

SECTION 13160 MODULAR CLASSROOM BUILDINGS

PART 1 – GENERAL

1.01 SUMMARY

- A. This section describes prefabricated, clear span, permanent modular structures. The prefabricated modular structure shall be erected at the designated site within the State of California, complete and ready for use by Owner. All costs for regulatory approvals, transportation to and installation at the site are to be included in the Bid Amount.
- B. Extent of Prefabricated Modular Structure is shown specified herein.
- C. Definitions:
 - 1. Owner: Waukena Joint Union Elementary School District
 - 2. Architect: The entity contracted with the Owner to design the building structural foundation, site grading, and utility extensions as well as provide the schematic design and specifications of the modular building.
 - 3. Contractor: The entity contracted with the Owner to provide final, structural design of the foundations and modular buildings as well as factory-manufacture the buildings and install the buildings on Owner's site.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and Division-1 apply to work of this section.

1.03 QUALITY ASSURANCE

- A. Qualifications:
 - 1. The bidder must have a current, valid California Class B Contractor's license to perform the work of this contract.
 - 2. Bidders shall give evidence of at least ten (10) consecutive years experience in the construction of modular school buildings in California.
 - 3. All workers shall be skilled and qualified for work which they perform. All material used, unless otherwise specified, shall be new and of the type and grades specified. The Contractor shall, if requested, furnish evidence satisfactory to the architect that such is the case. Contractor's crews assigned to any work performed under this contract shall include one competent and fully experienced person designated as the responsible person in charge.
 - 4. Welding shall be performed only by qualified welders approved by the welding inspector.
- B. Quality Control:
 - 1. Governing Codes: All work and materials shall comply with the requirements of California Code of Regulations Title 24, 2016 Editions (including supplements) of Parts 1-6, Part 11 - CalGreen Code (where applicable), regulations of the State Fire Marshall, and any other applicable state or local laws, ordinances and regulations.

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2. Modular building plans shall be stamped by a professional engineer registered in the State of California, or as otherwise required by governing agency. Structural calculations shall be stamped by a structural engineer registered in the State of California, or as otherwise required by governing agency.
3. The legal entity that manufactures the building modules shall also be their installer; no subcontracting of final installation allowed.
4. Factory Inspection: Inspection of in-plant work shall be provided as required by the Division of the State Architect.

1.04 SUBMITTALS

- A. General: Submit the following according to conditions of contract and Division-1 Specifications Sections.
 1. Pre-Bid Product Data: Submit cut sheets for all products intended for Prefabricated Modular Structure.
 2. Progress Drawings: Submit 100% DD drawings for Prefabricated Modular Structure two weeks after given Notice to Proceed by Owner complete with dimensions and other information needed to verify conformance with design criteria and specifications. Minimum drawings required include floor plans, ceiling plans and exterior elevations.
 3. Samples: For all products or materials involving choices of color, pattern or texture, submit manufacturer's full-range color cards, or actual samples where feasible, for selection by Owner.

1.05 WARRANTY

- A. Contractor unconditionally guarantees that work will be done in accordance with requirements of contract and remain free of defects in workmanship and materials for a period of one (1) year from date of acceptance. Contractor agrees to repair or replace any and all work that may prove to be not in accordance with requirements or contract or that may be defective in workmanship or material within guarantee period, without any expense whatsoever to the district, ordinary wear and tear and abuse or neglect excepted.
- B. Contractor agrees that within fourteen (14) calendar days after being notified in writing by the Owner of any work requiring repair or replacement under warranty, they will commence and prosecute with due diligence all work necessary to fulfill terms of this warranty, and to complete the work within a reasonable period of time.

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2.05 BUILDING DESIGN REQUIREMENTS

A. Building Type:

1. Extent of work is shown on drawings.
2. Modular buildings shall consist of all new prefabricated modules, including roof, walls, windows, finishes, electrical, plumbing, fire protection and mechanical services. Each module shall be slab-on-grade construction or pit-set construction and be engineered by the Contractor as follows:
 - a. A structural steel moment frame and wood shear panel framing system (light gauge, cold-formed primary frames not allowed).
 - b. Dimensions as shown on plans may deviate slightly in order to accommodate an approved structural system.
 - c. Each module shall be capable of resisting all vertical and lateral loads during transportation.
3. Arrange modules as shown on drawings. Components must conform to architectural design appearance shown on plans and requirements specified hereinafter. When modules are assembled, joints shall be covered with same materials as adjacent construction, blended and finished to make joints invisible or inconspicuous.
4. The building contractor shall provide drawings and calculations acceptable to the Architect, meeting the provisions of the California Code of Regulations. Building Contractor shall bear all costs for production of drawings and associated structural calculations. Building Contractor shall make all revisions and corrections to those documents required by DSA, and shall resubmit as required to obtain approvals.
5. The Architect's decisions regarding design aesthetics shall be binding on the Contractor. Basic design loads, as well as auxiliary and collateral loads, are as follows:
 - a. Exterior walls shall be designed to withstand wind loads perpendicular to wall plane equivalent to "Exposure B, 115 mph". This requirement applies to all exterior walls of building section even though configuration of building may be such that some walls are not exposed to wind.
 - b. Roofs: Design live load of 20 psf plus ground snow load of 80 psf. All roofs shall be designed as diaphragms for resisting applied horizontal loads. Building roof shall be sloped for drainage as indicated on plans. Roof framing shall be designed to withstand wind loads equivalent to "Exposure B; 115 mph".
 - c. Design each member to withstand stresses resulting from combinations of loads that produce maximum percentage of actual to allowable stress in that member.

B. Fabrication Criteria:

1. Provide Modular Buildings as produced by a Contractor who is regularly engaged in fabrication and erection of Modular Structures of type and quality indicated.
2. Design prefabricated components and necessary field connections required for erection to permit easy assembly.

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- C. Energy Requirements: Manufacturer shall be responsible for providing and submitting complete energy compliance documentation and calculations as required by California State Energy Code as established by the Energy Efficiency Standards for Buildings as prescribed by the California Energy Commission.
- D. Foundations: The building will be erected on a concrete slab foundation or concrete stem walls, designed by Modular Building Contractor and constructed by the Modular Building Contractor.
- E. Plan Approval Agency Submittal:
 - 1. Contractor's building drawings, standard details, structural calculations and specifications for building assemblies manufactured hereunder shall be submitted to architect for submittal to governing authorities in compliance with governing codes, rules and regulations
 - 2. Contractor shall assist architect as necessary to obtain stamped approval by DSA.
 - 3. Additional drawings and instructions deemed necessary to carry out the work included in Contract shall be supplied to or by the Contractor or so prepared as to be consistent with the Contract Documents.

PART 2 – PRODUCTS

Refer to the following outline specification for product/technical information.

GENERAL	1	Submit intended list of exclusions and inclusions 10 days prior to bid opening for review. No exclusions permitted without permission from the owner.
DIVISION	2	SITEWORK
		No Work
DIVISION	3	CONCRETE
	03210	Reinforcing Steel
		A. Reinforcing for structural concrete.
		B. Steel shall conform to ASTM A-615 grade 60.
		1. #4s & smaller shall be grade 40.
	03300	Structural Concrete Work
		A. Foundations: f'c = 3000 p.s.i.
		B. Slabs: f'c = 3000 p.s.i.
		1. 0.45 maximum water-to-cement ratio.
		2. Membrane vapor barrier over 2" crushed rock over minimum 12" compacted fill.
		3. Under slab treated for termite control.
		4. Provide sealer & curing compound.
		5. Maximum slump shall be 4".
		6. When superplasticizers are used, apply at jobsite after slump test is performed and accepted. Mix per manufacturer's instructions.
		C. Portland cement: Conform to ASTM C150, Type V.
		D. Aggregate: Conform to ASTM C33.

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DIVISION 4 MASONRY

No Work

DIVISION 5 METALS

05100 Structural Steel

- A. Structural framing hardware.
- B. Structural beams, columns, and braces.
- C. Conform to:
 - 1. Rolled shapes: ASTM A-36.
 - 2. Pipe: ASTM A53, type E or S, grade B.
 - 3. Tubes: ASTM A 500 grade B.
 - 4. Electrode: ASTM A233, E70XX series.
 - 5. Bolts & anchors: ASTM A 307 grade A.

05310 Steel Deck

- A. Steel Non-Composition Deck
- B. Qualifications:
 - 1. Welders:
 - a. Currently qualified according to AWS D1.3.
 - 2. Manufacturer:
 - a. Regularly engaged in production of metal decking.
 - 3. Erector:
 - a. Minimum three years experience in erection of metal decking for projects of similar size and difficulty.

05800 Expansion Control

- A. Aluminum:
 - 1. ASTM B221, alloy 6063-T5 for extrusions, and ASTM B 209 alloy 6061-T6 for sheet and plate.
 - 2. Protect aluminum surfaces in contact with cementitious materials with zinc chromate primer or chromate conversion coating.
- B. Exterior Seals:
 - 1. Thermoplastic rubber primary seals extruded in Santoprene, retained in extruded aluminum side frames complete with independent, continuous PVC back seal.
- C. Accessories:
 - 1. Manufacturer's standard anchors, fasteners, set screws, spacers, flexible vapor seals, and filler materials, drain tubes, adhesive, and other accessories compatible with material in contact, as indicated or required for complete installations.
- D. Manufacturers:
 - 1. Conspec Systems, Inc., P.O. Box 380, Muncy, PA;
 - 2. Or approved manufacturer with equal product as specified.

DIVISION 6 WOOD

06100 Rough Carpentry

QUALITY ASSURANCE

- A. Regulatory Compliance:
 - 1. Conform to DSA Interpretation of Regulations and policies.
 - a. Timber Connectors and Fasteners shall be per requirements of CBC

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Section 2304.9.

B. Grade Marking:

1. All timbers, lumber, or other dimensional structural wood products shall be grade-stamped by an agency certified by the Board of Review of the American Lumber Standards Committee (ALS), and manufactured in accordance with current product standard PS 20 as published by the Department of Commerce.
2. Plywood shall be manufactured under the specifications and provisions of US Product Standard PS 1-07.
 - a. Comply with the requirements of American Plywood Association: PRP-108.

C. Lumber shall be:

1. Douglas fir-larch per WCLB grading rule no. 17.
 - (a) Joists & Planks: No. 1, S-dry.
 - (b) Beams & Stringers: Select Structural (FB: 1600).
 - (c) Posts & Timbers: No. 1.
 - (d) Other lumber: Construction grade, S-dry.
 - (e) Plywood Sheathing: Structural I, C-D with exterior glue.

06191 Engineered Wood Product

QUALITY ASSURANCE

A. General:

1. Engineered wood products shall have current model code evaluation/research reports that are acceptable to authorities having jurisdiction and that evidence compliance for the application indicated with specified requirements and the building code in effect for this Project.
 - a. Identification Markings:
 - 1) Each member shall be stamped with an identifying mark showing the ICC-ESR Evaluation Number and the manufacturer logo.

B. Laminated Veneer:

1. Lumber manufactured by laminating wood veneers in a continuous press using an exterior-type adhesive complying with ASTM D2559 to produce members with grain of veneers parallel with their lengths and complying with the following requirements:
 - a. Veneer Characteristics:
 - 1) Douglas fir or southern pine veneers of varying thickness by widths and lengths standard with manufacturer, end-jointed with a tap-joint, butt joint, or scarf joint.

C. Materials:

1. Subject to compliance with requirements, materials that may be incorporated into the work include, but are not limited to, the following:
 - a. Laminated Veneer Lumber:
 1. Headers and beams and studs: MICRO-LAM LVL by Truss Joist Corporation; ICBO number: ER 4979.
 - b. Wood-I-Joist:
 1. Georgia Pacific Corp.;
 2. Louisiana-Pacific Corp.;
 3. TrusJoist/WeyerHaeser.

06192 Manufactured Wood Chord Joists

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- A. Division of the State Architect approved pre-designed wood chord joists (I-joists).
- B. Acceptable manufacturers are as follows:
 - 1. Truss-Joist McMillan.
 - 2. Standard Structures, Inc.

06200 Finish Carpentry

- A. Installation of hollow metal frames; provide additional jamb anchor 6" above bottom of door

DIVISION 7 THERMAL & MOISTURE PROTECTION

07200 Insulation

- A. Fiberglass Batt Thermal Insulation:
 - 1. Wall insulation:
 - (a) Exterior walls: R-19
 - 2. Ceiling insulation:
 - (a) Attic: R-38
- B. Semi-rigid Mineral Fiber Sound Attenuation Batt:
 - 1. Sound batt installed where indicated on Drawings.
 - (a) Sound walls: R-11

07400 Preformed Metal Roofing

- A. 24 gauge preformed metal roofing:
 - 1. Minimum five (5) year weather tightness guarantee is required from the installation contractor.
 - 2. Work shall conform to the standards set forth in the SMACNA Architectural Sheet Metal Manual.
 - 3. Finish:
 - (a) Oven cured, 1 mil thick, fluoropolymer coating.
 - (1) KYNAR 500 or equal.
 - (2) Custom color as selected by Architect.
 - (3) Minimum twenty (20) year finish guarantee is required from the roofing manufacturer.
- B. Warranty:
 - 1. Manufacturer:
 - a. Twenty (20) year paint finish guarantee.
 - 2. Installation Contractor:
 - a. Five (5) year weather tightness guarantee.

07600 Sheet Metal Work

- A. Quality Control – Field Testing:
 - 1. Running or standing water testing may be required of the work of this Section to demonstrate water tightness of work.
 - 2. Use full lengths of material to minimize the number of joints.
 - 3. Sheet metal and accessories shall be left free of dirt, grease, acids, or other compounds which may inhibit the proper bonding of paint finishes.

07900 Joint Sealants

- A. Building related sealant and caulking;
 - 1. Sealant around door, window and louver frames.
- B. Joint primer and filler;
- C. Interior sealant and/or caulking required to prevent passage of moisture into wall assemblies or behind fixtures and built-in furnishings;

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1. Caulking of wall openings around all toilet accessories.
- D. Acoustical Sealant
- E. Intumescent fire stopping.
 1. Intumescent material for sealing holes or voids in fire rated floors and walls.
 2. Joint sealing system for sealant joints in fire rated concrete walls.

QUALITY ASSURANCE

- A. Warranty:
 1. Provide a written guarantee to maintain sealant/caulking in a watertight condition for a minimum period of 2 years.
- B. Qualifications:
 1. Installer shall be thoroughly trained and experienced in the necessary skills required to perform this work.
- C. Delivery, Storage, and Handling:
 1. Deliver materials to the jobsite in original, unopened containers with labels intact.
 2. Store only under conditions recommended by the manufacturers.
 1. Remove and dispose of material that has exceeded the shelf life recommended by its manufacturer.

DIVISION 8 DOORS AND WINDOWS

08110 Hollow Metal Doors & Frames

- A. 16 gauge steel extra heavy duty seamless doors.
 1. Exterior doors shall be prepped for painting.
 2. Reinforced with internal channels:
 - (a) 12 gauge at top of door for closer.
 - (b) 16 gauge at sides and bottom of door.
- B. 14 gauge steel welded corner frames.
 1. Exterior frames shall be galvanized.
 2. Heavy-duty anchor clips. Provide extra clip 6" from bottom of hollow metal doors.
- C. Warranty:
 1. Steel doors and frames supplied with a one (1) year warranty against defects in materials and workmanship.

08210 Wood Doors

GENERAL

- A. Wood doors will be used on interior openings only.
 1. Doors shall be premium quality, 1-3/4" thick, flush type, particleboard core.
 - (a) Stiles shall be 1-1/2" wide hardwood or fire treated Douglas Fir.
 - (b) Rails shall be 2-1/4" wide.
 - (1) 3/4" minimum shall be hardwood.
 - (c) Core adhesive shall be type II minimum.
 - (d) Face adhesive shall be type I minimum.
 2. Veneer shall be plain sliced AWI grade-1 facing veneer of natural book matched White Birch.
 - (a) Provide veneer with minimal color variation throughout.
 - (1) Premium quality, solid core.
 - (2) Stain grade natural birch veneer.
 3. Finish shall be factory applied stain finish.

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QUALITY ASSURANCE

A. General:

1. Wood door supplier to be a qualified direct distributor of products to be furnished. In addition, the distributor is to have in their regular employment an AHC/CDC, or person of equivalent experience, who is to be made available at reasonable times to consult with the Architect, Contractor, and/or Owner regarding any matters affecting the wood doors in this project.
2. When hanging doors, do not subject them to extremes of heat and/or humid conditions. Relative humidity shall not be less than 30% or more than 60%.

B. Conformance:

1. Obtain doors from a single manufacturer to ensure uniformity in quality of appearance and construction. All material supplied for this project to conform to NWWDA/WDMA IS 1-A for premium grade wood doors.
2. Installation shall meet the minimum standards set forth in WI Manual of Millwork, as modified by this Section.
 - a. Provide a WI Certified Compliance Certificate for Installation at the completion of project installation.

C. Warranty:

1. Wood Doors:

- a. Submit written warranty on manufacturer's standard form signed by an official of the door manufacturer agreeing to repair or replace defective doors which have:
 - 1) Delamination in any degree.
 - 2) Warp or twist of 1/4 inch or more in any 3 foot 6 inch by 7 foot plane of door face.
 - 3) Telegraphing of stile, rail, or core through face to cause surface variation in excess of 1/100 inch in any 3 inch span.
 - b. Warranty to be in effect for life of the original installation.
 - c. Warranty to include refinishing and reinstallation that may be required due to repair or replacement of defective doors.
 - d. Warranty not to be in effect for any field-finished doors not having been sealed properly on all edges and faces.
- ##### **2. Installation:**
- a. Contractor shall warranty door installation for a period of one (2) years.

08305 Access Doors

A. Factory finished steel access doors.

1. Use master key compatible key lock on exterior access doors.
2. Use cam lock for interior access doors.
3. Mount door on 175 degree minimum swing hinges with removable pins.
4. Doors shall receive a baked-on factory primer coat.
5. Final finish shall be field-applied as specified in Section 09900 Painting.

08522 Aluminum Windows

Quality Standard:

1. Torrance Aluminum 2000 series with 1" outside glazing unit.
 2. Columbia C-2050 series (projected) and C-2000 series (fixed)
- ##### **A. Nail-in aluminum window frames with 1" double pane thermal glazing.**
1. Frames shall have integral plaster stop where applicable.
 2. Inward projecting hopper type units where indicated.
 - (a) Pole operation of latch for high windows.

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- B. Vertical Sliding Service Windows
 - 1. Vertical sliding serving window with sliding screen for installation between mullions.
- C. Warranty:
 - 1. One year guarantee of thermal and physical integrity of insulated glass units.

08625 Tubular Skylights

QUALITY ASSURANCE

- A. The work in this Section, including design, engineering, fabrication, and glazing and erection shall be the responsibility of the skylight manufacturer. The skylight manufacturer shall have been regularly engaged in the specialized type of work for at least 10 years and have satisfactorily completed projects of a similar scope.
- A. A complete skylight assembly that is weather tight and air tight.
 - 1. Electrically operated to control light.
 - 2. Solatube or approved equal
- B. Warranty:
 - 1. Certify that skylight system will remain free from defects in material and workmanship, and remain free of leakage for a period of two (2) years from the date of substantial completion.

08710 Finish Hardware

- A. Finish Door Hardware
 - 1. Classrooms:
 - (a) Exterior: Pull Plate
 - (b) Interior: Lever handle lockset with keyed hold back/locking cylinder.
 - (c) Door mounted closer.
 - (d) Door stop & door holder.
 - 2. Other Buildings:
 - (a) Panic hardware with exterior pull plate.
 - (b) Door stop & door holder.
- B. Door closers and latch hardware shall be attached with sex bolts.
- C. Lockset shall be keyed to the District's grand master, master system.
- D. Provide master keyed compatible padlocks for site gates.
- E. Doorstops shall be three-screw type.
- F. Warranty:
 - 1. Part of respective manufacturers' regular terms of sale. Provide manufacturers' written warranties:
 - a. Locksets: Three years.
 - b. Extra Heavy Duty Cylindrical Lock: Seven Years
 - c. Exit Devices: Three years.
 - d. Closers: Ten years mechanical, two years electrical.
 - e. Hinges: Life of Building.
 - f. Other Hardware: Two years.
- G. HARDWARE SETS
 - 1. Exterior Door with Panic Hardware:
 - 1 EA CONTINUOUS HINGE 700 630 IVE
 - 1 EA PANIC HARDWARE AXCD98NL-OP 626 VON
 - 1 EA RIM CYLINDER 20-057-ICX (SPECIFY A, B OR C) 626 SCH
 - 1 EA MORTISE CYLINDER 20-061 ICX XQ11-948 (DOGGING) 626 SCH
 - 2 EA CORE ONLY 23-030 626 SCH

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- 1 EA DOOR PULL VR910NL 630 IVE
 - 1 EA SURFACE CLOSER 4111 H EDA 689 LCN
 - 1 EA KICK PLATE 8400 10" X 2" LDW 630 IVE
 - 1 EA FLOOR STOP FS18S BLK IVE
 - 2 EA JAMB SEALS 700ES CL NGP
 - 1 EA HEAD SEAL 700SA CL NGP
 - 1 EA DOOR SWEEP 200NA CL NGP
 - 1 EA THRESHOLD 613 MS/LA AL NGP
2. Exterior Door without Panic Hardware:
- 1 EA CONTINUOUS HINGE 700 630 IVE
 - 1 EA CLASSROOM LOCK L9077T 06A X L/OST X L283-150 626 SCH
 - 2 EA CORE ONLY 23-030 626 SCH
 - 1 EA DOOR PULL VR900 630 IVE
 - 1 EA SURFACE CLOSER 4111 H EDA 689 LCN
 - 1 EA KICK PLATE 8400 10" X 2" LDW 630 IVE
 - 1 EA FLOOR STOP FS18S BLK IVE
 - 2 EA JAMB SEALS 700ES CL NGP
 - 1 EA HEAD SEAL 700SA CL NGP
 - 1 EA DOOR SWEEP 200NA CL NGP
 - 1 EA THRESHOLD 613 MS/LA AL NGP
3. Interior Office Door:
- 3 EA HINGE 5BB1 4.5 X 4.5 652 IVE
 - 1 EA OFFICE LOCK ND91TD RHO 626 SCH
 - 1 EA CORE ONLY 23-030 626 SCH
 - 1 EA KICK PLATE 8400 10" X 2" LDW 630 IVE
 - 1 EA WALL STOP WS401CCV 626 IVE
 - 3 EA SILENCER SR64 GRY IVE

Abbreviations:

IVE H B Ives Co.

LCN Door Controls

NGP National Guard Products

SCH Schlage Lock Co.

VON Von Duprin

08800 Glass and Glazing

QUALITY ASSURANCE

A. Regulatory Compliance:

- 1. Fire-rated glass shall comply with the requirements of the California Building Code (CBC) and Division of the State Architect (DSA) including, but not limited to, the following:
 - a. CBC Section 2406.1 - Human Impact Loads:
 - 1) Individual glazed areas in hazardous locations, including glazing used in fire assemblies shall pass the test requirements of CPSC 16 CFR Part 1201, or CBC Table 2406.2(2).
- B. Double Pane Glazing (1" insulated glazing Low E unit): Visual light transmission of 35%, Solar Heat Gain Coefficient (SHGC) of the glazing assembly shall be 0.24 or less:
 - 1. Exterior Glazing:
 - a. Polished Plate Glass PPG Solargray with Solarban 60 on airspace side. Visual light transmission of 35%, Solar Heat Gain Coefficient (SHGC) when measured at the center of the glazing assembly shall be 0.24 or less.

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- 1) Tempered or non-tempered as indicated on Drawings.
2. Air Space shall be 1/2" sealed.
3. Interior Glazing:
 - a. Polished 1/4" Clear Float Plate Glass.
 - 1) Tempered or non-tempered as indicated on Drawings.
4. Perimeter Seal:
 - a. Butyl primary seal on each side of metal spacer with structural adhesive grade silicone secondary seal.

DIVISION 9 FINISHES

09200 Exterior Lathing and Plastering

QUALITY ASSURANCE

- A. Regulatory Compliance:
1. Lathing and plastering shall conform to California Building Code, Chapter 25.
 2. As per CBC, installation shall conform with ASTM C926 and ASTM C1063, except as modified by this specification.
 - a. Where conflicts occur between this specification and the referenced ASTM, then the most stringent application applies.

Warranty:

1. Manufacturer shall warranty the finish coat for a period of five years.
2. Contractor shall patch and repair plaster cracks larger than 1/32" in width that appear within the first year after acceptance.

ASSEMBLY SCHEDULE

(Use the following materials in the following locations unless otherwise noted)

<u>Location</u>	<u>Plaster</u>	<u>Backing</u>
Plaster walls	7/8" Cement Plaster	WRB, Paper, and Wire Mesh
Plaster soffits	3/4" Cement Plaster	Expanded Metal Lath
Setting bed for ceramic tile Metal Lath	3/4" Cement Plaster	WRB, Paper, and Expanded

B. CURING SCHEDULE

<u>Curing Coat</u>	<u>Moisture Cure Period</u>	<u>Cure Time Between Coat</u>
Scratch coat	24 hours	1 day minimum
Brown coat	48 hours	14 days minimum
Finish coat	Per Manufacturer	

09260 Gypsum Wall Board

- A. Interior gypsum board finishes and backing boards.
1. Type "X" in areas requiring fire rated construction.
 2. Abuse-resistant gypsum fiber panels where indicated on Drawings.
- B. Manufacturers:
1. US Gypsum Co.;
 2. Gold Bond;
 3. Georgia-Pacific
 3. Other approved equal.

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09510 Acoustic Ceilings

QUALITY ASSURANCE

- A. Regulatory Compliance:
 - 1. Materials must meet the standard set by the State of California for environmental protection and hazardous material content.
 - 2. Comply with all requirements of Division of State Architect (DSA).
 - a. DSA Interpretation of Regulations (IR)25-5.
 - b. Qualified ICC-ER/ESR reports of submitted systems.
- B. Suspended acoustic ceilings shall be heavy duty T-bar grid.
 - 1. Standard white color.
- C. Acoustic tiles shall be 2'x 4' fissured typical.
 - 1. 2' x 2' tegular acoustic tiles as indicated on Drawings.
- D. Manufacturers:
 - 1. Suspension System:
 - a. Chicago Metallic;
 - b. Donn;
 - c. Armstrong World Industries.
 - d. Substitutions must demonstrate structural equivalency and must be submitted as a no cost change order and must be approved by the Division of the State Architect, Structural Safety Section, and the Structural Engineer of Record.
 - 1. Acoustic Tiles and Panels:
 - a. Armstrong;
 - b. USG;
 - c. Or approved equal.

09650 Resilient Floor Covering

QUALITY ASSURANCE

- A. Regulatory Compliance:
 - 1. Static Coefficient of Friction:
 - a. Resilient flooring to have minimum coefficient of friction of at least 0.6.
 - 1) Test shall be based on ASTM D2047 James Slip Test, Shoe Material – Official Test Leather.
 - 2. Flammability:
 - a. ASTM E648.
 - b. ASTM E662.
 - 3. Material Fabrication:
 - a. Vinyl Composition Tile:
 - 1) ASTM F1066, Class 2 – through pattern.
 - b. Vinyl Composition Sheet:
 - 1) ASTM F1303, Type II, Grade 1, Class A backing.
 - c. Linoleum Tile or Sheet:
 - 1) ASTM F 2034, Type I.
 - 4. Health:
 - a. ASTM D2859.
- B. Warranty:
 - 1. Contractor's 1-year per General Conditions.
 - 2. Manufacturer's 7-year warranty on welded seam resilient sheet flooring.
- A. Vinyl Composition Tiles:

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- A. Nominal total thickness of 1/8 inch, 12" x 12", composed of polyvinyl chloride resin binder, plasticizers, fillers, and pigments with colors and texture dispersed uniformly throughout its thickness.
 - B. Sheet Vinyl Flooring:
 - A. 72 inches wide, having a nominal total thickness of 0.085 inch. The wear surface shall be composed of polyvinyl chloride resin, stabilizers, fillers, and pigments with a nominal thickness of 0.050 inches consisting of granular visual with a subtle surface texture. Vinyl granules shall extend through the thickness of the wear layer.
 - C. Rubber Base:
 - A. 4" height typical.
 - B. Stair base at steps.
- 09681 Broadloom Woven Carpeting
- A. Carpet
 - 1. 26 ounce 100% solution dyed non-branded nylon looped carpet.
 - (a) Moisture barrier coated backing.
 - (b) Cushion backed where indicated.
 - B. Entry Mat
 - 1. 24 ounce 100% solution dyed polypropylene needle punch textile mat.
 - C. Warranty:
 - 1. 1-year per General Conditions.
 - 2. Lifetime manufacturer's warranty for the following:
 - a. Texture Retention;
 - b. Zippering;
 - c. Edge Ravel;
 - d. Delamination;
 - e. Wear;
 - f. Permanent Stain Warranty;
 - g. 25 lb. minimum Tuft Bind.
- 09900 Painting

QUALITY CONTROL

- A. Tolerances:
 - 1. No holidays, sags, runs, crawls, brush marks, or other blemishes.
 - 2. All primers and finish coats shall be applied at manufacturer's recommended spread rates to produce manufacturer's recommended dry film thickness per coat.

PAINT SCHEDULE (Based on Dunn-Edwards Paints, or Glidden Professional)

- A. **Exterior Work:**
 - 1. Wood Work:
 - a. Painted Satin Finish:
 - 1) Back Prime:
 - (a) One coat: Exterior Acrylic Primer, EZ Prime Premium (EZPROO); Glidden 6001 Hydrosealer)
 - 2) 1st coat:
 - (a) Smooth/Rough Sawn Wood and Siding,
 - (1) Exterior Acrylic Wood Primer, EZ Prime Premium (EZPROO); Glidden 6001 Hydrosealer)
 - (b) Synthetic Wood and Siding:
 - (1) Multi-Purpose Acrylic Primer, Ultra-Grip Premium (UGPROO); Glidden 6001 Hydroseal
 - 3) 2nd coat: Acrylic Low Sheen Paint, D.E. Spartashield (SSHL40);

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- Glidden 2402V
- 4) 3rd coat: Acrylic Low Sheen Paint, D.E. Spartashield (SSHHL40); Glidden 2402V
- b. Stained Finish:
 - 1) 1st coat: Alkyd interior wiping oil stain, Stainseal (V-QYB);
 - 2) 2nd coat: Acrylic Polyurethane, Semi-Gloss Cabot Waterborne Polyurethane 8087-1.
 - 3) 3rd coat Same as 2nd coat.
- 2. Metal Work:
 - a. Ferrous Metal (structural steel and uncoated ferrous metals):
 - 1) 1st coat (shop primed): Red Oxide Alkyd Primer by Section 05740.
 - 2) 1st coat: Bloc-Rust Premium (BRPOO) alkyd primer, or Devflex 4020PF
 - 3) 2nd coat: Exterior 100% Acrylic Semi-Gloss, DE Spartashield (SSHL50), Glidden 2406V.
 - 4) 3rd coat: Exterior 100% Acrylic Semi-Gloss, Spartaglo (W 7500V).
 - b. Metal Trim and Hollow Metal Doors and Frames:
 - 1) 1st coat: Galvanized per section 08110
 - 2) 2nd coat: Galvanize etching per section 08110.
 - 3) 3rd coat: Alkyd Primer by Section 08110.
 - (a) When "Shop Primed," only touch up primer, Devoe 4020PF.
 - (b) Onsite solvent cleaning per SSPC-SP 1 requirements
 - 4) 4th coat: DTM Acrylic Enamel Semi-Gloss, Carboline Carbocrylic #3359 MC, Devflex 4216L S/G.
 - 5) 5th coat: DTM Acrylic Enamel Semi-Gloss, Carboline Carbocrylic #3359 MC; Devflex 4216L S/G.
 - f. Galvanized Metal Work:
 - 1) 1st coat: Chemical Etch, Galv-Etch (GE 123).
 - 2) 2nd coat: Epoxy Ester, Galv-Alum Premium (GAPROO) Interior/Exterior Non-Ferrous Metal Primer, Devoe 4020 PF.
 - 3) 3rd coat: Exterior 100% Acrylic Semi-Gloss, Carboline Carbocrylic #3359 MC; Devflex 4216L S/G.
 - 4) 4th coat: Exterior 100% Acrylic Semi-Gloss, Carboline Carbocrylic #3359 MC; Devflex 4216L S/G.
- 3. Mechanical Equipment:
 - a. Duct Work and Miscellaneous Equipment:
 - 1) As per Ferrous or Non-Ferrous metal listed above, as applicable.
- B. Interior Work:**
 - 1. Wood Work:
 - a. Painted Finish:
 - 1) 1st coat: Interior Acrylic Enamel Undercoat, INTER-KOTE (W 6325); Glidden 1000 or 3210.
 - 2) 2nd coat: Acrylic Low Sheen Paint, Spartashield SSHL40; Glidden 1403V.
 - 3) 3rd coat: Acrylic Low Sheen Paint, Spartashield SSHL40; Glidden 1403V.
 - b. Stained Finish:
 - 1) 1st coat: Sanding Sealer, Glidden 1916 Wood Pride;
 - (a) Omit sanding sealer if wood is to be stained
 - 2) 1st coat: Alkyd interior wiping oil stain, Stainseal (V-QYB); Glidden 1700V
 - 3) 2nd coat: Polyurethane Gloss Varnish, Glidden 1808 Wood Pride.
 - 4) 3rd coat: Polyurethane Gloss Varnish, Glidden 1808 Wood Pride.
 - c. Clear Lacquer Finish:
 - 1) 1st coat: Clear Lacquer Sanding Sealer, ZAR Stain.

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- 2) 2nd coat: Nitrocellulose High Solid Clear Lacquer.
Contractors Edge Production Clear Lacquer, 60 Sheen; or
GEMINI 275 VOC Clear Laquer
- 3) 3rd coat: Nitrocellulose High Solid Clear Lacquer.
Contractors Edge Production Clear Lacquer, 60 Sheen; or
GEMINI 275 VOC Clear Lacquer
- 2. Metal:
 - a. Metal Trim, Metal Doors, and Frames:
 - 1) Same as for exterior painting above
 - 3. Wall and Ceiling Finishes - General Use Areas (eggshell):
- C. Manufacturers:
 - 1. Dunn Edwards.
 - 2. Benjamin Moore;
 - 3. Sherwin Williams;
 - 4. Glidden Professional

DIVISION 10 SPECIALTIES

10100 Liquid Marker Boards and Tack Boards

MATERIALS

- A. Liquid Marker System Boards:
 - 1. Face Sheet: 24 magnetized gauge porcelain enameled sheet metal finish.
 - 2. Core Material: 3/8" Particle Board.
 - 3. Panel Backing: 0.005" Aluminum Foil Panel.
 - 4. Frame with extruded aluminum channel trim:
 - a. 0.50 thick with 5/8" legs.
 - b. Miter corners.
 - c. Clear anodized.
 - 5. Panel Size: 4'-0" high x 8'-0" long typical unless noted otherwise on Drawings.

Tackboard:

- 1. Tackboard Surface: Vinyl fabric on 7/32" cork underlay with 1/4" hardboard back.
 - 2. Frame with extruded aluminum channel trim:
 - a. 0.50 thick with 5/8" legs.
 - b. Miter corners.
 - c. Clear anodized.
 - 3. Panel Size: 4'-0" high x 8'-0" long typical unless noted otherwise on Drawings.
 - 4. Panel Color: Vinyl covering shall match the covering listed in the Vinyl Covered Fiberboard (VCF) section of these specifications in areas with VCF, and/or shall match the Vinyl Wallcovering in its section of these specifications to match the corresponding surrounding areas.
 - 5. Design Standard:
 - a. Claridge Factory Built Tackboards.
- A. Manufacturers:
 - 1. Liquid Marker Boards and Tackboards:
 - a. Polyvision;
 - b. Lemco;
 - c. Claridge;
 - d. Or approved equal.

10400 Metal Letters and Plaques:

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- A. Building Identification Signs.
 - 1. 10" Helvetica painted letters and/or numbers on 16 gauge metal base, painted in a contrasting color.
- B. Dimensional Letters.
 - 1. 10" Helvetica cast aluminum letters with baked enamel finish.
- C. Manufacturers:
 - 1. Individual Cast Metal Letters:
 - a. Matthews International Corporation;

10520 Fire Extinguishers, Cabinets & Accessories

- A. Fire extinguishers shall be dry chemical type as shown:
 - 1. FE1 Recessed 4A:60B:C
 - 2. FE2 Semi-recessed 4A:60B:C
 - 3. FE3 Wall hung, w/ strap 2A:10B:C
 - 4. FE4 Wall hung, w/ strap 2A:1B:C:K (Class K)
 - (a) For Cafeteria Kitchen.
- B. Fire extinguisher cabinets shall be constructed of 18 gauge minimum thickness material.
 - 1. Cabinet, flange and door construction shall be welded with welds ground smooth.
 - 2. Factory finish white baked on enamel.
 - 3. Cabinet doors shall be clear acrylic type with hollow steel frame.
 - (a) Use continuous piano hinge assembly.
 - (b) Door shall open 180 degrees.
- C. Manufacturers:
 - 1. Potter-Roemer;
 - 2. Standard Fire-West;
 - 3. J. L. Industries;
 - 4. Larsen's Manufacturing Co.;
 - 5. Or equal.

DIVISION 11 EQUIPMENT

No Work

DIVISION 12 FURNISHINGS

No Work

DIVISION 13 SPECIAL CONSTRUCTION

Refer to requirements in this section.

DIVISION 14 CONVEYING SYSTEMS

No Work

DIVISION 15 MECHANICAL

15100 General Mechanical Requirements

- A. Codes and standards:
 - 1. Comply with applicable codes.
 - 2. Comply with the requirements of local utility companies.
- B. Permits and Fees:
 - 1. Contractor to pay for required permits & fees.

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- C. Definitions:
 - 1. Piping
 - 2. Equipment
- D. Guarantees:
 - 1. Submittal of manufacturer's warranties.
- E. Coordination of Trades:
 - 1. Electrical Work.
- F. Cleaning, Testing and Adjusting:
 - 1. Contractor shall pay for all required testing and adjustments required.

15800 Heating, Ventilation, and Air Conditioning

- A. Scope of Work.
- B. Materials:
 - 1. Ductwork and accessories:
 - (a) General:
 - (1) Construction per CMC Chapter 10 and SMACNA manuals.
 - (b) Rectangular Ducts:
 - (1) Fabricated and supported per CMC tables 10A and 10E.
 - (2) Ells shall have air foil type turning vanes.
 - (c) Round Ducts:
 - (1) Galvanized:
 - (i) United McGill "Uni-Rib" spiral lockseam.
 - (ii) 8" diameter or less - use Noll or Young snap-lock.
 - (d) Duct Joints:
 - (1) Rectangular:
 - (i) "S & Drive" clips.
 - (ii) Ducts 18" and larger - "Ductmate 25/35" factory fabricated duct joints.
 - (2) Round:
 - (i) Male - Female slip joints with a minimum of (3) sheet metal screws.
 - (e) Flexible Duct:
 - (1) Limited to last seven feet of branch duct run-outs.
 - (i) J.P. Lamborn Type APF-07;
 - (ii) Thermaflex M-RE.
 - 2. Grilles and Diffusers.
 - 3. Insulation.
 - 4. Vibration isolators:
 - (a) Spring rail curb type, OSHPD pre-approved.
- C. Equipment:
 - 1. Rooftop-mounted dual pack heating & air-conditioning units.
 - (a) High efficiency type with economizers.
 - 2. "American Standard" or equivalent.

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- D. Installation:
 - 1. Ductwork.
 - 2. Equipment.
 - 3. System air balance.

- 15950 Facility Management System
 - A. Scope of Work:
 - 1. Control HVAC systems & equipment.
 - 2. Remotely monitored and changeable.
 - 3. System shall be compatible with districts current EMS system.
 - B. Materials.
 - C. Installation.

DIVISION 16 ELECTRICAL

- 16010 General Electrical Conditions
- 16050 Basic Electrical Materials and Methods
- 16400 Service and Distribution
 - A. Electrical power distribution system.
 - B. All connections shall be made above ground level.
- 16500 Lighting
 - A. Classrooms - Energy Efficient LED:
 - 1. Motion detector, photocell and dimmer controlled.
 - B. Exterior Lighting:
 - 1. Lighting control panel automatic controls.
- 16721 Fire Detection and Communication System
 - A. Fire alarm system in compliance with State Fire Marshal Regulations.
 - B. All wire connections shall be made above ground level.
 - C. Voice Evacuation System integrated to FA
- 16727 Intrusion Detection and Alarm System
 - A. Provide conduit, boxes, and backboards for security alarm system that will be provided and installed by owner.
 - B. Provide and install surveillance camera dome accents
 - C. All wire connections shall be made above ground level.
- 16780 Integrated Voice, Program and Multimedia System
 - A. Room-to-room communication.
 - B. Controlled access to outside phone lines through I.C. system handsets.
 - C. Portscell Voice Lift System: Red cet or equal.
 - D. Distribution of locally originated video throughout campus.
 - E. All wire connections shall be made above ground level.
 - F. Battery clocks.
 - G. Data, telephone outlet per plan.
 - H. Short throw projectors in classrooms.
 - I. Ceiling projector in multipurpose.

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2.01 GENERAL - Refer to individual specification sections for technical information.

PART 3 – EXECUTION

3.01 COORDINATION AND EXAMINATION

- A. It is the Contractor's responsibility to make all necessary prior arrangements with the Owner's authorized representative for access to building site and removal of obstructions, if necessary. Contractor shall bear all costs related to delivery of building modules to site. Provide Owner with a plan of proposed property entry point and path of travel to the building site for approval at least two weeks prior to delivery. Notify Architect and Owner at least 48 hours prior to delivery of modules on site.
- B. The Contractor shall verify that the building site and foundation is ready to receive the building prior to transportation of any modules by visiting and inspecting the site.
- C. Report any unacceptable conditions to the Architect. Do not deliver any building modules until unacceptable conditions have been corrected.
- D. Coordinate and cooperate with the Site Contractor to prevent conflicts between the separate portions of work.

3.02 PROTECTION

- A. Protect Owner's property, facilities and utilities from damage during transportation and erection of building modules. Repair or replace any damage to satisfaction of Owner.

3.03 INSTALLATION AT SITE

- B. Site Construction: Once delivery of modules is made, erection shall commence immediately and be pursued in a timely and continuous manner until complete. All modules called for at that site shall be scheduled for delivery and erection in one continuous time frame.
- C. Construction Progress: The Contractor shall furnish materials, articles and equipment in ample quantities and at such times as to assure uninterrupted progress of the work. Failure to provide adequate working force, or material of proper quality, or failure in any other respect to prosecute the work with diligence and force specified herein are grounds for declaring a default on the contract.
- D. Set building modules plumb, level and square; straight and true to line with foundation.
- E. Site Security: Security of the buildings against vandalism is the sole responsibility of the Site Contractor until completion and structures have been accepted by the Owner.
- F. On-site Inspection: Arrange for inspections of work on-site by DSA as required by that agency. Submit copies of inspection reports to Architect and Owner.

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3.04 CLEAN UP AND ADJUSTING

- G. The adjacent site and the structures shall be cleaned and made ready for occupancy prior to acceptance by the Owners.
- H. Test and adjust controls and operating functions as required by appropriate specification section. Repair or replace any damaged or malfunctioning hardware, fixtures, equipment or controls.

3.05 UTILITY HOOK-UPS

- I. Utility Connections: All utility connection points shall be located per the approved drawings to accommodate hook-ups provided at the site. Unless otherwise noted, extend utility connections (five) 5 feet from building and terminate with appropriate temporary closures. Final utility connections are by the Site Contractor.

3.06 OWNER INSTRUCTION AND DOCUMENTATION

- A. Provide instruction to Owner's designated personnel in operation and maintenance of all equipment, fixtures and utilities included in the modular building as stipulated in appropriate specification sections.
- B. Deliver operating manuals, parts lists and warranties for all equipment and fixtures in modular building to Owner or as stipulated by commissioning agent.
- C. Provide Owner with final certificate of occupancy from authorities having jurisdiction.

END OF SECTION 13160