

**Agenda Item #:**

**ITEM TYPE: Action**

**BOARD AGENDA ITEM**

**TITLE:** Approval of the Construction Documents for the William Winchester Elementary School Prekindergarten Project

**DATE:** October 8, 2025

**OVERVIEW:**

The Construction Document submission is consistent with the previously approved Design Development, Schematic Design, and Educational Specifications for this project, all of which were developed with the guidance of the Construction Planning Committee.

This Construction Document submission includes a project summary, design discipline analysis along with available plans and specifications to bid-level detail. Upon approval by the Board of Education, this submission will be sent to the State Department of General Services and Carroll County Bureau of Permits for review. The construction estimate from these documents is in line with the current project budget.

**LINK TO STRATEGIC PLAN:**

Pillar IV – Establish safe, secure, healthy, and modern learning environments.

**FISCAL IMPACT:**

N/A

**RECOMMENDATION/FUTURE DIRECTION:**

For Board of Education approval.

**Submitted by:**

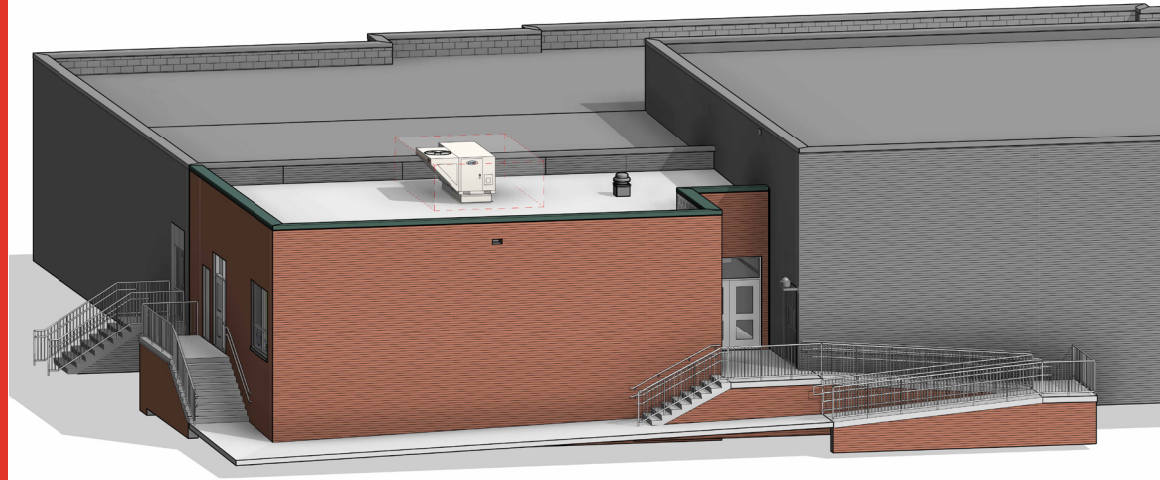
James Marks, Supervisor of Construction  
Raymond Prokop, Director of Facilities Management

**Approve/Concur:**

Jonathan D. O’Neal, Assistant Superintendent of Operations  
Cynthia McCabe, Ed.D., Superintendent of Schools

# WILLIAM WINCHESTER ELEMENTARY SCHOOL

PRE-KINDERGARTEN CLASSROOM ADDITION DESIGN  
CONSTRUCTION DOCUMENTS SUBMISSION



MOSELEYARCHITECTS

Construction Documents Submission

October 8, 2025

## PROJECT TEAM

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Stephen Whisler - *Vice President*  
Dr. Patricia S. Dorsey - *Board Member*  
Dr. Greg Malveaux - *Board Member*  
Kristen Zihmer - *Board Member*  
Jasmina Musaeva - *Student Representative*  
Dr. Cynthia McCabe - *Superintendent of Schools*

### **CARROLL COUNTY PUBLIC SCHOOLS FACILITIES MANAGEMENT TEAM MEMBERS**

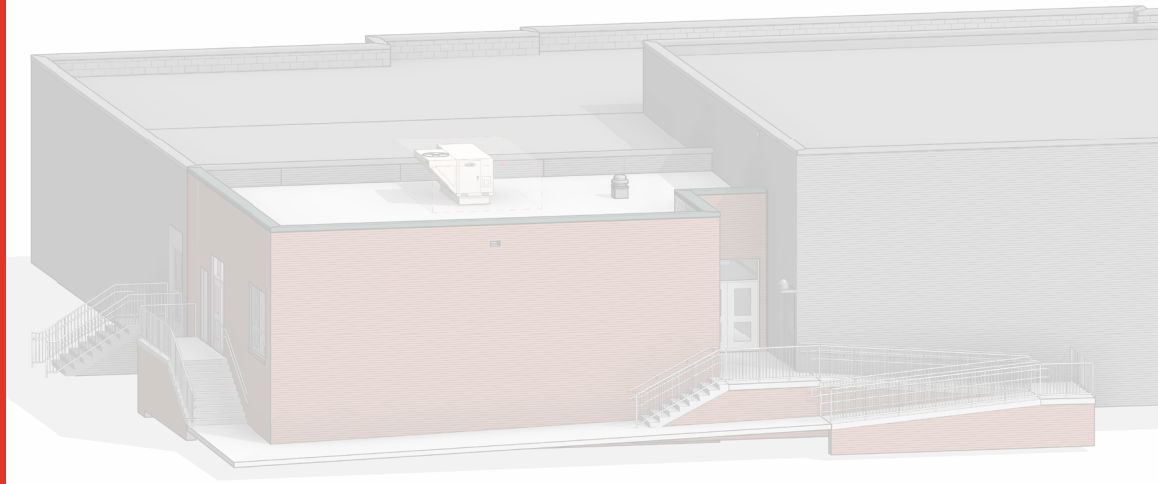
Raymond Prokop - *Director of Facilities*  
William Caine - *Facilities Planner*  
Jim Marks - *Supervisor of Construction*  
Dave Norman - *School Construction Project Manager*



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# NARRATIVE DESCRIPTIONS



MOSELEYARCHITECTS

WILLIAM WINCHESTER ELEMENTARY SCHOOL  
PRE-KINDERGARTEN ADDITION  
CONSTRUCTION DOCUMENTS SUBMISSION

**PROJECT  
BACKGROUND**

William Winchester Elementary School is located at 70 Monroe Street in Westminster, Maryland. The school provides education for grades pre-kindergarten through fifth grade and currently has a state rated capacity (SRC) of 568 students. The existing building was originally constructed in 1962. The school has had recent upgrades to the building including additions done to the school in 1980, 1986, 1990, 2010, and an air conditioning replacement in 2005.

The existing school is a two-story building with the main entrance on the upper level, at the north end of the building. The existing kindergarten and pre-kindergarten classrooms are located on the lower level, at the south end of the building, and were added as part of the 8,761 SF addition completed in 2010. The existing pre-kindergarten/kindergarten play area is located outside the 2010 addition and existing gymnasium, at the south-east corner of the building. The play area is accessed from the school via an exterior stair and exterior ramp.

Per the approved educational specifications for this project, an additional one (1) pre-kindergarten classroom, as well as various support spaces are to be provided to increase the state rated capacity of the school to 588 students. The addition will conform to the educational specification approved by the Carroll County Board of Education and local building and life safety codes. The pre-kindergarten classroom addition and supporting spaces will add approximately 1,958 gross square feet to the existing building for an overall building size of 68,320 gross square feet.

The location of the proposed addition is at the south-east corner of the building, adjacent to the existing kindergarten classrooms. The existing corridor would extend east and exit to a new ramp and stair. The proposed construction would require the removal/infill of an existing window to an existing pre-kindergarten classroom. However, the existing classroom would still receive some daylight from its exterior door that has a sidelight and a transom.

Upon presenting several design options to the Carroll County Public Schools for this school, the proposed project will provide one (1) pre-kindergarten classroom addition, one (1) workroom, and two (2) toilet rooms off the south-east side of the building, and (1) Fire Sprinkler room. The existing kindergarten classrooms and the existing gymnasium at the school are currently located at the end of the wing where the proposed addition will connect into. A small area at the end of the existing interior corridor will be demolished to create a connection to the new corridor of the addition.

The existing building's exterior walls are comprised of non-load bearing 4" brick veneer on concrete masonry unit (CMU) backup. The proposed addition coordinates with the existing structural features of the building. There shall be a new one hour rated fire wall with rated openings (doors, frames, glazing) between existing and new addition. The addition shall have sprinklering, valve assembly, sprinkler room, new water line & service utility from street to building to serve sprinklers for addition. The existing building is not sprinklered.

**DESIGN GOALS**

- Design and construct a new pre-kindergarten classroom for use by elementary students. Classroom spaces will comply with the latest CCPS educational specifications and design standards, life safety, accessibility and building codes.
- Address projected enrollment at this school with an addition that will meet

**DESIGN GOALS**

(CONTINUED)

the approved educational specifications as well as provide adequate learning spaces more efficiently through a building addition rather than renovating existing inefficient spaces.

- Provide visual and physical continuity and connection to the existing building with the placement of the addition and the alignment of the corridor in the addition to the corridor in the existing building.
- Expansion joints will be provided between the addition areas and the existing building construction, which will allow the building areas to be independent of each other.
- Provide new mechanical, plumbing, electrical, lighting, low voltage, and fire alarm systems to serve the addition. Connect the systems to serve the addition to the existing building systems where feasible while not disrupting the use and occupancy of the existing building spaces and minimizing impact on the existing building infrastructure.
- Propose complementary exterior building materials at the addition including masonry veneer and exterior window systems.

**ARCHITECTURAL DESIGN**

PROPOSED FLOOR PLAN

Architectural Design:

The proposed pre-kindergarten classroom addition will be located off the south-east end of the building and will connect to an existing classroom wing via an extended new corridor. The addition will be steel frame construction with exterior masonry bearing with brick veneer exterior walls, with CFSF metal stud and gypsum board interior partitions.

The design of the exterior wall brick pattern and window openings will be compatible and complimentary with the original building. The existing roof is a built-up roof over concrete and metal deck. The Base Bid for the roofing system will be a thermoplastic polyolefin (TPO) membrane roof system on a metal deck. An add-alternate built-up roof system (BUR) with flexible flashings will be priced with the project. The roof slope will be a minimum of 1/4 inch per foot and will be drained via internal roof drains with overflow scuppers. Access to the roof of the addition will be through an existing internal access point within the existing building.

The new interior corridors will connect to and align with the corridor of the existing building. New exterior exit doors will be provided at the end of the new extended corridor of the addition.

The new classroom and support spaces will be designed per the latest Carroll County Public Schools educational specifications and design standards. The new pre-kindergarten classroom will have two (2) student toilet rooms. A single convenience sink with built-in cabinetry and a countertop will be provided in the classroom for storage. Toilet rooms and classroom sink will be located between the new corridor and the classroom spaces. This arrangement will provide efficiency in the installation of new plumbing and sanitary lines and will minimize cost. Additional support spaces that will be included in the project include a storage/workroom directly accessed from the pre-kindergarten classroom and the existing adjacent pre-kindergarten classroom. Based on the existing floor elevation of the building the addition will also include an exterior ramp and stairs on the south-east side and stairs on the south side.

## ARCHITECTURAL DESIGN

(CONTINUED)

Several existing building and site components will be affected by the addition project:

- Existing roof drainage and roof coping will be impacted.
- The existing exterior ramp and stairs will be impacted.
- The existing sheds that are located at the south-east side of the building will be relocated.

### Building Materials:

Exterior building materials will be complimentary to materials used on the adjacent existing building facades. Exterior walls will be of brick veneer on concrete masonry unit backup. New window openings will be aluminum framed to match the existing units and glazing will be double-paned insulated glass with low-E coating. The new exterior doors will be insulated steel, painted to match similar doors at the school. Egress hardware will be provided on the new exterior doors to ensure security and ease of exiting in an emergency.

Interior finish materials will be selected to comply with current CCPS design standards. The pre-kindergarten classroom and student accessed spaces will be provided with vinyl composition tile floors with a rubber base, painted gypsum board walls, and suspended acoustical tile ceilings with recessed light fixtures. Toilet rooms will have porcelain tile floors, painted gypsum drywall ceilings, and a combination of porcelain tile and painted walls. Utilitarian type rooms will be provided with sealed concrete floors, painted walls and no finished ceiling. New corridor floors will have vinyl composition tile floors with a tile base, which will be similar and complimentary to the flooring throughout the existing building's corridors. The new corridor walls will include large format ceramic tile to 4'-0" above the finished floor and tile base, both to provide additional durability. The interior of the new classrooms will be furnished with a mixture of built-in features and movable furniture. Built-in items under the construction contract will include marker and tack boards, tack strips, and various built-in storage cabinets, wall and base cabinets with a student-use convenience sink at the classroom, student belongings cubbies at the entries to the classroom, and various storage cabinets in the workroom. A wall mounted projector will be installed to face the teaching wall. New windows will be provided with horizontal shades. The interior classroom doors will be a flush panel and will include a partial side lite with a roller-shade window treatment. All furniture and movable furnishings will be provided as an add alternate in the construction contract and are indicated on the enclosed drawings for reference.

The sustainability requirements for this project will be to comply with the current requirements of the International Green Building Code – 2021 Edition, as adopted by Carroll County, Maryland. Due to the size of the proposed addition at this school, compliance with the Maryland High Performance Green Building Program will not be required.

### Building Codes:

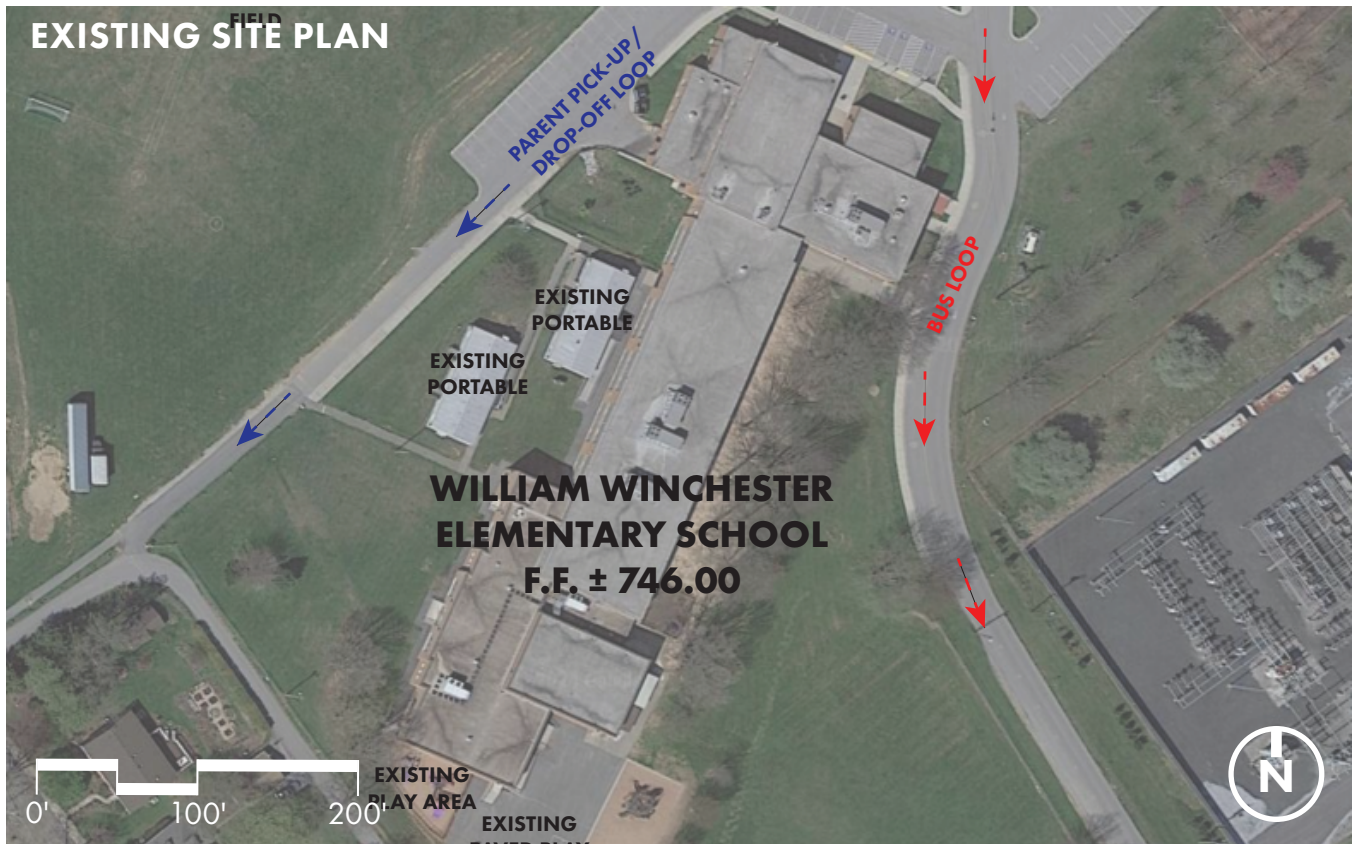
Ch. 170 of the Code of Public Local Laws and Ordinances of Carroll County – contains applicable amendments to the county's adopted building, electrical, plumbing, mechanical, accessibility and fire codes.

The Code of Public Local Laws and Ordinances of Carroll County, Title XVII, Buildings and Construction, Chapter 170, Construction Codes, Section 170.01, Adoption of Standards by Reference:

**ARCHITECTURAL DESIGN**

(CONTINUED)

- International Building Code (IBC), as amended by the Maryland Building Performance Standards - 2021
- International Existing Building Code (IEBC), as amended by the Maryland Building Performance Standards - 2021
- International Energy Conservation Code (IECC), as amended by the Maryland Building Performance Standard - 2021
- International Mechanical Code (IMC) - 2021
- National Electric Code (NFPA 70), Replaces ICC, International Electric Code - 2023
- International Plumbing Code (IPC) - 2021
- International Fuel Gas Code (IFGC) - 2021
- NFPA 58 - Standard for the Installation of Liquefied Petroleum Gas (As Referenced by IBC) - 2017
- International Green Construction Code (IGCC), as amended by the Maryland Building Performance Standards - 2021
- NFPA 101 Life Safety Code, As Adopted by the Maryland State Fire Code - 2024
- NFPA 1 - Fire Code (Fire Prevention Code), As Adopted by the Maryland State Fire Code - 2024
- NFPA 13 - Standard for the Installation of Sprinkler Systems (As Referenced by IBC)
- NFPA 72 - National Fire Alarm and Signaling Code
- NFPA 70 - National Electrical Code - 2023
- NFPA 90A - Standard for the Installation of Air Conditioning and Ventilation Systems
- ASHRAE Standard 62.1-2010 - Ventilation for Acceptable Indoor Air Quality
- ASHRAE 90.1-2013 - Energy Standard for Buildings
- A117.1 - 2009
- ADA Standards for Accessible Design - 2010
- Maryland Accessibility Code (COMAR 09.12.53) - 2019
- Maryland Building Performance Standards (MBPS) - 2015
- Refer to Other Contract Documents (Disciplines) and Specifications for Additional Code Summary Information not Included in this Code Summary (Generally related to Chapters 13 Through 33)
- All Listed Codes Shall Include Amendments by the County and AHJ



**CIVIL DESIGN**

EXISTING CONDITIONS

SITE DESCRIPTION

The subject site for William Winchester Elementary school is located at 70 Monroe Street, Westminster, MD 21157. The site is approximately 30.97 acres and currently contains the existing Elementary School along with West Middle School and associated amenities. The property is shown on tax map 39, grid 19 and parcel 0000. The tax account number for the property is 003420. The site is owned by the Board of Education of Carroll County.

SITE CIRCULATION AND PARKING

The site has five curb cuts. Three of them are on Monroe Street which serve both the middle school and elementary school. The eastern most curb cut serves as an entrance for William Winchester ES. All traffic passes through the middle school parking lot before reaching the elementary school. Buses continue to the south of the school to drop off before exiting onto Carroll street. Parents continue to the north of the school before exiting onto 25th Street.

ZONING INFORMATION

Zone: C – Conservation (within both the City of Westminster and Carroll County)

SITE SOILS

According to information obtained from the United States Department of Agriculture Natural Resources Conservation Service, the project area where work will take place is underlain with only three soil groups:

**CIVIL DESIGN**  
(CONTINUED)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GfB	Glenleg-Urban land complex, 0 to 8 percent slopes	0.6	24.4%
GfC	Glenleg-Urban land complex, 8 to 15 percent slopes	0.8	32.3%
UrB	Urban land-Udorthents complex, 0 to 8 percent slopes	1.1	43.3%
Total		2.5	100.00%

**SITE TOPOGRAPHY**

The site slopes from northwest to southeast. The site all drains to Carroll Street.

**SITE UTILITIES**

Water:

The water for the site comes from the West towards West MS.

Sanitary Sewer:

The site is served by an existing 8" sanitary sewer that connects to the sanitary sewer main in 25th Street.

Storm Drains:

There are two storm drain outfalls for the site. One drains the back of the building towards the south side of the building. The other drains around the east side of the building. Both outfall into the grass on site.

Gas & Electric:

There are overhead electric lines running on the north side of Carroll Street. There was no visual evidence of gas service. It is assumed the existing service is adequate for the addition project.

Utility Easement:

There are no known utility easements on the school property.

**STORMWATER MANAGEMENT**

The classroom portables are served by dry wells. There is also a micro-bioretenion located on the northwest side of the building. There are no other known SWM facilities on the elementary school site.

**FLOODPLAINS, WETLANDS, AND WATERWAYS**

There are no records of any floodplains or wetlands on the site.

**LANDSCAPE, TREES AND FOREST CONSERVATION**

There are no records of a forest conservation area on-site.

**ATHLETIC FIELDS, ATHLETIC COURTS, PLAY AREAS**

There is one asphalt play area and two mulch play areas on the southwest

**CIVIL DESIGN**

(CONTINUED)

side of the elementary school building. The grass play field is located to the southeast of the building. There are various other play spaces located on the middle school side of the property.

PROPOSED SITE REVITALIZATION

SITE DESCRIPTION

The proposed site work includes constructing a Pre-Kindergarten addition and associated site improvements. The site improvements will require the rebuilding of an ADA ramp and stairs down from the addition. The asphalt and mulch play areas will need to be modified for the addition.

SITE CIRCULATION AND PARKING

There are no anticipated changes to site circulation and parking.

ZONING INFORMATION

The construction of the new building will be following the Carroll County Zoning Code and the City of Westminster Zoning.

SITE TOPOGRAPHY

Site construction will require minor grading for the building addition as well as a new ADA ramp and stair. The modifications to the asphalt and mulch play spaces will require grading and may require retaining walls.

SITE UTILITIES

Water:

Due to the new addition being required to be sprinklered, a new waterline will be added for the school. The nearest watermain with capacity to serve the sprinkler system is located in Carroll Avenue. A 4" service connection will be extended under the grass play field out to the roadway.

Sanitary Sewer:

It is currently assumed that the existing sanitary service from the building has sufficient capacity for the new additions. It's preferable to connect to the existing sanitary service through the building in lieu of connection outside the building.

Storm Drains:

There are no known modifications necessary to the existing storm drain system.

Gas, Electric, Cable & Telephone:

It is assumed that all necessary connections will be made through the existing building.

STORMWATER MANAGEMENT

Stormwater management will be provided to meet MDE and Carroll County requirements.

LANDSCAPE, TREES AND FOREST CONSERVATION

Carroll County and Maryland State forestry regulations and City of Westminster landscaping requirements will be followed.

**CIVIL DESIGN**

(CONTINUED)

ATHLETIC FIELDS, ATHLETIC COURTS, PLAY AREAS

The existing asphalt and mulch play spaces will need to be modified for the construction of the addition. The proposed addition conflicts with the existing asphalt play area. The construction access and staging will take up the remainder of the asphalt play space. A portion of asphalt play space will need to be replaced for the interim condition and may stay as a permanent expansion to the asphalt play area. The mulch play may be modified along with the asphalt play space to leave the new asphalt play space congruous to the existing asphalt play space.

## STRUCTURAL DESIGN

### STRUCTURAL DESIGN

#### PROJECT OVERVIEW

Existing drawings for the building are available and were prepared by Van Rennselaer P. Saxe and are dated January 27, 1961. The existing building is a two-story building consisting of open web steel joists spanning between concrete masonry bearing walls. The interior and exterior walls consist of concrete masonry backup walls with a brick facade at the exterior. The existing masonry walls are supported on continuous concrete strip footings. The proposed addition will be a single-story steel and masonry structure. The new addition will be designed to be structurally independent from the existing building. The following section outlines the structural systems and components proposed for the new classroom addition. All new construction will be designed and built using conventional engineering and construction practices.

#### STRUCTURAL SYSTEMS

##### FOUNDATIONS

A geotechnical analysis has been performed on site of the proposed addition which has provided recommendations for the foundations for the addition. Foundation recommendations are dependent on local site conditions and must be established via subgrade investigation and geotechnical analysis prior to design. The geotechnical engineer has recommended traditional continuous footings. All structural elements for the proposed addition will be supported on reinforced concrete footings. Masonry exterior walls will be supported on continuous strip footings. The elevations of new footings abutting the existing structure will be coordinated to match the existing and doveled to the existing to minimize the potential for differential settlement. All exterior foundations will bear at least 2'-6" below the finished grade to provide the necessary frost protection and will be coordinated with underground utilities. The following preliminary foundation sizes for the proposed addition are based on the recommended allowable capacity of 2,500 psf allowable bearing pressure.

##### Non-Bearing Walls:

- Interior 8" CMU partitions: 2'-0" x 1'-0" continuous
- Exterior wall footings: 2'-6" x 1'-0" continuous

##### Column Spread Footings:

- Typical column: 4'-0" x 4'-0" x 1'-0"

The typical slab on grade will be 5" thick, normal weight concrete, reinforced with 6"x6", W2.1xW2.1 W.W.F placed over a 15-mil. vapor barrier and a 6" thick washed gravel base. The slab will also be thickened under masonry partitions and other anticipated heavy loads. Control joints will be provided at +/- 20' on center to reduce the potential for shrinkage cracks.

##### ROOF

Typical roof construction will consist of 1½" deep, type 'B' wide rib, 20 gage, a galvanized metal deck supported by open web steel joists at maximum 6'-0" on center. These roof joists will be supported on concrete masonry bearing walls. New roof framing will slope to drainage as needed.

## STRUCTURAL DESIGN

(CONTINUED)

### WALLS

Exterior walls will consist of brick veneer on 8" CMU back up. Interior walls will be constructed with cold-formed structural steel studs and gypsum boards. The top of all CMU walls will be braced at the roof structure. Lintels will be required for all openings in the masonry walls. Precast masonry or concrete lintels may be used for openings in interior partition walls. For the exterior walls, lintels will consist of wide flange steel beams with hung plates sized to support the CMU and masonry veneer. All steel lintels will be galvanized.

### NEW - EXISTING INTERFACE

The new addition will be structurally independent from the existing one. Where required, the new steel framing will be designed for snow drift where the roof elevation of the addition is lower than the existing.

### LATERAL RESISTING SYSTEM

The new addition will be a standalone structure supported on intermediate reinforced masonry shear walls. All shear walls will be reinforced to resist the applicable lateral forces. To control thermal movement and avoid introducing new loads into the existing building frame, a 2" expansion joint will be provided to separate the addition from the existing building. This joint will be installed between the existing exterior wall and the new roof structure.

### CODE AND STANDARDS

#### PRIMARY REFERENCES:

- International Building Code 2021 with Local Amendments
- American Society of Civil Engineers: Minimum Design Loads for Buildings and Other Structures (ASCE/SEI 7-16)
- American Concrete Institute: Building Code Requirements for Reinforced Concrete (ACI 318-14)
- Building Code Requirements and Specification for Masonry Structures (TMS 402-16)
- American Institute for Steel Construction: Steel Construction Manual 14th ed. (AISC 360 16)

#### OTHER REFERENCED ORGANIZATIONS

- American National Standards Institute (ANSI)
- American Iron and Steel Institute (AISI)
- American Society for Testing and Materials (ASTM)
- Portland Cement Association (PCA)
- Concrete Reinforcing Steel Institute (CRSI)
- American Welding Society (AWS)
- National Concrete Masonry Association (NCMA)
- Brick Institute of America (BIA)

### DESIGN CRITERIA

#### Superimposed Dead Loads:

- Suspended Ceiling: 2 psf
- Sprinkler System: 3 psf
- Mechanical and Electrical Systems: 3 psf (Typical); 5 psf (Corridors)
  - ◇ In areas above mechanical rooms, the mechanical and electrical

**STRUCTURAL DESIGN**

(CONTINUED)

- ◇ superimposed dead load will be increased to 15 psf.
- ◇ Additional mechanical and electrical superimposed loads will be used to account for major concentrations of pipe runs, major duct runs, and hung equipment.

Live Loads:

- First Floor Slab on Grade: 100 psf
- Roof: 30 psf
- ◇ Consideration of drifting, sliding, and unbalanced snow loads as required by the local building code.

Snow Loads:

Applicable ground, flat, and drifting snow loads based on section 1608 of the 2021 International Building Code and Chapter 7 of ASCE 7-16.

- Importance Factor,  $I_s$ : 1.10
- Ground Snow load,  $p_g$ : 40 psf (per local building code amendments)
- Snow Density: 19.2 pcf
- Exposure Factor,  $C_e$ : 1.0
- Thermal Factor,  $C_t$ : 1.0
- Flat Roof Snow Load,  $p_f$ : 30 psf
- Minimum Load for Low-Slope Roof,  $p_m$ : 22 psf

Wind Loads:

Applicable wind pressure coefficients established using section 1609 of the 2021 International Building Code and Chapters 26-30 of ASCE 7-16. Components and cladding at walls and roof to be calculated separately with the appropriate Code required factors.

- Ultimate Wind Speed,  $V_{ult}$ : 120 MPH (3 second gust, Risk Category 3)
- Nominal Wind Speed,  $V_{asd}$ : 93 MPH (3 second gust)
- Exposure: C
- Internal Pressure Coefficient,  $G_{Cpi}$ : +/-0.18

Seismic Design Criteria:

Applicable seismic loads based on section 1613 of the 2021 International Building Code and Chapters 11-12 of ASCE 7-16.

- Seismic Occupancy Category: III
- Seismic Importance Factor: 1.25
- Spectral Response Coefficients:
  - ◇  $S_s = 0.142$
  - ◇  $S_1 = 0.043$
  - ◇  $S_{ds} = 0.1123$
  - ◇  $S_{d1} = 0.043$
- Site Class: C
- Seismic Design Category: B
- Seismic Force Resisting System:
  - ◇ Ordinary Reinforced Masonry Shear Walls

Concentrated Loads:

Floor slabs will be designed for the indicated uniform live loads or a minimum concentrated load of 1,000 pounds, whichever produces the greater stress.

**STRUCTURAL DESIGN**

(CONTINUED)

Deflection Criteria:

- Total drift will not exceed  $H/400$  for lateral loads, where “H” is the story or building height.
- Live load deflection of roof members will not exceed the  $L/240$ .
- Live load deflection of spandrel members that support glass will not exceed  $L/480$  with a maximum of  $1/2''$ .
- Live load deflection of spandrel members and structural elements that support masonry will not exceed  $L/600$  with a maximum of  $3/8''$ .

**MECHANICAL &  
PLUMBING DESIGN**

EXISTING BUILDING SYSTEMS

HVAC

The existing building includes a 2-pipe heating water central plant. Heating water is generated by two fuel oil fired boilers located in the mechanical room. The heating water system has three constant speed primary end suction pumps circulating hot water through two distribution piping, a 4-inch line serving the unit ventilators and air handling units (AHUs), and a 3-inch line serving the unit heaters and perimeter baseboards. Associated central plant pumps, water treatment, and air management systems are located within the mechanical room.

Roof mounted air handling units (AHUs) provide cooled, preheated, and required outdoor air throughout the building. Classrooms are served by variable air volume (VAV) terminal units. Distributed roof mounted exhaust fans serve each shared classroom's toilet rooms. The building utilizes controls by Johnson Control's Metasys system.

PLUMBING

The existing building has an incoming 3-inch domestic water with a backflow preventer. Domestic hot water is generated by a shell & tube hot water generator located in the mechanical room. There are multiple 4-inch sanitary pipes exiting the west south portion of the building at a 2% slope and connect to a 6-inch main sanitary piping outside. The building includes an interior primary storm drain that routes above the ceiling, continues below grade which connects to the main perimeter storm drain outside the building and emergency overflow scupper along the building parapet.

PROPOSED SYSTEMS

APPLICABLE CODES AND STANDARDS

- 2021 International Building Code (IBC)
- 2021 International Energy Conservation Code (IECC)
- 2021 International Mechanical Code (IMC)
- 2021 International Plumbing Code (IPC)
- 2021 International Fuel Gas Code
- ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1 – Energy Standard for Buildings
- NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems

HVAC

Through discussions with the CCPS team, the preference for the new addition would be to tie-in to the existing hot water loop at the school. Moseley has completed an initial assessment of the existing equipment and system at the school as part of the schematic design phase, which included preliminary load calculations to determine the likely capacity of the existing system and the anticipated load of the addition. Upon further investigation and in discussion with CCPS, it was confirmed that the new HVAC unit will be able to connect to the existing 2-pipe system. Supplemental testing will be conducted to determine the existing 2-pipe system's pressure, heating hot water flow rates, and operating temperatures. This information will be used for the selection of the new HVAC unit.

**MECHANICAL &  
PLUMBING DESIGN**

(CONTINUED)

Based on initial field investigations and a review of the as-built information for the school, existing AHUs are connected to the hot water loop. Moseley's initial calculation indicates that a total connected load of the existing HVAC equipment would have an approximate total connected load lower than the hot water plant capacity with diversity. The new HVAC unit will be a roof mounted DX packaged-type VAV air-source heat pump roof top unit (HPRTU) with a reheat coil for humidity control. The new unit will tie-in to the existing chilled and hot water piping above the ceiling with isolation valves. A 5.5 to 6.5-ton unit will be necessary for the size of the base bid design of this project. Each classroom and any support spaces associated with the classroom will be an individual zone. Each zone will have a thermostatically controlled variable air volume (VAV) with a hot water coil. New exhaust fans will be provided for the new toilet rooms.

**PLUMBING**

The existing domestic cold, hot water, and hot water recirculation piping shall be extended with shut-off and balancing valves to serve the toilet rooms and classroom in the addition. The existing hot water recirculation pump will be evaluated and replaced as necessary to ensure it has the capacity to serve the addition. The existing water heater appears to be able to accommodate the addition's toilet rooms and classroom domestic hot water requirements.

The addition's roof will be sloped at 2% and shall have an internal primary piping routed above the ceiling and shall extend below grade and connect to the main storm water outside of the building. Overflow storm drain scuppers shall be added to the addition roof parapet.

The addition's toilet rooms sanitary piping will be routed and sloped at 2% below the new slab. The design intent is to connect to the nearest existing sanitary main within the building. Vent piping will be routed above the ceiling and through the roof.

**FIRE SUPPRESSION SYSTEM**

Addition shall be provided for a complete NFPA compliant automatic wet pipe sprinkler system coverage with sprinkler layout to conform to space requirements. The system shall be specified as follows:

- All sprinkler piping shall be black steel per NFPA 13.
- Piping 2-1/2" and larger will be Schedule 10 per NFPA 13 and piping 2" and smaller shall be threaded piping, minimum schedule 40, per NFPA 13.
- Sprinkler piping shall be specified to be concealed in all finished ceiling areas and exposed in exposed construction areas.
- Sprinklers in areas where heads subjected to being damaged shall be provided with sprinkler guards.

**ELECTRICAL DESIGN**

APPLICABLE CODES AND STANDARDS

- 2021 Maryland Building Code (IBC 2021 amended)
- 2021 Maryland Existing Building Code (IEBC 2021 amended)
- 2021 Maryland Energy Code (IECC 2021 amended)
- 2020 Maryland Electrical Code (NFPA 70, 2020 amended)
- 2019 Maryland Fire Alarm Code (NFPA 72, 2019)
- 2018 Maryland Life Safety Code (NFPA 101, 2018 amended)
- Carroll County Public Schools Design Standards

MAIN SERVICE EQUIPMENT AND LOAD CALCULATIONS

The existing electrical utility service is provided by Baltimore Gas and Electric (BGE), which enters the building's main electrical room into an existing 1200A, 208Y/120V, 3-Phase, 4-Wire panelboard manufactured by Square D, with a 1200A main circuit breaker. The existing electrical load on this service was calculated based on the monthly utility bill date provided by CCPS for the period between July 2023 through July 2024. During this period, the maximum demand for the electric service was 214kW and occurred during the month of September 2023. The existing load is calculated per NEC 220.87 as follows:

Peak Demand:	214kW (September 2023) 0.8 power factor 267.5kVA <u>743A at 208V, 3-PH</u>
Demand factor (NEC 220.87)	x1.25
Maximum Existing Load	<u>929A</u>
Existing Service:	1,200A
Spare Capacity:	271A

Based on the information above, Moseley assumes that the existing electrical utility service will have sufficient capacity to support the new proposed electrical loads for this project.

DISTRIBUTION EQUIPMENT

EXISTING CONDITIONS

The panelboard contains circuit breakers for panelboards, mechanical equipment, portable classrooms, elevator, and old electric service panelboard. Electrical rooms are located throughout the building, which contain 208V panelboards. These panelboards provide power to lighting, mechanical equipment & receptacles in the classrooms and offices.

The existing area of the building where the proposed addition will be located is served by panelboard RP1. Panel RP1 powers the interior lighting, the receptacles, general power equipment, mechanical equipment, and classroom appliances.

NEW WORK

The existing panelboard RP1 appears to have sufficient capacity however does not have physical space to support the new electrical loads required for this addition. A new subpanel will need to be provided to support the additional electrical loads needed for the new addition.

**ELECTRICAL DESIGN**

(CONTINUED)

LIGHTING

EXISTING CONDITIONS

The existing interior lighting is provided by 2'x4' linear fluorescent troffers with flat acrylic lens and recessed downlights. The existing exit signs have red letters. One emergency light fixture is provided in each classroom. This light fixture is near the interior classroom door and is unswitched. The existing exterior lighting is provided by surface mounted LED fixtures. The existing lighting controls consist of wall mounted light switches and ceiling mounted occupancy sensors.

NEW WORK

New 2'x4' linear LED light fixtures will be provided at 4000K CCT with integral dimming drivers and flat acrylic lens. The light fixtures will be located throughout each space to provide uniform illumination and an average illumination of 65 fc at the work plane per CCPS standards. New LED exit signs will be provided with white thermoplastic housings and red letters. Emergency lighting with integral battery backup shall be provided in each space to provide minimum emergency egress lighting. The existing exterior surface mounted LED fixture will be removed and reinstalled at the new exterior doorway. Low voltage lighting controls will be provided in each space, to allow for multiple lighting levels and flexible lighting zones. The final lighting control design will be coordinated with CCPS during the design process. Exterior lighting will connect to the existing lighting controls.

RECEPTACLES

EXISTING CONDITIONS

Existing receptacles are ivory in finish color with stainless steel wall plates.

NEW WORK

New tamper-resistant receptacles shall be provided in ivory finish with stainless steel wall plates. The exact quantity and layout of the receptacles shall be coordinated with CCPS during the design process. At the main teaching wall, a high and low receptacle shall also be provided for connection to a wall mounted short-throw projector.

FIRE ALARM SYSTEM

The existing fire alarm system is a digital addressable system by GE model EST3. The existing fire alarm annunciator panel is located at the front entrance lobby.

NEW WORK

The existing fire alarm system shall be modified and extended to provide new fire alarm notification devices for the new addition. If required, a fire alarm extender panel shall be provided and located in a nearby room to power up the additional devices. The existing fire alarm annunciator panel will need to be removed and replaced to reflect the new building footprint.

**ELECTRICAL DESIGN**

(CONTINUED)

TELECOMMUNICATIONS AND SPECIAL SYSTEMS

EXISTING CONDITIONS

The incoming telephone and data service enters the building within the gym storage room. Telephone 110 punch down blocks and a telecom floor mounted equipment rack are located within this room. Within the rack are patch panels for the distribution of the telephone system via CAT5 cables. There are network switches for distribution of the data system via CAT6 cables. Each classroom has a wall mounted telephone near the front door.

The existing PA system head end equipment is located within the administrative area. The PA system serves ceiling mounted speakers located throughout the building. There is an existing call switch near the front door.

NEW WORK

The design approach for the addition will be coordinated with CCPS. New telecom outlets will also be provided at the teaching wall and the proposed teacher desk/workstation. High and low outlets will be provided at the teaching wall for a wall mounted short throw projector. Additional outlets will be provided around the perimeter of each classroom. Empty double-gang back boxes with a 1" empty conduit will be installed in the wall for each telecom outlet. The existing cable tray system shall be extended down the new corridors. Telecom cables homeruns will be routed back to the Gym Storage room and connected to the existing equipment racks and system.

New ceiling mounted PA speakers shall be provided in the new addition and connected to the existing PA system. New clocks will be provided in the classrooms in coordination with CCPS. The specific equipment, cable types and devices will be coordinated with CCPS during design.

SECURITY & ACCESS CONTROL SYSTEM

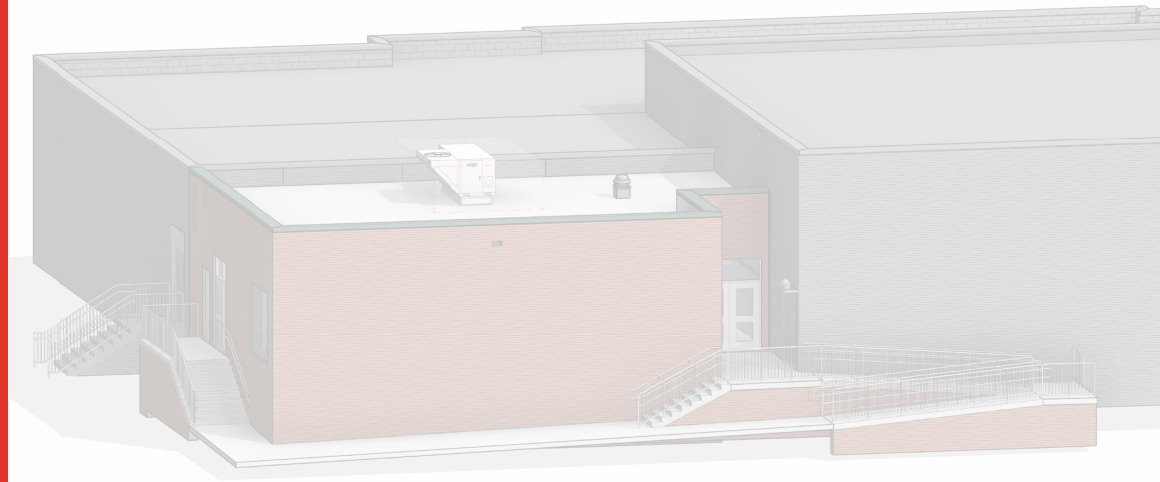
EXISTING CONDITIONS

An exterior rated card reader is located at the egress door at the end of the corridor. Security cameras are located within the corridors and outside along the exterior walls of the school.

NEW WORK

Empty backboxes and conduit shall be provided for the installation of new card readers at the exterior doors and security cameras. The exact location and quantity of devices shall be coordinated with CCPS during design. CCPS's security system vendor will provide security and access control devices and cables for the addition.

## PROJECT INFORMATION



MOSELEYARCHITECTS

WILLIAM WINCHESTER ELEMENTARY SCHOOL  
PRE-KINDERGARTEN ADDITION  
CONSTRUCTION DOCUMENTS SUBMISSION

## Project Information

### PROJECT SUMMARY

Current State Rated Capacity	<b>568</b>
State Rated Capacity with Proposed Addition	<b>588</b>
Building Height	<b>One Story</b>
Occupancy Use Group	<b>E - Educational</b>
Construction Classification	<b>Type IIB</b>
Existing Building Square Footage	<b>66,362 GSF</b>
Area of Proposed PK Addition	<b>1,958 GSF</b>
Total Building SF After Proposed Addition	<b>68,320 GSF</b>

### PROJECT SCHEDULE

Education Specifications	<b>June 2023</b>
Schematic Design	<b>November 2024</b>
Design Development	<b>April 2025</b>
Construction Documents	<b>October 2025</b>
Permitting	<b>October 2025 - December 2025</b>
Advertise/Bid/Award	<b>December 2025 - March 2026</b>
Construction Start	<b>June 2026</b>
Occupancy	<b>August 2027</b>

### PROJECT CONSTRUCTION BUDGET

BUILDING CONSTRUCTION BUDGET	\$ 1,356,939.00
SITE CONSTRUCTION BUDGET	\$ 627,019.00
<b>CONSTRUCTION DOCUMENTS TOTAL CONSTRUCTION COST BUDGET</b>	<b>\$ 1,983,958.00</b>

### PROJECT CONSTRUCTION ESTIMATE

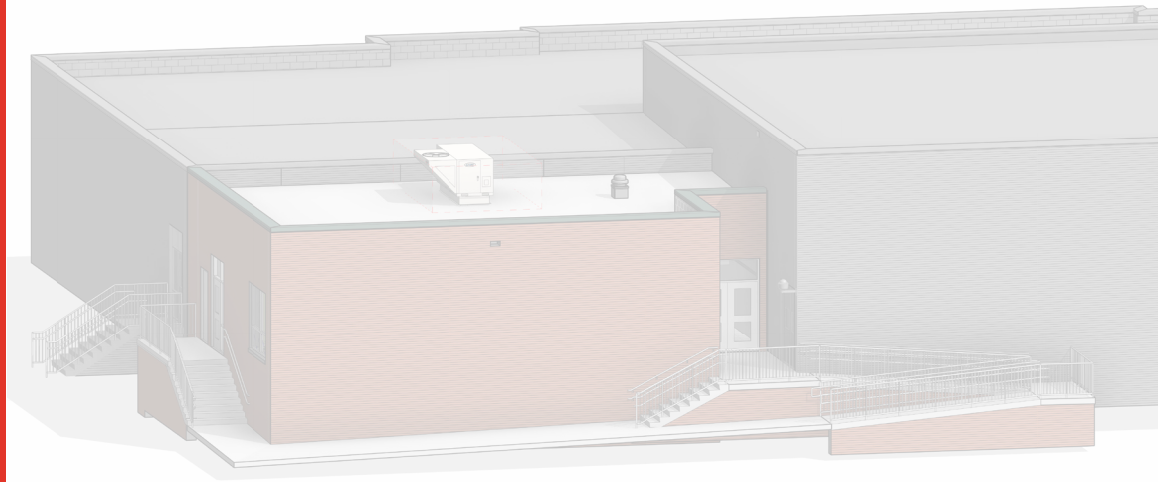
BUILDING CONSTRUCTION ESTIMATE	\$ 978,019.87
SITE CONSTRUCTION ESTIMATE	\$ 634,850.52
ESCALATION	\$ 98,704.71
<b>TOTAL WITH ESCALATION</b>	<b>\$ 1,711,575.10</b>
GENERAL CONDITIONS, INSURANCE & CM FEE	\$ 609,373.90
<b>CONSTRUCTION DOCUMENTS TOTAL CONSTRUCTION COST ESTIMATE</b>	<b>\$ 2,320,949.00</b>

**SPACE ANALYSIS**

\*Areas indicated in net square feet unless otherwise noted.

WILLIAM WINCHESTER ELEMENTARY SCHOOL PK CLASSROOM ADDITION - IAC CD SUBMISSION																
PROGRAM SPACE	EDUCATIONAL SPECIFICATION				SCHEMATIC DESIGN				DESIGN DEVELOPMENT				CONSTRUCTION DOCUMENTS			
	# of rooms	# of teaching stations	square footage	component subtotal	# of rooms	# of teaching stations	square footage	component subtotal	# of rooms	# of teaching stations	square footage	component subtotal	# of rooms	# of teaching stations	square footage	component subtotal
<b>CORE INSTRUCTIONAL PROGRAMS</b>				<b>1,400</b>				<b>1,414</b>				<b>1,456</b>				<b>1,376</b>
Pre-Kindergarten																
Classrooms	1	1	1000	1000	1	1	1009.45	1009	1	1	1030.91	1031	1	1	1028	1028
Storage/ Workroom	1	0	300	300	1	0	299.4	299	1	0	305.13	305	1	0	228.21	228
Student Toilets	2	0	50	100	2	0	52.5	105	2	0	60.03	120	2	0	60.03	120
Fire Sprinkler Room	0	0	0	0	1	0	72.08	72	1	0	72.08	72	1	0	72.08	72
Net square footage subtotal all programs				<b>1,400</b>				<b>1,414</b>				<b>1,456</b>				<b>1,376</b>
Efficiency adjustment (Walls & Circulation)				602				534				502				582
NSF/GSF Efficiency % (calculated NSF/GSF)				70%				73%				74%				70%
<b>GROSS SQUARE FOOTAGE</b>	Ed Spec Total GSF:			<b>2,002</b>	Calculated GSF:			<b>1,948</b>	Calculated GSF:			<b>1,958</b>	Calculated GSF:			<b>1,958</b>
<b>DRAFTED FLOOR PLAN GSF (ADDITION)</b>					GSF:			<b>1,948</b>	GSF:			<b>1,958</b>	GSF:			<b>1,958</b>
<b>INTERIOR RENOVATION/ ALTERATION SPACE</b>					NSF:			<b>0</b>	NSF:			<b>0</b>	NSF:			<b>0</b>
<b>OVERALL PROJECT AREA</b>	Ed Spec Total GSF:			<b>2,002</b>	Project Total GSF:			<b>1,948</b>	Project Total GSF:			<b>1,958</b>	Project Total GSF:			<b>1,958</b>

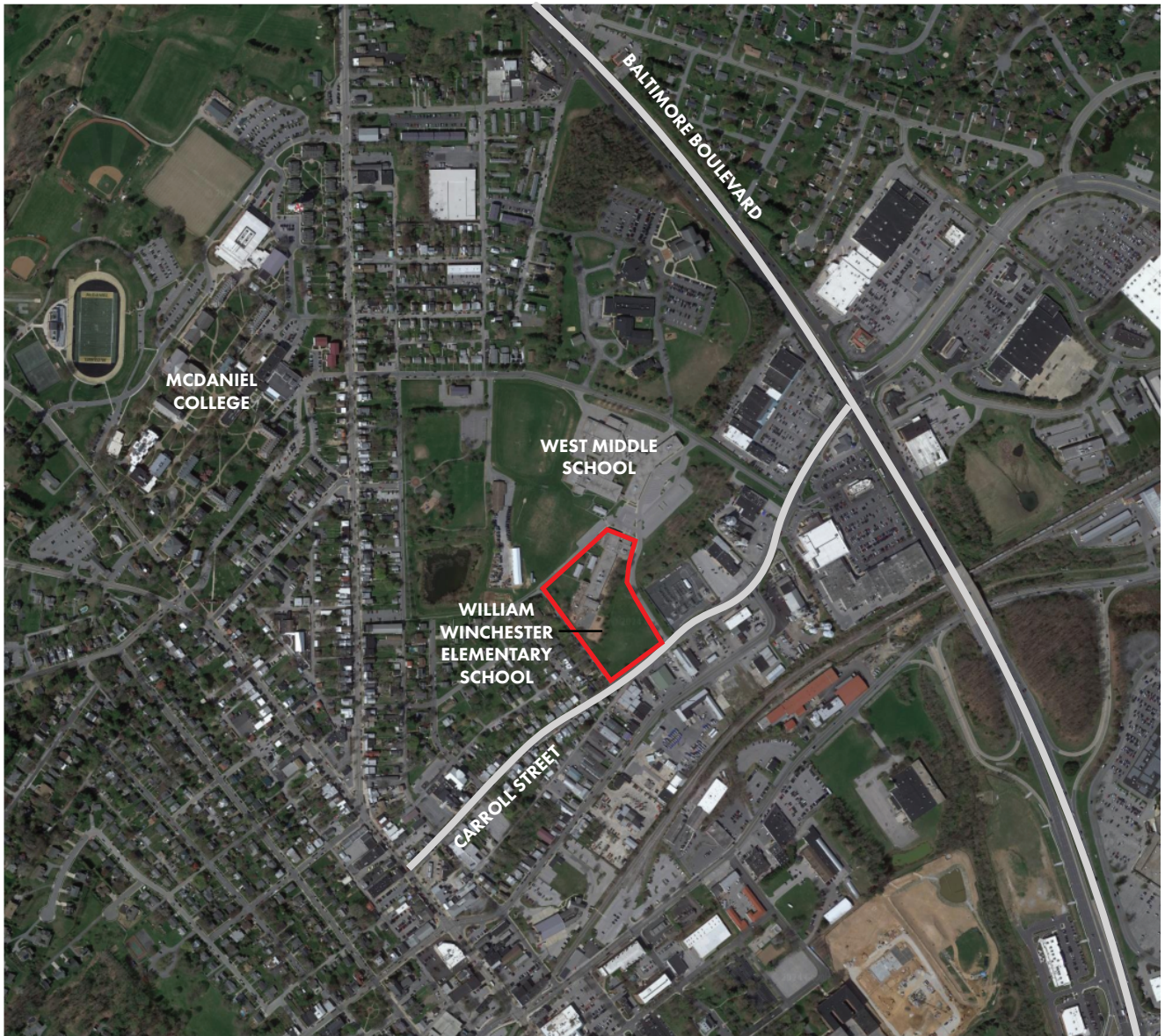
## DESIGN DRAWINGS



MOSELEYARCHITECTS

WILLIAM WINCHESTER ELEMENTARY SCHOOL  
PRE-KINDERGARTEN ADDITION  
CONSTRUCTION DOCUMENTS SUBMISSION

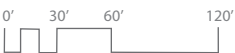
VICINITY MAP



0' 250' 500' 1000'



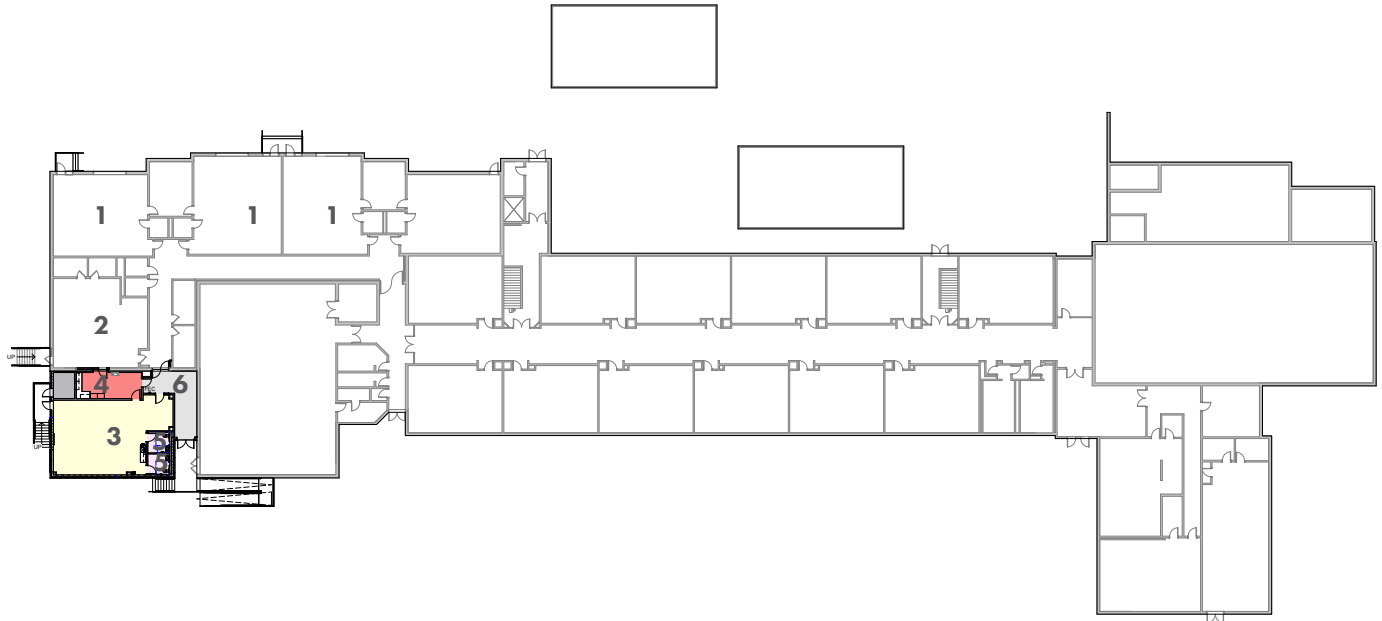
EXISTING SITE PLAN









**PROPOSED SITE PLAN**



### OVERALL FLOOR PLAN



### LEGEND

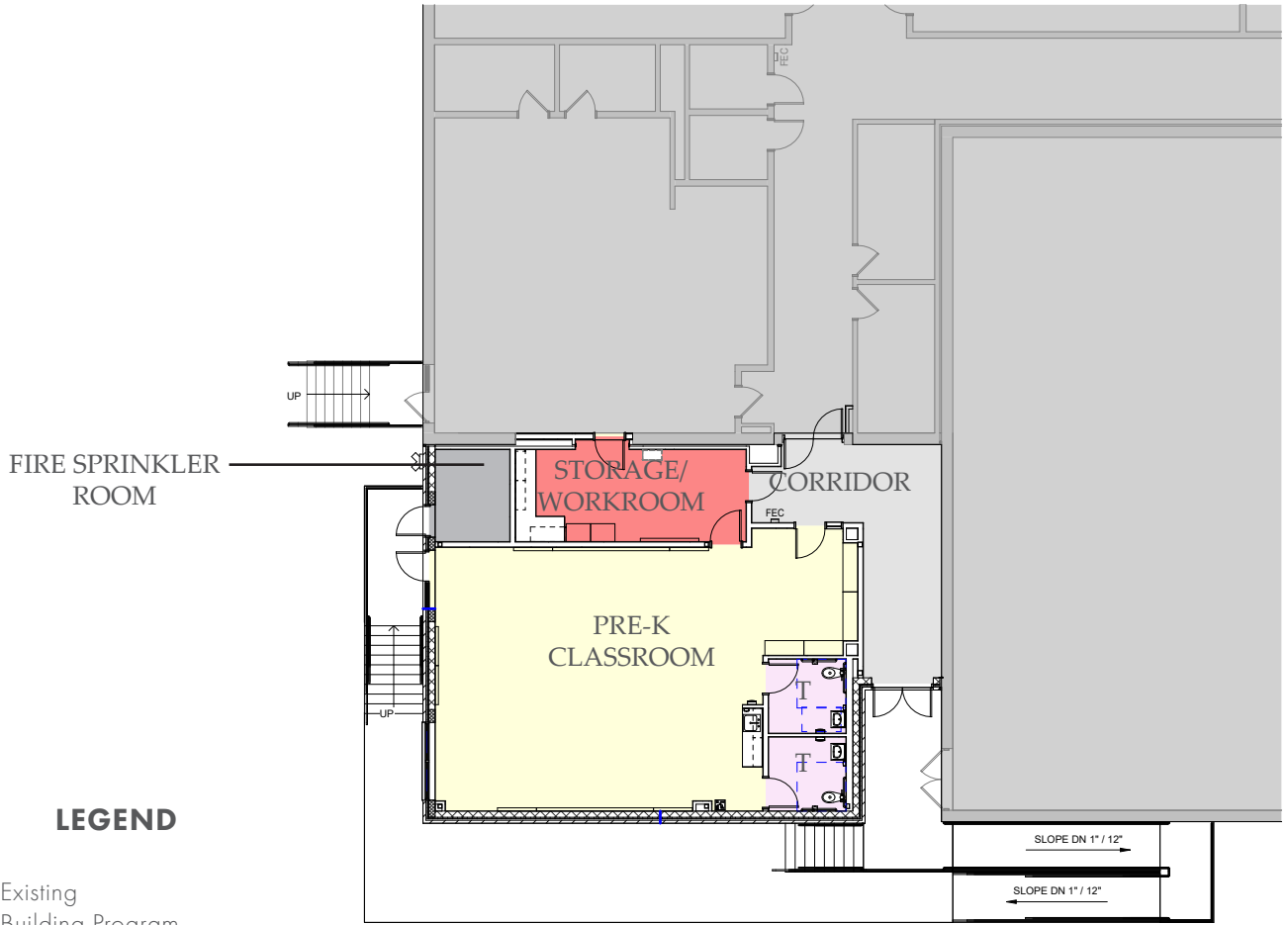
-  Existing Building Program
-  New Pre-K Classroom
-  New Storage / Workroom
-  New Student Restrooms
-  New Corridor
-  Fire Sprinkler Room



### PROGRAM KEY

1. Existing Classroom - Kindergarten
2. Existing Classroom - Pre-K
3. New Classroom - Pre-K
4. Storage / Workroom
5. Student Restrooms
6. New Corridor

### ENLARGED FLOOR PLAN

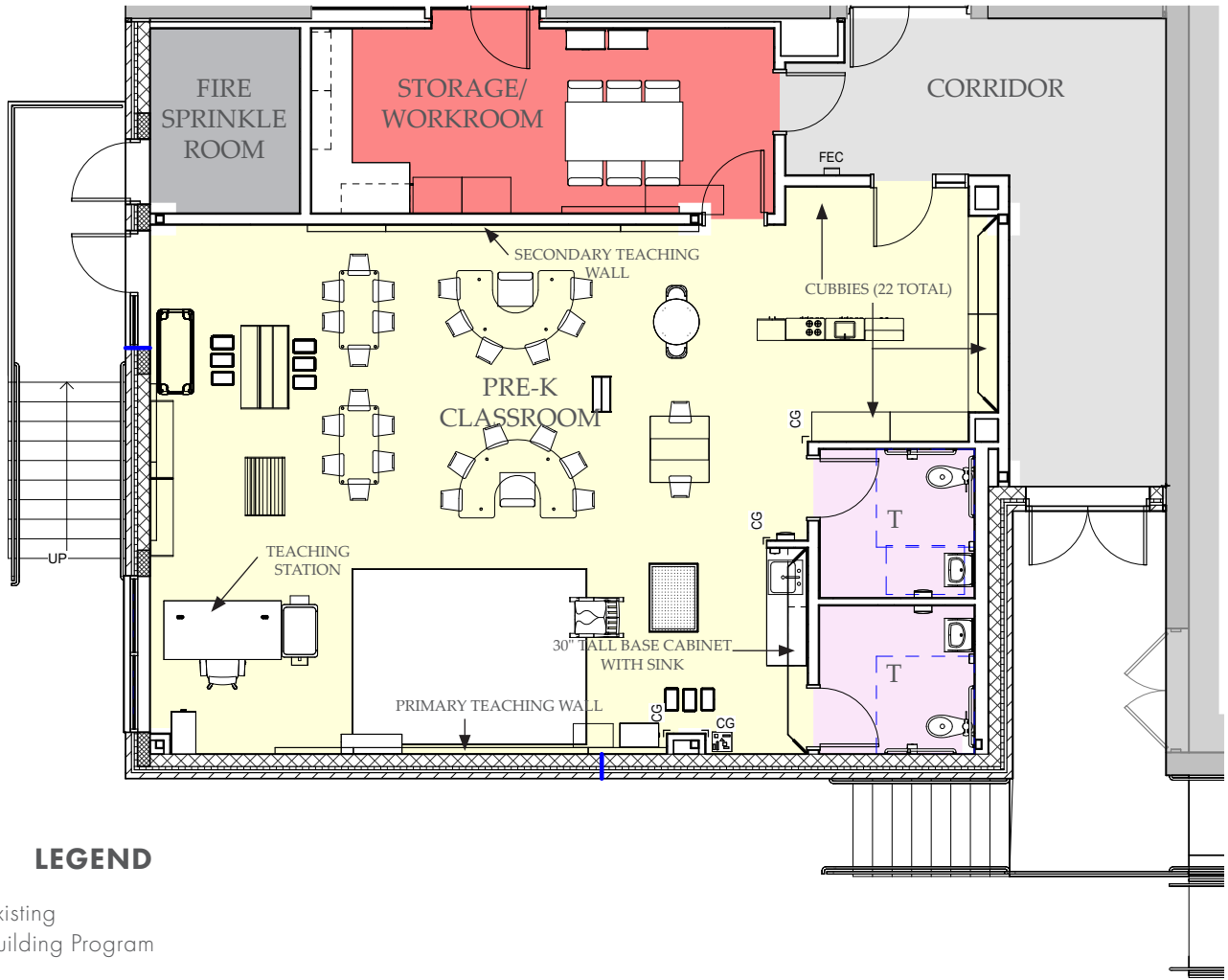


#### LEGEND

- Existing Building Program
- New Pre-K Classroom
- New Storage / Workroom
- New Student Restrooms
- New Corridor
- Fire Sprinkler Room



**CLASSROOM FLOOR PLAN**



**LEGEND**

- Existing Building Program
- New Pre-K Classroom
- New Storage / Workroom
- New Student Restrooms
- New Corridor
- Fire Sprinkler Room



**BUILDING ELEVATIONS**

