PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Selective demolition of building elements.

B. Description of items to be salvaged or removed and reused.

1.2 RELATED REQUIREMENTS

1.3 REFERENCE STANDARDS

A. 29 CFR 1910 - Occupational Safety and Health Standards; current edition.

B. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

C. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section in accordance with Division 01.

1. Review preparation and installation procedures and coordinating and scheduling required with related work.
2. Review Owner salvage requirements and conduct a walk-through with Owner present.

1.5 SUBMITTALS

A. Qualification Data: For demolition contractor listing projects and references.

B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.

1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of partitions, barricades and fences.
2. Include procedures and coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations.
3. Identify demolition firm and submit qualifications.
4. Include a summary of safety procedures.

C. Existing Condition Survey.

D. Shop Drawings: Indicate required flashings, sealing at openings.

E. Closeout Submittals: Accurately record actual locations of capped and active utilities and subsurface construction.

1.6 QUALITY ASSURANCE

A. Demolition Contractor Qualifications: Company specializing in selective demolition comparable in scope, environmental and historical sensitivity of work specified in this section with minimum 5 years experience.

B . Designer Qualifications: Professional structural engineer with 5 years of documented experience in design of this work and licensed in the location of the project.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Selectively demolish existing elements to accommodate tie-in of new work to existing conditions.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B . 29 CFR 1910: Occupational Safety and Health Standards.

C . 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

D . NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

2.3 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.

PART 3 - EXECUTION

3.1 EXAMINATION

A . Verify that utilities have been disconnected and capped before start of work.

B . Review record documents provided by Owner and schedule listing salvage and remove for reuse items.

C . Engage a professional engineer to perform an engineering survey to determine if removing indicated elements may result in a structural deficiency or unsafe condition during scope of work.

D . Perform a survey of existing conditions by use of measured drawings and preconstruction photographs.

E . It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

3.2 PREPARATION

A . Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B . Provide fire watch during hot work while sprinklers are offline.

C . Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

D . Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.3 SELECTIVE DEMOLITION OF BUILDING ELEMENTS

A . Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations.

B . Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.

C . Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

D . Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

E . Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

F . Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.4 CLEANING

A . Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition. Return adjacent areas to condition existing before selective demolition rations began.

3.5 SCHEDULE

A . Locations and extent in accordance with demolition drawings.

B . Salvaged Items:

1. Existing ceiling grid, tiles and lights.
2. 2 x 4 coffers.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Sealants for interior surfaces.

1.2 RELATED REQUIREMENTS

A . 088000 - Glazing.

B . 085659 - Transaction Windows.

C . 093000 - Tiling.

D . 095100 - Acoustical Ceiling.

E . 096500 - Resilient Flooring.

1.3 REFERENCE STANDARDS

A . ASTM C834 - Standard Specification for Latex Sealants; 2017.

B . ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.

C . ASTM D1056 - Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; 2014.

1.4 SUBMITTALS

A . Qualification Data: For Manufacturer, Installer, Testing Agency.

B . Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C . Preliminary Selection Sample: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

D . Field Samples for Confirmation: Provide sealant samples in the color selected based on Manufacturer's charts for sealants other than the ones included in the Visual and Performance Mockup. Field samples shall be minimum 12 inches long and installed at joints intended for each particular sealant use. Mockup and field samples will be used to confirm sealant color selection.

E . SWRI Validation Certificate: For each elastomeric sealant specified to be validated by SWRI's Sealant Validation Program.

F . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

G . Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

H . Field Test Report Log: For each elastomeric sealant application.

I . Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.

J . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

K . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Recommendations on maintenance schedule.

1.5 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

B . Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project. Minimum 5 years of documented experience in facilities of this size and scope.

1. Prequalification of single source installers for exterior sealants is encouraged.

1.6 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.7 WARRANTY

A . Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Joint sealers for properly designed joints in exterior materials; selected for durability, movement capacity, adhesion to substrates and non-staining characteristics.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B . Colors of Exposed Joint Sealants As selected by Architect from manufacturer's full range.

C . Elastomeric Sealants: Comply with ASTM C920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C920 classifications for type, grade, class, and uses related to exposure and joint substrates.

2.3 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Sealants for interior surfaces:

1. (S-10): General Purpose Interior Sealant: polyurethane; single, or multi- component, paintable.
    a. Color: Standard colors matching finished surfaces.
    b. Product: Dymonic FC, Dymeric 240FC by Tremco Inc.
    c. Designed for interior movement and non-moving joints adjacent to painted surfaces.
2. (S-11): Tile Sealant: Silicone; ASTM C920, Uses M and A; single component, mildew resistant.
    a. Colors other than white may be required.
    b. Product: Trade Mate Tub, Tile & Ceramic Silicone Sealant manufactured by Dow.
    c. Sealant Used in Food preparation area must be USDA approved for that use.
3. (S-12): Acoustical Sealant: Acrylic sealant; ASTM C834.
    a. Product: Tremco "Acoustical Sealant".
    b. Tested as part of acoustical assemblies.
4. (S-13): Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C920, Grade P, Class 25, Uses T, M and A; single or multi-component.
    a. Approved by manufacturer for wide joints up to 1-1/2 inches.
    b. Color: Standard colors matching finished surfaces.
    c. Product: Vulkem 45 SSL by Tremco Inc.
    d. Designed for exposed, trafficked joints with pourable self-leveling installation.

2.4 ACCESSORIES

A . Joint sealant backing:

1. General:
    a. Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
2. Elastomeric Tubing Sealant Backings:
    a. Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
3. Bond-Breaker Tape:
    a. Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

B . Miscellaneous Materials:

1. Primer:

a. Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

2. Cleaners for Nonporous Surfaces:

a. Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

3. Masking Tape:

a. Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

C . 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

3.4 PROTECTION

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

3.5 SCHEDULE

A . Sealants for interior surfaces:

1. (S-10): Typical Interior Sealant: Moving and non-moving Interior wall and ceiling control joints, smoke rated (but not fire rated) partitions.

2. (S-11): Joints between plumbing fixtures and floor and wall surfaces. Joints between kitchen, laundry room and bath countertops and wall surfaces.

3. (S-12): Use for concealed locations only. Sealant bead between top stud runner and structure and between bottom stud track and floor at any wall designated as acoustical.

4. (S-13): Control joints in floors.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Non-fire rated steel doors.

B. Non-fire rated steel frames.

1.2 RELATED REQUIREMENTS

A. 081214 - Prefinished Steel Door Frames: For site assembled prefinished steel door frames.

B. 087100 - Door Hardware: For hardware installed in hollow metal doors.

C. 099000 - Painting and Coating: For field painting.

1.3 REFERENCE STANDARDS

A. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.

B. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2016.

1.4 SUBMITTALS

A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes. Include U-value data for thermally broken doors and frames.

B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

C. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

E. Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Hollow metal frames and doors for fire rated openings.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . NAAMM HMMA doors of equivalent or better construction are allowed.

B . Provide hardware preparation in accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard. Coordinate with Section 087100 - Door Hardware.

2.3 MANUFACTURERS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Specification is based on Doors and Frames by one of the following:

1. Comparable products by one of the following are also acceptable.
    a. Assa Abloy.
    b. Ceco.
    c. Curries.
    d. Fleming.
    e. Steelcraft.

2.4 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Non-fire Rated Steel Doors:

1. Performance Criteria:
    a. Grade: ANSI A250.8 Level 3, physical performance Level C, Model 2, seamless.
    b. Thickness: 1-3/4 inches.
2. Features:
    a. Door Top and Closures: Steel, Flush with top of faces and edges.
    b. Door Edge Profile: Beveled on both edges.
    c. Face Texture: Smooth.
    d. Glazed Lights: Sizes and configurations as indicated on drawings. Provide secure glazing stops on secure side of door.
        1) Glazing: Fully Tempered Float Glass specified in Section 088000 - Glazing.
    e. Finish: Factory primed for field finishing.
    f. Field Finish: In accordance with Section 099000 - Painting and Coating.
    g. Field Finish Color: To be selected from manufacturer's full range

3. Location: as indicated on Door Schedule on Drawings.

C . Non-Fire Rated Frames:

1. Basis of Design: C-Series Timely Industries, A division of SDS Industries, Inc; www.timelyframes.com.
2. Performance Criteria:
   a. Comply with the requirements of grade specified for corresponding door.
   b. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 2.
3. Features:
   a. Width: 3-1/2"
   b. Material: TA-28 aluminum.
   c. Assembly: Fully welded.
   d. Finish: Factory primed, for field finishing.
   e. Color: black paint to match the color guide.
4. Location: as indicated on Door Schedule on Drawings.

2.5 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.

2.6 FINISHING

A . Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

B . Field Finish: In accordance with Section 099000 - Painting and Coating.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

B . Coat inside of frames to be installed in masonry, with bituminous coating, prior to installation.

C . Coat inside of other frames with bituminous coating to a thickness of 1/16 inch (1.5 mm).

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B . Install fire rated units in accordance with NFPA 80.

C . Coordinate installation of hardware.

D . Coordinate installation of electrical connections to electrical hardware items.

E . Touch up damaged factory finishes.

3.4 TOLERANCES

A . Clearances Between Door and Frame: As specified in ANSI A250.8.

B . Maximum Diagonal Distortion: 1/16 in (1.5 mm) measured with straight edge, corner to corner.

3.5 ADJUSTING

A . Adjust and lubricate hardware for proper operation.

B . Adjust for smooth and balanced door movement in accordance with manufacturer's instructions.

3.6 PROTECTION

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

3.7 SCHEDULE

A . Refer to door schedule on drawings.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Fire rated prefinished steel door frames for interior applications.

1.2 RELATED REQUIREMENTS

A . 081113 - Hollow Metal Frames: All other types of steel door frames.

1.3 REFERENCE STANDARDS

1.4 SUBMITTALS

A . Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.

B . Samples: Submit selection and verification samples of finishes, colors and textures.

1. Submit sample of each door frame type.
2. Submit color charts of prefinished components indicating standard and custom colors selections. Include samples of custom color matches on base metal.

C . Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

1. Indicate frame elevations, reinforcement, anchor types and spacing and locations of cut-outs for hardware.

D . Certificates: Certify that products in this section meet or exceed specified requirements.

E . Warranty: Submit Manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

F . Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

1.5 QUALITY ASSURANCE

A . Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

B . Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

C . Installer Qualifications: Company specializing in performing the work of the section with minimum 5 years of experience.

D . Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A . Deliver materials on manufacturer's original, unopened, undamaged containers with identification labels intact.

B . Factory package door frames individually with surface protection against shipping and handling damage until time of installation.

C . Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

D . Store frames in dry, protected are off ground. Do not cover with tarp. Do not create a moisture chamber over product in storage.

1.7 WARRANTY

A . Correct defective Work within a 3 year period after Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Prefinished Steel Frames:

1. Basis of Design: Timely Industries, A division of SDS Industries, Inc; www.timelyframes.com.
2. Rediframe Products, a Division of the Dunbarton Corporation; www.dunbarton.com.
3. Substitutions: See 016000 - Product Requirements

2.2 MATERIALS:

A . Form interior door frames of ASTM A 366 commercial quality cold rolled steel.

2.3 FRAMES

A . Fire rated frames:

1. “S” Series Frames, 20 gauge.
2. Location: Unit entry doors.
    a. Corridor side casing: TA-23 Anodized Aluminum.
    b. Unit Side casing: T-8 Steel.

B . Casings:

1. Manufacturer’s standard.
    a. Aluminum Casing: Aluminum in painted finish.
    b. Provide casings with corner alignment clips.

2.4 ACCESSORIES

A . Reinforcement Bracket for Closer:

1. Manufacturer’s standard for application.

B . Silencers:

1. Vinyl and clear stick-on type.

C . Fasteners:

1. Interior Frames: Drywall type G.

2.5 FABRICATION

A . Frames: Fabricate frames as indicated on shop drawings.

2.6 FINISHES

A . Prefinished with factory applied impact-resistant, polyester backed enamel finish in manufacturer's finish colors as selected.

B . Touch-up Paint: Provide touch-up paint for onsite repair as recommended by manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A . Verify existing conditions before starting work.

B . Verify that opening sizes and tolerances are acceptable.

C . Verify finish hardware requirements for each opening; verify frame reinforcement, preparation and anchorage. Verify requirements and coordinate with door and hardware supplier.

3.2 INSTALLATION

A . Install in accordance with manufacturer's instructions.

B . Prefinished Steel Frames:

1. Verify opening and dimensions with the shop drawings.
    a. Use door as a template
2. Install frames over finished walls and anchor through faces of structure as indicated on drawings.

C . Comply with manufacturer's recommendations for maximum fastener spacing.

D . Secure frames to wall with appropriate type fasteners. Install casings on the frames.

E . Align parts with proper clearances to ensure proper fit, tight miters and performance requirements.

F . Adjust strike plate to hold door tight to stops when closed.

3.3 FINAL INSPECTION

A . Inspect each opening for operation, hardware, appearance and installation. Make required adjustments.

B . Replace frames defective under terms of manufacturer's warranty.

3.4 CLEANING

A . Cleaning: Remove temporary coverings and protection of adjacent work areas.

B . Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

C . Repair or replace damaged installed products.

D . Remove from jobsite refuse and debris created and dispose per Division 01.

3.5 PROTECTION

A . Protection: Protect installed product's finish surfaces from damage during construction.

B . Repair or replace all damaged or defective frames.

C . Touch-up paint all damaged areas of factory applied finishes with same paint as used in factory.

3.6 SCHEDULE

A . Refer to Door and Frame Schedule on the drawings.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. New non-fire rated wood doors.

B. Fire rated wood doors.

1.2 RELATED REQUIREMENTS

A. 081113 - Hollow Metal Frames: For frames.

B. 087100 - Door Hardware: For hardware installed in wood doors.

1.3 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

C. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.

D. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

E. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2013.

1.4 SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles.

D. Sample: Submit two samples face material, manufacturer's standard size showing factory finishes, colors, and surface texture.

E. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.5 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.

1.6 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.7 WARRANTY

A . Interior Doors: Provide manufacturer's warranty for the life of the installation.

1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Wood doors for non-fire rated openings.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Accessibility Requirements: For doors required to be accessible, comply with applicable provisions in the Accessible and Usable Building Facilities ICC A117.1 and 2010 ADA Standards for Accessible Design – Department of Justice.

B . Quality Level: Custom Grade, Extra Heavy Duty performance, in accordance with WDMA I.S. 1A for all doors with the following exceptions.

C . Construction: Flush.

D . Vertical Edges: Same species as face veneer.

E . Edge type (AWI "E" type) edge set in between door face veneers.

F . Door Edge Profile: Beveled on both edges.

G . Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

H . Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

I . Source Limitations: For doors and frames, obtain products from single source from single manufacturer.

J . Provide hardware preparation in accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard. Coordinate with Section 087100 - Door Hardware.

2.3 MANUFACTURERS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Specification is based on doors and frames by one of the following:

1. Graham Wood Doors: www.grahamdoors.com.
2. Lynden Doors: www.lyndendoor.com
3. VT Industries, Inc: www.vtindustries.com

2.4 MATERIALS

A . Wood Veneer Facing:

1. Wood Veneer Facing for Transparent Finish: Vertical Grain Fir, quarter sawn, slip matched, veneer grade as specified by quality standard.

B . Cores:

1. Cores Constructed with stiles and rails:
   a. Provide solid blocks for hardware reinforcement.
   b. Provide solid blocking for other throughbolted hardware.
2. Non-Rated Solid Core and 20 Minute Rated Doors: Type: No Added Urea Formaldehyde particleboard core (PC), plies and faces as indicated above.
3. Sound Retardant Core: Equivalent to Type PC construction with core as required to achieve rating specified; plies and faces as indicated above.

C . Non-fire rated wood doors.

1. Features:
   a. Thickness: 1-3/4 inches.
   b. Core: Solid.
   c. Facing Material:
      1) Wood veneer facing with factory transparent finish.
      2) Wood veneer facing with factory opaque finish.
      3) High pressure decorative laminate finish.
   d. Color/Finish: Stain.
   e. Glazed Lights: Sizes and configurations as indicated on drawings. Provide secure glazing stops on secure side of door.
      1) Glazing: Fully Tempered Float Glass specified in Section 088000 - Glazing.

2.5 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.

2.6 FINISHING

A. Factory Finish: Finish work in accordance with AWI/AWMAC/WI (AWS) Architectural Woodwork Standards, Section 5 - Finishing for Grade specified and as follows:

1. Transparent:

a. System - 11, Polyurethane, Catalyzed.

b. Stain: To match sample.

c. Sheen: Semigloss.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A. Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B. Field-Finished Doors: Trimming to fit is acceptable.

1. Adjust width of non-rated doors by cutting equally on both jamb edges.

2. Trim maximum of 3/4 inch (19 mm) off bottom edges.

C. Coordinate installation of hardware.

D. Touch up damaged finishes.

3.4 TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.5 ADJUSTING

A. Adjust and lubricate hardware for proper operation.

B. Adjust for smooth and balanced door movement in accordance with manufacturer's instructions.

3.6 PROTECTION

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

3.7 SCHEDULE

A. Refer to door schedule on drawings.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Overhead coiling counter doors.

1.2 RELATED REQUIREMENTS

A . 099000 - Painting and Coating: Field paint finish.

1.3 SUBMITTALS

A . Qualification Data: For manufacturer.

B . Product Data: Provide general construction, component connections and details, electrical equipment .

C . Shop Drawings: Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.

D . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention. Indicate installation sequence and procedures, adjustment and alignment procedures

E . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

F . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Maintenance Data: Indicate lubrication requirements and frequency and periodic adjustments required.
4. Recommendations on maintenance schedule.

1.4 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

1.5 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.6 WARRANTY

A . Manufacturer’s Finish Warranty: Correct defective work within a 20 year period after Substantial Completion for degradation of panel finish, including color fading caused by exposure to weather.

1. Panel Finish Criteria are listed AAMA 2605.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A. Counter coiling doors.

2.2 PERFORMANCE AND DESIGN CRITERIA

A. Products Requiring Electrical Connection: Listed and classified by testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

2.3 MATERIALS

A. Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B. Overhead coiling counter doors.

1. Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.
2. Non-Rated overhead coiling counter doors:
    a. Specification is based on Model ESC10 by Cornell.
    b. Performance Criteria:
        1) Air Infiltration: Less than 1.0 cfm/sq ft.
        2) Curtain R-Value: 8 minimum.
        3) Baffles in hood, sweeps and seals all as required for the tested and labeled assembly.
    c. Features:
        1) Curtain Material: Aluminum.
        2) Material Thickness: As required by manufacturer for heavy duty door of size indicated.
        3) Curtain Finish: Manufacturer's powder coat finish.
            a) Color: Manufacturer's standard White.
        4) Hood: Match the material, finish and color of curtain.
        5) Operation: Manual Push up.
        6) Mounting: Between jambs.
        7) Lock/Latch: Lock and cylinder keyed to building's key system.
        8) Counter: Stainless Steel.
    d. Location: Check-In Counter.

2.4 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

3.4 ADJUSTING

A . Adjust and lubricate hardware for proper operation.

3.5 PROTECTION

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

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Transaction windows.

B. Vertical sliding service window.

1.2 RELATED REQUIREMENTS

A. 088000 - Glazing: for transaction windows.

B. 123530 - Casework: For casework supporting countertops.

C. 123600 - Countertops.

1.3 REFERENCE STANDARDS

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section in accordance with Division 01.

1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.5 SUBMITTALS

A. Qualification Data: For manufacturer, design engineer, fabricator, and installer.

B. Product Data: Provide product criteria, characteristics, accessories, jointing and seaming methods, and termination conditions.

C. Shop Drawings: Indicate required flashings, sealing at openings.

D. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

E. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

F. Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.

2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

B. Designer Qualifications: Professional structural engineer with 5 years of documented experience in design of this work and licensed in the location of the project.

C . Fabricators Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

D . Installer Qualifications: Company specializing in performing the work of this section with minimum of 5 years of experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.8 WARRANTY

A . Manufacturer Warranty: All material and workmanship shall be warranted against defects for a period of one (1) year from the original date of purchase.

B . Installation Warranty: Contractor shall correct defective Work within a 2 year period after Date of Substantial Completion; remove and replace materials concealing waterproofing at no extra cost to Owner.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Factory fabricated transaction and vertical sliding service windows with accessories and attachment devices.

2.2 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Transaction Window:

1. Basis of Design Product: Cashier Window Unit by C.R. Laurence Co., Inc.
2. Features:
    a. Material: Aluminum.
    b. Window Glazing: see Section 088000.
    c. Frame Finish: Satin anodized.
    d. Width: 30".
    e. Shelf: brushed stainless steel #4.
    f. Color: To be selected by Architect from manufacturer's full range.
    g. No-Draft Speak-Thru: satin anodized aluminum.
    h. Cash and CoinTray Drawer: brushed stainless steel.
    i. Shelf: brushed stainless steel.

C . Vertical Sliding Service Window:

1. Basis of Design Product: Medium-duty commercial aluminum (SW) series, vertical sliding service window manufactured by C.R. Laurence Co., Inc.
2. Features:
    a. Material: Aluminum.

b. Window Glazing: see Section 088000 for safety glazing.

c. Frame Finish: satin anodized

d. Overall frame Size: 36"W x 36"H.

e. Screen: screen included.

f. Poly-pile weather stripping and slide locks.

g. Color: Bronze.

2.3 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . Install window in accordance with manufacturer’s printed instructions and recommendations. Repair damaged units as directed (if approved by the manufacturer and the architect) or replace with new units.

3.4 ADJUSTING

A . Adjust and lubricate hardware for proper operation.

3.5 CLEANING

A . Clean frame and glazing surfaces after installation, complying with requirements contained in the manufacturer’s instructions. Remove excess glazing sealant compounds, dirt or other substances.

3.6 PROTECTION

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

END OF SECTION

SECTION 087100 - DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

Hardware for swinging, sliding, and folding doors except special types of unique and non-matching hardware specified in other sections.

1.2 RELATED WORK

A. Section 081113 – Hollow Metal Doors and Frames
B. Section 082111 – Flush Wood Doors
C. Section 084313 – Metal Framed Storefronts
D. Division 26 – Electrical
E. Division 28 – Fire Alarm/Detection

1.3 REFERENCES

A. ADA - Americans with Disabilities Act of 1990 including Accessibility Guidelines as amended by the D.O.J. September 15, 2010, as adopted by the Authority Having Jurisdiction (AHJ).
B. ANSI A117.1 - Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People.
C. ANSI/BHMA A156 (.1 through .21)
D. ANSI/DHI – A115.IG Installation Guide for Doors and Hardware.
E. FEMA P-361 – Safe Rooms for Tornados and Hurricanes.
F. NFPA 80 - Fire Doors and Windows.
G. NFPA 101 – Life Safety Code
H. IBC - International Building Code, as adopted by public Authority Having Jurisdiction (AHJ).
I. State and local Rules and Regulations for Barrier Free Facilities, as adopted by AHJ.

1.4 DOOR HARDWARE TYPES

A. Types of finish hardware required include, but is not necessarily limited to, the following:
    1. Pivot sets and intermediate pivots.
    2. Hinges.
    3. Lock cylinders.
    4. Keys, keying, and key control.
    5. Locksets, latchsets, and privacy sets.
    6. Exit devices.
    7. Closers.
    8. Mullions.
    9. Overhead, wall, and floor stops.
    10. Protection plates.
    11. Gasketing for exterior and interior doors, as required.
    12. Door holders.
    13. Door bottoms.
    14. Thresholds.
    15. Silencers.

B. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of door hardware is indicated elsewhere in this section or in the Door Hardware Schedule at the end of this section. Refer to Part 2 Products for Manufacturer's identification and allowable substitutions.

1.5 SUBMITTALS

A. Under provisions of Section 01 34 00, submit the following:
   1. Product information: Manufacturer's published technical product data for all specified door hardware items indicating compliance with the requirements.
   2. Hardware Schedule:
      a. Hardware schedules are intended for the Contractor's coordination of the work. Review and acceptance by the Architect or Owner does not relieve the Contractor of his exclusive responsibility to fulfill the requirements as shown and specified.
      b. Submit hardware schedule in the manner and format as specified, complying with the actual construction progress schedule requirements for each draft. Include the following information:
         1) Explanation of all abbreviations, symbols, codes, at the like, including door handing.
         2) Type, style, function, size, and finish of each hardware item.
         3) Door and frame sizes and materials cross referenced to the Architect's marks in the door schedule.
         4) Room identification (name and number) on each side of door opening as indicated on the drawings.
         5) Product name, model number, description, and name of manufacturer of each item.
         6) Fastenings and other pertinent information.
         7) Locations of hardware cross referenced to architectural floor plans and door schedules.
         8) Mounting heights and locations of each type of hardware.
   3. Key Schedule:
      a. Require a qualified representative of the hardware supplier to personally meet with the Owner and Architect to obtain the Owner's written key requirements.
      b. Include a separate key schedule, showing clearly how the Owner's instructions on keying of locks has been fulfilled.
   4. Samples: Upon request, submit actual material samples of items indicated as for color selection.
   5. Templates: Hardware supplier will furnish hardware templates to the Contractor for each fabricator of doors, frames, and other work to be shop prepared or factory prepared for the installation of hardware. Upon request check shop drawings of such other work, to conform that adequate provisions are made for proper location and installation of hardware.
   6. Provide electrical operation technical sheets including product schematics, point to point diagrams, and electrical requirements of all electrified hardware. Completely coordinate with the general contractor, electrical engineer, electrician, security access subcontractor and the installer. Operational descriptions are for demonstration only – verify operational intent with the owner, architect and electrical engineer.
B. Under provisions of Section 01 70 00, submit the following:
   1. Product information.
   2. Hardware schedule.
   3. Manufacturer's published operation and maintenance data. Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
   4. Tools and extra materials as required.
   5. Manufacturer's warranties, revise to meet criteria as established within this section. Warranty periods shall commence upon acceptance of the building by the owner. Where warranties listed exceed the manufacturer's standard warranty, obtain in writing an extended warranty to meet the requirements above and as noted. If the manufacturer will not meet these requirements, and another approved manufacturer will comply, supply the alternate approved manufacturer.

1.6 QUALITY ASSURANCE

A. Acceptable Designs:
   1. Items specified in this section are products which are of acceptable design.
   2. Do not substitute products without Architect's written prior approval per Section 01 60 00. Requests for approval shall be submitted by factory authorized distributor firms representing the products proposed for substitution. Items that are noted to allow no substitution are matching existing materials and the owner's material inventory for servicing the facility.

B. Qualifications:
   1. Manufacturer: Manufacturers named in Part 2 of this section with not less than 5 years experience in manufacturing commercial door hardware of the type indicated.
   2. Hardware Supplier:
      a. A recognized architectural finish hardware supplier who has been furnishing hardware in the same state as the project for a period of not less than 5 years.
      b. Hardware supplier's organization shall include an experienced Architectural Hardware Consultant (AHC), certified by the Door and Hardware Institute (DHI), who is physically available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor. Mail or telephone correspondence is not acceptable.
      c. Hardware supplier shall have local warehousing facilities and shall maintain an adequate parts inventory of items supplied for future service to the owner. Supplier will be a factory authorized distributor of all hardware specified.
   3. Installer: Company specializing in installing work of this section with not less than 5 years experience and acceptable to the manufacturers and the hardware supplier. Maintain regular work force of qualified personnel, trained, skilled, and experienced in installing door hardware and constant, competent supervision per the requirements of the General Contractor. The hardware installer shall meet with the representatives of the General Contractor and hardware supplier to jointly inventory all hardware items. Upon satisfactory inventory of products, the hardware installer accepts responsibility for all hardware items inventoried.

C. Regulatory and Operational Requirements:
   1. Provide hardware for all openings, whether specified or not, in compliance with NFPA Standard No. 80, proper operation and local building code requirements. Where required provide only hardware which has been tested and listed by UL or FM for types and sizes of doors required and complies with requirements of door and door frame labels. Label hardware, as required, for compliance with pressure testing criteria as dictated in IBC.
   2. Provide hardware which meets or exceeds handicap accessibility per local building code requirements. Conform to the Americans with Disabilities Act (ADA) of 1990 as amended by the D.O.J. September 15, 2010, as adopted by the Authority Having Jurisdiction (AHJ).

1.7 DELIVERY, STORAGE, HANDLING, AND PROTECTION

A. Deliver, store, handle, and protect products to project site under provisions of Section 01600 and as specified herein.

B. Require hardware supplier to:
   1. Tag each item or package separately, with identification related to final hardware schedule.
   2. Include manufacturer's basic installation instructions with each item or package.
   3. As material is received by hardware supplier from various manufacturers, sort and repackage in containers with each item clearly marked with appropriate opening numbers to match the approved hardware schedule. Two or more identical items may be packed in the same container.
   4. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

5. Inventory hardware jointly with representatives of the General Contractor, hardware supplier and the hardware installer until each is satisfied that count is correct. Refer to paragraph 1.6-B-3.

C. Protect hardware from theft by cataloging and storing in a secure and lockable area. Control the handling and installation of hardware items which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation. Replace lost, missing, damaged, or stolen door hardware items at no additional cost to the Owner as required to meet schedule requirements.

1.8 SEQUENCING AND SCHEDULING

A. Coordinate work of this section with the work of other sections of work under provisions of Section 01 04 00
B. Furnish hardware templates to each fabricator of doors, frames, and other work to be shop or factory prepared for the installation of hardware.
C. Verify completeness and suitability of door hardware with the hardware supplier and the hardware installer.

1.9 MAINTENANCE MATERIALS

A. Under provisions of Section 01 70 00, furnish to Owner a complete set of special wrenches and tools applicable to each different or special hardware component as needed for Owner's continued adjustment, maintenance, removal, and replacement of door hardware.
B. Special tools and accessories shall be supplied by the hardware component manufacturer.

PART 2 PRODUCTS

2.1 MATERIALS AND FABRICATION

A. General:
   1. Provide all door hardware for complete work, in accordance with the drawings and as specified herein.
   2. Quantities listed, in any instance, are for the Contractor's convenience only and are not guaranteed.
   3. Provide items and quantities not specifically mentioned to ensure a proper and complete operational installation. Match the quality and finish of items specified.
   4. Provide miscellaneous hardware as listed in hardware groups.
B. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Door schedule indicates door and frame sizes, materials, required fire ratings, and other pertinent information. Furnish each item of hardware for proper installation and operation of door movement as indicated.
C. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable name plates), except in conjunction with required UL or FM labels and as otherwise acceptable to the Architect. Manufacturer's identification will be permitted on rim of lock cylinders and latch faceplates only.
D. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.
E. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self tapping sheet metal screws, except as specifically indicated.
   1. Screws: Furnish screws for installation, with each hardware item. Provide Phillips flat head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finishes of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.

2. Concealed Fasteners: Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex screw fasteners.

2.2 HINGES

A. Manufacturer:
   1. Listed in Door Hardware Schedule: Stanley
   2. Approved Substitutions: PBB, Hager
B. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template produced units.
C. Screws: Furnish Phillips flat head or machine screws for installation of units, except furnish Phillips flat head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges.
D. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   1. Steel Hinges: Steel pins.
   2. Non-ferrous Hinges: Stainless steel pins.
   3. Exterior doors: Non-removable pins.
   4. Reverse bevel interior doors (lockable): Non-removable pins.
   5. Interior doors: Non-rising pins.
E. Pin Tips: Flat button and matching plug, finished to match leaves.
F. Number of Hinges: Provide number of hinges indicated, but not less than 3 hinges per door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.
G. Butt type hinges and continuous hinges are to be warranted for a period of two years. Pivots shall be warranted for a period of two years.

2.3 LOCK CYLINDERS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: Medeco
   2. Substitutions: None – Facility Standard
B. Cylinders are specified to match existing and for bidding purposes. Consult with the owner to determine the proper Medeco cylinder to match and expand the existing Medeco key system.
C. Construct lock cylinder parts from brass/bronze, stainless steel, or nickel silver.

2.4 KEYS, KEYING, AND KEY CONTROL

A. Keys:
   1. Material: Provide keys of nickel silver only.
   2. Quantities: These quantities are to establish a maximum allowable quantity of cut keys to service the project and may not necessarily be assigned as noted. A lesser quantity of cut keys required will not result in any credits, nor a quantity of uncut keys to be issued unless noted otherwise.
      a. 3 change keys per each cylinder unit.
      b. 5 master keys per master.
      c. 2 Construction Control Keys
      d. 2 Permanent Control Keys
      e. 10 construction keys.
   3. Deliver keys to the Owner's representative: Send masterkeys to Owner via U.S. registered mail direct from hardware supplier.

B. Keying:
   1. Comply with Owner's written instructions for masterkeying and, except as otherwise indicated, provide individual change keys for each lock which is not designated to be keyed alike with a group of related locks.
   2. Grandmaster key all cylinder items to coordinate with the Owner's instructions. Permanently inscribe each key with the notation "DO NOT DUPLICATE".
C. Key Control:
   1. Provide a key control system including envelopes, labels, tags with self locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by the system manufacturer, with capacity for 150% of the number of locks required for the project.
   2. Provide a hinged panel type cabinet, for wall mounting, Telkee RWC-75S or equal.
   3. Provide cylinder units with concealed key control and keys with visual key control.

2.5 LOCKSETS, LATCHSETS, AND PRIVACY SETS:

A. Manufacturer:
   1. Listed in Door Hardware Schedule: Best 9K
   2. Approved Substitutions: Schlage ND, Sargent 10-Line
B. Types: Locksets, latchsets, and privacy sets as indicated in Door Hardware Schedule.
C. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt. Provide dust-proof strikes for foot bolts, except where not available. At these locations, provide manufacturer's standard recessed strike. Provide roller type strikes where recommended by lock, latch or bolt manufacturer. If aluminum frames are specified, confirm with the aluminum frame supplier that the standard lock strikes will function. Provide the manufacturer's standard extended lip strikes if required.
D. Lock Throw: Provide 3/4" minimum throw of mortise type latches and deadbolts used. Cylindrical latches will be 1/2" minimum. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
E. Locks and latches shall be warranted for a period of five years.

2.6 EXIT DEVICES AND MULLIONS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: Precision 2000
   2. Approved Substitutions: Von Duprin 98, Corbin 5200
B. Provide risers, as needed, to prevent interference with door glazing kits.
C. Provide spacers as needed for proper application of removable mullions on narrow stop type frames.
D. Exit devices and related hardware shall be warranted for a period of five years.

2.7 CLOSERS:

A. Manufacturer:
   1. Listed in Door Hardware Schedule: Stanley QDC1 Series
   2. Approved Substitutions: Dorma 8916, LCN 4040XP-DEL
   3. Concealed closers are as manufactured by Dorma.
B. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending on the size of the door, exposure to weather and anticipated frequency of use.
C. Provide manufacturer's standard through bolt attachment where door construction is not adequate for support.
D. Arms:
   1. Provide parallel arms for all overhead closers, except as otherwise indicated. Provide drop plates as needed to prevent glazing interference.

E. Mount all closers to the maximum allowable degree of opening by the closer manufacturer's template. Where closer arms incorporate dead stop features, mount closers to the maximum degree of opening available before conflict with adjacent structures. If not apparent on the contract documents, verify the use of open space with the Architect or Owner's Representative to determine the maximum allowable degree of opening.
F. Access Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A117.1 provisions for door opening force. Fire protection has precedence over handicap compatibility, check with local jurisdiction.
G. Where not standard, supply the manufacturer's optional full cover (FC) for all closers.
H. Door closers and related hardware shall be warranted for a minimum period of twenty-five years. Electronic closers shall be warranted for a period of two years.

2.8 OVERHEAD STOPS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: Architectural Builders Hardware
   2. Approved Substitutions: Rixson
B. Mount stops to the maximum degree of opening available before conflict with adjacent structures, or, if adjacent structures are not considered, to the maximum allowable by stop manufacturer's template.
C. If not apparent on the contract documents, verify the use of open space with the Architect or Owner's Representative to determine the maximum allowable degree of opening.
D. Overhead stops in exterior doors must be manufactured from stainless steel, US32D finish.
E. Overhead stops shall be warranted for a period of two years.

2.9 WALL AND FLOOR STOPS

A. Manufacturers:
   1. Listed in Door Hardware Schedule: Trimco
   2. Approved Substitutions: Hager, Rockwood
B. General: Except as otherwise indicated, provide stops (wall, floor or overhead) at each leaf of every swinging door leaf.

2.10 PROTECTION PLATES

A. Manufacturers:
   1. Listed in Door Hardware Schedule: Trimco
   2. Approved Substitutions: Hager, Tice
B. Types: Armor Plates, Kick Plates, Mop Plates
C. Fasteners: Provide manufacturer's standard exposed Phillips head fasteners for door trim units; either machine screws or self tapping sheet metal type screws per manufacturer's recommendations for application to the specified door construction.
D. Sizes: Fabricate protection plates (armor, kick or mop) not more than 2" less than door width on stop side and not more than 1" less than door width on pull side, x the height indicated.
E. Metal Plates: Stainless Steel, 18 gauge (0.050) thick. Satin finish, US32D (630), beveled four edges (B4E).

2.11 GASKETS AND SWEEPS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: National Guard Products (NGP)
   2. Approved Substitutions: Reese, Pemko

B. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf. Provide type, sizes and profiles indicated as drawn or scheduled.
C. Fasteners: Provide non-corrosive fasteners as recommended by the manufacturer for applications indicated.
D. Replaceable seal strips: Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by the manufacturer.
E. Perimeter weatherstripping: Flexible, hollow neoprene bulb or loop insert, conforming to MIL R 6055, Class II, Grade 40.
F. Weatherstripping at Door Bottoms: Provide door bottoms consisting of contact type resilient insert and metal housing of design and size indicated.
G. Hot smoke seal, if required by IBC and subsequent UL testing procedures, will be supplied as an integral part of the door assembly by the door manufacturer.
H. Gaskets and sweeps shall be warranted for a period of three years.

2.12 THRESHOLDS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: National Guard Products (NGP)
   2. Approved Substitutions: Reese, Pemko
B. Except as otherwise indicated provide standard metal threshold unit of type, size and profile as detailed or scheduled.
C. Where there is conflict between scheduled thresholds and details, details shall have precedence. Revise details only if necessary to comply with handicap accessibility requirements. Notify the Architect of such required modifications.
D. Thresholds and related items shall be warranted for a period of three years, abrasive coatings shall be warranted for a period of ten years.

2.13 SILENCERS

A. Manufacturers:
   1. Listed in Door Hardware Schedule: Trimco
   2. Approved Substitutions: Hager, Rockwood

2.14 FINISHES

A. Exposed surfaces of hardware shall be satin chrome (US26D, 626, 652), unless otherwise indicated. Items specified in satin stainless steel (US32D, 630) shall be supplied in satin stainless steel with no exceptions.
B. The designations used in the schedule and elsewhere to indicate hardware finishes are the industry recognized standard commercial finishes common to the product's manufacturer listed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Under provisions of Section 01 04 00, examine and verify that substrates and project site conditions are ready to receive work of this section.
B. Do not begin installation until finishes indicated to be field applied have been applied to doors, frames, and similar items requiring project site finishing and are thoroughly dry and cured.
C. Do not begin installation until unsatisfactory conditions are corrected in a manner acceptable to the installer. Beginning installation means installer accepts project site conditions and substrates as ready to receive work of this section.

3.2 INSTALLATION

A. General: The types and approximate quantities of door hardware required for this project are indicated at the end of this section.
B. Key Cabinet: Install in location as indicated on drawings or as directed by the Architect.
C. Heights: Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for /standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by the Architect.
D. Substrates: Adjust and reinforce attachment substrates as necessary for proper installation and operation of hardware.
E. Installation:
    1. Install each hardware item in compliance with the manufacturer's instructions, requirements of NFPA 80, NFPA 101, IBC, ADA, State Rules and Regulations for Barrier Free Facilities and recommendations of the DHI.
    2. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
    3. Drill and countersink units which are not factory prepared for fasteners. Space fasteners and anchors in accordance with industry standards.
    4. Where not factory machined, machine cut for hardware per template, as required.
    5. Cut and fit thresholds and floor covers to profile of door frames. Join units with concealed welds. Cut smooth openings for spindles, bolts, or similar items. Screw thresholds to substrate with the manufacturer's standard flat head sleeve anchor (FHSL), 1/4-20 x 2". Fill cavities of thresholds at sound rated openings with 1 inch thick (uncompressed thickness) low density fiberglass sill sealer insulation full width and length of the threshold. In addition to fastening requirements, set thresholds for exterior doors in a full bed of butyl-rubber or polyisobutylene mastic sealant.
    6. Do not install hardware which is incomplete or apparently improper for application. Notify the hardware supplier immediately of any such deficiencies. Failure to comply with this requirement indicates the hardware installer's acceptance of responsibility for proper application and performance.
    7. Where new hardware is specified for existing installations, modify existing structures to accept new hardware as specified. If the modification voids any existing fire labels, consult with the architect and hardware consultant to establish a path to recertify the label.
F. Cutting and Patching:
    Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division-9 sections.

3.3 ADJUSTING

A. Initial Adjustment:
    1. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Adjust resilient faced sound stops for continuous contact with door and threshold. Adjust weatherstripping and sweeps to completely seal doors with frames and to adjacent structures.
    2. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
B. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.4 DEMONSTRATION

Instruct Owner's personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

3.5 CLEANING AND DEBRIS

A. Cleaning:
   1. Clean work under provisions of Section 01 70 00
   2. Clean adjacent surfaces soiled by work of this section.
B. Debris: Under provisions of Section 01 50 00, remove debris from project site and legally dispose of off-site.

3.6 MAINTENANCE

A. Approximately six months after the acceptance of hardware in each area, the hardware installer shall:
   1. Return to the project and re-adjust every item of hardware to restore proper function of doors and hardware.
   2. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.
   3. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units.
   4. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware and submit to the Architect.

3.7 PROTECTION

Under provisions of Section 01 50 0, protect work of this section as required so that work will be without damage or deterioration at the time of completion and acceptance by the Owner.

3.8 DOOR HARDWARE SCHEDULE

List of Manufacturers

BE	Best	Locks, Cylinders
ME	Medeco	Cylinders
NA	National Guard	Weatherstrip
PR	Precision	Exit Devices, Power Supplies
ST	Stanley	Hinges, Closers
TK	Telkee	Key Cabinet
TR	Trimco	Stops, Push/Pulls, Flat Goods

Finish Codes

Code	Description
626, 652	Satin Chrome Plated
630	Satin Stainless Steel
689	Aluminum, Painted
GREY	Grey

Option List

Code	Description
C	Quick Connect Wiring (Precision, Best)
RQE	Request to Exit (Best)
HC	Hurricane Code Device (Precision)
TS	Touchbar Monitoring Switch (Precision)
MLR	Motorized Latch Retraction (Precision)
B4E	Beveled 4 Edges - Kick and Mop Plates (Trimco)
CS	Counter Sinking of Kick and Mop Plates (Trimco)
MS/EA	Machine Screws/Expansion Anchors (NGP)

Miscellaneous Hardware – provide the following:

1	Key Cabinet	RWC-75S		TK

SET #1 - Office

Doors: 101A, 103A, 104A, 105A, 111A, 112A, 114A, 117A, 122A, 123A, 124A, 125A, 126A, 127A, 128A, 130A, 134A, 136A, 137A

3	Hinges	CB179 4 1/2 X 4 1/2	652	ST
1	Passage Set	9K3-0N15D	626	BE
1	Wall Stop	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR

Prepare existing frames to accept new hardware specified. Timely frames include adhesive silencers.

SET #2 - Office - Card Reader

Doors: 102A, 103B, 137B, 138A

2	Hinges	CB179 4 1/2 X 4 1/2	652	ST
*1	Electric Hinge	CECB179-12C 4 1/2 x 4 1/2	652	ST
*1	Electro-mech Lock	9KW3-7DEL15D C RQE SCHRC	626	BE
1	LFIC Core	322201	626	ME
1	Door Closer	QDC111	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Wall Stop	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR
*1	Wire Harness	WH-6E		ST
*1	Wire Harness	WH-44		ST
*1	Wire Harness	WH-192		ST
*1	Power Supply	RPSMLR2		PR

Prepare existing frames to accept new hardware specified. Card reader by owner.

SET #3 - Break Room

Door: 106A

3	Hinges	CB179 4 1/2 X 4 1/2	652	ST
1	Passage Set	9K3-0N15D	626	BE
1	Door Closer	QDC111	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Wall Stop	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR

Prepare existing frames to accept new hardware specified.

SET #4 - Restroom

Doors: 107A, 108A

3	Hinges	CB179 4 1/2 X 4 1/2	652	ST
1	Pull Plate	1018-3	630	TR
1	Push Plate	1001-3	630	TR
1	Door Closer	QDC111	689	ST
1	Mop Plate	KM050 4" x 1" LDW B4E CS	630	TR
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Wall Stop	1270WV	630	TR
1	Gasketing	5040 B		NA

Prepare existing frames to accept new hardware specified.

SET #5 - Server Room

Door: 113A

3	Hinges	CB179 4 1/2 X 4 1/2 NRP	652	ST
1	Lockset	9K3-7A15D SCHRC	626	BE
1	LFIC Core	322201	626	ME
1	Wall Stop	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR

SET #6 - Card Access

Doors: 116A, 125B

2	Hinges	CB179 4 1/2 X 4 1/2 NRP	652	ST
*1	Electric Hinge	CECB179-12C 4 1/2 x 4 1/2	652	ST
*1	Electro-mech Lock	9KW3-7DEL15D L/C C RQE SCHRC	626	BE
1	LFIC Core	322201	626	ME
1	Door Closer	QDC111	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Wall Stop	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR
*1	Wire Harness	WH-6E		ST
*1	Wire Harness	WH-44		ST
*1	Wire Harness	WH-192		ST
*1	Power Supply	RPSMLR2		PR

Prepare existing frames to accept new hardware specified. Timely frames include adhesive silencers. Card reader by owner.

SET #7 - Exterior - Card Reader

Doors: 106B, 132A

2	Hinges	CB191 4 1/2 X 4 1/2 NRP	630	ST
*1	Electric Hinge	CECB191-12C 4 1/2 x 4 1/2	630	ST
*1	Electro-mech Lock	9KW3-7DEL15D C RQE SCHRC	626	BE
1	LFIC Core	322201	626	ME
1	Lock Guard	5002	630	TR
1	Closer/Stop	QDC119	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Weatherstrip	160 SA SMS-TEKS		NA
1	Door Sweep	200 NA SMS-TEKS		NA
1	Saddle Threshold	426 E MS/EA		NA
*1	Wire Harness	WH-6E		ST
*1	Wire Harness	WH-44		ST
*1	Wire Harness	WH-192		ST
*1	Power Supply	RPSMLR2		PR

Prepare existing frames to accept new hardware specified. Card reader by owner.

SET #8 - Open Office - Exit - Card Reader

Door: 133A

2	Hinges	CB191 4 1/2 X 4 1/2 NRP	630	ST
*1	Electric Hinge	CECB191-12C 4 1/2 x 4 1/2	630	ST
*1	Exit Device	C MLR TS 2108 X 4908A	630	PR
1	Rim Cylinder	320400H	626	ME
1	Door Closer	QDC111	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Wall Stop	1270WV	630	TR
3	Door Silencers	1229A	GREY	TR
*1	Wire Harness	WH-6E		ST
*1	Wire Harness	WH-12		ST
*1	Wire Harness	WH-192		ST
*1	Power Supply	RPSMLR2		PR

Prepare existing frames to accept new hardware specified. Card activation retracts latch momentarily and allows access. Card reader by owner.

SET #9 - Open Office

Door: 131A

3	Hinges	CB179 4 1/2 X 4 1/2	652	ST
1	Passage Set	9K3-0N15D	626	BE
1	Door Closer	QDC111	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Door Stop	1215CKU	626	TR

Timely frames include adhesive silencers.

SET #10 - Open Office

Door: 131B

3	Hinges	CB179 4 1/2 X 4 1/2	652	ST
1	Passage Set	9K3-0N15D	626	BE
1	Door Closer	QDC111	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Wall Stop	1270WV	630	TR

Timely frames include adhesive silencers.

SET #11 - Open Office - Exit - Card Reader

Door: 133B

4	Hinges	CB179 4 1/2 X 4 1/2 NRP	652	ST
*2	Electric Hinges	CECB179-12C 4 1/2 x 4 1/2	652	ST
1	Removable Mullion	KR822	689	PR
*2	Exit Devices	C MLR TS 2108 X 4908A	630	PR
3	Rim Cylinders	320400H	626	ME
2	Door Closers	QDC111	689	ST
2	Kick Plates	K0050 10" x 2" LDW B4E CS	630	TR
2	Wall Stops	1270WV	630	TR
2	Door Silencers	1229A	GREY	TR
*2	Wire Harnesses	WH-6E		ST
*2	Wire Harnesses	WH-12		ST
*2	Wire Harnesses	WH-192		ST
*1	Power Supply	RPSMLR2		PR

Prepare existing frames to accept new hardware specified. Card activation retracts latches momentarily and allows access. Card reader by owner.

SET #12 - Exterior Exit - Card Reader

Door: 135A

2	Hinges	CB191 4 1/2 X 4 1/2 NRP	630	ST
*1	Electric Hinge	CECB191-12C 4 1/2 x 4 1/2	630	ST
*1	Exit Device	C MLR TS 2103 X 1703C	630	PR
1	Rim Cylinder	320400H	626	ME
1	Closer/Stop	QDC119	689	ST
1	Kick Plate	K0050 10" x 2" LDW B4E CS	630	TR
1	Gasketing	5040 B		NA
1	Door Sweep	200 NA SMS-TEKS		NA
1	Saddle Threshold	426 E MS/EA		NA
*1	Wire Harness	WH-6E		ST
*1	Wire Harness	WH-12		ST
*1	Wire Harness	WH-192		ST
*1	Power Supply	RPSMLR2		PR

Prepare existing frames to accept new hardware specified. Card activation retracts latch momentarily and allows access. Card reader by owner.

* Requires electrical coordination

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Glass glazing.

1.2 RELATED REQUIREMENTS

A . 081113 - Hollow Metal Frames: For assembly requiring components from this section.

B . 081416 - Flush Wood Doors: For assembly requiring components from this section.

C . 085695 - Transaction Windows.

1.3 SUBMITTALS

A . Qualification Data: For installer, fabricator and design engineer.

B . Product Data:

1. Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
2. Glazing Compounds & Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements and identify available colors.

C . Shop Drawings: For any glazing installed with components from this section alone.

1. Submit shop drawings for glazing installed within other systems in accordance with the system submittal requirements.

D . Sample: Submit two samples in manufacturer's standard size of glass type units, showing coloration and design.

E . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

F . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.4 QUALITY ASSURANCE

A . Fabricators Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

B . Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

1.5 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.6 WARRANTY

A . Sealed Insulating Glass Units: Provide a ten (10) year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

B . Laminated Glass: Provide a ten (10) year warranty to include coverage for delamination, including replacement of failed units.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Glass glazing and accessories installed as monolithic glazing within framing systems and support structures specified elsewhere.

2.2 MATERIALS

A . General:

1. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.
2. Strength:
    a. Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article.
    b. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article.
    c. Where fully tempered float glass is indicated, provide fully tempered float glass.

B . Float Glass:

1. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated, thickness as shown or specified, tempered in doors, transaction windows and adjacent lights where shown on Drawings or required by codes, provide one of the following:
    a. AFGD.
    b. Guardian.
    c. Pilkington (LOF).
    d. PPG Industries.
    e. Viracon.
    f. Zeledyne.

C . Performance Criteria:

1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
2. Heat-Strengthened in accordance with ASTM C1048.
3. Fully Tempered in accordance with ASTM C1048.

2.3 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

3.4 PROTECTION

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

3.5 SCHEDULE

A . Single Safety Glazing:

1. Application: Provide this type of glazing in the following for non-fire-rated locations:
    a. Glazed lites in doors, except fire doors.
    b. Glazed sidelights to doors, except in fire-rated walls and partitions.
    c. Other locations required by applicable federal, state, and local codes and regulations.
    d. Other locations indicated on the drawings.
2. Type: Fully tempered float glass as specified.
3. Thickness: 1/4"

B . Transaction Windows:

1. Glass: Clear, fully tempered.
2. Thickness: 1/4".

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Gypsum Sheathing.

B . Tile Backer Board.

C . Acoustic Insulation.

1.2 RELATED REQUIREMENTS

A . 079005 - Joint Sealers: Acoustic sealant.

B . 092219 - Non-Structural Metal Framing: Blocking product and execution requirements.

1.3 REFERENCE STANDARDS

A . ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2017a.

B . ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.

C . ASTM E413 - Classification for Rating Sound Insulation; 2016.

D . GA-216 - Application and Finishing of Gypsum Board; 2016.

E . GA-600 - Fire Resistance Design Manual; 2015.

1.4 SUBMITTALS

A . Qualification Data: For Installer and design engineer.

B . Product Data: Provide data on gypsum board, glass mat faced gypsum board, accessories, joint finishing system, and cement board.

C . Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.

D . Test Reports: For all stud framing products that do not comply with ASTM C645 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.5 QUALITY ASSURANCE

A . Designer Qualifications: Professional structural engineer with 5 years of documented experience in design of this work and licensed in the location of the project.

B . Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

1.6 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Includes Gypsum wallboard finishing, metal trim and accessories, and acoustical sealants and insulation.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Provide completed gypsum board assemblies complying with ASTM C840 and GA-216.

B . Fire Rated Assemblies: Provide completed assemblies complying with UL listed assemblies indicated and ratings indicated on life safety drawings.

1. Gypsum Association File Numbers: Comply with requirements of GA-600 for the particular assembly.
2. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL Fire Resistance Directory.

C . Interior Partitions Indicated as Acoustic: Provide completed assemblies with the following characteristics:

1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

2.3 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Gypsum Sheathing:

1. Sizes to minimize joints in place; ends square cut.
    a. Application: Exterior sheathing, unless otherwise indicated.
    b. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
    c. Glass-Mat-Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
2. Core Type: Type X.
3. Thickness: 5/8 inch (16 mm).
4. Glass-Mat-Faced Products: Georgia-Pacific Gypsum; DensGlass Sheathing.

C . Tile Backer Board:

1. Glass-Mat-Faced Board: Coated glass mat water-resistant gypsum backing panel as defined in ASTM C1178/C1178M.
    a. Standard Type: Thickness 1/2 inch (12.7 mm).
    b. Fire-Resistant Type: Type X core, thickness 5/8 inch (16 mm).
    c. Products:
        1) Georgia-Pacific Gypsum; DensShield Tile Backer.

D . Acoustic Insulation:

1. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3.5 inches, unless noted otherwise.

2.4 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 . Acoustic Sealant:

1. As specified in Section 079005 - Joint Sealers.

C . Finishing Accessories:

1. ASTM C1047, galvanized steel or rolled zinc, unless otherwise indicated.

a. Types: As detailed or required for finished appearance.

b. Special Shapes: In addition to conventional cornerbead and control joints, provide U-bead at exposed panel edges.

D . Joint Materials:

1. ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

a. Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners, except as otherwise indicated.

b. Typical: Ready-mixed vinyl-based joint compound.

c. Exterior Soffits: Chemical hardening type compound.

E . Anchorage to Substrate:

1. Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B . Comply with ASTM C840 and GA-216. Install to minimize butt end joints, especially in highly visible locations.

C . Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

3.4 INSTALLATION OF TRIM AND ACCESSORIES

A . Control Joints: Place control joints consistent with lines of building spaces and as indicated.

1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.

2. At exterior soffits, not more than 30 feet (10 meters) apart in both directions.

B . Corner Beads: Install at external corners, using longest practical lengths.

C . Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.5 JOINT TREATMENT

A . Finish gypsum board in accordance with levels defined in ASTM C840, as follows:

1. Level 5: Walls and ceilings typical.
2. Level 4: Perforated gypsum.
3. Level 3: In utility areas, behind cabinetry, and on backing board to receive tile finish.
4. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
5. Level 0: Temporary partitions and surfaces indicated to be finished in later stage of project.

B . Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.

1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

C . Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

D . Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.6 FIELD OBSERVATION AT "PUNCH"

A . Finish will be judged from a viewing difference of 4 feet.

B . Ceilings will be viewed from a standing position.

C . Finished lighting system or temporary lighting similar to proposed finished lighting should be used for judging the wall.

D . Eye catching discrepancies and or blemishes, including “fuzzy” wall board surfaces, will be rejected.

3.7 PROTECTION

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

3.8 SCHEDULE

A . Typical: Gypsum Board, Type X, 5/8 thickness.

B . Restrooms: Glass Mat Gypsum board.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Metal partition and ceiling framing.

B. Blocking and backing panels.

1.2 RELATED REQUIREMENTS

A. 092116 - Gypsum Board Assemblies: Execution requirements for anchors for attaching work of this section.

1.3 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; 2016.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015, with Editorial Revision (2016).

C. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.

D. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2017.

E. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014, with Editorial Revision (2015).

F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.

G. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2016a.

H. ASTM E413 - Classification for Rating Sound Insulation; 2016.

I. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).

J. CISCA (AC) - Acoustical Ceilings: Use and Practice; 1999.

K. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.4 SUBMITTALS

A. Qualification Data: For installer and design engineer.

B. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations. Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

C. Shop Drawings: Indicate required flashings, sealing at openings.

1. Indicate acoustic details.

2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.

D . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

A . Designer Qualifications: Professional structural engineer with 5 years of documented experience in design of this work and licensed in the location of the project.

B . Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

1.6 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Non-structural metal support framing for gypsum board assemblies and other finishes.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Perform Work in accordance with ASTM C754.

B . Coordinate the placement of components to be installed within stud framing system.

C . Suspended Assemblies: Coordinate with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

D . Design and install framing and furring to limit deflection to the following under point loads of 100 lbs and uniform loads as noted below except where required to withstand greater load (pressurized shafts and stairwells for example).

1. Maximum Deflection of Vertical Assemblies:

a. Assemblies spanning single floor: Sustained loads of 5 lbf/sq ft with a maximum mid span deflection of 1:240.

b. Assemblies spanning multiple floors: Sustained loads of 7.5 lbf/sq ft with a maximum mid span deflection of 1:240.

2. Maximum Deflection of Horizontal Assemblies: 1:240 deflection under dead loads and wind uplift.

3. Maximum Deflection for assemblies under applied plaster finishes (Portland Cement or Gypsum) and ceramic tile is 1:360.

4. Use The SSMA Product Technical Information Book to look up the appropriate stud size, spacing and thickness.

E . Ceiling Framing:

1. Seismic Requirements:

a. Classification: Conform to ASTM C635/C635M, Heavy Duty Classification.

b. Code Compliance: FBC, American Society of Civil Engineers ASCE 7 Section 13 and CISCA (AC) Guidelines.

F . Acoustic Attenuation for Interior Partitions : STC's are calculated in accordance with ASTM E413 and based on published tests conducted in accordance with ASTM E90.

1. Provide materials and construction identical to those tested in assembly indicated according to ASTM E90. See Section 092116 for STC requirement.

G . Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing agency.

2.3 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Metal partition, ceiling, and soffit and shaftwall framing.

1. Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and "SSMA Product Technical Information" book for the spacing indicated.

a. Minimum Framing Component thickness is 20 Gage.

b. Studs: C shaped.

c. Runners: U shaped, sized to match studs.

d. Ceiling Channels: C shaped or T shaped.

e. Furring: Hat-shaped sections, minimum depth of 7/8 inch (22 mm).

f. Steel Stud Framing Connectors:

1) Products:

a) Simpson Strong Tie, Bridging Connectors; DBC Bridging Connector: www.strongtie.com.

g. Single leg Resilient channels.

h. "Z's": Used for several different members.

i. Shaftwall framing CH and other sections as required for complete framing system.

2. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.

3. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.

a. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.

b. Material:

1) Typical: ASTM A653/A653M steel sheet, SS Grade 50, with G40/Z120 hot dipped galvanized coating.

2) Areas Subject to Moisture: ASTM A653/A653M steel sheet, SS Grade 50, with G60/Z180 hot dipped galvanized coating. Areas include exterior or non-conditioned space, shower rooms, locker rooms or other locations subject to regular wetting or high humidity.

c. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems.

4. Tracks and Runners: Same material and thickness as studs, bent leg retainer notched to receive studs with provision for crimp locking to stud.
5. Furring and Bracing Members: Of same material as studs; thickness to suit purpose; complying with applicable requirements of ASTM C754.
6. Fasteners: ASTM C1002 self-piercing tapping screws.
7. Anchorage Devices: Power actuated.
    a. Also acceptable "Danback" flexible wood blocking system from Deitrich.
    b. See backing schedule on architectural drawings.
8. Anchorage Devices: Power actuated or Drilled expansion bolts.
9. Acoustic Insulation: As specified in Section 092116 - Gypsum Board Assemblies.
10. Acoustic Sealant: As specified in Section 079005.
11. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic.

C . Blocking and backing panels.

1. Sheet Metal Backing (Blocking): 0.036 inch (0.9 mm) thick, galvanized. 4 inch minimum width
    a. See backing schedule on architectural drawings.
2. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
3. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
4. Specifically, provide the following non-structural framing and blocking:
    a. Cabinets and shelf supports.
    b. Wall brackets.
    c. Handrails.
    d. Grab bars.
    e. Towel and bath accessories.
    f. Wall-mounted door stops.
    g. Chalkboards and marker boards.
    h. Wall paneling and trim.
    i. Joints of rigid wall coverings that occur between studs.

2.4 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.

PART 3 - EXECUTION

3.1 EXAMINATION

A . Verify that rough-in utilities are in proper location.

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

3.2 INSTALLATION OF STUD FRAMING

A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B. Comply with requirements of ASTM C754.

C. Extend partition framing to structure where indicated and to ceiling in other locations.

D. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.

E. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

F. At partitions indicated with an acoustic rating:

1. Provide components and install as required to produce STC ratings as indicated.
2. Place two beads of acoustic sealant (one on either side) between runners and substrate, studs, and adjacent construction.
3. Place one bead of acoustic sealant between studs and adjacent vertical surfaces.
4. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

G. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.

H. Backing and Blocking: Use steel channels or flat sheets secured to studs minimum 4" wide. Provide blocking for support of all wall hung items and equipment.

1. Use sheet metal backing for reinforcement of 16 ga. min.

I. Install supplementary framing and bracing at openings and terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer.

J. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement:

1. Where edges of suspended ceilings abut building structure at ceiling perimeters and at penetrations of structural elements.
2. Where partition and wall framing abuts overhead structure.
3. Where studs are installed directly against exterior walls of masonry or concrete, install asphalt felt strips between studs and wall.

3.3 CEILING AND SOFFIT FRAMING

A. Comply with requirements of ASTM C754.

B. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.

C. Install furring independent of walls, columns, and above-ceiling work.

D. Securely anchor hangers to structural members or embed in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.

E . Space main carrying channels at maximum 72 inch (1 800 mm) on center, and not more than 6 inches (150 mm) from wall surfaces. Lap splice securely.

F . Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.

G . Place furring channels perpendicular to carrying channels, not more than 2 inches (50 mm) from perimeter walls, and rigidly secure. Lap splices securely.

H . Reinforce openings in suspension system that interrupt main carrying channels or furring channels with lateral channel bracing. Extend bracing minimum 24 inches (600 mm) past each opening.

I . Laterally brace suspension system.

1. Sway-brace suspension systems with hangers used for support.

3.4 TOLERANCES

A . Maximum Variation From True Position: 1/8 inch in 10 feet (3 mm in 3 m).

B . Maximum Variation From Plumb: 1/8 inch in 10 feet (3 mm in 3 m).

C . Level ceiling to a tolerance of 1/1200. For tilted ceilings maintain this tolerance as a "flatness" tolerance.

3.5 PROTECTION

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

3.6 SCHEDULE

A . Interior Assemblies: Finish: G40, Sizes: Profiles indicated, Metal Thickness: As required to meet performance criteria.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Tile.

B. Installation materials.

C. Installation methods.

1.2 RELATED REQUIREMENTS

A. 079005 - Joint Sealers: For sealants installed with tiling.

B. 092116 - Gypsum Board Assemblies: For tile backer board installation for tile substrate.

C. 092219 - Non-Structural Metal Framing: For installation requirements of metal framing to meet tiling requirements.

1.3 REFERENCE STANDARDS

A. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2010).

B. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes For Thin-Set Ceramic Tile And Dimension Stone Installation; 2014.

C. ANSI A118.13 - American National Standard Specifications for Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation; 2014.

D. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2013 (Revised).

E. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2010 (Reaffirmed 2016).

F. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2010 (Reaffirmed 2016).

G. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2012.

H. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.

I. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.

J. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2016.

1.4 SUBMITTALS

A. Qualification Data: For installer.

B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

C . Shop Drawings: Indicate membrane and tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details and related dimensioning as well as plumbing (drains) mechanical and electrical fixtures and lines installed.

D . Sample: Mount tile and apply grout on two plywood panels, minimum 18 x 18 inches in size illustrating pattern, color variations, and grout joint size variations.

E . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

F . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G . Maintenance Data: For user's operation and maintenance of system including:

1. Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.5 MAINTENANCE MATERIAL

A . Extra Tile: 10 square feet (1 square meters) of each size, color, and surface finish combination.

1.6 QUALITY ASSURANCE

A . Installer Qualifications: Company specializing in performing the work of this section with minimum of 5 years of experience.

1.7 MOCKUP

A . Construct tile mockup where indicated on the drawings, incorporating all components specified for the location.

1. Approved mockup may remain as part of the Work.

1.8 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.9 WARRANTY

A . Installation Warranty: Contractor shall correct defective Work withing a 2 year period after Date of Substantial Completion.

B . Manufacturer Warranty: Provide five year warranty for tile setting materials failing to resist penetration of water.

1. Exception: Where such failures are the result of structural failures of building. Hairline cracking of concrete due to temperature change or shrinkage is not considered a structural failure.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Tile assemblies and accessories installed in accordance with Tile Council of North America guidelines on walls, floors, and in showers.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Blending: For tiles with color variations, factory blend and package tile so each package has the same range of colors and quantities of each variation. If factory blending is not available, field blend prior to beginning installation.

B . Coefficient of Friction (COF):

1. General: There is no national standard for slip resistance. Use the following as guides for providing tile for this work.

   a. For any tile provide data that states the type of test apparatus, method of text and result. As machines and test methods vary so will results. The numbers listed below are to be used as a guide.

2. Provide tile test data:

   a. For ADA accessible areas: ADAAG recommends a COF of 0.06 flat and 0.08 for ramps when measured with a NBS-Brungraber machine using a silastic sensor shoe on dry surfaces.

   b. For dry flat surfaces for other than ADA accessibility a COF of 0.05 is referenced in the literature.

2.3 TILE

A . Specification is based on products listed in Finish Legend on Drawings.

1. Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

2.4 INSTALLATION MATERIALS

A . Non-Ceramic Trim:

1. Specification is based on products listed below by Custom Building Products.

   a. Comparable products by one of the following are also acceptable. See Division 01 for submittal requirements.

      1) Genesis APS International: www.genesis-aps.com.

      2) Schluter.

   b. Substitutions for products by manufacturers other than those listed above: See Division 01.

2. Satin natural anodized extruded aluminum, or stainless steel as scheduled, style and dimensions to suit application, for setting using tile mortar or adhesive.

   a. Applications: Use in the following locations:

      1) Open edges of wall tile.

      2) Open edges of floor tile.

      3) Wall corners, outside and inside.

      4) Transition between floor finishes of different heights.

      5) Thresholds at door openings.

      6) Expansion and control joints, floor and wall.

      7) Floor to wall joints: Profiles ProCove base. Finish as selected by Architect from manufacturer's full range.

B . Grout:

1. Grout Colors based as listed in Finish Legend on Drawings.

2. Standard Grout: ANSI A118.6 standard cement grout.
    a. Specification is based on:
        1) Prism SureColor Grout by Custom Building Products.
        2) FL Rapid set sanded grout or FG-C microtec unsanded grout by Ardex
        3) Substitutions for products by manufacturers other than those listed above: See Division 01 .
3. Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
    a. Specification is based on:
        1) Prism SureColor Grout by Custom Building Products.
        2) FL Rapid set sanded grout by Ardex. If an unsanded grout is desired choose Ardex FG-C microtec unsanded floor and wall grout.
        3) Substitutions for products by manufacturers other than those listed above: See Division 01.
    b. Performance:
        1) For Use in Grout Joints 1/16 inch to 1/2 inch width.
        2) Rated for Scratch/Abrasion Sensitive Tile/Stone Surfaces.
4. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
    a. Specification is based on:
        1) CEG-IG Industrial Grade Commercial Epoxy Grout by Custom Building Products.
        2) WA Epoxy Grout by ARDEX Engineered Cements.
        3) Opticolor by Mapei.
        4) Substitutions for products by manufacturers other than those listed above: See Division 01.
    b. Performance:
        1) For Use in Grout Joints 1/16 in to 1/2 inch in width.
        2) Resistant to Oleic Acids and No-Rinse Cleaning Agents Normally Associated with Commercial Kitchen Conditions.
        3) Rated for use in both floor and wall applications, maintaining non-sag characteristics for vertical grout joints.
        4) Water Cleanable 100% Solids Grouting Epoxy.
    c. Features:
        1) Color: As indicated in Finish Legend.

C . Grout Sealer:

1. Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
    a. Specification is based on:
        1) AquaMix Sealers' Choice Gold by Custom Building Products.
        2) Substitutions for products by manufacturers other than those listed above: See Division 01 .
    b. Performance:
        1) Water-Based Penetrating Sealer – No Sheen Formula.
        2) Low VOC Content, below 100 g/L.

D . Waterproof Membrane:

1. Specifically designed for bonding to cementitious substrate and thinset tile over a sloped mortar bed or pre-fabricated shower pan; complying with ANSI A118.10.and ANSI A108.13.
    a. Specification is based on:
        1) RedGard Waterproofing & Crack Prevention Membrane by Custom Building Products.
        2) 8+9 rapid waterproofing by ARDEX Engineered Cements.
        3) Mapelastic 400 by Mapei.
        4) Substitutions for products by manufacturers other than those listed above: See Division 01.
    b. Performance:
        1) Thickness: 25 mils, minimum, dry film thickness.
        2) Thin-Load Bearing Membrane Designed to Suppress Horizontal In-Plane Cracks in Concrete Up to 1/8 inch in width.

E . Sound Reduction Underlayment:
1. Comply with ANSI A118.13, bonded membrane.
    a. Specification is based on:
        1) EasyMat 5mm Sound Reduction Mat Underlayment by Custom Building Products.
        2) DS 70 acoustic mat 5mm by Ardex.
        3) Substitutions for products by manufacturers other than those listed above: See Division 01 .
    b. Performance:
        1) Mat Underlayment to Maintain Delta of 20 or Greater.
        2) Mat Underlayment to be Compatible with Setting Mortar and Grouting Materials.

F . Joint Sealant:
1. For treatment of movement, expansion, and change of plane joints in tile work,
2. complying with ASTM C920, and requirements of TCNA (HB) section EJ-171.
    a. Specification is based on:
        1) 100% Silicone Commercial Sealant by Custom Building Products.
        2) SX 100% silicone sealant by ARDEX Engineered Cements.
        3) Mapesil by Mapei.
        4) Substitutions for products by manufacturers other than those listed above: See Division 01.
    b. Performance:
        1) Sealant Material Must Maintain Shore A Hardness of 20 or Greater for conditions exposed to foot traffic.
        2) Sealant Material Must be Color Matched to Selected Grout Color.

G . Tile Backer Board:
1. Coated glass mat type complying with ASTM C1178/C1178M; inorganic fiberglass mat on both surfaces and integral acrylic coating vapor retarder.
    a. Specification is based on:
        1) DensShield Tile Backer by Georgia-Pacific Gypsum.
        2) Substitutions for products by manufacturers other than those listed above: See Division 01 .

b. Performance:

1) Core: Type X.

2) Thickness: 5/8 inch.

2.5 INSTALLATION METHODS

A . Wall Installation over Gypsum: In accordance with The Tile Council of North America Handbook TCNA (HB) Method W244.

1. Using waterproof membrane at toilet room walls containing plumbing.

B . Floor Installation over Concrete: In accordance with The Tile Council of North America Handbook Method F113.

C . Shower Wall Installation over Tile Backer: In accordance with The Tile Council of North America Handbook TCNA (HB) Method B422.

1. Carry membrane up shower walls to ceiling.

2.6 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B . Verify Deflection of floor using note "Maximum Allowable Deflection..." under the headline Notes / Definitions in the TCA manual. This limit 1/360 with a 300 lb concentrated load shall be doubled to 1/720 for stone tiles.

C . Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

D . Large format tiles require very flat floors. Do no install if floors are not the equivalent of a floor flatness of Ff 50 (35 local) and Fl 50 (35 local).

E . Verify that concrete subfloor surfaces are ready for tile installation in accordance with Section 090510 - Flooring Moisture Measurement and Mitigation for moisture emission rate and alkalinity; obtain instructions if test results are not within the following limits:

1. Moisture emission rate: Not greater than 3 lb per 1000 sq ft (7.1 kg per 100 sq m) per 24 hours, tested according to ASTM F1869.

2. Alkalinity: pH range of 5 to 9, tested according to ASTM F710.

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B . Extend tile work into recesses and under or behind fixtures and cabinets to form a complete covering without interruptions. Terminate work neatly at obstructions, edges, and corners.

C . Ground Tile: When partial tiles must be used on exposed edges:

1. Grind the edges of cut unglazed thru-body tile to mimic the factory edge and place the cut edge in.
2. If a cut edge must face out, grind with fine enough grit to match the finish texture of the tile as close as possible.
3. Submit samples for approval prior to commencing work.

D . Lay tile to pattern indicated.

1. Do not interrupt tile pattern through openings.
2. Align floor, base, wall, and trim joints where sizes permit.
3. Lay out tilework and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting.

E . Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

1. Glazed Wall and Floor Tile: 1/8 inch.

F . Sound tile after setting. Replace hollow sounding units.

G . Keep expansion joints free of adhesive or grout. Apply sealant to joints.

H . Prior to grouting, allow installation to completely cure; minimum of 48 hours.

I . Grout tile joints.

J . Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.4 ERECTION TOLERANCES

A . Lippage:

Material	Size	Joint Width	Allowable Lippage
Glazed Wall/Mosaics	1" x1" to 6" x 6"	1/8" or less	1/32"
Quarry	6" x 6" and larger	1/4" or greater	1/16"
Paver/Stone	All	1/8" to 1/4"	1/32"
Paver/Stone	All	1/4" or greater	1/16"

1. The ANSI A137.1 standard defined allowed warpage according to the type of tile.
2. 5.3.1.2.6 Warpage: For example paver tiles, when measured as described in ASTM C 485, the warpage of each tile in the sample shall not exceed 1.0 percent along any edge nor 0.75 percent on either diagonal. From this formula the allowable warpage can be determined.
3. The amount of allowable tile warpage is not used in the calculation of allowable lippage. Rather, allowable lippage is the total of the inherent (i.e. actual) tile warpage and the allowable lippage from the table above. Of course, the actual warpage should not exceed the allowable warpage as calculated above.

4. Running Bond / Brick Joint Tile Patterns: For Running Bond/Brick Joint Patterns utilizing tiles (square or rectangular) where the side being offset is greater than 18" (nominal dimension), the running bond offset will be a maximum of 33% unless otherwise specified by the tile manufacturer. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage.

5. Floor/Substrate Flatness Requirements: Maximum allowable plane variation: 1/4 inch in 10.0 feet for installation of small format tiles (all edges of tile units less than 15 inches in length). Maximum allowable plane variation: 1/8 inch in 10.0 feet for installation of large format tiles (tile units maintaining any edge 15 inches in length or greater).

3.5 PROTECTION

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

B . Apply heavy kraft paper as a minimum to prevent surface damage during construction, and remove before final inspection.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Suspended metal grid ceiling system.

B . Acoustical units.

1.2 RELATED REQUIREMENTS

A . 079005 - Joint Sealers: Acoustical sealant.

B . 092116 - Gypsum Board Assemblies: Acoustical insulation.

1.3 REFERENCE STANDARDS

A . ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; 2016.

B . ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2017.

C . ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

D . CISCA (AC) - Acoustical Ceilings: Use and Practice; 1999.

1.4 ADMINISTRATIVE REQUIREMENTS

1.5 SUBMITTALS

A . Qualification Data: For manufacturer and installer.

B . Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, mechanical and electrical items installed in the ceiling, and perimeter molding and suspension/bracing details.

C . Product Data: Provide data on suspension system components, acoustical units, and perimeter molding/seismic connections.

D . Samples: Submit two samples 6 x 6 inch (48 x 48 mm) in size illustrating material and finish of acoustical units.

E . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

F . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.6 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

B . Installer Qualifications: Company specializing in performing the work of this section with minimum of 5 years of experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.8 WARRANTY

A . Provide 10 year manufacturer warranty on all acoustical panels for sagging and warping, grid system, rusting, and manufacturer's defects.

B . Provide 15 year warranty for all products using additional "Humidity and Sag resistance" control systems.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Suspended metal grid ceiling systems with seismic edge clips and manufactured edge trim at changes in plane. Fiberglass and gypsum based acoustical units.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Seismic Requirements:

1. Classification: Conform to ASTM C635/C635M, Heavy Duty Classification.
2. Code Compliance: IBC, American Society of Civil Engineers ASCE 7, and CISCA (AC) Guidelines. Comply with edition dates per local Authorities Having Jurisdiction.

B . Components: Lock together in a positive manner.

C . Pull out tension:

1. Cross Tee Connections: Minimum 300 pounds.
2. Main Tee Splices: Minimum 200 pounds.

D . Seismic Lateral Design: Conform to IBC and ASCE 7 especially requirement for independent support from structure above for light fixture and mechanical services installed into acoustical lay-in panel ceiling systems.

E . Install to conceal plenum space above acoustical ceiling system and to allow access.

F . Make provisions for vertical as well as horizontal suspension systems.

2.3 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Acoustical Units - General: ASTM E1264, Class A.

1. Features:
    a. Size: 24 x 24 inches.
    b. Thickness: 5/8 inches.
    c. Composition: Water felted.
    d. Joint: Kerfed and rabbeted.
    e. Edge: Square.
    f. Surface Color: White.
    g. Surface Pattern: Perforated, regularly spaced large holes.

2.4 SUSPENSION SYSTEM(S)

A . Manufacturers:
    1. Same as for acoustical units.

B . Suspension Systems - General: ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

C . Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; heavy-duty.
    1. Profile as specified in Finish Legend on the drawings.

2.5 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 . Support Channels and Hangers:
    1. Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

C . Seismic Suspension Edge Clips:
    1. Manufacturer's approved, to meet code required movement without 2 inch wall angles.
        a. Basis of Design: Seismic RX BERC2 clip components by Armstrong or ACM7 seismic clips components by USG.

D . Acoustical Sealant For Perimeter Moldings:
    1. Specified in Section 079005.

E . Touch-up Paint:
    1. Type and color to match acoustical and grid units.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B . Verify that layout of hangers will not interfere with other work.

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B . Acoustical Units:

1. Install acoustical units in accordance with manufacturer's instructions.
2. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
3. Lay directional patterned units with pattern parallel to longest room axis if not shown on reflected ceiling plans.
4. Fit border trim neatly against abutting surfaces.
5. Install units after above-ceiling work is complete.
6. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
7. Cutting Acoustical Units:
    a. Cut to fit irregular grid and perimeter edge trim.
    b. Make field cut edges of same profile as factory edges.
    c. Double cut and field paint exposed reveal edges.
    d. Seal cut edges of ceiling panels to encapsulate edges to same level as factory finish using manufacturer's recommended touch up materials.
8. Where obstructions occur, provide preformed closures to match perimeter molding.
9. Install hold-down clips on panels within 20 ft (6 m) of an exterior door.

3.4 TOLERANCES

A . Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B . Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.5 PROTECTION

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

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Resilient sheet flooring.

B . Resilient base.

C . Resilient installation accessories.

1.2 RELATED REQUIREMENTS

A . 079005 - Joint Sealers.

1.3 REFERENCE STANDARDS

A . ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2015.

B . ASTM F1859 - Standard Specification for Rubber Sheet Floor Covering Without Backing; 2014.

C . ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012).

D . ASTM F2034 - Standard Specification for Sheet Linoleum Floor Covering; 2008 (Reapproved 2013).

E . NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

1.4 ADMINISTRATIVE REQUIREMENTS

A . Preinstallation Meeting: Convene one week before starting work of this section in accordance with Division 01.

1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.5 SUBMITTALS

A . Qualification Data: For installer.

B . Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C . Shop Drawings: Indicate seaming plan.

D . Flooring Sample: Submit two samples, 6 x 6 inch in size illustrating color and pattern for each resilient flooring product specified.

E . Base and Accessory Samples: Submit manufacturer's complete set of color samples for initial selection.

F . Certificate: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.

G . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

H . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

I . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.6 MAINTENANCE MATERIAL

A . Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. Extra Flooring Material: each type and color by feet or percentage per Owner’s request.
2. Extra Wall Base: each type and color by feet or percentage per Owner’s request.

1.7 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

B . Installer Qualifications: Company specializing in performing the work of this section with minimum 2 years of experience.

1.8 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.9 WARRANTY

A . Provide minimum Manufacturers Limited 5 year commercial warranty for manufacturing defects.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Resilient sheet flooring, resilient base and installation accessories for transition to other flooring types.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.

2.3 RESILIENT SHEET FLOORING

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . (RF-1) Linoleum Sheet Flooring: Homogeneous wear layer bonded to backing, with color and pattern through wear layer thickness. Comply with ASTM F2034.

1. Basis of Cost: Marmoleum Modular by Forbo or comparable product.

a. Minimum Requirements: Comply with ASTM F1859, Type 1, without backing.

b. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.

2. Color: T5230 White Wash.

2.4 RESILIENT BASE

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . (RB-1) Resilient Base: ASTM F1861, top set Style A straight and Style B cove, and as follows:

1. Basis of Design: Traditional rubber base by Johnsonite, a Tarkett Company; www.johnsonite.com.

2. Thickness: 0.125 inch (3.2 mm) thick.

3. Color: 20 Charcoal WG.

4. Length: Roll (4 foot sections are not acceptable except as maintenance stock).

2.5 RESILIENT INSTALLATION ACCESSORIES

A . Basis of Design Product: Products by manufacturer of resilient flooring or base. Comparable and substituted products will be judged based on color match and available profiles.

1. Comparable products by one of the following are also acceptable.

a. Burke Flooring: www.burkemercer.com.

b. Johnsonite, a Tarkett Company: www.johnsonite.com.

c. Roppe Corp: www.roppe.com.

d. Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Profile and Dimensions: As indicated or required for conditions present.

C . Colors and Patterns: As selected from full range of industry colors.

D . Locations: Provide rubber molding accessories in areas indicated and as recommended by flooring manufacturer for complete installation.

2.6 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B . Verify existing conditions meet the manufacturer's requirements before starting work, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

C . Verify that wall surfaces are smooth and flat within the tolerances specified, are dust-free, and are ready to receive resilient base.

D . Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General:

1. Install all materials in accordance with manufacturer's instructions based on conditions present.
2. Starting installation constitutes acceptance of subfloor conditions.
3. Fit joints tightly.
4. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
5. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
    a. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
    b. Resilient Strips: Attach to substrate using adhesive.
6. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
7. Install flooring in recessed floor access covers, maintaining floor pattern.
8. At movable partitions, install flooring under partitions without interrupting floor pattern.
9. Turn sheet flooring up 4 inches to create integral cove base. Heat weld corner seams.

B . Resilient Base:

1. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.
2. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
3. Install base on solid backing. Bond tightly to wall and floor surfaces.
4. Scribe and fit to door frames and other interruptions.

3.4 CLEANING

A . Remove excess adhesive from floor, base, and wall surfaces without damage.

B . Initial cleaning and finishing is the responsibility of the contractor.

1. Follow manufacturer's recommendations for initial cleaning and finishing procedures.
2. Not all types of flooring require finishing.

3.5 PROTECTION

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

3.6 SCHEDULE

A . As specified in Finish Legends on Drawings.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Carpet tile.

B . Walk-Off Mat.

1.2 RELATED REQUIREMENTS

A . 096500 - Resilient Flooring: For resilient installation accessories installed with carpet tile.

1.3 REFERENCE STANDARDS

A . ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016.

B . ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2015.

C . NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

1.4 SUBMITTALS

A . Qualification Data: For installer.

B . Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C . Shop Drawings: Indicate layout of joints.

D . Flooring Sample: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.

E . Accessory Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

F . Certificate: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of sub-floor is acceptable.

G . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

H . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

I . Maintenance Data: For user's operation and maintenance of materials including:

1. Methods for maintaining materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.5 MAINTENANCE MATERIAL

A . Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. Extra Flooring Material: 3% of each type and color (minimum of 10 yards) each type and color.

1.6 QUALITY ASSURANCE

A . Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years of experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.8 WARRANTY

A . Provide minimum Manufacturers Limited 5 year commercial warranty for manufacturing defects.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Carpet tile flooring and walk-off mat.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.

B . Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").

2.3 CARPET TILE

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . (CPT-1) Carpet Tile: Manufactured in single dye lot, conforming to the following criteria:

1. Manufacturer: Mohawk.
    a. Style: BT424 Reconstruct
    b. Color: 983 Masonry
    c. Construction: Tufted.
    d. Fiber Type: Colorstrand SD Nylon.
    e. Backing Material: EcoFlex CT.
    f. Finished Pile Thickness: .100 inches.
    g. Size: 24 inch x 24 inch.
    h. Installation: as indicated on drawings.

C . (WM-1) Walk-Off Mat: Modular walk-off tile.

1. Manufacturer: J&J Flooring.

a. Style: CATWALK II Modular 7268.

b. Color: 1427 Spotlight.

c. Construction: Textured patterned loop.

d. Standard Backing: Nexus Modular.

e. Thickness: .375 inches.

f. Standard Size: 24 inch x 24 inch.

g. Standard Adhesive: Commercial Premium Carpet Adhesive.

2.4 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 . Subfloor Filler: Type recommended by adhesive material manufacturer.

C . Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.

D . Moldings, Transition and Edge Strips: 096500 - Resilient Flooring.

PART 3 - EXECUTION

3.1 EXAMINATION

A . Verify existing conditions meet the manufacturer's requirements before starting work, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B . Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General:

1. Install all materials in accordance with manufacturer's instructions based on conditions present and CRI Carpet Installation Standard.
2. Blend carpet from different cartons to ensure minimal variation in color match.
3. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
4. Lay carpet tile in pattern scheduled in Finish Legend on Drawings, with pile direction parallel to next unit, set aligned as indicated on shop drawings.
5. Starting installation constitutes acceptance of subfloor conditions.
6. Fit joints tightly.
7. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
8. Adhere carpet tile to substrate along centerline of rooms, at perimeter of rooms, where tiles are cut, and at 15 foot (4.5 m) intervals throughout rooms. Lay remainder of tile dry over substrate.
9. Trim carpet tile neatly at walls and around interruptions.

10. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
    a. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
    b. Resilient Strips: Attach to substrate using adhesive.

3.4 CLEANING

A . Remove excess adhesive from floor, base, and wall surfaces without damage.

B . Clean and vacuum carpet tile surfaces in accordance with manufacturer's instructions.

3.5 PROTECTION

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

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Acoustic ceiling panels.

B . Suspended metal grid ceiling system.

C . Accessories as required for complete installation.

1.2 RELATED REQUIREMENTS

A . 092219 - Non-Structural Metal Framing.

1.3 REFERENCE STANDARDS

A . ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; 2016.

B . ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2017.

C . ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.

D . CISCA (AC) - Acoustical Ceilings: Use and Practice; 1999.

1.4 SUBMITTALS

A . Qualification Data: For manufacturer and installer.

B . 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.
4. Specimen warranty.

C . Test Reports: Certified test data from an independent test agency verifying that wall systems meet specified requirements for acoustical and fire performance.

D . Shop Drawings: Elevations indicating proposed locations of fabric seams and details indicating typical transitions to other finish surfaces. Include details of inside and outside corners and backing at fixtures mounted within panels.

E . Verification Samples:

1. For each textile specified, minimum size 8 inches (200 mm) square, representing actual product in color, texture, and pattern.
2. Accessory package.

F . Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

G . Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. Supply an additional 10 percent of accessories installed for Owner's use in maintenance of project.
2. Supply an additional 5 percent of fabric installed for Owner's use in maintenance of project.

1.5 QUALITY ASSURANCE

A . Manufacturer Qualifications: Provide all components of acoustical wall systems by a single manufacturer, including recommended primers, adhesives, and sealants.

B . Installer Qualifications: Firm specializing in site-fabricated wall systems, with not less than 2 years of documented experience in installing wall systems of the type specified, and approved by the manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Acoustic ceiling components including prefabricated and site built units.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Seismic Requirements:

1. Classification: Conform to ASTM C635/C635M, Heavy Duty Classification.
2. Code Compliance: IBC, American Society of Civil Engineers ASCE 7, and CISCA (AC) Guidelines. Comply with edition dates per local Authorities Having Jurisdiction.

B . Components: Lock together in a positive manner.

C . Pull out tension:

1. Cross Tee Connections: Minimum 300 pounds.
2. Main Tee Splices: Minimum 200 pounds.

D . Seismic Lateral Design: Conform to IBC and ASCE 7 especially requirement for independent support from structure above for light fixture and mechanical services installed into acoustical lay-in panel ceiling systems.

E . Install to conceal plenum space above acoustical ceiling system and to allow access.

F . Make provisions for vertical as well as horizontal suspension systems.

G . All paints, coatings, adhesives, and sealants shall meet the VOC limits specified in Division 01

2.3 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Acoustic Ceiling Panels:

1. Fabric-wrapped acoustic panel core:
2. Panel size: Varies as indicated.

3. Substrate: Decoustics Acoustical Absorptive AP Panel.
    a. Comply with ASTM E84 for surface burning characteristics: Class A.
    b. Edges: Chemically hardened.
    c. Thickness: 1 inch.
4. Fabric: Spinneybeck Perforated (PF) 0330 Pattern 330.
    a. Fabric shall be tested for suitability (ASTM D6207) and approved for use by the panel manufacturer prior to procurement and fabrication.
    b. Color: 4065 Reed Warbler.
5. Mounting: Direct-mount with concealed fasteners to suspended unistrut frame.

2.4 ACOUSTICAL ACCESSORIES

A . Acoustical Board:
1. Manufacturer: Owens Corning.
2. Product: SelectSound Black Acoustic Board.
3. Size: 48 inches by 96 inches.
4. Thickness: 2 inch.
5. Attachment method: Adhered directly ceiling panels; field cut to fit panels.
6. Location: (AWC-23) and (AWC-24).

2.5 SUSPENSION SYSTEM

A . Manufacturers:
1. Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Suspension Systems - General: ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

2.6 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.

PART 3 - EXECUTION

3.1 EXAMINATION

A . Do not begin installation until substrates have been properly prepared.

B . Verify that all casework, markerboards, door and window jambs, finished ceiling, and other finished items abutting acoustical wall systems have been installed.

C . If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A . Clean surfaces thoroughly prior to installation.

B . Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C . Remove wall plates and other obstacles, and prepare substrates to receive core material in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . Acoustic Ceiling Panels: Fabric finish shall be bonded to, or stretched over, the panel face, bonded to the panel edges and returned a minimum of one inch on the back of the panel. The finish shall be flat and wrinkle free and fully tailored at corners with no exposed darting.

3.4 PROTECTION

A . Protect installed products until completion of project, using methods that will ensure that the finished work will be without damage or deterioration at Date of Substantial Completion.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Interior paint systems.

1.2 ADMINISTRATIVE REQUIREMENTS

A . Preinstallation Meeting: Convene one week before starting work of this section in accordance with Division 01.

1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.3 SUBMITTALS

A . Product Data: Provide product criteria, characteristics, accessories, jointing and seaming methods, and termination conditions.

B . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

C . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Recommendations on maintenance schedule.

1.4 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of paint and coating products used in the work of this section with minimum ten years of experience.

B . Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

1.5 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Surface preparation and field application of paints, stains, varnishes, and other coatings.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . VOC Content: Provide adhesive and sealant products with VOC content equal to or less than 50 grams/Liter.

2.3 MANUFACTURERS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Provide all paint and coating products used in any individual system from the same manufacturer; unless noted otherwise below.

C . Paints:

1. Pkr: Comex Group (Color Wheel, Frazee, General Paint, Kwal, or Parker): www.thecomexgroup.com
2. K-M: Kelly Moore Paints: www.kellymoore.com.
3. B-M: Benjamin Moore & Co: www.benjaminmoore.com.
4. Mlr: (PPG) Miller Paint Company: www.millerpaint.com, www.ppgpro.com.
5. Rodda (Cloverdale, Zinsser, XIM): www.roddapaint.com.
6. MDC wall coverings distributor of Idea Paint.
7. S-W: Sherwin-Williams Co.: www.sherwin-williams.com.
8. Tnemec: www.tnemec.com.

2.4 MATERIALS

A . Interior paint systems:

1. See Interior painting schedule in the specifications (this schedule) for paint system for each substrate.
2. PS-01 Acrylic-Enamel.
    a. Substrate: Concrete, Concrete Masonry Units, Gypsum Board.
3. PS-02 Epoxy.
    a. Substrate: Concrete, Concrete Masonry Units, Gypsum Board.
4. PS-03 Urethane Finish.
    a. Substrate: Ferrous, Non-Ferrous, and Zinc-Coated Metals:
5. PS-04 Acrylic.
    a. Substrate: Interior Ferrous Metal.

2.5 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.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

3.4 PROTECTION

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

3.5 SCHEDULE

A . See Architectural drawings for locations to receive paint.

B . (PT-1) Sherwin Williams

1. Color: Nebulous White; SW 7063.

C . (PT-2) Sherwin Williams

1. Color: Stamped Concrete; SW 7655.

D . (PT-3) Sherwin Williams

1. Color: TBD.

E . (PT-4) Sherwin Williams

1. Color: TBD

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Water purifer.

1.2 SUBMITTALS

A . Product Data: Manufacturer's printed product literature for each type of specialty, indicating colors, locations, overall dimensions.

B . Samples: Submit sample of finish options for verification.

C . Manufacturer's Installation Instructions: Include installation templates and attachment devices.

D . Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1.3 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Water purifier.

2.2 WATER PURIFIER:

A . Basis of Design: DSBS13oUVPC by Elkay.

1. 1.5 GPH.
2. Counter mounted.
3. Owner-Provided and installed.
4. Water connection provided by General Contractor.
5. Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Location: As indicated on Drawings.

2.3 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.

PART 3 - EXECUTION

3.1 EXAMINATION

A . Verify that substrate surfaces are ready to receive work.

3.2 INSTALLATION

A . Install in accordance with manufacturer's instructions.

B . Install neatly, with horizontal edges level.

C . Protect from damage until Substantial Completion; repair or replace damage items.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Residential Casework.

1.2 RELATED REQUIREMENTS

A. 079500 - Joint Sealers.

B. 092116 - Gypsum Board Assemblies.

C. 123600 - Countertops.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section in accordance with Division 01.

1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

A. Qualification Data: For manufacturer, fabricator, and installer.

B. Product Data: Provide product criteria, characteristics, accessories, jointing and seaming methods, and termination conditions.

C. Shop Drawings: Indicate required flashings, sealing at openings.

D. Sample: 12 x 12 inch sample of all exposed surfaces, full set of hardware.

E. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.

2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.5 MAINTENANCE MATERIAL

A. Sets of Hardware: 20 each typical.

B. Door Faces: 10 each typical.

C. Drawer Faces: 10 each typical.

1.6 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

B . Fabricators Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

C . Installer Qualifications: Company specializing in performing the work of this section with minimum of 5 years of experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.8 WARRANTY

A . Installation Warranty: Contractor shall correct defective Work within a 2 year period after Date of Substantial Completion; remove and replace materials concealing waterproofing at no extra cost to Owner.

B . Manufacturer Warranty: Provide 1 year warranty for casework failing to perform as advertised.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Residential kitchen and vanity casework purchased as finished products from a manufacturer for site installed countertops.

2.2 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Kitchen Casework:

1. (CAB-1) Basis of Design Product: European Cabinets by Leedo. Comparable and substituted products will be judged based on the following performance criteria, features, warranty, and qualifications.
2. Performance Criteria:
    a. Drawers: 100 pound rating.
3. Features:
    a. Door Category: Slab Front.
    b. Shelf Supports: Metal pins in drilled holes.
    c. Oversized finished end panels at refrigerators.
    d. Base: to match casework.
    e. Hardware: Basis of Design: Mockett - DP177.
        1) Soft close hinges.
        2) Drawer Guides: Soft close/ full extension drawer system.
        3) Hardware:

a) Hardware Finish: Satin Nickel.

b) DP177A at casework less than 12 inches.

c) DP177B at casework greater than 12 inches.

4. Countertops: see Section 123600 Countertops.

2.3 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.

2.4 FABRICATION

A . Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings, and unit entries.

B . Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.

C . Fabricate each unit to be rigid and not dependent on building structure for rigidity.

D . Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

E . Form smooth edges. Form material for countertops, shelves, and drain boards from continuous sheets.

F . Provide cutouts for plumbing fixtures, appliances, and fixtures and fittings. Prime paint contact surfaces of cut edges.

G . When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B . Use anchoring devices to suit conditions and substrate materials encountered.

C . Set casework items plumb and square, securely anchored to building structure.

D . Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch (1 mm). Use filler strips; not additional overlay trim for this purpose.

E . Close ends of units, back splashes, shelves and bases.

3.4 ADJUSTING

A . Adjust doors, drawers, hardware, fixtures, and other moving or operating parts to function smoothly.

3.5 PROTECTION

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

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Countertops for cabinetwork.

1.2 RELATED REQUIREMENTS

A. 123530 - Casework: For casework supporting countertops.

1.3 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2009.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.

C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

D. ISFA-2 - Classification and Standards for Solid Surfacing Material; 2001 (2013).

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.4 ADMINISTRATIVE REQUIREMENTS

1.5 SUBMITTALS

A. Qualification Data: For design engineer and fabricator.

B. Product Data: Provide product criteria, characteristics, accessories, jointing and seaming methods, and termination conditions.

C. Shop Drawings: Complete details of materials and installation.

D. Sample: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.

1. For sealant and accessories submit manufacturer's full range of available colors and patterns for selection.

E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

F. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

H. Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Recommendations on maintenance schedule.

1.6 QUALITY ASSURANCE

A . Fabricators Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

1.7 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.1 DESCRIPTION

A . Casework supported countertops fabricated from solid surface.

2.2 PERFORMANCE AND DESIGN CRITERIA

A . Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) Architectural Woodwork Standards.

2.3 MATERIALS

A . Substitution for products by manufacturers other than listed: See Appendix A - DIV 01 Forms: Submittal Product Form.

B . Solid Surface Material Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.

1. Performance Criteria:

a. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA-2 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.

1) Surface Burning Characteristics: Flame spread 25, maximum; smoke developed 450, maximum; when tested in accordance with ASTM E84.

2) NSF approved for food contact.

2. Features:

a. Flat Sheet Thickness: Per manufacturer's recommendation for spans indicated.

b. Exposed Edge Treatment:

1) Built up to minimum 1-1/2 inch thick; square edge; use marine edge at sinks.

c. Back and End Splashes: Same sheet material, square top; minimum 4 inches (102 mm) high.

d. Skirts: As indicated on drawings.

C . Natural Quartz and Resin Composite Countertops: Sheet or slab of natural quartz and plastic resin over continuous substrate.

1. Basis of Design Product: Caesar Stone, Ice Stone, or comparable; substituted products will be judged based on the following performance criteria, features, warranty, and qualifications.

2. Performance Criteria:

a. Natural Quartz and Resin Composite Sheets, Slabs and Castings: Complying with ISFA-2 and NEMA LD 3; orthopthalic polyester resin, mineral filler, and pigments; homogenous, non-porous and

capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.

b. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with the MIA Dimension Stone Design Manual.

c. Surface Burning Characteristics: Flame spread 25, maximum; smoke developed 450, maximum; when tested in accordance with ASTM E84.

d. NSF approved for food contact.

3. Features:

a. Flat Sheet Thickness: 3/4 inch (19 mm), minimum.

b. Other Components Thickness: 3/4 inch (19 mm), minimum.

c. Exposed Edge Treatment:

1) Built up to minimum 1-1/4 inch thick; square edge and as detailed.

d. Back and End Splashes: Same sheet material, square top; minimum 4 inches (102 mm) high and as indicated on drawings.

2.4 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 . Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf (20 kg/cu m) minimum density; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.

1. Made with binder containing no urea formaldehyde.

C . Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

D . Joint Sealant: Mildew-resistant silicone sealant, as selected by Architect from manufacturer's full range.

2.5 FABRICATION

A . Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.

1. Join lengths of tops using best method recommended by manufacturer.

2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.

3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B . Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.

1. Secure to countertop with concealed fasteners and secure finish surfaces with contact surfaces with a waterproof glue.

2. Height: 4 inches (102 mm), unless otherwise indicated.

C . Solid Surfacing: Fabricate tops up to 144 inches (3657 mm) long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A. Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

C. Seal joint between back/end splashes and vertical surfaces.

1. Where indicated use rubber cove molding.
2. Where applied cove molding is not indicated use specified sealant.

D. Joints between adjacent pieces of surfacing.

1. Securely join with manufacturer's approved adhesive.
2. Fill joints level with surfacing.
3. Clamp or brace surfacing in position until adhesive sets.
4. Joints shall be flush, tight fitting, level, and neat.

3.4 TOLERANCES

A. Variation From Horizontal: 1/8 inch in 10 feet (3 mm in 3 m), maximum.

B. Offset From Wall, Countertops: 1/8 inch (3 mm) maximum; 1/16 inch (1.5 mm) minimum.

C. Field Joints: 1/8 inch (3 mm) wide, maximum.

3.5 CLEANING

A. Clean countertops surfaces thoroughly.

3.6 PROTECTION

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

END OF SECTION