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Construction Specification Manual

Salt River Project

Technical Specification Index – June 2025

Division 6

Division	Title	Updated
DIVISION 6: WOODS, PLASTICS, & COMPOSITES		
061053	Miscellaneous Rough Carpentry	Revised 06/25
061643	Exterior Gypsum Sheathing	Revised 08/21
064113	Wood-Veneer-Faced Arch Cabinets	Revised 08/21
064116	PLAM-Clad Architectural Cabinets	Revised 08/21
068316	Fiberglass Reinforced Plastic Paneling	Revised 08/21

SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Rooftop equipment bases and support curbs.
2. Wood blocking, cants, and nailers.
3. Wood furring and grounds.
4. In-wall blocking for wall-mounted items, equipment, and accessories.
5. Plywood backing panels.

B. Related Requirements:

1. Section 09 22 16 "Non-Structural Metal Framing" for support loads imposed at wall-mounted and wall-hung items that require backing.

1.2 DEFINITIONS

- A. Boards or Strips (Backing): Sheet lumber of less than 2 inches nominal (38 mm actual) size in least dimension.
- B. Dimension Lumber (Blocking): Lumber of 2 inches nominal (38 mm actual) or greater size but less than 5 inches nominal (114 mm actual) size in least dimension.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preserved treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
 1. Preservative-treated wood.
 2. Fire-retardant-treated wood.
 3. Metal framing anchors.

1.5 QUALITY ASSURANCE

- A. 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.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
 3. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent for 2-inch nominal (38-mm actual) thickness or less; no limit for more than 2-inch nominal (38-mm actual) thickness unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 - 2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
 - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply 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.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and 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 (3.2 m) beyond the centerline of the burners at any time during the test.
 - 1. Treatment shall not promote corrosion of metal fasteners.
 - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.

3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
 4. Cants.
 5. Furring.
 6. Grounds.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
 1. Hem-fir (north); NLGA.
 2. Mixed southern pine or southern pine; SPIB.
 3. Spruce-pine-fir; NLGA.
 4. Hem-fir; WCLIB or WWPA.
 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
 6. Western woods; WCLIB or WWPA.
 7. Northern species; NLGA.
- C. Concealed Boards: 19 percent maximum moisture content of any of the following species and grades:
 1. Mixed southern pine or southern pine, No. 3 grade; SPIB.
 2. Hem-fir or hem-fir (north), Standard or No. 3 Common grade; NLGA, WCLIB, or WWPA.
 3. Spruce-pine-fir (south) or spruce-pine-fir, Standard or No. 3 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated, not less than 3/4-inch (19-mm) nominal thickness.

2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Screws for Fastening to Metal Framing: ASTM C 954, length as recommended by screw manufacturer for material being fastened.
- D. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- E. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2.7 METAL FRAMING ANCHORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cleveland Steel Specialty Co.
 - 2. KC Metals Products, Inc.

3. Phoenix Metal Products, Inc.
 4. Simpson Strong-Tie Co., Inc.
 5. USP Structural Connectors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.
1. Use for interior locations unless otherwise indicated.
- C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.
1. Use for wood-preserved-treated lumber and where indicated.

2.8 MISCELLANEOUS MATERIALS

- A. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
1. Adhesives shall have a VOC content of 70 g/L or less.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- C. Do not splice structural members between supports unless otherwise indicated.
- D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
1. Provide metal clips for fastening gypsum board at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches (406 mm) o.c.
- E. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

- F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 - 1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches (2438 mm) o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
 - 2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches (2438 mm) o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal (38-mm actual) thickness.
 - 3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. (9.3 sq. m) and to solidly fill space below partitions.

3.3 IN-WALL REINFORCEMENT FOR WALL-MOUNTED ITEMS

- A. Materials:
 - 1. Provide 3/4-inch (18 mm) thick fire-retardant-treated (FRT) plywood backing , or fire-retardant-treated (FRT) wood, nominal 1 1/2 inches thick with owner permission, for anchorage and structural support for wall mounted items for identified locations.
 - a. Extend wood a minimum of 6 inches (152 mm) above and below anchorage points.
 - b. Secure wood to be flush to the face of perpendicular non-structural metal framing studs which will receive finish sheathing. Fasteners should occur through vertical flange of framing stud on 6-inch spacings along one edge of wood backing and through a metal clip angle on 6-inch spacings that is secured to both the framing stud and the concealed face on the opposite edge of the wood backing.

2. Provide fire-retardant-treated (FRT) wood lumber blocking, nominal 1 ½ inches thick, for anchorage and structural support for Heavy-Duty wall mounted items with Owner authorization for identified locations.
 3. Where wood is not permitted by Authorities Having Jurisdiction and with Owner's authorization, utilize one of the methods defined in Section 09 22 16.
- B. Locations: Provide fire rated plywood blocking at wall-mounted equipment and accessories listed below typically including, the following: (Items not requiring wood blocking, see Section 09 22 16 "Non-Structural Metal Framing".)
1. Wall Monitors.
 - a. New walls: Provide in-wall backing flush with framing members.
 - b. Existing walls: Provide surface-mounted backing Architectural grade, with finish as selected by Owner.
 2. Projection screens.
 3. Urinal screens.
 4. Surface-mounted and semi-recessed toilet accessories.
 5. Wardrobe lockers.
 6. Surface-mounted and semi-recessed fire protection specialties.
 7. Surface-mounted and semi-recessed AED cabinets.
 8. Glass markerboards.
 9. Architectural woodwork and trim.
 10. Shelf standards and brackets.
 11. Metal cabinets.
 12. Computer equipment wall mounting brackets.
 13. Window shades.
 14. Lower base cabinets and casework units.
 15. Countertops
 16. Exterior building signage.
 17. Miscellaneous wall-mounted mechanical, electrical, or other equipment weighing less than 50 lbs.
- C. Heavy-Duty Applications: Provide blocking at the following locations:
- a. Wall-mounted door stops.
 - b. Impact zone of toilet partition door stops.
 - c. Wall-mounted grab bars.
 - d. Wall-mounted shower seats.
 - e. Upper wall cabinets and casework units.
 - f. Wall-mounted handrails.
 - g. Wall-mounted ladders.
 - h. Miscellaneous wall-mounted mechanical, electrical or other equipment weighing more than 50 lbs.

3.4 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
 - 1. Fire block furred spaces of walls, at each floor level and at ceiling, with wood blocking or noncombustible materials accurately fitted to close furred spaces.
- B. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal- (19-by-38-mm actual-) size furring vertically at 16 inches (406 mm) o.c.

3.5 PANEL PRODUCT INSTALLATION

- A. Wood Structural Panels: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
 - 1. Comply with "Code Plus" provisions in above-referenced guide.

3.6 EQUIPMENT BACKING PANELS

- A. Provide fire retardant-treated 3/4-inch thick plywood panels to each wall scheduled to receive electrical, telephone, communications, data, or similar equipment.
 - 1. Do not install panels within 2 feet of the floor nor within 2 feet of a door frame.
- B. Refer to Section 09 91 23 for field painting. Do not paint over at least one fire-retardant-treated label per panel.

END OF SECTION

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SECTION 06 16 43

EXTERIOR GYPSUM SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Glass-Mat Gypsum Wall Sheathing.
 - 2. Sheathing joint and penetration treatment.
- B. Related Requirements:
 - 1. Section 05 40 00 "Cold-Formed Metal Framing."
 - 2. Section 07 27 26 "Fluid-Applied Membrane Air Barriers" for air barrier applied over wall sheathing.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review gypsum sheathing requirements and installation, including screw fastener spacing to be utilized at interior zones and corner zones of building façade, as required to ensure sheathing installation will withstand negative wind load pressures imposed by design wind speeds.
 - 2. Refer to Division 05 Section "Cold-Formed Metal Framing" for additional preinstallation conference requirements.

1.3 ACTION SUBMITTALS

- A. Product Data: For each factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
- B. Data for screws for fastening gypsum sheathing to cold-formed metal framing, including screw head diameter.
 - 1. Indicate exterior sheathing screw fastener spacing to be utilized at interior zones and corner zones of building façade, as required to ensure sheathing installation will withstand negative wind load pressures imposed by design wind speeds.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Manufacturer's Certification that sheathing fastener screws comply with sheathing manufacturer's requirements for type, size, and head diameter.

- C. Field quality-control reports, if required.

1.5 QUALITY ASSURANCE

- A. Mockups: Integrate gypsum sheathing into integrated exterior mockups to set quality standards for materials and execution.
 - 1. Provide mock-up in accordance with provisions of Section 01 40 00.
 - a. Coordinate construction of mockups to permit inspection and testing of sheathing before external insulation and cladding are installed.
 - b. Include junction with roofing membrane, building corner condition, and foundation wall intersection.
 - c. If Architect determines mockups do not comply with requirements, reconstruct mockups until mockups are approved.
- B. Testing Agency Qualifications (If Required):
 - 1. For testing agency provide inspections that are acceptable to Owner that periodically performs inspections to verify that material are installed correctly.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: As tested according to ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 GYPSUM SHEATHING

- A. Glass-Mat Gypsum Sheathing: ASTM C 1177/1177M.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation; GlasRoc.
 - b. Georgia-Pacific Building Products; Dens-Glass Exterior Sheathing.
 - c. National Gypsum Company; Gold Bond eXP.
 - d. United States Gypsum Co.; Securock.
 - e. Substitutions: None permitted.
 - 2. Type and Thickness: Type X, 5/8 inch (15.9 mm) thick.

3. Permeance: Not less than 15 perms per ASTM E 96.
4. Size: 48 by 96 inches (1219 by 2438 mm).
5. Mold Growth: 10, per ASTM D 3273.

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 1. For wall sheathing, provide fasteners [with hot-dip zinc coating complying with ASTM A 153/A 153M] [of Type 304 stainless steel].
- B. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached.
 1. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, provide one of the following:
 - a. Bugle-head screws complying with ASTM C 954.
 - b. Wafer-head screws complying with ASTM C 1513.
 2. Minimum Fastener Head Diameter: Not less than 0.42 in. (10.7 mm), unless larger diameter is required by sheathing manufacturer.

2.4 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

- A. Sheathing Sealant: Approved or recommended by Air-Barrier manufacturer. Refer to Section 07 27 26 "Fluid-Applied Membrane Air Barriers."

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 1. ASTM C 1280, unless closer spacing is required in order for sheathing to resist pressures imposed by design wind speeds.
- D. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

- E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- F. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
 - 1. Fasten gypsum sheathing to cold-formed metal framing with bugle-head or wafer-head screws, with minimum head diameter of 0.42 in. (10.7 mm), unless larger diameter is required by sheathing manufacturer.
 - 2. Install panels with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
 - 3. Install panels with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- B. Apply fasteners so heads bear tightly against face of sheathing, but do not cut into facing.
 - 1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of panels.
 - 2. Decrease spacing between fasteners where required to ensure sheathing installation will withstand negative wind pressures imposed by design wind speeds.

3.3 SHEATHING JOINT-AND-PENETRATION TREATMENT

- A. Seal sheathing joints according to Air-Barrier manufacturer's written recommendations.
 - 1. Apply sealant on joints and fasteners and trowel flat. Apply sufficient quantity of sealant to completely cover joints and fasteners after troweling, unless directed otherwise by Air-Barrier manufacturer's written instructions. Seal other penetrations and openings.
 - a. Utilize primers and tapes as recommended by sealant manufacturer at corners and joints at adjacent substrates.
 - 2. Taping of joints will not be accepted as an alternative or substitute for application of joint sealant.
 - 3. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply air barrier transition strip, so that a minimum of 3 inches (75 mm) of coverage is achieved over each substrate. Maintain 3 inches (75 mm) of full contact over firm bearing to perimeter frames, with not less than 1 inch (25 mm) of full contact.
 - a. Air Barrier Transition Strip: Roll firmly to enhance adhesion.
 - b. Silicone Sheet Transition Assembly: Set in full bed of silicone sealant applied to walls, frame, and air-barrier material.

4. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, doors, and miscellaneous penetrations of sheathing material with foam sealant.
5. Seal top of through-wall flashings to sheathing with an additional 6-inch- (150-mm-) wide, transition strip.
6. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with termination mastic.
7. Repair punctures, voids, and deficient lapped seams in strips and transition strips extending 6 inches (150 mm) beyond repaired areas in strip direction.

3.4 FIELD QUALITY CONTROL

- A. Testing: Owner reserves the right to engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. The following items will be subject to testing and inspecting:
 1. Attachment of sheathing to studs and other supplemental support framing.
 2. Type and size of fasteners.
 3. Spacing of fasteners.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Correct work where test results indicate that it does 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.

END OF SECTION

Project Name
Project Number

Deliverable
Issue Date

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SECTION 06 41 13

WOOD-VENEER-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood cabinets for transparent finish.
2. Cabinet hardware and accessories.
3. Wood furring, blocking, shims, and hanging strips for installing architectural cabinets that are not concealed within other construction.
4. Shop finishing.

B. Related Requirements:

1. Section 06 10 53 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.
2. Section 12 36 66 "Solid-Surface-Material Countertops."
3. Section 12 36 69 "Quartz Agglomerate Countertops."

1.2 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.
- B. Submittals Coordination: Submit related Shop Drawings required by other Sections concurrently with cabinet Shop Drawings.

1.3 PREINSTALLATION MEETINGS

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

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Sustainable Design Submittals, including information on the following, as applicable:

1. Recycled content.
2. Regional materials.

WOOD-VENEER-FACED ARCHITECTURAL CABINETS

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3. Certified wood.
 4. Adhesives.
 5. Composite wood.
- C. Shop Drawings: For architectural cabinets.
1. Include plans, elevations, sections, and attachment details.
 2. Show large-scale details.
 3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 4. Show locations and sizes of cutouts and holes for items installed in architectural cabinets.
 5. Show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.
- D. Samples for Initial Selection: For each type of exposed finish.
- E. Samples for Verification: For the following:
1. Lumber for Transparent Finish: Not less than 5 inches (125 mm) wide by 12 inches (300 mm) long, for each species and cut, finished on one side and one edge.
 2. Veneer Leaves: Representative of and selected from flitches to be used for transparent-finished cabinets.
 3. Thermally Fused Laminate (TFL) Panels: 8 by 10 inches (200 by 250 mm), for each color, pattern, and surface finish.
 - a. Provide edge banding on one edge.
 4. Corner Pieces:
 - a. Cabinet-front frame joints between stiles and rails and at exposed end pieces, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.
 - b. Miter joints for standing trim.
 5. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Certificates: For the following:
1. Composite wood products.
 2. Thermally fused laminate panels.
 3. Glass.
 4. Adhesives.
- C. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

WOOD-VENEER-FACED ARCHITECTURAL CABINETS

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1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: 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. Installer Qualifications: Manufacturer of products.
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Build mockups of typical architectural cabinets as shown on Drawings.
 - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.8 FIELD CONDITIONS

- A. Environmental Limitations with Humidity Control: 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 (16 and 32 deg C) and relative humidity between 20 and 50 percent during the remainder of the construction period.
- B. 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/concealed by construction, and indicate measurements on Shop Drawings.
- C. 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.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL CABINET MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

WOOD-VENEER-FACED ARCHITECTURAL CABINETS

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1. Brochstein's Inc.
2. Central Custom Millworks, Inc.
3. Paramount Millwork Corp.
4. Patella Industries Inc.
5. Stevens Industries
6. Woodhaus, Inc.

- B. Source Limitations: Engage a qualified woodworking firm to assume responsibility for production of architectural cabinets with transparent-finished wood doors that are required to be of same species and finish as architectural cabinets.

2.2 CABINETS, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of architectural cabinets indicated for construction, finishes, installation, and other requirements.
1. The Contract Documents may contain requirements that are more stringent than the referenced woodwork quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.

2.3 WOOD CABINETS FOR TRANSPARENT FINISH

- A. Architectural Woodwork Standards Grade: Custom.
- B. Type of Construction: Frameless.
- C. Door and Drawer-Front Style: Flush overlay.
- D. Wood for Exposed Surfaces: As indicated on Drawings.
1. Cut: Plain sliced/plain sawn.
 2. Grain Direction: Vertically for doors and fixed panels, horizontally for drawer fronts, unless otherwise indicated on Drawings.
 3. Matching of Veneer Leaves: Book match.
- E. Semiexposed Surfaces:
1. Surfaces Other Than Drawer Bodies: Same species and cut indicated for exposed surfaces unless otherwise indicated.
 2. Shelves Inside Closed Cabinets: Thermally fused laminate panels.
 - a. Edges of Thermally Fused Laminate Panel Shelves: PVC or polyester edge banding.
 3. Drawer Subfronts, Backs, and Sides: Solid-hardwood lumber, same species indicated for exposed surfaces.
 4. Drawer Bottoms: Thermally fused laminate panels.

- F. 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.

2.4 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 3 inches (75 mm) wide.
 - 2. Wood Moisture Content: 4 to 9 percent.
- B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
 - 2. Particleboard (Medium Density): ANSI A208.1, Grade M-2-Exterior Glue.
 - 3. Softwood Plywood: DOC PS 1, medium-density overlay.
 - 4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.
 - 5. Thermally Fused Laminate (TFL) Panels: Particleboard or MDF 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.

2.5 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials 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 quality 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 E84, 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 (3.2 m) 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.

2.6 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Accuride International.
 - b. Blum, Julius & Co., Inc.
 - c. CompX Fort.
 - d. GRASS GmbH.
 - e. Häfele GmbH & Co.
 - f. Knappe & Vogt Manufacturing Company.
- B. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, 170 degrees of opening, self-closing.
1. Provide hinges as follows (based on maximum 24-inch wide doors):
 - a. 2 Hinges: For doors up to 35 inches high.
 - b. 3 Hinges: For doors 36 to 62 inches high.
 - c. 4 Hinges: For doors 63 to 78 inches high.
 - d. 5 Hinges: For doors 79 to 94 inches high.
 2. Acceptable Products:
 - a. Wide Angle – Salice by Häfele.
 - b. No. 3903 by Grass America, Inc.
- C. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, 100 degrees of opening, self-closing, for cabinet doors adjacent to walls or limited opening space.
1. Provide hinges as follows (based on maximum 24-inch wide doors):
 - a. 2 Hinges: For doors up to 35 inches high.
 - b. 3 Hinges: For doors 36 to 62 inches high.
 - c. 4 Hinges: For doors 63 to 78 inches high.
 - d. 5 Hinges: For doors 79 to 94 inches high.
 2. Acceptable Products:
 - a. 200 Series – Salice by Häfele.

- b. No. 3606 by Grass America Inc.
- D. Wire Pulls: Back mounted, satin finish stainless steel, 5.43 inches (138 mm) long, 1.38 inches (35 mm) deep, and 5/16 inch (8 mm) in diameter.
 - 1. Acceptable Product: No. 155.00.952 by Hafele.
- E. Catches: Magnetic catches, ANSI/BHMA A156.9, B03141.
 - 1. Acceptable Product:
 - a. "Thin Magnet" MGP262 catch by Selby.
- F. Touch Latch:
 - 1. Push-in magnetic catches, BHMA A156.9, B03131.
 - a. Acceptable Product: No. 245.61.322 by Hafele.
- G. Adjustable Shelf Standards and Supports: ANSI/BHMA A156.9, B04071; with shelf rests, B04081.
 - 1. Capacity: 500 lbs. per shelf.
 - 2. Style: Mortise-Mount.
 - 3. Finish: Bright zinc.
 - 4. Acceptable Products:
 - a. Pilaster Standards: 255 Series by Knappe & Vogt.
 - b. Shelf Supports: #256 by Knappe & Vogt.
- H. Shelf Rests: Heavy-duty two-pin plastic, with hold-down clip and 5-mm holes.
 - 1. Acceptable Product:
 - a. Hafele; number 282.47.702
- I. Drawer Slides: ANSI/BHMA A156.9.
 - 1. Standard Duty (Grade 1 and Grade 2): Side mount.
 - 2. Heavy-Duty (Grade 1HD-100 and Grade 1HD-200): Side mount.
 - a. Type: Full extension.
 - b. Material: Zinc-plated ball bearing slides.
 - 3. Pencil drawers not more than 3 inches (75 mm) high and not more than 24 inches (600 mm) wide, provide 50 lb (22.7 kg) load capacity.
 - 4. General purpose drawers more than 3 inches (75 mm) high, but not more than 6 inches (150 mm) high and not more than 24 inches (600 mm) wide, provide 75 lb (34 kg) load capacity.
 - 5. File drawers more than 6 inches (150 mm) high or more than 24 inches (600 mm) wide, provide 100 lb (45 kg) load capacity.
 - 6. Lateral file drawers more than 6 inches (150 mm) high and more than 24 inches (600 mm) but not more than 30 inches (762 mm) wide, provide 150 lb (68 kg) load capacity.
 - 7. Lateral file drawers more than 6 inches (150 mm) high and more than 30 inches (762 mm) wide, provide 200 lb (90.7 kg) load capacity.
 - 8. Computer keyboard tray, provide 75 lb (34 kg) load capacity.

- J. Drawer Locks: ANSI/BHMA A156, five-pin cam type. Provide at each cabinet drawer.
 - 1. Provide spur washer at all lock locations.
 - 2. Provide two keys per lock.
- K. Door Locks: ANSI/BHMA A156, five-pin cam type. Provide at each cabinet door.
 - 1. Provide spur washer at all lock locations.
 - 2. Provide two keys per lock.
- L. Elbow Latch: BHMA A156.9, B03023, for inactive leaf at pairs of doors.
- M. Door and Drawer Silencers: Provide 3/8 inch to 1/2-inch diameter self-adhesive neoprene or silicone disks.
 - 1. Color: Clear.
- N. Hanging File Support Bars: Aluminum 1-1/4" x 1/8" or 1-1/4" x 1/4", length as required; mill finish.
- O. Hanging Rods:
 - 1. Closet Shelf and Rod Supports:
 - a. Aluminum; painted white.
 - b. 11" L x 10" H;
 - c. 1195 by Knappe & Vogt.
 - 2. Center Support:
 - a. 24" Length; 1-1/16" od tubing; anochrome finish.
 - b. 760 by Knappe and Vogt.
 - 3. Tubing: Stainless Steel; 1-1/16" diameter; 660 by Knappe & Vogt.
 - 4. Tubing Flange: 1/16" o.d. mounted with two 5mm pins.
 - 5. End Cap: 730 by Knappe and Vogt.
- P. Coat Hooks:
 - 1. Finish: Burnished cast aluminum double hook.
 - 2. Acceptable Product: No. 580 by Ives (if double hook).
- Q. Keyboard Drawer Slides and Trays:
 - 1. Steel keyboard and mouse platform; adjustable 10" height and 30° tilt; platform rotates 360°; gel-filled keyboard wrist rest.
 - 2. Acceptable Product: 28828 Easy Touch Articulating Keyboard Arm by Mead-Hitcher.
- R. Grommets for Cable Passage: 2-inch (51-mm) OD, molded-plastic grommets and matching plastic caps with slot for wire passage.
 - 1. Color: As selected by Architect from manufacturer's full range.
- S. Tempered Float Glass for Cabinet Doors: ASTM C1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, 6 mm thick unless otherwise indicated.

- T. Tempered Float Glass for Cabinet Shelves: ASTM C1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3; with exposed edges seamed before tempering, 6 mm thick.
- U. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with ANSI/BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Stainless Steel: ANSI/BHMA 630.
 - 2. Satin Chromium Plated: ANSI/BHMA 652 for steel base.
- V. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9.

2.7 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.

2.8 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate architectural cabinets to dimensions, profiles, and details indicated. Ease edges and corners to 1/16-inch (1.5-mm) radius unless otherwise indicated.
- C. Complete fabrication, including assembly 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. Trial fit assemblies at manufacturer's 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.
- E. Install glass to comply with applicable requirements in Section 08 80 00 "Glazing" and in GANA's "Glazing Manual."
 - 1. For glass in wood frames, secure glass with removable stops.

2. For exposed glass edges, polish and grind smooth.

2.9 SHOP FINISHING

- A. General: Finish transparent-finished architectural cabinets at manufacturer's shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- B. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural 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.
- C. Transparent Finish:
 1. Architectural Woodwork Standards Grade: Custom. Provide one of the following systems, at manufacturer's option:
 - a. Finish: System - 7, catalyzed vinyl
 - b. Finish: System - 11, catalyzed polyurethane.
 2. Wash Coat for Closed-Grain Woods: Apply wash-coat sealer to cabinets made from closed-grain wood before staining and finishing.
 3. Staining: Match Architect's sample.
 4. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
 5. 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.
 6. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D523.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

- A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing

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nails or finishing screws for exposed fastening, countersunk and filled flush with cabinet surface.

1. For shop-finished items, use filler matching finish of items being installed.

D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm) using concealed shims.

1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
2. Install cabinets without distortion so doors and drawers fit openings 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.
3. Maintain veneer sequence matching of cabinets with transparent finish.
4. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches (400 mm) o.c. as follows:
 - a. No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips
 - b. No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish
 - c. Toggle bolts through metal backing or metal framing behind wall finish.
 - d. Toggle bolts through concrete masonry units.

E. Shop Finishes: Touch up finishing after installation of architectural cabinets. Fill nail holes with matching filler.

1. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are shop applied.

3.3 ADJUSTING AND CLEANING

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

END OF SECTION

Project Name
Project Number

Deliverable
Issue Date

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SECTION 06 41 16

PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plastic-laminate-clad architectural cabinets.
2. Plastic-laminate-clad countertops.
3. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-clad architectural cabinets that are not concealed within other construction.
4. Coordination and preparation as required to accommodate countertops.

B. Related Requirements:

1. Section 06 10 53 "Miscellaneous Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.
2. Section 12 36 66 "Solid-Surface-Material Countertops."
3. Section 12 36 69 "Quartz Agglomerate Countertops."

1.2 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.
- B.** Submittals Coordination: Submit related Shop Drawings required by other Sections concurrently with cabinet Shop Drawings.

1.3 PREINSTALLATION MEETINGS

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

1.4 ACTION SUBMITTALS

- A.** Product Data: For each type of product.
- B.** Shop Drawings: For architectural cabinets.
1. Include plans, elevations, sections, and attachment details.
 2. Show large-scale details.
 3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.

4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.
- C. Samples for Verification: For the following:
1. Plastic Laminates: 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish.
 - a. Provide one sample applied to core material with specified edge material applied to one edge.
 2. Thermoset Decorative Panels: 8 by 10 inches (200 by 250 mm), for each color, pattern, and surface finish.
 - a. Provide edge banding on one edge.
 3. Corner Pieces:
 - a. Cabinet-front frame joints between stiles and rails and at exposed end pieces, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.
 - b. Miter joints for standing trim.
 4. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Certificates: For the following:
1. Composite wood products.
 2. Thermally fused laminate panels.
 3. Glass.
 4. Adhesives.
- C. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: 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. Installer Qualifications: Manufacturer of products.
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
1. Build mockups of typical architectural cabinets as shown on Drawings.
 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.8 FIELD CONDITIONS

- A. Environmental Limitations with Humidity Control: 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 (16 and 32 deg C) and relative humidity between 20 and 50 percent during the remainder of the construction period.
- B. 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/concealed by construction, and indicate measurements on Shop Drawings.
- C. 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.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Brochstein's Inc.
 - 2. Central Custom Millworks, Inc.
 - 3. Paramount Millwork Corp.
 - 4. Patella Industries Inc.
 - 5. Stevens Industries
 - 6. Woodhaus, Inc.

2.2 PLASTIC-LAMINATE-CLAD CABINETS, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of cabinets indicated for construction, finishes, installation, and other requirements.

1. 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.

2.3 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

- A. Architectural Woodwork Standards Grade: Custom.
- B. Regional Materials: Wood products shall be manufactured within 100 miles (160 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
- C. Type of Construction: Frameless.
- D. Door and Drawer-Front Style: Flush overlay.
- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.
 1. Manufacturer and Colors / Patterns: As indicated in Interior Finish Legend on Drawings.
- F. Laminate Cladding for Exposed Surfaces:
 1. Horizontal Surfaces: Grade HGS.
 2. Postformed Surfaces: Grade HGP.
 3. Vertical Surfaces: Grade HGS.
 4. Exposed Edging for Door and Drawer Fronts: Plastic laminate matching door and drawer front. Apply with hot adhesive.
- G. Materials for Semiexposed Surfaces:
 1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.
 - a. Edges of Plastic-Laminate Shelves: PVC tape, 0.018-inch (0.460-mm) minimum thickness, matching laminate in color, pattern, and finish.
 - b. Edges of Thermally Fused Laminate Panel Shelves: PVC or polyester edge banding.
 - c. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
 2. Drawer Sides and Backs: Thermally fused laminate panels with PVC or polyester edge banding.
 3. Drawer Bottoms: Thermally fused laminate panels.
- H. Dust Panels: 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers unless located directly under tops.
- I. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

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- J. 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.
- K. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. Colors: As selected by Architect.

2.4 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Wood Moisture Content: 4 to 9 percent.
- B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
 - 2. Particleboard (Medium Density): ANSI A208.1, Grade M-2-Exterior Glue.
 - 3. Softwood Plywood: DOC PS 1, medium-density overlay.
 - 4. Thermally Fused Laminate (TFL) Panels: Particleboard or MDF 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.

2.5 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials 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 quality 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 E84, 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 (3.2 m) 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.

2.6 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Accuride International.
 - b. Blum, Julius & Co., Inc.
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 - d. GRASS GmbH.
 - e. Häfele GmbH & Co.
 - f. Knappe & Vogt Manufacturing Company.
- B. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, 170 degrees of opening, self-closing.
1. Provide hinges as follows (based on maximum 24-inch wide doors):
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 - b. 3 Hinges: For doors 36 to 62 inches high.
 - c. 4 Hinges: For doors 63 to 78 inches high.
 - d. 5 Hinges: For doors 79 to 94 inches high.
 2. Acceptable Products:
 - a. Wide Angle – Salice by Häfele.
 - b. No. 3903 by Grass America, Inc.
- C. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, 100 degrees of opening, self-closing, for cabinet doors adjacent to walls or limited opening space.
1. Provide hinges as follows (based on maximum 24-inch wide doors):
 - a. 2 Hinges: For doors up to 35 inches high.
 - b. 3 Hinges: For doors 36 to 62 inches high.
 - c. 4 Hinges: For doors 63 to 78 inches high.
 - d. 5 Hinges: For doors 79 to 94 inches high.
 2. Acceptable Products:
 - a. 200 Series – Salice by Häfele.

- b. No. 3606 by Grass America Inc.
- D. Wire Pulls: Back mounted, satin finish stainless steel, 5.43 inches (138 mm) long, 1.38 inches (35 mm) deep, and 5/16 inch (8 mm) in diameter.
 - 1. Acceptable Product: No. 155.00.952 by Hafele.
- E. Catches: Magnetic catches, ANSI/BHMA A156.9, B03141.
 - 1. Acceptable Product:
 - a. "Thin Magnet" MGP262 catch by Selby.
- F. Touch Latch:
 - 1. Push-in magnetic catches, BHMA A156.9, B03131.
 - a. Acceptable Product: No. 245.61.322 by Hafele.
- G. Adjustable Shelf Standards and Supports: ANSI/BHMA A156.9, B04071; with shelf rests, B04081.
 - 1. Capacity: 500 lbs. per shelf.
 - 2. Style: Mortise-Mount.
 - 3. Finish: Bright zinc.
 - 4. Acceptable Products:
 - a. Pilaster Standards: 255 Series by Knape & Vogt.
 - b. Shelf Supports: #256 by Knape & Vogt.
- H. Shelf Rests: Heavy-duty two-pin plastic, with hold-down clip and 5-mm holes.
 - 1. Acceptable Product:
 - a. Hafele; number 282.47.702
- I. Drawer Slides: ANSI/BHMA A156.9.
 - 1. Standard Duty (Grade 1 and Grade 2): Side mount.
 - 2. Heavy-Duty (Grade 1HD-100 and Grade 1HD-200): Side mount.
 - a. Type: Full extension.
 - b. Material: Zinc-plated ball bearing slides.
 - 3. Pencil drawers not more than 3 inches (75 mm) high and not more than 24 inches (600 mm) wide, provide 50 lb (22.7 kg) load capacity.
 - 4. General purpose drawers more than 3 inches (75 mm) high, but not more than 6 inches (150 mm) high and not more than 24 inches (600 mm) wide, provide 75 lb (34 kg) load capacity.
 - 5. File drawers more than 6 inches (150 mm) high or more than 24 inches (600 mm) wide, provide 100 lb (45 kg) load capacity.
 - 6. Lateral file drawers more than 6 inches (150 mm) high and more than 24 inches (600 mm) but not more than 30 inches (762 mm) wide, provide 150 lb (68 kg) load capacity.
 - 7. Lateral file drawers more than 6 inches (150 mm) high and more than 30 inches (762 mm) wide, provide 200 lb (90.7 kg) load capacity.
 - 8. Computer keyboard tray, provide 75 lb (34 kg) load capacity.

- J. Drawer Locks: ANSI/BHMA A156, five-pin cam type. Provide at each cabinet drawer.
 - 1. Provide spur washer at all lock locations.
 - 2. Provide two keys per lock.
- K. Door Locks: ANSI/BHMA A156, five-pin cam type. Provide at each cabinet door.
 - 1. Provide spur washer at all lock locations.
 - 2. Provide two keys per lock.
- L. Elbow Latch: BHMA A156.9, B03023, for inactive leaf at pairs of doors.
- M. Door and Drawer Silencers: Provide 3/8 inch to 1/2-inch diameter self-adhesive neoprene or silicone disks.
 - 1. Color: Clear.
- N. Hanging File Support Bars: Aluminum 1-1/4" x 1/8" or 1-1/4" x 1/4", length as required; mill finish.
- O. Hanging Rods:
 - 1. Closet Shelf and Rod Supports:
 - a. Aluminum; painted white.
 - b. 11" L x 10" H;
 - c. 1195 by Knappe & Vogt.
 - 2. Center Support:
 - a. 24" Length; 1-1/16" od tubing; anochrome finish.
 - b. 760 by Knappe and Vogt.
 - 3. Tubing: Stainless Steel; 1-1/16" diameter; 660 by Knappe & Vogt.
 - 4. Tubing Flange: 1/16" o.d. mounted with two 5mm pins.
 - 5. End Cap: 730 by Knappe and Vogt.
- P. Coat Hooks:
 - 1. Finish: Burnished cast aluminum double hook.
 - 2. Acceptable Product: No. 580 by Ives (if double hook).
- Q. Keyboard Drawer Slides and Trays:
 - 1. Steel keyboard and mouse platform; adjustable 10" height and 30° tilt; platform rotates 360°; gel-filled keyboard wrist rest.
 - 2. Acceptable Product: 28828 Easy Touch Articulating Keyboard Arm by Mead-Hitcher.
- R. Grommets for Cable Passage: 2-inch (51-mm) OD, molded-plastic grommets and matching plastic caps with slot for wire passage.
 - 1. Color: As selected by Architect from manufacturer's full range.
- S. Tempered Float Glass for Cabinet Doors: ASTM C1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, 6 mm thick unless otherwise indicated.

- T. Tempered Float Glass for Cabinet Shelves: ASTM C1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3; with exposed edges seamed before tempering, 6 mm thick.
- U. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with ANSI/BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Stainless Steel: ANSI/BHMA 630.
 - 2. Satin Chromium Plated: ANSI/BHMA 652 for steel base.
- V. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9.

2.7 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. Adhesives: Use adhesives that meet the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- D. Adhesive for Bonding Plastic Laminate: Contact cement.
 - 1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.8 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate architectural cabinets to dimensions, profiles, and details indicated.
- C. Complete fabrication, including assembly 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. Trial fit assemblies at manufacturer's 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.

PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

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- 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.
- E. Install glass to comply with applicable requirements in Section 08 80 00 "Glazing" and in GANA's "Glazing Manual."
 - 1. For glass in wood frames, secure glass with removable stops.
 - 2. For exposed glass edges, polish and grind smooth.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

- A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.
- D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm) using concealed shims.
 - 1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
 - 2. Install cabinets without distortion so doors and drawers fit openings 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.
 - 3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches (400 mm) o.c. as follows:
 - a. No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips
 - b. No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish
 - c. Toggle bolts through metal backing or metal framing behind wall finish.
 - d. Toggle bolts through concrete masonry units.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION

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SECTION 06 83 16

FIBERGLASS REINFORCED PLASTIC (FRP) PANELING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Fiberglass reinforced plastic sheet paneling and trim.

1.2 ACTION SUBMITTALS

- A. Product Data: Technical data including supporting documentation of compliance with surface burning characteristics for FRP and accessories.
- B. Samples for Verification: Submit 12 inch by 12 inch (305 mm by 305 mm) samples of each color and texture of plastic paneling and 12 inch (310 mm) long lengths of each type of trim accessory.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain plastic paneling and trim accessories from single manufacturer.

1.4 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install plastic paneling until spaces are enclosed and weathertight and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface Burning Characteristics: Determined by testing identical products according to ASTM E 84 by qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame Spread Index: 25 or less.
 - 2. Smoke Developed Index: 450 or less.
- B. Fire Test Response Characteristics of Plastic Panels: Determined by testing plastic materials by a qualified testing agency acceptable to authorities having jurisdiction.

1. Self ignition temperature of 650 degrees F (343 degrees C) or higher when tested according to ASTM D 1929 on plastic sheets in thickness indicated for the work.
2. Burning rate of 2.5 in./min. (1.06 mm/s) or less when tested according to ASTM D 635 at a nominal thickness of 0.060 inch (1.52 mm) or thickness indicated for the work.

2.2 MATERIALS

- A. Glass Fiber Reinforced Plastic Paneling: Gelcoat finished, glass fiber reinforced plastic panels complying with ASTM D 5319.
 1. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Crane Composites, Inc.
 - b. Glasteel.
 - c. Marlite.
 - d. Nudo Products, Inc.
 2. Nominal Thickness: Not less than 0.09 inch (2.3 mm).
 3. Surface Finish: Pebble unless otherwise indicated on Drawings.
 4. Color: White unless otherwise indicated on Drawings.
- B. Trim Accessories: One piece vinyl extrusions designed to retain and cover edges of panels. Provide division bars, inside corners, and caps as necessary to conceal edges.
 1. Color: Match panels.
- C. Exposed Fasteners: Nylon drive rivets recommended by panel manufacturer.
- D. Concealed Mounting Splines: Continuous, H shaped aluminum extrusions designed to fit into grooves routed in edges of factory laminated panels and to be fastened to substrate.
- E. Adhesive: Type recommended by plastic paneling manufacturer.
- F. Sealant: Mildew resistant, single component, neutral curing silicone sealant recommended by plastic paneling manufacturer and complying with requirements in Section 07 92 00 "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the work. Proceed with installation after correcting unsatisfactory conditions.

3.2 PREPARATION

- A. Remove wallpaper, vinyl wall covering, loose or soluble paint, and materials that interfere with adhesive bond. Prepare substrate by sanding high spots and filling low spots as needed to provide flat, even surface for panel installation.
- B. Clean substrates of substances that could impair adhesive bond, including oil, grease, dirt, and dust.
- C. Condition panels by unpacking and placing in installation space before installation according to manufacturer's written recommendations.
- D. Lay out paneling before installing. Locate panel joints so that trimmed panels at corners are not less than 12 inches (300 mm) wide.
 - 1. Mark plumb lines on substrate at trim accessory locations for accurate installation.
 - 2. Locate trim accessories to allow clearance at panel edges according to manufacturer's written instructions.

3.3 INSTALLATION

- A. Install plastic paneling according to manufacturer's written instructions.
- B. Install panels with fasteners. Layout fastener locations and mark on face of panels so that fasteners are accurately aligned.
 - 1. Drill oversized fastener holes in panels and center fasteners in holes.
 - 2. Apply sealant to fastener holes before installing fasteners.
- C. Install trim accessories with adhesive. Do not fasten through panels.
- D. Fill grooves in trim accessories with sealant before installing panels, and bed inside corner trim in a bead of sealant.
- E. Maintain uniform space between panels and wall fixtures. Fill space with sealant.
- F. Remove excess sealant and smears as paneling is installed. Clean with solvent recommended by sealant manufacturer and then wipe with clean dry cloths until no residue remains.

3.4 SITE SUSTAINABILITY

- A. Construction Waste Management: Comply with requirements of Section 01 74 19.
 - 1. Waste Disposal: Dispose of product waste, including accessories and used items, by recycling or reusing waste materials.

END OF SECTION

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