

## **SECTION 13 34 23 PRE-ENGINEERED MODULAR BUILDINGS**

### **PART 1 GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of this Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Contract Documents:
  - 1. Review all contract documents thoroughly prior to bid.
  - 2. LUSD standards – matrix
  - 3. Products listed are from the District Standards

#### **1.2 SUMMARY**

- A. This Section includes but is not limited to:
  - 1. Pre-engineered, steel frame, clear span modular buildings, fully code-compliant, complete and ready for use.
  - 2. Design buildings, size components to meet performance requirements indicated, coordinate systems to avoid conflicts, and provide all elements necessary to conform to the requirements of this specification and complete the project for occupancy and use subject to all requirements and prevailing codes.
  - 3. Slab on grade or lifted concrete stem wall foundation and/or flush to grade.
  - 4. Transportation from the factory to the site, erection, installation, and finishing at the site including all materials, equipment, and operations described in the Contract Documents.
  - 5. Connection of site utilities.
  - 6. Connection to fire alarm system.
  - 7. Connection to communications.
  - 8. Coordinate all finishes, equipment, materials and hardware with District Standards Prior to construction.
- B. Related Sections:
  - 1. Section 13 34 23.01: Pre-Engineered Modular Building - Matrix
  - 2. Other related work is specified in pertinent sections elsewhere in the Contract Documents and may or not be noted in this Section.
- C. Attachments: Geotechnical Engineering and Geologic Hazards Study.

#### **1.3 REFERENCE STANDARDS:**

- 1. AISC 5335 Specification for Structural Steel Buildings Allowable Stress Design, Plastic Design; American Institute of Steel Construction, Inc.
  - 2. 2022 California Building Code (CBC).
  - 3. Division of the State Architect Interpretation of Regulations (IR) Manual, latest edition.
- B. Products Supplied But Not Installed Under This Section:
- 1. Modular contractor's responsibility for completion of design:
    - a. Contract Document Drawings for the modular buildings specified in this Section are to be DSA approved documents, no exceptions.
    - b. All elements required for buildings to be fully code compliant, complete, and ready for use, including all entries, access to cabinets, teaching walls, and controls.
    - c. Coordination with site contractor for exact location of utilities, power, fire alarm, and

- communications hook-ups and operations.
  - d. Coordinate with site contractor for Project completion to meet requirements of the District and this Project manual.
  - e. Building transportation and placement.
  - 2. Design load criteria:
    - a. Roof live load: 20 psf.
    - b. Floor live load: 100 psf.
    - c. Wind load: 90 mph, exposure C, include positive and negative wind loading. Conform to applicable requirements of DSA IR 16-4 "Wind Load Design for One-Story Relocatable School Buildings (Less than 2000 s.f. in Floor Area)."
    - d. Seismic loads:  $S_s = 1.5$ ; soil site: Class D; seismic design category E.
    - e. Collateral loads: Dead loads of building systems, in addition to the dead load of the building itself, including but not limited to, fire sprinkler systems and roof mounted equipment or elements.
  - 3. Energy conservation: All work shall be subject to Title 24, CCR, Building Standards, Part 6, Division T20, Chapter 2, Subchapter 4, Article 2, on energy conservation regulations and required certification.
  - 4. Design buildings to be transportable:
    - a. Modules capable of transportation on trailers allowed for shipping on public streets and highways. The uppermost portion of the module or panel shall not exceed 16 feet from the road surface during transport.
  - 5. Provide weathertight and watertight construction at all stages of work.
  - 6. Permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range not exceeding that of the maximum annual range of variation found at the Project site, as determined by the National Weather Service records.
  - 7. Size and fabricate wall and roof systems free of distortion or defects detrimental to appearance or performance.
  - 8. Provide secure and safe design conforming to standards of care for similar work prevailing in the area where the Project is located.
- C. Products Installed but Not Supplied by Modular Contractor:
- 1. Site contractor shall provide and pay for all of the following items necessary for proper execution and completion of the work, temporary or permanent, to be incorporated into the Work for this Project:
    - a. Labor.
    - b. Materials.
    - c. Equipment.
    - d. Tools.
    - e. Construction equipment and machinery including, but not limited to, earth moving equipment and compaction of soil required for installation of modular buildings.
    - f. Site utilities (water, sewer and storm sewer, electrical, fire sprinkler, fire alarm, and communications).
    - g. Fencing and security.
    - h. All other facilities and services necessary, wherever located.
  - 2. Coordinate with modular building Drawings for foundation work (stem wall construction, slab on grade construction, and/or pier lift and skirt construction).
  - 3. The modular building manufacturer must also be the General Contractor and installer of the building. No building brokering allowed.
  - 4. Site contractor shall be responsible for selecting and coordinating all construction means, methods, techniques, sequences, and procedures.
  - 5. Review all Contract Documents thoroughly and coordinate all components to meet performance requirements indicated, coordinate systems to avoid conflicts, and provide all elements necessary to meet the requirements of this Specification and complete the Project for occupancy and use subject to all requirements of prevailing codes.

## 1.4 SUBMITTALS

- A. Construction Documents:
1. Submit to the Architect complete Plans and specifications including:
    - a. Structural, mechanical, fire sprinkler, and electrical design drawings and details.
    - b. Energy efficiency compliance documentation:
      - 1) Each complete and with all necessary supporting calculations as required to obtain approval of DSA through a standard DSA plan review and backcheck process, unless otherwise indicated by contract.
  2. All drawings, details, specifications, and calculations shall be stamped and signed by an architect, structural engineer, mechanical engineer, electrical engineer, and professionals of such other disciplines as may be necessary or required, all currently licensed by the State of California.
  3. Architect will review and comment on these submittal documents and return to modular contractor for corrections.
  4. Modular contractor shall incorporate all notations, revisions, or corrections required by Architect within 14 days of receipt. After corrections noted by Architect have been made, Architect will review the corrected documents and shall submit documents to DSA for approval.
  5. Following return of reviewed documents from DSA, Project Architect will review and record DSA comments and transmit document to modular contractor for corrections.
  6. Modular contractor shall incorporate all notations, revisions, or corrections required by DSA and Architect within 14 days of receipt. After corrections noted by DSA and Project Architect have been made, Project Architect will review the corrected documents and shall schedule DSA backcheck appointment for approval.
  7. Project Architect and modular contractor, together with the modular contractor's design professionals as may be required, will attend the DSA backcheck to perform final review and corrections necessary to receive DSA approval.
  8. In the event that more than one backcheck appointment is required to achieve DSA approval, the Owner may back charge modular contractor for the costs of Architect's attendance of additional appointments. Such back charges will be implemented in the manner described in the General Conditions of the Contract Documents.
  9. All costs for production and revision of submittal documentation shall be borne by the modular contractor.
  10. Final DSA approved documents with original stamps and signatures of design engineers, responsible parties, and DSA will be retained by the Project Architect. Copies will be provided to modular contractor for his use in production of buildings and site contractor for coordination of all Work for this Project.
  11. Modular contractor shall not submit any document directly to DSA; all submittals shall be made only by the Project Architect.
- B. Shop Drawings:
1. Indicate assembly dimensions, locations of structural members, and connections.
  2. Wall and roof system dimensions, general construction details, anchorages and method of anchorage, installation, and door, window, and finish schedules.
  3. All details necessary to describe the complete building, systems, components and their relationships to work provided under separate contracts, framing anchor bolt settings and their sizes and locations from datum, and structural attachments.
  4. Indicate welded connections with AWS A2.4 welding symbols.
  5. Indicate net weld lengths.
  6. Provide professional seal and signature.
  7. Initial submittal to the Architect: One (1) reproducible and three (3) prints of complete sets of drawings, calculations, and specifications, complete with original stamps and signatures of all design professionals.
- C. Samples: Submit two (2) samples of factory finished materials for each material, product,

and color selected, eight by ten inch (8" x 10") in size, or as otherwise specified in the related Sections, illustrating color and texture of finish.

- D. Manufacturer's Instructions: Indicate preparation requirements, anchor bolt placement, and all information necessary to coordinate work provided by separate contracts.
- E. Submit original written certifications of the manufacturer and installer qualifications specified in Quality Assurance paragraphs of this Section.
- F. Project Record Documents: Record all changes made during construction and actual locations of concealed components and utilities.

## 1.5 PERFORMANCE REQUIREMENTS

- A. Design, fabricate, and erect building structure and exterior cladding to withstand:
  - 1. Loads from wind, seismic, gravity, thermally induced and other structural movement, weather exposure, and other conditions of use normally encountered.
  - 2. Applicable loads and combined loads as required by the California Building Code.

## 1.6 QUALITY ASSURANCE

- A. Submit Evidence of Confirming Qualifications:
  - 1. Manufacturer qualifications: Specializing in design and fabrication of modular school building systems of the specific type and quality indicated, in California, for a minimum of 20 years, with evidence of satisfactory completion, including DSA closeout documentation, of minimum of five (5) projects of similar scope and scale within the last five (5) years.
  - 2. Installer qualifications: Specializing in erection and installation of modular building systems for minimum of 20 years with evidence of satisfactory completion, including DSA closeout documentation, of minimum of five (5) projects of similar scope and scale within the last five (5) years, approved and certified in writing by the manufacturer.
- B. Inspection and Material Testing of Prefabricated Buildings Divided Into Two Separate Components:
  - 1. Plant inspection and material testing.
  - 2. Onsite inspection and material testing.
  - 3. All inspectors shall be retained by the Owner.
- C. All materials used, unless otherwise specified, shall be new and of the types and grades specified. Contractor shall furnish confirming evidence satisfactory to the Project Architect upon request.
- D. All workers, in plant or field, shall be skilled and qualified for the work to be performed.
- E. Design structural components, develop shop drawings, and perform shop and sitework under direct supervision of a professional structural engineer experienced in design of this Work and licensed in the State of California:
  - 1. Conform to California Building Code (CBC), Title 24 Parts 1 and 2, and DSA Interpretation of Regulations for submission of design calculations and reviewed shop and erection drawings for acquiring DSA approval.
  - 2. Cooperate with inspectors, regulatory and testing agency or authority, and provide data as requested.
- F. Perform work in accordance with AISC "Specification for Structural Steel Buildings--

Allowable Stress Design, Plastic Design."

- G. Perform welding in accordance with AWS D1.1.
- H. Pre-Installation Meeting:
  - 1. To be conducted at Project site a minimum of one (1) week before starting work of this Section.

## **1.7 WARRANTY**

- A. Correct defective work within a one (1) year period after date of Substantial Completion.

## **1.8 DELIVERY, STORAGE, AND HANDLING**

- A. Handle work with care. Avoid damage during delivery, erection, and placement.
- B. Replace all damaged work prior to installation. Do not install damaged work or materials.
- C. Deliver prefabricated components, materials, and manufactured items undamaged. Package, wrap, or provide temporary coverings to protect all or parts of buildings from the elements and from transportation damage.
- D. Acceptance at Site: Inspect work as it is delivered. Reject work exhibiting damage and provide new undamaged work. Reject work not accompanied with the in-plant inspector's certificate.
- E. Protect delivered work from weather and related construction operations, including those of other contracts. Maintain work in undamaged condition until erection and placement.
- F. Refer to related Sections for additional specific requirements.
- G. Coordinate with site contractor for staging areas, crane locations, and parking a minimum of one (1) week prior to delivery.

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable Modular Building Manufacturers include, but are not limited to the following:
  - 1. American Modular Inc., 787 Spreckels Ave, Manteca, CA 95336 209-825-1921.
  - 2. Enviroplex, 4777 E. Carpenter Road, Stockton, CA 95215 209-466-8000.
  - 3. Modern Building Systems, 605 Sutter Avenue, West Sacramento, CA 95691 916-985-9865.
  - 4. Meehleis Modular Buildings, Inc., 1303 E Lodi Avenue, Lodi, CA 95240 209-334-4637.
  - 5. JL Modular, Inc., 70 Stony Point Road, Suite D Santa Rosa, CA 95401 707-527-5788
- B. Substitutions: See Section 01 25 00: Substitution Procedures and Form. Substitutions are subject to compliance with qualifications specified in the Quality Assurance paragraphs of this Section.

### **2.2 GENERAL - MANUFACTURED UNITS**

- A. Modular Buildings: Complete, as indicated and specified, conforming to architectural design and appearance indicated, constructed of modules or panels comprising of exterior walls and roofs as shown. All wall and roof joints watertight and weatherproof. Design to

withstand structural loading as required by DSA.

- B. Meet all requirements of Title 24 Parts 1 and 2, and Division of the State Architect Interpretation of Regulations. All areas and portions of the Project shall be fully accessible, complying with Chapter 11 of California Building Code and enforcement comments of DSA access compliance review. Coordinate with site contractor all site related work with path of travel.
- C. Design buildings to conform to architectural design and appearance indicated. Select components and design systems to provide functions and amenities indicated, as well as those that are required by the prevailing codes and agencies having jurisdiction, whether or not shown in the Contract Documents.
- D. In the event of conflicts, recommend mode of resolution requiring minimum revision to indicated design concept and request direction from Architect. Do not revise or modify design concepts without written acceptance of Architect.
- E. The modular building manufacturer's term contract is the minimum scope of work or level of quality to be provided unless otherwise indicated. In the event of conflict between the modular contractor and the site contractor, the DSA approved documents, including this Project manual, having the greater scope or higher quality as specified, including this Section, shall govern. Site contractor to coordinate with modular contractor for exact location of all utility, water, electrical, fire alarm, and connections to complete this Project including location of landscape irrigation and planting.
- F. Dimensions and Tolerances: Minimum ceiling height is eight feet (8'-0"). Plan dimensions indicated may vary within tolerances of plus or minus three inches (3") to allow flexibility in module or panelization layouts. Clearly indicate all deviations from indicated dimensions or pitches on shop drawings and request specific review from Project Architect in writing prior to any site construction work and/or completion of DSA plan review.
- G. Design buildings to be transportable over highways to the Project site if transportation of components is necessary. Identify potential design conflicts with maximum transportable sizes. Recommend mode of conflict resolution and request direction from Project Architect. Do not construct buildings or components that cannot be transported lawfully or safely on California roadways.

### **2.3 FOUNDATIONS, FLOORS-ON-GRADE, SUBSTRUCTURE**

- A. Field Engineering: Site contractor to provide, where required by documentation for this Project, field surveying and field engineering services not otherwise required by the modular contractor for complete installation of all parts of the building and its components for this Project. Locate buildings, utilities, site features, and other construction, and establish elevations and grades from identified benchmarks to ensure proper installation of modular building parts to meet design criteria for this Project.
- B. Slab-on-Grade Floor System:
  - 1. Design and provide permanent concrete slab-on-grade system that meets the recommendations of geotechnical reports.
  - 2. Design slabs and structural cross sections to fit within subgrade elevations and finish floor elevations indicated. Select concrete mix designs and reinforcement to provide structural values required within dimensional constraints indicated. Perform all additional subgrade excavation required to provide for thicker structural sections as designed by Contractor's Engineer.
  - 3. Contractor's Engineer is responsible for design of slab-on-grade floor systems in

- accordance with recommendations of geotechnical reports referenced as related documents.
4. Select and provide vapor barrier system, topical vapor transmission coating, or concrete mix design to ensure that moisture transmission through concrete slab remains below recommended levels of specified floor coverings. All floor slabs shall be acceptable substrates for specified floor coverings, enabling provision of full manufacturer's warranties for floor coverings.
- C. Stem Wall Foundation System:
1. Design and provide permanent concrete stem wall system that meets the recommendations of geotechnical reports.
  2. Design stem wall structural foundation cross sections to fit within subgrade elevations and finish floor elevations indicated. Select concrete mix designs and reinforcement to provide structural values required within dimensional constraints indicated. Perform all additional subgrade excavation required to provide for interior underfloor crawl space drainage with appropriate drain inlets and drain lines and connect to site sewer system. Site contractor to coordinate.
  3. Modular Contractor's Engineer is responsible for design of stem wall foundation systems in accordance with recommendations of geotechnical reports referenced as related documents of structural engineering practices.
  4. Select and provide vapor barrier system, topical vapor transmission coating, or concrete mix design to ensure that moisture transmission through concrete slab remains below recommended level.

## 2.4 SUPERSTRUCTURE

- A. Steel Frame: Two-dimensional moment resisting steel frame with bolted or welded connections.
- B. Provide clear span construction free of interior columns or pilasters.

## 2.5 ROOF STRUCTURE

- A. Roof Structure: Steel beams and purlins, galvanized standing seam metal roof o/ plywood roof deck.
- B. Roof slope shall be minimum two inches (1/4") per foot.
- C. Roof Overhang – Plywood:
  1. All overhangs shall present a pleasing and finished appearance.
  2. Soffits shall be enclosed with plywood without visible framing or protruding fasteners.
  3. Plywood soffit material shall be applied with long direction running parallel to the length of the building.
  4. Soffits shall be neatly and closely fitted and trimmed without gaps.
- D. Roof Overhang - Metal Soffit:
  1. All overhangs shall present a pleasing two-part metal fascia of same type of material as soffit.
  2. Soffits shall be enclosed metal soffit perpendicular to adjacent wall surface.
  3. Soffits to include screened section to allow for ventilation (required by code of DSA).
  4. Soffit to be neatly closed and sealed.
- E. Ventilation:
  1. All enclosed attic and soffit areas shall be ventilated per the 2019 CBC codes:
    - a. Provide venting at locations selected by modular manufacturer to provide minimum

- cross-sectional free area stipulated by code or by DSA comments.
- b. Avoid conflict with other building elements.
- c. Show supporting calculations and vent type(s) and locations on shop drawings.

- F. Draft Stopping:
  - 1. Enclosed attic and soffit areas shall be draft stopped with durable panel materials per the 2019 CBC codes:
    - a. Provide draft stops at locations selected by manufacturer to reduce attic and soffit areas to the maximum sizes stipulated by code.
    - b. Show supporting calculations and draft stop locations on shop drawings.
    - c. Coordinate design of draft stopping with requirements for attic ventilation to ensure that all enclosed areas are properly ventilated.

## 2.6 EXTERIOR ENCLOSURE

- A. Exterior Walls: Wall framing shall be six-inch (6") wood studs, minimum, and greater as determined by modular contractor's structural engineering review to meet requirements of 2022 CBC codes.
- B. Watertight and Weatherproof:
  - 1. Provide complete metal and flexible flashings and trim for watertight and weatherproof construction. Design building envelope flashing systems in accordance with SMACNA standards.
  - 2. All weather-exposed surfaces shall have a weather-resistive barrier equivalent to two (2) layers of Grade D Kraft waterproof building paper conforming to ABC, Title 24, Part 2 for asphalt-saturated rag felt.
  - 3. Barrier shall be free from holes and breaks other than those created by fasteners and construction systems for attachment of the building paper and shall be applied over studs or sheathing of all exterior walls. Such barrier shall be applied weather-board fashion, lapped, and wrapped at corners.
  - 4. Provide sheet metal flashings separating concrete from structure at all perimeter locations.
- C. Exterior Plaster:
  - 1. Three-part portland cement plaster, field-applied, with integral color finish coat:
    - a. Include all screeds, drips, and control joints. Provide and install reveals as shown.
    - b. Color to be selected by Project Architect.
- D. Insulation:
  - 1. Walls shall have an insulation rating of R-19 minimum.
  - 2. Roof shall have an insulation rating of R-30 minimum. Insulation shall be designed to ensure that there is no condensation on interior surface of the corrugated metal roof deck.
  - 3. Insulation vapor barrier shall be installed to the heated side. Provide type FSK barrier where located above suspended ceilings.
  - 4. Floor shall have an insulation rating of R-30 minimum.
- E. Doors and Hollow Metal Frames:
  - 1. Exterior Doors: Flush doors, minimum dimensions three feet by seven feet by 1-3/4 inch (3'-0" x 7'-0", 1-3/4") thick, 18-gauge, with steel face sheets and fire resistive cores. Factory prepare and reinforce for indicated finish hardware, including reinforcement on both faces for closers.
  - 2. Hollow metal frames shall be 16-gauge at exterior openings and 18-gauge at interior openings, depth to suit wall thickness. Jamb throats shall capture all wall cheating panels or materials. Do not permit paneled finishes butted to door frames returns. Provide three (3) anchors minimum per jamb and adjustable floor anchor at bottom of



- each jamb. Prepare and reinforce for specified and required hardware, including strike box and reinforcement for closers on all frames.
3. Sound deaden concealed faces with 1/8-inch thick undercoating or fill metal door frame cavity with insulation to attain the sound-deadening requirement. Chemically treat doors and frames for paint adhesion and apply one (1) complete shop coat of metal primer, prepared for field finish specified elsewhere.
  4. Design, coordinate, and install door and frame systems with other related work for complete waterproof and watertight systems without conflict or omission in weatherproof enclosures.
- F. Windows:
1. Provide thermally broken aluminum nail-fin type windows in configuration shown on the Drawings. Provide operable sections as indicated.
  2. Glazing: Provide dual pane insulated glazing with a low-e coating. Color to be selected by Project Architect.
  3. Exterior side of window openings in plaster walls shall self-trim into the plaster.
  4. Exterior side of window openings in plywood wall shall have minimum edge clearance on all sides and have one inch (1") minimum trim on all sides. Refer to exterior elevations for details.
  5. Interior side of window openings shall be completely cased with solid wood trim, opaque finish. Windows located or sized so that sill heights are seven feet (7') or more above floor elevation may be self-trimmed by the wallboard only.
  6. Header: Typical window header height shall be the same as the door, unless otherwise shown.
  7. Design, coordinate, and install window systems with other related work for complete waterproof and watertight systems without conflict or omission in weatherproof enclosures.
  8. District Standard Manufacturers:
  9. Glazing: PPG
  10. Fire Rated Glazing: Technical Glass Products.
  11. Glazing Fire Tape: Pemko.
  12. Louver Fire Tape: Pemko.
- G. Hardware for Exterior Doors and Interior Doors: Match District Standard Hardware and Keying
1. Hanging Devices: Ives.
  2. Door Operating Trim: Ives.
  3. Cylinders and Keying: Schlage
  4. Mechanical locks and Latching Devices: Schlage
  5. Conventional Exit Devices: Von Duprin
  6. Door Closures: LCN Closers.
  7. Door Stops and Holders: Ives
  8. Architectural Seals: Zero.
  9. Miscellaneous: Zero.
- H. Painting: Paint all exposed surfaces, including cement plaster. Match District Standard Paints (Kelly Moore).

## 2.7 ROOFING

- A. Design, coordinate, and install roofing systems with other related work.
- B. Flashing, Gutters, Trim, and Seismic Joints: Provide complete flashing and trim for watertight and weatherproof construction. All roof drainage diverted to roof drains and drained into downspouts extending to below grade storm drain system.

- C. Rain Drainage Work: Downspouts with any part located eight feet (8') or less above finish exterior grade shall be welded Schedule 40 steel pipe construction and brackets. All downspouts extending to finish exterior grade shall be connected to underground storm drain system coordinated with site contractor.

## 2.8 INTERIOR CONSTRUCTION

- A. Partition and demising wall framing shall be six-inch (6") wood studs, minimum, and greater as determined by modular contractor's structural engineer to meet requirements of 2019 CBC codes.
- B. Sound Attenuation: All interior partitions shall be provided with fiberglass sound insulation and acoustical sealant at top, bottom, and all openings to create a partition with a Sound Transmission Class (STC) rating of 45 or higher. All interior partitions shall extend full height to the underside of the roof deck unless otherwise noted on approved Drawings.
- C. Flooring/Base:
  - 1. Provide four-inch (4") high resilient base, coved at resilient flooring and straight type at carpeting, at floor-to-wall junctions and cabinet bases.
  - 2. Luxury Vinyl Tile: Shaw Contract, Grain 0364V
  - 3. Walk off mat: Mohawk, Step Up II.
- D. Interior Wall Finishes:
  - 1. All walls shall be covered with gypsum wallboard. Gypsum wallboard not concealed by other finishes shall be finished, textured, and painted.
  - 2. Tackboard wall: Walls shall be covered with vinyl covered tackboard applied without horizontal joints. Vertical joints shall be covered with manufacturer's standard pre-finished joint cover splines matching vinyl color. Wallcovering to be Décor, Color Oyster.
  - 3. Provide an additional layer of gypsum wallboard at locations where FRP wall panels abut vinyl covered tackboard wall panels to provide flush finish transitions between the two materials.
- E. Ceiling:
  - 1. Typical ceiling system shall be suspended ceiling system, minimum classification of Heavy Duty per ASTM C635. Grid shall be direct hung in strict accordance with CBC Title 24, Part 2 and DSA IR #25-2.10.
  - 2. Typical acoustical panels shall be 5/8-inch minimum thick, mineral fiberboard, or vinyl-faced fiberglass lay-in panels, square edge, ASTM flame-spread index Class I (O-25), 24 inches by 48 inches modular size, light reflection 75 percent minimum, noise reduction coefficient of 0.65 minimum.
- F. Painting: Paint all exposed surfaces that are not factory finished.
- G. Fire Extinguishers:
  - 1. Fire Extinguish Cabinet: Potter-Roemer, Alta 7062-DV

## 2.9 PLUMBING

- A. Modular contractor shall design and provide a complete plumbing system comprising of:
  - 1. Domestic cold water piping systems.
  - 2. Drain, waste, and vent piping systems.
  - 3. Gas piping system.

4. Plumbing fixtures and trim.
  5. Gas and water shut-off valves capable of isolating building systems from site systems.
- B. All equipment and systems must comply with California Plumbing Code and Title 24 energy use standards as well as District standards, if known. No "PEX" connectors allowed.
1. Sink (Classrooms): Elkay, Model DRKADQ3119-65-bp
  2. Faucet/Valve (Classrooms): Chicago Faucets, bubbler
- C. All piping shall be concealed within the building structure or within chases.
- D. Coordinate exact location of connections with site contractor or extend piping systems to points-of-connection with site utilities at locations indicated on Drawings. Provide shut-off valves and grade boxes within five-foot (5') perimeter of the building. Provide clean-outs in locations required by California Plumbing Code. Coordinate with site contractor to bring clean-outs and grade boxes to finish grade. Coordinate in landscape areas or on concrete/asphalt paved areas with site contractor.
- E. Size piping on the basis of fixture or appliance demand and conforming to California Plumbing Code. Provide shut-off and isolation valves to permit maintenance and repair without undue interruption of service to other units. Install piping to prevent damage to structure or pipe supports from thermal expansion or contraction of piping systems.
- F. Route and install piping systems to avoid conflicts with structure while remaining concealed. Provide chases, furring, or enlarged framing to allow piping to pass around structural framing without exceeding code-imposed limits on openings allowed in framing.

## **2.10 HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)**

- A. Modular contractor shall design and provide a complete HVAC system comprising of:
1. Forced air unit located in mechanical closet or as exterior hung unit on rear wall side.
  2. Ductwork, registers, and air diffusers.
  3. Controls.
  4. Testing and balancing of ventilation system.
- B. Reference Brand Carrier, or equal. Air filters shall be two inches (2") thick pleated media, disposable type. Filters shall be 30 percent efficient per ASHRAE standard 52.
- C. The mechanical ventilation system shall provide a minimum of 15 cubic feet of outside air per minute per occupant, with one (1) occupant per 20 square feet of floor area.
- D. The system shall maintain an automatically controlled indoor classroom temperature of 75 degrees F in summer and 70 degrees F in winter with a 40-60 percent relative humidity when the outdoor temperature varies between 98 degrees F dry bulb (69 degrees F wet bulb) and 28 degrees F dry bulb.
- E. The system must maintain the specified temperatures when providing outside air as indicated.
- F. The equipment and systems must comply with California Mechanical Code and Title 24 energy use standards.
- G. HVAC equipment electrical characteristics shall suit the site requirements.
- H. Ductwork constructed of galvanized sheet metal in accordance with California Mechanical

Code, ASHRAE, and SMACNA Low Velocity Duct Construction Manual, latest editions:

1. All ductwork shall be concealed within the building walls, floor, ceiling, or in soffits or chases, unless specifically shown otherwise in the Architect's Drawings. Request specific direction from Architect for re-routing of ductwork or for use of exposed ductwork. All exposed ductwork shall be round spiral-wound material designed and manufactured for exposed locations.
2. Insulate with one-inch (1") fiberglass duct wrap with vapor barrier, include one-inch (1") duct attenuation within eight feet (8') of HVAC unit.
3. Rigid one-inch (1") fiberglass or insulated "Flex-Duct" conforming to NFPA 90-A, 90 B and SMACNA Class 1 may be substituted for metal ductwork in accessible concealed portions of the duct system.
4. Registers and diffusers: Provide minimum of two (2) four-way air supply diffusers per room, located to provide maximum feasible air distribution. Diffusers shall not be sized larger than 400 cfm each and shall have a NC-30 or less.
5. Ducted return: Provide ducted return air design. Direct-coupled return air registers are not acceptable.

## **2.11 FIRE PROTECTION**

- A. Design and provide a complete fire protection system, if required.
- B. Owner will conduct a flow test on the existing hydrant and will provide the results upon request.

## **2.12 ELECTRICAL**

- A. Design and provide a complete electrical system comprising of line voltage power outlets and distribution and panel boards to provide complete operational systems.
- B. Provide bonding of all building components to an approved ground as required by DSA IR E-1, such that the resistance to ground is 25 ohms or less. Grounding tests are to be observed and reported by the onsite inspector. Costs of inspection will be provided by the District.

## **2.13 LIGHTING**

- A. Design and provide a complete lighting system comprising of:
  1. Interior fixtures of types and quantities to meet the following standards:
    - a. Selected and spaced to provide minimum overall average illumination of 50-foot candles at desk level (30 inches above floor elevation) and comply with IES recommendations for classroom interiors otherwise.
    - b. Exterior fixtures to have translucent vandal-resistant housing with corrosion-resistant metal housing, high-pressure sodium or metal-halide type, securely attached to building structure adjacent to all exterior doors and as otherwise required to provide minimum overall average illumination complying with IES recommendations for exterior walkways.
    - c. All lighting in classrooms and small rooms shall be controlled by occupancy sensors.
    - d. Exterior lighting shall be controlled by an astronomical timeclock.

## **2.14 FIRE ALARM AND DETECTION**

- A. Provide conduit and junction boxes with pull strings for interior and exterior initiation devices, horn-strobes, terminals, and other devices as shown.

- B. Seal conduits and boxes with weatherproof covers and leave in condition for components, wiring, and final connections by sitework contractor.

## **2.15 SIGNAL, DATA, AND TELECOMMUNICATIONS**

- A. Provide conduit and junction boxes with pull strings for interior and exterior devices.
- B. Telecommunications and signal device locations for rough ins will be based on sitework electrical plans and documents.
- C. Seal conduits and boxes with weatherproof covers and leave in condition for components, wiring, and final connections by sitework contractor.

## **2.16 EQUIPMENT AND FURNISHINGS**

- A. Cabinets and Casework:
  - 1. Plastic laminate, frameless, custom grade per Woodwork Institute:
    - a. Countertops and frames to have plastic laminate surfaces. Colors to be selected by Project Architect.
- B. Marker Boards: Each classroom shall have two (2) eight-foot (8') long DTS series marker boards as manufactured by Platinum or approved equal, located as shown.
- C. Fire Extinguishers and Cabinets:
  - 1. Each exterior door shall be equipped with a pressure type fire extinguisher with 2A-10BC UL rating mounted at a height of four feet (4') on the interior wall near the doorway.
- D. Projection Screens (District option):
  - 1. Surface mounted, metal encased, manually operated screens without tab tensioning.
  - 2. Units designed and fabricated for surface mounting on wall or ceiling, fabricated from formed-steel sheet not less than 0.027 inch (0.7 mm) thick or from aluminum extrusions, with flat back design and vinyl covering or baked-enamel finish. Provide units with matching end caps and concealed mounting.
  - 3. Manufacturers are subject to compliance with requirements; provide products by one of the following:
    - a. Promethean Boards
    - b. Architect approved substitute.
- E. Work Surfaces:
  - 1. Cast epoxy resin work surfaces.
  - 2. Thickness: One inch (1").
  - 3. Color: Black.

## **2.17 SITE PREPARATION**

- A. Site preparation and building pad preparation to be performed by site contractor.
- B. Perform fine grading within perimeter of building foundations prior to permanent placement of buildings; ensure positive drainage to under-building drains.

## **2.18 SITE SERVICES**

- A. Certain site service utilities are provided by site contractor.

- B. Site contractor to connect site service utilities to modular buildings as follows:
1. Rain drainage: Site contractor to connect building systems to stub-out provided by sitework contractor.
  2. Sanitary sewer: Modular contractor to connect building systems to stub-out provided by sitework contractor.
  3. Domestic water: Modular contractor to connect building systems to stub-out at valve in grade box provided by site contractor.
  4. Fire water: Modular contractor to provide post indicator valve and connect building systems to stub-out provided by site contractor.
  5. Modular contractor to provide conduit and wire to connect P.I.V. tamper switch to new fire alarm panel.
  6. Electrical power: Modular contractor to connect conduit raceways from building systems to stub-out provided by sitework contractor. Sitework contractor shall pull conductors and make final connections inside modular building panel.
  7. Clock: Modular contractor to connect conduit raceways from building systems to stub-out provided by sitework contractor. Site contractor shall pull conductors and provide active devices and terminations and all final connections inside modular building.
  8. Bell: Modular contractor to connect conduit raceways from building systems to stub-out provided by site contractor. Site contractor shall pull conductors and provide active devices and terminations and all final connections inside modular building.
  9. Intercom/public address: Modular contractor to connect conduit raceways from building systems to stub-out provided by sitework contractor. Site contractor shall pull conductors, provide active devices and terminations and all final connections inside modular building.
  10. Telephone: Modular contractor to connect conduit raceways from building systems to stub-out provided by site contractor. Site contractor shall pull conductors and provide active devices and terminations and all final connections inside modular building.
  11. Data/fiberoptic: Modular contractor to connect conduit raceways from building systems to stub-out provided by site contractor. Site contractor shall pull conductors and provide active devices and terminations and all final connections inside modular building.
  12. Television: Modular contractor to connect conduit raceways from building systems to stub-out provided by site contractor. Site contractor shall pull conductors and provide active devices and terminations and all final connections inside modular building.

## 2.19 ACCESSORIES

- A. Modular contractor to provide complete functional buildings:
1. Design, select, and provide all building elements, incidental fasteners, sealants, components, flashings, and fittings necessary to finish the work complete with all performance characteristics as indicated, specified, and as needed to comply with referenced and prevailing codes.
- B. No allowances for additional sums will be made for Modular contractor's errors, omissions, or failure to design all required conditions in completion of the building design or construction.

## 2.20 MIXES

- A. Mixes for the Modular Structure: Concrete, mortar, grout, and other mixes shall be designed by the modular contractor's design professionals in conformance with requirements of the Contract Documents.

## 2.21 FABRICATION

- A. Modular Plant Fabrication Required: Perform building fabrication under factory conditions in

- a plant designed for this type of work. Provide adequate space, equipment, materials, licensed design services, and technical personnel to fabricate, coordinate, assemble, pack, ship, and install all required building components in controlled conditions.
- B. Shop welding shall comply with AWS D1.3 for cold-formed steel. Do not commence welding operations until the welding inspector has inspected and accepted materials, joint preparation, equipment, and qualifications of the operators. Unsatisfactory work shall be removed and replaced with conforming work.
  - C. Provide for temperature expansion/contraction movement and seismic movement of building elements. Design and fabricate expansion control in accordance with prevailing codes and Contractor's design calculations.
  - D. Fabrication testing and inspection shall be performed at the plant.
  - E. Do not fabricate until materials are tested and accepted. Do not fabricate with untested materials.
  - F. Framed Openings: Provide openings of shape, size, location, and design to accommodate systems requiring penetrations. Reinforce openings with structural elements sized to resist loads and vibrations imposed, including mechanical and electrical work. Securely attach all framing to structure.
  - G. Provide for fabrication and wind loads. Provide temporary bracing to maintain work plumb and in alignment until completion of erection and installation of permanent bracing.
  - H. Select fabrication methods and processes to avoid transmission of erection or fabrication loads to fabricated members. Avoid locking-in stresses.
  - I. Prepare all work true to indicated shapes and dimensions required. Form all components true to required shape, accurate in size and radius, square, and free from distortion or defects. Cut materials to precise lengths indicated from field measurements.
  - J. Machine-roll elements required to be curved or radiused. Do not field bend or "walk-down." Provide true curves; segmented fabrication not allowed.
  - K. Store completed work at the fabrication plant under conditions that will prevent damage or deterioration until work can be transported to the Project site. Repair damage prior to transport. Do not transport damaged or unacceptable work.
  - L. Do not store completed work at the Project site. Do not transport completed work until Project site is prepared to accept building modules for prompt installation.
  - M. In-plant inspection required by DSA with a DSA approval project inspector.

## **2.22 FINISHES**

- A. Exterior and interior finishes shall be as indicated on the Drawings. Exposed finishes shall be site-applied to the greatest extent feasible.
- B. Painting: All exterior and interior finishes shall be painted.

## **2.23 SOURCE QUALITY CONTROL**

- A. Inspection: Plant inspection and material testing shall be performed under the supervision of the in-plant inspector. Provide the inspector with full access to all plant operations involving work under this contract. Notify the inspector in advance of the time and place when operations requiring inspection or observation are to take place.
- B. Inspector shall inspect all components for acceptability and issue a written certificate. A copy of the signed certificate shall accompany each building to the site. Do not release components from plant without this certificate.
- C. Attach to each module or panel a permanent visible tag indicating the date of manufacture, the manufacturer's serial number, and the DSA application number prior to release from plant for delivery.
- D. The inspector shall examine the workmanship of each welder prior to incorporation of the individual's welding into the Work. Unsatisfactory welders shall be removed by the inspector and replaced with qualified personnel. Welders so removed shall be required to pass qualification tests before returning to work.
- E. Every layer of weld shall be inspected for quality. Each layer of multiple pass welds shall be fully inspected before the succeeding layer is applied. Each joint shall be inspected for conformance with the Contract Documents. Full penetration butt welds shall be made only in the presence of the welding inspector.
- F. Single pass welds may be inspected after the welding is completed, except for conditions requiring continuous inspection.
- G. The welding inspector shall use all means necessary to determine the quality of the welds.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that civil, mechanical, and electrical utilities are proper types in correct position.
- B. Verify building pads and adjacent subgrades are certified elevations, properly compacted and moisture conditioned.
- C. Verify that adjacent structures, foundations, and items in related contracts are proper types in correct positions.

### **3.2 PROJECT CONDITIONS**

- A. Coordination of Work:
  - 1. Comply with requirements for coordination specified elsewhere and the following:
    - a. Make all necessary arrangements with the District's authorized representative and other separate contractors for access to grounds, removal of obstructions, and preparation of delivery routes. This contact shall be made at least 48 hours in advance of delivery of any module, building component, equipment, or material.
- B. Visit the site to verify readiness to receive building modules, components, or equipment. If work is delivered before site is prepared to receive it, modular contractor shall be responsible for all costs incurred including, but not limited to, inspector's time and costs accruing to separate contractors or others for accommodating this out-of-sequence work.
- C. Continuously coordinate this work with that of separate contractors. Attend progress



meetings of separate contractors, cooperate with separate contractors, provide and request all data concerning schedules, access, storage and handling, and all such other information as requested or necessary to fully complete the work, free of conflicts or omissions.

### **3.3 INTERFACE WITH OTHER WORK**

- A. Coordinate the modular building erection and installation with other contracts. Ensure construction of complete and functional systems, free of conflict or omission. Allow access to other contracts to complete work related to this contract.

### **3.4 SEQUENCING**

- A. Sequence the work to coordinate with the activities of separate contractors and specific sequences as indicated or implied.
- B. Sequence work to avoid interference with adjacent construction.
- C. Request or provide information concerning activities of this contract or separate contracts to enable efficient sequencing.

### **3.5 SCHEDULING**

- A. Schedule the work to achieve Contract milestones and completion dates indicated.
- B. Deliver and install buildings to ensure that Project is completed on schedule. Calculate costs of weekend, overtime, or premium time work to accomplish the schedule and include these costs in the bid.

### **3.6 TRANSPORTING AND STORAGE**

- A. Transport prefabricated components from fabrication plant to Project site.
- B. Coordinate component delivery in time for erection in intended locations. Do not store components onsite prior to completion of foundations or site preparation.

### **3.7 ERECTION STEM FOUNDATIONS AND SLABS**

- A. General: Verify elevations and perform excavation required for foundations, footings, etc. prior to installation of foundation materials. Conform to DSA foundation and slab requirements.
- B. Prepare formwork, embedments, and reinforcements, and place concrete as specified by modular contractor's engineer.
- C. Finish, cure, and patch concrete as specified by modular contractor's engineer. Coordinate all sitework with site contractor.

### **3.8 ERECTION GENERAL**

- A. Erection shall be performed by personnel experienced in the delivery and erection of modular and relocatable structures. All building joints shall be capable of being rigidly connected in order to maintain positive alignment of floors, walls, and roofs.
- B. Verify that floor slab and placed anchors are in correct position.

- C. All work shall be installed plumb, level, true to line and plane, in strict conformance with the DSA approved shop drawings, and as specified by modular contractor's engineer.
- D. Erect framing in accordance with AISC Specification for Structural Steel Buildings.
- E. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing.
- F. Set column base plates with non-shrink grout to achieve full plate bearing.
- G. Do not field cut or alter structural members without approval.
- H. Install bolts as indicated on shop drawings. Provide washers under all nuts. Draw up all nuts tightly. Install high-strength bolting in accordance with prevailing code.
- I. After erection, prime welds, abrasions, and surfaces not shop primed.

### **3.9 INSTALLATION ACCESSORIES**

- A. Install components and accessories as specified in their respective Sections and in accordance with modular manufacturer's instructions.
- B. Install trims and finishes neatly, free of gaps, holes, cut edges, frays, or ravel. Conceal fasteners wherever possible.
- C. Seal wall and roof accessories watertight and weather tight with sealant.

### **3.10 FIELD QUALITY CONTROL**

- A. Onsite inspection shall be performed by the Owner's site inspector. All work performed at the site shall be subject to the inspection of the site inspector. Inform the site inspector as to progress of work and dates when sitework will occur.
- B. Coordinate inspections with those required for other contracts, to the greatest extent feasible.
- C. Grounding tests of building electrical systems are to be observed and reported by the onsite inspector. Costs of inspection will be provided by the District.

### **3.11 TOLERANCES**

- A. Framing Members: 1/8 inch from level; 1/8 inch in ten feet (10') non-cumulative, from plumb.
- B. Siding and Roofing: 1/8 inch from true position.
- C. Other Elements: As specified in the respective related Sections.

### **3.12 PROTECTION**

- A. Repair or replace damaged work prior to acceptance.

### **3.13 ADJUSTING AND CLEANING**

- A. Prior to Project Architect's punch list, adjust work for complete and functional operation and appearance.

- B. Following punch list, perform all adjustments as noted by the Project Architect and maintain the work in this condition until acceptance by the Owner.

### **3.14 DEMONSTRATION**

- A. Demonstrate proper operation of all building elements and features to Project Architect and Owner.

### **3.15 MAINTENANCE**

- A. Provide extra materials for Owner's use in maintenance as specified in the pertinent related Sections.
- B. Fasteners and Connectors: Provide a minimum of five percent (5%) additional fasteners over the amount required for each connection of each module and panel of building component. Pack, label, and identify fasteners for intended use and store on the site in a mutually accepted, secure location. Deliver these surplus fasteners prior to the delivery of building modules to the site.

**END OF SECTION 13 34 23**

**SECTION 13 34 23.01 PRE-ENGINEERED MODULAR BUILDING - MATRIX**

<b>Responsibility Matrix</b>				
<b>Lodi Unified School District – Davis Elementary School Modernization</b>				
<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>District</b>	<b>Comments</b>
<b>Division 01 – General Requirements:</b>				
All Work Within the Perimeter of the Modular Building		X		
All Work Outside the Perimeter of the Modular Buildings Not Specifically Identified Below	X			
Full-Time Supervision for Modular Crew Onsite		X		Factory Trained Crew
<b>Temporary Facilities:</b>				
Set-up Staging Area for Modular	X			Location acceptable to District.
Temporary Site Security Fencing	X			
Field Office Trailer	X			Field Office for IOR and Contractors
Temporary Power	X			
Permit and Utility Charges for Start-Up and Testing	X			
Temporary Water	X			
Temporary Fire Water	X			
Temporary Dumpster and Toilets	X			
<b>Division 02 – Existing Conditions:</b>				
Site Demo Removal and Excavation	X			
Rough Grading	X			Coordinate with Modular Manufacturer.
<b>Division 03 – Concrete:</b>				
Design (Geotech Report by Others)			X	
Over-Excavation and Pad Prep with Certified Pad	X			

Description	Site Contractor	Modular Contractor	Others	Comments
Surveying and Foundation Staking	X			
Modular Footings and Stem Walls and Crawl Space		X		
Building Slab-on-Grade		X		Prepare pad 8" below Finish Floor.
Building Mow Strips	X			
Off-Haul Footing Spoils		X		Basis of design 30" minimum depth of off-haul
<b>Retaining Walls:</b>				
Non-Modular Site Foundations	X			
<b>Division 05 – Metals:</b>				
Design		X		
Steel Framing		X		
DI Grates	X			
Modular Building Flashings and Weep Screens		X		
Modular Gutters and Downspouts		X		
DF Rails at Site DFs	X			
ADA Site Handrails	X			
ADA Drinking Fountain Handrails	X			
ADA Site Guardrail	X			
<b>Division 06 – Wood, Plastics, and Composites:</b>				
Wall Framing		X		
Building Insulation		X		
Exterior / Interior Trim		X		
Wood Siding / Soffits		X		
<b>Division 07 – Thermal and Moisture Protection:</b>				
Gutters and Downspouts		X		
Roof Drains/Scuppers		X		Modular Contractor to coordinate with Site Contractor for placement
Roofing – Standing Seam Metal Roof		X		
Built-up Roof on Modular		X		

<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Modular Building Damp Proofing and Waterproofing		X		
<b>Division 08 – Openings:</b>				
Doors		X		
Door Hardware		X		
Windows		X		
<b>Division 09 – Finishes:</b>				
Acoustic Ceilings		X		
Gypsum Board		X		
Lath and Plaster		X		
Tackboard		X		
Painting and Coatings		X		
<b>Division 10 – Specialties:</b>				
Toilet Partitions	X			
Toilet Accessories	X			
Modular Building Fire Extinguishers		X		
Modular Building ID and ADA Signage		X		
Site Signage	X			
<b>Division 11 – Equipment:</b>				
Projection Screens		X		
Smart TV's			X	
Markerboards		X		
<b>Division 12 – Furnishings:</b>				
Casework and Countertops		X		
Window Coverings		X		
Furniture			X	
<b>Division 13 – Special Construction:</b>				
<b>Modular Buildings:</b>				
Design and Engineering, Structural, and MEP		X		
Manufacture Buildings		X		
Deliver, Set, and Connect		X		
All Finishes		X		

Description	Site Contractor	Modular Contractor	Others	Comments
<b>Division 14 – Conveying Equipment:</b>				
<b>Division 21 – Fire Suppression:</b>				
Site Hydrants	X			Coordinate with local Fire Dept for hydrant Testing.
<b>Division 23 – Heating, Ventilating, and Air Conditioning (HVAC):</b>				
Modular Building Design		X		
Modular Building HVAC Equipment		X		
Modular Building Plumbing and Trim		X		
Modular Building Condensate Drain and Drywell		X		
Drinking Fountains at Modular Buildings		X		
Drinking Fountains Not Attached to Buildings	X			
Energy Management System/BMS			X	
Connect Bell and Flow Switch to FA System and Provide Power	X			
<b>Division 26 – Electrical:</b>				
Modular Building Design – Power and Lighting		X		
Transformers in Building (if required)		X		
MDP in Modular Building		X		
Subpanels in Modular Building		X		
Modular Building Lighting		X		
Grounding, Install and Test		X		
Site Power and Lighting	X			
Integration and Networking to BMS	X			
Solar System/Array	X			

Description	Site Contractor	Modular Contractor	Others	Comments
<b>Division 27 – Communications:</b>				
<b>Telephone/Telecom Systems:</b>				
Design			X	
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
Telephone System and Testing	X			
<b>Data:</b>				
Design			X	
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
Data Equipment and Cabling	X			
IDF Cabinet	X			
Power for IDF		X		
<b>Clock/Bell/Intercom:</b>				
Design			X	
Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
Equipment and Cabling	X			
<b>AV Systems:</b>				
Design			X	
Classroom Projector and Mounts		X		
Classroom AV System	X			
Power for Classroom Projectors		X		
Assistive Listening System	X			
<b>Division 28 – Electronic Safety and Security:</b>				
<b>Fire Alarm:</b>				
Design			X	
Empty Conduit and Back Boxes in Building		X		Conduit stubbed to attic
Conduit to Building	X			
All Fire Alarm Control and Annunciator Panels	X			
Power for FACP/FAEP (in modular buildings)		X		
FACP/FAEP	X			
<b>Security System:</b>				
Design			X	



Empty Conduit and Back Boxes in Building		X		
Conduit to Building	X			
Cameras and Equipment			X	
<b>Division 31 – Earthwork:</b>				
<b>Site Clearing:</b>				
Grubbing	X			
Earthwork – Rough Grading	X			
<b>Grading:</b>	X			
Excavation and fill: General	X			
Excavation and fill: Modular		X		
Finish Grading and Re-Grading After the Form Work is Removed by the Modular Contractor	X			Modular Contractor to coordinate ALL utilities hook-up with Site Contractor
Erosion and Sediment Control	X			
Soil Treatment	X			
Soil Stabilization (Lime)	X			
<b>Division 32 – Exterior Improvements</b>				
<b>Asphalt/Concrete:</b>				
Driveways/Parking	X			
Walkways	X			
Curbs, Gutters and Sidewalks	X			
Pavement Markings	X			
Gates and Fencing	X			
Irrigation	X			
Planting	X			
Turf and Grasses	X			
<b>Division 33 – Utilities</b>				
<b>Storm Drains:</b>				
Site	X			
Storm Drain to RWL	X			
Connect RWL to SD	X			
<b>Gas Service:</b>				
<b>Domestic Water:</b>				
Water Service to Meter Inc. Trenching	X			
Water Service to Meter	X			Coordinate with Modular Contractor

<b>Description</b>	<b>Site Contractor</b>	<b>Modular Contractor</b>	<b>Others</b>	<b>Comments</b>
Water Service (From within 5' to buildings)		X		
SOV at Buildings		X		
Connect to Buildings		X		
Chlorination – Site Lines	X			
Chlorination – Building Lines		X		
<b>Sanitary Sewer:</b>				
Site to POC (within 5' of building)	X			
Cleanouts at POC	X			
Connections at Building		X		