SECTION 13 3441

WOOD PORTABLE BUILDINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

 (Note to the Specifier, Architect and Owner: Because there is no on-site labor furnished by the Manufacturer, this is product must be considered "equipment" similar to Walk-In Freezers. Equipment is "covered by the Uniform Commercial Code (UCC) so fraud, early failure and manufacturer's Warranty are addressed as is their "Right to Lien". So project wide subjects like Retainage and Warranty timing are not applicable to "materialmen" on construction projects.

A. Provide a factory made, wood framed, office building(s).

B. Building Construction Type: IBC Type V-B Wood Frame suitable for Class B (Business Occupancy) as well as storage and other occupancies as determined by Code Authorities.

C. This style of building is ready for Owner furnished concrete slab or manufacturer provided wood floor skids to be anchored by the Owner.

1.02 RELATED REQUIREMENTS

A. Owner or Design Professional shall supply to the Manufacturer a detailed list of Building Codes, including Energy, Structural (including live and dead loads,seismic) and wind loads for the occupancy requirements and location (Jurisdiction) for the project. Owner or Design Professional shall ascertain the jurisdiction's submittal requirements such as drawings (building plans elevations and details, site plans needed to obtain a Building Permit. Note: Owner's Design Professional must furnish the Site Plan. Also Owner or Design Professional shall provide time tables (duration) for the jurisdiction to review for a Building Permit. Note: the Owner shall pay all Permit Fees directly to the jurisdiction.

B. Wood Portable Building Manufacturer shall assist the Owner by providing the information needed to assist Code Jurisdictions on obtaining permits necessary for construction and assure the Owner and Jurisdictions that the project will meet all requirements for the proposed occupancy.

1.03 PRICE AND PAYMENT PROCEDURES

A. Amount and payment schedule as negotiated with manufacturer's Project Manager.

 (Note to the Specifier) Per Note above, review Division 1 - General Requirements, like Payment Procedures and other administrative requirements such as Closeout requirements and Submittals. Note that these requirements are written for sub-contractors not equipment suppliers who have no on site labor.

1. Typical Payment Terms: 1/3 Deposit at the time of ordering, with balance due and paid in full when Wood Portable Building is delivered to the job site. Unless other payment procedures have been agreed upon.

1.04 REFERENCE STANDARDS

A. Standard Manufacturer's Wood Frame Building are engineered for California Department of Housing and Community Development (HCD) approved Commercial Modular Buildings. Manufacturer shall have a current license issued by HCD for Commercial Modular Manufacturers.

B. Other Codes that shall be met by manufacturer.

1. CODES: California Title 25 Part 2, for Commercial Modular buildings, which includes, as amended: Title 24, Part 2 (California Building Code 20193 edition, including Disabled Access), Part 3 (California Electrical Code 2019 edition), Part 4 (California Mechanical Code 2019 edition), Part 5 (California Plumbing Code 2019 edition), Part 6 (California Energy Code 2019 edition). 28 CFR Part 36, (Federal American Disability Act, 2010 Standards.

C. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; 2011.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Manufacturer shall furnish a Project Manager to follow the project from order to delivery.

B. Sequencing: Owner shall ensure that utility connections are achieved in an orderly and correct manner for immediate connection of factory made for portable wood framed building upon delivery.

 (Note to the Specifier) This manufacturer is a supplier with no field labor. Like all equipment, portable buildings should be paid 100% FOB at the site. All building equipment (like, Furnaces and Walk-In Freezers) must be paid in full or liens on the property are easily obtained.

1.06 SUBMITTALS

 (Note to the Specifier) Do not reference the Projects Section 01 3000 - Administrative Requirements for several reasons 1) Often they are bought independently by the Owner or General Contractor to avoid "mark-ups" and 2) the UCC requires full payment of equipment upon delivery to the site.

A. Product Data: Wood Portable Building Manufacturer shall provide the following.

1. Owner or Design Professional shall inform the Manufacturer if they prefer electronic submittals (pdf format) or paper submittals.

 (Note to the Specifier) List specific items that are unique like non-standard colors below in Part 2 - Products.

2. Color Chips for exterior and interior paint, describing which items get which colors. Submittals shall include the paint manufacturer's description of the different types of paint used.

3. Roofing Manufacturer, profile, gauge, color and fastener system and perimeter trim.

4. Siding Manufacturer, profile, material, thickness, color and fastener system.

5. Trim: Interior and exterior: material, Profile size and thickness, fasteners and finish.

6. Underlayment: For Roof, walls and floorings (as may be applicable).

7. Light Fixtures: Submit manufacturer's catalog information, including appearance and electrical characteristics.

8. Windows, Doors and Hardware: Provide catalog cuts showing materials, function and appearance. Owner shall tell manufacturer which exterior doors are and are not required for ADA access.

9. Interior Ceilings and Walls: substrate (material and thickness) and finish colors.

10. Structural Systems: State which codes will be met and materials to be used.

B. Shop Drawings: Standard Floor Plans, Elevations, Details, Foundation Plan and Standard Anchor Details Drawing furnished by Manufacturer but all site installation and utility connections are by the Owner. Manufacturer shall work with the Owner for the location of all utility connections and anchor bolt locations as needed for a successful project. The connections will be installed by the Owner.

 **OR**

 (Note to the Specifier) During Design Development the Design Professional will determine if the standard manufactured project will serve the Owner adequately or if custom construction layout or materials will be needed and worth the added expense. So delete above or below paragraphs and modify for project specific drawings needed for review.

C. Shop Drawings: Custom Floor Plans using custom or standard elevations and details drawings both standard and custom) showing custom features negotiated with the Wood Portable Buildings manufacturer.

1. Entry Door

a. Installed with hinges, key lock, weather stripping and threshold as recommended by door manufacturer.

 (Note to the Specifier) State whether entry doors need to be ADA compliant.

2. Exterior Door Hardware and Keying: Manufacturer's standard is 510 C Key.

a. (Note to the Specifier), If door needs to have campus keying cylinders, change above accordingly. However, another way that is often cost effective is to use the manufacturer's standard hardware as "construction keying" and have the commercial hardware supplier for the rest of the campus, change out the hardware on the portable building at a later date.

3. Interior Doors: owner to provide hardware function and if interior door(s) are to be ADA complaint.

D. Manufacturer's Qualification Statement.

E. Specimen Warranty: (unsigned) Manufacturer's Warranty submit with Shop Drawings.

F. Certification: Wood Portable Building shall bear the approval insignia of the California Department of Housing and Community Development (HCD) certifying the design loads, mechanical systems and life safety components.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience and have a state license from California Department of Housing and Community Development for Commercial Modular Manufacturing.

B. Certification: Wood Portable Building shall bear the approval insignia of the California Department of Housing and Community Development (HCD) certifying the design loads, mechanical systems and life safety components.

1.08 WARRANTY

A. Manufacturer's Warranty (and the industry standard) is for one year from date of delivery.

B. Manufacturer shall correct defective Work within a one year period from the date of arrival on site. This is a material and workmanship warranty for normal use. Abuse will not be included in the Warranty.

 (Note to the Specifier): If a longer term warranty is desired, call the manufacturer and discuss the warranty and costs that will, in turn will be built into the cost of the portable building(s).The Design Professional has the duty to communicate with the Owner and portable building manufacturer to build-in the costs of a longer term warranty or other items not normal to the modular industry.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Alan-Pre-Fab Building Corp. 17817 Evelyn Ave, Gardena CA 90248-3735 USA

1. Tel: 1.310.538.0333

2. Email: bandrus@alanprefab.com

B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 INSTALLATION

A. Site Paving Assembly (by Owner):

1. Concrete: 3,000 psi (20.7 MPa) 28 day concrete, 4 inches (100 mm) thick Portland cement, finish as directed by the Owner.

2. Parking Area Pavement: 4,000 psi (27.6 MPa) 28 day concrete, 5 inches (125 mm) thick, 6/6 - 6 x 6 inch mesh reinforcement, wood float finish.

2.03 PRE-FAB SYSTEM

A. Basis of Design Manufacturer: Alan Pre-Fab Building Corporation. Model: Deluxe Office Building.

B. Other Acceptable Manufacturers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Submit history, and HCD license copy if project is in the State of California. Other states have comparable Licensing for factory made structures that are Pre-fabricated in a factory.

a. The Owner and Design Professional shall be the judge on whether the out of state manufacturer is acceptable for this project.

C. Description: Alan Wood Framed Buildings System. Note the components listed below are typically used for this system. Changes by Owner/Design Professional are allowed with price and possibly schedule modifications.

1. Color: To be selected by Design Professional from standard color range of wood portable building manufacturer. Unique colors must be discussed with manufacturer prior to price agreement.

D. Design Criteria: (Site Dependent)

1. Comply with the Code requirements stated in PART 1 of this specification.

2. Floor: 50 PSF Live Load with 2000 pound concentrated load. Wind: 100 MPH Exposure C at 16#/Sq. Ft.PSF wind load minimum. Roof 20 PSF. Seismic: Design Category D. Climate Zone: 00 (site dependent 01-16).

a. Some locations may require higher design loads and therefore larger framing members than described below.

E. Wood Construction Requirements:

1. Wood Construction Materials: Comply with the following standards.

a. PS1 - Construction & Industry Plywood 2009.

b. PS 20 - American Softwood Lumber Standards 2010.

2. Wood Treatment where called for by in the IBC and other applicable Codes:

a. Treated Lumber & Plywood: Comply with Requirements of AMPA U-1 - Use Category System for Wood Treatment determined by use categories, expected service conditions, and specific applications.

1) Fire-Retardant Treated Wood, if used : Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

F. Floor Construction:

1. 2 each 4x6 skids, #2 Douglas Fir pressure treated for ground contact. 2x6 #2 Douglas Fir floor joists, 16” OC. ¾” P&TS Sturd-I-Floor plywood decking, T&G, 5 ply.

G. "No Floor" Style Option:

 Note to the Specifier: Owner shall be providing the concrete floor for this system. Owner needs to hire a Design Professional to assist and help coordinate with the manufacturer.

1. "No floor" type buildings shall use an Owner furnished site poured concrete slab as a floor. The portable building shall use a 4x6 #2 Douglas Fir pressure treated bottom plate under the walls to provide substantial framing member to attach the building to the slab using steel angles or plates. Steel angles, if employed, shall be continuous along the interior walls of the portable building and be lag screwed to the 4x6 member and attached to the concrete slab with concrete wedge anchors per the engineer's design. Steel plates, if employed, shall occur periodically, or 48” OC on the exterior of the building and be lag screwed to the 4x6 member and attached to the concrete slab with concrete wedge anchors or poured in place anchor bolts, per the engineers design. The Owner furnished site plan shall be furnished to the Wood Portable Building manufacturer for assistance with anchoring instructions.

H. Wall Construction:

1. 2x4 standard & better Douglas Fir studs, 16” OC with 2x4 single bottom plate and double top plate. Approved “house wrap” water resistive barrier.

I. Exterior Finish:

1. : 5/8” premium Pine T-111 (303-6) siding with 100% acrylic latex low VOC paint, semi gloss.

 OR

2. 3/8” OSB rated sheathing with 26 gauge ribbed steel siding, HR-36 or Reverse Box Rib, by AEP Span, with cool DuraTech nt finish paint coating system. Two coat, 1 mil thick paint system, composed of a low bake universal primer and a silicone-polyester based topcoat, applied over Zincalume zinc-aluminum coaste steel. Fasteners as recommended by AEP, self tapping, with bonded neoprene, sealing washer.

3. Building and window trim furnished and installed by Manufacturer. However, exterior bottom trim will not be installed and the Owner will need to do this after that anchor bolts are installed and accepted by local code officials as may be required. Owner to install the exterior trim when allowed by the local building official. Trim pieces shipped loose for site installation by Owner.

J. Roof Construction:

1. 2x6 #2 Douglas Fir rafters, 24” OC. ½”:12 minimum slope achieved with 2x tapered sleeper rafter. 1/2” 3ply rated Pine plywood decking (sheathing). ¼” gypsum drywall non-combustible deck. 15# ASTM rated roofing felt 0.024” single piece rolled aluminum roofing, painted white. Rolled roofing shall be fastened 4” OC at edges and 16” OC in two field rows with #14 x 1inch HWH tapping screws with bonded sealing washers. All field screws shall be further sealed with one part urethane caulking.

a. Roofing Membrane Flammability: Class A per ASTM E-108.

b. Aluminum roofing shall be 0.024 inches thick and painted white and rated for 130 miles per hour hold down ability.

K. Exterior Doors:

1. Manufacturer and Style:Tell Manufacturing Telstar Pro, 3’x6’8” 20G HM door with steel frame. 4.5”x4.5” NRP hinges, handicap threshold, full weather stripping. 6”x30” clear tempered glass door lite. Door skin shall be factory painted interior and exterior. Hardware shall be Tell lever passage set (LC2675CTL) and single cylinder deadbolt (DB2051), 26D finish.

a. Hardware: Schlage Key 510-C

b. Optional sizes: 3’x7’ or 6’x6’8” double doors

2. Optional Door Construction:

a. Galvanized steel frame and door. 16 Gauge welded frame with 18G foam insulated door, painted to match siding. 4.5”x4.5” NRP hinges. Sizes2’6”x7’0” to 6’0”x7’0”.

L. Interior Doors:

1. Frame: Timely frame, Brownstone.

2. Door: Legacy walnut, 3' x 6'-8" x 1'-3/8", solid core with two 3-1/2" hinges.

3. Prep: Single prep 2-3/4" BS.

4. Hardware: Tell lever passage LC2675CTL 626, domed floor mounted door stop.

5. Interior Door Options:

a. Door: 3' x 6'-8 x 1-3/4" hollow core with three 4 x 3" hinges.

b. Door: 3' x 6'-8" - 1-3/4" solid core with three 4" x 3" hinges.

c. Hardware: Tell single cylinder deadbolt lock DB2051. (In addition to lever passage).

d. Tell Keyed Lever (In lieu of lever passage and deadbolt).

M. Windows:

1. Madison Windows 4800W White Vinyl sliding windows with ¾” dual glazed Low-E clear glass.

a. Options: Tempered glass one side/both sides. Grey tint. Fixed picture windows (4802W). Single glazed anodized aluminum (3400A), if energy code allows.

 **OR**

2. Windows:

a. International Windows: 6200A Anodized Aluminum windows with ¾” dual glazed Low-E clear glass.

1) Options: Tempered glass one side/both sides. Grey tint. Fixed picture windows (6220A).

N. Insulation:

1. Unfaced fiberglass batt insulation. R-11 floor, R-13 walls, R-21 ceiling. Or as required by Energy Code for situs climate zone.

a. Option: continuous rigid foam insulation for lower U-values (greater energy efficiency).

b. Where occupancy and energy codes allow, (like a storage building, energy code may allow, smaller R-Values that can be used.

O. Interior Finish: Low VOC paint as required by law.

1. Default Walls: 1/4" Minnesota Birch with a rated Flame Spread Rating of 200 or less.

2. Gypsum Wall and ceiling board 5/8 inch at walls and 1/2 inch at ceilings. Another wall option is Prefinished Vinyl wrapped wall board with edges wrapped with vinyl.

3. Interior Wood Trim: windows and floor base trim: Painted brown with Low VOC Acrylic Paint.

4. Flooring: Armstrong 12 x 12 x1/8 Excelon Series, color "sand drift white".

P. Topaz Light Fixtures. SDL4-12-940. Surface mounted with prismatic diffusers. Quantities per Energy Code, at .5 watts/SF for office use. Higher lighting densities as permitted by Energy Code under task lighting conditions.

Q. Cooling and heating units: Manufactured by Friedrich, sized for location and clients' occupancy intentions. KYS12M33 or similar. Through wall room air conditioner / heat pump per CEC approved appliance list. Bolt chassis to wall sleeve to prevent displacement of chassis in transit and for security.

R. All electrical wiring shall be in type MC metallic sheathed cable. Copper conductors, sized per circuit loads and NEC. #14 AWG minimum.

 (Note to the Specifier) The Design Professional should communicate to the Manufacturer the projects Intentions (Like LEED or first cost budget concerns).

2.04 MANUFACTURED UNITS

A. Basis of Design Manufacturer: Alan Pre-Fab (310.538.0333) located in the Gardena, California 90248.

B. Other Acceptable Manufacturers:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Substitutions: See Section 01 6000 - Product Requirements.

 (Note to the Specifier): This section number and name (or very similar ones) are often used for providing "the rules" around whether the Owner and/or Architect want to consider non-specified equals. If this section is not included in the specification it often implies the substitutions will NOT be considered.

PART 3 EXECUTION

3.01 INSTALLERS

A. Owner shall furnish a crane or fork-lift intended for the weight of the Portable Building. Manufacturer will assist the Owner by providing correct minimum lifting capacity and by locating lift points and recommended lifting capacities.

B. Owner will be responsible for having all utility connections in their correct place before portable building is shipped by the manufacturer.

1. Assuring that power lines or other impediments are not in the way is the Owner's responsibility.

3.02 EXAMINATION

A. Verification of Conditions: Verify that portable building is complete and ready for occupancy. Code officials may want to see the anchor bolts before the bottom trim is installed.

3.03 PREPARATION

A. Protection of In-Place Conditions: Owner's full responsibility.

B. Surface Preparation: Manufacture shall prepare modular building at factory for over the highway transportation.

C. Bottom Trim: Will be finished and furnished by manufacturer (and depending on the anchoring system) cut to size and installed by Owner after anchor bolts are secured.

3.04 INSTALLATION

A. Manufacturer shall advise the Owner on the options for removing the Wood Portable Building off the truck and onto the place and utilities that will become the long term home location.

1. The Owner shall arrange for a fork lift or crane to move the wood portable building off the truck to it's long term location.

2. Owner shall prepare a Site Plan in preparation for the arrival of the wood portable building showing power lines, fire hydrants and site access.

3. The wood portable building manufacturer shall identify "pick points" for crane or forklift as will be supplied in the field.

4. The Owner shall work with the wood portable building manufacturer on the exact location and configuration of all utilities to be connected by the Owner.

5. The Owner will install all anchor bolts, style and locations of bolts will be dictated by the manufacturer to meet the local wind and seismic code requirements.

B. Install each item in accordance with component manufacturer's instructions.

3.05 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for additional requirements.

3.06 CLEANING

A. Clean wood portable building before preparing for transit.

B. Prepare building to assure damage free transit.

C. Lock and block (with 2x4's) all doors and windows for transit.

3.07 CLOSEOUT ACTIVITIES

 (Note to the Specifier) Since this entire portable building is looked at as a piece of equipment virtually none of the project wide Closeout Activities apply! Owner's representative needs to assure that everything is clean and ready for occupancy upon delivery, "Close Out" occurs on the date of arrival!

A. Owner's Representative shall inspect the "like new" condition of the structure and components. clean fix and re-paint as necessary for the Owner's occupancy.

1. If problems arise, inform manufacturer by phone and follow up as required.

B. Exterior (roof, walls and windows) shall be washed, as necessary (in the field) and cleaned free of dirt.

1. If problems arise, inform manufacturer by phone and follow up as required.

3.08 PROTECTION

A. Protect installed wood portable building from subsequent construction operations.

B. Do not permit traffic over unprotected floor surface without Owner's consent.

END OF SECTION