LS3P

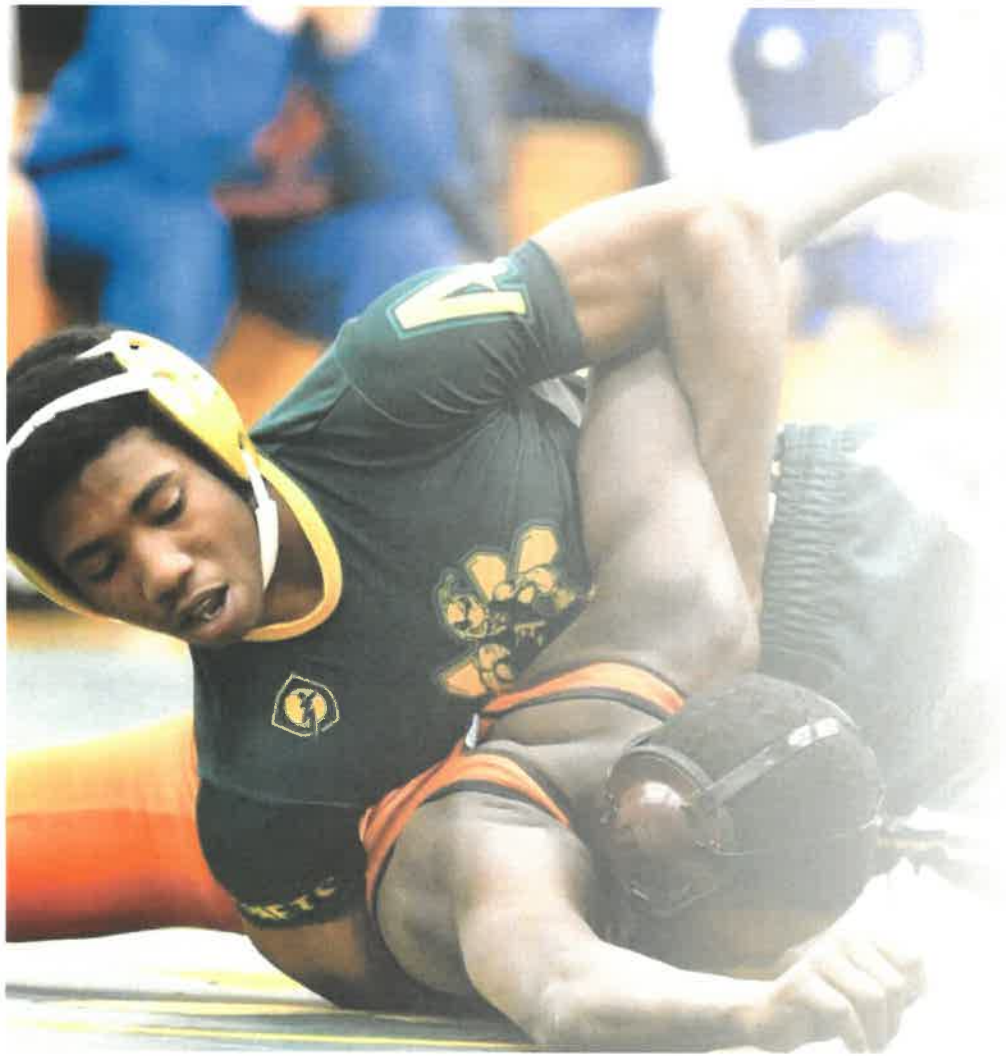
AIKEN COUNTY
PUBLIC SCHOOLS

AIKEN HIGH SCHOOL
TAYLOR GYM RENOVATION

LS3P Commission No. 2201-187760

DESIGN DEVELOPMENT AND CONSTRUCTION DOCUMENTS SUBMITTAL
APRIL 2019

ENGAGE DESIGN TRANSFORM



CONTENTS

AIKEN HIGH SCHOOL
TAYLOR GYM RENOVATION

The Mission of Aiken County Public Schools, the emerging premier school district, is to cultivate future-ready students to serve our evolving community and world through an innovative, literacy-focused school system distinguished by

- *rigorous, personalized learning opportunities*
- *highly effective, service-driven professionals; and*
- *mutually beneficial partnerships.*

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DESIGN STATEMENT

Our initial project scope was to develop a campus Master Plan based on Phasing to ultimately replace most or all of the existing academic facilities on the campus. Phasing plans were developed for renovations/additions to the campus, presented to the District Committee, and presented to the School Board by District Staff.

LS3P designed Phase 1 of the Master Plan, which consisted of two new building additions: a two-story science classroom building and a one-story field house, construction of which were completed in 2013. Phase 2 is the logical second step, which seeks to develop and provide the following:

Phase 2A: New administration, general classrooms, media center, student dining/food service and business classrooms/labs.

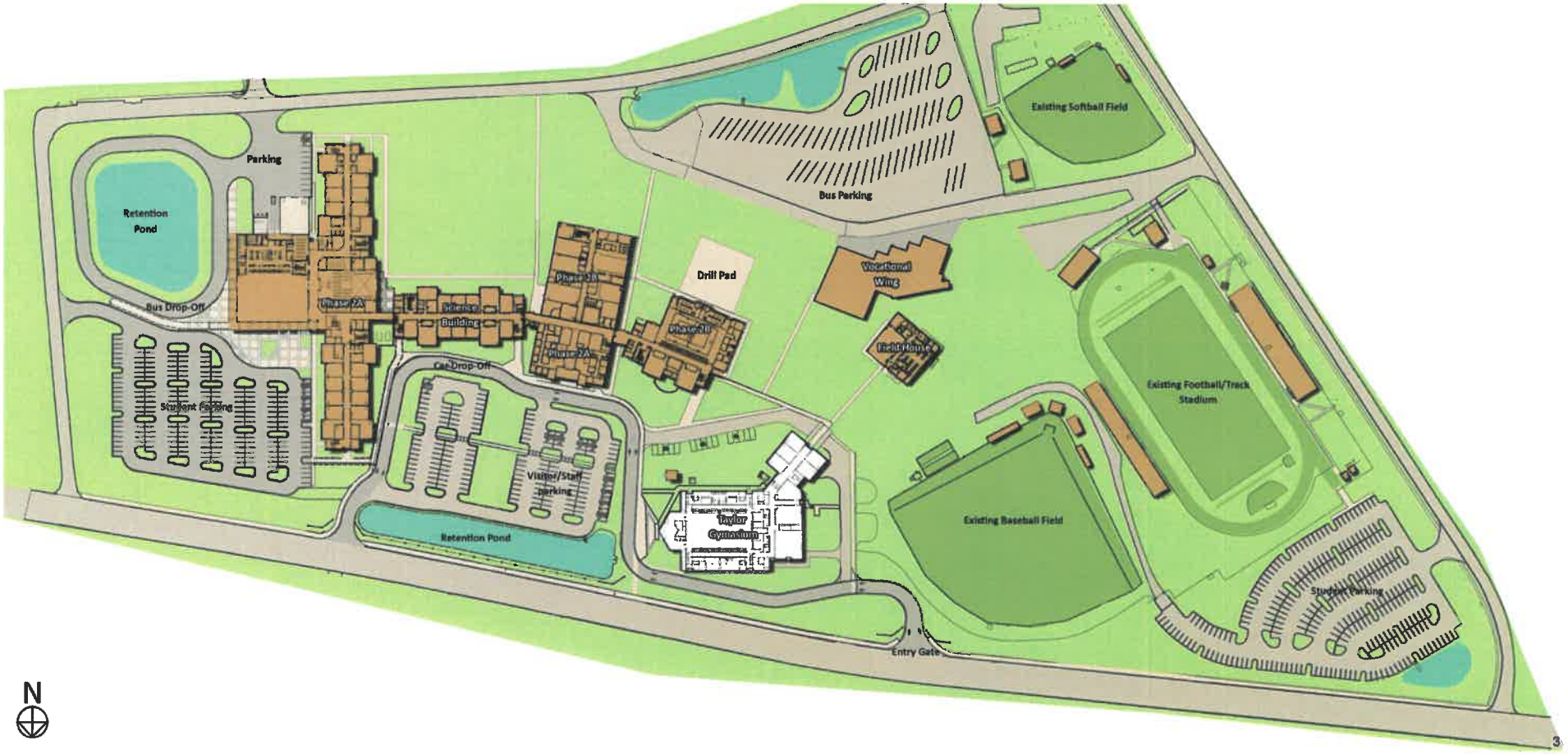
Phase 2B: New auxiliary gym, art, child care, culinary, ROTC, band, and chorus.

Taylor Gym Renovation: Renovation of existing main gynasium, althletic spaces, and classrooms.

The Construction Documents Submittal has resulted in a project that remains consistent with the original project goals and seeks to renovate the Aiken High School Taylor Gym with reconfigured spaces, new seating, and new finshes to intgrate the building with the new facilities on campus and better accomodate Aiken High School students, instructors, coaches, and fans.

SITE PLAN

The site is the existing James Taylor Gymnasium Building at the Aiken High School campus located at 449 Rutland Drive NW in Aiken, South Carolina. The new work will be phased in order to keep the school in operation as portions of the existing building are selectively demolished while new portions are constructed. Exterior improvements to the Taylor Gymnasium will build upon the design language of the buildings and site improvements designed and constructed as part of Phase 1 and Phase 2. Vehicular circulation was largely re-designed in the previous Phase 2A, with new car and bus drop-off loops incorporated into the design. The parking area accessed from Rutland Drive, which was constructed during Phase 1 was reconfigured in Phase 2A to accomodate a new main entrance to the administration wing and parent drop-off loop. These parking areas maintain parking accomodations while providing safer pedestrian connections between the Taylor Gymnasium and other buildings on campus. Phase 2B site work provided safer pedestrian connections from the new wings to the existing Taylor Gymnasium, the Field House, and other existing facilities. During the Taylor Gym Renovation, sitework will be minimal, but will focus on improving both the appearance and experience at the main entrance to the building and provide for improved ticket sales and queuing, as well as improving egress from the gym.



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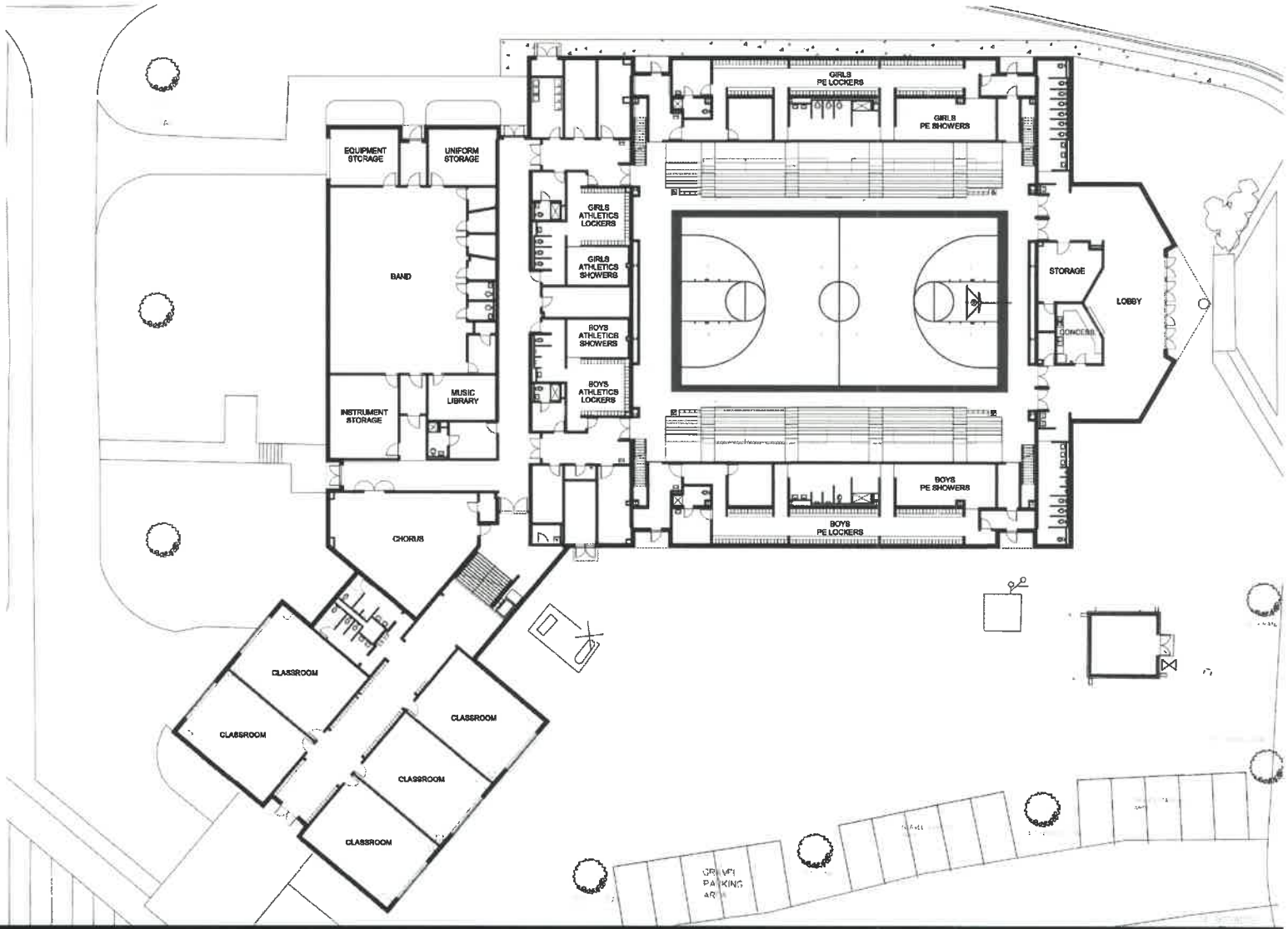
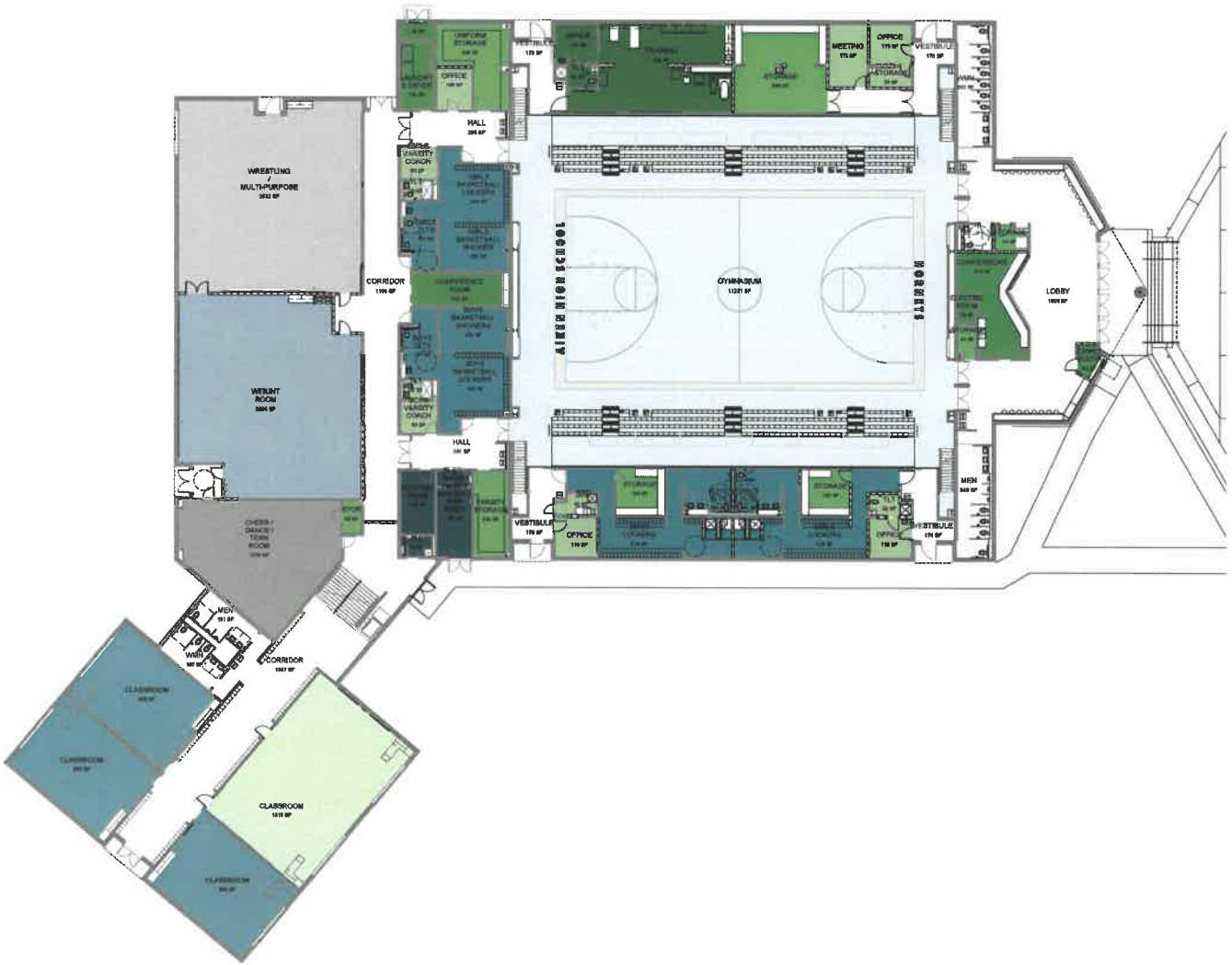
EXISTING FLOOR PLAN



EXISTING PLAN - 1ST FLOOR

RENOVATION FLOOR PLAN

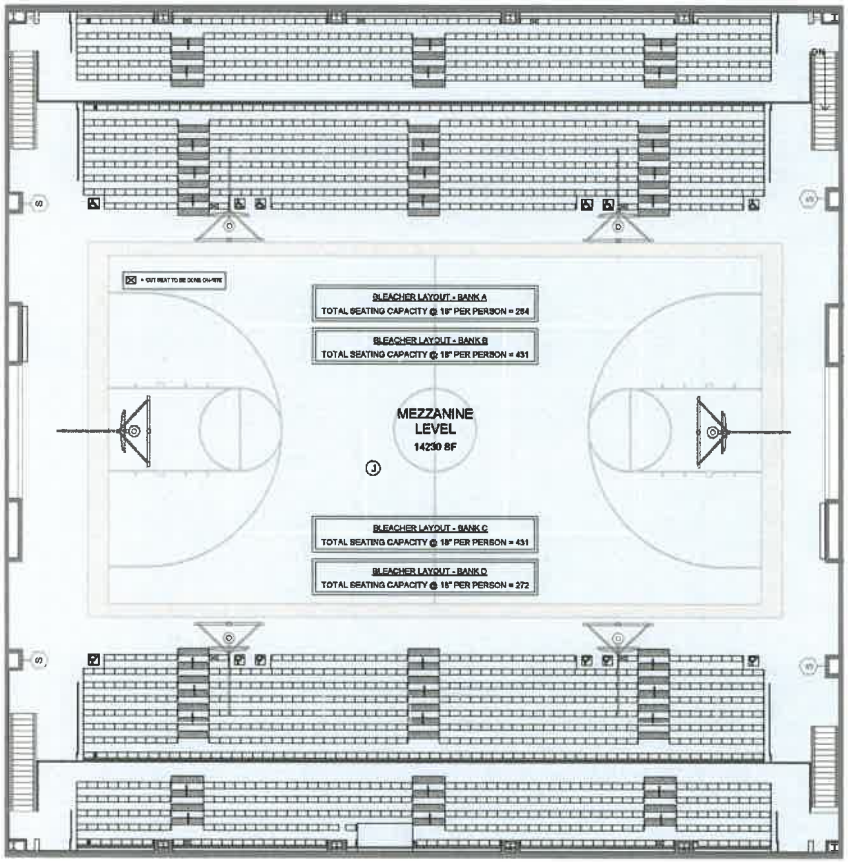


- ARENA
- CHEER / DANCE
- FLEX CLASSROOM
- LOCKERS
- MECH
- MULTIPURPOSE
- OFFICE
- STORAGE
- SUPPORT
- TRAINING
- WEIGHT ROOM
- WRESTLING / MULTIPURPOSE

N

RENOVATION FLOOR PLANS

TOTAL GYMNASIUM BLEACHER CAPACITY= 1418



ARENA
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N

RENOVATION PLAN - 2ND FLOOR

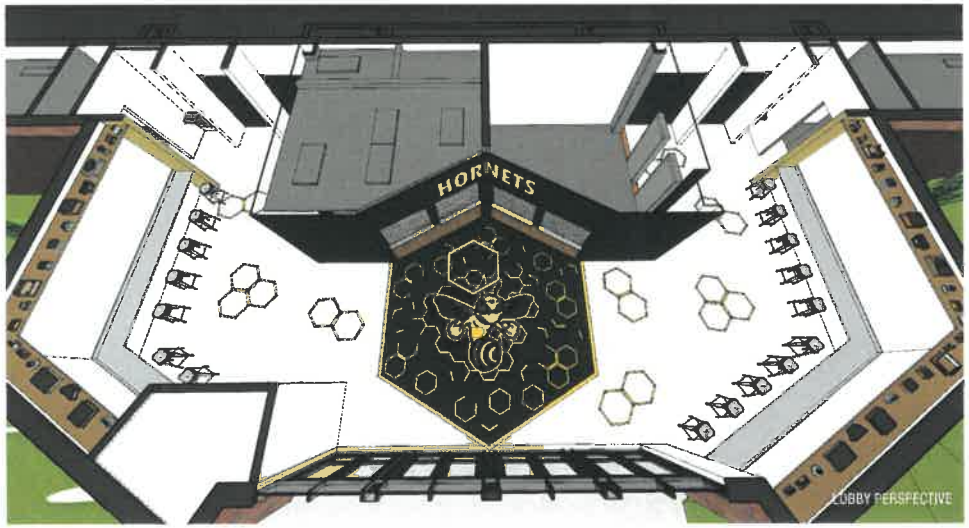
EXISTING EXTERIOR

EXISTING TAYLOR GYM PHOTOS

CONCEPTUAL PERSPECTIVES

MAIN ENTRY PERSPECTIVE 1

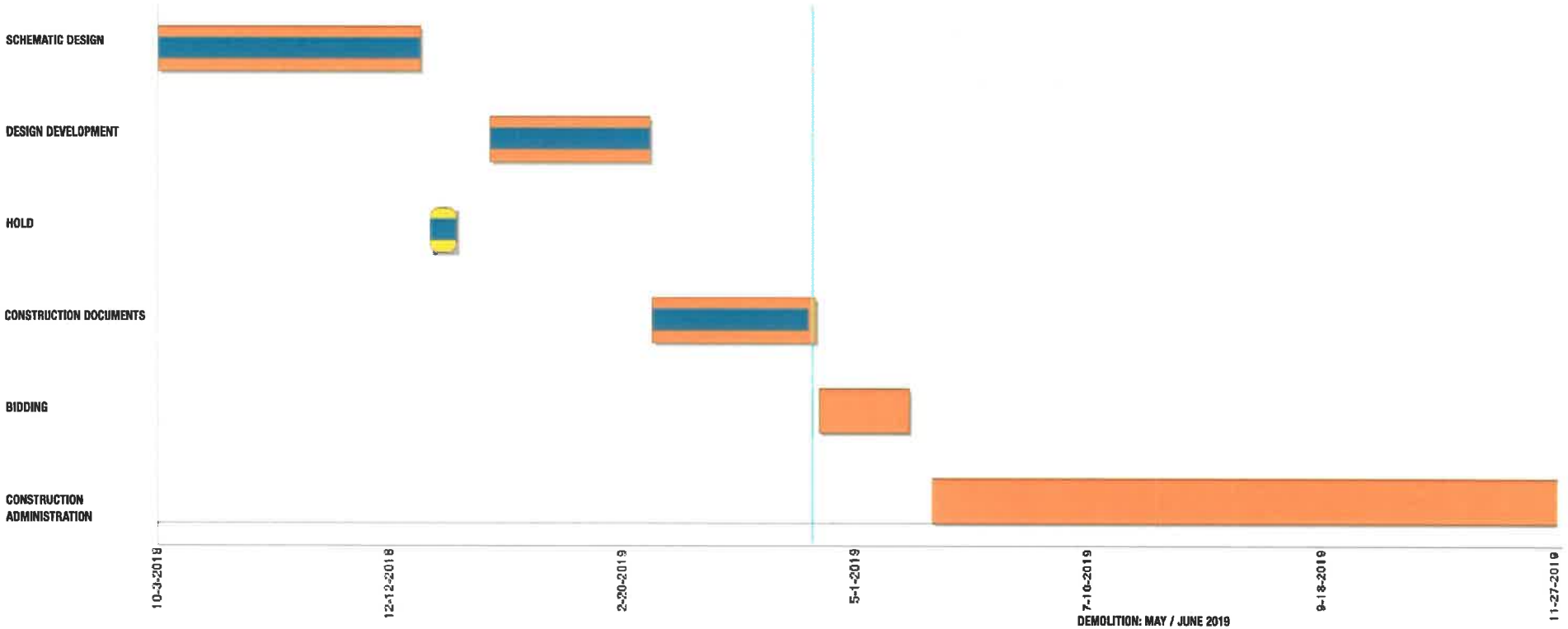
GYM PERSPECTIVE



LOBBY PERSPECTIVE

MAIN ENTRY PERSPECTIVE 2

SCHEDULE



DEMOLITION: MAY / JUNE 2019

RENOVATION: JUNE/ NOVEMBER 2019

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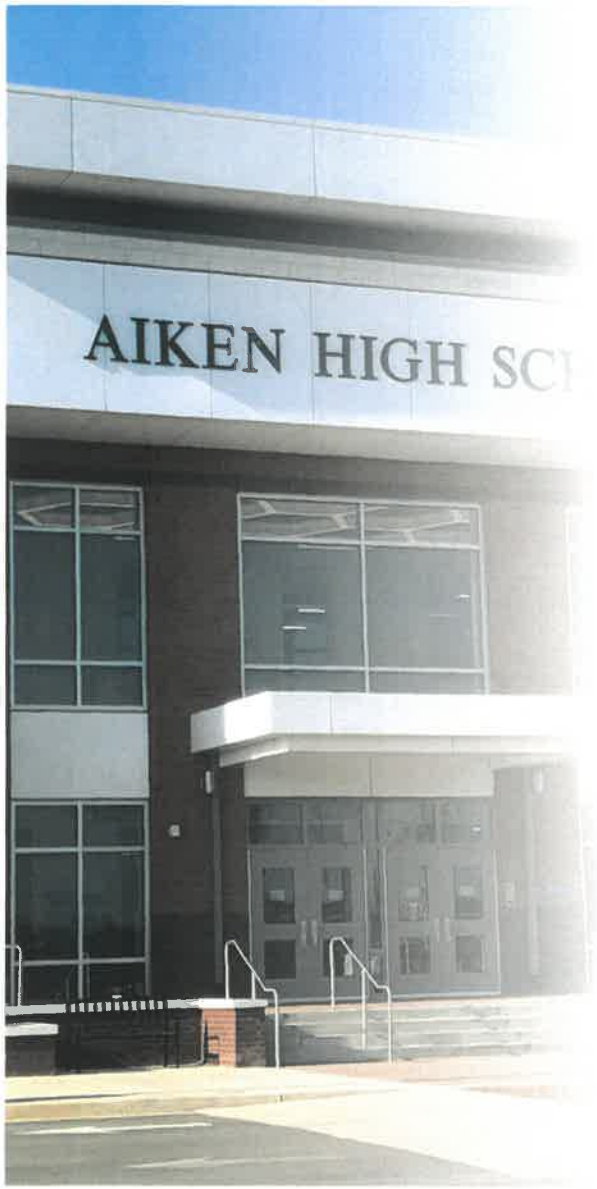
April 23, 2019

FINAL PROJECT BUDGET SUMMARY ESTIMATE

Aiken County School District

LS3P Commission No.: 2201-187760

Aiken High School Taylor Gym Renovation	Notes			Costs
Description		**GSF**	**$/GSF**	**Totals**
Estimated Construction Costs				
Actual Demolition Package - GMP #1	*May 2019 Start*	***40,762***		$740,287
Estimated Renovation and Finishes Package (future GMP #2)		***40,762***		$5,638,836
Contingency				$264,953
Estimated Total Hard / Construction Costs				**$6,644,076**
Project Soft Costs				
Architectural/Engineering Basic Services				
Reimbursable Expenses				
Roof Consultant				
*Legal/Insurance **				
Preconstruction CM@R Services (Or Cost Estimating Consultant)				
*Special Inspections/Const Materials Testing **				
Bid advertisements				
Fixtures, Furnishings & Equipment; Technology *				
Estimated Total Project Soft Costs				$1,407,171
ESTIMATED TOTAL PROJECT COSTS				**$8,051,247**
Overall Project Contingency				$664,408



MATERIALS AND SYSTEMS

A. STRUCTURAL SYSTEM

I. GENERAL STRUCTURE DESCRIPTION

A. APPLICABLE BUILDING CODE: 2015 IBC and ASCE 7-10 for wind, seismic and gravity loadings.
B. STRUCTURE: Existing Taylor Gym Renovations
C. SEISMIC DESIGN CATEGORY: Although the soils investigation for this project has not been completed yet, preliminary indications from the geotechnical firm are that the building will be classified as Seismic Site Class
D. This will result in a classification of Seismic Design Category C for the building in accordance with the 2015 International Building Code.

II. NEW INTERIOR WALLS AND NEW EXTERIOR WALL OPENINGS

A. New interior walls will have (2) bond beams on the existing floor slab and be braced at the top with angles at 9'-0" o.c. typical.
B. New exterior and interior wall openings will have a W8x15 steel lintel + plate toothed into the existing masonry wall

III. NEW MECHANICAL UNITS ON EXISTING ROOF

A. Gravity loads and wind loads of new units on existing structure conform to code requirements for new structures (international existing building code 807.4)
B. Seismic loads of new units on existing structure increase the seismic demand-capacity ratio on any existing structural element by less than 10% (international existing building code (807.5)
C. MECHANICAL UNITS: Units will be supported on the typical bar joist and metal deck system, with steel beams or joist reinforcing added where required.

V. STEEL FRAMING

A. STEEL FRAME: A steel frame will be provided for the exterior entry canopy with footings to support the canopy loads.
B. STEEL MATERIALS: Steel wide flange shapes will be ASTM A992, 50 ksi. Steel tubes will be ASTM A500, Grade B. Steel pipe will be ASTM A53, Grade B. All other structural steel will be ASTM A36. Lintels in exterior walls will be hot-dipped galvanized.

B. ROOFING (ALTERNATE)

The insulation system within the new roof system assembly will consist of 2 layers of polyisocyanurate roof insulation and a cover board of perlite roof insulation with a minimum R-value of 25.

The roofing membrane on the low sloped roof areas will consist of three (3) plies of fiberglass felts ad-hered in hot asphalt and an Energy Star granule surfaced modified bitumen cap sheet adhered in cold ad-hesive or torch applied. A three (3) year Contractor's Warranty and a twenty (20) year Manufacturer's Warranty will be provided for the low sloped roofing system.

All sheet metal components for both roofing systems will consist of pre-finished, minimum 24 gage Gal-valume. Other specific flashing details will require other appropriate metal types.

The roofing systems will comply with the 2015 IBC and ACPS requirements.

C. EXTERIOR AND INTERIOR WALLS

The existing exterior facade of the Taylor Gym building (consisting of masonry and metal panels with aluminum windows and hollow metal frames) will be repaired, pointed up, and re-painted as necessary. A new steel-framed canopy will be provided at the main entrance. New rainscreen signage/graphics will be provided along the Rutland Drive elevation. The majority of the existing and new interior wall surfaces are concrete block, and all interior walls will be painted.

D. DOORS AND WINDOWS

Existing exterior and interior hollow metal (steel) doors will be repainted. New interior doors will typically be stained solid core wood. All existing hollow metal (steel) door frames will be Repainted. Existing classroom windows are typically aluminum, and will be repaired as needed. New roller shades will be provided at classroom windows. New aluminum ticket windows, covered by a canopy, will be provided near the main entrance.

MATERIALS AND SYSTEMS

E. WALL FINISHES

All interior walls (existing and new) will be primed and will have a minimum of two finish coats of paint applied. Waterbourne epoxy paint will be used on all concrete block walls.

F. FLOOR FINISHES

New vinyl composition tile will be provided at the classrooms and corridors, and storage rooms. Replacement of the vinyl composition tile with resinous epoxy terrazzo with a terrazzo logo will be priced as an alternate for the entry lobby. Weight, cheerleading/dance, wrestling, and athletic training rooms will receive resiliant athletic flooring, with additional resinous expoxy flooring at the hydrotherapy area of the athletic training room. Reconfigured or new toilet rooms and locker rooms will receive a resinous epoxy flooring. The wood flooring in the gym will be repaired as needed and refinished, and new striping and logos will be applied. Existing porcelain tile at the locker rooms and toilet rooms that are not reconfigured will be accessed and repaired or replaced as needed. Floors will be painted with waterborne epoxy floor paint in janitor, electrical, data, mechanical, and equipment rooms.

G. CEILINGS

New acoustical ceiling tile and grid (2'x2') will typically be provided at all reconfigured educational and athletic spaces. At existing spaces with acoustical ceiling tile and grid that will not be reconfigured (lobby, corridors, three classrooms, and most offices), the existing grid will be painted and all tile replaced. Hard ceilings will be used in new or reconfigured toilet and shower areas. All existing areas of hard ceiling will be repainted. the exposed structure in the main gymnasium will be repainted. No ceilings will typically be installed in janitor, electrical, data, mechanical, or equipment rooms.

H. ACCESSORIES AND SPECIALTIES

New marker and tack boards will be provided in all classroom and teaching areas. Signage will be provided to identify each space. Rough-ins will be provided for District-installed Smart Boards.

I. CASEWORK AND MILLWORK

Durable grade plastic laminate cabinets will be typically provided throughout. Display cabinets will be repaired as necessary and refinished.

J. FIRE PROTECTION (ALTERNATE)

I. GENERAL:

A. The Building will be designed and constructed according to the following codes/standards:
2015 International Building Code
2015 International Fire Code
2013 NFPA 13 "Installation of Sprinkler Systems"
2013 NFPA 24 "Installation of Private Fire Service Mains and Their Appurtenances"

B. The building will be fully sprinklered.

C. The building will be protected throughout by a single zone, wet pipe sprinkler system.

D. Fire protection water will be connected to the existing fire pump building located outside and adjacent to the gymnasium. Piping shall be routed from the fire pump building to the new riser room located in Gym.

E. The mechanical rooms, electrical rooms, storage areas, water heater rooms, janitor rooms, Classrooms, Wrestling, Cheer/Dance/Team Room, and Concessions shall be designed for Ordinary Hazard Group I occupancy. The remainder of the building shall be designed for Light Hazard Occupancy.

F. The automatic sprinkler system shall be hydraulically calculated to provide a safety factor margin of 10 psi or 20 percent, whichever is greater.

G. The fire protection system shall be seismically braced and restrained as required for a Seismic Design Category C facility.

H. The Fire Riser room should be accessible from the exterior. The incoming fire line into this room shall be provided with an exterior freestanding Post Indicator Valve (PIV), freestanding Fire Department Connection. A wet sprinkler valve assembly (i.e., riser check valve and floor control assembly) shall be located inside this room. An exterior horn/strobe (furnished and installed by Division 28 Fire Alarm) shall be provided to indicate activation of sprinkler system.

II. MATERIALS:

A. Above Grade Piping

1. Piping 1-1/2" and larger shall be Schedule 10 or 40 steel piping with mechanical grooved pipe couplings and fittings. Welded outlets are acceptable in lieu of fittings.
2. Piping 1-1/4" and smaller shall be Schedule 40 with threaded fittings.
3. Piping, except for hot dipped galvanized piping, shall be internally coated to be resistant to bacterial growth and maintained minimal bacterial count after multiple flushes of the pipe.
4. Piping and fittings exposed to ambient conditions or installed on the exterior shall be hot-dipped zinc coated (galvanized).
5. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213, rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, Grade "A" EPDMA-rubber gasket, and bolts and nuts. Fittings and couplings for grooved end products shall be provided by one manufacturer.

B. Below Grade Piping

1. In-Building Riser
   a. Piping below grade (including incoming fire line and fire department connection line) from 5'-0" outside the building to riser flange inside the building shall be an "In-Building Riser".
   b. The "in-building riser" shall be composed of a single extended ninety-degree fitting fabricated from Type 304 stainless steel tubing, with a maximum working pressure of 200 psi.
   c. The riser shall have a grooved (or flanged) end on the outlet (building) side and a Cast Iron Pipe size coupler on the entrance (underground) side. Diameter shall be as shown on the drawings.
   d. The grooved (or flanged) end on the outlet side shall include a coupler and cap to facilitate testing of the underground piping.
   e. The riser shall be similar in all respects to the Ames Model "In-Building Riser" as manufactured by Ames Fire & Waterworks or approved equal.
2. Piping below grade, from 5'-0" outside the building and including fire department connection line, shall be ductile iron, AWWA C151, Class 50. Lining shall be AWWA C104, cement mortar, seal coated. Gaskets shall be rubber in accordance with AWWA C111. Fittings shall be AWWA C110, ductile iron or cast iron, 250 psi pressure rating; or AWWA C153, ductile iron compact fittings, 350 psi pressure rating. All bolts, nuts, washers, and rodding used for installation of underground piping, valves, and fittings from the riser flange back to site water connection shall be stainless steel conforming to UNS31600 (formerly AISI Type 316).

MATERIALS AND SYSTEMS

a. Piping below grade may be Class 200 PVC pipe conforming to AWWA C900. If Class 200 PVC piping is used, a transition from approved PVC piping for underground supply to cement-lined ductile iron pipe conforming to AWWA C151 and C104 shall be provided prior to rising above grade. Fittings shall conform to AWWA C110.

C. Sprinklers

1. Flat plate concealed sprinklers shall be installed in all areas with finished ceilings.
2. Pendent or upright sprinklers shall be installed in mechanical rooms, electrical rooms, storage rooms, and similar rooms and any other space without ceilings. Provide sprinkler guards for any sprinkler installed less than 7'-0" AFF and for all sprinklers in Gym.
3. Braided flexible sprinkler hose fittings may be provided for all sprinklers located in lay-in ceilings. Acceptable manufacturers include SuperFlex by Flexhead, and Victlex AH2 by Victaulic.

D. Fire Department Connection (FDC)

1. Freestanding.
2. Polished chrome finish.
3. Route from Fire Riser Room below grade to location within 100 feet of nearest fire hydrant.

E. Miscellaneous Materials will include

1. All material installed on the exterior or exposed to ambient will be hot dipped galvanized or 304 SS.

K. PLUMBING SYSTEM

A. Domestic Water:

Wall hydrants will be surface mounted, loose key, anti-freeze with backflow preventer. Hydrants shall be located at approximately 100-ft. intervals around perimeter of the building. Hose bibb with loose key and vacuum breaker will be located in all toilets with floor drains and in mechanical room.

B. Water Heating:

Building will be provided with natural gas fired water heaters. A hot water recirculation system shall be provided with water heater when the hot water system piping exceeds 100 feet from water heater to last fixture.

C. Sanitary Sewer and Storm Drainage:

Sanitary sewer shall be collected inside the building and extend 5'-0" outside the building for connection to site utility system.

D. Miscellaneous Utilities:

Natural gas shall be provided to all gas fired equipment (i.e., building heating systems, domestic hot water heating systems, kitchen equipment, etc.).

E. Materials:

1. Domestic water lines:
   a. Type "L" copper above floor.
   b. Type "K" copper below floor.
2. Sanitary Sewer and Storm Drain:
   a. No-hub cast iron with heavy duty stainless steel couplings for piping located above floor.
   b. Hub and spigot cast iron piping with gasketed joints for piping below grade.
3. Natural Gas Line:
   a. Above floor: Black Steel Schedule 40 or Corrugated Stainless Steel piping by Tracpipe.
   b. Below floor: Black Steel Schedule 40 or Corrugated Stainless Steel piping by Tracpipe with Schedule 40 PVC casing.
4. Water Closets: Floor mounted flush valve type. Water closets installed in group restrooms shall have sensor operated flush valves.
5. Urinals: Wall hung flush valve type. Urinals installed in gang restrooms shall have sensor operated flush valves.
6. Lavatories: Lavatories shall be wall hung enameled cast iron with hot and cold water faucets. Group restroom shall have sensor faucets. Single adult restrooms shall have manual faucet with gooseneck and 4" wrist blades.
8. Water coolers shall be stainless steel wall hung vandal resistant type. There shall be one water cooler with bottle filling station in public area.
9. Shower shall be field constructed equipped with thermostatic mixing valve.

MATERIALS AND SYSTEMS

L. MECHANICAL SYSTEM

Each classroom is presently served with a thru wall air conditioning unit. These units will be removed and each classroom will be served by a new constant volume, rooftop, DX heat pump with auxiliary electric heat and needlepoint bi-polar ionization. Outside air for all classrooms will be provided by a 100% outside air unit with DX coil, SCR preheat, and modulating hot gas reheat for humidity control.

The new Weight Room (former Choral Room) will be served by a new constant volume, rooftop, DX heat pump with auxiliary electric heat and needlepoint bi-polar ionization. This space will require a new duct system. The unit will have hot gas reheat for humidity control.

The new Wrestling Room (former Band Room) will be served by a new constant volume, rooftop, DX heat pump with auxiliary electric heat and needlepoint bi-polar ionization. This space will require a new duct system. The unit will have hot gas reheat for humidity control.

The new Cheer/Dance Room (former Band Room) will be served by a new constant volume, rooftop, DX heat pump with auxiliary electric heat and needlepoint bi-polar ionization. This space will require a new duct system. The unit will have hot gas reheat for humidity control.

The Girls and Boys Basketball Locker Rooms and Showers are presently served by two (2) rooftop gaspacks. These two units will be replaced with two new constant volume, rooftop gaspacks with hot gas reheat for humidity control. The new rooftop units will be installed on adapter curbs. A dedicated, ductless split system heat pump will serve the Conference Room for better temperature control.

The existing Girls PE Shower and Locker Room will become the new Training Room, Meeting Room, Offices, and Storage. The existing unit is a gas heating and ventilating unit without any cooling. The existing system will be replaced with two new constant volume, rooftop gaspacks with hot gas reheat for humidity control.

The existing Boys PE Shower and Locker Room will be renovated and divided into the new Boys PE Shower and Locker Room and Girls PE Shower and Locker Room. The existing heating and ventilating unit will be replaced with two new constant volume, rooftop gaspacks with hot gas reheat for humidity control.

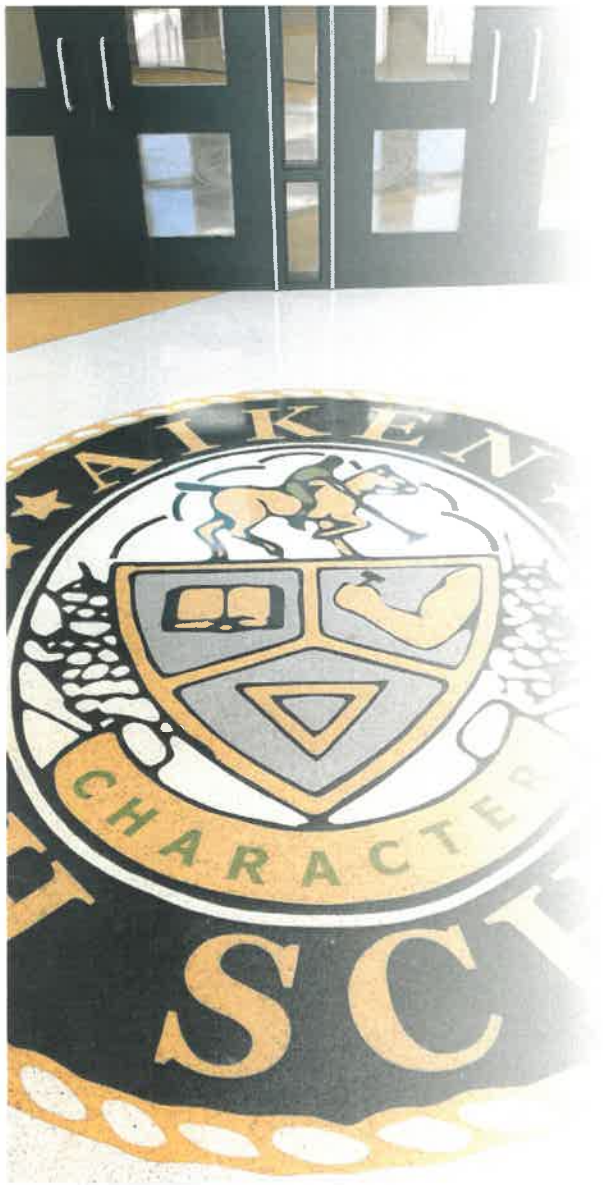
The Gym is presently served by two (2) fifty (50) ton rooftop gaspacks. These units will be replaced with similar units except they will be single zone VAV units with hot gas reheat for humidity control. The units will tie into the existing duct system. The new rooftop units will be installed on adapter curbs.

The Lobby and Concessions is presently served with two (2) rooftop gaspacks. These units will be replaced with two new constant volume, rooftop gaspacks with hot gas reheat for humidity control. The new rooftop units will be installed on adapter curbs.

The ventilation fans and heating systems for the existing electrical and mechanical rooms will remain as is. The existing ceiling heaters will be replaced.

All new concealed ducts will be rectangular galvanized sheet metal with 2" FSK fiberglass insulation. Exposed ductwork will be dual wall spiral duct. Ducts will be Seal Class A. Ceiling diffusers will be louvered face grilles.

HVAC systems will be controlled by a web-based Automated Logic Control System. Most exhaust fans will be controlled by occupancy schedules; some may be controlled by wall switches. Space humidity sensors will be provided at various locations to monitor space humidity levels.



MATERIALS AND SYSTEMS

M. ELECTRICAL SYSTEM

Electrical existing service, 277/480V 3 phase 4 wire, fed by SCE&G pad-mount on the west side of the gym, will remain. Existing distribution equipment will be reused as permitted by the renovation.

Emergency power for the gym will be derived from the Phase 2B construction. The existing propane generator will be retired and removed.

Replacement interior lighting will generally consist of specification grade LED lay-in lighting fixtures. Lighting levels in classrooms will be controlled via simple 0-10V dimming, inherent in contemporary LED driver design, and shall provide separate control for teaching wall.

Replacement exterior lighting will consist of building mounted LED architectural cut-off security fixtures.

Occupancy sensors for lighting control and energy savings will be used as much as possible. Commons areas such as corridors and exterior lighting will be controlled by the building automation system.

The existing voice-evacuation type fire alarm system manufactured by Silent Knight, installed under previous phase will be modified as needed for the renovation work.

The premises wiring system installed by phase 2A, including fiber optic backbone with CAT 6 copper drops will remain. Modifications will be made as required for the renovation. Nominal outlet locations in instructional spaces shall be for ten (10) drops per classroom, one for the teacher station, one for network printer, two for wireless access points and 6 for student stations.

Cable tray system shall be for the sole use of IT, security, CCTV, and other systems installed outside the construction contract. HVAC controls will not be installed in the cable tray system. Cable tray shall be aluminum ladder type tray.

Conduit pathway shall be provided within instructional spaces to support multi-media applications between the instructor's station and display equipment installed by the Owner.

The IP based two-way school intercom system installed during phase 2A (Rauland Borg TCU) shall reworked as required for the renovation.

The existing Gym Sound reinforcement systems will be replaced as part of this work. The gymnasium AV presentation system (projector, projector life and screen) will remain.