

SECTION 13 3419
PREFABRICATED MODULAR BUILDING UNITS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Design, fabrication, delivery and installation of modular building units.

1.2 PERFORMANCE REQUIREMENTS

- A. Perform installations at Site accomplished by the manufacturer or others under contract to, and under the direct supervision of the manufacturer.
- B. All manufacturers for panel walls, exterior doors, roofing materials, skylights, windows, doors, shutters, louvers, structural components, and other products comprising of the building's envelope, whether or not listed or specified, shall comply with Rule 9N-3 (Formally 9B-72) of the Florida Administrative Code and shall comply with the FBC.
 - 1. If products listed are not approved, the manufacturer shall be responsible to obtain approvals in accordance with Rule 9N-3 of the Florida Administrative Code prior to submitting Product Data or Shop Drawings. If the product is not approved by the State, it will not be acceptable.
- C. Regulatory requirements and standards:
 - 1. DCA-Department of Community Affairs Regulations. Each unit of portable and mobile buildings shall be provided with the Department of Community Affairs Seal of Approval and in accord with Codes identified by Rule 61G20-5.004 Florida Administrative Code.
 - 2. Florida Building Code.
 - 3. Florida Fire Prevention and Life Safety Codes.
 - 4. U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.
- D. Energy Code: Provide factory built, prefabricated structures that meet energy code requirements for the State of Florida.
- E. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- F. Electrical Devices: Devices UL listed with wiring bearing UL classification and conforming to the current NEC.
- G. Cooperate with regulatory agency or authority and provide data as requested by authority having jurisdiction.

1.3 SUBMITTALS

- A. Submission requirements:

1. Provide submittals accompanied by transmittal letter and include:
 - a. Date and revision date.
 - b. Project title and Owner's number.
 - c. Names of manufacturer, subcontractor, and supplier.
 - d. Identification of specific product and system.
 - e. Clearly identified field dimensions.
 - f. Applicable reference standard, such as ASTM or other.
 - g. Identification or description of deviation from Contract Documents.
 - h. Blank space for Owner's log stamp, 4 in. x 4 in.
 - i. Manufacturer's stamp, signed or initialed, certifying its review and compliance with Contract Documents.
 - B. Shop Drawings:
 1. Show elevations, details and methods of assembling sections, dimensions, shapes of materials, and anchorage methods.
 2. Wind loading Calculations shall be stamped, sealed and signed by a Professional Engineer in the State of Florida verifying compliance with ASCE 7-10.
 - C. Maintenance data and operating instructions:
 1. Provide the following:
 - a. System description.
 - b. Manufacturer's data.
 - c. Warranties.
 - D. Energy calculations
 - E. Three samples of
 1. Interior joint sealant color charts
 2. Carpet Tile sample books
 3. Color chart for seamless vinyl flooring
 4. Floor Tile color chips
 5. Wall Tile color chips
 6. FRP color charts
 7. Acoustical ceiling tile choices
 8. Interior and exterior paint colors
 9. Plastic laminate chains for toilet partitions
 10. Plastic Laminate chains for casework
 11. Mini blind color choices
 12. Section of porcelain enamel markerboards
 13. Vinyl covering for tack boards
 - F. Sample warranty
- 1.4 QUALITY ASSURANCE
- A. Manufacturer's Qualifications: Manufacturer is now, and has been for the past 5 years, engaged in the modular buildings industry, manufacturing and installing modular buildings of the kind herein specified as its principal product.
 - B. Manufacturer shall be responsible for the fabrication, assembly, delivery and installation of the work of this Section, in accord

with applicable regulatory requirements.

- C. Manufacturer shall become familiar with job conditions and other conditions in order to coordinate the planning, design, delivery, and installation of its work.

1.5 PRODUCT HANDLING

- A. Transport, deliver, and install at the job site.

1. Attend a pre-delivery conference with Owner's representative to determine the delivery route, schedule and procedure prior to the delivery of portable and mobile building units.

- a. Tires and axles are to remain the property of the Owner unless noted otherwise.

1.6 PROJECT CONDITIONS

- A. Do not install products under environmental conditions outside manufacturer's limits.

1.7 WARRANTY

- A. Manufacturer's Warranties:

1. Provide manufacturer's 2-year limited warranty on the completed structure to be free of leaks and defects in materials and workmanship from Date of Substantial Completion.
2. Provide the manufacturer's 5-year limited warranty on anodized aluminum surfaces against oxidation.

- B. Provide manufacturer's standard warranties on HVAC units, plumbing systems, electrical systems, and low-voltage systems beginning on the Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ~~ACCEPTABLE~~ MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to:

- ~~A. ASAP Office Buildings, Inc., 8222 South Orange Avenue, Orlando, FL 32809, Tel: (800) 765-9380~~

1. ~~G.E. Capital Modular Space~~ Modular Space Corporation (ModSpace), 931 Taft Vineland Road 3075 Whitten Road, Orlando Lakeland, FL 32824 33811, Tel: (407) 863-8596 48-79251464

2. Premier Modular Buildings, ~~387-203 East~~ Taft Vineland Road, Orlando, FL 32824, Tel: (407) 888-2022

- ~~B. Vision Building Solutions, 259 Deer Isle Drive, Winter Garden, FL 34787, Tel: (888) 767-1114~~

- ~~1-3.~~ Williams Scotsman, 1263 W. Landstreet Road 801 Jetstream Drive, Orlando, FL 32824, Tel: (407) 851-9030

2.2 DESCRIPTION

- A. General: Provide one 12 unit building and one 8 unit building in configurations shown on Drawings.
 - 1. Overall individual unit size: Nominal 12 ft. x 56 ft.
 - a. Ceiling height: 9 ft., finished, unless indicated otherwise on drawings.
- B. Seal of approval: Prior to leaving factory, obtain DCA inspection and have a registered Florida State Seal of Approval insignia permanently affixed.
- C. Serial numbers: Permanently attach serial number of portable and mobile building units to inside of electrical panel doors.

2.3 MATERIALS

- A. Building manufacturer shall furnish all specified and otherwise necessary materials to complete interiors and exteriors of units.
 - 1. Skirting: Stucco finish as detailed on Drawings
 - 2. Structural requirements:
 - a. Design modular building unit floors to support a minimum live load of 100 psf. Provide additional framing or reduced spans, as indicated on manufacturer's drawings, to support additional loading.
 - b. Design modular building unit roofs to support a minimum live load of 20 psf.
 - c. Provide structural pier supports below each door jamb of exterior door frames, in addition to manufacturer's standard structural systems.
 - d. Windloads: Refer to Structural Foundation Plan.
- B. Floor construction:
 - 1. Framing: Manufacturer's standard for required loading.
 - 2. Provide 2 layers 5/8 in., APA plywood underlayment, sanded face.
 - 3. Cut back top layer 12 in. each side of adjoining units and provide filler splice to be installed in top layer after units have been joined in the field.
 - 4. Insulate: Minimum R-20.
- C. Interior partitions: Full height unless indicated otherwise. Provide additional framing members or backing plates as required to accommodate requirements of wall mounted toilet room accessories, plumbing fixtures, piping, and other similar or related items.
- D. Telephone and electrical backboards: Plywood, 3/4 in. thick wall-mounted and painted to match adjacent wall finish. Plywood paint finish shall be Owner approved intumescent paint.
- E. Exterior siding and trim: Stucco over lath on sheathing as detailed on Drawings
- F. Insulation:
 - 1. Insulate exterior walls, ceilings and floors with manufacturer's standard Kraft faced fiberglass batts with minimum R-value of 20 for walls and R-value of 30 for roof.

- G. Roofing and flashing: Provide fully adhered TPO, single ply roofing system, nominal 45 mil thickness.
 - 1. Color: White or manufacturer's light shade.
 - 2. Roof board: Dens-Deck roof board as manufactured by Georgia Pacific; minimum thickness, 1/2 in.
 - 3. Gutters and downspouts: Aluminum, minimum 0.050 thick with factory finish.
- H. Joint sealants: Seal around windows and door openings at interior and exterior with polyurethane sealant in accord with ASTM C920. Match color of sealant with adjoining wall finish color.
- I. Doors and windows:
 - 1. Exterior doors:
 - a. Provide steel door(s) and frame(s). Provide 20 in. x 30 in. vision glass.
 - b. Main entry doors (and side lites if applicable) shall be glass and aluminum storefront type equal to Kawneer 350 series, medium stile doors and frames; clear anodized, with 1/4 inch, clear, laminated safety glazing.
 - 2. Interior doors:
 - a. Construction: Prehung, flush hardwood veneer, solid-core, paint grade. Factory painted to color selected by Owner.
 - b. Under cut all interior doors 1/2 in. above finish floor.
 - c. Provide 8 in. x 34 in. stainless steel kickplates to each face of restroom doors.
 - 3. Windows:
 - a. Provide manufacturer's standard clear anodized aluminum windows complete with 1/4 inch, grey tinted, tempered glazing.
 - b. All exterior windows shall be impact storm resistant per FBC, double hung with screens.
 - c. Interior Windows: 1/4 inch tempered, clear. Aluminum framed, fixed, with mini blind on viewer side.
 - 4. Hardware: Refer to Division 08 Section, Door Hardware.
- J. Floor finishes
 - 1. Carpet (CPT-1): - Interface, Cubic, Style Number: 1380102500, Color Number: 6395 Construction
 - 2. Seamless Vinyl Flooring:
 - a. SV-1: Tech Design, Color Number: TD-DRW-9468, Color Light Honey (Grain direction noted on plan)
 - b. SV-2 - Johnsonite, Optima, Color Number: 862, Color Name: Raw Ivory, Roll Goods, Welding Rod: 1291862
 - 3. Base (RB-1): Mercer 4" Cove Toe Base, Color: Off White
- K. Wall finish: Gypsum wallboard, 5/8 in., moisture resistant throughout.

1. Tile:
 - a. CT-1: Dal-Tile CY04, Color Name: District gold, Size: 12 x 12, Grout: Laticrete, Epoxy Grout, Color: #34 Sandstone
 - b. CT-2: Dal-Tile: CY03, Color Name: Downtown night, Size 12 x 12, Grout: Laticrete, Epoxy Grout, Color: #39 Mushroom
- L. Ceiling: Armstrong #770, 24 by 24
- M. Painting:
 1. Surfaces to receive paint shall be prepared in accord with SSPC requirements, or other Owner-approved standards.
 2. Use hand tools or other recommended appropriate methods to remove rough surfaces appropriate to receive specified paint/stain finishes.
 3. Apply paint by methods to achieve a final smooth coat, as nearly uniform in thickness as possible, and free of brush and roller marks.
 4. Paint all exposed electrical panels to match adjacent wall color.
 5. Paint Schedule:
 - a. PT-1 - Neutral Paint - Coronado - Color: Dubai Sand, Color Number: OW 135
 - b. PT-2 - Accent Paint - Glidden - Color: Ivory Sampler, Color: Number: #30YY 58/178
 - c. PT-3 - Accent Paint - Glidden - Color: Gravel Pit, Color Number: #50GG 40/064
 - d. PT-4 - Accent Paint - Glidden - Color: Thyme, Color Number: #70YY 46/160
 - e. PT-5 - Accent Paint - Glidden - Color: Butterfield, Color Number: #20YY 51/306
- N. Toilet room requirements:
 1. General: Toilet room dimensions and fixtures shall comply with Federal Accessibility Requirements, and any additional accessibility requirements imposed by Owner.
 2. Toilet room partitions: Hiny Hiders by Scranton Products
 - a. Color: Linen
 - b. Size: 55 inches by 1 inch thick
 - c. Floor mounted, overhead braced
 - d. Hinges: 8 inches
 - e. Provide wraparound aluminum heat sink
 - f. Fasteners: 1-1/2 inch Torx
 - g. Latch/Strike: Aluminum with emergency access, brushed finish
 - h. Wall Bracket: Continuous plastic
 - i. Pilaster Shoe: Plastic
 - j. Minimum standard stall size: 3'-0 wide by 4'-8 deep.
 3. Toilet accessories: Provide manufacturer's standard items. Submit catalog cuts for Owner's review. Provide the following as a minimum:
 - a. Toilet tissue holders.
 - b. Soap dispensers.
 - c. Paper towel dispensers.

- d. Grab bars.
 - e. Mirrors (18 in. wide x 36 in. high minimum).
 - f. Seat cover dispensers.
 - g. Sanitary napkin disposal.
 - O. Casework for toilet room vanities, Break Room, Copies/Coffee Room cabinets, and other spaces where casework is shown.
 - 1. Vanities shall comply with all ADA accessibility requirements and clearances.
 - 2. Provide plastic laminate-finished casework at all locations except countertops.
 - 3. Countertops: : Silestone Eco "Crystal Sand" (quartz) 2 cm thickness round over edge, 4 inch backsplash, 2 integrated sinks, color #A3211 "Staron-Bone." Provide with 1 trash drop hole and a 2 x 4 frame underneath.
 - 4. All casework to be constructed to meet the minimum standards of AWI 1600-Modular Cabinets and installation 1700-Installation of Woodwork.
 - P. Fire extinguishers: Bracket mounts for Owner supplied extinguishers. Coordinate with Owner for size of extinguisher bottle.
 - Q. Window blinds: Provide horizontal type, 1 inch, metal mini-blinds at each window location. Color: White.
 - R. All signage by Owner
 - S. Visual Display Boards
 - 1. Porcelain Enamel Markerboards: Provide balanced, high-pressure laminated porcelain enamel markerboards of three ply construction consisting of face sheet, core material, and backing. 24 gage steel facing.
 - 2. Vinyl-Fabric-Faced Tack Boards: Mildew-resistant, washable, vinyl fabric complying with FS CCC-W-408, Type II, minimum 13 ounces per square yard, laminated to cork sheet, flame spread of 25 or less per ASTM E 84. Color and texture selected by Owner. Backing: factory laminated 1/8-inch thick cork face sheet under pressure to 3/8-inch thick fiberboard.
 - T. Residential Kitchen Equipment
 - 1. Refrigerator: GE# GTS21KBXWW, 21 Cu Ft with ice maker option
 - 2. Countertop Microwave: GE# JEB1860DMBB, 1100 watts
- 2.4 ENTRANCE DOOR CANOPY
- A. Provide an aluminum canopy over designated entrance doors, including flashing, assembly and erection to provide a complete installation. Minimum size: 48 inches wide by 36 inches from wall.
 - B. Structural calculations:
 - 1. Provide structural calculations signed and sealed by a registered professional engineer in the State of Florida.
 - 2. Prepare calculations in accord with current design rules of the Aluminum Association, AISC and AISI. Include analyses

for wind and dead load on framing members, anchors and inserts.

C. Aluminum:

1. Alloy for aluminum extrusions: 6063-T5 alloy and temper.
2. Alloy for aluminum sheet: 5005-H14, or 3105 H-28 alloy and temper. Select alloy for optimum finish quality and appearance match with finished extrusions.
 - a. Minimum trim thickness: 1/8 in.
 - b. Minimum flashing thickness: 24 gauge.
3. Roof deck: Roll-formed aluminum, in manufacturer's profile and sheet thickness.
4. Provide aluminum structural supports and bracing in accord with applicable aluminum material and fabrication requirements.

D. Fasteners: Screws, bolts, nuts, and washers shall be 18-8 or 300 series nonmagnetic stainless steel, regardless of its location.

E. Finish: Clear anodized.

2.5 MECHANICAL

A. Fire sprinkler protection:

1. Summary of fire sprinkler protection work:
 - a. Provide a complete automatic water fire sprinkler protection system for portable and mobile buildings designed in accord with NFPA 13 Standard For Installation of Sprinkler Systems, and in accord with Factory Mutual requirements.
 - b. Area/density criteria: 0.20 gpm / ft² at 2,000 ft² area.
 - 1) Pipe fire riser to bottom edge of outside wall of modular building unit for connection in field.
 - 2) Coordinate fire risers with mains.
 - c. The information provided in this Section is presented as a performance standard for the sprinkler system designer and is not intended as a design specification. The sprinkler system designer selected for the project shall design a complete fully approved wet pipe sprinkler system and shall become the engineer of record for the sprinkler system design.
 - d. System description: Provide a total system comprised of, but not limited to, the following components:
 - 1) Cap fire riser inlets.
 - 2) Main shut-off valve.
 - 3) 2 supervised flow switches (to be connected to AM & CS in field) (equivalent to Notifier Series WFD).
 - 4) 165° quick-response recessed header.
 - 5) Main check valve.
 - 6) Main drain valve.

- 7) Pipe: Schedule 40 steel, welded or seamless in accord with ANSI/ASTM A53.
- B. Plumbing: Refer to Division 22 sections elsewhere in the Project Manual
- C. Heating, ventilation and air conditioning: Coordinate with MEP engineer.
- 2.6 ELECTRICAL: Refer to Division 26 Sections elsewhere in this Project Manual
- 2.7 FIRE/SECURITY Coordinate with MEP Engineer

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substructure and conditions under which portable and mobile building units are to be installed and erected. Do not proceed with erection until unsatisfactory conditions have been corrected.
- B. Coordinate concrete flat work and electrical rough-in installations, as required, for proper interface with portable and mobile building units.
- C. Furnish to the job site anchor bolts to be embedded in concrete for anchorage of units to the foundation.

3.2 ERECTION

- A. Erect portable and mobile building units at the designated location on the site, complete and in accord with manufacturer's erection drawings, using good quality workmanship.
- B. Provide field fabrication, and fitting of standard and non-standard components and accessories. Install units on proper foundation pads with screw type tie downs located and in such quantity so as to comply with Federal, State and local codes and regulatory requirements including Factory Mutual requirements for support and wind uplift resistance.
- C. Connect utilities to manifolds or mains sloped to and terminated and capped at locations of (P.O.C.) point of connection indicated on the Drawings. Final connection to utility services shall be performed under another and separate Contract.
- D. Install concrete pads as required for structural support and HVAC unit components. Install and connect HVAC units. Testing shall be performed upon installation of permanent power or with temporary power if available in sufficient capacity and character.
- E. Connect units and finish intersections and laps in accord with manufacturer's standard details. Lap and seal roof membrane in accord with roofing manufacturer's requirements.
- F. Electrically bond units and HVAC units.
- G. Install electrical feeds to HVAC units. Provide external disconnect at each HVAC unit.
- H. Install grounding.

3.3 CLEAN UP

- A. At completion of erection, remove excess materials from site.
- B. Field touch-up scratched and abraded portions of factory finishes.

END OF SECTION 13 3419