



SUITLAND HIGH SCHOOL

FEASIBILITY STUDY

Prince George County Public Schools

7 March 2019

cox graae + spack architects



community
culture...
uniquely
you

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executive summary



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SUITLAND HIGH SCHOOL

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CVPA student work

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SUITLAND HIGH SCHOOL

PURPOSE

The purpose of this study is to provide three design options for the modernization and/or replacement of the four educational components of the Suitland High School campus. These options have been evaluated to comply with the educational specifications and take into consideration cost effectiveness, comprehensiveness and overall quality. Within this document is an assessment of existing building and site conditions, descriptions of the three design options and supporting documents including the educational specifications for each program on campus. Also included with each option is a cost estimate and phasing time line. Prince George's County Public School System will use this study to determine a viable option for moving their vision for Suitland High School forward.



Mural on auditorium



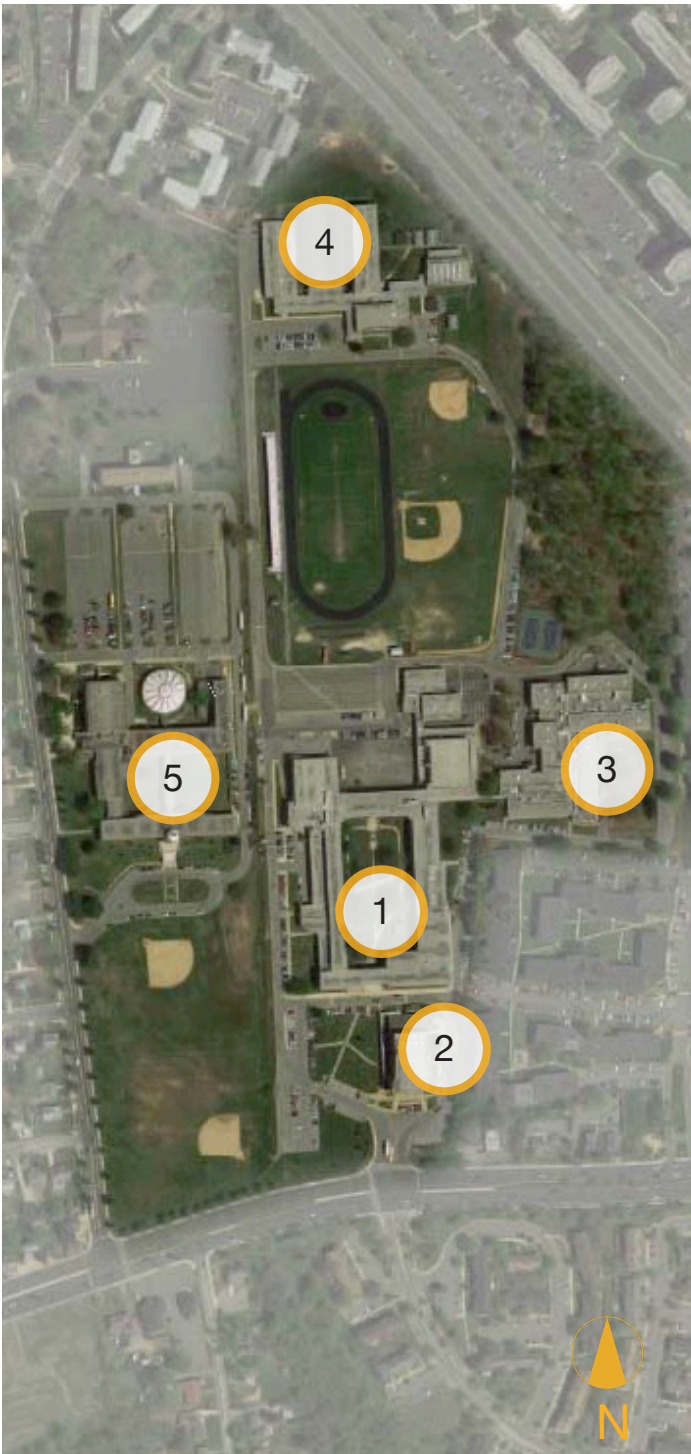
PROCESS

The first step in this process was to conduct an existing conditions assessment of the site. The architect and engineers visited the site to document and analyze the existing structures, assessing the condition of electrical, mechanical and plumbing systems, site conditions and exterior and interior building elements. The team took note of what elements needed to be repaired or replaced as well as how spaces were functioning in their current arrangement.

The team also relied on the educational specifications provided by the County. These documents detailed the spatial and equipment needs of each program (Comprehensive High School, CVPA and CTE). The square footage information outlined in these documents was used to provide block and stack diagrams for each option.

A key stakeholder in the process was the Project Planning Committee (PPC). The PPC, comprised of teachers, faculty, parents and community members, was the core group with whom the design team worked throughout the process. After the initial kickoff meeting, the team led a visioning session to better understand the needs and desires of the group. The design team used this information to create a series of design options that were evaluated and refined at the following meetings. The eight options were numbered 1 to 4 and lettered A to D. As options were eliminated, the remaining 4 options were renumbered I to IV. Option II was combined into option III after discussion at the Project Planning Committee Meeting on November 7, 2019. The final three design options selected by the PPC (options I, III and IV) are highlighted in the Design Options section.

EXISTING CONDITIONS



Existing Site

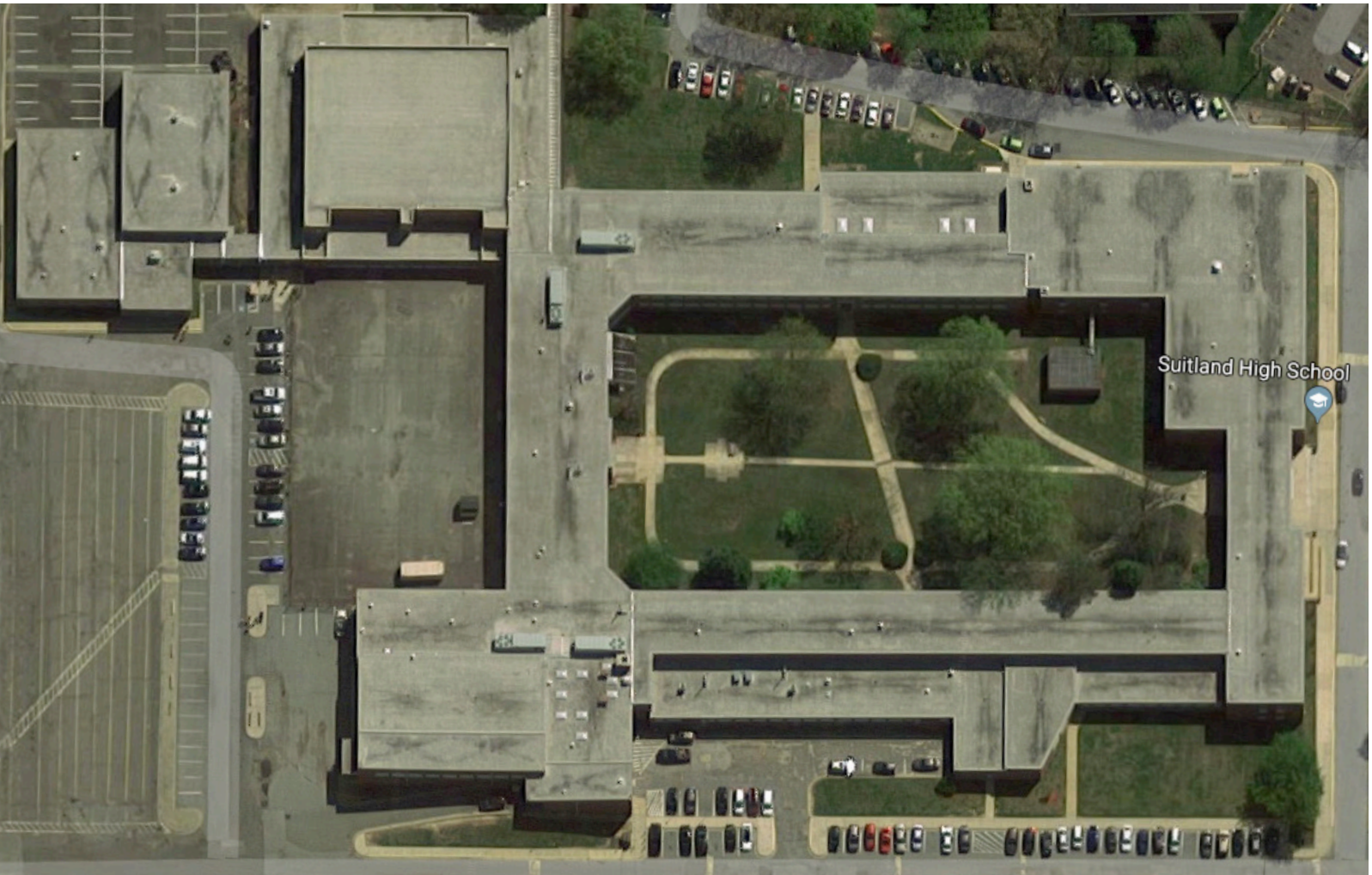
The Suitland High School site is located at the corner of Silver Hill Road and Brooks Drive and is bordered on the northeast side Pennsylvania Avenue. The school is comprised of 3 different programs; the Comprehensive High School, Career and Technical Academy (CTE) and the Center for Visual and Performing Arts (CVPA). The CVPA program is located at the northern most end of the site with the main athletic fields separating it from the Comprehensive High School. The High School and CTE are connected by an enclosed walkway. This is the primary way the students access the CTE facility.

The auditorium, currently used by both the comprehensive high school and CVPA, is a free standing building that sits at the entry to the site.

Also within the scope of the study is Drew Freeman Middle School. This site is located to the west of the High School site. The Middle School utilizes the play fields to the south of the site. These fields are also used extensively by the community. To the north of the middle school site is a large parking lot that is also used by the church on the neighboring site. Thought the middle school is a part of the study, it is a separate project in the current fiscal year 2020 Capital Improvement Program.

Existing Site Programs

1. Comprehensive High School - 224,185 GSF
2. Auditorium - 19,798 GSF
3. Career and Technical Academy (CTE) - 70,016 GSF
4. Center for Visual and Performing Arts
(CVPA) - 74,223 GSF
5. Drew Freeman Middle School - 126,486 GSF



1

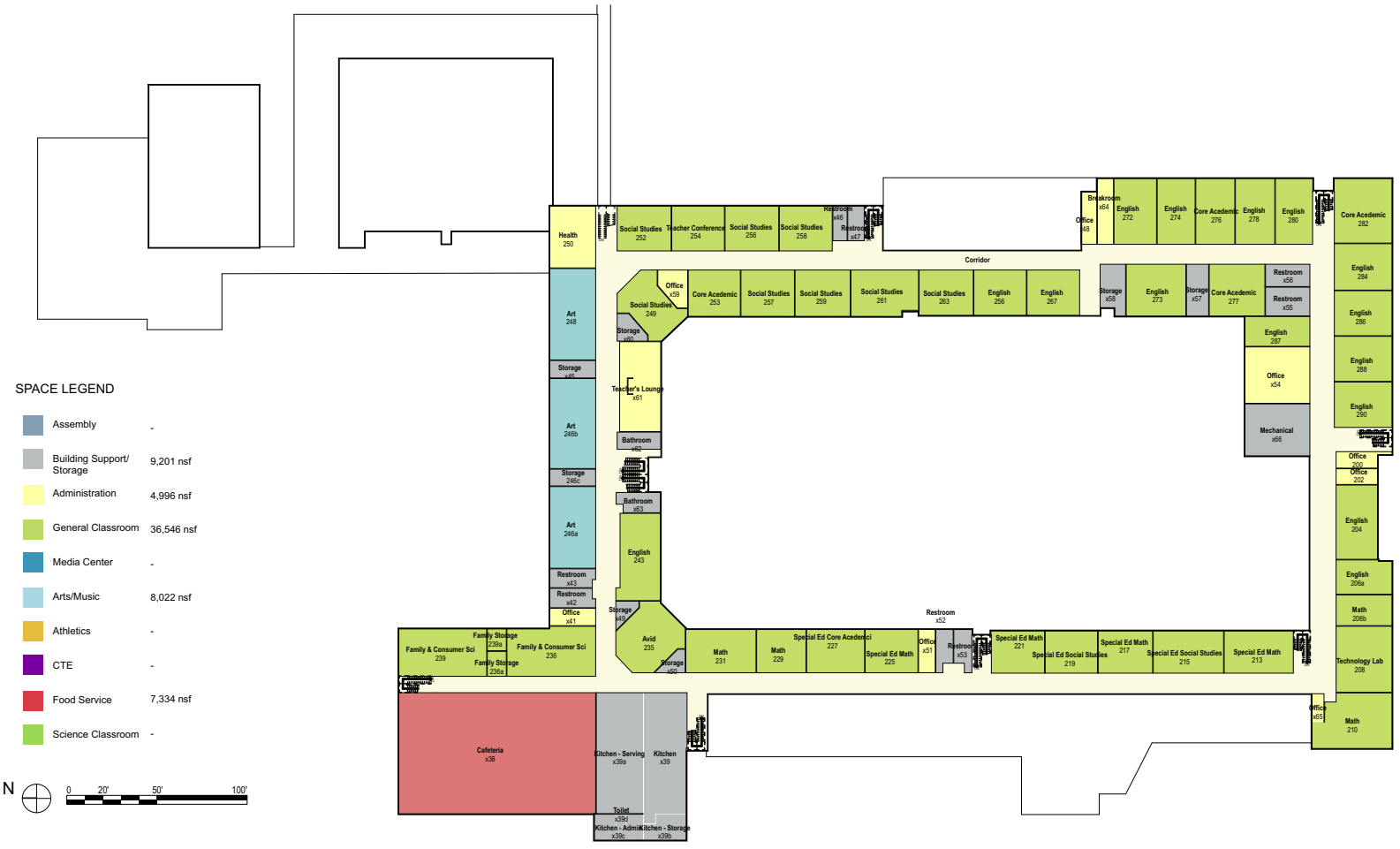
COMPREHENSIVE HIGH SCHOOL AERIAL VIEW





COMPREHENSIVE HIGH SCHOOL 1ST FLOOR

1



1

COMPREHENSIVE HIGH SCHOOL 2ND FLOOR



SUITLAND HIGH SCHOOL



High School Lobby



Science Classroom



Courtyard













2

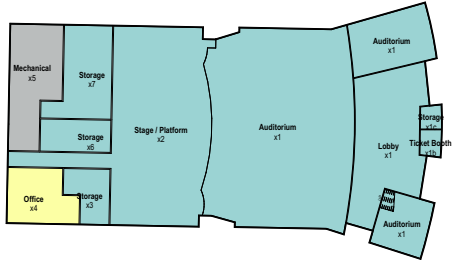



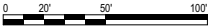
AUDITORIUM AERIAL VIEW

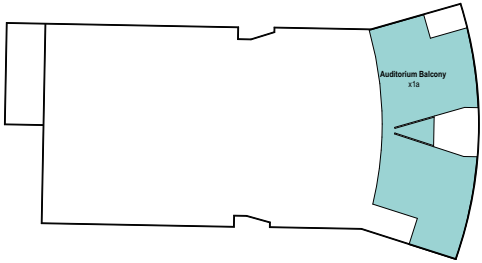



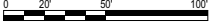
SPACE LEGEND

	Assembly	-
	Building Support/ Storage	1,332 nsf
	Administration	844 nsf
	General Classroom	-
	Media Center	-
	Arts/Music	17,159 nsf
	Athletics	-
	CTE	-
	Food Service	-
	Science Classroom	-



N  **1st Floor Plan**




N  **2nd Floor Plan**


AUDITORIUM 1ST & 2ND FLOOR



SUITLAND HIGH SCHOOL



Back stage at auditorium



Auditorium seating



Front of auditorium

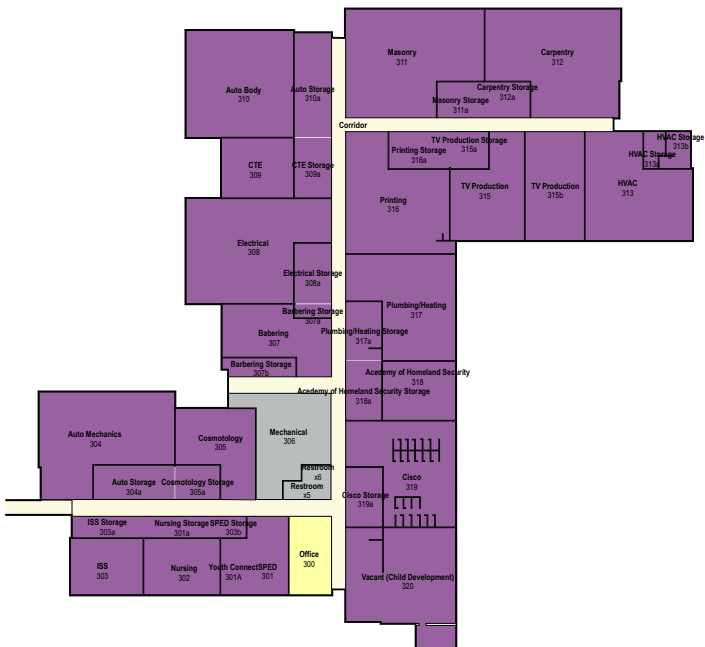


3



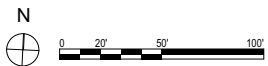
CAREER AND TECHNICAL ACADEMY AERIAL VIEW





SPACE LEGEND

- Assembly -
- Building Support/Storage 1,984 nsf
- Administration 802 nsf
- General Classroom -
- Media Center -
- Arts/Music -
- Athletics -
- CTE 46,312 nsf
- Food Service -
- Science Classroom -



CAREER AND TECHNICAL ACADEMY 1ST FLOOR





Secondary CTE Entry



Cosmetology Class



Masonry Class



Plumbing Class



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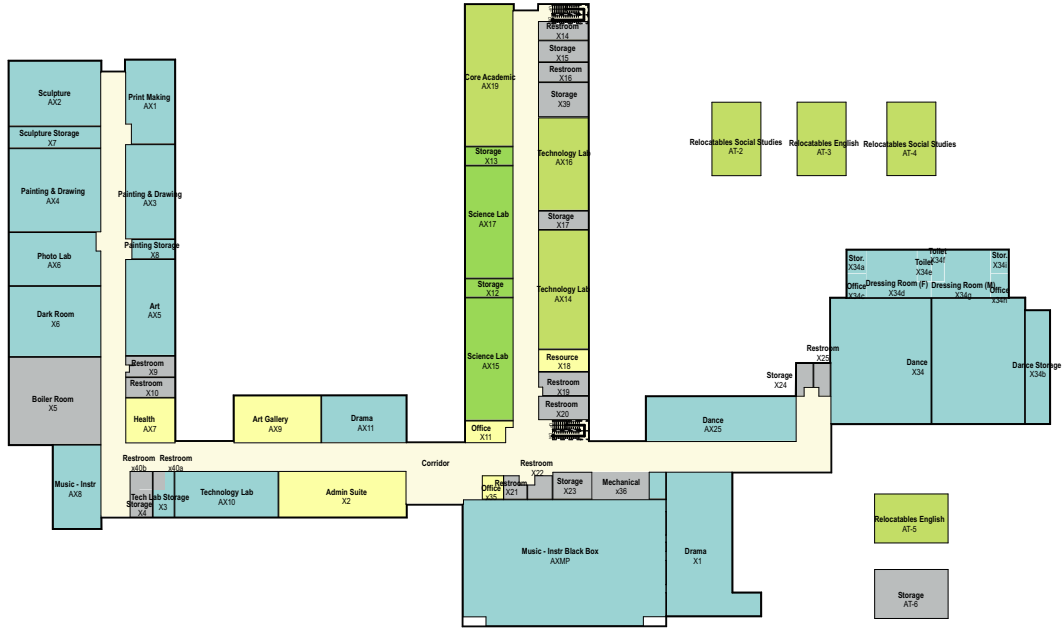


CENTER FOR VISUAL AND PERFORMING ARTS AERIAL VIEW 4



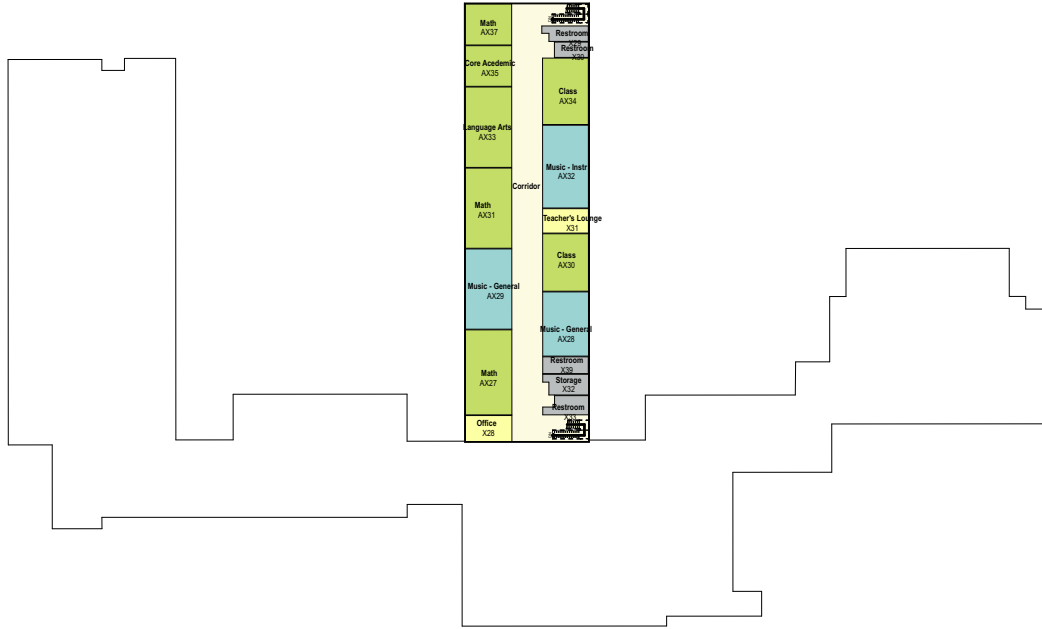
SPACE LEGEND

Assembly	-
Building Support/Storage	6,403 nsf
Administration	3,512 nsf
General Classroom	7,601 nsf
Media Center	-
Arts/Music	31,576 nsf
Athletics	-
CTE	-
Food Service	-
Science Classroom	3,105 nsf



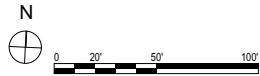
CENTER FOR VISUAL AND PERFORMING ARTS 1ST FLOOR

4



SPACE LEGEND

- Assembly -
- Building Support/ Storage 852 nsf
- Administration 557 nsf
- General Classroom 5,008 nsf
- Media Center -
- Arts/Music 2,508 nsf
- Athletics -
- CTE -
- Food Service -
- Science Classroom -





Band Room



Mural at Corridor

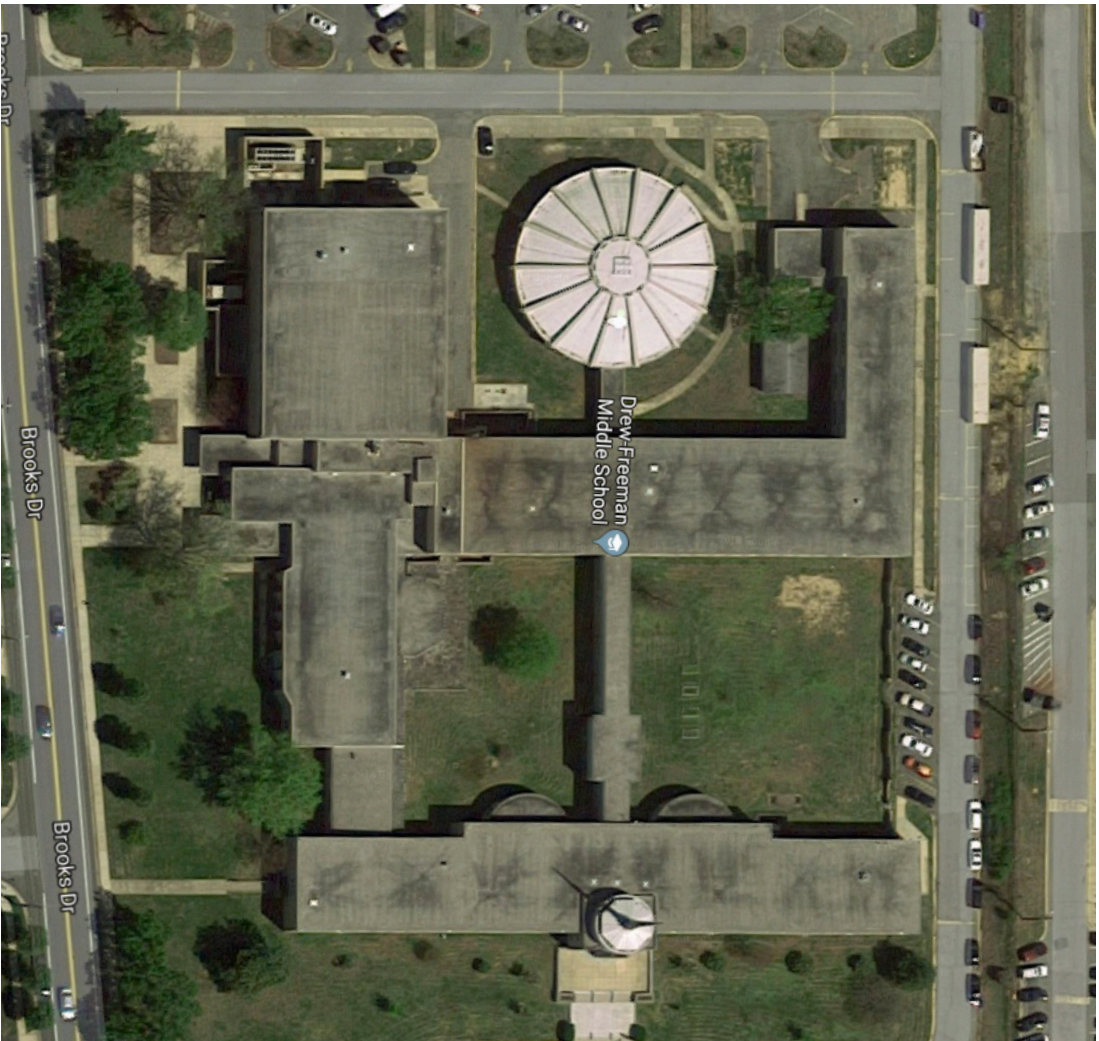


Dark Room



Visual Arts Class





DREW FREEMAN MIDDLE SCHOOL AERIAL VIEW





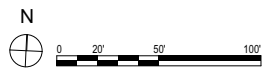
DREW FREEMAN MIDDLE SCHOOL 1ST FLOOR

5



SPACE LEGEND

- Assembly -
- Building Support/Storage 2,360 nsf
- Administration 3,729 nsf
- General Classroom 21,452 nsf
- Media Center -
- Arts/Music -
- Athletics 11,046 nsf
- CTE -
- Food Service -
- Science Classroom -



SUITLAND HIGH SCHOOL



Drew Freeman Middle School



Terrazzo at Science Rotunda



Auditorium

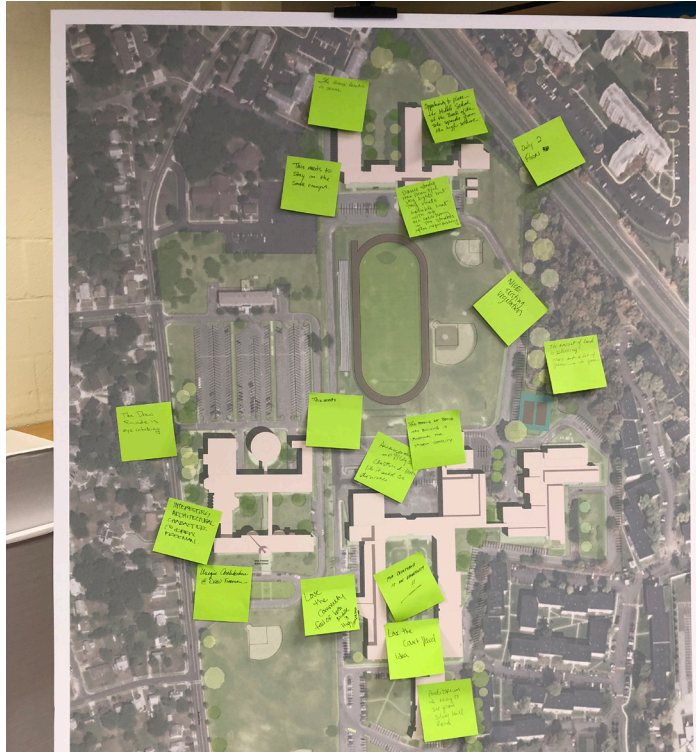


Entry Lobby

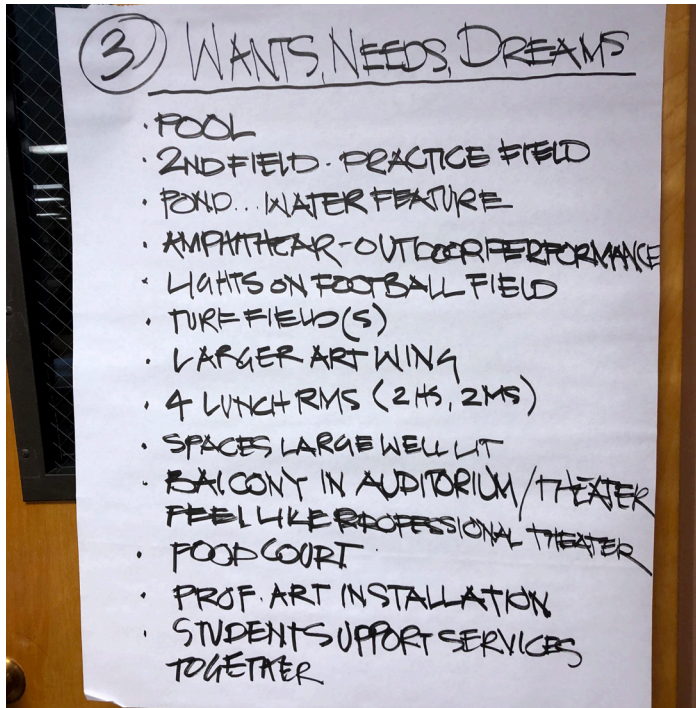


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COMMUNITY ENGAGEMENT



PPC Input at Visioning Session



Wants, Needs, Dreams Board

From the start, the County and design team wanted this process to be as inclusive as possible. The design team worked extensively with the Project Planning Committee (PPC) to gather input on the needs of the teachers, faculty, parents and students. The team met regularly with the PPC, with the first meeting being a kick-off meeting to introduce team members and let the PPC know how they could be involved. The next meeting was a visioning session where PPC members were able to discuss what worked with the current site and what didn't. This was an important meeting as it helped the design team take the first steps in reimagining the site organization. The meeting attendees commented on things like site circulation, facility conditions and community benefits.

With the information obtained from the visioning session, the team was able to develop 8 initial plans. These plans were presented to the PPC over the following months and were refined based on member comments. The three options selected to move forward are summarized in the following section.

In addition to the PPC meetings, the design team set up a website where meeting presentations and meeting minutes could be found. The site also had a portal where anyone could submit a question to be answered by the design team. The team also presented the design options to the Suitland Civic Association, a prominent nonprofit organization in the community.

Meeting Dates

PPC Kick Off Meeting: May 29, 2018

Visioning Meeting: June 29, 2018

Concept Meeting 1: July 17, 2018

Concept Meeting 2: August 21, 2018

Concept Meeting 3: October 2, 2018

Suitland Civic Associates Meeting: October 15, 2018

Concept Meeting 4: November 14, 2018



DESIGN OPTIONS

Total construction cost does not include the middle school program. Cost details are located in the Appendix.



Option I: Maximum Modernization

This option represents the maximum reuse of building elements. In this option, CVPA is relocated the Drew Freeman building, the middle school program moves to the annex and CTE is demolished. All other programs remain in their existing locations. The site is completely modernized and parking is relocated to provide better access to new building entries. 145,247 square feet of existing space is demolished and the remaining 369,461 square feet is modernized. 179,540 square feet of new space is constructed. Total square footage is 549,001 square feet.

Strengths

- Proximity between CVPA and comprehensive high school remains the same
- Keeping the auditorium allows it to be used by the community and for larger event

Weaknesses

- Proximity between CVPA and comprehensive high school remains the same.
- Access road along east edge of the site has been omitted
- Number of entrances to the site could pose a security risk



Option III: Modernization/New Construction Hybrid

This option represent an equal mix of modernization and new construction. A new CVPA building is joined to a modernized high school, creating a single building that can share services like loading and trash pick up. The CTE is demolished. No work on the Drew Freeman building is apart of this option. The site is completely modernized and parking is concentrated at the rear of the site. Also relocated to the back of the site are the athletic fields. 215,511 square feet of existing space is demolished and the remaining 172,711 square feet is modernized. 205,314 square feet of new space is constructed. Total square footage is 378,025 square feet.

Strengths

- Buildings being connected is a positive
- Site layout is efficient
- CVPA and comprehensive high school can easily share facility resources like food services, loading and storage

Weaknesses

- More hardscape



SUITLAND HIGH SCHOOL



Option IIIA: Modernization/New Construction Hybrid Alternate

This option represent an equal mix of modernization and new construction. A new CVPA building is joined to a modernized high school, creating a single building that can share services like loading and trash pick up. The CTE is demolished. No work on the Drew Freeman building is apart of this option. The site is completely modernized and parking is concentrated at the rear of the site. Also relocated to the back of the site are the athletic fields. 215,511 square feet of existing space is demolished and the remaining 172,711 square feet is modernized. 184,730 square feet of new space is constructed. Total square footage is 357,441 square feet.

Strengths

- Buildings being connected is a positive
- Site layout is efficient
- CVPA and comprehensive high school can easily share facility resources like food services, loading and storage

Weaknesses

- More hardscape



Option IV: Maximum New Construction

The maximum new construction option provides new facilities for all programs except the historic Drew Freeman building. The CTE is demolished. No work on the Drew Freeman building is apart of this option. A central quadrangle is created with the new buildings and each has an entry off this quadrangle. The main vehicular circulation is on the perimeter of the site which allow safe pedestrian circulation at the center of the site. Part of the site modernization includes relocating the athletic fields at the back of the site. 388,222 square feet of existing space is demolished with no remaining area to be modernized. 378,025 square feet of new space is constructed. Total square footage is 378, 025 square feet.

Strengths

- Focus is not on Silver Hill Road and this could alleviate traffic
- The center quad is a nice feature for students

Weaknesses

- Comprehensive high school is separated from the football field



Conclusion & Recommendations

The Project Planning Committee considered a number of design options throughout the feasibility study process. At the conclusion of the process, the Hybrid option was considered more preferable due to the site layout and building efficiency. In all options the Drew Freeman Middle School building is a separate project because per the County's fiscal year 2020 Capital Improvement Program. The building is included in the study because it is located on the campus and is integral with the phasing plan of Option I.

Administration leadership agreed that cost could be minimized by creating a more efficient layout by eliminating some of the extra general classroom included for the CVPA. For this reason an additional design option was introduced entitled IIIA. Additionally, administration leadership agreed to consider the relocation of the CTE program to Crossland High School. The result was the removal of the existing CTE building from all options. However, it was decided by the CTE stakeholders, that some additional program space was needed in the main comprehensive high school building to accommodate the Technical Education Academy programs along with some CTE programs that may need to remain at this school. The Department of Capital Programs (DCP) staff recommends option IIIA to the interim CEO of Schools for Board of Education for approval.



existing conditions



2

SITE ANALYSIS

General Site Information

Suitland High School is located on a 62.4-acre property comprised of four parcels located at 5200 Silver Hill Road in District Heights, Maryland. The site has a high school (south), Career and Technical Education wing (CTE) (east), Center for the Visual and Performing Arts (CVPA) (north) and Drew Freeman Middle School (west). The site is zoned R-55 in the southern portion and R-18C at the north end where the CVPA building is located. The property is bound by Brooks Drive to the west, Silver Hill Road to the south, and Pennbrooke apartments to the east. To the north is Pennsylvania Avenue (MD-4). The site is relatively flat (less than 20' elevation change) and appears to drain from the south to the north. Several areas throughout the site contained standing water on both pavement and non-paved surfaces.

Site Access

The site has its southern access at Silver Hill Road at a signalized intersection with a turning lane in the eastbound direction. The Silver Hill Road access serves the main driveway for the High School, CTE, and CVPA Building. Access to the Middle School is located from Brooks Drive. Parking areas for the High School and CTE are scattered along the main drive way. The Silver Hill Road access also serves as the bus entrance/exit and student drop off area for the schools. The entrance has a sidewalk entering the property on the west side. However, this sidewalk ends once it reaches a parking lot and does not have a crosswalk across the driveway for access to the main property. The neighborhoods surrounding the school have a good sidewalk presence with connectivity to the border of the school property through crosswalks. It appears that no bicycle parking areas are provided.

The campus sees fifty-eight (58) buses between the High School and middle school with two (2) additional buses to the CVPA. There is a staging area to the north of the high school. The bus loop contains narrow paths and sharp corners making it hard to maneuver leading to bus tires rubbing their wheels on the curbs. The condition of much of the pavement along the route is



Damaged asphalt

	R-55	R-18C
Lot Coverage	60%	60%
Lot Width/Frontage (min in ft)	45	85
Front Yard (min in ft)	25	30
Side Yard (depth/width in ft)	17/8	30/10
Rear Yard (min in ft)	20	30
Max Height in ft	35	50

Zoning Chart



SUITLAND HIGH SCHOOL

poor and includes potholes and crumbling pavement.

The student drop-off is located on the south side of both High School and Middle School buildings within a small loop that allows drivers to drop students off without encircling the whole school property. There is sufficient space for many cars to be parked in the drop-off lane without inhibiting the regular flow of traffic. There is a curb cutout and a ramp that exist at each drop-off for wheelchair access.

There is a lack of sidewalks connecting the CVPA to the main High School building. The only route that does not involve walking through a drive way is across the track area in which no crosswalks connect through the CVPA parking lot. The sidewalks at the main entrance are not connected to the main building area and cross walks are not present across the main drive path. Many of the sidewalks are deteriorated and in serious need of repair. An example of this can be seen on the following page.

There are several locations throughout the site that do not comply with ADA requirements. Specifically, some paths exceed the cross slope of two percent, handrails are missing on ramps steeper than five percent, and there is a lack of proper landings on some of the ramps.

Parking & Loading

Currently, high school parking is provided in many small lots around the driveway. The bulk of the available parking is on the east and west sides of the High School building where parking stalls line the edges of the driving lane. The total parking around the high school sums to around 200 available spaces. While there are a number of “handicap only” parking stalls for each building, meeting requirements of ADA for slope. Signage needs to be improved. While it appears that there is ample parking for the students and staff, typical designs for high schools strive to achieve around 500 parking spaces. There are also 3 large, adjacent lots (~100 stalls each) located at the middle school that could serve as overflow parking for sporting events. The CVPA building has two small lots located to the south and west of the building that have a combined capacity of approximately 50 cars. This appears to be enough parking for CVPA staff only. The condition of many of the parking lots and driving lanes is poor and

deteriorating. There are many areas in which potholes and standing water exist throughout the pavement surfaces.

A loading dock is located at the northeast side of the auditorium building and a dock exists at the northwest side of the high school building that accesses the second floor (cafeteria). The CTE building has a series of garage doors on the northwest corner of the building. However, it appears these may be more utilized for the auto shop classes than deliveries. The CVPA building does not have any designated loading area, although the drive lane to the west of the building provides space. Loading for the middle school appears to take place at the north end of the building.

Vegetation

A forested nature area of roughly 4 acres lies on the east side of the property. Various other landscape trees exist around the property and in the courtyard of the High School. A Natural Resources Inventory should be prepared in order to determine tree sizes, species, and health. This will also provide a better understanding to how proposed improvements will impact the site trees. Vegetation overgrowth throughout the site is minimal and seems to be under control.

Athletic Fields

The general layout of the athletic fields appears to be functional, although handicap access to the track and field is not sufficient. There are crosswalks that lead from the High School to the track area. While there are only two tennis courts on site, they appear to be in good condition. The surface and fencing appear to be recently installed. The football field and baseball/softball fields appear to be in good condition. There are ADA accessible bleachers at the football field. The integrity of the concessions stand is good with seemingly recent paint. Some of the lawn area could use seeding with grass as there are some bare and muddy spots. The track is in relatively fair condition, but could use a resurfacing.



SUITLAND HIGH SCHOOL**Water & Sewer**

The existing site is served by the 24" water main (PCCP) that runs along the Silver Hill Road right-of-way. However, there is an adjacent 14" pipe (iron) that runs parallel to the 24" main. A fire flow test has been requested to be performed by WSSC. Once this information is received, it can be determined if sufficient flows and pressures will be provided for the existing site and any improvements.

According to WSSC, the site is in a 405A pressure zone with a High Hydraulic Gradient of approximately 460 and a Low Hydraulic Gradient of approximately 393. On that basis, per WSSC prescribed calculations, the water pressure at the existing connection to the water main in Silver Hill Road is approximated to be between 48 psi and 81 psi. The exact pressures and flows should be confirmed via field testing at the time of design.

The sanitary sewer system layout is unclear at the time. With a more detailed analysis, it will become clear whether or not the proposed construction can be sewered through the existing line. Limited information regarding the onsite utility system is known. However based on field evidence it can be assumed that the onsite water follows the below alignment.

Gas, Electric & Telephone

It appears that the electric and telephone utility service connections run along the main driveway from the Silver Hill Road right-of-way to the buildings. There is a transformer located behind the auditorium and a gas meter on the east side of the auditorium north of the loading dock. At the CVPA the gas meter, and water and sewer connection enter the building along the west side. For the CTE, the gas meter is located on the west side of the building where the connecting corridor to the High School is located. At the high school, the gas meter and a generator are located along the east side of the building. The existing conditions of these are unknown. Any proposed upgrades to the existing building utilities will require the consultation of a Mechanical Engineer and Electrical Engineer.



Existing sidewalk not ADA compliant



Site topography & existing water layout



SUITLAND HIGH SCHOOL

Site Soils

According to the USDA Web Soil survey, the site soils range from moderately well drained to well drained with a relatively low erosion factor (>0.38) and runoff rates of very low to medium. Specifically, 50 percent of soils are group D (poor infiltration), 18 percent are C, and 32 percent are A (well infiltrated). There is not a probable chance of flooding with the present soils. The main soil is Urban land sassafras complex at almost 45 percent of the site area. The Beltsville urban land complex, taking up 18 percent of the site, has the shallowest water table at 61 centimeters. The remaining soils have water table depths of over 200 centimeters. A large portion of the site has a depth of restrictive layer of over 200 centimeters. However, five percent of the site has a restrictive layer depth of 25 centimeters and 18 percent has a depth of 51 centimeters. Since it is unlikely that bedrock exists this shallow, it is assumed that this was due to previous construction such as packing of soils or placement of pavement.

Storm Drainage & Stormwater Management

The existing stormwater management on the site is unclear at the time. It can be anticipated that any site improvements will be required to include Environmental Site Design (ESD) to the maximum extent practicable to treat all areas inside the limits of disturbance. If ESD efforts are exhausted and the site has still not been able to reach a hydrologic state of “good condition,” then structural practices may be permitted as determined by Prince George’s County.

Potential ESD stormwater management practices for the site include both micro-scale practices and alternative surfaces. Micro-scale facilities could include the utilization of bio-swales and micro-bioretenion facilities where available open space can be found, such as parking lot islands and around the athletic fields. Permeable pavements and infiltration practices are not suitable for hydrologic soil group ‘D’, however, an alternative surface such as vegetative roofing is a consideration to help achieve ESD.

Flood Plains, Stream Valley Buffers & Non-Tidal Wetlands

Initial investigations reveal that the site is located in an “area of minimal flood hazard” as shown on the FEMA Flood Insurance Rate Map number 24033C0235E (2016). Furthermore, according to the U.S. Fish and Wildlife Mapping services there are no nationally recognized wetlands located on or around the site.



Crumbling sidewalk



Patching at damaged asphalt



existing conditions:
high school



2

BUILDING ANALYSIS: HIGH SCHOOL

Exterior Envelope

The typical exterior wall is CMU block with a brick veneer. Minimal cracking was observed. Mortar joints are in good condition though there are limited areas of deterioration. Precast panels at the south facade appear structurally sound but the finish is chipping deteriorating. The Dryvit insulation system used above many of the windows, installed during the 1984 renovation, appears to be in good conditions. The building structure is a mixture of open web steel joist on masonry bearing walls and concrete waffle slab on concrete columns. The hopper style windows are single pane with steel frames and appear to be original to the building. The sealant around these window has deteriorated and the precast window sills, though in fair condition, are in need of cleaning and new sealant. A small number of windows were replaced with new aluminum framed windows with insulated glazing.

The built up roof with gravel appears to be in good condition. The coping, flashing and counter flashing appear to have been recently replaced. Drains were clear, but there are no overflow drains.

Entries, Stairs & Corridors

The main entry to the school is at the south of the building. The concrete stair and ramp are in fair condition. There is some deterioration at the concrete and paint is chipping at the railing at the ramp. Concrete steps and slabs at other entries are deteriorated. The other entries lack code compliant railing, steps or ramps. The interior stairs are metal pan and have a vertical metal partition attached to the inside stringer of the stair. A metal handrail pipe is connected to the partition. The stair treads have a VCT covering and a rubber non-slip end. The VCT and rubber ends are chipping off some treads, as well as the paint from the metal pipe handrails. The ramp at the entry of the school provides access to the first floor, but there is no elevator in the building to provide access to the second floor.

The lobby and corridor flooring is terrazzo and in good condition. Corridor walls have glazed CMU wainscoting



Grout damage at entry



Sealant deteriorating at windows



with painted CMU above and are in good condition. Lockers show signs of wear with chipping paint and dented doors. 2x4 acoustical ceiling tiles at corridors are in fair condition.

Classrooms

Typical classrooms have VCT flooring that is in fair condition and some science classrooms have newer resilient flooring that is in good condition. 2x4 acoustical ceiling tiles show signs of water damage or have been soiled with dust and debris. In general classrooms with built-in casework, the casework is dated but sturdy. Metal cabinets for baseboard heaters show signs of deterioration with rust and chipping paint. Science labs are in good condition, though current trends in science education may necessitate changes in classroom layout and equipment.



Computer Classroom

Interior Doors & Hardware

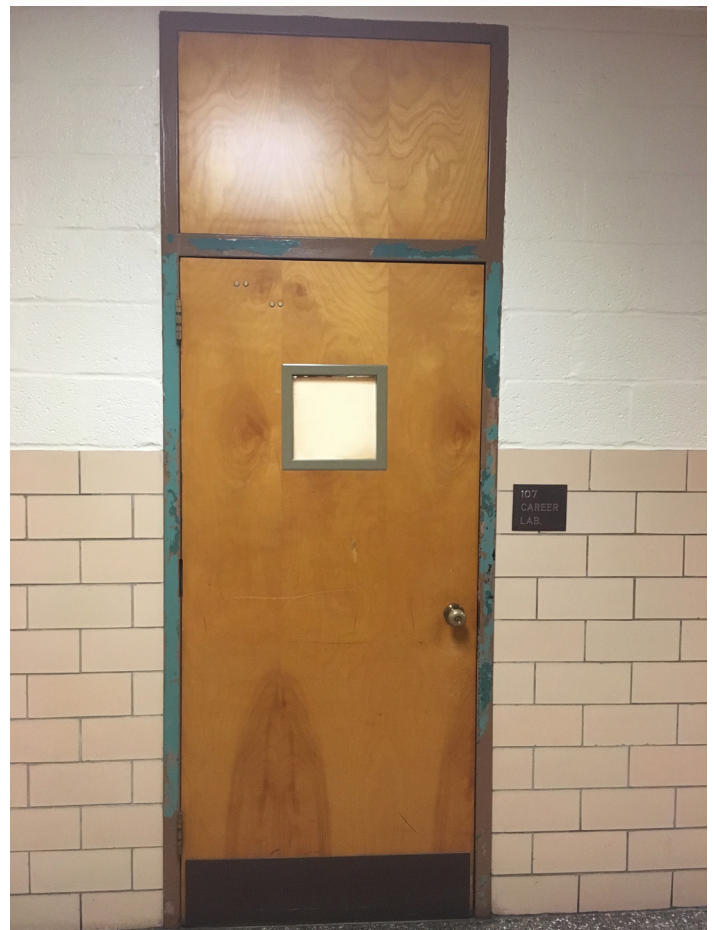
Door hardware and hollow core wood doors are in fair condition. Veneers on some are delaminating and many of the metal frames are in need of refinishing. Classroom entry door hardware is a mixture of levers and knobs. Most are in working condition but knobs are not accessibility compliant.

Bathroom

VCT flooring in many of the bathrooms is in poor condition. There are no burn guards at the sinks and many accessories are not within accessible reach range. Most plumbing fixtures appear to be in working condition.

Library/Media Center

The library and media center is located at the southeast corner of the building. The main space has a series of tables and chair as well as a section reserved for computer use. Administration offices and work rooms are located around the perimeter of the space. These rooms have interior windows to the main space with painted metal frames and wire mesh glass. There are two entries to the media center, one from the main lobby and one from the northeast corridor. Metal detectors



Typical Door Condition



SUITLAND HIGH SCHOOL



Boys locker room



Girls shower area

are at both entries. The carpet in the main space is in overall good condition. The VCT in the stack area is also in good condition. The acoustical ceiling panels are in good conditions, although there are a variety of different types used in the space. Ceiling heights vary throughout.

Gyms & Locker Rooms

The gyms are located at the upper northeast corner of the school. The main gym hosts the basketball games and wrestling matches and also serves as a gathering space for school assemblies. There are retractable bleachers on each side of the gym. The bleachers on the west end of the gym are inoperable. The gym floor is in fair conditions with a few areas in need of repair. The smaller gym is in similar condition, but with no spectator seating. There is no cooling system in the main gym.

The boys locker room flanks the main gym. Lockers and concrete floors in the changing area are in good condition. The two shower areas that serve the boys locker room are in poor condition. All plumbing fixtures have been removed from one of the shower areas and the floor is in extremely poor condition. The operable shower area has tile flooring in fair condition. The shower area is raised 10” above the main floor and is not wheelchair accessible. There are no benches in the boys locker room, and the aisles separating the lockers have a clear space of 38 inches .

The girls locker room has tile flooring throughout. The shower area is in fair condition but is not accessible. The floor mounted benches in the locker area are in good condition. The girls locker room has an aisle clearance of 6 ft between lockers. The dressing area in the girls locker room has a laminate covered built-in counter that is delaminating. There are both wall mounted and recessed florescent light fixtures in the girls locker room that are in fair condition

Cafeteria

The cafeteria is located in the northwest corner of the building on the second floor. The site slopes up at this area and allows trucks to drive up to the receiving area of the kitchen. There are two types of tables with



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integral seating found in the cafeteria. The first is a 5 ft long table with individual seating on each side. The second is 6 ft 2 in long with benched seating on each side. The VCT flooring shows signs of deterioration at entries and doors all show signs of extreme wear. There are two serveries at the south end of the cafeteria with the kitchen to the south of the serveries. In addition to the main food preparation area, there is a storage area, office and women's only restroom. The kitchen is spacious and the equipment appears to be in working condition. VCT flooring also appears to be in fair condition.



Cafeteria



Exterior door in cafeteria

SUITLAND HIGH SCHOOL**MEP ANALYSIS: HIGH SCHOOL****Heating System**

The entire building, except for the gymnasium, is equipped with steam perimeter convection units as shown. The classrooms have exposed low profile convection units and the corridors have recessed type convection units. All classrooms have individual thermostats to control the perimeter heating system. The two main air handlers serving the first and second floor west side of the building are equipped with steam reheat coils. The steam reheat coils appear to be for tempering air only and do not provide any space heat. Most units appear to be at least 20 years or older.

The gym is equipped with steam unit heaters and ventilation only. The units appear to be at least 20 years old.

Air System

The East side of the second floor and most of the first floor is served by 2 large air handling systems which appear to be field assembled. The air handlers consist simply of a draw through supply fan, chilled water coil, steam preheat coil, filter section and mixing box. They are located in mechanical rooms on the first and second floor as shown and serve the East side of both floors of the building. The units provide ventilation and cooling in the warm season. They draw air through large louvers on the side wall of the mechanical rooms. They are equipped with steam reheat coils to temper air in the winter. The units do not have frequency drives or modulating inlet dampers. The areas they serve only have thermostats for the perimeter heat. The individual rooms these serve have no terminal units therefore, it appears that the cooling is done by return air temperature and does not have any individual control. There is no heat recovery. The built-up air handling units appear to be at least 20 years old. Though they are serviceable and appear to be well maintained, they are ready for replacement.

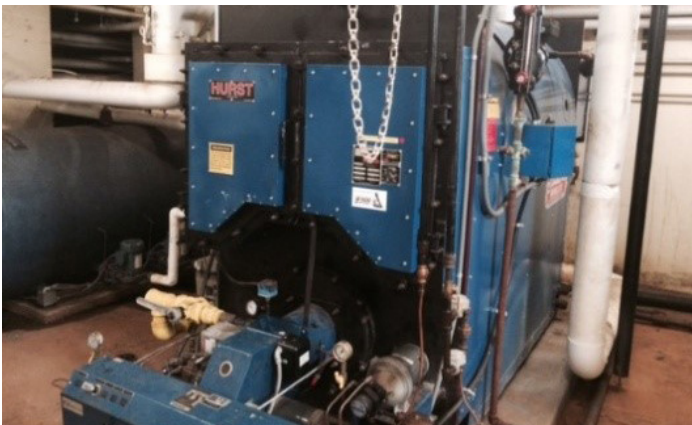
The Cafeteria, Kitchen, and the West half of the second floor are served by Packaged air conditioning units. These are four rooftop air conditioning units



Typical Built up AHU on 1st and 2nd floor



Rooftop Units



Firebox boilers in north boiler rooms



TRANE model SAHFF50 nominal 50-ton units. All units are identical in configuration. They have no heat, no VFD or modulating inlet dampers therefore these units are similar to the existing air handlers in that there is no individual space control and heat is provided by the perimeter radiation units. The units are controlled by return air temperature. These units provide both cooling and ventilation. There is no heat recovery. The units are five years old and appear to be in very good condition.

Many of the science labs have cooling by a VRF system. The VRF system consists of Daikin RXYQ72 heat pumps on the roof and cassette type air conditioners in the ceiling of some of the science labs. There are two units on the roof and each classroom appears to have multiple cassette type units. The classrooms with the VRF unit also have diffusers from the rooftop unit so it is assumed that is where the ventilation for the units is coming from. These units are heat pumps but the classroom with VRF also has perimeter steam convection units. The classrooms have separate thermostats for the perimeter heat and for the VRF units. The VRF system was installed five years ago and appears to be in good condition.

The gym and locker rooms only have ventilation, exhaust and heat with unit heaters, no air conditioning. All of the equipment appeared to be at least 20 years old and in working condition.

Central Plant

Heating Plants: Steam for the entire building is provided by dual fuel Fire box steam boilers located in two mechanical rooms, as shown. The north Mechanical room contains two dual fueled 4,226 MBH Fire Box boilers and associated boiler feed units. The south mechanical room contains three 3,650 MBH HB Smith Cast Iron boilers and associated boiler feed units. The boilers feed all of the heating in the building through a two-pipe distribution system. The boilers in the North mechanical room were installed seven years ago and appear to be in very good condition. The boiler feed unit appears to have been installed at the same time as the boilers. The cast iron boilers are in decent working condition. The steam piping in the building dates back to the original building construction and appears to be experiencing numerous leaks.

Cooling Plant: The central cooling plant consists of an air-cooled TRANE RTAC 200A nominal 200-ton chiller located in the chiller enclosure. The hydronic system consists of two constant volume duty-standby pumps in the North Boiler room. The only coils served by the chiller appear to be in AHU-1 and AHU-2 which are equipped with three-way valves. The unit is 10 years old and in good working condition.

Controls

Pneumatic compressors were observed in both boiler rooms. The control valves observed for all hydronic system were also pneumatic. Digital control panels were also observed throughout the building.

Domestic/Fire Water Service

Domestic water and fire protection combined water service is from the city main at Silver Hill Rd. A water meter vault is located at the main water service on the site. The vault is full of water and a backflow preventer is not found installed at school water main. The school water main distributes domestic / fire water supply to each building without a backflow preventer inside the building. It does not meet the current code and local water authority requirement. Backflow preventer has been provided at boiler room mechanical makeup water line connection. It passes through a Reduced Pressure Zone Assembly with the backflow device discharging to the boiler room floor.

Domestic Hot Water System

Domestic hot water is generated by domestic water heaters in boiler room. The domestic water heaters located at Boiler Room No.1 are two 75 gallon storage tanks with 670,000 BTU gas input per hour. Both heaters are from 1985. No master thermal mixing valve is installed in this hot water system. The storage temperature setting is at 120 deg. F. Hot water recirculation system had been provided. Another gas fired domestic water heater is located in Boiler Room No.2. This is from 2011 and has 100 gallon storage tank capacity with 75,000 BTU gas input per hour.

Store Drainage System



SUITLAND HIGH SCHOOL



Domestic water & fire service in mechanical room



Domestic hot water system

The buildings' primary storm drainage system consists of roof drains. Emergency overflow drainage is accomplished through over flow scuppers. There were no reports by school staff of leaking problem for this building.

Sanitary Waste System

There are multiple sanitary drain lines exiting the structure and connecting to the campus sanitary sewer then connecting to the public system. Existing plumbing drawings are not available, therefore; no information regarding sanitary drains location and size is available. A Grease Interceptor has been provided for kitchen waste. No blockage in the main lines was reported.

Plumbing Fixtures

The observed plumbing fixtures the buildings are in fair condition. A few fixtures are out of function. All of the drinking fountains / electric water coolers are disconnected except a few in Main building due to lead contaminated water. Bottled drinking water is provided by the school.

Natural Gas System

Gas is supplied to the boiler rooms to serve the boiler, domestic water heater, kitchen equipment and science labs.

Fire Suppression System

The building is served fully by wet-pipe sprinkler system.

Electrical Service

The original building has an electrical service with 208Y/120V voltage system service from a utility transformer sitting next to the building via an underground primary feeder into the main electrical room on ground floor. The utility company is PEPCO. The secondary feeders, entering the main electric room are located on the ground floor and terminate at the Current Transformer (C/T) section. Existing metering number is 'KZD350867123'. Main switch is 208Y/120V, 3PH, 4w, 3000A, FPE make and part of the MDP. The



PEPCO engineer should be contacted for the existing site electric distribution plan.

Power Distribution System

Main Distribution Panel (MDP) is rated at 3000A, 208Y/120V, 3PH, 4W, dated 1985. Section 1 of the switchboard comprises of the C/T cabinet. Section 2 contains the main service disconnect switch, while sections 3 and 4 house the distribution sections. Distribution sections feed various mechanical loads and branch panel boards that are distributed throughout the school. Another distribution section was added later and is in the same electrical room at the ground level. This equipment has components that are more than 30 years old and has already reached the end of its useful life.

Branch Panelboards: There are several load centers in the boiler room. There are also branch panels on the first and second floor of the school. Most of these branch panels are located in the main corridors and feed the local loads such as lighting, receptacles, exhaust fans, unit heater and window A/C units. Dedicated panels in the kitchen and cafeteria (on second floor) feed all of the kitchen equipment including the lights, refrigerator, freezer, garbage disposal, dishwasher, oven food warmer, etc. These panels are of 'Kinney' make of circa 1976 and are very old. A new KOLPAN walk in freezer has been added to the kitchen. Existing branch panel boards are in poor condition and beyond their useful life. Most of these panels are recessed mounted in hallways and surface mounted in back rooms and the kitchen. It is strongly recommended that the electrical distribution equipment be installed in dedicated spaces, like electrical rooms and closets.

Wires & Conduits: Wires & conduits are embedded in the walls and cannot be observed. The manufacturing date should be the same as when the panels were installed. There is no information on the condition of the cables conductivity and insulation. Therefore, cable insulation and conductivity tests should be performed for all wires.

Emergency/Stand-by Power System

Stand-By Generator: The building has a generator for backup source of power for loads in the building. It

is a KOHLER, 100KVA, 120 amps, 480/277V, by-fuel, installed in 2015.

ATS switches installed in Boiler Room 2.

An Emergency Branch panel board located in the Boiler Room 2.

Interior Lighting System

Classrooms/Corridors/Cafeteria/Offices: 2x2 and 2x4 recessed ceiling fixtures with prismatic lens and four T8 fluorescent lamps. Higher energy efficient LED light source are available and upgrade is recommended.

Lighting conditions in Mechanical room/Electrical room/Utility room/Storage: 1x4 surface or pendant mounted to the ceiling two T8 lamp with cage barrier over exposed lamps.

Lighting Controls in Classrooms/Offices/Mechanical room/Electrical room/Storage: Standard on/off switch. Lighting controls in corridors are controlled via breakers in the panel board. There are no switches on the site for corridor lighting. Manual switches at the panel board are not code compliant and need to be replaced. Exterior lights are controlled via photocell & time switch.

Egress Lighting & Exit Lights

Egress lighting: No emergency generator is provided and instead emergency battery wall packs are located in the building. During the site visit, it was noted that there are not enough battery wall packs to sufficiently light the means of egress and therefore existing conditions are not code compliant. This needs to be updated.

Exit Lights: All exit signs are on normal power with battery backup.

Receptacles

While most of the power outlets appear to be old, there are areas where additional power outlets and all tel/data outlets were added close to the existing outlets. This prompts the assumption that the outlets originally provided were not sufficient for the growing power & telecommunication requirements of the school. This is



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Utility Transformer



FACP in electrical room

evidenced by the surface run conduits containing power wiring terminating at surface mounted receptacles and data boxes and by ceiling to floor power/data poles recently installed. Existing power receptacles are a combination of recessed, floor box and surface mounted receptacles in various areas of the High School building. Recessed type receptacles are mainly in the rooms and hallways (Upper and lower levels). Surface mounted receptacles were found in class rooms, workshops and the main office. From the observation, recessed type outlets (data and power) have been added in some of the classrooms which were renovated in terms of power, lighting and telecommunication. The condition of the receptacles is based on individually need to be tested. Branch wiring needs to be tested for insulation and conductivity. It seems that complete verification is needed to ensure the power and data outlets in the building fit the requirements.

Fire Alarm System

Fire Alarm Control Panel: Wall mounted in the electrical room. FACP is zone based. The existing FACP is provided by Simplex and in fair condition. Installation date was not available from the school official. It is recommended to replace the existing system with the addressable type, which has several advantages, such as easily expandable and includes new technology for the fire alarm system.

Wall Mounted Fire Alarm Annunciator Panel (FAAP) by Simplex is installed at the main entrance. Annunciator panel is not in good condition. A total of 20 zones is provided to cover the building. However, by replacing the existing system with addressable type, this panel would need to be replaced.

Fire Alarm Initiation & Notification Devices are old and in poor condition. Addressable devices are required for recommended system.

Public Address & Sound System

Main Control Panel: High School Public Address Console is Bogen model, in the main office and is in fair and working condition.

Speakers: Ceiling mounted recessed Public-Address



speakers are noticed in the reception area, library, back rooms, classrooms (upper & lower level), hallways (upper and lower levels).

Sound System: Additional Portable Sound systems are provided in the cafeteria, gymnasium and rehearsal area theatre. The condition of the speaker system is fair and in working condition. The system may have to be tested and verified for additional speakers that may be needed in some places.

Telephone/Data System

Incoming Tel/Data Service(s) & MDF room: Tel cabinet on the plywood board is in the Electrical room. The condition is poor and needs to be verified. Data racks for various areas are locally provided and wall mounted. They are not connected to each other. Some of the school's low voltage equipment racks are currently located in the vice principal's office, custodian rooms, storage, library, etc.

Tel/Data Outlets are combination of recessed and surface mounted. Surface mounted data outlets were noticed in the main office, back rooms, class rooms, studios, etc. with raceways going to the suspended ceiling. Individual data racks were installed in various offices, storage area, and classrooms due to the lack of intermediate or main distribution frame closets. Since the building is old, the data outlets need to be verified and tested. More outlets may be needed to due to the additional requirements.

WIFI System and components: WIFI system is provided in the building and devices are observed ceiling mounted in class rooms, main office, studios, dance studios, stage areas, etc. As there was request for stronger signals from users, the system should be tested for proper performance.

Security System

Main Security Control Panel: Security equipment is on a free standing rack inside the Security office. Equipment is not too old and condition of the system is fair, except that room is not exclusively used for security purposes and equipment is sitting on a moving table. Next to the rack there is a monitor for checking multiple scenes. A laptop was also observed, but it is not sure that it can

officially connect to other areas of the building. All low voltage equipment will require dedicated spaces.

Security Cameras are provided in the hallways. They cover each end of the hallway and at corridor intersections. These cameras were also observed in some stairwells and rooms.

Motion Sensors were observed in the main floor and upper floor corridors, main office area, stairs, back rooms, class rooms and the reception area. System was installed in 2014 (based on the existing motion sensor layout). They are monitored from the Security office. Equipment is from 'Altronix' and wall mounted in the electrical room.

Door Access Controls are provided at some of the exit/entrance doors. Monitoring Equipment is from 'Silent Knight' model 4126 and wall mounted in the electrical room. Apparently, the security system and location of related components such as cameras are designed and supervised by the county security team.



SUITLAND HIGH SCHOOL

SHORT TERM REMEDIAL WORK

The following sections identifies short term remedial work that could be performed at the high school building until new construction work begins.

Rooftop Units

The rooftop units appear to be in good working order. No outward signs of damage or wear. No immediate action is required other than regular maintenance.

VRF Systems

These appear to have been recently installed and in good working order. No immediate action is required other than regular maintenance.

Steam Boilers

One mechanical room contains older steam boilers and boiler feed unit. The older boilers are cast iron but they appear in good working order with no signs of leaks. The other mechanical room contains new steam boilers and boiler feed unit. There appears to be good redundancy. The staff reports that leaks in the distribution system are a regular occurrence. Steam shall not be used in any renovations so it is recommended to do minimum to maintain the system until it can be replaced.

Chilled Water System

The existing air-cooled chiller looks to be in good working order with no signs of damage. Any renovations shall most likely switch to water cooled systems so it is recommended that the chiller only receive routine maintenance. The pumps and piping appear to be in good working order and in no need of immediate service. No action is required other than regular maintenance.

Built Up AHU

The existing built up air handlers on the first and second floor are very old. They appear to be original equipment from the construction of the building. They appear to be functioning with no indications of air leakage or

structural damage. These units should be repaired and kept running with minimum investment as they shall not be incorporated into any renovations.

Plumbing/Fire Protection Systems

No Immediate attention required.

Power distribution system

1. All branch panelboards located in different corridors of the building are old and door locks on one of them is damaged. Recommend breakers inside panels to be verified/tested and replaced if necessary. Door locks to be repaired

2. All existing power wiring in the building is old. Recommend conductivity and insulation test to be performed on all wiring related to panel feeders and large equipment. Replacement of damaged wires as necessary.

3. Regarding the age of the existing stand-by generator unit, related ATS, emergency panel and other related components; we recommend the entire system to be completely tested, serviced/maintained by a generator service company to ensure the emergency power system in the building will work properly.

Emergency Lighting

1. As mentioned in the report, existing fixtures for emergency egress pathways are old and there are locations that may not be covered by existing fixture layout. Recommend the location/layout of the existing emergency fixtures be verified, additional fixtures be installed in egress pathways which do not have full coverage. Existing emergency fixtures to be tested, re-lamped and cleaned, and also related batteries to be replaced (if necessary).

2. Recommend to verify location of all existing exit lights and provide additional exit lights as necessary. Also recommend all existing exit lights be tested, re-lamped, cleaned and related batteries to be replaced



as required.

Interior Lighting System

1. Existing light fixtures in the building are generally ceiling mounted fluorescent type with prismatic lens. Light fixtures in each location are controlled by wall mounted toggle switches. Recommend all fixtures be tested, cleaned and re-lamped. If complete fixture or part of the fixture such as lens, ballast are damaged. Damaged part to be replaced.

2. Recommend light control devices in each location be tested and related wiring be verified for proper performance. If a light control switch in any location is damaged, replace with a new device.

Fire Alarm System

1. Existing fire alarm system is conventional zoned system. Related FACP is located in electrical room. Recommend complete existing fire alarm system including FACP, FAAP, initiating and notification devices and related wiring to be carefully tested by a company specialist in servicing fire alarm systems to make sure the existing system in the building operates correctly. Replace any device/component which is damaged or not functioning properly.



existing conditions:
auditorium



BUILDING ANALYSIS: AUDITORIUM

The Annabelle E. Ferguson auditorium was constructed in 1986 and is a free standing building located at the entrance of the high school. A metal canopy covers a walkway located along its western façade. There are murals painted on the brick veneer of the buildings western façade. The storefront assembly at the entry is in fair condition, with some sections pulling apart from expansion and contraction. The storefront frame, doors and metal side panels appears to have been painted black. Door hardware is in poor condition. Clerestory windows atop flush steel entry doors are in need of repaired or replacement. The loading dock and platform on the eastern side of the auditorium has a clogged drain, no overflow drain and the bumper pads at the end are rusting and deteriorating.

The interior seating in the auditorium is in overall fair condition, although some seats are in need of minor repairs. The seating assemblies are on metal platforms and have red upholstered seats and backs. Wood caps on the arm rest are in fair condition. The wooden floors at the proscenium are in fair condition with some scratches and warping observed on the floors. Some of the wood flooring along the western side of the proscenium has warped. The accessible stall in the men's bathroom does not comply with current accessibility codes. A floor mounted grab bar located next to the toilet prevents the required 5 ft accessibility diameter from being complied with.



Auditorium stage



Auditorium lobby



Bumpers at loading dock



SUITLAND HIGH SCHOOL

**MEP ANALYSIS:
AUDITORIUM**

Heating Systems

The building is heated by hydronic coils in each air handling system. There is no perimeter heating system. All heating occurs at the main air handling units.

Air Systems

AHU: All heating and cooling in the building is done by four hydronic air Chilled Water Systems. All AHU appear to be configured the exact same way. The air handlers have a mixing section, a filter section, a dual temperature coil and a draw through fan. One unit in the main mechanical room serves the stage, another unit in the mezzanine serves the office and storage rooms and the last unit in the upper mechanical room serves the auditorium. These units all perform heating, cooling and ventilation of the spaces. The units appear to be at least 20 years old but are in working condition.

Central Plants

Heating Plant: Heating provided by a single outdoor gas fired heating water boiler located in the equipment yard. The boiler is 10 years old but is in good working condition. The current code requires at least 18 inches of clear space around a boiler. This installation does not comply with that and there is an extremely long egress path to service the boiler which is obstructed by chiller piping.

Cooling Plant: The chilled water is provided by two TRANE RTAA70 70-ton air cooled chillers both located in the same yard as the boiler. The chiller are ten years old but appear in good working condition. Their does not appear to be adequate service clearance around any of the chillers and the piping is obstructing the egress to one of the chillers

Hydronic System: The hydronic system is a constant volume dual temperature system with switchover valves to circulate water through the boiler or chillers depending on the season. It appears to have been connected to the high school chilled water system at one time but the signage in the room indicates that



Incoming domestic water service



Mechanical makeup water line



Sanitary vent system



SUITLAND HIGH SCHOOL*Gas service supply to boiler room**Fire hydrant next to stage**Typical panel boards*

the cross connection is no longer used. The pumps appear to be in duty standby configuration. A lot of the piping had stripped insulation and the condensation appears to have caused a lot of corrosion in the room. The exposed piping appear to be very corroded and the pumps also seemed very corroded.

Controls

All observed dampers and control valves were pneumatic. Pneumatic compressors were observed in both boiler rooms. Control valves for all dual temperature coils were three-way.

Domestic / Fire Water Service

Domestic water service and fire service are from school main. These incoming services in the building without backflow preventer do not meet the current code and local water authority requirement. Backflow preventer have been provided at mechanical makeup water line connection. It passes through a Reduced Pressure Zone Assembly with the backflow device discharging to the boiler room floor.

Domestic Hot Water System

Domestic hot water is generated by domestic water heaters. There are two electrical water heaters located at separated room (Boiler Rm & Janitor Rm) in Auditorium Building. Both are year 2007 products. 50 gallon tank capacity with 4.5 KW power input.

Storm Drainage System

The buildings' primary storm drainage system consists of roof drains collecting. Emergency overflow drainage is accomplished through over flow scuppers. There were no reports by school staff of leaking problem.

Sanitary Waste System

The buildings sanitary drains are out of buildings with multiple exit points to campus site then connect to city sewer. Existing plumbing drawings are not available, so no information about sanitary drains location and size. No blockage in the main lines was reported. The sanitary vent system is generally vertical stacks up to



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roof. A few vent through roof is 2-inch which is not recommended as a minimum 3-inch in DC area. This size helps prevent closure due to snow or frost.

Plumbing Fixtures

The observed plumbing fixtures in the buildings are in fair condition.

Natural Gas System

Gas is supplied to the boiler room to serve boilers.

Fire Suppression System

Auditorium is served fully throughout by a wet-pipe sprinkler system and a standpipe system.

Existing Electrical Service

Existing metering number is 'KZD357697887'. Main switch is 208Y/120V, 3PH, 4w, 3000A, Square D make. Per school custodian, installed in early part of 2003. PEPCO is the utility company. The secondary feeders enter the main electric room (which is on the ground floor) and terminate at the Current Transformer (C/T) section. PEPCO engineer to be contacted for existing site electric distribution plan.

Existing Power Distribution System

Main Power Distribution Panel: Main distribution panel (MDP) is 208Y/120V, 3PH, 1600A, Square D, installed in early 2003. Based on our survey, the existing MDP is in fair condition.

Branch Panelboards: Branch Panel boards are spread out in all the hallways and different area of the building in order to feed the loads scattered in various locations. Condition is bad as they are over 50 years of age. The parts of the panel boards including enclosure is not available. Panels are beyond any repairs and should be replaced with new

Wires & Conduits: Although, wires & conduits are embedded in the walls, the installation date is the same when the panels were installed. We recommend conductivity and insulation tests to be performed for all

wires.

Existing Emergency/Stand-By Power System

Stand-By Generator -Existing emergency generator by ONAN rated 18.75KVA, 120/208V. No accurate record of the generator installation date. However, year 2008 according to Generator service record displayed on the generator. Existing condition seems fair. However, the unit should be tested and have a service maintenance for high efficiency performance.

ATS Switches: Existing emergency transfer switch by ONAN rated 60A, 3P, 120/208V.

Emergency power distribution -There is an emergency panelboard 'LE' to feed the emergency load in the building

Existing Interior Lighting System

Theater/Corridors /Office: Downlight and 2x4 recessed in ceiling fixtures with prismatic lens and four T8 fluorescent lamps. Higher energy efficient LED light source are available at this time and upgrade is recommended.

Existing Stage Lighting Condition – Stage has many type of lighting fixture (Stage Spot light, fixture with different lighting color, Projectors, Floor Mounted Projectors.

Mechanical Room/Electrical Room/Utility Room/Storage: 1x4 surface or pendant mounted to the ceiling two T8 lamp with cage barrier over exposed bulbs.

Existing Exterior Lighting System

Flood light with motion sensor, Wall box and Site poles with one or two heads all with metal halide light sources. Some exterior light poles are rusted and are in bad condition. It is recommended that the light poles be replaced.

Existing Lighting Controls

Corridor/Offices/Mechanical Room/Electrical Room/storage: standard on/off switch



Stage and theater: controlled via Portable control switch for dimming and on/off.

Exterior: controlled via photocell

Existing Egress Lighting & Exit Lights

Egress Path Lighting - no emergency generator is provided and instead emergency battery wall packs are located on site. During the site visit it was noted that there are not enough battery wall packs to sufficiently light the means of egress and therefore existing conditions are not code compliant, this needs to be updated.

Exit Lights - No emergency generator provides in this building, all exit sign on normal power with battery backup.

Existing Receptacles

Existing power receptacles are combination of recessed, floor box and surface mounted receptacles in various areas of the auditorium. Recessed type receptacles are mainly in the auditorium seating (Main and Balcony levels, reception area, around stage. Surface mounted receptacles were found in back rooms and have been added as needed. Condition of the receptacles are fair. Wiring needs to be tested for insulation and conductivity.

Existing Fire Alarm System

Fire Alarm Control Panel - Mounted in the niche between back stage wall, FACP is 4100U by Simplex and it is in good condition.

Fire Alarm Annunciator Panel - Mounted in the main entrance area, FAAP is by TYCO Simplex Grinnell, QED Annunciators and is in good condition.

Fire Alarm Initiation Devices - Devices are in good condition.

Fire Alarm Notification Appliances - Devices are by Simplex and in good condition. Their wiring is recessed for devices in the seating area. Back stage and in some area in reception are surface mounted, which implies that FA system was later added to the building. Devices

are working and in good condition.

Existing Public Address and Sound System

Main Control Panel - Installed in the ticket office at the main entrance

Speakers - Ceiling mounted recessed Public Address speakers are noticed in reception area, back rooms, balcony area. Main ground floor has the two large speakers at each end of the stage in addition to wall mounted speakers at the balcony level

Sound System - Additional Sound system is provided at the balcony level. This is in addition to the main floor Sound system with the speakers. According to the custodian, speaker and the complete sound system are in good working condition.

Existing Tel/Data System

Incoming Tel/Data Service(s) & MDF room - Tel cabinet on the plywood board is in the Electrical room. The condition is not fair and needed some repairs. Data rack is wall mounted in the ticket office at the main entrance. It is locally serving the data requirements for the auditorium. From the observation, it requires a LAN cabinet in which all wires should be appropriately managed and should not hanging above the attendant.

IDF rooms - No IDF room was observed

Tel/Data Outlets - Like power outlets, tel/data outlets are combination of recessed and surface mounted. Surface mounted data outlets were noticed in ticket office, back rooms, etc. with raceway going to the suspended ceiling. Since the building is not that old, the outlets have to be checked individually. Otherwise they are in fair condition.

Existing Security System

Main Security Control Panel - Security rack is on free standing rack inside Security office. Conditions of the system is fair.

Security Cameras - Dome cameras provided in the main seating area and balcony.



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Motion Sensors - Motion sensors were observed in the ground floor and balcony seating area, in addition to the back rooms and reception area. They are also monitored from the Security office.



Movable spot lights



Data rack mounted in ticket office



SHORT TERM REMEDIAL WORK

The following sections identifies short term remedial work that could be performed at the auditorium until new construction work begins.

Air Handling Units

Appear to be in good working order, no signs of any physical damage or air leaks. Other than routine maintenance, there are no other recommendations for these units.

Hydronic System

The existing dual temperature hydronic system looks to be in very poor condition. There are numerous places where insulation is missing and many pipes and the pumps appear to have significant amounts of rust on them. Recommend only repairing leaks and replacing pumps as required and reinsulating piping with missing insulation. The condensation from the uninsulated piping was causing a hazardous wet floor.

Air Cooled Chiller

These appear to be in good working order, with no signs of damage. Other than routine maintenance there are no other recommendations.

Outdoor Boiler

The outdoor boiler appears to be in good working order, if a renovation was not imminent, would recommend replacing it with high efficiency indoor condensing boiler. Since renovation is imminent, recommend only routine maintenance to it.

Plumbing/Fire Protection Systems

No Immediate attention required.

Power distribution system

1. Existing power distribution including existing switchboard and branch panelboards inside the

building are in fair condition, however, we recommend conductivity and insulation test to be performed on all wiring related to feeders and large equipment. Damaged wires need to be replaced as necessary.

2. Existing stand-by generator seems in fair condition. However, regarding the age of the unit and related ATS and emergency panel and components, we recommend the complete emergency system and related equipment in the building be tested and serviced/maintained by a generator service company to make sure the emergency power system in the building will work properly.

Emergency Lighting

1. Existing light fixtures for emergency egress pathways throughout the building are fixtures with back-up batteries. During our survey we noticed there are places in the building that have not emergency lighting coverage. Recommend the location/layout of the existing emergency fixtures to be verified, additional fixtures to be installed in egress pathways as necessary for full emergency lighting coverage. We also recommend existing emergency fixtures to be tested, re-lamped and cleaned and related batteries to be replaced as necessary.

2. Recommend to verify location of all existing exit lights and provide additional exit lights as necessary. Also recommend all existing exit lights be tested, re-lamped, cleaned and related batteries to be replaced as required.

Interior Lighting System

1. Existing light fixtures in the building are generally ceiling mounted fluorescent type with prismatic lens. Light fixtures in each location are controlled by wall mounted toggle switches. There are theatrical lighting fixtures for the stage lighting. Recommend all existing fixtures to be tested, cleaned and re-lamped. If a complete fixture or part of the fixture such as lens, or ballast is damaged. Damaged part should be replaced.

2. Recommend light control devices/switches in each



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location to be tested and related wiring to be verified for proper performance. If a light control switch in any location is damaged, it should be replaced with a new device. Also recommend the lighting control system for the stage lighting to be tested and all related applications/functions to be verified.

Fire Alarm System

1. Existing fire alarm system in the building is an addressable system from SIMPLEX. According to our observation, the existing fire alarm system and related components are in fair condition. Recommend the existing fire alarm system including FACP, FAAP, initiating and notification devices and related wiring to be carefully tested by a company specialist in servicing fire alarm systems to make sure the existing system operates correctly. Replace any components which is damaged or not functioning properly.





existing conditions:

career & technical academy



SUITLAND HIGH SCHOOL

BUILDING ANALYSIS: CTE

Exterior Envelope

The Jesse J. Warr Vocational Center (CTE) was constructed in 1982. A long, enclosed corridor with a metal framed curved glass roof connects the main high school building with CTE. The exterior walls are brick veneer on CMU with a combination of single hung windows, fixed windows and overhead coiling doors. The brick is in overall good condition. Windows and overhead doors are in fair condition with paint chipping at most overhead coiling door locations. The building structure appears to be open web steel joist on masonry bearing walls. The roof appears to be in good condition. The coping, flashing and counter flashing appear to have been recently replaced. Scuppers and drains were clear, but there are no overflow drains.

Entries & Corridors

Students mainly enter CTE from the high school building. The building is a one story with three main corridors. There is access to the exterior from all the classrooms and workshops. The VCT flooring and ACP in the corridors are in good condition. The CMU corridor walls are also in good condition. There are no lockers in the corridors as they are located in the classrooms. Doors from corridors to classrooms are in good condition but most have knob type hardware and therefore is not accessibility compliant.

Classrooms

A typical CTE classroom is a large, double height industrial open space with a metal decking above exposed steel joists, lighting and ductwork. Classrooms are entered through a narrow hallway flanked by lockers which leads to the main space. The VCT in the hallway is in good to fair condition. Some floor patches are stained and need to be replaced. There is a more conventional teaching space, with a much lower ACP ceiling, adjacent to the main classroom space, as well as a storage room and a single use bathroom. Hollow metal doors to bathroom and storage rooms are in fair condition, but door hardware is not accessibility compliant. The main industrial space has resilient flooring. In some spaces the flooring is new. In spaces with older flooring the condition is fair to poor.



Typical CTE workshop



Walkway between high school and CTE



MEP ANALYSIS: CTE

Heating System

The entire building is heated by heating water piping. The piping is connected to reheat coils in each rooftop unit or split system air handling unit. Each reheat coil appeared to be well maintained and in good condition.

Air System

Packaged and Split Units: All areas of the CTE are air conditioned by rooftop package units or split systems with rooftop condensers. Each system provides heating, cooling and ventilation to the space it serves. Each space is individually controlled. The condition of the systems varied, some in very good condition and others in poor condition. This is common for decentralized systems with units being replaced as required.

Central Plants

Heating Plants: The heating plant consists of two gas fired 4,710 MBH input cast iron hot water boilers in the main boiler room. The plant also contains two constant volume heating water pumps. The system is operated seasonally. The boilers are several years old but appear to be in good condition. The insulation was well maintained and clean. The pumps also appeared to be in very good condition.

Controls

A pneumatic compressor was observed in the boiler room. The control valves and ventilation dampers in the building were all pneumatic.

Domestic/Fire Water Service

Domestic water service and fire service are from the school main. Backflow preventer was not installed at the incoming service. It does not meet the current code and local water authority requirement.



Rooftop units in good condition



Rooftop Unit in Poor Condition



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Domestic Hot Water System

Domestic hot water is generated by a gas fired domestic water heater. The Domestic water heater in the boiler room at the CTE building is from 2002. The hot water heater has a 77 gallon storage capacity with 600,000 BTU gas input/hour.

Storm Drainage System

The buildings' primary storm drainage system consists of roof drains. Emergency overflow drainage is accomplished through over flow scuppers. There were no reports by school staff of leaking problem for this building.

Sanitary Waste System

There are multiple sanitary drain lines exiting the structure and connecting to the campus sanitary sewer then connecting to the public system. Existing plumbing drawings are not available, so no information about sanitary drains location and size. No blockage in the main lines was reported.

Plumbing Fixtures

The observed plumbing fixtures in the building are in fair condition. All the drinking fountains / electric water coolers are disconnected due to lead contamination.

Natural Gas System

Gas is supplied to the boiler room to serve boiler and domestic water heaters.

Fire Suppression System

The CTE building is served fully by wet-pipe sprinkler system.

Existing Electrical Service

The building is presently served from an underground electric service from PEPCO. The secondary feeders enter the main electric room located on the ground floor and terminate at the Current Transformer (C/T)

section. Existing metering number is 'KZD350868091'. Main switch is 208Y/120V, 3PH, 4w, 3000A, Square D make. PEPCO engineer to be contacted for existing site electric distribution plan.

Existing Power Distribution System

Main Distribution Panel: (MDP) is rated at 3000A, 208Y/120V, 3PH, 4W. Approximate age of the panel is 30 years. There are two distribution sections of 1600A and 1200A serving miscellaneous loads. The distribution section feeds DP1 in the Masonry shop, which feeds panel boards E1 through E6 located in different parts of the building and also individual feeders serving various branch panels in the building.

The condition of existing main distribution panel can be considered as fair. However, the equipment fed from the panel are over 30 years old. The workshops have their own dedicated panel board installed inside the shop.

Branch Panelboards: As mentioned above, the dedicated Branch Panel boards are installed in most of the workshops and feed the local loads such as: lighting, receptacles, exhaust fans, unit heaters, etc. Certain other panels are located in various spaces and are dedicated to that space. Panels in the boiler room feed the boilers, pumps, air compressors, etc. Special purpose classrooms, such as print making, sculpture; darkroom, etc. have dedicated panel boards located within the classrooms.

Wires & Conduits are embedded in the walls and cannot be observed. The installation date should be the same as panels. We recommend conductivity and insulation tests to be performed for all wires.

Existing Emergency/Stand-by Power System

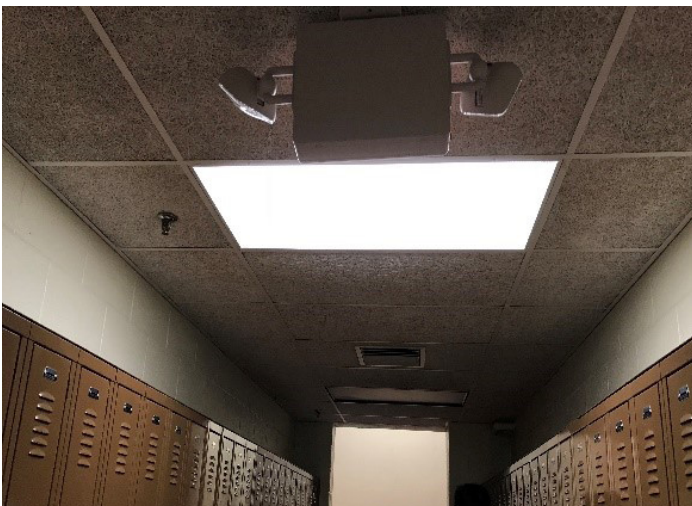
Stand-By Generator: The building has a generator for backup power for selected loads in the building. The generator is by GILLETTE GENERATORS and is 138A, 120/208V, 3PH. The generator's remote annunciator including push buttons & alarm signals are located in the main office area.

ATS switches: ATS is 70A, 3P and installed in the



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Typical surface mounted panel in workshop



Existing 2x4 recessed fluorescent fixture

electrical room.

Emergency Branch Panelboards: There is an emergency branch panel board 'EM'. Emergency loads such as FA cabinet, ATC, lighting in classrooms and hallways, etc.

Existing Interior Lighting System

Corridors/Classrooms/Office: 2x4 recessed fixtures with prismatic lens and four T8 fluorescent lamps. We recommend upgrading light fixtures to higher energy efficient LED lights.

Workshops/Mechanical room/Electrical room: 1x4 surface or pendant mounted to the ceiling two T8 lamp with cage barrier over exposed lamps. These fixtures seem to be in fair working condition.

Classrooms/Offices/Mechanical room/Workshops/Storage: standard on/off switch

Corridors: controls via breakers in the panel board, there are no switches on the site for corridor lighting. Manually switching lighting at the panelboard is not recommended and needs to be replaced.

Exterior: Controlled via photocell & time switch.

Existing Receptacles

Existing power receptacles are a combination of recessed, floor box and surface mounted receptacles in various areas of the CTE building. Recessed type receptacles are mainly in the rooms and hallways. Surface mounted receptacles were found in class rooms, workshops, main office and have been added due to the additional needs.

The condition of the receptacles is fair in most cases, but there are some broken power/data receptacles that need to be repaired and should be tested. Branch wiring needs to be tested for insulation and conductivity.

Existing Fire Alarm System

Fire Alarm Control Panels: Wall mounted in the electrical room, FACP is zone based (which is old technology). Existing FACP is provided by Simplex is in fair condition,



SUITLAND HIGH SCHOOL

except may run out of zones. Installation date was not available from the school official.

It is recommended to replace the existing system with an addressable type, which has several advantages, such as easily expandable and includes new technology for the fire alarm system.

Fire Alarm Annunciator Panel: Wall Mounted at the second entrance area. The existing Fire Alarm Annunciator Panel (FAAP) is in fair condition.

Fire Alarm Initiation Devices are old but in working condition. Spare parts will not be easy to find.

Fire Alarm Notification Appliances: Devices are by Simplex and old but are working. The wiring is recessed for devices in the hallways. Back rooms and reception area are surface mounted, which implies that FA system for certain areas was later added. Devices are old but working and their condition is fair.

Existing Public Address System

Main Control Panel: CTE Public Address Console is in the main office and is in fair condition.

Speakers: Ceiling mounted recessed Public Address speakers are noticed in reception area, back rooms, workshops, hallways.

Sound System: Portable Sound system is provided at the TV studios and workshop. The speaker system is fair condition.

Existing Tel/Data System

Telecommunications cabinet on the plywood board is in the Electrical room. The condition is poor and needs some attention and wire management.

Data racks for various areas are locally provided and wall mounted. They are not connected to each other. A data rack was noticed inside the electrical room. It is locally serving the data requirements for the CTE building.

No IDF room was observed except for Storage room X16

where data rack is also installed. It is recommended to have all low voltage equipment in dedicated spaces.

Tel/Data Outlets: Tel/data outlets are a combination of recessed and surface mounted. Surface mounted data outlets were noticed in main office, back rooms, class rooms, studios, etc. with raceway going to the suspended ceiling. Individual data racks were installed in various offices, storage areas and classrooms due to the lack of intermediate or main distribution frame closets. Since the building is old, the outlets have to be tested individually.

WIFI System and components: WIFI system is provided in the building and related components are ceiling mounted in class rooms, main office, studios, etc. The system should be tested for proper performance.

Existing Security System

Main Security Control Panel: Security rack is on a freestanding table inside the back room. Equipment and condition of the system is fair.

Security Cameras: Cameras provided in the hallways. They cover each end of the hallway and at corridor intersections. These cameras were also observed in some stairwells and rooms. Cameras are protected in enclosures and in fair condition.

Motion Sensors: Motion sensors were observed in the main floor corridors, main office area, back rooms, class rooms and the reception area. They are also monitored from the Security office. Equipment is mounted inside on the wall of the electrical room.



SHORT TERM REMEDIAL WORK

The following sections identifies short term remedial work that could be performed at the CTE building until new construction work begins.

Rooftop Units

This is a largely decentralized system with individual rooftop units with hydronic heat serving each classroom. The condition of the rooftop units varies from brand new to old and rusted. Since failure of any individual unit does not affect the other units, it is recommended only to repair units as required and replace units after they become unserviceable on a case by case basis.

Heating Water System

All of the equipment in the mechanical room: boilers, pumps and controls compressor, appeared to be in excellent condition. No missing insulation and only tiny amounts of visible corrosion. Only recommendation is for routine maintenance.

Plumbing/Fire Protection Systems

No Immediate attention required.

Power distribution system

1. Existing power distribution including existing switchboard and branch panelboards inside the building are in fair condition, however, we recommend conductivity and insulation test to be performed on all wiring related to feeders and large equipment. Damaged wires to be replaced as necessary.

2. Existing stand-by generator seems in fair condition. However, regarding the age of the unit and related ATS, emergency panel and other components; we recommend the complete emergency system and related equipment in the building to be tested and serviced/maintained by a generator service company to ensure the emergency power system in the building will operate properly.

Emergency Lighting

1. Existing light fixtures for emergency egress pathways

throughout the building are fixtures with back-up batteries. During our survey we noticed there are places in the building that have no emergency lighting coverage. Recommend the location/layout of the existing emergency fixtures to be verified, additional fixtures to be installed in egress pathways as necessary for full emergency lighting coverage. Also, existing emergency fixtures need to be tested, re-lamped and cleaned and related batteries to be replaced as necessary.

2. Recommend to verify location of all existing exit lights and provide additional exit lights as necessary. Also recommend all existing exit lights be tested, re-lamped, cleaned and related batteries to be replaced as required.

Interior Lighting System

1. Existing light fixtures in the building are generally ceiling mounted fluorescent type with prismatic lens. Light fixtures in each location are controlled by wall mounted toggle switches. There are theatrical lighting fixtures for the stage lighting. Recommend all existing fixtures to be tested, cleaned and re-lamped. If a complete fixture or part of the fixture such as lens, or ballast is damaged. Damaged part should be replaced.

2. Recommend light control devices/switches in each location to be tested and related wiring to be verified for proper performance. If a light control switch in any location is damaged, it should be replaced with a new device. Also recommend the lighting control system for the stage lighting to be tested and all related applications/functions to be verified.

Fire Alarm System

1. Existing fire alarm system is conventional zoned system. Related FACP is located in electrical room. Recommend complete existing fire alarm system including FACP, FAAP, initiating and notification devices and related wiring to be carefully tested by a company specialist in servicing fire alarm systems to make sure the existing system in the building operates correctly. Replace any device/component which is damaged or not functioning properly.



existing conditions:
cvs cvpa



BUILDING ANALYSIS: CVPA

Exterior Envelope

The CVPA building was constructed in 1956 and initially housed the junior high school program. The CVPA program was moved into the building in 1986. The facility is a two story, "F" shaped building with 3 main corridors. The center corridor occupies both the first and second floor. Exterior walls are brick on CMU with steel framed windows and metal panels. The brick is good condition, however, the single pane window assemblies and metal panels are in fair to poor condition and sealant around the these assemblies is deteriorating. Some broken panes were also observed. The structure appears to be steel joist on steel columns. The built up roof with gravel ballast appears to be in good condition. The coping, flashing and counter flashing appear to have been recently replaced. Drains were clear. There were no overflow drains, but scuppers are present.



Walkway on roof

Entry & Circulation

The entry to the building is on the south facade. Wall mounted wooden benches at the entry are deteriorating and pulling from the wall. The lobby and corridor flooring is terrazzo and is in fair condition. Masonry corridor walls are painted standard CMU with a glazed CMU wainscoting and are in fair condition. There are wall mounted display cases that project too far into the corridor with no cane detection and recessed water fountains that are not accessible. 2x4 acoustical ceiling tiles in the corridors are in fair condition.

The metal pan interior stairs are in poor condition. A metal handrail pipe is connected to a metal partition. The paint is chipping off the stair in many places. The stair treads are terrazzo tile with an adhesive non slip strips on the nosing. The interior staircases provide the only access to the second floor.

Classrooms

Most classroom have VCT that is in fair condition. Some visual arts classes have sealed, unpainted concrete floors that are also in fair condition. There is a general lack of storage in all classrooms and classroom furniture is in poor condition. The visual arts



Typical visual arts class

SUITLAND HIGH SCHOOL



Stage at blackbox theater



Damaged floor at dance studio

classes have specific needs that aren't being met with the current facility. For example, the kiln room for the sculpture studio is not sized appropriately and does not have adequate ventilation, the photo lab does not have adequate dark room space and there aren't enough music practice rooms to support the number of students in the program.

The program also been utilizing prefabricated mobile units that have been retrofitted to accommodate additional teaching spaces. These are in fair to poor condition and have no accessible means of entry.

Interior Doors & Hardware

Interior door hardware and hollow core wood doors are in poor condition. Veneers on many doors are delaminating and many of the metal frames are in need of refinishing. Also, door hardware to classrooms and offices are knob type and do not meet accessibility requirements.

Dance Studios

There are three dance studios - two large dance studios and one smaller one. The wooden spring floor in the main studios is in fair condition with missing wood planks and signs of previous repair. Mirrors approximately 8 feet tall are on the south walls of the studio. These studios are well lit with skylights, but lack of air conditioning makes the space uncomfortable.

Black Box Theater

The Black Box Theater, which functions as a classroom space, office and performance space, is located on the first floor of the CVPA. The walls are painted CMU with a glazed CMU wainscoting and are in fair condition. The acoustical ceiling tiles are mostly in good condition, but some tiles are dirty or show signs of damage. The fluorescent lighting is in good condition. The wood framed stage at the east side of the space is in poor condition. The paint is chipped in several parts of the stage and some splintering is also occurring.



MEP ANALYSIS: CVPA

Heating Systems

The heating system consists of steam cabinet radiators in every classroom and corridor as shown. Some classrooms are equipped with split systems for cooling,. Those classrooms have steam reheat coils for heat as well as the cabinet radiators. The radiators appeared to be at least 20 years old but were working properly.

The Dance Room has a heating only air handler with a steam coil and window units for cooling. The heating unit appeared to be at least 20 years old and was functional.

Air Systems

Most of the classrooms have only window units or split systems for air conditioning. The dance room has a heating only air handler. The systems do not provide ventilation, all windows are operable and the building appears to be naturally ventilated. The condition of the window units varied as is common with decentralized systems which get replaced at different times.

Central Plants

Heating Plants: Steam for the entire building is provided by two dual fueled Cleaver Brooks 5,230 MBH input steam Firetube boilers and associated boiler feed units. The boilers are in the main boiler room. The boilers and feed unit are 10 years old but appear to be in working order.

Controls

Pneumatic compressors were observed in the boiler room. The control valves observed for all hydronic system were also pneumatic. No digital control panels were observed throughout the building.

Domestic/Fire Water Service

Water quality is a problem at this service line. Even though a water filter is added at service, the water still



Typical classroom heating unit and window AC



Firetube steam boilers



Water service



SUITLAND HIGH SCHOOL



200 gallon hot water heaters



Scuppers at roof edge



Clay traps at visual arts class

very dirty.

Domestic Hot Water System

In CVPA building, hot water is produced by a gas fired semi-instantaneous water heater with two 200 gallon storage tanks. All are 1987 products.

Storm Drainage System

All the buildings' primary storm drainage system consists of roof drains. Emergency overflow drainage is accomplished through over flow scuppers. There were no reports by school staff of leaking problem for all the buildings until current raining period. A little leaking was found at CVPA building.

Sanitary Waste System

There are multiple sanitary drain lines exiting the structure and connecting to the campus sanitary sewer then connecting to the public system. Existing plumbing drawings are not available, therefore; no information regarding sanitary drain locations and size is available. The sink in the Painting classroom has been provided a clay trap. No blockage in the main lines was reported.

Plumbing Fixtures

The observed plumbing fixtures in all the buildings are in fair condition. A few fixtures are out of function. All the drinking fountains / electric water coolers are disconnected due to lead contaminated water.

Natural Gas System

Gas is supplied to the boiler rooms at each building to serve boilers and domestic water heater.

Fire Suppression System

No sprinkler system is served to CVPA building, only heat detect is provided.



Existing Electrical Service

The building is presently served from an underground electric service from PEPCO. The secondary feeders enter the main electric room located on the ground floor and terminate at the Current Transformer (C/T) section. Existing metering number is 'KZD357697887'. Main switch is 208Y/120V, 3PH, 4w, 3000A, Square D make. PEPCO engineer to be contacted for existing site electrical distribution plan.

Existing Power Distribution System

Main Distribution Panel (MDP) is rated at 3000A, 208Y/120V, 3PH, 4W and approximate age of panel is 30 years. Existing original inspection sticker on the panel indicates 1984. C/T section & main switch are separate enclosures and there is a separate enclosure of two distribution sections. The distribution sections feed various branch panels that are distributed throughout the building. The condition of the main distribution panel is old and the components spare parts are hard to find.

Branch Panel Boards: Branch Panel boards are located in the hallways of the school (lower and upper floors and in boiler room) in order to feed the loads in various parts of the CVPA, such as lighting, receptacles, small mechanical loads, window A/C units, etc. Dedicated panels are located in a particular space such as panels in the boiler room feeds the boilers, pumps, air compressors, etc. Special purpose classrooms, such as print making, sculpture; darkroom, etc. have dedicated panel boards located within classrooms. Existing panel boards are in poor condition, as they are over 50 years of age and beyond their useful life. The spare parts of the panel boards are most likely not available. We recommend all panel boards to be replaced.

Wires & Conduits: Wires & conduits are embedded in the walls and cannot be observed. The manufacturing date should be the same as when the panels were installed. There is no information about the cables conductivity and insulation. Therefore; cable insulation and conductivity tests should be performed for all wires.

Existing Emergency/ Stand-By Power System

The building does not have a standby generator to back up the necessary loads in the building.

Existing Interior Lighting System

Light Fixtures: Classrooms/Corridors/Cafeteria/Offices: 2x2 and 2x4 recessed in ceiling fixtures with prismatic lens and four T8 fluorescent lamps. Higher energy efficient LED light source are available and upgrade is recommended. Graphic art classrooms have track lights and dance studios have 2x4 light fixtures surface mounted to the structure.

Lighting conditions Mechanical room/Electrical room/Utility room/Storage: 1x4 surface or pendant mounted to the ceiling two T8 lamps with cage barrier over exposed lamps.

Lighting controls – Classrooms/Offices/Mechanical room/Electrical room/Storage: Standard on/off switch. Lighting controls – Corridors: Controlled via breakers in the panelboard. There are no switches on the site for corridor lighting. Manual switches at the panel board is not code compliant and needs to be replaced. Exterior: Controlled via photocell & time switch



SUITLAND HIGH SCHOOL

SHORT TERM REMEDIAL WORK

The following sections identifies short term remedial work that could be performed at the CVPA building until new construction work begins.

Central Steam Plant

The existing boilers and boiler feed units appear to have been there at least ten years but they look to be in good condition. There are no recommendations for this system other than routine maintenance.

Terminal Units

All of the terminal units are steam convection units and a steam heated air handling unit for the dance studio. There terminal units appear old but in good condition. Recommend no action other than repairing leaks until the system is renovated.

Air Conditioning

All of the air conditioning is from window units or split systems throughout the building. Only recommendation is to replace these units as they fail until the building can be renovated.

Plumbing/Fire Protection Systems

No Immediate attention required.

Power distribution system

1. The entire power distribution system in the building including main distribution panel, all branch panelboards and related wiring in the building are old and in poor condition. To improve this condition as a permanent solution, this system should be completely replaced with new equipment (panels) entire wiring. However, for a limited period and as a short term solution, we recommend all panels including main distribution panel and branch panelboards be cleaned and tested, all breakers inside panel panels also to be tested. Damaged or malfunctioning breakers to be replaced, wiring inside panels to be verified and replaced if necessary, wiring

terminals to be examined and replaced if necessary, panel enclosures to be verified and damaged doors/locks to be repaired.

2. All existing power wiring in the building is old. Recommend conductivity and insulation test to be performed on all wiring related to panel feeders and large equipment. Replace damaged wires as necessary.

Emergency Lighting

1. Existing light fixtures for emergency egress pathways throughout the building are fixtures with back-up batteries. During our survey we noticed there are places in the building that have no emergency lighting coverage. Recommend the location/layout of the existing emergency fixtures to be verified, additional fixtures to be installed in egress pathways as necessary for full emergency lighting coverage. Also, existing emergency fixtures need to be tested, re-lamped and cleaned and related batteries to be replaced as necessary.

2. Recommend to verify location of all existing exit lights and provide additional exit lights as necessary. Also recommend all existing exit lights be tested, re-lamped, cleaned and related batteries to be replaced as required.

Interior Lighting System

1. Existing light fixtures in the building are generally ceiling mounted fluorescent type with prismatic lens. Light fixtures in each location are controlled by wall mounted toggle switches. There are theatrical lighting fixtures for the stage lighting. Recommend all existing fixtures to be tested, cleaned and re-lamped. If a complete fixture or part of the fixture such as lens, or ballast is damaged. Damaged part should be replaced.

2. Recommend light control devices/switches in each location to be tested and related wiring to be verified for proper performance. If a light control switch in any location is damaged, it should be replaced with



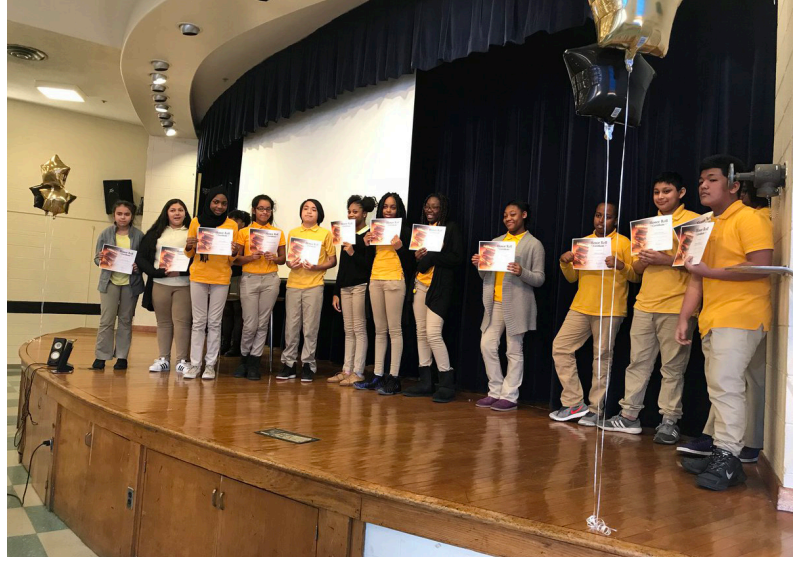
a new device. Also recommend the lighting control system for the stage lighting to be tested and all related applications/functions to be verified.

Fire Alarm System

1. Existing fire alarm system is conventional zoned system. Related FACP is located in electrical room. Recommend complete existing fire alarm system including FACP, FAAP, initiating and notification devices and related wiring to be carefully tested by a company specialist in servicing fire alarm systems to make sure the existing system in the building operates correctly. Replace any device/component which is damaged or not functioning properly.



existing conditions:
middle school



BUILDING ANALYSIS: MIDDLE SCHOOL

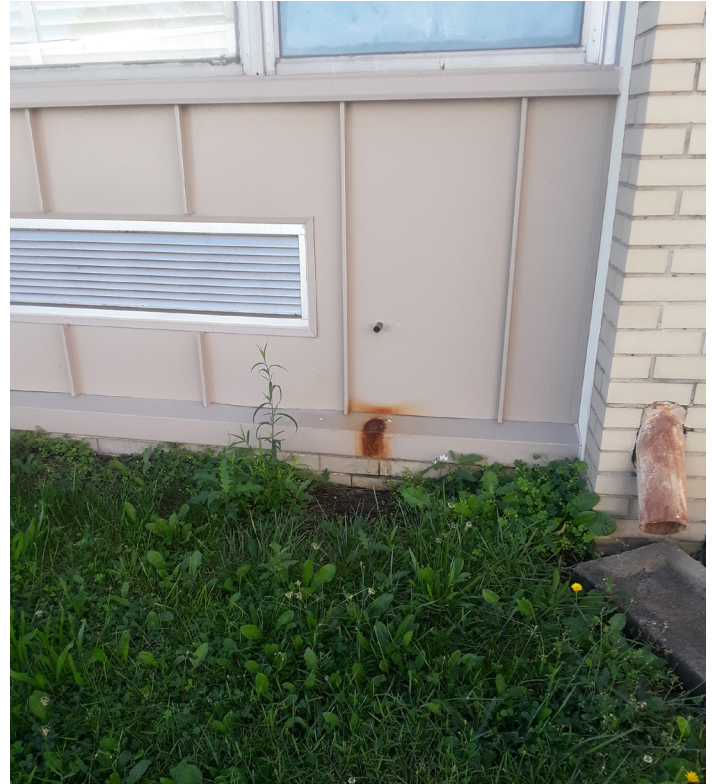
Exterior Envelope

The middle school building was constructed in 1960 as the LaReine Catholic High School. It was repurposed as Drew Freeman Middle School in 1995. The exterior envelope is brick veneer on CMU and is in good condition. Metal panels below the steel framed, hopper style windows are in good condition, but sealant is deteriorating in some locations. There is also staining at many locations do to condensate drainage directly onto the metal panels. There is also settlement cracking at these locations. The precast panels at the entry are in good condition, but has staining in some areas. The majority of the roof appears to be in good condition. Most coping, flashing and counter flashing been recently replaced, but some existing flashing remains. In some areas the built up roof is deteriorating and ballast is missing, but these areas are few. Drains were clear, but there are no overflow drains. Downspouts discharge at grade near the building foundation.

Entries, Corridors & Stairs

The main entrance is on the north face of the building and is accessed by a series of steps that lead to a plaza about 5 ½ feet above the sidewalk grade level. A secondary entrance on the west facade - facing Brooks Drive - is utilized for sporting events in the gym and events in the auditorium. This entrance is at grade.

The building is two stories and is divided into two main sections. A breezeway connects these two sections at the center and the auditorium on the first floor connects them along Brooks Drive. The breezeway is enclosed on the second floor only. The terrazzo flooring and ACP ceiling in the corridors are in good condition. There is a mixture of recessed and floor mounted lockers throughout the corridors. All lockers were recently painted and appear to be in good condition. At some recessed locker locations, there are clerestory windows into the adjacent classroom. Corridor walls are a mixture of painted CMU, brick and glazed CMU and are in good condition. The second floor is accessible by stair only.



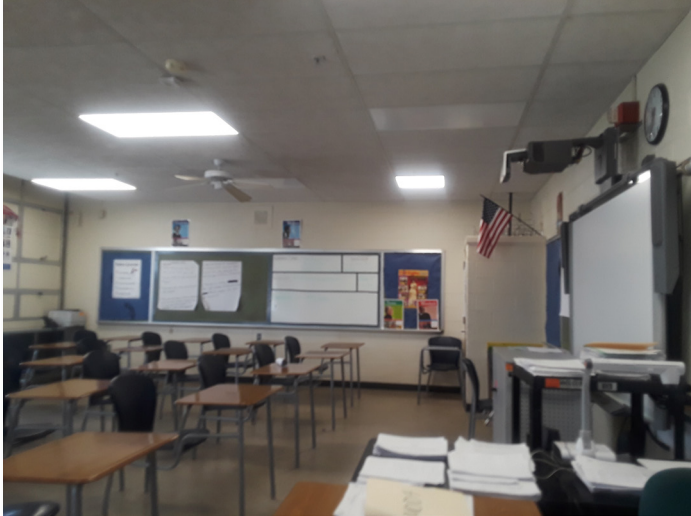
Typical staining at condensate drainage



Ramp entry with missing push button



SUITLAND HIGH SCHOOL



Typical classroom



Damaged flooring outside of girls locker room

Classrooms

Typical classrooms have VCT flooring and 2x4 ACP ceilings that are in fair condition. Some have ceiling fans that are in poor condition. Classrooms are equipped with interactive whiteboards and wall mounted projectors that appear to be in good condition. In the science rotunda, classes have a lecture hall arrangement with tiered desk fixed to the floor. The desk are in poor condition with some missing seats or writing surfaces. Laboratory tables are at the upper level of the classrooms. Plaster ceilings are in poor condition and show significant signs of water damage.

Interior Doors & Hardware

Door hardware and hollow core wood doors are in fair condition. Veneers on some are delaminating and many of the metal frames are in need of refinishing. Most classrooms have lever style handles though some closets and offices have non accessibility compliant knob style hardware.

Bathroom

Tile flooring in most of the bathrooms is in fair condition. There are no burn guards at the sinks and many accessories are not within accessible reach range or are missing completely. Partitions are in fair to poor condition. Most plumbing fixtures appear to be in working condition.

Gym and Locker Rooms

The gym is located near the Brooks Drive entrance and is a half story above the entrance level. The wooden gym flooring is in fair condition with deterioration at the entrances to the locker rooms. The wooden retractable seating on both sides of the court is in fair condition. Some clerestory windows along both sides of the court are broken and all lack any screening devices. There are 6 retractable backboards that all appear to be operational.



SUITLAND HIGH SCHOOL

The male locker area is accessible from the gym at the same elevation. The ceramic tile flooring and ACP ceiling are in fair condition. The benches and three tier lockers are in good condition. The female locker room is located one level below the gym. The locker area has VCT flooring that is in fair condition. The double tier lockers and shower areas are in fair condition. The VCT flooring in the corridor outside of the locker room is in poor condition with some tiles missing. Both locker rooms are only accessible via a stairway.

Cafeteria

The cafeteria is also located near the Brooks Drive entrance and is a half story below the entrance level directly below the gym. There is one serving area in which two lines are formed during the lunch period. Flooring and mobile tables with integral seats are in good condition. Ceiling fans in the space are in fair condition. The kitchen area consist of a main food prep area, storage area and locker area. Some boxes were being stored in the circulation areas in addition to the storage rooms. Flooring in the kitchen area is in fair condition.

*Cafeteria***Auditorium**

The auditorium is a double height space with room for about 320 non fixed seats. There is a small balcony area that is generally locked and not used for seating. The stage is in fair condition and is about 3' above the seating level. Access doors to storage under the stage show signs of wear with some areas of missing veneer. The walls are painted CMU block and are in good condition. The gypsum ceiling and VCT flooring are also in good condition.

*Stage in auditorium*

MEP ANALYSIS: MIDDLE SCHOOL

Air Systems

Classrooms-Admin: All of the classrooms and admin are heated and cooled with two pipe floor mounted fan coils fan coils. The fan coils heat and cool seasonally. Each space is ventilated with direct connection of the fan coils to exterior louvers. Each space has individual temperature control. The library has an above ceiling air handling unit ducted to diffusers. The kitchen also has it's own independent air handling unit with a ducted distribution system and perimeter convective heaters. The gym contains unit heaters and exhausts only, no air conditioning. The units appear to be in good working condition.

Central Plants

Heating Plants: Steam for the entire building is provided by two dual fuel Hurst Firebox steam boilers located in the main mechanical room as shown. Each boiler is rated at 8,400 MBH input. There is also a small cast iron steam boiler which is used in the cooling season to provide steam for the kitchen only. The boilers are only two years old and appear well maintained and in good condition.

The central cooling plant consists of an air-cooled Daikin AWS260 chiller nominal 260-ton chiller. The chiller (below) was installed last year and appears to be in excellent condition. There is plenty of service clearance around the chiller.

Distribution: The distribution is 2-pipe hydronic with output of main boilers going directly to a hydronic heat exchanger. Pumping is constant volume with a two-pump duty standby configuration. Switchover is 100% manual, there are no automatic valves in performing switchover. Piping appeared to be in good condition, the insulation in some places had been torn off and not replaced. There was a lot of abandoned steam piping still left in the building from when the building was switched over to a two-pipe hydronic system.



Typical classroom FCU



Firebox heating water boilers



Cast iron kitchen boiler



Controls

Digital control boxes were observed throughout the building. It is assumed that enabling of all main systems is on digital control. The fan coils appear to be controlled by standalone room sensors. There was no observed compressors or pneumatic systems.

Domestic/Fire Water Service

4" Domestic Water Service enters the building at basement without backflow preventer. A 6" double check valve (ASSE 1015) without detector has been installed on incoming 8" Fire Service. It does not meet the current code and local water authority requirement (ASSE 1048).

Backflow preventer have been provided at mechanical makeup water line connection. It passes through a Reduced Pressure Zone Assembly with the backflow device discharging to Boiler room floor.

Domestic Hot Water System

Domestic hot water is generated by domestic water heaters in the boiler room and mechanical room. Hot water recirculation system has been provided. The domestic water heater located in the basement Boiler room is a two years old storage electric water heater.

Sanitary Waste System

There are multiple sanitary drain lines exiting the structure and connecting to the campus sanitary sewer then connecting to the public system. Existing plumbing drawings are not available therefore; no information regarding sanitary drains location and size is available Grease Interceptor had been provided for Kitchen grease waste. No blockage in the main lines was reported.

Plumbing Fixtures

The observed plumbing fixtures in all the buildings are in fair condition. A few fixtures are out of function. Some of the drinking fountains / electric water coolers are disconnected. A few are still working but in poor condition.

Natural Gas Systems

Gas is supplied to the gas fired domestic water heater only. No gas meter in this building, Only a gas main shut-off valve installed at gas supply line. Gas shut-off valve is located at building side entrance which faces Books Drive.

Fire Suppression System

The building is served fully throughout by wet-pipe sprinkler system.

Existing Electrical Service

The building is presently served from an underground electric service from PEPCO. The secondary feeders enter the main electric room located on the basement floor and terminate at the Current Transformer (C/T) section. Existing metering number is 'KZD341208184GE'. Main power supply is 208Y/120V, 3PH, 4w.

Existing Power Distribution System

Main Power Distribution Panel: There are two distribution boards, of 800A for panelboard for building A and 1200A for panelboard for building B, C & D along with the corresponding main switches in the same electrical room serving miscellaneous loads. C/T section is a separate cabinet. The distribution boards feed various lighting, power and small mechanical loads plus individual feeders serving various branch panels that are distributed throughout the building. The condition of existing power service and distribution equipment seems good as the equipment is not too old (they are mostly near 20 years old).

Branch Panelboards: As mentioned above dedicated Branch Panel boards installed in most of the workshops and they mainly feed the local loads such as lighting, receptacles and small mechanical loads like exhaust fans, unit heaters, etc. Certain other panels are located in a particular space and are dedicated to that space. Panels in the boiler room mainly feed the boilers, pumps, air compressors, etc. Panels in the kitchen area feed kitchen lights, freezer refrigerator, garbage disposal, dishwasher, etc. Panels in the kitchen were also part



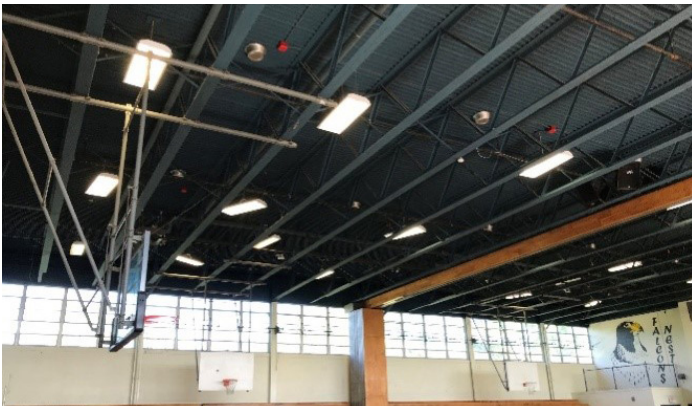
SUITLAND HIGH SCHOOL



Electric domestic water heater



Emergency generator panel EMDP



2x4 fixtures in gym

of the renovation in 1994 and are in fair condition. The branch panels on the first and second floors are mainly located in the hallways and mainly feed the local loads such as lighting, receptacles, small mechanical loads. Condition of the panelboards is considered fair. Most panelboards are part of 1994 renovation. There are Panels prior to that period which are old and per school custodian are going to be replaced.

Wires & Conduits are embedded in the walls and cannot be observed. The installation date should be the same as when the panels were installed. We recommend conductivity & insulation tests to be performed for entire school wiring system apart from the recent renovation.

Existing Emergency/ Stand-By Power System

Stand-By Generator: The building has a generator for backup source of power for some loads in the building. It is 125KW, 208/120V, 3ph emergency generator.

ATS switches: ATS is 400A, 3 pole.

Emergency power distribution: There is an emergency branch distribution panel board EMDP which is installed in emergency room nearby basement electrical room. Emergency exit lights are on normal power with battery packs.

Existing Interior Lighting System

Lighting has gone through major changes in terms of new energy efficient LED fixtures along with occupancy sensors that were provided in certain areas. According to the school custodian, lighting will be changed in stages. Hence areas with no changes were noticed among the areas where new work has been carried out.

Classrooms/Corridors/Cafeteria/Offices: 2x4 recessed ceiling fixtures with prismatic lens and four T8 fluorescent lamps. Some of these light fixtures are Higher energy efficient LED light type and it needs to be verified, as Middle school is going through partial renovations.

Mechanical room/Gymnasium: 1x4 and 2x4 surface or pendant mounted to the ceiling two T8 or 4 T* lamp



SUITLAND HIGH SCHOOL

with cage or cage barrier over exposed lamps. Some of these light fixtures are Higher energy efficient LED light type and it needs to be verified, as Middle school is going through partial renovations

Lighting controls in classrooms/Offices/Mechanical room/Electrical room/Storage is standard on/off switch. Corridors are controlled via breakers in the panelboard. There were no switches on the site for corridor lighting. This needs to be verified. Manually switching at the panelboard is not a code compliant and needs to be replaced.

Existing Egress Lighting & Exit Lights

During the school visit, the middle school was observed to have energy efficient lighting sources and code compliant egress lighting and controls.

Emergency exit lights are connected to normal power with battery backup.

Existing Receptacles

Existing power receptacles are combination of recessed, floor box and surface mounted receptacles in various areas of the middle school building. Recessed type receptacles are mainly in the rooms and hallways (Upper and lower levels). Surface mounted receptacles were found in class rooms, workshops, main office and have been added due to the additional need basis. Extension cords are being used in the main office areas where power requirement increased due to the addition of computer peripherals and other electronic devices. Existing power/data poles are also noticed.

From the observation, they seem installed recently in some areas such as security office and were installed earlier in other areas, such as class rooms where data/power raceway surface mounted were added for the additional outlets power and data requirements. Condition of the receptacles are based on individual case and they need to be tested. Branch wiring needs to be tested for insulation and conductivity.

Existing Fire Alarm System

Existing fire alarm control panel (FACP) is Wall mounted

located in the emergency electrical room in the basement in 1994 renovations, FACP seems addressable system in compliance with current code requirements. Existing FACP is provided by Simplex is in fair condition.

Existing fire alarm annunciator panel (FAAP) is wall Mounted in the main entrance area, FAAP is in fair condition

Initiation Devices are from 1994 renovation and they are in fair and in working condition. Notification devices are by Simplex and from the same period as initiation devices and working. Their wiring is recessed for most of the devices in the hallways. Surface mounted raceways were observed for some devices in the corridor, entrances. Back rooms and in some areas in reception are surface mounted.

Existing Public Address, Clock/Bell & Sound System

Freeman MS Public Address Console is in the main office and is in fair condition. Ceiling mounted recessed Public-Address speakers are observed in reception area, back rooms, classrooms (upper & lower level), hallways (upper and lower levels) and are in fair condition. Some of these speakers look new as they may be part of the renovation school is going through. Clock system is provided and added on the existing system. Clocks were noted in hallways, classrooms, labs, studios, etc. Additional Portable Sound systems are provided at the dancing studios, stage and rehearsal area theatre. The condition of the speaker system is fair and in good working condition. The system as a whole may have to be tested for proper performance.



SUITLAND HIGH SCHOOL

SHORT TERM REMEDIAL WORK

The following sections identifies short term remedial work that could be performed at the Drew Freeman building until new construction work begins.

Air Cooled Chiller

The chiller appears to have been very recently installed. It is in excellent condition and other than routine maintenance, there are no other recommendations.

Boilers

The existing fire box steam boilers are in excellent condition. They also appear to have been recently installed. Other than to continue the maintenance on these boilers, there are no recommendations.

Dual Temperature Piping System

The dual temperature hydronic system does not appear to be in very good condition. There is a lot of piping missing insulation in the mechanical room and signs of damaged insulation and rusted piping. The pumps appear to have been recently installed. Recommend reinsulating piping in the mechanical room.

Terminal Units

The terminal units are fan coils with brick vents for ventilation. These appear to be in good working order and should remain as is except for regular maintenance until a renovation.

Plumbing/Fire Protection Systems

No Immediate attention required.

Power distribution system

1. Most of the panels and wiring inside the building has been replaced in the latest renovation and appear to be in fair condition. However, we recommend conductivity and insulation test be performed on all remaining old wiring related to panel feeders and large equipment.

Based on the result of these tests, damaged wiring should be replaced as necessary.

2. Building has a stand-by generator unit, related ATS and emergency panel. We recommend the generator unit be tested and serviced/maintained by a generator service company to ensure the emergency power system in the building will work properly.

Interior Lighting, Emergency Lighting & Exit Lights

1. The school is in process of a major renovation which covers the entire lighting system in the building. As part of this renovation, all old light fixtures with fluorescent lamps are/will be replaced with high efficiency fixtures (with LED drives).

Fire Alarm System

1. Existing fire alarm system in the building is an addressable system from SIMPLEX. According to our observation, the existing fire alarm system and related components are in fair condition. Recommend the existing fire alarm system including FACP, FAAP, initiating devices, notification devices and related wiring to be carefully tested by a service company (which is a specialist in servicing fire alarm systems) to ensure the existing system operates correctly. Replace any components that are damaged or not functioning properly.



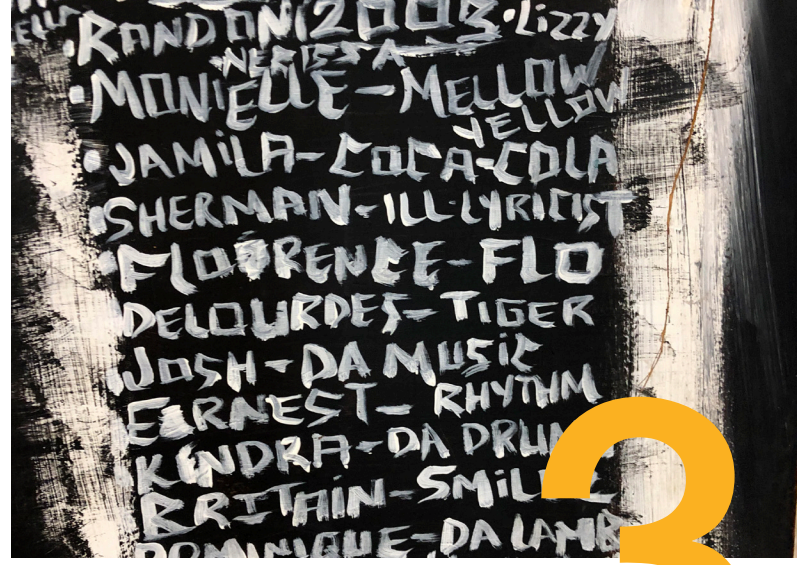


SUITLAND HIGH SCHOOL





design options





Maximum Modernization Site Plan

OPTION I: MAX MODERNIZATION OVERVIEW

The maximum modernization option maximizes reuse of existing building elements with minimal new additions. This option will take advantage of existing elements in their existing locations on the site. Buildings will be fully modernized with new partitions, finishes and mechanical, electrical and plumbing services. Programs will be reorganized to meet the educational specification and maximize efficiency and circulation within the buildings and throughout the site. The site modifications will also provide for more efficient circulation and will include new athletic fields, more convenient parking and improved stormwater management interventions.

In this option, 145,247 square feet of the existing buildings will be completely demolished and 179,540 square feet of new space constructed. Newly constructed spaces will house big box programs like gyms and auditoriums as well as create a new gathering space in each building. These new spaces will incorporate efficient building envelopes, energy efficient mechanical and electrical elements and water conserving plumbing fixture.

Architectural interventions in the 369,461 square feet of existing building to be modernized will include:

- Full demolition of interior finishes, buildings systems, partitions, to structure
- Accessibility upgrades including the installation of new elevators or lifts where required, installation of all new stairs, handrails and construction of new ramps
- Replacement of all exterior & interior windows, doors and frames
- Replacement of all floor, wall and ceiling finishes
- Replacement of all built-in casework and lockers
- Replacement of built-in science equipment to accommodate educational specification
- Reconfiguration of most / all partitions to accommodate educational specification
- Cleaning and repointing of existing exterior masonry
- Replacement of exterior caulking and sealants
- New roof

Mechanical, electrical and plumbing systems will also be completely replaced. A complete breakdown of these interventions is located in the MEP Summary sections.

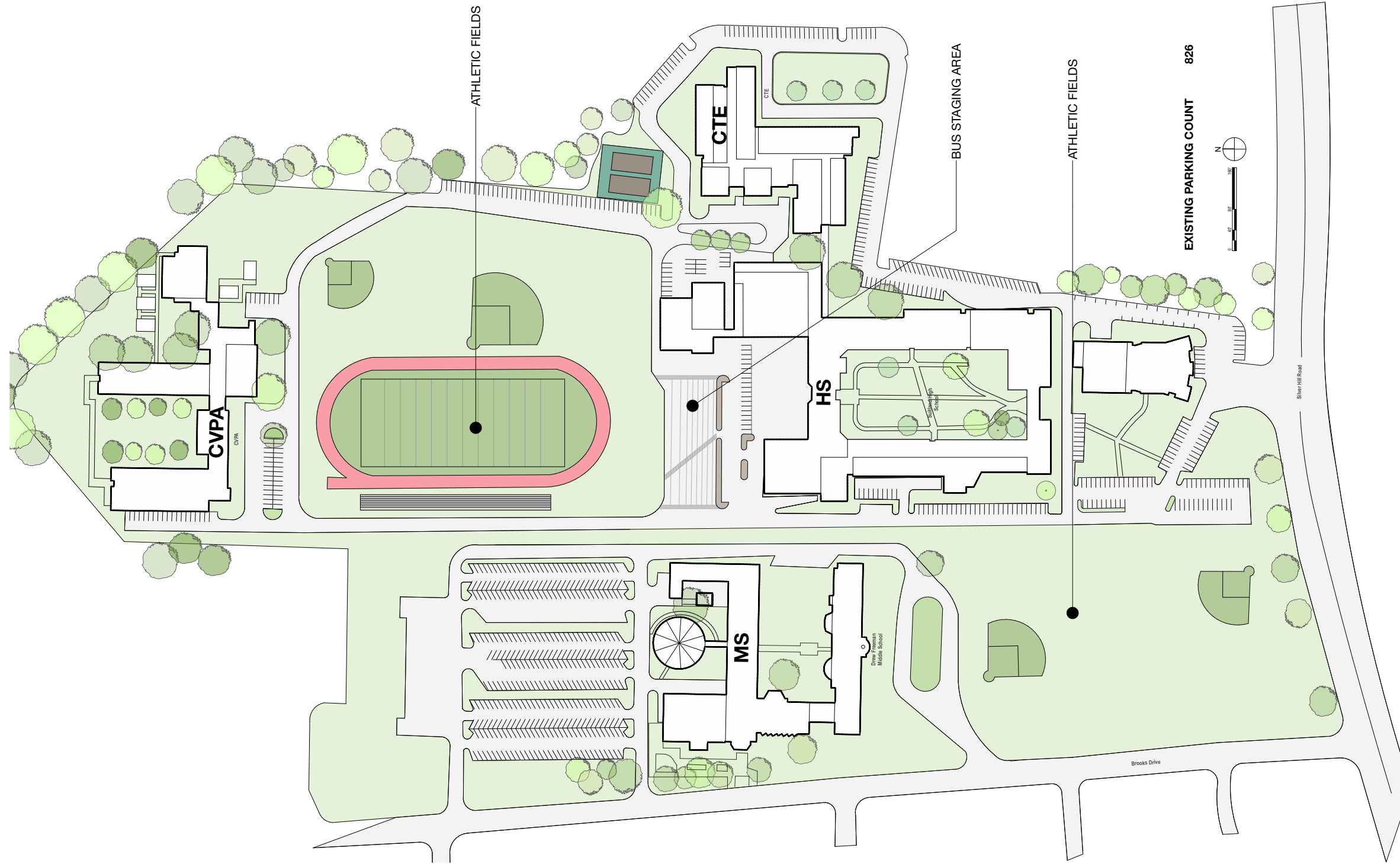
In this option, the CVPA program is moved to the Drew Freeman building and the middle school programs is moved to a newly renovated annex building. This brings CVPA students closer to the comprehensive high school which will allow for easier

communication between the two programs. The comprehensive high school remains in its current location and the CTE building is demolished as the program will be moved off campus.

It can be anticipated that any site improvements will be required to include Environmental Site Design (ESD) to the maximum extent practicable to treat all areas inside the limits of disturbance. If ESD efforts are exhausted and the site has still not been able to reach a hydrologic state of "good condition," then structural practices may be permitted as determined by Prince George's County.

Potential ESD stormwater management practices for the site include both micro-scale practices and alternative surfaces. Micro-scale facilities could include the utilization of bio-swales, micro-bioretenion, and vegetative green roof facilities where available open space can be found, such as parking lot islands, around the athletic fields, and on proposed building expansion areas.

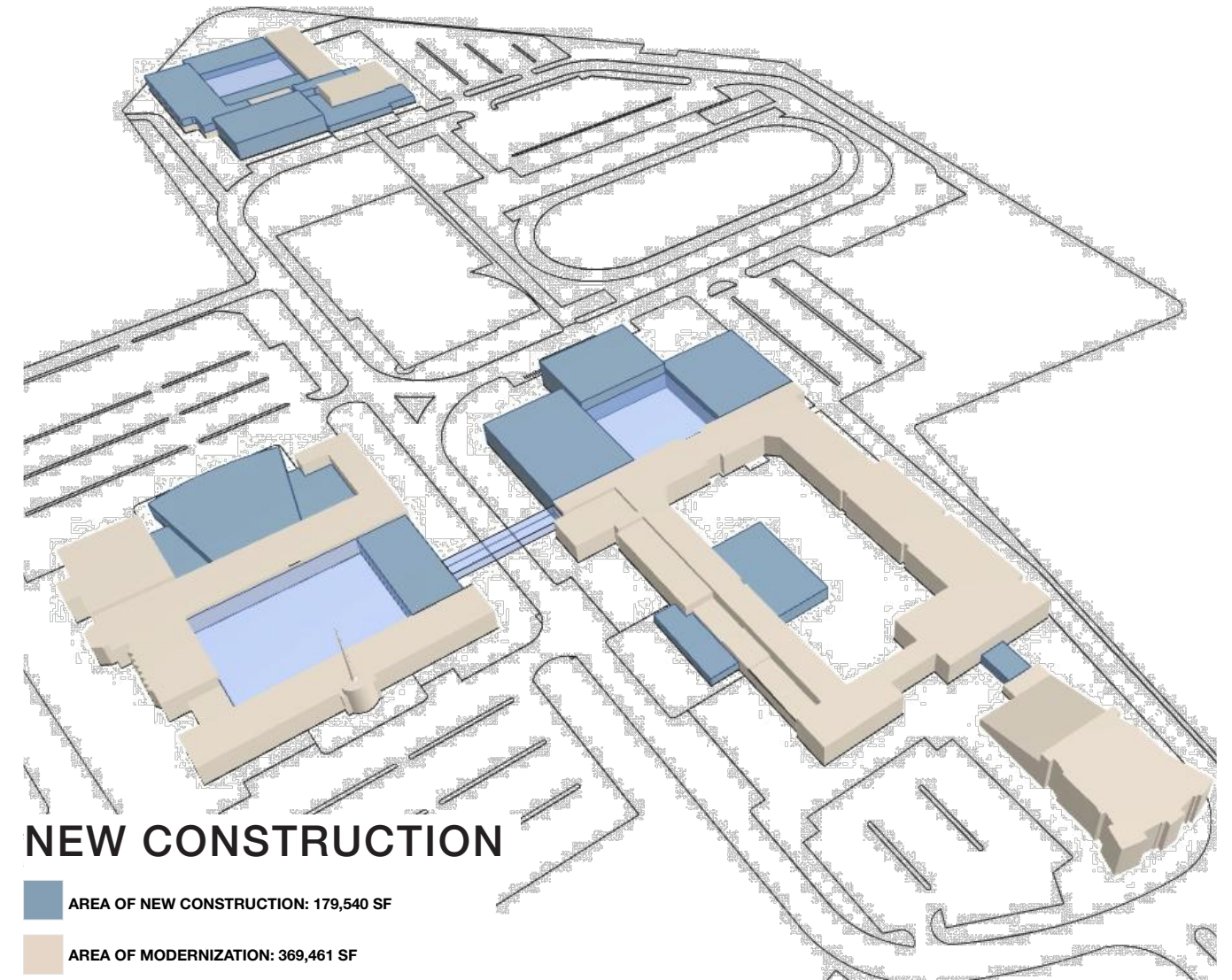
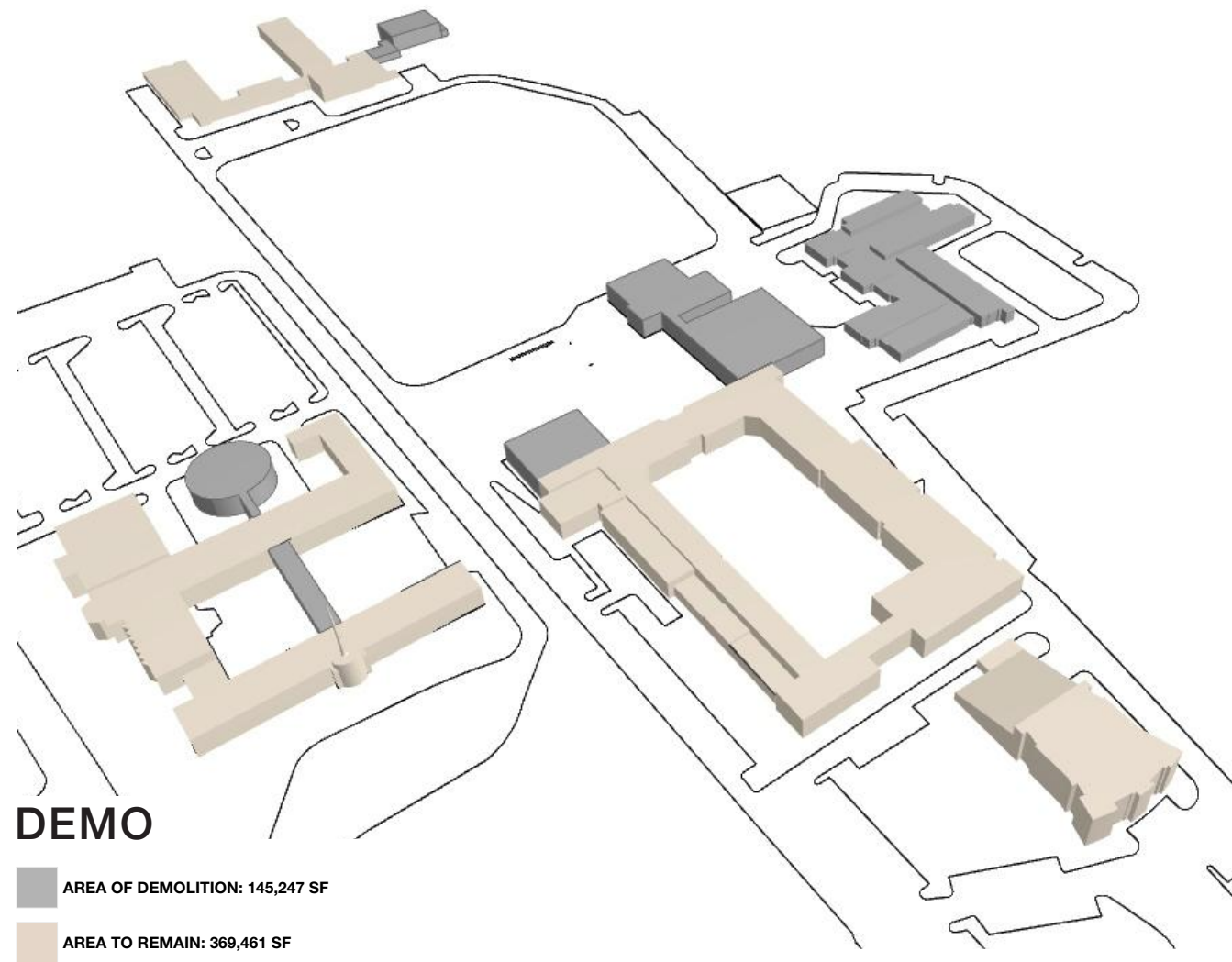
MAX MODERNIZATION



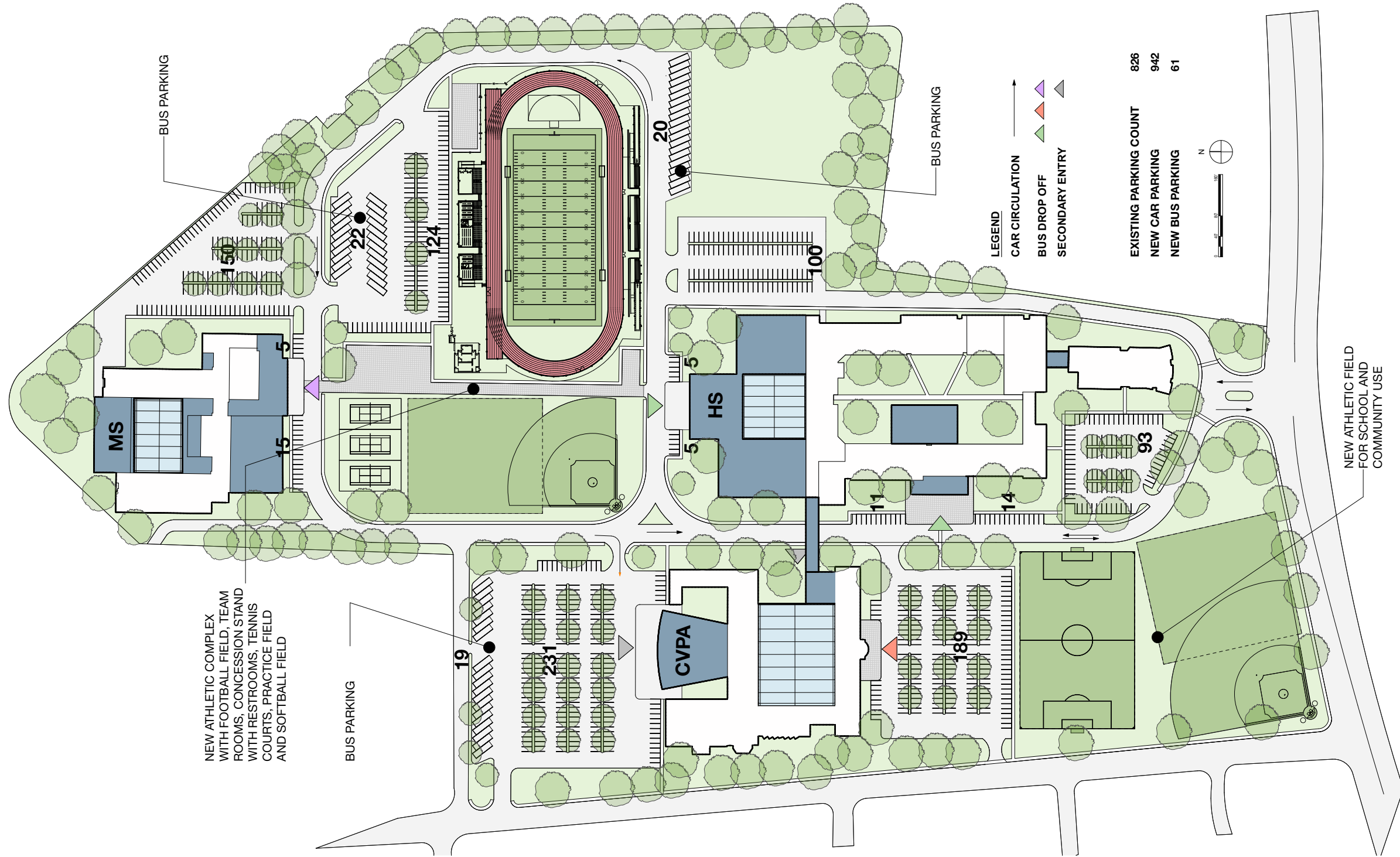
MAX MODERNIZATION

EXISTING SITE PLAN

BUILDING ALTERATIONS



MAX MODERNIZATION



MAX MODERNIZATION

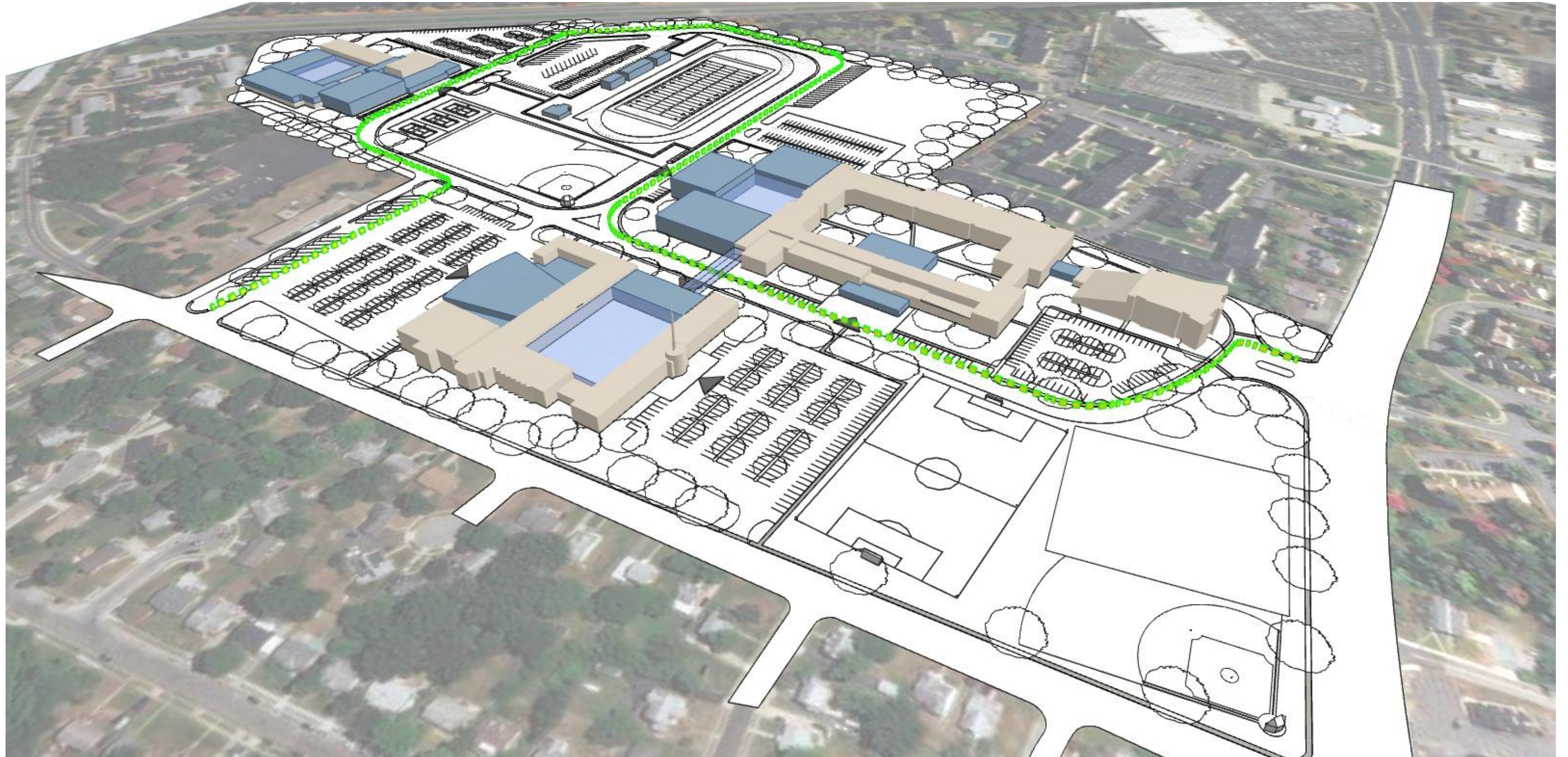


Maximum Modernization Site Plan

MAX MODERNIZATION

BUS ROUTES

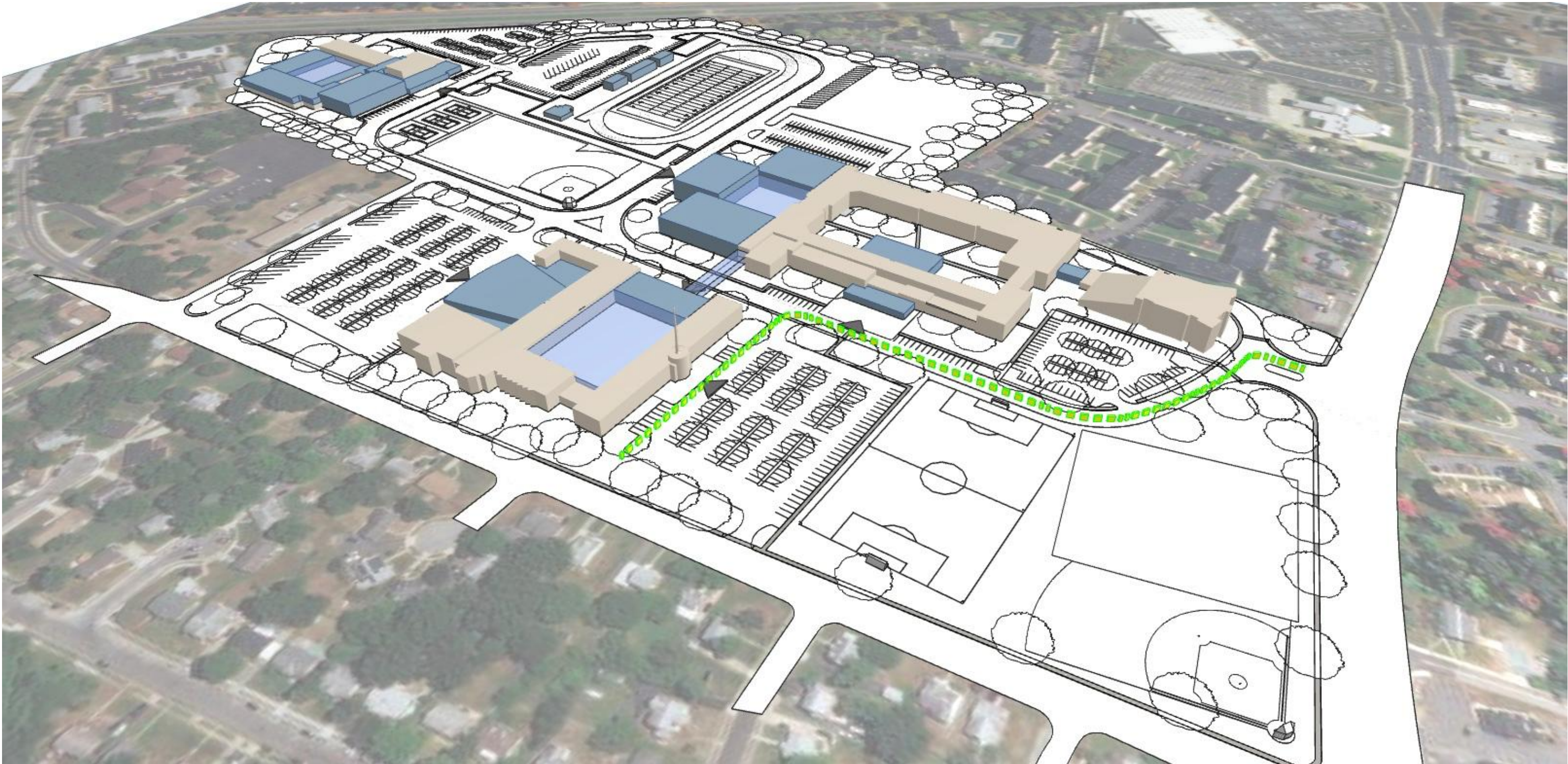
Comprehensive High School & CTE



MAX MODERNIZATION

BUS ROUTES

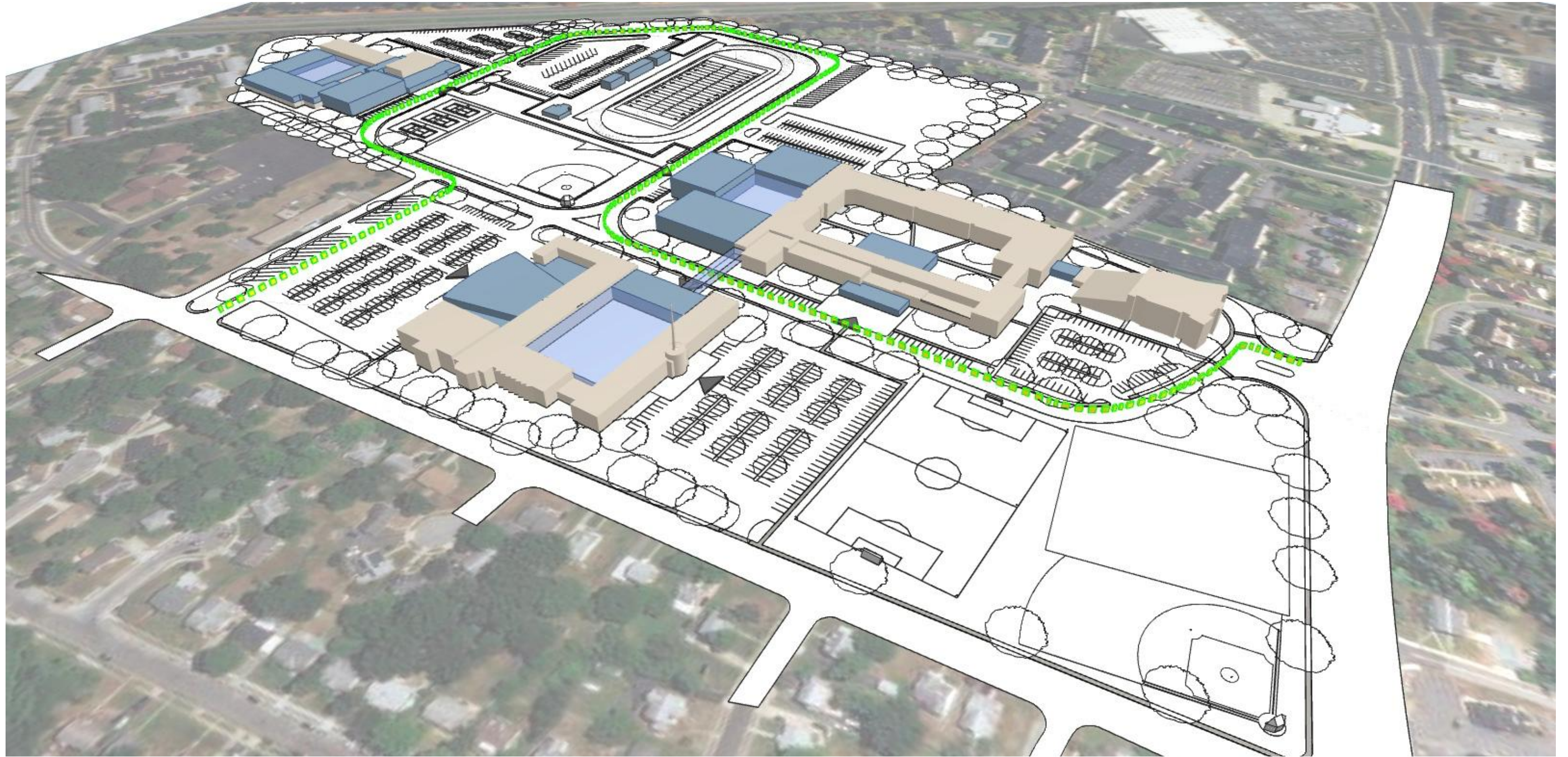
CVPA



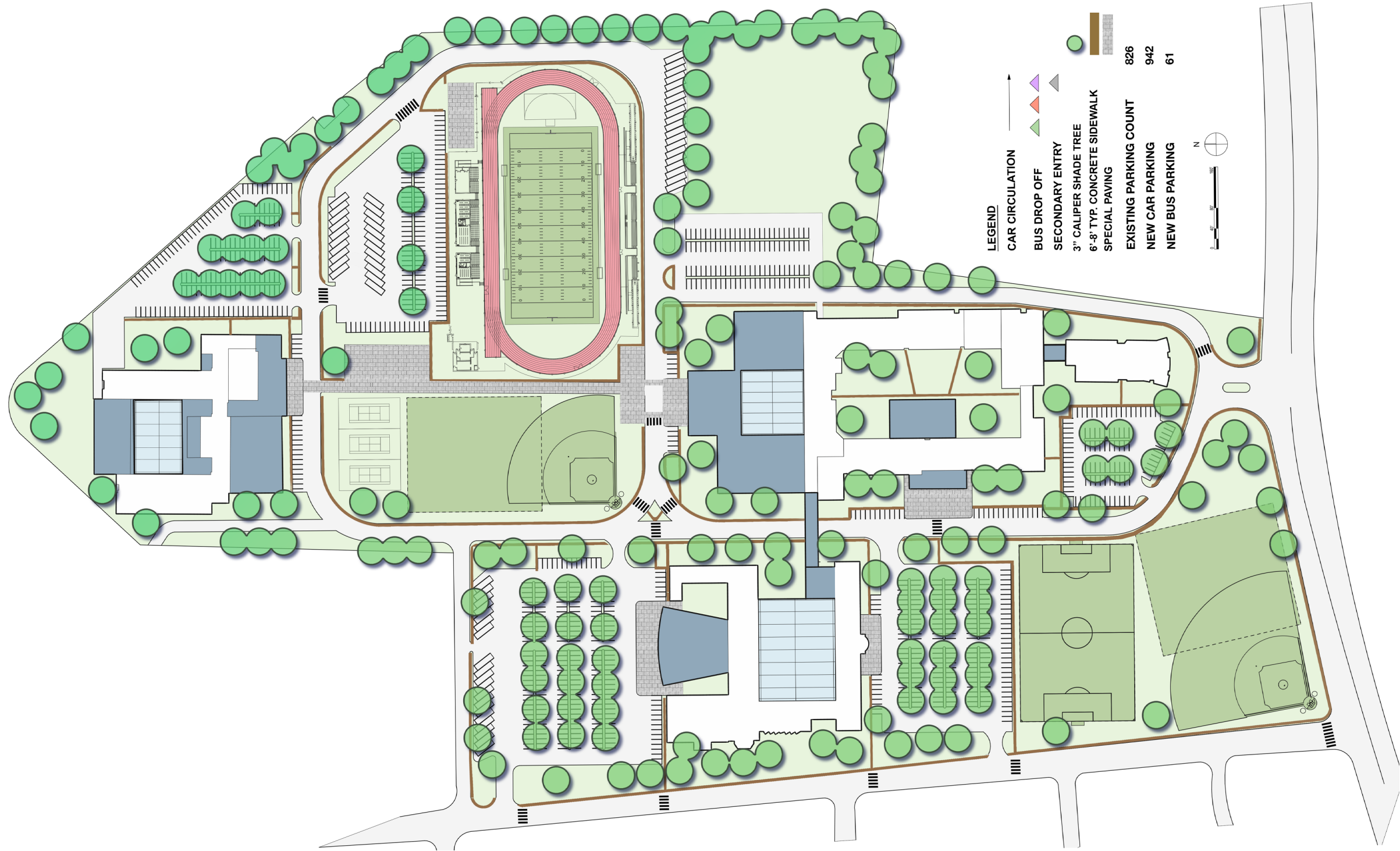
MAX MODERNIZATION

BUS ROUTES

Middle School

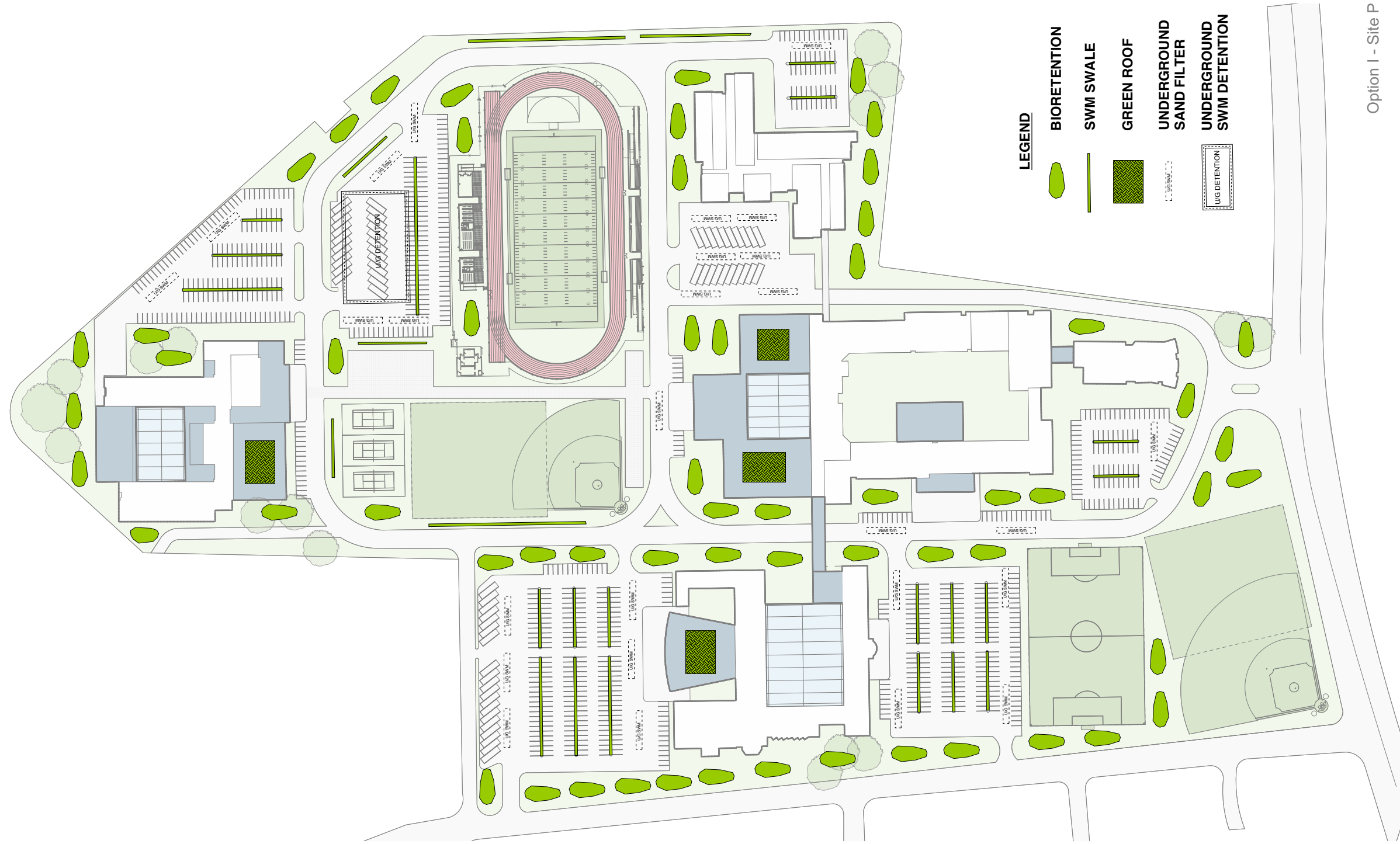


MAX MODERNIZATION



PROPOSED LANDSCAPE PLAN
Maximum Modernization

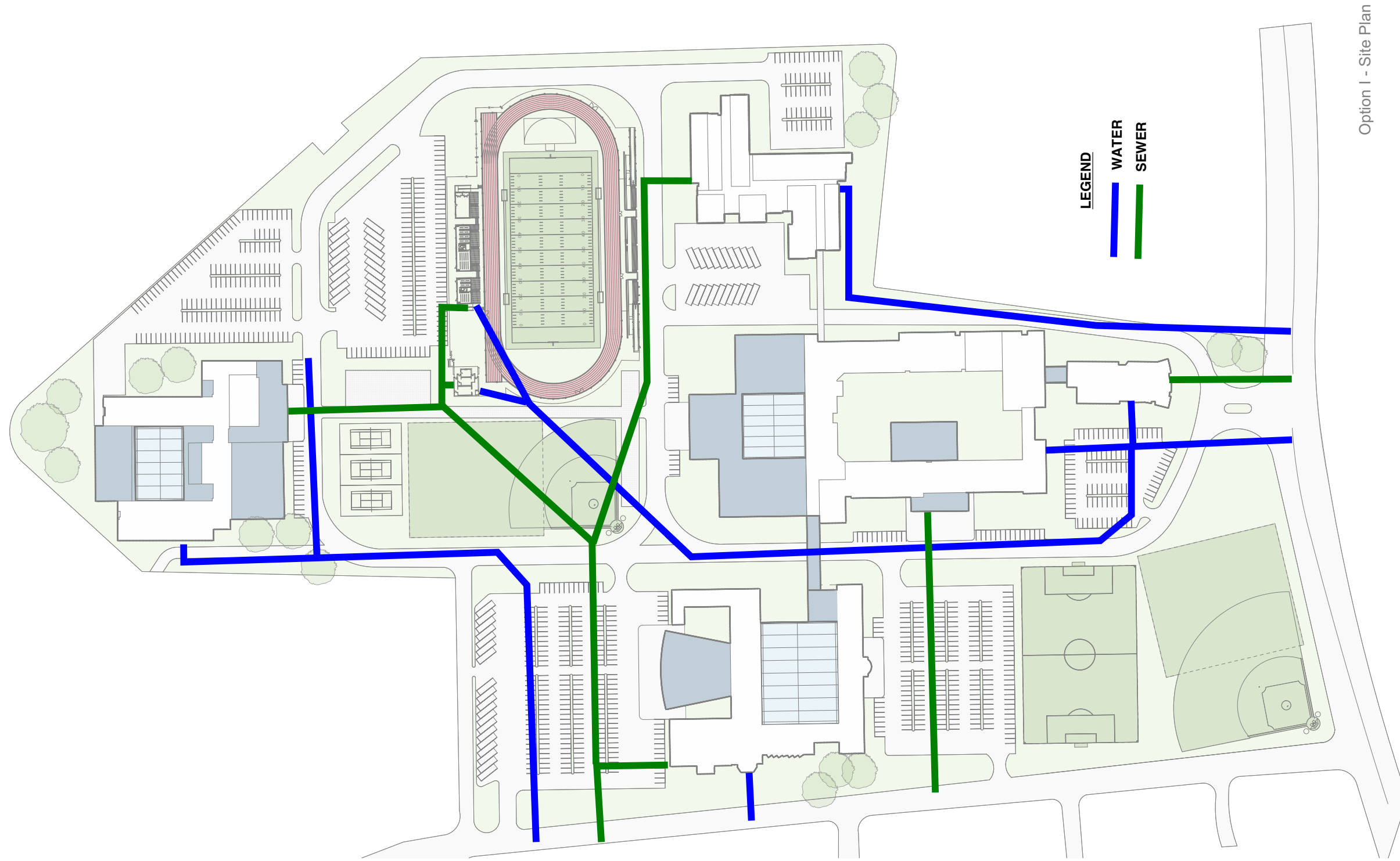
MAX MODERNIZATION



Option I - Site P

STORM WATER MANAGEMENT PLAN

MAX MODERNIZATION














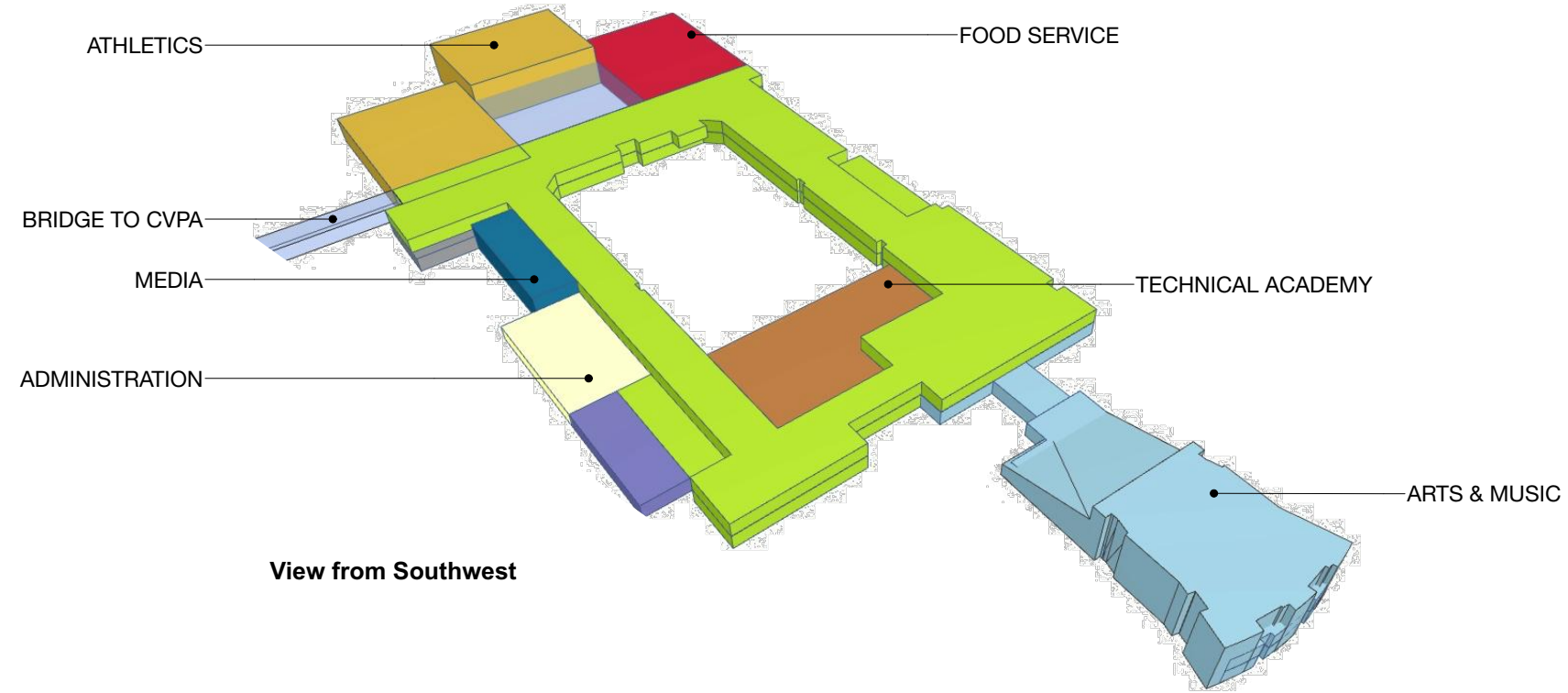
UTILITY PLAN

MAX MODERNIZATION

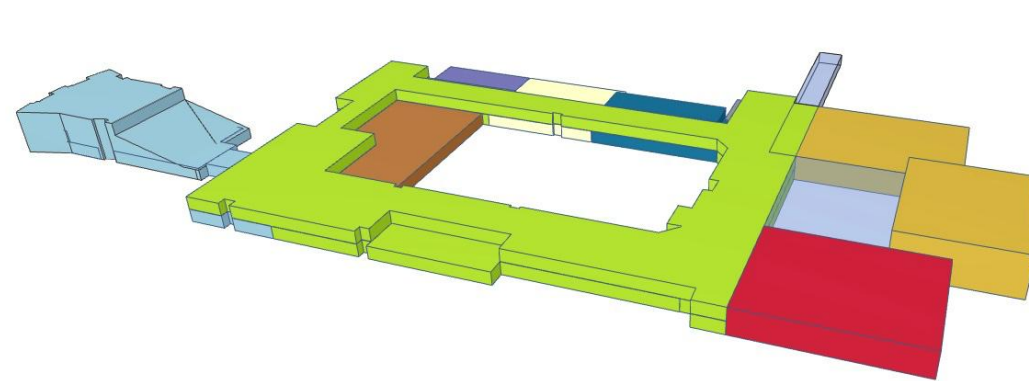
HIGH SCHOOL PROGRAM ORGANIZATION

HIGH SCHOOL SPACE LEGEND

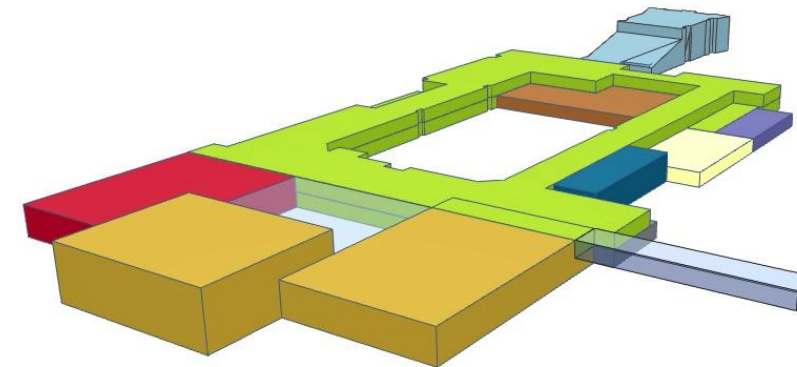
1st Floor Plan	
	Media 7,110
	Community Partners 3,500
	Tech Academy 14,400
	Arts/Music 23,019
	Building Infrastructure 67,316
	General Classroom 40,310
	Food Service 11,150
	Athletics 23,910
	Administrative 11,070
2nd Floor Plan	
	Arts/Music 4,000
	General Classroom 40,310
TOTAL NET SF	180,599 SF
TOTAL GROSS SF	245,615 SF



View from Southwest



View from Northeast



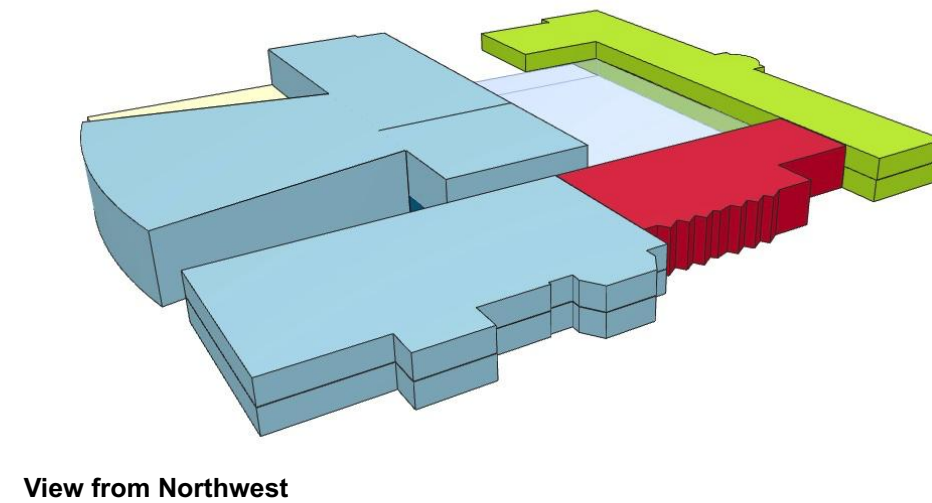
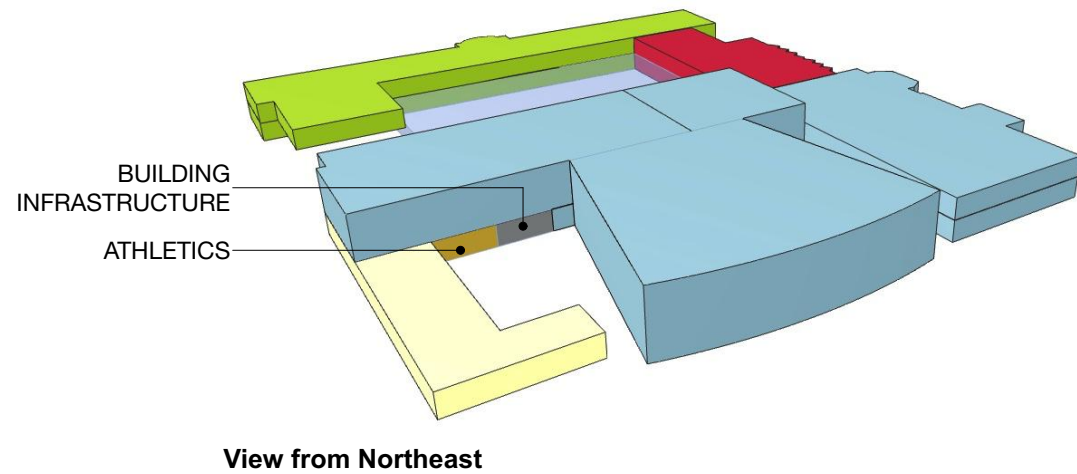
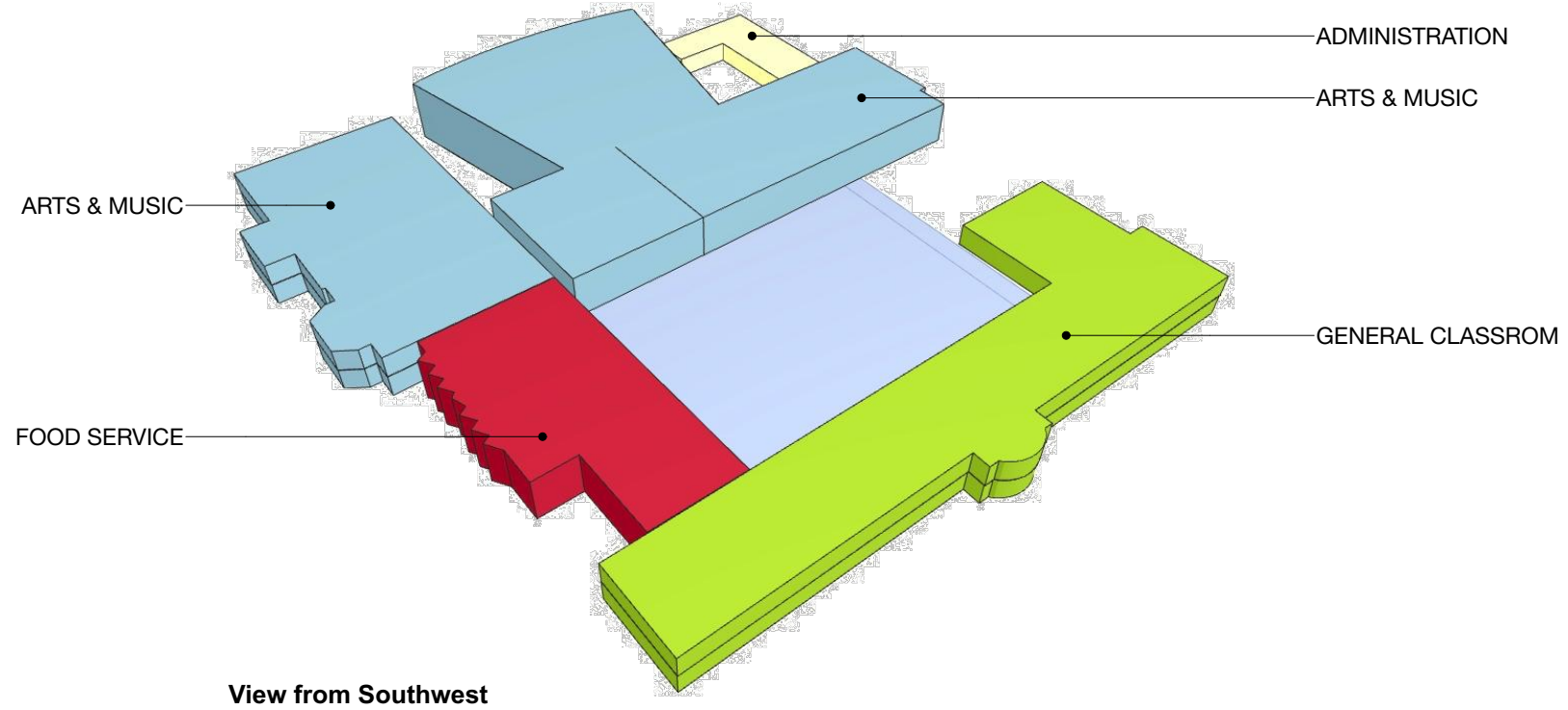
View from Northwest

MAX MODERNIZATION

CVPA PROGRAM ORGANIZATION

CVPA SPACE LEGEND

1st Floor Plan	
Media	4,640
Arts/Music	31,265
Building Infrastructure	34,250
General Classroom	10,175
Food Service	4,795
Athletics	1,400
Administrative	4,445
2nd Floor Plan	
Arts/Music	31,265
General Classroom	10,175
TOTAL NET SF	99,410 SF
TOTAL GROSS SF	132,410 SF

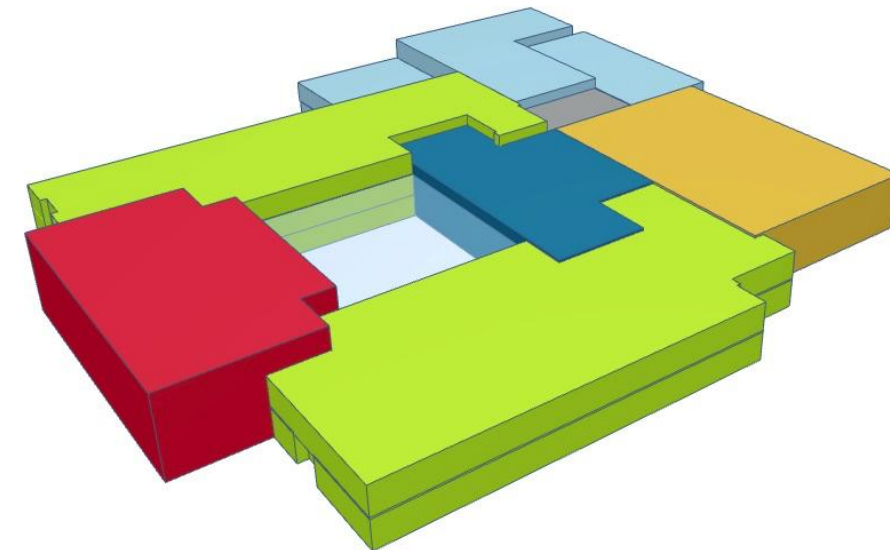
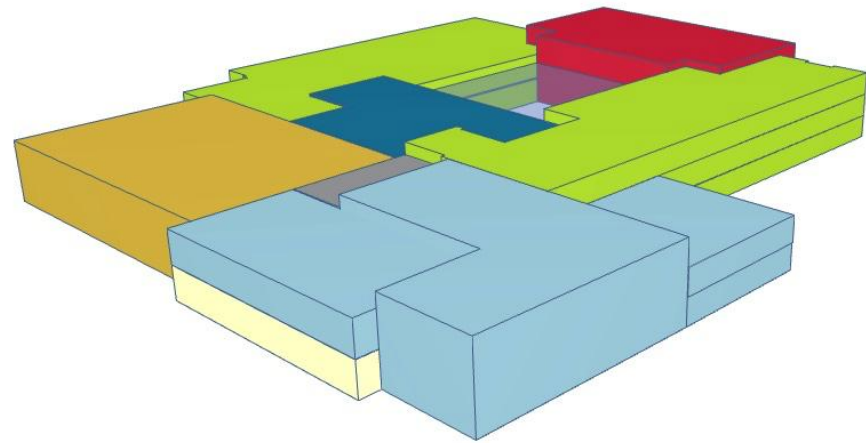
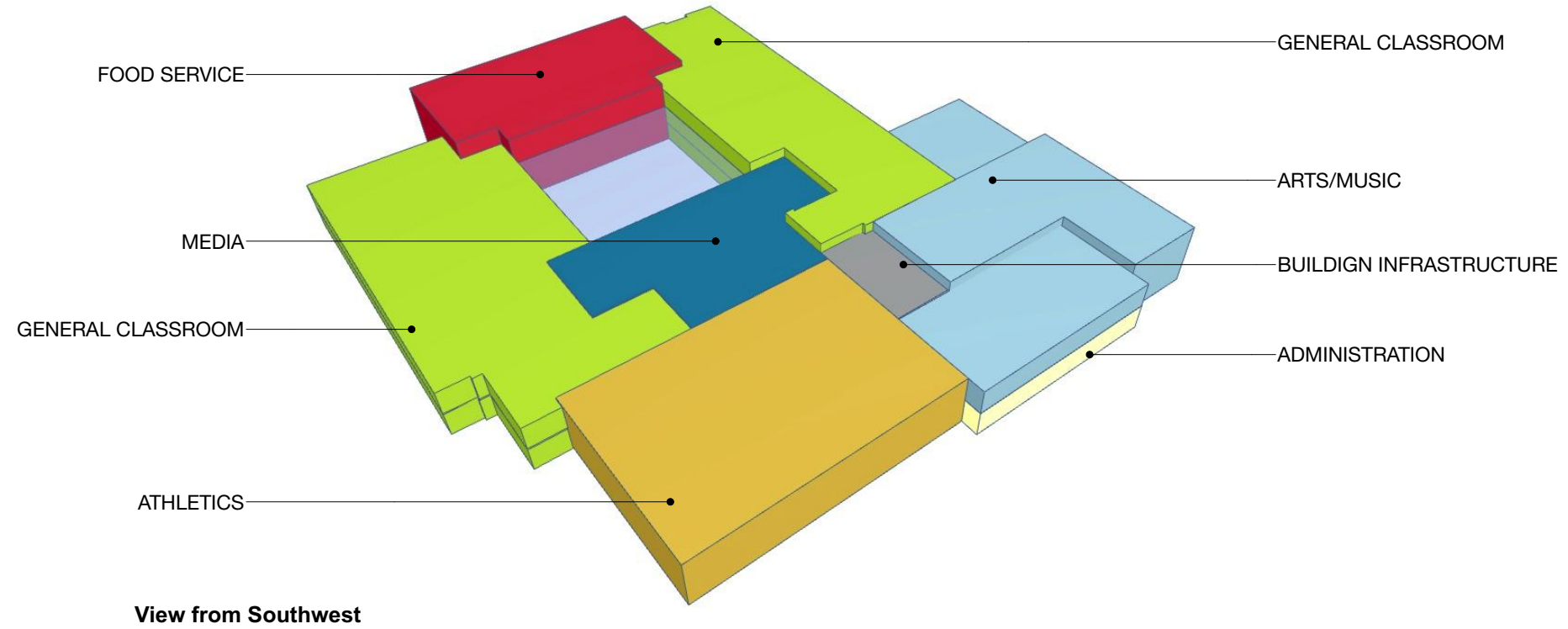


MAX MODERNIZATION

MIDDLE SCHOOL PROGRAM ORGANIZATION

MIDDLE SCHOOL SPACE LEGEND

1st Floor Plan	
Media	6,700
Arts/Music	5,718
General Classroom	23,043
Food Service	10,120
Athletics	14,750
Administrative	7,345
2nd Floor Plan	
Arts/Music	5,718
Building Infrastructure	57,541
General Classroom	23,042
3rd Floor Plan	
General Classroom	17,000
TOTAL NET SF	114,785 SF
TOTAL GROSS SF	170,976 SF



MAX MODERNIZATION

ELECTRICAL SUMMARY

	HIGH SCHOOL		AUDITORIUM	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
POWER DISTRIBUTION	<p>Replace Main Distribution panel (MDP)</p> <p>Replace all branch panelboards in the building with new panels. Locate new panels in dedicated spaces out of students' reach</p> <p>Replace all existing wiring with new wires from MDP to branch panelboard and loads by using existing conduits. Provide new conduits as necessary.</p>	<p>Extend the normal & emergency power distribution system in the renovation part of the building to the new construction; provide new branch panelboard as necessary to distribute power in new construction zone.</p> <p>Provide complete new wiring (wires & conduits) for power distribution system in new construction zone.</p>	<p>Maintain, test and clean the existing Main Distribution panel (MDP)</p> <p>Replace all branch panelboards in the building with new panels. Locate new panels in dedicated spaces out of students' reach</p> <p>Replace all existing wiring with new wires from MDP to branch panelboards and loads by using existing conduits. Provide new conduits as necessary.</p>	<p>Service, test the existing stand-by generator unit.</p>
EMERGENCY POWER SYSTEMS	<p>Replace the existing stand-by generator unit with a new unit with higher capacity to be able to handle the building life safety loads.</p> <p>Install a new ATS switch and life safety panelboard dedicated to life safety loads.</p> <p>Test, service and maintenance/repair the existing ATS switches and emergency panelboard.</p> <p>Provide new wiring for life safety ATS and panel.</p> <p>Perform conductivity & insulation tests for all existing wiring and replace existing wires with new wires as necessary</p>		<p>Test, service and maintenance/repair the existing ATS switches and related emergency panel dedicated to the building life safety loads.</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing wires with new wires as necessary.</p>	
INTERIOR LIGHTING	<p>Replace all existing light fixtures with new LED fixture.</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors</p> <p>Replace all emergency fixtures & exit signs with new fixtures, provide additional fixture as necessary for complete coverage of egress path in the building.</p> <p>Replace all existing wiring with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>Provide new lighting system with LED light fixtures.</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors</p> <p>Provide new emergency fixtures & exit signs with LED fixtures for all egress paths in new construction zone.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>	<p>Replace all existing light fixtures with new LED fixture.</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors</p> <p>Replace all emergency fixtures & exit signs with new LED fixtures, provide additional fixture as necessary for complete coverage of egress path in the building.</p> <p>Maintain, test complete existing stage lighting system including light fixtures and lighting control system. Repair and replace damaged components as necessary.</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing wires with new wires as necessary.</p>	
POWER OUTLETS	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Replace all existing wires with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>Provide new power outlets as necessary</p> <p>Provide new wires (wires & conduits) for power outlets in new construction zone.</p>	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing damaged wires with new wires as necessary.</p>	
FIRE ALARM SYSTEM	<p>Replace the entire existing fire alarm with new addressable system including new FACP, FAPR, Initiating devices, notification appliances, necessary modules and sub-panels and complete wiring. The new system also includes voice alarm system.</p>		<p>Existing fire alarm system is in good condition. However, performing test on all system components, devices and wiring is recommended.</p>	
PUBLIC ADDRESS (PA) & SOUND SYSTEM	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers.</p> <p>Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building</p> <p>Replace the existing wiring with new wires and provide new wiring as necessary.</p>	<p>Extend PA system in renovation part of the building to the new construction zone. Provide new speakers and related components as necessary. Provide new wiring for PA system in new construction.</p>	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers.</p> <p>Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing damaged wires with new wires as necessary.</p>	
TEL/DATA SYSTEM	<p>Test, service and maintenance/repair the existing Tel/Data system control panel</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary.</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>	<p>Extend Tel/Data system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for tel/data system in new construction</p>	<p>Test, service and maintenance/repair the existing Tel/Data system control panel.</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary.</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary.</p> <p>Arrangement of the existing cabling/wiring in MDF & IDF rooms.</p>	
SECURITY SYSTEM	<p>Test, service and maintenance/repair the existing security system control panel/rack</p> <p>Test all the existing security devices and provide additional devices as necessary.</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>	<p>Extend security system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for security system in new construction.</p>	<p>Test, service and maintenance/repair the existing security system control panel/rack.</p> <p>Test all the existing security devices and cameras.</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary.</p>	

ELECTRICAL SUMMARY

	CVPA		MIDDLE SCHOOL	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
POWER DISTRIBUTION	<p>Evaluation of capacity of existing electrical service in regard to requirements of new building application. This building previously used as Middle School building, in this option application of building changed to CVPA building.</p> <p>Test, maintenance and clean existing main distribution panels and all existing branch panelboards in the building.</p> <p>Perform conductivity and insulation test for all existing wiring.</p>	<p>Extend the normal & emergency power distribution system in the renovation part of the building to the new construction, provide new branch panelboard as necessary to distribute power in new construction zone.</p> <p>provide complete new wiring (wires & conduits) for power distribution system in new construction zone</p>	<p>Evaluation of capacity of existing electrical service in regard to requirements of new building application. This building previously used as CVPA building, in this option application of building changed to Middle School.</p> <p>Test, maintenance and clean existing main distribution panel (MDP) and all existing branch panelboards in the building.</p> <p>Perform conductivity and insulation test for all existing wiring.</p>	<p>Extend the normal & emergency power distribution system in the renovation part of the building to the new construction, provide new branch panelboard as necessary to distribute power in new construction zone.</p> <p>provide complete new wiring (wires & conduits) for power distribution system in new construction zone.</p>
EMERGENCY POWER SYSTEMS	<p>Provide a new stand-by generator unit with ATS switches for building life safety loads and critical/optional loads</p> <p>Provide emergency panels dedicated to building life safety and critical loads</p> <p>Provide new wiring for emergency power distribution system in the building.</p>		<p>Provide a new stand-by generator unit with ATS switches for building life safety loads and critical/optional loads</p> <p>Provide emergency panels dedicated to building life safety and critical loads</p> <p>Provide new wiring for emergency power distribution system in the building.</p>	
INTERIOR LIGHTING	<p>Replace all existing light fixtures with new LED fixture</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors</p> <p>Replace all emergency fixtures & exit signs with new LED fixtures; provide additional fixture as necessary for complete coverage of egress path in the building.</p> <p>Replace all existing wiring with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>provide new lighting system with LED light fixtures.</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors</p> <p>provide new emergency fixtures & exit signs with LED fixtures for all egress paths in new construction zone.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>	<p>Replace all existing light fixtures with new LED fixture.</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors</p> <p>Replace all emergency fixtures & exit signs with new LED fixtures; provide additional fixture as necessary for complete coverage of egress path in the building.</p> <p>Replace all existing wiring with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>provide new lighting system with LED light fixtures.</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors</p> <p>provide new emergency fixtures & exit signs with LED fixtures for all egress paths in new construction zone.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>
POWER OUTLETS	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Replace all existing wires with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>Provide new power outlets as necessary</p> <p>Provide new wires (wires & conduits) for power outlets in new construction zone.</p>	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Replace all existing wires with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>Provide new power outlets as necessary</p> <p>Provide new wires (wires & conduits) for power outlets in new construction zone.</p>
FIRE ALARM SYSTEM	<p>Test, service and maintenance/repair the existing addressable fire alarm system including existing FACP, FAAP, Initiating devices, notification appliances, related modules and sub-panels and complete wiring. Provide new devices as necessary for complete coverage of fire alarm system in the building.</p>		<p>Replace the entire existing fire alarm system with new addressable system including new FACP, FAAP, Initiating devices, notification appliances, necessary modules and sub-panels and complete wiring. The new system also includes voice alarm system.</p>	
PUBLIC ADDRESS (PA) & SOUND SYSTEM	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers. Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building</p> <p>Test, service and maintenance/repair the existing clock system including existing master clock and secondary clocks. Provide new secondary clocks as necessary for complete coverage of the building. Replace the existing wiring with new wires and provide new wiring as necessary.</p>	<p>Extend PA system in renovation part of the building to the new construction zone. Provide new speakers and related components as necessary. Provide new wiring for PA system in new construction.</p>	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers.</p> <p>Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building</p> <p>Replace the existing wiring with new wires and provide new wiring as necessary.</p>	<p>Extend PA system in renovation part of the building to the new construction zone. Provide new speakers and related components as necessary. Provide new wiring for PA system in new construction.</p>
TEL/DATA SYSTEM	<p>Test, service and maintenance/repair the existing Tel/Data system control equipment/racks</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary. Some data outlets in some areas are surface mounted. Based on requirement for each space provide additional recessed Perform conductivity & insulation tests for all existing wiring/cablings and provide new wires as necessary</p>	<p>Extend Tel/Data system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for tel/data system in new construction.</p>	<p>Test, service and maintenance/repair the existing Tel/Data system control equipment/racks</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary. Some data outlets in some areas are surface mounted. Based on requirement for each space provide additional recessed Perform conductivity & insulation tests for all existing wiring/cablings and provide new wires as necessary</p>	<p>Extend Tel/Data system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for tel/data system in new construction.</p>
SECURITY SYSTEM	<p>Test, service and maintenance/repair the existing security system control panel/racks and related components.</p> <p>Test all the existing security devices and cameras and provide additional devices and components as necessary</p> <p>Perform conductivity & insulation tests for all existing wiring/cablings and provide new wires as necessary</p>	<p>Extend security system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for security system in new construction.</p>	<p>Test, service and maintenance/repair the existing security system control panel/racks and related components.</p> <p>Test all the existing security devices and cameras and provide additional devices and components as necessary,</p> <p>Perform conductivity & insulation tests for all existing wiring/cablings and provide new wires as necessary</p>	<p>Extend security system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for security system in new construction.</p>

MAX MODERNIZATION

MECHANICAL SUMMARY

	HIGH SCHOOL		CVPA	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
CENTRAL PLANT	<p>Replace all steam boilers in the building with new condensing hydronic boilers.</p> <p>Replace two existing 70-ton chillers in the yard with new water-cooled chillers and cooling tower on roof.</p> <p>Replace existing built up AHU on first and second floor with new four pipe fan coil system and a dedicated outdoor air system with heat recovery.</p> <p>Demolish chillers and outdoor boiler in auditorium and connect auditorium air handlers to hydronic systems in main building.</p> <p>Replace air handlers in auditorium with new units. Stage and Seating area units shall be equipped with economizers and heat recovery.</p>		<p>Replace existing steam fire box boilers and heat exchanger with new condensing hydronic boilers. Replace existing dual temperature pumps.</p> <p>Existing Air-cooled chiller to remain.</p>	
EXISTING HYDRONIC AND STEAM SYSTEMS	<p>Replace all existing steam and chilled water piping in building with new four-pipe hydronic system with variable flow primary secondary pumping.</p> <p>Remove all perimeter heating units throughout building.</p>		<p>Replace existing steam fire box boilers and heat exchanger with new condensing hydronic boilers. Replace existing dual temperature pumps.</p> <p>Existing Air-cooled chiller to remain</p>	
OUTDOOR AIR			<p>Provide new dedicated outdoor air system with heat recovery to provide outdoor air to each room.</p>	
TERMINAL UNITS			<p>Replace every floor mounted terminal unit in each room and blank off the outdoor air louver in each room.</p>	
EXISTING PACKAGED ROOFTOP UNITS	<p>Existing packaged rooftop units to remain, all areas served by the units shall be retrofitted with bypass type VAV terminals with hot water reheat. Each classroom shall have it's own independent thermostat.</p>			
CONTROLS	<p>Gut all pneumatic controls and expand the existing system to control all systems in the building.</p>		<p>Gut all pneumatic controls and expand the existing system to control all systems in the building.</p>	
OFFICE	<p>The office shall be provided with a standalone VRF system.</p>		<p>The office shall be provided with a standalone VRF system</p>	
GYM	<p>Gym shall be provided with a rooftop air hander to provide heating and cooling.</p>			
HVAC		<p>Extend the new four-pipe hydronic system int the new construction and provide four pipe fan coils and a dedicated outdoor air unit with heat recovery.</p> <p>New DDC control systems shall control all systems in new construction.</p>	<p>Extend the new four-pipe hydronic system in the new construction and provide four pipe fan coils and a dedicated outdoor air unit with heat recovery.</p> <p>New DDC control systems shall control all systems in new construction</p>	

*New systems for the auditorium are fed from the high school central plant

MAX MODERNIZATION

MECHANICAL SUMMARY

MIDDLE SCHOOL	
	MODERNIZATION
	NEW CONSTRUCTION
CENTRAL PLANT	<p>Replace existing steam fire tube boilers with new condensing hydronic boilers</p> <p>Provide new water-cooled chiller.</p> <p>Provide new rooftop mounted cooling tower</p>
EXISTING HYDRONIC AND STEAM SYSTEMS	<p>Gut all steam piping in the building, replace with a four-pipe distribution system complete with variable flow primary secondary pumping.</p>
OUTDOOR AIR	
TERMINAL UNITS	<p>Remove all heating units in classroom and block off outdoor air louver.</p> <p>Provide new four-pipe fan coil in each classroom.</p> <p>Provide new hydronic heating units in the corridor.</p> <p>Provide Dedicated Outdoor air unit with heat recovery to provide ventilation for all of the classrooms.</p>
EXISTING PACKAGED ROOFTOP UNITS	
CONTROLS	<p>Gut all pneumatic controls and expand the existing system to control all systems in the building.</p>
OFFICE	<p>The office shall be provided with a standalone VRF system.</p>
GYM	<p>Gym shall be provided with a rooftop air handler to provide heating and cooling</p>
HVAC	<p>Extend the new four-pipe hydronic system in the new construction and provide four pipe fan coils and a dedicated outdoor air unit with heat recovery.</p> <p>New DDC control systems shall control all systems in new construction.</p>

MAX MODERNIZATION

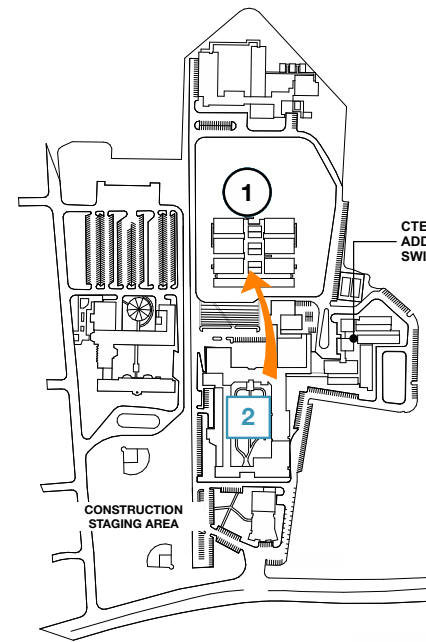
PLUMBING SUMMARY

HIGH SCHOOL	AUDITORIUM	CVPA	MIDDLE SCHOOL
<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outside and shall be set adjacent to the property line. The water service shall be routed vertically and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for the lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all the domestic water heaters with high efficiency and energy saving new water heaters. A gas fired domestic water heater located at Boiler Room No.2 can be salvaged. This 2011 heater is a 100 gallon storage tank capacity with 75,000 BTU per hour gas input.</p> <p>Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Demolish complete sprinkler system in the existing building. Provide wet-pipe sprinkler system with new sprinkler control zones for the building.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outside and shall be set adjacent to the property line. The water service shall be routed vertically and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for the lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all domestic water heaters with high efficiency and energy saving new water heaters.</p> <p>Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Provide new sprinkler heads and adjust the location for renovated ceiling as required.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outside and shall be set adjacent to the property line. The water service shall be routed vertically and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for the lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all the domestic water heaters with high efficiency and energy saving new water heaters. The domestic water heater located in the basement Boiler Room is two years old. This storage electric water heater can be salvaged.</p> <p>Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Demolish complete sprinkler system in the existing building. Provide wet-pipe sprinkler system with new sprinkler control zones for the building.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outside and shall be set adjacent to the property line. The water service shall be routed vertically and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for the lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all domestic water heaters with high efficiency and energy saving new water heaters.</p> <p>Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Provide wet-pipe sprinkler system for the building.</p>

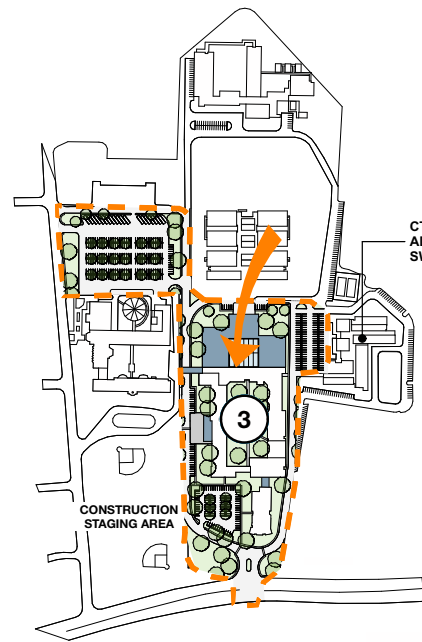


MAX MODERNIZATION

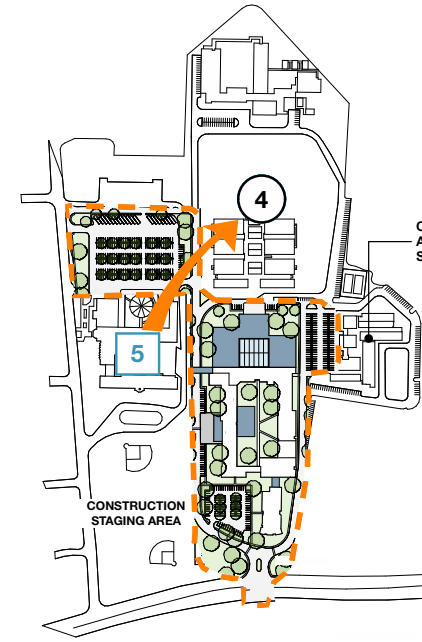
PHASING DIAGRAM



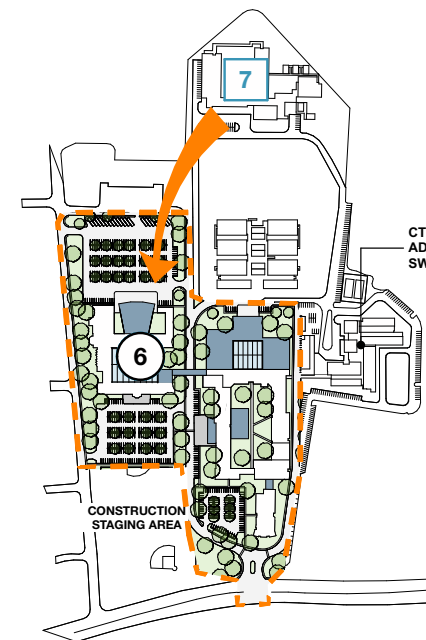
- A**
- 1 Students from High School move the temporary on-site campus
 - 2 High school modernization and addition



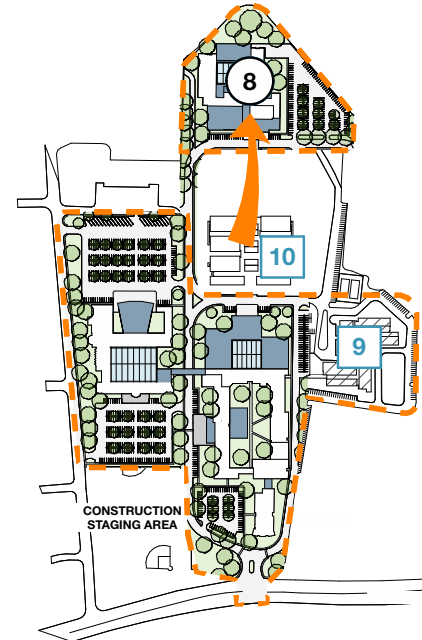
- B**
- 3 High school students at temporary campus move back into newly renovated high school



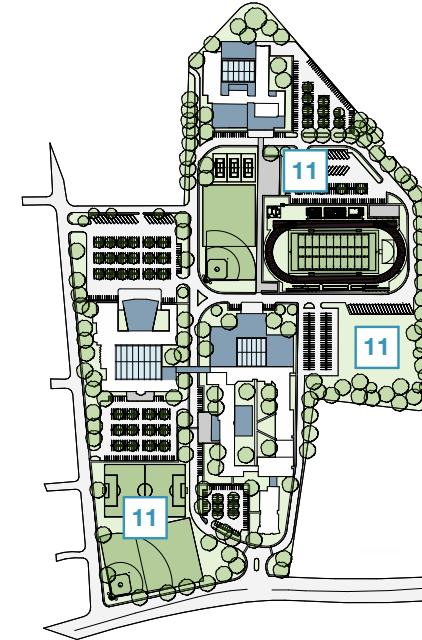
- C**
- 4 Students from middle school move the temporary on-site campus
 - 5 Drew Freeman modernization and addition



- D**
- 6 Students from CVPA move into newly renovated Drew Freeman building
 - 7 Modernization of annex



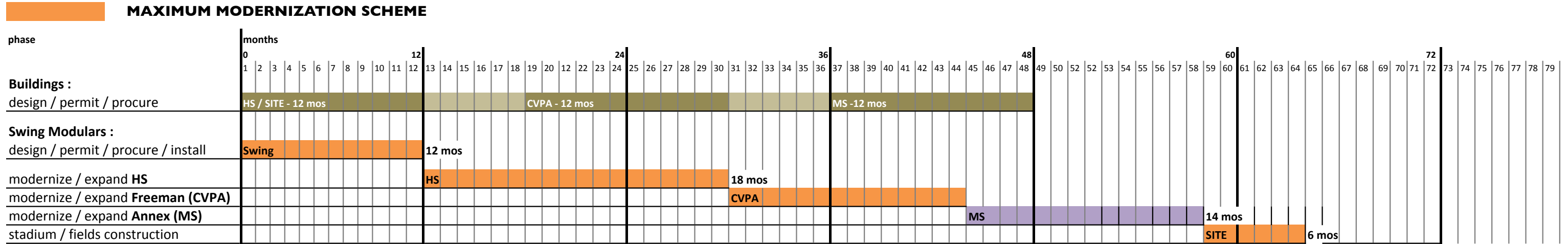
- E**
- 8 Middle school moves from temporary campus to modernized annex building
 - 9 Demolition of CTE building
 - 10 Removal of temporary campus



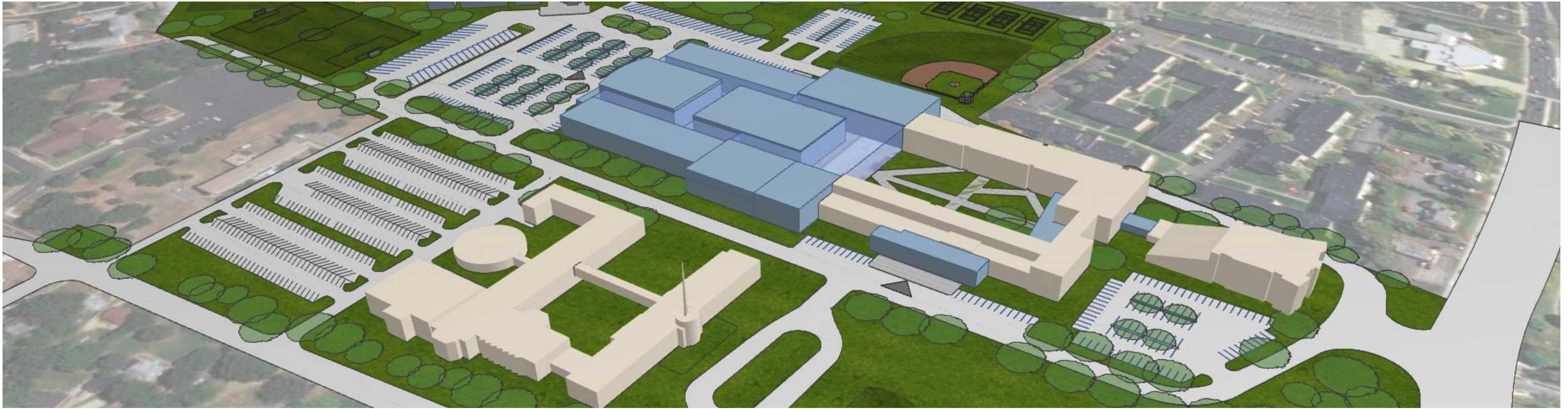
- F**
- 11 Removal of temporary campus and modernization of athletic fields and site

MAX MODERNIZATION

PHASING SCHEDULE



MAX MODERNIZATION



Modernization/New Construction Hybrid Site Plan

OPTION III: MODERNIZATION/NEW CONSTRUCTION HYBRID OVERVIEW

This option takes advantage of building structure reuse and adds a new building to the site. The hybrid option modernizes the comprehensive high school building and completely demolishes the annex. Work on the Drew Freeman building is not a part of this option. The CTE building is completely demolished as the program is being moved off campus. A new building for CVPA is constructed and connected to the modernized comprehensive high school. The primary entry to CVPA will be located at the north of the building near the main parking area. The joining of CVPA and the comprehensive high school will allow for some efficiency in the layout of the mechanical, electrical and plumbing systems. The connection will also allow students to easily transfer between programs and share various program spaces. All programs are brought to the center of the site, which will allow for the sharing of services like loading and trash pick-up.

In this option, 215,511 square feet of the existing buildings will be completely demolished and 205,314 square feet of new space constructed. The comprehensive high school will continue to utilize the auditorium and a new passageway will be constructed to connect it back to the high school. The PPC felt the courtyard of the high school was a major asset so this area will also be modernized to

provide increased functionality. A new administration suite to the west of the building will serve as a new entry to the school.

Athletic fields on Silver Hill Road are near the entry and allow for continued access for community members. The majority of the athletic fields are located at the back of the site and have access to parking for major events.

Architectural interventions in the 172,711 square feet of existing building to be modernized will include:

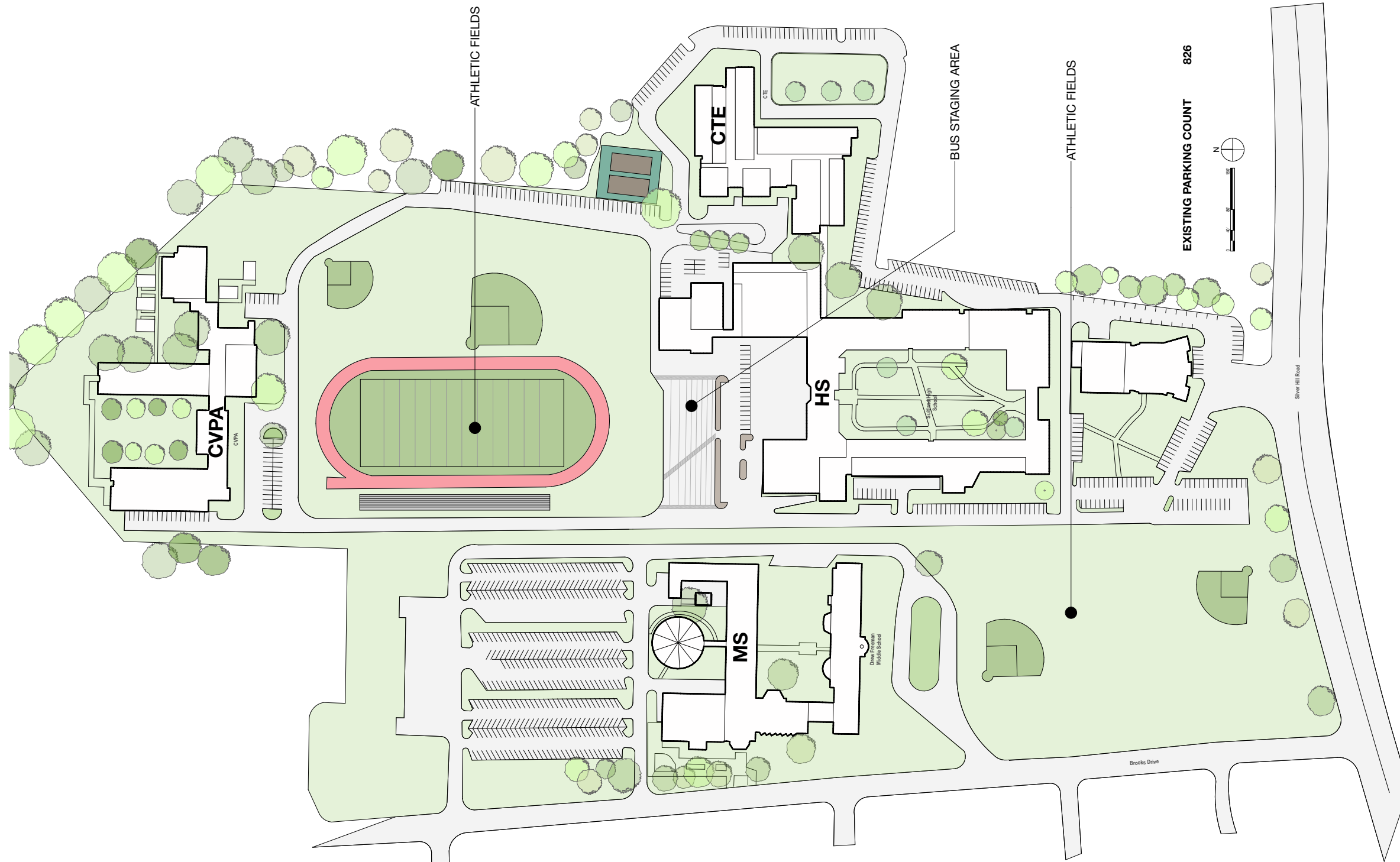
- Full demolition of interior finishes, buildings systems, partitions, to structure
- Accessibility upgrades including the installation of new elevators or lifts where required, installation of all new stairs, handrails and construction of new ramps
- Replacement of all exterior & interior windows, doors and frames
- Replacement of all floor, wall and ceiling finishes
- Replacement of all built-in casework and lockers
- Replacement of built-in science equipment to accommodate educational specification
- Reconfiguration of most / all partitions to accommodate educational specification

- Cleaning and repointing of existing exterior masonry
- Replacement of exterior caulking and sealants
- New roofs

It can be anticipated that any site improvements will be required to include Environmental Site Design (ESD) to the maximum extent practicable to treat all areas inside the limits of disturbance. If ESD efforts are exhausted and the site has still not been able to reach a hydrologic state of “good condition,” then structural practices may be permitted as determined by Prince George’s County.

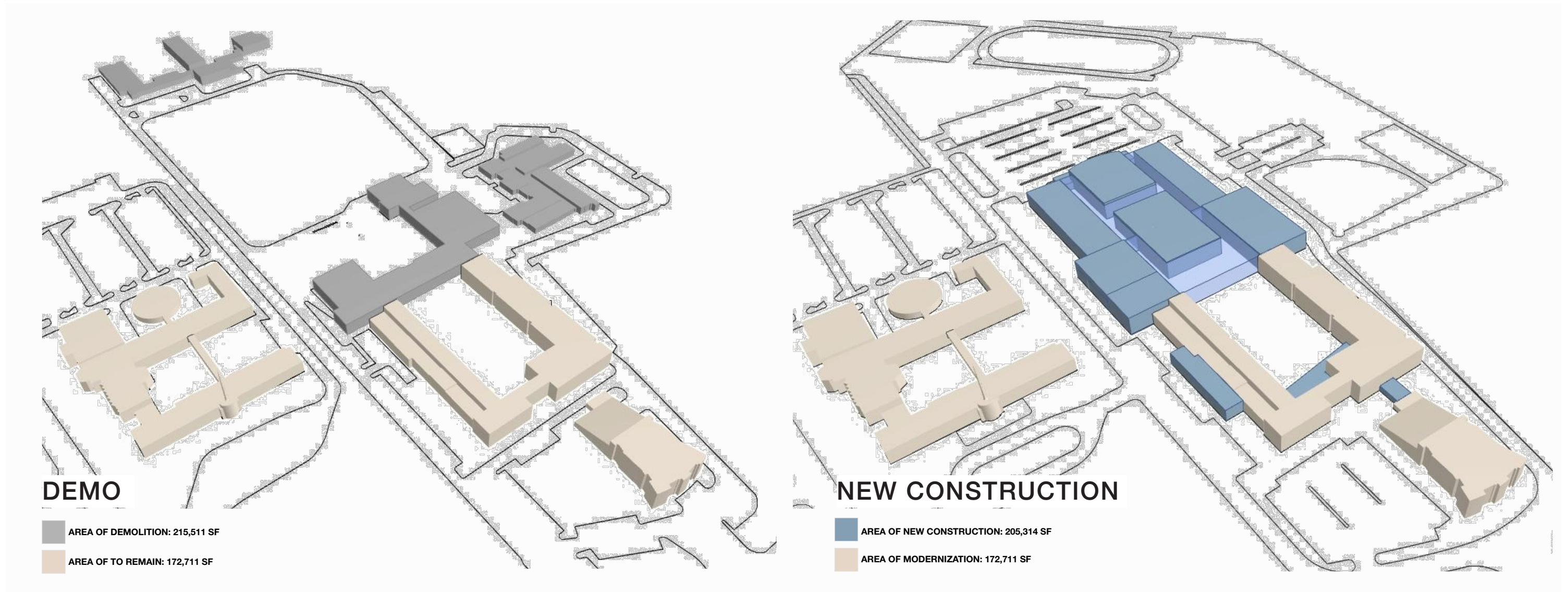
Potential ESD stormwater management practices for the site include both micro-scale practices and alternative surfaces. Micro-scale facilities could include the utilization of bio-swales, micro-bioretenion, and vegetative green roof facilities where available open space can be found, such as parking lot islands, around the athletic fields, and on proposed building expansion areas.

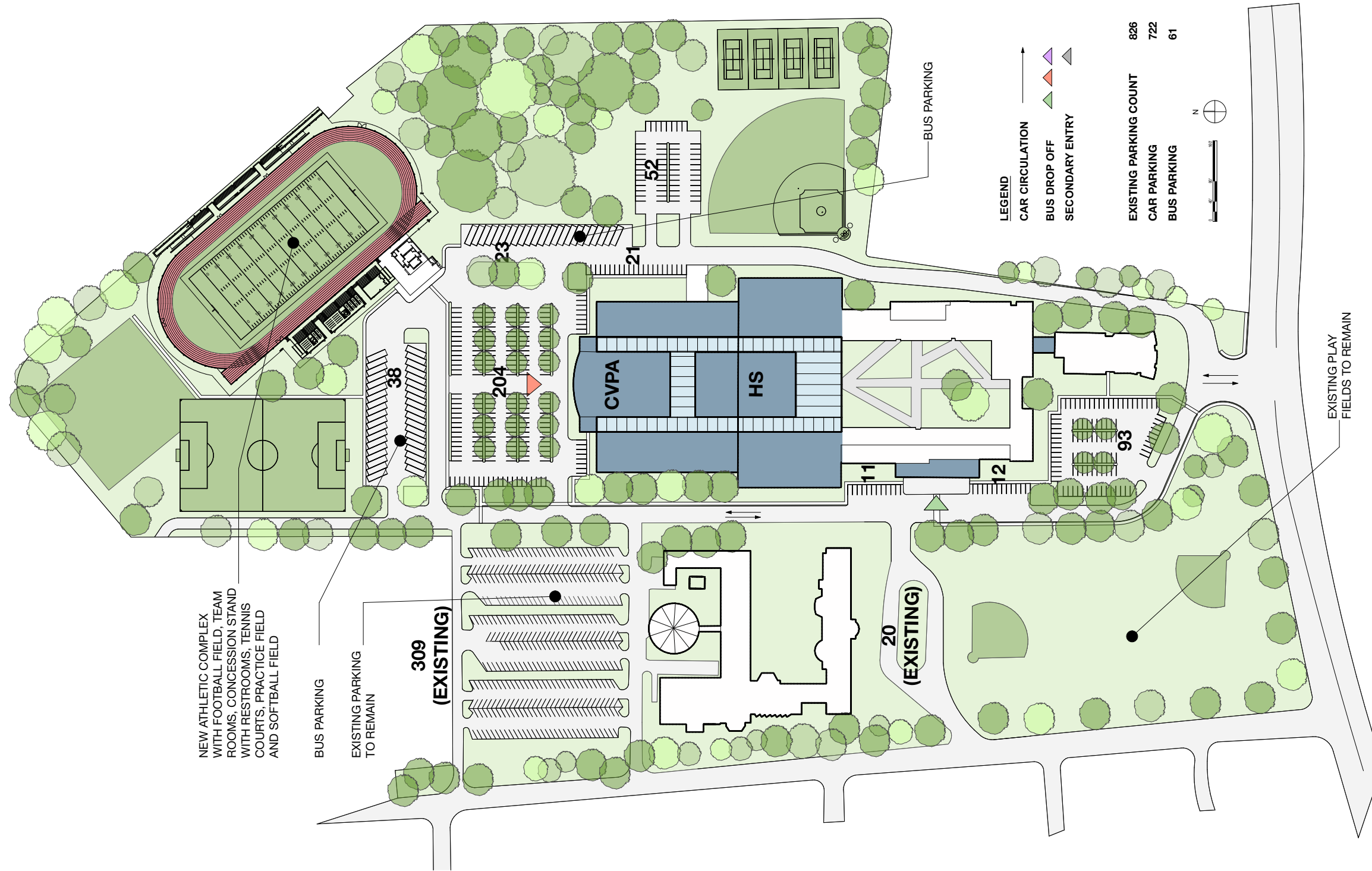
HYBRID



EXISTING SITE PLAN

BUILDING ALTERATIONS



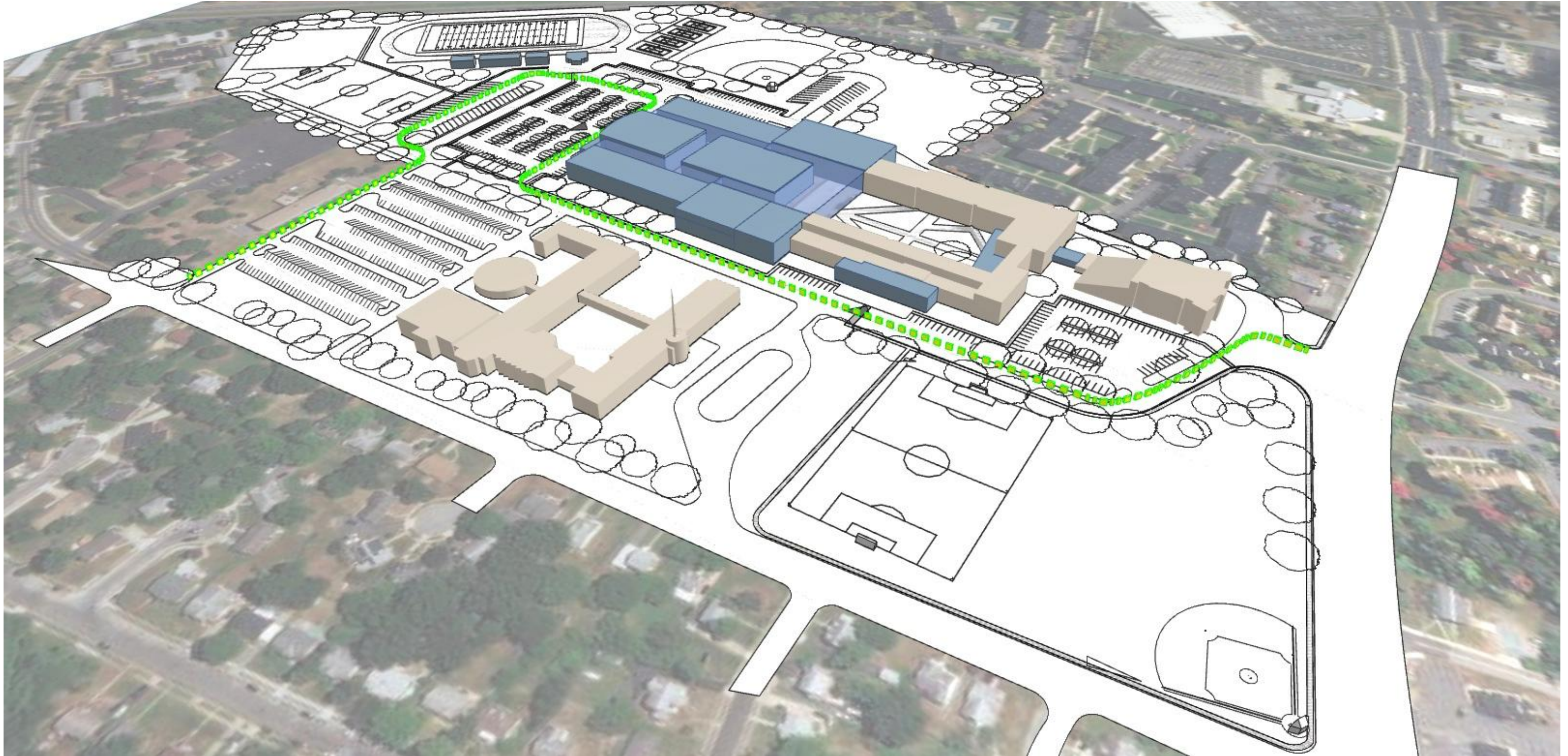




Modernization/New Construction Hybrid Site Plan

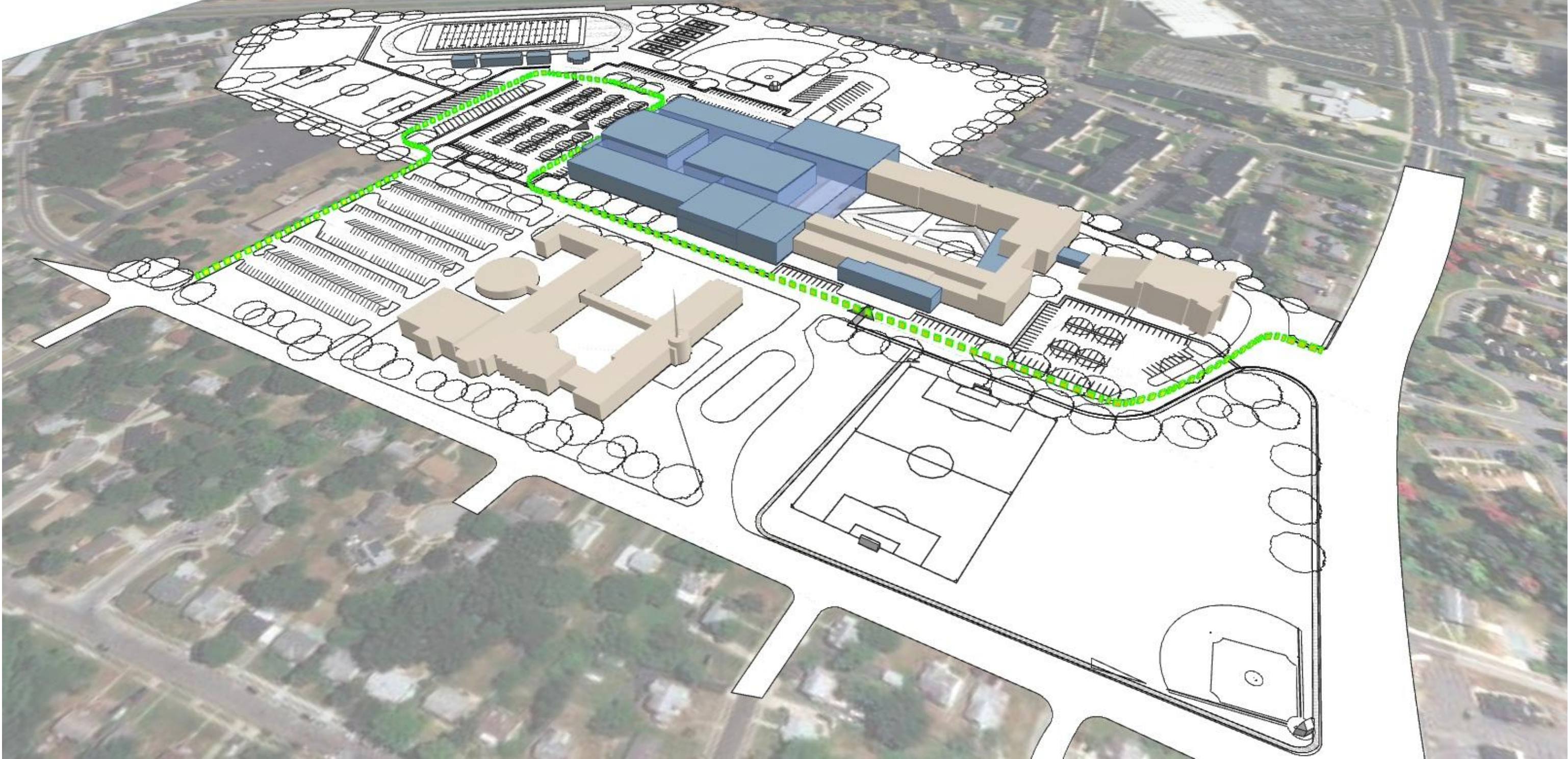
BUS ROUTES

Comprehensive High School & CTE



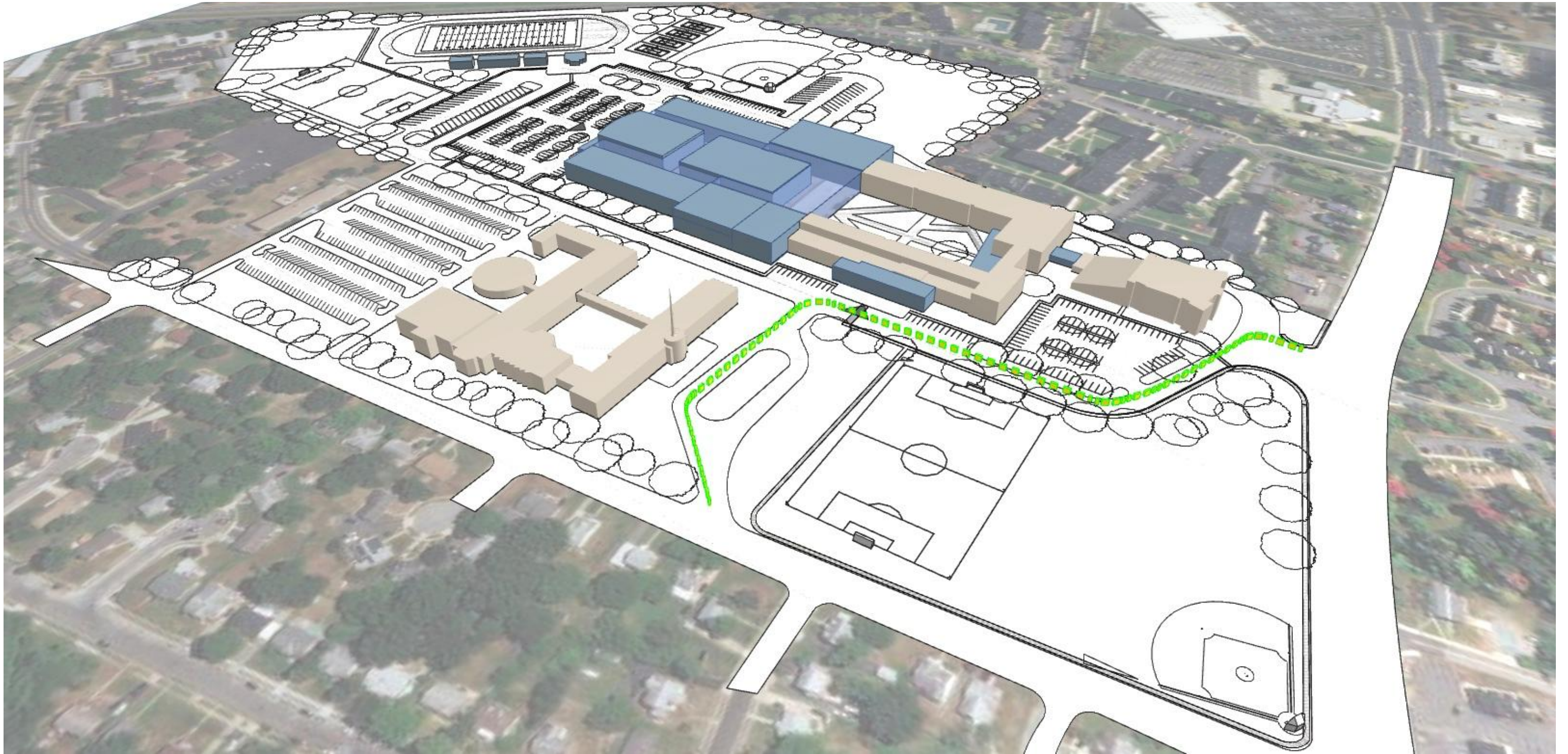
BUS ROUTES

Center for Visual & Performing Arts



BUS ROUTES

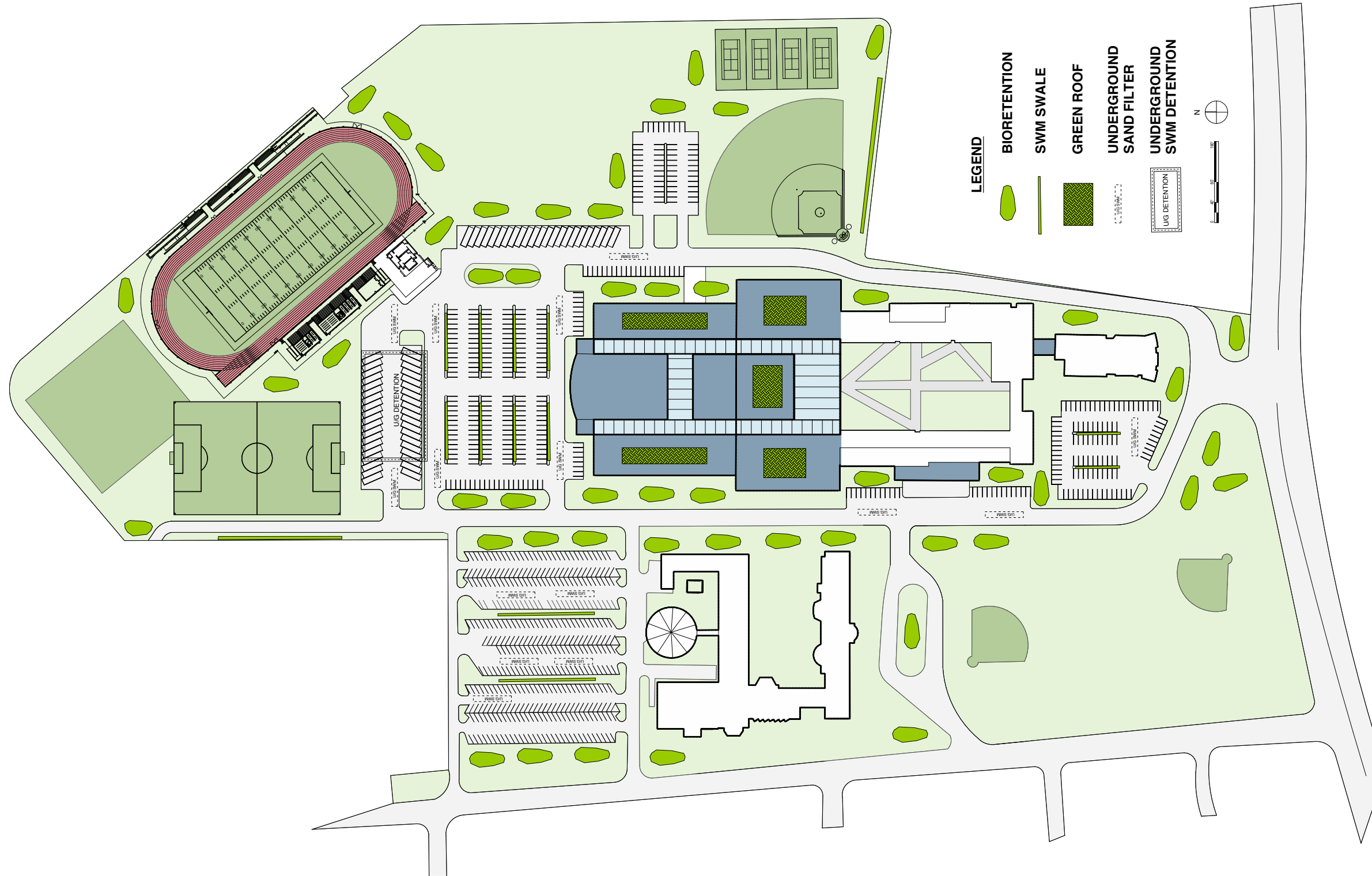
Middle School



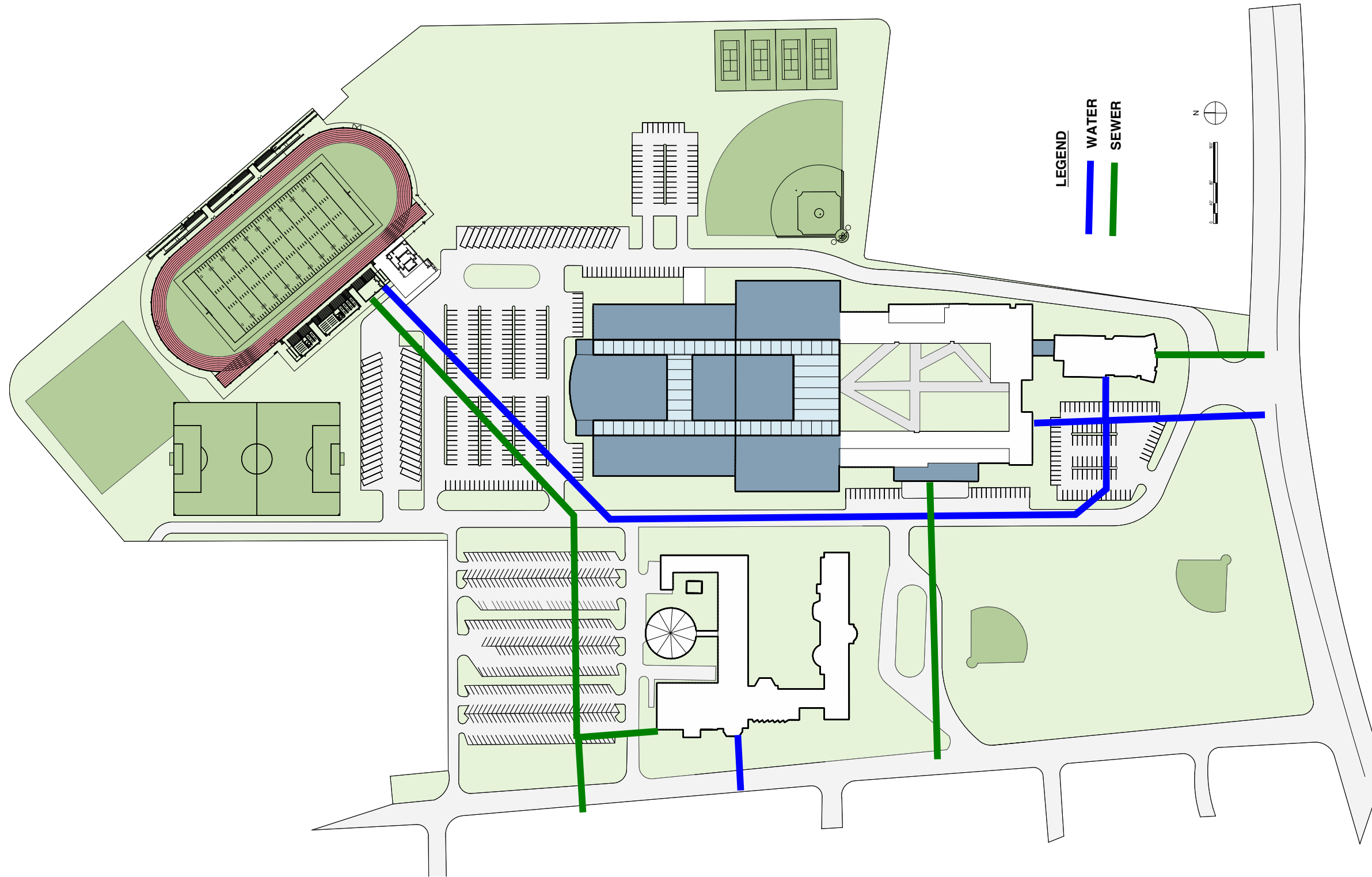


PROPOSED LANDSCAPE PLAN
Hybrid

HYBRID



STORM WATER MANAGEMENT PLAN



HIGH SCHOOL PROGRAM ORGANIZATION

HIGH SCHOOL SPACE LEGEND

1st Floor Plan

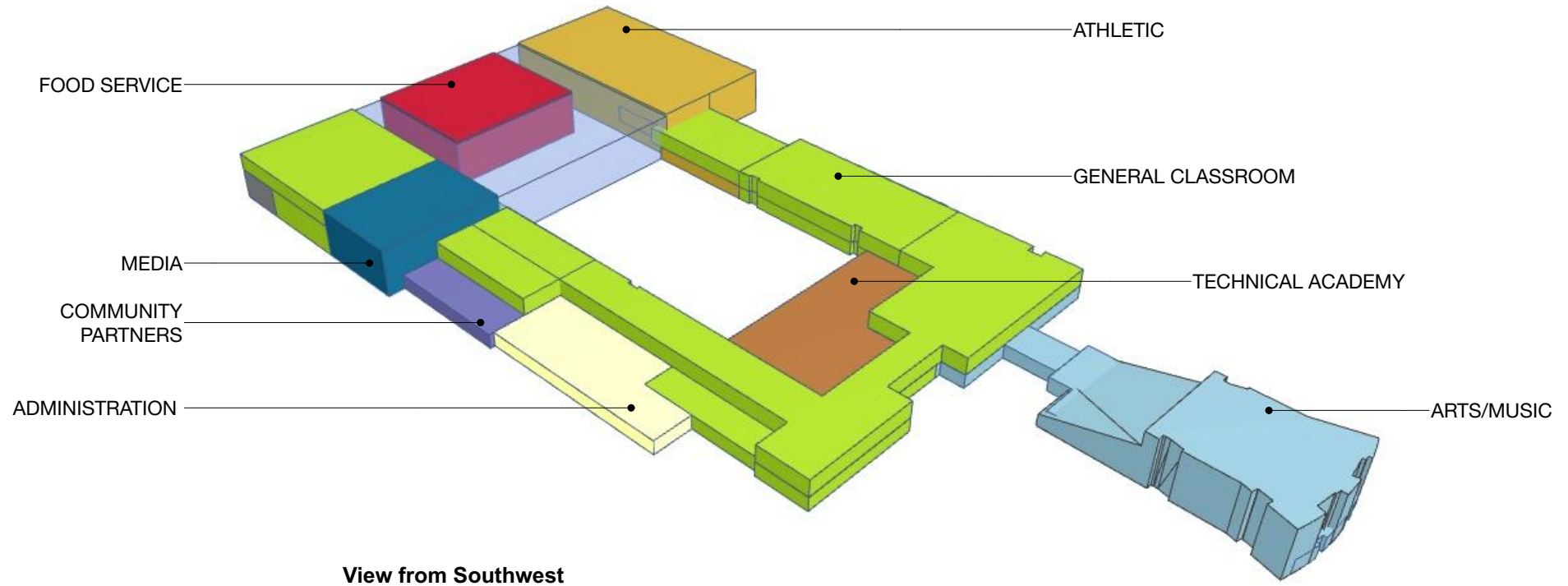
■ Media	7,110
■ Community Partners	3,520
■ Tech Academy	14,400
■ Arts/Music	27,019
■ Building Infrastructure	67,316
■ General Classroom	40,310
■ Food Service	11,150
■ Athletics	23,910
■ Administrative	11,070

2nd Floor Plan

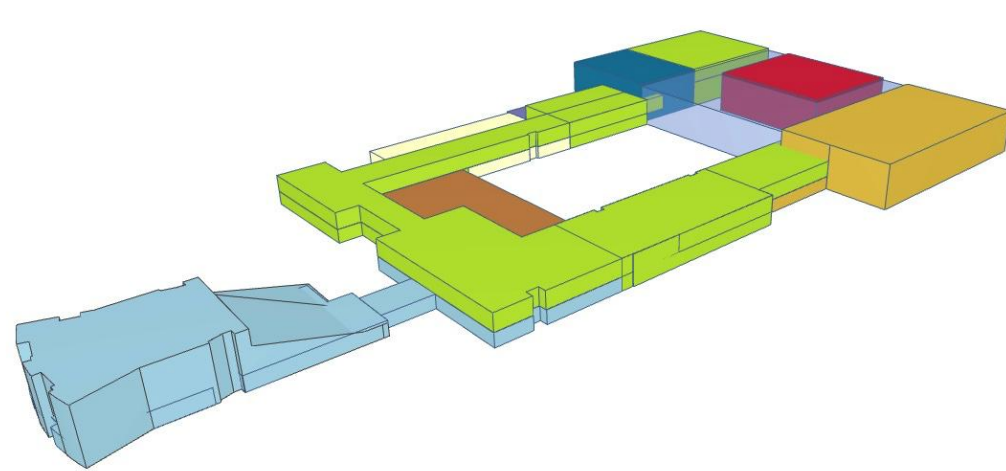
■ General Classroom	40,310
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TOTAL NET SF 180,599 SF

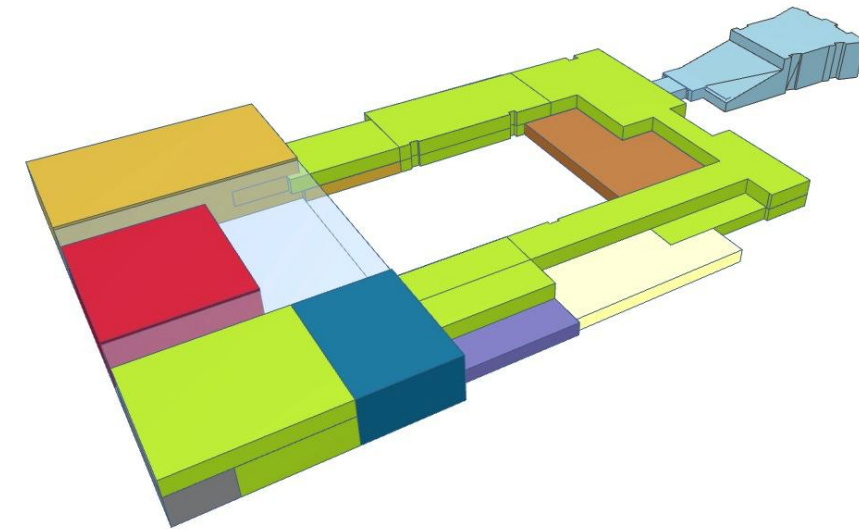
TOTAL GROSS SF 245,615 SF



View from Southwest



View from Southeast



View from Northwest

CVPA PROGRAM ORGANIZATION

CVPA SPACE LEGEND

1st Floor Plan

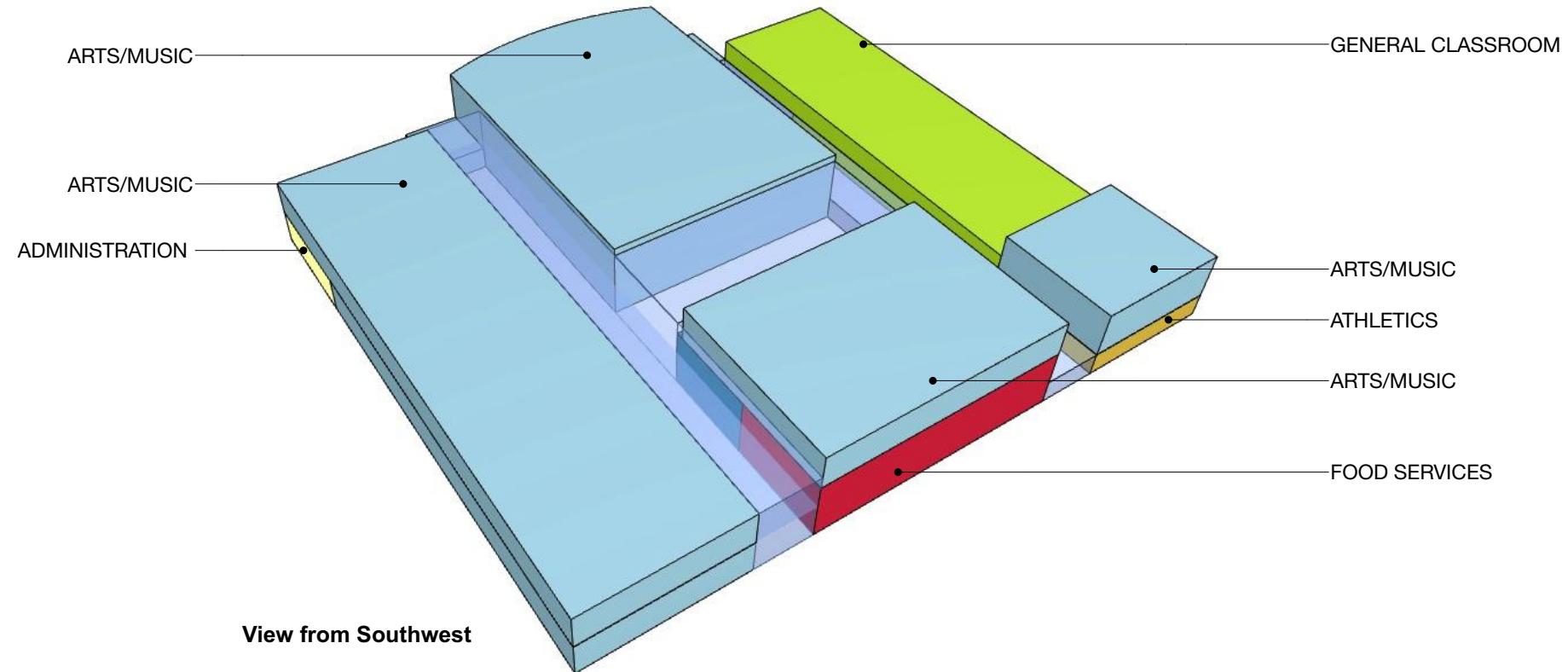
Media	4,640
Arts/Music	31,265
Building Infrastructure	34,250
General Classroom	10,175
Food Service	4,795
Athletics	1,400
Administrative	4,445

2nd Floor Plan

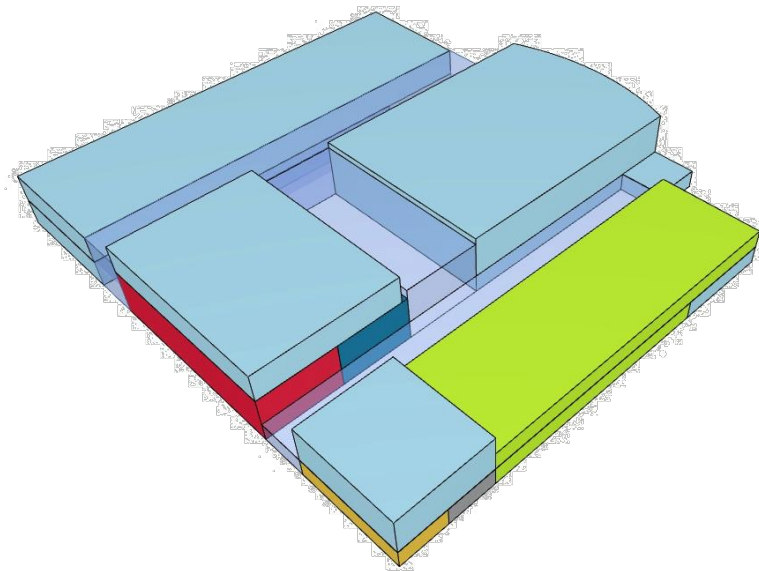
Arts/Music	31,265
General Classroom	10,175

TOTAL NET SF 99,410 SF

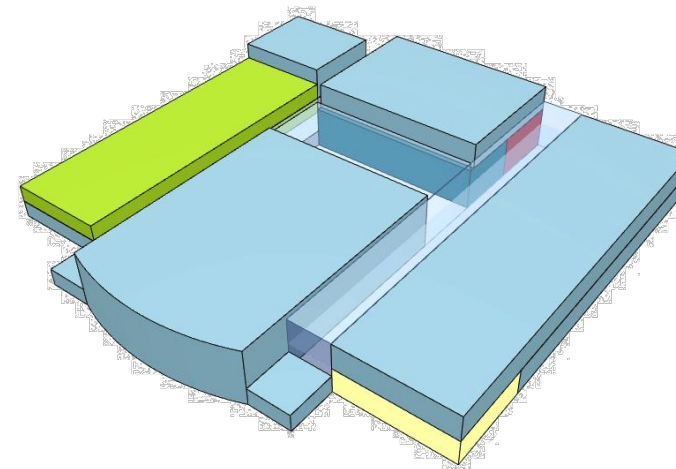
TOTAL GROSS SF 132,410 SF



View from Southwest



View from Southeast



View from Northeast

ELECTRICAL SUMMARY

	HIGH SCHOOL		CVPA	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
POWER DISTRIBUTION	<p>Replace Main Distribution panel (MDP)</p> <p>Replace all branch panelboards in the building with new panels. Locate new panels in dedicated spaces out of students' reach</p> <p>Replace all existing wiring with new wires from MDP to branch panelboard and loads by using existing conduits. Provide new conduits as necessary.</p>	<p>Extend the normal & emergency power distribution system in the renovation part of the building to the new construction; provide new branch panelboard as necessary to distribute power in new construction zone.</p> <p>provide complete new wiring (wires & conduits) for power distribution system in new construction zone.</p>		<p>provide new electrical service. Contact utility company and issue necessary application for new class of service. Voltage system for new service will be 208Y/120V, 3-Phase, 4-Wire. Capacity of the new service will be most likely the same as existing CVPA building.</p> <p>Provide a new main distribution panel (MDP) to be located inside the main electrical room.</p> <p>Provide new branch panelboards inside floor electrical closets throughout the building.</p> <p>Provide mechanical panels in building mechanical room and mechanical closets.</p> <p>Provide a new stand-by generator unit with ATS switches for building life safety loads and critical/optional loads.</p> <p>Provide emergency panels dedicated to building life safety and critical loads</p> <p>provide complete new wiring (wires & conduits) for normal and emergency power distribution system in new building</p>
EMERGENCY POWER SYSTEMS	<p>Replace the existing stand-by generator unit with a new unit with higher capacity to be able to handle the building life safety loads. Install a new ATS switch and life safety panelboard dedicated to life safety loads.</p> <p>Test, service and maintenance/repair the existing ATS switches and emergency panelboard.</p> <p>Provide new wiring for life safety ATS and panel.</p> <p>Perform conductivity & insulation tests for all existing wiring and replace existing wires with new wires as necessary</p>			
INTERIOR LIGHTING	<p>Replace all existing light fixtures with new LED fixture.</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors</p> <p>Replace all emergency fixtures & exit signs with new fixtures, provide additional fixture as necessary for complete coverage of egress path in the building</p> <p>Replace all existing wiring with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>provide new lighting system with LED light fixtures</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors</p> <p>provide new emergency fixtures & exit signs with LED fixtures for all egress paths in new construction zone.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>		<p>provide new lighting system with LED light fixtures</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors.</p> <p>provide new emergency fixtures & exit signs with LED fixtures for all egress paths.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>
POWER OUTLETS	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Replace all existing wires with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>Provide new power outlets as necessary</p> <p>Provide new wires (wires & conduits) for power outlets in new construction zone.</p>		<p>Provide new power outlets as necessary in all spaces.</p> <p>Provide new wires (wires & conduits) for all power outlets in all areas.</p>
FIRE ALARM SYSTEM	<p>Replace the entire existing fire alarm with new addressable system including new FACP, FAAP, initiating devices, notification appliances, necessary modules and sub-panels and complete wiring. The new system also includes voice alarm system.</p>			<p>Provide complete addressable fire alarm system with voice alarm including: fire alarm control panel (FACP), graphic annunciator panel (FAAP), addressable initiating devices, notification appliances, necessary control modules and sub-panels. Provide complete wiring for the system in the building.</p>
PUBLIC ADDRESS (PA) & SOUND SYSTEM	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers.</p> <p>Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building</p> <p>Replace the existing wiring with new wires and provide new wiring as necessary</p>	<p>Extend PA system in renovation part of the building to the new construction zone. Provide new speakers and related components as necessary. Provide new wiring for PA system in new construction.</p>		<p>Provide new PA system in the building including complete main control panel/rack, ceiling speakers and other related accessories and components. Provide complete wiring for PA system in the building</p> <p>Provide sound system for different studios and stages as necessary including complete main control equipment, ceiling/wall speakers and other related accessories and components. Provide new wiring for sound system in different areas.</p>
TEL/DATA SYSTEM	<p>Test, service and maintenance/repair the existing Tel/Data system control panel</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary,</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>	<p>Extend Tel/Data system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for tel/data system in new construction.</p>		<p>Provide complete Tel/Data system in the building including equipment/racks in MDF and IDF rooms, backbone wiring, cabling between MDF equipment and IDF rooms, tel/data outlets and related jacks and wiring tel/data outlets to IDF equipment/patch panels. All tel/data equipment will be connected to the building emergency system. Provide UPS system to support data/tel system during utility power outage until emergency generator is upon and running. Cable trays will be used for all tel/data wiring in the building.</p>
SECURITY SYSTEM	<p>Test, service and maintenance/repair the existing security system control panel/rack</p> <p>Test all the existing security devices and provide additional devices as necessary,</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>	<p>Extend security system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for security system in new construction.</p>		<p>Provide complete security and CCTV system in the building including equipment/racks in MDF & IDF rooms, security cameras inside the building and outside, motion detectors, Access control devices for designated doors and all security monitoring equipment in security control room. Provide all necessary wiring for security system inside and outside of the building.</p>

MECHANICAL SUMMARY

	HIGH SCHOOL		CVPA	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
CENTRAL PLANT	<p>Replace all steam boilers in the building with new condensing hydronic boilers.</p> <p>Replace two existing 70-ton chillers in the yard with new water-cooled chillers and cooling tower on roof.</p> <p>Replace existing built up AHU on first and second floor with new four pipe fan coil system and a dedicated outdoor air system with heat recovery.</p> <p>Demolish chillers and outdoor boiler in auditorium and connect auditorium air handlers to hydronic systems in main building</p> <p>Replace air handlers in auditorium with new units. Stage and Seating area units shall be equipped with economizers and heat recovery.</p>			
EXISTING HYDRONIC AND STEAM SYSTEMS	<p>Replace all existing steam and chilled water piping in building with new four-pipe hydronic system complete with variable flow primary secondary pumping.</p> <p>Remove all perimeter heating units throughout building.</p>			
OUTDOOR AIR				
TERMINAL UNITS				
EXISTING PACKAGED ROOFTOP UNITS	<p>Existing packaged rooftop units shall all be removed, areas they served are now new construction. Any areas left that were served by the packaged units shall be served by the new hydronic system with dedicated outdoor air units.</p>			
CONTROLS	<p>Gut all pneumatic controls and expand the existing system to control all systems in the building.</p>			
OFFICE	<p>The office shall be provided with a standalone VRF system</p>			
GYM	<p>Gym and multipurpose rooms shall be provided with a rooftop air handler to provide heating and cooling. The units shall be equipped with heat recovery or demand control ventilation depending on the ventilation rate.</p>			
HVAC				<p>Extend the new four-pipe hydronic system from the High School into the new construction and provide four pipe fan coils and provide dedicated outdoor air units with heat recovery. New DDC control systems shall control all systems in new construction</p>

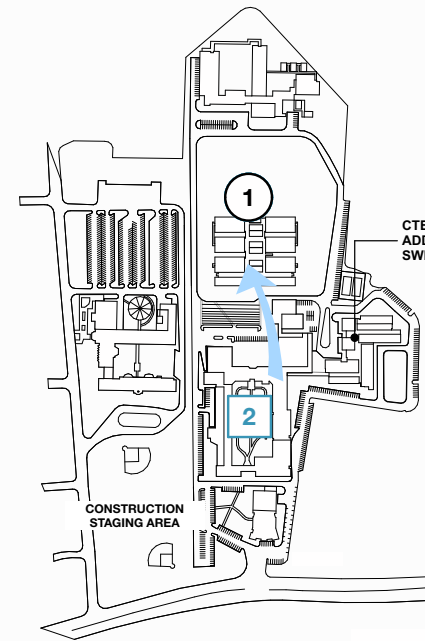
*New systems for the auditorium are fed from the high school central plant

PLUMBING SUMMARY

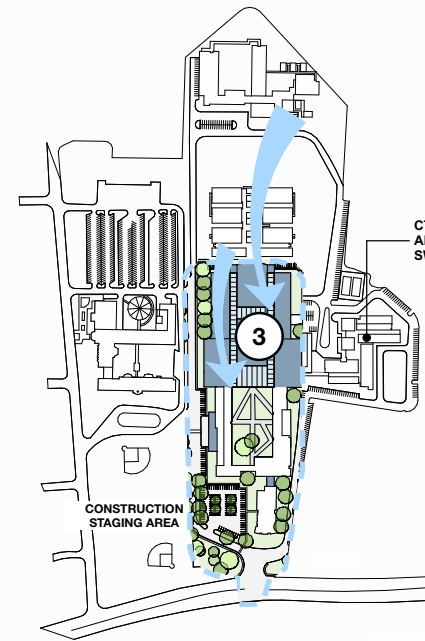
HIGH SCHOOL	AUDITORIUM	CVPA
<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outdoor and shall be set adjacent to the property line. The water service shall be routed vertical and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all the domestic water heaters with high efficiency and energy saving new water heaters. A gas fired domestic water heater located in Boiler Room No.2 can be salvaged. This 2011 heater is a 100 gallon storage tank capacity with 75,000 BTU per hour gas input. Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED silver level.</p> <p>Demolish sprinkler system in existing building. Provide wet-pipe sprinkler system with new sprinkler control zones for the building.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outside and shall be set adjacent to the property line. The water service shall be routed vertically and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for the lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all domestic water heaters with high efficiency and energy saving new water heaters.</p> <p>Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Provide new sprinkler heads and adjust the location for renovated ceiling as required.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outdoor and shall be set adjacent to the property line. The water service shall be routed vertical and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for lining of underslab piping. Install backflow device at domestic and fire incoming services to current code and local water authority requirement.</p> <p>Provide high efficiency and energy saving domestic water heaters.</p> <p>Provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Provide wet-pipe sprinkler system for the building.</p>



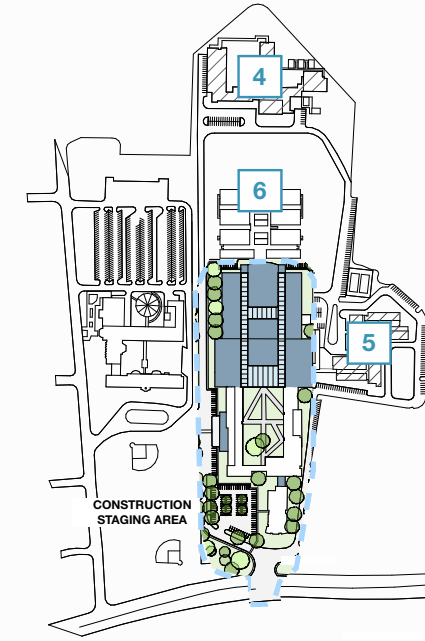
PHASING DIAGRAM



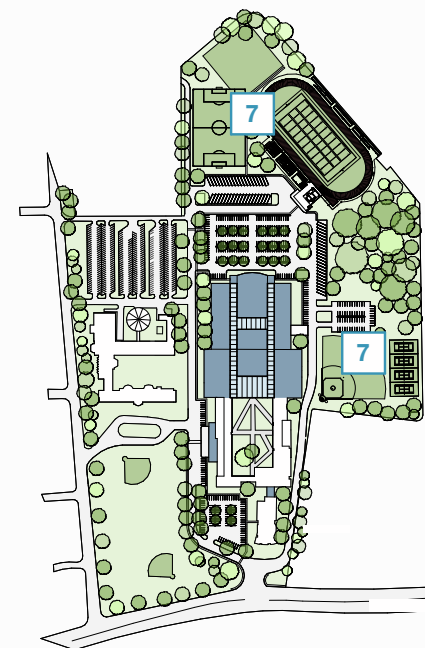
- A**
- 1 Students from High School move to the temporary on-site campus
 - 2 High school and CVPA modernization and addition



- B**
- 3 High school and CVPA students move into newly modernized high school

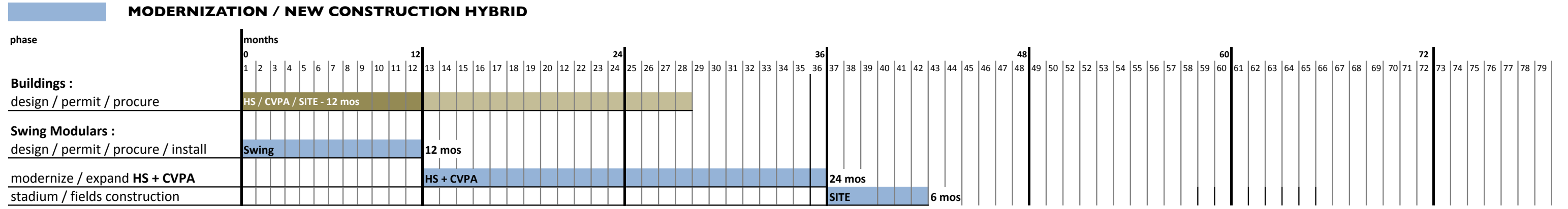


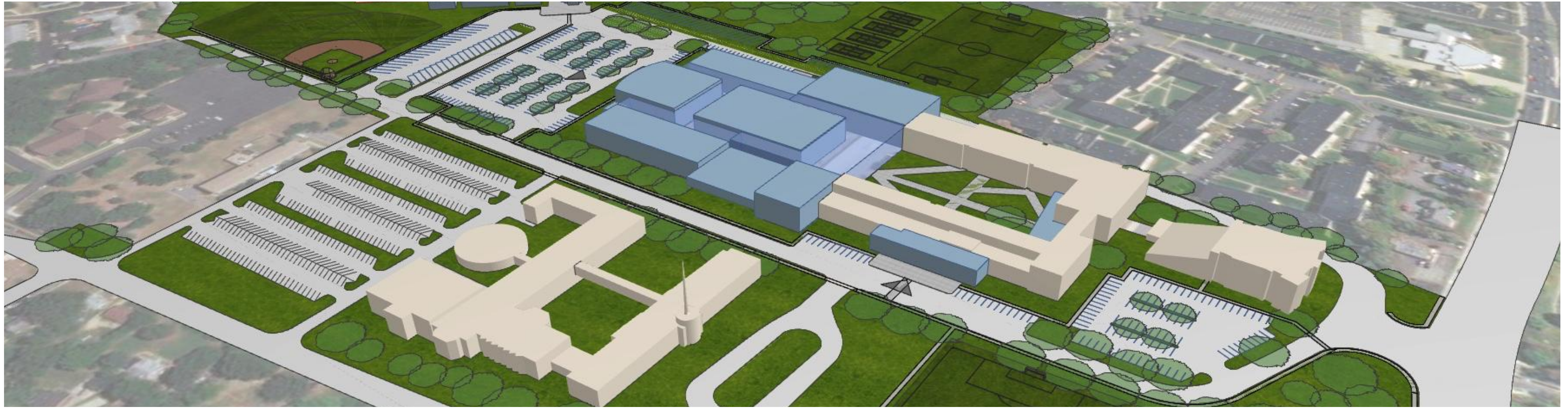
- C**
- 4 Demolition of annex building
 - 5 Demolition of CTE
 - 6 Removal of temporary campus



- D**
- 7 Modernization of site

PHASING SCHEDULE





Modernization/New Construction Hybrid Site Plan

OPTION IIIA: MODERNIZATION/NEW CONSTRUCTION HYBRID OVERVIEW

This option takes advantage of building structure reuse and adds a new building to the site. The hybrid alternate option modernizes the comprehensive high school building and completely demolishes the annex. Work on the Drew Freeman building is not a part of this option. The CTE building is completely demolished as this program is being moved off campus. A new building for CVPA is constructed and connected to the modernized comprehensive high school. The primary entry to CVPA will be located at the north of the building near the main parking area. The joining of CVPA and the comprehensive high school will allow for some efficiency in the layout of the mechanical, electrical and plumbing systems. This option assumes CVPA will share many common program elements with the comprehensive high school. All programs are brought to the center of the site, which will allow for the sharing of services like loading and trash pick-up.

In this option, 215,511 square feet of the existing buildings will be completely demolished and 184,730 square feet of new space constructed. The comprehensive high school will continue to utilize the auditorium and a new passageway will be constructed to connect it to the high school. The PPC felt the courtyard of the high school was a major asset so this area will also be modernized to provide

increased functionality. A new administration suite to the west of the building will serve as a new entry to the school.

Athletic fields on Silver Hill Road are near the entry and allow for continued access for community members. The majority of the athletic fields are located at the back of the site and have access to parking for major events.

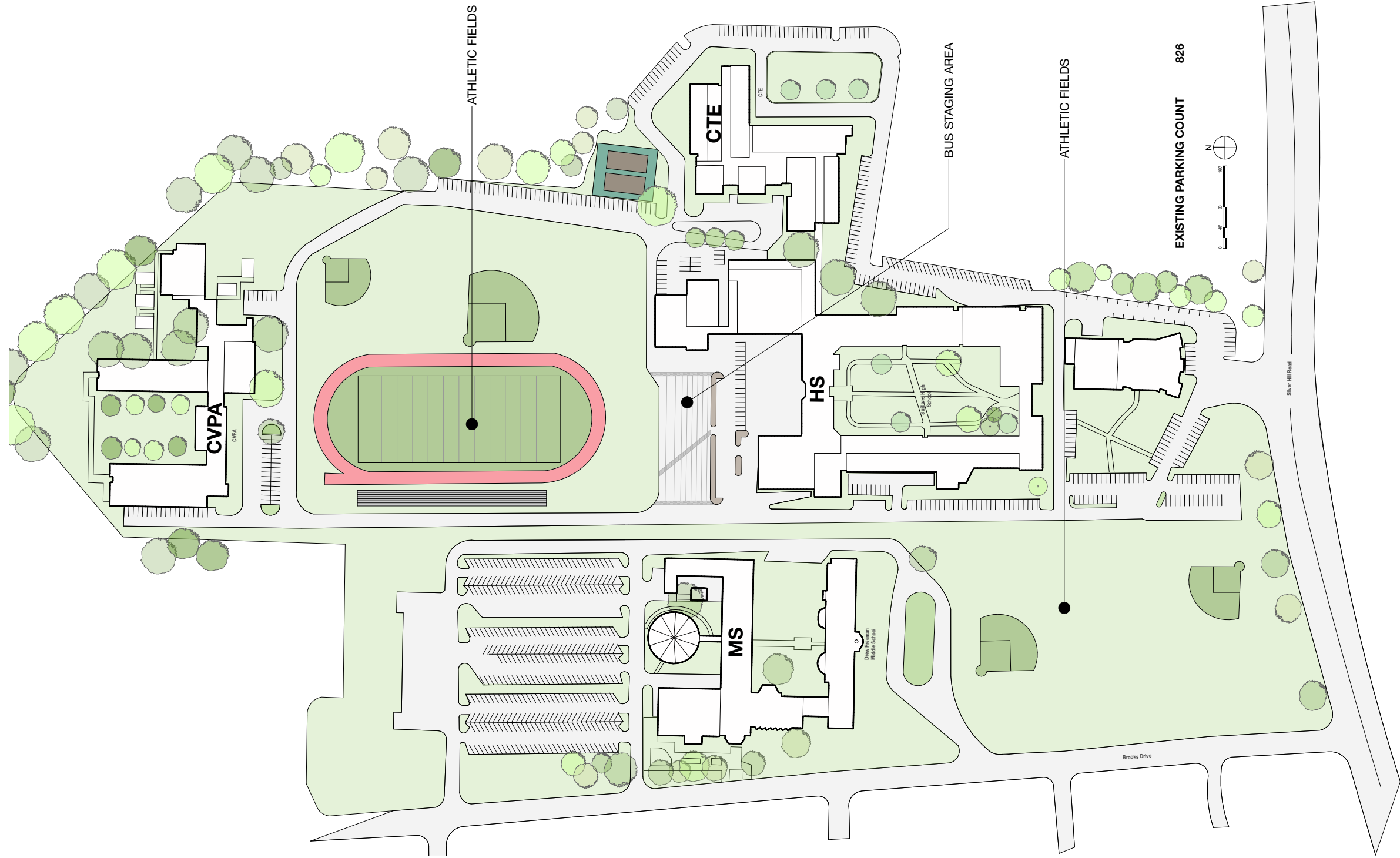
Architectural interventions in the 172,711 square feet of existing building to be modernized will include:

- Full demolition of interior finishes, buildings systems, partitions, to structure
- Accessibility upgrades including the installation of new elevators or lifts where required, installation of all new stairs, handrails and construction of new ramps
- Replacement of all exterior & interior windows, doors and frames
- Replacement of all floor, wall and ceiling finishes
- Replacement of all built-in casework and lockers
- Replacement of built-in science equipment to accommodate educational specification
- Reconfiguration of most / all partitions to accommodate educational specification

- Cleaning and repointing of existing exterior masonry
- Replacement of exterior caulking and sealants
- New roofs

It can be anticipated that any site improvements will be required to include Environmental Site Design (ESD) to the maximum extent practicable to treat all areas inside the limits of disturbance. If ESD efforts are exhausted and the site has still not been able to reach a hydrologic state of “good condition,” then structural practices may be permitted as determined by Prince George’s County.

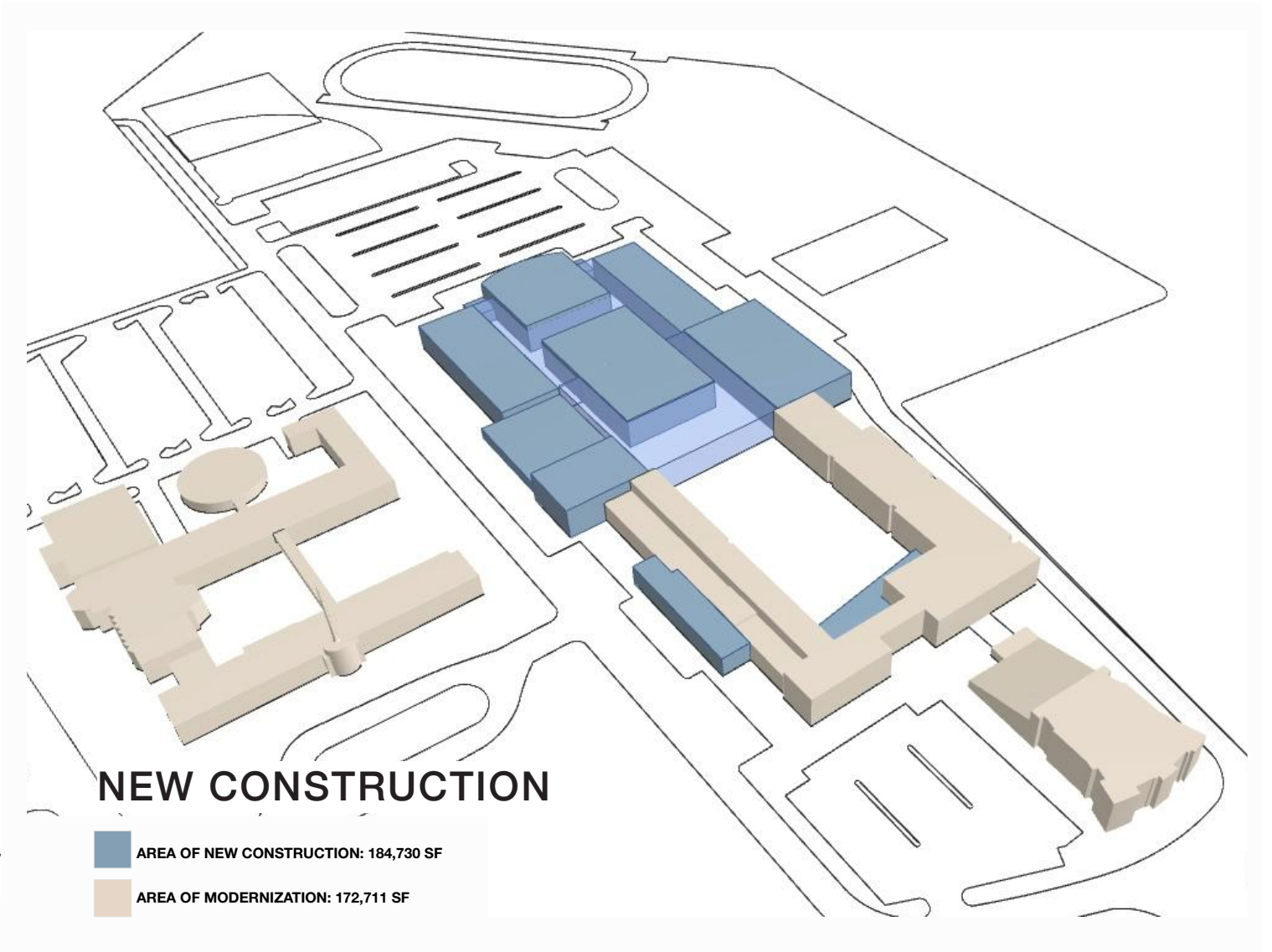
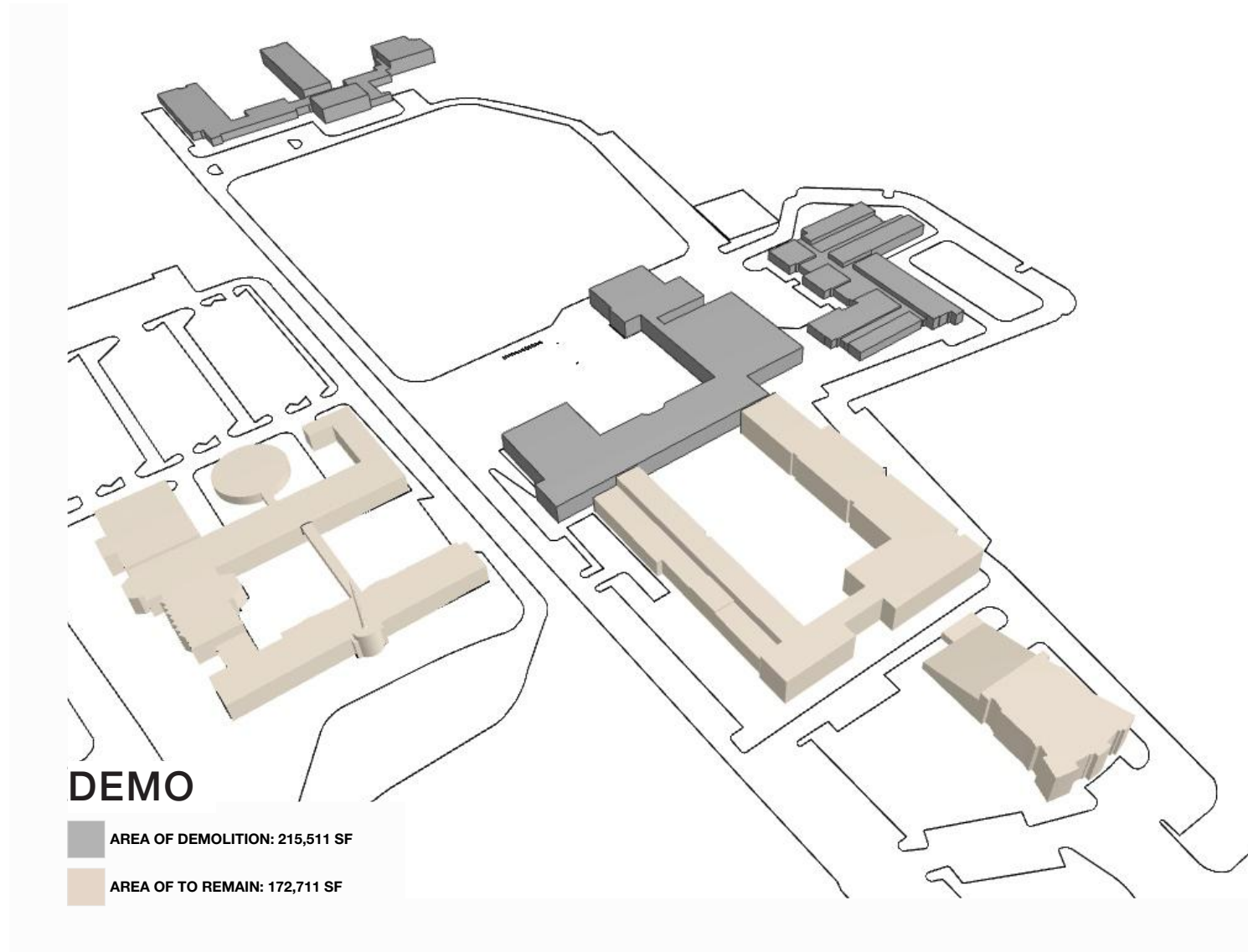
Potential ESD stormwater management practices for the site include both micro-scale practices and alternative surfaces. Micro-scale facilities could include the utilization of bio-swales, micro-bioretenion, and vegetative green roof facilities where available open space can be found, such as parking lot islands, around the athletic fields, and on proposed building expansion areas.



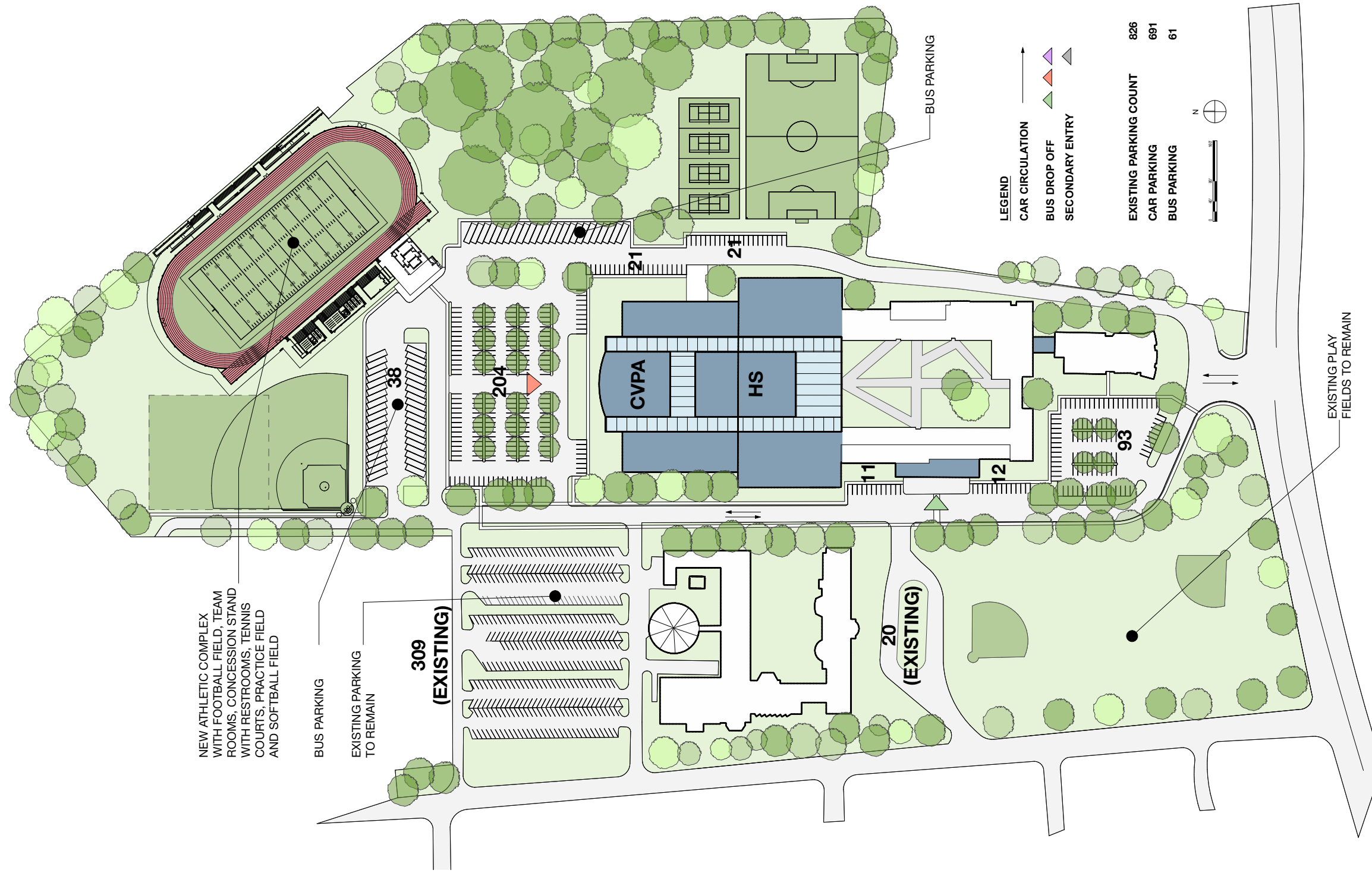
EXISTING SITE PLAN

HYBRID - ALTERNATE

BUILDING ALTERATIONS



HYBRID - ALTERNATE



HYBRID - ALTERNATE

PROPOSED SITE PLAN
 Modernization/New Construction Hybrid Site Plan

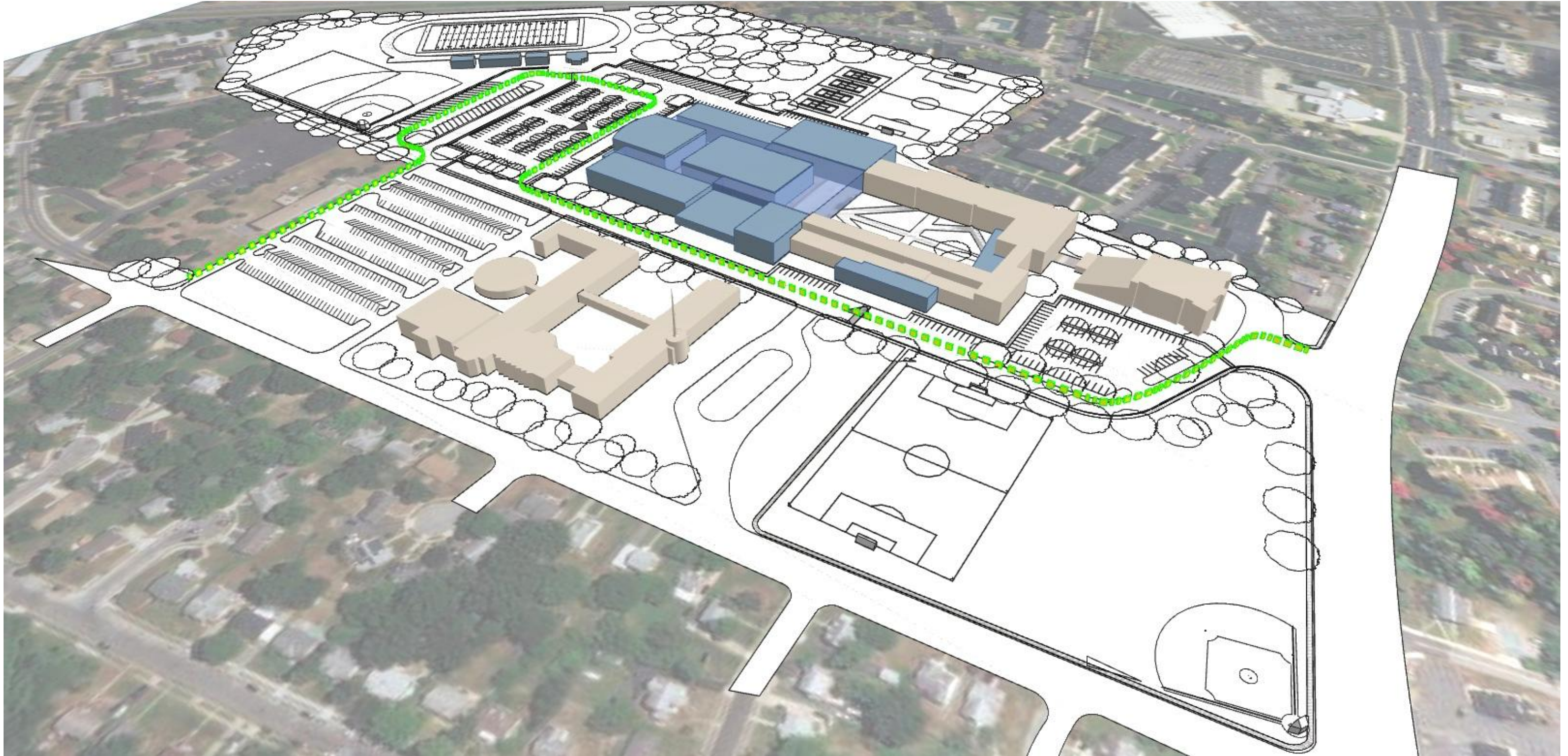


Modernization/New Construction Hybrid Site Plan

HYBRID - ALTERNATE

BUS ROUTES

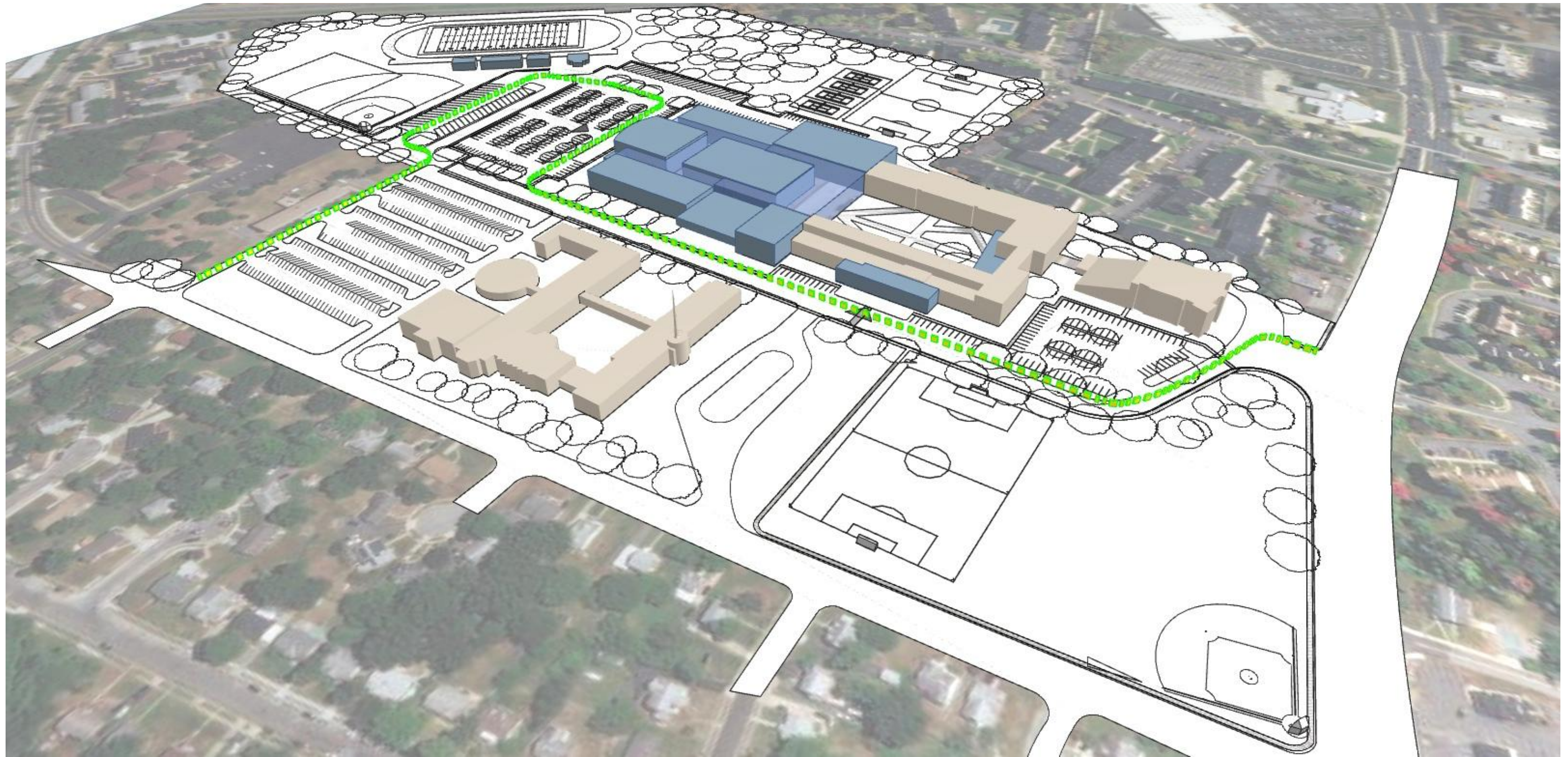
Comprehensive High School & CTE



HYBRID - ALTERNATE

BUS ROUTES

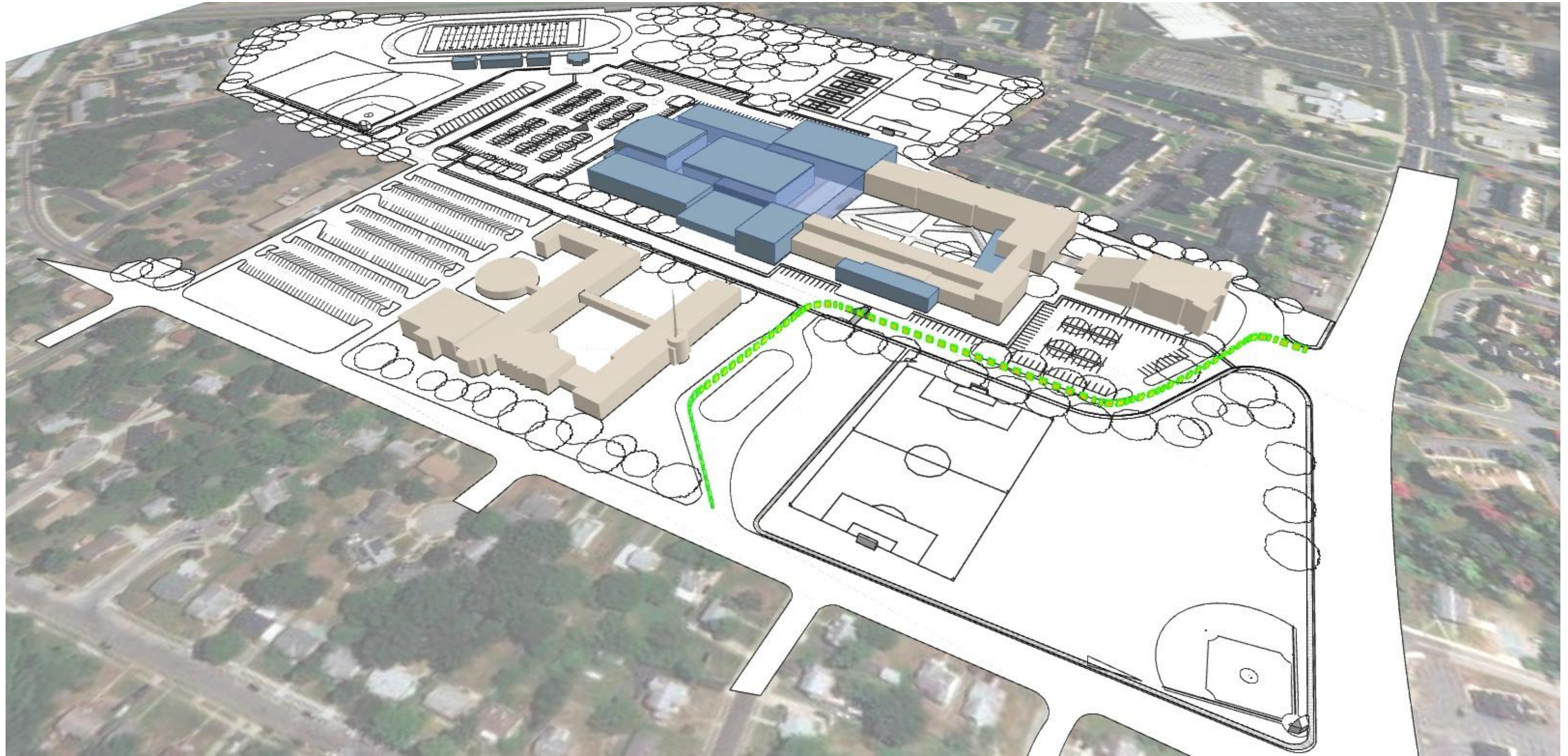
Center for Visual & Performing Arts



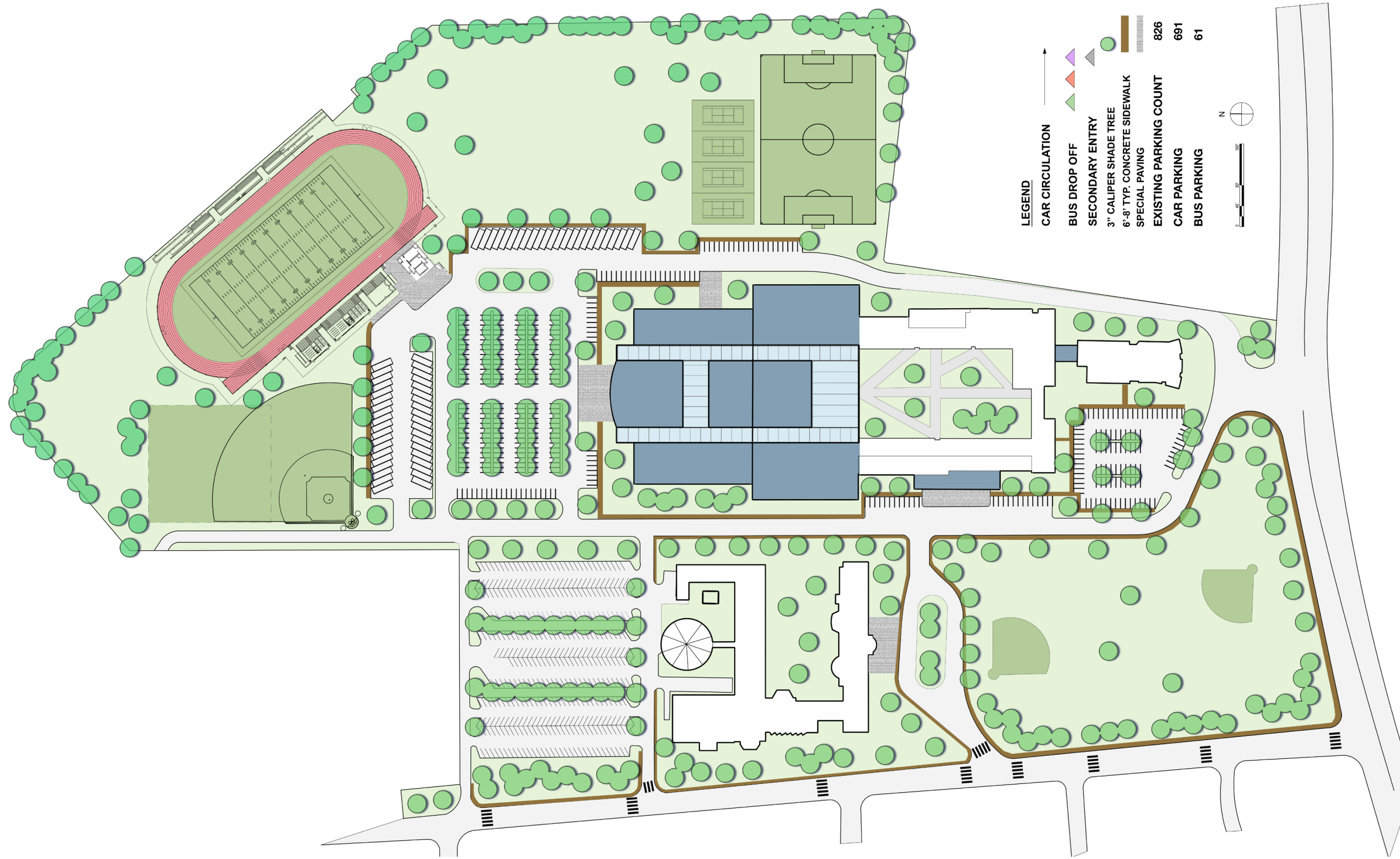
HYBRID - ALTERNATE

BUS ROUTES

Middle School

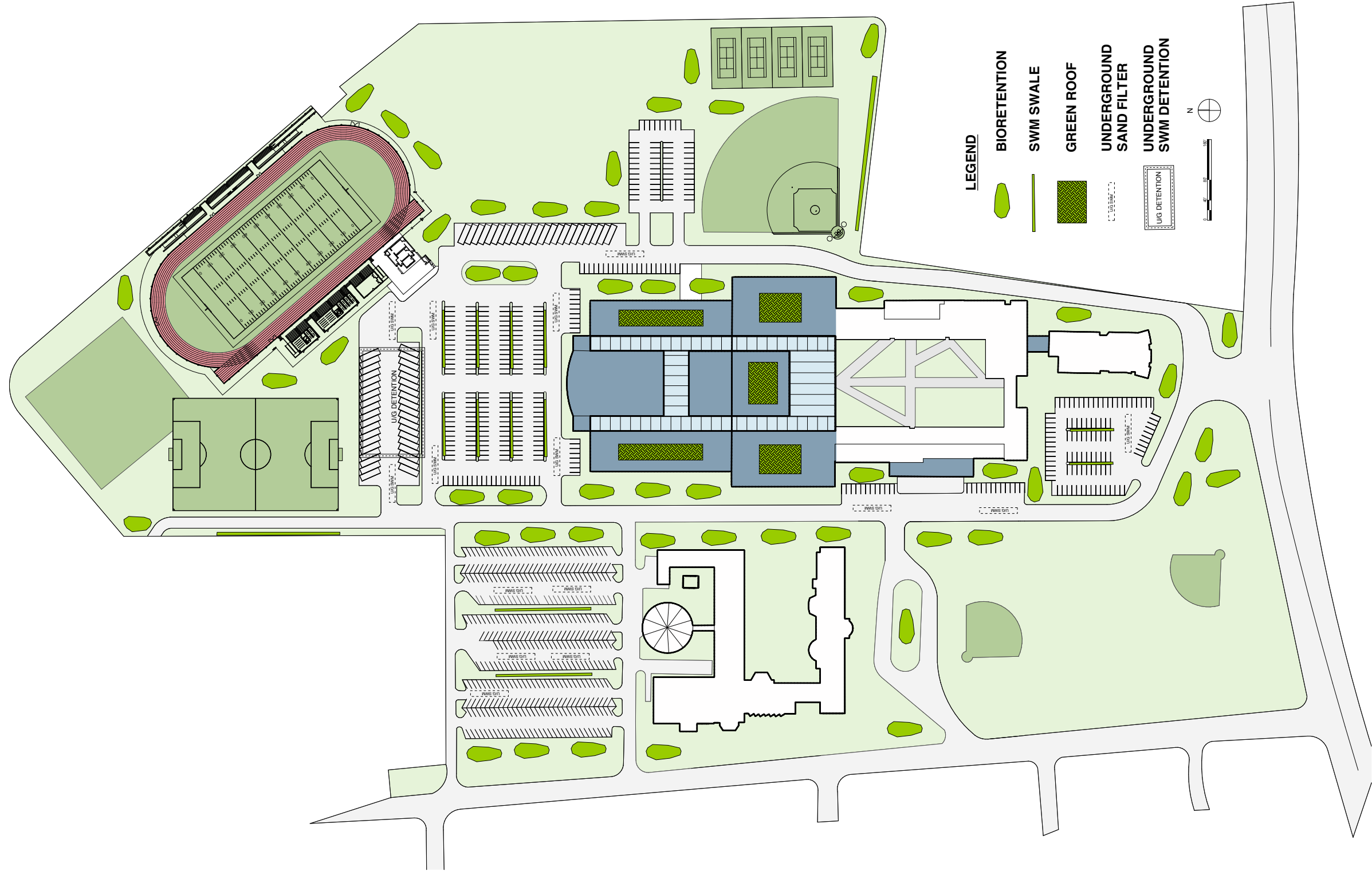


HYBRID - ALTERNATE



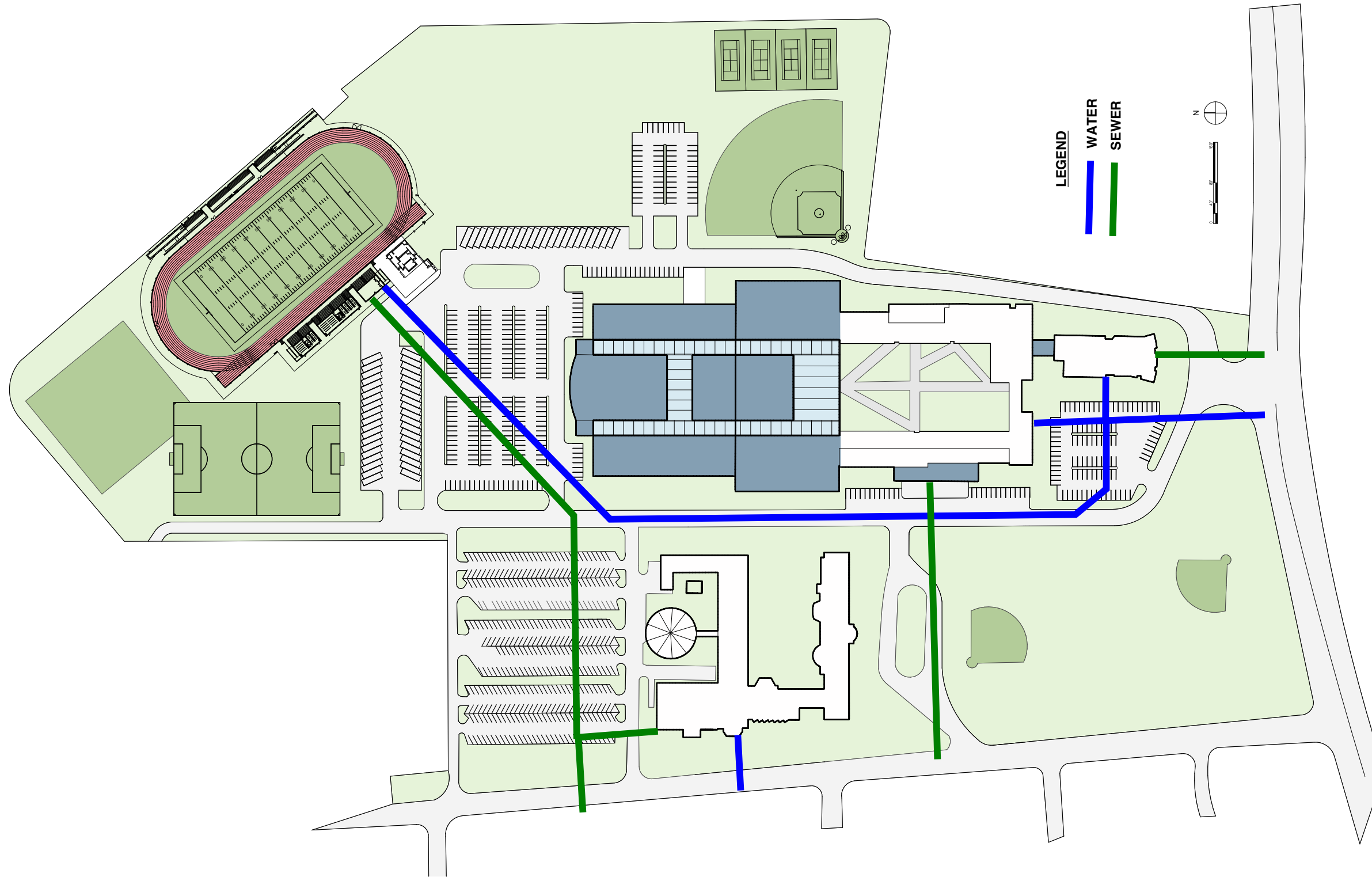
HYBRID - ALTERNATE

PROPOSED LANDSCAPE PLAN
Hybrid



STORM WATER MANAGEMENT PLAN

HYBRID - ALTERNATE



HIGH SCHOOL PROGRAM ORGANIZATION

HIGH SCHOOL SPACE LEGEND

1st Floor Plan

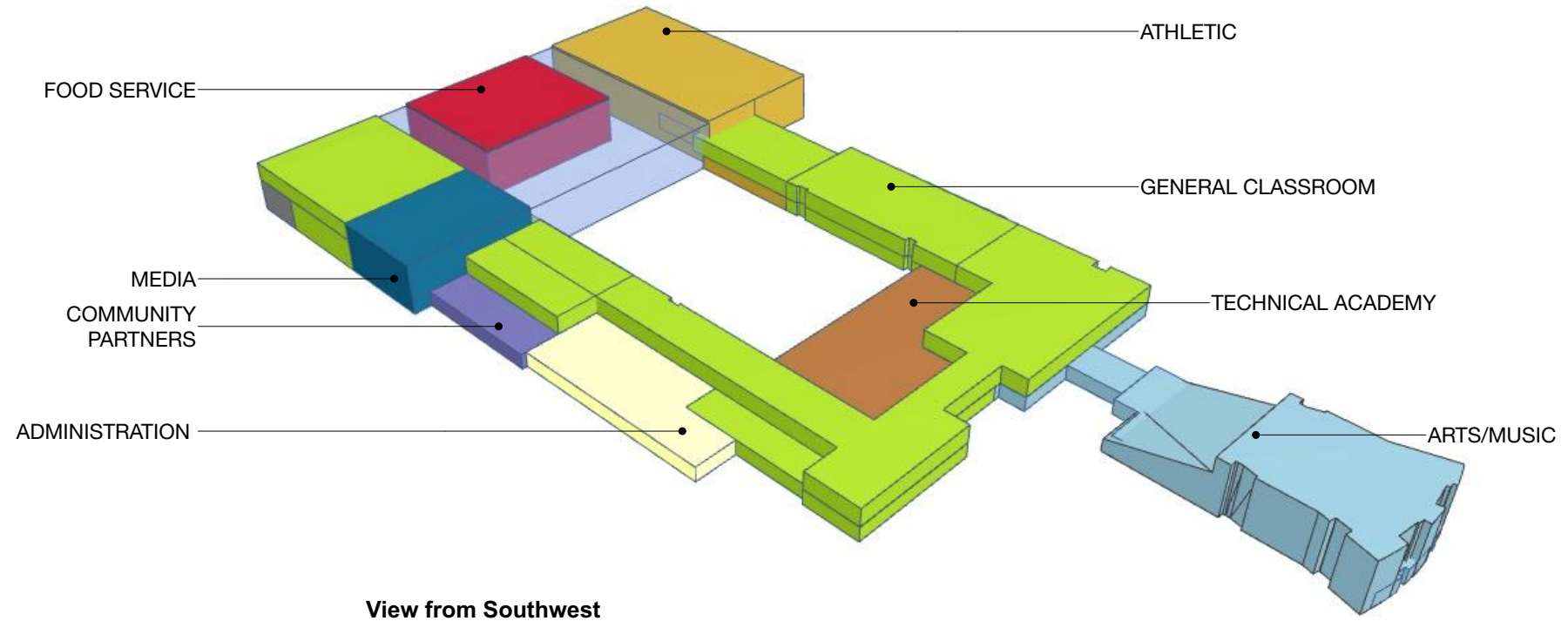
Media	7,110
Community Partners	3,520
Tech Academy	14,400
Arts/Music	27,019
Building Infrastructure	67,316
General Classroom	40,310
Food Service	11,150
Athletics	23,410
Administrative	11,070

2nd Floor Plan

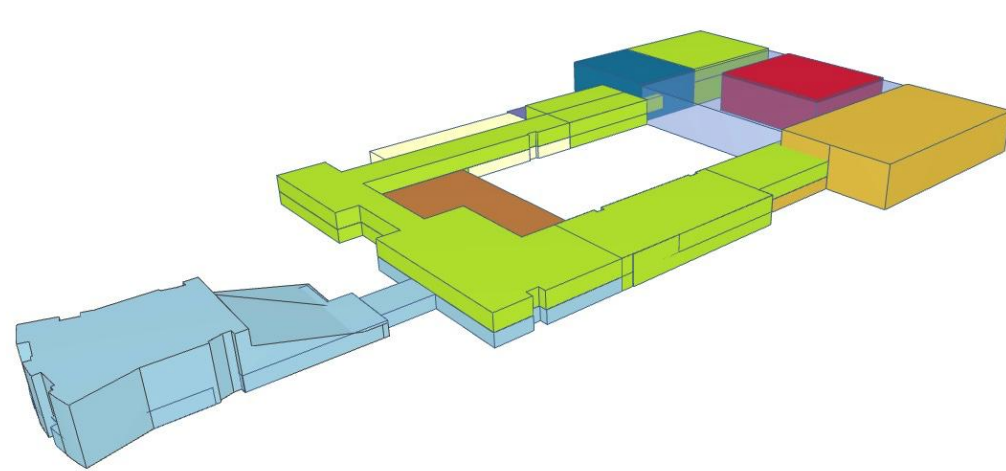
General Classroom	40,310
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TOTAL NET SF 180,599 SF

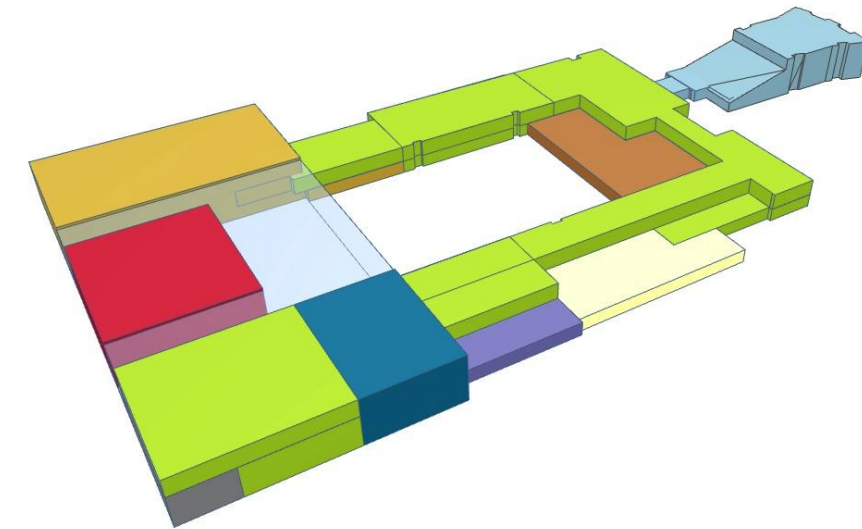
TOTAL GROSS SF 245,615 SF



View from Southwest



View from Southeast



View from Northwest

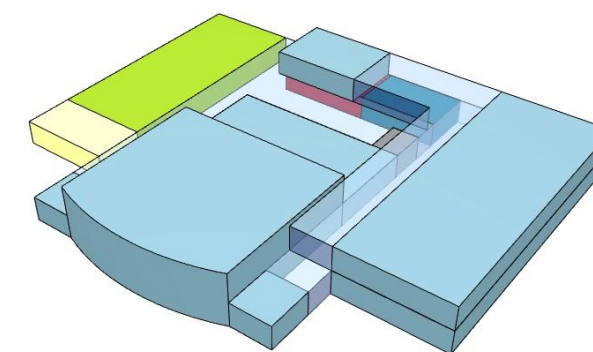
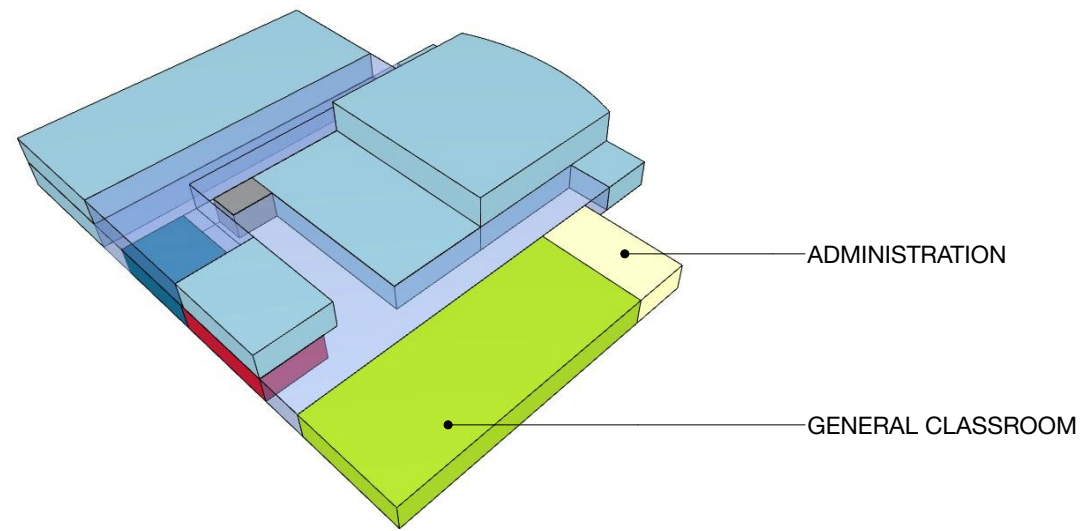
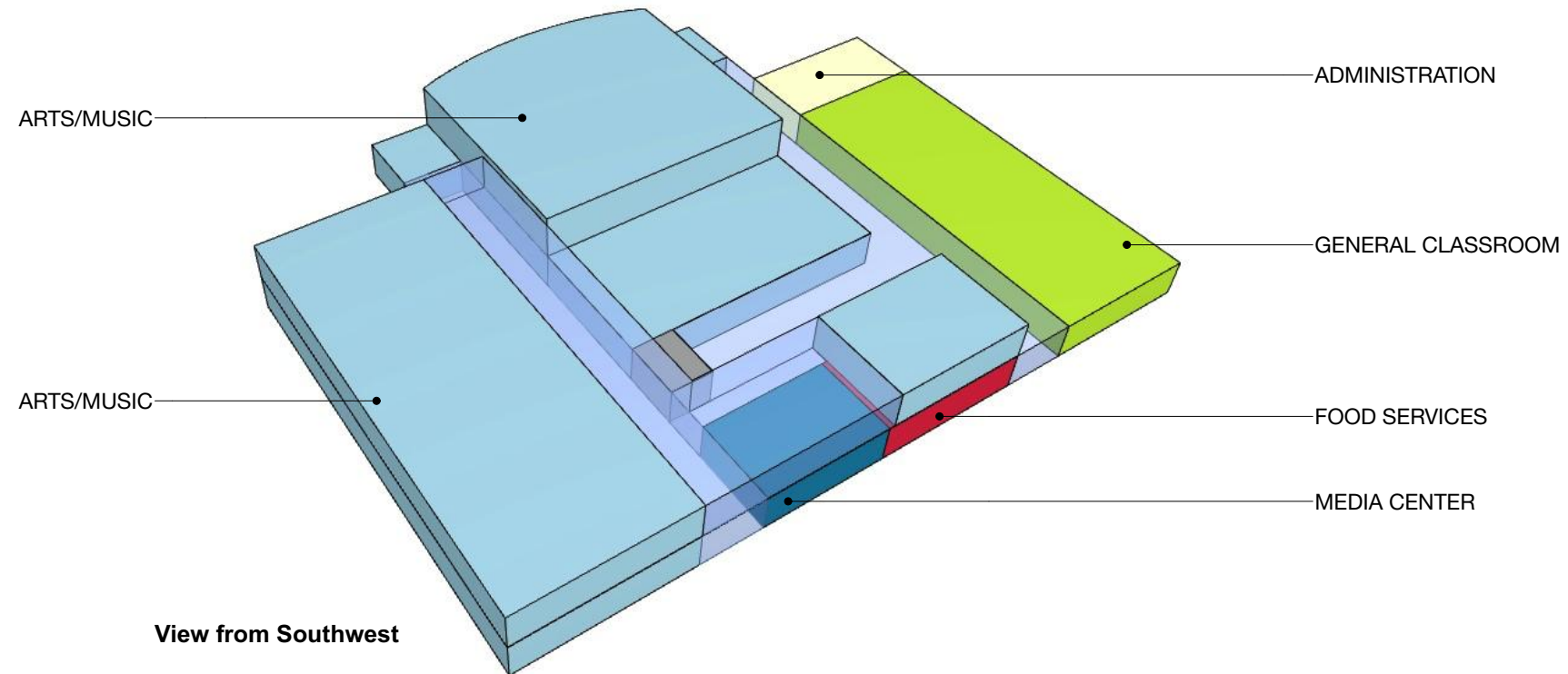
HYBRID - ALTERNATE

CVPA PROGRAM ORGANIZATION

CVPA SPACE LEGEND

1st Floor Plan	
Media	2,545
Building Infrastructure	20,557
Arts/Music	48,330
General Classroom	11,900
Food Service	2,750
Administrative	2,545
2nd Floor Plan	
Building Infrastructure	9,204
Arts/Music	14,200

TOTAL NET SF 82,615 SF
TOTAL GROSS SF 111,826 SF



ELECTRICAL SUMMARY

	HIGH SCHOOL		AUDITORIUM		CVPA	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
POWER DISTRIBUTION	<p>Replace Main Distribution panel (MDP)</p> <p>Replace all branch panelboards in the building with new panels. Locate new panels in dedicated spaces out of students' reach</p> <p>Replace all existing wiring with new wires from MDP to branch panelboard and loads by using existing conduits. Provide new conduits as necessary.</p>	<p>Extend the normal & emergency power distribution system in the renovation part of the building to the new construction; provide new branch panelboard as necessary to distribute power in new construction zone.</p> <p>provide complete new wiring (wires & conduits) for power distribution system in new construction zone.</p>	<p>Maintain, test and clean the existing Main Distribution panel (MDP).</p> <p>Replace all branch panelboards in the building with new panels. Locate new panels in dedicated spaces out of students' reach</p> <p>Replace all existing wiring with new wires from MDP to branch panelboards and loads by using existing conduits. Provide new conduits as necessary.</p>			<p>provide new electrical service. Contact utility company and issue necessary application for new class of service. Voltage system for new service will be 208Y/120V, 3-Phase, 4-Wire. Capacity of the new service will be most likely the same as existing CVPA building.</p> <p>Provide a new main distribution panel (MDP) to be located inside the main electrical room.</p> <p>Provide new branch panelboards inside floor electrical closets throughout the building.</p> <p>Provide mechanical panels in building mechanical room and mechanical closets.</p> <p>Provide a new stand-by generator unit with ATS switches for building life safety loads and critical/optional loads.</p> <p>Provide emergency panels dedicated to building life safety and critical loads</p> <p>provide complete new wiring (wires & conduits) for normal and emergency power distribution system in new building</p>
EMERGENCY POWER SYSTEMS	<p>Replace the existing stand-by generator unit with a new unit with higher capacity to be able to handle the building life safety loads. Install a new ATS switch and life safety panelboard dedicated to life safety loads.</p> <p>Test, service and maintenance/repair the existing ATS switches and emergency panelboard.</p> <p>Provide new wiring for life safety ATS and panel.</p> <p>Perform conductivity & insulation tests for all existing wiring and replace existing wires with new wires as necessary</p>		<p>Service, test the existing stand-by generator unit.</p> <p>Test, service and maintenance/repair the existing ATS switches and related emergency panel dedicated to the building life safety loads.</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing wires with new wires as necessary.</p>			
INTERIOR LIGHTING	<p>Replace all existing light fixtures with new LED fixture.</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors</p> <p>Replace all emergency fixtures & exit signs with new fixtures, provide additional fixture as necessary for complete coverage of egress path in the building</p> <p>Replace all existing wiring with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>provide new lighting system with LED light fixtures</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors</p> <p>provide new emergency fixtures & exit signs with LED fixtures for all egress paths in new construction zone.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>	<p>Replace all existing light fixtures with new LED fixture.</p> <p>Replace all existing lighting control switches with new wall/ceiling occupancy sensors.</p> <p>Replace all emergency fixtures & exit signs with new LED fixtures, provide additional fixture as necessary for complete coverage of egress path in the building.</p> <p>Maintain, test complete existing stage lighting system including light fixtures and lighting control system. Repair and replace damaged components as necessary.</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing wires with new wires as necessary.</p>			<p>provide new lighting system with LED light fixtures</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors.</p> <p>provide new emergency fixtures & exit signs with LED fixtures for all egress paths.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>
POWER OUTLETS	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Replace all existing wires with new wires by using existing conduits. Provide new conduits as necessary.</p>	<p>Provide new power outlets as necessary</p> <p>Provide new wires (wires & conduits) for power outlets in new construction zone.</p>	<p>Test all power outlets and provide additional outlets as necessary</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing damaged wires with new wires as necessary.</p>			<p>Provide new power outlets as necessary in all spaces.</p> <p>Provide new wires (wires & conduits) for all power outlets in all areas.</p>
FIRE ALARM SYSTEM	<p>Replace the entire existing fire alarm with new addressable system including new FACP, FAAP, Initiating devices, notification appliances, necessary modules and sub-panels and complete wiring. The new system also includes voice alarm system.</p>		<p>Existing fire alarm system is in good condition. However, performing test on all system components, devices and wiring is recommended.</p>			<p>Provide complete addressable fire alarm system with voice alarm including: fire alarm control panel (FACP), graphic annunciator panel (FAAP), addressable initiating devices, notification appliances, necessary control modules and sub-panels. Provide complete wiring for the system in the building.</p>
PUBLIC ADDRESS (PA) & SOUND SYSTEM	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers.</p> <p>Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building</p> <p>Replace the existing wiring with new wires and provide new wiring as necessary</p>	<p>Extend PA system in renovation part of the building to the new construction zone. Provide new speakers and related components as necessary. Provide new wiring for PA system in new construction.</p>	<p>Test, service and maintenance/repair the existing PA system control Panel and related speakers.</p> <p>Provide new speakers and related accessories, as necessary, for complete coverage of the system in the building.</p> <p>Perform conductivity & insulation tests for all existing wiring related to emergency power distribution and replace existing damaged wires with new wires as necessary.</p>			<p>Provide new PA system in the building including complete main control panel/rack, ceiling speakers and other related accessories and components. Provide complete wiring for PA system in the building</p> <p>Provide sound system for different studios and stages as necessary including complete main control equipment, ceiling/wall speakers and other related accessories and components. Provide new wiring for sound system in different areas.</p>
TEL/DATA SYSTEM	<p>Test, service and maintenance/repair the existing Tel/Data system control panel</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary,</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>	<p>Extend Tel/Data system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for tel/data system in new construction.</p>	<p>Test, service and maintenance/repair the existing Tel/Data system control panel.</p> <p>Test all the existing Tel/data outlets and provide additional devices as necessary.</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary.</p> <p>Arrangement of the existing cabling/wiring in MDF & IDF rooms.</p>			<p>Provide complete Tel/Data system in the building including equipment / racks in MDF and IDF rooms, backbone wiring, cabling between MDF equipment and IDF rooms, tel/data outlets and related jacks and wiring tel/data outlets to IDF equipment/patch panels. All tel/data equipment will be connected to the building emergency system. Provide UPS system to support data/tel system during utility power outage until emergency generator is upon and running. Cable trays will be used for all tel/data wiring in the building.</p>
SECURITY SYSTEM	<p>Test, service and maintenance/repair the existing security system control panel/rack</p> <p>Test all the existing security devices and provide additional devices as necessary,</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>	<p>Extend security system in renovation part of the building to the new construction zone. Provide new devices and components as necessary. Provide new wiring for security system in new construction.</p>	<p>Test, service and maintenance/repair the existing security system control panel/rack</p> <p>Test all the existing security devices and cameras.</p> <p>Perform conductivity & insulation tests for all existing wiring/cabling and provide new wires as necessary</p>			<p>Provide complete security and CCTV system in the building including equipment/racks in MDF & IDF rooms, security cameras inside the building and outside, motion detectors, Access control devices for designated doors and all security monitoring equipment in security control room. Provide all necessary wiring for security system inside and outside of the building.</p>

HYBRID - ALTERNATE

MECHANICAL SUMMARY

	HIGH SCHOOL		CVPA	
	MODERNIZATION	NEW CONSTRUCTION	MODERNIZATION	NEW CONSTRUCTION
CENTRAL PLANT	<p>Replace all steam boilers in the building with new condensing hydronic boilers.</p> <p>Replace two existing 70-ton chillers in the yard with new water-cooled chillers and cooling tower on roof.</p> <p>Replace existing built up AHU on first and second floor with new four pipe fan coil system and a dedicated outdoor air system with heat recovery.</p> <p>Demolish chillers and outdoor boiler in auditorium and connect auditorium air handlers to hydronic systems in main building.</p> <p>Replace air handlers in auditorium with new units. Stage and Seating area units shall be equipped with economizers and heat recovery.</p>			
EXISTING HYDRONIC AND STEAM SYSTEMS	<p>Replace all existing steam and chilled water piping in building with new four-pipe hydronic system complete with variable flow primary secondary pumping.</p> <p>Remove all perimeter heating units throughout building.</p>			
OUTDOOR AIR				
TERMINAL UNITS				
EXISTING PACKAGED ROOFTOP UNITS	<p>Existing packaged rooftop units shall all be removed, areas they served are now new construction. Any areas left that were served by the packaged units shall be served by the new hydronic system with dedicated outdoor air units.</p>			
CONTROLS	<p>Gut all pneumatic controls and expand the existing system to control all systems in the building.</p>			
OFFICE	<p>The office shall be provided with a standalone VRF system</p>			
GYM	<p>Gym and multipurpose rooms shall be provided with a rooftop air handler to provide heating and cooling. The units shall be equipped with heat recovery or demand control ventilation depending on the ventilation rate.</p>			
HVAC				<p>Extend the new four-pipe hydronic system from the High School into the new construction and provide four pipe fan coils and provide dedicated outdoor air units with heat recovery. New DDC control systems shall control all systems in new construction</p>

*New systems for the auditorium are fed from the high school central plant

HYBRID - ALTERNATE

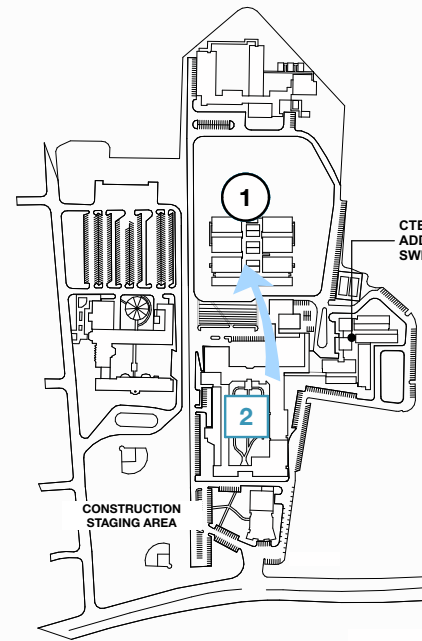
PLUMBING SUMMARY

HIGHSCHOOL	AUDITORIUM	CVPA
<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outdoor and shall be set adjacent to the property line. The water service shall be routed vertical and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all the domestic water heaters with high efficiency and energy saving new water heaters. A gas fired domestic water heater located in Boiler Room No.2 can be salvaged. This 2011 heater is a 100 gallon storage tank capacity with 75,000 BTU per hour gas input. Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED silver level.</p> <p>Demolish sprinkler system in existing building. Provide wet-pipe sprinkler system with new sprinkler control zones for the building.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outside and shall be set adjacent to the property line. The water service shall be routed vertically and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for the lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.</p> <p>Replace all domestic water heaters with high efficiency and energy saving new water heaters.</p> <p>Demolish all plumbing fixtures and provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Provide new sprinkler heads and adjust the location for renovated ceiling as required.</p>	<p>RECOMMENDATION</p> <p>Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outdoor and shall be set adjacent to the property line. The water service shall be routed vertical and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for lining of underslab piping. Install backflow device at domestic and fire incoming services to current code and local water authority requirement.</p> <p>Provide high efficiency and energy saving domestic water heaters.</p> <p>Provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.</p> <p>Provide wet-pipe sprinkler system for the building.</p>

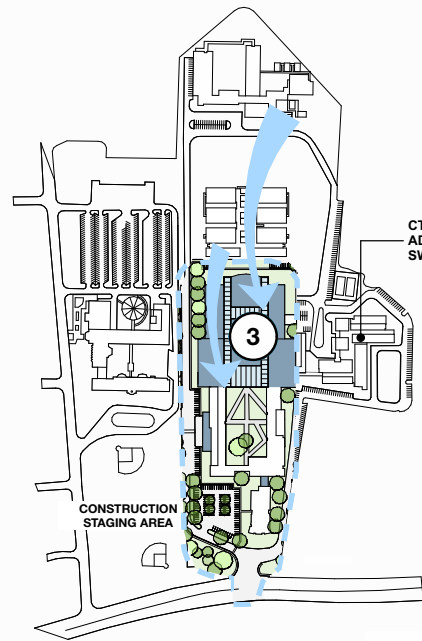


HYBRID - ALTERNATE

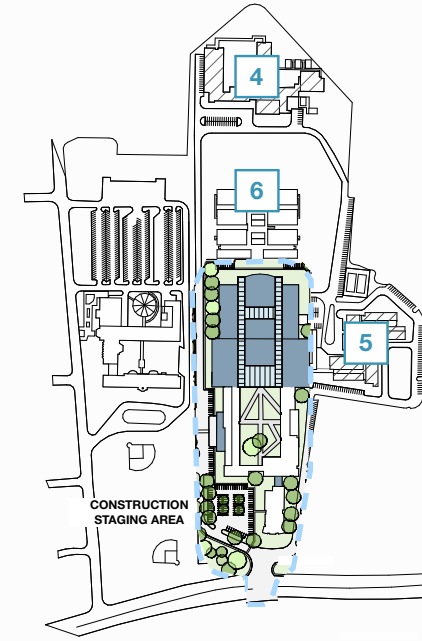
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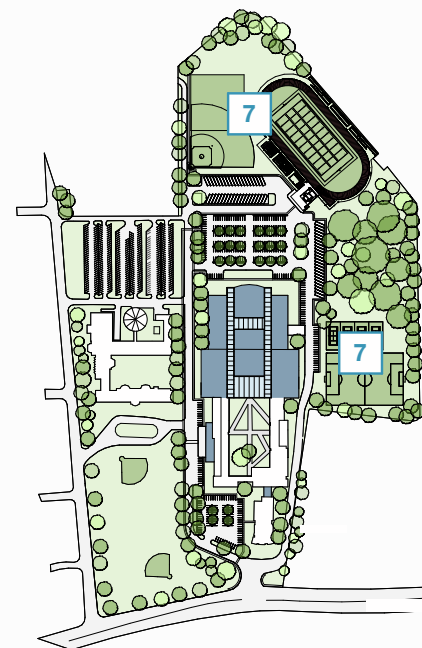
- A**
- 1 Students from High School move to the temporary on-site campus
 - 2 High school and CVPA modernization and addition



- B**
- 3 High school and CVPA students move into newly modernized high school



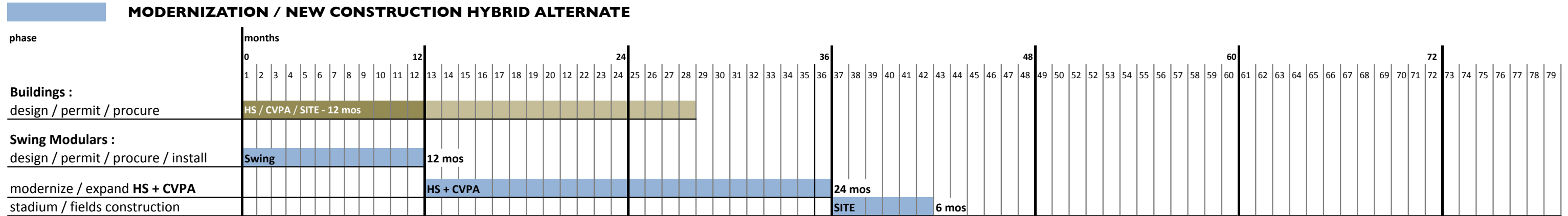
- C**
- 4 Demolition of annex building
 - 5 Demolition of CTE
 - 6 Removal of temporary campus



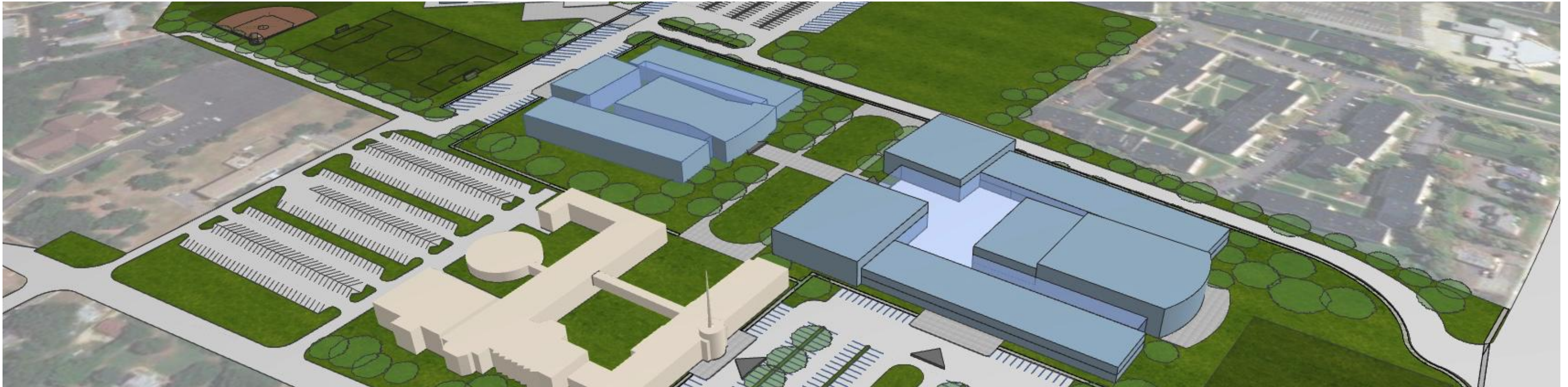
- D**
- 7 Modernization of site

HYBRID - ALTERNATE

PHASING SCHEDULE



HYBRID - ALTERNATE



Maximum New Construction Site Plan

OPTION IV: MAXIMUM NEW CONSTRUCTION OVERVIEW

In this option, the existing high school, auditorium, annex and CTE building will be demolished as this program is being moved off campus. Total square footage to be demolished is 388,222 square feet. No work on the Drew Freeman building is part of this option. Both the CVPA and comprehensive high school programs move into new buildings that are arranged around a central courtyard. This central courtyard provides a gathering space for all students that is easily accessed without crossing any streets. Each building has an entry off this courtyard. The comprehensive high school is located to the south of the site and CVPA is to the north. In addition to the courtyard entries, each building has another main entry located near a parking area. Total new square footage is 378,025 square feet.

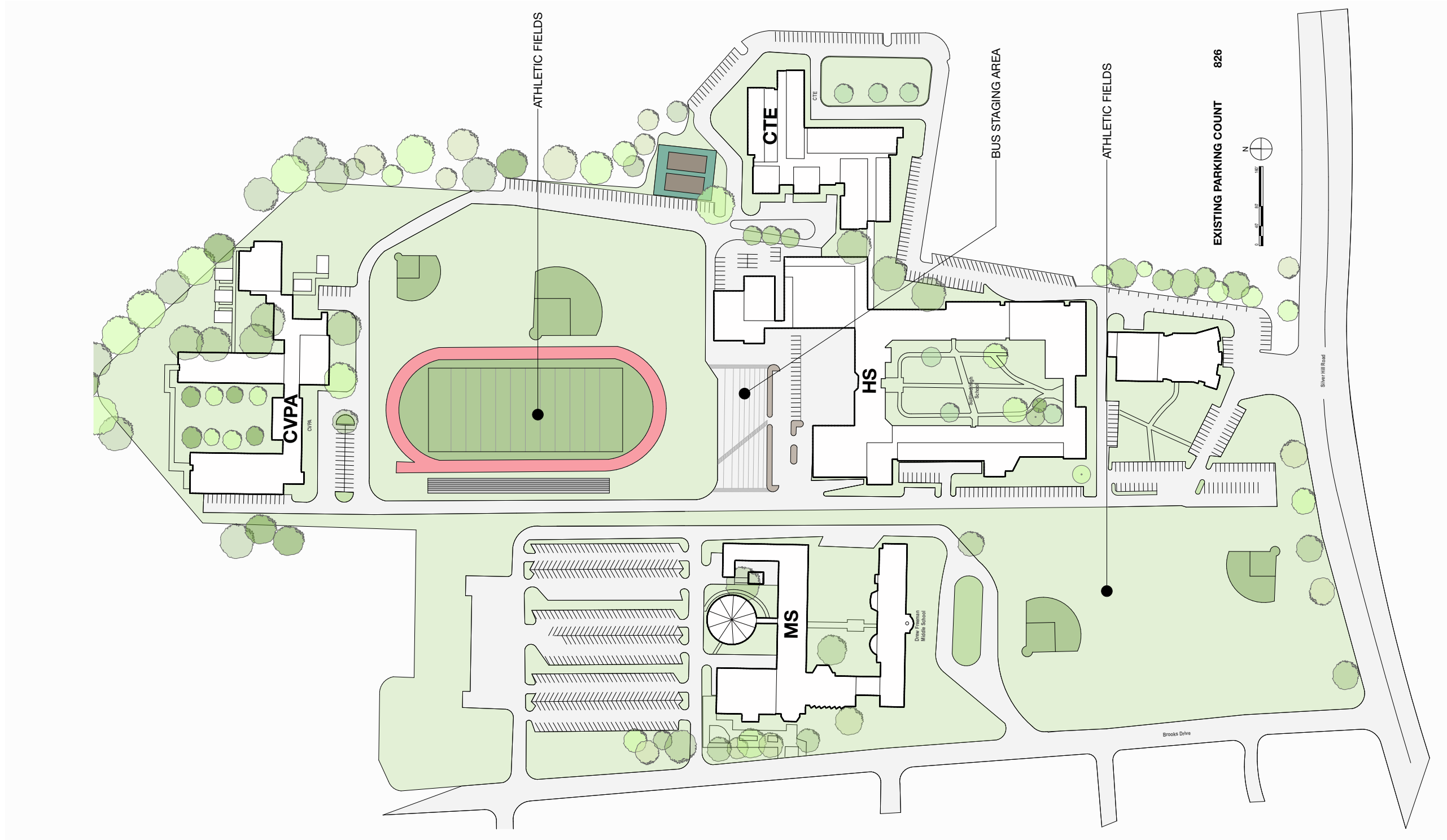
The maximum new construction scheme also maintains open space and athletic fields near the front of the site where they can be easily accessed by community members. Like the other options, the entry off Silver Hill road is maintained and additional site access is provided from Brooks Drive. Vehicular traffic flows around the site allowing pedestrians to traverse the site safely. The complete reorganization of the site will also allow walkways and plantings to be planned in a way that promotes walking and provides visitors and students with access to shaded seating areas.

Like other options, the majority of the athletic fields are located at the back of the site, creating a unified athletic campus. There are multiple practice fields which will allow different sporting events or practices to happen simultaneously.

It can be anticipated that any site improvements will be required to include Environmental Site Design (ESD) to the maximum extent practicable to treat all areas inside the limits of disturbance. If ESD efforts are exhausted and the site has still not been able to reach a hydrologic state of "good condition," then structural practices may be permitted as determined by Prince George's County.

Potential ESD stormwater management practices for the site include both micro-scale practices and alternative surfaces. Micro-scale facilities could include the utilization of bio-swales, micro-bioretenement, and vegetative green roof facilities where available open space can be found, such as parking lot islands, around the athletic fields, and on proposed building expansion areas.

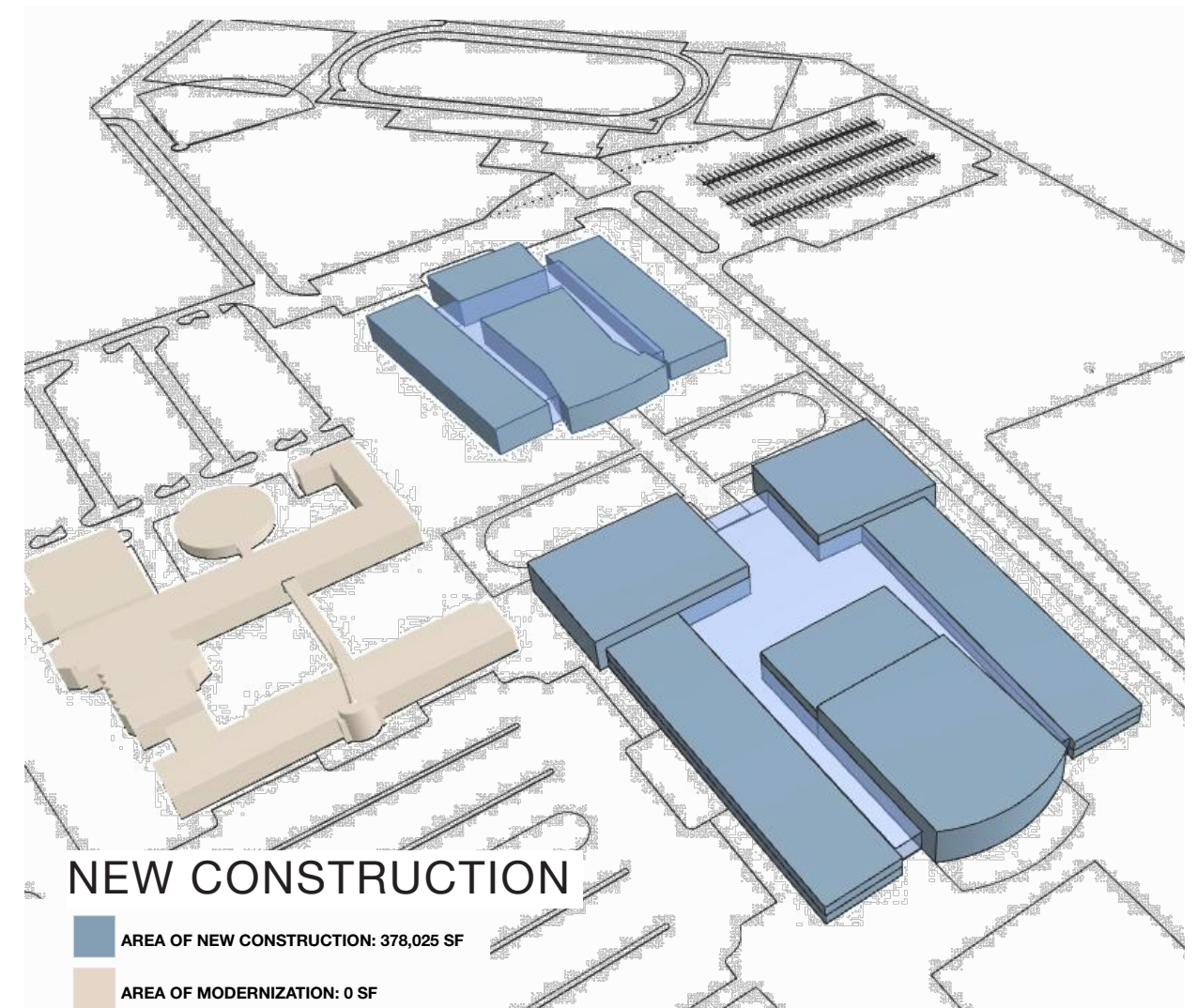
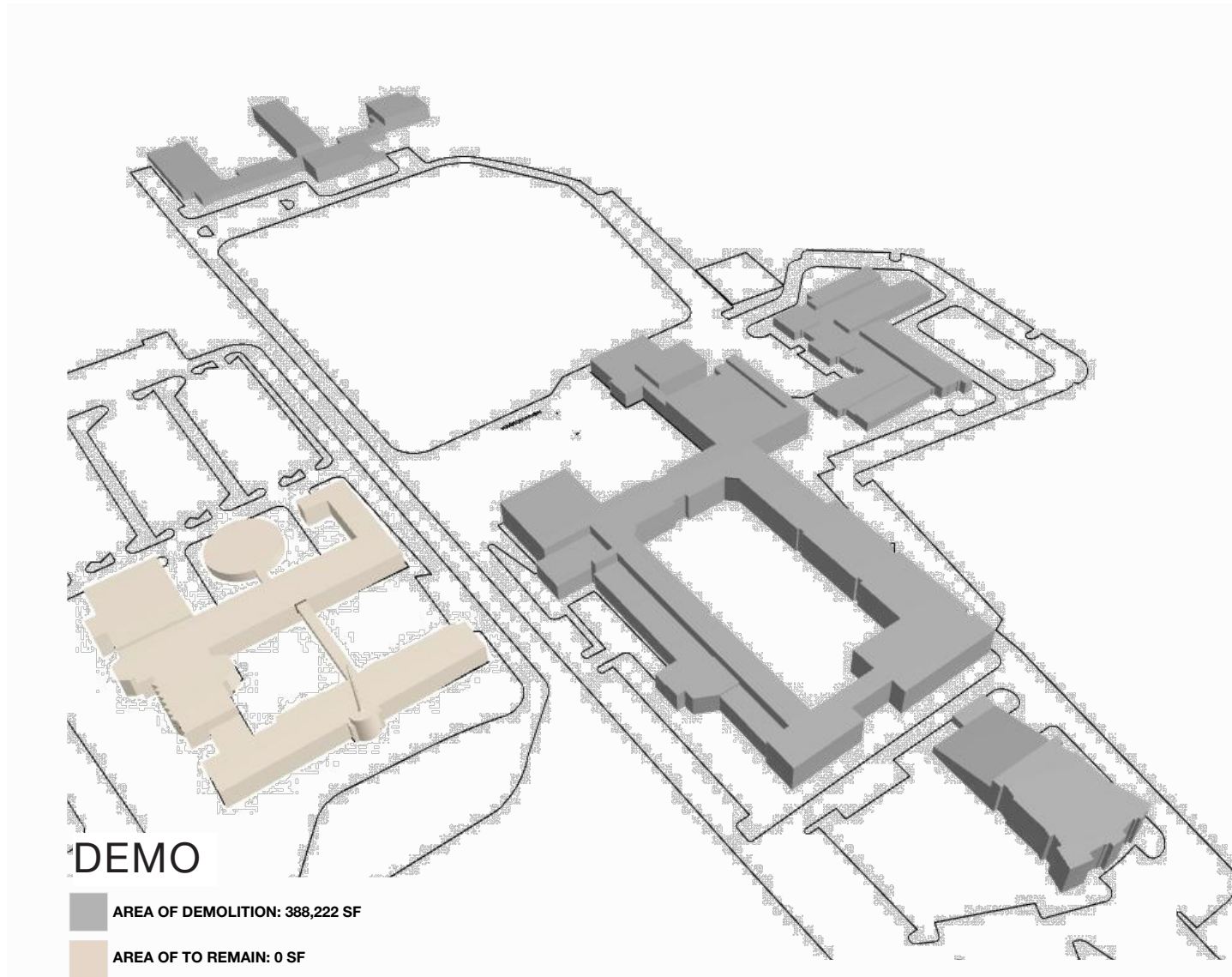
MAX NEW CONSTRUCTION



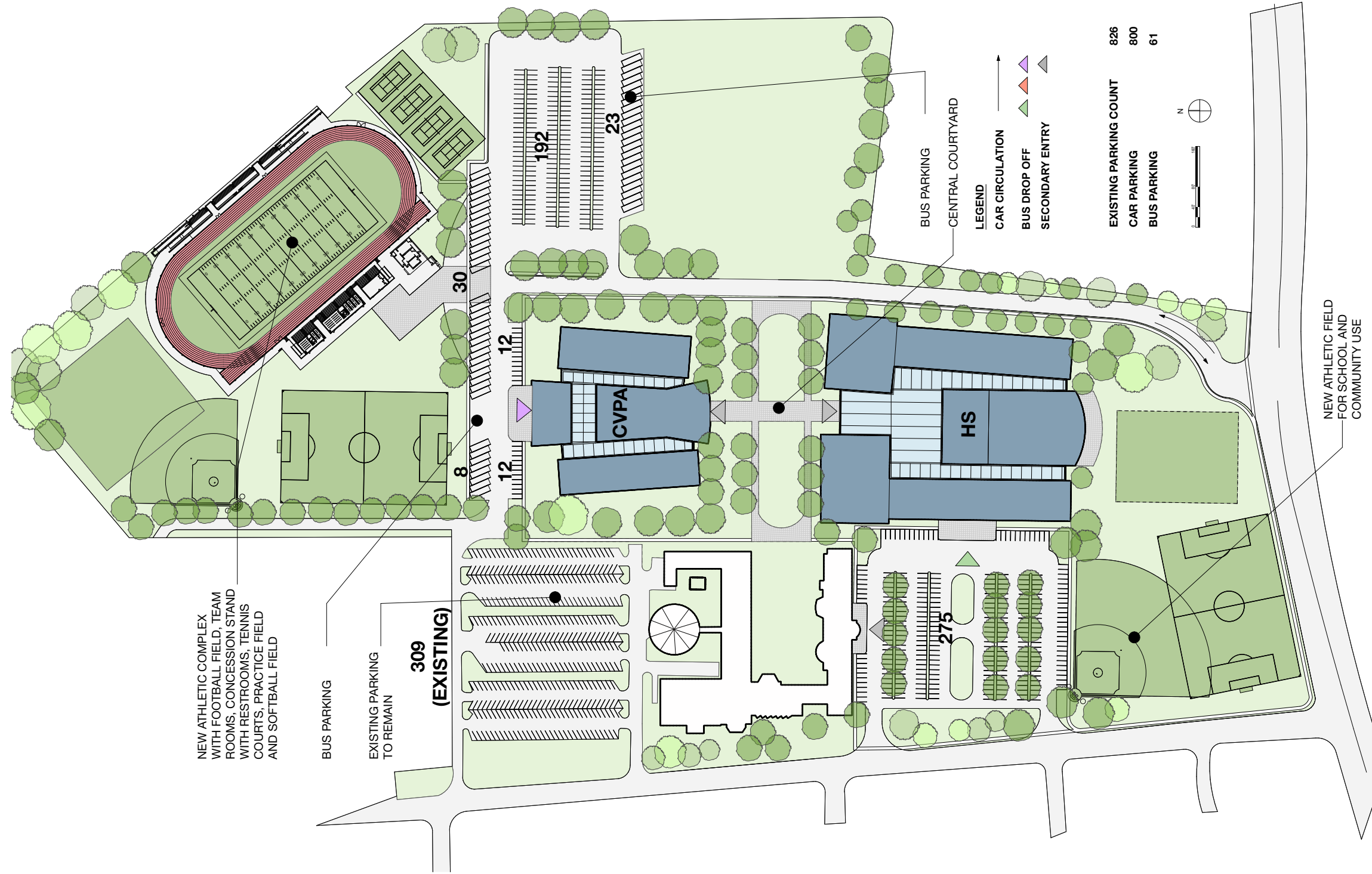
MAX NEW CONSTRUCTION

EXISTING SITE PLAN

BUILDING ALTERATIONS



MAX NEW CONSTRUCTION



MAX NEW CONSTRUCTION

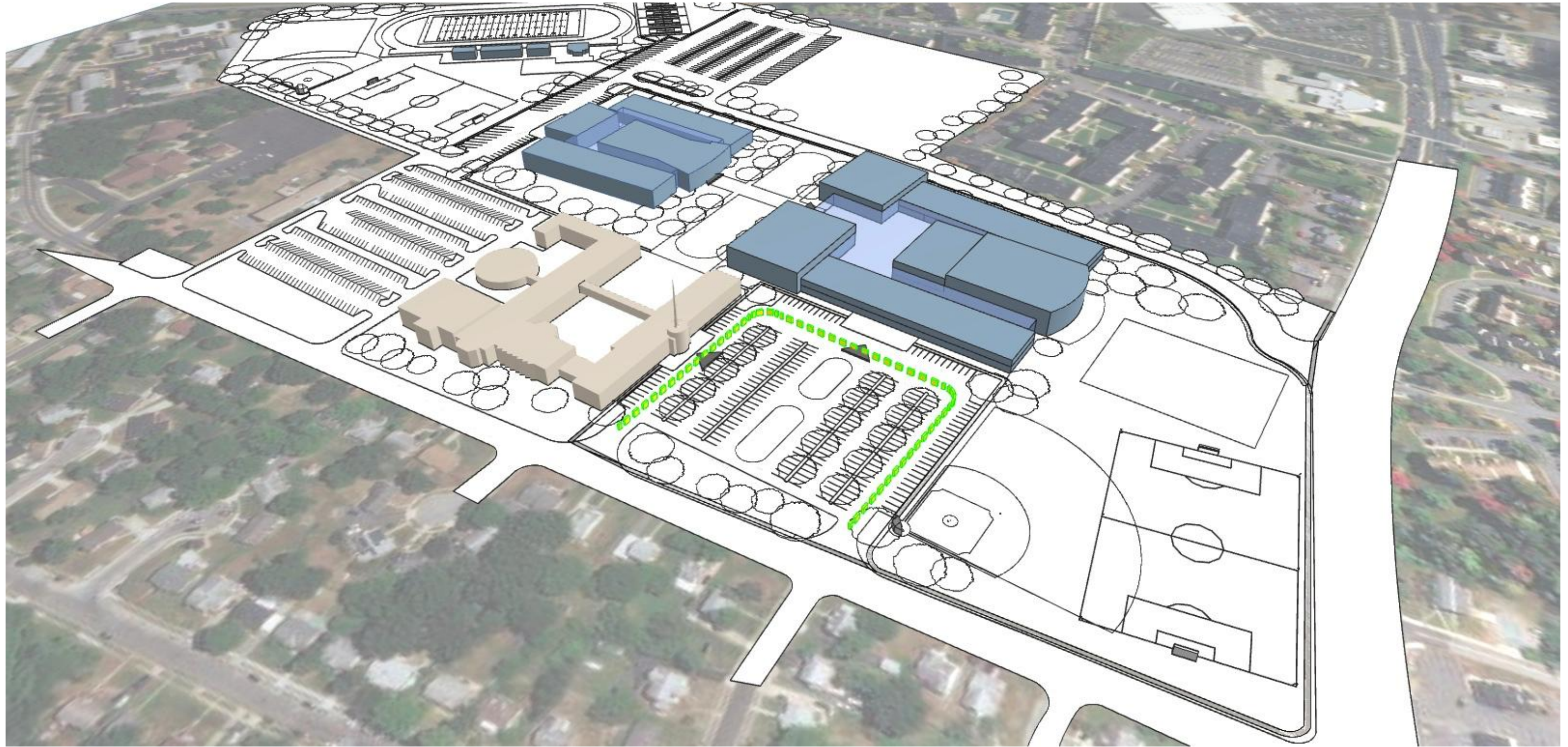


Maximum New Construction Site Plan

MAX NEW CONSTRUCTION

BUS ROUTES

Comprehensive High School & CTE



MAX NEW CONSTRUCTION

BUS ROUTES

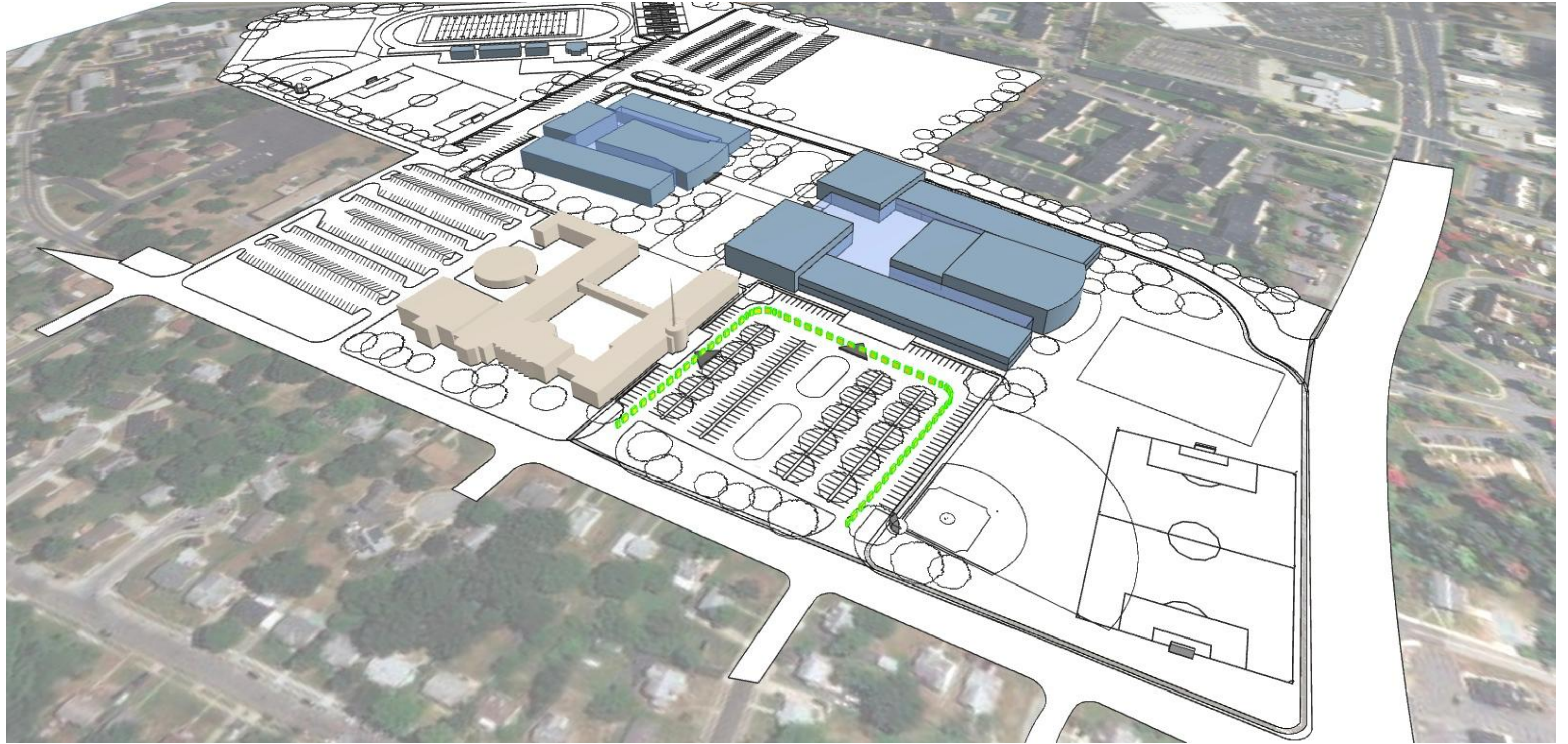
Center for Visual & Performing Arts



MAX NEW CONSTRUCTION

BUS ROUTES

Middle School

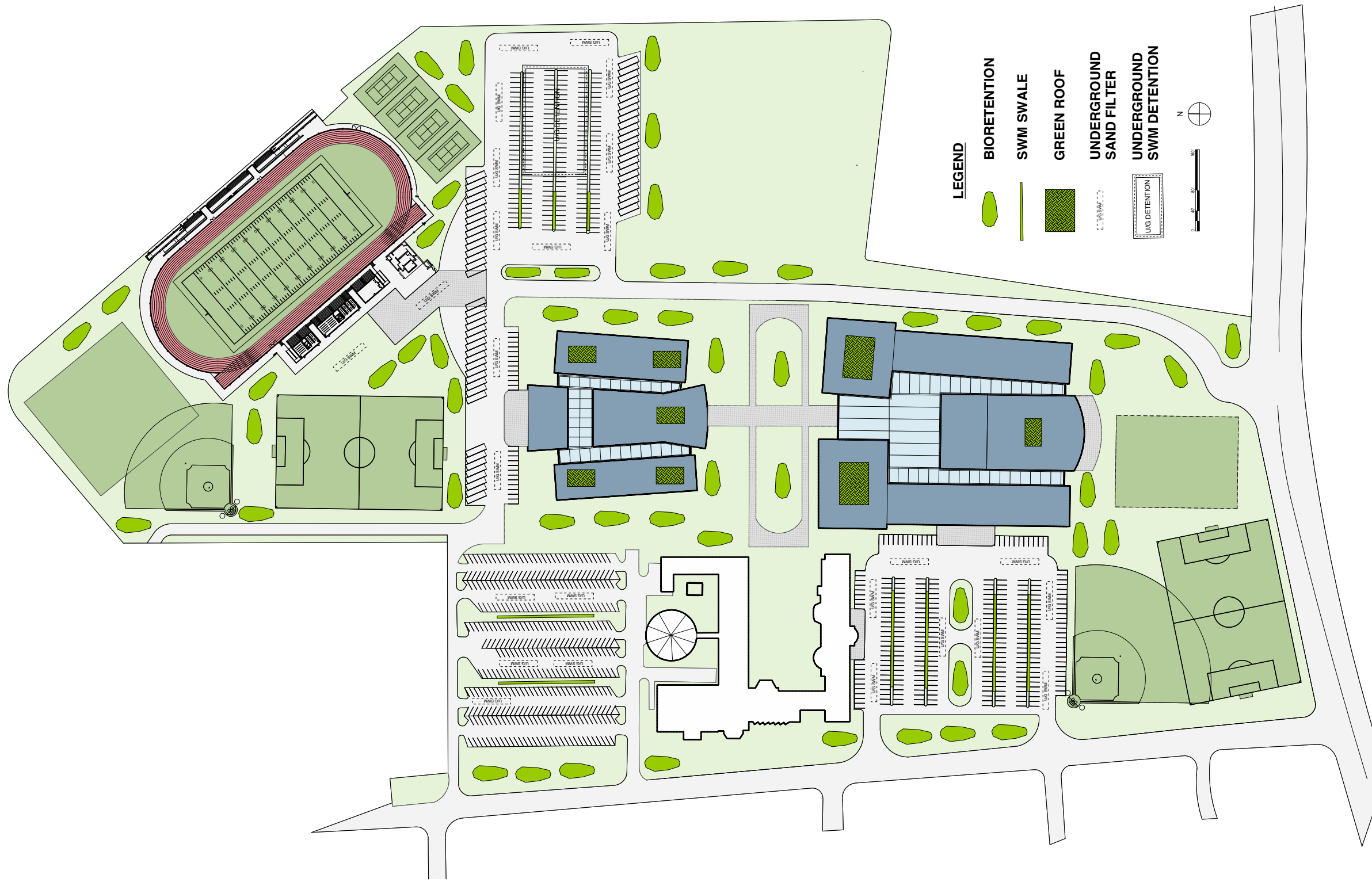


MAX NEW CONSTRUCTION



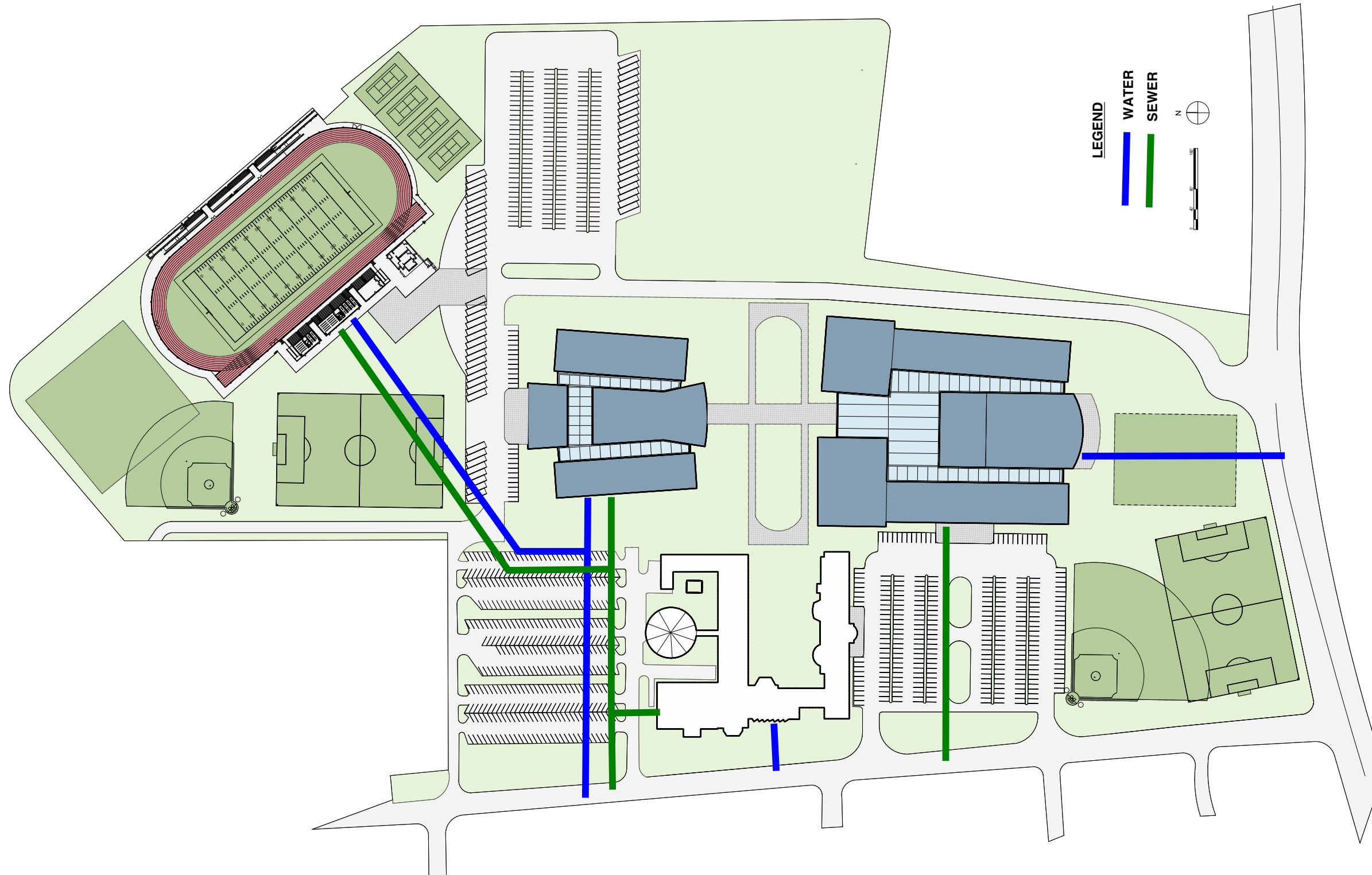
MAX NEW CONSTRUCTION

PROPOSED LANDSCAPE PLAN
Maximum New Construction



STORM WATER MANAGEMENT PLAN

MAX NEW CONSTRUCTION



MAX NEW CONSTRUCTION

UTILITY PLAN

HIGH SCHOOL PROGRAM ORGANIZATION

HIGH SCHOOL SPACE LEGEND

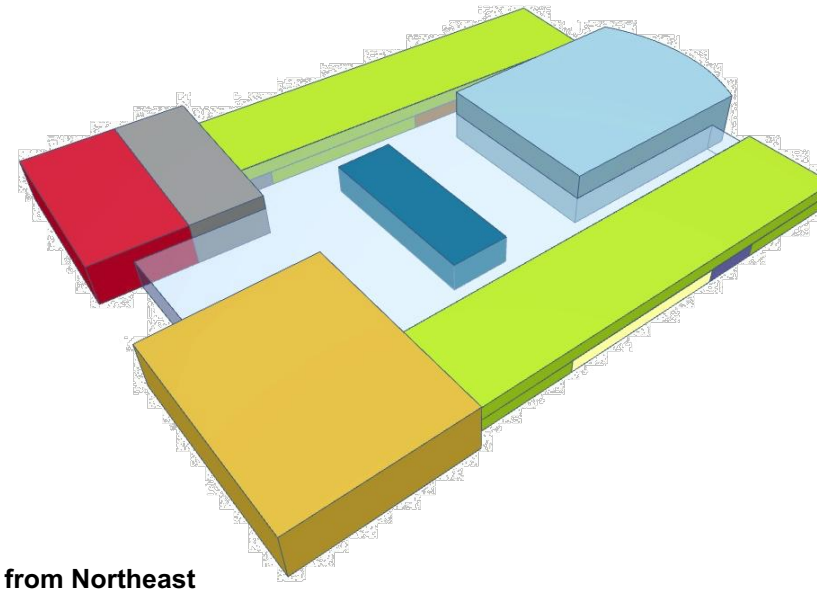
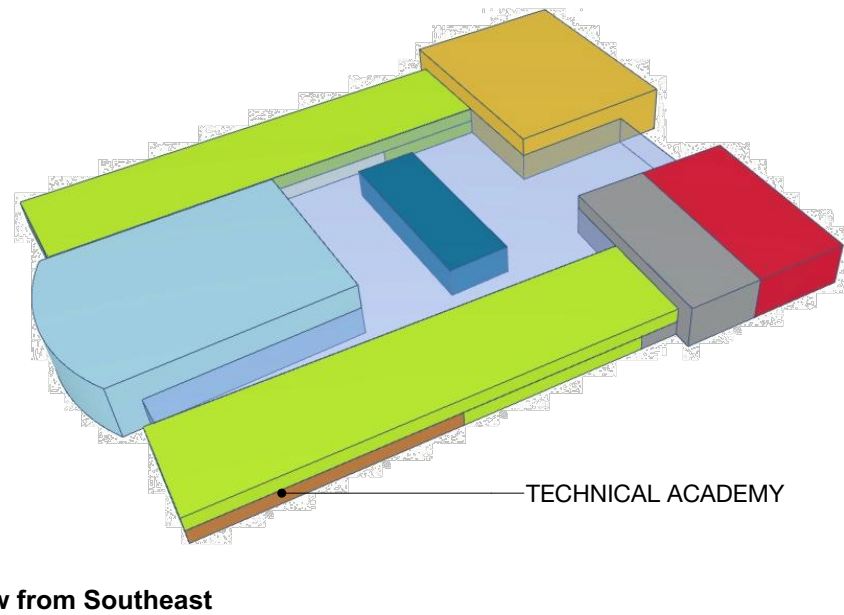
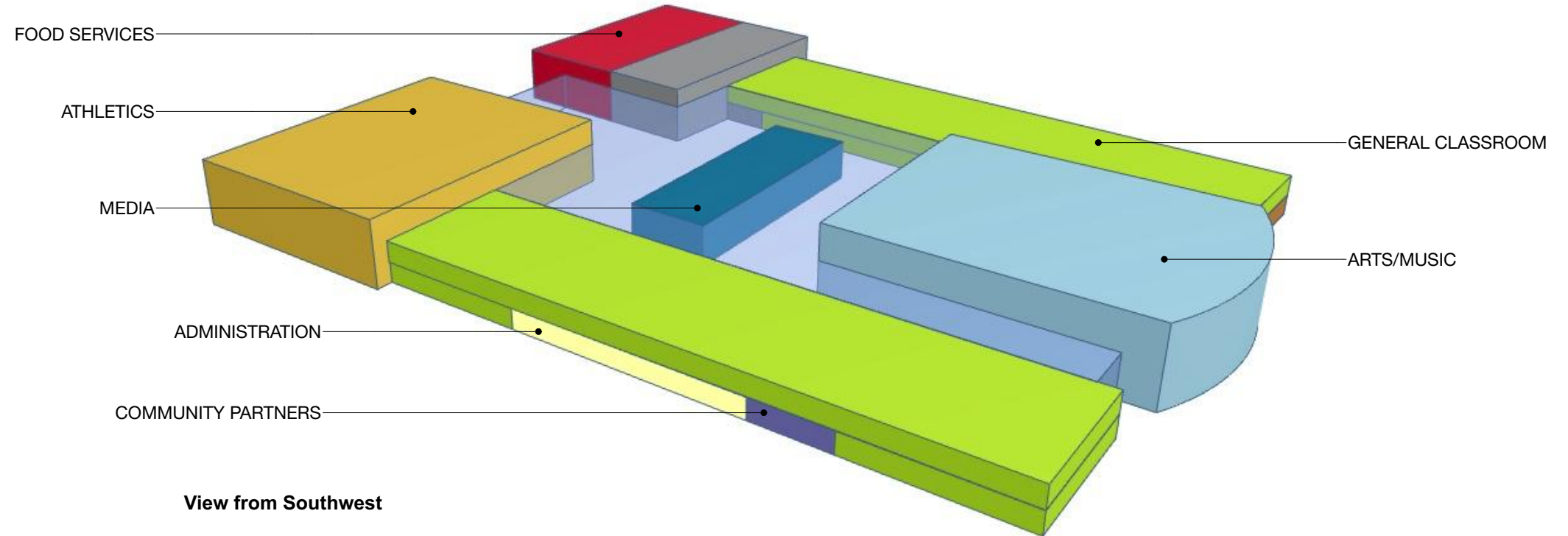
1st Floor Plan

Media	7,110
Community Partners	3,520
Tech Academy	14,400
Arts/Music	27,019
Building Infrastructure	67,316
General Classroom	40,310
Food Service	11,150
Athletics	23,410
Administrative	11,070

2nd Floor Plan

General Classroom	40,310
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TOTAL NET SF	180,599 SF
TOTAL GROSS SF	245,615 SF

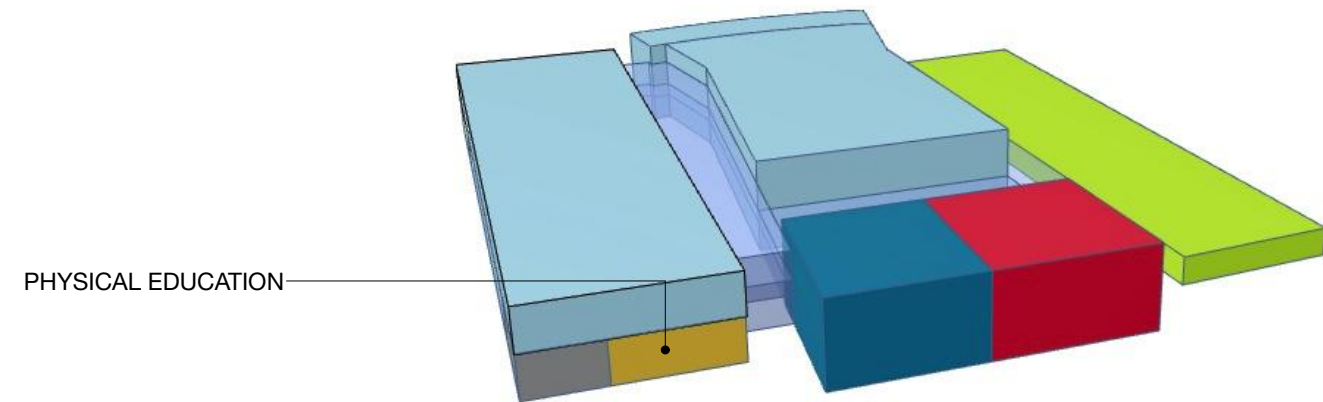
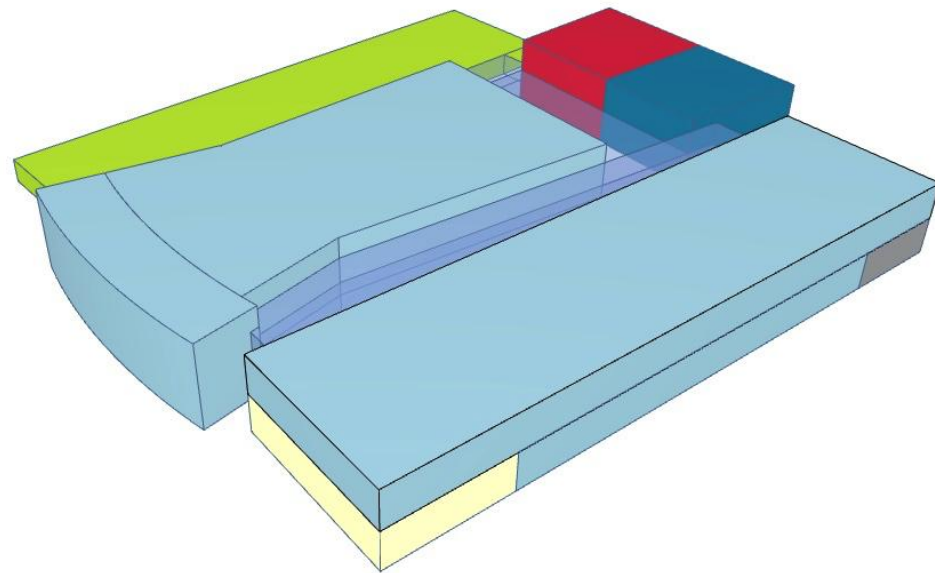
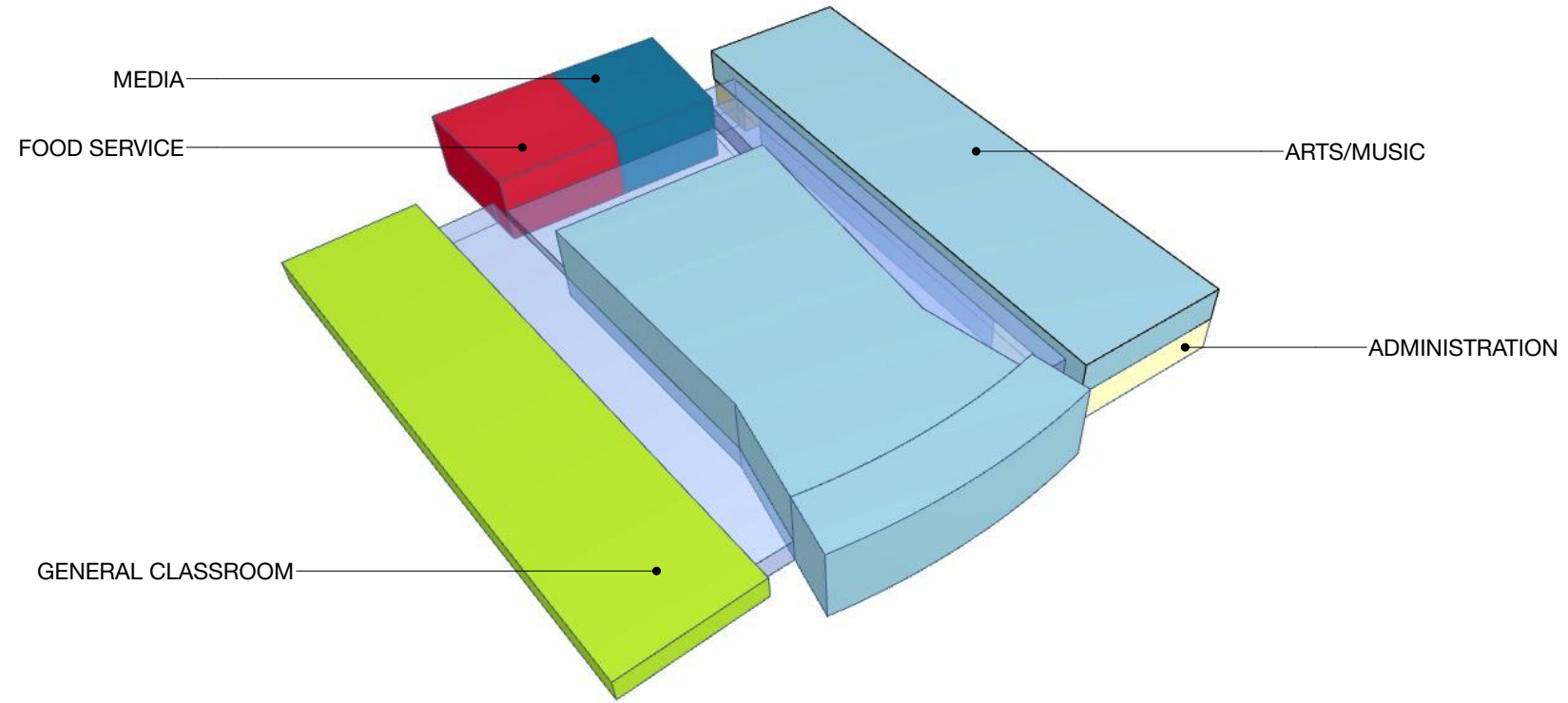


MAX NEW CONSTRUCTION

CVPA PROGRAM ORGANIZATION

CVPA SPACE LEGEND

1st Floor Plan	
	Media 4,640
	Arts/Music 31,265
	Building Infrastructure 34,250
	General Classroom 20,350
	Food Service 4,795
	Athletics 1,400
	Administrative 4,445
2nd Floor Plan	
	Arts/Music 31,265
TOTAL NET SF	99,410 SF
TOTAL GROSS SF	132,410 SF



MAX NEW CONSTRUCTION

ELECTRICAL SUMMARY

HIGH SCHOOL, CVPA	
NEW CONSTRUCTION	
POWER DISTRIBUTION	<p>Provide new electrical service. Contact utility company and issue necessary application for new class of service. Voltage system for new service will be 208Y/120V, 3-Phase, 4-Wire. Capacity of the new service will be most likely the same as existing CVPA building.</p> <p>Provide a new main distribution panel (MDP) to be located inside the main electrical room.</p> <p>Provide new branch panelboards inside floor electrical closets throughout the building.</p> <p>Provide mechanical panels in building mechanical room and mechanical closets.</p> <p>Provide a new stand-by generator unit with ATS switches for building life safety loads and critical/optional loads.</p> <p>Provide emergency panels dedicated to building life safety and critical loads</p> <p>provide complete new wiring (wires & conduits) for normal and emergency power distribution system in new building</p>
EMERGENCY POWER SYSTEMS	
INTERIOR LIGHTING	<p>Provide new lighting system with LED light fixtures.</p> <p>Provide new lighting control system including wall/ceiling occupancy sensors.</p> <p>Provide new emergency fixtures & exit signs with LED fixtures for all egress paths.</p> <p>Provide new wiring (wires & Conduit) necessary for lighting system.</p>
POWER OUTLETS	<p>Provide new power outlets as necessary in all spaces.</p> <p>Provide new wires (wires & conduits) for all power outlets in all areas.</p>
FIRE ALARM SYSTEM	<p>Provide complete addressable fire alarm system with voice alarm including: fire alarm control panel (FACP), graphic annunciator panel (GAP), addressable initiating devices, notification appliances, necessary control modules and sub-panels. Provide complete wiring for the system in the building.</p>
PUBLIC ADDRESS (PA) & SOUND SYSTEM	<p>Provide new PA system in the building including complete main control panel/rack, ceiling speakers and other related accessories and components. Provide complete wiring for PA system in the building.</p> <p>Provide sound system for different studios and stages as necessary including complete main control equipment, ceiling/wall speakers and other related accessories and components. Provide new wiring for sound system in different areas.</p>
TEL/DATA SYSTEM	<p>Provide complete Tel/Data system in the building including equipment/racks in MDF and IDF rooms, backbone wiring, cabling between MDF equipment and IDF rooms, tel/data outlets and related jacks and wiring tel/data outlets to IDF equipment/patch panels. All tel/data equipment will be connected to the building emergency system. Provide UPS system to support data/tel system during utility power outage until emergency generator is upon and running. Cable trays will be used for all tel/data wiring in the building.</p>
SECURITY SYSTEM	<p>Provide complete security and CCTV system in the building including equipment/racks in MDF & IDF rooms, security cameras inside the building and outside, motion detectors, Access control devices for designated doors and all security monitoring equipment in security control room. Provide all necessary wiring for security system inside and outside of the building.</p>

MAX NEW CONSTRUCTION

MECHANICAL SUMMARY

HIGH SCHOOL, CVPA	
NEW CONSTRUCTION	
CENTRAL PLANT	<p>A single central plant will be provided to serve all of the buildings. The plant shall consist of centrifugal water-cooled magnetic bearing chillers with VFD compressors. Cooling towers shall be provided on the roof of the high school.</p> <p>New high efficiency condensing boilers shall be provided in a single location to serve all of the buildings.</p> <p>Pumps shall be provided in the central plant to serve each building, it is proposed that a set of primary pumps shall be provided in the plant room and each building shall have set of duplex secondary pumps for heating and cooling.</p>
HYDRONIC AND STEAM SYSTEMS	<p>Each building shall receive a new four-pipe variable flow distribution system to serve all of the terminal equipment and Air handlers throughout the buildings. Piping shall be distributed underground from the building with the central plant to each of the buildings.</p>
OUTDOOR AIR	
TERMINAL UNITS	<p>Classrooms shall receive four pipe fan coils and have dedicated outdoor air units with heat recovery which shall deliver dehumidified, load neutral air to the space</p> <p>Gyms, multipurpose rooms and cafeterias shall have dedicated rooftop air handling units with heat recovery or demand control ventilation based on the outdoor air percentage.</p>
EXISTING PACKAGED ROOFTOP UNITS	
CONTROLS	<p>The entire system shall be controlled by a new DDC system. The campus shall have its own server and PC located in the new MDF room.</p>
OFFICE	<p>Office shall receive a new stand-alone VRF system for heating, cooling and ventilation.</p>
GYM	
HVAC	

MAX NEW CONSTRUCTION

PLUMBING SUMMARY

HIGH SCHOOL

RECOMMENDATION

Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outdoor and shall be set adjacent to the property line. The water service shall be routed vertical and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for lining of underslab piping. Install backflow device at domestic and fire incoming services to meet current code and local water authority requirement.

Provide high efficiency and energy saving domestic water heaters. Provide high efficiency and low consumption plumbing fixtures. It is anticipated that the facility will pursue LEED Silver level.

Provide wet-pipe sprinkler system for the building.



CVPA

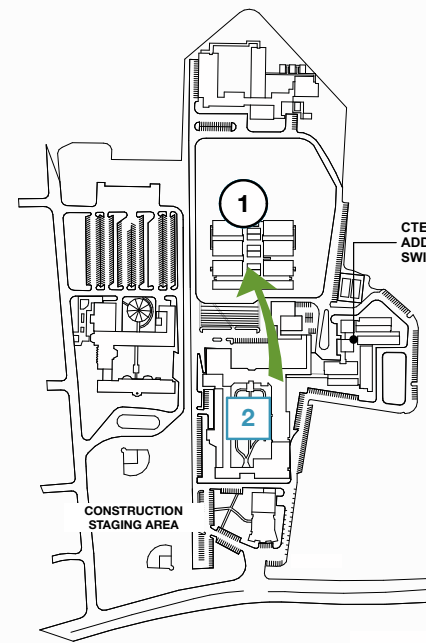
RECOMMENDATION

Provide a new domestic water and fire protection combined water service to this building. The water meter will be located outdoor and shall be set adjacent to the property line. The water service shall be routed vertical and penetrate the lowest relative slab within five feet of the perimeter wall which it passed under for lining of underslab piping. Install backflow device at domestic and fire incoming services to current code and local water authority requirement.

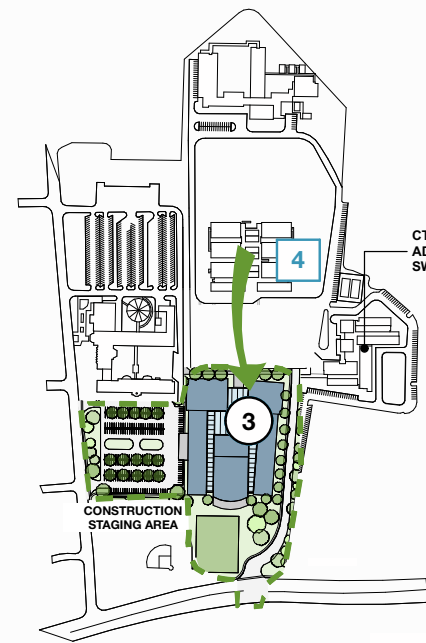


MAX NEW CONSTRUCTION

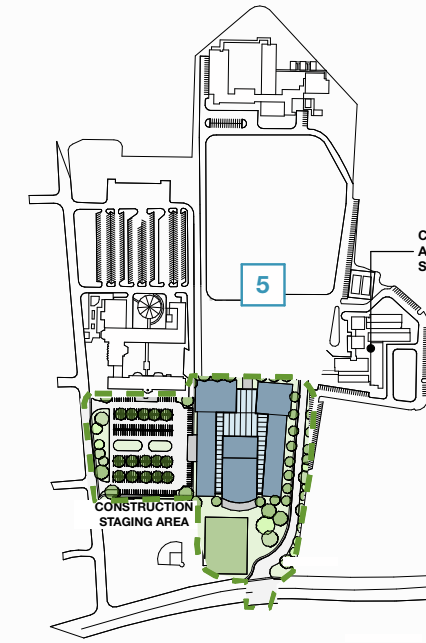
PHASING DIAGRAM



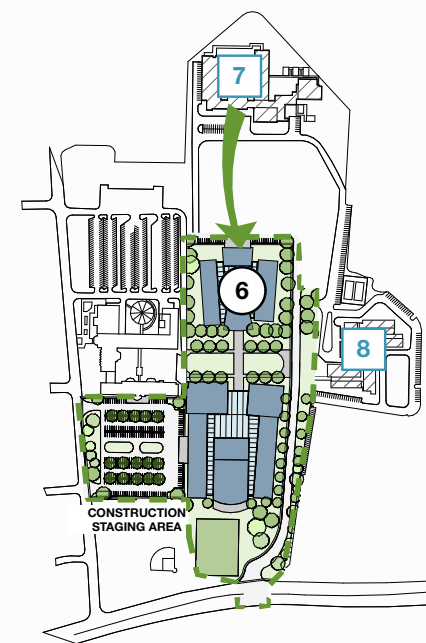
- A**
- 1 Students from high school move the temporary on-site campus
 - 2 Construction of new high school



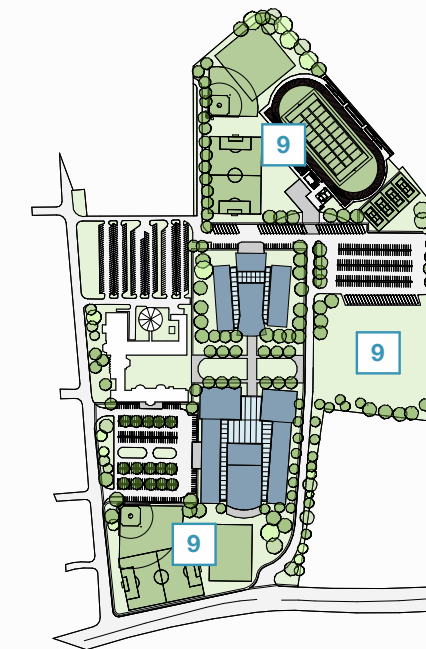
- B**
- 3 High school students move into new building
 - 4 Removal of temporary campus



- C**
- 5 Construction of new CVPA building



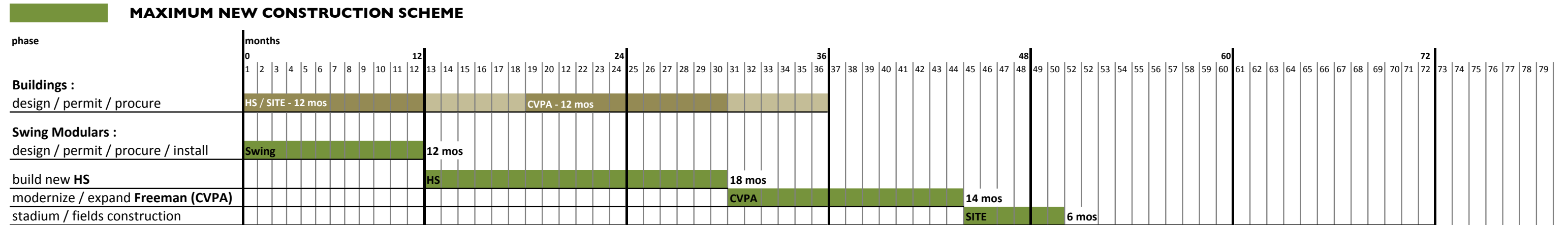
- D**
- 6 CVPA students move into new CVPA building.
 - 7 Demolition of annex building
 - 8 Demolition of CTE building



- E**
- 9 Site modernization

MAX NEW CONSTRUCTION

PHASING SCHEDULE



MAX NEW CONSTRUCTION

COST SUMMARY

DESCRIPTION		Program Building	OPTION IV: MAXIMUM NEW CONSTRUCTION														
			High School		High School		CVPA		CTE		Annex		Site Works & Temp Campus	TOTAL OPTION IV			
			New Construction		High School		New Construction		CTE		Annex		Total	Renovation	New Addition	Total	
			New Addition	Total	Complete	Total	New Addition	Total	Complete	Total	Complete	Total	Amount	Amount	Rate	Amount	
DIVISION	GSF / Program	Rate	Amount	Demo	Amount	Rate	Amount	Demo	Amount	Demo	Amount	Amount	Amount	Rate	Amount		
020000	EXISTING CONDITIONS/ INTER. DEMO		245,615		243,983		132,410		70,016		74,223						
030000	CONCRETE	\$ 35.00	\$ 8,596,525			\$ 35.00	\$ 4,634,350										
040000	MASONRY	\$ 33.00	\$ 8,105,295			\$ 33.00	\$ 4,369,530										
050000	METALS	\$ 52.80	\$ 12,968,472			\$ 52.80	\$ 6,991,248										
060000	WOOD, PLASTICS AND COMPOSITES	\$ 10.00	\$ 2,456,150			\$ 10.00	\$ 1,324,100										
070000	THERMAL & MOISTURE PROTECTION	\$ 26.00	\$ 6,385,990			\$ 26.00	\$ 3,442,660										
080000	OPENINGS	\$ 35.53	\$ 8,727,488			\$ 34.83	\$ 4,612,497										
090000	FINISHES	\$ 43.02	\$ 10,567,547			\$ 44.58	\$ 5,902,256										
100000	SPECIALTIES	\$ 8.00	\$ 1,964,920			\$ 8.00	\$ 1,059,280										
110000	EQUIPMENT	\$ 5.90	\$ 1,449,010			\$ 5.98	\$ 791,540										
120000	FURNISHINGS	\$ 5.09	\$ 1,251,303			\$ 5.00	\$ 662,050										
130000	SPECIAL CONSTRUCTION	\$ 3.00	\$ 736,845			\$ 3.00	\$ 397,230										
140000	CONVEYING SYSTEMS	\$ 8.00	\$ 1,964,920			\$ 8.00	\$ 1,059,280										
210000	FIRE SUPPRESSION	\$ 4.79	\$ 1,175,972			\$ 5.01	\$ 663,102										
220000	PLUMBING	\$ 9.17	\$ 2,252,857			\$ 13.72	\$ 1,816,559										
230000	HVAC	\$ 53.38	\$ 13,111,695			\$ 54.45	\$ 7,209,684										
260000	ELECTRICAL	\$ 34.93	\$ 8,578,492			\$ 35.39	\$ 4,685,421										
270000	COMMUNICATIONS	\$ 9.83	\$ 2,413,169			\$ 10.08	\$ 1,334,881										
280000	ELEC. SAFETY AND SECURITY	\$ 5.37	\$ 1,318,200			\$ 5.83	\$ 772,573										
310000	EARTHWORK	\$ 10.00	\$ 2,456,150			\$ 10.00	\$ 1,324,100										
320000	EXTERIOR IMPROVEMENTS	\$ -	\$ 3,925,130			\$ -	\$ 1,293,074					\$ 12,402,638					
020000	BUILDINGS COMPLETE DEMO	\$ -	\$ -	\$ 16.00	\$ 3,903,728	\$ -	\$ -	\$ 16.00	\$ 1,120,256	\$ 16.00	\$ 1,187,568		\$ 6,211,552		\$ 16.43	\$ 6,211,552	
	SUB TOTAL	\$ 408.79	\$ 100,406,130		\$ 3,903,728	\$ 410.43	\$ 54,345,415		\$ 1,120,256		\$ 1,187,568		\$ 12,402,638	\$ 6,211,552	\$ 167,154,183	\$ 459	\$ 173,365,735
	GENERAL CONDITIONS	10.00%	\$ 10,040,613		\$ 390,373		\$ 5,434,541		\$ 112,026		\$ 118,757		\$ 1,240,264	\$ 621,155	\$ 16,715,418	\$ 45.9	\$ 17,336,574
	OVERHEAD AND PROFIT	8.00%	\$ 8,032,490		\$ 312,298		\$ 4,347,633		\$ 89,620		\$ 95,005		\$ 992,211	\$ 496,924	\$ 13,372,335	\$ 36.7	\$ 13,869,259
	CONSTRUCTION CONTINGENCY	5.00%	\$ 5,020,307		\$ 195,186		\$ 2,717,271		\$ 56,013		\$ 59,378		\$ 620,132	\$ 310,578	\$ 8,357,709	\$ 22.9	\$ 8,668,287
	SUB TOTAL	\$ 502.82	\$ 123,499,540	\$ 19.68	\$ 4,801,585	\$ 504.83	\$ 66,844,860	\$ 19.68	\$ 1,377,915	\$ 19.68	\$ 1,460,709	\$ -	\$ 15,255,245	\$ 7,640,209	\$ 205,599,645	\$ 564	\$ 213,239,854.31
	DESIGN CONTINGENCY	15.00%	\$ 15,060,920		\$ 585,559		\$ 8,151,812		\$ 168,038		\$ 178,135		\$ 1,860,396	\$ 931,733	\$ 25,073,127	\$ 68.8	\$ 26,004,860
	ESCALATION	Varies	\$ 9,036,551.73	12.0%	\$ 468,447	16.0%	\$ 8,695,266	20.0%	\$ 224,051	20.0%	\$ 237,513.60	20.0%	\$ 2,480,528	\$ 930,012	\$ 20,212,346	\$ 55.9	\$ 21,142,358
	TOTAL FOR CONSTRUCTION COST	\$ 600.93	\$ 147,597,012		\$ 5,855,592	\$ 505	\$ 83,691,938	\$ 20	\$ 1,770,004		\$ 1,876,357		\$ 19,596,168	\$ 9,501,954	\$ 250,885,119	\$ 689	\$ 260,387,072
	SOFT COST	35.00%	\$ 51,658,954		\$ 2,049,457		\$ 29,292,178		\$ 619,502		\$ 656,725		\$ 6,858,659	\$ 3,325,684	\$ 87,809,791	\$ 241.1	\$ 91,135,475
	Temp campus, Renatl Trailer 4 years													\$ 19.6	\$ 7,425,000		\$ 7,425,000
	TOTAL FOR CONSTRUCTION COST	\$ 811.3	\$ 199,255,966	\$ 32.40	\$ 7,905,049	\$ 853.29	\$ 112,984,117	\$ 34.13	\$ 2,389,506	\$ 34.13	\$ 2,533,083		\$ 26,454,827	\$ 12,827,638	\$ 338,694,910	\$ 949.5	\$ 358,947,548

MAX NEW CONSTRUCTION

 appendix

Contents

- A - Program Space Summaries
- B - LEED Score Cards
- C - Codes & Regulations
- D - 40 Year Life Cycle Analysis
- E - Cost Estimate Detail





A: program space summaries



HIGH SCHOOL PROGRAM

Base Required Space	Square Footage
Core Academic/Science/Support	60,400
Special Education	6,160
Academy – Business	6,700
Academy – Homeland Security and Military Science	7,360
Administration/ Health	5,610
Academic Support (Offices/Tech Planning/Storage)	2,260
Guidance and Student Services	3,200
Media Center	7,110
Performing Arts	21,019
PE/Indoor	23,410
PE/Athletics Outdoor	-
Student Dining & Food Service	11,150
Visual Arts	6,000
Building Maintenance & Custodial Services	2,300
Program Subtotal - Net	162,679
Community Partners	3,520
Technical Academy (Based on approx. 1,500 student)	14,400
Program Total - Net	180,599
Building Support Areas [corridors, bathrooms, storage, stairwells, elevators]	65,016
Program Total - Gross	245,615



SUITLAND MASTER PLAN

CVPA PROGRAM

Base Required Space	Square Footage
Academic/Science/Support	20,350
Administration	4,445
Music	12,960
Visual Arts	14,130
Drama	4,450
Dance	11,970
Media Arts	3,600
Media Center	4,640
Performance Venues	15,420
Physical Education	1,400
Student Dining & Food Service	4,795
Building Maintenance & Custodial Services	1,250
Program Total - Net	99,410
Building Support Areas [corridors, group bathrooms, stairwells, elevators]	33,000
Program Total - Gross	132,410



CVPA PROGRAM - ALT.

Base Required Space	Square Footage
Academic/Science/Support	11,900
Administration	2,545
Music	12,960
Visual Arts	14,130
Drama	4,450
Dance	11,970
Media Arts	3,600
Media Center	2,340
Performance Venues	15,420
Student Dining & Food Service	2,750
Building Maintenance & Custodial Services	550
Program Total - Net	82,615
Building Support Areas [corridors, group bathrooms, stairwells, elevators]	29,211
Program Total - Gross	111,826





B: leed score cards



LEED SCORE CARDS

A LEED score card details a project's intended methods to achieve a certain LEED rating. Projects are rated Certified, Gold, Silver or Platinum depending on the number of intended methods achieved. The following pages contain LEED scorecards for each design option discussed in the study. All options aim for a minimum LEED rating of Silver.





LEED v4 for BD+C: Schools
Project Checklist

Project Name: Suitland High School - Max Modernization
Date: December 3rd, 2018

Y ? N

1			Credit	Integrative Process	1
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6	5	16	Location and Transportation		15
		12	Credit	LEED for Neighborhood Development Location	15
1			Credit	Sensitive Land Protection	1
	1	1	Credit	High Priority Site	2
2	2	1	Credit	Surrounding Density and Diverse Uses	5
1	1	2	Credit	Access to Quality Transit	4
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

6	5	1	Sustainable Sites		12
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	Environmental Site Assessment	Required
1			Credit	Site Assessment	1
	1	1	Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
	2		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1
	1		Credit	Site Master Plan	1
1			Credit	Joint Use of Facilities	1

5	7	0	Water Efficiency		12
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
3	4		Credit	Indoor Water Use Reduction	7
	2		Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

19	11	1	Energy and Atmosphere		31
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	3		Credit	Enhanced Commissioning	6
13	3		Credit	Optimize Energy Performance	16
1			Credit	Advanced Energy Metering	1
1	1		Credit	Demand Response	2
	3		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

11	2	0	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3	2		Credit	Building Life-Cycle Impact Reduction	5
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
2			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

11	5	0	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
Y			Prereq	Minimum Acoustic Performance	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
2	1		Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
2			Credit	Interior Lighting	2
	3		Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

3	3	0	Innovation		6
2	3		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

4	0	0	Regional Priority		4
1			Credit	Regional Priority: Optimize Energy Performance	1
1			Credit	Regional Priority: Access to Quality Transit	1
1			Credit	Regional Priority: Bicycle Facilities	1
1			Credit	Regional Priority: Joint use of facilities	1

66	38	18	TOTALS	Possible Points:	110
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

MAX MODERNIZATION



LEED v4 for BD+C: Schools

Project Checklist

Project Name: Suitland High School - Modernization/NC Hybrid

Date: December 3rd, 2018

Y	?	N		
1			Credit	Integrative Process
				1

6	5	16	Location and Transportation	15
		12	Credit	LEED for Neighborhood Development Location
1			Credit	Sensitive Land Protection
	1	1	Credit	High Priority Site
2	2	1	Credit	Surrounding Density and Diverse Uses
1	1	2	Credit	Access to Quality Transit
1			Credit	Bicycle Facilities
	1		Credit	Reduced Parking Footprint
1			Credit	Green Vehicles

6	5	1	Sustainable Sites	12
Y			Prereq	Construction Activity Pollution Prevention
Y			Prereq	Environmental Site Assessment
1			Credit	Site Assessment
	1	1	Credit	Site Development - Protect or Restore Habitat
1			Credit	Open Space
2	1		Credit	Rainwater Management
	2		Credit	Heat Island Reduction
1			Credit	Light Pollution Reduction
	1		Credit	Site Master Plan
1			Credit	Joint Use of Facilities

5	7	0	Water Efficiency	12
Y			Prereq	Outdoor Water Use Reduction
Y			Prereq	Indoor Water Use Reduction
Y			Prereq	Building-Level Water Metering
1	1		Credit	Outdoor Water Use Reduction
3	4		Credit	Indoor Water Use Reduction
	2		Credit	Cooling Tower Water Use
1			Credit	Water Metering

19	11	1	Energy and Atmosphere	31
Y			Prereq	Fundamental Commissioning and Verification
Y			Prereq	Minimum Energy Performance
Y			Prereq	Building-Level Energy Metering
Y			Prereq	Fundamental Refrigerant Management
3	3		Credit	Enhanced Commissioning
13	3		Credit	Optimize Energy Performance
1			Credit	Advanced Energy Metering
1	1		Credit	Demand Response
	3		Credit	Renewable Energy Production
1			Credit	Enhanced Refrigerant Management
	1	1	Credit	Green Power and Carbon Offsets

11	2	0	Materials and Resources	13
Y			Prereq	Storage and Collection of Recyclables
Y			Prereq	Construction and Demolition Waste Management Planning
3	2		Credit	Building Life-Cycle Impact Reduction
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations
2			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials
2			Credit	Building Product Disclosure and Optimization - Material Ingredients
2			Credit	Construction and Demolition Waste Management

11	5	0	Indoor Environmental Quality	16
Y			Prereq	Minimum Indoor Air Quality Performance
Y			Prereq	Environmental Tobacco Smoke Control
Y			Prereq	Minimum Acoustic Performance
2			Credit	Enhanced Indoor Air Quality Strategies
2	1		Credit	Low-Emitting Materials
1			Credit	Construction Indoor Air Quality Management Plan
1	1		Credit	Indoor Air Quality Assessment
1			Credit	Thermal Comfort
2			Credit	Interior Lighting
	3		Credit	Daylight
1			Credit	Quality Views
1			Credit	Acoustic Performance

3	3	0	Innovation	6
2	3		Credit	Innovation
1			Credit	LEED Accredited Professional

4	0	0	Regional Priority	4
1			Credit	Regional Priority: Optimize Energy Performance
1			Credit	Regional Priority: Access to Quality Transit
1			Credit	Regional Priority: Bicycle Facilities
1			Credit	Regional Priority: Joint use of facilities

66	38	18	TOTALS	Possible Points: 110
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110				

HYBRID



LEED v4 for BD+C: Schools

Project Checklist

Project Name: Suitland High School - Modernization/NC Hybrid

Date: December 3rd, 2018

Y ? N

1		Credit	Integrative Process	1	
6	5	16	Location and Transportation	15	
		12	Credit	LEED for Neighborhood Development Location	15
1			Credit	Sensitive Land Protection	1
	1	1	Credit	High Priority Site	2
2	2	1	Credit	Surrounding Density and Diverse Uses	5
1	1	2	Credit	Access to Quality Transit	4
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

6	5	1	Sustainable Sites	12	
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	Environmental Site Assessment	Required
1			Credit	Site Assessment	1
	1	1	Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
	2		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1
	1		Credit	Site Master Plan	1
1			Credit	Joint Use of Facilities	1

5	7	0	Water Efficiency	12	
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
3	4		Credit	Indoor Water Use Reduction	7
	2		Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

19	11	1	Energy and Atmosphere	31	
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	3		Credit	Enhanced Commissioning	6
13	3		Credit	Optimize Energy Performance	16
1			Credit	Advanced Energy Metering	1
1	1		Credit	Demand Response	2
	3		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

11	2	0	Materials and Resources	13	
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3	2		Credit	Building Life-Cycle Impact Reduction	5
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
2			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

11	5	0	Indoor Environmental Quality	16	
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
Y			Prereq	Minimum Acoustic Performance	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
2	1		Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
2			Credit	Interior Lighting	2
	3		Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

3	3	0	Innovation	6	
2	3		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

4	0	0	Regional Priority	4	
1			Credit	Regional Priority: Optimize Energy Performance	1
1			Credit	Regional Priority: Access to Quality Transit	1
1			Credit	Regional Priority: Bicycle Facilities	1
1			Credit	Regional Priority: Joint use of facilities	1

66	38	18	TOTALS	Possible Points: 110
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

HYBRID ALTERNATE



LEED v4 for BD+C: Schools

Project Checklist

Project Name: Suitland High School - New Construction

Date: December 3rd, 2018

Y ? N

1		Credit	Integrative Process	1	
6	5	16	Location and Transportation	15	
		12	Credit	LEED for Neighborhood Development Location	15
1			Credit	Sensitive Land Protection	1
	1	1	Credit	High Priority Site	2
2	2	1	Credit	Surrounding Density and Diverse Uses	5
1	1	2	Credit	Access to Quality Transit	4
1			Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1

6	5	1	Sustainable Sites	12	
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	Environmental Site Assessment	Required
1			Credit	Site Assessment	1
	1	1	Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2	1		Credit	Rainwater Management	3
	2		Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1
	1		Credit	Site Master Plan	1
1			Credit	Joint Use of Facilities	1

5	7	0	Water Efficiency	12	
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
3	4		Credit	Indoor Water Use Reduction	7
	2		Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

19	11	1	Energy and Atmosphere	31	
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
3	3		Credit	Enhanced Commissioning	6
13	3		Credit	Optimize Energy Performance	16
1			Credit	Advanced Energy Metering	1
1	1		Credit	Demand Response	2
	3		Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	1	1	Credit	Green Power and Carbon Offsets	2

10	3	0	Materials and Resources	13	
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
2	3		Credit	Building Life-Cycle Impact Reduction	5
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
2			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

11	5	0	Indoor Environmental Quality	16	
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
Y			Prereq	Minimum Acoustic Performance	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
2	1		Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
2			Credit	Interior Lighting	2
	3		Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1

3	3	0	Innovation	6	
2	3		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

4	0	0	Regional Priority	4	
1			Credit	Regional Priority: Optimize Energy Performance	1
1			Credit	Regional Priority: Access to Quality Transit	1
1			Credit	Regional Priority: Bicycle Facilities	1
1			Credit	Regional Priority: Joint use of facilities	1

65	39	18	TOTALS	Possible Points: 110
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

MAX NEW CONSTRUCTION



C: codes & regulations



CODES & REGULATIONS

Applicable Building, Fire and Related Codes and Regulations

The current codes and regulations that have purview over this project are as follows:

The Prince George's County Zoning Ordinance

2015 NFPA 101 Life Safety Code and Subtitle 11 Prince George's County Fire Safety Code (COMAR 05.02.07)
 2015 International Building Code and Subtitle 4 Prince George's County Building Code (COMAR 05.02.07)
 2015 International Existing Building Code (IEBC) (COMAR 05.16)
 2012 International Green Conservation Code 2012 (COMAR 05.02.07)

2013 NFPA 13 Installation of Sprinkler Systems
 2013 NFPA 72 National Fire Alarm and Signaling Code

2014 NFPA 70 National Electrical Code and Subtitle 9 Prince George's County Electrical Code

Prince George's County Subtitle 4, Sec. 4-180 Chapter 11 - Accessibility
 2012 Maryland Accessibility Code (COMAR 05.02.02)
 2010 ADA Standards for Accessible Design - US Department of Justice
 Americans with Disabilities Act - US Department of Justice

2015 International Mechanical Code
 2015 International Energy Conservation Code (COMAR 05.02.07)
 2018 WSSC Plumbing and Fuel Gas Code

2015 International Building Code (IBC)

Use and Occupancy (IBC - Section 305):

E- Education
 A1 - Theater
 A2- Cafeteria
 A3 - Gymnasium, Media Center

Type of Construction (Existing Buildings):

High School - Likely Type IIB, non combustible, unprotected
 CTE - Likely Type IIB, non combustible, unprotected
 CVPA - Likely Type IIB, non combustible, unprotected
 Middle School - Likely Type IIB, non combustible, unprotected

Existing Height & Area

High School - 2 Stories, 224,185 gsf
 Auditorium - 2 Stories 26, 208 gsf
 CTE - 1 Story, 54,474 gsf
 CVPA - 2 Stories, 77,675 gsf
 Middle School - 2 Stories, 126,486 gsf

Allowable Height & Area (IBC - Table 504.3, 504.4, 506.2 & 506.3):

Type IIB:
 2 stories (3 stories sprinklered)
 55FT height (75FT sprinklered)
 14,500SF per story (not sprinklered) + frontage increase
 58,000SF per story (1 story, fully sprinklered) + frontage increase
 43,500SF per story (2 story, fully sprinklered) + frontage increase

Separation of Occupancies: Education from Assembly

- No separation requirement with or without sprinklers (IBC 508.3.3)
 - Two hour separation reduced to one hour with sprinklers (NFPA Table 6.1.14.4.1(a))



SUITLAND MASTER PLAN

CODES & REGULATIONS

Fire Resistance Ratings in Hours Type IIB (IBC T601, T602)

Structural Frame : 0
Bearing Walls (Interior): 0
Bearing Walls (Exterior): 0
Nonbearing Walls: 0
Floor Construction: 0
Roof Construction: 0
Exterior Walls with <10FT Separation Distance: 1

Occupant Load (T 1004.1.2)

Classrooms 20 NSF per person
Shops and other vocational areas: 50NSF per person
Gymnasium (un-concentrated): 15NSF per person
Cafeteria (un-concentrated tables and chairs): 15NSF per person
Theater (concentrated) : 7 NSF per person
Library Reading Room: 50NSF per person
Library Stacks : 100 GSF per person

Means of Egress:

-Means of egress that provides a continuous and unobstructed path of vertical and horizontal egress travel to a public way: Occupant load of 50-500: Minimum Two (2) Exit required. Occupant Load of 501-1000: Minimum Three (3) exits required. Occupant Load above 1000: Minimum Four (4) exits required.

- Accessible Exits: Minimum One (1) required

- Signage indicating an accessible entrance shall be provided in compliance with IBC 1110

Means of Egress Components:

- Minimum Corridor Width - 6 Feet (serving 50 or more people)
- Stair Width: .3 inches per person
- Doors and Ramps: .2 inches per person

Exit Access Travel Distance:

- Maximum travel distance for occupancy with sprinkler system: 250FT (IBC 1017, T1017.2)
- Maximum travel distance for occupancy with sprinkler system: 200FT (NFPA 14.2.6.3)

Dead End Corridor (IBC1020.4)

- Maximum with Sprinkler System: 50FT





D: 40 year life cycle analysis





Suitland High School

Feasibility Study
LIFE CYCLE COST ANALYSIS

Maintenance and Operating Costs :

	Maximum Modernization Scheme			Hybrid Scheme			Hybrid Scheme - Alternate			Maximum New Construction Scheme		
	Area	Unit cost	Item Cost	Area	Unit cost	Item Cost	Area	Unit cost	Item Cost	Area	Unit cost	Item Cost
High School												
Maintenance Costs	245,615	1.66	\$407,721	245,615	1.66	\$407,721	245,615	1.66	\$407,721	245,615	1.66	\$407,721
Operating Costs	245,615	2.81	\$690,178	245,615	2.81	\$690,178	245,615	2.81	\$690,178	245,615	2.81	\$690,178
Utility Costs	245,615	2.25	\$552,634	245,615	2.25	\$552,634	245,615	2.25	\$552,634	245,615	2.25	\$552,634
Sub-total Cost / Year			\$1,650,533			\$1,650,533			\$1,650,533			\$1,650,533
CVPA												
Maintenance Costs	132,410	1.66	\$219,801	132,410	1.66	\$219,801	111,826	1.66	\$185,631	132,410	1.66	\$219,801
Operating Costs	132,410	2.81	\$372,072	132,410	2.81	\$372,072	111,827	2.81	\$314,234	132,410	2.81	\$372,072
Utility Costs	132,410	2.25	\$297,923	132,410	2.25	\$297,923	111,828	2.25	\$251,613	132,410	2.25	\$297,923
Sub-total Cost / Year			\$889,795			\$889,795			\$751,478			\$889,795
Middle School												
Maintenance Costs	170,976	1.66	\$283,820	0	1.66	\$0	0	1.66	\$0	0	1.66	\$0
Operating Costs	170,976	2.81	\$480,443	0	2.81	\$0	0	2.81	\$0	0	2.81	\$0
Utility Costs	170,976	2.25	\$384,696	0	2.25	\$0	0	2.25	\$0	0	2.25	\$0
Sub-total Cost / Year			\$1,148,959			\$0			\$0			\$0
Total Maintenance + Operating Costs / Year	549,001		\$3,689,287	378,025		\$2,540,328	357,443		\$2,402,011	378,025		\$2,540,328
Net Present Value of Maintenance + Operating Costs (FY 2018 Dollars based on an operating cost escalation rate of 5.0%)												
			\$211,805,639.88	40 Years		\$145,842,770.81	40 Years		\$137,901,843.76			\$145,842,770.81



E: cost estimate detail



DESCRIPTION		OPTION III: MODERNIZATION / NEW HYBRID																		
		High School						CVPA		CTE		Annex		Site Works & Temp Campus	TOTAL OPTION III					
		High School						New Construction		Complete		Annex		Total	Renovation		New Addition		Total	
		Renovation		New Addition		Total		New Addition	Total	Complete	Total	Complete	Total	Total	Renovation	New Addition	Total			
Rate		Amount		Rate		Amount		Rate	Amount	Demo	Amount	Demo	Amount	Amount	Amount	Amount	Rate	Amount		
DIVISION	GSF / Program		172,711		72,904		245,615		132,410		70,016		74,223							
020000	EXISTING CONDITIONS/ INTER. DEMO	\$ 8.00	\$ 1,381,688			\$ 6	\$ 1,381,688						\$ -				\$ 3.66	\$ 1,381,688		
030000	CONCRETE	\$ 1.40	\$ 241,795	\$ 35.00	\$ 2,551,640	\$ 11.37	\$ 2,793,435	\$ 35.00	\$ 4,634,350				\$ -				\$ 19.65	\$ 7,427,785		
040000	MASONRY	\$ 3.00	\$ 518,133	\$ 33.00	\$ 2,405,832	\$ 11.90	\$ 2,923,965	\$ 33.00	\$ 4,369,530				\$ -				\$ 19.29	\$ 7,293,495		
050000	METALS	\$ 2.40	\$ 414,506	\$ 52.80	\$ 3,849,331	\$ 17.36	\$ 4,263,838	\$ 52.80	\$ 6,991,248				\$ -				\$ 29.77	\$ 11,255,086		
060000	WOOD, PLASTICS AND COMPOSITES	\$ 10.00	\$ 1,727,110	\$ 10.00	\$ 729,040	\$ 10.00	\$ 2,456,150	\$ 10.00	\$ 1,324,100				\$ -				\$ 10.00	\$ 3,780,250		
070000	THERMAL & MOISTURE PROTECTION	\$ 10.00	\$ 1,727,110	\$ 26.00	\$ 1,895,504	\$ 14.75	\$ 3,622,614	\$ 26.00	\$ 3,442,660				\$ -				\$ 18.69	\$ 7,065,274		
080000	OPENINGS	\$ 21.61	\$ 3,732,309	\$ 35.61	\$ 2,596,122	\$ 25.77	\$ 6,328,431	\$ 34.52	\$ 4,570,297				\$ -				\$ 28.83	\$ 10,898,727		
090000	FINISHES	\$ 43.15	\$ 7,452,539	\$ 43.15	\$ 3,145,833	\$ 43.15	\$ 10,598,372	\$ 46.36	\$ 6,137,904				\$ -				\$ 44.27	\$ 16,736,276		
100000	SPECIALTIES	\$ 8.00	\$ 1,381,688	\$ 8.00	\$ 583,232	\$ 8.00	\$ 1,964,920	\$ 8.00	\$ 1,059,280				\$ -				\$ 8.00	\$ 3,024,200		
110000	EQUIPMENT	\$ 5.90	\$ 1,018,537	\$ 5.90	\$ 429,940	\$ 5.90	\$ 1,448,477	\$ 5.97	\$ 791,062				\$ -				\$ 5.92	\$ 2,239,538		
120000	FURNISHINGS	\$ 5.10	\$ 880,242	\$ 5.10	\$ 371,564	\$ 5.10	\$ 1,251,805	\$ 5.03	\$ 666,490				\$ -				\$ 5.07	\$ 1,918,296		
130000	SPECIAL CONSTRUCTION	\$ 3.00	\$ 518,133	\$ 3.00	\$ 218,712	\$ 3.00	\$ 736,845	\$ 3.00	\$ 397,230				\$ -				\$ 3.00	\$ 1,134,075		
140000	CONVEYING SYSTEMS	\$ 8.00	\$ 1,381,688	\$ 8.00	\$ 583,232	\$ 8.00	\$ 1,964,920	\$ 8.00	\$ 1,059,280				\$ -				\$ 8.00	\$ 3,024,200		
210000	FIRE SUPPRESSION	\$ 4.79	\$ 827,486	\$ 4.79	\$ 349,295	\$ 4.79	\$ 1,176,781	\$ 5.09	\$ 673,536				\$ -				\$ 4.89	\$ 1,850,316		
220000	PLUMBING	\$ 9.31	\$ 1,607,349	\$ 9.31	\$ 678,487	\$ 9.31	\$ 2,285,836	\$ 7.17	\$ 949,351				\$ -				\$ 8.56	\$ 3,235,188		
230000	HVAC	\$ 53.18	\$ 9,185,266	\$ 53.18	\$ 3,877,244	\$ 53.18	\$ 13,062,510	\$ 50.13	\$ 6,637,865				\$ -				\$ 52.11	\$ 19,700,375		
260000	ELECTRICAL	\$ 34.85	\$ 6,018,862	\$ 34.85	\$ 2,540,655	\$ 34.85	\$ 8,559,518	\$ 32.46	\$ 4,297,594				\$ -				\$ 34.01	\$ 12,857,111		
270000	COMMUNICATIONS	\$ 9.82	\$ 1,695,727	\$ 9.82	\$ 715,793	\$ 9.82	\$ 2,411,520	\$ 9.03	\$ 1,195,163				\$ -				\$ 9.54	\$ 3,606,683		
280000	ELEC. SAFETY AND SECURITY	\$ 5.39	\$ 930,166	\$ 5.39	\$ 392,638	\$ 5.39	\$ 1,322,803	\$ 5.44	\$ 720,813				\$ -				\$ 5.41	\$ 2,043,616		
310000	EARTHWORK	\$ -	\$ -	\$ 10.00	\$ 729,040	\$ 2.97	\$ 729,040	\$ 10.00	\$ 1,324,100				\$ -				\$ 5.43	\$ 2,053,140		
320000	EXTERIOR IMPROVEMENTS	\$ -	\$ 1,690,608	\$ -	\$ 1,690,608	\$ 13.77	\$ 3,381,215		\$ 1,293,074				\$ -		\$ 9,380,040		\$ 37.18	\$ 14,054,330		
020000	BUILDINGS COMPLETE DEMO	\$ 16.00	\$ 1,140,352	\$ -	\$ -	\$ 4.64	\$ 1,140,352		\$ -	\$ 16.00	\$ 1,120,256	\$ 16.00	\$ 1,120,256				\$ 8.94	\$ 3,380,864		
SUB TOTAL		\$263.28	\$45,471,295	\$416.08	\$ 30,333,741	\$ 308.63	\$ 75,805,035	\$ 396.76	\$ 52,534,926		\$ 1,120,256	\$ 15.09	\$ 1,120,256		\$ 9,380,040	\$ 47,711,807	\$ 92,248,707	\$ 370.24	\$ 139,960,514	
GENERAL CONDITIONS 10.00%			\$ 4,547,129		\$ 3,033,374	\$ 30.86	\$ 7,580,504		\$ 5,253,493		\$ 112,026		\$ 112,026		\$ 938,004	\$ 4,771,181	\$ 9,224,871	\$ 37.02	\$ 13,996,051	
OVERHEAD AND PROFIT 8.00%			\$ -		\$ -	\$ -	\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
CONSTRUCTION CONTINGENCY 5.00%			\$ 3,637,704		\$ 2,426,699	\$ 24.69	\$ 6,064,403		\$ 4,202,794		\$ 89,620		\$ 89,620		\$ 750,403	\$ 3,816,945	\$ 7,379,897	\$ 29.62	\$ 11,196,841	
			\$ -		\$ -	\$ -	\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
			\$ 2,273,565		\$ 1,516,687	\$ 15.43	\$ 3,790,252		\$ 2,626,746		\$ 56,013		\$ 56,013		\$ 469,002	\$ 2,385,590	\$ 4,612,435	\$ 18.51	\$ 6,998,026	
			\$ -		\$ -	\$ -	\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
SUB TOTAL		\$323.83	\$55,929,693	\$511.78	\$ 37,310,501	\$ 379.62	\$ 93,240,193	\$ 488.01	\$ 64,617,959	\$ 19.68	\$ 1,377,915	\$ 18.56	\$ 1,377,915		\$ 11,537,449	\$ 58,685,522	\$ 113,465,909	\$ 455.40	\$ 172,151,432	
DESIGN CONTINGENCY 15.00%			\$ 6,820,694		\$ 4,550,061	\$ 46.30	\$ 11,370,755		\$ 7,880,239		\$ 168,038		\$ 168,038		\$ 1,407,006	\$ 7,156,771	\$ 13,837,306	\$ 55.54	\$ 20,994,077	
ESCALATION <i>Varies</i>		10.0%	\$ 4,547,129		\$ 3,033,374	\$ 30.86	\$ 7,580,504	10.0%	\$ 5,253,493	14.0%	\$ 156,835.84	14.0%	\$ 156,836	16.0%	\$ 1,500,806	\$ 4,860,801	\$ 9,787,673	\$ 38.75	\$ 14,648,474	
TOTAL FOR CONSTRUCTION COST		\$389.65	\$67,297,516	\$615.80	\$ 44,893,936	\$ 456.78	\$ 112,191,452	\$ 587.20	\$ 77,751,691	\$ 24.32	\$ 1,702,789	\$ 22.94	\$ 1,702,789		\$ 14,445,262	\$ 70,703,095	\$ 137,090,889	\$ 549.68	\$ 207,793,983	
SOFT COST 35.00%			\$23,554,131		\$ 15,712,878	\$ 159.87	\$ 39,267,008		\$ 27,213,092		\$ 595,976		\$ 595,976		\$ 5,055,842	\$ 24,746,083	\$ 47,981,811	\$ 192.39	\$ 72,727,894	
Temp campus, Renatl Trailer 3 years			\$ -		\$ -	\$ -	\$ -		\$ -		\$ -		\$ -		\$ -	\$ -	\$ -	\$ 19.64	\$ 7,425,000	
TOTAL FOR CONSTRUCTION COST		\$ 526.0	\$90,851,647	\$ 831.3	\$ 60,606,814	\$ 616.65	\$ 151,458,461	\$ 792.7	\$ 104,964,783	\$ 32.83	\$ 2,298,765	\$ 30.97	\$ 2,298,765		\$ 19,501,103	\$ 95,449,178	\$ 185,072,699	\$ 761.71	\$ 287,946,877	

OPTION IIIA: MODERNIZATION / NEW HYBRID																									
DIVISION	DESCRIPTION	Program	Building	High School						CVPA		CTE		Annex		Site Works & Temp Campus	TOTAL OPTION IIIA								
				High School						New Construction		Complete	Total	Complete	Total		Total	Renovation	New Addition	Total					
				Renovation		New Addition		Total		New Addition	Total									Demo	Amount	Demo	Amount	Amount	Amount
				Rate	Amount	Rate	Amount	Rate	Amount			Rate	Amount	Rate	Amount		Rate	Amount	Rate						
	GSF / Program			172,711		72,904			245,615			111,826			74,223			172,711	184,730		357,441				
020000	EXISTING CONDITIONS/ INTER. DEMO			\$ 8.00	\$ 1,381,688			\$ 6	\$ 1,381,688					\$ -				\$ 1,381,688	\$ -	\$ 3.87	\$ 1,381,688				
030000	CONCRETE			\$ 1.40	\$ 241,795	\$ 35.00	\$ 2,551,640	\$ 11.37	\$ 2,793,435	\$ 35.00	\$ 3,913,910			\$ -				\$ 241,795	\$ 6,465,550	\$ 18.76	\$ 6,707,345				
040000	MASONRY			\$ 3.00	\$ 518,133	\$ 33.00	\$ 2,405,832	\$ 11.90	\$ 2,923,965	\$ 33.00	\$ 3,690,258			\$ -				\$ 518,133	\$ 6,096,090	\$ 18.50	\$ 6,614,223				
050000	METALS			\$ 2.40	\$ 414,506	\$ 52.80	\$ 3,849,331	\$ 17.36	\$ 4,263,838	\$ 52.80	\$ 5,904,413			\$ -				\$ 414,506	\$ 9,753,744	\$ 28.45	\$ 10,168,250				
060000	WOOD, PLASTICS AND COMPOSITES			\$ 10.00	\$ 1,727,110	\$ 10.00	\$ 729,040	\$ 10.00	\$ 2,456,150	\$ 10.00	\$ 1,118,260			\$ -				\$ 1,727,110	\$ 1,847,300	\$ 10.00	\$ 3,574,410				
070000	THERMAL & MOISTURE PROTECTION			\$ 10.00	\$ 1,727,110	\$ 26.00	\$ 1,895,504	\$ 14.75	\$ 3,622,614	\$ 26.00	\$ 2,907,476			\$ -				\$ 1,727,110	\$ 4,802,980	\$ 18.27	\$ 6,530,090				
080000	OPENINGS			\$ 21.61	\$ 3,732,309	\$ 35.61	\$ 2,596,122	\$ 25.77	\$ 6,328,431	\$ 34.52	\$ 3,859,814			\$ -				\$ 3,732,309	\$ 6,455,936	\$ 28.50	\$ 10,188,245				
090000	FINISHES			\$ 43.15	\$ 7,452,539	\$ 43.15	\$ 3,145,833	\$ 43.15	\$ 10,598,372	\$ 46.36	\$ 5,183,727			\$ -				\$ 7,452,539	\$ 8,329,560	\$ 44.15	\$ 15,782,099				
100000	SPECIALTIES			\$ 8.00	\$ 1,381,688	\$ 8.00	\$ 583,232	\$ 8.00	\$ 1,964,920	\$ 8.00	\$ 894,608			\$ -				\$ 1,381,688	\$ 1,477,840	\$ 8.00	\$ 2,859,528				
110000	EQUIPMENT			\$ 5.90	\$ 1,018,537	\$ 5.90	\$ 429,940	\$ 5.90	\$ 1,448,477	\$ 5.97	\$ 688,086			\$ -				\$ 1,018,537	\$ 1,098,026	\$ 5.92	\$ 2,116,563				
120000	FURNISHINGS			\$ 5.10	\$ 880,242	\$ 5.10	\$ 371,564	\$ 5.10	\$ 1,251,805	\$ 5.03	\$ 562,880			\$ -				\$ 880,242	\$ 934,444	\$ 5.08	\$ 1,814,685				
130000	SPECIAL CONSTRUCTION			\$ 3.00	\$ 518,133	\$ 3.00	\$ 218,712	\$ 3.00	\$ 736,845	\$ 3.00	\$ 335,478			\$ -				\$ 518,133	\$ 554,190	\$ 3.00	\$ 1,072,323				
140000	CONVEYING SYSTEMS			\$ 8.00	\$ 1,381,688	\$ 8.00	\$ 583,232	\$ 8.00	\$ 1,964,920	\$ 8.00	\$ 894,608			\$ -				\$ 1,381,688	\$ 1,477,840	\$ 8.00	\$ 2,859,528				
210000	FIRE SUPPRESSION			\$ 4.79	\$ 827,486	\$ 4.79	\$ 349,295	\$ 4.79	\$ 1,176,781	\$ 5.09	\$ 568,830			\$ -				\$ 827,486	\$ 918,125	\$ 4.88	\$ 1,745,611				
220000	PLUMBING			\$ 9.31	\$ 1,607,349	\$ 9.31	\$ 678,487	\$ 9.31	\$ 2,285,836	\$ 7.17	\$ 801,769			\$ -				\$ 1,607,349	\$ 1,480,256	\$ 8.64	\$ 3,087,605				
230000	HVAC			\$ 53.18	\$ 9,185,266	\$ 53.18	\$ 3,877,244	\$ 53.18	\$ 13,062,510	\$ 50.13	\$ 5,605,965			\$ -				\$ 9,185,266	\$ 9,483,209	\$ 52.23	\$ 18,668,476				
260000	ELECTRICAL			\$ 34.85	\$ 6,018,862	\$ 34.85	\$ 2,540,655	\$ 34.85	\$ 8,559,518	\$ 32.46	\$ 3,629,505			\$ -				\$ 6,018,862	\$ 6,170,160	\$ 34.10	\$ 12,189,022				
270000	COMMUNICATIONS			\$ 9.82	\$ 1,695,727	\$ 9.82	\$ 715,793	\$ 9.82	\$ 2,411,520	\$ 9.03	\$ 1,009,367			\$ -				\$ 1,695,727	\$ 1,725,160	\$ 9.57	\$ 3,420,887				
280000	ELEC. SAFETY AND SECURITY			\$ 5.39	\$ 930,166	\$ 5.39	\$ 392,638	\$ 5.39	\$ 1,322,803	\$ 5.44	\$ 608,758			\$ -				\$ 930,166	\$ 1,001,395	\$ 5.40	\$ 1,931,561				
310000	EARTHWORK			\$ -	\$ -	\$ 10.00	\$ 729,040	\$ 2.97	\$ 729,040	\$ 10.00	\$ 1,118,260			\$ -				\$ -	\$ 1,847,300	\$ 5.17	\$ 1,847,300				
320000	EXTERIOR IMPROVEMENTS			\$ -	\$ 1,690,608	\$ -	\$ 1,690,608	\$ 13.77	\$ 3,381,215		\$ 1,293,074			\$ -			\$ 9,380,040	\$ 1,690,608	\$ 12,363,722	\$ 39.32	\$ 14,054,330				
020000	BUILDINGS COMPLETE DEMO			\$ 16.00	\$ 1,140,352	\$ -	\$ -	\$ 4.64	\$ 1,140,352		\$ -			\$ 16.00	\$ 1,187,568			\$ 3,448,176	\$ -	\$ 9.65	\$ 3,448,176				
	SUB TOTAL			#####	\$ 45,471,295	#####	\$ 30,333,741	\$ 308.63	\$ 75,805,035	\$ 398.56	\$ 44,569,045			\$ 16.00	\$ 1,120,256			\$ 1,187,568		\$ 9,380,040	\$ 47,779,119	\$ 84,282,826	\$ 369.47	\$ 132,061,945	
	GENERAL CONDITIONS	10.00%			\$ 4,547,129		\$ 3,033,374	\$ 30.86	\$ 7,580,504		\$ 4,456,905			\$ 112,026				\$ 118,757		\$ 938,004	\$ 4,777,912	\$ 8,428,283	\$ 36.95	\$ 13,206,194	
	OVERHEAD AND PROFIT	8.00%			\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
	CONSTRUCTION CONTINGENCY	5.00%			\$ 3,637,704		\$ 2,426,699	\$ 24.69	\$ 6,064,403		\$ 3,565,524			\$ 89,620				\$ 95,005		\$ 750,403	\$ 3,822,330	\$ 6,742,626	\$ 29.56	\$ 10,564,956	
					\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
					\$ 2,273,565		\$ 1,516,687	\$ 15.43	\$ 3,790,252		\$ 2,228,452			\$ 56,013				\$ 59,378		\$ 469,002	\$ 2,388,956	\$ 4,214,141	\$ 18.47	\$ 6,603,097	
					\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
	SUB TOTAL			#####	\$ 55,929,693	#####	\$ 37,310,501	\$ 379.62	\$ 93,240,193	\$ 490.23	\$ 54,819,926			\$ 19.68	\$ 1,377,915			\$ 1,460,709		\$ 11,537,449	\$ 58,768,316	\$ 103,667,876	\$ 454.44	\$ 162,436,192	
	DESIGN CONTINGENCY	15.00%			\$ 6,820,694		\$ 4,550,061	\$ 46.30	\$ 11,370,755		\$ 6,685,357			\$ 168,038				\$ 178,135		\$ 1,407,006	\$ 7,166,868	\$ 12,642,424	\$ 55.42	\$ 19,809,292	
	ESCALATION	Varies			\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
					\$ 4,547,129		\$ 3,033,374	\$ 30.86	\$ 7,580,504	10.0%	\$ 4,456,905			14.0%	\$ 156,836			14.0%	\$ 166,259.52	16.0%	\$ 1,500,806	\$ 4,870,225	\$ 8,991,085	\$ 38.78	\$ 13,861,310
					\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
	TOTAL FOR CONSTRUCTION COST			#####	\$ 67,297,516	#####	\$ 44,893,936	\$ 456.78	\$ 112,191,452	\$ 589.86	\$ 65,962,187			\$ 24.32	\$ 1,702,789			\$ 24.32	\$ 1,805,103		\$ 14,445,262	\$ 70,805,409	\$ 125,301,385	\$ 548.64	\$ 196,106,794
	SOFT COST	35.00%			\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
	Temp campus, Renalt Trailer 3 years				\$ 23,554,131		\$ 15,712,878	\$ 159.87	\$ 39,267,008		\$ 23,086,766			\$ 595,976				\$ 631,786		\$ 5,055,842	\$ 24,781,893	\$ 43,855,485	\$ 192.02	\$ 68,637,378	
					\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
					\$ -		\$ -	\$ -	\$ -		\$ -			\$ -				\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	
	TOTAL FOR CONSTRUCTION COST			\$ 526.0	\$ 90,851,647	\$ 831.3	\$ 60,606,814	\$ 616.65	\$ 151,458,461	\$ 796.3	\$ 89,048,953			\$ 32.83	\$ 2,298,765			\$ 32.83	\$ 2,436,890		\$ 19,501,103	\$ 95,587,302	\$ 169,156,870	\$ 761.44	\$ 272,169,171

OPTION IV: MAXIMUM NEW CONSTRUCTION																				
DESCRIPTION	Program Building	High School		High School		CVPA		CTE		Annex		Site Works & Temp Campus	TOTAL OPTION IV							
		New Construction		Complete		New Construction		Complete		Complete		Total	Renovation	New Addition	Total					
		Rate	Amount	Demo	Amount	Rate	Amount	Demo	Amount	Demo	Amount	Amount	Amount	Amount	Rate	Amount				
		245,615		243,983		132,410		70,016		74,223			378,025							
DIVISION	GSF / Program												378,025							
020000	EXISTING CONDITIONS/ INTER. DEMO												\$	-	\$	-	\$	-	\$	-
030000	CONCRETE	\$ 35.00	\$ 8,596,525			\$ 35.00	\$ 4,634,350						\$	-	\$	13,230,875	\$	35.00	\$	13,230,875
040000	MASONRY	\$ 33.00	\$ 8,105,295			\$ 33.00	\$ 4,369,530						\$	-	\$	12,474,825	\$	33.00	\$	12,474,825
050000	METALS	\$ 52.80	\$ 12,968,472			\$ 52.80	\$ 6,991,248						\$	-	\$	19,959,720	\$	52.80	\$	19,959,720
060000	WOOD, PLASTICS AND COMPOSITES	\$ 10.00	\$ 2,456,150			\$ 10.00	\$ 1,324,100						\$	-	\$	3,780,250	\$	10.00	\$	3,780,250
070000	THERMAL & MOISTURE PROTECTION	\$ 26.00	\$ 6,385,990			\$ 26.00	\$ 3,442,660						\$	-	\$	9,828,650	\$	26.00	\$	9,828,650
080000	OPENINGS	\$ 35.53	\$ 8,727,488			\$ 34.83	\$ 4,612,497						\$	-	\$	13,339,984	\$	35.29	\$	13,339,984
090000	FINISHES	\$ 43.02	\$ 10,567,547			\$ 44.58	\$ 5,902,256						\$	-	\$	16,469,803	\$	43.57	\$	16,469,803
100000	SPECIALTIES	\$ 8.00	\$ 1,964,920			\$ 8.00	\$ 1,059,280						\$	-	\$	3,024,200	\$	8.00	\$	3,024,200
110000	EQUIPMENT	\$ 5.90	\$ 1,449,010			\$ 5.98	\$ 791,540						\$	-	\$	2,240,550	\$	5.93	\$	2,240,550
120000	FURNISHINGS	\$ 5.09	\$ 1,251,303			\$ 5.00	\$ 662,050						\$	-	\$	1,913,353	\$	5.06	\$	1,913,353
130000	SPECIAL CONSTRUCTION	\$ 3.00	\$ 736,845			\$ 3.00	\$ 397,230						\$	-	\$	1,134,075	\$	3.00	\$	1,134,075
140000	CONVEYING SYSTEMS	\$ 8.00	\$ 1,964,920			\$ 8.00	\$ 1,059,280						\$	-	\$	3,024,200	\$	8.00	\$	3,024,200
210000	FIRE SUPPRESSION	\$ 4.79	\$ 1,175,972			\$ 5.01	\$ 663,102						\$	-	\$	1,839,074	\$	4.86	\$	1,839,074
220000	PLUMBING	\$ 9.17	\$ 2,252,857			\$ 13.72	\$ 1,816,559						\$	-	\$	4,069,417	\$	10.76	\$	4,069,417
230000	HVAC	\$ 53.38	\$ 13,111,695			\$ 54.45	\$ 7,209,684						\$	-	\$	20,321,379	\$	53.76	\$	20,321,379
260000	ELECTRICAL	\$ 34.93	\$ 8,578,492			\$ 35.39	\$ 4,685,421						\$	-	\$	13,263,913	\$	35.09	\$	13,263,913
270000	COMMUNICATIONS	\$ 9.83	\$ 2,413,169			\$ 10.08	\$ 1,334,881						\$	-	\$	3,748,050	\$	9.91	\$	3,748,050
280000	ELEC. SAFETY AND SECURITY	\$ 5.37	\$ 1,318,200			\$ 5.83	\$ 772,573						\$	-	\$	2,090,773	\$	5.53	\$	2,090,773
310000	EARTHWORK	\$ 10.00	\$ 2,456,150			\$ 10.00	\$ 1,324,100						\$	-	\$	3,780,250	\$	10.00	\$	3,780,250
320000	EXTERIOR IMPROVEMENTS	\$ -	\$ 3,925,130			\$ -	\$ 1,293,074				\$	12,402,638	\$	-	\$	17,620,843	\$	46.61	\$	17,620,843
020000	BUILDINGS COMPLETE DEMO	\$ -	\$ -	\$ 16.00	\$ 3,903,728	\$ -	\$ -	\$ 16.00	\$ 1,120,256	\$ 16.00	\$ 1,187,568		\$	6,211,552	\$	-	\$	16.43	\$	6,211,552
		\$ -	\$ -										\$	-	\$	-	\$	-	\$	-
SUB TOTAL		\$ 408.79	\$ 100,406,130		\$ 3,903,728	\$ 410.43	\$ 54,345,415		\$ 1,120,256		\$ 1,187,568	\$ 12,402,638	\$	6,211,552	\$ 167,154,183	\$ 459	\$ 173,365,735			
GENERAL CONDITIONS	10.00%		\$ 10,040,613		\$ 390,373		\$ 5,434,541		\$ 112,026		\$ 118,757		\$ 1,240,264	\$	621,155	\$ 16,715,418	\$ 45.9	\$ 17,336,574		
OVERHEAD AND PROFIT	8.00%		\$ 8,032,490		\$ 312,298		\$ 4,347,633		\$ 89,620		\$ 95,005		\$ 992,211	\$	496,924	\$ 13,372,335	\$ 36.7	\$ 13,869,259		
CONSTRUCTION CONTINGENCY	5.00%		\$ 5,020,307		\$ 195,186		\$ 2,717,271		\$ 56,013		\$ 59,378		\$ 620,132	\$	310,578	\$ 8,357,709	\$ 22.9	\$ 8,668,287		
SUB TOTAL		\$ 502.82	\$ 123,499,540	\$ 19.68	\$ 4,801,585	\$ 504.83	\$ 66,844,860	\$ 19.68	\$ 1,377,915	\$ 19.68	\$ 1,460,709	\$ -	\$ 15,255,245	\$ 7,640,209	\$ 205,599,645	\$ 564	\$ 213,239,854.31			
DESIGN CONTINGENCY	15.00%		\$ 15,060,920		\$ 585,559		\$ 8,151,812		\$ 168,038		\$ 178,135		\$ 1,860,396	\$	931,733	\$ 25,073,127	\$ 68.8	\$ 26,004,860		
ESCALATION	Varies	9.0%	\$ 9,036,551.73	12.0%	\$ 468,447	16.0%	\$ 8,695,266	20.0%	\$ 224,051	20.0%	\$237,513.60	20.0%	\$ 2,480,528	\$	930,012	\$ 20,212,346	\$ 55.9	\$ 21,142,358		
TOTAL FOR CONSTRUCTION COST		\$ 600.93	\$ 147,597,012		\$ 5,855,592	\$ 505	\$ 83,691,938	\$ 20	\$ 1,770,004		\$ 1,876,357	\$ 19,596,168	\$ 9,501,954	\$ 250,885,119	\$ 689	\$ 260,387,072				
SOFT COST	35.00%		\$ 51,658,954		\$ 2,049,457		\$ 29,292,178		\$ 619,502		\$ 656,725		\$ 6,858,659	\$	3,325,684	\$ 87,809,791	\$ 241.1	\$ 91,135,475		
Temp campus, Renat Trailer 4 years													\$	-	\$	-	\$	19.6	\$	7,425,000
TOTAL FOR CONSTRUCTION COST		\$ 811.3	\$ 199,255,966	\$ 32.40	\$ 7,905,049	\$ 853.29	\$ 112,984,117	\$ 34.13	\$ 2,389,506	\$ 34.13	\$ 2,533,083	\$ 26,454,827	\$ 12,827,638	\$ 338,694,910	\$ 949.5	\$ 358,947,548				

Building	Program	Existing Gross	Existing Construction to be Demoed	Existing Construction to be Modernized	New Construction	Total Modernization + New Construction
Option I						
High School	High School	243,983	54,007	189,976	55,639	245,615
CTE	CTE	70,016	70,016			0
Drew Freeman	CVPA	126,486	10,704	115,782	16,628	132,410
Annex	Middle School	74,223	10,520	63,703	107,273	170,976
Auditorium	High School	19,798		19,798		19,798
Total Program areas			145,247	369,461	179,540	549,001
Option II - OPTION OMITTED						
Option III						397,823
High School	High School	243,983	71,272	172,711	72,904	245,615
CTE	NONE	70,016	70,016			0
Annex	NONE	74,223	74,223			0
Drew Freeman	Middle School					0
Auditorium	High School	19,798		19,798		19,798
New Construction	CVPA				132,410	132,410
Total Program areas			215,511	172,711	205,314	378,025
Option IIIA						377,239
High School	High School	243,983	71,272	172,711	72,904	245,615
CTE	NONE	70,016	70,016			0
Annex	NONE	74,223	74,223			0
Drew Freeman	Middle School					0
Auditorium	High School	19,798		19,798		19,798
New Construction	CVPA				111,826	111,826
Total Program areas			215,511	172,711	184,730	357,441
Option IV						
High School	NONE	243,983	243,983	-	-	
CTE	NONE	70,016	70,016	-	-	
Annex	NONE	74,223	74,223	-	-	
Auditorium	NONE	19,798	19,798			
Drew Freeman	CVPA					
New Construction	High School	-	-	-	245,615	245,615
New Construction	CVPA	-	-	-	132,410	132,410
New Construction	Middle School	-	-	-		0
Total Program areas			388,222	0	378,025	378,025