ Frames/ Corner Posts/ Micro-Perforated]**.
4. (GL-1) Glass:
 - a. Type: Tempered.
 - b. Color/Finish: Manufacturer Standard Clear.
 - c. Thickness: 10 mm.
 - d. Color Manufacturer: DIRTT or approved equal.
5. Finish Panels:
 - a. (MCF-1) Magnetic Markerboard:
 - a. Type: Porcelain Faced steel adhered to substrate.
 - b. Color: White.
6. Finish Panels:
 - a. (MCF-2) Magnetic Markerboard:
 - a. Type: Porcelain Faced steel adhered to substrate.
 - b. Color: #045-17-1507.

3.10 DOOR HARDWARE SCHEDULE

- A . See door hardware schedule and specifications.

END OF SECTION