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# **LUCY V. BARNESLEY ELEMENTARY SCHOOL ADDITION**

## **Feasibility Study**

Prepared for  
Montgomery County Public Schools

by  
**WALTON • MADDEN • COOPER • ROBINSON • PONESS, INC**

October 2013

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## **Lucy V. Barnsley Elementary School**

Addition

14516 Nadine Drive  
Rockville, Maryland 20853

## **Montgomery County Board of Education**

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Mr. Michael P. Shpur	Architect, Division of Construction
Mr. Ray Marhamati	Project Manager, Division of Construction
Ms. Deborah Szyfer	Senior Facilities Planner, Division of Long-range Planning

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## I. INTRODUCTION

This addition feasibility study was conducted for Montgomery County Public Schools (MCPS) by the architectural firm of Walton Madden Cooper Robinson Poness, Inc. Lucy V. Barnsley Elementary School is located at 14516 Nadine Drive, Rockville, Maryland, 20853. The work was performed under the direction of the MCPS Department of Facilities Management, Division of Construction.

### **FEASIBILITY STUDY PARTICIPANTS**

The Feasibility Study participants reviewed and provided input on the design concepts for the proposed classroom addition to Lucy V. Barnsley Elementary School. The feasibility study includes several options for locating the addition on the school site. The meetings occurred on January 24, February 12, and 28, and March 13, 2013. The proposed design options are a result of the participants' suggestions and guidance during the feasibility study process.

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# I. INTRODUCTION

## FEASIBILITY STUDY PARTICIPANTS

Mr. Andrew Winter	Principal	Lucy V. Barnsley Elementary School
Ms. Adelle Bank	Community	Lucy V. Barnsley Elementary School
Ms. Robin Brinkhoff	Parent	Lucy V. Barnsley Elementary School
Mr. Juan Breu	Community	Lucy V. Barnsley Elementary School
Ms. Lynn Camacho	Staff	Lucy V. Barnsley Elementary School
Ms. Sonja Chestnut	Parent	Lucy V. Barnsley Elementary School
Ms. Anita Ehrstein	Community	Lucy V. Barnsley Elementary School
Mr. Jim Ehrstein	Community	Lucy V. Barnsley Elementary School
Ms. Ann English	Program Planning Specialist	Montgomery County Department of Environmental Protection
Ms. Christa Gordon	Staff	Lucy V. Barnsley Elementary School
Ms. Jean Gries	Traffic Specialist	Montgomery County Department of Transportation
Mr. Harvey Kaplan	Community	Lucy V. Barnsley Elementary School
Ms. Naomi Kaplan	Community	Lucy V. Barnsley Elementary School
Mr. Zach Larnard	Facility Planner	Division of Long-range Planning - MCPS
Mr. Ray Marhamati	Project Manager	Division of Construction - MCPS
Ms. Molly Natchipulsky	Parent	Lucy V. Barnsley Elementary School
Ms. Maritza Portocarrero	Community	Lucy V. Barnsley Elementary School
Mr. Joe Pospisil	Traffic Specialist	Montgomery County Department of Transportation
Ms. Linda Shapiro	Staff	Lucy V. Barnsley Elementary School

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# I. INTRODUCTION (CONTINUED)

## FEASIBILITY STUDY PARTICIPANTS *continued*:

Mr. Michael Shpur	Architect	Division of Construction - MCPS
Ms. Michelle Sobel	Parent	Lucy V. Barnsley Elementary School
Ms. Jillian Storms	School Facilities Architect	Maryland State Department of Education
Ms. Debbie Szyfer	Senior Facility Planner	Division of Long-range Planning - MCPS



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## II. EXECUTIVE SUMMARY

### A. PURPOSE

The purpose of this feasibility study is to explore options to accommodate additional classrooms and staff support spaces to the existing elementary school. This study provides design options based on the educational specifications prepared by MCPS. When the addition is completed the building will have an increased capacity of 640 students and a core capacity of 740. An addition to the multipurpose room is required to increase the core capacity from 640 to 740. Six future classrooms are master-planned which if built, would bring the capacity to 740 students.

### B. HISTORY

Lucy V. Barnsley Elementary School is located at 14516 Nadine Drive, Rockville, Maryland, 20853 on a site that is approximately 10 acres in size. The original building was completed in 1965. Additions were constructed in 1968 and 1998 when the school also was revitalized. A gymnasium was added in 1999. The building contains 72,024 gross square feet of space. Currently there are 9 relocatable classrooms on site. Presently the school enrollment is 558 students in kindergarten through grade 5.

### C. METHODOLOGY

The school was evaluated by a design team of architects and engineers to determine the modifications required to accommodate a classroom addition and in the future, add six classrooms to comply with the educational specification requirements dated November 11, 2011.

The study is based on the following:

- Workshops with the feasibility study participants and MCPS staff
  - 4 meetings
  - Consistent attendance from the participants
  - 23 different attendees
- Analysis of the existing physical plant
- Review of the existing construction documents provided by MCPS
- Review of the educational specifications and summary of space requirements provided by MCPS
- Research conducted by the design team

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## II. EXECUTIVE SUMMARY (CONTINUED)

### D. SUMMARY

Lucy V. Barnsley Elementary School is situated on an approximate 10 acre parcel at 14516 Nadine Drive, Rockville, Maryland. The site is bound by Nadine Drive to the east, and single-family homes to the north, south, and west. The immediate neighborhood features single family dwellings built in the same time frame as the school. The site is accessed from Nadine Drive via three curb cuts. The bus loop drops students in front of the school entrance. The student drop-off is also part of the faculty and visitor parking lot with a single entrance and exit from Nadine Drive. There is parking for approximately 75 cars, including 3 handicapped spaces.

The existing Lucy V. Barnsley Elementary School is a two-story structure. The existing structure is constructed of non-combustible construction. The exterior walls are masonry with a face brick veneer. The majority of the interior walls are painted concrete masonry units.

Three options for the classroom addition were developed with input from the feasibility study participants. All options meet the programmatic requirements of the educational specifications. Minor improvements to the bus and staff parking areas were considered as part of the study.

Option 1 is the preferred option. The feasibility study participants believed this option addressed the goals and objectives in the most comprehensive manner. Option 1 proposes locating the classroom addition into the hillside in front of the existing building at a lower level that is on grade with the bus drop off. It is the only option that allows for expanding the paved area of the bus loop to provide safer operation.

### E. COMMON DESIGN ELEMENTS

All three options have the following common elements:

- Adherence to MCPS educational specifications
- Kindergarten classrooms in close proximity to existing ones
- Increased parking and improved student drop off in all options
- Fields and playgrounds consolidated for ease of monitoring student activity
- Full requirements for outdoor play fields and hard and soft play areas maintained
- Multi-purpose room expanded

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## II. EXECUTIVE SUMMARY (CONTINUED)

### F. UNIQUE ELEMENTS OF OPTION 1 (Preferred):

- Least impact to the neighborhood
- Better ADA access because classrooms at lower level on grade with bus loop
- Better access for construction
- Bus loop widened for increased safety

**Option 1 - Building Total Cost: \$12,165,000**

### G. UNIQUE ELEMENTS OF OPTION 2:

- Sloped courtyard area filled in at the rear of the school
- Loop circulation via a new stair between the first and second floor is provided

**Option 2 - Building Total Cost: \$10,143,000**

### H. UNIQUE ELEMENTS OF OPTION 3:

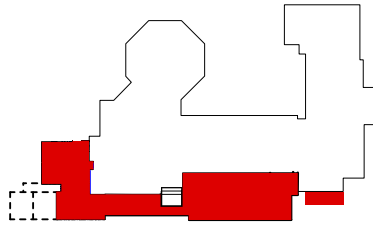
- Three story addition at the southeast corner of the existing building

**Option 3 - Building Total Cost: \$9,009,000**

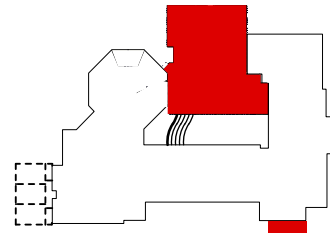
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## II. EXECUTIVE SUMMARY (CONTINUED)

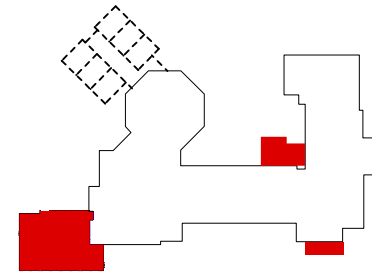
### H. COMPARATIVE ANALYSIS



OPTION 1 - ADDITION  
NEW CONSTRUCTION = 29,500 SF



OPTION 2 - ADDITION  
NEW CONSTRUCTION = 26,400 SF



OPTION 3 - ADDITION  
NEW CONSTRUCTION = 25,900 SF

## II. EXECUTIVE SUMMARY (CONTINUED)

### I. SUMMARY TABLE AND COST COMPARISON OF ADDITION OPTIONS

#### Square Footage Analysis

	OPTION 1(Preferred)	OPTION 2	OPTION 3
Existing	72,024	72,024	72,024
New Construction	29,500	26,400	25,900
Renovation	6,000	3,200	2,700
Demolition (Total)	0	0	0
Existing To Remain	72,024	72,024	72,024
<b>Total Gross Square Feet</b>	<b>101,524</b>	<b>98,424</b>	<b>97,924</b>
<b>Total Construction Cost</b>	<b>\$10,108,875</b>	<b>\$8,676,500</b>	<b>\$8,039,575</b>

#### PDF Feasibility Study Cost Outline (000's)

Construction Cost Estimate	10,072
Utilities/Permits	705
Contingency and Related Costs	755
Furniture and Equipment	402
<b>TOTALS</b>	<b>\$11,934</b>

The cost estimate in the feasibility study is based on current construction market conditions for both building and site.

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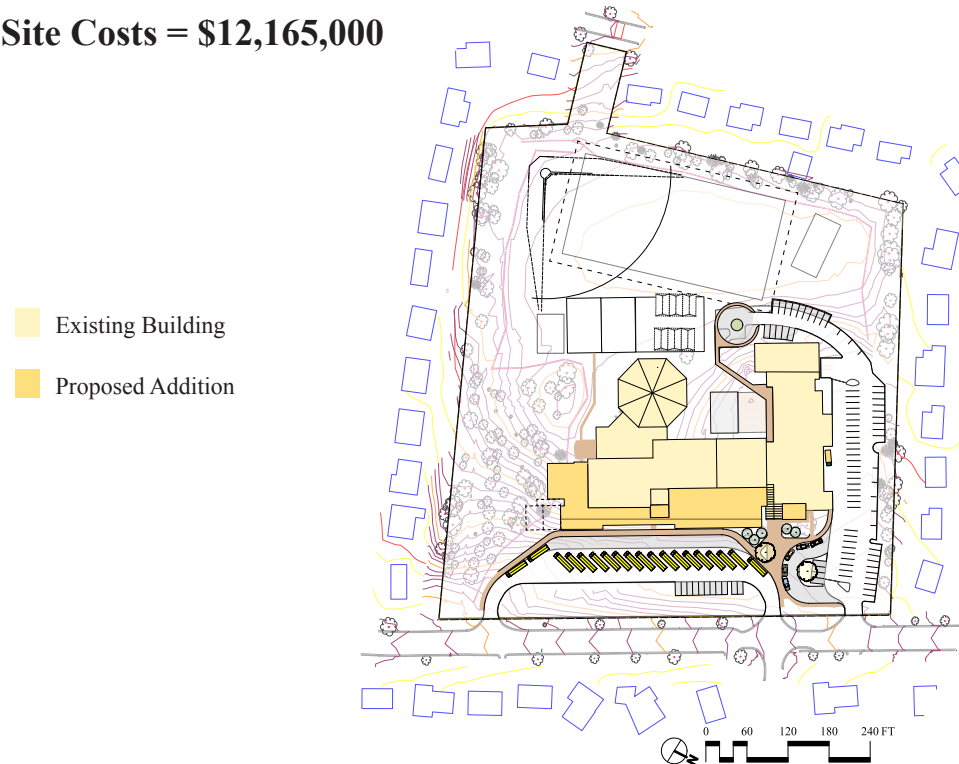
## II. EXECUTIVE SUMMARY (CONTINUED)

### OPTION 1

Option 1 locates a one and three-story classroom wing addition to the front of the existing school and an expansion of the multipurpose room. The addition will be built into the hillside. The lowest floor level will be on grade with the bus loading area. All of the building elements from the educational specifications are included in this option. The bus loop will be widened under this option.

All new systems will be designed to meet MCPS standards. These include the HVAC, life safety, fire protection, electrical, lighting, data, and communication systems. The addition will comply with accessibility codes.

**Option 1 - Building and Site Costs = \$12,165,000**



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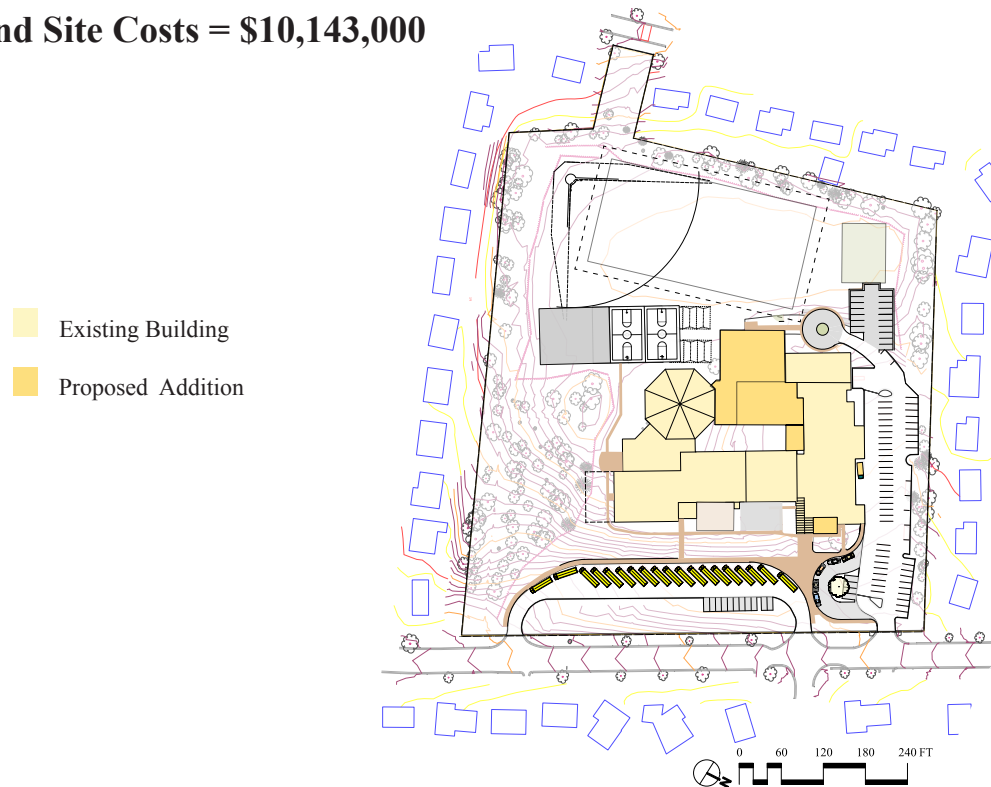
## II. EXECUTIVE SUMMARY (CONTINUED)

### OPTION 2

Option 2 locates a two-story classroom addition at the back of the school and an expansion of the multipurpose room. The addition will be built into the hillside. The second floor will be on grade with the playgrounds. All of the building elements from the educational specifications are included in this option.

All new systems will be designed to meet MCPS standards. These include the HVAC, life safety, fire protection, electrical, lighting, data, and communication systems. The classroom addition will comply with accessibility codes.

**Option 2 - Building and Site Costs = \$10,143,000**



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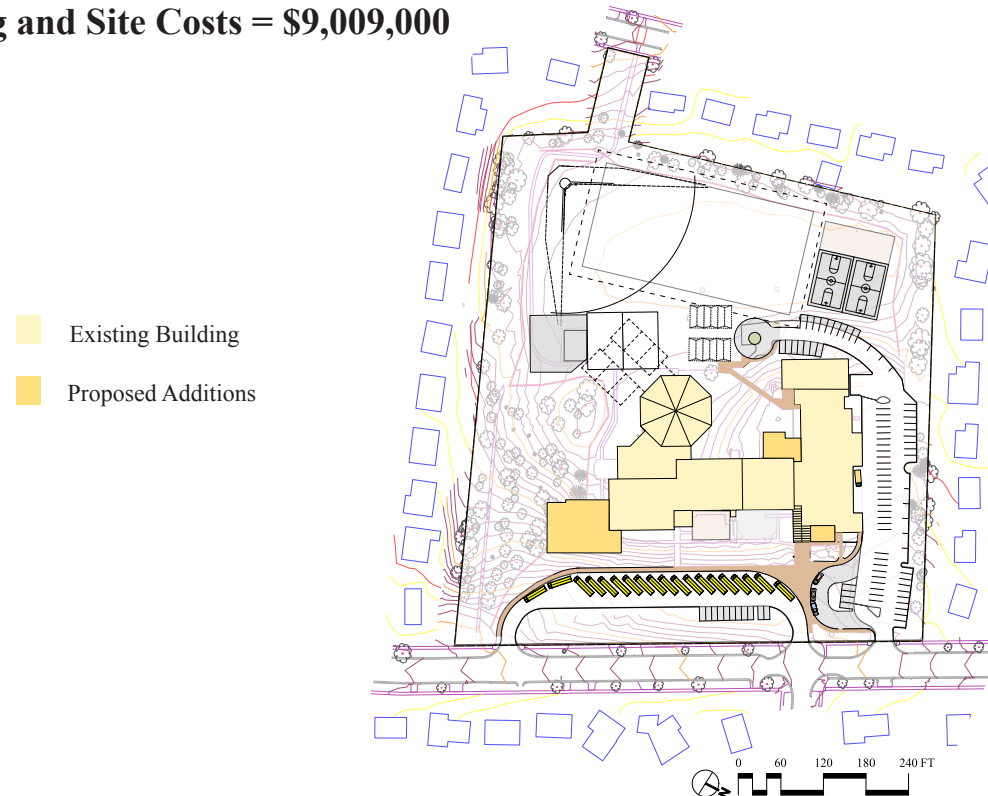
## II. EXECUTIVE SUMMARY (CONTINUED)

### OPTION 3

Option 3 locates a three-story classroom addition to the southeast side of the existing school and an expansion of the multipurpose room. A small one-story addition at the back of the school is necessary to accommodate the dual purpose room with this option. All of the building elements from the educational specifications are included in this option.

All new systems will be designed to meet MCPS standards. These include the HVAC, life safety, fire protection, electrical, lighting, data, and communication systems. The classroom addition will comply with accessibility codes.

**Option 3 - Building and Site Costs = \$9,009,000**





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## II. EXECUTIVE SUMMARY (CONTINUED)

### J. CONCLUSIONS AND RECOMMENDATIONS

WMCRP Architects recommends the following course of action to meet the program requirements for the addition of Lucy V. Barnsley Elementary School. The recommendations are consistent with MCPS standards, meet MCPS program requirements, and address the interests and concerns of the principal; school staff; the PTA; and the community as represented by the feasibility study meeting participants.

#### CLASSROOM ADDITION

At the conclusion of the feasibility study process, the participants preferred Option 1, as described in Section V. Option 1 proposes a one and three-story classroom addition at the front of the existing school and an expansion to the multipurpose room. This option also includes widening the bus lane to provide adequate staging and safe maneuvering of buses. The lowest floor level of the addition will be at grade with the bus loop, affording ADA compliant access to and from the buses at this level.

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### III. SCOPE, METHODOLOGY, & GOALS

#### SCOPE AND INTENT

Montgomery County Public Schools (MCPS) has a need to provide additional classroom and support spaces to relieve current and projected overcrowding at Lucy V. Barnsley Elementary School. MCPS further desires the addition to the school meet current specifications relative to educational programs, instructional philosophy, program space allocations, and current energy, ADA, and life safety codes. When completed, the addition will increase capacity to 640 students.

The intent of this feasibility study is to explore options for the classroom addition to the existing facility that accommodate and meet the educational requirements, satisfy the staff and community concerns, and provide a cost effective, energy efficient, and safe facility to meet the future needs of the school.

The scope of work includes a survey of the physical plant and evaluation of the existing mechanical, electrical, and plumbing systems. The architectural/engineering design team analyzed the educational specifications and developed three site and building concepts throughout the entire process. The feasibility study participants reviewed the progression of these concepts. The concepts are presented as options in this report. Option One best meets MCPS requirements.

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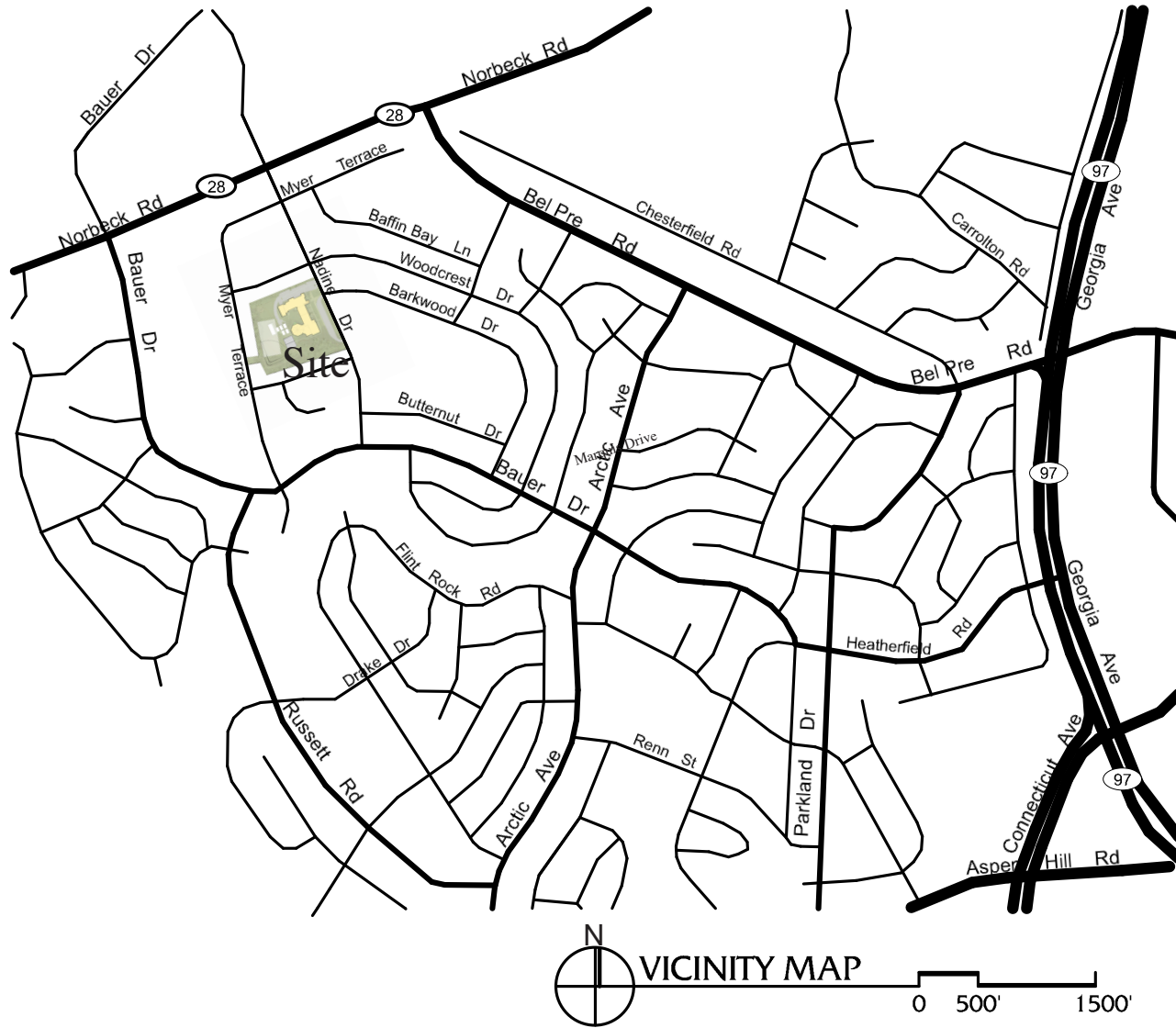
### III. SCOPE, METHODOLOGY, & GOALS (CONTINUED)

#### GENERAL GOALS

The initial feasibility study advisory work session was held on January 24, 2013. At that meeting, members of the community, PTA, and school staff discussed goals for the project. At each subsequent meeting, the goals and objectives were reviewed and modified by input from participants. The following goals and objectives were a result of that effort:

- Improve security at the school
- Provide safety measures for ongoing operation of the school during construction
- Return open space currently used for portables to recreation purposes
- Locate classroom addition(s) in under utilized areas of the site
- Maintain existing forest buffer at south end of property
- Increase parking spaces
- Improve bus and student drop-off
- Use sustainable design principles in the new design
- Group proposed program uses with existing programs including Kindergarten classrooms, Music, Art, and Dual Purpose Room

# IV. EXISTING CONDITIONS

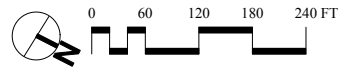
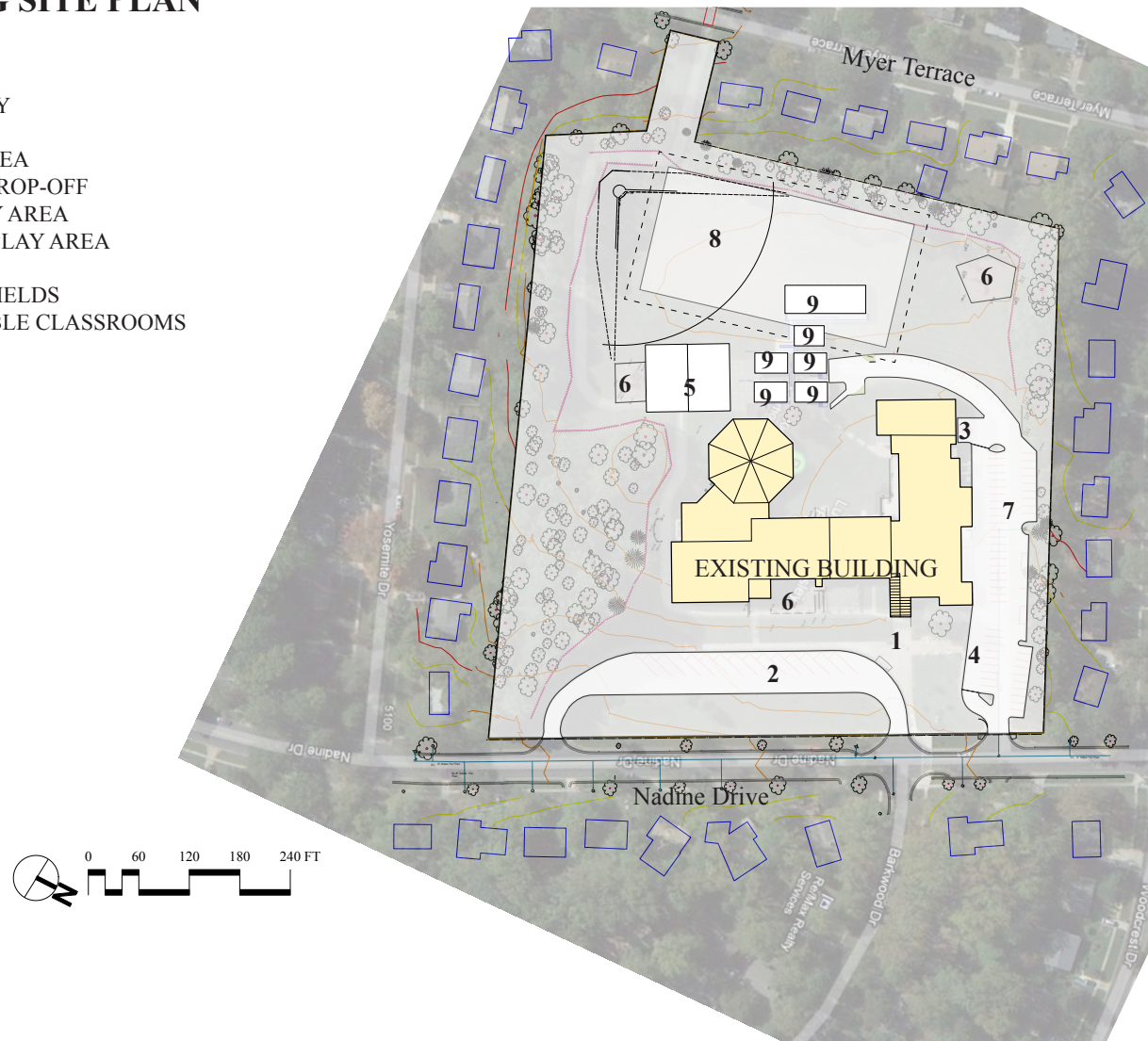


## IV. EXISTING CONDITIONS (CONTINUED)

### EXISTING SITE PLAN

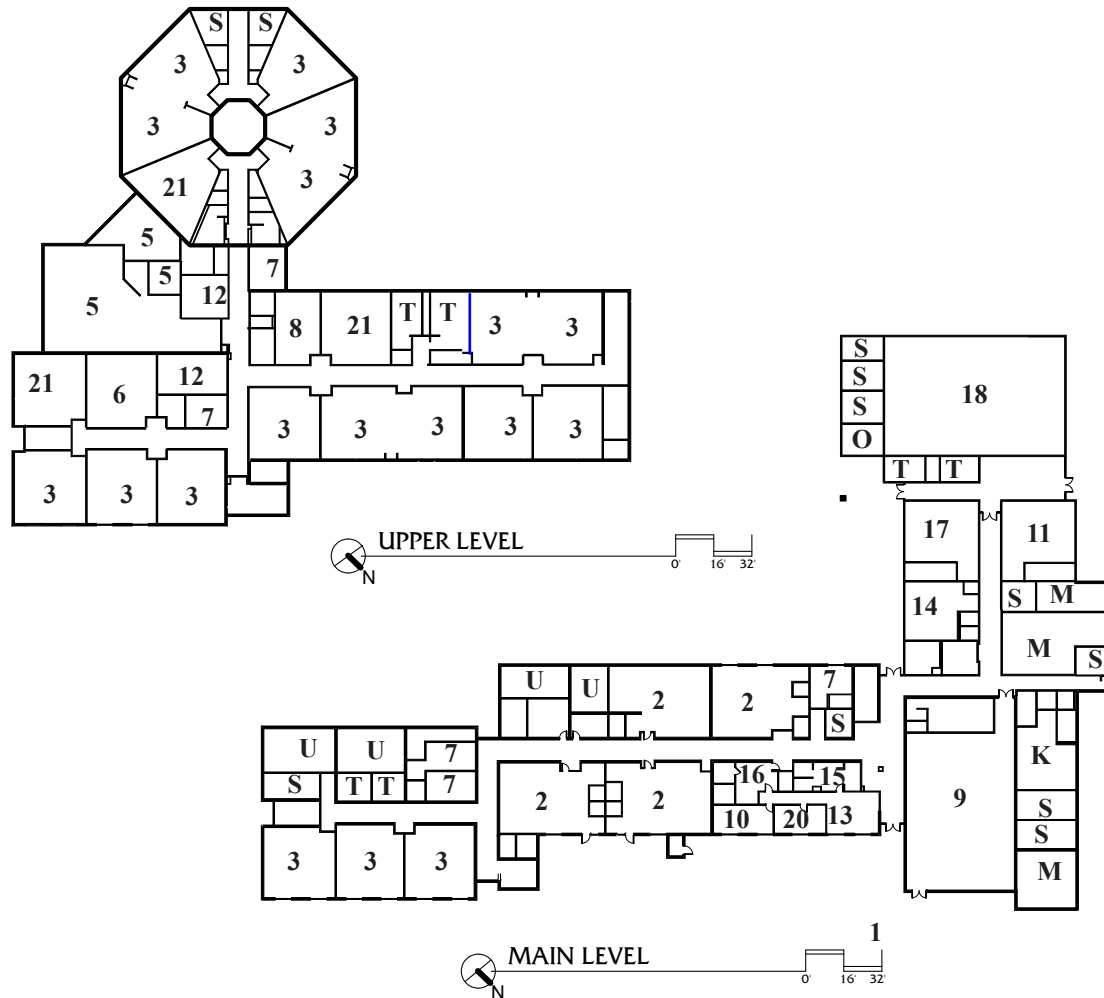
#### LEGEND

- 1 MAIN ENTRY
- 2 BUS LOOP
- 3 SERVICE AREA
- 4 STUDENT DROP-OFF
- 5 PAVED PLAY AREA
- 6 MULCHED PLAY AREA
- 7 PARKING
- 8 ATHLETIC FIELDS
- 9 RELOCATABLE CLASSROOMS



# IV. EXISTING CONDITIONS (CONTINUED)

## EXISTING FLOOR PLANS



## LEGEND

- 1 ENTRY
- 2 KINDERGARTEN CLASSROOM
- 3 CLASSROOM
- 4 DUAL PURPOSE ROOM
- 5 INSTRUCTIONAL MEDIA CENTER
- 6 COMPUTER LABORATORY
- 7 SUPPORT STAFF ROOM
- 8 LARGE GROUP INSTRUCTION
- 9 MULTI-PURPOSE ROOM
- 10 PRINCIPAL'S OFFICE
- 11 MUSIC
- 12 SMALL GROUP INSTRUCTION
- 13 MAIN OFFICE
- 14 STAFF LOUNGE
- 15 HEALTH
- 16 WORKROOM
- 17 ART
- 18 GYMNASIUM
- 19 RESOURCE ROOM
- 20 CONFERENCE
- 21 SPECIAL ED CLASSROOM
- S STORAGE ROOM
- M MECHANICAL ROOM
- K KITCHEN
- O OFFICE
- U UNEXCAVATED
- T TOILET
- E ELEVATOR
- R ROOF
- F FUTURE CLASSROOMS

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## IV. EXISTING CONDITIONS (CONTINUED)

### EXISTING CONDITIONS SUMMARY

Lucy V. Barnsley Elementary School is situated on an approximately 10 acre parcel at 14516 Nadine Drive, Rockville, Maryland. The site is bound by Nadine Drive to the east, and single family detached dwelling units to the north, south, and west. The immediate neighborhood features single-family dwellings.

The existing site topography features a level plateau along the western edge of the property. The plateau provides relatively flat grades for the play fields at the rear of the school. The site slopes significantly down to the east toward Nadine Drive. The site also slopes down to the south toward Yosemite Drive. A significant forest area is present just south of the existing school to the south property line. A steep embankment runs along the length of the building facing Nadine Drive between the building and the bus loading area. Buses and cars enter the site from Nadine Drive. The existing staff parking and student drop-off share a single entry point. Buses enter and exit the site in a one-way loop from Nadine Drive. The property is bordered on the east, west, and south by residential single-family neighborhoods. Stormwater management facilities exist in the grass median between the bus loop and Nadine Drive.

The existing Lucy V. Barnsley Elementary School is a two-story structure, built of non-combustible construction. The exterior walls are masonry with a face brick veneer. The majority of the interior walls are painted concrete masonry units.

For more information, refer to the existing survey, Appendix C.



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## V. DESCRIPTION OF OPTIONS

### GENERAL

All options have been developed in response to the MCPS educational specifications for Lucy V. Barnsley Elementary School. Once the addition is complete the relocatable classroom modular units will be removed from the site. Only existing site amenities disturbed by the addition project will be replaced. Minor site improvements including additional parking and improved student drop-off are recommended.

### COMMON SITE DESIGN ELEMENTS FOR EACH OPTION

#### SITE

- Car and bus traffic is separated in all options. Parking is increased from 75 spaces to 90 spaces.
- All options create one main entrance to the building adjacent to the student drop-off loop and bus loop to easily monitor both loops at arrival and dismissal.
- The site plans and building plans will allow for future expansion and locate potential relocatable classrooms.
- The fields and playgrounds are consolidated for ease of monitoring student activity by minimal number of staff.
- All site features will be ADA accessible.
- The location of the existing play fields will remain largely unchanged.
- All necessary quantity and quality control of stormwater will be provided for all options per code requirements.

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### ARCHITECTURAL

- The administration suite is at the main entrance. The main entry will be locked during the school day, requiring visitors to enter through the main office. A security vestibule will be provided in all options
- The location of the administration suite will allow for easy passive supervision of the bus loop and student drop-off.
- Kindergarten classrooms will be clustered together.
- The facility will be ADA accessible.
- The classroom addition will be separated from the existing building with 2-hour fire rated partitions and fire rated doors.
- The addition will be designed to fully comply with current building codes.

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### MECHANICAL

#### HVAC SYSTEMS

##### ADDITION

The existing chiller system does not have sufficient capacity to cool the addition. Therefore, the addition will be heated and cooled with incremental equipment. Options will include DX (electric) split systems, gas furnaces, hot water heating from the central plant, and water source heat pumps. Ventilation air to the classrooms will be supplied through energy recovery units (100 percent outdoor air) mounted on the roof. The units will supply conditioned outdoor air directly to the classrooms and exhaust through air devices mounted low on the walls. Exhaust air systems from the energy recovery units also will serve toilet and storage rooms.

Electric heat will be provided at entrances, stairs, toilets and storage rooms.

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### PLUMBING

#### ADDITION

All new plumbing fixtures will tie back to the existing sanitary and domestic water systems.

All plumbing fixtures will be institutional grade with a maximum 1.6 gallon flush on water closets, 1.0 pint on urinals, and 0.5 gallons per minute on faucets. Plumbing fixtures will comply with ADA requirements and utilize water conservation features. All systems will be provided in accordance with local plumbing code requirements.

#### FIRE PROTECTION SYSTEMS

The addition will tie back to the existing fire alarm system. The new sprinkler system will be provided in accordance with National Fire Protection Association (NFPA) requirements.

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### **ELECTRICAL**

#### SERVICE AND POWER DISTRIBUTION

The addition will tie back to the existing electrical switchboard via new 480 volt distribution panel in the new addition. Separate computer power panels for the new addition will be provided via harmonic mitigating transformer. These panels will have 200 percent neutral bus to account for harmonic distortions. Power connections with a disconnect switch will be provided in the mechanical rooms for all mechanical equipment. Phase loss protection will be provided for all 3-phase motors, and transient voltage surge suppression provided at the service entrance and distribution panels.

#### EMERGENCY POWER

Emergency power will be provided via a new feeder to the new addition to serve the life/safety loads.

#### FIRE ALARM SYSTEM

The existing fire alarm system will be extended for the addition. Occupant notification will be provided by visible and audible signals. Audible alarms will be provided by recorded voice announcements utilizing speakers. Audible and visual alarm signals will operate throughout the entire building.

The fire alarm system initiating devices will consist of smoke detectors, manual pull stations, and sprinkler water flow switches. Smoke detectors will be provided in areas where doors are held-open with magnetic hold-open devices. Manual pull stations will be provided at the designated main exits. Duct smoke detectors will be provided in HVAC systems over 2,000 CFM. A water flow switch will be provided at each sprinkler zone control assembly. Valve supervisory switches will be provided for all sprinkler system control valves.

All fire alarm system wiring will be installed in conduit.

Alarm, trouble and supervisory signals are displayed on the building fire alarm control panel and all annunciator panels. The

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FACP will transmit alarm, supervisory, and trouble conditions to the central station via a digital communicator.

All fire alarm system wiring will be installed in conduit.

#### LIGHTING

Interior classroom and office lighting will be direct/indirect, linear fluorescent type fixtures with 28-watt, 3500K, T-5 lamps and electronic ballasts. Corridors and other miscellaneous spaces will be lensed type recessed fluorescent fixtures. Other energy-saving lamp types such as compact fluorescent downlights and HID lights will be provided for interior and exterior lighting. General lighting control will be provided by room lighting switching schemes with central station via a digital communicator.

#### LIGHTING

Interior classroom and office lighting will be direct/indirect, linear fluorescent type fixtures with 28-watt, 3500K, T-5 lamps and electronic ballasts. Corridors and other miscellaneous spaces will be lensed type recessed fluorescent fixtures. Other energy-saving lamp types such as compact fluorescent downlights and HID lights will be provided for interior and exterior lighting. General lighting control will be provided by room lighting switching schemes with occupancy sensors for automatic shut-off control. Multiple switching will be provided for larger areas. Exit lights will be the LED type on separate circuits. Emergency lighting will be switched.

The lighting power density shall not exceed 1.2 watts per foot per ASHRAE 90.1.

#### CLASSROOM TECHNOLOGY

Classrooms will be equipped with dedicated computer receptacles connected to a separate “clean-power” computer panels. The teacher’s desk receptacles will be connected to this emergency standby source. An additional “clean-power” receptacle will be located at the front of the classroom off-center of the teaching wall for smart boards. Provisions for data and cable television will be provided at the teacher’s desk and/or at a technology wardrobe or cabinet as coordinated with the architect and MCPS.

#### PUBLIC ADDRESS SYSTEM

The existing public address (PA) system will be extended to the addition.

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 1 - DESCRIPTION

Option 1 locates the classroom addition at the front of the existing school. This one/three-story wing makes use of the under utilized embankment running along the entire front of the existing building. A new lower level is on grade with the bus loading area allowing for an alternative ADA compliant access to the buses for arrival and dismissal. All of the building elements from the educational specifications are included in this option. .

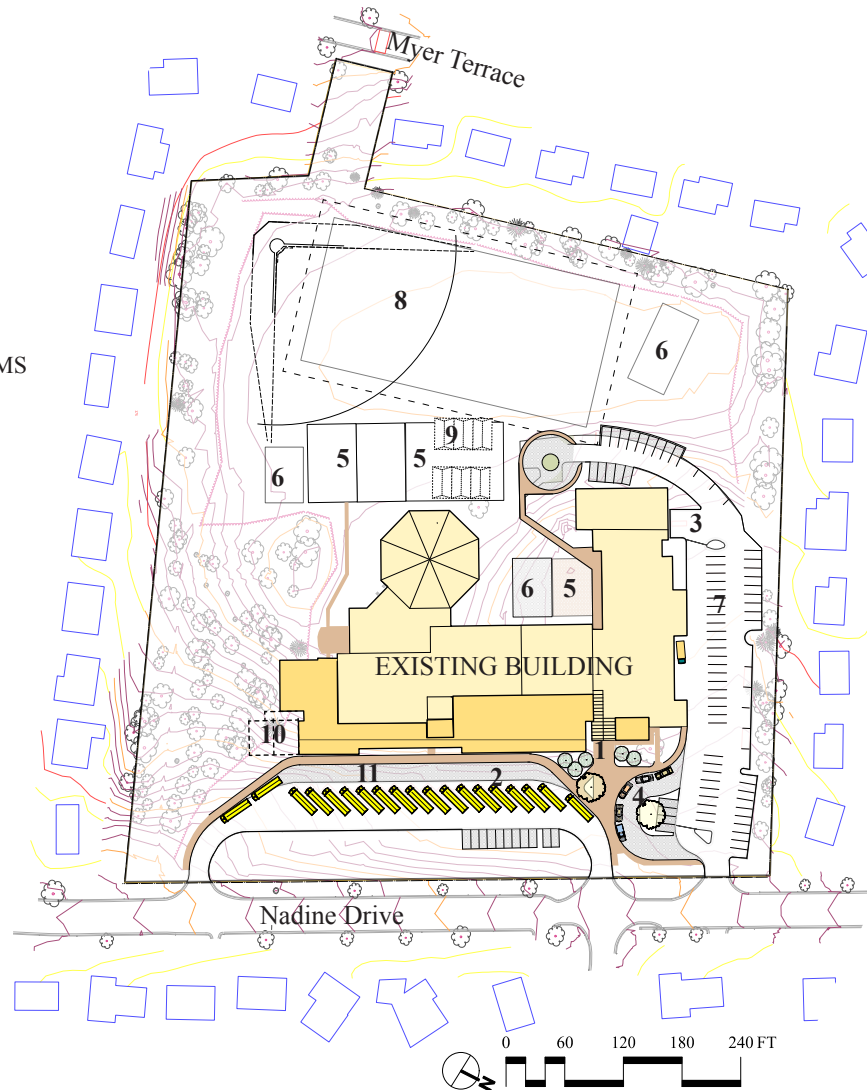
Option 1 locates the kindergarten classrooms together in the existing building by renovating three classrooms to two kindergarten classrooms. The three classrooms are provided in the new classroom addition. A second elevator is required for this option. Site improvements include widening the bus loop and expanding the student drop-off area. Fifteen new parking spaces are provided.

## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 1 - SITE PLAN

#### LEGEND

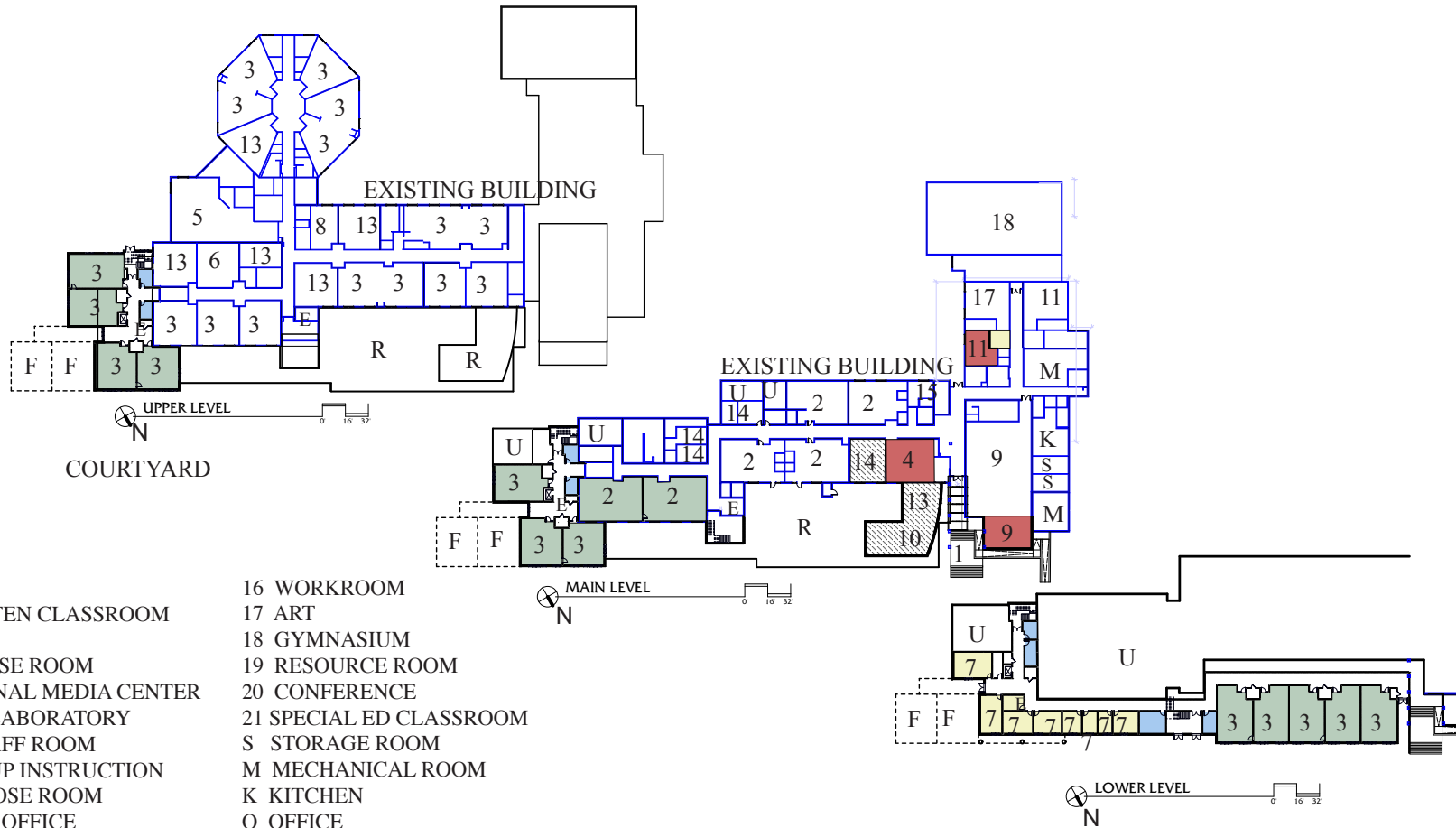
- 1 MAIN ENTRY
- 2 BUS LOOP
- 3 SERVICE AREA
- 4 PROPOSED STUDENT DROP-OFF
- 5 PAVED PLAY AREA
- 6 MULCHED PLAY AREA
- 7 PARKING
- 8 ATHLETIC FIELDS
- 9 FUTURE RELOCATABLE CLASSROOMS
- 10 FUTURE CLASSROOM ADDITION
- 11 CONTRACTOR'S STAGING AREA





# V. DESCRIPTION OF OPTIONS (CONTINUED)

## OPTION 1 - PROPOSED FLOOR PLANS



### LEGEND

- |                              |                         |
|------------------------------|-------------------------|
| 1 ENTRY                      | 16 WORKROOM             |
| 2 KINDERGARTEN CLASSROOM     | 17 ART                  |
| 3 CLASSROOM                  | 18 GYMNASIUM            |
| 4 DUAL PURPOSE ROOM          | 19 RESOURCE ROOM        |
| 5 INSTRUCTIONAL MEDIA CENTER | 20 CONFERENCE           |
| 6 COMPUTER LABORATORY        | 21 SPECIAL ED CLASSROOM |
| 7 SUPPORT STAFF ROOM         | S STORAGE ROOM          |
| 8 LARGE GROUP INSTRUCTION    | M MECHANICAL ROOM       |
| 9 MULTI-PURPOSE ROOM         | K KITCHEN               |
| 10 PRINCIPAL'S OFFICE        | O OFFICE                |
| 11 MUSIC                     | U UNEXCAVATED           |
| 12 SMALL GROUP INSTRUCTION   | T TOILET                |
| 13 MAIN OFFICE               | E ELEVATOR              |
| 14 STAFF LOUNGE              | R ROOF                  |
| 15 HEALTH                    | F FUTURE CLASSROOMS     |

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION ONE ADVANTAGES AND DISADVANTAGES

**Option 1** proposes a three-story classroom addition at the front of the existing school.

#### Advantages

- Construction consolidated to one area of the site
- Makes use of under utilized slope at the front of the building
- Allows for increased bus loop width to improve safety
- No restrictions to use of play areas behind school during construction
- Construction area does not impact parking/student drop-off
- New kindergarten classrooms located within K-cluster
- Use of green roofs on lower wing provides educational opportunities
- New lower floor provides at grade access to buses
- The entire front facade of the building would receive an architectural “face lift”
- Efficient use of land could help reduce storm run-off from the front of site
- Access to relocatable classrooms remains the same
- Eliminates costly maintenance of steep grassy hill in front of building
- Does not disturb outdoor teaching space during construction
- Larger bus loop increases “wet day” play area

#### Disadvantages

- Bus loop would be restricted to a single lane during construction and most likely would back up onto Nadine Drive during dismissal
- Bus loop would not be available for use as “wet day” recreation during construction
- New foundation would require underpinning existing building, a costly effort
- Construction zone adjacent to classroom wing may be a distraction to 13 classrooms
- A second elevator required to serve lower level
- Long single loaded classroom corridor
- Largest area of renovation required including administrative offices

---

## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 2 - DESCRIPTION

Option 2 locates the classroom addition at the rear of the existing school. The two-story addition will be built into the existing hillside . All of the building elements from the educational specifications are included in this option. Option 2 locates the kindergarten classrooms in the new wing facing an outdoor courtyard across from the existing kindergarten wing. The outdoor courtyard provides the school with a secure outdoor space to enhance educational opportunities.

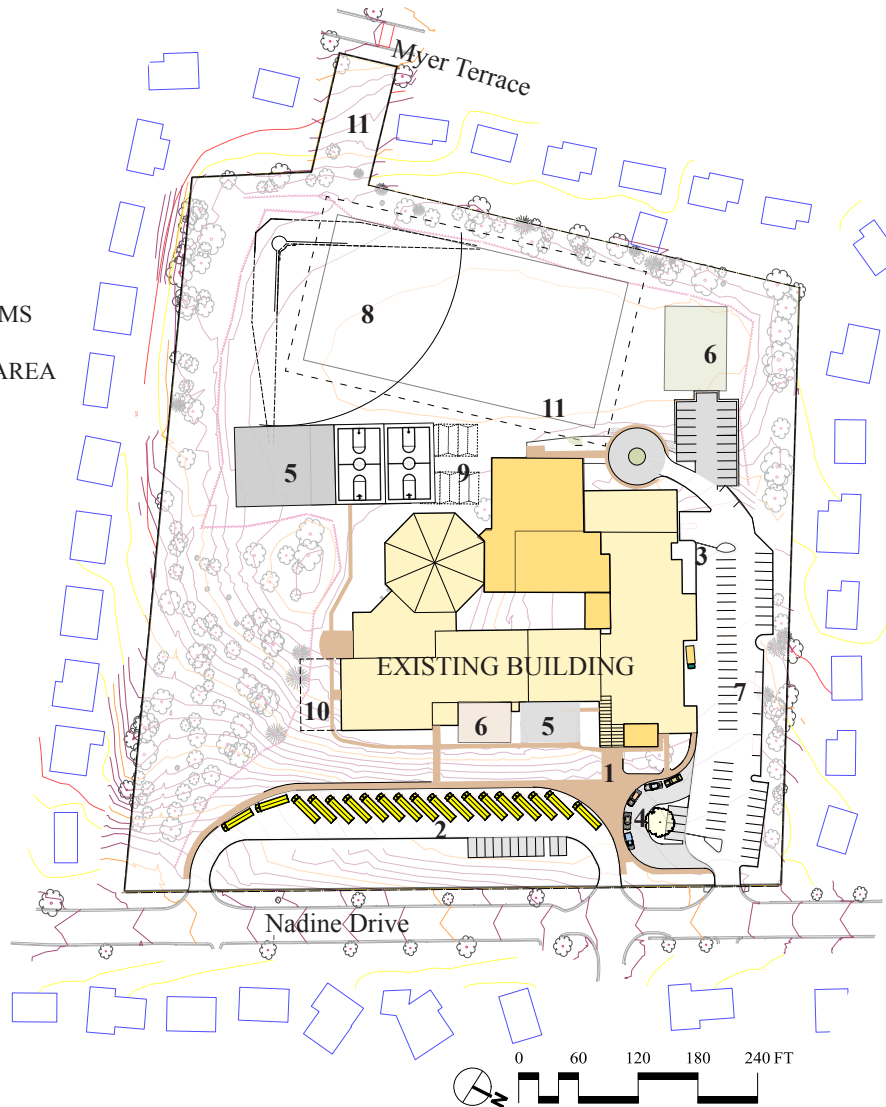
Site improvements include expanding the student drop-off area. Fifteen new parking spaces are provided.

# V. DESCRIPTION OF OPTIONS (CONTINUED)

## OPTION 2 - SITE PLAN

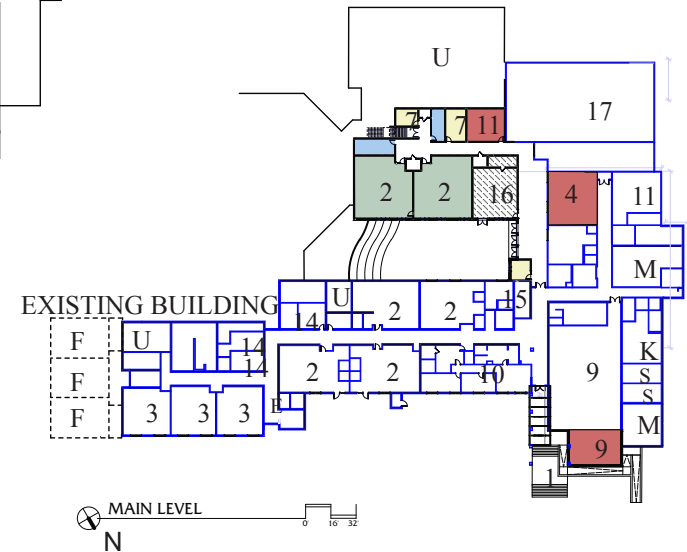
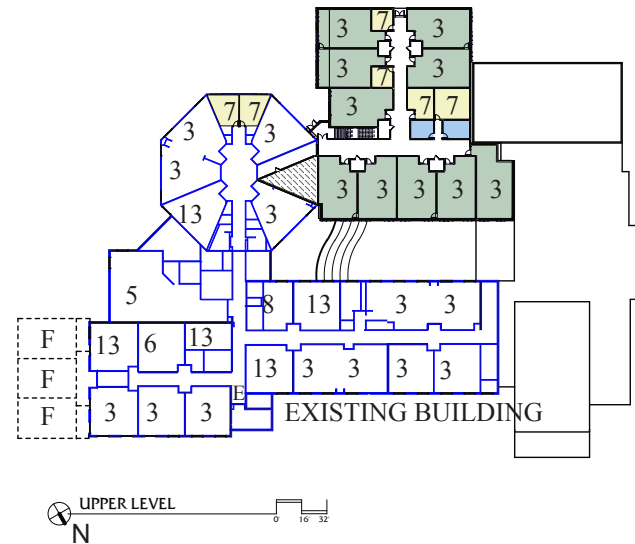
### LEGEND

- 1 MAIN ENTRY
- 2 BUS LOOP
- 3 SERVICE AREAS
- 4 PROPOSED STUDENT DROP-OFF
- 5 PAVED PLAY AREA
- 6 MULCHED PLAY AREA
- 7 PARKING
- 8 ATHLETIC FIELDS
- 9 FUTURE RELOCATABLE CLASSROOMS
- 10 FUTURE CLASSROOM ADDITION
- 11 CONTRACTOR'S ACCESS/STAGING AREA



## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 2 - FLOOR PLANS



#### LEGEND

1 ENTRY	16 WORKROOM
2 KINDERGARTEN CLASSROOM	17 ART
3 CLASSROOM	18 GYMNASIUM
4 DUAL PURPOSE ROOM	19 RESOURCE ROOM
5 INSTRUCTIONAL MEDIA CENTER	20 CONFERENCE
6 COMPUTER LABORATORY	21 SPECIAL ED CLASSROOM
7 SUPPORT STAFF ROOM	S STORAGE ROOM
8 LARGE GROUP INSTRUCTION	M MECHANICAL ROOM
9 MULTI-PURPOSE ROOM	K KITCHEN
10 PRINCIPAL'S OFFICE	O OFFICE
11 MUSIC	U UNEXCAVATED
12 SMALL GROUP INSTRUCTION	T TOILET
13 MAIN OFFICE	E ELEVATOR
14 STAFF LOUNGE	R ROOF
15 HEALTH	F FUTURE CLASSROOMS

---

## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 2 ADVANTAGES AND DISADVANTAGES

**Option 2** proposes a two-story classroom wing at the rear of the existing building.

#### Advantages

- Consolidates construction in one area
- Provides more efficient circulation
- Maintains full forest area
- Maintains pedestrian path through site from Myer Terrace
- Future 6-classroom addition minimally impacts forest area
- Creates an enclosed outdoor courtyard for controlled use by the school
- Improves internal circulation flow
- Art room can open directly to protected courtyard for outdoor classes
- Construction access from the back has least impact on vehicular access to the school
- More clustering of classrooms to minimize grade level splits
- Courtyard could accommodate controlled outdoor environmental learning

#### Disadvantages

- New kindergarten classrooms not in close proximity to existing ones
- Windowless dual purpose room (can receive borrowed light from courtyard)
- Construction access from back (Myer Terrace) will impact play fields
- Up to four relocatable classrooms required to be moved for construction
- Amount of available play areas restricted during construction
- Access to relocatable classrooms/play areas through second floor hallway adjacent to construction zone
- Access to courtyard from existing kindergarten classrooms eliminated during construction

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 3 - DESCRIPTION

Option 3 locates the classroom addition at the end of the existing school facing the existing forest area. The three-story addition will be built into the existing hillside. A significant portion of the forest area will be removed as a consequence of this addition. A second addition at the rear of the school contains additional program elements. All of the building elements from the educational specifications are included in this option. Option 3 locates the kindergarten classrooms in the existing building together by renovating three classrooms to two kindergarten classrooms. The three classrooms are provided in the new classroom addition. A second elevator is required for this option.

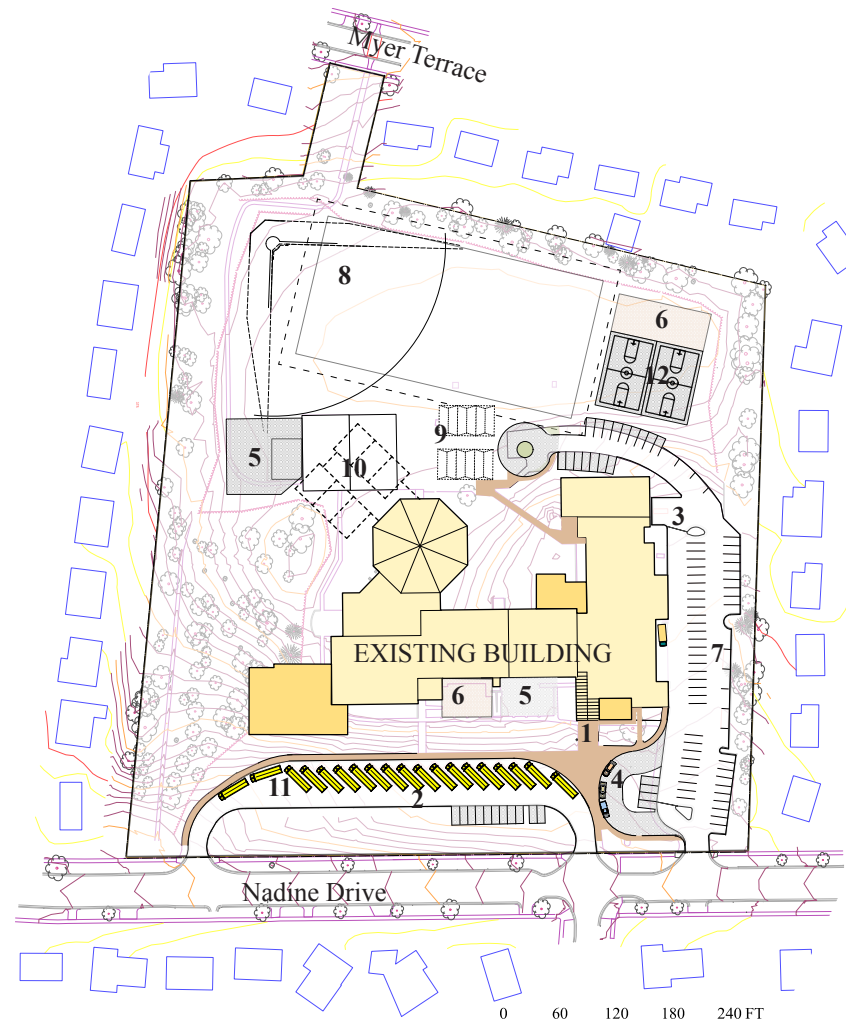
Site improvements include expanding the student drop-off area. Fifteen new parking spaces are provided.

## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 3 - SITE PLAN

#### LEGEND

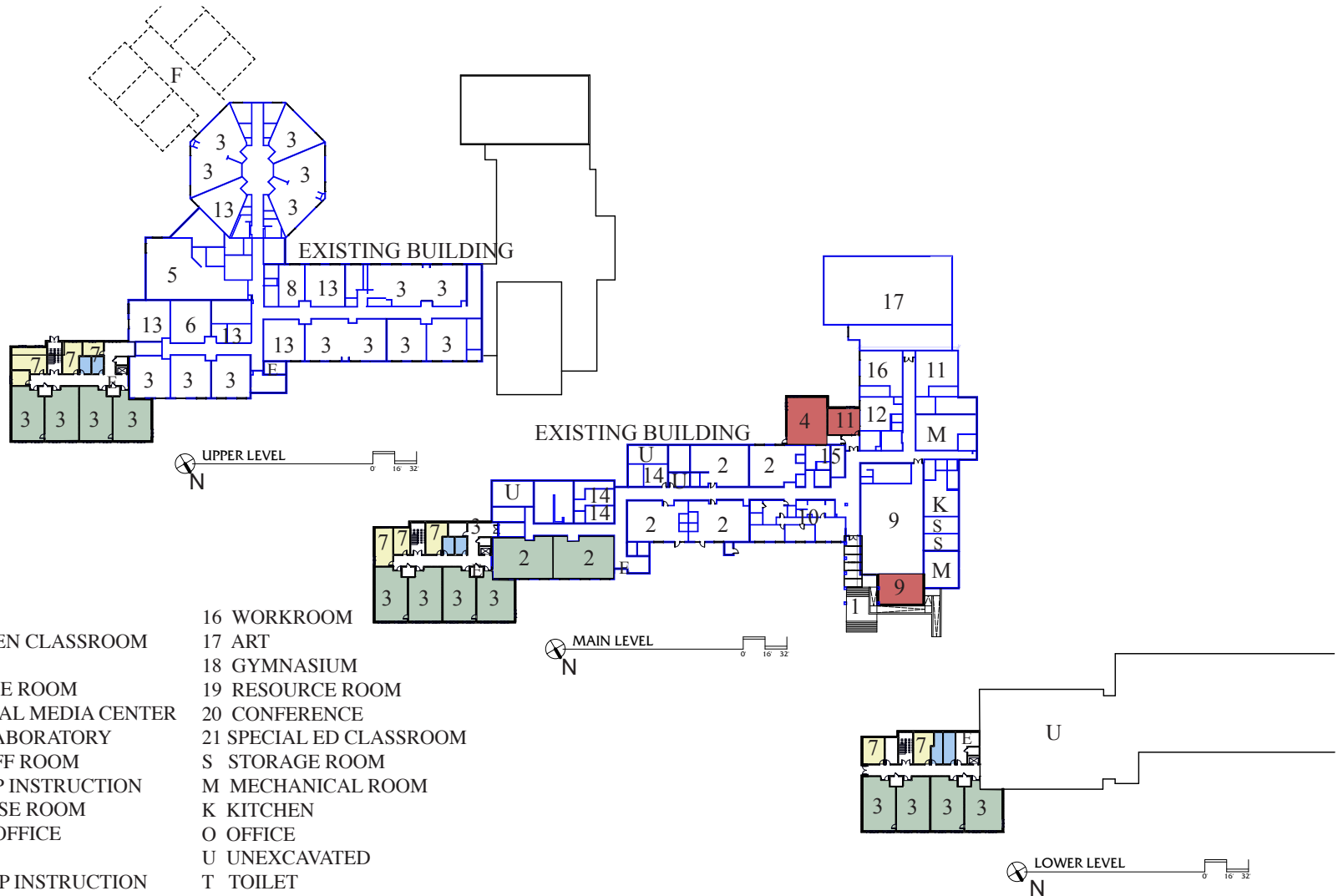
- 1 MAIN ENTRY
- 2 BUS LOOP
- 3 SERVICE AREA
- 4 PROPOSED STUDENT DROP-OFF
- 5 PAVED PLAY AREA
- 6 MULCHED PLAY AREA
- 7 PARKING
- 8 ATHLETIC FIELDS
- 9 FUTURE RELOCATABLE CLASSROOMS
- 10 FUTURE CLASSROOM ADDITION
- 11 CONTRACTOR'S STAGING AREA
- 12 RELOCATE EXISTING PAVED PLAY AREA IF FUTURE CLASSROOM WING IS BUILT





# V. DESCRIPTION OF OPTIONS (CONTINUED)

## OPTION 3 - FLOOR PLANS



### LEGEND

- |                              |                         |
|------------------------------|-------------------------|
| 1 ENTRY                      | 16 WORKROOM             |
| 2 KINDERGARTEN CLASSROOM     | 17 ART                  |
| 3 CLASSROOM                  | 18 GYMNASIUM            |
| 4 DUAL PURPOSE ROOM          | 19 RESOURCE ROOM        |
| 5 INSTRUCTIONAL MEDIA CENTER | 20 CONFERENCE           |
| 6 COMPUTER LABORATORY        | 21 SPECIAL ED CLASSROOM |
| 7 SUPPORT STAFF ROOM         | S STORAGE ROOM          |
| 8 LARGE GROUP INSTRUCTION    | M MECHANICAL ROOM       |
| 9 MULTI-PURPOSE ROOM         | K KITCHEN               |
| 10 PRINCIPAL'S OFFICE        | O OFFICE                |
| 11 MUSIC                     | U UNEXCAVATED           |
| 12 SMALL GROUP INSTRUCTION   | T TOILET                |
| 13 MAIN OFFICE               | E ELEVATOR              |
| 14 STAFF LOUNGE              | R ROOF                  |
| 15 HEALTH                    | F FUTURE CLASSROOMS     |

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## V. DESCRIPTION OF OPTIONS (CONTINUED)

### OPTION 3 ADVANTAGES AND DISADVANTAGES

**Option 3** proposes a three-story classroom wing at the southeast corner of the existing building.

#### Advantages

- Bulk of construction consolidated to one area of the site
- Makes use of under utilized slope at the southeast corner of the building
- No restrictions of play areas behind school during construction
- Construction area does not impact parking/student drop-off
- New kindergarten classrooms located near existing Kindergarten classrooms

#### Disadvantages

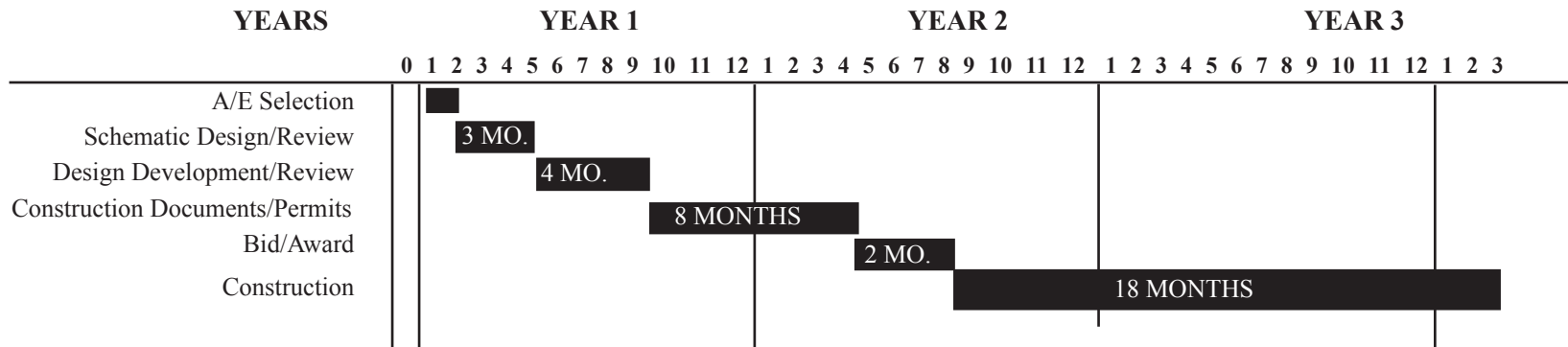
- Bus loop would be restricted to a single lane during construction
- Bus loop would not be available for use as “wet day” recreation
- New foundation would require underpinning existing foundation, a costly effort
- A second elevator required to serve lower level
- Some impact to existing forest area
- Least compact layout, longest circulation, hardest to supervise
- Isolates 4 classrooms on main and lower level
- The future 6 classroom addition impacts available play space

# VI. PROPOSED PROJECT IMPLEMENTATION SCHEDULE

## Design Team Members

Architect:	WMCRP, Inc.
Civil Engineer:	Huron Engineering
Cost Consultant:	WMCRP, Inc.
Electrical Engineer:	Building Dynamics, LLC.
Mechanical/Electrical Engineer:	Building Dynamics, LLC..
Geotechnical:	Kim Engineering
Structural Engineer:	Watkins & Associates

## Proposed Project Schedule



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## VII. APPENDICES



## APPENDIX A - SPACE ALLOCATION SUMMARY

When this project is complete, the following spaces are to be provided:

Facility	# Needed	Description	Net Sq. Ft.	Total Net Sq. Ft.
<b>Classrooms</b>				
Kindergarten	2	Includes 250 s.f. storage	1300	2600
Grades 1-5	9	Includes 150 s.f. storage	900	8100
Instrumental Music Room	1		450	450
Dual purpose Room	1		1000	1000
<b>Support Rooms</b>				
Pull-Out Support Room for HSM	2		300	600
Office (HSM)	1		200	200
Small Instructional Support Room	1		450	450
Therapy/Support Room	1		250	250
Testing/Support Room	1		150	150
Support Staff Offices	2		150	300
Conference Room	1		300	300
<b>Multi-Purpose Room</b>	1	Increase existing MPR	720	720
<b>Total</b>				<b>15,120</b>

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**APPENDIX B - EDUCATIONAL SPECIFICATIONS**

**Lucy V. Barnsley Elementary  
School Addition**

Educational Specifications

**Feasibility Study**

March 1, 2013



**Montgomery County Public Schools**

**Rockville, Maryland 20850**

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Lucy V. Barnsley Elementary School - Addition  
WALTON • MADDEN • COOPER • ROBINSON • PONESS, INC - Architect

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# APPENDIX B - EDUCATIONAL SPECIFICATIONS

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

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[Prekindergarten Play Areas](#).....B:34

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Introduction

- This document describes the facilities that are needed for the Barnsley Elementary School addition educational program. The descriptions provide the architect with important guidelines and will be used by staff representatives when reviewing drawings for the facility.
- The program capacity for this school will be 640 with a master-planned (core) capacity for 740. The school needs a 6-classroom master-planned addition to bring the program school up to its master-planned capacity. The architect should show the location for the future classroom addition.
- The educational specifications are divided into three sections.
  - The first section, the space summary, lists the type of spaces and square footage required when the project is complete.
  - The second section describes the general design, location, and specific requirements for each type of space in accordance with Montgomery County Public Schools (MCPS) standards.
  - The third section identifies additional program requirements for the school.
    - The architect should show the location for relocatable classrooms, should they be required in the future. These units should be sited in a location where it will not cause conflict with the constructability of a future addition. The necessary utility connections, i.e. electrical power, fire alarm, public address, and data should be provided near the future location of relocatable classrooms.
    - The architect will provide a space summary comparison between the programmed space requirements and the proposed after each phase of the project including but not limited to the feasibility study, schematic design, design development, and final design phase.
    - For all new schools and modernizations, the project will be designed for LEED Silver certification by the United States Green Building Council (USBGC) under the LEED for Schools guidelines. If this project is a classroom addition, the certification requirement applies only if the addition doubles the existing building footprint. If this project is a building renovation, the certification requirement applies only if the renovation alters more than fifty percent of the existing building gross floor area.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### General Planning Considerations

In the general planning of this building, special consideration is to be given to the following comments and instructions:

- The architect is expected to be compliant with all national, state and local fire safety, life safety, and health code regulations and to follow applicable rules of the State Interagency Committee on School Construction.
- The building is to be accessible to the disabled within the meaning of the latest edition of the Americans with Disabilities Act and to conform to all the latest requirements of the Americans with Disabilities Act Accessibility Guidelines (ADAAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board. (The regulation can be found at <http://www.access-board.gov/adaag/html/adaag.htm>). In addition to the ADAAG, the *Maryland Accessibility Code* (COMAR.05.02.02) revised in 2002 also is required for public schools. (The regulation can be found at <http://mdcodes.umbc.edu/dhcd2/Title05.pdf>)
- The facility is to reflect an appealing visual, acoustic, and thermal environment and is to be properly furnished and equipped. Well chosen colors and textures are to be used. Lighting must meet current guidelines and provide adequate levels.
- High quality materials are to be used in the construction.
- The architect should refer to the MCPS Facility Guideline Specifications when noted. The document can be found at: <http://www.montgomeryschoolsmd.org/departments/construction/publications/guidelines.shtm>
- The first impression of a building is important. The main entrance to the school should have a clear and inviting identity, and the entrance area should be designed and landscaped to emphasize its importance. A covered walkway from the bus loading area to the front door is desirable. The design of the main lobby area needs to convey a feeling of warmth and welcome. The inclusion of a lighted showcase in which children's work can be displayed is recommended.
- The design of the building and grounds must provide for a secure environment for students and staff. Isolated areas should be minimized and natural surveillance encouraged by eliminating visual barriers.
- For security purposes, all doors into classrooms, conference rooms, offices etc. must have a sidelight window with shades.
- Water coolers should be provided throughout the school.
- Every teaching station, support space, and core area must be wired for computer, CCTV, and telephone, along with adequate electrical supply in compliance with Maryland State design guidelines for Technology in Schools and the MCPS Office of the Chief Technology Office (OCTO) guidelines. Facilities must be adaptable to accommodate rapid development in high technology and its equipment since educational program and organization in this field are dynamic. Space and power supply must be flexible to meet these changing needs.
- Core spaces such as the cafeteria, gymnasiums, and instructional media center should be easily accessible for community use and secure from the rest of the building after school hours.
- An MCPS designed alarm system will provide security for this facility. The architect will provide for this system in consultation with the DOC staff.
- Building code requirements call for less than fifty percent of interior corridor space to be used for displaying flammable materials. Display areas can be provided by a 5' x 5' bulletin board per classroom or an equivalent amount of space in a larger area. Please refer to the MCPS Facility Guideline Specifications.
- Students should have ADA compliant access to the play areas from the multipurpose room. Play areas are to be protected from any vehicular traffic. Unobstructed supervision of play areas from one central area is desirable.
- The school is to be air-conditioned except for the gymnasium and kitchen. Careful placement of glass is required to avoid excess heat gain in occupied areas.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- Some windows must be operable in each space in the building. Transmission of radiation through windows into various portions of the plant is to be considered in relation to heating and ventilating and in relation to planning the building for air conditioning. All instructional spaces should have windows, preferably exterior windows. If the design does not permit exterior windows, windows onto corridors should be provided.
- Zoning the plant for heating and air-conditioning should be related to afterhours use of various areas such as offices, gymnasium, multipurpose room, and the instructional media center. Appropriate location of parking, corridor barriers, and toilet rooms is necessary for after-hours use. Some classrooms nearby the multipurpose room should be zoned for after hour use as well.
- The architect should refer to MSDE's 2006 *Classroom Acoustic Guidelines* to address the acoustical qualities for classrooms. In addition, the architect should refer to *American National Standard, Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools* (ANSI S12.60-2002) for additional information.
- Noise and distracting sounds are to be minimized. In areas such as the multipurpose room and classrooms, which may be used for meetings and adult education, the sound of operating fans for ventilation should not interfere with instruction.
- Adult restrooms should be provided in accordance with the latest code requirements. Adult restrooms in elementary schools will be unisex.
- Spaces that serve no real educational function, such as corridors, should be limited while at the same time assuring an easy to supervise and smooth flow of pupil traffic to and from the instructional media center, multipurpose room, gymnasium, specialized centers, and support rooms.
- Carpeting should be limited to the principal's office, assistant principal's office and conference room in the administration suite and the main reading room of the instructional media center.
- All instructional, resource, or office spaces that students may occupy should be designed with either a sidelight or glass panel in the door and must be able to be supervised from the corridor or an adjacent space. Doors should be provided between classrooms whenever possible, however, expensive folding walls should be carefully considered as they are rarely utilized. The classrooms should be designed to accommodate various size groups. Each classroom should be readily adaptable for group work, various presentation formats, and should have maximum connectivity to outside resources.
- The shape of the classroom and the design of built-in features and storage areas should provide optimum net usable floor area. Elongated rooms and features that protrude into floor area, limiting flexibility, are to be discouraged. Rectangular shaped classrooms are preferred.
- Metal adjustable shelving is to be provided in all building storage closets.
- All plan reviews will be coordinated through the Division of Construction.
- Special consideration must be given to energy conservation including total lifecycle costs. The current Maryland State Department of General Service (DGS) requirements will be applied as design criteria. Lifecycle cost accounting in accordance with DGS criteria is required.
- Per COMAR 23.03.02: Regulation .29, all school projects that include replacing or upgrading the electrical system should be designed and constructed so that a designated public shelter area can be fully powered in the event of an emergency.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Technology Framework

The latest technology should be integrated into every aspect of building. The architect should consult with the Office of the Chief Technology Officer (OCTO) and the Division of Construction (DOC) for the latest technology requirements. The architect must at a minimum plan for the following elements.

- Through the use of wireless access, local area and wide area computer and video networks, students should have access to each other, to schools throughout the county with similar capabilities, and to universities and government institutions throughout the world.
- Each classroom is to have three electrical outlets for charging mobile laptop carts.
- Each classroom will have a promethean board at the teaching wall and CNO for the teacher's computer.
- Computer network outlets (CNOs) consisting of a flush mounted standard electrical box with 1 1/2" conduit to the ceiling space overhead should be located in all classrooms, offices, and other work locations according to the following general rules:
  - one CNO per office, staff office, planning room, etc. adjacent to telephone outlet
  - Two CNOs for student use located 3' apart along the back or side wall in each classroom.
  - Multiple CNOs in media center at circulation desk, reference areas, etc.
  - One CNO at each science lab workstation
  - All other areas such as the stage, bookstore, dining room, etc., where computers might be used.
- The number and location of telecommunication closets required to support the building-wide computer network is dependent on the size and geometry of the building. The layout of the telecommunication closets will be determined during the design phase of the project.
- Provisions for high-resolution fiber optic cable for television must be included in the design of all teaching stations.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Description of Facilities

Please refer to the summary of spaces in the front of this document for the square foot requirements for each space described below. Square foot allocations should be considered the standard to be followed, although minor deviations are permitted.

### Prekindergarten/Kindergarten Classroom

- If the school has a Head Start program, the classroom should be designed as a prekindergarten/kindergarten classroom.
- Each room should allow flexibility in creation of activity areas and to provide for individualized instruction through arrangement of the “centers” approach.
- An area should be designated for placement of a 12’ by 15’ area rug over the finished floor.
- A 100 square foot walk-in storage closet and 150 square feet of general storage (casework throughout the classroom) is needed.
- When possible there should be interconnecting interior doors between all kindergarten and pre-kindergarten rooms.
- All prekindergarten rooms should have an outside door or be directly accessible to the outside and convenient to the main entrance of the school building.
- The prekindergarten classrooms must have direct access to the prekindergarten play areas. See the Site Requirements section for a description of play areas. The computers should not be located next to a whiteboard where magnets might damage the hardware and software. Glare from the windows on the computer screens should be eliminated as much as possible. Security for the computers should be planned in consultation with the DOC. Computer/technology wiring must be in accordance with MSDE/MCPS guidelines.
- Every classroom must have computer outlets for two student workstations and one teacher workstation. The building information and communications distribution system and other aspects of the building design must comply with the February 2002 revision of the MSDE *Maryland Public School Standards for Telecommunications Distribution Systems*.
- The main teaching wall layout should be in accordance to MCPS Facilities Guide.
- A sink with a drinking fountain must be provided, with cabinets above and below.
- In a non class-size reduction school, the built-in student wardrobe area must provide 28 individual compartments to store students’ belongings. The architect is to refer to the MCPS Facility Guideline Specifications for a typical cubby design. Lockers in the classroom may be considered for the kindergarten classrooms.



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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- In a class-size reduction school, the built-in student wardrobe area must provide 24 individual compartments to store students' belongings. The architect is to refer to the MCPS Facility Guideline Specifications for a typical cubby design. Lockers in the classroom may be considered for the kindergarten classrooms.
- A total of 20 feet of tackboard and 10 feet of magnetic whiteboard should be installed at eyelevel height for small children, with tack stripping along walls for display of student work.
- Each room must have a toilet room that is accessible from within the room and easily accessible from outside. The toilet room will contain a standard height toilet, a sink with child-height mirror, and soap and towel dispensers that are accessible to small children. The light switch should automatically turn on the vent fan.
- Each classroom should be equipped with window blinds per the MCPS design guidelines.
- Battery operated clocks will be installed.
- All classrooms should be equipped with a handicapped accessible sink with drinking bubbler.
- A full-length mirror should be installed.

---

## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Standard Classroom

- Each room must have an open classroom area with moveable furniture.
- 150 square feet of casework storage is needed in the classroom.
  - When possible there should be interconnecting interior doors between all classrooms.
- The computers should not be located next to a whiteboard where magnets might damage the hardware and software. Glare from the windows on the computer screens should also be eliminated as much as possible. Security for the computers should be planned in consultation with the MCPS DOC. Computer/technology wiring must be in accordance with DOC/MSDE/OCTO guidelines.
- Every classroom must have computer outlets for two student workstations and one teacher workstation. The building information and communications distribution system and other aspects of the building design must comply with the latest edition of MSDE *Maryland Public School Standards for Telecommunications Distribution System*.
- The architect should refer to the MCPS Facility Guideline Specifications for the main teaching wall layout.
- Thirty built-in individual compartments in the wardrobe area for storing student personal property are required. The architect should refer to the MCPS Facility Guideline Specifications for a typical cubby design for grades K-1 and grades 2-5. Lockers in the hallway may be used in place of the classroom cubbies.
- If lockers are designed for storing individual student property, the architect should design the facility with 700 lockers if the core capacity is 640 and 815 lockers if the core capacity is 740.
- All classrooms should be equipped with a handicapped accessible sink with drinking bubbler.
- A storage area is needed to hold at least two science kits (approximate 27" x 17" x 12" each) and one math kit in each classroom.
- General storage space must be built in and must accommodate 24 by 36inch paper and a 4-drawer file cabinet. Each classroom must include 48 linear feet of built-in adjustable shelving.
- A small lockable teacher's wardrobe must be provided, as per MCPS Facility Guideline Specifications.
- Designated shelf space, not near a window, for an aquarium/terrarium with nearby electrical outlet, is desirable.
- Each classroom should be equipped with window blinds. The specifications for the window blinds will be provided by DOC.
  
- Electrical and data outlets should be provided in the ceiling for a ceiling mounted LCD projector.
- Battery operated clocks will be installed.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- Shelving or cabinetry should be provided in every teaching station for the VCR and television. A school may choose to place the television and VCR on a cart. Appropriate CCTV receptacles and a duplex outlet should be provided nearby for the operation of the TV and VCR. Placement of the TV should be to maximize student viewing and not be unduly influenced by exterior or interior extraneous light.
- A school may consider reducing the size of each classroom to create small break-out rooms in the school. The number and design of these breakout rooms may be determined by school and MCPS staff.

---

## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Music Suite

Spatial Needs
Instrumental Music Room

### Instrumental Music Room

- A secure closet area is needed adjacent to the room for large instrument storage.
- A sink and countertop area should be provided for cleaning and repairing musical instruments.
- The Instrumental Music Room must be soundproofed.
- Doors into the instrumental music room must be wide enough to accommodate the passage of a piano.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Dual Purpose Room

- This room should be designed to accommodate both art and music activities in the school but with less detail than the regular art and music rooms.
- Some acoustical treatment should be provided in the room.
- One sink for student use should be provided along with some countertop area.
- No kiln area is needed and less shelving than described in the art room is to be provided.
- The exact details of the design should be discussed with the school staff and community.

---

## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Support Rooms

Spatial Needs
Pull-out Room for HSM
Small Instructional Support Room
Occupational Therapy/Physical Therapy (OT/PT) Room
Testing/Conference Room
Support Staff Offices
Conference Room

### Pull-out Room for HSM

- Room for a teacher's desk, lockable file cabinet, and assorted sized furniture is desired.
- Every classroom must have computer outlets for two student workstations and one teacher workstation. The building information and communications distribution system and other aspects of the building design must comply with the latest edition of MSDE *Maryland Public School Standards for Telecommunications Distribution System*.
- Approximately 10 to 15 linear feet of magnetic marker board and 10 to 15 linear feet of tack board, both with tack strips and map rails above the boards, should be installed in each classroom. Marker boards should be located so as to reduce glare. Tack strip is needed on all available walls. The architect should refer to the MCPS Facility Guideline Specifications for the main teaching wall layout.
- Each classroom must include built-in adjustable shelving under the windows.
- A small lockable teacher's wardrobe must be provided, as per MCPS Facility Guideline Specifications.

---

## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- This classroom should be equipped with a handicapped accessible sink with drinking bubbler. Cabinets should be provided above and below the counter area.
- Each classroom should be equipped with window blinds. The specifications for the window blinds will be provided by DOC.
- Each classroom should be equipped with a retractable projection screen (7' x 7'). The projection screen should not be mounted near any emergency lighting tracks. All areas of the screen should be illuminated and readable when the lights are dimmed.
- Electrical and data outlets should be provided in the ceiling for a ceiling mounted LCD projector.
- Battery operated clocks will be installed. The clock should not be mounted behind the projection screen.

### **Small Instructional Support Room**

- Room for a teacher's desk, lockable file cabinet, and assorted sized furniture is desired.
- Every classroom must have computer outlets for two student workstations and one teacher workstation. The building information and communications distribution system and other aspects of the building design must comply with the latest edition of MSDE *Maryland Public School Standards for Telecommunications Distribution System*.
- Approximately 10 to 15 linear feet of magnetic marker board and 10 to 15 linear feet of tack board, both with tack strips and map rails above the boards, should be installed in each classroom. Marker boards should be located so as to reduce glare. Tack strip is needed on all available walls. The architect should refer to the MCPS Facility Guideline Specifications for the main teaching wall layout.
- Each classroom must include built-in adjustable shelving under the windows.
- A small lockable teacher's wardrobe must be provided, as per MCPS Facility Guideline Specifications.
- This classroom should be equipped with a handicapped accessible sink with drinking bubbler. Cabinets should be provided above and below the counter area.
- Each classroom should be equipped with window blinds. The specifications for the window blinds will be provided by DOC.
- Each classroom should be equipped with a retractable projection screen (7' x 7'). The projection screen should not be mounted near any emergency lighting tracks. All areas of the screen should be illuminated and readable when the lights are dimmed.
- Electrical and data outlets should be provided in the ceiling for a ceiling mounted LCD projector.
- Battery operated clocks will be installed. The clock should not be mounted behind the projection screen.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Occupational Therapy/Physical Therapy (OT/PT) Room

- Each room must have whiteboard that is mounted two feet off the floor.
- A tack board, open and closed lockable storage, open shelving, and a lockable teacher wardrobe are required.
- A sink with counter space is required in the OT/PT room.
- Room for a teacher's desk, lockable file cabinet, and assorted sized furniture with adjustable legs should be provided.
- The OT/PT rooms should be wired for access to one computer workstation each.
- The OT/PT requires a ceiling mounted hook for a swing.

The OT/PT room requires lockable storage with sufficient area to house large gross motor equipment (minimum of 35 square feet) such as therapy balls, scooter boards, walkers, balance beams, ramps, etc.

### Testing/Conference Room

- School and/or central office staff test individual students or small groups of students. Typical testing includes psychological, diagnostic, vision/hearing, gifted, and makeup testing for required standardized tests. This room also will be used to accommodate posttest conferences with teachers and/or parents.
- This room should be designed as a secure room for testing materials and should have a counter with lockable cabinets above and below.
- This room needs acoustical treatment as well as video, voice, and data outlets.

### Support Staff Offices

- Office space is needed for permanent as well as itinerant support staff (curriculum coordinator, team coordinator, social worker, psychologist, auditory and vision specialists, and psychiatrist).



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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- A teacher's wardrobe should be provided for itinerant staff use.
- Video, voice, and data outlets should be provided.

### **Conference Room**

- The conference room is to have a whiteboard and tack board.
- The conference room should be equipped with a telephone jack and computer outlet.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Multipurpose Room and Platform

Spatial Needs
Multipurpose Room
Platform

#### Multipurpose Room

- The multipurpose room should have a ceiling height of 12–14 feet.
- A building service utility closet should be provided near the entrance to the multipurpose room for convenient lunch cleanups.
- Table storage and chair storage must be located adjacent to the multipurpose room.
- Exits from the multipurpose room must be sufficient to allow maximum seating.
- Toilet rooms and an electric water cooler should be near the multipurpose room to allow for public use.
- Audiences need to be able to hear and see presentations from all locations in the room.
- Ventilation equipment noise must not inhibit use of the space for auditorium purposes.
- Acoustical treatment is needed.
- Proper lighting and sound amplification are required.
- Each side of the risers at the multipurpose room floor level should be equipped with CCTV/data/voice/modem/electrical receptacles.
- Lighting, windows, fire alarm box, clock, and ceiling must be protected to prevent damage by balls.
- Outdoor play areas should be accessible from the multipurpose room. Children should not have to cross driveways or parking lots to access the play areas.
- An audio loop system should be provided for hearing impaired students; guidelines are available through the Division of Construction.
- An independent sound system should be provided in the multipurpose room.
- A call button to the main office should be provided.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### **Platform**

- The platform should have a proscenium opening 24 feet wide. The depth is to be 15 feet deep. The platform floor is to be three risers above the multipurpose room floor. A full set of platform curtains is to be provided. An 8'x10' motorized projection screen is to be provided. Platform steps must NOT be carpeted.
- The platform must be accessible to the physically handicapped.
- Each side of the platform should be equipped with CCTV/data/voice/modem/electrical receptacles.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Administration suite

The following spaces are provided for design purposes. In some options of the feasibility study, the administration suite is relocated to another location.

Spatial Needs
General Office
Workroom
Code Red/Code Blue Command Center
Principal's Office
Assistant Principal's Office
Conference Room
Telephone Room
Storage Room
Records Room

- The administration suite must be located with good access from the main entrance of the school and visual oversight of the main entrance and bus drop-off area.
- The suite must be a natural first stop for visitors to the school and must, therefore, have direct corridor access. A security vestibule must be designed so that all visitors must enter the general office to check in before entering the school.
- Spaces need to be arranged for student and visitor flow and for efficient use by office staff.
- The general office is to be treated as the center of the administration suite with direct access to the principal's office, the workroom, and the health suite.
- A coat closet is to be provided for office staff and visitors.
- The Administration suite should be carpeted.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- Sufficient electrical outlets are to be provided (where feasible, quadruplex outlets may be utilized) as well as CCTV receptacle for the general office, principal's, and assistant principal's offices.
- A glass display case should be located in the vestibule of the Administration suite entrance.
- The administration suite should be designed with separate toilet rooms. If the school chooses, one of these toilet rooms may be located in the principal's office.

### **General Office**

- A counter should be provided near the entrance to greet and separate visitors from staff and to provide a place to write.
- Space for two to three staff persons is required behind the counter.
- The general office should be equipped with a staff bulletin board.

### **Workroom**

- The location of mailboxes should not create congestion by impeding the smooth flow of traffic in the general office and hallways.
- Cabinetry appropriate for storing a variety of office and school supplies should be designed along one wall of the workroom.
- A portion of countertop is to be more than 30 inch wide to accommodate a large paper cutter.
- Space adequate for a large copying machine with necessary electric service and ventilation is required.
- A sink is needed in the workroom.
- There should be direct access to a corridor from the workroom.
- The workroom should be treated acoustically to keep machine and work noises at low levels.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Command Center

- An interior room in the school needs to be designated as the command center for Code Red/Code Blue emergencies. In many schools, the workroom in the administration suite may serve this purpose. The room cannot be on an outside wall.
- The room designated as the command center must have all data and communication equipment including data, cable, phone, and public address (PA) system.
- The PA console should be located in the room that is designated as the command center.
- Window coverings such as mini blinds or roller shades must be provided for all windows and doors to the command center.
- In secondary schools, the security camera monitors should be located in this area.
- The space designated as the Command Center must be large enough to accommodate up to six staff persons.
- Storage space is needed for the Code Red/Code Blue emergency kit.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### **Principal's Office**

- This office should be carpeted.
- This office should be equipped with a tack board and two-shelf adjustable bookcases under the windows. Each shelf must be able to hold a 12 inch notebook upright.
- The office should be directly accessible to the conference room through a connecting door.
- This office should have good visible access of the main entrance and to the bus drop-off area.

### **Assistant Principal's Office**

- This office should be carpeted.
- This office should be equipped with a tack board and two-shelf adjustable bookcases under the windows. Each shelf must be able to hold a 12 inch notebook upright.
- This office should have good visible access to the main entrance and bus drop-off.

### **Conference Room**

- The conference room should be carpeted.
- The conference room is to have a whiteboard, a tack board, and one bookcase.
- The conference room should be equipped with a telephone jack.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### **Telephone Booth**

- A small room where a teacher can talk privately on the telephone is required. (The room needs a door with a window, or a “phone in use” light.)
- This room should have a small built in countertop and room for one chair.
- This room should be carpeted.

### **Storage and Records Rooms**

- Two lockable rooms are needed for storage of office supplies and student records.
- The records room needs space for lockable file cabinets.

### **2<sup>nd</sup> Floor Workroom**

- This room requires appropriate electrical wiring and ventilation to house a copier for staff use.
- This room requires a work counter and cabinets under and over the counter for storing supplies.



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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Health Services Suite

Spatial Needs
Waiting Area
Treatment/Medication Area
Office/Health Assessment Room
Health Assessment/Isolation Room
Rest Area
Toilet Room
Storage Room

- The Health Services Suite should be in complete compliance with COMAR 13A.05.05.10A.
- The health suite must meet accessibility requirements of the ADA, and at a minimum, include spaces for waiting, examination and treatment, storage, resting, a separate room for private consultation and for use as the school health services professional's office, a toilet room, and lockable cabinets for storing health records and medications.
- A designated school health services professional must be involved in the planning of the health services suite.
- The architect should refer to MSDE document, *School Health Services*, June 2002 for specific utility information.
- The suite should be designed to provide easy visual supervision of all the spaces by the health services professional. The suite should be laid out so that an additional workstation for a health professional can be positioned near the treatment and waiting areas.
- In addition to access to the general office, the health services suite also must have a window into the general office so that office staff may monitor the room when health staff is unavailable.
- The health room also must have a door to the corridor.
- Ventilation is important throughout the health suite.
- The countertops should be seamless to aid in maintaining sanitary conditions.
- The floor finish should be an easily cleaned non-absorbent material. Carpet should not be used in any areas of the health suite.
- A non-porous ceiling material should be used. Vinyl-coated ceiling tile or painted drywall is an acceptable choice.
- If any of the areas are enclosed then glazed walls areas should be provided.
- The health suite requires wall and base cabinets, lockable file cabinets, for storing health records. A portion of these cabinets must be lockable to store medications, medical supplies, and equipment.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Waiting Area

- The waiting area should have space for four to eight chairs.
- A small tack board should be provided in the waiting area to display health care and other information of importance to students and staff.

### Treatment/Medication Area

- This area should be adjacent to the waiting area to facilitate the efficient flow of students.
- This area should have a kitchen type sink with cabinets above and below (including a locked medicine cabinet), a 34inch high countertop, and a small residential style refrigerator/freezer to store medical supplies and foods.
- A minimum of 12 linear feet of wall and base cabinets should be provided.
- The freezer should have an icemaker.
- The treatment area also requires a computer.

### Office/Health Assessment Room

- The room requires one computer, fax machine, and electronic connection and physical proximity to a copy machine.
- The spaces used for consultation and examinations must be enclosed with sufficient acoustical isolation to ensure complete privacy and confidentiality.
- A small sink, with cup, towel, and soap dispensers should be provided.

### Health Assessment/Isolation Room

- The spaces used for consultation and examinations must be enclosed with sufficient acoustical isolation to ensure complete privacy and confidentiality.
- A small sink, with cup, towel, and soap dispensers should be provided.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Rest Area

- This area should not be a fully contained room but rather an area that can provide privacy for each cot with a draw curtain on a ceiling track.
- The rest area needs space for two to four cots, and one bedside cabinet.
- There should be a separate privacy room within the rest area, with a door and space for a cot and a single pedestal desk and chair.
- In the rest area and privacy room, supplementary power ventilation capable of 20 changes per hour should be provided, with control by means of a separate switch within the health suite.

### Toilet Room

- One ADA toilet should be provided.
- The toilet room should be accessed without having to go through another functional space in the health suite such as a rest area.
- Ideally, students should be able to enter the health suite solely to use the toilet room without disrupting other activities.

### Storage Room

- The storage area is to have space sufficient for a four drawer locked file cabinet, a wardrobe for coats, and space for storing large items such as wheelchairs.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Site Requirements

The architect should use the following information as a guide if any of the site is disturbed with the addition.

- The architect should consider the architecture of the neighborhood in designing the building
- The site should be designed to provide a clear view of all play areas and to facilitate supervision from one location.
- Protective fencing may need to be provided near heavily wooded areas, busy streets, steep hills, parking lots and turnaround areas.
- Metal drains/grates should not be located in the playing fields, paved play areas and mulched playground equipment areas.
- Paved areas and fields must be as level as possible. Water should not collect on paved areas or in mulched areas. The architect should consider the architecture of the neighborhood in designing the building.
- The design should retain as many trees as possible in order to buffer the school and the playing fields.
- Pedestrian access must be provided from the surrounding neighborhoods.
- An unimproved area on-site should be designated to serve as an environmental study area in the future.
- A covered area for students in the bus loading area should be provided.
- Space for buses to load at one time is needed. The number of buses will be reviewed during the design phase in consultation with the Department of Transportation.
- Bike racks should be provided near the building.
- Playground equipment areas should not be located at the bottom of hills unless a provision is made to channel water away from the equipment areas.

### Driveway and Service Drive

- The architect/engineer should refer to the MCPS Facility Guideline Specifications when designing the driveway, bus loop, service drives, etc.
- Bus traffic should be separated from car traffic at all times, when possible. Bus loading zones should be able to accommodate the entire student body.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- A student drop off area should be provided and must be separate from the bus loop area.
- All driveways must be arranged so that children do not cross them to get to the play areas.
- Care for safety of students must be exercised in developing the driveways including use of safety rails in the bus loading area.
- Pedestrian access to the school facilities should be designed to make the best use of community right-of-ways and avoid crossing of loading zone areas.
- The site must comply with the most current ADA or COMAR regulations, whichever is most stringent.
- Site access must be provided to comply with fire protection and storm water management.
- Driveway aprons are to be perpendicular to the centerline of the street; and if there is an intersecting street on the opposite side from the proposed driveways, the driveway apron should line up with the intersecting street.
- Driveways should be located so that vehicle headlights do not project into adjacent homes.
- A service drive is required to service the kitchen, boiler room, and general delivery area. The architect should refer to the MCPS Facilities Guide.
- Site access must be provided to comply with fire protection and storm water management regulations.

### Parking

- Ideally, a minimum of 80 parking spaces should be designed initially for a school with regular staffing allocations, with future expansion possible. At schools with class-size reduction, 100 parking spaces should be provided.
- The parking area should be designed to maximize safety and minimize speed.
- Adequate lighting should be provided.
- Parking area should have two exits.
- Guardrails or bollards are to be installed to protect fields and play areas.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Landscaping

- Planting should include screen planting and other planting needed for erosion control.
- Existing plant stock, if on site, is to be evaluated for reuse and protected accordingly.
- Landscaping to support energy conservation and to relate the building to the site with aesthetic appeal must be included.
- Consideration should be given to safety and security when selecting plant materials.
- Provision for outdoor watering must be included.
- The landscaping plan should include areas for outdoors environmental education programs.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Physical Education Site Requirements

The items described below are for a school that meets the preferred site size of 12 usable acres. At schools with smaller sites, the architect is to work with MCPS staff, including the Physical Education Curriculum Coordinator, Safety Director, and school staff to determine layout of the play areas. The outdoor physical educational instructional space should not be compromised for playground equipment.

#### Softball Fields

- Two softball fields should be provided with the following design requirements:
- 250' radius, with a soccer field superimposed should be provided if possible. See below for the soccer field dimensions.
- The site size will determine the number and dimension of the softball fields.
- Softball fields should have metal benches protected by fencing for each team's use.
- The fencing and benches should not interfere with soccer field usage.
- The softball backstops (2) shall be in diagonal corners of the field or in corners on the same side. See the diagram in the MCPS Facilities Guideline Specifications.
- Softball infields are not skinned for elementary schools. However, one field may be skinned if it does not significantly impact the soccer playing area.

#### Soccer

- The site size will determine the size of the soccer fields. The elementary school size soccer field is 150'x240' however the minimum size field should be 105' x 180'.
- No permanent goals or temporary goals should be installed on the soccer fields.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### **Paved Play Areas**

- Two paved areas, 80' x 100' should be provided if the site permits.
- If located adjacent to one another, a grassy strip of at least 20' should be between the two paved areas.
- One area should have four basketball goals with appropriate striping (see diagram in the MCPS Facility Guideline Specification).
- A second area, designated for primary use, shall be striped according to drawings provided in the MCPS Facility Guideline Specification. On small sites, this paved area should be fenced for use by Grade Kindergarten students.



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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

### Kindergarten Paved Play Area

- A third paved area, at least 40'x 60' but preferably 80' x 100', is desired, is needed for the Kindergarten students.
- This area needs to be located adjacent to the Kindergarten playground (mulched) area and close to the other paved play areas.
- This area requires a fence around it or adequate separation from the other paved play areas.
- The area will be striped according to drawings provided in the Facility Guideline Specification.

### Playground Equipment Areas (mulched areas)

- One or two areas shall be provided near the playing fields and large paved play area for playground equipment. Each area should be approximately 40'x40'. The size and shape of the play area will be developed during the design process in consultation with MCPS staff.
- The area shall be level, bare ground, unseeded, and no sod. MCPS will provide equipment dimensions for these areas.
- An underground drainage system must be provided.
- The loose-fill surfacing material (engineered wood fiber) must meet ADA requirements. A border must be provided to contain the filler. The surfacing materials must meet or exceed safety specifications for shock absorbing qualities as outlined by US CPSC.

### Kindergarten Play Area (mulched area)

- A mulched kindergarten play area of 40' x 60' should be located adjacent to the kindergarten paved play area described in the physical education section for playground equipment. The size and shape of the play area will be developed during the design process in consultation with MCPS staff.
- The area shall be level bare ground, unseeded, and no sod. MCPS will provide equipment dimensions for this area.

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## APPENDIX B - EDUCATIONAL SPECIFICATIONS

- Protective fencing should enclose the area.
- An underground drainage system must be provided.
- The loose-fill surfacing material (engineered wood fiber) must meet ADA requirements. A border must be provided to contain the filler. The surfacing materials must meet or exceed safety specifications for shock absorbing qualities as outlined by US CPSC.

### Prekindergarten Play Areas

- If the school has a prekindergarten, Head Start, or Preschool Education Program, then a separate and fenced outdoor play is required.
- This area must be adjacent to the classrooms with access directly from the classrooms.
- If the school does not have a prekindergarten program than the outdoor play area should be master planned so that it can be added on at a later time.
- The prekindergarten play area should include a 40'x40' paved play area and a 40'x40' mulched area. The architect will consult with the MCPS staff on the design of the playground equipment.

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# APPENDIX C - EXISTING CONDITIONS SURVEY & CODE ANALYSIS

## EXISTING CONDITIONS

### CIVIL

#### Description Of Existing Facilities

The original building at 14516 Nadine Drive, constructed in 1965, was renovated in 1998, at which time the water service was replaced with a new 6” ductile iron service at the North property frontage, from the existing 8” water main in Nadine Drive. One on-site electrically-supervised hydrant was added in front of the building. The service provides both domestic and fire sprinkler systems in the building. The water meter is located inside the building. A new outside meter will be required in an underground vault per WSSC standards. The sanitary sewer flows through a manhole in front of the building, and then to the sanitary sewer under Nadine Drive. The electrical service was increased and placed underground at that time. Storm water retention was provided by an underground storage system adjacent to the Nadine Drive property line. The gas service runs parallel to the water service. An outside meter is located on the wall adjacent to the service entry. All utilities are of adequate size to serve the new addition.

### ARCHITECTURAL

#### Description Of Existing Facilities

The two-story existing building is predominantly of grade slab and masonry bearing-wall construction, with open-web steel joints and beams at the second floor and roof. Roof construction consists of steel deck with a built-up asphalt roofing system. Portions of the 1998 addition are steel-framed and all foundations are conventional spread footings at normal depths. Interior walls are constructed of painted concrete masonry. Major exterior material is face brick, with EIFS and metal panel infill at spandrels and fascia. Windows are aluminum framed insulating glass, in fixed and projecting configurations.

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# APPENDIX C - EXISTING CONDITIONS SURVEY

## EXISTING CONDITIONS

### MECHANICAL

#### General

Lucy V. Barnsley Elementary School is located at 14516 Nadine Drive, Rockville, Maryland, 20853. The original building was completed in 1965. Additions were constructed in 1968 and 1998 when the school was also revitalized. A gymnasium was added in 1999. The building contains 72,024 gross square feet of space. Work in the existing building will be limited to what is necessary to accommodate reassignment of spaces to meet the educational specifications for the preferred option. A second set of doors will be added at the entrance lobby to provide a secure vestibule.

The classroom addition will be designed with a stand-alone HVAC system. High efficiency incremental heating and air conditioning systems will be evaluated during the design phase. Ventilation air will be introduced via a stand alone Dedicated Outside Air System (DOAS) or through incremental units.

#### HVAC System

The heating, ventilating, and air conditioning (HVAC) system in the existing school is generally as originally installed. Hydronic system is a dual temperature two (2) pipe system. The system consists of 4 air handler units (AHUs), unit ventilators, fan coil units, and cabinet heaters. Two of the air units provide supply air to variable air volume (VAV) terminal units in the Media Center and the Administration areas, while two other units are zoned for constant volume systems in the Multipurpose room and Gymnasium areas. Classrooms are served primarily by unit ventilators with dual chilled/hot water coils. The Media Center and Administration air unit have both chilled/hot water coils and direct-expansion (DX) cooling coils. Heating is also provided in VAV terminal unit hot water coils. The kitchen and dry storage areas have small DX cooling and hot water heating AHUs. Miscellaneous unit heaters and cabinet heaters are present in limited quantities.

There are several exhaust fans on the roof that appear to be in fair condition. These fans should be checked to ensure that they are operating since most were installed during the 1998 renovation. Consideration should be given to replacing all exhaust fans.

#### Heating System

There are two boilers installed in the boiler room. Each boiler is a Kewanee three-pass conventional steel boiler (Model L53W-SO-G) with a gas fired forced draft burner. Each 50-BHP boiler has a natural gas input of 1,674,000 btu/hr, providing hot water at 180 degrees. The boilers are piped to a common manifold allowing both boilers to operate when the highest heating demand is required. Each boiler metal breaching extends through the boiler room roof. Two base-mounted lead-lag 5-HP centrifugal pumps provide hot water circulation, with an air separator and atmospheric expansion tank. Two additional 5-HP pumps circulate hot water to heating only units. Pumps and motors appear to be original.

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## APPENDIX C - EXISTING CONDITIONS SURVEY

### Cooling System

The AHU's serving the Classrooms and Multipurpose Room are supplied with chilled water by a 175-ton water-cooled McQuay electric air-cooled chiller, using R-22 refrigerant, which is no longer allowed in new equipment. Dual temperature water is circulated through the building by a 20-HP base-mounted centrifugal pump. A 20-HP stand-by pump is provided. Chilled water is circulated through the chiller by a base-mounted 115-HP centrifugal pump. Pumps and motors appear to be original.

### Control System

The control system for the building is pneumatic, using a single air compressor, installed with a small storage tank and a refrigerant air dryer. It appears that all operating controls are pneumatic, but controls are connected back to MCPS central monitoring through Andover DDC controls.

### Plumbing Systems

Domestic hot water is generated by a 100-gallon atmospheric gas-fired water heater. The heater was manufactured by AO Smith and is equipped with a 75,000-btu/hr gas burner that produces 68.3 gallons per hour recovery. The heater appears to be original. There is a small domestic hot water circulator that keeps hot water in circulation throughout the building and ready when needed. The system is not equipped with an expansion tank or mixing valve used on new systems today.

The 6-inch water service is a combined domestic water/fire sprinkler service

Plumbing fixtures appear to be in fair to poor condition in the building. The original fixtures are floor-mounted water closets, wall-hung urinals and wall-hung lavatories. There are minimal provisions for compliance with the Americans with Disabilities Act (ADA).

### Fire Protection System

The school building is sprinklered throughout. Smoke detectors are present on all air-handling units.

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# APPENDIX C - EXISTING CONDITIONS SURVEY

## ELECTRICAL

### Power Distribution

The school is fed from a PEPCO transformer located outside next to the building. The service is labeled as 1600 amps. Service is 277/480 volt, three-phase. The service enters through a CT section and goes into a Cutler Hammer make Pow-R-Line switchboard. There is a space available in the switchboard to serve the new building.

Branch circuit panelboards and step-down transformers are located in several storage closets throughout the building, all are of original construction

### Emergency Power

Emergency power is provided to the school from a 35kW Generac diesel generator with 60A MCB. The generator serves a 100 amp, 480 volt three-pole automatic transfer switch in a building electrical room, which in turn, serves the emergency power panelboard HEM. HEM serves a small transformer which serves 208Y/120 volt panel LEM1 which in turn serves FACP and all emergency loads. Today MCPS standards require that selected optional loads, such as walk-in boxes and heating, be provided with generator standby power. This cannot be accomplished with the existing generator. The emergency loads connected to the generator consist of emergency and exit lights and the fire alarm system.

The fire alarm system, manufactured by Edwards, includes audio-visual signaling devices throughout the building. On the day of field survey we were told that fire alarm system will be replaced this year.

### Portable Classrooms

A 200 amp, 480 volt feeder is provided (served from switchboard) to serve the portable classroom load. 200 amp FSS serves 112.5kVA XFMR which serves a 400 amp panel. The 400 amp panel serves nine portables with each having a 125 amp, 2-pole breaker.

### Lighting

Fluorescent lighting is used throughout the school. Classroom lighting is 2' x 4' four-tube fluorescent fixtures; 2' x 2' U-tube fixtures are used in corridors. These lensed fixtures do not use today's energy efficient lamps so electric usage will be higher on this school due to the fixtures. The existing lighting fixtures cannot be retrofitted with T-5 or T-8 lamps without major modifications. Lighting throughout the school should be replaced with present day energy efficient fixtures, which will reduce power consumption and electric bills.

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## APPENDIX D - EXISTING PHOTOS



Front of building from bus loop



Classroom wing viewed from bus loop



Classroom wing viewed from bus loop



Stair at southeast end from bus loop

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# APPENDIX D - EXISTING PHOTOS



Stair from lower end of bus loop to playgrounds



Stair from bus loop to classroom wing



Hard surface playground at south end



Hard surface playground and relocatable classrooms



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## APPENDIX D - EXISTING PHOTOS



Pedestrian walkway at media center



Embankment between bus loop and Nadine Drive



View of front entrance



View of staff parking/loading area and student drop-off loop

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# APPENDIX D - EXISTING PHOTOS



View of gymnasium and drive lane to relocatables



View looking east toward classroom wing



View looking toward classroom wing across terraced open space



Looking toward first floor exit from lobby to the back of the school

## APPENDIX D - EXISTING PHOTOS



Stair from gymnasium to relocatables and play fields



Existing boilers



Gas service



Main electrical panel



Outdoor air cooled condenser unit in sound lined enclosure

