



ENGAGE DESIGN TRANSFORM



**AIKEN COUNTY**  
PUBLIC SCHOOLS

## Ridge Spring-Monetta K-12

Schematic Design Submittal - September 2017  
LS3P Commission No. 2201-168720





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## Ridge Spring Monetta K-12



EXISTING GYMNASIUM BUILDING



EXISTING PHASE 1 MIDDLE SCHOOL BUILDING

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*“The mission of Aiken County Public School System is to create in students a passion for learning and achievement that will serve them as they compete and contribute in a global society.”*

- Aiken County Public School District’s Purpose Statement



# Design Statement



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

Phase 1 consists of the existing Middle School classroom wing and a kitchen/dining room that is shared with the High School. Phases 2, 3, and 4 are the next steps, which seek to develop and provide the following:

Phase 2: New administration, High School general classrooms, elective classrooms, labs, media center, main gymnasium, athletic fields, and Partner space.

Phase 3: New Elementary school classrooms, media center, dining, and multipurpose space.

Phase 4: New auditorium and renovations to the existing gymnasium to serve as an auxiliary gym.

The Schematic Design Submittal has resulted in a project that remains consistent with the project goals and the needs of the Ridge Spring and Monetta communities.



# Site Plan



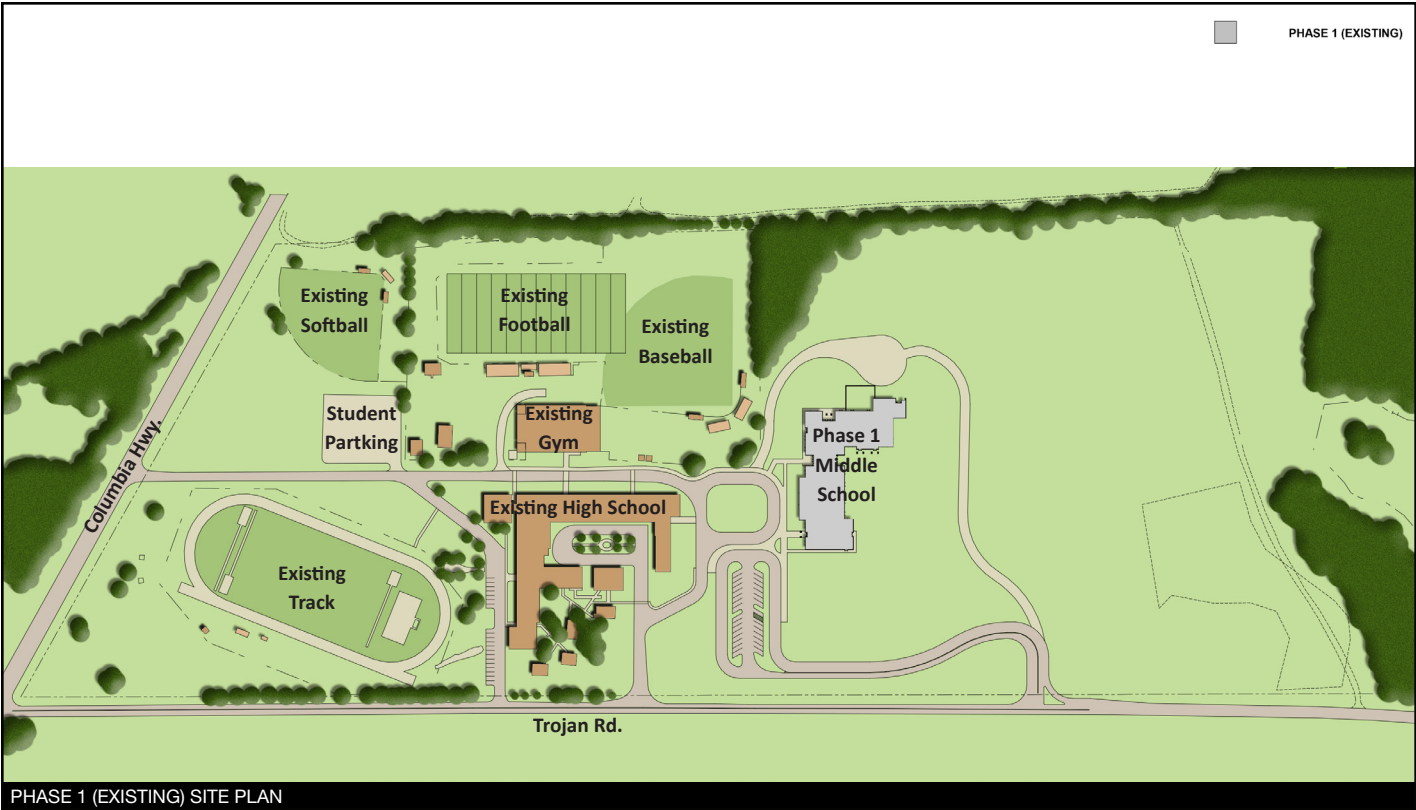
EXISTING RIDGE SPRING-MONETTA MIDDLE / HIGH SCHOOL CAMPUS



The site is the existing Ridge Spring-Monetta Middle/High School campus located at 10 JP Neese Dr. in Monetta, South Carolina. The new work will be phased in order to keep the existing portions of the school in operation as portions of the existing buildings are selectively demolished while new portions are constructed. The new wings will visually complement the existing Phase 1 Middle School wing, but will ultimately result in a new face for the school, and a cohesive design that is welcoming while providing security and a sense of pride for the Ridge Spring and Monetta communities.

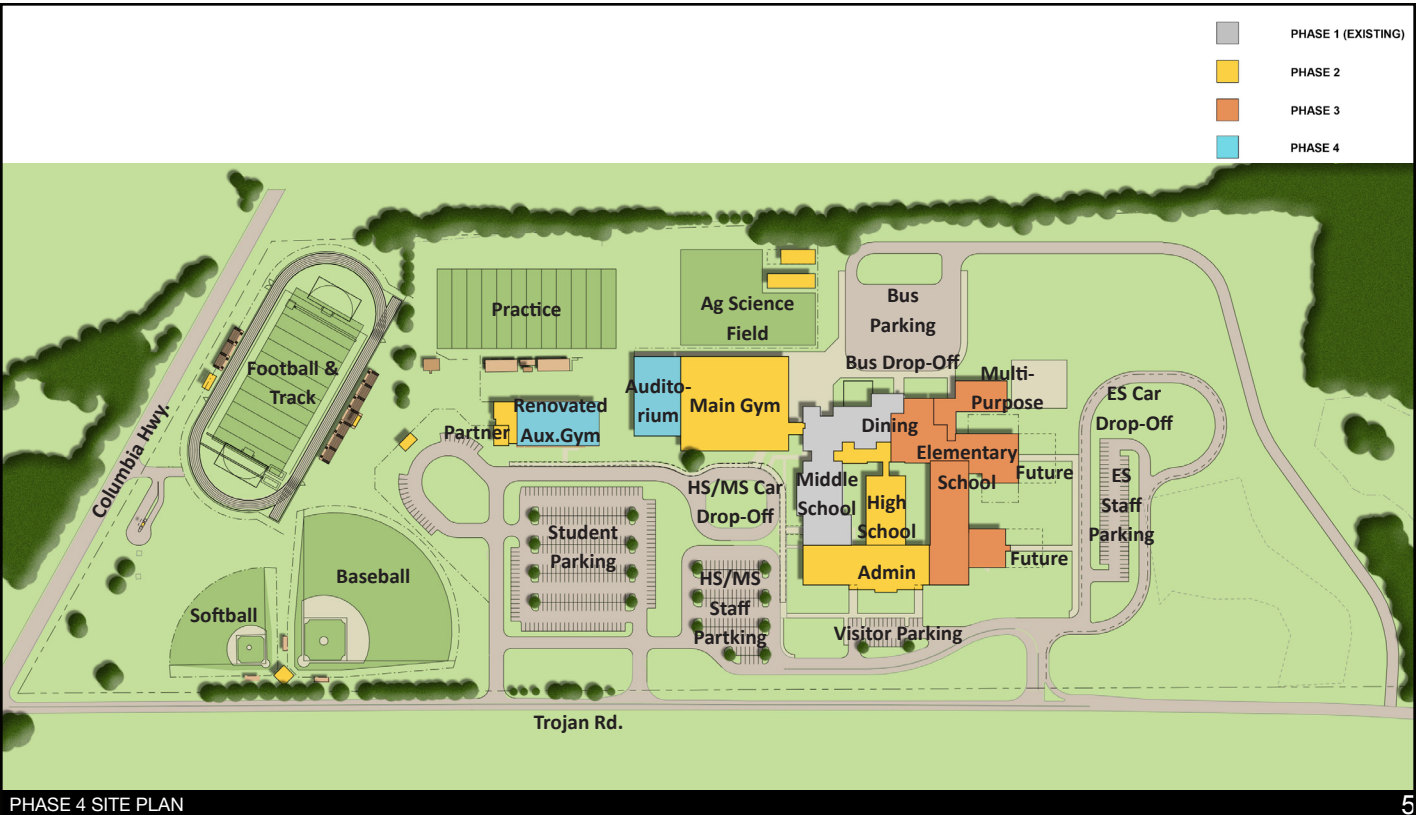
Vehicular circulation will be largely re-configured with new car and bus drop-off loops incorporated into the design. New and expanded parking areas will maintain parking accommodations while providing safer pedestrian connections between the existing buildings to remain and the new wings.

# Phasing Plans



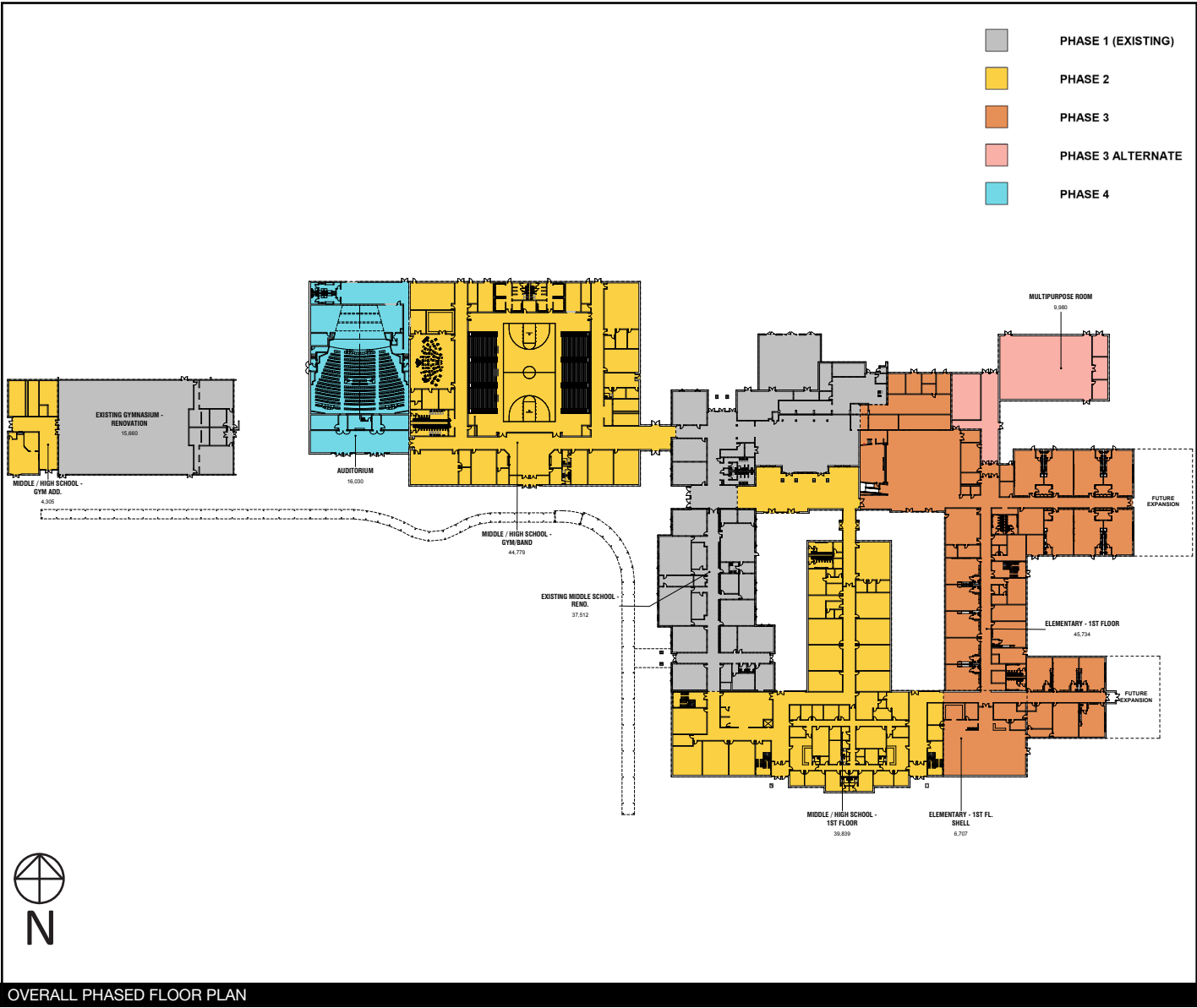


# Phasing Plans












# Floor Plan - Full Build-Out










# Floor Plans



 ELEMENTARY
  HIGH SCHOOL
  MS/HS SHARED
  PARTNER  
 ES/MS/HS SHARED
  MIDDLE SCHOOL
  NON-ASSIGNABLE

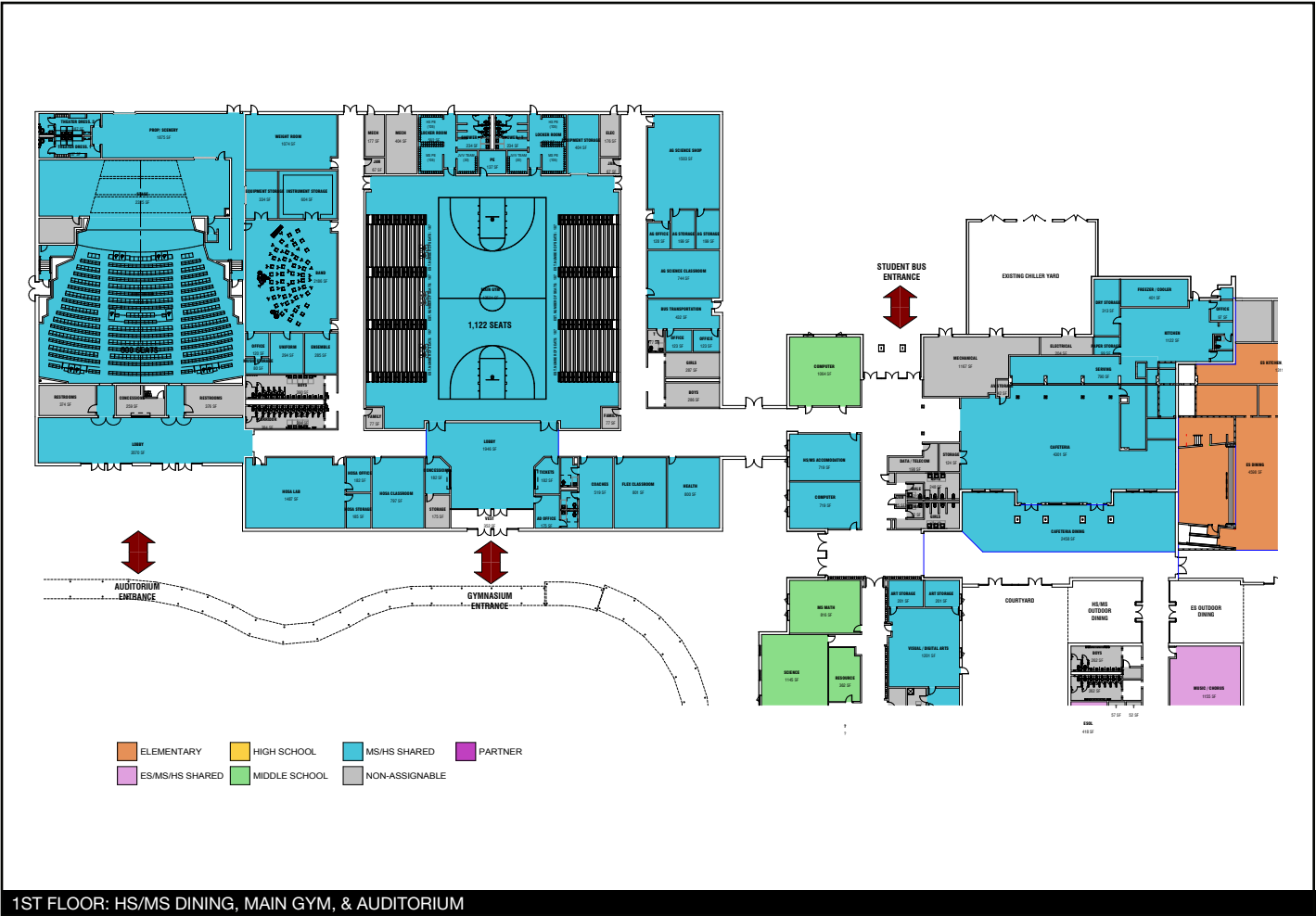
## 2ND FLOOR: CLASSROOMS



 ELEMENTARY
  HIGH SCHOOL
  MS/HS SHARED
  PARTNER  
 ES/MS/HS SHARED
  MIDDLE SCHOOL
  NON-ASSIGNABLE

## 1ST FLOOR: CLASSROOMS, DINING, & MEDIA CENTER

# Floor Plans





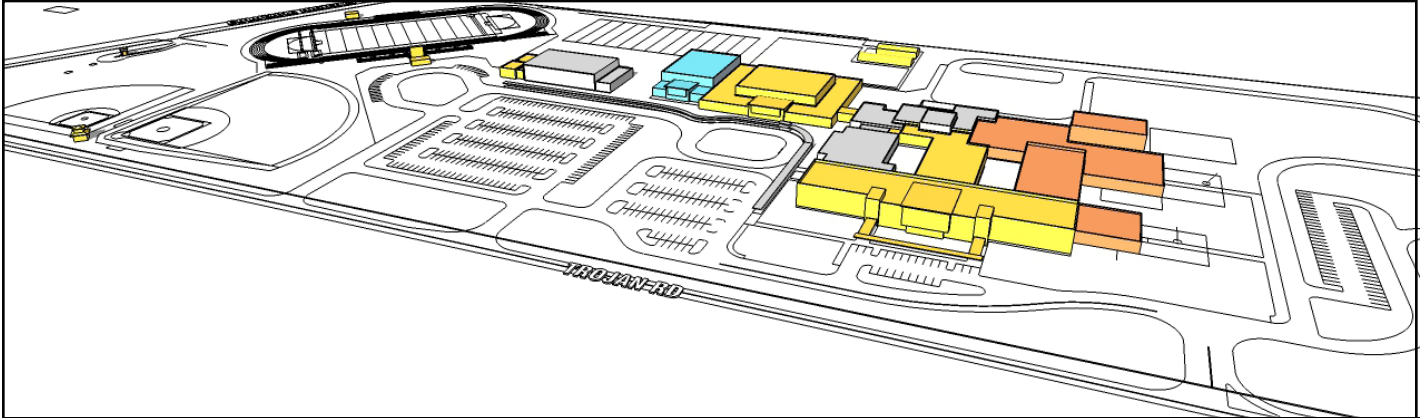


EXISTING MIDDLE SCHOOL WING

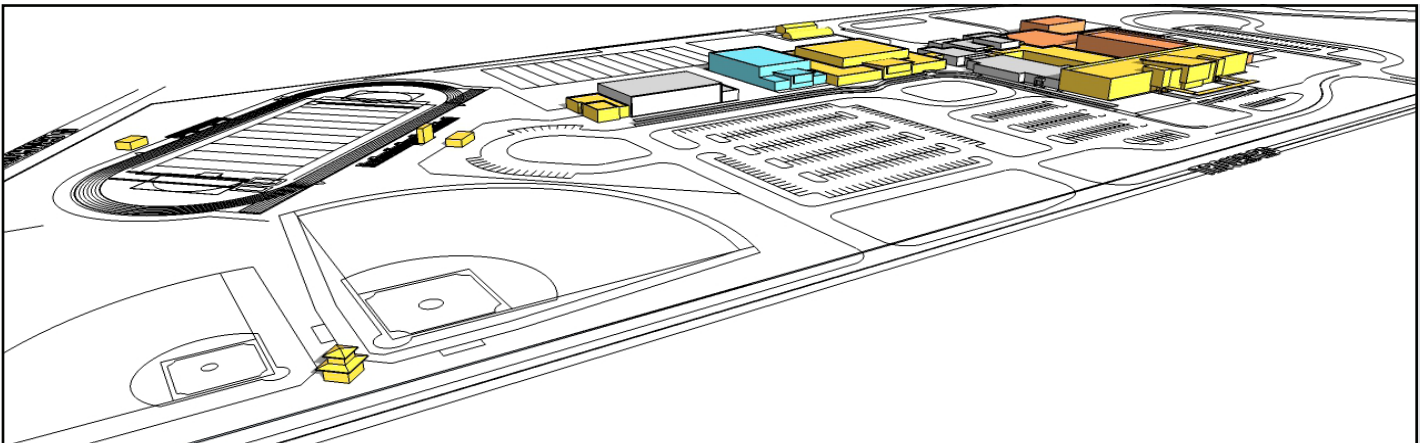


EXISTING GYM TO BE RENOVATED

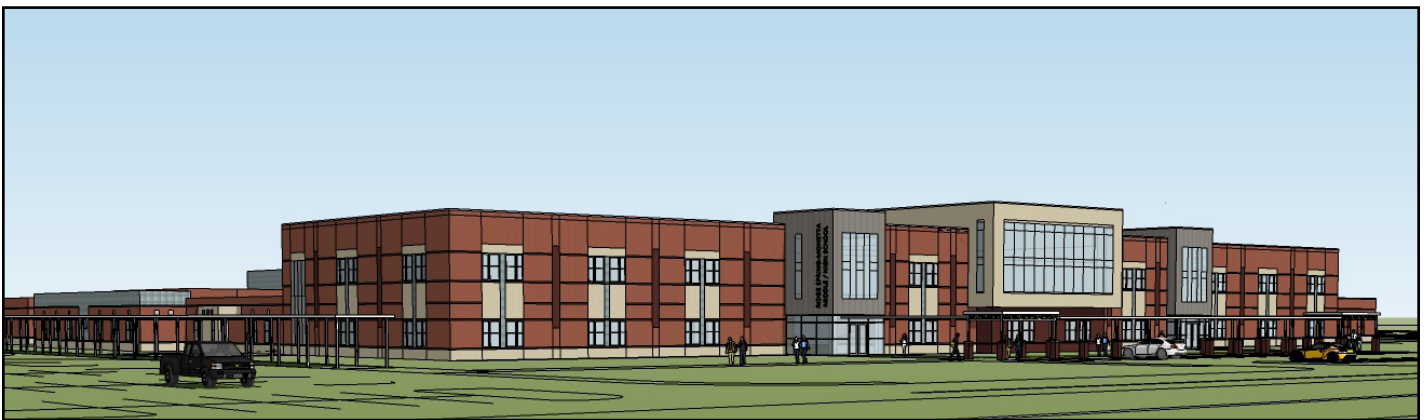
## Massing & Perspectives



BIRD'S EYE VIEW FROM SOUTHEAST (FULL BUILD-OUT)



BIRD'S EYE VIEW FROM SOUTHWEST (FULL BUILD-OUT)



CONCEPTUAL ELEVATION ALONG TROJAN RD.



# Materials and Systems

## A. Structural System

The structural design will be in accordance with the 2012 IBC and ASCE 7-05 for wind, seismic and gravity loadings. The structural system will consist primarily of load bearing CMU (concrete masonry unit) walls of eight and twelve inch thickness as required by height. The exterior masonry walls will be vertically reinforced and grouted CMU with additional horizontal joint reinforcing with an integral veneer tie system. The interior CMU walls will also be vertically reinforced and grouted and contain horizontal joint reinforcing.

Elevated floors will consist of a welded wire mesh reinforced slab on composite metal deck. The slab and deck will be supported on composite steel beams which bear on the main load bearing lines to include exterior walls, corridor walls, and interior partition walls at isolated locations.

The roofs will be framed with steel joists spaced approximately five feet on center. Similar to the floor, the steel joists will bear at main bearing lines including exterior walls, and corridor walls. Areas of pitched roofs will be framed with galvanized structural steel framed on top of steel joists. Roof deck will consist of 1 1/2" galvanized steel.

Continuous strip footings will be provided beneath all exterior walls and interior masonry walls. Larger spread footings will be used at isolated and integral cmu wall piers. All foundations will be constructed of reinforced concrete. The first floor construction will be a 4-inch welded wire mesh reinforced concrete slab on grade placed on a 15-mil vapor barrier.

The code-applied wind and seismic lateral loads will be resisted by a system composed of the elevated concrete floor slab diaphragms, metal roof deck diaphragm and reinforced masonry shear walls.

## B. Roofing

The insulation system within the new roof system assemblies will consist of polyisocyanurate roof insulation and perlite roof insulation with a minimum R-value of 30.

The roofing membrane on the low sloped roof areas will consist of three (3) plies of fiberglass felts adhered in hot asphalt and an Energy Star granule surfaced modified bitumen cap sheet adhered in cold adhesive 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 Galvalume. Other specific flashing details will require other appropriate metal types.

The roofing systems will comply with the 2012 IBC and ACPS requirements.

## C. Exterior and Interior Walls

The exterior facade of the new wings will consist of brick and metal panels with aluminum windows. The majority of the interior wall surfaces will be painted concrete block.

## D. Doors and Windows

Exterior doors will be painted hollow metal (steel) while interior doors will typically be stained solid core wood. All door frames will be hollow metal (steel). Classroom windows will typically be aluminum, triple-glazed, with integral blinds. Aluminum storefront windows will be used at selected locations.

## E. Wall Finishes

All interior walls will be primed and will have a minimum of two finish coats of paint applied. Waterborne epoxy paint will be used on all CMU walls.

## F. Floor Finishes

Vinyl composition tile will be used at the classrooms, labs, and corridors. The group toilets will feature an epoxy flooring. The flooring in the main gym will be a combination of a Grade 1 wood flooring at the basketball court and resilient sports flooring at circulation areas. Quarry tile will be used at the locker rooms. Floors will be painted with waterborne epoxy floor paint in janitor, electrical, data, mechanical, and fire riser rooms.



# Materials and Systems

## G. Ceilings

Acoustical ceiling tile (2'x2') will typically be provided throughout corridor and classroom spaces. Hard ceilings will be used in toilet and shower areas. No ceilings will typically be installed in janitor, electrical, data, mechanical, or fire riser rooms.

## H. Accessories and Specialties

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 provided, as will reception desks and media center circulation desks.

## J. Mechanical System

The chilled water system for the second and future phases of construction will include one of three possible chiller plant options. The first option is the build-out of the existing chiller plant and the addition of a new chiller plant to support the classroom and administrative additions. The second option is to provide one new chiller plant and move the two 90 ton chillers to the new chiller plant which would then support the entire campus. The third option is to add on to the existing chiller plant which would also support the entire campus. The second and third options would provide a chiller plant with 65% to 75% redundancy should one chiller fail or be down for servicing. In the first option, the existing chiller plant would have 50% to possibly 65% redundancy depending upon which building or building areas were added to the existing central chiller plant.

The classrooms and administrative areas will be served with indoor or rooftop, variable air volume (VAV) air handlers and terminal units with electric heat. The Kitchen will be served with a rooftop, constant volume air handler. The gym will be served with a combination of indoor or rooftop VAV air handlers and single zone VAV air handlers. Outside air will be provided by a 100% outside air unit dedicated to providing dehumidified air to the Gym. The Auditorium will be served with a combination of indoor or rooftop VAV air handlers and single zone VAV air handlers. Outside air will be provided by a 100% outside air unit dedicated to providing dehumidified air to the Auditorium. All air handlers will be dual wall with chilled water coils and SCR electric heaters.

The hoods in the new Kitchen, if new hoods are required, will be served by rooftop makeup air units with gas heat and exhaust fans. All fans will be variable speed controlled by heat sensors and variable speed fan drives provided with the hoods.

The existing Gym may be served with chilled water air handlers similar to the new Gym or it may be served with packaged AC units with hot gas reheat for humidity control. The decision on the system to serve the existing Gym is partially based upon the chiller system selected by the District.

Ducts will be rectangular or spiral galvanized sheetmetal with fiberglass insulation with FRP jackets. Exposed duct in the Gym will be dual wall duct. Piping will be schedule 40 black steel or Type L copper with polyiso insulation outdoors and in mechanical rooms and fiberglass insulation with ASJ jacket in other locations. Above ground, outdoor piping will have an aluminum jacket. Underground chilled water piping shall have polyurethane insulation with a PVC or FRP jacket.

The control system will be a web based control system by Automated Logic Controls. All components of the HVAC system will be controlled along with the common lighting zones (primarily corridors and exterior lighting).







# Materials and Systems

## K. Plumbing System

Large demand usage areas (i.e., kitchen, showers, etc.) will be provided with natural gas-fired instantaneous water heaters. Water heaters for lesser-usage areas shall be electric storage tank type water heaters. A hot water recirculation system shall be provided with a water heater when the hot water system piping exceeds 100 feet from water heater to last fixture.

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

Water closets shall be floor mounted with flush valves. Urinals shall be wall-hung with flush valves. Flush valves installed in group restrooms shall be the self-powered, sensor type. Except for lavatories in adult restrooms, lavatories shall be wall-hung, enameled cast iron fixtures with sensor type hot and cold water faucets. Group restroom lavatories shall sensor type cold water faucets only. Faucets shall be the self-powered type. Lavatories in single adult restrooms shall have a manual faucet with goose neck and 4" wrist blades.

Art Room sinks shall be 302 stainless steel, 18 gauge type with hot and cold water. Art Room sinks will be provided with above floor sediment traps. Classroom sinks shall be 302 stainless steel, 18 gauge type with hot and cold water.

Water coolers shall be the stainless steel, wall hung, and vandal resistant type. There shall be one water cooler with bottle filling station on each floor.

Wall hydrants will be surface mounted, loose key, anti-freeze with a backflow preventer. Hydrants shall be located at approximately 100-ft. intervals around perimeter of the building. Roof hydrants will be provided at rooftop equipment for wash down and maintenance purposes. A hose bibb with loose key and vacuum breaker will be located in all toilets with floor drains and in mechanical rooms.

Water piping located above ground shall be type "L" copper and water piping located below grade shall be type "K" copper. All waste and storm drain piping located below grade shall be schedule 40 PVC piping. All waste, vent, and storm drain piping located above ground shall be No-hub type cast iron piping with heavy duty stainless steel coupling. All gas piping located above ground shall be either corrugated stainless steel piping by Tracpipe or schedule 40 black steel. All gas piping located below grade shall be corrugated stainless steel piping by Tracpipe.

If sufficient water pressure is not available on the site, a duplex booster pump shall boost the water pressure of the entire campus. The water service to the building shall be protected with a backflow preventer.

## L. Fire Protection System

All of the additions will be protected throughout with an automatic fire sprinkler system. The existing Fire Riser system in the existing classroom building made provisions for the majority of the planned future additions by extending five lines from the existing riser room and capping them at two different locations – two lines on one side of building and three lines on the opposite side of the building. A total of six sprinkler zones will be required to provide protection for all of the proposed additions. There are presently four capped outlets in the main manifold located in the Fire Riser room. An additional two new zones will be connected to this existing manifold for a total of six new zones. Each zone assembly will require a control valve and riser check valve assembly.

The existing auxiliary gym and proposed addition shall be protected throughout with an automatic fire sprinkler system. This will require a new fire line with Post Indicator Valve, backflow preventer, riser valve assembly and Fire Department Connection.

Based on previous water flow tests for this project, it appears that a fire pump may be required for either some or all of the additions. If a fire pump is required, an electric driven fire pump will be proposed.

The mechanical rooms, electrical rooms, storage areas, janitor rooms and water heater rooms shall be designed for Ordinary Hazard Group I occupancy. Auditorium Stage and workshop areas shall be designed for Ordinary Hazard Group II occupancy. The remainder of the building shall be designed for Light Hazard Occupancy.

# Materials and Systems

Concealed sprinklers will be provided in all areas with finished ceilings. Upright sprinklers will be installed in mechanical rooms, electrical rooms, storage rooms, and similar rooms and any other space without ceilings. Upright sprinklers in Gymnasium shall be provided with sprinkler guards.

## M. Electrical System

Electrical service for the new addition will be obtained from a pad-mount transformer fed by SCE&G. Service voltage will be 277/480V 3 phase 4 wire. Surge protective devices (SPD) will be provided for the new electrical service and downstream distribution equipment. The existing service will be reworked to consolidate main service disconnects in a single location.

Emergency power will be derived from an outdoor diesel generator set in a sound attenuated weatherproof enclosure. Nominal size required for the campus is estimated to be 200 kW at 480Y/277 3 phase 4 wire. The new unit will replace the existing 60kW generator. The emergency power system will provide emergency power for the emergency lighting, fire pump and communications systems as well as standby power for food service refrigeration equipment and elevator(s).

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.

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.

An addressable fire alarm system will be provided. The system will be a voice-evacuation type utilizing strobes, speakers, and pre-recorded voice messages to notify occupants. The fire alarm system will report automatically to a Central Receiving Station. Basis of design will be systems manufactured by Silent Knight.

A premises wiring system, including fiber optic backbone with CAT 6 copper drops will be provided. This will include a complete conduit and/or cable tray system for support of IT technology wiring and equipment racks for installation of jack panels and Owner installed electronics.

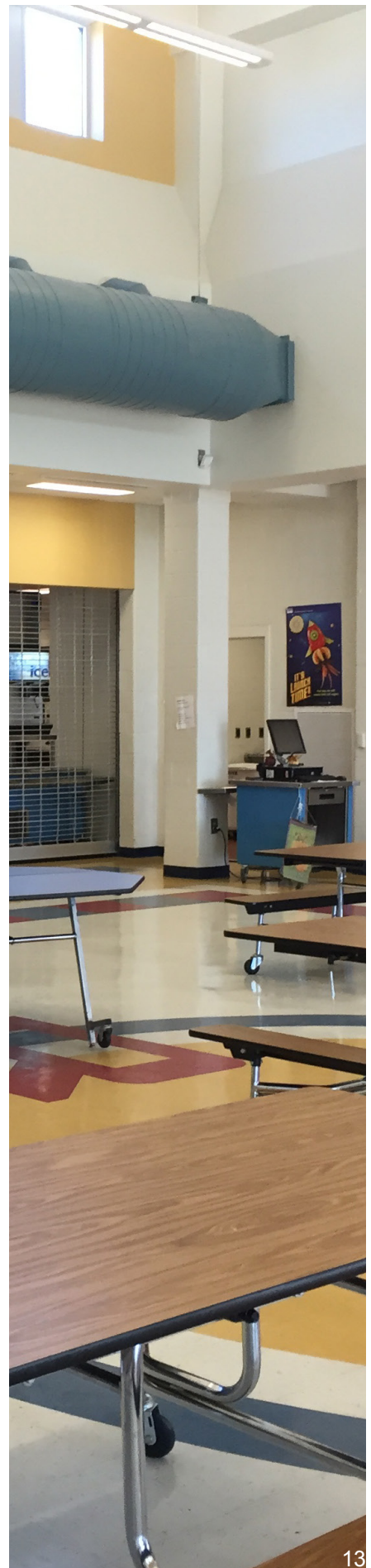
Cable tray system shall be for the sole use of IT, security, CCTV, and other systems installed outside the construction contract. HVAC controls shall not be installed in the cable tray system. Cable tray shall be aluminum ladder type tray.

Nominal outlet locations in instructional spaces shall be for nine (9) drops per classroom, one for teacher station, two for wireless access point and six for student stations. Conduit pathway shall be provided within instructional spaces to support multi-media applications between the instructor's station and display equipment. Empty conduit will be provided for an intrusion detection system (IDS), building access control and CCTV systems. System electronics and installation will be included in the construction contract via Owner's security vendor. Device locations to be provided by Owner's security systems vendor for incorporation into the contract documents.

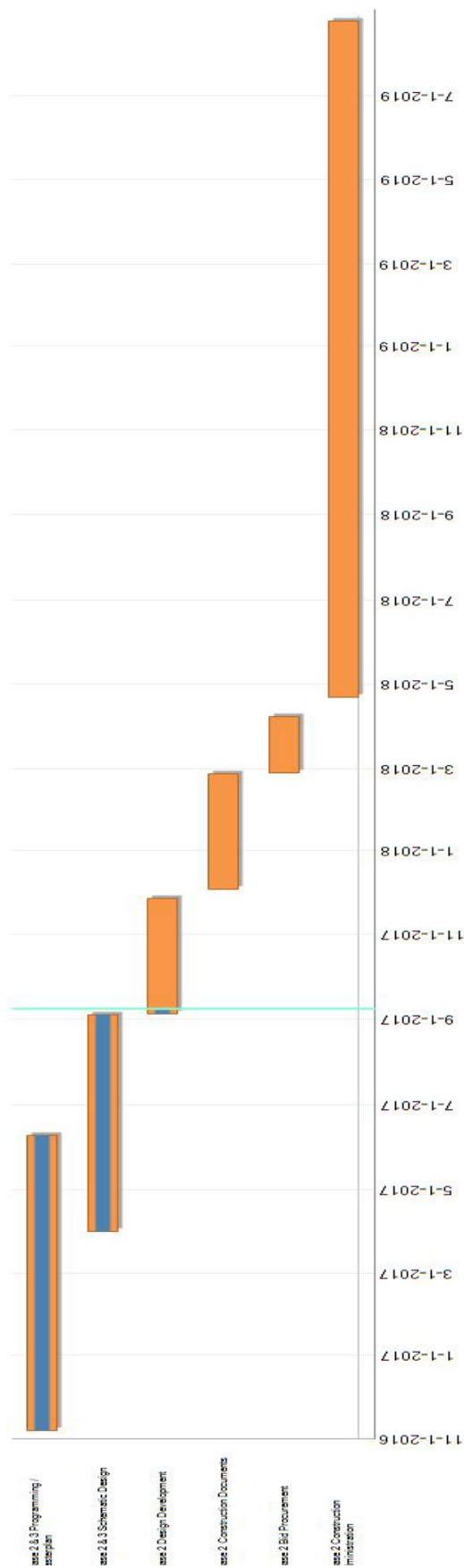
A two-way school intercom system shall be provided for calls to instructional areas and for general paging through the building. The existing Rauland Borg TC-21 installed under phase 1 will be extended into the new construction. Call-back buttons shall be provided in classrooms and selected locations. Administration phone handsets shall be provided announcements at the main reception desk, principal's office, and the guidance reception desk.

Sound reinforcement systems and rough-ins for future A/V presentation systems will be provided in the gymnasium.

Athletic field lighting manufactured by Musco Sports Lighting will be provided for replacement athletic fields.



# Schedule





# Preliminary Project Budget Summary Estimate

## Ridge Spring-Monetta K-12 - Phases 2 & 3

Aiken County School District

LS3P Commission No.: 2201-168720

12-Sep-17



Description	High School & Admin			K-5 Classrooms and Admin.			FUTURE			Phase 4		TBD
	GSF	\$/GSF	Totals	GSF	\$/GSF	Totals	GSF	\$/GSF	Totals			
<b>Estimated Construction Costs</b>												
<b>HG Reynolds</b>												
<b>Demotion</b>												
Site and Building Demolition			\$495,840									
<b>Building/Site</b>												
New MS/HS Addition - Levels 1 & 2	63,300	\$205	\$12,976,500	73,611	\$205	\$15,090,255						
New MS/HS Gym/Music/CATE	44,779	\$205	\$9,179,695									
Existing gym lobby renovate / new partner space	4,305	\$185	\$796,425									
ES Shell Space Upfit - Levels 1 & 2				13,414	\$85	\$1,140,190						
<b>Sub-total</b>			\$23,448,460			\$16,230,445						
<b>Site</b>												
New Football/Track Stadium			\$550,000			\$1,300,000						
New Baseball/Softball Complex			\$315,000									
New free-standing storage building	2,100	\$150	\$315,000									
New greenhouse	3,000	\$50	\$150,000									
			\$1,015,000									
<b>Projected Sub-Total Construction</b>			\$24,959,300			\$17,530,445						
<b>Alternates</b>												
ES Shell Space - Levels 1 & 2	13,414	135	\$1,810,890				16,030	\$220	\$3,526,600			
MS/HS Auditorium							15,660	\$8	\$125,280			
Existing Gym Renovations							9,980	\$205	\$2,045,900			
Elementary Multi-Purpose Room				9,980	\$205	\$2,045,900						
<b>Sub-total</b>			\$1,810,890			\$2,045,900						
<b>TOTAL CONSTRUCTION</b>			\$26,770,190			\$19,576,345						
<b>Schematic Design / Estimate Contingency</b>			\$1,286,308			\$940,643						
<b>Projected Total Construction / Phase</b>			\$28,056,498			\$20,516,988						
<b>Professional/Technical/Inspection Fees</b>												
(Fees, surveys, inspections)												
<b>TOTAL</b>			\$2,552,342			\$1,385,207						
<b>Advertising</b>												
Bid advertisements			(included in CM@R)			(included in CM@R)						
<b>Miscellaneous</b>												
Fixtures, Furnishings & Equipment; Technology			\$2,805,650			\$2,051,699						
<b>TOTAL</b>			\$2,805,650			\$2,051,699						
<b>Sub-Total</b>			\$33,414,489			\$23,953,894						
Overall Project Contingency			\$1,670,724.45			\$1,197,694.72						

### ESTIMATED TOTAL

	\$35,085,214	\$25,151,589	\$7,592,182
<b>Running TOTAL</b>	\$35,085,214	\$60,236,803	\$67,828,985

#### Alternates

Add'l. Construction Admin (LS3P weekly)

Add'l. Construction Admin (Consultants as req'd)

OPTIONAL

OPTIONAL, hourly

17 mos.	\$7,000	\$112,000	14 mo	\$7,000	\$98,000	14 mo	\$7,000	\$98,000	
17 mos.	TBD		TBD			TBD			

	\$35,197,214	\$25,249,589	\$7,690,182
<b>Running TOTAL</b>	\$35,197,214	\$60,446,803	\$68,136,985

Under/Over Budget

### OVERALL PROJECT BUDGET

\*Actual costs to be provided by District.

\$5,797,214

\$29,400,000

\$6,049,589

\$19,200,000

\$7,690,182