

# RS



**AIKEN COUNTY**  
PUBLIC SCHOOLS

**RIDGE SPRING-MONETTA K-12  
PHASE 2**

LS3P Commission No. 2201-168720



**CONSTRUCTION DOCUMENTS SUBMITTAL  
JUNE 2018**



# CONTENTS

## RIDGE SPRING MONETTA K-12



EXISTING GYMNASIUM BUILDING



EXISTING PHASE 1 MIDDLE SCHOOL BUILDING

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*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.*

# DESIGN STATEMENT



MAIN ENTRY CONCEPT

Our project scope was to develop a campus Master Plan based on phasing to ultimately replace or renovate the existing academic and athletic facilities on the campus. Phasing plans were developed for renovations/additions to the campus, presented to the District Committee, 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, and athletic fields.

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 Phase 2 Construction Documents Submittal has resulted in a project that remains consistent with the project goals and the needs of the Ridge Spring and Monetta communities.

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

## PHASE 1

PHASE 1 (EXISTING)

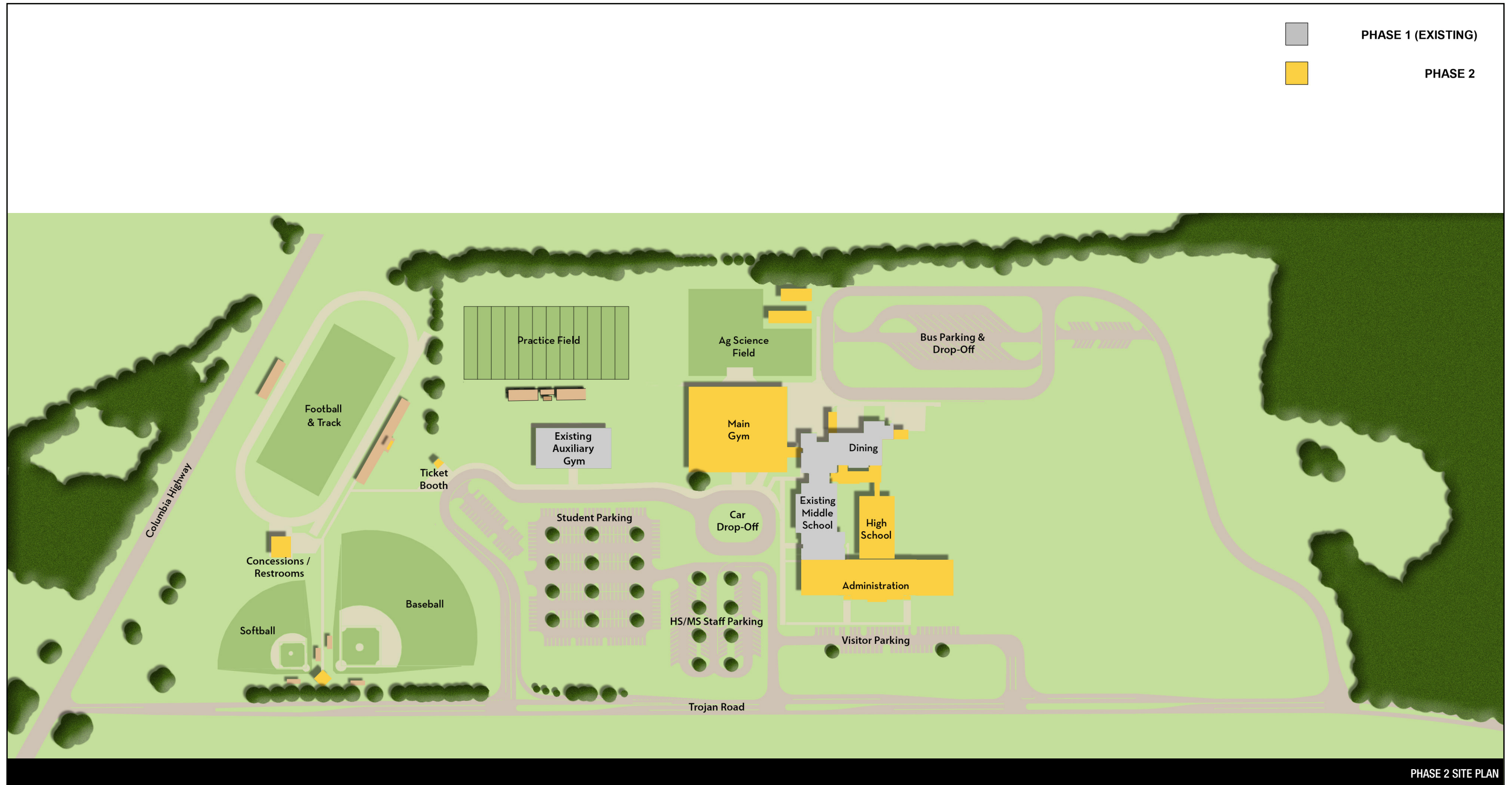


PHASE 1 (EXISTING) SITE PLAN

# PHASING PLANS

PHASE 2

PHASE 1 (EXISTING)  
PHASE 2



PHASE 2 SITE PLAN

# PHASING PLANS

## PHASE 3

- PHASE 1 (EXISTING)
- PHASE 2
- PHASE 3



PHASE 3 SITE PLAN



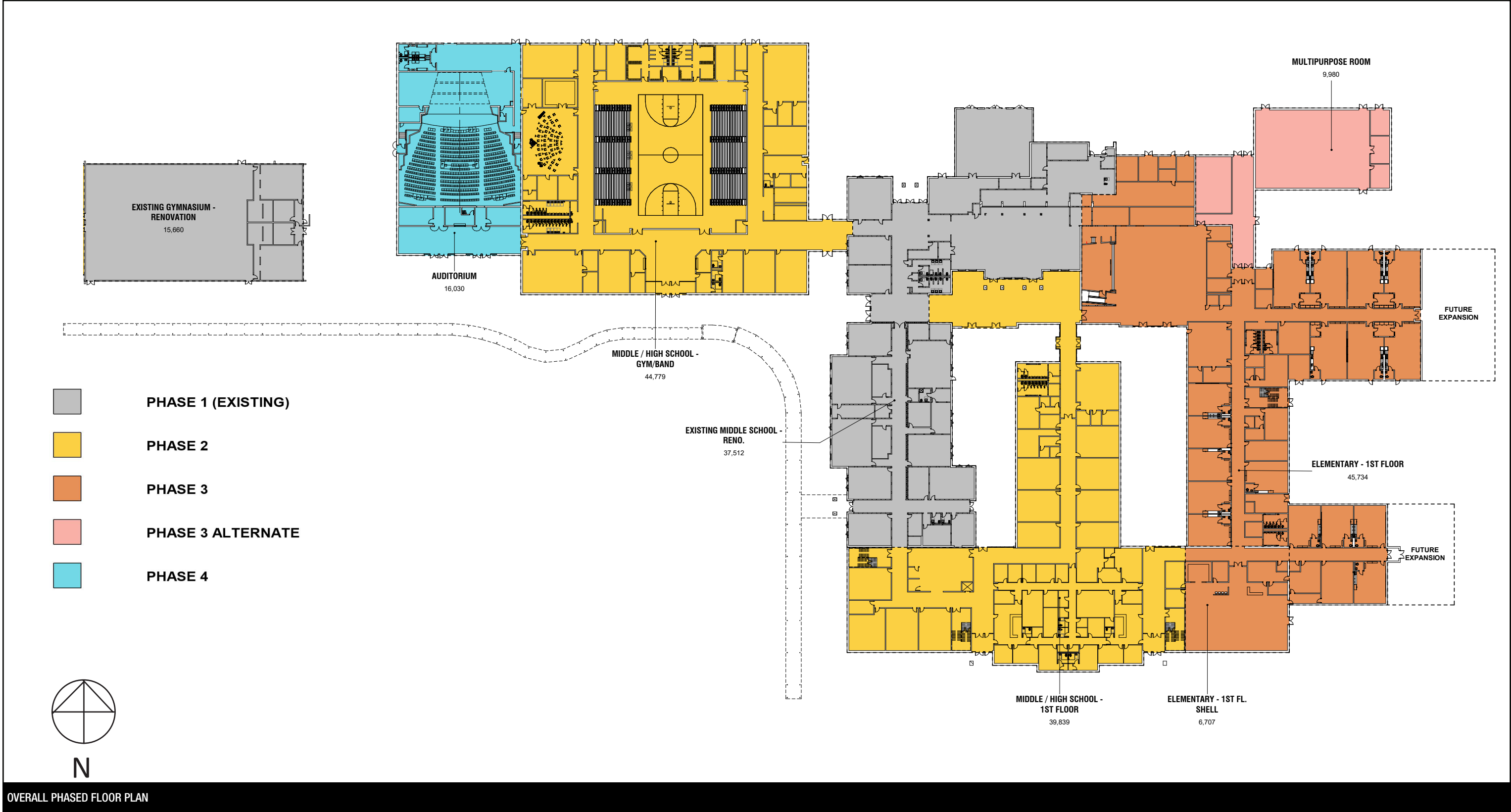
# PHASING PLANS

## PHASE 4



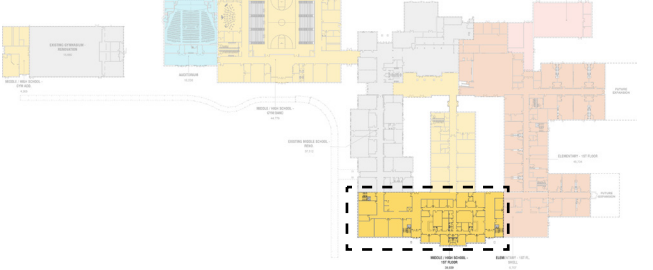
PHASE 4 SITE PLAN

# FLOOR PLAN - FULL BUILD-OUT



OVERALL PHASED FLOOR PLAN

# FLOOR PLANS



PHASE 2 ADMIN/CLASSROOM WINGS: 1ST FLOOR

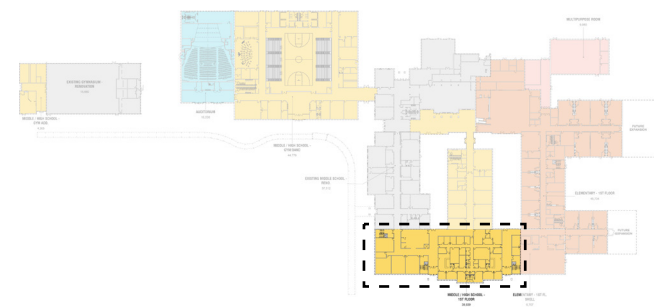
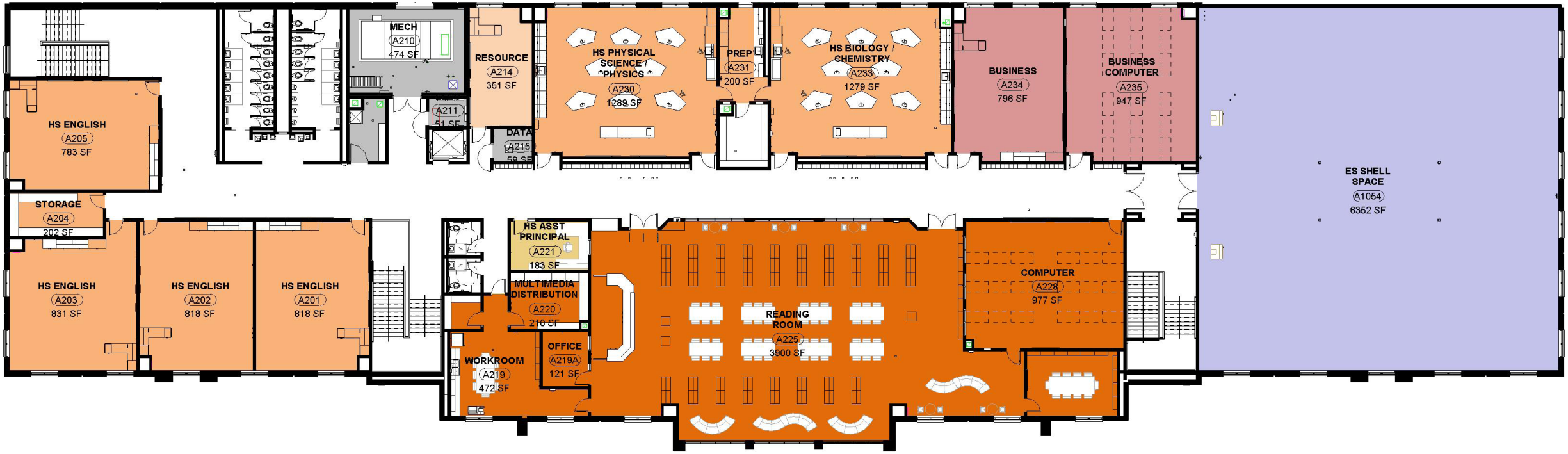
# FLOOR PLANS



PHASE 2 ADMIN/CLASSROOM WINGS: 1ST FLOOR

# FLOOR PLANS

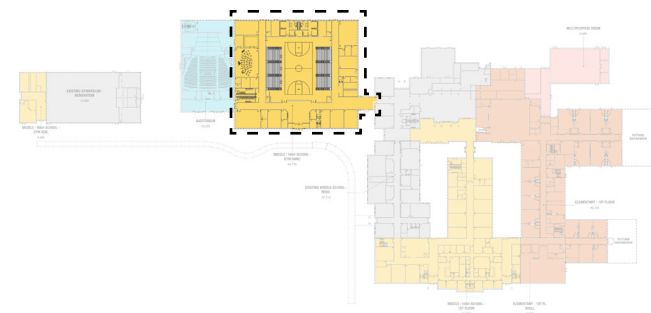
- ADMINISTRATION
- ARTS
- ATHLETICS
- DINING & FOOD SERVICE
- ES SHELL SPACE
- GENERAL CLASSROOMS
- GUIDANCE
- MEDIA CENTER
- MUSIC
- SPECIAL EDUCATION
- SUPPORT
- VOCATIONAL



PHASE 2 ADMIN/CLASSROOM WINGS: 2ND FLOOR

# FLOOR PLANS

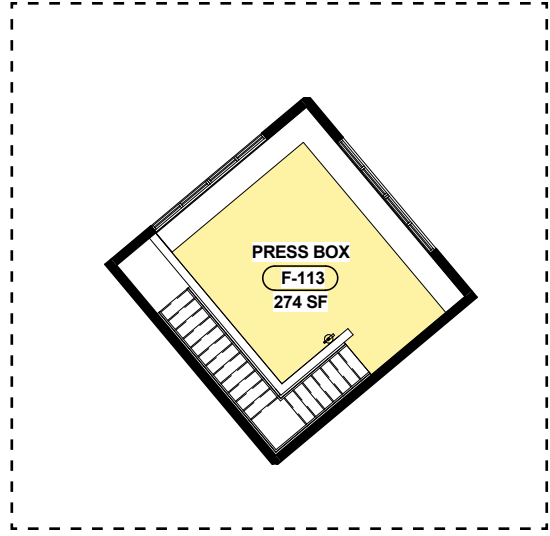
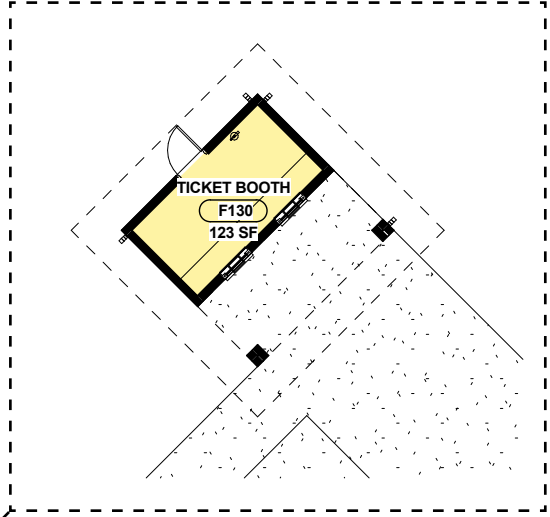
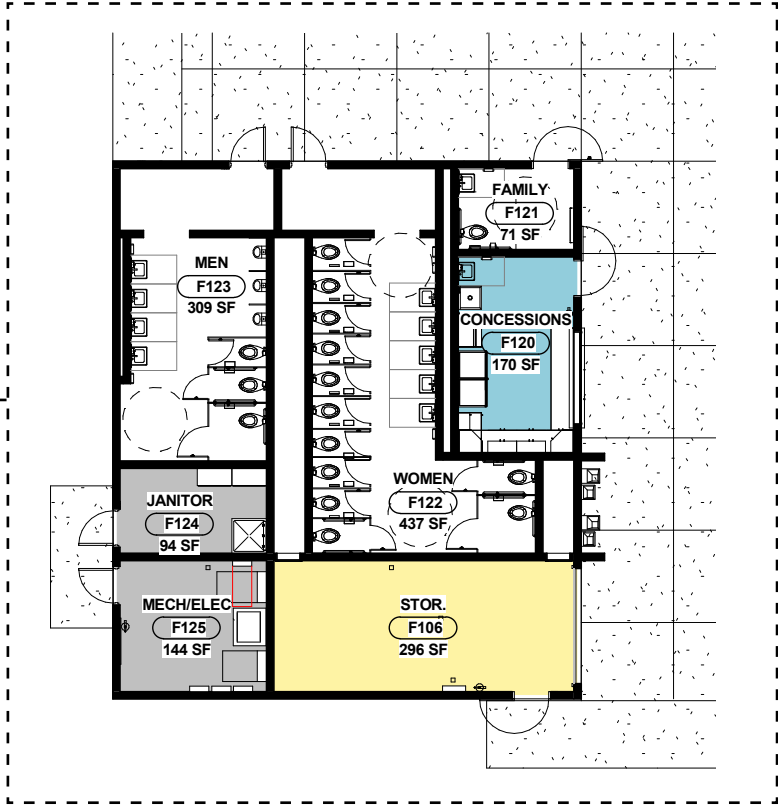
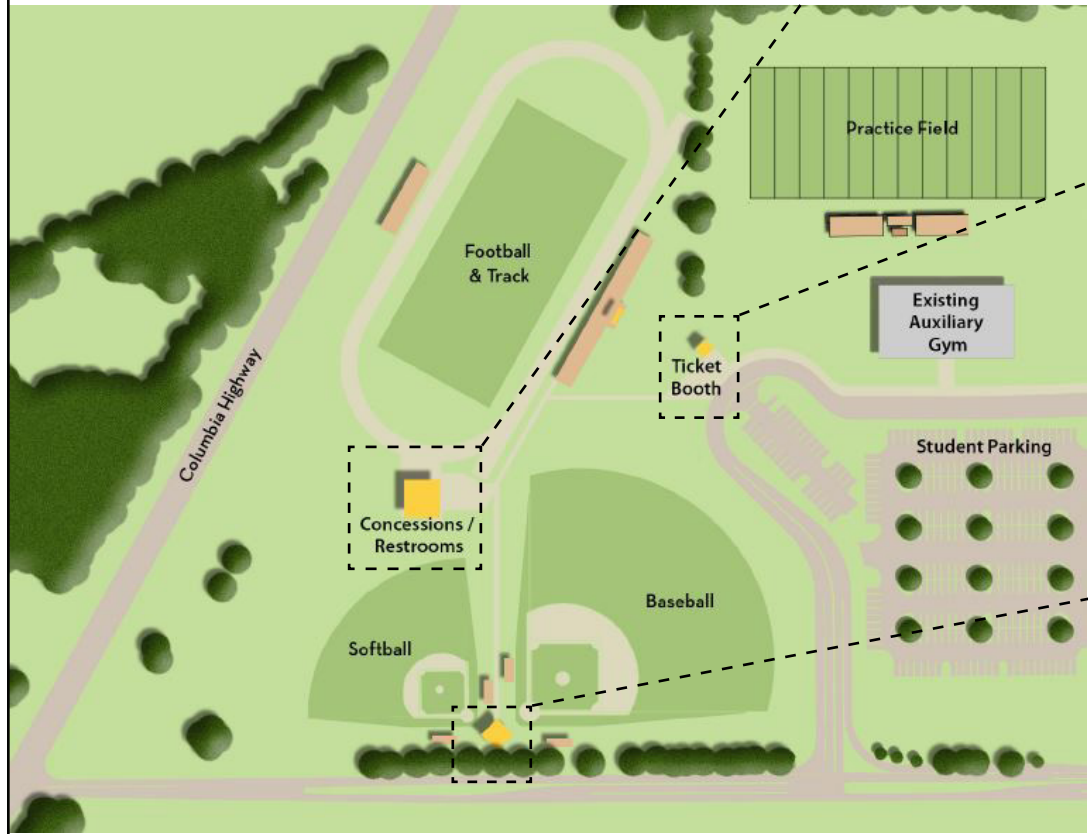
- ADMINISTRATION
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1ST FLOOR : GYMNASIUM WING

# FLOOR PLANS

- ADMINISTRATION
- ARTS
- ATHLETICS
- DINING & FOOD SERVICE
- ES SHELL SPACE
- GENERAL CLASSROOMS
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1ST FLOOR : ATHLETIC OUTBUILDINGS

# ELEVATIONS







PERSPECTIVE ALONG TROJAN RD.

PERSPECTIVES



MAIN ENTRY PERSPECTIVE



GYMNASIUM WING ENTRY PERSPECTIVE



# 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 waterborn 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

Most spaces / zones are served by modular, indoor or rooftop, single or multi-fan, single or multi-zone, variable air volume (VAV) air handlers with chilled water coils and SCR electric preheat or reheat coils. The terminal units are shutoff and fan-powered type with SCR electric reheat. Electric wall heaters and ceiling unit heaters serve stairways, entryways, and vestibules. Toilets, janitor's closets, electrical rooms, health rooms, workrooms, showers, and washer / dryer rooms are exhausted. Transfer fans ventilate data closets. Shell spaces are temporarily served by floor-mounted blower coil units with chilled water and electric reheat. These units will be relocated to the mechanical rooms during the next phase of construction when the shell space is up-fitted. The new Gym is served by a modular, indoor, multi-fan, single-zone VAV air handler with a chilled water coil and an SCR electric reheat coil. Outside air is provided by a 100% outside air unit with a chilled water coil and an SCR electric preheat coil dedicated to providing outside air to the gym. Outside air is drawn from a rooftop intake hood. Exposed spiral ducts are utilized in the Gym.

The AG Science Shop is served by a modular, rooftop, single-zone VAV air handler with chilled water coils and an SCR electric reheat coil. Exposed spiral ducts are utilized. A purge exhaust fan is provided to remove excessive smoke if needed.

The locker rooms are served by two indoor, constant volume air handlers with chilled water coils and SCR electric reheat coils. During occupied mode, these air handlers draw air directly from the gym and the locker rooms are exhausted. During unoccupied mode, these air handlers operate in 100% recirculation mode.

The Cannery is conditioned by a VAV system, and is served by a Type 1 Hood with a dedicated makeup air unit. The modular, rooftop makeup air unit has an SCR electric preheat coil. The hood is served by a rooftop grease exhaust fan. Auxiliary general exhaust is also provided.

The Gym corridors / Lobby are served by a modular, rooftop, single-zone VAV air handler with a chilled water coil and an SCR electric reheat coil. Exposed spiral supply ducts are utilized in the Gym Lobby and an electric radiant heating panel serves the ticket booth.

In the new dining wing, exposed spiral supply and return ducts are utilized. This wing is served by a modular, rooftop, single-zone VAV air handler with a chilled water coil and an SCR electric reheat coil.

The Gym mechanical mezzanine is served by a blower coil unit with a chilled water coil and an electric reheat coil along with two electric unit heaters.

The new baseball / softball press box is served by a ductless, split-system, DX heat pump. The air handler is wall-mounted on the 2nd-Floor of the press box and the condensing unit is located directly outside on grade.

The new football toilet / concessions building is primarily served by multiple ventilating exhaust fans and electric unit heaters.

Science labs and fume hoods are served by a rooftop lab fume exhaust fan and multiple lab exhaust valves. The chemical storage, prep rooms, and fume hoods are all exhausted.

In the existing middle school the economizer sequence of the existing air handling unit is being abandoned, and the outside air intake is being modified. The existing rooftop relief hood is being replaced with a rooftop outside air supply fan. Some existing VAV boxes are being removed and replaced with new VAV boxes that meet the design of the renovated spaces. For air handling units that serve other portions of the existing middle school, outside air intake louvers in the existing mechanical room are being removed and replaced with a rooftop intake hood.





## MATERIALS AND SYSTEMS

to provide outside air to the system.

Generally, all electrical, fire protection, and mechanical rooms are to be ventilated with exhaust fans, and heated with electric unit heaters.

The existing chiller plant is not modified or renovated in this project. Two new variable flow primary chiller plants are added to serve all areas of the building. The chiller plants each have capacity to support the building additions proposed in the next phases. A chiller will have to be added to support the elementary school construction in the next phase. All above ground chiller yard piping is heat traced. Chilled water piping will be Schedule 40 black steel. Refrigerant piping will be ACR copper. Condensate drain piping will be Type L copper.

All ducts will be either rectangular or spiral galvanized sheet metal unless specified otherwise. Exposed ductwork will be dual wall spiral with mylar liner protecting the inner airstream and shall have a paint grip coating to allow finish painting of the duct. Ceiling diffusers will be louvered face grilles. Ceiling diffusers in classrooms will be high induction louvered face grilles. Ducts will be Seal Class A. Grease exhaust duct (Type 1 Hood) will be welded steel duct.

Insulation for concealed supply and return duct will be 2" FSK fiberglass insulation with FRP jackets. Indoor pipe insulation will be fiberglass with ASJ jacket. Outdoor and mechanical room pipe insulation will be polyiso. Above ground outdoor piping will have an aluminum jacket. Underground chilled water piping will have polyurethane insulation with a PVC or FRP jacket.

HVAC systems will be controlled by the existing and renovated web-based Automated Logic Control System. The system will be upgraded as necessary to support the new or modified HVAC systems. Most exhaust fans will be controlled by occupancy schedules; some will be controlled by wall switches. Common lighting zones (primarily corridors and exterior lighting) will be controlled by the building control system. Space humidity sensors will be provided at various locations to monitor space humidity levels.

### 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

# MATERIALS AND SYSTEMS

of the proposed additions. There are presently four capped outlets in the main manifold located in the Fire Riser room. These zones will be relocated to the new Fire Pump room. An additional two new zones will be required to provide a total of six new zones. Each zone assembly will require a control valve and riser check valve assembly. Based on previous water flow tests for this project, it appears that a fire pump will be required for the additions. An electric driven fire pump with automatic transfer switch will be provided.

The fire sprinkler main shall be extended from Area E (Phase 2A) in which piping was capped for the Phase 2B addition. In addition, Sprinkler main piping and Fire Department Connection piping for Future Auditorium shall be routed through Area F and capped for future connection.

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.

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.

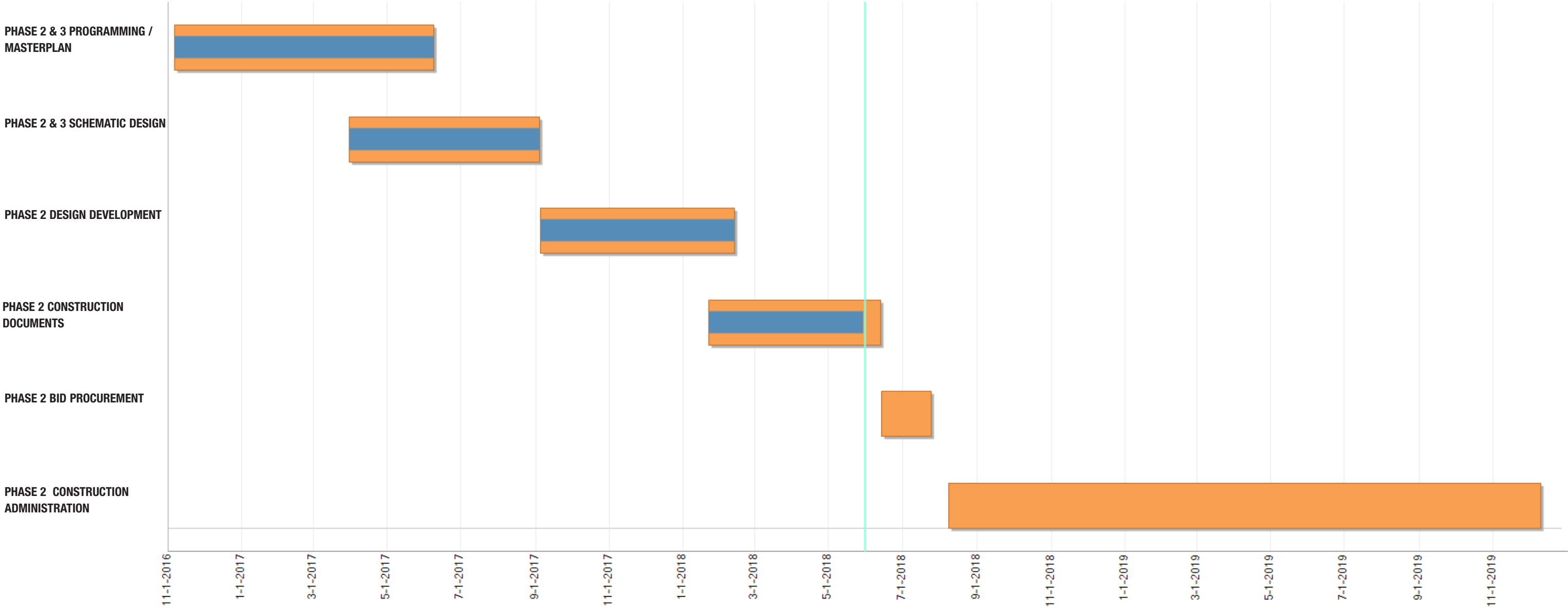
A two-way school intercom system shall be provided for calls to instructional areas and for general paging through the building. The existing Rauland Borg TC-21 installed under phase 1 will be extended into the new construction. Call-back buttons shall be provided in classrooms and selected locations. 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





# PROJECT BUDGET SUMMARY ESTIMATE

**Ridge Spring-Monetta K-12 - Phases 2 - 4**  
**Aiken County School District**  
 LS3P Commission No.: 2201-168720

28-Feb-18



Description	High School & Admin			K-5 Classrooms and Admin.			FUTURE		Phase 4 (2021-2022)	
	GSF	\$/GSF	Totals	GSF	\$/GSF	Totals	GSF	\$/GSF	Totals	
<b>Estimated Construction Costs</b>	<b>HG Reynolds</b>									
<b>Site</b>										
Site and Site Demo			\$2,527,473							
<b>Building</b>										
New high school construction, including building demo	124,550	\$221	\$27,531,079	73,611	\$205	\$15,090,255				
<i>Sub-total</i>			\$30,058,552			\$16,230,445				
<b>Athletic Fields</b>										
Football/Track Stadium, Baseball/Softball complex, Restroom/Concessions			\$2,465,008							
<b>Projected Sub-Total Construction</b>			<b>\$32,523,560</b>			<b>\$16,230,445</b>				
<b>Alternates</b>										
MS/HS Auditorium							16,030	\$220	\$3,526,600	
Existing Gym Renovations				15,660	\$8	\$125,280				
Elementary Multi-Purpose Room				9,980	\$205	\$2,045,900				
<i>Sub-total</i>						\$2,045,900			\$3,526,600	
<b>TOTAL CONSTRUCTION</b>			<b>\$32,523,560</b>			<b>\$18,276,345</b>			<b>\$3,526,600</b>	
<i>Design Development / Estimate Contingency</i>										
<i>Projected Total Construction / Phase</i>			<b>\$32,523,560</b>			<b>\$18,276,345</b>			<b>\$3,526,600</b>	
<b>Professional/Technical/Inspection Fees</b>										
(Fees, surveys, inspections)										
<b>TOTAL</b>			<b>\$2,814,949</b>			<b>\$1,273,791</b>			<b>\$540,360</b>	
<b>Advertising</b>										
<i>Bid advertisements</i>										
<b>Miscellaneous</b>										
Hazardous Material Consultant / Abatement										
(not applicable 'till Phase 3?)										
Fixtures, Furnishings & Equipment; Technology			\$3,252,356			\$1,827,635			\$352,660	
10% of Projected Const.										
<b>TOTAL</b>			<b>\$3,252,356</b>			<b>\$1,827,635</b>			<b>\$352,660</b>	
<b>Sub-Total</b>			\$38,590,865			\$21,377,771			\$4,419,620	
Overall Project Contingency		5.00%	\$1,929,543.26			\$1,068,888.54			\$220,981.01	
<b>ESTIMATED TOTAL</b>			<b>\$40,520,408</b>			<b>\$22,446,659</b>			<b>\$4,640,601</b>	
<i>Running TOTAL</i>			\$40,520,408			\$62,967,068			\$67,607,669	
<b>Alternates</b>										
Add'l. Construction Admin (LS3P weekly)										
OPTIONAL	17 mos.	\$7,000	\$112,000	14 mo	\$7,000	\$98,000	14 mo	\$7,000	\$98,000	
Add'l. Construction Admin (Consultants as req'd)										
OPTIONAL, hourly	17 mos.	TBD		TBD			TBD			
			<b>\$40,632,408</b>			<b>\$22,544,659</b>			<b>\$4,738,601</b>	
<b>Running TOTAL</b>			<b>\$40,632,408</b>			<b>\$63,177,068</b>			<b>\$67,915,669</b>	
<b>OVERALL PROJECT BUDGET</b>			<b>\$65,489,000</b>							
Under/Over Budget									\$2,426,669	
*Actual costs to be provided by District.										