

BID SPECIFICATIONS (PURCHASE ONLY)

BuyBoard

PERMANENT FACTORY BUILT TWO STORY CLASSROOM BUILDING

CONSTRUCTION TYPE V-b

VARIOUS SITES WITHIN 600 MILES OF ORIGIN

MUST BE A FACTORY BUILT STRUCTURE MANUFACTURED BY A MANUFACTURING COMPANY LICENSED AND APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION; "TDL&R".

1.0 FLOOR

1.1 FIRST STORY

FLOOR STRUCTURE: The modular building floor shall be a minimum 5" thick, poured in place, steel reinforced 3000 psi concrete slab.

Use of steel frame or wood floor assembly will not be allowed.

**1.2 FIRST STORY ROOF/
SECOND STORY**

FLOOR STRUCTURE: 2x10 #2 SYP Installed transverse at 16" o.c.

2x10 #2 SYP Perimeter rails.

R-11 Un-faced fiberglass batts shall be installed between the joists of the first story roof/second story floor structure.

Single layer of 1-1/8" tongue and groove plywood or Advantec installed perpendicular atop the first story roof/second story floor joists.

Single layer of 5/8" type "X" gypsum shall be installed perpendicular bottom of the first story roof/second story floor joists.

Second story floor decking shall receive a top coating of 7/8" thick Gyp-Crete or equal; site installed.

1.3 FLOOR COVERING:

28 oz., nylon, solution dyed, level loop pile, direct glue down, commercial carpet installed in classrooms areas utilizing the direct glue down method. 12" x 12" x 1/8" Vinyl composition tile shall be installed in corridor, 2nd story storage closet and telephone/computer server rooms.

8" X 8" Ceramic tile flooring shall be installed in restrooms and janitor closets.

Rubber flooring with rubber nosings shall be installed on stairs.

1st Story storage closet and elevator equipment room shall be sealed concrete.

Color of all floor coverings shall be as selected by the Owner.

2.0 EXTERIOR WALLS

2.1 TYPE:

IBC framing.

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- 2.2 STUDS:** 2x4 #2 SYP @ 16" o.c.
- 2.3 BOTTOM PLATE:** 2x4 #2 SYP.
- 2.4 TOP PLATE:** Double 2x4 #2 SYP.
- 2.5 MISC. BLOCKS:** 2x4 #2 SYP installed as required for horizontal sheathing joints.
- 2.6 WALL HEIGHT:** All exterior walls shall be built full height to bottom of roof structure or to the bottom of the steel truss where applicable.
 Second story exterior walls shall be parapet type, square profile to conceal the roof line.
- 2.7 INTERIOR FINISH:** 5/8" type "X" unfinished gypsum wallboard installed on all walls. Interior finish shall be tape, bed, texture and paint.
Paint color shall be selected by the Owner.
 5/8" Type X, moisture resistant gypsum wallboard ("green board") shall be installed full height on all restroom walls and janitor's closet.
 Restroom walls and Janitor's Closet shall receive a 48" high wainscot of 8"x8" ceramic tile. Wall area above wainscot shall receive tape, bed, texture and paint.
Color shall be selected by the Owner.
- 2.8 INSULATION:** R-13 Kraft faced fiberglass batts shall be installed in all walls, full height to roof.
- 2.9 SHEATHING:** 7/16" OSB or 3/8" CDX plywood sheathing shall be installed full height on the exterior face of all exterior walls.
 Exterior face of all walls shall receive one layer of 15# felt and one layer of a water resistive barrier installed full height.
- 2.10 SIDING:** 26 Gauge, high rib commercial steel siding with "R panel" profile and baked enamel finish. **Steel siding to be site installed to avoid use of "hat trim" or other molding/trim at mate lines. Siding shall be full height panels, installed from grade to top of parapet.**
Color shall be selected by the Owner.
- 2.11 TRIM:** 26 Gauge "J" flashing at windows and doors.
 26 Gauge "Z" flashing at bottom of siding.
Color of "J" and "Z" trim shall match siding.
- 2.12 PARAPET CAP:** 24 Gauge steel with baked enamel finish, installed entire perimeter the building.
Color shall be selected by the Owner.

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- 2.13 SCUPPERS
W/DOWNSPOUTS:** 26 Gauge steel scuppers installed on eaves of the building. Scuppers shall be equipped with 26-gauge steel downspouts. Downspouts shall be installed to grade, terminating at a splash block.

3.0 INTERIOR WALLS

- 3.1 STUDS:** 2x4 #2 SYP @ 16" o.c.
- 3.2 BOTTOM PLATE:** 2x4 #2 SYP.
- 3.3 TOP PLATE:** Double 2x4 #2 SYP.
- 3.4 MISC. BLOCKS:** 2x4 #2 SYP studs installed as required for horizontal sheathing joints.
- 3.5 WALL HEIGHT:** All walls shall be built full height to the roof or to the bottom of the steel truss where applicable. Classroom dividing walls shall be built to bottom of steel truss if applicable. Steel truss above classroom dividing wall shall receive framing, R-11 insulation and 5/8" type "X" gypsum to reduce sound transmission between classrooms.
- 3.6 FINISH:** 5/8" type "X" unfinished gypsum wallboard installed on all walls. Interior finish shall be tape, bed, texture and paint.
Paint color shall be selected by the Owner.
5/8" Type X, moisture resistant gypsum wallboard ("green board") shall be installed full height on all restroom walls and janitor's closet.
Restroom walls and Janitor's Closet shall receive a 48" high wainscot of 8"x8" ceramic tile. Wall area above wainscot shall receive tape, bed, texture and paint.
Color shall be selected by the Owner.
- 3.7 INSULATION:** All interior walls shall be insulated with R-11 (3-1/2") un-faced fiberglass batts.

4.0 MOULDING

- 4.1 BASE:** 4" Vinyl cove base shall be installed in Classrooms, Corridors and Closets.
Coved ceramic base shall be installed in restrooms and janitor's closet.
Colors shall be selected by the Owner.
- 4.2 WINDOWS:** The jambs of all windows shall be finished the same as the adjacent wall.

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5.0 ROOF

- 5.1 RAFTERS:** Second story roof rafters shall be 2x10 #2 SYP installed @ 24" o.c.
Roof shall be framed for a 1/4 in 12 pitch.
- 5.2 RAILS:** 2x10 #2 SYP.
- 5.3 STEEL TRUSS:** **Open web steel truss designed to provide clear roof span full length of each module without use of intermediate supports, columns or load bearing walls. Provide on each side of mate line and over exterior sidewalls.**
- Use of wood or plywood mate beams or full height mate walls will not be acceptable.**
- Steel truss above classroom dividing wall shall receive, R-11 insulation and 5/8" type "X" gypsum to reduce sound transmission between classrooms.**
- 5.4 BRIDGING:** 2"x2"x3/16" Steel angle installed @ 8' on center from truss to joist.
- 5.5 CEILING:** 2' x 4' x 5/8" acoustical mineral fiber panel in suspended T-grid system. Armstrong, Cortega # 769 with Prelude XL 15/16" exposed tee or equal.
Ceiling shall be field installed after all modules are set-up and installation is complete.
- No ceiling provided in first and second story storage rooms or elevator equipment room.
- 5.6 CEILING HEIGHT:** The finished ceiling height throughout the building shall be **8'-6"**, nominal.
- 5.7 SUB-CEILING:** 5/8" Type "X" unfinished gypsum sheathing shall be installed on the bottom of the second story roof joists and face of walls above the ceiling.
- 5.8 INSULATION:** R-30 Kraft faced fiberglass insulation installed atop the gypsum sub-ceiling of the second story roof joists.
- 5.9 SHEATHING:** 5/8" CDX plywood sheathing installed perpendicular to second story roof joists.
- Single layer of 1/4" or 1/2" Dens-Deck sheathing shall be installed atop the plywood roof deck.
- 5.10 ROOFING:** 60 mil. White TPO roofing membrane fully adhered to the dens-deck sheathing.
- 5.11 ROOF ACCESS:** Roof access ladder shall be provided and installed as shown on plans. Ladder construction shall be either mill finish aluminum or painted steel. Ladder shall be equipped with safety cage and security door.

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6.0 EXTERIOR DOORS

- 6.1 DOORS:** Main Entrance doors shall be 1-3/4" x 72" x 84", 18 Gauge hollow core commercial steel assemblies consisting of two 1-3/4" x 36" x 84", active panels with removable mullion.
- Storage and Elevator Equipment room doors shall be 1-3/4" x 36" x 84", 18 Gauge hollow core commercial steel assemblies.
- Doors to have minimum U-Value of 0.70.
- 6.2 FRAMES:** Steel doors shall be equipped with 16-gauge knockdown commercial steel drywall frames.
- 6.3 HARDWARE:** All exterior steel doors shall be equipped with 1-1/2 pr. of 4-1/2"x4-1/2" ball bearing, non-removable pin butt hinges, full weatherstrip and threshold.
- 6.4 WINDOW:** Each exterior door shall be provided with a 7" X 24" Window kit with 1/4" wire safety glass.
- 6.5 EXIT DEVICE:** Main entrance doors shall be equipped with Von Duprin panic bar. Von Duprin # 22EO with 210NL exterior pull.
- Storage and Elevator Equipment room doors shall be equipped with lever handle keyed lockset with storeroom function.
- 6.6 LOCKSETS:** Each exterior door shall be equipped with keyed rim cylinder with Schlage type "C" keyway.
- 6.7 CLOSER:** A Norton hydraulic closer with back check feature shall be provided on all exterior steel doors.
- 6.8 FINISH:** The interior and exterior side of the steel doors and frames shall be painted a color as selected by the Owner.

7.0 INTERIOR DOORS

- 7.1 DOORS:** 36" x 80" x 1-3/4" Mohawk architectural grade AWI System 3 solid core wood, rotary cut flush panel, prefinished "Birch Brown".
- 7.2 FRAMES:** All interior doors shall be set in 16 Ga. knock down, commercial steel drywall frames with primer coat and painted finish.
- Frame color shall be: Selected by Owner.
- 7.3 HARDWARE:** All interior doors shall be equipped with 1-1/2 pair of 4-1/2" x 4-1/2" mortised hinges with US 26D Finish.
- 7.4 CLOSERS:** A heavy duty hydraulic closer with back check feature shall be provided on all multi-occupant rest room doors.

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- 7.5 LATCHSETS:** Classrooms, closets, offices and janitor's closet shall be equipped with keyed lock set with lever handle, Falcon lockset with Schlage keyway type "C".
Student rest room doors shall be equipped with "push/pull" devices and kick plates.
Staff rest room doors shall be equipped with Falcon privacy function lever handle lock set.

8.0 WINDOWS

- 8.1 TYPE:** 36"x60" aluminum framed, single hung, vertical slider, mill finish frame, glazing shall be blue tinted, dual pane insulated low-e glass and window screen.
Windows shall have a minimum U-Value of .55 and a SHGC of .25

9.0 ELECTRICAL

- 9.1 SERVICE:** 120/208Volt, three phase.
- 9.2 MAIN DISTRIBUTION PANEL:** **The building shall be equipped with a 120/208V, three phase main distribution panel (MDP).** The MDP shall be equipped with a main breaker sized to accommodate the electrical loads of the building.
- 9.3 SUB-PANELS:** 120/208V, three phase sub-panels, interior flush mount with main lug only, as required to handle the building electrical loads. Contractor Shall interconnect all sub-panels to the building "MDP".
- 9.4 BREAKERS:** All breakers shall be plug in type.
- 9.5 ENTRANCE:** Bottom or top feed for main distribution panel as site requirements dictate.
- 9.6 RACEWAY/ CONDUCTORS:** Minimum #12 AWG type THHN copper wire in concealed MC cable or EMT (electrical metallic tubing) with set screw fittings conduit.
- 9.7 LIGHTS:** 2'-0" x 4'-0" Four, Three or Two tube as required, recessed, fluorescent light with acrylic diffusers. Fixtures shall be equipped with T-8 lamps and electronic ballasts. See plans for quantities.
- 9.8 EMERGENCY LIGHTS:** Dual head, wall mount emergency lights with back up battery power shall be provided and installed in corridors and restrooms.
- 9.9 EXIT LIGHTS:** 120 volt ceiling mount exit lights with back up battery power, 1 at each exterior door. Exit lights shall be Lithonia LED.
- 9.10 EXTERIOR LIGHTS:** 70 Watt, weather proof, metal halide lights installed at each exterior door. Exterior lights shall be controlled by photo cells.
- 9.11 EXTERIOR EM LIGHT:** Exterior emergency egress light per plans.

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- 9.12 RECEPTACLES:** 120v 20 AMP Duplex grounding type with cover. Receptacles shall be ivory color. See plans for quantities.
- 9.13 SWITCHES:** 120v 20 AMP occupant sensor type in each classroom, capable of detecting occupancy by sensing a combination of heat and/or movement in the area of coverage. Switches shall be ivory color. See plans for quantities.
- 120v 20AMP Toggle type in all other spaces.
- 9.14 LOW VOLTAGE:** Rough-in junction boxes with ¾" conduits extended to attic cavity with pull wires shall be installed to allow for installation of fire alarm system, public address system and/or computer outlets by Owner. Final wiring, devices and termination for all systems shall be by Owner.

10.0 PLUMBING

- 10.1 WATERLINES:** **Type "L" copper with sweat copper fittings.** All fixtures shall be provided with shut-off valves. All lines above ceiling must be insulated to protect against condensation.
- 10.2 WASTELINES:** **PVC-DWV-SCH-40 drain, waste and vent lines.**
- All lines above ceiling shall be wrapped to provide a class "A" flame spread protection.
- 10.3 WATER HEATER:** 30 Gallon, 208v electric water heater with back-flow preventer and expansion tank, installed in janitor closet.
- 10.4 WATER CLOSET:** Floor mount vitreous china with flush valve, elongated bowl and open front seat.
- Designated water closets shall be installed for the handicapped.
- 10.5 URINAL:** White vitreous china wall hung with flushometer valve.
- 10.6 MODESTY PARTITIONS:** 5'-0" high, floor mounted, overhead braced, steel with baked on enamel finish, modesty partitions with door and lock and urinal blinds. Units shall be installed 12" from floor. Color shall be: Selected by Owner.
- 10.7 LAVATORIES:** Vitreous china wall hung with 4" washerless centerset faucet. Designated lavatories shall be installed for the handicapped and shall be equipped with Handi-guard water supply and drain protective covers and wrist blade handles.
- 10.8 MOP SINK:** Single bowl, fiberglass floor mount with laundry tray faucet with hot and cold water.
- 10.9 FLOOR DRAIN:** 3" Floor drain with trap primer shall be installed in each multi-occupant rest room and in the janitor closet with floor sloped to drain in accordance with applicable codes.
- 10.10 ELECTRONIC TRAP PRIMER:** Floor drain trap primers shall be connected to electronic trap primer distribution unit. Electronic trap primer shall be Zurn #Z1020 or equal.

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10.11 WATER COOLER: 8 GPH wall mounted refrigerated water coolers. Designated water coolers shall be installed for the handicapped.

10.12 ACCESSORIES: Single roll toilet paper holder at each water closet.
Stainless steel grab bars at each handicapped water closet.
18" x 36" metal edged mirror above each lavatory in rest rooms only.

11.0 H.V.A.C.

11.1 SPLIT SYSTEMS: Each classroom and the restroom core area shall be equipped with a 208v 3-phase, attic mount air handler with exterior pad mounted condenser; Carrier or equal. Condensers serving the second story shall be mounted on the roof. Attic mount air handlers shall be equipped with drain pans and over flows. Split systems shall be sized and designed per section 14.5.

No wall mounted HVAC units or air handlers installed in closets will be allowed.

11.2 HEATING: 208v electric resistance heat strip in each air handler. Heat strip shall be sized and designed per section 14.4.

11.3 SUPPLY DUCTS: Rigid fiberglass duct with 1-1/2" wall thickness installed below joist with insulated circular flex to designated diffusers.

11.4 DIFFUSERS: 24"x24" or as indicated on plans, white stamped metal with adjustable damper.

11.5 RETURN AIR: 24" X 24" return air grilles in ceiling, via Class "A" ceiling cavity to plenums located at HVAC units.

11.6 THERMOSTAT: (1) Programmable thermostat shall be provided for each H.V.A.C. unit, Luxpro PSP511 or equal. All thermostat wiring shall be plenum rated or installed in "EMT" conduit.

11.7 EXHAUST FANS: Ceiling mount with back draft damper installed in each rest room and janitor closet; sized per code for number of fixtures in rest room.

11.8 BAROMETRIC DAMPERS: 10" Barometric Relief Dampers as required.

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12.0 FIRE PROTECTION

12.1 FIRE SPRINKLER SYSTEM:

Provide a complete engineered automatic wet pipe sprinkler system in accordance with NFPA, state and local codes. System to consist of Gate Valve, Alarm Valve, Check Valve, Fire Riser, Siamese Connection, Cross Main Pipe, Branch Lines and Pendant Chrome Sprinkler Heads. System design integrated with Structural, Mechanical, Fire Alarm Control Panel and other building services as applicable. Connection to Fire Alarm System devices include: activation devices (smoke detectors, heat detectors and manual pull stations) and audible alarm notification. Pricing included assumes adequate pressure from City Main Water Supply is available. Wet pipe equipment only, does not include devices associated with following suppression systems: deluge, foam, dry, clean agent, halon, or carbon dioxide. System shall be installed by a certified licensed installer.

Exclusions: storage tanks, booster pumps, fire hose and cabinets, vault, fire main extension and connection.

12.2 FIRE ALARM SYSTEM:

Provide a complete Fire Alarm System with the following devices: horn/strobe alarms, manual pull stations, ceiling mounted smoke detectors, duct mounted smoke detectors, flame detectors and main Fire Alarm and Smoke Detection Control Panel in accordance with NFPA, TAS, state and local codes. System shall be stand-alone with outside monitoring capability (monitoring service expense and contract not included)

13.0 FURNISHINGS

13.1 TACKBOARDS:

Each classroom shall be equipped with (1) 4'-0" x 4'-0" Claridge #844F or equal, tackboard with heavy duty satin finish aluminum frames.

13.2 MARKERBOARDS:

Each classroom shall be equipped with (2) 4'-0" x 8'-0" Claridge #MLC or equal, 2048 white marker boards with heavy duty satin finished anodized aluminum frames and troughs.

13.3 FIRE EXTINGUISHERS:

10 Lb ABC type fire extinguishers installed in semi-recessed cabinet. Refer to drawings for locations. Cabinet shall be Larsen's # 2409-6R, Steel "White" full panel. Fire extinguisher MP-10.

13.4 LOCKERS:

Provided and installed by Owner, if required.

13.5 SIGNAGE:

Provided and installed by Owner, if required.

13.6 CASEWORK:

Prefinished wood cabinets as shown on plans. Base cabinets shall have plastic laminate counter tops.

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13.7 INTERNAL STAIRS: Three stairways shall be provided for the building as shown on the plans. Stairs shall be fabricated of steel and equipped with steel pan and concrete treads. Site constructed stair towers shall be provided at the (2) exterior main entrances. Stair towers shall be of same construction as main building.

13.8 LIBRARY EQUIPMENT: Library furnishings/equipment not included in base bid. See 17.12 allowances/options for pricing.

14.0 EQUIPMENT

14.1 ELEVATOR: (1) 2,000 pound capacity, passenger elevator as shown on plans. Elevator shall be complete with car, elevator equipment room and pit. Elevator shall have manufacturer's standard finishes.

15.0 DESIGN CRITERIA

15.1 FLOORS: The first story floor system shall be constructed to accommodate a live load of 200 psf, in addition to the dead loads. Second story floor system shall be constructed to accommodate a live load of 50# psf in addition to the dead loads; 100# psf in corridors.

15.2 WALLS: The exterior walls shall be framed, braced and secured in accordance with the requirements of the IBC, based on 90 mile per hour wind loads, 3 second gust (subject to change based on differing local codes of the building installation site).

15.3 ROOFS: All structural components of the second story roof system shall be designed and erected to span their respective areas and carry a live load of 20 psf and a dead load of 10 psf.

15.4 HEATING: The heating system shall be designed to maintain an interior temperature of 72 degrees + or - 2 degrees.

15.5 COOLING: The cooling system shall be designed to maintain an interior temperature of 75 degrees + or - 2 degrees.

15.6 CODES: The building shall be built in accordance with the following codes.

- A. International Building Code, 2006; Building Type V-b
- B. International Plumbing Code, 2006
- C. International Mechanical Code, 2006
- D. National Electrical Code, 2008
- E. International Energy Conservation Code, 2006
- F. Texas Accessibility Standards, 1994

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- 15.7 APPROVALS:** **A. State of Texas Industrialized, Housing and Building Rules, as administered by the Texas Department of Licensing and Regulations.**

The scope of this design does not include accessibility elements required for the site. It is the owner's responsibility to have these designs developed and to make submittal as required by the Texas Architectural Barriers Act, through their design professional. This submittal should be made to:

**Texas Department of Licensing and Regulations
Architectural Barriers Section
P.O. Box 12157
Austin, TX 78711**

16.0 FIELD ACTIVITIES

- 16.1 SITE PREPARATION:** The Owner shall be responsible for all clearing, grubbing, filling, backfilling, grading and associated compaction to achieve a soil bearing capacity of 2500/pounds per square foot (PSF) and a uniformly level site (no more that 3" +/- over the longest dimension of the building). The site shall have adequate drainage providing a positive flow of storm water away from the building. The Owner shall provide free and easy access to the site. Free and easy access to the site is defined as the building pad being accessible for both the delivery vehicle and the building unit with no on-site obstructions that might prevent the proper placement of the building modules.

- 16.2 FOUNDATION:** The contractor shall design and construct a poured-in-place, engineered foundation based on an assumed soil bearing capacity of 2500 pounds per square foot, a plasticity index of 19, or less and potential vertical rise of 1 inch or less, to support the floor structure described in 1.1 of these specifications. The modular building shall be installed in such a manner to achieve a finished floor elevation not to exceed 4" above the final exterior grade.

Note: Foundation allowance shall be stated on proposal document. After award of a contract and upon completion of civil and geotechnical surveys by the owner, or its agent, or other acceptable analysis of site and soil conditions, the contractor shall submit to the owner a final foundation cost based on a comparison of assumed versus actual site conditions.

- 16.3 ENTRIES:** The contractor shall design and construct concrete entries with minimum 10' x 10' landings at each entry. Landings shall have a finished elevation approximately ½" below the finished floor of the building.

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- 16.4 ELECTRIC UTILITIES:** The contractor shall provide and install a main distribution panel (MDP) and all sub-panels, including interconnection of sub-panels to “MDP” providing a single point of connection at the MDP.
- The Owner shall be responsible for extending and connecting site electrical service to the building and making the final connection at the MDP, transformer, meter and meter base shall be by Owner.
- 16.5 WATER UTILITIES:** The contractor shall install all plumbing fixtures and piping, providing a single point of connection for water supply.
- The Owner shall be responsible for extending and connecting site water service to the building and making the final connection at a single point.
- 16.6 SEWER UTILITIES:** The contractor shall provide and install all drain, waste and vent piping, necessary to provide a single point of connection for the sanitary sewer.
- The Owner shall be responsible for extending and connecting site sewer service to the building.
- 16.7 TRASH:** The contractor shall provide trash dumpster and keep site clean on a daily basis. **Under no circumstance shall the contractor use the Schools trash dumpster.**
- 16.8 TOILET FACILITIES:** The contractor shall provide and maintain sanitary toilet facilities for personnel on the construction site. **Under no circumstance shall construction personnel use School toilet facilities.**
- 16.9 SITE SUPERINTENDENT:** The contractor shall provide a full time site superintendent, site superintendent shall be a full time employee of the Contractor. Superintendent shall be on-site from beginning of site work until project completion.

EXCLUSIONS:

Surveys
Civil Design
Soils Testing/Analysis
Site Development
Utility Extensions/Connections
Landscaping or Irrigation
Poured Concrete; other than foundation/floor structure and entries
Building Permits
TAS Compliance for Accessible Routes Beyond the Building's Footprint.
Performance and Payment Bonds
Taxes
Builders Risk Insurance excludes flood coverage in Flood Zones A, V or D as defined by FEMA.

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17.0 ALLOWANCE FOR THE FOLLOWING OPTIONAL
ITEMS. SEE PRICING ALLOWANCE PRICING SCHEDULE.

- 17.1 MASONRY EXTERIOR:** Provide full brick exterior in lieu of 26 gauge steel siding. The brick finish shall cover the entire exterior from brick ledge to top of parapet. The allowance shall include providing for the brick ledge on the concrete foundation. Brick shall be installed over Tyvek and 15# Felt paper.
- 17.2 SECURITY SYSTEM:** Provide a complete Intrusion Detection System with the following devices: magnetic switches (at each exterior door), motion detectors (at main corridor), window break detectors (exterior classroom windows), and signaling devices (alarm bells) connected to Main Control Panel. Design and installed in accordance with NFPA, TAS, state and local codes.
- Power Panel to be stand-alone system with have backup standby battery to accommodate 24 hour power loss and have remote monitoring capabilities (monitoring service expense and contract not included).
- Signaling device to include electric vibrating, 8 inch bell with operating mechanism behind dome. Sound Rating: 81dB at 10 feet.
- Use 18 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in Rigid Conduit.
- 17.3 INTERCOM SYSTEM:** Provide a stand-alone intercom/public address system with loudspeaker communications between classrooms and central control station. Devices to consist of central control station with two-way communications capability to individually designated classrooms and/or one-way communication to all-call addressing.

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17.4 ELECTRICAL SERVICE

EXTENSION:

Underground electrical service from the building "MDP" to point of connection on site, assume 50' for allowance. Includes main disconnect, meter box, four (4) – 4" Rigid Metal Conduits (RMC) with four (4) - #600 KCMIL with one (1) - 0 Ground wire in three (3) individual 4" conduits. One (1) – 4" RMC to serve as spare.
Trench backfill compaction in maximum 8" lifts to 95 % maximum dry density.

Detectable Warning Tape: Acid-and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6" wide and 4mm thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30" deep. Install warning tape directly over utilities, 12" below finished grade. Color: red.

**17.5 ELECTRICAL
TRANSFORMER:**

Provide pad mounted 120/208 volt, three-phase transformer, allowance shall be based on providing 75 KVA transformer.

**17.6 FRESH WATER
EXTENSION:**

Underground fresh water service from the building to point of connection on site, assume 50' for allowance. Provide 2" Schedule 40PVC, ASTM D 1785, to perimeter of building. Include Detectable Warning Tape. Color: blue.
Trench backfill compaction in maximum 8" lifts to 95 % maximum dry density.
Excludes: tap fees, meter fees, impact fees, yard hose bibs/hydrants, and gate valves.

**17.7 SEWER
EXTENSION:**

Underground sewer service from the building to point of connection on site, assume 50' for allowance. Provide 4" Schedule PVC, Poly (Vinly Chloride), ASTM D 1785 to perimeter of building. Includes double service cleanout. Lay pipe to a maximum slope variation from true slope of 1/8 inch in 10 feet with a minimum ¼ inch in 1 foot fall for positive gravity flow. Include Detectable Warning Tape. Color: green.
Trench backfill compaction in maximum 8" lifts to 95 % maximum dry density.
Excludes: tap fees, impact fees, lift stations, and man holes.

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- 17.8 FIRE LINE EXTENSION:** Underground fire line service from the building to point of connection on site, assume 50' for allowance. Provide 2" Schedule 40 PVC, ASTM D 1785, to perimeter of building. Include Detectable Warning Tape. Color: blue.
Provide backflow preventor, double detector check valve and underground concrete vault.
Trench backfill compaction in maximum 8" lifts to 95 % maximum dry density.
Excludes: tap fees, meter fees, impact fees, and fire hydrants.
- 17.9 SIDEWALKS:** Provide square foot cost allowance to provide 3000 PSI, 4" deep x 5' wide concrete sidewalk reinforced with 6" x 6" x 6" welded wire fabric, ASTM A 185. Install expansion joints at 40' intervals and where abutting existing concrete (i.e, foundation). Joint Sealer: self-leveling "Dow-Corning 890 SL." Saw cut perpendicular control joints at 5' intervals and at building corners within 24 hours after placing. Provide light broom finish, texture perpendicular to direction of travel with troweled and ¼ radiused edge.
Excludes: site paving, curb & gutter, concrete stain/paint, ramps, handrails and signage.
- 17.10 CANOPIES:** Provide square foot cost allowance to provide 7' wide X 10' tall sidewalk canopy system utilizing steel tube columns spaced at 18' intervals (one per each side of sidewalk). Canopy panels, eave gutters, and downspouts to be 26 gauge factory pre-finished material.
- 17.11 SCIENCE LAB:** one
Science lab shall be configured with six, four student lab stations and instructor's demonstration station with acid resistant sinks, counter tops and piping. Lab stations contain under counter doors and drawers for storage. Labs include an emergency shower and eyewash station with floor drain and fume hood with water, electric power, drain and exhaust to outside atmosphere. Science labs are furnished with an adjacent lockable preparatory room with acid resistant wash sink, counter top and piping. Preparatory room also includes solvent/acid storage cabinets, microscope and miscellaneous storage cabinets. All science lab stations, furniture and equipment are as manufactured by Kewanee Scientific Corporation or equal. Lab furniture color as selected by owner from standard manufactures colors.

Science lab option shall include all appropriate acid resistant DWV piping and acid neutralization well.

Exercising the optional allowance for the Science Lab will result in required changes to the published floor plans. The number of standard classrooms shown will be reduced in order to accommodate the addition

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of a Science Lab.

17.12 LIBRARY:

Library shall be furnished with librarian's desk, reading tables and chairs, book storage shelving and computer stations. Library furniture shall be as manufactured by Indeco Manufacturing or equal. Finish color as selected by owner from standard manufacturers colors.

**17.13 PERFORMANCE
AND PAYMENT
BONDS:**

Provide percentage of contract allowance to provide Performance and Payment bonds for 100% total cost of project.