Addendum
No. THREE Date: 6.18.20

Project:

New Educational Facility for the
West Morgan High School for the
Morgan County Board of Education
Decatur, Alabama

MCKEE PROJECT NO. 2020.123
ALABAMA DIVISION OF CONSTRUCTION MANAGEMENT NO. 2020086

The following changes and/or substitutions to the plans and specifications are hereby made a part of same and are incorporated in full force as part of the contract.

Bidders shall acknowledge receipt of this Addendum in writing on his Proposal Form.

A3.1 GENERAL MODIFICATIONS:

A. Refer to attached Special Instructions to Bidders [Revised 6.18.20], herein.

A3.2 SPECIFICATION MODIFICATIONS:

A. Refer to Section 02720, Storm Utility Drainage Piping [Revised 6.16.20], herein.
B. DELETE Section 09800, Acoustical Metal Wall Panel System, in its entirety.
C. See Section 09800, Acoustical Metal Wall Panels, herein.
D. Refer to Section 11200, Gymnasium Equipment [Revised 6.12.20], herein.
E. See Section 12355, Art Casework, herein.
G. The following manufactures are hereby approved subject to the plans and specifications:

1. Section 09500, Linear Metal Ceiling/Soffit – Hunter Douglas/Certainteed | Norcross GA | 770.754.4040
2. Section 09551, Wood Gymnasium Flooring –
Action Floor Systems LLC | Mercer WI | 800.746.3512
Connors Sports | Amasa, MI | 630.641.9184
3. Section 09843, Acoustical Wall Panels – G&S Acoustics | St. Louis MO | 800.737.0309
4. Section 12304, Plastic Laminate Casework – Cabinets by Design/USA Millwork | Duluth GA | 803.840.2018
5. Section 12345, Wood Laboratory Casework – Tesco | Bellville TX | 800.699.5824
6. Section 12355, Music Casework – Case Systems | Midland MI | 989.496.9510
7. Section 12661, Telescopic Bleachers – Irwin | Altamont IL | 618.483.6157

A3.3 DRAWING MODIFICATIONS:

A. Refer to Addendum No. 2 dated 06.12.20. Plumbing Drawings P5, P6, P10, P12, P16 dated 06.10.2020 and P9 dated 06.11.2020 were included, but not referenced in the Addendum.
B. Refer to Sheet C200 issued in Addendum No. Two. The Limits of Sod is indicated. All other areas within the scope of work and all disturbed areas including the practice field shall receive seeding. Topsoil shall be provided for sodding and seeding.
C. Refer to Sheet A2.5. The Acoustical Wall Panels shown are those specified in Section 09803-Sound Absorbing Wall Panels.

D. Refer to Sheet A5.1. the key/symbol “AWP” shown are those specified in Section 09800-Acoustical Metal Wall Panels. Further reference is made on the Room Finish Schedule A9.2.

E. Refer to Reflected Ceiling Plans. Delete reference to the 18” x 18” Ceiling Access Panels.

F. Refer to the Room Finish Schedules. Delete reference to “PT-Porcelain Tile”. Revisions are made on the revised drawings attached herein.

G. Refer to sheet A1.8. Delete reference to note “tackboards, markerboards, smart boards, overhead projectors & screens, seating by others” at the bottom of the equipment list. The equipment list references only the equipment and furnishings specified in Section 012345-Wood Laboratory Casework. Specifications and plans indicate what other specialty items will be provided.

H. See the attached drawings as follows:


A3.4 CLARIFICATIONS & RESPONSES:

A. NONE

END OF ADDENDUM
SPECIAL INSTRUCTIONS TO BIDDERS [Revised 6.18.20]

INTENT OF INSTRUCTIONS
A. The Special Instructions to Bidders are intended to amplify the abbreviated Advertisement and to give other details which shall allow interested parties to prepare bids which accurately reflect the scope of the Work. The Special Instructions to Bidders are meant to be viewed as a complement to the general Instructions to Bidders found in the Project Manual. Should any discrepancy or ambiguity be noted, the Special Instructions to Bidders shall defer to the general Instructions to Bidders.

EXPLANATION AND INTERPRETATION
A. Should any Bidder or subcontractor find any ambiguity, discrepancy, omission, or error in the Drawings and Project Manual, or insufficient information to provide a complete job, or be in doubt as to the intent and meaning thereof, he should at once report such in writing to Architect and request clarification prior to bidding.

B. Clarification shall be made only by written Addenda during the bid period and sent to all perspective Bidders. The Architect and Consultants shall not be responsible for verbal answers regarding intent or meaning of the Contract Documents, or for any verbal instructions, by whomsoever made, prior to the award of the Contract.

C. Additionally, all designed systems and/or assemblies are to be proposed and bid as complete assemblies or operational systems. Drawings are indicating intent and not attempting to fully obtain or detail required work.

BIDDER REQUIREMENTS
A. The Apparent Low Bidder must submit to the Architect a list of the principal Subcontractors, suppliers, and fabricators he plans to use for each category of work. The list of Subcontractors must be received by the Architect within 24 hours following the Bid Opening (email to: andersong@mckeeassoc.com). Once the successful bidder has obtained approval from the Owner, no changes in Subcontractors shall be made without the express, written consent of the Owner. Contractor shall request consent in writing from the Owner and Architect and provide specific and reasonable explanation as to the necessity of said change. Should said change be approved by the Owner, the Contractor must submit the desired replacement Subcontractor to the Architect and obtain written approval of the Subcontractor.

OPENING OF PROPOSALS
A. The Owner shall, according to applicable laws and regulations pertaining to bid openings, receive and review all Proposals submitted, according to the method selected below:

1. Proposals shall be opened and read publicly at the time and place indicated in the Advertisement.

2. Proposals may be rejected if they contain any omissions, alterations of forms, additions not called for, conditional bids, alternate bids unless called for, incomplete bids, erasures, or irregularities of any kind. Proposals in which the unit or lump sum prices bid are obviously unbalanced may be rejected. Additions to or deductions from the Bid amount may be written on the outside of the sealed bid, or by letter enclosed in the sealed bid envelope.

DETERMINATION of LOW BIDDER by USE of ALTERNATES
A. The Awarding Authority may request alternate bid prices (alternates) to facilitate either reducing the base bid to an amount within the funds available for the project or adding items to the base bid.
within the funds available for the project. Alternates, if any, are listed in the Proposal Form in the order in which they shall cumulatively deduct from or add to the base bid for determining the lowest bidder.

B. If alternates are included in the Proposal Form, the Awarding Authority shall determine the dollar amount of funds available and immediately prior to the opening of bids shall announce publicly the funds available for the project. The dollar amount of such funds shall be used to determine the lowest bidder as provided herein below, notwithstanding that the actual funds available for the project may subsequently be determined to be more or less than the expected funds available as determined immediately prior to the time of the opening of bids.

If additional funds become available after the bid opening, the Owner may at his option elect to award to the lowest base bid bidder a contract based on the Contractors base bid amount and additional Alternates.

C. If the base bid of the lowest bidder exceeds the funds available and alternate bid prices will reduce the base bids to an amount that is within the funds available, the lowest bidder will be determined by considering, in order, the fewest number of the alternates that produces a price within the funds available.

If the base bid of the lowest bidder is within the funds available and alternate bid prices will permit adding items to the base bid, the lowest bidder will be determined by considering, in order, the greatest number of the alternates that produces a price within the funds available.

D. After the lowest bidder has been determined as set forth above, the Awarding Authority may award that bidder any combination of alternates, provided said bidder is also the low bidder when only the Base Bid and such combination of alternates are considered.

AWARD OF CONTRACT

A. The Bidder to whom the award is made shall be notified by letter to the address shown on his Proposal at the earliest possible date. At such time, at the option of the Owner, additional information such as a complete financial statement may be required from the successful Bidder.

EXECUTION OF CONTRACT

A. The Contract shall be signed by the successful Bidder, in the number of counterparts provided in the Contract Agreement and returned to the Owner with satisfactory Contract Bonds within ten (10) days after the date of Notice of Award.

PERFORMANCE BOND AND PAYMENT BOND

A. The intent of the Performance Bond is to ensure the faithful performance of each and every condition, stipulation, and requirements of the Contract and to indemnify and save harmless the Owner, Architect, and Consultants from any and all damages, either directly or indirectly (arising out of any failure to perform same). The successful Bidder to whom the Contract is awarded shall furnish at his expense an acceptable Performance Bond in an amount equal to one hundred percent (100%) of the Contract Price of the Contract as awarded. Said Bond shall be made on the approved Bond form, shall be furnished by a surety company duly authorized and qualified to make such bonds in the State of Alabama, shall be countersigned by an authorized agent resident in the State who is qualified for the execution of such instruments, and shall have attached thereto power of attorney of the signing official. In case of default on the part of the Contractor, all expenses incident to ascertaining and collecting losses suffered by the Owner under the Bond, the direct costs of administration, architectural, engineering, and legal services, shall lie against the Contract Bond for Performance of the Work.

B. In addition thereto, the successful Bidder to whom the Contract is awarded shall furnish at his expense a Payment Bond with good and sufficient surety payable to the Owner in an amount not
less than one hundred percent (100%) of the Contract Price, with the obligation that the Contractor shall promptly make payment to all persons furnishing him or them with labor, material, feedstuffs, or supplies for or in prosecution of the Work provided for in the Contract and for the payment or reasonable attorneys’ fees, incurred by successful claimants or plaintiffs in suits on said Bond.

APPROVAL OF CONTRACT

A. No Contract is binding upon the Owner until it has been executed by the Owner and the successful Bidder and copies delivered.

CAD FILES

A. Digital Unlocked Project CAD Files may be requested by emailing cadoperator@mckeeassoc.com and follow instructions as required.

LIST OF SUBCONTRACTORS

A. The Apparent Low Bidder AND Apparent Second Lowest Bidder must submit to the Architect a list of the principal Subcontractors, suppliers, and fabricators he plans to use for each category of work. The list of Subcontractors must be received by the Architect within twenty-four hours following the Bid Opening (email to: andersong@mckeeassoc.com). Once the successful bidder has obtained approval from the Owner, no changes in Subcontractors shall be made without the express, written consent of the Owner.

B. LIST OF SUBCONTRACTORS SUBMITTAL FORM
Email this form in its entirety to contact listed below.
The **Apparent Low Bidder AND Apparent Second Lowest Bidder** must submit to the Architect a list of the principal Subcontractors, suppliers, and fabricators he plans to use for each category of work. The list of Subcontractors must be received by the Architect within twenty-four hours following the Bid Opening.

To: McKee & Associates, Architects

Greg Anderson
andersong@mckeeassoc.com

From: ________________________________________

Name

Company

Email

Project:_____________________________________

Issue Date:____________________________________

Project Number:______________________________

Bid Date:_____________________________________

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END OF SECTION
SECTION 02720 - STORM UTILITY DRAINAGE PIPING [Revised 6.16.20]

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Pipe and fittings.
   2. Manholes.
   3. Catch basins.
   4. Stormwater inlets.
   5. Pipe outlets.

1.02 SUBMITTALS

A. First two paragraphs below are defined in Division 1 Section "Submittal Procedures" as "Action Submittals."

B. Product Data: For each type of product indicated.

C. Shop Drawings:

   1. Precast Structures: Submit general structure dimension and details.

PART 2 - PRODUCTS

2.01 HP PIPE AND FITTINGS

A. 12 inch through 30 inch pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2736 and AASHTO M330.

B. Pipe shall be joint with gasketed integral bell and spigot joint meeting the requirements of ASTM F2736 of F2881, for the respective diameters.

C. 12 inch through 60 inch shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during joint assembly.

D. 12 inch through 60 inch diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

E. Fittings shall conform to ASTM F2736, ASTM F2881 and AASHTO M330, for the respective diameters. Bell and spigot connections shall utilize a spun-on, welded or integral bell and a spigot with gaskets meeting ASTM F477. Bell and spigot fittings joint shall meet the watertight joint performance requirements of ASTM D3212. Corrugated couplings shall be split collar, engaging at least 2 full corrugations.

F. Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2736, Section 4, ASTM F2881, Section 5 and AASHTO M330, Section 6.1, for the respective diameters.

2.02 HDPE PIPE AND FITTINGS

A. All HDPE used on this project shall have smooth interior and annular exterior corrugations and shall have received ALDOT approval.
B. HDPE Pipe and Fittings:

1. Pipe Sizes:
   1. Pipe sizes 4” – 10” shall conform to AASHTO M252 Type S.
   2. Pipe 12” – 30” pipe shall conform to AASHTO M294 Type S.

2. Joints: Joints will be locking type (bell and spigot) and silt resistant. Joints will allow up to a 1.5° deflection. Gasket shall meet ASTM F477L.

3. Material: Virgin material for pipe and fitting production shall be high density polyethylene conforming with the minimum requirements of cell classification 424420C for 4” – 10” diameters or 435400C for 12” – 60” diameters, as defined and described in the latest version of ASTM D 3350, except that carbon black content should not exceed 4%. The 12” – 60” virgin pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in Section 9.5 and 5.1 of AASHTO M294 and ASTM F2306, respectively.

2.03 CONCRETE PIPE AND FITTINGS

A. Reinforced-Concrete sewer pipe and fittings shall conform to ASTM C76

B. Joints shall be grouted bell and spigot or tongue and groove

C. Pipe shall be Class III reinforced concrete

2.04 MANHOLES AND INLETS

A. Standard precast concrete manholes

   1. Manholes shall conform to ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.

   2. Manholes shall be 48 inch diameter or 48 inch square, minimum, unless otherwise indicated.

   3. Increase thickness of precast concrete sections or add concrete to base section as required to prevent flotation.

   4. Base Section

      a. 6 inch minimum thickness for floor slab and 4 inch minimum thickness for walls and base riser section, and separate base slab or base section with integral floor

   5. Riser Section

      a. 4 inch minimum thickness, and lengths to provide depth as indicated.

   6. Steps shall conform to ASTM A 615, deformed, 3/8 inch steel reinforcing rods encased in ASTM D 4101, PP wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalks at 12 inch to 16 inch intervals. Omit steps if total depth from floor of manhole to finished grade is less than 48 inches.

B. PVC Drainage Basins

   1. PVC surface drainage inlets shall include the drain basin type as indicated on the drawings. The ductile iron grates (12 inch and 15 inch frames are cast iron) for
of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer.

2. PVC basins shall be manufactured from PVC stock, utilizing a thermo-molding process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The pipe stock used to manufacture the main body and pipe stubs of the surface drainage inlets shall meet the mechanical property requirements for fabricated fittings as described by ASTM D3034, Standard for Sewer PVC Pipe and fittings; ASTM F1336 Standard for PVC Gasketed Sewer Fittings.

3. Grates furnished for PVC drainage inlets shall be ductile iron grates and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting H-20 wheel loading. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grates shall be provided painted black.

2.04 STORMWATER DETENTION

A. General: Stormwater Detention Basin shall be graded and shaped as indicated on the Drawings.

2.05 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, ACI 350/350R, and the following:

1. Cement: ASTM C 150, Type II.

B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio.

2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (420 MPa) deformed steel.

C. Ballast and Pipe Supports: Portland cement design mix, 3000 psi minimum, with 0.58 maximum water/cementitious materials ratio.

2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (420 MPa) deformed steel.

2.06 CAST IRON DOWNSPOUT BOOTS

A. Factory Fabricated Downspout Boots: contoured interior flow design with no boxed corners, weld seams or choke points; include integral lug slots and stainless steel fasteners.

2. Configuration: Offset/O-Series; Angular/A-Series or Ninety/N-Series as required. Inside top bell shall be sized as required to connect to specified metal downspouts. Length shall be sized as required to connect to drain line run to storm sewer as indicated on the drawings.


4. Finish: Manufacturer's standard powder coat finish.

5. Color: To be selected by Architect from manufacturer's standard range.

6. Accessories:
   a. Manufacturer's standard stainless steel fasteners for mounting onto building wall.
   b. Flexible rubber adapter for connection to drainage pipe

PART 3 - EXECUTION

3.01 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Section 31 20 00 “Earth Moving”.

3.02 PIPING INSTALLATION

A. General Locations and Arrangements: Drawing plans and details indicate location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.

B. Prior to excavating for any storm sewer piping, Contractor shall verify elevations of existing Hot and Chill Water piping at proposed storm sewer crossing to confirm adequate clearance is available and shall notify Architect of the existing elevations.

C. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

D. Install gravity-flow, nonpressure drainage piping according to the following:
   1. Install piping pitched down in direction of flow.
   2. Install piping with 12-inch minimum cover.
   3. Install piping according to manufacturer’s recommendations.

3.03 PIPE JOINT CONSTRUCTION

A. Join gravity-flow, nonpressure drainage piping according to the following:
   1. Join HP pipe with gasketed integral bell and spigot joint meeting the requirements of ASTM F2736 of F2881, for the respective diameters.
   2. Join reinforced concrete piping by grouting.

3.04 MANHOLE INSTALLATION

A. General: Install manholes, complete with appurtenances and accessories as indicated.
B. Install precast concrete manhole sections with sealants according to ASTM C 891.

C. Where specific manhole construction is not indicated, follow manhole manufacturer's written instructions.

D. PVC basins shall be installed using conventional flexible pipe backfill materials and procedures and in accordance with manufacturer’s specifications. The basin body will be cut to final height at time of the final grading so as to maintain a one-piece, leak proof structure. A concrete ring shall be poured under the grate and frame as shown in the project details.

3.05 CONCRETE PLACEMENT

A. Place cast-in-place concrete according to ACI 318.

3.06 FIELD QUALITY CONTROL

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.

1. Submit separate reports for each system inspection.

2. Contractor shall perform a video inspection (TVI) and provide a copy of the video (TVI) inspection report to the Owner and the Construction Manager.

3. Defects requiring correction include the following:
   a. Alignment: Less than full diameter of inside of pipe is visible between structures.
   b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
   c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
   d. Infiltration: Water leakage into piping.
   e. Exfiltration: Water leakage from or around piping.

4. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.

5. Reinspect and repeat procedure until results are satisfactory.

B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.

1. Do not enclose, cover, or put into service before inspection and approval.

2. Test completed piping systems according to requirements of authorities having jurisdiction.

3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours advance notice.

4. Submit separate report for each test. END OF SECTION
SECTION 09800 – ACOUSTICAL METAL WALL PANEL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

A. This section includes Perforated Metal Wall Panels as shown on the architectural drawings.

1.3 SUBMITTALS

A. Manufacturer’s Literature and Data:

   1. Product Data: Submit manufacturer’s technical data and brochures for specified system.

B. Shop Drawings:

   1. Shop drawings shall show dimensions, sizes, thickness, finishes, joining, mounting attachments, and relationship to adjoining work.

C. Samples:

   1. Samples shall include 2 samples each, 12” X 12” nominal piece of each type of metal, finished as specified, and accessories.

D. Certification:

   1. Submit certification from manufacturer of wall panels attesting that products comply with specified requirements including finish as specified.

E. Qualification Data:

   1. Firms specified in “Quality Assurance” Article must demonstrate their capabilities and experience by including lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

G. Maintenance Data:

   1. Provide maintenance instructions for acoustical panels to be included in maintenance manuals as specified in Division 1.

H. Warranty:

   1. Provide manufacturer standard product warranty from date of substantial project completion

1.4 QUALITY ASSURANCE

A. Performance Test Standards: Provide preformed panel systems which have been pretested and certified by manufacturer to provide specified resistance to air and water infiltration and structural deflection and failure when installed as indicated and when tested in accordance with AAMA 501, “Methods of Test for Metal Curtain Walls”.

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B. Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.

1.5 DELIVERY, STORAGE & HANDLING

A. All materials shall be protected during fabrication, shipment, site storage and erection to prevent damage to the finished work from other trades. Store panels inside a well-ventilated area, away from uncured concrete and masonry, and protected from the weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. American Buildings Company/A Nucor Company; (Basis of Design and Quality); www.americanbuildings.com; 1150 State Docks Road, Eufaula, Alabama 36027; Phone: 334.687.2032.

B. MBCI Manufacturing; www.mbci.com; 2280 Monier Avenue, Lithia Springs, Georgia, 30122; Phone: 844.2506 or 770.729.4772.

C. Morin / A Kingspan Group Company; www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems; 1975 Eidson Drive, Florida, 32724; Phone: 860.584.0900 or 800.640.9501

D. Equal products of other manufacturers may be used in the work, provided such products have been approved by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 SYSTEM DESCRIPTION

A. Perforated Soffit Liner Panel (SLP) by American Buildings Company/A Nucor Company.

1. The panel shall have a configuration consisting of 1” interlocking ribs. The interlocking ribs are designed to conceal the panel fasteners. The panel shall provide a net coverage of 12” in width. Panel shall be smooth finish.

2. Panel material as specified shall be 24 gage 50,000 psi (Select one of the following)
   a. G90 Zinc-coated (galvanized)

3. Fasteners for Soffit Liner Wall Panels (SLP):
   a. Shall be manufacturer’s fastener with hex washer head, cadmium or zinc plated.
   b. Shall be assembled with an EPDM washer.
   c. The fasteners shall be color coordinated with a premium coating system which protects against corrosion and weathering.

4. Finish/Color:
   a. Finish shall be Smartkote Kynar 500® finish.
   b. Provide all trims, fasteners, sealants to match selected colors.
   c. Color of the panels shall be selected by Architect from manufactures Standard Color pallet.
2.3 MATERIALS

A. Fabrication

1. General: Fabricate and finish panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, and as required to fulfill indicated performance requirements which have been demonstrated by factory testing. Comply with indicated profiles and dimensional requirements, and with structural requirements.

2. Metal Gages: Thicknesses required for structural performances, but not less than manufacturer's recommended minimums for profiles and applications indicated, and not less than 22 gauge.

3. Required Performances: Fabricate panels and other components of wall system for the following installed performances.

4. Water Penetration: No significant, uncontrolled leakage at 4 lbs. per sq. ft. pressure with spray test.

5. Air Infiltration: 0.02 cfm per sq. ft. for gross roof/wall areas, with 4 lbs. per sq. ft. differential pressure.


7. Sound Absorption, Interior Surfaces: Coefficient of 0.75.

8. Apply bituminous coating or other permanent separation materials on concealed panel surfaces where panels would otherwise be in direct contact with substrate materials which are noncompatible or could result in corrosion or deterioration of either material or finishes.

9. Fabricate panel joints with captive gaskets or separator strips, which provide a tight seal and prevent metal-to-metal contact in a manner which will minimize noise from movements within panel system.

10. Condensation: Fabricate panels for control of condensation, including vapor inclusion of seals and provisions for breathing, venting, weeping and draining.

B. Metal Panel Internal Framing:

1. Manufacturers Standard.

C. Fasteners & Accessories

1. Manufacturer's standard noncorrosive types, with exterior heads gasketed.

2. Except as indicated as work of another specification section, provide components required for a complete wall panel/siding system, including trim, closures, fascias, gravel stops, mullions, sills, corner units, ridge closures, clips, seam covers, battens, flashings, gutters, louvers, sealants, gaskets, fillers, closure strips and similar items. Match materials/finishes of preformed panels.

3. Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15 mil dry film thickness per coat.

2.4 FINISHES

A. Metal Finishes

1. General: Apply coating either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability.

2. Protect coating promptly after application and cure, by application of strippable film or removable adhesive cover, and retain until installation has been completed.
3. Durability: Provide coating which has been field tested under normal range of weathering conditions for minimum of 20 years without significant peel, blister, flake, chip, crack or check in finish, and without chalking in excess of 8 (ASTM D 659), and without fading in excess of 5 NBS units.

4. Color Finish on All Trim and All Wall Panels: Panels shall have a factory color finish on the exposed side. The exposed finish shall consist of a 70% KYNAR 500 resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than 0.8 mil. exclusive of the primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. The color finish shall meet or exceed the performance requirements specified below.

5. Color selected by Architect from manufacturer's standard colors.

6. Paint Color Test:
   a. Test: Film Thickness; Test Method: ASTM D-1005; Performance: 0.2 mil primer 0.8-0.9 mil topcoat
   b. Test: 60° @ under 10 low gloss; Test Method: ASTM D-523; Performance: 25-35
   c. Test: IR Reflectivity; Test Method: ASTM D-4803-97; Performance: Must meet 25% Minimum (exceeds)
   d. Test: Pencil Hardness; Test Method: ASTM D-3363; Performance: HB-H
   e. Test: Flexibility, T-Bend; Test Method: ASTM D-4145; Performance: 2-T Galvalume Steel
   f. Test: Adhesion; Test Method: ASTM D-3359; Performance: No adhesion Loss
   g. Test: Reverse Impact; Test Method: ASTM D-2794; Performance: No cracking or loss of adhesion
   h. Test: Abrasion, Falling Sand; Test Method: ASTM D-968; Performance: 65-85 1/mil
   i. Test: Mortar Resistance; Test Method: ASTM C-267; Performance: No effect
   j. Test: Detergent Resistance; Test Method: ASTM D-2248 3% 72 hrs. @ 100°F; Performance: No effect
   k. Test: Acid Pollutants; Test Method: ASTM D-1308 10% Muriatic Acid (15 min) 20% Muriatic Acid (15 min); Performance: No effect, AAMA 605.2 <5 units color change
   m. Test: Acid Rain Test; Test Method: Kesternich; Performance: 15 cycles minimum, no objectionable color
   n. Test: Alkali Resistance; Test Method: 20% Sodium Hydroxide (1hr); Performance: No effect
   p. Test: Salt Spray Resistance 5% @ 95° F; Test Method: ASTM B-117; Performance: 1000 hrs Galvalume Steel
   q. Test: Humidity Resistance 100% @ 100° F; Test Method: ASTM D-2247; Performance: Passes 1000 hrs
   r. Test: South Florida exposure; Test Method: ASTM D-2244; Performance: <5 units color change
   u. Test: UVB (313 bulbs); Test Method: ASTM G-53; Performance: Passes 3000 hrs
   v. Test: Chalk Resistance; Test Method: ASTM D-4214; Performance: Rating of 8 min

PART 3 –EXECUTION

3.1 INSPECTION

A. General: Comply with panel fabricator's and material manufacturer's instructions and recommendations for installation, as applicable to project conditions and supporting动工 Facility for the West Morgan High School for the Morgan County Board of Education Decatur, Alabama MCKEE PROJECT NO. 2020.123

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substrates. Anchor panels and other components of the work securely in place, with provisions for thermal/structural movement.

B. Install panels with concealed fasteners.

C. Tolerances:
   1. Installation Tolerances: Shim and align panel units within installed tolerance of 1/4" in 20'-0" on level/plumb/slope and location/line as indicated, and within 1/8" offset of adjoining faces and of alignment of matching profiles.

D. Joint Sealers: Install gaskets, joint fillers and sealants where indicated and where required for weatherproof performance of panel systems. Provide types of gaskets and sealants/fillers indicated or, if not otherwise indicated, types recommended by panel manufacturer.
   1. Refer to other sections of these specifications for product and installation requirements applicable to indicated joint sealers.
   2. Joint Sealers: Refer to other sections of these specifications for post-installation requirements on joint sealers; not work of this section.

3.3 CLEANING

A. Clean all surfaces following installation.

B. Replace material having scratches, abrasions, or other defects, with unblemished panels, or suspension.

C. Maintenance per manufacturer’s finish maintenance instructions.

END OF SECTION
SECTION 11200 - GYMNASIUM EQUIPMENT [Revised 6.12.20]

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Gymnasium Equipment:
   1. Overhead-supported basketball backstops.
   2. Basketball backstop winches.
   3. Basketball backboards.
   4. Basketball backboard padding.
   5. Basketball goals.
   6. Backstop Height Adjustment Units.
   7. Indoor Volleyball Systems.
   8. Indoor Volleyball Nets.
   9. Indoor Volleyball Sleeves & Cover plates.
   10. Indoor Volleyball Net Antennas.
   11. Indoor Volleyball Boundary Markers.
   12. Indoor Volleyball Protective Padding.
   15. Gymnasium Wall Padding.

1.2 RELATED SECTIONS

A. Division 5 (Division 05) Metals Sections: Structural steel and steel joists.
B. Division 9 (Division 09) Finishes Section: Finish painting of factory-primed surfaces.
C. Division 16 (Division 26) Electrical Section: Installing electrical power to operate gymnasium equipment.

1.3 REFERENCES

H. UL 214 – Test for Flame-Propagation of Fabrics and Films.

1.4 DESIGN REQUIREMENTS

A. Basketball Backstops: Locate overhead attachments of basketball backstops in keeping with static equivalent loading and point reactions.
1.5 SUBMITTALS

A. Comply with Section 01330 (01 33 00) – Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including materials, components, fabrication, finish, and installation instructions.

C. Shop Drawings:
   1. Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating locations, quantities, dimensions, tolerances, materials, fabrication, connections, hardware, fasteners, finish, electrical wiring diagrams, options, and accessories.
   2. Show location and detail of attachment to building structure.

D. Samples: Submit manufacturer's color samples.
   1. Basketball backboard padding.
   2. Wall wainscot padding.

E. Design Data:
   1. Basketball Backstops:
      a. Submit manufacturer's design data, indicating static loads and point reactions.
      b. Submit calculations complete, showing hanger and hoist pulley points.
      c. General load charts or generic product laboratory test data will not be considered sufficient data.

F. Test Reports: Submit manufacturer's certified test reports from testing performed by accredited independent testing laboratory, indicating compliance of materials with requirements as specified.

G. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

H. Manufacturer's Project References: Submit manufacturer's list of recently completed projects, including project name and location, name of architect, and type and quantity of gymnasium and play field equipment installed.

I. Operation and Maintenance Manual: Submit manufacturer's operation and maintenance manual; including operation, maintenance, adjustment, and cleaning instructions; trouble shooting guide; parts list; and electrical wiring diagrams.

J. Warranty: Submit manufacturer's standard, lifetime, and additional warranties.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility: Provide gymnasium equipment from single manufacturer.

B. Manufacturer's Qualifications: Minimum of 5 consecutive years experience manufacturing gymnasium and play field equipment similar to that specified.

C. Installer's Qualifications: Trained and approved by manufacturer.

D. Regulatory Requirements: Gymnasium equipment shall conform to latest rules and regulations.
   1. Federation Internationale de Football Association (FIFA).
   2. International Basketball Federation / Federation International de Basketball (FIBA).
   7. USA Volleyball (USAV).
1.7 DELIVERY, STORAGE, AND HANDLING
A. Delivery: Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer’s instructions. Keep temporary protective coverings in place.
C. Handling: Protect materials and finish from damage during handling and installation.

1.8 WARRANTY
A. Provide 1-year warranty against defects in materials and workmanship, unless otherwise specified.

PART 2 PRODUCTS

2.1 MANUFACTURER
C. Draper, Inc. | 411 South Pearl St., Spiceland, Indiana 47385 | 765-987-7999 | 800-238-7999 | www.draperinc.com
E. AALCO Manufacturing | 1650 Avenue H St. Louis, MO 63125 | 314-544-4300 | 314-544-4300 | email: sales@aalcomfg.com | www.aalcomfg.com
F. Equal products of other manufacturers may be used in the work provided, such products have been approved, by the Architect, not less than Ten (10) days prior to scheduled bid opening.

2.2 OVERHEAD-SUPPORTED BASKETBALL BACKSTOPS
A. Model No. 917 Forward Fold – Rear Braced overheard – supporting basketball backstop:
1. Refer to drawings for Location(s) and Quantities.
3. Ends of Diagonal-Brace Tubes and Internal Web Bracing: Precision machine-cut to provide maximum weld surface contact to form unitized, back-to-back, triangular-type structural design to provide superior lateral stability.
4. Top Horizontal Mast Hinge Spreader: Heavy 4-inch structural steel channel.
5. Backstop: Supported from 3-1/2-inch O.D. pipe anchored to overhead framing members with heavy formed-steel support fittings. Capable of supporting load exceeding 10,000 pounds with sufficient attachment points and meeting safety factor of 60 to 1. Furnish certified test results with submittals.
6. Goals: Mount directly through backboard and into heavy structural steel weldment Center-Strut, clamped to vertical 6-5/8-inch O.D. center support to eliminate strain on backboard, should player hang on front-mounted goal and to be in compliance with NCAA and NFSHSA requirements.
8. Upper Backboard Extension Assembly: Provide official NCAA and NFSHSA regulation 6
inches from front of Center-Strut to face of backboard.

9. **Main Backstop Frame Assembly**: Suspended from overhead 3-1/2-inch O.D. pipe by adjustable hangers, with 2 inches of vertical adjustment, to provide for precise plumbing of frame during installation.

10. **Hangers**: Tested to 20,000 pounds maximum breaking point to achieve safety factor of 50 to 1. Furnish certified test results with submittals.

11. **Support Hangers**: Offset 1-1/2 inches from center line of main center mast to properly weight lock unit in playing position.


13. **Knee Joint**: Lock backboard in playing position, with torsion spring within hinge assembly.

14. **Hoist Cable**: Disengage knee joint, allowing front brace to fold.

15. **Backstop 6-5/8-Inch O.D. Main Stem**: Suspended diagonally from superstructure with 15 degree angle and 4'-6" long vertical member for attachment of basketball backboard.


17. **Adjustable Collar**: Permanently set during installation to plumb face of backboard and to level goal.

18. **Finish of Metal Parts, Pipes, and Fittings**: Flat enamel, 1 coat. Color to be selected by Architect from manufacturers standards.

### B. **Model No. 955 Side Folding – Side Braced overhead-supporting basketball backstop**

1. Refer to drawings for Location(s) and Quantities.

2. **Vertical Frame Assembly**: Main vertical support of 6-5/8-inch O.D. heavy-wall structural tube with rear diagonal brace of 1-7/8-inch O.D. structural pipe. Suspended by adjustable hangers, with 2-inch adjustment, to provide for precise plumbing of frame during installation, and further supported from 3-1/2-inch O.D. pipe anchored to overhead framing system by heavy, formed, die-cut steel support fittings.

3. **Top Horizontal Mast Hinge Spreader**: Heavy-wall 3-1/2-inch O.D. tubing to form rigid triangular design.

4. **Goal**: Mount directly through backboard and into heavy structural steel weldment clamped to vertical 6-5/8-inch O.D. center support to eliminate strain on backboard, should player hang on front-mounted goal. Direct-mount feature shall conform to NCAA rules. Transfer load on goal directly to backboard support Center-Strut, to minimize stress to glass backboard.

5. **Upper Backboard Extension Assembly**: Official NCAA and NFSHSA regulation 6 inches from front of Center-Strut to face of backboard.

6. **Support Fittings**: Attached to overhead framing. Capable of supporting load exceeding 10,000 pounds, with sufficient attachment points to acquire 60:1 safety factor for support of entire backstop superstructure system. Furnish certified test results with submittals.

7. **Superstructure Pipes**: Reinforced with truss-type bridging or bracing when truss centers exceed spans of 14'-0", as required.

8. **Pipe Ends**: Cap when exposed.


10. **Knee Joint**: Locks backboard in playing position with torsion spring within hinge assembly. Disengaged by upward force of hoist cable.

11. **Finish of Metal Parts, Pipes, and Fittings**: Flat enamel, 1 coat. Color to be selected by Architect from manufacturers standards.

### 2.3 **BASKETBALL BACKSTOP WINCHES**

#### A. Basketball Backstop Winches, General:

1. **Hoist Cable**: Of sufficient length to each backstop. 1/4-inch diameter galvanized aircraft-type cable, minimum of 7,000 pounds ultimate.

2. **Swivel Pulleys**: 4-inch diameter cast ductile iron pulley sheave with maintenance-free, oil-impregnated bearing for proper hoist cable routing to winch.

3. **Pulley Assembly and Attachment to 3-1/2-Inch O.D. Support Structure**: Rated at minimum 9,000-pound load rating. Furnish certified test results with submittals.

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B. Standard-Duty Electric Winches: Model No. 712.
   1. For each backstop.
   2. Hold units at any position when raising or lowering.
   4. Fully Enclosed Gear Set: Set in oil bath and factory sealed to eliminate need for lubrication.
   5. Cable Drum: Grooved to provide neat and consistent cable tracking.
   6. Gear Shaft: Connect directly to drum hoist without use of chain.
   7. Electric Winch: Incorporate rotary up and down limit switches and flush wall-mounted dual-key (separate up and down keys) switch to prevent improper operation of system.
   8. Key Switches: Key switches, operating basketball backstops and gymnasium dividers, shall be furnished identical.

C. Safety Locks: Model No. 797 Saf-Strap safety lock.
   1. For each court backstop.
   2. Lock: Inertia sensitive to automatically lock basketball backstop in position at any time in storage or during raising or lowering cycle, due to sudden surge of speed created by possible malfunction of hoisting apparatus.
   3. Reset: Fully automatic reset requiring no poles, ropes, levers, or buttons.

2.4 BASKETBALL BACKBOARDS

A. Basketball Backboards: Model No. 208 rectangular backboard.
   1. Provide for each 917 and 955 backstop.
   2. Backboards: 2-5/16-inch thick frame, 72 inches by 42 inches, 1/2-inch tempered plate glass cushioned in unitized steel-tubing frame.
   5. Warranty: Limited lifetime warranty against breakage.

2.5 BASKETBALL BACKBOARD PADDING

A. Basketball Backboard Padding: Model No. 326 Pro Pad bolt-on positive-attachment backboard pad.
   1. Provide for each rectangular glass backboard, along bottom of backboard and up 15 inches on each side, meeting NCAA and NFHS rules.
   2. Pads: 2-inch thick, molded from 9-pound density polyurethane foam with integral skin.
   3. Color: To be selected by Architect from manufacturer standards: Gray, Scarlet, Royal, Navy, Kelly, Forest Green, Maroon, Orange, Black, Purple, and Gold
   4. Warranty: 8 years.

2.6 BASKETBALL GOALS

A. Basketball Goals: Model No. 236054 Ultra – Flex II Goal [Breakaway Goal]
   1. Provide for each Model No. 208 backboard.
   2. Goal: Positive-lock, pressure-release mechanism which is preset to provide rebound characteristics identical to those of a non-movable ring. Spring-loaded to automatically and instantaneously return to playing position.
   3. Pressure Release Mechanism: Factory preset with capability for field adjustment to comply with NCAA recommendation to test goals for rebound elasticity.
   4. Breakaway goals with plastic-pivot bearings are not acceptable.
   5. Rim: 18 inch diameter, made with 5/8 inch diameter cold drawn, alloy steel, rigidly braced by 3/16-inch thick steel formed and die-cut steel brace welded in position on underside of rim for maximum support.
   6. Net Attachment: Tube-tie net attachment system on rim to eliminate conventional wire-formed net locks.

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2.7 HEIGHT ADJUSTMENT UNITS

1. Model No. 00900xxx for each backstop, height adjustment unit for adjusting goal height to any position between 8'-0" and 10'-0" above floor, with Center-Strut direct-goal attachment to eliminate strain on backboard.
2. Height Scale: Located on side of slide tube to visually determine height settings.
3. Guide Tubes: Fabricated with dual, 2-3/16-inch square, heavy-wall, zinc-plated, guide tubes. Tubes to be welded to upper and lower clamps that attach securely to 6-5/8-inch diameter backstop mast. Tubes shall support heavy steel center weldment, which shall support backboard and be factory drilled for direct goal attachment.
5. Height Locking Device: Automatically engages when hand crank is removed.
6. Unit shall operate by 3/4-inch diameter Acme-threaded rod and removable hand crank.
7. Include Height Adjuster Crank.

2.8 INDOOR VOLLEYBALL

A. Volleyball System: Model No. 01991000 Powr-Line Competition volleyball system.
1. Posts: Telescoping type that does not extend above net and impede official's vision.
2. Post Material: 3-1/2-inch diameter, Alloy 6063-T6 aluminum extrusion with reinforcing rib pattern. Finished with plastic-molded foot to protect against gymnasium floor damage.
3. Upper Telescoping Upright: Extruded from same aluminum alloy as bottom upright. Height adjustable for heights from 6'-1" to 7'-11-5/8" with pressure-lock T-handle assembly. Counterbalanced with constant-tension spring mechanism to eliminate possibility of accidentally falling while making height adjustments.
4. Upper End of Upright: 3-inch diameter pulley to reduce cable drag and unnecessary system tension.
5. Winch Post: Heavy-duty Powr-Winch®.
8. Height Indicator Labels: Apply after assembly of posts.
9. Each System: Consists of 1 winch post and 1 end post.

C. Volleyball Nets: Model No. 02295640 volleyball net.
1. Nets: 32 feet by 39 inches with 42'-6", 1/4 inch diameter nylon braided cord with a Kevlar core. Use with Model No. 01991 competition standards.
2. End Hems: 4-inch width with 1/2-inch diameter fiberglass dowel to provide rigidity and tailored square hanging net.
3. Each End Hem: Equipped with three 1-inch wide polypropylene web-tension straps and quick-adjust tension clips.
4. Netting: 4-inch square, heavy-duty, #24 black nylon mesh with 2-inch wide, vinyl-coated, polyester hem double-stitched across top of net.

D. Floor Sleeves and Cover Plates: Model No. 00870100 floor sleeve.
1. Floor Sleeve: 3-3/4-inch O.D. heavy-wall steel tubing, extending 9 inches into concrete footing.
2. Cover Plate: Brass plated. 5-inch O.D. by 1/2-inch thick recessed collar, cork gasket, and cover.
4. Cover removal key.

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A. Net Antenna: Model No. 02296100 Powr-Line net antenna with clamp.
   1. Antenna Clamps: Included with net antenna. As 1 complete unit, clamps shall snap easily and securely into place.
   2. Antenna Size: 3/8-inch diameter by 6-foot long fiberglass dowels. Check no spec measurements
   3. Antenna Markings: Alternately marked red and white.

F. Boundary Markers: Model No. 02297 boundary markers.
   1. 2-inch wide, durable, white, polyester-reinforced vinyl material with white Velcro attachment strips sewn in place for securing to competition volleyball net.

G. Protective Padding: Model No. 00839000 protective padding.
   1. Compliance: Meet current competition requirements as prescribed by USAV, NFHS, and NCAA for player protection and safety.
   2. Padding: Extend to height of 6'-0".
   4. Pads Installed on Uprights: Narrow profile to provide for maximum visibility for judges and spectators.
   5. Color: Custom colors available.
   6. Net Attachment: One side of pad has cut-out to accommodate net attachment.

H. Judge's Platforms: Model No. 00999000 judge's platform.
   1. Attach to volleyball system in cavities of post.
   4. Casters: 2, for ease of moving.
   5. Protective Pads: Model No. 00993100.

2.9 GYMNASIUM CONTROL SYSTEMS

A. Key Switches: Model No. XELE007911xx
   1. Wall-Mounted Dual-Key Switch: Switch with separate “up” and “down” keys to prevent improper operation of system. Single key systems or “toggle” type switches are not approved. Operates quantity of winches required.
   2. Momentary Switch: Switch automatically returns to “off” position if released.
   3. Cover Plate: Flush-mounted stainless steel cover plate with manufacturer's label including operating instructions.
   4. Key Switches: Key switches for all gymnasium equipment to be furnished identical.

B. Wiring: Install electric power and hook-up of electric controllers.
   1. Materials: Conduit, wire, and boxes for power and control of key switches, touch pad, and motors to be furnished and installed as specified in Division 16 (Division 26) electrical section.
   2. Hook-Ups: Complete and final hook-up of motors and electrical devises as specified in Division 16 (Division 26) electrical section.

2.11 GYMNASIUM WALL PADDING:

A. Model No. 005600XX 2” ImpactSafe Wall Pad. [Non-Fire Retardant]
      a. The Maximum gMAX values for the padding shall not exceed 200 and the HIC shall not exceed 1000 when tested at a 4 foot Drop Height.
   2. Cover Material: Designated as flame resistant in accordance with NFPA 701 and State of California.
   3. Wall Pad Dimensions: 2'-0" wide by 6'-0" high by 2-1/4" thick.
   4. Nailing Margin: 1-inch nailing margin top and bottom for securing panels to wall.
5. Foam: 2-1/4-inch thick polyethylene foam.
6. Interior Foam: Bonded to 7/16-inch OSB to minimize warping.
8. Cover Material Tear Strength: 100 psi.
9. Cover Material Properties: Mildew resistant, rot resistant, with infection-combating fungicide.
10. Fold and securely staple cover to backside of OSB.
11. Color: To be selected by Architect from manufacturer standards. Light Blue, Royal Blue, Red, White, Orange, Yellow, Tan, Gray, Maroon, Purple, Black, Navy Blue, Kelly Green, Dark Green
12. Column Pads: Same construction as wall pads mounted on ¾” plywood backing mounted to columns, equal to Aalco Model #CCP-1. Height of column pads shall be 8’-0” high. Color to match wall pads.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas and supporting structure to receive gymnasium and play field equipment. Notify Architect in writing of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install gymnasium and play field equipment in accordance with manufacturer's instructions at locations indicated on the Drawings.
B. Install equipment plumb, level, straight, square, accurately aligned, correctly located, to proper elevation, and secure.
C. Install equipment using manufacturer's supplied hardware and fasteners.
D. Electrical: Install electrical power as specified in Division 16 (Division 26) electrical section.
E. Wall Padding: Form or cutout panels for columns, electrical outlets, wall switches, and other items as required.
F. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
G. Remove and replace damaged components that cannot be successfully repaired, as determined by Architect.

3.3 ADJUSTING

A. Adjust basketball backstops, backboards, and goals for plumb and level.
B. Adjust operating equipment to function properly and for smooth operation without binding.
C. Set and adjust electric winch upper and lower limit controls.

3.4 CLEANING

A. Clean gymnasium and play field equipment promptly after installation in accordance with manufacturer's instructions.
B. Remove labels and temporary protective coverings.
C. Do not use harsh cleaning materials or methods that would damage finish.

3.5 DEMONSTRATION
A. Demonstrate operation and maintenance of gymnasium and play field equipment to Owner’s personnel.
B. Furnish Owner with keys to equipment after demonstration.

3.6 PROTECTION
A. Protect installed gymnasium and play field equipment to ensure equipment will be without damage or deterioration at time of substantial completion.

END OF SECTION
SECTION 12355 - WOOD ART CASEWORK & EQUIPMENT

PART 1 – GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract including General and Special Conditions and Division 1 Specification sections apply to work of this section.

QUALIFICATIONS

All art casework, countertops, and equipment covered by this specification and accompanying drawings shall be manufactured or furnished by one manufacturer and supplied under their direction to eliminate any divided responsibility.

QUALITY ASSURANCE

Cabinet construction and associated components are approved and listed with SEFA to SEFA 8-2010 4TH Edition, Version 1.0 Specification. Manufacturer must submit the independent laboratory certificate of performance indicating that the art casework being constructed PASSED the SEFA 8-W recommended practices. Certificate of performance must be submitted to architect before being approved.

WORK BY ART CASEWORK & EQUIPMENT CONTRACTOR

Furnishing, delivering to the building, uncrating, setting in place, leveling, and anchoring all casework and equipment listed in the specifications or equipment schedule and/or shown on the drawings.

Furnishing art area plumbing fixtures and fittings (only) as defined in the specifications, complete with tank nipples and lock nuts for mounting fixtures and fittings on tops or curbs furnished in cartons and delivered to appropriate trades. Installation will be by these other respective trades as a part of their final connections.

Furnishing art sink bowls, complete with required overflows, plugs and strainers as called for in the specifications, equipment list and/or shown on the drawings. Sinks supplied, not attached or assembled. Installation will be by other respective trades as a part of their final connections.

Furnishing and installing filler panels and scribes as required for finished installation.

Removal of all debris, dirt, and rubbish accumulated as a result of installation of this equipment, leaving premises broom clean and orderly.

WORK BY OTHERS

Furnishing, installing, and connecting of all service lines, drain lines, piping, and conduit within equipment, in service turrets or tunnels, through, under, or along the backs of working surfaces as required by specifications and/or drawings.

Furnishing, installing, and connecting of all vents, revents and special plumbing fixtures or piping to meet local codes, even though not specifically called for in the specifications and/or shown on the drawings.

Furnishing and installation of all rigid or flexible conduit, wire, pulling of wire, fittings, special electrical equipment and accessories including boxes, receptacles; flush plates and all electrical requirements for the Art areas. All shall be in accordance with local codes even though not specifically called for in specifications and/or shown on drawings.

Providing protection and security by General Contractor during and after art equipment installation.
Hoisting or elevator service by General Contractor at no charge to Equipment Contractor.

**DRAWINGS**

This contractor shall furnish to the Owner, five (5) sets of shop drawings showing in detail all proposed materials, equipment, and scope of work.

**MAINTENANCE AND OPERATING INSTRUCTIONS**

This contractor shall include in its bid, the cost of providing a technically qualified representative to thoroughly instruct the Owner's personnel in correct procedures of operating and maintaining this contract.

**GUARANTEE**

This contractor shall guarantee all materials and workmanship of equipment provided on this contract for a period of one (1) year from the date of final acceptance. Any defective materials or faulty workmanship occurring within that time shall be replaced or corrected without charge.

**PART 2 - PRODUCTS**

Manufacturers: The following manufacturers’ products have been used to establish minimum standards for materials, workmanship and function:

The basis of this specification is wood casework manufactured and constructed according to the standards used by Sheldon Laboratory Systems as a basis of design, quality, and layout.

**Products of Kewanee, Cabinets By Design, Peterson Casework and CiF are provided prior approval BASED on meeting all the specifications and intent herein. Even though prior approved, these manufacturers must submit to Architect 10 days before bid literature and catalogs showing any differences from the specifications herein.**

The specifications and drawings define and show the essential minimum requirements.

Where a definite material or manufacturer is specified, it is not the intent to discriminate against any product of another manufacturer. However, it is the intent of this specification to provide for the Owner a quality and educationally functional installation of art equipment, countertops, and casework, and to exclude inadequate or inferior equipment and casework.

Minimum standards are set forth herein to comply with this intent. Art equipment and casework manufacturer(s)/bidders are cautioned that ONLY EQUIPMENT MEETING THE STANDARDS SET FORTH IN THE SPECIFICATION WILL BE ACCEPTABLE.

Other manufacturers and prior approved manufacturer shall submit for approval no later than (10) days prior to bid date. Any Manufacturer submitting for approval shall list any and all deviation from the products indicated on the plans and specification in written form. Additionally the manufacturer must submit a list of (5) projects of similar size completed in the last 2 years. This list must include: Project name, General Contracting firm and Address of Installation.

To insure that all bidders are bidding equal equipment, all requests for changes, modifications, substitutions, approvals, etc., will be set forth in an addendum. Any item not receiving prior approval will rightfully be construed as based on supplying the educational function, essential requirements, design, construction, and materials as called for in this specification. Bidders shall not rely upon approvals made in any other manner.
MATERIALS (WOOD CASEWORK)

General: All casework shall be of modern design and shall be constructed in accordance with the best woodworking practices of the cabinet making industry. First class quality casework shall be established by use of machinery, tools, fixtures, and skilled workmanship. Tolerances for components per various equipment used to manufacture components.

Definitions: The following definitions apply to wood art casework units. Casework unit size and type are indicated on the drawings and/or equipment list.

1. Exposed portions of casework include surfaces visible when doors and drawers are closed. Bottoms of cases more than 4'-0" above floor shall be considered as exposed. Visible members in open cases or behind glass doors also shall be considered as exposed portions.
2. Unexposed portions of casework shall include sleepers, web frames, dust panels, and other surfaces not usually visible after completed installation.
3. Semi exposed portions of casework shall include interior spaces when doors and drawers are open.

Materials: Materials used for construction of cabinets, cases and tables as specified herein shall meet or exceed the minimum standards as specified.

1. Wood species required shall be: Red Oak
2. All wood materials used shall meet applicable standards for CARB 2.
3. Exposed Woods:
   a. Solid Wood: Flat sawn lumber, clear and free from defects. All lumber thoroughly and properly air dried to a uniform moisture content of 4%-6% by weight, tempered to 7%-8% during fabrication.
   b. Plywood: Plywood shall be thickness as specified herein, faced with surface veneer secured with highly water-resistant glue. Wood veneer shall be plain sliced. Wood veneer shall be "Premium Grade A", face smooth, tight cut and full length of exposed face.
4. Unexposed Woods:
   a. Solid Lumber: Dry, sound, selected to eliminate appearance defects. Any species of hardwood.
   b. Plywood: Uniform hardwood face veneer.
5. Hardboard: (Tempered) Shall be 1/4" thick. All hardboard shall be composed of wood fibers and resinous binder compressed under heat and pressure.

Construction – General:

1. Cabinets, cases, tables, and other units shall be of the size and configuration indicated on the drawings and/or equipment list. General construction is bored, doweled, dadoed and glued. Classic series fronts shall be square partial overlay with vertical match grain describe below.
2. Base Cabinet Construction:
   a. Cabinet end panels shall be 3/4" thick, 7-ply, hardwood plywood.
   b. Vertical partitions (as required) shall be 3/4" thick, 7-ply, hardwood plywood.
   c. Exposed edges of end panels, partitions, shelves shall be edged with solid wood banding.
   d. Front and back rails: 1" X 3" solid oak front rail, back grooved to receive cross rails, and similar 1" X 3" solid oak back rail, both set flush with cabinet ends; doweled and glued into place.
   e. Cross rails are 1" X 2-1/4" solid hardwood fully housed into front and back rails with mortised and tenoned joints to form a full four-sided top frame.
   f. Intermediate rails (as required) are 1" X 3" solid hardwood rails, back grooved to receive security panels as required, set flush with cabinet ends; doweled and...
g. Cabinet bottoms shall be 3/4", 7-ply hardwood plywood. Set flush with cabinet ends; doweled and glued into place.

h. Security panel (as required) is 1/4" thick hardboard. Panel is provided between drawers/drawers and drawers/doors when base cabinet has lock sets keyed differently.

3. Wall Cabinet Construction:
   a. Cabinet end panels shall be 3/4" thick, 7-ply, hardwood plywood.
   b. Vertical partitions (as required) shall be 3/4" thick, 7-ply, hardwood plywood.
   c. Exposed edges of end panels, partitions, shelves shall be edged with solid wood banding.
   d. Cabinet tops and bottoms shall be 1", 11-ply hardwood plywood. Set flush with cabinet ends; doweled and glued into place.
   e. Back panel shall be 1/4" hardwood plywood when cabinet interior is exposed and 1/4" hardboard when semi exposed.
   f. Top and bottom back rail shall be 1/2" hardwood plywood.
   g. Each wall case will be provided two heavy duty steel angled mounting brackets screwed to the interior of the cabinet end panels and shall be used for mounting cabinets to wall structure.

4. Tall Cabinet Construction:
   a. Cabinet end panels shall be 3/4" thick, 7-ply, hardwood plywood.
   b. Vertical partitions (as required) shall be 3/4" thick, 7-ply, hardwood plywood.
   c. Exposed edges of end panels, partitions, shelves shall be edged with solid wood banding.
   d. Division rails (as required) shall be 1" X 3" solid hardwood rails, back grooved to receive security panels as required, set flush with cabinet ends; doweled and glued into place.
   e. Cabinet bottoms shall be 3/4", 7-ply hardwood plywood. Set flush with cabinet ends; doweled and glued into place.
   f. Cabinet tops shall be 1", 11-ply hardwood plywood. Set flush with cabinet ends; doweled and glued into place.
   g. Top Back Rail and Center Back Rail shall be 1" X 3" solid hardwood doweled and glued into end panels. Bottom Back Rail shall be 3/4" X 4" hardwood plywood doweled and glued into end panels.
   h. Back panel shall be 1/4" hardwood plywood when cabinet interior is exposed and 1/4" hardboard when semi exposed.

5. Drawers:
   a. Classic Front: Shall be 3/4" thick 45 lb. industrial grade particle board core, 5 ply panel with both faces surfaced with hardwood veneer. Edges banded with 3 mm solid hardwood with a slight radius. Grain shall be vertically matched cut from one panel as a set.
   b. Drawer Box Body: Back, sides, and front shall be 1/2" thick 9-ply birch plywood, chuck and bore joinery with 1/4" thick hardboard white melamine bottom. Set in groove all around, pinned and glued, clear chemical resistant finish with top edges finished.

6. Doors - Base and Wall Cabinets:
   a. Classic Partial Overlay Front: Shall be 3/4" thick 45 lb. industrial grade particle board core, 5 ply panel with both faces surfaced with hardwood veneer. Edges banded with 3 mm solid hardwood with a slight radius. Grain shall be vertically matched cut from one panel as a set.

7. Doors - Tall Cabinets:
   a. Classic Partial Overlay Front: Shall be 3/4" thick 45 lb. industrial grade particle board core, 5 ply panel with both faces surfaced with hardwood veneer. Edges banded with 3 mm solid hardwood with a slight radius. Grain shall be vertically matched cut from one panel as a set.

8. Cabinet Backs:
   a. Exposed interior - 1/4" thick hardwood plywood
   b. Unexposed interior - 1/4" thick hardboard (Removable at sink cabinets)
9. Cabinet Shelves:
   a. Shelves in cabinets shall be 1” thick 11-ply hardwood plywood. Front edge banded with solid hardwood. Shelves shall be adjustable on 1-1/4” centers, supported by four (4) nickel-plated steel pin and socket type shelf clips.

Wood Finish:

1. Exposed wood parts of all art casework and equipment shall be finished SEFA approved finish. Standard colors or clear finish available
2. All parts shall be carefully sanded and buffed in preparation for the finishing processes. The first coat shall be a stain and sealer coat of synthetic resin. The product is then cured at elevated temperatures. After the first sealer coat, the product shall be sanded, wiped clean and then two (2) more coats of an acid resisting synthetic resin shall be applied and cured at elevated temperatures.
   a. Interior of cabinets with solid doors receive one (1) sealer coat and one (1) coat of an acid resisting synthetic resin.
3. Cabinet Finish Chemical Test and Evaluation
   a. Wood cabinet finish shall meet the chemical test procedures described in SEFA 8-w-2010

CASEWORK HARDWARE AND ACCESSORIES

Hinges: Institutional type, ground tip, five-knuckle, with pins of not less than .177” in diameter and leaves of not less than .095” thick. Hinges shall be wrought steel with chemical resistant epoxy powder coating. Two (2) hinges shall be provided on doors under 36” in height and three (3) hinges for doors 36” and over.

Pulls: Solid metal, wire type, 4” long mounted with two (2) screws fastened from back. Pulls shall be chemical resistant epoxy powder coated to match hinges. Provide two (2) pulls for drawers over 24” wide.

Drawer Slide System: ¾ extension drawer runners shall be powder coated, cold roll steel, featuring a captive roller system with in and out stop and out position keeper. Drawer runners shall be side and bottom mount with 100 lb. load rating per BHMA, BIFMA test procedure.

Door Catches: Provide two (2), top and bottom. Dual, self-aligning magnetic catch.

Elbow Catches: Brass with latch held by coiled compressing spring. Catch plates of 16 gauge plated steel.

Slam Latch: Supplied on tall cases with double doors where locks are specified, 4-5/8” bevel slide bolt with 2-1/4 lb./in. actuated spring.

Leg Shoes: Molded vinyl or rubber, black, coved bottom type to match radius of base molding.

Locks: (as noted on plans) Lock shall be laboratory grade, cylinder cam lock, with 5-disc tumbler mechanism, and a dull chrome-plated face. Tumblers and keys are brass, while plug and cylinder are die cast zinc alloy. There are 500 key changes standard. Locks are keyed differently, master-keyed and furnished with 2 keys per lock. Lock shall be equipped with RemovaCoreTM keying control. When needed, with the use of a control key, the key core of the lock assembly can be removed and a new key core inserted, changing the entire locking system in a matter of minutes. Locks shall be provided only when specifically shown on drawings, equipment list, or indicated by catalog number.

Tote Tray - High impact plastic tray with high gloss. Provide where indicated. Note model number on equipment list for tote tray size
TOPS, SINKS, AND ACCESSORIES

General:

1. Comply with physical and chemical resistance requirements for materials for tops and splashes as specified herein.

2. Tops: Provide smooth, clean, exposed tops and edges, in uniform plane free of defects. Splash and curbs shall be 4" high x 1" thick, unless otherwise noted on the drawings, and shall be located at the backs of all counter tops.
   a. Top sizes: Furnish tops in maximum practicable lengths, in configuration indicated on the drawings.

Counter Tops & Splashes:

1. Phenolic Resin tops: Trespa TOPLAB “black” Tops & Splashes to be 1" thick.

Sinks:

1. Epoxy resin - one-piece construction. (Where shown and required) Sinks to be “drop-in” style with inside corners and bottoms coved for easy cleaning. Epoxy sinks furnished with polypropylene sink outlets.
   a. D57: Resin drop in type 25” x 15” x 13.6”
   b. A55: Resin drop in type 25”x 15” x 4.8”
   c. A61: Resin drop in type 30” x 16”x 17.8”


Art Service Fixtures and Fittings:

1. Vandal-Resistant Fittings:
   a. Provide Vandal-Resistant Faucets and Fittings specifically designed to prevent student damage and provide extra protection from student vandalism.
   b. All Service Fittings shall conform to SEFA 7-2010, Recommended Practices for Laboratory Service Fittings, Para 14.0 - 14.3 for Vandal Resistant Fittings.
   c. Each fitting shall resist turning, bending, breakage, and unintended disassembly through acts of vandalism or physical abuse.
   d. Vandal-Resistant Construction features shall include:
      e. All threaded connections that will not require field service shall be secured with a suitable adhesive so as to be non-removable.
      f. All Goosenecks and spouts shall be constructed of heavy duty pipe or tubing that is sufficient to resist bending and breakage.
      g. Faucet bodies and turret bases shall be provided with locking pins or other means to prevent the fixture from being turned on the work surface.
      h. Outlet fittings (such as aerators or serrated hose ends) shall either be of Vandal-Resistant design or shall be secured in place with an adhesive.
      i. Index buttons shall be tamperproof.
      J. Water fittings provided with serrated hose ends shall be furnished with vacuum breakers to prevent contamination of the potable water system through backflow or back-siphonage.
      k. Water fittings shall have valve packing nuts secured with set screws.
      l. Screws that may be removed only by maintenance personnel.

2. Water Faucets and Valves:
   a. Provide units that comply with SEFA 7 - 2010, Laboratory Service Fittings - Recommended Practices, and also complying with ANSI/ASME A112.18.1 - 2005 and certified by CSA International under CAN/CSA B.125.1 - 05.
   b. Provide units fabricated from cast or forged red brass unless otherwise indicated.
   c. Provide fittings complete with threaded mounting shanks, locknuts, and washers. Include necessary flanges, escutcheons, extension rods, etc.
d. Provide units complying with ADA accessible requirements where indicated on Drawings or Equipment List.
e. One Faucet shall be provided with 4" wrist-blade handles at ADA sinks.
f. All Water faucets shall be provided with Aerator.

3. Quality Assurance:
   a. All water faucets shall be fully assembled and factory tested prior to shipment.

Drain Fittings:

1. Sink Fittings:
   a. Sinks shall be provided with 1-1/2" Dia. x 3" threaded Polypropylene Sink Outlet with Locknut, Removable Disc Strainer, and Sink Stopper.

TECHNICAL PRODUCTS

General: The following Equipment List is provided to accurately describe specific Technical Products shown on the Drawings and Equipment List;

1. ROLL PAPER DISPENSER #86860:
   a. Holder with tear off bar. Accommodates roll paper up to 36” wide.

2. WALL SINK CENTER #76810:
   a. 75"L. x 30"W. x 61"H. Overall. Wall sink assembly shall consist of two supporting base cabinets, stainless steel tub sink with integral service turret and service fixtures, and service wall assembly.
   b. Each base cabinet shall be a special 24"L. unit with one end panel 29"H., and opposite panel 34-3/4" H. Cabinets 22" deep with 7" deep pipe chase with end closure panels. Each cabinet shall have a single hinged door and a full length facia panel connecting both units. A removable closure panel shall be secured between cabinets allowing access to all plumbing services. Cabinet and closure panel shall be constructed identical to other units provided within this specification.
   c. Stainless steel tub sink shall be Type 302 with integral 6"H. back panel having an inside dimension no less than 72" x 22" x 8" deep. Entire tub sink shall be formed to drain to center outlet. Integral back panel provided with a formed stainless steel removable cap full length 7-1/2" wide. Wall clips provided for securing removable cap. Integral back panel provided with three (3) panel-mounted 80300-BW, hot and cold mixing goosenecks with aerators.
   d. ADA units height to be set at 34” above finish floor.
   e. Service wall assembly shall consist of a ¾" thick, 72"L. x 21"H. back panel with an 8” deep, full length shelf. Provide four panel mount 9” long utility hooks.

3. WET PROCESSING PHOTOGRAPHIC DEVELOPING CENTER# 76900:
   a. 75"L. x 31"W. x 40"H. Overall. Wall sink assembly shall consist of two supporting base cabinets, stainless steel tub sink with integral service turret and service fixtures, and service wall assembly.
   b. Each base cabinet shall be a special 18"L. unit with one end panel 29"H., and opposite panel 34-3/4" H. Cabinets 22" deep with 7" deep pipe chase with end closure panels. Each cabinet with a single hinged door and a full length facia panel connecting both units. A removable closure panel shall be secured between cabinets allowing access to all plumbing services. Cabinet and closure panel shall be constructed identical to other units provided within this specification.
   c. Stainless steel tub sink shall be Type 302 with integral 6"H. back panel having an inside dimension no less than 72” x 22” x 4.5” deep. Entire tub sink shall be formed to drain to center outlet. Integral back panel provided with a formed stainless steel removable cap full length 7-1/2” wide. Wall clips provided for securing removable cap. Integral back panel provided with (1) panel-mounted 80100-BW, hot and cold mixing gooseneck with aerator.

4. DAMP CABINET #79920:
a. 18"D. x 36"L. x 85"H. Overall. Damp Cabinet for storage of clay projects during drying period. Heavy duty institutional grade steel cabinet having flush formed and welded face frame with two (2) ¾" thick hinged doors. Doors with interior panel of 20-gauge steel and exterior of 18-gauge provided with three point latching mechanism with lock. Five adjustable perforated metal shelves with steel frame. Water-tight bottom pan 1" deep of 20-gauge steel. Entire unit treated and finished in manufacturer's standard Putty color paint.

5. STACKABLE ART STORAGE #46620:
   a. 32"L. x 21"D. x 21"H. Overall. Units constructed of 3/4" thick plastic laminate materials with four (4) ¾" non-adjustable shelves. All units are designed to be either stacked, setting vertical or setting in horizontal positions. Stackable designed to store flat stock materials up to 30" x 20".

6. GLAZING/CLAY MOBILE STAND #79930:
   a. 18"L. x 18"W. x 5"H. Overall. Welded steel frame with ¾" solid bottom and four (4) 4" swivel casters. Designed to accept either glazing or clay material storage containers (containers not included). Unit can support up to 500 lbs.

7. HEAVY DUTY PROJECT BENCH #53560:
   a. 60"L. X 42"W. X 36"H. Overall. Hardwood fully framed with rails (3/4" X 4") with diagonal corner braces tenoned and screwed to inner face of rails. The corner braces shall be metal, grooved and screwed with four (4) screws. Table legs shall be properly fitted into position and securely fastened to diagonal corner brace with nut, washer and 3-1/2" x 5/16 carriage bolt completely running through the leg providing a positive system whereby bolt can be tightened without depending upon screw holding power of the table legs. Legs shall be 2-1/4" square of solid laminated hardwood, thoroughly glued, and corners rounded. Legs shall be equipped with two (2) sets of stretchers each, to accommodate heavy duty slat shelves, rubber leg shoes, and nylon adjustable glides. Top is 1" phenolic resin.

8. ROLL PAPER DISPENSER #46708:
   a. Metal frame with (4) swivel caster. (8) roll capacity. Each holder has tear bar and accommodate rolls up to 36” wide.

9. STORAGE TRANSPORT - TOOL WORKBENCH #69763:
   a. 35" x 21-5/8" x 60-3/4" overall. Upper section has perforated lining for tool display and storage. Fixed shelf has #86420 utility vise attached. One adjustable 1" thick shelf. (4) Heavy duty lockable casters for mobility.

10. STUDENT TABLES:
    a. Hardwood fully framed with rails 3/4" X 4" with diagonal corner braces tenoned and screwed to inner face of rails. The corner braces shall be metal, grooved and screwed with four screws. Table legs shall be properly fitted into position and securely fastened to diagonal corner brace with nut, washer and 3-1/2" x 5/16 carriage bolt completely running through the leg providing a positive system whereby bolt can be tightened without depending upon screw holding power of the table legs. NO other leg fastening method is approved. Legs shall be 2-1/4" square of solid laminated hardwood, thoroughly glued, and corners rounded. Legs shall be equipped with rubber leg shoes, and nylon adjustable glides. Top to be 1" Phenolic. Table sizes are indicated on Equipment list.

11. KILN ROOM WIRE SHELVING:
    a. Shelving shall be 36’w x 72”h x 18”d, welded wire construction shelves shall adjust in one inch increments. The shelves shall be open wire
design that permits air circulation and prevents dust accumulation. Each shelf shall be rated up to a minimum of 800 lbs. per shelf and NSF certified. Starter unit shall include four shelves, four posts, and snap together clips. Unit shall have chrome finish.

12. KILN ROOM METAL SHELVING:
   a. Metal shelving unit shall be 36”w x 72”h x 18”d utilizing box beam design with double-sided compression clips. Shelves shall adjust in one inch increments. Unit includes four shelves, four 72” high posts, with corner brackets and hat channel. Rating shall be a minimum of 800 lbs. per shelf.

PART 3 – EXECUTION

COORDINATION

The casework contractor shall coordinate all deliveries and installation of this equipment with the General Contractor and associated trades.

Lab casework shall not be delivered to the jobsite until the following conditions have occurred.

1. Overhead ceiling work - ductwork, lighting, acoustical ceiling, etc. is complete.
2. Windows and exterior doors are installed. Building is secure and weather tight.
3. Air circulation control system is functioning and maintaining relatively constant temperature and humidity conditions closely approximating those to be maintained by the Owner.

It is recommended that all painting be completed in the areas in which casework is to be installed prior to such installation.

CABINET INSTALLATION

The casework shall be delivered to the building in prefinished modular units. It shall be set in place, leveled, secured to walls or floors as necessary, trimmed or scribed to make a neat installation. Installation shall be under the direction of a factory approved superintendent.

Provide filler panels where required to close spaces between casework and walls.

The casework contractor shall deliver to the appropriate contractor all sinks, troughs, service fixtures, etc., as supplied in this section, for installation and connection by the appropriate trades.

CLEANING AND PROTECTION

Remove all debris, dirt, rubbish and excess material accumulated as a result of the installation of this equipment and leave casework clean and orderly.

Advise contractor of procedures for protection of installed material from damage from work of other trades.

END OF SECTION
June 18, 2020

A New Educational Facility for the West Morgan High School

HVAC ADDENDUM

1. Refer to the Drawings, Sheet M-1, the note located within the bold rectangle adjacent to the Laboratory Classrooms Wing. Delete the verbiage and substitute the following:

   NOTE: Exhaust duct systems associated with EF-H, EF-J, EF-K, EF-L AND EF-T, this sheet, shall be provided with 2" thickness internal acoustical insulation – Refer to the Specifications for additional requirements.

2. Refer to the Specifications Section 15700, Part 21, Split System Heat Pumps, Part 22, Gas Fired Condensing Furnaces with Evaporator coils, Part 23, Packaged Pad Mounted and Rooftop Heating and Air Conditioning Units and Part 24, Air Cooled Condensing Units, Part 25 Wall Mounted Ductless Split System Units and Part 26 Split System Cassette Type Heat Pump Units and add the following:

   Bryant is added to the list of approved Manufacturers.

END OF ADDENDUM
### DOOR SCHEDULE - PART A

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### SIGNAGE NOTES:

- Sign Mounting Height: General Office Doors are located at a standard mounting height of 6 feet above the floor. Classroom doors may vary depending on the specific room requirements.

- All signs are to be placed in a visible location near the entrance of each door.

- The sign for the General Office is to be clearly visible from the hallway.

- Classroom signs should be placed in a location that is easily visible to students entering the room.

- All signs must be legible and compliant with local and federal signage regulations.

- Provision for emergency exit signage is required at each exit point.

- All signage must be maintained and replaced as necessary to ensure legibility and compliance with regulations.