



**LEGEND**

 PROPERLY REMOVE AND DISPOSE OF BLACK HVAC MASTIC

 PROPERLY REMOVE AND DISPOSE OF BLACK MASTIC ON FIBERGLASS PIPE INSULATION

Site Prep for PET/CT Installation  
 VA Medical Center  
 Miami, FL  
 02 82 11 - 52

SITE PREP FOR PET/CT INSTALLATION  
 PROJECT NO.: 546-CSI-113  
 BRUCE W. CARTER VAMC  
 MIAMI, FLORIDA

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**SECTION 06 10 00  
ROUGH CARPENTRY**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

- A. Section specifies wood blocking and nailers.

**1.2 RELATED WORK:**

**1.3 SUBMITTALS:**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings showing framing connection details, fasteners, connections and dimensions.

**1.4 PRODUCT DELIVERY, STORAGE AND HANDLING:**

- A. Protect lumber and other products from dampness both during and after delivery at site.
- B. Pile lumber in stacks in such manner as to provide air circulation around surfaces of each piece.
- C. Stack plywood and other board products so as to prevent warping.
- D. Locate stacks on well drained areas, supported at least 150 mm (6 inches) above grade and cover with well ventilated sheds having firmly constructed over hanging roof with sufficient end wall to protect lumber from driving rain.

**1.5 APPLICABLE PUBLICATIONS:**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.
- B. American Forest and Paper Association (AFPA):  
National Design Specification for Wood Construction  
NDS-05.....Conventional Wood Frame Construction
- C. American Institute of Timber Construction (AITC):  
A190.1-07.....Structural Glued Laminated Timber
- D. American Society of Mechanical Engineers (ASME):  
B18.2.1-96(R2005).....Square and Hex Bolts and Screws  
B18.2.2-87.....Square and Hex Nuts  
B18.6.1-97.....Wood Screws  
B18.6.4-98(R2005).....Thread Forming and Thread Cutting Tapping Screws  
and Metallic Drive Screws
- E. American Plywood Association (APA):  
E30-07.....Engineered Wood Construction Guide

- F. American Society for Testing And Materials (ASTM):
- A47-99(R2009).....Ferritic Malleable Iron Castings
  - A48-03(R2008).....Gray Iron Castings
  - A653/A653M-10.....Steel Sheet Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process
  - C954-10.....Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases to Steel Studs from 0.033 inch (2.24 mm) to 0.112-inch (2.84 mm) in thickness
  - C1002-07.....Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Metal Studs
  - D143-09.....Small Clear Specimens of Timber, Method of Testing
  - D1760-01.....Pressure Treatment of Timber Products
  - D2559-10.....Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions
  - D3498-11.....Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems
  - F844-07.....Washers, Steel, Plan (Flat) Unhardened for General Use
  - F1667-08.....Nails, Spikes, and Staples
- G. Federal Specifications (Fed. Spec.):
- MM-L-736C.....Lumber; Hardwood
- H. Commercial Item Description (CID):
- A-A-55615.....Shield, Expansion (Wood Screw and Lag Bolt Self Threading Anchors)
- I. Military Specification (Mil. Spec.):
- MIL-L-19140E.....Lumber and Plywood, Fire-Retardant Treated
- J. Truss Plate Institute (TPI):
- TPI-85.....Metal Plate Connected Wood Trusses
- K. U.S. Department of Commerce Product Standard (PS)
- PS 1-95.....Construction and Industrial Plywood
  - PS 20-05.....American Softwood Lumber Standard

**PART 2 - PRODUCTS****2.1 LUMBER:**

- A. Unless otherwise specified, each piece of lumber bear grade mark, stamp, or other identifying marks indicating grades of material, and rules or standards under which produced.
  - 1. Identifying marks in accordance with rule or standard under which material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.
  - 2. Inspection agency for lumber approved by the Board of Review, American Lumber Standards Committee, to grade species used.
- B. Lumber Other Than Structural:
  - 1. Unless otherwise specified, species graded under the grading rules of an inspection agency approved by Board of Review, American Lumber Standards Committee.
  - 2. Furring, blocking, nailers and similar items 100 mm (4 inches) and narrower Standard Grade; and, members 150 mm (6 inches) and wider, Number 2 Grade.
- C. Sizes:
  - 1. Conforming to Prod. Std., PS20.
  - 2. Size references are nominal sizes, unless otherwise specified, actual sizes within manufacturing tolerances allowed by standard under which produced.
- D. Moisture Content:
  - 1. At time of delivery and maintained at the site.
  - 2. Boards and lumber 50 mm (2 inches) and less in thickness: 19 percent or less.
  - 3. Lumber over 50 mm (2 inches) thick: 25 percent or less.
- E. Fire Retardant Treatment:
  - 1. Mil Spec. MIL-L-19140 with piece of treated material bearing identification of testing agency and showing performance rating.
  - 2. Treatment and performance inspection, by an independent and qualified testing agency that establishes performance ratings.
- F. Preservative Treatment:
  - 1. Treat wood members and plywood exposed to weather or in contact with plaster, masonry or concrete, including framing of open roofed structures; sills, sole plates, furring, and sleepers that are less than 600 mm (24 inches) from ground; nailers, edge strips, blocking,

crickets, curbs, cant, vent strips and other members used in connection with roofing and flashing materials.

2. Treat other members specified as preservative treated (PT).
3. Preservative treat by the pressure method complying with ASTM D1760, except any process involving the use of Chromated Copper arsenate (CCA) for pressure treating wood is not permitted.

## **2.2 PLYWOOD**

- A. Comply with Prod. Std., PS 1.
- B. Bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of plywood which identifies compliance by veneer grade, group number, span rating where applicable, and glue type.

## **2.3 ROUGH HARDWARE AND ADHESIVES:**

- A. Anchor Bolts:
  1. ASME B18.2.1 and ANSI B18.2.2 galvanized, 13 mm (1/2 inch) unless shown otherwise.
  2. Extend at least 200 mm (8 inches) into masonry or concrete with ends bent 50 mm (2 inches).
- B. Miscellaneous Bolts: Expansion Bolts: C1D, A-A-55615; lag bolt, long enough to extend at least 65 mm (2-1/2 inches) into masonry or concrete. Use 13 mm (1/2 inch) bolt unless shown otherwise.
- C. Washers
  1. ASTM F844.
  2. Use zinc or cadmium coated steel or cast iron for washers exposed to weather.
- D. Screws:
  1. Wood to Wood: ANSI B18.6.1 or ASTM C1002.
  2. Wood to Steel: ASTM C954, or ASTM C1002.
- E. Nails:
  1. Size and type best suited for purpose unless noted otherwise.
  2. ASTM F1667:
    - a. Common: Type I, Style 10.
    - b. Concrete: Type I, Style 11.
    - c. Barbed: Type I, Style 26.
    - d. Masonry: Type I, Style 27.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION OF FRAMING AND MISCELLANEOUS WOOD MEMBERS:**

- A. Conform to applicable requirements of the following:

1. AFPA WCD-number 1, Manual for House Framing for nailing and framing unless specified otherwise.
  2. APA for installation of plywood or structural use panels.
- B. Fasteners:
1. Nails.
    - a. Nail in accordance with the Recommended Nailing Schedule as specified in AFPA Manual for House Framing where detailed nailing requirements are not specified in nailing schedule. Select nail size and nail spacing sufficient to develop adequate strength for the connection without splitting the members.
    - b. Use eight penny or larger nails for nailing through 25 mm (1 inch) thick lumber and for toe nailing 50 mm (2 inch) thick lumber.
    - c. Use 16 penny or larger nails for nailing through 50 mm (2 inch) thick lumber.
    - d. Select the size and number of nails in accordance with the Nailing Schedule except for special nails with framing anchors.
  2. Bolts:
    - a. Fit bolt heads and nuts bearing on wood with washers.
    - b. Countersink bolt heads flush with the surface of nailers.
    - c. Embed in concrete and solid masonry or use expansion bolts. Special bolts or screws designed for anchor to solid masonry or concrete in drilled holes may be used.
    - d. Use toggle bolts to hollow masonry or sheet metal.
    - e. Use bolts to steel over 2.84 mm (0.112 inch, 11 gage) in thickness. Secure wood nailers to vertical structural steel members with bolts, placed one at ends of nailer and 600 mm (24 inch) intervals between end bolts. Use clips to beam flanges.
  3. Drill Screws to steel less than 2.84 mm (0.112 inch) thick.
    - a. ASTM C1002 for steel less than 0.84 mm (0.033 inch) thick.
    - b. ASTM C 954 for steel over 0.84 mm (0.033 inch) thick.
  4. Power actuated drive pins may be used where practical to anchor to solid masonry, concrete, or steel.
  5. Do not anchor to wood plugs or nailing blocks in masonry or concrete. Use metal plugs, inserts or similar fastening.
  6. Screws to Join Wood:
    - a. Where shown or option to nails.
    - b. ASTM C1002, sized to provide not less than 25 mm (1 inch) penetration into anchorage member.
    - c. Spaced same as nails.

- C. Cut notch, or bore in accordance with NFPA Manual for House-Framing for passage of ducts wires, bolts, pipes, conduits and to accommodate other work. Repair or replace miscut, misfit or damaged work.
- D. Blocking Nailers, and Furring:
  - 1. Install furring, blocking, nailers, and grounds where shown.
  - 2. Use longest lengths practicable.
  - 3. Use fire retardant treated wood blocking where shown at openings and where shown or specified.
  - 4. Layers of Blocking or Plates:
    - a. Stagger end joints between upper and lower pieces.
    - b. Nail at ends and not over 600 mm (24 inches) between ends.
    - c. Stagger nails from side to side of wood member over 125 mm (5 inches) in width.

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**SECTION 06 20 00  
FINISH CARPENTRY**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section specifies interior millwork.
- B. Items specified.
  - 1. Base and Wall cabinets.

**1.2 RELATED WORK**

- A. Framing, furring and blocking: Section 06 10 00, ROUGH CARPENTRY.
- B. Countertops: Division 12, FURNISHINGS.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
  - 1. Millwork items - Half full size scale for sections and details 1:50 (1/4-inch) for elevations and plans.
  - 2. Show construction and installation.
- C. Samples:
  - 1. Plastic laminate finished plywood or particleboard, 150 mm by 300 mm (six by twelve inches).
- D. Certificates:
  - 1. Indicating moisture content of materials meet the requirements specified.
- E. List of acceptable sealers for preservative treated materials.
- F. Manufacturer's literature and data:
  - 1. Finish hardware.

**1.4 DELIVERY, STORAGE AND HANDLING**

- A. Protect lumber and millwork from dampness, maintaining moisture content specified both during and after delivery at site.
- B. Store finishing lumber and millwork in weathertight well ventilated structures or in space in existing buildings designated by COR. Store at a minimum temperature of 21<sup>0</sup>C (70<sup>0</sup>F) for not less than 10 days before installation.

**1.5 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society of Testing and Materials (ASTM):
  - A36/A36M-08.....Structural Steel

- A53-12.....Pipe, Steel, Black and Hot-Dipped Zinc Coated,  
Welded and Seamless
- A167-99 (R2009).....Stainless and Heat-Resisting Chromium-Nickel  
Steel Plate, Sheet, and Strip
- B26/B26M-09.....Aluminum-Alloy Sand Castings
- B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods,  
Wire, Profiles, and Tubes
- E84-10.....Surface Burning Characteristics of Building  
Materials
- C. American Hardboard Association (AHA):  
A135.4-04.....Basic Hardboard
- D. Builders Hardware Manufacturers Association (BHMA):  
A156.9-03.....Cabinet Hardware  
A156.11-10.....Cabinet Locks  
A156.16-08.....Auxiliary Hardware
- E. Hardwood Plywood and Veneer Association (HPVA):  
HP1-09.....Hardwood and Decorative Plywood
- F. National Particleboard Association (NPA):  
A208.1-09.....Wood Particleboard
- G. American Wood-Preservers' Association (AWPA):  
AWPA C1-03.....All Timber Products - Preservative Treatment by  
Pressure Processes
- H. Architectural Woodwork Institute (AWI):  
AWI-09.....Architectural Woodwork Quality Standards and  
Quality Certification Program
- I. National Electrical Manufacturers Association (NEMA):  
LD 3-05.....High-Pressure Decorative Laminates
- J. U.S. Department of Commerce, Product Standard (PS):  
PS20-10.....American Softwood Lumber Standard
- K. Military Specification (Mil. Spec):  
MIL-L-19140E.....Lumber and Plywood, Fire-Retardant Treated
- L. Federal Specifications (Fed. Spec.):  
A-A-1922A.....Shield Expansion  
A-A-1936.....Contact Adhesive  
FF-N-836D.....Nut, Square, Hexagon Cap, Slotted, Castle  
FF-S-111D(1).....Screw, Wood  
MM-L-736(C).....Lumber, Hardwood

**PART 2 - PRODUCTS****2.1 BIO-BASED MATERIAL:**

- A. Bio-based Materials: For products designated by the USDA's Bio-Preferred program, provide products that meet or exceed USDA recommendations for bio-based content, so long as products meet all performance requirements in this specification section. For more information regarding the product categories covered by the Bio-Preferred program, visit <http://www.biopreferred.gov>

**2.2 LUMBER**

- A. Grading and Marking:
1. Lumber shall bear the grade mark, stamp, or other identifying marks indicating grades of material.
  2. Such identifying marks on a material shall be in accordance with the rule or standard under which the material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.
  3. The inspection agency for lumber shall be approved by the Board of Review, American Lumber Standards Committee, to grade species used.
- B. Sizes:
1. Lumber Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which product is produced.
  2. Millwork, standing and running trim, and rails: Actual size as shown or specified.
- C. Softwood: PS-20, exposed to view appearance grades:
1. Use C select or D select, vertical grain for transparent finish including stain transparent finish.
  2. Use Prime for painted or opaque finish.

**2.3 PLYWOOD**

- A. Softwood Plywood:
1. Prod. Std.
  2. Grading and Marking:
    - a. Each sheet of plywood shall bear the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood.
    - b. The mark shall identify the plywood by species group or identification index, and shall show glue type, grade, and compliance with PS1.

3. Plywood, 13 mm (1/2 inch) and thicker; not less than five ply construction, except 32 mm (1-1/4 inch) thick plywood not less than seven ply.
4. Plastic Laminate Plywood Cores:
  - a. Exterior Type, and species group.
  - b. Veneer Grade: A-C.
5. Shelving Plywood:
  - a. Interior Type, any species group.
  - b. Veneer Grade: A-B or B-C.
6. Other: As specified for item.

#### **2.4 PARTICLEBOARD**

- A. NPA A208.1
- B. Plastic Laminate Particleboard Cores:
  1. Use Type 1, Grade 1-M-3, or Type 2, Grade 2-M-2, unless otherwise specified.
  2. Use Type 2, Grade 2-M-2, exterior bond, for tops with sinks.
- C. General Use: Type 1, Grade 1-M-3 or Type 2, Grade 2-M-2.

#### **2.5 PLASTIC LAMINATE**

- A. NEMA LD-3.
- B. Exposed decorative surfaces including both sides of cabinet doors, and for items having plastic laminate finish. General Purpose, Type HGL.
- C. Cabinet Interiors including Shelving: Both of following options to comply with NEMA, CLS as a minimum.
  1. Plastic laminate clad plywood or particle board.
  2. Resin impregnated decorative paper thermally fused to particle board.

#### **2.6 ADHESIVE**

- A. For Plastic Laminate: Fed. Spec. A-A-1936.
- B. For Interior Millwork: Unextended urea resin, unextended melamine resin, phenol resin, or resorcinol resin.

#### **2.7 HARDWARE**

- A. Rough Hardware:
  1. Furnish rough hardware with a standard plating, applied after punching, forming and assembly of parts; galvanized, cadmium plated, or zinc-coated by electric-galvanizing process. Galvanized where specified.
  2. Fasteners:
    - a. Bolts with Nuts: FF-N-836.
    - b. Expansion Bolts: A-A-1922A.
    - c. Screws: Fed. Spec. FF-S-111.

## B. Finish Hardware

1. Cabinet Hardware: ANSI A156.9.
  - a. Door/Drawer Pulls: B02011.
  - b. Drawer Slides: B05051 for drawers over 150 mm (6 inches) deep, B05052 for drawers 75 mm to 150 mm (3 to 6 inches) deep, and B05053 for drawers less than 75 mm (3 inches) deep except where noted otherwise in the Drawings.
  - c. Adjustable Shelf Standards: B4061 with shelf rest B04083.
  - d. Concealed Hinges: B1601, minimum 110 degree opening.
  - e. Cabinet Door Catch: B0371 or B03172.
2. Cabinet Locks: ANSI A156.11.
  - a. Drawers: E07262.
3. Edge Strips Moldings:
  - a. Driven type "T" shape with serrated retaining stem; vinyl plastic to match plastic laminate color, stainless steel, or 3 mm (1/8 inch) thick extruded aluminum.

### 2.8 MOISTURE CONTENT

- A. Moisture content of lumber and millwork at time of delivery to site.
  1. Interior finish lumber, trim, and millwork 32 mm (1-1/4 inches) or less in nominal thickness: 12 percent on 85 percent of the pieces and 15 percent on the remainder.
  2. Exterior treated or untreated finish lumber and trim 100 mm (4 inches) or less in nominal thickness: 15 percent.
  3. Moisture content of other materials shall be in accordance with the standards under which the products are produced.

### 2.9 PRESERVATIVE TREATMENT

- A. Wood members and plywood in contact with plaster, masonry or concrete, including wood members used for rough framing of millwork items except heart-wood Redwood and Western Red Cedar shall be preservative treated in accordance with AWWA Standards.
- B. Use Grade A, exterior plywood for treatment.

### 2.10 FABRICATION

- A. General:
  1. Except as otherwise specified, use AWI Custom Grade for interior millwork.
  2. Finish woodwork shall be free from pitch pockets.
  3. Except where special profiles are shown, trim shall be standard stock molding and members of the same species.

4. Plywood shall be not less than 13 mm (1/2 inch), unless otherwise shown or specified.
5. Edges of members in contact with concrete or masonry shall have a square corner caulking rebate.
6. Fabricate members less than 4 m (14 feet) in length from one piece of lumber, back channeled and molded as shown.
7. Interior trim and items of millwork to be painted may be fabricated from jointed, built-up, or laminated members, unless otherwise shown on drawings or specified.
8. Plastic Laminate Work:
  - a. Factory glued to either a plywood or a particle board core, thickness as shown or specified.
  - b. Cover exposed edges with plastic laminate, except where plastic molded edge strips are shown or specified. Use plastic molded edge strips on 19 mm (3/4-inch) molded thick or thinner core material.

### **PART 3 - EXECUTION**

#### **3.1 ENVIRONMENTAL REQUIREMENTS**

- A. Maintain work areas and storage areas to a minimum temperature of 21°C (70°F) for not less than 10 days before and during installation of interior millwork.
- B. Do not install finish lumber or millwork in any room or space where wet process systems such as concrete, masonry, or plaster work is not complete and dry.

#### **3.2 INSTALLATION**

- A. General:
  1. Secure trim with fine finishing nails, screws, or glue as required.
  2. Set nails for putty stopping. Use washers under bolt heads where no other bearing plate occurs.
  3. Seal cut edges of preservative treated wood materials with a certified acceptable sealer.
  4. Coordinate with plumbing and electrical work for installation of fixtures and service connections in millwork items.
  5. Plumb and level items unless shown otherwise.
  6. Nail finish at each blocking, lookout, or other nailer and intermediate points; toggle or expansion bolt in place where nails are not suitable.

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**SECTION 08 35 13**  
**FOLDING GLASS DOORS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section includes furnishing and installing a floor track supported, sliding-folding, thermally broken, aluminum-framed glass panel system that includes:
  - 1. Aluminum frame
  - 2. Threshold
  - 3. Panels
  - 4. Sliding-folding and locking hardware
  - 5. Glass and glazing
  - 6. Accessories as required for a complete working installation.
- B. Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to, the following:
  - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 General Requirements, Specification Sections, apply to this Section.
  - 2. Section 07 92 00, Joint Sealants
  - 3. Section 09 22 16, Non-Structural Metal Framing: Metal framing R.O. and reinforcement.

**1.2 REFERENCES**

- A. Reference Standards in accordance with Division 01 and current editions from the following:
  - 1. AAMA. American Architectural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org)
    - a. AAMA 503, Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls, and Sloped Glazing Systems
    - b. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum
    - c. AAMA 920, Operation / Cycling Performance
    - d. AAMA 1304, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems
    - e. AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
    - f. AAMA/WDMA/CSA 101/I.S.2/A440, NAFS, North American Fenestration Standard - Specification for Windows, Doors and Skylights

2. ANSI. American National Standards Institute; [www.ansi.org](http://www.ansi.org)
  - a. ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used In Buildings
3. ASTM. ASTM International; [www.astm.org](http://www.astm.org)
  - a. ASTM C1036, Standard Specification for Flat Glass
  - b. ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass
4. CPSC. Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov)
  - a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials

### **1.3 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate Folding Glass Storefront system and framing R.O.

### **1.4 SUBMITTALS**

- A. For Contractor submittal procedures see Section 01 33 23.
- B. Product Data: Submit manufacturer's printed product literature for each Folding Glass Storefront system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles and colors.
- C. Shop Drawings: Indicate Folding Glass Storefront system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.
- D. Delegated-Design Submittal: For structural performance of Folding Glass Storefront system, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- E. Manufacturers' Instructions: Submit manufacturer's installation instructions.
- F. Operation and Maintenance Data: Submit Owner's Manual from manufacturer. Identify with project name, location and completion date, and type and size of unit installed.

### **1.5 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with a minimum twenty-five (25) years' experience in the sale of folding-sliding door systems for large openings in the North American market.
- B. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.
  1. Installer to be trained and certified by manufacturer.
- C. Single Source Responsibility: Furnish Folding Glass

Storefront system materials from one manufacturer for entire Project.

#### **1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with manufacturer's instructions and recommendations and as follows:
  - 1. Deliver materials to job site in sealed, unopened cartons or crates.
    - a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.
  - 2. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

#### **1.7 FIELD CONDITIONS**

- A. Field Measurements: Contractor to field verify dimensions of rough openings (R.O.). Mark field measurements on shop drawing submittal.

#### **1.8 WARRANTY**

- A. Manufacturer Warranty: Provide Folding Glass Storefront system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.
  - 1. Warranty Period beginning with the earliest of 120 days from Date of Delivery or Date of Substantial Completion:
    - a. Rollers and Glass Seal Failure: Ten (10) years
    - b. All Other Components: Ten (10) years

### **PART 2 PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Basis-of-Design Product by Manufacturer: **NanaWall SL60** by **NANA WALL SYSTEMS, INC.**  
([www.nanawall.com](http://www.nanawall.com))

#### **2.2 PERFORMANCE / DESIGN CRITERIA**

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00, Quality Requirements, to design the Folding Glass Storefront system according to the following performance requirements:
  - 1. Comply with applicable Code requirements.
- B. Design Criteria:
  - 1. Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing panels, and location of tracks and stacking bays.
  - 2. Unit Operation: Sliding and folding hardware with top and bottom tracks;
    - a. **outswing type.**

3. Mounting Type:
  - a. **Floor track supported**
4. Panel Type: Hinged
  - a. Primary swing panel of paired swing panels, looking from inside, to be on the **left**.
5. Panel Pairing Configuration: See Drawings.

### 2.3 MATERIALS

- A. Thermally Broken Aluminum Framed Folding Glass Storefront
 

Description: Narrow stile frame and floor track supported system. Manufacturer's standard frame and panel profiles, with head track, side jambs and panels with dimensions as shown on Drawings.

  1. Panels:
    - a. **Single lite with simulated divided lites with one horizontal applied mullion installed at door handle height.**
  2. Panel Size (W x H): As indicated.
  3. Rail Depth: 2-5/16 inch (59 mm)
  4. Head Width (Floor Mounted): 4-9/16 inch (117 mm)
  5. Head and Jamb Rail Width: 2-3/8 inch (60 mm)
  6. Bottom Rail Width:
    - a. **2-3/8 inch (60 mm) for surface mounted interior sill.**
    - b. **Manufacturer's standard kickplate with height indicated.**
  7. Aluminum Extrusion: AIMgSi0.5 alloy, 6063-T5 (F-22 - European standard)
    - a. Thickness: 0.078 inch (2.0 mm) nominal
    - b. Thermal Break: 7/8 inch (22 mm) wide polyamide plastic reinforced with glass fibers. Thinner or poured and de-bridged type thermal breaks not acceptable.
  8. Aluminum Finish: Inside and Outside;
    - a. Powder Coat (AAMA 2604):
- B.
  - 1). Color as chosen from manufacturer's powder coating finish chart from a). **manufacturer's standard selection of 50 colors - matte.**

Glass and Glazing:

  1. Safety Glazing: In compliance with ANSI Z97.1 and CPSC 16CFR 1201.
  2. Manufacturer's **tempered** glass lites in **double** insulated glazing units, dry glazed with glass stops on the inside.
    - a. Insulated Glass Unit (IGU) Lites: 1).
 

**Double IGU:**

- a). **15/16 inch (24 mm) thick.**
  - b. IGU Fill:
    - 1). Air filled
  - c. Glass Lite Type:
    - 1). Standard
  - d. Glass Spacers: Manufacturer's standard **gray** finish; capillary tubes.
- C. Sliding- Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks and threshold. All running carriages to be with sealed, self-lubrication, ball bearing multi-rollers. Surface mounted hinges and running carriages not acceptable.
- 1. For Each Pair of Folding Panels:
    - a. Floor Mounted System (SL60/u): Provide upper guide carriage and lower running carriage with two vertical stainless steel wheels and two horizontal wheels. Vertical wheels to ride on stainless steel guide track covers over the full length of sill track and lie above the water run-off level.
      - 1). Lower Running Carriage Carrying Capacity: 220 lbs. (100 kg)
  - 2. Sill Type:
    - a. **Surface mounted interior sill (not thermally broken)**
    - b. Finish: Aluminum with
      - 1). **a clear anodized finish.**
    - c. Cover plate over sill NOT acceptable.
    - d. For ADA Compliance: Provide gasket to cover the channel in the sill at swing doors.
  - 3. On All Four Corners of Panels: Provide thermally broken die cast zinc multi-functional corner fittings with carriage connectors, hinges and **standard** hinge pins.
    - a. Finish: Powder coated, closest match to finish of frame and panel.
  - 4. Adjustment: Provide 1/16 inch (1.5 mm) in width per hinge adjustments without removing panels from tracks and without needing to remove panels from tracks.
- D. Fasteners: Tapered pins or stainless steel screws for connecting frame components.

## 2.4 FABRICATION

- A. Folding Glass Wall: Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing components needed

to construct a folding glass wall.

1. Each unit factory pre-assembled and shipped with complete system components and installation instructions.
2. Exposed work to be carefully matched to produce continuity of line and design with all joints.
3. No raw edges visible at joints.

## **2.5 ACCESSORIES**

- A. Provide double doors as indicated.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Examination and Acceptance of Conditions as follows:
  1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
    - a. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer for readiness to receive Work.
    - b. Verify structural integrity of the header for deflection with live and dead loads limited to the lesser of L/720 of the span or 1/4 inch (6 mm). Provide structural support for lateral loads and eccentric load when the panels are stacked open.
  2. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2 INSTALLATION**

- A. General: Install Folding Glass Storefront system in accordance with the Drawings, approved submittals, manufacturer's recommendations and installation instructions, and as follows:
  1. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb and square. Install frame in proper elevation, plane and location, and in proper alignment with other work
  2. Install panels, handles, lockset, screens and other accessories in accordance with manufacturer's recommendations and instructions.

### **3.3 FIELD QUALITY CONTROL**

- A. Field Tests and Inspections per Section 01 40 00 of the following:
  1. Verify the Folding Glass Storefront system operates and functions properly. Adjust hardware for proper operation.
- B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

**3.4 CLEANING AND PROTECTION**

- A. Keep units closed and protect Folding Glass Storefront installation against damage from construction activities.
- B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

END OF SECTION

**SECTION 12 36 00  
COUNTERTOPS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

A. This section specifies casework countertops.

**1.2 RELATED WORK**

A. Color and patterns of top: Selected by COR from manufacturer's standard color palette.

B. DIVISION 22, PLUMBING.

C. DIVISION 26, ELECTRICAL.

**1.3 SUBMITTALS**

A. Submit in accordance with SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Shop Drawings

1. Show dimensions of section and method of assembly.

2. Show details of construction at 1/2 scale.

C. Samples:

1. 150 mm (6 inch) square samples each top.

2. Front edge, back splash, end splash and core with surface material and booking.

**1.4 APPLICABLE PUBLICATIONS**

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

B. American Hardboard Association (AHA):

A135.4-95.....Basic Hardboard

C. Composite Panel Association (CPA):

A208.1-09.....Particleboard

D. American Society of Mechanical Engineers (ASME):

A112.18.1-12.....Plumbing Supply Fittings

A112.1.2-12.....Air Gaps in Plumbing System

A112.19.3-08(R2004).....Stainless Steel Plumbing Fixtures (Designed for Residential Use)

E. American Society for Testing and Materials (ASTM):

A167-99 (R2009).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip

A1008-10.....Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength, Low Alloy

D256-10.....Pendulum Impact Resistance of Plastic

- D570-98(R2005).....Water Absorption of Plastics
- D638-10.....Tensile Properties of Plastics
- D785-08.....Rockwell Hardness of Plastics and Electrical Insulating Materials
- D790-10.....Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- D4690-99(2005).....Urea-Formaldehyde Resin Adhesives
- F. Federal Specifications (FS):
  - A-A-1936.....Adhesive, Contact, Neoprene Rubber
- G. U.S. Department of Commerce, Product Standards (PS):
  - PS 1-95.....Construction and Industrial Plywood
- H. National Electrical Manufacturers Association (NEMA):
  - LD 3-05.....High Pressure Decorative Laminates

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Solid Polymer Material:
  1. Filled Methyl Methacrylic Polymer.
  2. Performance properties required:

| Property                         | Result  | Test  |
|----------------------------------|---|---|
| Elongation                       | 0.3% min.   | ASTM D638   |
| Hardness                         | 90 Rockwell M   | ASTM D785   |
| Gloss (60° Gordon)               | 5-20  | NEMA LD3.1  |
| Color stability                  | No change   | NEMA LD3 except 200 hour                            |
| Abrasion resistance              | No loss of pattern<br>Max wear depth 0.0762 mm<br>(0.003 in) - 10000 cycles | NEMA LD3  |
| Water absorption weight (5 max)  | 24 hours 0.9  | ASTM D-570  |
| Izod impact                      | 14 N·m/m<br>(0.25 ft-lb/in)   | ASTM D256<br>(Method A)                             |
| Impact resistance                | No fracture   | NEMA LD-3 900 mm<br>(36") drop 1 kg<br>(2 lb.) ball |
| Boiling water surface resistance | No visible change   | NEMA LD3  |
| High temperature resistance      | Slight surface dulling  | NEMA LD3  |

3. Cast into sheet form.
4. Color throughout with subtle veining through thickness.

5. Joint adhesive and sealer: Manufacturers silicone adhesive and sealant for joining methyl methacrylic polymer sheet.
6. Bio-based products will be preferred.

## **2.2 SINKS**

- A. Material as specified in DIVISION 22, PLUMBING.

## **2.3 TRAPS AND FITTINGS**

- A. Material as specified in DIVISION 22, PLUMBING.

## **2.4 WATER FAUCETS**

- A. Material as specified in DIVISION 22, PLUMBING.

## **2.5 COUNTERTOPS**

- A. Fabricate in largest sections practicable.
- B. Fabricate with joints flush on top surface.
- C. Fabricate countertops to overhang front of cabinets and end of assemblies 25 mm (one inch) except where against walls or cabinets. Provide double-bullnose edge where exposed.
- D. Provide 1 mm (0.039 inch) thick metal plate connectors or fastening devices (except epoxy resin tops).
- E. Fabricate with end splashes where against walls or cabinets.
- F. Splash Backs and End Splashes:
  1. Not less than 19 mm (3/4 inch) thick.
  2. Height 100 mm (4 inches) unless noted otherwise.
- G. Drill or cutout for sinks, and penetrations.
  1. Accurately cut for size of penetration.
- H. Methyl Methacrylic Polymer Tops:
  1. Fabricate countertop of methyl methacrylic polymer cast sheet, 19 mm (3/4 inch) thick.
  2. Fabricate back splash and end splash to height shown.
  3. Fabricate with marine edge where sinks occur.
  4. Fabricate in one piece for full length from corner to corner up to 3600 mm (12 feet).
  5. Join pieces with adhesive sealant.
  6. Cut out countertop for lavatories, plumbing trim.
  7. Provide concealed fasteners and epoxy cement for anchorage of sinks to countertop.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Before installing countertops verify that wall surfaces have been finished as specified and that mechanical and electrical service locations are as required.

- B. Secure countertops to supporting rails of cabinets with metal fastening devices, or screws through pierced slots in rails.
  - 1. Where type, size or spacing of fastenings is not shown or specified, submit shop drawings showing proposed fastenings and method of installation.
  - 2. Use round head bolts or screws.
  - 3. Use epoxy or silicone to fasten the epoxy resin countertops to the cabinets.
- C. Sinks
  - 1. Install stainless steel sink in top with epoxy compound to form watertight seal under shelf rim.
    - a. In laboratory and pharmacy fit stainless steel sink with overflow standpipe.
    - b. Install faucets and fittings on sink ledges with watertight seals where shown.
- D. Faucets, Fixtures, and Outlets:
  - 1. Seal opening between fixture and top.
  - 2. Secure to top with manufacturers standard fittings.

**3.2 PROTECTION AND CLEANING**

- A. Tightly cover and protect against dirt, water, and chemical or mechanical injury.
- B. Clean at completion of work.

- - - E N D - - -