



# 10 YEAR STRATEGIC CONDITIONS ASSESSMENT 2019-2028



**HENDERSON COUNTY  
PUBLIC SCHOOLS**

**HARPER**  
GENERAL CONTRACTORS



**NOVUS**  
*always new*



## **EVALUATION CRITERIA**

- **School Safety**
  - Contain to Confirm
  - Building Perimeter
  - Building Connectivity
  - Building Code-Exiting
- **Building Conditions**
  - Life Expectancy of Systems
  - Building Maintenance
  - Water Infiltration
- **DPI Guidelines**
  - Square Footage
  - Science Safety
  - Enrollment/Capacity



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  - Square Footage
  - Science Safety
  - Enrollment/Capacity

### DATA COLLECTION

- **Total Square Footage**
  - 1,800,000 SF
- **Site Visits**
  - Photographs, Measurements
- **Facilities & Maintenance**
  - Meetings
  - Systems Conditions
- **Work Order History**
  - Trends for older buildings
- **Information from Principals**
  - ADM
  - Room Usage



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  - ADM
  - Room Usage

### CONCLUSIONS

- **Safety/DPI Matrix**
- **Scope Matrix**
  - Classify types of work
  - Prioritize Year for work
  - Recommend Phasing
- **Cost Estimating**
  - Project Costs
  - Renovation vs New



# SUMMARY OF FINDINGS

## SCHOOL SAFETY

- SEVERAL BUILDINGS MEET MOST/ALL OBJECTIVES
- CONTAIN TO CONFIRM: SOLUTIONS UNDERWAY
- HIGH PRIORITY SCHOOLS:
  - Modulars: Atkinson, Hendersonville Elementary, Flat Rock, Rugby, East High
  - Contained Entry: Upward, Flat Rock, Rugby
  - Building Connectivity: Apple Valley, North High, East High, West High

	School Safety			DPI Guidelines		Capacity	Remarks
	Single Entry	Connectivity	Building Code	Square Footage	Science Safety	ADM vs Capacity	
<b>ELEMENTARY SCHOOLS</b>							
Atkinson	Orange	Red	Red	Yellow	Grey	Red	MODULAR CLASSROOMS, COURTYARDS, EMERGENCY ESCAPE CAFETERIA & K-3 CLASSROOMS SLIGHTLY TOO SMALL
Bruce Drysdale	Orange	Red	Grey	Grey	Grey	Yellow	HIGH PUBLIC TRAFFIC ON SITE, MODULAR CLASSROOMS RELOCATE AGENCY PARTNERSHIPS TO HELP WITH CAPACITY
Clear Creek					Grey		
Dana	Orange				Grey		
Etowah	Orange			Yellow	Grey		SOME K-3 CLASSROOMS TOO SMALL
Fletcher					Grey		
Glenn Marlow	Orange				Grey	Yellow	EARLY EVIDENCE OF CAPACITY ISSUES: KINDER IN ADMIN PRE-K PARTNERSHIP
Hendersonville	Orange	Red	Red	Red	Grey	Red	MODULAR CLASSROOMS, COURTYARD, EMERGENCY ESCAPE ALL CLASSROOMS TOO SMALL
Hillandale					Grey		
Mills River					Grey		
Sugarloaf					Grey		
Upward	Red			Red	Grey		MAIN ENTRY: LOW VISIBILITY CAFETERIA TOO SMALL
<b>MIDDLE SCHOOLS</b>							
Apple Valley	Orange	Red	Red	Grey	Yellow	Grey	COURTYARD MISSING SAFETY FEATURES & STORAGE
Flat Rock	Red	Red	Red	Grey	Red	Red	EMERGENCY ESCAPE, FRONT ENTRY MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
Hendersonville				Yellow	Yellow		CAFETERIA CROWDED: COMPLIES WITH DPI MISSING SAFETY FEATURES & STORAGE
Rugby	Red	Red	Red	Red	Red	Red	EMERGENCY ESCAPE, FRONT ENTRY MISSING SAFETY FEATURES & STORAGE
<b>HIGH SCHOOLS</b>							
East Henderson	Orange	Red	Red	Red	Red	Red	SEPARATE BUILDINGS, CAFETERIA TOO SMALL MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
North Henderson	Orange	Red	Red	Grey	Yellow	Grey	COURTYARD, SEPARATE BUILDINGS MISSING SAFETY FEATURES & STORAGE
West Henderson	Orange	Red	Red	Red	Red	Red	SEPARATE BUILDINGS, CAFETERIA TOO SMALL MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
Bus Garage	Grey	Grey	Grey	Red	Grey	Red	BUILDING TOO SMALL, NOT ENOUGH MAINTENANCE BAYS



# SUMMARY OF FINDINGS

## BUILDING CODE

- FOCUS ON EXITING: COURTYARDS, CLASSROOM EMERGENCY ESCAPE

- HIGH PRIORITY SCHOOLS:

- Courtyards: Atkinson, Hendersonville Elementary, Apple Valley, North High

- Emergency Escape: Atkinson, Hendersonville Elementary, Flat Rock, Rugby, Apple Valley, North High

	School Safety			DPI Guidelines		Capacity	Remarks
	Single Entry	Connectivity	Building Code	Square Footage	Science Safety	ADM vs Capacity	
<b>ELEMENTARY SCHOOLS</b>							
Atkinson	Orange	Red	Red	Yellow	Grey X	Red	MODULAR CLASSROOMS, COURTYARDS, EMERGENCY ESCAPE CAFETERIA & K-3 CLASSROOMS SLIGHTLY TOO SMALL
Bruce Drysdale	Orange	Red			Grey X	Yellow	HIGH PUBLIC TRAFFIC ON SITE, MODULAR CLASSROOMS RELOCATE AGENCY PARTNERSHIPS TO HELP WITH CAPACITY
Clear Creek					Grey X		
Dana	Orange				Grey X		
Etowah	Orange			Yellow	Grey X		SOME K-3 CLASSROOMS TOO SMALL
Fletcher					Grey X		
Glenn Marlow	Orange				Grey X	Yellow	EARLY EVIDENCE OF CAPACITY ISSUES: KINDER IN ADMIN PRE-K PARTNERSHIP
Hendersonville	Orange	Red	Red	Red	Grey X	Red	MODULAR CLASSROOMS, COURTYARD, EMERGENCY ESCAPE ALL CLASSROOMS TOO SMALL
Hillandale					Grey X		
Mills River					Grey X		
Sugarloaf					Grey X		
Upward	Red			Red	Grey X		MAIN ENTRY: LOW VISIBILITY CAFETERIA TOO SMALL
<b>MIDDLE SCHOOLS</b>							
Apple Valley	Orange	Red	Red		Orange		COURTYARD MISSING SAFETY FEATURES & STORAGE
Flat Rock	Red	Red	Red		Red	Red	EMERGENCY ESCAPE, FRONT ENTRY MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
Hendersonville				Yellow	Orange		CAFETERIA CROWDED: COMPLIES WITH DPI MISSING SAFETY FEATURES & STORAGE
Rugby	Red	Red	Red	Red	Orange	Red	EMERGENCY ESCAPE, FRONT ENTRY MISSING SAFETY FEATURES & STORAGE
<b>HIGH SCHOOLS</b>							
East Henderson	Orange	Red		Red	Red	Orange	SEPARATE BUILDINGS, CAFETERIA TOO SMALL MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
North Henderson	Orange	Red	Red		Orange		COURTYARD, SEPARATE BUILDINGS MISSING SAFETY FEATURES & STORAGE
West Henderson	Orange	Red		Red	Red	Orange	SEPARATE BUILDINGS, CAFETERIA TOO SMALL MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
Bus Garage	Grey X	Grey X	Grey X	Red	Grey X	Red	BUILDING TOO SMALL, NOT ENOUGH MAINTENANCE BAYS



# SUMMARY OF FINDINGS

## DPI GUIDELINES

- MINOR CONCERNS: POTENTIAL FOR OPERATIONAL SOLUTIONS
- HIGH PRIORITIES:
  - Cafeterias: Upward, East High
  - Science Safety: Apple Valley, Flat Rock, Hendersonville Middle, Rugby, East High, North High, West High
    - Safety Features
    - Square Footage
  - Bus Garage

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	Single Entry	Connectivity	Building Code	Square Footage	Science Safety	ADM vs Capacity	
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Bruce Drysdale	Orange	Red	Grey	White	White with X	Yellow	HIGH PUBLIC TRAFFIC ON SITE, MODULAR CLASSROOMS RELOCATE AGENCY PARTNERSHIPS TO HELP WITH CAPACITY
Clear Creek	Grey	Grey	Grey	White	White with X	Grey	
Dana	Orange	Grey	Grey	White	White with X	Grey	
Etowah	Orange	Grey	Grey	Yellow	White with X	Grey	SOME K-3 CLASSROOMS TOO SMALL
Fletcher	Grey	Grey	Grey	White	White with X	Grey	
Glenn Marlow	Orange	Grey	Grey	White	White with X	Yellow	EARLY EVIDENCE OF CAPACITY ISSUES: KINDER IN ADMIN PRE-K PARTNERSHIP
Hendersonville	Orange	Red	Red	Red	White with X	Red	MODULAR CLASSROOMS, COURTYARD, EMERGENCY ESCAPE ALL CLASSROOMS TOO SMALL
Hillandale	Grey	Grey	Grey	White	White with X	Grey	
Mills River	Grey	Grey	Grey	White	White with X	Grey	
Sugarloaf	Grey	Grey	Grey	White	White with X	Grey	
Upward	Red	Grey	Grey	Red	White with X	Red	MAIN ENTRY: LOW VISIBILITY CAFETERIA TOO SMALL
<b>MIDDLE SCHOOLS</b>							
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Flat Rock	Red	Red	Red	White	Red	Red	EMERGENCY ESCAPE, FRONT ENTRY MISSING SAFETY FEATURES, STORAGE, CLASSROOM SIZE
Hendersonville	Grey	Grey	Grey	Yellow	Orange	Grey	CAFETERIA CROWDED: COMPLIES WITH DPI MISSING SAFETY FEATURES & STORAGE
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Bus Garage	White with X	White with X	White with X	Red	White with X	Red	BUILDING TOO SMALL, NOT ENOUGH MAINTENANCE BAYS

## SCHOOL CAPACITY

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Bus Garage	Grey	Grey	Grey	Green	Grey	Red	BUILDING TOO SMALL, NOT ENOUGH MAINTENANCE BAYS

- ELEMENTARY SCHOOLS: COMPLIANCE WITH NC K-3 CLASS SIZE
  - Operational Solution: Bruce Drysdale
  - Glenn Marlow: evidence of capacity challenges
  - Modulars: Atkinson & Hendersonville
- MIDDLE SCHOOLS:
  - Modulars: Flat Rock & Rugby
- HIGH SCHOOLS:
  - Modulars: East High
    - calculations show room for growth
    - Cafeteria is too small for capacity

# SUMMARY OF FINDINGS

## HIGH PRIORITY SCHOOLS

- Atkinson Elementary
- Hendersonville Elementary
- Upward Elementary
- Apple Valley Middle
- Flat Rock Middle
- Rugby Middle
- East Henderson High
- North Henderson High
- West Henderson High
- Bus Garage

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Bus Garage	White with X	White with X	White with X	Red	White with X	Red	BUILDING TOO SMALL, NOT ENOUGH MAINTENANCE BAYS



## SUMMARY OF FINDINGS

### BUILDING CONDITIONS EVALUATION:

- Site: drainage, utilities, paving
- Roofs: warranties, conditions
- Gutters & Downspouts: conditions
- Building Envelope: windows, veneer, water infiltration
- HVAC Equipment: installation year, 25 year life cycle (15 years for chillers)
- Electrical: service/panel capacity, conditions
- Low Voltage Systems: intercom, HVAC controls, LED lighting, VOIP (Generator)
- Plumbing: infrastructure
- Interior: floor finishes, bleachers





## SUMMARY OF FINDINGS

### HCPS TREND

- Major Renovations every 20-25 years
  - Aligns with life cycle of major components: HVAC, Windows, Roof Warranties, Gutters/Downspouts, etc.





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### HCPS TREND

- Major Renovations every 20-25 years
  - Aligns with life cycle of major components: HVAC, Windows, Roof Warranties, Gutters/Downspouts, etc.

### FINDINGS:

- SITE:
  - Atkinson, Bruce Drysdale, Glenn Marlow,
  - Rugby, Flat Rock, Apple Valley
  - North High, East High
- ROOFS:
  - Up to date replacement with warranty expiration
  - Gutters/Downspouts: vegetation, leaking joints
    - Atkinson, Fletcher, Glenn Marlow, Hillandale, Mills River, Sugarloaf,
    - East High





## SUMMARY OF FINDINGS

### FINDINGS:

- ENVELOPE:
  - window replacement, tuck pointing, EIFS
    - Atkinson, Glenn Marlow, Dana, Hendersonville Elem
    - Flat Rock, Rugby, Apple Valley
    - North High, East High
- HVAC:
  - Easy to defer because of cost, a quick fix can buy time
    - Atkinson, Hendersonville Elem
    - Apple Valley, Flat Rock, Rugby
    - East High, North High
- ELECTRICAL:
  - Capacity and panel replacement
    - Atkinson, Bruce Drysdale, Hendersonville Elem
    - Flat Rock, Rugby
    - East High





## SUMMARY OF FINDINGS

### FINDINGS:

- **LOW VOLTAGE:**
  - Intercom/HVAC controls obsolete throughout system
  - VOIP Phone: Generator work required
  - LED Lighting: could help electrical capacity issues
  - Fire Alarm systems: some schools not HCPS standard
- **PLUMBING:**
  - Infrastructure/piping concerns
    - Etowah, Glenn Marlow, Sugarloaf, Flat Rock, Rugby,
  - ADA Restrooms
    - Hendersonville Elem, Flat Rock, Rugby, East High, West High
- **INTERIORS:**
  - Carpet Replacement: 10-15 years, easy to defer, replace isolated locations
    - Atkinson, Upward, Flat Rock, East High, West High





# 10 YEAR SCOPE MATRIX

	Immediate	Short Term			Mid Term			Long Term		
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>ELEMENTARY SCHOOLS</b>										
Atkinson	RENOVATIONS & ADDITION									
Bruce Drysdale										
Clear Creek										
Dana										
Etowah										
Fletcher										
Glenn Marlow										
Hendersonville	RENOVATIONS & ADDITION									
Hillandale										
Mills River										
Sugarloaf										
Upward	PARKING ENTRY MODIFICATIONS CAFETERIA ADDITION				PHASE 2 BLDG RENOVATIONS					
<b>MIDDLE SCHOOLS</b>										
Apple Valley					EXITS/CONNECTORS BLDG RENOVATIONS					
Flat Rock	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION				PHASE 2 BLDG RENOVATIONS					
Hendersonville										
Rugby	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION				PHASE 2 BLDG RENOVATIONS					
<b>HIGH SCHOOLS</b>										
East Henderson	PHASE 1 ENTRY CONNECTORS CAFETERIA EXPANSION				PHASE 2 NEW CLASSROOMS					
North Henderson					EXITS/CONNECTORS BLDG RENOVATIONS					
West Henderson	PHASE 1 ENTRY CONNECTORS				PHASE 2 SCIENCE BUILDING					
Bus Garage	NEW SITE AND BUILDING									

- MAJOR BUILDING PROJECTS**
- Atkinson
  - Hendersonville Elementary
  - Upward Elementary
  - Flat Rock Middle
  - Rugby Middle
  - East High
  - West High
  - Bus Garage



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	Immediate	Short Term			Mid Term			Long Term		
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>ELEMENTARY SCHOOLS</b>										
Atkinson	RENOVATIONS & ADDITION									
Bruce Drysdale				BUILDING REPAIRS						
Clear Creek			BUILDING REPAIRS							
Dana		GYM REPAIRS								
Etowah				BUILDING REPAIRS						
Fletcher		BUILDING REPAIRS								
Glenn Marlow		BUILDING REPAIRS								
Hendersonville	RENOVATIONS & ADDITION									
Hillandale					BUILDING REPAIRS					
Mills River					BUILDING REPAIRS					
Sugarloaf			BUILDING REPAIRS							
Upward	PARKING ENTRY MODIFICATIONS CAFETERIA ADDITION					PHASE 2 BLDG RENOVATIONS				
<b>MIDDLE SCHOOLS</b>										
Apple Valley	PARAPET REPAIRS REMOVE SKYLIGHT					EXITS/CONNECTORS BLDG RENOVATIONS				
Flat Rock	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION					PHASE 2 BLDG RENOVATIONS				
Hendersonville				BUILDING REPAIRS						
Rugby	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION					PHASE 2 BLDG RENOVATIONS				
<b>HIGH SCHOOLS</b>										
East Henderson	PHASE 1 ENTRY CONNECTORS CAFETERIA EXPANSION					PHASE 2 NEW CLASSROOMS				
North Henderson	PARAPET REPAIRS REMOVE SKYLIGHT					EXITS/CONNECTORS BLDG RENOVATIONS				
West Henderson	PHASE 1 ENTRY CONNECTORS					PHASE 2 SCIENCE BUILDING				
Bus Garage	NEW SITE AND BUILDING									

**MAJOR BUILDING PROJECTS**

**BUILDING REPAIRS**

Less Invasive

Summer Work

Exterior Work

Shorter Duration

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<b>ELEMENTARY SCHOOLS</b>										
Atkinson	RENOVATIONS & ADDITION									
Bruce Drysdale				BUILDING REPAIRS LOW VOLTAGE						
Clear Creek			BUILDING REPAIRS		LOW VOLTAGE					
Dana		GYM REPAIRS				LOW VOLTAGE				
Etowah					LOW VOLTAGE BUILDING REPAIRS					
Fletcher		BUILDING REPAIRS			LOW VOLTAGE					
Glenn Marlow		BUILDING REPAIRS			LOW VOLTAGE					
Hendersonville	RENOVATIONS & ADDITION									
Hillendale					BUILDING REPAIRS	LOW VOLTAGE				
Mills River					BUILDING REPAIRS	LOW VOLTAGE				
Sugarloaf			BUILDING REPAIRS			LOW VOLTAGE				
Upward	PARKING ENTRY MODIFICATIONS CAFETERIA ADDITION					PHASE 2 BLDG RENOVATIONS				
<b>MIDDLE SCHOOLS</b>										
Apple Valley	PARAPET REPAIRS REMOVE SKYLIGHT					EXITS/CONNECTORS BLDG RENOVATIONS				
Flat Rock	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION					PHASE 2 BLDG RENOVATIONS				
Hendersonville					LOW VOLTAGE BUILDING REPAIRS					
Rugby	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION					PHASE 2 BLDG RENOVATIONS				
<b>HIGH SCHOOLS</b>										
East Henderson	PHASE 1 ENTRY CONNECTORS CAFETERIA EXPANSION					PHASE 2 NEW CLASSROOMS				
North Henderson	PARAPET REPAIRS REMOVE SKYLIGHT					EXITS/CONNECTORS BLDG RENOVATIONS				
West Henderson	PHASE 1 ENTRY CONNECTORS					PHASE 2 SCIENCE BUILDING				
Bus Garage	NEW SITE AND BUILDING									

**MAJOR BUILDING PROJECTS**

**BUILDING REPAIRS**

**LOW VOLTAGE UPGRADES**

Intercom

HVAC Controls

LED Lighting Upgrade

Fire Alarm Systems

VOIP Phone



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	Immediate	Short Term			Mid Term			Long Term		
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
<b>ELEMENTARY SCHOOLS</b>										
Atkinson	RENOVATIONS & ADDITION				ASPHALT PAVING					
Bruce Drysdale				BUILDING REPAIRS LOW VOLTAGE						
Clear Creek			BUILDING REPAIRS		LOW VOLTAGE					
Dana		GYM REPAIRS			ASPHALT PAVING LOW VOLTAGE				ROOF REPLACEMENT	
Etowah	ROOF REPLACEMENT			LOW VOLTAGE BUILDING REPAIRS	ASPHALT PAVING			HVAC REPLACEMENT		
Fletcher		BUILDING REPAIRS		LOW VOLTAGE	ASPHALT PAVING			HVAC REPLACEMENT		
Glenn Marlow		BUILDING REPAIRS		LOW VOLTAGE		HVAC REPLACEMENT				
Hendersonville	RENOVATIONS & ADDITION				ASPHALT PAVING					
Hillandale					BUILDING REPAIRS	PAVING & ROOF LOW VOLTAGE				
Mills River					BUILDING REPAIRS	PAVING & ROOF LOW VOLTAGE				
Sugarloaf			BUILDING REPAIRS		PAVING & HVAC LOW VOLTAGE					
Upward	PARKING ENTRY MODIFICATIONS CAFETERIA ADDITION				PHASE 2 BLDG RENOVATIONS					
<b>MIDDLE SCHOOLS</b>										
Apple Valley	PARAPET REPAIRS REMOVE SKYLIGHT				EXITS/CONNECTORS BLDG RENOVATIONS			ROOF REPLACEMENT		
Flat Rock	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION				PHASE 2 BLDG RENOVATIONS		ROOF REPLACEMENT			
Hendersonville				LOW VOLTAGE BUILDING REPAIRS						HVAC REPLACEMENT
Rugby	HVAC & WINDOW REPLACEMENT CLASSROOM WING CONSTRUCTION				PHASE 2 BLDG RENOVATIONS		ROOF REPLACEMENT			
<b>HIGH SCHOOLS</b>										
East Henderson	PHASE 1 ENTRY CONNECTORS CAFETERIA EXPANSION				PHASE 2 NEW CLASSROOMS					
North Henderson	PARAPET REPAIRS REMOVE SKYLIGHT				EXITS/CONNECTORS BLDG RENOVATIONS					
West Henderson	PHASE 1 ENTRY CONNECTORS				PHASE 2 SCIENCE BUILDING	ROOF REPLACEMENT				
Bus Garage	NEW SITE AND BUILDING									

MAJOR BUILDING PROJECTS

BUILDING REPAIRS

LOW VOLTAGE UPGRADES

ROUTINE MAINTENANCE



## FLAT ROCK MIDDLE



### BUILDING CODE

- Classrooms w/o Emergency escape

### DPI GUIDELINES

- Science Safety/Classroom Size
- Gymnasium

### MODULAR CLASSROOMS

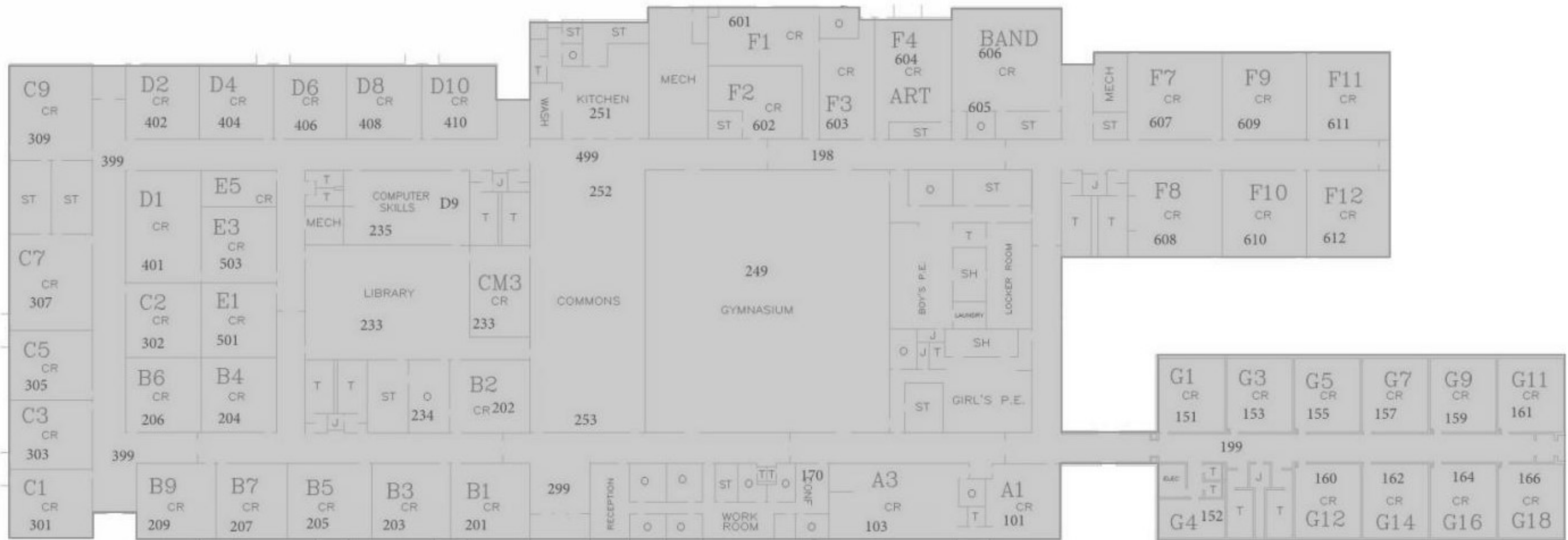
- Modulares on site
- No interior connectivity

### BUILDING CONDITIONS

- Piping throughout
- HVAC Units
- Sidewalks, Canopies, Patio
- Brick Veneer
- Windows & Doors
- Obsolete HVAC Controls, Intercom
- ADA Restrooms

**2019 PHASE 1: EMERGENCY UPGRADES**

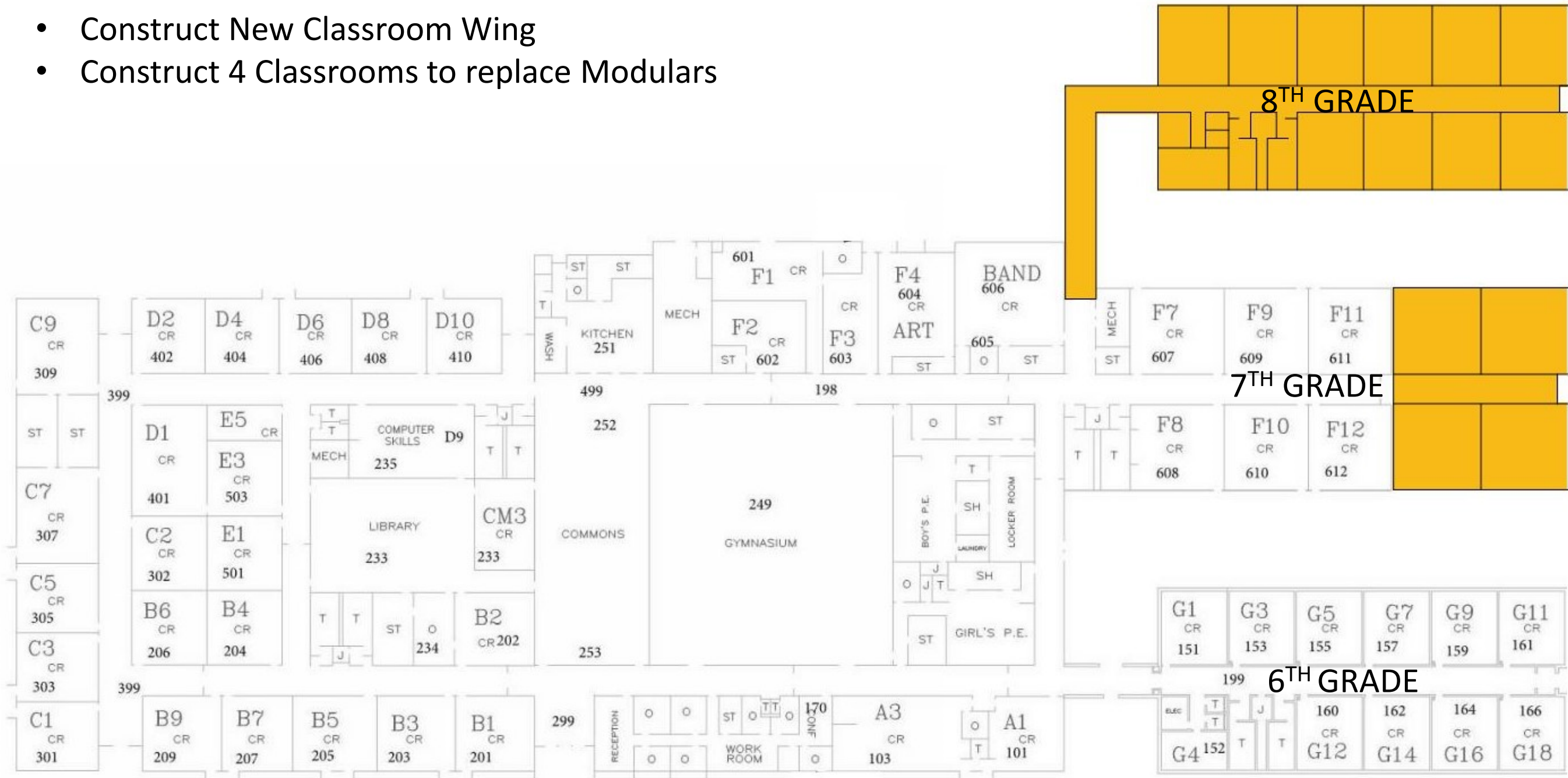
- Replace HVAC throughout Existing Building
- Replace Windows throughout Existing Building





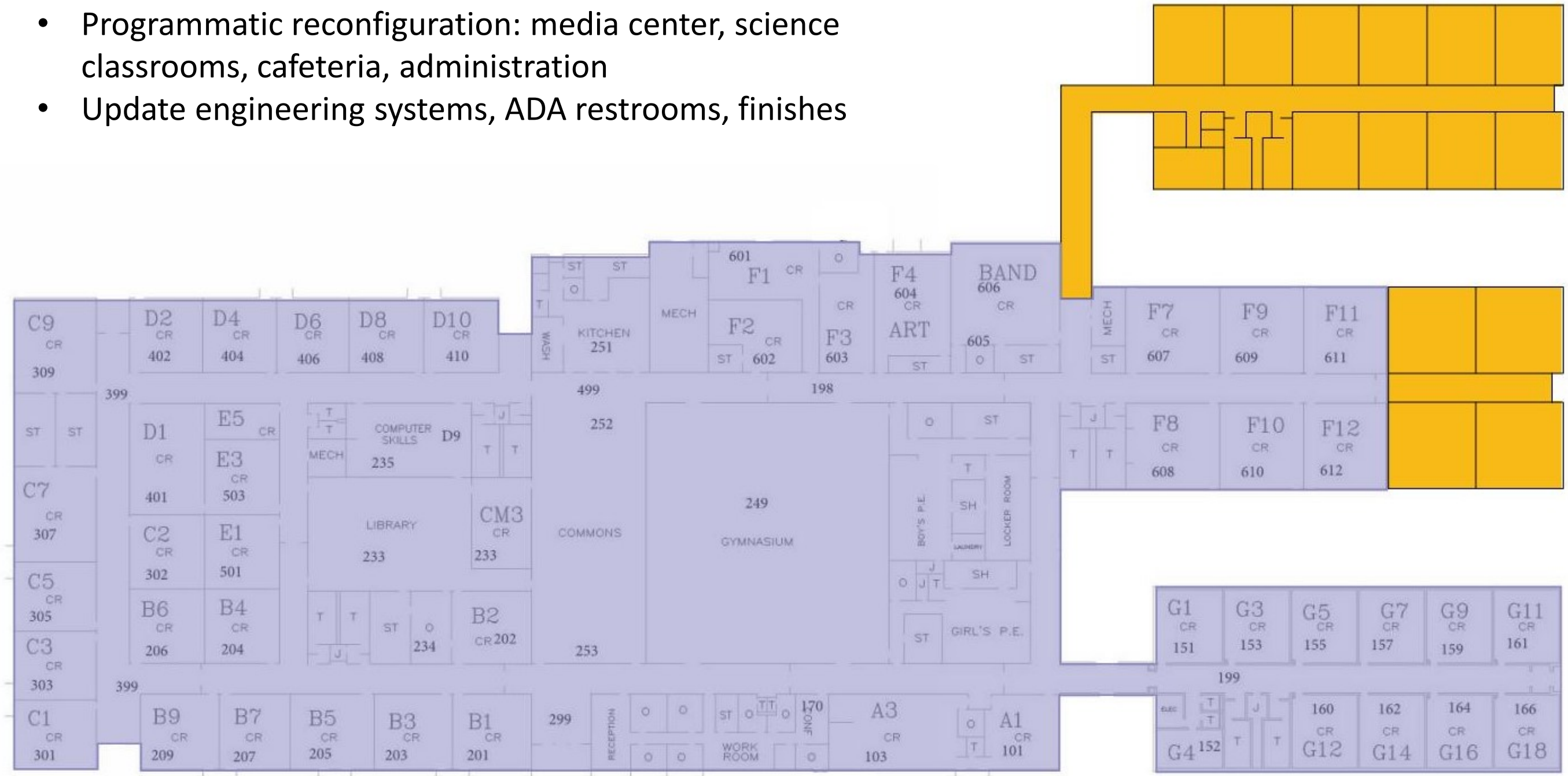
## 2019 PHASE 1: CLASSROOM ADDITIONS

- Construct New Classroom Wing
- Construct 4 Classrooms to replace Modulars



**2021 PHASE 2: EXISTING BUILDING RENOVATIONS**

- Programmatic reconfiguration: media center, science classrooms, cafeteria, administration
- Update engineering systems, ADA restrooms, finishes





## FLAT ROCK MIDDLE



2019 PHASE 1  
• \$9,214,000

2023 PHASE 2  
• \$16,643,000

TOTAL PROJECT COSTS  
• **\$25,857,000**

## RUGBY MIDDLE



### BUILDING CODE

- Classrooms w/o Emergency escape

### DPI GUIDELINES

- Science Safety/Classroom Size

### MODULAR CLASSROOMS

- Modulares on site
- No interior connectivity

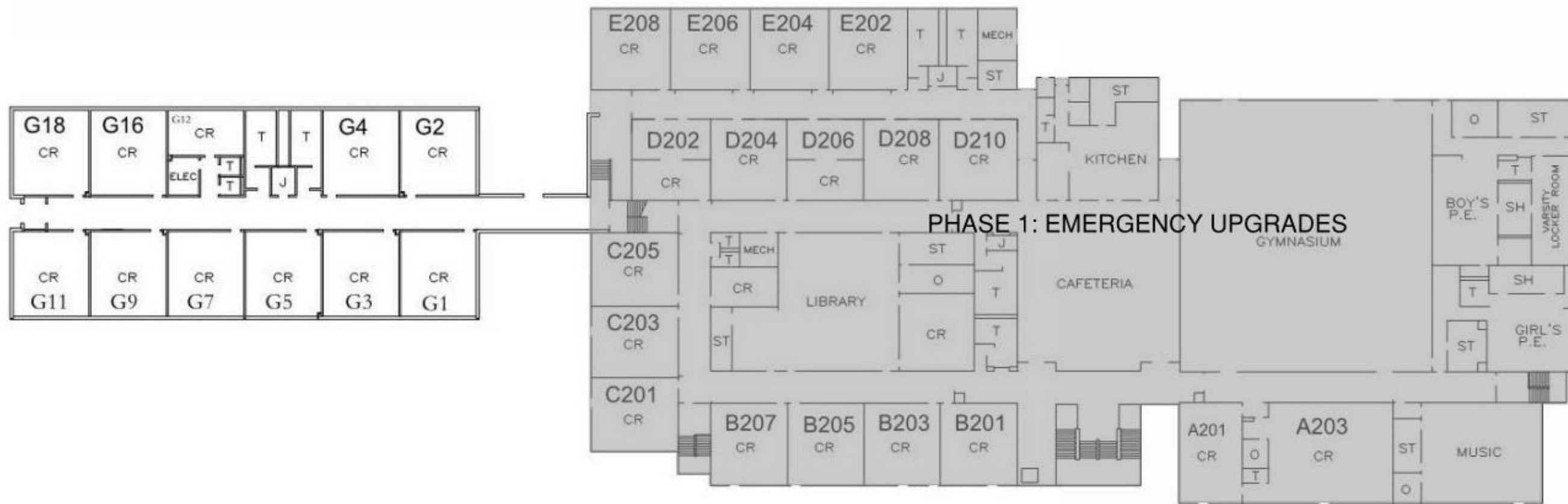
### BUILDING CONDITIONS

- Piping throughout
- HVAC Units
- Windows & Doors
- Sidewalks, Canopies
- Obsolete HVAC Controls, Intercom
- ADA Restrooms



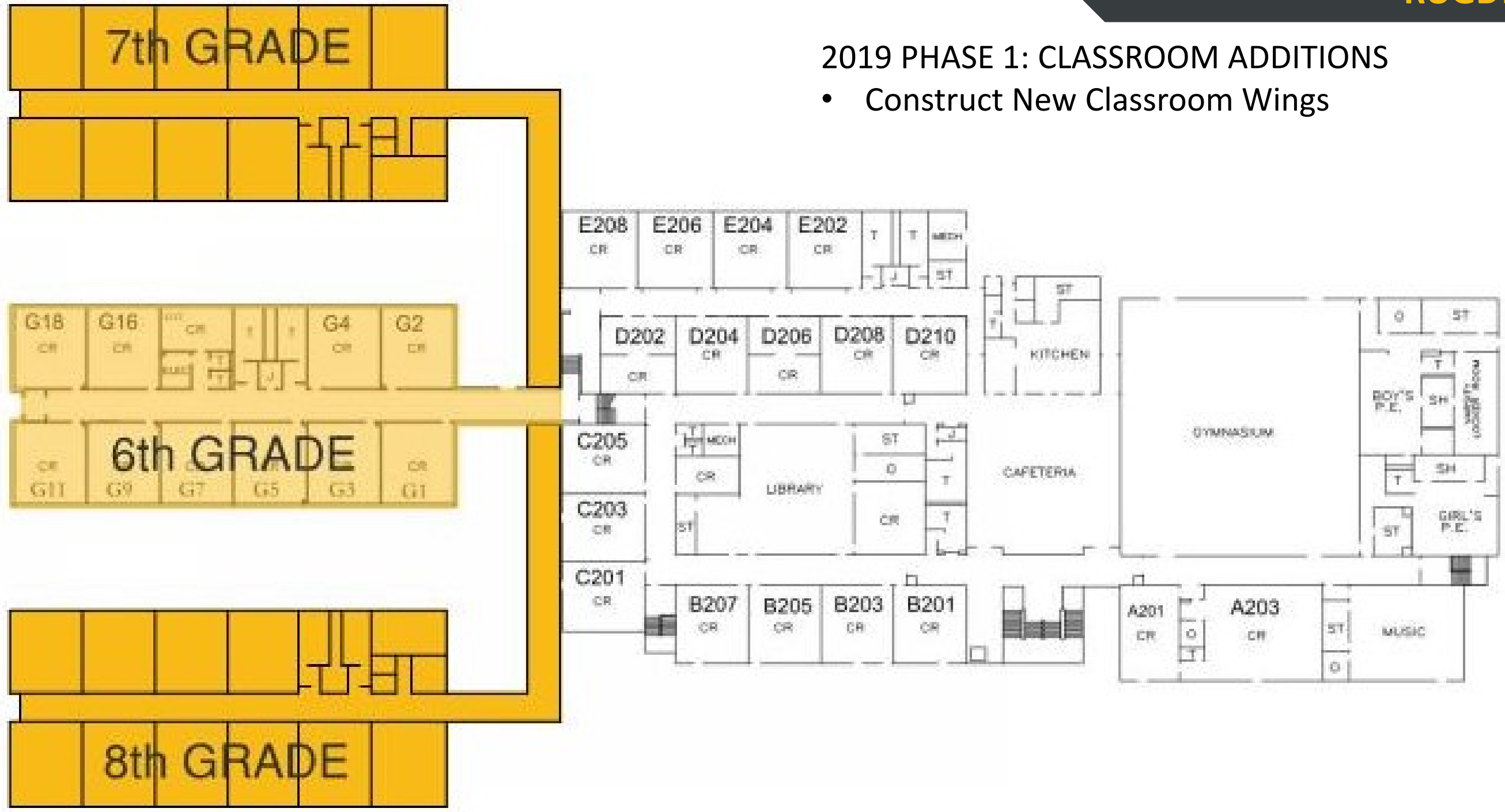
2019 PHASE 1: EMERGENCY UPGRADES

- Replace HVAC throughout Existing Building
- Replace Windows throughout Existing Building

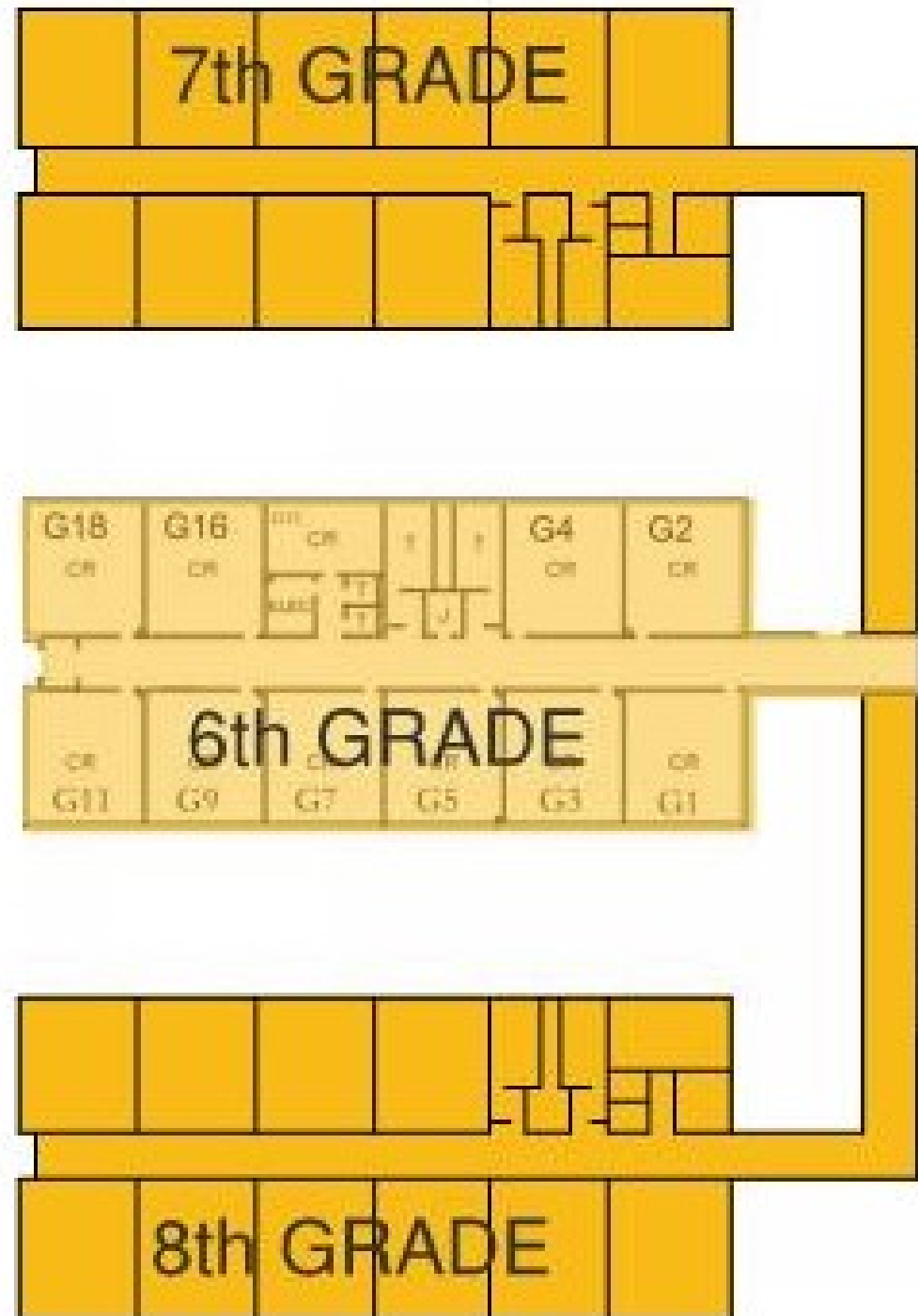


2019 PHASE 1: CLASSROOM ADDITIONS

- Construct New Classroom Wings







## 2023 PHASE 2: EXISTING BUILDING RENOVATIONS

- Programmatic reconfiguration: media center, science classrooms, cafeteria, administration
- Update engineering systems, ADA restrooms, finishes



## RUGBY MIDDLE



2019 PHASE 1

- \$11,728,000

2023 PHASE 2

- \$16,572,000

TOTAL PROJECT COSTS

- **\$28,300,000**





## EAST HENDERSON HIGH

### BUILDING CONNECTIVITY

- Separate buildings

### DPI GUIDELINES

- Science Safety/Classroom Size
- Cafeteria (3057 actual/6000 DPI)

### MODULARS

- Modulares on site

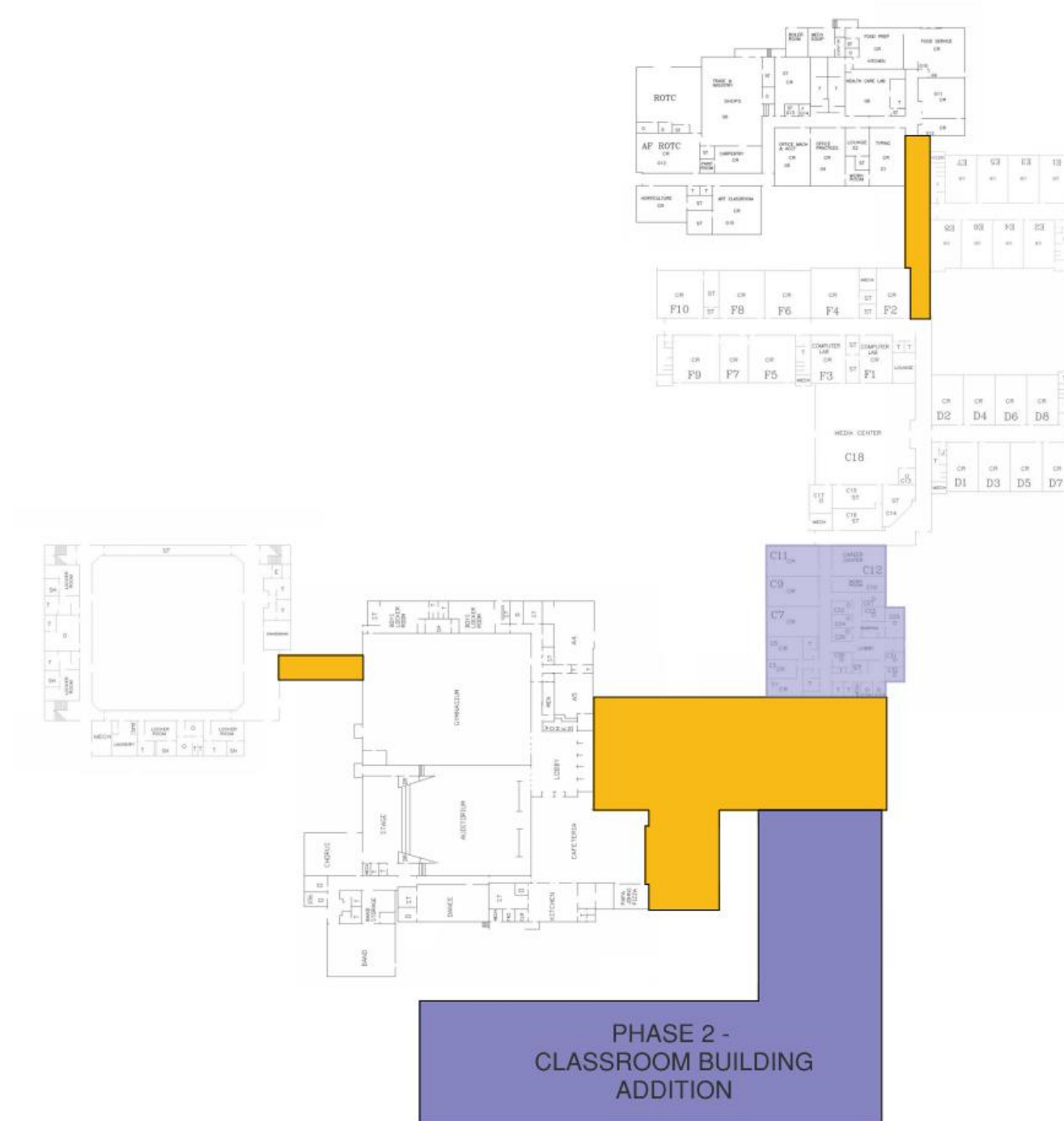
### BUILDING CONDITIONS

- HVAC Replacement
- Electrical Panel/Service
- Stormwater drain failure
- ADA Restrooms/Plumbing failures
- Windows/Door Hardware
- Obsolete HVAC Controls, Intercom
- Asphalt Paving
- Gym Bleachers repair/replace
- Roof replacements 2022





## EAST HENDERSON HIGH



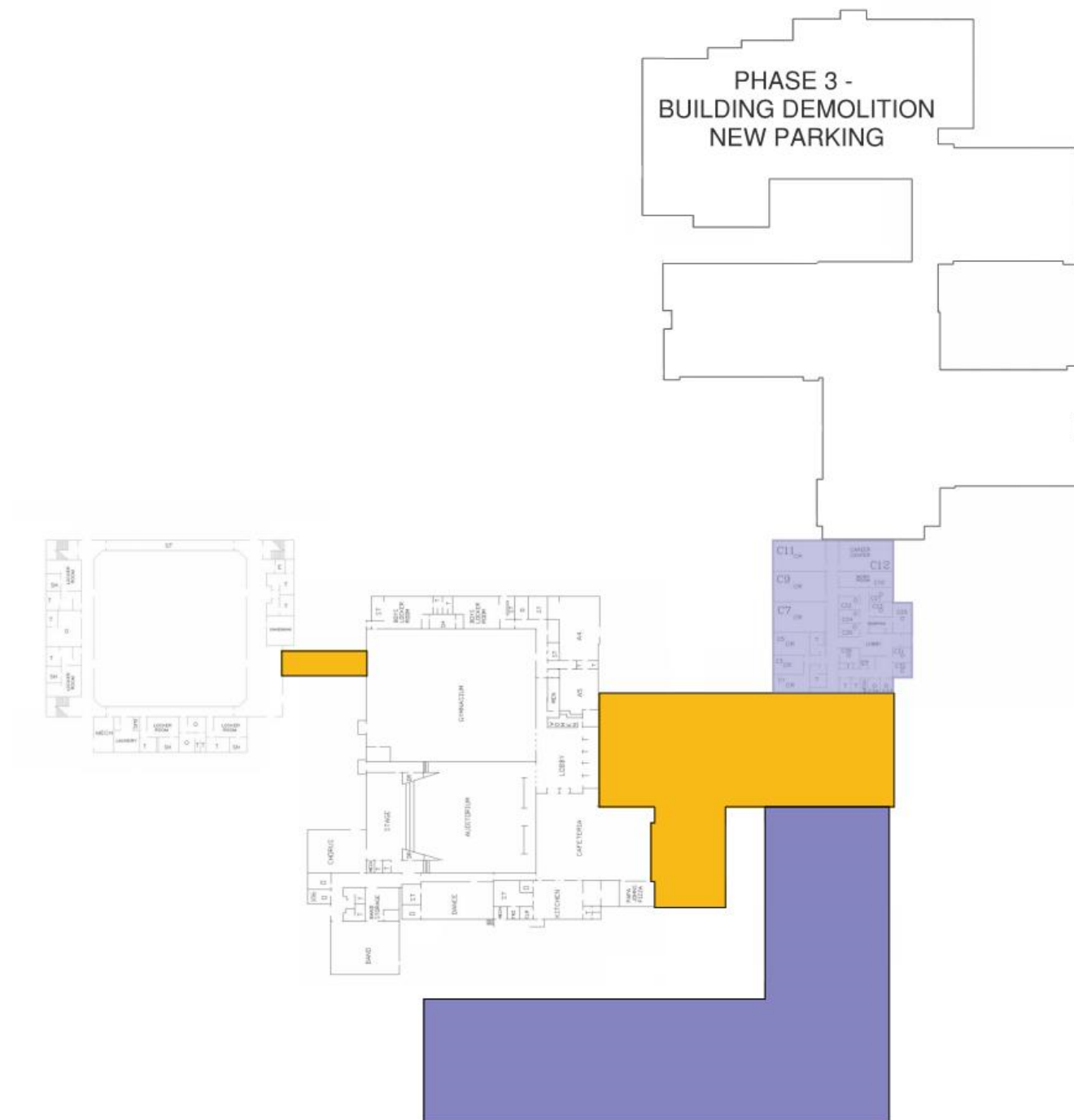
### 2019 PHASE 1:

- Connector corridors between buildings
- Main Entry to Gym Lobby with cafeteria addition and classrooms to replace modulares

### 2023 PHASE 2:

- Construct New Classroom Building
- Renovate Administration

## EAST HENDERSON HIGH



### 2019 PHASE 1:

- Connector corridors between buildings
- Main Entry to Gym Lobby with cafeteria addition and classrooms to replace modulars

### 2023 PHASE 2:

- Construct New Classroom Building
- Renovate Administration

### 2023 PHASE 3:

- Building Demolition
- New Parking Lots



## EAST HENDERSON HIGH

PHASE 3 -  
DEMOLISH EXISTING  
BUILDINGS, CREATE  
NEW PARKING

CONNECTOR CORRIDOR

MAIN ENTRY &  
CAFETERIA ADDITION

PHASE 2 -  
NEW CLASSROOMS

2019 PHASE 1:  
ENTRY, CONNECTIVITY, RENOVATIONS  
• \$9,423,000

2023 PHASE 2 & 3:  
CLASSROOM BLDG & BLDG DEMO  
• \$33,091,000

TOTAL PROJECT COSTS  
• **\$42,514,000**





## WEST HENDERSON HIGH

### BUILDING CONNECTIVITY

- Separate X building

### DPI GUIDELINES

- Science Safety/Classroom Size

### BUILDING CONDITIONS

- Need new Boilers/Burners
- Electrical Panel Replacement
- HVAC Units Ongoing
- Obsolete HVAC Controls, Intercom
- New Roof @ Y & Z Buildings
- Asphalt Paving
- Gym Bleachers repair/replace
- ADA Restrooms



# WEST HENDERSON HIGH

## 2019 PHASE 1:

- Connector corridor @ X Building
- Main Entry to Gym Lobby



# WEST HENDERSON HIGH



## 2019 PHASE 1:

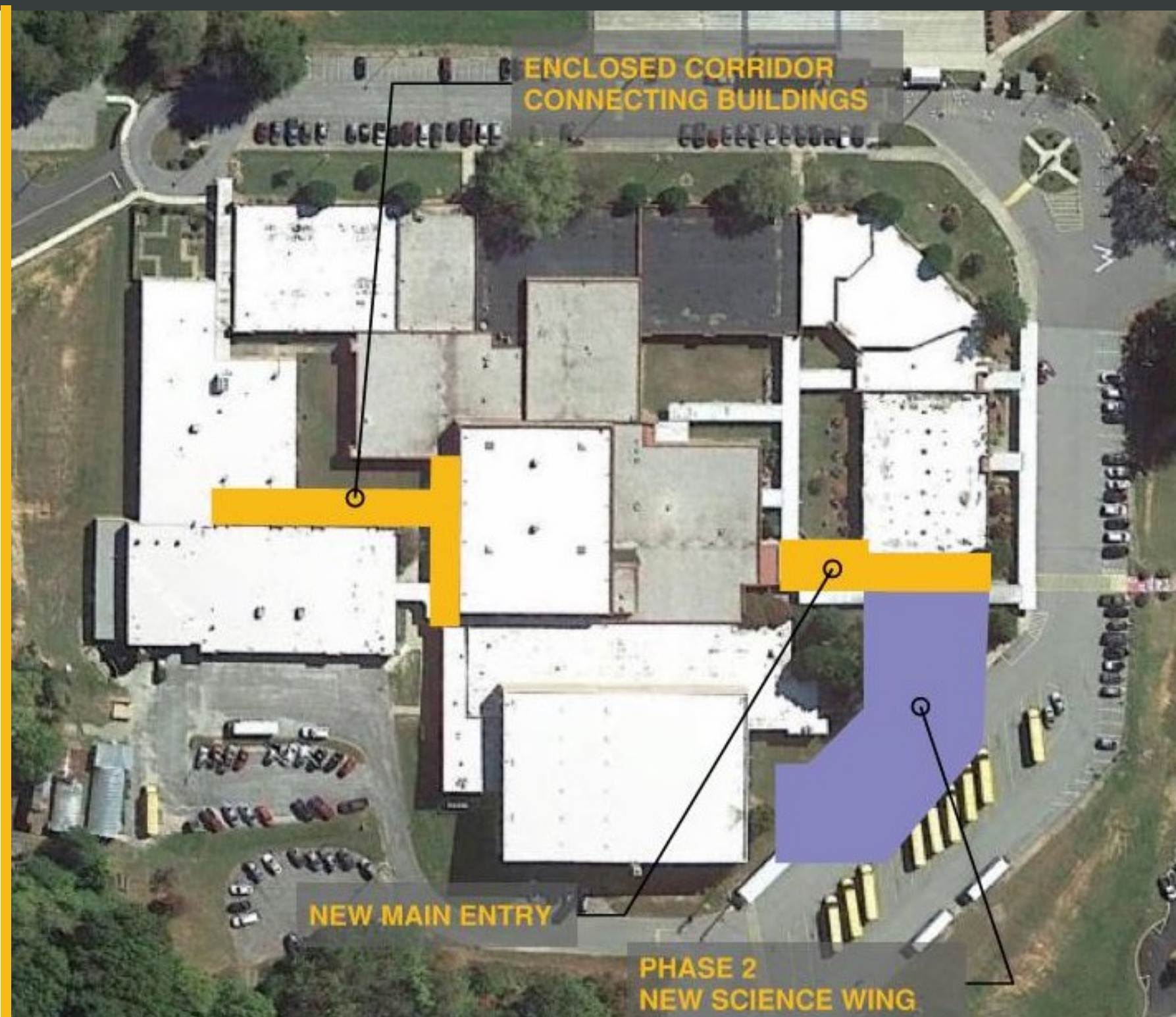
- Connector corridor @ X Building
- Main Entry to Gym Lobby

## 2023 PHASE 2:

- Science Classroom Addition



## WEST HENDERSON HIGH



### 2019 PHASE 1: ENTRY & CONNECTORS

- \$1,880,000

### 2023 PHASE 2: SCIENCE BUILDING

- \$6,706,000

### TOTAL PROJECT COSTS

- **\$8,586,000**



## BUS GARAGE

### DPI GUIDELINES

- Site Size 12 acres
  - HCPS 2.95 + 1.3 acres
- Fuel Storage 25,000 gal
  - HCPS 10,000 gal

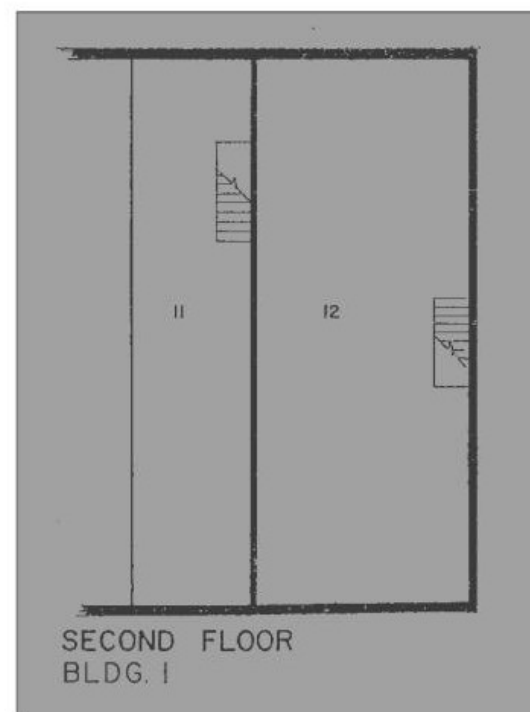
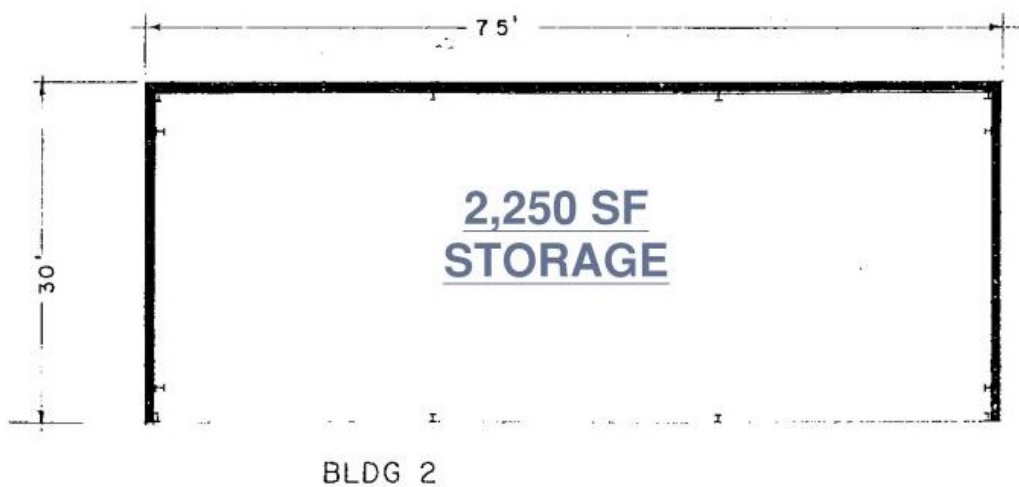
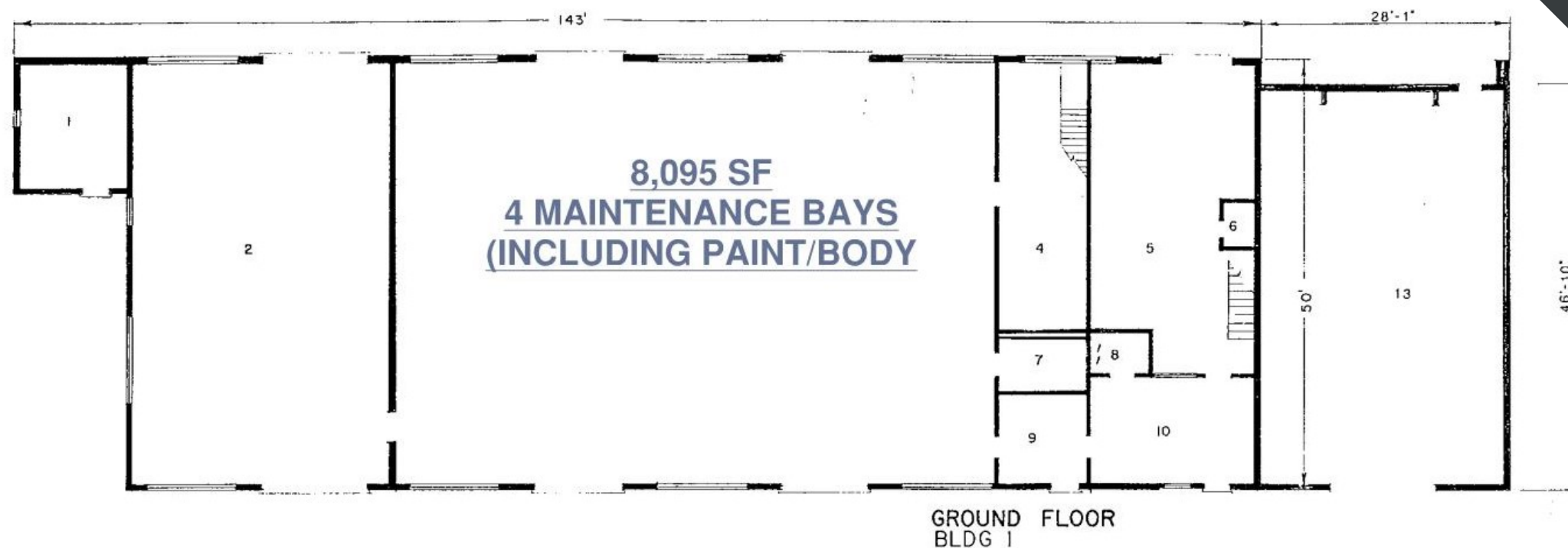
### BUILDING CONDITIONS

- Built 1952
- Second floor condemned
- Unconditioned Storage
- Workplace Safety Requirements
- Bus sizes vs. service bay size





# BUS GARAGE



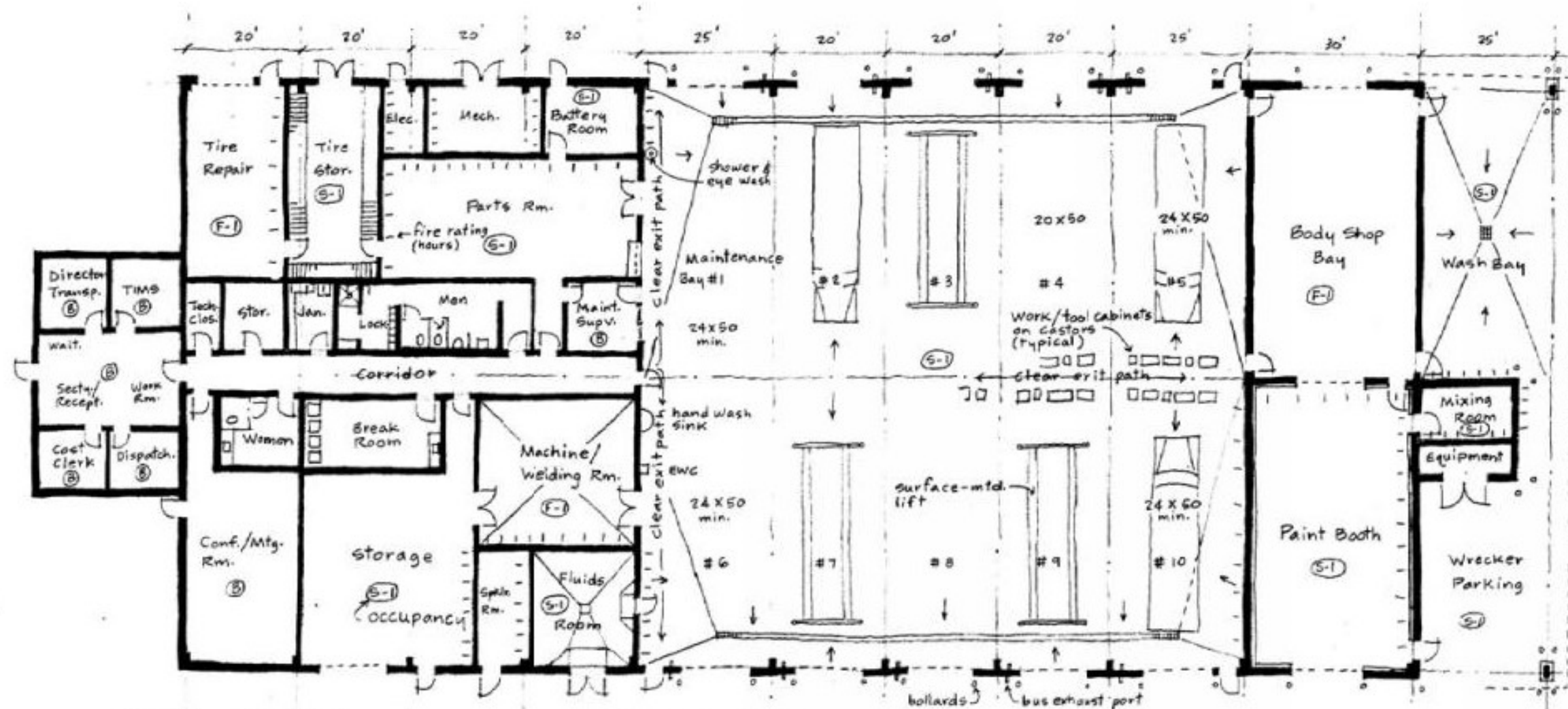
## DPI GUIDELINES

- 8 Service Bays
  - HCPS 3 bays
- 1 Paint Bay
- 1 Body Bay
  - HCPS shared paint/body
- 1 Wash Bay
  - HCPS none
- 27,200 SF
  - HCPS 10,345 SF

# BUS GARAGE

## 2019 NEW BUILDING CONSTRUCTION

- \$2,089,000 (BUILDING COSTS ONLY)



Medium School System (150 buses)

150 SCHOOL BUS SYSTEM  
 0 20 4 10 20

- Fully sprinklered (including roof overhang @ right end)
  - Fire area over 12,000 sf
  - Non-separated mixed use
  - Construction Type II-B
- 50' wide concrete apron
- Fuel dispensing station is remotely located.



## UPWARD ELEMENTARY



### MAIN ENTRY

- Poor Visibility from Reception at current 'Front'

### CAFETERIA

- Under DPI guideline for square footage
- DPI: 2,500 sf
- Actual: 2,000 sf

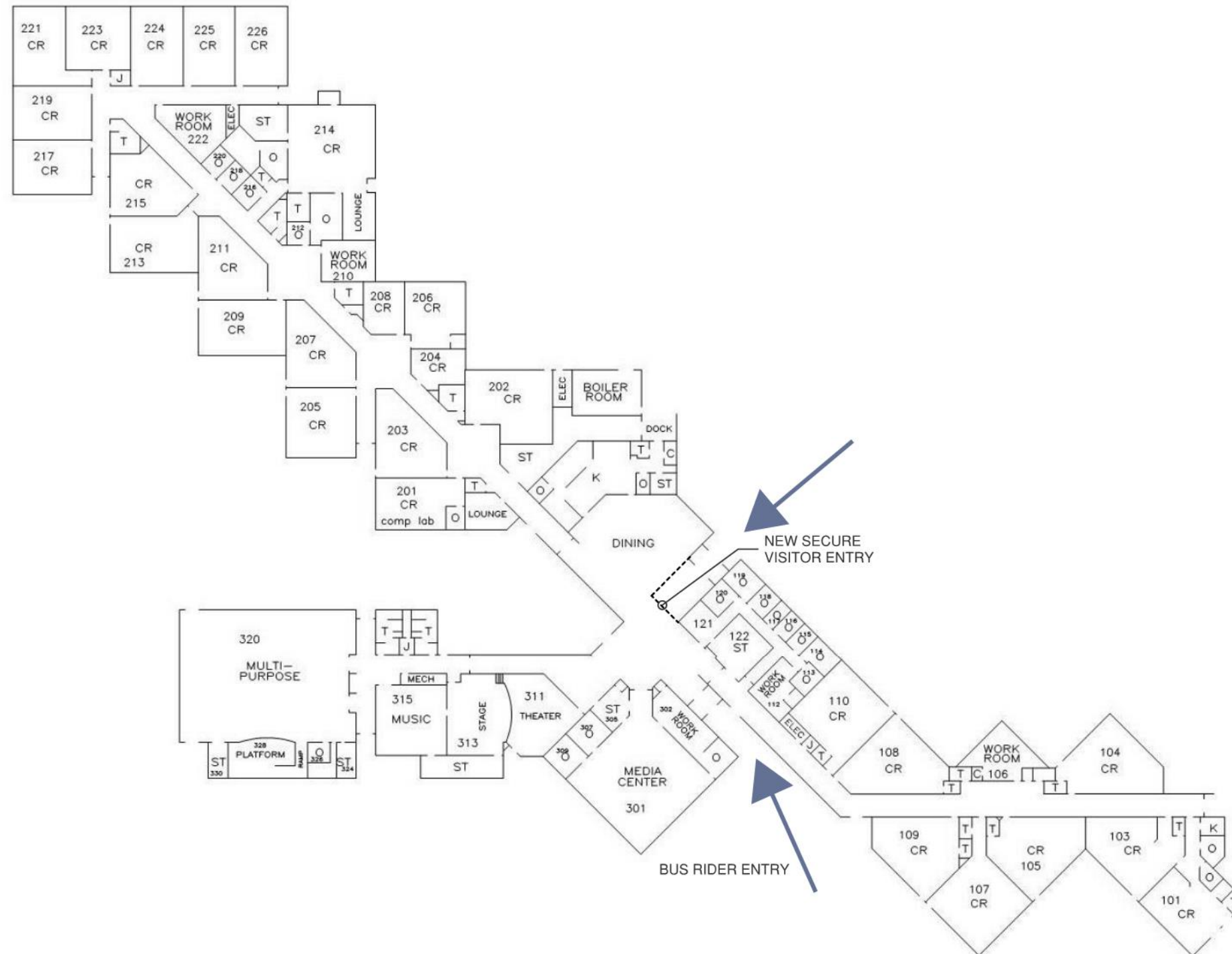
### BUILDING CONDITIONS

- Replace Drop-Off Canopies
- Obsolete HVAC Controls, Intercom
- Entry Doors & Hardware
- 1992 HVAC Equipment
- 1992 Carpet

## UPWARD ELEMENTARY

### 2019 PHASE 1:

- Switch Car & Bus Rider Drop-offs
- Better visibility from Reception
- Construct wall for secure entry
- Re-stripe parking lots





# UPWARD ELEMENTARY

## 2019 PHASE 1:

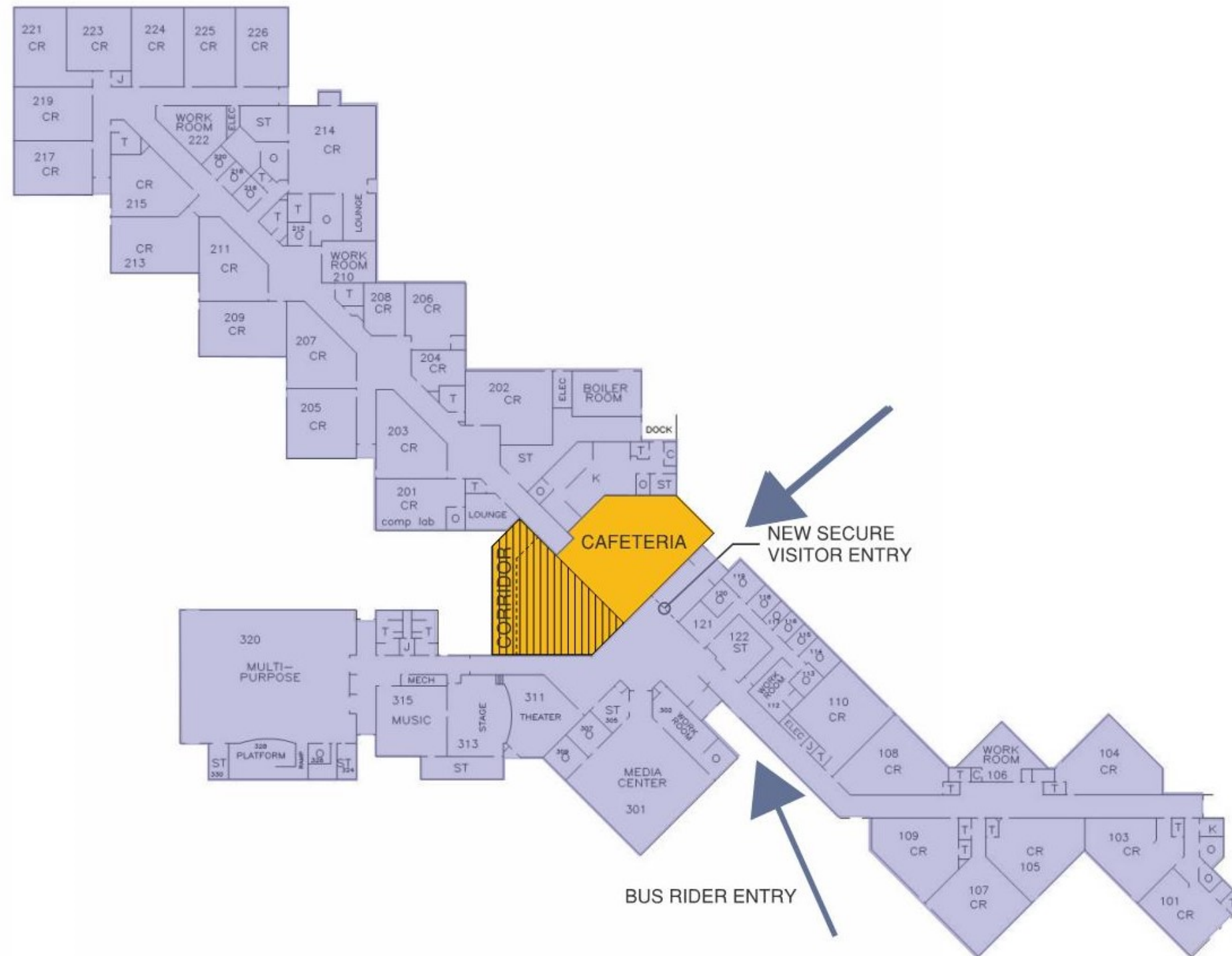
- Switch Car & Bus Rider Drop-offs
- Better visibility from Reception
- Construct wall for secure entry
- Re-stripe parking lots

## 2019 PHASE 2:

- Construct cafeteria addition
- New corridor around cafeteria



## UPWARD ELEMENTARY



### 2019 PHASE 1:

- Switch Car & Bus Rider Drop-offs
- Better visibility from Reception
- Construct wall for secure entry
- Re-stripe parking lots

### 2019 PHASE 1:

- Construct cafeteria addition
- New corridor around cafeteria

### 2023 PHASE 2:

- Existing building renovations
- Equipment replacement



## UPWARD ELEMENTARY



2019 PHASE 1:  
ENTRY/SITE, CAFETERIA MODIFICATIONS

- \$702,000

2023 PHASE 2: BUILDING RENOVATIONS

- \$1,881,000

TOTAL PROJECT COSTS

- \$2,583,000



## ATKINSON ELEMENTARY

### BUILDING CODE

- Emergency escape into courtyard
- Exit from courtyard into building
- Classrooms without 2<sup>nd</sup> exit outside

### MODULAR CLASSROOMS

- Modulares on site
- No interior building connectivity

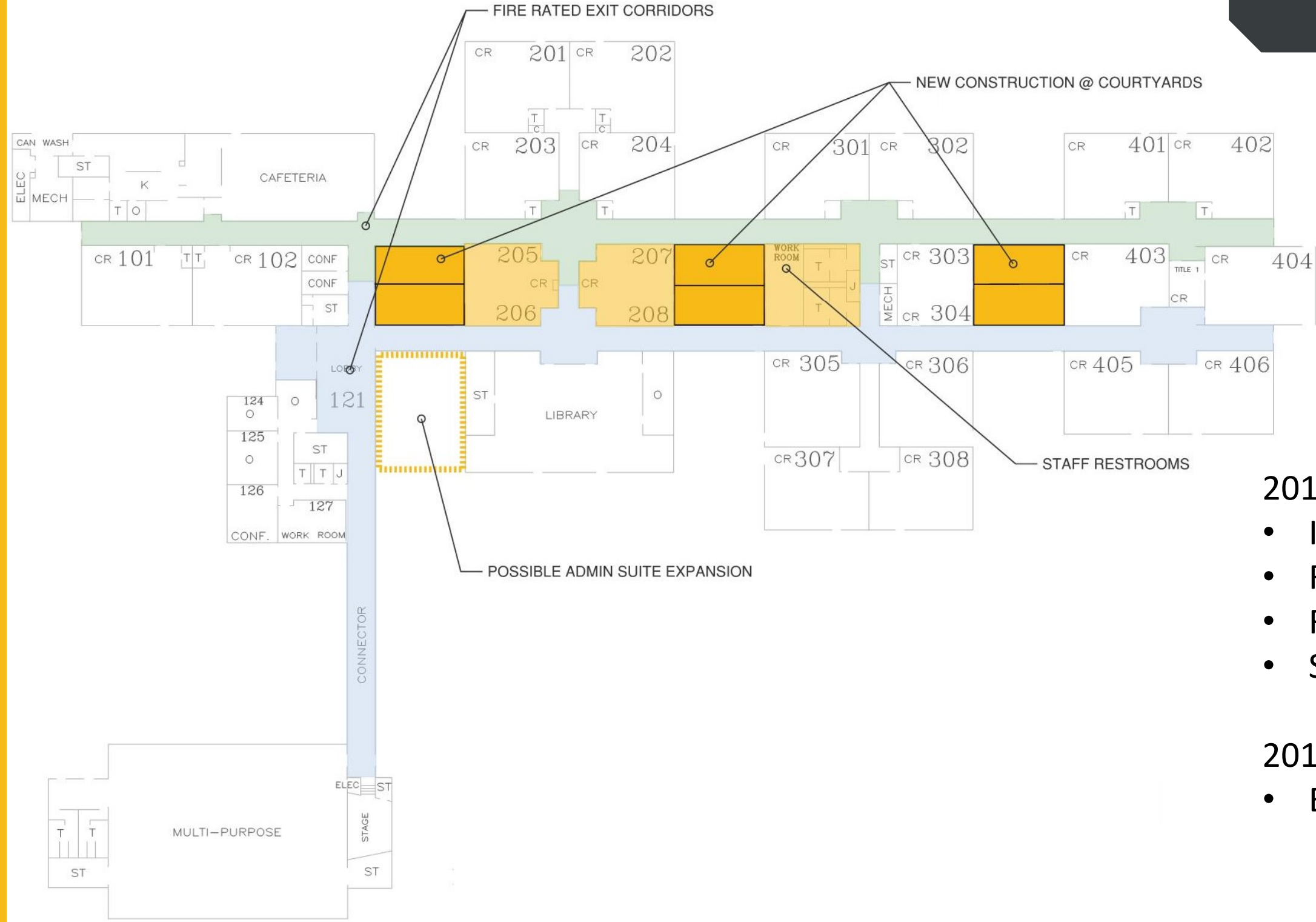
### BUILDING CONDITIONS

- Poor Drainage throughout Site
- Bridge over stream
- Water infiltration in Veneer & Gym
- Humidity: no HVAC in corridor
- Windows need replaced
- Obsolete HVAC Controls





# ATKINSON ELEMENTARY



## 2019 PHASE CLASSROOM ADDITIONS

- Infill Courtyards
- Rearrange Instructional Spaces
- Fire Rated Corridors or Sprinkler
- Staff Restrooms

## 2019 BUILDING RENOVATIONS

- Existing Building Renovations

# ATKINSON ELEMENTARY



## 2019 TOTAL PROJECT COSTS

- **\$3,075,000**

## Potential Administration Addition

- **\$911,400**





## HENDERSONVILLE ELEMENTARY

### BUILDING CODE

- Emergency escape into courtyard
- Exit from courtyard into building
- Upstairs Classroom(s)

### MODULAR CLASSROOMS

- Modulares on site
- No interior building connectivity

### BUILDING CONDITIONS

- +20 year old HVAC Equipment
- Obsolete HVAC Controls, Intercom
- Original Electrical: no additional capacity
- 1971 Windows
- No ADA Restrooms

# HENDERSONVILLE ELEMENTARY



## 2019 CLASSROOM ADDITION:

- Construct (4) Classroom Addition
- Kindergarten classrooms to meet DPI Guidelines
- Exit Passageway from Courtyard

## 2019 BUILDING RENOVATIONS

- Existing Building Renovations
- ADA Restroom Upgrades



## HENDERSONVILLE ELEMENTARY

2019 BUILDING TOTAL

- \$3,996,000



(4) CLASSROOM  
ADDITION



## NORTH AND APPLE VALLEY

### BUILDING CODE

- Emergency escape into courtyard

### BUILDING CONNECTIVITY

- Annex building not connected
- Creates additional courtyard
- BLOCKS FIRE LANE

### DPI GUIDELINES

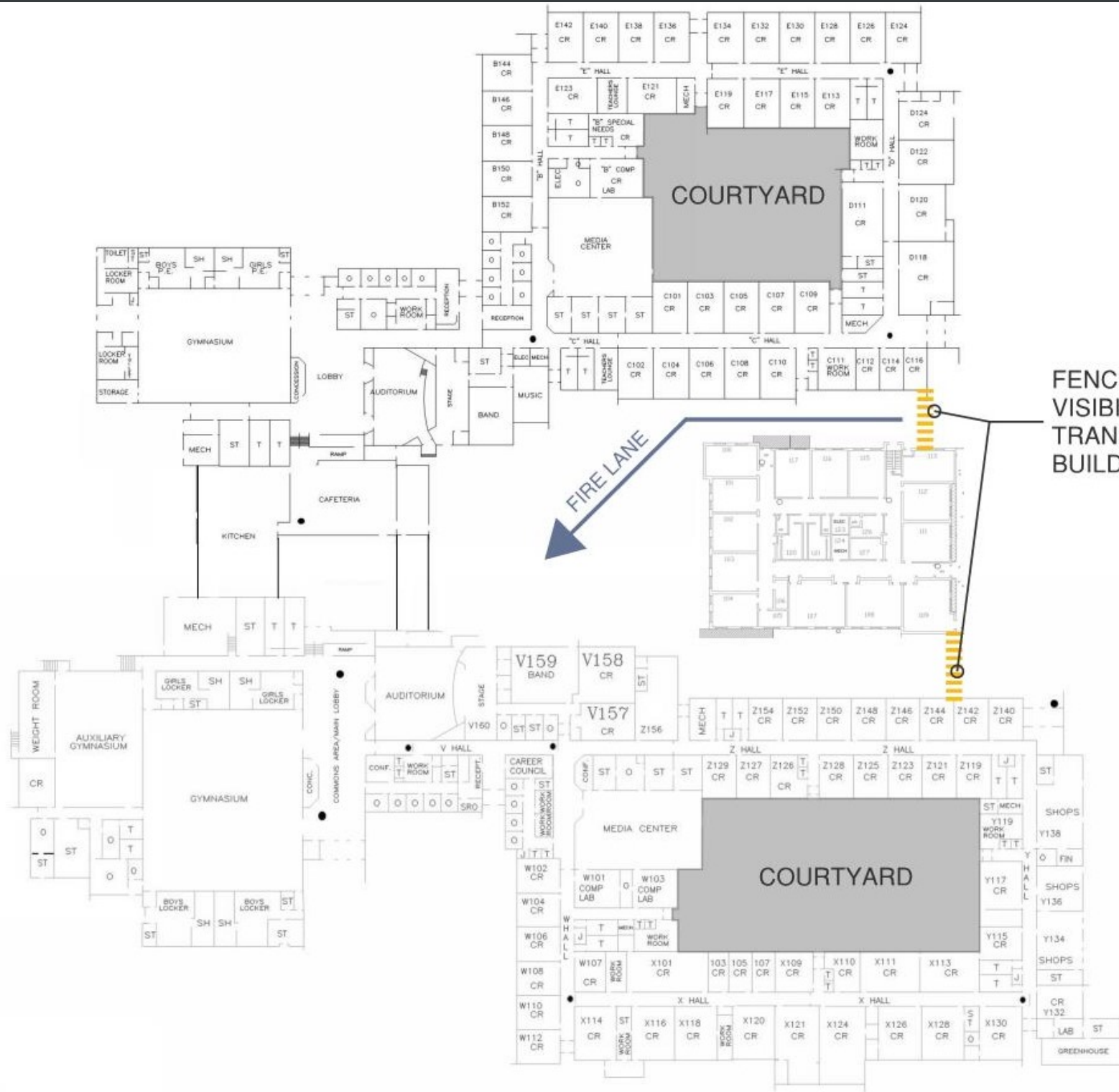
- Science Safety

### BUILDING CONDITIONS

- Parapet structural failures
- HVAC Equipment Replacement
- Chiller Piping
- Gutters & Downspouts
- Paving/Sidewalks, site drainage
- Obsolete HVAC Controls, Intercom
- Exterior doors
- Gym Bleachers



## NORTH AND APPLE VALLEY



### 2019 PHASE 1

- Repair precast parapets throughout
- Remove existing skylights, repair roof
- Fencing to protect building connections

### 2023 PHASE 2

- Building renovations



## NORTH AND APPLE VALLEY

2019 PHASE 1: PARAPETS/SKYLIGHTS

- \$95,000

2023 PHASE 2

- \$3,320,000

TOTAL PROJECT COSTS

- **\$3,415,000**



# LONG TERM PRIORITIES



YEAR	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
PROJECT SCOPE	ROOF REPLACEMENT			SYSTEM UPGRADES	BUILDING REPAIRS					
SCHOOL SAFETY/BUILDING CODE					REPLACE DOOR HARDWARE					
CAPACITY										
DPI GUIDELINES										
MAINTENANCE	GYMNASIUM TPO ROOF REPLACEMENT				REPLACE EXTERIOR DOORS AND SIDELITES NEW ASPHALT PAVING THROUGHOUT					
SYSTEM UPGRADES				REPLACE INTERCOM SYSTEM REPLACE HVAC CONTROLS LED LIGHTING UPGRADES VOIP PHONE SYSTEM UPGRADE SECURITY SYSTEM						
BUILDING DEFICIENCIES				INSTALL EMERGENCY GENERATOR	ADD ADDITIONAL PARKING					
COST	\$140,000			\$518,000	\$391,000					

### EXECUTIVE SUMMARY

The Harper General Contractors thanks you for the opportunity to participate in the feasibility study for Etowah Elementary School in Henderson County, North Carolina. Harper has performed feasibility pricing for the multiple phases and options presented to us by Novus Architects. This historical cost and input from key trade partners are available to develop budget cost for Henderson County and Novus Architects to utilize as they develop future projects in the future.

### BUDGET AND SCOPE REVIEW

#### Phase 1: Roof Replacement

	Number of Units	Units of Measure	Cost / Unit of Measure	
Gymnasium TPO Roof Replacement	13360	SF	\$ 8.50	\$ 113,560.00
<b>Roof Replacement Total</b>				<b>\$ 113,560.00</b>

#### Phase 2: Low Voltage

	Number of Units	Units of Measure	Cost / Unit of Measure	
Replace Intercom System	1	LS	\$ 40,000.00	\$ 40,000.00
Replace HVAC Controls	1	LS	\$ 50,000.00	\$ 50,000.00
LED lighting upgrades	39110	SF	\$ 4.77	\$ 186,554.70
VOIP phone system	1	LS	\$ 13,000.00	\$ 13,000.00
Generator Work	1	LS	\$ 80,000.00	\$ 80,000.00
Replace security cameras	1	LS	\$ 15,000.00	\$ 15,000.00
<b>Low Voltage Total</b>				<b>\$ 384,554.70</b>

#### Phase 3: Asphalt Paving & Building Repairs

	Number of Units	Units of Measure	Cost / Unit of Measure	
New asphalt paving	7046.667	SY	\$ 30.00	\$ 211,400.00
Add Parking (30 Additional Spaces)	555	SY	\$ 80.00	\$ 44,400.00
Remove key FOBS and replace hardware	5	EA	\$ 2,000.00	\$ 10,000.00
Reglaze exterior doors & sidelights	500	SF	\$ 25.00	\$ 12,500.00
<b>Asphalt Paving &amp; Building Repairs Total</b>				<b>\$ 278,300.00</b>

### Phase 4: HVAC Replacement

	Number of Units	Units of Measure	Cost / Unit of Measure	
Replace Chiller	39110	SF	\$ 2.00	\$ 78,220.00
Replace RTUs	39110	SF	\$ 2.50	\$ 97,775.00
Replace Classroom HVAC units	39110	SF	\$ 1.25	\$ 48,887.50
HVAC piping replacement	39110	SF	\$ 2.25	\$ 87,997.50
<b>HVAC Replacement Total</b>				<b>\$ 312,880.00</b>

### CLARIFICATIONS

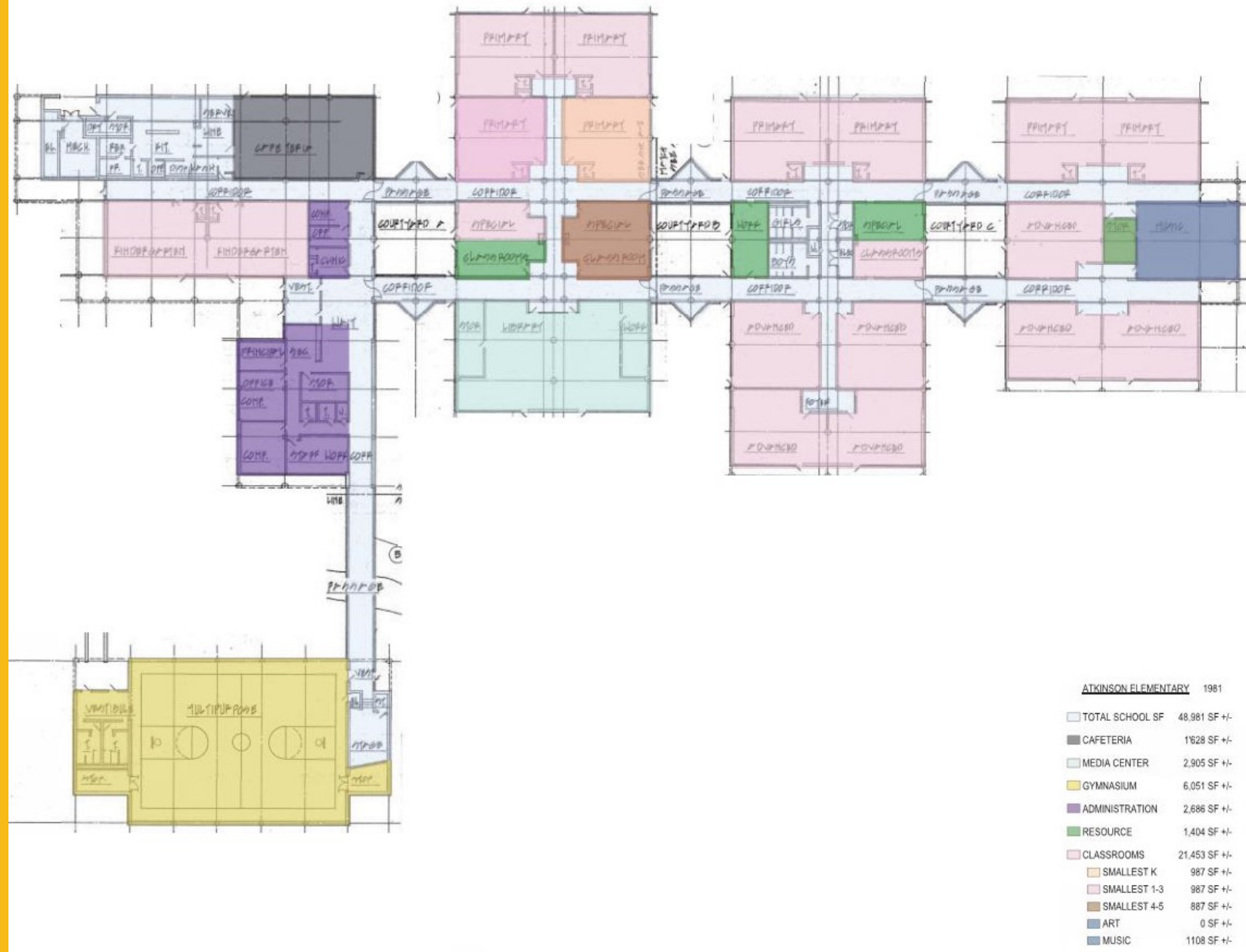
- New Generator assumes a 150 kW back-up generator.
- Replacing security cameras is an allowance.
- Pricing excludes all design fees including architectural, structural, civil, mechanical, electrical, and plumbing.
- Pricing excludes abatement of any existing hazardous building materials.
- Cost of replacing VOIP phone system was provided under the assumption that all schools will be upgraded at the same time.
- **All pricing is based on present market conditions and does not account for inflation.**
- All pricing is based on Harper General Contractors interpretation of the scope of services. If the scope of services differs from what we have been provided the costs outlined should not be considered accurate.



# BUILDING ASSESSMENTS

## CONDITIONS

ATKINSON ELEMENTARY SCHOOL



## SCHOOL AND LIFE SAFETY

SPRINKLED.....	NO
DEAD END CORRIDORS.....	YES
NON-FIRE RATED CORRIDORS.....	YES
EMERGENCY ESCAPE IN COURTYARD.....	YES
MODULAR CLASSROOMS.....	YES
CONTAIN TO CONFIRM.....	NO
AGENCY PARTNERSHIPS.....	NONE

## DPI FACILITY GUIDELINE COMPARISON

- (1) K AND (1) 3RD CLASSROOMS ARE SMALLER THAN MIN DPI GUIDELINES.
- CAFETERIA IS SMALLER THAN MIN. DPI GUIDELINE.

## CAPACITY

ADM\*: 346      DPI CAPACITY\*\*: 347      ASSESSED CAPACITY\*\*\*: 389

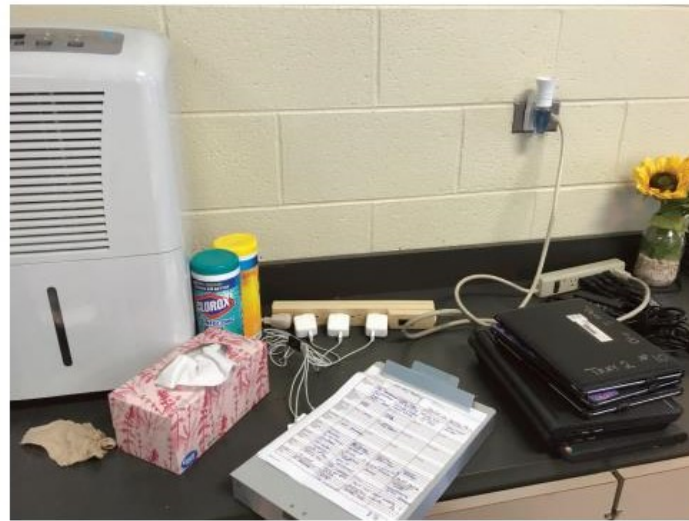
\*AVERAGE DAILY MEMBERSHIP, VARIES PER SCHOOLYEAR  
 \*\*PROVIDED BY THE 2015-16 DPI FACILITY NEEDS SURVEY  
 \*\*\*USING HB90 MAX CLASS SIZES FOR K-3RD, AND 30 FOR 4TH-5TH

## CONDITIONS - ITEMS OF CONCERN

SITE.....	SIDEWALK HEAVING IMPACTING EXTERIOR DOORS POOR DRAINAGE THROUGHOUT SITE SEWER GAS SETTLES IN BUILDING LEACH FIELD POOLS DURING HEAVY RAIN BRIDGE IS DETERIORATING
ROOF.....	TPO INSTALLED IN 2014 AND 2016 S.S. CLERESTORY ROOF FINISH FAILING VEGETATION AND LEAKING AT GUTTER JOINTS
WALLS/DOORS/OPENINGS.....	GLAZING, SEALS A& FRAMES FAILING & LEAKING' FOB HARDWARE NOT FUNCTIONING HM DOORS RUSTING, GLAZING FAILURE WALLS SHOW EVIDENCE OF CONSTANT MOISTURE WALLS SPALLING AND CRACKING IN SOME LOCATIONS
TIONS	
FLOORING/FINISHES.....	WATER INTRUSION AT BELOW GRADE WALL AT GYM GROUT IN RESTROOMS IN BAD CONDITION CARPET IS FREQUENTLY WET AT DOORWAYS GYM FLOORING BUCKLING IN SOME LOCATIONS.
PLUMBING.....	SEALED ROOF VENTS NO HW IN CLASSROOMS OR RESTROOMS COPPER PIPING NEWLY REPLACED INSUFFICIENT ADA STALLS TOILET CARRIERS ARE FIELD FABRICATED STAFF RESTROOMS ONLY PROVIDED AT OFFICE
MECHANICAL.....	CORRIDORS NOT CONDITIONED NEW BOILERS IN 2008 CLASSROOM UNITS STANDALONE AC 2 PIPE HEATING FOR ENTIRE SCHOOL



# BUILDING ASSESSMENTS



## CONDITIONS - ITEMS OF CONCERN (CONTI

ELECTRICAL.....	LED LIGHTING REPLACEMENT INCOMPLETE MDP AND/OR SERVICE CAPACITY IS TOO SMALL SUB PANELS ARE FULL
LOW VOLTAGE.....	HVAC CONTROL SYSTEM IS OBSOLETE

## ANTICIPATED MAINTENANCE AND REPLACEMENT

ROUTINE MAINTENANCE.....	GUTTER & DOWNSPOUT JOINTS
SCHEDULED REPLACEMENT.....	HVAC EQUIPMENT?
UNSCHEDULED REPLACEMENT/MAINT.*.....	STANDING SEAM CLERESTORY ROOFS BRIDGE HVAC CONTROLS WINDOWS DOORS FOB HARDWARE SITE DRAINAGE EXTERIOR SIDEWALKS

\*ITEMS NEED PRIORTIZATION

CONDITIONS

ATKINSON ELEMENTARY SCHOOL

