



February 12, 2009

**MEMORANDUM**

**TO:** Montgomery County Planning Board

**VIA:** John A. Carter, Chief *JAC*  
Urban Design and Preservation Division

**FROM:** Kathleen A. Reilly, AICP, Planner Coordinator (301/495-4614) *KAR*  
Vision/Community Based Planning Division

**SUBJECT:** Mandatory Referral No. 08404-MCPS-1: Cabin John Middle School  
Modernization Project -10701 Gainsborough Road, R-90 Zone,  
2002 Potomac Subregion Master Plan

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**RECOMMENDATION:**

Approval to transmit the following comments to Montgomery County Public Schools:

1. Provide a traffic study for any future building additions if the school's core capacity is increased above 1,200 students.
2. Discourage parent drop-off/pick-up of students along Gainsborough Road and Bells Mill Road.
3. Notify Community Use of Public Facilities six months in advance of construction that will prohibit community use of playing fields.

**Project Summary**

Montgomery County Public Schools (MCPS) has submitted a Mandatory Referral to modernize the existing Cabin John Middle School. The project will consist of demolishing the existing school and constructing a new school on the same site located at 10701 Gainsborough Drive in Potomac.



## **Project Description**

The proposed school will consist of approximately 159,514 square feet and be approximately 40 feet in height. The building's first floor will contain approximately 119,810 square feet and the second floor will contain approximately 39,704 square feet. Access to the school will be provided in the following manner: two driveways along Bells Mill Road will serve as a drop off and pick up locations for school buses and one driveway along Gainsborough Road will serve as the entrance to staff parking and for parents to drop off or pick up students. A total of 100 parking spaces and 20 bus parking bays are proposed for this site. The proposed school will have a capacity to accommodate up to 1,200 students. The basketball and tennis courts and athletic fields will be renovated under this proposal.

## **Existing Site**

Cabin John Middle School is located on the northeast corner of the intersection of Gainsborough Drive and Bells Mill Road. The existing school was constructed in 1968. The site contains approximately 18.2 acres of R-90 zoned land and is developed with a 120,788 square foot one-story middle school, surface parking for 100 vehicles, five basketball courts, and five tennis courts and several athletic fields. The property also contains the Georgetown Hill Day Care Center, which is adjacent to and east of the proposed school. This facility is a separate building and is not part of the mandatory referral application. It is separated by an existing trees and vegetation.

For the school year 2008-09, the existing school has an enrollment of approximately 875 students in sixth grade through eighth grade. The hours of operation for the school are from 7:00 a.m. to 3:00 p.m. Access to the site is from a driveway on Gainsborough Road which provides the ingress and egress for staff parking and for parents driving students to and from school. Two driveway entrances on Bells Mill Road will serve as ingress and egress points for bus traffic and also serve as areas for staff parking.

The properties north, south and west of the school property are zoned R-90 and are developed with single family detached dwelling units. The properties northeast of the school are developed with single family attached dwelling units and are also zoned R-90. East of and immediately adjacent to the property is the Bells Mill Elementary School which is zoned R-90. Presently, this elementary school is also undergoing modernization.

The property has 1,420 feet and 1,130 feet of frontage along Gainsborough Drive and Bells Mill Road, respectively. The site slopes from the northeast property corner to the southwest property corner with an approximate grade differential of 35 feet. The existing site is developed in three tiers. The first tier of the existing site contains the school and associated parking areas, the second tier is slightly higher as it wraps around the school building and contains the basketball and tennis courts. The third tier is reached by stairs adjacent to the tennis courts and contains the athletic fields.

## ANALYSIS

### Master Plan

The Cabin John Middle School is located within the 2002 Potomac Subregion Master Plan area. The Master Plan has a community facilities chapter which addresses the need for new schools. While the Plan does not have specific comments or recommendations regarding this specific site, it does state the following:

*The need for new schools is determined by both the capacity of existing schools and the projected increase in student enrollment. The Board of Education programs funds for school modernization through its capital budget with funds set aside to improve the quality of existing schools and to build new schools. As growth has varied in each of the Subregion's four community areas, so has school capacity.*

One of the recommendations contained in the Potomac Master Plan is to:

*Support Montgomery County School Board Capital Improvement Program:*

Presently, there are four portable classrooms on the school site. The proposed modernization of Cabin John Middle School will increase the school's student capacity and it is consistent with the Potomac Master Plan recommendation of supporting the MCPS capital improvement program. Staff recommends approval of this mandatory referral.

### Zoning Analysis

The site is zoned R-90 and the following chart depicts the requirements of this zone.

Development Standards	Zoning Requirement	Provided
Minimum Net Lot Area	9,000 square feet	18.2 acres
Minimum Lot Width at Street Line	25 feet	1,130 feet
Minimum Setbacks		
Front	30 feet	100 feet
Side/Sum	8/25 feet	675 feet
Rear	25 feet	250 feet
Maximum Building Height	35 feet	40 feet
Maximum Lot Coverage	30%	20%

Section 59-A.5.42 of the Zoning Ordinance allows public buildings to be constructed up to a height of 120 feet, if the minimum front, rear and side yard requirements is increased one foot for each one foot the height exceeds the height requirements established in the zone. In the R-90 Zone, the height requirement is 35 feet and Cabin John Middle School will be 40 feet in height. According the submitted site plan, the front, rear, and side yard dimensions will be in excess of the additional five feet required to compensate for the proposed 40' height. Thus, as submitted and shown on above chart, the new school will satisfy the requirements for the R-90 zone. The proposed school replaces the existing school on this property. Design of the proposed school will be

compatible with the surrounding neighborhood in terms of appropriate building setbacks for the increased height and additional landscaping and screening materials.

## **Environmental**

The Environmental Planning Unit of the Countywide Planning Division recommends transmittal of the Mandatory Referral and offers comments in the following paragraphs. Under a separate memo Environmental Planning staff recommends approval of the preliminary forest conservation plan with conditions.

**Steep Slopes** – One of the major challenges of redeveloping this site is the topography. There are more than 1.8 acres of steep slopes and a substantial amount of grading is necessary to accommodate the increased program size. Currently, the school is developed in three tiers separated by steep slopes. The first tier is composed of the school building and relates to the surrounding roads and houses at an elevation of approximately 318 feet. The second tier is separated by a series of steep slopes and is at an elevation of 324 to 326 feet. The basketball and tennis courts are on this tier. The third and final tier is the athletic fields which are at an elevation of 338 feet and separated from the ball courts by steep slopes. From the north to south, there is an elevation change in excess of 20 feet in some places. From east to west, there is an elevation change in excess of 35 feet. While the soils are not highly erodible, the slopes on this site make redevelopment and expansion of the school very challenging.

In response to this challenging site, MCPS has designed the proposed middle school that is two tiered and makes use of retaining walls. This allows the tennis and basketball courts to be on the same level as the school building, with the ball fields at a higher elevation. The school and ball courts are at an approximate 324 foot elevation and separated from the ball fields by retaining walls as high as 18 feet in some locations. Other retaining walls are necessary to accommodate slopes due to the increase in school facilities. These retaining walls range from 12 feet high to a pair of retaining walls six feet and ten feet in height. As proposed, there are more than 868 linear feet of retaining wall necessary for this redevelopment. The grading for this site balances the amount of cut and fill.

**Sustainability** – Montgomery County has a number of goals that work towards the goal of creating a sustainable community. These goals include, but are not limited to, reducing the carbon footprint of proposed development and promoting walkability. In order to meet the Countywide goals, individual projects will have to positively contribute to creating sustainable development. Public projects should lead the way in promoting sustainability, as the public will reap the rewards in the long term, and give example to private development and future leaders of its multiple benefits.

**Walkability** – From a walkability standpoint, this site is within an existing residential community. There are approximately 7200 dwelling units within the boundaries for Cabin John Middle School. Even though an appropriate middle school walking distance is generally considered to be one and a half miles, only approximately 1600 dwelling units are within the walking area delineated for this school. This is due to a number of factors which include the location of the school within the boundaries, the configuration of school boundaries with ‘islands’ (detached areas served by this school), and the locations of sidewalks and barriers near

the school. Even parkland serves as a de facto barrier, necessitating the busing of children from locations less than a third of a mile from the school. MCPS is not responsible for the development of sidewalks off school property but does make recommendations to the appropriate agencies.

As part of the ongoing Bells Mill Elementary School replacement project and the proposed Cabin John Middle School modernization project, MCPS and Montgomery County Department of Transportation (DOT) are proposing to jointly reconstruct an existing, sub-standard four-foot wide sidewalk along the north side of Bells Mill Road (with missing sections) between Deborah Drive (east of Bells Mill Elementary School) and Gainsborough Road as a five-foot wide sidewalk. While these improvements will not increase the number of students within the walking area, it may increase the number of students within that area that walk, instead of being driven to school.

**Carbon Footprint** – In order to meet the requirements of Chapter 22A Montgomery County Forest Conservation Law, MCPS will be planting more than two acres of forest and tree cover. These new plantings will also serve to sequester greenhouse gasses generated and to reduce the carbon footprint. This is an important part of a long term carbon mitigation strategy.

**Environmental Guidelines** – The applicant submitted and received approval of a Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) number 420081030 on March 31, 2008.

**Forest Conservation** – This property is subject to the Chapter 22A Montgomery County Forest Conservation Law and a Forest Conservation Plan has been submitted for approval. There is 1.67 acres of upland forest in four separate stands on the subject property. The forest is all of moderate priority for retention, with invasive management issues. 0.73 acres of forest will be cleared and 0.94 acres of forest will be retained through the redevelopment of this school. There is a planting requirement of 2.52 acres which will be met through a combination of on-site forest planting and landscape credit and off-site planting or protection. A Category I easement will be placed over all areas of forest retention and planting. The Forest Conservation Plan also addresses invasive management issues. There is a large stand of ailanthus (tree-of-heaven) that will be eradicated as part of this plan.

**Tree Save** – There are approximately 21 large or specimen trees on the property, including one tree within 75 percent of the size of the current County Champion for that species and one tree within 75 percent of the size of the current State Champion for that species. A mockernut hickory tree is 28 inches DBH (diameter at breast height), while the County Champion mockernut hickory is approximately 33 inches DBH. A Virginia pine is 23” DBH, while the State Champion Virginia pine is 30 inches DBH. There is no County Champion for this species. The entire critical root zone of both of these trees will be protected. Both the Virginia pine and mockernut hickory will be protected during the construction process. Approximately eight large or specimen trees will be removed as part of the demolition and construction of the new school.

**Stormwater Management** – A stormwater Management concept plan was approved by the Department of Permitting Services on October 30, 2008. The stormwater management concept consists of on-site channel protection measures via underground pipe storage, and on-site water

quality control via five biofilters and eight volume-based Stormfilters that are fed by flow-splitter manholes. Onsite recharge is not required for redevelopment.

**Green Buildings** – This project will need to comply with County Council Bill 17-06, Montgomery County Green Buildings Law. MCPS is seeking LEED (Leadership in Energy and Environmental Design) Silver Certification for this project. The re-use of the existing site saves valuable undisturbed land and trees while maximizing open space. The applicant will use regionally (within 500 miles) manufactured materials that will reduce the negative impact of transportation. Landscaping with indigenous plants will require little maintenance or irrigation. Additional water saving technology in the form of waterless urinals and dual flush toilets can be found inside. A variety of economic benefits including savings in energy and water through the use of highly efficient fixtures and a geothermal-based mechanical system will result in reduced maintenance and operational costs and the conservation of natural resources. Additionally, another environmental benefit of this site design is that the proposed grading produces a balanced site. This means the volume of soil cut equals the volume of fill required. Having a balanced site reduces the amount of truck traffic and potential for sediment escape.

Finally, while a vegetated roof is not required to meet LEED certification or stormwater management requirements, it is strongly recommended that MCPS use this type of green roof on school modernization projects. This is especially critical on sites that have difficulty providing above ground water quality control due to configuration or size.

**Water Quality** – The property is located in the Bucks Branch subwatershed of the Cabin John watershed. The *Countywide Stream Protection Strategy* (CSPS) assesses this tributary as on the margin between good and fair. Flow-related bank stability and sediment deposition problems are affecting in-stream habitat. This stream currently supports the most diverse fish community of all the tributaries. This is a Watershed Protection Area – remedial, that is a priority for protection.

### **Transportation**

The Transportation Planning staff reviewed this application and offers the following comments.

1. Provide a traffic study for any future building addition if the school's core capacity is increased above 1,200 students.
2. Discourage parent drop-off/pick-up of students along Gainsborough Road and Bells Mill Road.

**School Location, Area Roadways, Pedestrian Facilities, Public Transportation** - Cabin John Middle School is located in the northeast quadrant of the intersection of Gainsborough Road and Bells Mill Road in Potomac. This site is located west of and adjacent to Bells Mill Elementary School where a replacement school building is under construction. The modernized middle school will have a core capacity to accommodate 1,200 students.

Gainsborough Road is a north-south primary residential street between Seven Locks Road to the north and Democracy Boulevard to the south, and it has a posted speed limit of 25 mph in the

vicinity of the school. Stopping and U-turns are prohibited along Gainsborough Road between 7:30 a.m. to 8:30 a.m. and 2:15 p.m. to 3:15 p.m. on school days. Bells Mill Road is an east-west primary residential street between Seven Locks Road and Falls Road, and it has a posted speed limit of 30 mph in the vicinity of the school. Stopping and U-turns are also prohibited on school days along Bells Mill Road.

The intersection of Gainsborough Road and Bells Mill Road has an All-Way STOP sign control. Cross-walks are provided across the north, east, and south legs of the intersection. Pedestrian and school warning signs currently exist along both the Gainsborough Road and Bells Mill Road approaches to the school.

Currently, four-foot wide sidewalks exist along both sides of Gainsborough Road between Bells Mills Road and Seven Locks Road. To the south of Bells Mill Road, a four-foot wide sidewalk is provided along the east side of Gainsborough Road to Democracy Boulevard. As part of the ongoing Bells Mill Elementary School replacement project and proposed Cabin John Middle School modernization project, MCPS and the Montgomery County Department of Transportation (DOT) are proposing to jointly reconstruct an existing, sub-standard four-foot wide sidewalk along the north side of Bells Mill Road (with missing sections) between Deborah Drive (to the east of Bells Mill Elementary School) and Gainsborough Road to a five-foot wide sidewalk. Adequate lead-in sidewalks will also be provided to Cabin John Middle School from Gainsborough Road and Bells Mill Road and the adjoining neighborhood.

Gainsborough Road is served by RideOn Route 38 and has stops near the Cabin John Middle School. There are no buses along Bells Mill Road.

**School Access, Circulation, and Parking** - Presently, access to Cabin John Middle School is provided via two circular driveways, one from Bells Mill Road and another circular driveway from Gainsborough Road. These driveways operate in a one-way counter-clockwise direction. The Bells Mill Road driveway currently accommodates student drop-offs and pick-ups, as well as staff parking. There are 55 parking spaces in this area.

Field observations included in the traffic study prepared by the applicant's consultant indicated that drop-offs occurring on-site during the morning student drop-off peak period extended at times onto Bells Mill Road. These queues extended up to 13 vehicles on westbound Bells Mill Road and 15 vehicles on eastbound Bells Mill Road, for a total queue of 43 vehicles. During the evening student pick-up peak period, up to 19 queued vehicles were observed on westbound Bells Mill Road and one queued vehicle was observed on eastbound Bells Mill Road, for a total queue of 35 vehicles. Peak activity at the school during the morning drop-off period is concentrated, since the school is not open for drop-offs until approximately 7:35 a.m.

Presently, buses utilize the circular driveway on Gainsborough Road. Only buses are allowed to use this driveway during the drop-off and pick-up periods. There were no queuing problems observed on this driveway. There is also a staff parking lot with 45 spaces that is accessed from the northern driveway off Gainsborough Road. This driveway accommodates two-way traffic.



This application proposes modifications to the school's parking, drop-off/pick-up queuing, circulation patterns and school bus access to accommodate future demands for the school's core capacity of 1,200 students. Under this plan, all staff and visitor parking, approximately 100 spaces, is proposed to be relocated along the Gainsborough Road side of the campus, and will be accessed via a driveway from this roadway. During peak morning drop-off and afternoon pick-up activity, queuing will begin at the driveway, continue through the parking aisle and follow in a counter-clockwise pattern that will not be in conflict with parked vehicles. This circulation pattern will simplify the drop-off/pick-up operation and provide for extended off-street queuing distance. The available on-site queuing distance for drop-offs/pick-ups associated with this pattern is approximately 1,015 feet, compared to approximately 425 feet that is currently available. The 1,015 feet, which equates to approximately  $(1,015/20) = 50$  vehicles, is greater than the maximum queue of 43 vehicles that was observed at the school during the morning peak. The school buses will be relocated to the Bells Mill Road side of the school, where the buses will enter the campus at the eastern driveway and proceed in a counter-clockwise direction. There will be no student pick-up/drop-off activity or staff parking in this lot during school hours.

**Master Plan Roadways** - The Approved and Adopted Potomac Subregion Master Plan describes the following nearby master-planned roadways:

1. Gainsborough Road, as a two-lane primary residential street (P-17) with a recommended minimum right-of-way width of 70-feet, between Democracy Boulevard and Seven Locks Road.
2. Bells Mill Road, as a two-lane primary residential street (P-10) with a recommended minimum right-of-way width of 70-feet, between Falls Road and Seven Locks Road.

**Local Area Transportation Review** - The 2007 *Local Area Transportation Review (LATR) and Policy Area Mobility Review (PAMR) Guidelines* require a traffic study for all uses that generate 30 or more total peak-hour trips during the typical weekday morning (6:30 a.m. – 9:30 a.m.) and evening (4:00 p.m. – 7:00 p.m.) peak periods. Under Section II.C.1 of the *Guidelines*, a full LATR study is waived within the Potomac Policy Area if a particular use will not impact specific intersections that are identified in the *Guidelines*. Since school related traffic would not affect these intersections, a full LATR traffic study is not required for this MCPS project.

Staff requested that the submission for this project include: documentation and analysis of internal school traffic circulation, external student drop-offs and pick-ups, existing and projected queuing along school driveways, operation of school driveway intersections with Gainsborough Road and Bells Mill Road, and operation of Gainsborough Road and Bells Mill Road intersection during the morning and afternoon peak school arrival/dismissal hours.

Using trip generation rates developed for the existing school, the traffic study estimated that the proposed modernization project including an increase in core capacity up to 1,200 students would result in 192 additional trips to the school during the morning school peak-hour and 86 additional trips during the afternoon school peak-hour. The traffic study also indicated that the

proposed school with a core capacity for 1,200 students will operate satisfactorily during the weekday morning school drop-off and afternoon school pick-up peak periods.

## **Parks**

The Park Planning and Stewardship staff has reviewed this mandatory referral and offers the following comment. Cabin John Middle School's ballfields are maintained by the Montgomery County Parks Department under the Ballfield Initiatives maintenance contract. MCPS should notify Community Use of Public Facilities (CUPF) six months in advance of any construction that will prohibit scheduled community use of the playing fields. Once the MCPS installs the geothermal wells under the ballfields, those fields will need to be restored to playable condition when the school reopens.

## **Community Notification**

MCPS developed and evaluated design alternatives through a series of conferences with the Facility Advisory Committee. The committee reviewed and modified these plans and ultimately approved the plans submitted as part of this application. Staff mailed notices to residents abutting, adjoining and confronting the school, and civic associations within a one-mile radius of the site regarding this mandatory referral hearing.

## **CONCLUSION**

Based on information provided by the applicant and the analysis contained in this report, staff concludes that the Mandatory Referral meets the applicable standards and guidelines for the environment, the applicable guidelines for adequate public facilities as well the development standards for the R-90 zone. Staff recommends approval of the mandatory referral with comments listed at the front of this report.

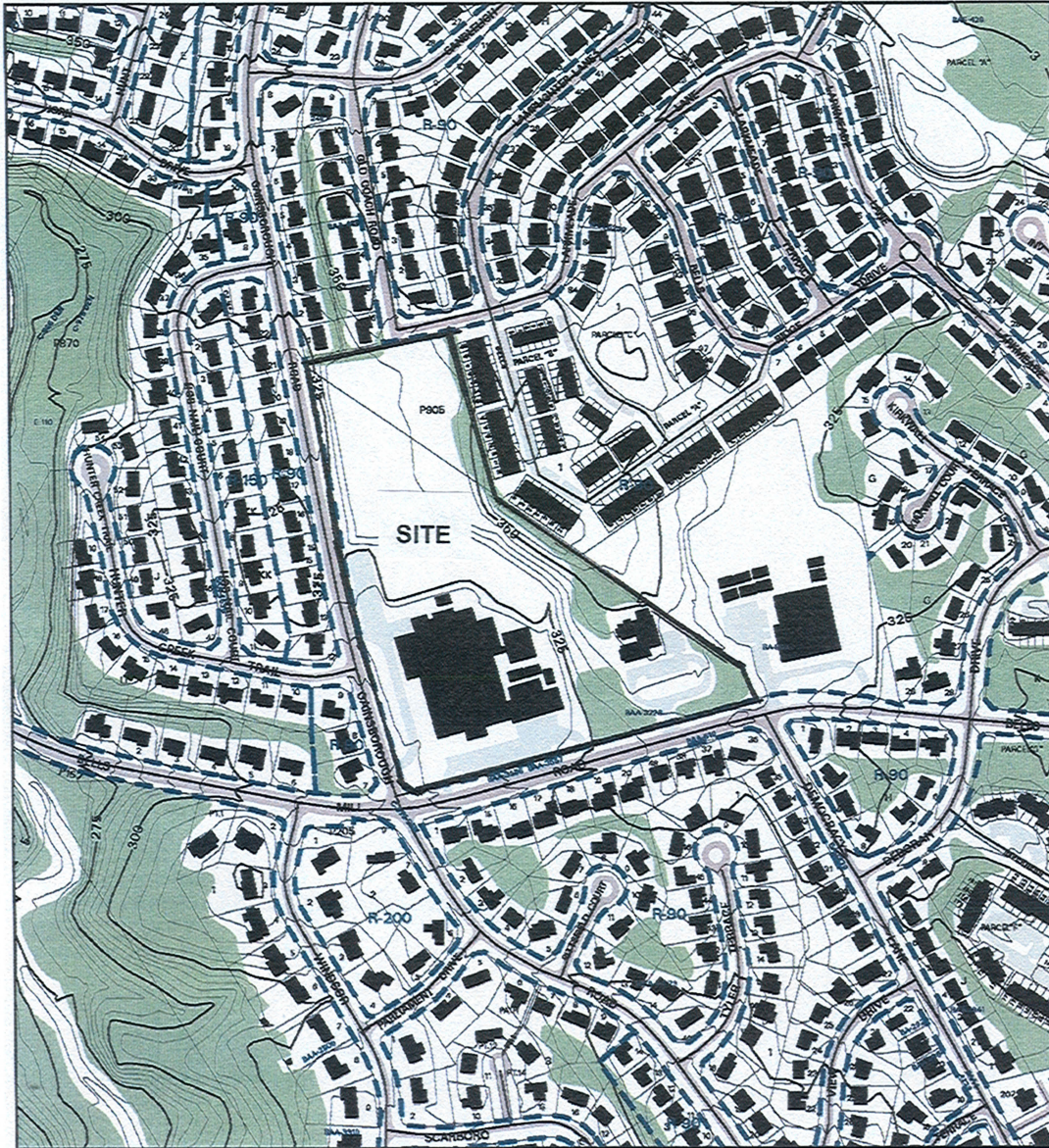
### **Attachments:**

1. Vicinity Map
2. Zoning Map
3. Existing Site Plan
4. Proposed Site Plan
5. Proposed Ground Floor Plan
6. Proposed Second Floor Plan
7. Proposed Building Elevations

M:\Reilly\cabin john middle report

# ATTACHMENT 1 VICINITY MAP

## CABIN JOHN MIDDLE SCHOOL



Map compiled on January 26, 2009 at 11:51 AM | Site located on base sheet no - 213N1W08

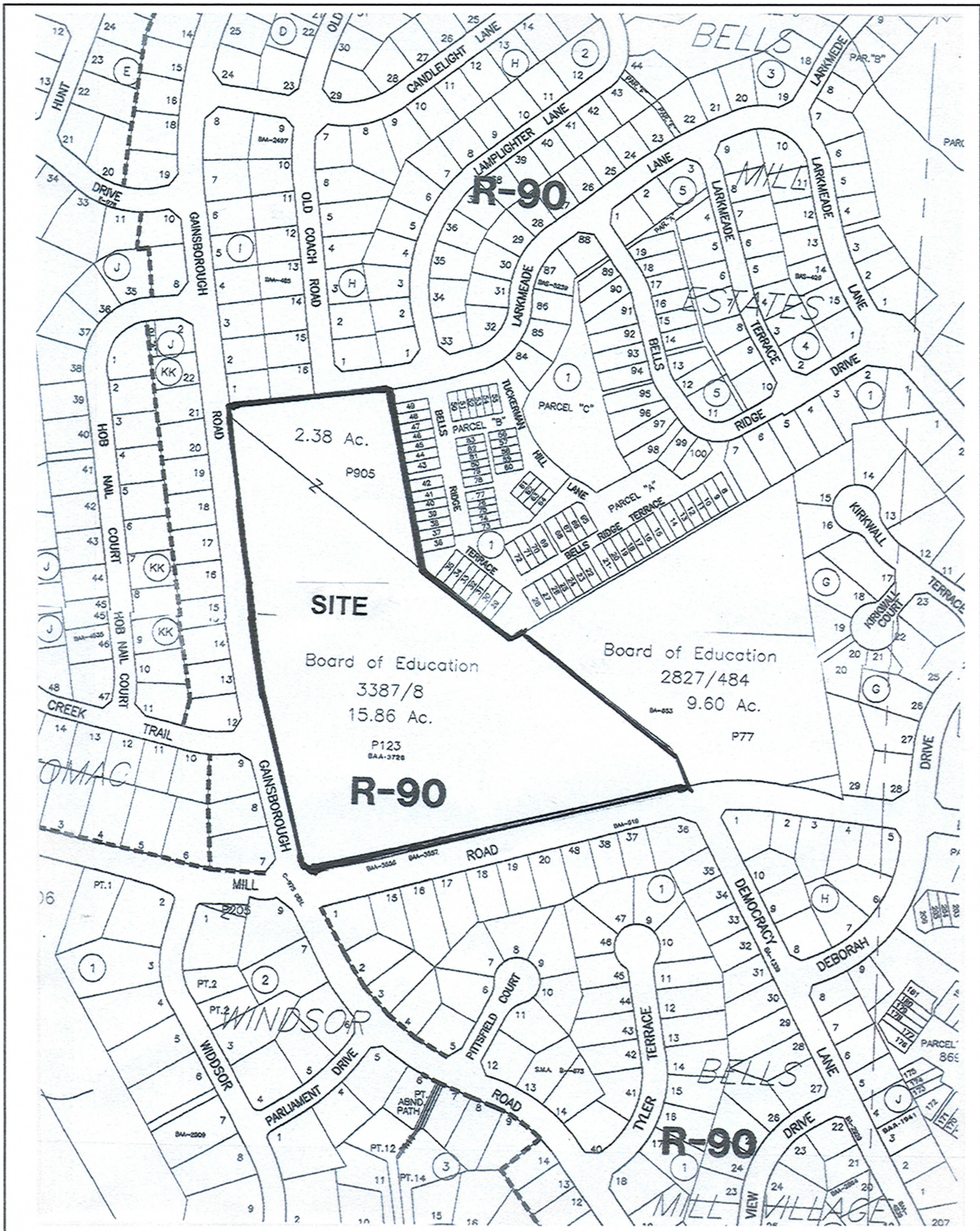
### NOTICE

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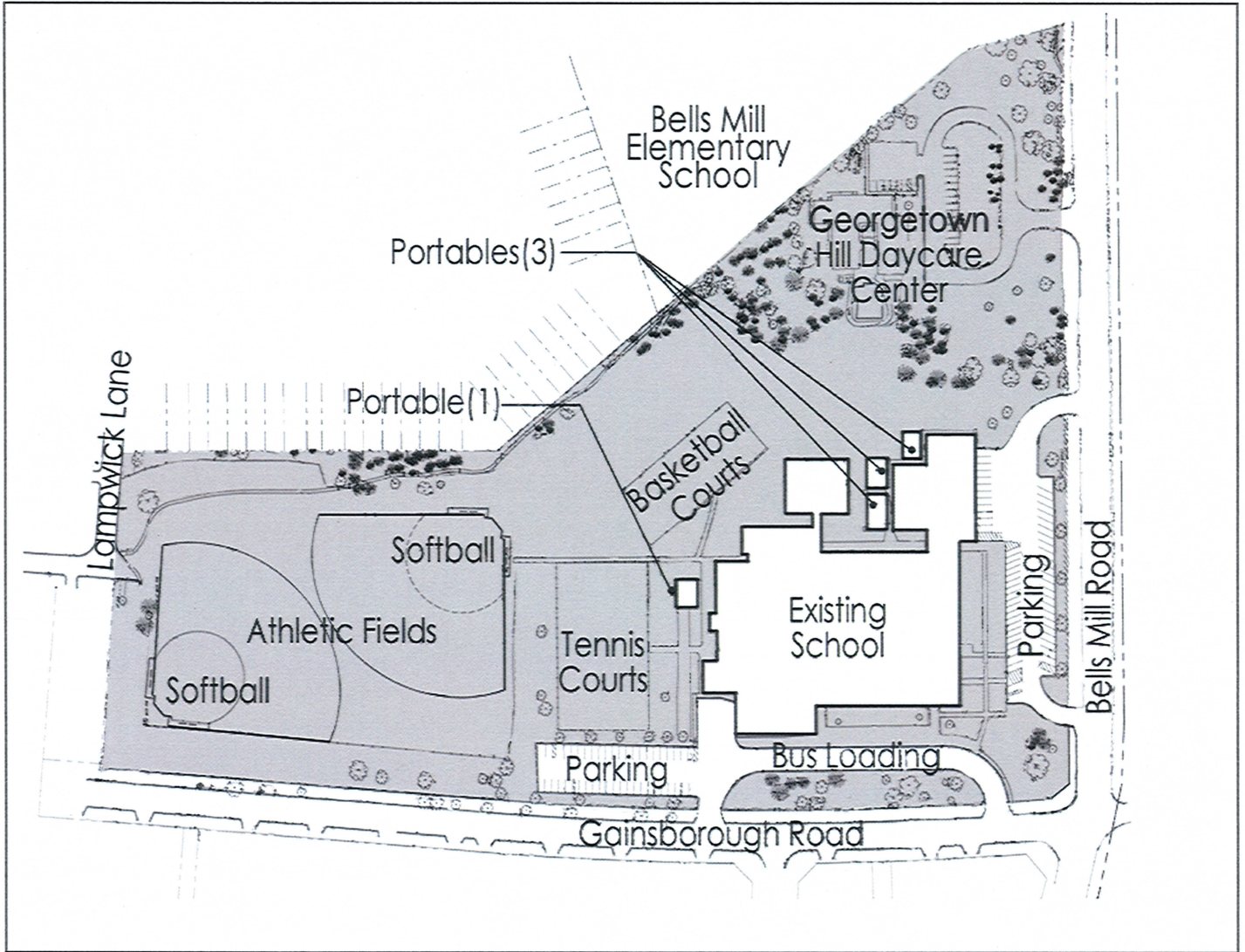


**MONTGOMERY COUNTY DEPARTMENT OF PARK AND PLANNING**  
 THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION  
 2787 Georgia Avenue - Silver Spring, Maryland 20910-1750

# ATTACHMENT 2 ZONING MAP



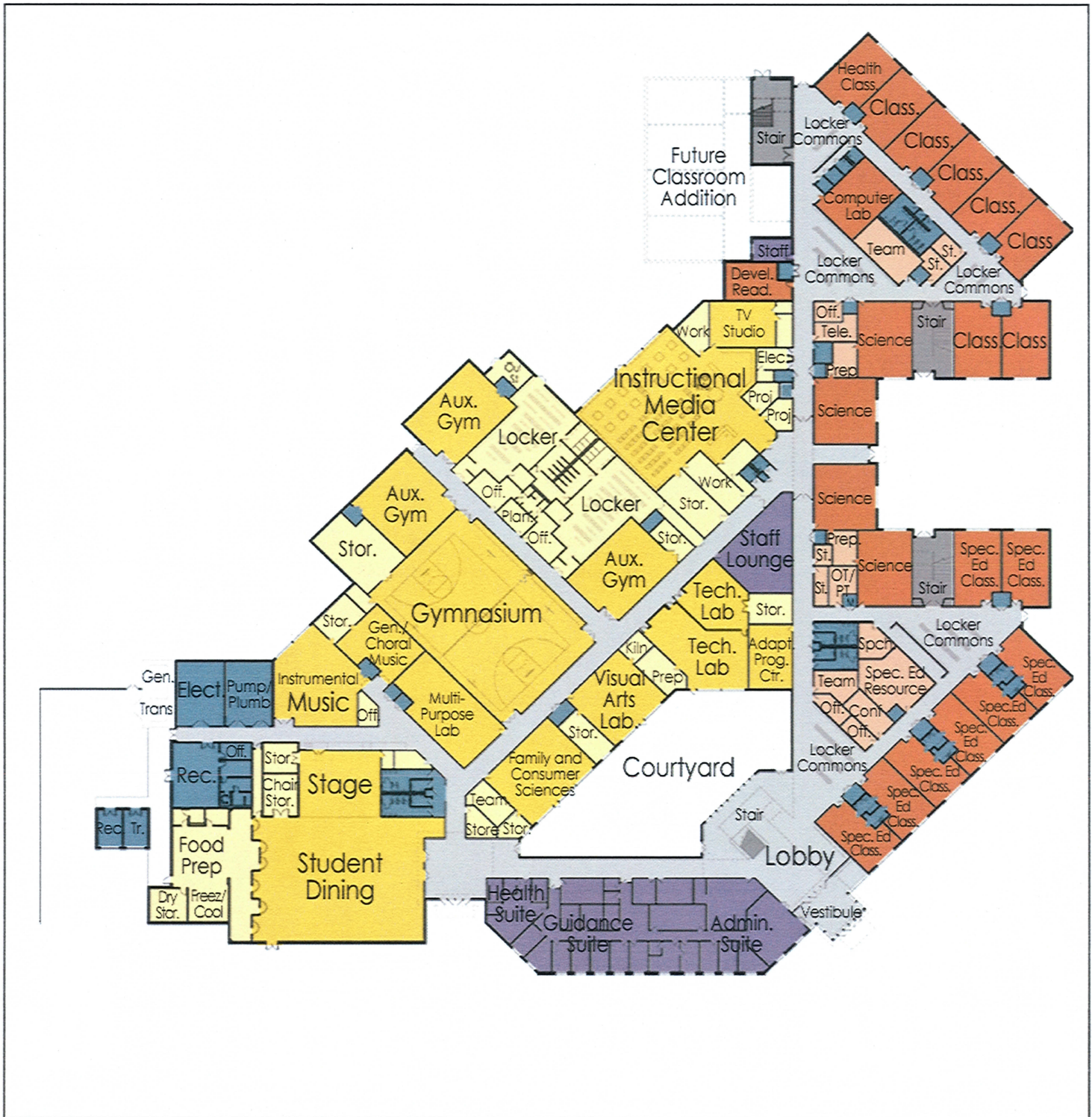
ATTACHMENT 3  
EXISTING SITE PLAN



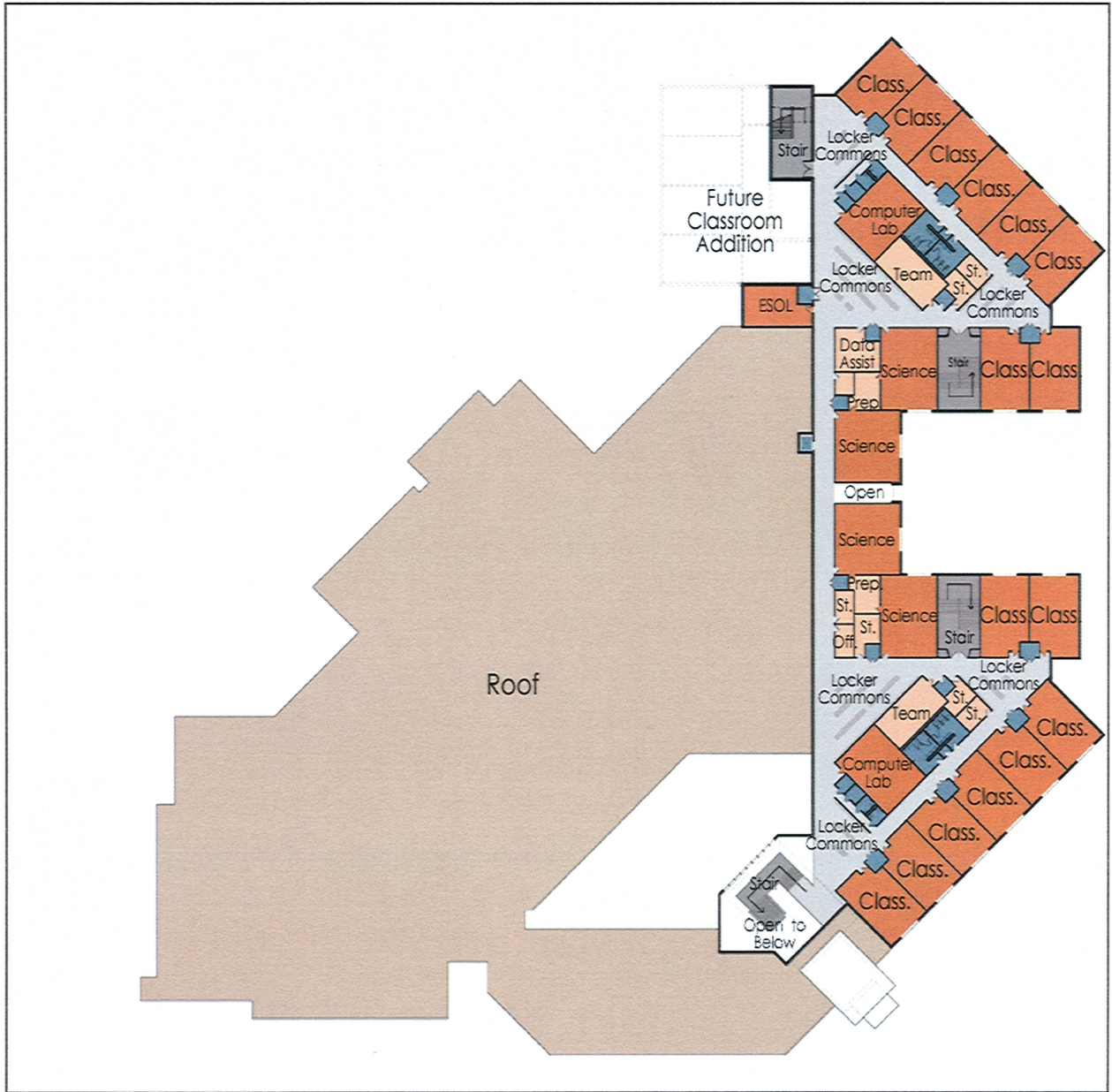
# ATTACHMENT 4 PROPOSED SITE PLAN



# ATTACHMENT 5 PROPOSED GROUND FLOOR PLAN

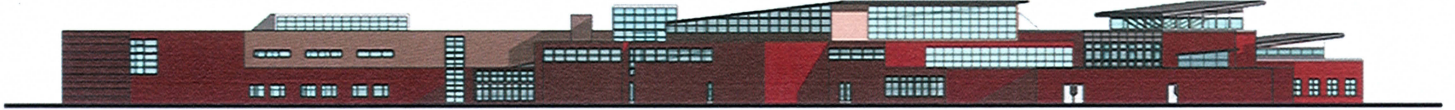


ATTACHMENT 6  
PROPOSED SECOND FLOOR PLAN

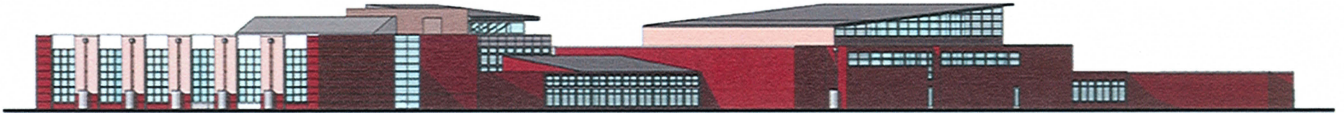




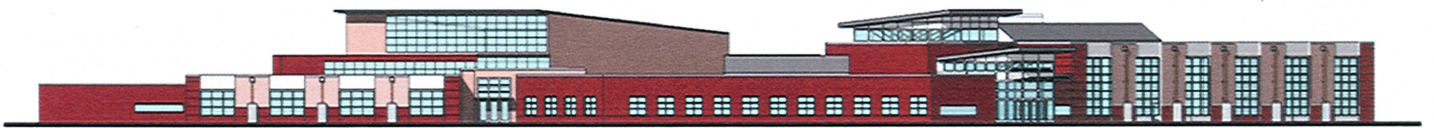
ATTACHMENT 7  
PROPOSED BUILDING ELEVATIONS



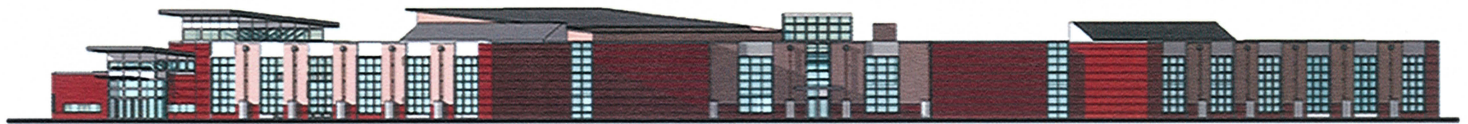
North Elevation



East Elevation



Gainsborough Elevation



Bells Mill Elevation