



# TRANSMITTAL

**To:** Mr. Chris Alles  
 Project Manager  
 Massachusetts School Building Authority  
 40 Broad Street, 5<sup>th</sup> Floor  
 Suite 500  
 Boston, MA 02109

**From:** Jon Winikur  
 Principal  
 STRATEGIC BUILDING SOLUTIONS  
 67 Hunt Street  
 Agawam, MA 01001

Phone: (617) 720-4466  
 Fax: (617) 720-5620

Phone: (860)395-0055  
 Fax: (860)395-1795  
 e-mail: jwinikur@go-sbs.com

**Client:** Berkshire Hills Regional School District

**Project:** Monument Mountain Regional High School Feasibility Study Submission


Attached you will find the following items:

Item #:	# of Copies:	Dated:	Description:
1	1	09.27.12	OPM FS Submission Approval Letter
2	1	09.27.12	Compact Disks – Complete STRSD FS Submission Documents
3	1	09.27.12	Report Binder –FS Submission

**These are transmitted as checked below:**

- |                                       |  |  |
|---------------------------------------|--|--|
| <input type="checkbox"/> For Approval | <input checked="" type="checkbox"/> For Review & Comment | <input type="checkbox"/> Approved as Noted     |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> Copies for Distribution         | <input type="checkbox"/> Approved as Submitted |
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**Remarks:** Chris,  
 The items noted above are enclosed, per the MSBA Submission requirements.  
 Please feel free to contact me if you have any questions or comments.  
 Thank You!

Signed: 

Date: September 26, 2012







September 27, 2012

Mr. Chris Alles  
Project Manager  
Massachusetts School Building Authority  
40 Broad Street, 5<sup>th</sup> Floor  
Suite 500  
Boston, MA 02109

***Subject: Berkshire Hills Regional School District Monument Mountain RHS  
OPM Approval of Designer Submission – Preferred Schematic Report***

Dear Mr. Alles:

Strategic Building Solutions, LLC (SBS) has reviewed the materials provided by the Design Team of Symmes Maini & McKee Associates (SMMA) for the Preferred Schematic Report for the referenced project. Based upon our review of the materials assembled and included for your review in the attached package, we hereby certify the completeness of this submission with the following exception:

- District Budget Statement for Revenues and Expenditures which is currently being prepared by the district and is anticipated to be completed this week. Upon receipt we will forward to your attention for inclusion.

Please feel free to contact me with any questions or additional requests.

Sincerely,

A handwritten signature in blue ink that reads "Jonathan Winikur".

Jonathan Winikur  
Principal

CC: Peter Dillon Ed.D., Superintendent  
Alex Pitkin, SMMA



**PREFERRED SCHEMATIC  
STUDY REPORT  
-MSBA SUBMISSION-**

**Monument Mountain Regional High School**  
*Great Barrington, Massachusetts*

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*SEPTEMBER 27, 2012*

*Submitted by,*

**SMMA**

*Symmes Maini & McKee Associates  
Cambridge, MA*

  
**MARGO JONES**  
*Architects*

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*SMMA No. 12029.00*



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## SECTION ONE INTRODUCTION

### 1.1 OVERVIEW OF THE PROCESS

In November 2009, the Berkshire Hills Regional School District (BHRSD) submitted a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA) for Monument Mountain Regional High School (MMRHS). The stated priorities of the SOI were to consider the health and safety of the occupants of this 44 year old facility. The infrastructure is outdated with an aged and inoperable heating and ventilating (HVAC) system, un-insulated single pane windows, minimal insulation levels, a roof that is aging, inadequate lighting and information technology, and certain inadequately sized facilities. An evaluation of all major building systems has shown that in addition to the HVAC system, the plumbing, electrical, technology, fire alarm, emergency power systems are all at the end of their useful life. The existing 113,705 gross square foot building, constructed in 1968, has a concrete foundation with steel frame and an exterior of minimally insulated brick masonry walls with a portion of metal clad “mansard” roof. There is not an adequate lateral force resisting brace system for the building’s structural systems. Barrier-free access is a pervasive problem throughout the building. Certain aspects of the existing construction do not meet current building code requirements, in the areas of fire suppression, fire alarm, and electrical systems. Hazardous materials including asbestos, mercury vapor ballasts, PCBs, and other construction components is expected to be found and will need abatement.

A number of educational concerns in the building include: inadequate science and technology lab space; undersized and poorly functioning library and media spaces; classrooms not equipped for 21st century instruction; an overcrowded server room and undersized kitchen; completely outdated and underserved vocational technology spaces; a plethora of unsecured entry and exit points, including door sized casement windows in all classrooms; lack of alternative physical education spaces; and overall lack of storage. Classrooms typically have glare problems, there are interior classrooms with no daylight at all, and there is a low level of illumination and little daylight in the hallways. While the main entry is welcoming but confusing due to two identical sets of doors, the primary functional access to the building is from the north, at the bus drop-off and nearest point to the parking lot, but also next to dumpsters and loading dock (the “back door”).

Monument Mountain Regional High School is a well maintained facility, which is heavily used and well regarded by the community. It has a well deserved reputation for excellence in academics and the arts. It is also located on an exceptionally beautiful site, with views of Monument Mountain to the west, Bear Mountain and other Berkshire Hills to the east. MMRHS engages the many outstanding cultural institutions in its region, with partnerships that include a myriad of productions produced at the school, involving students and local citizens. Many students choice-in from

neighboring districts, which is expected to continue and is accounted for in the projected enrollment of 570 pupils.

Since the submittal of the Preliminary Design Program (PDP) in July 2012, the School Building Committee (SBC), with the assistance of the design and project management team, has endeavored to maintain an open, rigorous process. The Committee has met on a frequent basis during the Feasibility Study in open public meetings. Building Committee meetings have been held either at the MMRHS or at the BHRSD office in Stockbridge.

The Committee formed a Working Group, consisting of the Building Committee chair, School committee Chair, Superintendent, Business Manager, Director of Facilities, and Principal of the high school, to efficiently and effectively develop, process and distribute project information. The Working Group focused on Educational Program, general budget guidelines and options, and the development and review of alternative options.

On July 27, 2012, the Preliminary Design Program (PDP) for the Monument Mountain Regional High School was submitted to the MSBA. The PDP included five High School construction alternatives, from renovating and upgrading the existing facility [No Build], to three sets of possible addition/renovations, to replacing it entirely with an all new building [Build New].

The Committee continued to review the construction alternatives. There was a desire to explore more alternatives, and to modify some of the submitted options shown in the PDP:

- 1) The “No Build” approach required clarification, in that it includes renovating and upgrading the entire existing school, but will not address current educational space and equipment needs.
- 2) There was agreement that the “Build New” option, Option 5, was not the direction that both the Building and School Committees wanted to take. Overall budget constraints and general fondness of the existing structure were the ultimate reasons for this decision.
- 3) The committee wished to study possible two story options--either expanding “down” into the slope of the plateau on which they are located, or up to a second story above the existing one-story structure.
- 4) In all options, it was decided that the horticultural program should be moved up to the main campus to integrate the program into the school’s STEM initiative, provide handicapped access, and make it more visible to all students.
- 5) There was agreement that providing greater access and openness across the two main corridors (running from north to south) was desired, this is achieved by opening up the space between the gymnasium and the auditorium. This new intermediate connection from east to west is shown in all the Renovation/Addition options.

6) A consensus was reached to relocate the Main Entrance to the building facing North/Northwest towards the existing parking lot.

7) Although many other schools use an open cafeteria accessible from the front lobby, there was little support for showcasing that space, and a preference for making the library or Media Center the focal point of the entry sequence.

7) Given the high public/community utilization of the core facilities, especially the Auditorium, a new entry needed to make access to those areas very clear and easy.

The SBC also requested the design team to provide more detail in the use of the existing building, in order to better organize existing programs, and determine the best possible arrangement for departments and facilities.

It is understood at this time that the PDP and this PSR will be reviewed by MSBA staff concurrently. Thus we are not repeating information from the prior document into this report, but ask that the reviewers refer to both.

Through careful discussion and consideration the District and School Building Committee approved **Addition/Renovation Option 2D.4 as the Preferred Alternative** at an SBC meeting on September 4, 2012. Option 2D.4 was then approved by the School Committee at a meeting on September 6<sup>th</sup>, 2012.

## 1.2 OVERVIEW OF COMMUNITY OUTREACH

The School Building Committee and the District are providing information regarding the feasibility and schematic design process on a project website:

<http://www.mmrhsproject.org/pages/MMRHSP>.

The website includes an overview, project schedule, copy of the PDP, photographs of existing conditions at the high school, certain approved MSBA documents, and current documents under consideration or which have been approved by the School Building Committee. The towns' and the District's websites provide links to the high school project website where there is an email contact link.

The School Building Committee has held three public forums to discuss the process being followed and the options that have been under review. The first public forum took place on June 13, 2012, consisting of a tour of the existing facility, and an explanation of the Feasibility Study process and timeline. The second presentation was on August 2, 2012, with a third convened on September 11, 2012. The public forums have been held at Monument Mountain Regional High School. While not heavily attended, in part due to the summer schedule, the August forum was televised on local access TV, and reported on in the weekly Great Barrington paper, Berkshire Record.

There will be town by town presentations to Board of Selectmen and Finance Committees throughout October 2012.

The local media is invited to all meetings and events. When they are not able to be present, they are provided with a meeting summary for them to make available in the local newspaper. Additionally, local reporters are engaged to provide them information for articles, updates and breaking news that only appears in the online version of the publication.

### **1.3 PROJECT SCHEDULE**

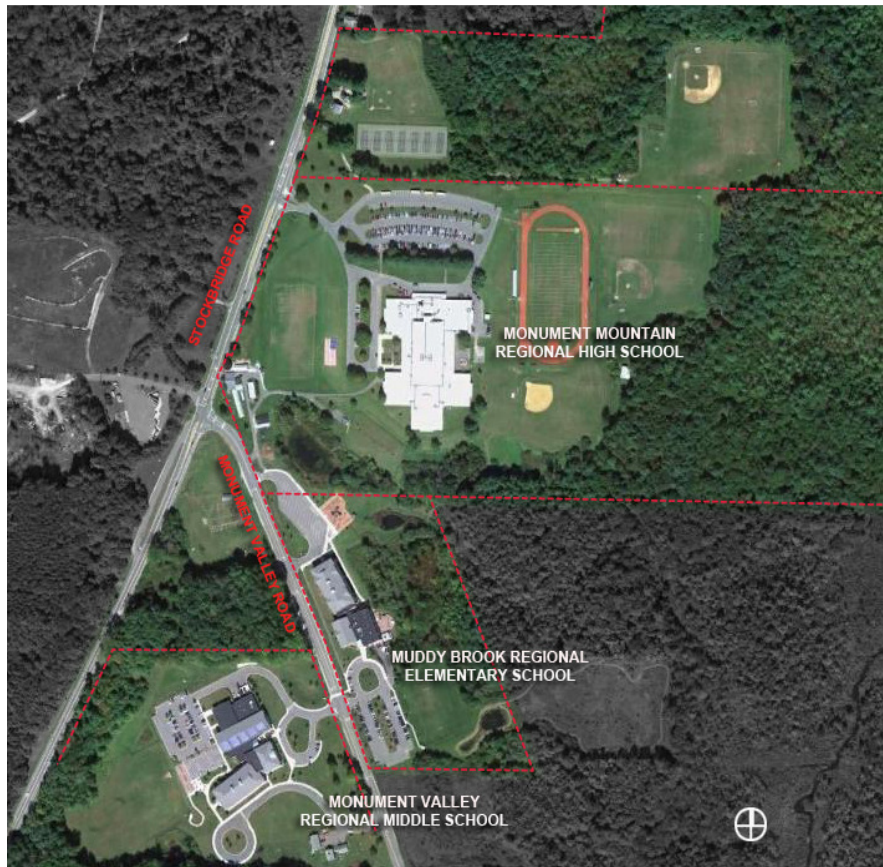
The project schedule anticipates MSBA Board of Director's approval to proceed into Schematic Design at their November 14, 2012 meeting and MSBA Board of Director's approval of the Project Scope and Budget Agreement at their March 2013 meeting. District-wide appropriation voting will occur immediately following, in the month of May 2013.

Following the District voting, the Design Documents will be developed, leading to construction commencement in the spring of 2014 and project completion the fall of 2017.

### **1.4 SUMMARY OF EXISTING CONDITIONS**

Please refer to Section 4 of the PDP for review of existing site and building conditions. No significant new information has been discovered since that report was issued in late July.

It has been decided by the School Building Committee to move the Chapter 74 Horticultural vocational program up to the main building. It is expected that some of the existing greenhouses might be transportable to the new location, or remain as is in their current location.



*Existing Site Plan*

## 1.5 SUMMARY OF EVALUATION OF ALTERNATIVES

The 11 construction alternatives developed and reviewed are summarized as follows:

### Base Repair Only Alternative (No-Build):

**Option 1A** – Base repair alternative, no addition, does not meet educational program. This option remains the same as described in the PDP, with a project cost of \$ 42 million.

### Addition/Renovation Alternatives:

**Option 2A** – One-story Science lab addition to the East of the building and Alternative PE/ Multi-Purpose addition to the North. The total new building gross square footage equals 156,675 (including the agricultural program) with an estimated project cost of \$57.7 million.

This option—adding new Science labs to the east - to create a collaborative and linked STEM wing - was the approach most preferred by the SBC, and thus other east side additions were generated and reviewed. Each added option in this 2 series included the following common features:

- Open central circulation spine
- Relocate Band/Chorus to existing Media Center

- Receiving/Loading dock on north wide, A wing
- Relocate “back-of-house” Custodial/Boiler/Kitchen spaces to A-wing
- Dining Commons located facing east (tied to loading dock locations)—with views of Bear Mountain
- New science labs—7<sup>th</sup> Science CR-STEM Lab—Flexible LGI type space
- New multi-purpose Cardio space—within existing roof (“porch”) along north side
- Automobile and Property Management programs remain in existing spaces, to be renovated
- Media Center central and prominent location facing west—with views of Monument Mountain
- Reorganization of entrance and Administration locations
- Connect Foods/Culinary Arts program to Early Education program
- Maximize use of existing, slightly undersized, classroom spaces

*The following are the additional “2 type” options that were explored after the PDP submission:*

**Option 2D.4** – One-story Science lab addition to the East of the building and Alternative PE/ Multi-Purpose enclosure of the existing North bus loading canopy. Main entrance is relocated to the north side of the building. The agricultural program is shown added to the northeast corner. Early childhood program is located at the southern corner of the G wing, with a playground at separate parent drop off adjacent. The building is 134,000 gross square feet (includes a 20,295 gsf addition) with a construction cost of \$ 40.8 million and project cost of \$52.8 million.

**Option 2E** – Two-story, lower level Science lab addition to the East of the building and Alternative PE/ Multi-Purpose enclosure of the existing North bus loading canopy. Main entrance is relocated to the north side of the building. The agricultural program is shown added to the northeast corner. Early childhood program is located at the southern corner of the G wing, with a playground at separate parent drop off adjacent. The building is 135,317 gross square feet (includes a 21,612 gsf addition) with a construction cost of \$42.0 million and project cost of \$53.4 million.

**Option 2F** – Two-story, second floor Science lab addition to the East of the building and Alternative PE/ Multi-Purpose enclosure of the existing North bus loading canopy. Main entrance is relocated to the north side of the building. The agricultural program is shown added to the northeast corner. Early childhood program is located at the southern corner of the G wing, with a playground at separate parent drop off adjacent. The building is 135,117 gross square feet (includes a 21,412 gsf addition) with a construction cost of \$43.4 million and project cost of \$57.5 million.

*The following are options remaining from the PDP, but are no longer under consideration:*



**Option 3A** – One-story Science lab addition to the East of the building and New Gym addition to the North. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57.1 million.

**Option 4A** – One-story addition to the West with new entrance and Alternative PE/ Multi-Purpose addition to the North. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57.1 million.

**Option 4B** – One-story addition to the West with new entrance courtyard and Alternative PE/ Multi-Purpose addition to the North. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57 million.

#### **New Construction Alternative:**

**Option 5A** – Two-story new High School constructed on the site of the existing baseball field to the north of the existing school. The building is 153,535 square feet with an estimated project cost of \$ 66.4 million.

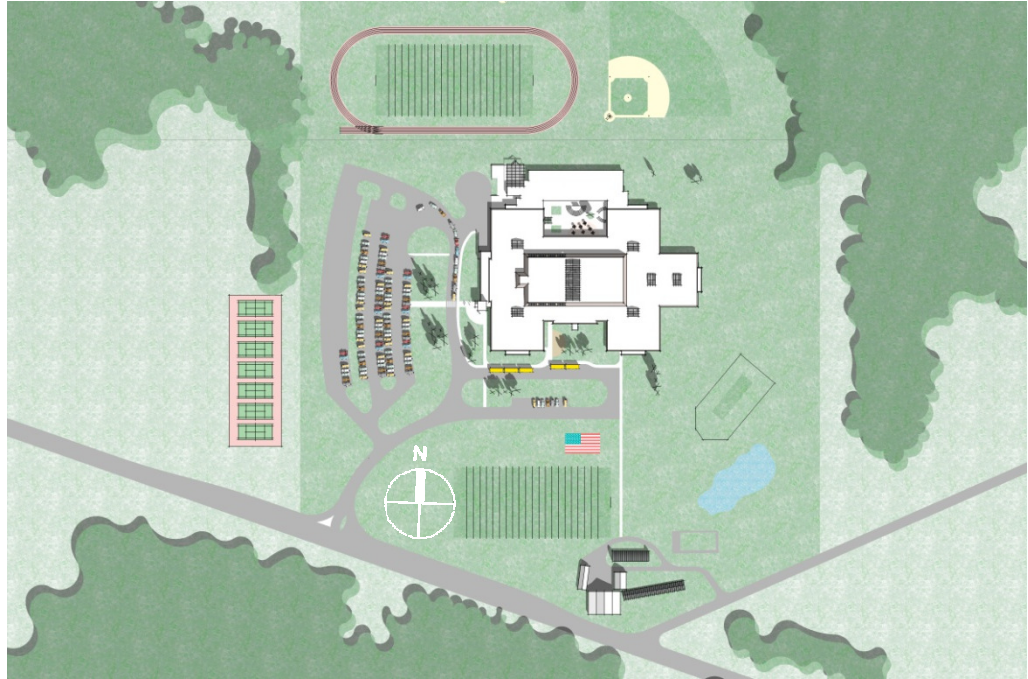
#### **PROJECT GOALS**

The project goals stated in the PDP remained in effect.

Each of the construction alternatives was reviewed against the Project Goals, and after careful review, discussion and consideration, **Option 2D.4** was voted by the School Building Committee as the Preferred Alternative.

## 1.6 SUMMARY OF PREFERRED ALTERNATIVE

### OPTION 2D.4 - ONE-STORY ACADEMIC ADDITION AT EAST SIDE OF THE EXISTING MMRHS



*OPTION 2D.4 – One-story Addition east of the MMRHS with new Main Entrance at the north facade.*

#### **Description**

Option 2D.4 is an addition/renovation option consisting of the construction of a new one-story Science lab wing to the east, including one multifunctional Science Dry Lab that would also function as a large group instruction space. The main entrance is relocated to the northern façade, facing the parking lot, and receiving the automobile traffic. Bus drop-off would relocate to the Western drive circle, but a new sidewalk/canopy structure at the west will connect it to the new north-facing Main Entrance, the new entry point for the facility.

The central cross corridor running east/ west between the gymnasium and auditorium will be a dynamic space connecting the Media Center and the open Dining Commons, moving the Student Center to the area currently containing the Band Room, possibly retaining the tiered platforms. The new Science addition will link STEM spaces—vocational technology to the north, and the math academic classrooms in the B-wing. In general, existing smaller classroom sizes are maintained, due to smaller class sizes at Monument Mountain Regional High School. A new large group instruction space is created out of formerly “landlocked” interior classrooms, to be day lit from roof monitors above. The agricultural program is relocated to the main building with separate public access at the northeast corner of the



building (A wing). The early childhood education vocational daycare classroom is located in the northwest wing, with its own dedicated, secure entrance, and adjacent play area. Food/culinary vocational technical classroom space is adjacent to Early Childhood, to enhance overlapping learning opportunities.

The existing building plumbing, HVAC, electrical and technology systems are fully upgraded, including providing for full fire sprinklering. The existing windows are replaced and the minimally insulated brick masonry may require insulation on the interior. The roof is replaced with new roofing and insulation, and the mansard roof possibly reconfigured to reflect a more functional, well insulated, and occasionally glazed function. The asbestos is abated through-out and new finishes are provided. The significant accessibility issues throughout are addressed, as well as life safety and egress code issues.

The site work addresses the existing entrance confusion and provides a more visually inviting presence to the main road. The worn and deteriorating vehicular lanes and parking lot will be refurbished, and utility services will be upgraded. Site accessibility is addressed including new ramp structures from the parking lot to the main entrance.

### **Schedule Overview**

Option 2D.4 will be constructed in multiple phased sections, in a schedule to be determined. Phase I will consist of building the new addition to the East and constructing the new Boiler/Mechanical spaces. The addition will be occupied upon completion, followed by the sequenced renovations. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break, commencing in the late spring and completing in the early fall.

### **Cost Overview**

The construction costs for Option 2D.4 were estimated to be:

- Construction Cost: \$40.8 million
- Project Cost: \$52.8 million

### **Conclusion**

The Pros and Cons of Option 2D.4 are summarized as follows:

#### **Pros**

- New science addition links the existing academic wings to the vocations & technology wing, which have been perceived to be remotely located.
- Reduction in number of entry points addresses security concerns while also improving internal circulation and orientation.
- New Alternative PE/ Multi-Purpose Room space, the relocation of the shipping and receiving spaces and new Main Entry additions at the

north of the building create and aesthetically pleasing facade facing the parking lot and new main entry sequence.

- Site circulation issues are addressed by re-organizing the bus and automobile drop-off areas.
- Multi-purpose Room/PE Alternative space location is ideal for public use.
- New center spine/corridor opens up the circulation in the center of the building.
- Entrance on the North provides direct building access from parking, from where the preponderance of students, staff, and visitors arrive.
- Separate public access and south facing exposure for Agriculture Program, which has good adjacency to other vocational technology classrooms and laboratories, and the courtyard.
- Enclosed courtyard allows for secure exterior dining and classroom space, as well as greenhouse and garden spaces for the Agricultural program.
- Utilizes existing building configuration and spaces economically.

#### **Cons**

- Successful enclosed “courtyard” spaces require conscious programming and maintenance.
- Interior courtyard limits views from Dining Commons to the east.
- Existing one-story configuration is spread out; new addition further expands footprint.

### **1.7 LOCAL APPROVAL PROCESS**

Throughout this process, the Monument Mountain Regional High School Building Committee has endeavored to maintain a public, transparent and open process. The Committee has attempted to reach out to as many residents as possible in an effort to gain input and feedback, through open public forums, the District’s website newsletters, cable television, and email list services.

Design alternatives have been developed through an open public process with significant School Building Committee and community participation. The Committee has sponsored public forums to the community to review and discuss the renovation/additions alternatives and the new construction alternatives. Additionally, the Committee has engaged in formal and informal dialog with representatives of town constituent groups, representing a wide spectrum of the general public.

The School Building Committee’s approval to submit this Preferred Schematic Study is located in Section Five of this report.

## SECTION TWO EVALUATION OF EXISTING CONDITIONS

### 2.1 SUMMARY OF EXISTING CONDITIONS

The traffic evaluation contained within the Preliminary Design Program has been supplemented to include more accurate traffic counts while school is in session. In particular, at the time the previous traffic report was conducted, seniors had already concluded their school year; therefore, traffic counts were partially based on estimated data. The supplement is appended to the end of this section.

The remaining evaluations of existing conditions contained within the Preliminary Design Program, including site, building, food service, hazardous materials, and geo-environmental remain. Refer to Section 4 of the Preliminary Design Program located in Appendix 6.1 of this report.



**Symmes Maini & McKee Associates, Inc.**

**Monument Mountain Regional High School**

**Stockbridge Road  
Great Barrington, Massachusetts**

**TRAFFIC IMPACT ANALYSIS**



(Existing Monument Mountain Regional High School)



Submitted By:  
**BRYANT ASSOCIATES, INC.**  
Engineers – Surveyors – Construction Managers  
640 George Washington Highway  
Building B, Suite 100  
Lincoln, RI 02865

**September 2012**

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## **1.0 INTRODUCTION**

### **1.1 Purpose of Study**

This traffic study was prepared at the request of Symmes Maini & McKee Associates, Inc. in connection with its study of the proposed improvements to the Monument Mountain Regional High School building on Stockbridge Road (U.S. Route 7) in Great Barrington, Massachusetts. For the benefit of the boards and the citizens of Great Barrington, the traffic impacts of the proposed improvements have been evaluated. The study analyzes traffic use attributable to the proposed improvement to the site and discusses transportation impacts in the vicinity of the site.

### **1.2 Description of Project**

The project site is located on Stockbridge Road, as shown in Figure No. 1. The proposed project includes renovations to the existing Monument Mountain Regional High School, as well as an addition to the existing building. The proposed improvements will accommodate a school population of approximately 570 students. The existing school has one driveway on Stockbridge Road.

## **2.0 EXISTING CONDITIONS**

### **2.1 Study Area**

The project will primarily utilize Stockbridge Road for access to and from the site. Traffic volumes are moderate on Stockbridge Road, which is classified as a Rural Minor Arterial, as presented in the online Road Inventory Interactive Map, which is based on the Year-End 2011 Road Inventory File maintained by the Massachusetts Office of Transportation Planning. By definition, an arterial highway emphasizes a high level of mobility for through traffic while providing access to local roadways.

The intersection of Stockbridge Road and the Monument Mountain Regional High School driveway is a three-way unsignalized intersection, which is stop-controlled on the driveway. A flashing warning beacon is also located at the driveway. The northbound approach of Stockbridge Road consists of a 12-foot travel lane, a 12-foot right turn lane, and a 2.5-foot shoulder. The channelized right turn lane providing access into the site is 18 feet in width with 2-foot shoulders. The southbound approach of Stockbridge Road consists of a 12-foot travel lane, a 12-foot left turn lane into the site, and a 2-foot shoulder. There is no curb or sidewalk. There are utility poles located on the west side of the roadway. The Monument Mountain Regional High School driveway approach consists of a 13-foot left turn lane with 1-foot shoulders and an 18-foot channelized right turn lane with 2-foot shoulders. The channelized right turn lane provides access to a 12-foot acceleration lane for vehicles merging onto Stockbridge Road northbound. In addition, there is a raised grassed island separating entering and exiting traffic. There is curb on both sides of the Monument Mountain Regional High School driveway. Land use in the area is institutional, commercial, and recreational.





Figure 1

**Location Map**

Symmes Maini & McKee Associates, Inc.  
Monument Mountain Regional High School  
Stockbridge Road  
Great Barrington, Massachusetts



The intersection of Stockbridge Road and Monument Valley Road, located to the south of the site, is a three-way signalized intersection. The southbound approach of Stockbridge Road consists of a 12-foot travel lane, a 12-foot left turn lane, and a 1-foot shoulder. The northbound approach consists of a 12-foot travel lane and a 6-foot shoulder. There is no curb or sidewalk. There are utility poles located on the west side of the roadway to the north of the intersection. The Monument Valley Road approach consists of a 14-foot right turn lane, an 11-foot left turn lane, and a 1-foot shoulder. There is no curb or sidewalk. There are utility poles located on the north side of the roadway. The driveway for the Great Barrington Transfer Station, which is only open on Saturdays, is located on the west side of Stockbridge Road within the intersection, however, it is not controlled by the signal.

The speed limit on Stockbridge Road southbound is posted at 50 mph to the north of the site. A flashing warning beacon with a School Bus Entering sign, while flashing, changes the speed limit to 40 mph in the vicinity of the Monument Mountain Regional High School driveway. To the south of the intersection of Stockbridge Road and Monument Valley Road, the speed limit increases to 55 mph. In the northbound direction of Stockbridge Road, the speed limit is posted at 50 mph throughout the area of the school.

## **2.2 Data Collection**

Traffic turning movement counts were conducted at the intersections of Stockbridge Road and the Monument Mountain Regional High School driveway and Stockbridge Road and Monument Valley Road between the hours of 6:00 and 10:00 A.M. and 1:00 and 6:00 P.M. on Thursday, September 20, 2012. The traffic count data is shown in Appendix A.

The calculated school A.M. peak hour for the existing Monument Mountain Regional High School is 7:15 – 8:15 and the school P.M. peak hour is 2:30 – 3:30. These peak hours were utilized for the analysis of all the study intersections since the school renovation is the focus of this report.

Pertinent field observations including existing stopping sight distances, location of existing utilities, posted speed limits, traffic control devices, etc. were made on June 6, 2012. This field review also included a review of operations on the site during the afternoon dismissal period, which occurs at 2:45. It should be noted, however, that the graduating seniors were no longer attending school on this date. It is expected that any observations of the traffic operations would be worsened with the additional senior student drivers. There was no police presence at the intersection during the dismissal on this day. Crash data has been requested from the Great Barrington Police Department. Continuous traffic speed data (shown in Appendix C) was obtained using road tubes on Stockbridge Road to the north of the Monument Mountain Regional High School driveway on Thursday, September 20, 2012.

## **3.0 TRAFFIC FORECASTS**

### **3.1 Traffic Volumes**

Existing traffic volumes for the study area were developed from traffic data obtained by Transportation Data Corporation (TDC).

The total 24-hour two-way traffic volume (from the road tube counts) on Stockbridge Road in the vicinity of the site is approximately 12,800 vehicles per day. The school hours for the existing Monument Mountain Regional High School are from 8:00 A.M. to 2:45 P.M. The school A.M. peak hour, as indicated in Section 2.2, occurred between 7:15 and 8:15, with two-way traffic volumes on Stockbridge Road and the Monument Mountain Regional High School driveway of 1,278 vehicles and 497 vehicles, respectively. The school P.M. peak hour was measured between 2:30 and 3:30, with two-way traffic volumes on Stockbridge Road of 1,242 vehicles and on the Monument Mountain Regional High School driveway of 203 vehicles.

The two-way traffic volumes on Stockbridge Road and Monument Valley Road were 1,178 vehicles and 390 vehicles, respectively, during the school A.M. peak hour. The two-way traffic volumes were 1,245 vehicles on Stockbridge Road and 415 vehicles on Monument Valley Road during the school P.M. peak hour.

The traffic anticipated to be generated by the development was added to the turning movement count volumes for use in determining levels of service (LOS).

### **3.2 Vehicle Trip Generation**

Currently, approximately 570 students attend the existing Monument Mountain Regional High School. The proposed school is expected to accommodate the same student population of 570 students. Trip generation of additional trips was not conducted since there is no anticipated increase in the student population for the proposed Monument Mountain Regional High School project as compared to the existing high school.

## **4.0 CAPACITY ANALYSIS**

### **4.1 General**

Capacity analyses in this report focus on the peak hours of traffic volume for the high school because they represent the most critical periods for operations and have the highest capacity requirements. If traffic operates at acceptable levels of service during the peak hours, then it will operate at acceptable levels during the remaining hours of the day.

### **4.2 Intersections**

The intersection capacity analysis was prepared using the Highway Capacity Manual, 2010 edition, published by the Transportation Research Board. The analysis utilizes the concept of Level of Service. The term “level of service” is defined as a qualitative measure describing operational conditions within a traffic stream based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. There are six levels of service utilized for the analysis. They are given letter designations from A to F, with Level of Service A representing the most favorable operating conditions and Level of Service F the least. Level of Service F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0,

regardless of the control delay. The level of service criteria for unsignalized and signalized intersections is shown in Table No. 2.

**Table No. 2**  
**Level of Service Criteria for Unsignalized and Signalized Intersections**  
**Source: Highway Capacity Manual, 2010**

Level Of Service	Average Total Delay (Sec./Veh)	
	Unsignalized Intersection	Signalized Intersection
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

The computer software, Synchro 8, was utilized to perform the capacity analysis for the study area.

It is anticipated that the proposed school will open in 2017. Therefore, the existing traffic counts on Stockbridge Road were expanded to 2017 using a conservative annual growth rate of 1.0%.

Unsignalized intersection capacity analysis for the intersection of Stockbridge Road and the Monument Mountain Regional High School driveway was undertaken using the school A.M. and school P.M. peak hour traffic volumes under no-build conditions in 2012 and build conditions in 2017. The capacity analysis computations are included in Appendix B. A summary of the level of service for this intersection is shown in Table Nos. 3 and 4 for the school A.M. and school P.M. peak hours, respectively. It is anticipated that a previous recommendation to lengthen the right turn lane exiting the site will be implemented with the school renovations.

**Table No. 3**  
**School A.M. Peak Hour - Level of Service Summary**  
**Unsignalized Intersection**

Intersection/ Critical Movement	Level of Service (Delay-Sec./Veh.)	
	2012 Existing	2017 Build
<i>Stockbridge Road/Monument Mountain Regional High School Driveway</i>		
Westbound Approach	F (368.6)	F (393.8)
Southbound Approach	A (1.7)	A (1.6)

The unsignalized intersection capacity analysis shows that the Monument Mountain Regional High School driveway currently operates at LOS F during the school A.M. and school P.M. peak hours. Under build conditions, with the lengthening of the right turn lane exiting the site, the Monument Mountain Regional High School driveway will continue to operate at LOS F during the school A.M.

and school P.M. peak hours. Stockbridge Road operates and will continue to operate at excellent levels of service.

**Table No. 4**  
**School P.M. Peak Hour - Level of Service Summary**  
**Unsignalized Intersection**

Intersection/ Critical Movement	Level of Service (Delay-Sec./Veh.)	
	2012 Existing	2017 Build
<i>Stockbridge Road/Monument Mountain Regional High School Driveway</i>		
Westbound Approach	F (809.4)	F (*)
Southbound Approach	A (0.5)	A (0.5)

\* Synchro cannot report a delay when the volumes greatly exceed the capacity.

Signalized intersection capacity analysis for the intersection of Stockbridge Road and Monument Valley Road was undertaken using the school A.M. and school P.M. peak hour traffic volumes under no-build conditions in 2012 and build conditions in 2017. The capacity analysis computations are included in Appendix B. A summary of the level of service for this intersection is shown in Table Nos. 5 and 6 for the school A.M. and school P.M. peak hour, respectively.

**Table No. 5**  
**School A.M. Peak Hour - Level of Service Summary**  
**Signalized Intersection**

Intersection/ Critical Movement	Level of Service (Delay-Sec./Veh.)	
	2012 Existing	2017 Build
<i>Stockbridge Road/Monument Valley Road</i>		
Overall Intersection	C (21.2)	C (23.6)
Westbound Approach	C (24.0)	C (24.8)
Northbound Approach	C (31.0)	D (35.0)
Southbound Approach	A (9.2)	B (10.7)

**Table No. 6**  
**School P.M. Peak Hour - Level of Service Summary**  
**Signalized Intersection**

Intersection/ Critical Movement	Level of Service (Delay-Sec./Veh.)	
	2012 Existing	2017 Build
<i>Stockbridge Road/Monument Valley Road</i>		
Overall Intersection	B (17.9)	B (18.2)
Westbound Approach	B (17.8)	B (18.8)
Northbound Approach	C (29.7)	C (29.8)
Southbound Approach	A (7.4)	A (7.6)

The signalized intersection capacity analysis shows that there will be no change in the overall intersection level of service at the intersection of Stockbridge Road and Monument Valley Road

during the school A.M. and school P.M. peak hours. The northbound approach of the intersection will change, from LOS C to LOS D, and the southbound approach will change, from LOS A to LOS B, during the school A.M. peak hour.

## **5.0 SAFETY ANALYSIS**

### **5.1 Geometrics**

The geometric configurations of the intersections affected by traffic generated by the proposed development were examined with regard to safe stopping sight distance using principles presented in A Policy on Geometric Design of Highways and Streets, 2011, of the American Association of State Highway and Transportation Officials (AASHTO). AASHTO provides recommendations for necessary sight distance at intersections.

A design speed of 50 mph was utilized for both directions of Stockbridge Road in the vicinity of the proposed site based on an observed 85<sup>th</sup> percentile speed of 50 mph for southbound traffic (see Appendix C). The minimum safe stopping distance for roadways with a design speed of 50 mph is 425 feet, as required by AASHTO, Table 3-1, Stopping Sight Distance on Level Roadways, P. 3-4. The existing sight distance from the north to the site driveway is well in excess of the minimum safe stopping distance. The existing sight distance from the south to the site driveway is unrestricted from beyond the intersection of Stockbridge Road and Monument Valley Road, which is well in excess of the minimum safe stopping distance.

### **5.2 Crash History**

Crash data for the study area was requested from the Great Barrington Police Department but has not yet been received. A summary and analysis of the data will be provided upon receipt of the data.

### **5.3 Site Circulation**

Once a preliminary site plan has been further developed, it will be reviewed with regard to layout and vehicular/pedestrian circulation, and comments will be provided, if necessary. The proposed site will be designed to accommodate the safe movement of emergency vehicles to and from the school.

Based on the capacity analysis and the review of the existing Monument Mountain Regional High School site and afternoon dismissal period operations, the following recommendations have been provided:

- Buses should be given a separate access point to Monument Valley Road so that they are not required to enter Stockbridge Road. If a separate access point is not feasible, buses should be given priority exiting the site. Student and parent drivers should be held back to allow the buses to leave and maintain their schedule. Due to the poor levels of service for the school driveway, if the secondary access to Monument Valley Road is feasible, consideration should be given to allow all vehicles traveling to the south to use this access.

- Although adequate sight distance to the north from the driveway is provided, relocating the access driveway to the south to provide for additional sight distance should be investigated.
- A second access driveway on Stockbridge Road to allow entering and exiting traffic to be separated would improve operations, although the intersection would still operate at LOS F.
- If the secondary access to Monument Valley Road is not feasible, regular use of police to control traffic during the school A.M. and school P.M. peak hours should be continued. Although not observed, based on the documentation review and experience, police control would provide for better operations and improved safety at the driveway intersection.
- Although the intersection level of service will not be affected, the existing Monument Mountain Regional High School driveway should be widened to allow right turning vehicles to bypass the queue of left turning vehicles. Extension of the right turn lane to the parking lot access road would allow vehicles exiting the parking lot to turn right without having to enter the queue.
- Signage and pavement markings should be installed throughout the site to better direct and control vehicular circulation. An upgrade to the existing signage at the intersection of Stockbridge Road and the Monument Mountain Regional High School driveway is also required.
- The installation of a traffic signal at the Monument Mountain Regional High School driveway should be investigated. However, based on previous analysis performed for the Monument Mountain Regional High School driveway, the Massachusetts Department of Transportation (MassDOT) indicated that a traffic signal would not be approved. Based on the new traffic counts performed, it is unlikely that the intersection would meet Warrant 1 of the Manual on Uniform Traffic Control Devices (MUTCD). This warrant requires that minimum volumes are met for at least eight hours a day, and is typically required to be met by MassDOT for approval of the installation of a traffic signal. Warrant 7, Crash Experience, should be reviewed once crash data has been received in order to determine if this warrant will be met, and if so, reviewed with MassDOT to determine if meeting this warrant would allow for approval of the signal.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

This traffic impact analysis was conducted to evaluate the impacts on surrounding roadways and intersections due to the improvements to the Monument Mountain Regional High School building on Stockbridge Road in Great Barrington, Massachusetts.

The unsignalized intersection capacity analysis shows that the Monument Mountain Regional High School driveway currently operates at LOS F during the school A.M. and school P.M. peak hours. Under build conditions, with the lengthening of the right turn lane exiting the site, the Monument Mountain Regional High School driveway will continue to operate at LOS F during the school A.M. and school P.M. peak hours. Stockbridge Road will operate at excellent levels of service.

The signalized intersection capacity analysis shows that there will be no change in the overall intersection level of service at the intersection of Stockbridge Road and Monument Valley Road during the school A.M. and school P.M. peak hours. The northbound approach of the intersection will change, from LOS C to LOS D, and the southbound approach will change, from LOS A to LOS B, during the school A.M. peak hour.

The geometric configuration of the existing roadways is such that adequate safe stopping sight distances exist for traffic passing and/or utilizing the site.

The following preliminary recommendations have been provided for the proposed site:

- Buses should be given a separate access point to Monument Valley Road so that they are not required to enter Stockbridge Road.
- Relocating the access driveway to the south or providing a second access driveway should be investigated.
- If the options are not feasible, regular use of police to control traffic during the school A.M. and school P.M. peak hours should be continued.
- Although the intersection level of service will not be affected, the existing Monument Mountain Regional High School driveway should be widened to allow right turning vehicles to bypass the queue of left turning vehicles.
- Signage and pavement markings should be installed throughout the site to better direct vehicular circulation. An upgrade to the existing signage at the intersection of Stockbridge Road and the Monument Mountain Regional High School driveway is also required.
- The installation of a traffic signal at the Monument Mountain Regional High School driveway should be investigated, although it is unlikely that it would be approved by MassDOT.

Based upon the analyses, traffic operations on the surrounding roadways and intersections will experience minimal change due to the proposed improvements.





***APPENDIX A: TRAFFIC COUNTS***



**Transportation Data Corporation**

Mario Perone, mperone1@verizon.net

t. (781) 587-0086 f. (781) 587-0189

Route 7 SB north of  
MMRHS Driveway  
City, State: Great Barrington, MA  
Client: Bryant/T. Brayton

04288BVOLUME  
Site Code: 212054

Start Time	20-Sep-12 Thu	SB		Hour Totals	
		Morning	Afternoon	Morning	Afternoon
12:00		5	98		
12:15		3	105		
12:30		3	99		
12:45		2	98	13	400
01:00		3	93		
01:15		3	91		
01:30		6	108		
01:45		1	86	13	378
02:00		1	103		
02:15		2	107		
02:30		3	132		
02:45		0	134	6	476
03:00		3	132		
03:15		2	169		
03:30		1	89		
03:45		2	128	8	518
04:00		10	127		
04:15		9	99		
04:30		9	135		
04:45		4	130	32	491
05:00		11	144		
05:15		15	123		
05:30		16	116		
05:45		33	108	75	491
06:00		35	86		
06:15		47	76		
06:30		91	64		
06:45		92	74	265	300
07:00		107	50		
07:15		136	50		
07:30		196	49		
07:45		195	47	634	196
08:00		156	45		
08:15		138	40		
08:30		133	49		
08:45		130	51	557	185
09:00		94	32		
09:15		95	31		
09:30		88	38		
09:45		122	23	399	124
10:00		90	31		
10:15		85	35		
10:30		84	22		
10:45		85	17	344	105
11:00		86	13		
11:15		80	9		
11:30		85	12		
11:45		104	7	355	41
<b>Total</b>		<b>2701</b>	<b>3705</b>		
<b>Percent</b>		<b>42.2%</b>	<b>57.8%</b>		
<b>Grand Total</b>			<b>2701</b>	<b>3705</b>	
<b>Percent</b>			<b>42.2%</b>	<b>57.8%</b>	
<b>ADT</b>			<b>ADT 6,406</b>		<b>AADT 6,406</b>

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288A  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

### Groups Printed- Cars & Peds - Trucks - Buses

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
06:00 AM	36	0	0	0	0	0	2	24	0	0	62	62
06:15 AM	42	2	0	0	0	0	3	38	0	0	85	85
06:30 AM	83	1	0	0	1	0	1	41	0	0	127	127
06:45 AM	92	4	0	1	1	0	4	53	0	0	155	155
<b>Total</b>	<b>253</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>156</b>	<b>0</b>	<b>0</b>	<b>429</b>	<b>429</b>
07:00 AM	92	7	0	4	7	0	9	57	0	0	176	176
07:15 AM	129	16	0	7	6	0	14	87	0	0	259	259
07:30 AM	158	37	0	27	38	0	76	98	0	0	434	434
07:45 AM	134	62	0	36	44	0	83	125	0	0	484	484
<b>Total</b>	<b>513</b>	<b>122</b>	<b>0</b>	<b>74</b>	<b>95</b>	<b>0</b>	<b>182</b>	<b>367</b>	<b>0</b>	<b>0</b>	<b>1353</b>	<b>1353</b>
08:00 AM	161	6	0	7	18	0	20	87	0	0	299	299
08:15 AM	136	4	0	4	2	0	4	101	0	0	251	251
08:30 AM	131	1	0	1	4	0	10	112	0	0	259	259
08:45 AM	130	4	0	2	6	0	6	85	0	0	233	233
<b>Total</b>	<b>558</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>30</b>	<b>0</b>	<b>40</b>	<b>385</b>	<b>0</b>	<b>0</b>	<b>1042</b>	<b>1042</b>
09:00 AM	100	0	0	1	0	0	5	82	0	0	188	188
09:15 AM	91	4	0	0	4	0	4	86	0	0	189	189
09:30 AM	99	4	0	0	6	0	2	84	0	0	195	195
09:45 AM	125	4	0	4	3	0	5	91	0	0	232	232
<b>Total</b>	<b>415</b>	<b>12</b>	<b>0</b>	<b>5</b>	<b>13</b>	<b>0</b>	<b>16</b>	<b>343</b>	<b>0</b>	<b>0</b>	<b>804</b>	<b>804</b>
<b>Grand Total</b>	<b>1739</b>	<b>156</b>	<b>0</b>	<b>94</b>	<b>140</b>	<b>0</b>	<b>248</b>	<b>1251</b>	<b>0</b>	<b>0</b>	<b>3628</b>	<b>3628</b>
<b>Apprch %</b>	<b>91.8</b>	<b>8.2</b>		<b>40.2</b>	<b>59.8</b>		<b>16.5</b>	<b>83.5</b>				
<b>Total %</b>	<b>47.9</b>	<b>4.3</b>		<b>2.6</b>	<b>3.9</b>		<b>6.8</b>	<b>34.5</b>		<b>0</b>	<b>100</b>	
<b>Cars &amp; Peds</b>	<b>1666</b>	<b>155</b>		<b>89</b>	<b>130</b>		<b>229</b>	<b>1196</b>		<b>0</b>	<b>0</b>	<b>3465</b>
<b>% Cars &amp; Peds</b>	<b>95.8</b>	<b>99.4</b>	<b>0</b>	<b>94.7</b>	<b>92.9</b>	<b>0</b>	<b>92.3</b>	<b>95.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>95.5</b>
<b>Trucks</b>	<b>61</b>	<b>1</b>		<b>0</b>	<b>1</b>		<b>0</b>	<b>46</b>		<b>0</b>	<b>0</b>	<b>109</b>
<b>% Trucks</b>	<b>3.5</b>	<b>0.6</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	<b>0</b>	<b>0</b>	<b>3.7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>Buses</b>	<b>12</b>	<b>0</b>		<b>5</b>	<b>9</b>		<b>19</b>	<b>9</b>		<b>0</b>	<b>0</b>	<b>54</b>
<b>% Buses</b>	<b>0.7</b>	<b>0</b>	<b>0</b>	<b>5.3</b>	<b>6.4</b>	<b>0</b>	<b>7.7</b>	<b>0.7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1.5</b>

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total	
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total		
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:15 AM											
07:15 AM	129	16	145	7	6	13	14	87	101	259	
07:30 AM	158	37	195	27	38	65	76	98	174	434	
07:45 AM	134	62	196	36	44	80	83	125	208	484	
08:00 AM	161	6	167	7	18	25	20	87	107	299	
<b>Total Volume</b>	<b>582</b>	<b>121</b>	<b>703</b>	<b>77</b>	<b>106</b>	<b>183</b>	<b>193</b>	<b>397</b>	<b>590</b>	<b>1476</b>	
<b>% App. Total</b>	<b>82.8</b>	<b>17.2</b>		<b>42.1</b>	<b>57.9</b>		<b>32.7</b>	<b>67.3</b>			
<b>PHF</b>	<b>.904</b>	<b>.488</b>	<b>.897</b>	<b>.535</b>	<b>.602</b>	<b>.572</b>	<b>.581</b>	<b>.794</b>	<b>.709</b>	<b>.762</b>	
<b>Cars &amp; Peds</b>	<b>559</b>	<b>121</b>	<b>680</b>	<b>72</b>	<b>98</b>	<b>170</b>	<b>178</b>	<b>378</b>	<b>556</b>	<b>1406</b>	
<b>% Cars &amp; Peds</b>	<b>96.0</b>	<b>100</b>	<b>96.7</b>	<b>93.5</b>	<b>92.5</b>	<b>92.9</b>	<b>92.2</b>	<b>95.2</b>	<b>94.2</b>	<b>95.3</b>	
<b>Trucks</b>	<b>16</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>18</b>	<b>34</b>	
<b>% Trucks</b>	<b>2.7</b>	<b>0</b>	<b>2.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4.5</b>	<b>3.1</b>	<b>2.3</b>	
<b>Buses</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>8</b>	<b>13</b>	<b>15</b>	<b>1</b>	<b>16</b>	<b>36</b>	
<b>% Buses</b>	<b>1.2</b>	<b>0</b>	<b>1.0</b>	<b>6.5</b>	<b>7.5</b>	<b>7.1</b>	<b>7.8</b>	<b>0.3</b>	<b>2.7</b>	<b>2.4</b>	

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288A  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
06:00 AM	32	0	0	0	0	0	2	23	0	0	57	57
06:15 AM	40	2	0	0	0	0	3	35	0	0	80	80
06:30 AM	79	1	0	0	1	0	1	40	0	0	122	122
06:45 AM	89	4	0	1	1	0	4	48	0	0	147	147
<b>Total</b>	<b>240</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>146</b>	<b>0</b>	<b>0</b>	<b>406</b>	<b>406</b>
07:00 AM	89	7	0	4	7	0	9	55	0	0	171	171
07:15 AM	125	16	0	7	6	0	14	86	0	0	254	254
07:30 AM	152	37	0	22	31	0	61	91	0	0	394	394
07:45 AM	132	62	0	36	43	0	83	116	0	0	472	472
<b>Total</b>	<b>498</b>	<b>122</b>	<b>0</b>	<b>69</b>	<b>87</b>	<b>0</b>	<b>167</b>	<b>348</b>	<b>0</b>	<b>0</b>	<b>1291</b>	<b>1291</b>
08:00 AM	150	6	0	7	18	0	20	85	0	0	286	286
08:15 AM	127	4	0	4	2	0	4	98	0	0	239	239
08:30 AM	128	1	0	1	3	0	6	109	0	0	248	248
08:45 AM	124	4	0	2	6	0	6	78	0	0	220	220
<b>Total</b>	<b>529</b>	<b>15</b>	<b>0</b>	<b>14</b>	<b>29</b>	<b>0</b>	<b>36</b>	<b>370</b>	<b>0</b>	<b>0</b>	<b>993</b>	<b>993</b>
09:00 AM	94	0	0	1	0	0	5	80	0	0	180	180
09:15 AM	89	3	0	0	4	0	4	83	0	0	183	183
09:30 AM	96	4	0	0	5	0	2	80	0	0	187	187
09:45 AM	120	4	0	4	3	0	5	89	0	0	225	225
<b>Total</b>	<b>399</b>	<b>11</b>	<b>0</b>	<b>5</b>	<b>12</b>	<b>0</b>	<b>16</b>	<b>332</b>	<b>0</b>	<b>0</b>	<b>775</b>	<b>775</b>
<b>Grand Total</b>	<b>1666</b>	<b>155</b>	<b>0</b>	<b>89</b>	<b>130</b>	<b>0</b>	<b>229</b>	<b>1196</b>	<b>0</b>	<b>0</b>	<b>3465</b>	<b>3465</b>
Apprch %	91.5	8.5		40.6	59.4		16.1	83.9				
Total %	48.1	4.5		2.6	3.8		6.6	34.5		0	100	

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	125	16	141	7	6	13	14	86	100	254
07:30 AM	152	37	189	22	31	53	61	91	152	394
07:45 AM	132	62	194	36	43	79	83	116	199	472
08:00 AM	150	6	156	7	18	25	20	85	105	286
<b>Total Volume</b>	<b>559</b>	<b>121</b>	<b>680</b>	<b>72</b>	<b>98</b>	<b>170</b>	<b>178</b>	<b>378</b>	<b>556</b>	<b>1406</b>
<b>% App. Total</b>	<b>82.2</b>	<b>17.8</b>		<b>42.4</b>	<b>57.6</b>		<b>32</b>	<b>68</b>		
PHF	.919	.488	.876	.500	.570	.538	.536	.815	.698	.745

# Transportation Data Corporation

Mario Perone, [mperone1@verizon.net](mailto:mperone1@verizon.net)

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288A  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Trucks

Start Time	Stockbridge Road (Route 7) From North		MMRHS Driveway From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
06:00 AM	4	0	0	0	0	1	5
06:15 AM	2	0	0	0	0	2	4
06:30 AM	3	0	0	0	0	1	4
06:45 AM	3	0	0	0	0	1	4
<b>Total</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>17</b>
07:00 AM	3	0	0	0	0	1	4
07:15 AM	3	0	0	0	0	1	4
07:30 AM	3	0	0	0	0	6	9
07:45 AM	1	0	0	0	0	9	10
<b>Total</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>27</b>
08:00 AM	9	0	0	0	0	2	11
08:15 AM	7	0	0	0	0	2	9
08:30 AM	2	0	0	0	0	3	5
08:45 AM	6	0	0	0	0	7	13
<b>Total</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>38</b>
09:00 AM	6	0	0	0	0	2	8
09:15 AM	2	1	0	0	0	2	5
09:30 AM	3	0	0	1	0	4	8
09:45 AM	4	0	0	0	0	2	6
<b>Total</b>	<b>15</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>27</b>
<b>Grand Total</b>	<b>61</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>46</b>	<b>109</b>
Apprch %	98.4	1.6	0	100	0	100	
Total %	56	0.9	0	0.9	0	42.2	

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	3	0	3	0	0	0	0	6	6	9
07:45 AM	1	0	1	0	0	0	0	9	9	10
08:00 AM	9	0	9	0	0	0	0	2	2	11
08:15 AM	7	0	7	0	0	0	0	2	2	9
<b>Total Volume</b>	<b>20</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>19</b>	<b>39</b>
<b>% App. Total</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>100</b>
PHF	.556	.000	.556	.000	.000	.000	.000	.528	.528	.886

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288A  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Buses

Start Time	Stockbridge Road (Route 7) From North		MMRHS Driveway From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
06:00 AM	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	1	1
06:30 AM	1	0	0	0	0	0	1
06:45 AM	0	0	0	0	0	4	4
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>6</b>
07:00 AM	0	0	0	0	0	1	1
07:15 AM	1	0	0	0	0	0	1
07:30 AM	3	0	5	7	15	1	31
07:45 AM	1	0	0	1	0	0	2
<b>Total</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>15</b>	<b>2</b>	<b>35</b>
08:00 AM	2	0	0	0	0	0	2
08:15 AM	2	0	0	0	0	1	3
08:30 AM	1	0	0	1	4	0	6
08:45 AM	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>11</b>
09:00 AM	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	1	1
09:30 AM	0	0	0	0	0	0	0
09:45 AM	1	0	0	0	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>
<b>Grand Total</b>	<b>12</b>	<b>0</b>	<b>5</b>	<b>9</b>	<b>19</b>	<b>9</b>	<b>54</b>
Apprch %	100	0	35.7	64.3	67.9	32.1	
Total %	22.2	0	9.3	16.7	35.2	16.7	

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	3	0	3	5	7	12	15	1	16	31
07:45 AM	1	0	1	0	1	1	0	0	0	2
08:00 AM	2	0	2	0	0	0	0	0	0	2
08:15 AM	2	0	2	0	0	0	0	1	1	3
<b>Total Volume</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>5</b>	<b>8</b>	<b>13</b>	<b>15</b>	<b>2</b>	<b>17</b>	<b>38</b>
% App. Total	100	0		38.5	61.5		88.2	11.8		
PIIF	.667	.000	.667	.250	.286	.271	.250	.500	.266	.306



# Transportation Data Corporation

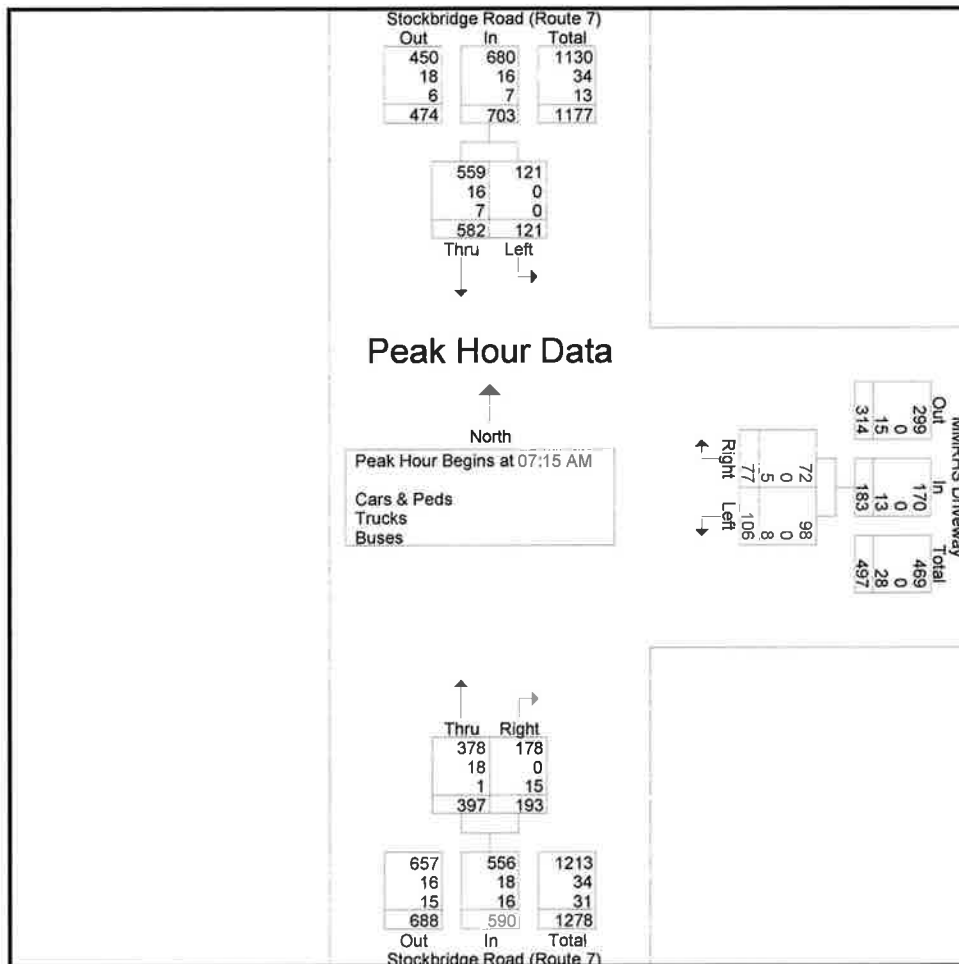
Mario Perone, [mperone1@verizon.net](mailto:mperone1@verizon.net)

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288A  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	129	16	145	7	6	13	14	87	101	259
07:30 AM	158	37	195	27	38	65	76	98	174	434
07:45 AM	134	62	196	36	44	80	83	125	208	484
08:00 AM	161	6	167	7	18	25	20	87	107	299
<b>Total Volume</b>	<b>582</b>	<b>121</b>	<b>703</b>	<b>77</b>	<b>106</b>	<b>183</b>	<b>193</b>	<b>397</b>	<b>590</b>	<b>1476</b>
% App. Total	82.8	17.2		42.1	57.9		32.7	67.3		
PHF	.904	.488	.897	.535	.602	.572	.581	.794	.709	.762
Cars & Peds	559	121	680	72	98	170	178	378	556	1406
% Cars & Peds	96.0	100	96.7	93.5	92.5	92.9	92.2	95.2	94.2	95.3
Trucks	16	0	16	0	0	0	0	18	18	34
% Trucks	2.7	0	2.3	0	0	0	0	4.5	3.1	2.3
Buses	7	0	7	5	8	13	15	1	16	36
% Buses	1.2	0	1.0	6.5	7.5	7.1	7.8	0.3	2.7	2.4



# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288AA  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Cars & Peds - Trucks - Buses

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
01:00 PM	91	2	0	4	10	0	5	130	0	0	242	242
01:15 PM	97	0	0	0	3	0	0	83	0	0	183	183
01:30 PM	107	2	0	3	3	0	4	109	0	0	228	228
01:45 PM	88	3	0	4	2	0	8	93	1	1	198	199
<b>Total</b>	<b>383</b>	<b>7</b>	<b>0</b>	<b>11</b>	<b>18</b>	<b>0</b>	<b>17</b>	<b>415</b>	<b>1</b>	<b>1</b>	<b>851</b>	<b>852</b>
02:00 PM	97	2	1	4	3	0	3	116	0	1	225	226
02:15 PM	109	5	0	0	2	0	11	118	0	0	245	245
02:30 PM	123	10	0	1	11	0	26	116	0	0	287	287
02:45 PM	122	6	0	27	56	8	12	132	0	8	355	363
<b>Total</b>	<b>451</b>	<b>23</b>	<b>1</b>	<b>32</b>	<b>72</b>	<b>8</b>	<b>52</b>	<b>482</b>	<b>0</b>	<b>9</b>	<b>1112</b>	<b>1121</b>
03:00 PM	140	1	0	10	17	0	0	129	0	0	297	297
03:15 PM	170	4	0	12	6	0	4	178	0	0	374	374
03:30 PM	88	7	0	3	6	1	5	173	0	1	282	283
03:45 PM	125	5	0	1	1	0	8	139	0	0	279	279
<b>Total</b>	<b>523</b>	<b>17</b>	<b>0</b>	<b>26</b>	<b>30</b>	<b>1</b>	<b>17</b>	<b>619</b>	<b>0</b>	<b>1</b>	<b>1232</b>	<b>1233</b>
04:00 PM	118	10	0	4	3	0	12	166	0	0	313	313
04:15 PM	97	8	0	6	8	1	9	161	0	1	289	290
04:30 PM	125	10	0	11	6	0	11	117	0	0	280	280
04:45 PM	116	8	0	7	9	0	19	126	0	0	285	285
<b>Total</b>	<b>456</b>	<b>36</b>	<b>0</b>	<b>28</b>	<b>26</b>	<b>1</b>	<b>51</b>	<b>570</b>	<b>0</b>	<b>1</b>	<b>1167</b>	<b>1168</b>
05:00 PM	139	13	0	6	16	0	21	127	0	0	322	322
05:15 PM	123	9	0	7	9	0	22	146	0	0	316	316
05:30 PM	101	14	0	6	12	0	14	157	0	0	304	304
05:45 PM	115	3	0	15	29	0	4	94	0	0	260	260
<b>Total</b>	<b>478</b>	<b>39</b>	<b>0</b>	<b>34</b>	<b>66</b>	<b>0</b>	<b>61</b>	<b>524</b>	<b>0</b>	<b>0</b>	<b>1202</b>	<b>1202</b>
<b>Grand Total</b>	<b>2291</b>	<b>122</b>	<b>1</b>	<b>131</b>	<b>212</b>	<b>10</b>	<b>198</b>	<b>2610</b>	<b>1</b>	<b>12</b>	<b>5564</b>	<b>5576</b>
Apprch %	94.9	5.1		38.2	61.8		7.1	92.9				
Total %	41.2	2.2		2.4	3.8		3.6	46.9		0.2	99.8	
Cars & Peds	2224	118		126	201		192	2521		0	0	5384
% Cars & Peds	97.1	96.7	100	96.2	94.8	0	97	96.6	100	0	0	96.6
Trucks	59	0		2	0		0	78		0	0	149
% Trucks	2.6	0		1.5	0	100	0	3	0	0	0	2.7
Buses	8	4		3	11		6	11		0	0	43
% Buses	0.3	3.3	0	2.3	5.2	0	3	0.4	0	0	0	0.8

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	123	10	133	1	11	12	26	116	142	287
02:45 PM	122	6	128	27	56	83	12	132	144	355
03:00 PM	140	1	141	10	17	27	0	129	129	297
03:15 PM	170	4	174	12	6	18	4	178	182	374
<b>Total Volume</b>	<b>555</b>	<b>21</b>	<b>576</b>	<b>50</b>	<b>90</b>	<b>140</b>	<b>42</b>	<b>555</b>	<b>597</b>	<b>1313</b>
% App. Total	96.4	3.6		35.7	64.3		7	93		
PHF	.816	.525	.828	.463	.402	.422	.404	.779	.820	.878
Cars & Peds	537	19	556	47	80	127	40	534	574	1257
% Cars & Peds	96.8	90.5	96.5	94.0	88.9	90.7	95.2	96.2	96.1	95.7
Trucks	13	0	13	1	0	1	0	14	14	28
% Trucks	2.3	0	2.3	2.0	0	0.7	0	2.5	2.3	2.1
Buses	5	2	7	2	10	12	2	7	9	28
% Buses	0.9	9.5	1.2	4.0	11.1	8.6	4.8	1.3	1.5	2.1

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288AA  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
01:00 PM	84	2	0	3	10	0	5	115	0	0	219	219
01:15 PM	94	0	0	0	3	0	0	75	0	0	172	172
01:30 PM	103	2	0	3	3	0	4	103	0	0	218	218
01:45 PM	84	3	0	4	2	0	7	86	1	1	186	187
Total	365	7	0	10	18	0	16	379	1	1	795	796
02:00 PM	91	2	1	3	3	0	3	107	0	1	209	210
02:15 PM	105	4	0	0	1	0	8	116	0	0	234	234
02:30 PM	119	8	0	1	10	0	24	114	0	0	276	276
02:45 PM	119	6	0	25	47	0	12	124	0	0	333	333
Total	434	20	1	29	61	0	47	461	0	1	1052	1053
03:00 PM	138	1	0	9	17	0	0	124	0	0	289	289
03:15 PM	161	4	0	12	6	0	4	172	0	0	359	359
03:30 PM	83	7	0	3	6	0	5	168	0	0	272	272
03:45 PM	123	4	0	1	1	0	8	135	0	0	272	272
Total	505	16	0	25	30	0	17	599	0	0	1192	1192
04:00 PM	115	10	0	4	3	0	12	164	0	0	308	308
04:15 PM	95	8	0	6	8	0	9	159	0	0	285	285
04:30 PM	125	10	0	11	6	0	11	114	0	0	277	277
04:45 PM	114	8	0	7	9	0	19	123	0	0	280	280
Total	449	36	0	28	26	0	51	560	0	0	1150	1150
05:00 PM	138	13	0	6	16	0	21	125	0	0	319	319
05:15 PM	121	9	0	7	9	0	22	146	0	0	314	314
05:30 PM	98	14	0	6	12	0	14	157	0	0	301	301
05:45 PM	114	3	0	15	29	0	4	94	0	0	259	259
Total	471	39	0	34	66	0	61	522	0	0	1193	1193
Grand Total	2224	118	1	126	201	0	192	2521	1	2	5382	5384
Apprch %	95	5		38.5	61.5		7.1	92.9				
Total %	41.3	2.2		2.3	3.7		3.6	46.8		0	100	

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	119	8	127	1	10	11	24	114	138	276
02:45 PM	119	6	125	25	47	72	12	124	136	333
03:00 PM	138	1	139	9	17	26	0	124	124	289
03:15 PM	161	4	165	12	6	18	4	172	176	359
Total Volume	537	19	556	47	80	127	40	534	574	1257
% App. Total	96.6	3.4		37	63		7	93		
PHF	.834	.594	.842	.470	.426	.441	.417	.776	.815	.875

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288AA  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Trucks										
Start Time	Stockbridge Road (Route 7) From North		MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total	
	Thru	Left	Right	Left	Right	Thru				
01:00 PM	7	0	1	0	0	14	22			
01:15 PM	3	0	0	0	0	8	11			
01:30 PM	4	0	0	0	0	6	10			
01:45 PM	4	0	0	0	0	7	11			
<b>Total</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>54</b>			
02:00 PM	6	0	0	0	0	8	14			
02:15 PM	4	0	0	0	0	1	5			
02:30 PM	4	0	0	0	0	2	6			
02:45 PM	3	0	1	0	0	3	7			
<b>Total</b>	<b>17</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>32</b>			
03:00 PM	2	0	0	0	0	5	7			
03:15 PM	4	0	0	0	0	4	8			
03:30 PM	5	0	0	0	0	4	9			
03:45 PM	1	0	0	0	0	4	5			
<b>Total</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>29</b>			
04:00 PM	1	0	0	0	0	2	3			
04:15 PM	2	0	0	0	0	2	4			
04:30 PM	0	0	0	0	0	3	3			
04:45 PM	2	0	0	0	0	3	5			
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>15</b>			
05:00 PM	1	0	0	0	0	2	3			
05:15 PM	2	0	0	0	0	0	2			
05:30 PM	3	0	0	0	0	0	3			
05:45 PM	1	0	0	0	0	0	1			
<b>Total</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>9</b>			
<b>Grand Total</b>	<b>59</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>139</b>			
Apprch %	100	0	100	0	0	100				
Total %	42.4	0	1.4	0	0	56.1				

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 01:00 PM										
01:00 PM	7	0	7	1	0	1	0	14	14	22
01:15 PM	3	0	3	0	0	0	0	8	8	11
01:30 PM	4	0	4	0	0	0	0	6	6	10
01:45 PM	4	0	4	0	0	0	0	7	7	11
<b>Total Volume</b>	<b>18</b>	<b>0</b>	<b>18</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>35</b>	<b>35</b>	<b>54</b>
<b>% App. Total</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>100</b>
PIIF	.643	.000	.643	.250	.000	.250	.000	.625	.625	.614

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288AA  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

### Groups Printed- Buses

Start Time	Stockbridge Road (Route 7) From North		MMRHS Driveway From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
01:00 PM	0	0	0	0	0	1	1
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	1	0	1
Total	0	0	0	0	1	1	2
02:00 PM	0	0	1	0	0	1	2
02:15 PM	0	1	0	1	3	1	6
02:30 PM	0	2	0	1	2	0	5
02:45 PM	0	0	1	9	0	5	15
Total	0	3	2	11	5	7	28
03:00 PM	0	0	1	0	0	0	1
03:15 PM	5	0	0	0	0	2	7
03:30 PM	0	0	0	0	0	1	1
03:45 PM	1	1	0	0	0	0	2
Total	6	1	1	0	0	3	11
04:00 PM	2	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	2	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	8	4	3	11	6	11	43
Apprch %	66.7	33.3	21.4	78.6	35.3	64.7	
Total %	18.6	9.3	7	25.6	14	25.6	

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	0	0	0	1	0	1	0	1	1	2
02:15 PM	0	1	1	0	1	1	3	1	4	6
02:30 PM	0	2	2	0	1	1	2	0	2	5
02:45 PM	0	0	0	1	9	10	0	5	5	15
Total Volume	0	3	3	2	11	13	5	7	12	28
% App. Total	0	100		15.4	84.6		41.7	58.3		
PHF	.000	.375	.375	.500	.306	.325	.417	.350	.600	.467

# Transportation Data Corporation

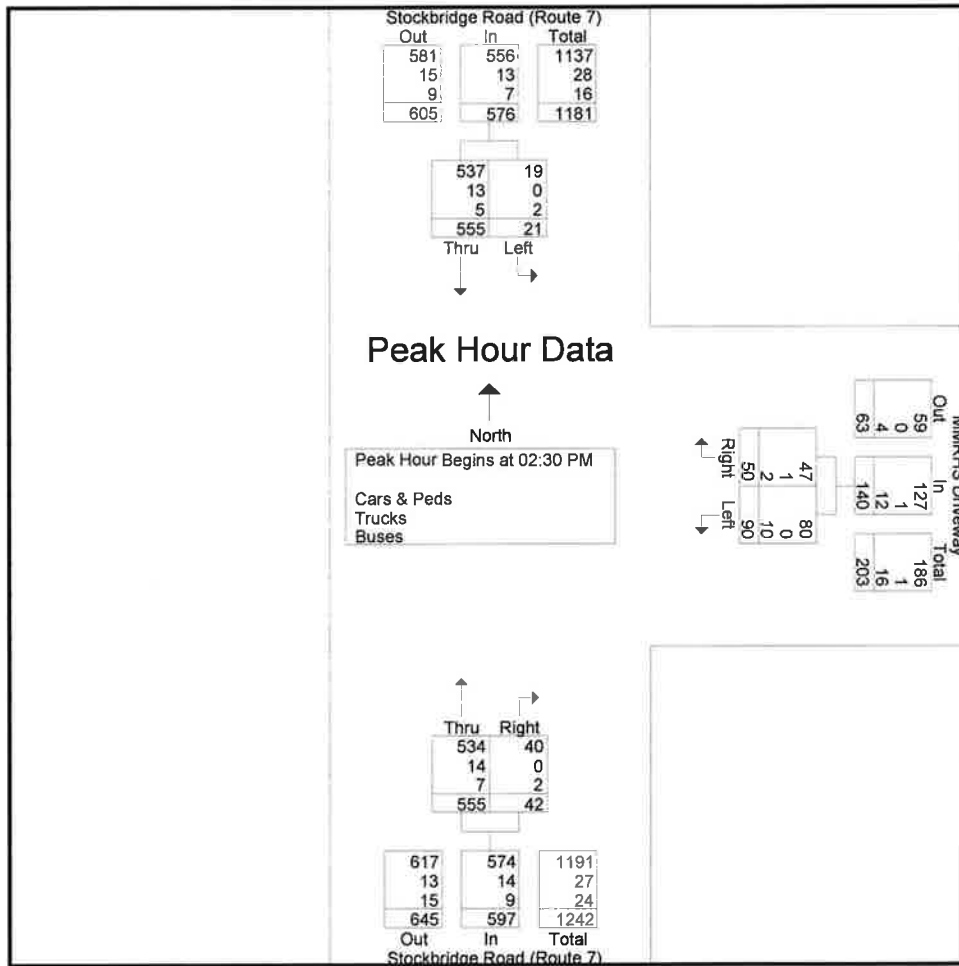
Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Mountain High School  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288AA  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Start Time	Stockbridge Road (Route 7) From North			MMRHS Driveway From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	123	10	133	1	11	12	26	116	142	287
02:45 PM	122	6	128	27	56	83	12	132	144	355
03:00 PM	140	1	141	10	17	27	0	129	129	297
03:15 PM	170	4	174	12	6	18	4	178	182	374
Total Volume	555	21	576	50	90	140	42	555	597	1313
% App. Total	96.4	3.6		35.7	64.3		7	93		
PHF	.816	.525	.828	.463	.402	.422	.404	.779	.820	.878
Cars & Peds	537	19	556	47	80	127	40	534	574	1257
% Cars & Peds	96.8	90.5	96.5	94.0	88.9	90.7	95.2	96.2	96.1	95.7
Trucks	13	0	13	1	0	1	0	14	14	28
% Trucks	2.3	0	2.3	2.0	0	0.7	0	2.5	2.3	2.1
Buses	5	2	7	2	10	12	2	7	9	28
% Buses	0.9	9.5	1.2	4.0	11.1	8.6	4.8	1.3	1.5	2.1



# Transportation Data Corporation

Mario Perone, [mperone1@verizon.net](mailto:mperone1@verizon.net)

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288B  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

### Groups Printed- Cars & Peds - Trucks - Buses

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
06:00 AM	31	6	0	5	0	0	2	22	0	0	66	66
06:15 AM	37	5	0	8	0	0	3	33	0	0	86	86
06:30 AM	74	10	0	6	0	0	0	35	0	0	125	125
06:45 AM	83	10	0	8	0	0	4	53	0	0	158	158
<b>Total</b>	<b>225</b>	<b>31</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>143</b>	<b>0</b>	<b>0</b>	<b>435</b>	<b>435</b>
07:00 AM	78	18	0	6	2	0	9	62	0	0	175	175
07:15 AM	104	27	0	25	1	0	19	80	0	0	256	256
07:30 AM	139	50	0	66	21	0	47	121	0	0	444	444
07:45 AM	142	35	0	47	42	0	40	160	0	0	466	466
<b>Total</b>	<b>463</b>	<b>130</b>	<b>0</b>	<b>144</b>	<b>66</b>	<b>0</b>	<b>115</b>	<b>423</b>	<b>0</b>	<b>0</b>	<b>1341</b>	<b>1341</b>
08:00 AM	146	29	0	21	14	0	21	81	0	0	312	312
08:15 AM	107	27	0	30	9	0	33	74	0	0	280	280
08:30 AM	113	20	0	38	42	0	28	83	0	0	324	324
08:45 AM	128	11	0	21	16	0	6	79	0	0	261	261
<b>Total</b>	<b>494</b>	<b>87</b>	<b>0</b>	<b>110</b>	<b>81</b>	<b>0</b>	<b>88</b>	<b>317</b>	<b>0</b>	<b>0</b>	<b>1177</b>	<b>1177</b>
09:00 AM	92	6	0	6	5	0	1	90	0	0	200	200
09:15 AM	84	10	0	7	1	0	4	76	0	0	182	182
09:30 AM	88	14	0	11	3	0	0	81	0	0	197	197
09:45 AM	110	7	0	13	4	0	2	82	0	0	218	218
<b>Total</b>	<b>374</b>	<b>37</b>	<b>0</b>	<b>37</b>	<b>13</b>	<b>0</b>	<b>7</b>	<b>329</b>	<b>0</b>	<b>0</b>	<b>797</b>	<b>797</b>
<b>Grand Total</b>	<b>1556</b>	<b>285</b>	<b>0</b>	<b>318</b>	<b>160</b>	<b>0</b>	<b>219</b>	<b>1212</b>	<b>0</b>	<b>0</b>	<b>3750</b>	<b>3750</b>
Approch %	84.5	15.5		66.5	33.5		15.3	84.7				
<b>Total %</b>	<b>41.5</b>	<b>7.6</b>		<b>8.5</b>	<b>4.3</b>		<b>5.8</b>	<b>32.3</b>			<b>100</b>	
Cars & Peds	1487	268		298	153		203	1156			0	3565
% Cars & Peds	95.6	94	0	93.7	95.6	0	92.7	95.4	0	0	0	95.1
Trucks	58	7		2	0		0	47			0	114
% Trucks	3.7	2.5	0	0.6	0	0	0	3.9	0	0	0	3
Buses	11	10		18	7		16	9			0	71
% Buses	0.7	3.5	0	5.7	4.4	0	7.3	0.7	0	0	0	1.9

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total	
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total		
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:30 AM											
07:30 AM	139	50	189	66	21	87	47	121	168	444	
07:45 AM	142	35	177	47	42	89	40	160	200	466	
08:00 AM	146	29	175	21	14	35	21	81	102	312	
08:15 AM	107	27	134	30	9	39	33	74	107	280	
Total Volume	534	141	675	164	86	250	141	436	577	1502	
% App. Total	79.1	20.9		65.6	34.4		24.4	75.6			
PHF	.914	.705	.893	.621	.512	.702	.750	.681	.721	.806	
Cars & Peds	506	129	635	151	82	233	129	414	543	1411	
% Cars & Peds	94.8	91.5	94.1	92.1	95.3	93.2	91.5	95.0	94.1	93.9	
Trucks	19	4	23	0	0	0	0	19	19	42	
% Trucks	3.6	2.8	3.4	0	0	0	0	4.4	3.3	2.8	
Buses	9	8	17	13	4	17	12	3	15	49	
% Buses	1.7	5.7	2.5	7.9	4.7	6.8	8.5	0.7	2.6	3.3	



# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288B  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

### Groups Printed- Cars & Peds

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
06:00 AM	27	6	0	5	0	0	2	21	0	0	61	61
06:15 AM	35	5	0	7	0	0	3	31	0	0	81	81
06:30 AM	71	9	0	6	0	0	0	34	0	0	120	120
06:45 AM	80	10	0	8	0	0	4	47	0	0	149	149
Total	213	30	0	26	0	0	9	133	0	0	411	411
07:00 AM	75	18	0	6	2	0	9	59	0	0	169	169
07:15 AM	101	26	0	24	1	0	17	78	0	0	247	247
07:30 AM	128	45	0	53	20	0	40	112	0	0	398	398
07:45 AM	140	33	0	47	41	0	40	151	0	0	452	452
Total	444	122	0	130	64	0	106	400	0	0	1266	1266
08:00 AM	136	29	0	21	14	0	21	79	0	0	300	300
08:15 AM	102	22	0	30	7	0	28	72	0	0	261	261
08:30 AM	110	19	0	34	40	0	27	79	0	0	309	309
08:45 AM	122	11	0	21	16	0	6	73	0	0	249	249
Total	470	81	0	106	77	0	82	303	0	0	1119	1119
09:00 AM	86	6	0	6	5	0	0	88	0	0	191	191
09:15 AM	82	10	0	7	1	0	4	74	0	0	178	178
09:30 AM	86	12	0	10	3	0	0	78	0	0	189	189
09:45 AM	106	7	0	13	3	0	2	80	0	0	211	211
Total	360	35	0	36	12	0	6	320	0	0	769	769
Grand Total	1487	268	0	298	153	0	203	1156	0	0	3565	3565
Apprch %	84.7	15.3		66.1	33.9		14.9	85.1				
Total %	41.7	7.5		8.4	4.3		5.7	32.4		0	100	

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	128	45	173	53	20	73	40	112	152	398
07:45 AM	140	33	173	47	41	88	40	151	191	452
08:00 AM	136	29	165	21	14	35	21	79	100	300
08:15 AM	102	22	124	30	7	37	28	72	100	261
Total Volume	506	129	635	151	82	233	129	414	543	1411
% App. Total	79.7	20.3		64.8	35.2		23.8	76.2		
PHF	.904	.717	.918	.712	.500	.662	.806	.685	.711	.780

**Transportation Data Corporation**

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288B  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Trucks

Start Time	Stockbridge Road (Route 7) From North		Monument Valley Road From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
06:00 AM	4	0	0	0	0	1	5
06:15 AM	2	0	1	0	0	1	4
06:30 AM	2	1	0	0	0	1	4
06:45 AM	3	0	0	0	0	3	6
<b>Total</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>19</b>
07:00 AM	3	0	0	0	0	2	5
07:15 AM	3	0	0	0	0	1	4
07:30 AM	4	0	0	0	0	6	10
07:45 AM	1	1	0	0	0	9	11
<b>Total</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>30</b>
08:00 AM	9	0	0	0	0	2	11
08:15 AM	5	3	0	0	0	2	10
08:30 AM	2	0	0	0	0	4	6
08:45 AM	6	0	0	0	0	6	12
<b>Total</b>	<b>22</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>39</b>
09:00 AM	6	0	0	0	0	2	8
09:15 AM	2	0	0	0	0	2	4
09:30 AM	2	2	1	0	0	3	8
09:45 AM	4	0	0	0	0	2	6
<b>Total</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>26</b>
<b>Grand Total</b>	<b>58</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>114</b>
Apprch %	89.2	10.8	100	0	0	100	
Total %	50.9	6.1	1.8	0	0	41.2	

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	4	0	4	0	0	0	0	6	6	10
07:45 AM	1	1	2	0	0	0	0	9	9	11
08:00 AM	9	0	9	0	0	0	0	2	2	11
08:15 AM	5	3	8	0	0	0	0	2	2	10
Total Volume	19	4	23	0	0	0	0	19	19	42
% App. Total	82.6	17.4		0	0		0	100		
PIIF	.528	.333	.639	.000	.000	.000	.000	.528	.528	.955

**Transportation Data Corporation**

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288B  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Buses

Start Time	Stockbridge Road (Route 7) From North		Monument Valley Road From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
06:00 AM	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	1	1
06:30 AM	1	0	0	0	0	0	1
06:45 AM	0	0	0	0	0	3	3
Total	1	0	0	0	0	4	5
07:00 AM	0	0	0	0	0	1	1
07:15 AM	0	1	1	0	2	1	5
07:30 AM	7	5	13	1	7	3	36
07:45 AM	1	1	0	1	0	0	3
Total	8	7	14	2	9	5	45
08:00 AM	1	0	0	0	0	0	1
08:15 AM	0	2	0	2	5	0	9
08:30 AM	1	1	4	2	1	0	9
08:45 AM	0	0	0	0	0	0	0
Total	2	3	4	4	6	0	19
09:00 AM	0	0	0	0	1	0	1
09:15 AM	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0
09:45 AM	0	0	0	1	0	0	1
Total	0	0	0	1	1	0	2
Grand Total	11	10	18	7	16	9	71
Apprch %	52.4	47.6	72	28	64	36	
Total %	15.5	14.1	25.4	9.9	22.5	12.7	

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	7	5	12	13	1	14	7	3	10	36
07:45 AM	1	1	2	0	1	1	0	0	0	3
08:00 AM	1	0	1	0	0	0	0	0	0	1
08:15 AM	0	2	2	0	2	2	5	0	5	9
Total Volume	9	8	17	13	4	17	12	3	15	49
% App. Total	52.9	47.1		76.5	23.5		80	20		
PHF	.321	.400	.354	.250	.500	.304	.429	.250	.375	.340

# Transportation Data Corporation

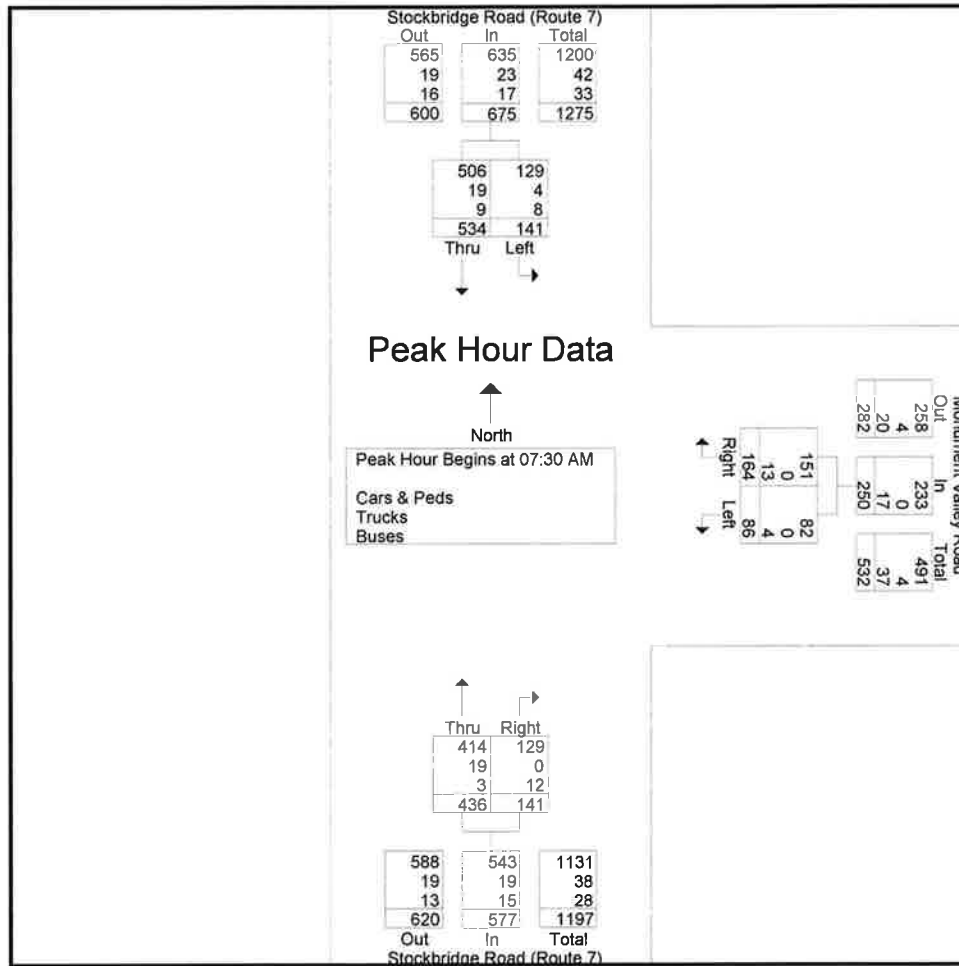
Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288B  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	139	50	189	66	21	87	47	121	168	444
07:45 AM	142	35	177	47	42	89	40	160	200	466
08:00 AM	146	29	175	21	14	35	21	81	102	312
08:15 AM	107	27	134	30	9	39	33	74	107	280
<b>Total Volume</b>	<b>534</b>	<b>141</b>	<b>675</b>	<b>164</b>	<b>86</b>	<b>250</b>	<b>141</b>	<b>436</b>	<b>577</b>	<b>1502</b>
% App. Total	79.1	20.9		65.6	34.4		24.4	75.6		
PHF	.914	.705	.893	.621	.512	.702	.750	.681	.721	.806
Cars & Peds	506	129	635	151	82	233	129	414	543	1411
% Cars & Peds	94.8	91.5	94.1	92.1	95.3	93.2	91.5	95.0	94.1	93.9
Trucks	19	4	23	0	0	0	0	19	19	42
% Trucks	3.6	2.8	3.4	0	0	0	0	4.4	3.3	2.8
Buses	9	8	17	13	4	17	12	3	15	49
% Buses	1.7	5.7	2.5	7.9	4.7	6.8	8.5	0.7	2.6	3.3



# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288BB  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

### Groups Printed- Cars & Peds - Trucks - Buses

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
01:00 PM	87	8	0	13	3	0	3	126	0	0	240	240
01:15 PM	91	9	0	9	4	0	4	80	0	0	197	197
01:30 PM	100	9	0	17	7	0	3	95	41	41	231	272
01:45 PM	86	4	0	11	8	0	3	93	0	0	205	205
<b>Total</b>	<b>364</b>	<b>30</b>	<b>0</b>	<b>50</b>	<b>22</b>	<b>0</b>	<b>13</b>	<b>394</b>	<b>41</b>	<b>41</b>	<b>873</b>	<b>914</b>
02:00 PM	93	4	0	11	5	0	5	116	0	0	234	234
02:15 PM	91	19	0	11	4	0	18	119	0	0	262	262
02:30 PM	111	18	0	19	6	0	24	124	0	0	302	302
02:45 PM	147	32	0	34	36	0	19	113	0	0	381	381
<b>Total</b>	<b>442</b>	<b>73</b>	<b>0</b>	<b>75</b>	<b>51</b>	<b>0</b>	<b>66</b>	<b>472</b>	<b>0</b>	<b>0</b>	<b>1179</b>	<b>1179</b>
03:00 PM	125	32	0	15	14	0	22	121	0	0	329	329
03:15 PM	131	31	0	56	37	28	20	136	0	28	411	439
03:30 PM	80	15	0	27	31	2	5	146	0	2	304	306
03:45 PM	108	14	0	19	12	6	3	138	0	6	294	300
<b>Total</b>	<b>444</b>	<b>92</b>	<b>0</b>	<b>117</b>	<b>94</b>	<b>36</b>	<b>50</b>	<b>541</b>	<b>0</b>	<b>36</b>	<b>1338</b>	<b>1374</b>
04:00 PM	106	11	0	20	7	10	9	159	0	10	312	322
04:15 PM	93	7	0	23	4	6	3	147	0	6	277	283
04:30 PM	108	22	0	14	2	0	6	116	0	0	268	268
04:45 PM	108	15	0	30	8	0	10	136	0	0	307	307
<b>Total</b>	<b>415</b>	<b>55</b>	<b>0</b>	<b>87</b>	<b>21</b>	<b>16</b>	<b>28</b>	<b>558</b>	<b>0</b>	<b>16</b>	<b>1164</b>	<b>1180</b>
05:00 PM	140	10	0	19	9	0	8	132	0	0	318	318
05:15 PM	110	16	0	11	4	0	8	162	0	0	311	311
05:30 PM	97	17	0	13	7	0	10	156	0	0	300	300
05:45 PM	121	15	0	12	5	0	5	88	0	0	246	246
<b>Total</b>	<b>468</b>	<b>58</b>	<b>0</b>	<b>55</b>	<b>25</b>	<b>0</b>	<b>31</b>	<b>538</b>	<b>0</b>	<b>0</b>	<b>1175</b>	<b>1175</b>
<b>Grand Total</b>	<b>2133</b>	<b>308</b>	<b>0</b>	<b>384</b>	<b>213</b>	<b>52</b>	<b>188</b>	<b>2503</b>	<b>41</b>	<b>93</b>	<b>5729</b>	<b>5822</b>
Apprch %	87.4	12.6		64.3	35.7		7	93				
Total %	37.2	5.4		6.7	3.7		3.3	43.7		1.6	98.4	
Cars & Peds	2067	291		372	195		175	2422		0	0	5615
% Cars & Peds	96.9	94.5	0	96.9	91.5	100	93.1	96.8	100	0	0	96.4
Trucks	60	2		4	0		0	71		0	0	137
% Trucks	2.8	0.6	0	1	0	0	0	2.8	0	0	0	2.4
Buses	6	15		8	18		13	10		0	0	70
% Buses	0.3	4.9	0	2.1	8.5	0	6.9	0.4	0	0	0	1.2

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
<b>Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1</b>										
<b>Peak Hour for Entire Intersection Begins at 02:45 PM</b>										
02:45 PM	147	32	179	34	36	70	19	113	132	381
03:00 PM	125	32	157	15	14	29	22	121	143	329
03:15 PM	131	31	162	56	37	93	20	136	156	411
03:30 PM	80	15	95	27	31	58	5	146	151	304
<b>Total Volume</b>	<b>483</b>	<b>110</b>	<b>593</b>	<b>132</b>	<b>118</b>	<b>250</b>	<b>66</b>	<b>516</b>	<b>582</b>	<b>1425</b>
% App. Total	81.5	18.5		52.8	47.2		11.3	88.7		
PIIF	.821	.859	.828	.589	.797	.672	.750	.884	.933	.867
Cars & Peds	465	97	562	124	101	225	62	501	563	1350
% Cars & Peds	96.3	88.2	94.8	93.9	85.6	90.0	93.9	97.1	96.7	94.7
Trucks	16	0	16	0	0	0	0	14	14	30
% Trucks	3.3	0	2.7	0	0	0	0	2.7	2.4	2.1
Buses	2	13	15	8	17	25	4	1	5	45
% Buses	0.4	11.8	2.5	6.1	14.4	10.0	6.1	0.2	0.9	3.2

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288BB  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Exclu. Total	Inclu. Total	Int. Total
	Thru	Left	Peds	Right	Left	Peds	Right	Thru	Peds			
01:00 PM	80	8	0	10	3	0	2	115	0	0	218	218
01:15 PM	88	9	0	9	3	0	4	72	0	0	185	185
01:30 PM	97	8	0	17	7	0	3	89	41	41	221	262
01:45 PM	81	4	0	11	8	0	3	85	0	0	192	192
<b>Total</b>	<b>346</b>	<b>29</b>	<b>0</b>	<b>47</b>	<b>21</b>	<b>0</b>	<b>12</b>	<b>361</b>	<b>41</b>	<b>41</b>	<b>816</b>	<b>857</b>
02:00 PM	87	4	0	11	5	0	5	108	0	0	220	220
02:15 PM	87	18	0	11	4	0	13	114	0	0	247	247
02:30 PM	107	16	0	18	6	0	21	121	0	0	289	289
02:45 PM	142	24	0	28	27	0	19	110	0	0	350	350
<b>Total</b>	<b>423</b>	<b>62</b>	<b>0</b>	<b>68</b>	<b>42</b>	<b>0</b>	<b>58</b>	<b>453</b>	<b>0</b>	<b>0</b>	<b>1106</b>	<b>1106</b>
03:00 PM	123	32	0	15	13	0	22	117	0	0	322	322
03:15 PM	126	26	0	55	32	28	16	132	0	28	387	415
03:30 PM	74	15	0	26	29	2	5	142	0	2	291	293
03:45 PM	106	14	0	19	12	6	3	134	0	6	288	294
<b>Total</b>	<b>429</b>	<b>87</b>	<b>0</b>	<b>115</b>	<b>86</b>	<b>36</b>	<b>46</b>	<b>525</b>	<b>0</b>	<b>36</b>	<b>1288</b>	<b>1324</b>
04:00 PM	103	11	0	20	7	10	9	157	0	10	307	317
04:15 PM	91	7	0	23	4	6	3	145	0	6	273	279
04:30 PM	108	22	0	14	2	0	6	113	0	0	265	265
04:45 PM	106	15	0	30	8	0	10	132	0	0	301	301
<b>Total</b>	<b>408</b>	<b>55</b>	<b>0</b>	<b>87</b>	<b>21</b>	<b>16</b>	<b>28</b>	<b>547</b>	<b>0</b>	<b>16</b>	<b>1146</b>	<b>1162</b>
05:00 PM	139	10	0	19	9	0	8	130	0	0	315	315
05:15 PM	108	16	0	11	4	0	8	162	0	0	309	309
05:30 PM	94	17	0	13	7	0	10	156	0	0	297	297
05:45 PM	120	15	0	12	5	0	5	88	0	0	245	245
<b>Total</b>	<b>461</b>	<b>58</b>	<b>0</b>	<b>55</b>	<b>25</b>	<b>0</b>	<b>31</b>	<b>536</b>	<b>0</b>	<b>0</b>	<b>1166</b>	<b>1166</b>
<b>Grand Total</b>	<b>2067</b>	<b>291</b>	<b>0</b>	<b>372</b>	<b>195</b>	<b>52</b>	<b>175</b>	<b>2422</b>	<b>41</b>	<b>93</b>	<b>5522</b>	<b>5615</b>
Apprch %	87.7	12.3		65.6	34.4		6.7	93.3				
Total %	37.4	5.3		6.7	3.5		3.2	43.9		1.7	98.3	

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:45 PM										
02:45 PM	142	24	166	28	27	55	19	110	129	350
03:00 PM	123	32	155	15	13	28	22	117	139	322
03:15 PM	126	26	152	55	32	87	16	132	148	387
03:30 PM	74	15	89	26	29	55	5	142	147	291
<b>Total Volume</b>	<b>465</b>	<b>97</b>	<b>562</b>	<b>124</b>	<b>101</b>	<b>225</b>	<b>62</b>	<b>501</b>	<b>563</b>	<b>1350</b>
<b>% App. Total</b>	<b>82.7</b>	<b>17.3</b>		<b>55.1</b>	<b>44.9</b>		<b>11</b>	<b>89</b>		
PHIF	.819	.758	.846	.564	.789	.647	.705	.882	.951	.872

**Transportation Data Corporation**

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288BB  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Groups Printed- Trucks

Start Time	Stockbridge Road (Route 7) From North		Monument Valley Road From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
01:00 PM	7	0	3	0	0	10	20
01:15 PM	3	0	0	0	0	8	11
01:30 PM	3	1	0	0	0	6	10
01:45 PM	5	0	0	0	0	7	12
Total	18	1	3	0	0	31	53
02:00 PM	6	0	0	0	0	7	13
02:15 PM	3	1	0	0	0	1	5
02:30 PM	4	0	1	0	0	1	6
02:45 PM	4	0	0	0	0	3	7
Total	17	1	1	0	0	12	31
03:00 PM	2	0	0	0	0	4	6
03:15 PM	4	0	0	0	0	3	7
03:30 PM	6	0	0	0	0	4	10
03:45 PM	1	0	0	0	0	4	5
Total	13	0	0	0	0	15	28
04:00 PM	1	0	0	0	0	2	3
04:15 PM	2	0	0	0	0	2	4
04:30 PM	0	0	0	0	0	3	3
04:45 PM	2	0	0	0	0	4	6
Total	5	0	0	0	0	11	16
05:00 PM	1	0	0	0	0	2	3
05:15 PM	2	0	0	0	0	0	2
05:30 PM	3	0	0	0	0	0	3
05:45 PM	1	0	0	0	0	0	1
Total	7	0	0	0	0	2	9
Grand Total	60	2	4	0	0	71	137
Apprch %	96.8	3.2	100	0	0	100	
Total %	43.8	1.5	2.9	0	0	51.8	

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 01:00 PM										
01:00 PM	7	0	7	3	0	3	0	10	10	20
01:15 PM	3	0	3	0	0	0	0	8	8	11
01:30 PM	3	1	4	0	0	0	0	6	6	10
01:45 PM	5	0	5	0	0	0	0	7	7	12
Total Volume	18	1	19	3	0	3	0	31	31	53
% App. Total	94.7	5.3		100	0		0	100		
PHF	.643	.250	.679	.250	.000	.250	.000	.775	.775	.663



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Mario Perone, mperone1@verizon.net

t (781) 587-0086 f(781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288BB  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

### Groups Printed- Buses

Start Time	Stockbridge Road (Route 7) From North		Monument Valley Road From East		Stockbridge Road (Route 7) From South		Int. Total
	Thru	Left	Right	Left	Right	Thru	
01:00 PM	0	0	0	0	1	1	2
01:15 PM	0	0	0	1	0	0	1
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	1	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>4</b>
02:00 PM	0	0	0	0	0	1	1
02:15 PM	1	0	0	0	5	4	10
02:30 PM	0	2	0	0	3	2	7
02:45 PM	1	8	6	9	0	0	24
<b>Total</b>	<b>2</b>	<b>10</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>7</b>	<b>42</b>
03:00 PM	0	0	0	1	0	0	1
03:15 PM	1	5	1	5	4	1	17
03:30 PM	0	0	1	2	0	0	3
03:45 PM	1	0	0	0	0	0	1
<b>Total</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>8</b>	<b>4</b>	<b>1</b>	<b>22</b>
04:00 PM	2	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Grand Total</b>	<b>6</b>	<b>15</b>	<b>8</b>	<b>18</b>	<b>13</b>	<b>10</b>	<b>70</b>
Apprch %	28.6	71.4	30.8	69.2	56.5	43.5	
Total %	8.6	21.4	11.4	25.7	18.6	14.3	

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
02:30 PM	0	2	2	0	0	0	3	2	5	7
02:45 PM	1	8	9	6	9	15	0	0	0	24
03:00 PM	0	0	0	0	1	1	0	0	0	1
03:15 PM	1	5	6	1	5	6	4	1	5	17
<b>Total Volume</b>	<b>2</b>	<b>15</b>	<b>17</b>	<b>7</b>	<b>15</b>	<b>22</b>	<b>7</b>	<b>3</b>	<b>10</b>	<b>49</b>
<b>% App. Total</b>	<b>11.8</b>	<b>88.2</b>		<b>31.8</b>	<b>68.2</b>		<b>70</b>	<b>30</b>		
<b>PHF</b>	<b>.500</b>	<b>.469</b>	<b>.472</b>	<b>.292</b>	<b>.417</b>	<b>.367</b>	<b>.438</b>	<b>.375</b>	<b>.500</b>	<b>.510</b>

Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 02:30 PM

# Transportation Data Corporation

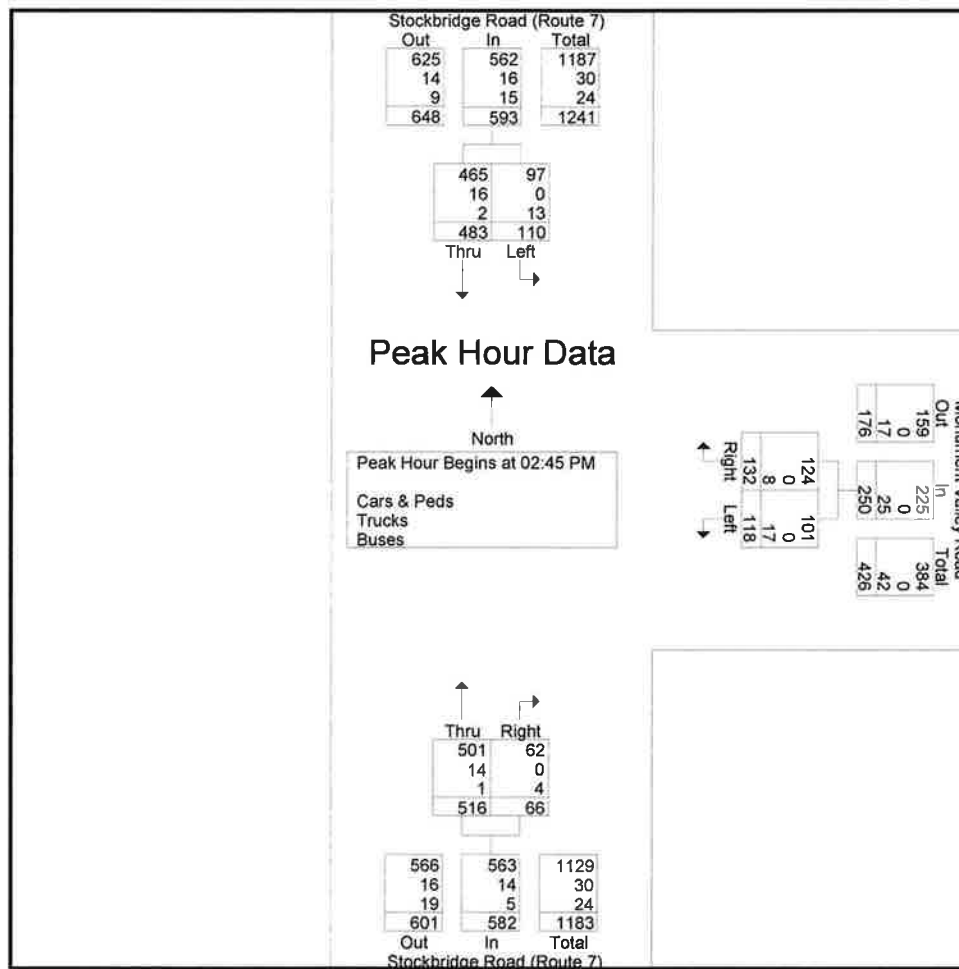
Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0189

N/S: Stockbridge Road (Route 7)  
 E: Monument Valley Road  
 City, State: Great Barrington, MA  
 Client: Bryant/T. Brayton

File Name : 04288BB  
 Site Code : 212054  
 Start Date : 9/20/2012  
 Page No : 1

Start Time	Stockbridge Road (Route 7) From North			Monument Valley Road From East			Stockbridge Road (Route 7) From South			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
Peak Hour Analysis From 01:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:45 PM										
02:45 PM	147	32	179	34	36	70	19	113	132	381
03:00 PM	125	32	157	15	14	29	22	121	143	329
03:15 PM	131	31	162	56	37	93	20	136	156	411
03:30 PM	80	15	95	27	31	58	5	146	151	304
<b>Total Volume</b>	<b>483</b>	<b>110</b>	<b>593</b>	<b>132</b>	<b>118</b>	<b>250</b>	<b>66</b>	<b>516</b>	<b>582</b>	<b>1425</b>
<b>% App. Total</b>	<b>81.5</b>	<b>18.5</b>		<b>52.8</b>	<b>47.2</b>		<b>11.3</b>	<b>88.7</b>		
<b>PHF</b>	<b>.821</b>	<b>.859</b>	<b>.828</b>	<b>.589</b>	<b>.797</b>	<b>.672</b>	<b>.750</b>	<b>.884</b>	<b>.933</b>	<b>.867</b>
Cars & Peds	465	97	562	124	101	225	62	501	563	1350
% Cars & Peds	96.3	88.2	94.8	93.9	85.6	90.0	93.9	97.1	96.7	94.7
Trucks	16	0	16	0	0	0	0	14	14	30
% Trucks	3.3	0	2.7	0	0	0	0	2.7	2.4	2.1
Buses	2	13	15	8	17	25	4	1	5	45
% Buses	0.4	11.8	2.5	6.1	14.4	10.0	6.1	0.2	0.9	3.2



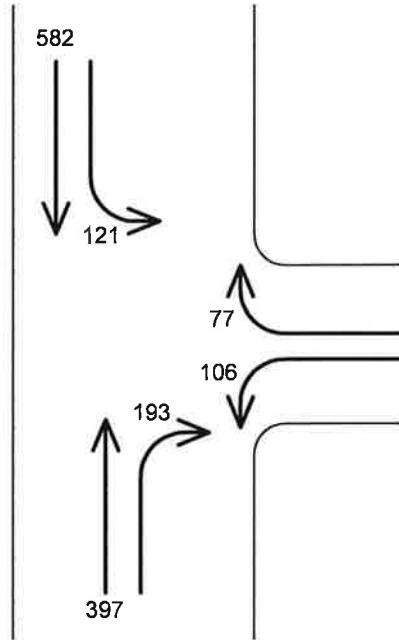


***APPENDIX B: INTERSECTION CAPACITY ANALYSIS COMPUTATIONS***



TRAFFIC VOLUMES  
MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
STOCKBRIDGE ROAD, GREAT BARRINGTON, MA  
EXISTING CONDITIONS - 2012

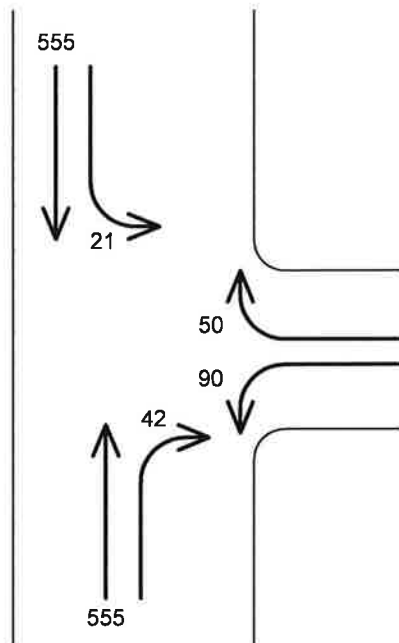
SCHOOL AM PEAK



MONUMENT MOUNTAIN  
REGIONAL HIGH SCHOOL  
DRIVEWAY

STOCKBRIDGE ROAD

SCHOOL PM PEAK















MONUMENT MOUNTAIN  
REGIONAL HIGH SCHOOL  
DRIVEWAY

STOCKBRIDGE ROAD

# HCM Unsignalized Intersection Capacity Analysis

## 3: Stockbridge Road & MMRHS Driveway

9/25/2012

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	106	77	397	193	121	582
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.60	0.53	0.79	0.58	0.82	0.90
Hourly flow rate (vph)	177	145	503	333	148	647
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			844			
pX, platoon unblocked						
vC, conflicting volume	1444	503			503	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1444	503			503	
tC, single (s)	6.5	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	0	74			86	
cM capacity (veh/h)	122	561			1072	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	322	503	333	148	647	
Volume Left	177	0	0	148	0	
Volume Right	145	0	333	0	0	
cSH	192	1700	1700	1072	1700	
Volume to Capacity	1.68	0.30	0.20	0.14	0.38	
Queue Length 95th (ft)	544	0	0	12	0	
Control Delay (s)	368.6	0.0	0.0	8.9	0.0	
Lane LOS	F			A		
Approach Delay (s)	368.6	0.0		1.7		
Approach LOS	F					
Intersection Summary						
Average Delay			61.5			
Intersection Capacity Utilization			43.5%		ICU Level of Service	A
Analysis Period (min)			15			



# HCM Unsignalized Intersection Capacity Analysis

## 3: Stockbridge Road & MMRHS Driveway

9/25/2012

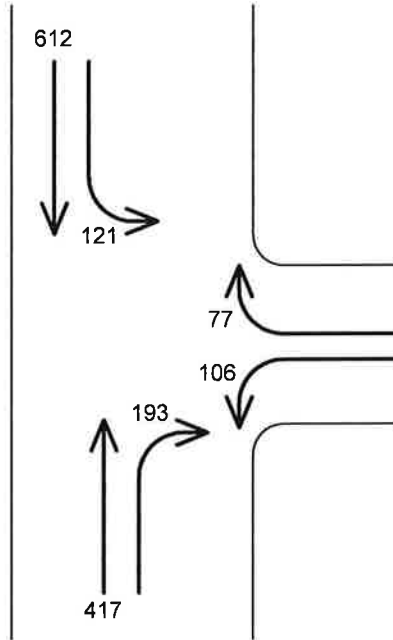


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↑	↗	↙	↑
Volume (veh/h)	90	50	555	42	21	555
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.40	0.46	0.78	0.40	0.53	0.82
Hourly flow rate (vph)	225	109	712	105	40	677
Pedestrians	8					
Lane Width (ft)	14.5					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)		2				
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			844			
pX, platoon unblocked	0.74	0.74			0.74	
vC, conflicting volume	1476	720			720	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1467	449			449	
tC, single (s)	6.5	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	0	75			95	
cM capacity (veh/h)	94	443			788	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	334	712	105	40	677	
Volume Left	225	0	0	40	0	
Volume Right	109	0	105	0	0	
cSH	127	1700	1700	788	1700	
Volume to Capacity	2.63	0.42	0.06	0.05	0.40	
Queue Length 95th (ft)	750	0	0	4	0	
Control Delay (s)	809.4	0.0	0.0	9.8	0.0	
Lane LOS	F			A		
Approach Delay (s)	809.4	0.0		0.5		
Approach LOS	F					

Intersection Summary					
Average Delay		144.9			
Intersection Capacity Utilization		40.9%	ICU Level of Service	A	
Analysis Period (min)		15			

TRAFFIC VOLUMES  
MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
STOCKBRIDGE ROAD, GREAT BARRINGTON, MA  
BUILD CONDITIONS - 2017

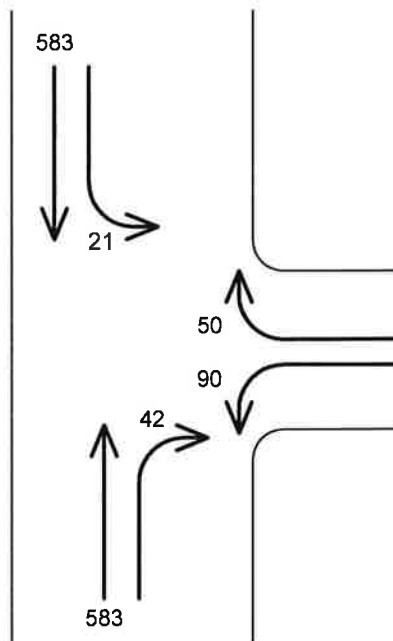
SCHOOL AM PEAK



MONUMENT MOUNTAIN  
REGIONAL HIGH SCHOOL  
DRIVEWAY

STOCKBRIDGE ROAD

SCHOOL PM PEAK















MONUMENT MOUNTAIN  
REGIONAL HIGH SCHOOL  
DRIVEWAY

STOCKBRIDGE ROAD

# HCM Unsignalized Intersection Capacity Analysis













## 3: Stockbridge Road & MMRHS Driveway

9/25/2012

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	106	77	417	193	121	612
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.60	0.53	0.79	0.58	0.82	0.90
Hourly flow rate (vph)	177	145	528	333	148	680
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			None			None
Median storage veh						
Upstream signal (ft)			844			
pX, platoon unblocked						
vC, conflicting volume	1503	528			528	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1503	528			528	
tC, single (s)	6.5	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	0	73			86	
cM capacity (veh/h)	111	543			1049	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	322	528	333	148	680	
Volume Left	177	0	0	148	0	
Volume Right	145	0	333	0	0	
cSH	186	1700	1700	1049	1700	
Volume to Capacity	1.73	0.31	0.20	0.14	0.40	
Queue Length 95th (ft)	559	0	0	12	0	
Control Delay (s)	393.8	0.0	0.0	9.0	0.0	
Lane LOS	F			A		
Approach Delay (s)	393.8	0.0		1.6		
Approach LOS	F					
Intersection Summary						
Average Delay			63.7			
Intersection Capacity Utilization			44.7%		ICU Level of Service	A
Analysis Period (min)			15			

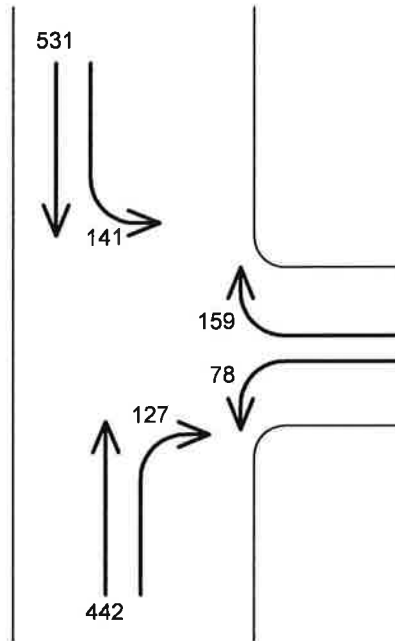
HCM Unsignalized Intersection Capacity Analysis  
 3: Stockbridge Road & MMRHS Driveway

9/25/2012

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	90	50	583	42	21	583
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.40	0.46	0.78	0.40	0.53	0.82
Hourly flow rate (vph)	225	109	747	105	40	711
Pedestrians	8					
Lane Width (ft)	14.5					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)		8				
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			844			
pX, platoon unblocked	0.72	0.72			0.72	
vC, conflicting volume	1546	755			755	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1563	469			469	
tC, single (s)	6.5	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	0	74			95	
cM capacity (veh/h)	79	420			754	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	334	747	105	40	711	
Volume Left	225	0	0	40	0	
Volume Right	109	0	105	0	0	
cSH	109	1700	1700	754	1700	
Volume to Capacity	3.05	0.44	0.06	0.05	0.42	
Queue Length 95th (ft)	Err	0	0	4	0	
Control Delay (s)	Err	0.0	0.0	10.0	0.0	
Lane LOS	F			B		
Approach Delay (s)	Err	0.0		0.5		
Approach LOS	F					
Intersection Summary						
Average Delay			1723.0			
Intersection Capacity Utilization			42.3%	ICU Level of Service		A
Analysis Period (min)			15			

TRAFFIC VOLUMES  
 MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
 STOCKBRIDGE ROAD, GREAT BARRINGTON, MA  
 EXISTING CONDITIONS - 2012

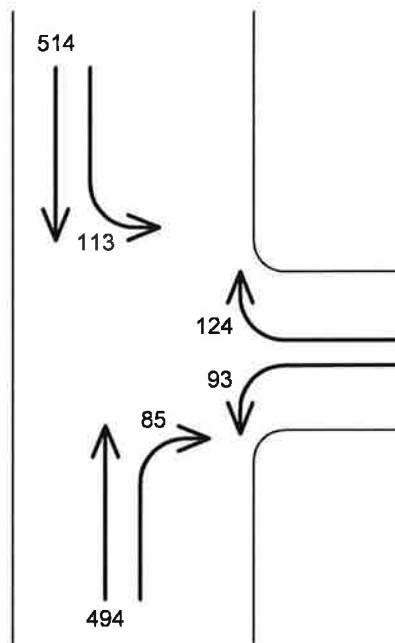
SCHOOL AM PEAK



MONUMENT VALLEY ROAD

STOCKBRIDGE ROAD

SCHOOL PM PEAK














MONUMENT VALLEY ROAD

STOCKBRIDGE ROAD

Lanes, Volumes, Timings  
1: Stockbridge Road & Monument Valley Road

9/26/2012

							ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Volume (vph)	78	159	442	127	141	531	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	90		0	150		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>		0.850	0.970				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1752	1482	1748	0	1703	1810	
Flt Permitted	0.950				0.121		
Satd. Flow (perm)	1752	1482	1748	0	217	1810	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		178	20				
Link Speed (mph)	35		50			50	
Link Distance (ft)	451		394			844	
Travel Time (s)	8.8		5.4			11.5	
Peak Hour Factor	0.46	0.60	0.69	0.68	0.71	0.91	
Heavy Vehicles (%)	3%	9%	5%	7%	6%	5%	
Adj. Flow (vph)	170	265	641	187	199	584	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	170	265	828	0	199	584	
Turn Type	NA	pt+ov	NA		pm+pt	NA	
Protected Phases	4	4 5	6		5	2 5	2
Permitted Phases					2 5		
Detector Phase	4	4 5	6		5	2 5	
Switch Phase							
Minimum Initial (s)	4.0		12.0		4.0		12.0
Minimum Split (s)	9.0		18.0		10.0		18.0
Total Split (s)	30.0		51.0		16.0		51.0
Total Split (%)	30.9%		52.6%		16.5%		53%
Yellow Time (s)	3.0		4.0		4.0		4.0
All-Red Time (s)	2.0		2.0		2.0		2.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	5.0		6.0		6.0		
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?							
Recall Mode	None		Min		None		Min
Act Effct Green (s)	12.5	28.5	45.0		61.1	61.1	
Actuated g/C Ratio	0.15	0.34	0.53		0.72	0.72	
v/c Ratio	0.66	0.43	0.88		0.60	0.45	
Control Delay	46.4	9.6	31.0		16.6	6.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.4	9.6	31.0		16.6	6.7	
LOS	D	A	C		B	A	
Approach Delay	24.0		31.0			9.2	
Approach LOS	C		C			A	
Queue Length 50th (ft)	86	32	356		27	105	
Queue Length 95th (ft)	70	30	370		58	207	

# Lanes, Volumes, Timings

## 1: Stockbridge Road & Monument Valley Road

9/26/2012



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø2
Internal Link Dist (ft)	371		314			764	
Turn Bay Length (ft)		90			150		
Base Capacity (vph)	519	622	941		332	1308	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.33	0.43	0.88		0.60	0.45	

### Intersection Summary

Area Type: Other

Cycle Length: 97

Actuated Cycle Length: 84.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 21.2

Intersection LOS: C

Intersection Capacity Utilization 57.3%

ICU Level of Service B

Analysis Period (min) 15












### Splits and Phases: 1: Stockbridge Road & Monument Valley Road

ø2	ø4
51 s	30 s
ø5	ø5
16 s	51 s

# Lanes, Volumes, Timings

## 1: Stockbridge Road & Monument Valley Road

9/26/2012

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	93	124	494	85	113	514	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	90		0	150		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor			0.99		0.99		
Frt		0.850	0.980				
Fit Protected	0.950				0.950		
Satd. Flow (prot)	1556	1524	1781	0	1597	1845	
Fit Permitted	0.950				0.161		
Satd. Flow (perm)	1556	1524	1781	0	269	1845	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		201	12				
Link Speed (mph)	35		50			50	
Link Distance (ft)	451		394			844	
Travel Time (s)	8.8		5.4			11.5	
Confl. Peds. (#/hr)				28	28		
Peak Hour Factor	0.63	0.55	0.91	0.89	0.88	0.87	
Heavy Vehicles (%)	16%	6%	3%	8%	13%	3%	
Adj. Flow (vph)	148	225	543	96	128	591	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	148	225	639	0	128	591	
Turn Type	NA	pt+ov	NA		pm+pt	NA	
Protected Phases	4	4 5	6		5	2 5	2
Permitted Phases					2 5		
Detector Phase	4	4 5	6		5	2 5	
Switch Phase							
Minimum Initial (s)	4.0		12.0		4.0		12.0
Minimum Split (s)	9.0		18.0		10.0		18.0
Total Split (s)	30.0		51.0		16.0		51.0
Total Split (%)	30.9%		52.6%		16.5%		53%
Yellow Time (s)	3.0		4.0		4.0		4.0
All-Red Time (s)	2.0		2.0		2.0		2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0
Total Lost Time (s)	5.0		6.0		6.0		6.0
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?							
Recall Mode	None		Min		None		Min
Act Effect Green (s)	11.4	28.0	28.2		44.9	44.9	
Actuated g/C Ratio	0.17	0.41	0.42		0.66	0.66	
v/c Ratio	0.57	0.30	0.85		0.34	0.48	
Control Delay	37.3	5.0	29.7		7.0	7.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	37.3	5.0	29.7		7.0	7.5	
LOS	D	A	C		A	A	
Approach Delay	17.8		29.7			7.4	
Approach LOS	B		C			A	



Lanes, Volumes, Timings  
 1: Stockbridge Road & Monument Valley Road

9/26/2012



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø2
Queue Length 50th (ft)	55	6	218		16	98	
Queue Length 95th (ft)	89	3	400		40	197	
Internal Link Dist (ft)	371		314			764	
Turn Bay Length (ft)		90			150		
Base Capacity (vph)	599	764	1238		382	1630	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.25	0.29	0.52		0.34	0.36	

Intersection Summary

Area Type: Other  
 Cycle Length: 97  
 Actuated Cycle Length: 67.7  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 17.9  
 Intersection Capacity Utilization 57.1%  
 Analysis Period (min) 15

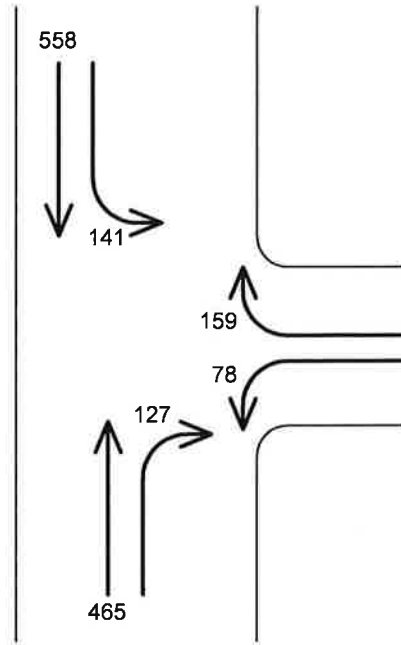
Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 1: Stockbridge Road & Monument Valley Road

↓ ø2 51 s		↘ ø4 30 s
↙ ø5 16 s	↑ ø5 51 s	

TRAFFIC VOLUMES  
MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
STOCKBRIDGE ROAD, GREAT BARRINGTON, MA  
BUILD CONDITIONS - 2017

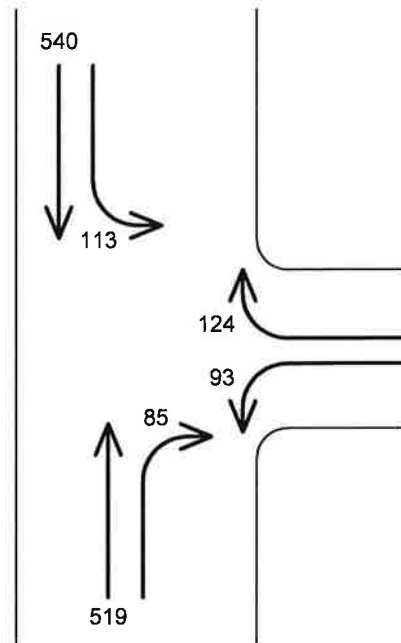
SCHOOL AM PEAK



MONUMENT VALLEY ROAD

STOCKBRIDGE ROAD

SCHOOL PM PEAK














MONUMENT VALLEY ROAD

STOCKBRIDGE ROAD

Lanes, Volumes, Timings  
1: Stockbridge Road & Monument Valley Road

9/26/2012

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	78	159	465	127	141	558	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	90		0	150		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.850	0.971				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1752	1482	1750	0	1703	1810	
Flt Permitted	0.950				0.100		
Satd. Flow (perm)	1752	1482	1750	0	179	1810	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		161	19				
Link Speed (mph)	35		50			50	
Link Distance (ft)	451		394			844	
Travel Time (s)	8.8		5.4			11.5	
Peak Hour Factor	0.46	0.60	0.69	0.68	0.71	0.91	
Heavy Vehicles (%)	3%	9%	5%	7%	6%	5%	
Adj. Flow (vph)	170	265	674	187	199	613	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	170	265	861	0	199	613	
Turn Type	NA	pt+ov	NA		pm+pt	NA	
Protected Phases	4	4 5	6		5	2 5	2
Permitted Phases					2 5		
Detector Phase	4	4 5	6		5	2 5	
Switch Phase							
Minimum Initial (s)	4.0		12.0		4.0		12.0
Minimum Split (s)	9.0		18.0		10.0		22.0
Total Split (s)	30.0		51.0		16.0		51.0
Total Split (%)	30.9%		52.6%		16.5%		53%
Yellow Time (s)	3.0		4.0		4.0		4.0
All-Red Time (s)	2.0		2.0		2.0		2.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	5.0		6.0		6.0		
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?							
Recall Mode	None		Min		None		Min
Act Effct Green (s)	12.5	28.5	45.1		61.1	61.1	
Actuated g/C Ratio	0.15	0.34	0.53		0.72	0.72	
v/c Ratio	0.66	0.44	0.91		0.64	0.47	
Control Delay	46.4	10.9	35.0		22.4	6.9	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.4	10.9	35.0		22.4	6.9	
LOS	D	B	D		C	A	
Approach Delay	24.8		35.0			10.7	
Approach LOS	C		D			B	
Queue Length 50th (ft)	86	39	385		35	113	
Queue Length 95th (ft)	70	37	394		74	222	

# Lanes, Volumes, Timings

## 1: Stockbridge Road & Monument Valley Road

9/26/2012



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø2
Internal Link Dist (ft)	371		314			764	
Turn Bay Length (ft)		90			150		
Base Capacity (vph)	518	611	941		309	1307	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.33	0.43	0.91		0.64	0.47	

### Intersection Summary

Area Type:	Other
Cycle Length:	97
Actuated Cycle Length:	84.6
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	23.6
Intersection LOS:	C
Intersection Capacity Utilization	58.5%
ICU Level of Service	B
Analysis Period (min)	15












### Splits and Phases: 1: Stockbridge Road & Monument Valley Road

ø2 51 s		ø4 30 s	
ø5 16 s	ø6 51 s		

# Lanes, Volumes, Timings

## 1: Stockbridge Road & Monument Valley Road

9/26/2012

							ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Volume (vph)	93	124	519	85	113	540	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0	90		0	150		
Storage Lanes	1	1		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor			0.99		0.99		
Frt		0.850	0.981				
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1556	1524	1784	0	1597	1845	
Flt Permitted	0.950				0.153		
Satd. Flow (perm)	1556	1524	1784	0	256	1845	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		186	12				
Link Speed (mph)	35		50			50	
Link Distance (ft)	451		394			844	
Travel Time (s)	8.8		5.4			11.5	
Confl. Peds. (#/hr)				28	28		
Peak Hour Factor	0.63	0.55	0.91	0.89	0.88	0.87	
Heavy Vehicles (%)	16%	6%	3%	8%	13%	3%	
Adj. Flow (vph)	148	225	570	96	128	621	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	148	225	666	0	128	621	
Turn Type	NA	pt+ov	NA		pm+pt	NA	
Protected Phases	4	4 5	6		5	2 5	2
Permitted Phases					2 5		
Detector Phase	4	4 5	6		5	2 5	
Switch Phase							
Minimum Initial (s)	4.0		12.0		4.0		12.0
Minimum Split (s)	9.0		18.0		10.0		18.0
Total Split (s)	30.0		51.0		16.0		51.0
Total Split (%)	30.9%		52.6%		16.5%		53%
Yellow Time (s)	3.0		4.0		4.0		4.0
All-Red Time (s)	2.0		2.0		2.0		2.0
Lost Time Adjust (s)	0.0		0.0		0.0		0.0
Total Lost Time (s)	5.0		6.0		6.0		6.0
Lead/Lag			Lag		Lead		
Lead-Lag Optimize?							
Recall Mode	None		Min		None		Min
Act Effect Green (s)	11.6	28.2	30.0		46.7	46.7	
Actuated g/C Ratio	0.17	0.40	0.43		0.67	0.67	
v/c Ratio	0.58	0.31	0.86		0.35	0.50	
Control Delay	38.4	5.9	29.8		7.2	7.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.4	5.9	29.8		7.2	7.7	
LOS	D	A	C		A	A	
Approach Delay	18.8		29.8			7.6	
Approach LOS	B		C			A	

Lanes, Volumes, Timings  
 1: Stockbridge Road & Monument Valley Road

9/26/2012



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	ø2
Queue Length 50th (ft)	58	10	235		16	108	
Queue Length 95th (ft)	89	8	426		40	211	
Internal Link Dist (ft)	371		314			764	
Turn Bay Length (ft)		90			150		
Base Capacity (vph)	581	741	1203		371	1602	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.25	0.30	0.55		0.35	0.39	

Intersection Summary

Area Type: Other  
 Cycle Length: 97  
 Actuated Cycle Length: 69.7  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 18.2  
 Intersection Capacity Utilization 58.4%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 1: Stockbridge Road & Monument Valley Road

ø2	ø4
51 s	30 s
ø5	ø6
16 s	51 s

## ***APPENDIX C: SPEED DATA***





**Transportation Data Corporation**

Mario Perone, mperone1@verizon.net

t. (781) 587-0086 f. (781) 587-0189

Route 7 SB north of  
MMRHS Driveway  
City, State: Great Barrington, MA  
Client: Bryant/T. Brayton

04288Bspeed  
Site Code: 212054

**Southbound**

Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	Total
9/20/12	0	0	0	0	0	0	0	0	0	0	2	6	3	1	0	0	1	0	0	0	0	0	0	0	0	13
01:00	0	0	0	0	0	0	0	0	2	3	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	13
02:00	0	0	0	0	0	1	0	2	1	0	2	1	0	0	0	0	2	0	0	0	0	0	0	0	0	6
03:00	0	0	0	0	0	0	0	0	1	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	0	0	0	0	0	0	0	5	14	7	6	0	0	0	0	0	0	0	0	0	0	0	0	0	32
05:00	0	0	0	0	0	0	1	11	17	35	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	75
06:00	0	0	0	1	1	6	36	90	106	19	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	265
07:00	1	2	16	56	137	138	126	102	50	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	634
08:00	0	0	11	64	142	189	114	33	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	557
09:00	0	0	4	19	77	140	129	26	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	399
10:00	0	0	0	39	106	120	68	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	344
11:00	0	0	0	10	73	122	100	37	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	355
12 PM	0	0	0	0	4	26	127	160	81	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400
13:00	0	0	0	0	8	38	124	136	65	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	378
14:00	0	0	0	2	36	108	213	87	27	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	476
15:00	0	2	0	0	45	136	195	113	24	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	518
16:00	0	1	1	0	12	69	200	165	41	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	491
17:00	1	3	1	0	8	61	222	144	44	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	491
18:00	0	0	0	1	2	19	66	116	81	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300
19:00	0	0	0	0	4	28	60	62	35	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
20:00	0	0	0	0	9	16	52	59	43	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	185
21:00	0	0	0	0	0	5	41	45	27	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124
22:00	0	0	0	0	2	7	26	39	26	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105
23:00	0	0	0	0	0	0	9	11	10	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
<b>Total</b>	<b>2</b>	<b>8</b>	<b>33</b>	<b>192</b>	<b>667</b>	<b>1231</b>	<b>1932</b>	<b>1478</b>	<b>733</b>	<b>111</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6406</b>											
<b>Percent</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.5%</b>	<b>3.0%</b>	<b>10.4%</b>	<b>19.2%</b>	<b>30.2%</b>	<b>23.1%</b>	<b>11.4%</b>	<b>1.7%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.0%</b>													

Daily

15th Percentile : 36 MPH  
50th Percentile : 43 MPH  
85th Percentile : 50 MPH  
95th Percentile : 54 MPH

Mean Speed(Average) : 43 MPH  
10 MPH Pace Speed : 41-50 MPH  
Number in Pace : 3410  
Percent in Pace : 53.2%  
Number of Vehicles > 40 MPH : 4273  
Percent of Vehicles > 40 MPH : 66.7%

**Grand Total**

<b>2</b>	<b>8</b>	<b>33</b>	<b>192</b>	<b>667</b>	<b>1231</b>	<b>1932</b>	<b>1478</b>	<b>733</b>	<b>111</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>6406</b>
----------	----------	-----------	------------	------------	-------------	-------------	-------------	------------	------------	-----------	----------	----------	-------------

Overall

15th Percentile : 36 MPH  
50th Percentile : 43 MPH  
85th Percentile : 50 MPH  
95th Percentile : 54 MPH

Mean Speed(Average) : 43 MPH  
10 MPH Pace Speed : 41-50 MPH  
Number in Pace : 3410  
Percent in Pace : 53.2%  
Number of Vehicles > 40 MPH : 4273  
Percent of Vehicles > 40 MPH : 66.7%



***APPENDIX D: SUPPLEMENTAL PLANS***

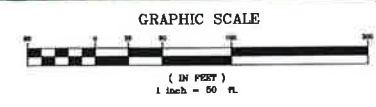
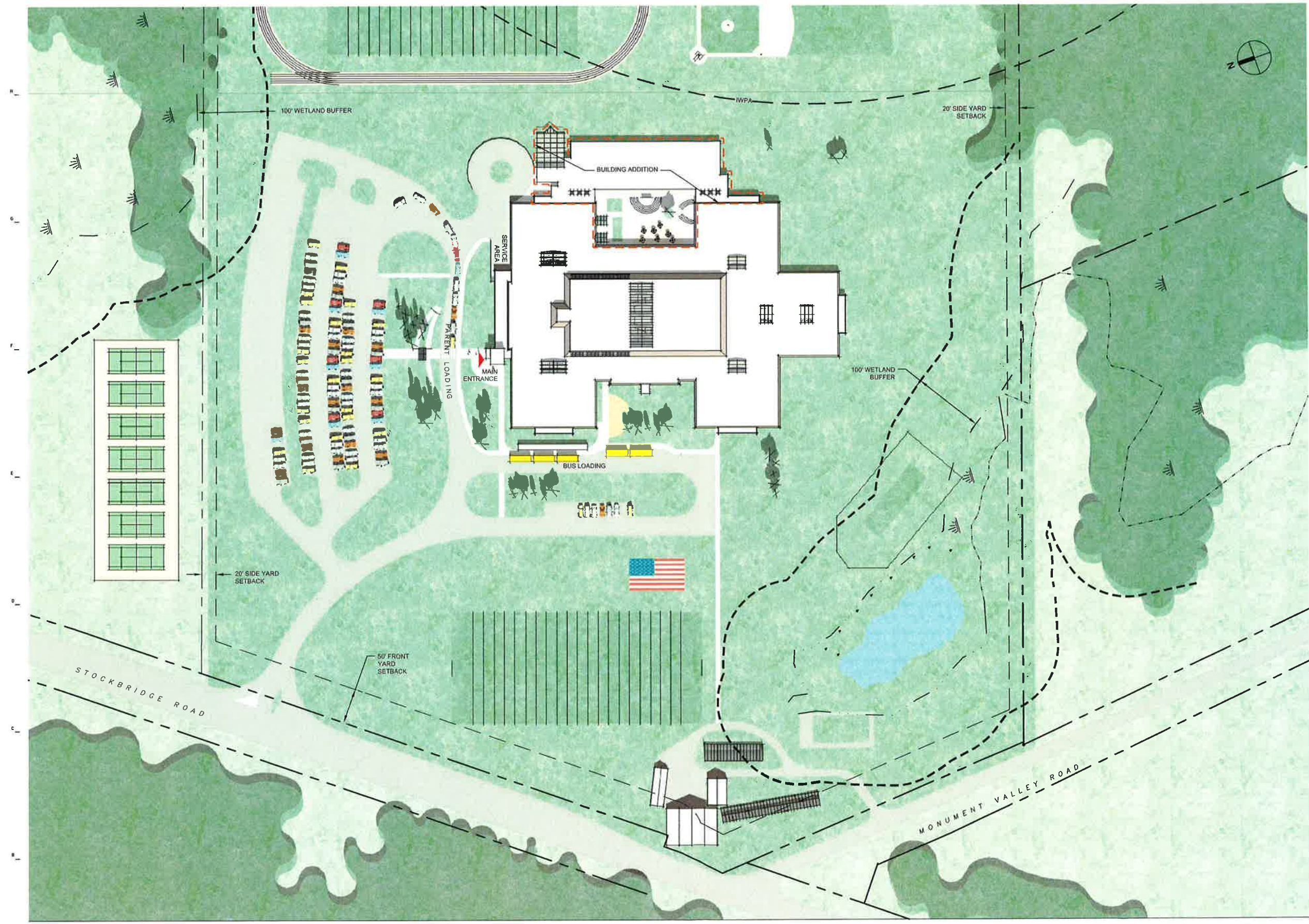




**Monument Mountain Regional High School**  
600 Stockbridge Road  
Great Barrington MA 01230

DATE:	01/13/2012	PERMITTED SCHEMATIC STUDY
NAME:	SS:EP	SS:EP
SS:EP LOG:		
△	CLOCKED CURB	
SCALE:	1"=60'	
DRAWN BY:	EP	
CHECKED BY:	JCH	
PROJECT MANAGER:	DFR	
PROJECT NO.:	12291.2	
© STUBBS, WAIN & WICKES ASSOCIATES, INC. 2012		

**SITE PLAN**







GREAT BARRINGTON  
ROUTE 7

FHWA DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS		96	8	14

PROJECT FILE NO. 601070  
TRAFFIC SIGNAL, SIGN, & MARKING PLAN

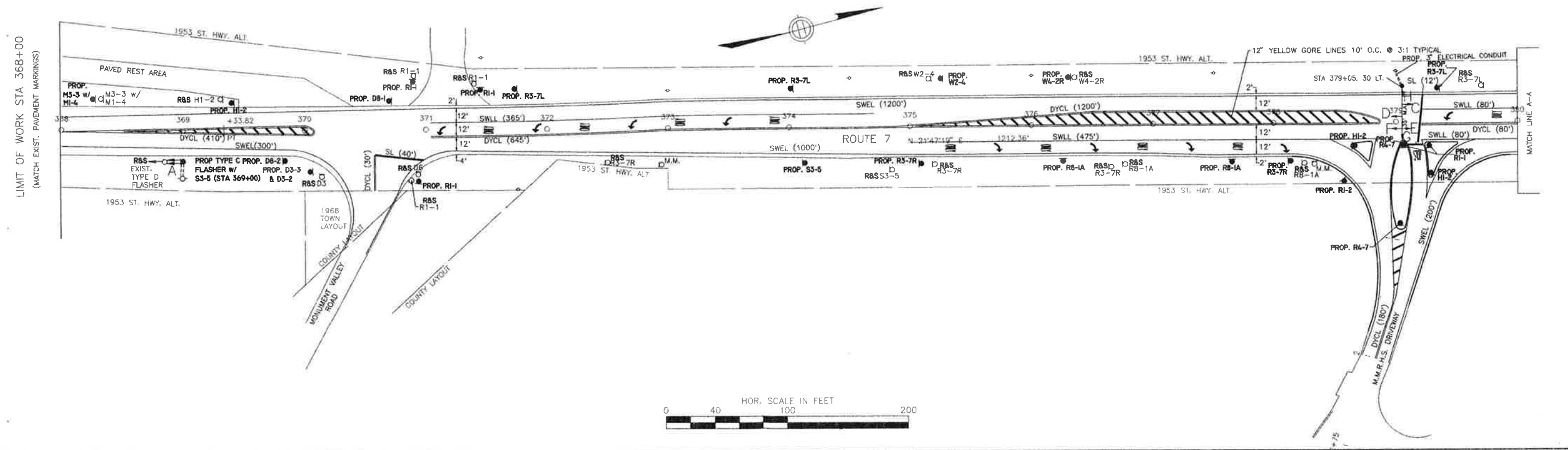
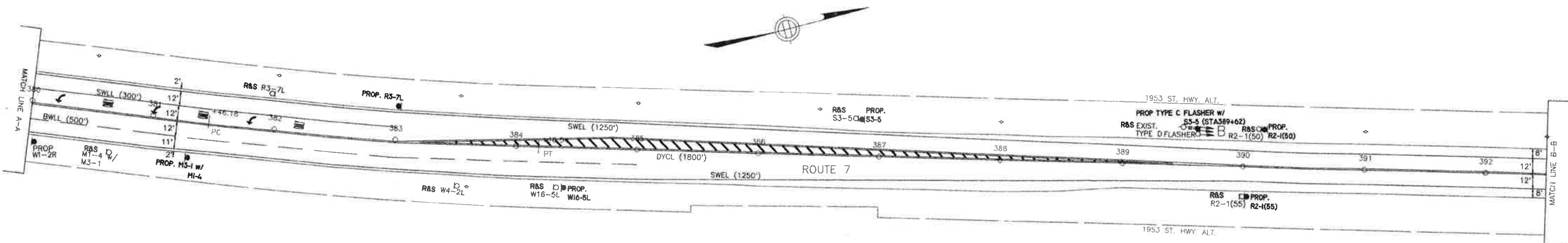
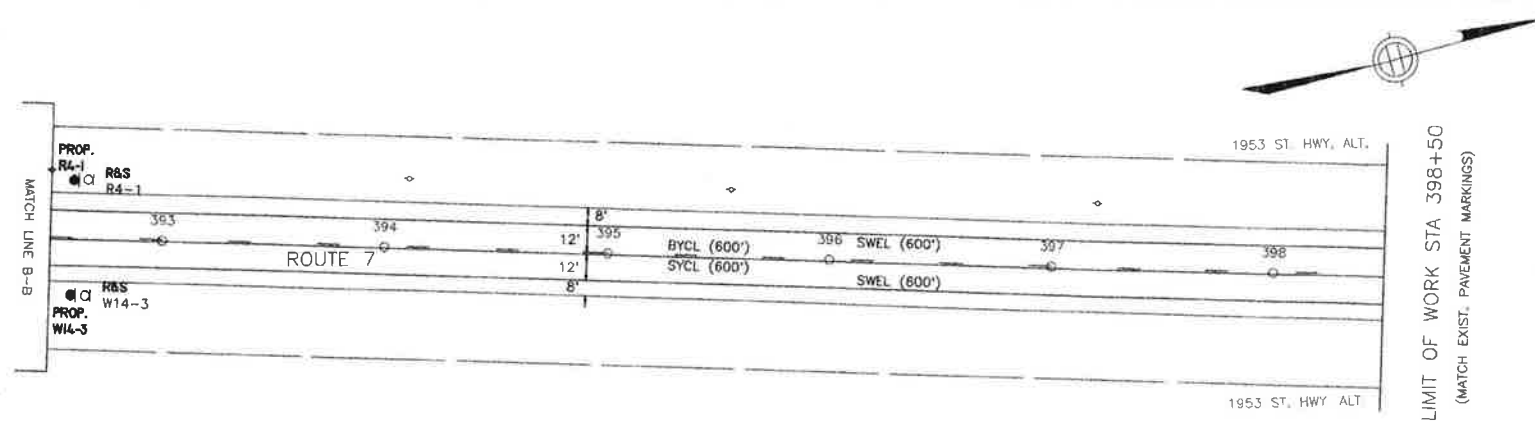
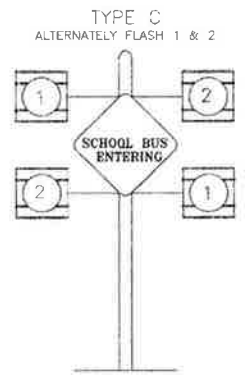
SEQUENCE AND TIMING

HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12
INITIAL INTERVAL												
VEHICLE INTERVAL												
MINIMUM												
MAXIMUM												
OTHER INTERVALS	ALTERNATING FLASHING YELLOW, 50-60 FLASHES PER MINUTE											
ROUTE 7 NB/SB A,B	FLASHING YELLOW, 50-60 FLASHES PER MINUTE											
ROUTE 7 NB/SB C,D,E,F	FLASHING YELLOW, 50-60 FLASHES PER MINUTE											
MMRHS DRIVEWAY G,H	FLASHING RED, 50-60 FLASHES PER MINUTE											

MAJOR ITEMS REQUIRED

NUMBER	ITEMS
1	35' MAST ARM STEEL MONOLEVER ASTRO BRAC OR EQUAL
1	MAST ARM FOUNDATION
3	1 WAY 1 LENS HOUSING 12"
1	3 WAY 1 LENS HOUSING 12"
2	1 WAY TYPE C FLASHER
2	8" T.S. POST INCLUDING FOUNDATION
3	FLASHING MECHANISM, FILTER, & METER w/ INTERNAL TIME CLOCK
3	SERVICE CONNECTION

PLUS ALL NECESSARY DUCT, CABLE, ETC.  
NOTES:  
1. ATTACH CONTROL CABINETS TO T.S. POSTS  
2. FLASHING IS ONLY TO TAKE PLACE FROM 7:00 A.M. TO 9:00 A.M. & FROM 2:00 P.M. TO 4:00 P.M.







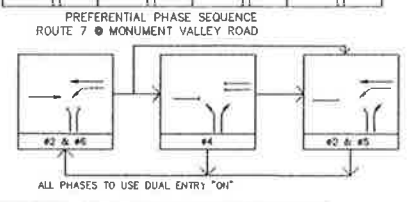
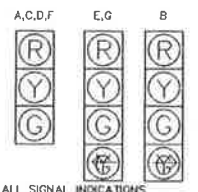
TRAFFIC SIGNAL DETAILS -- GREAT BARRINGTON -- ROUTE 7 @ MONUMENT VALLEY ROAD

QUAN.	MAJOR ITEMS REQUIRED
1	CONTROLLER, TYPE BSW #/CABINET, FOUNDATION
1	MCHS-DRIVER MCHS TS2 TYPE 1
2	30" TYPE 1 MAST ARM
2	MAST ARM SPREAD FOOTING FOUNDATION
2	STANDARD SIGNAL POST - 8" W/ GNC PIECE
1	ALUMINUM BASE & FOUND
4	1 WAY - 3 LENS SIGNAL HOUSING - 300 MM LENSES
3	1 WAY - 4 LENS SIGNAL HOUSING - 300 MM LENSES
7	LOUVERED BACK PLATE
17	PULL BOX - 300 MM x 300 MM (S2-031)
4	QUADRUPOLE WIRE LOOP - 6" X 23"
10	WIRE LOOP - 6" X 6"
5	DUAL CHANNEL DETECTOR - AMPLIFIER UNIT
1	MODIFIED SERVICE CONNECTION (OVERHEAD)
	WITH ABOVE GROUND SHUTOFF ON SERVICE POLE
	Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

GENERAL NOTES

- ALL OVERHEAD CONDUCTORS SHALL BE STRANDED WIRE.
- ALL SIGNAL HOUSINGS SHALL BE EQUIPPED WITH CAP VISORS.
- ALL SIGNAL HOUSINGS SHALL BE EQUIPPED WITH LOUVERED BACK PLATES.
- ALL SIGNAL INDICATIONS TO BE L.E.D. (R,Y,G & DUAL MODE)
- 3' X 4' CEMENT CONCRETE PLATFORM REQUIRED ON DOOR SIDE OF CONTROLLER CABINET
- ALL PULL BOX LOCATIONS SHOWN ARE SUBJECT TO ADJUSTMENT IN THE FIELD, IN NO CASE SHALL ANY PULL BOX BE LOCATED WITHIN A ROADWAY OR DRIVEWAY, MAXIMUM SPACING BETWEEN PULL BOXES IS APPROXIMATELY 150'
- REMOVE AND TRANSPORT OR DISCARD ALL EXISTING FLASHING COMPONENTS

SEQUENCE AND TIMING FOR FULLY ACTUATED CONTROL (ISOLATED)													
STREET	DIRECTION	HOUSINGS	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	FLASH OPER.
ROUTE 7	S.B.	F	G	Y	R	R	R	R	R	R	R	R	FY
ROUTE 7	S.B.	E.G.	G	Y	R	R	R	R	R	R	R	R	FY
MONUMENT VALLEY ROAD	N.B.	C.D.	R	R	R	R	R	R	R	R	R	R	FY
MONUMENT VALLEY ROAD	W.B.	A	R	R	R	G	Y	R	R	R	R	R	FY
MONUMENT VALLEY ROAD	W.B.	B	R	R	R	G	Y	R	R	R	R	R	FY



MAST ARM FOUNDATION DESIGN ROUTE 7 @ MONUMENT VALLEY ROAD				
MAST ARM	STATION	OFFSET	ANGLE	FOUNDATION DIMS
NORTHEAST CORNER	371+45.46	36.6 RT	30'	9' x 7'
SOUTHWEST CORNER	370+49.8	30.74 LT	0'	7' x 7'

NOTE: SEE SHEET 5 AND 30-30 - TYPE R MAST ARM SPREAD FOUNDATIONS FOR REINFORCING DESIGN AND FOOTING/CONCRETE SIZE

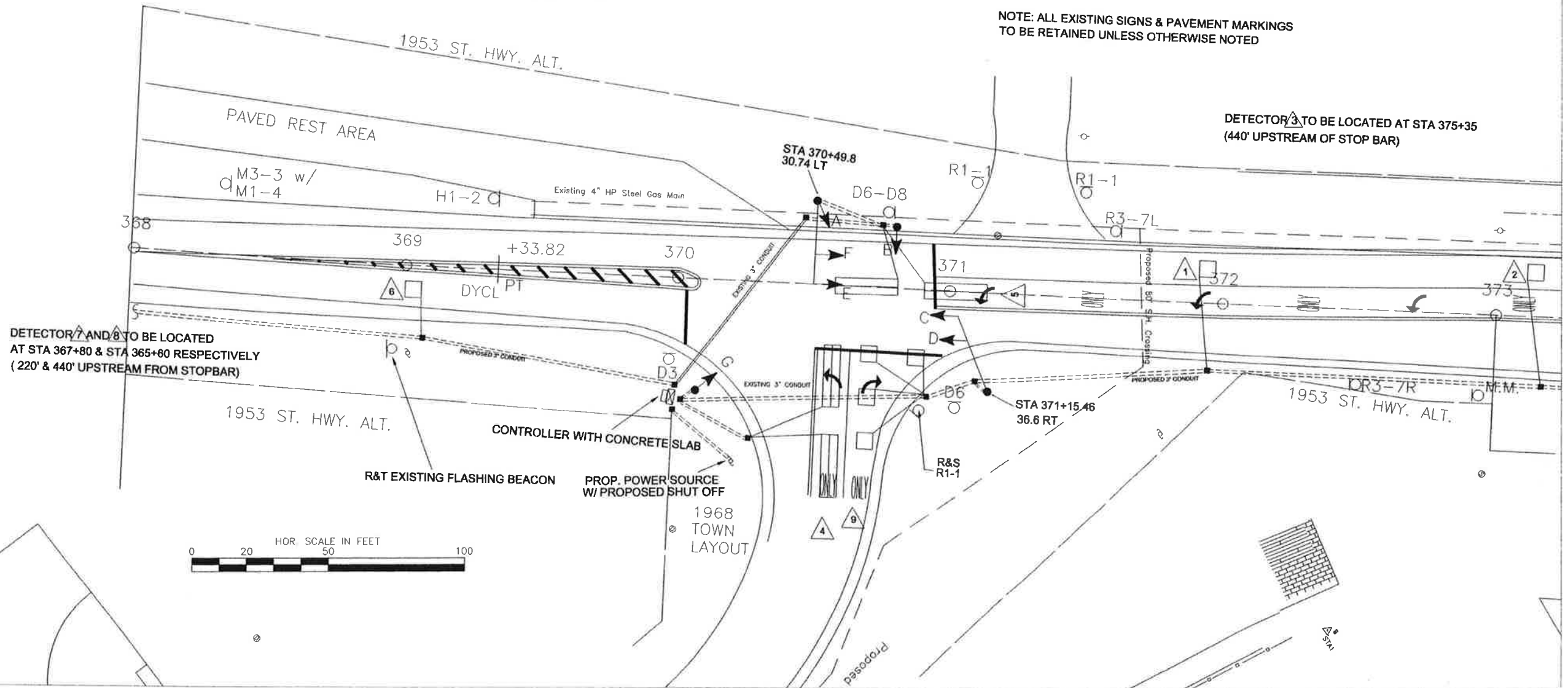
PROPOSED LOOP DETECTOR DATA -- GREAT BARRINGTON -- ROUTE 7 @ MONUMENT VALLEY ROAD									
DETECTOR NUMBER	NUMBER OF SECTIONS AND SIZE(FT)	NUMBER OF TURNS	SPLICE PATTERN	# CALLED	# EXTENDED	CALL DELAY	CALL EXTENSION	MEMORY	OPERATION
1	1 - 6'x6'	3	-	2	2	-	-	NON-LOCK	PRESENCE
2	1 - 6'x6'	3	-	2	2	-	2 Secs	NON-LOCK	PRESENCE
3	1 - 6'x6'	3	-	2	2	-	2 Secs	NON-LOCK	PRESENCE
4	2 - 6'x23'	2-4-2	SERIES	4	4	-	-	NON-LOCK	PRESENCE
5	2 - 6'x23'	2-4-2	SERIES	5	5	2 Secs	-	NON-LOCK	PRESENCE
6	1 - 6'x6'	3	-	6	6	-	-	NON-LOCK	PRESENCE
7	1 - 6'x6'	3	-	6	6	-	2 Secs	NON-LOCK	PRESENCE
8	1 - 6'x6'	3	-	6	6	-	2 Secs	NON-LOCK	PRESENCE
9	4 - 6'x6'	3	SERIES	5	5	8 Secs	-	NON-LOCK	PRESENCE

GREAT BARRINGTON ROUTE 7 @ MONUMENT VALLEY ROAD						
FHWA DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	PROJECT FILE NO.
1	MASS	STP-0015(362)X	2004	2	6	604244

TRAFFIC SIGNAL PLAN

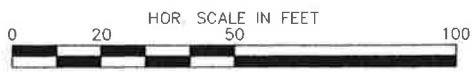


NOTE: ALL EXISTING SIGNS & PAVEMENT MARKINGS TO BE RETAINED UNLESS OTHERWISE NOTED



DETECTOR 7 AND 8 TO BE LOCATED AT STA 367+80 & STA 365+60 RESPECTIVELY (220' & 440' UPSTREAM FROM STOPBAR)

DETECTOR 3 TO BE LOCATED AT STA 375+35 (440' UPSTREAM OF STOP BAR)





## SECTION THREE FINAL EVALUATION OF ALTERNATIVES

**3.1 ANALYSIS OF SITE**

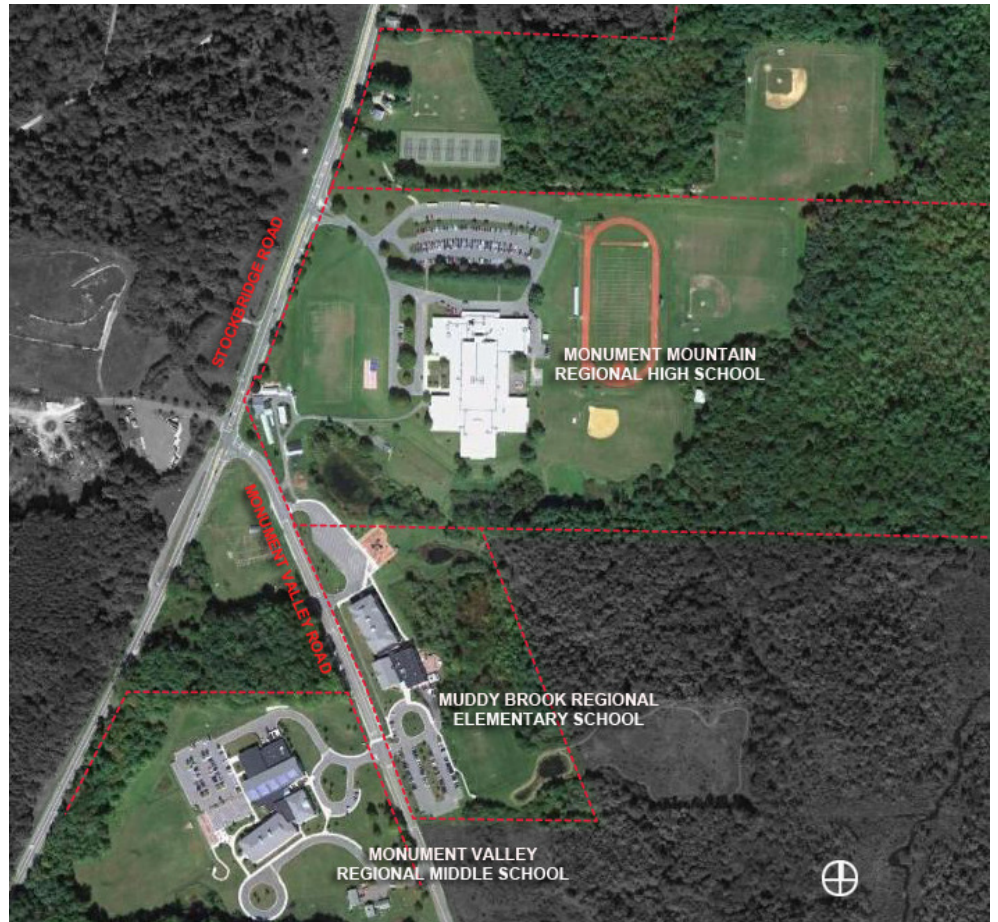
The existing Monument Mountain Regional High School is located at 600 Stockbridge Road (Route 7) in Great Barrington, MA. It is shown as Assessors Map #39, Parcels 3c, 4, & 19 and Map #35, Parcel 22 and is located within the R4 Large Acreage Residential zoning district. The site is not located within any special zoning overlay districts. The site is bound by Stockbridge Road to the west, Monument Valley Road and Muddy Brook Regional Elementary School to the southwest, residential property to the north and land to the east and southeast owned by Massachusetts Land Conservation Trust, Inc. The eastern property line follows the Konkapot Brook, identified as a perennial stream on the 2009 U.S. Geological Survey quadrangle maps.

The site measures approximately 143.3 acres, 40 acres of which make up the developed and western region of the site. The existing high school building is centrally located within the developed area. There is also a farmhouse building with accessory greenhouse structures located on the western corner of the site, at the intersection of Stockbridge Road and Monument Valley Road. The Muddy Brook Regional Elementary School and Monument Valley Regional Middle School are accessed by Monument Valley Road and are directly south of the High School site.

A track and field complex with bleachers and a press box are to the east of the existing school building, along with practice field space and baseball and softball fields. The site accommodates parking for approximately 290 vehicles mostly concentrated in a large parking lot to the north of the school building. The rest of the site, approximately 55 acres, is densely wooded and undeveloped. There is at-grade loading area on the northwest corner of the building.

Topography on the project site ranges significantly from the southwest corner at elevation 864 where the greenhouse building exists up to elevation 896 where the high school exists and down to a rough elevation of 830 along the east side of the property at the Brook. The school is one story with the same floor elevation generally throughout the building. In general, the site slopes away from the high school building in all directions as steep as 3h:1v.

The primary consideration in developing the conceptual site plan was to improve on-site vehicular circulation. In particular, addressing concerns over queuing lengths that back up into the site during peak hours and providing safe bus and pedestrian circulation.



*Existing Site Plan*

The proposed site plan includes reconfiguration of the existing driveway at Stockbridge Road to allow for a right turn only exit lane. By providing this additional lane, turning vehicles are able to exit the site without entering the queue of left turning vehicles. In addition, the parent drop-off and pick-up has been elongated to provide more area for students to safely exit and enter vehicles.

The proposed site plan will generally maintain existing parking configuration and number of parking spaces, for approximately 290 vehicles. The majority of parking spaces to the north and west will be maintained, and 7 new accessible spaces will be constructed closest to the new entrance as required by MAAB and ADA.

The parking lot and driveways will include limited new vertical granite and bituminous berm curbing, milling and overlay of existing pavement, landscaping, exterior lighting and ADA walkway connections to the building.

Additional site improvements include new concrete plazas at the new primary entrance to the building, pedestrian walkways and ADA compliant access to the building and athletic facilities, pedestrian lighting, and

landscaping. The site plan was specifically developed to limit disturbance to the existing ballfields and athletic facilities, which will remain.

### **3.2 ANALYSIS OF IMPACT OF CONSTRUCTION**

#### **PHASING**

Both renovation and addition alternatives will be phased construction. The primary building additions will be constructed in the first phase. Additionally, a primary focus of each of the renovation and addition options is the construction of the heating plant and electrical power supply in Phase 1 to ensure adequate services as other phases (wings) come on line. Since the existing systems cannot be removed and replaced within a summer period, supplemental temporary systems will need to be included to interface between the new systems and existing systems through-out the construction.

Further, the renovations and additions options will require asbestos and other hazardous materials abatement at the start of each phase. The need to isolate the areas of demolition from the school occupied areas has been planned into each of the options. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer breaks, commencing in the late spring and completing in the early fall.

#### **INDOOR AIR QUALITY**

The renovations and additions options will have specification requirements to ensure that air quality inside the building is not impacted by construction activities that lead to unhealthy or uncomfortable conditions for students, staff, faculty, visitors, as well as construction personnel.

The Contractor will be required to employ a Certified Indoor Environmentalist (CIE), as administered by the Indoor Air Quality Association, to perform indoor air quality testing and monitoring throughout the construction period. The CIE will make recommendations to the Owner and the Contractor to make engineering control changes to mitigate unacceptable air quality. The CIE will make recommendations regarding work practices, conduct indoor air quality testing, and review the properties of construction materials based on MSDS sheets to ensure that air quality in the occupied spaces of the building meets regulated and guideline recommendations. Work areas will be maintained under negative pressure, relative to adjacent occupied areas, at all times during construction, by means of appropriately sized and correctly functioning fan units directly exhausting thru filtration to the outside of the building and dust and sound proof partitioning.

#### **SITE AND BUILDING CIRCULATION**

The site access, circulation and service will be impacted by these construction options. The Contractor access, parking, and staging will be



segregated from the normal site access, circulation and service as much as possible. The site phasing will be adjusted at each phase to ensure separation of construction and student/staff/visitor traffic, fire safety access, and construction material and debris handling.

Internal building circulation will be affected in any renovation and addition option. The internal circulation will be carefully coordinated in each phase to ensure separation of construction and occupied spaces, code complying egress paths for construction and occupied spaces, construction material and debris handling routes and student travel between completed spaces and existing spaces.

### 3.3 CONCEPTUAL PLANS

This section describes the three conceptual options that were further reviewed subsequent to the submission of the Preliminary Design Program on July 27, 2012. These options are all renovation/ addition projects to the existing high school: Option 2D.4, Option 2E, and Option 2F. The Options are further described as follows:

#### 3.3.1 PREFERRED OPTION

##### OPTION 2D.4 - ONE-STORY ACADEMIC ADDITION EAST OF THE EXISTING MMRHS



OPTION 2D.4 – One-story, new construction east of the MMRHS. The spaces are color coded based on colors designated on the Proposed Space Summary.

## **Description**

Option 2D.4 is an addition and renovation option consisting of the construction of a new one-story academic wing of primarily science labs and Chapter 74 Agricultural greenhouse spaces. A new main entrance addition will be constructed on the north facade along with a new PE Alternative addition constructed under the existing bus drop-off roof canopy structure. A smaller addition to the West will highlight the Media Center at the center of the building. Total building size will be 134,000 square feet, meeting the space requirements set out in the Proposed Space Summary included in Section 4 of this Report.

The existing Gym and Auditorium spaces will remain in their existing locations while relocating the Band and Chorus spaces to allow for a new central circulation spine running east/west through the center of the building. The loading dock and service area are re-positioned for improved access and to be less visible from the main entrance facing the existing parking lot.

The existing building plumbing, HVAC, electrical and technology systems will be fully upgraded, including providing for full fire sprinkler system. The existing windows will be replaced and the minimally insulated terne metal mansard roof fascia panels are proposed to be re-clad with insulating metal panels. The roof will be replaced with new roofing and insulation. The asbestos will be abated through-out and new finishes provided. The significant accessibility issues throughout will be addressed, as well as life safety and egress code issues.

Option 2D.4- The proposed site work addresses the existing queuing problem at the driveway, improves parent and pedestrian circulation, creates a new and defined building entrance, refurbishes the worn and deteriorating parking lot, and upgrades the utility services including fire service lines.

## **Schedule Overview**

Option 2D.4 will be constructed in three main phases over approximately 42 months, commencing with the new science addition to the east. The addition will be occupied upon completion, creating additional swing space to complete the renovation, which will be accomplished in two main phases. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break, commencing in the late spring and completing in the early fall.

## **Cost Overview**

The construction costs for Option 2D.4 were estimated to be:

- Construction Cost: \$40.8 million
- Project Cost: \$52.8 million

## **Conclusion**

The Pros and Cons of Option 2D.4 are summarized as follows:

### **Pros**

- New science addition links the existing academic wings to the vocations & technology wing, which have been perceived to be remotely located.
- Reduction in number of entry points addresses security concerns while also improving internal circulation and orientation.
- New Alternative PE/ Multi-Purpose Room space, the relocation of the shipping and receiving spaces and new Main Entry additions at the north of the building create an aesthetically pleasing facade facing the parking lot and new main entry sequence.
- Site circulation issues are addressed by re-organizing the bus and automobile drop-off areas.
- Multi-purpose Room/PE Alternative space location is ideal for public use.
- New center spine/corridor opens up the circulation in the center of the building.
- Entrance on the North provides direct building access from parking, from where the preponderance of students, staff, and visitors arrive.
- Separate public access and south facing exposure for Agriculture Program, which has good adjacency to other vocational technology classrooms and laboratories, and the courtyard.
- Enclosed courtyard allows for secure exterior dining and classroom space, as well as garden and greenhouse spaces for the Agriculture program.
- Utilizes existing building configuration and spaces economically.

### **Cons**

- Successful enclosed “courtyard” spaces require conscious programming and maintenance.
- Interior courtyard limits views from Dining Commons to the east.
- Existing one-story configuration is spread out; new addition further expands footprint.

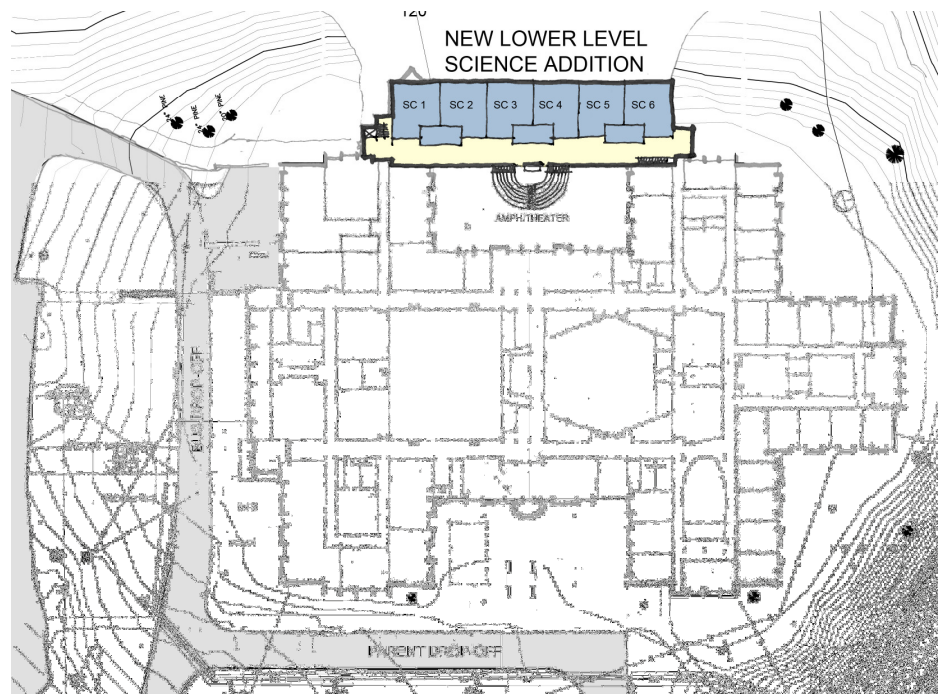


3.3.2 OPTION 2E

TWO-STORY, LOWER LEVEL ACADEMIC ADDITION EAST OF THE EXISTING MMRHS



OPTION 2E – First Floor Plan-- Two-story Addition east of the MMRHS.



OPTION 2E – Lower Level Floor Plan-- Two-story Addition east of the MMRHS.

## **Description**

Option 2E is an addition and renovation option consisting of the construction of a new two-story academic wing of primarily science labs and Chapter 74 Agricultural greenhouse spaces. A large portion of the addition along the East side will be a lower level addition taking advantage of the natural slope and grading of the site. The roof of this addition is proposed to be set at the first floor elevation allowing for a courtyard and potential green roof space overlooking the mountain views to the East.

A new main entrance addition will be constructed on the north facade along with a new PE Alternative addition constructed under the existing bus drop-off roof canopy structure. A smaller addition to the West will highlight the Media Center at the center of the building. Total building size will be 135,317 square feet, meeting the space requirements set out in the Proposed Space Summary.

The existing Gym and Auditorium spaces will remain in their existing locations while relocating the Band and Chorus spaces to allow for a new central circulation spine running east/west through the center of the building. The loading dock and service area are re-positioned for improved access and less visible from the main entrance facing the existing parking lot.

The existing building plumbing, HVAC, electrical and technology systems will be fully upgraded, including providing for full fire sprinkler system. The existing windows will be replaced and the minimally insulated terne metal mansard roof fascia panels are proposed to be re-clad with insulating metal panels. The roof will be replaced with new roofing and insulation. The asbestos will be abated through-out and new finishes provided. The significant accessibility issues throughout will be addressed, as well as life safety and egress code issues.

Option 2E- The proposed site work addresses the existing queuing problem at the driveway, improves parent and pedestrian circulation, creates a new and defined building entrance, refurbishes the worn and deteriorating parking lot, and upgrades the utility services including fire mains. Additional earthwork is also required for construction of the lower level) addition.

## **Schedule Overview**

Option 2E will be constructed in three main phases over approximately 42 months, commencing with construction of the academic addition to the east. The addition will be occupied upon completion, creating additional swing space to complete the renovation, which will be accomplished in two main phases. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break, commencing in the late spring and completing in the early fall.

### **Cost Overview**

The construction costs for Option 2E were estimated to be:

- Construction Cost: \$42 million
- Project Cost: \$53.4 million

### **Conclusion**

The Pros and Cons of Option 2E are summarized as follows:

#### **Pros**

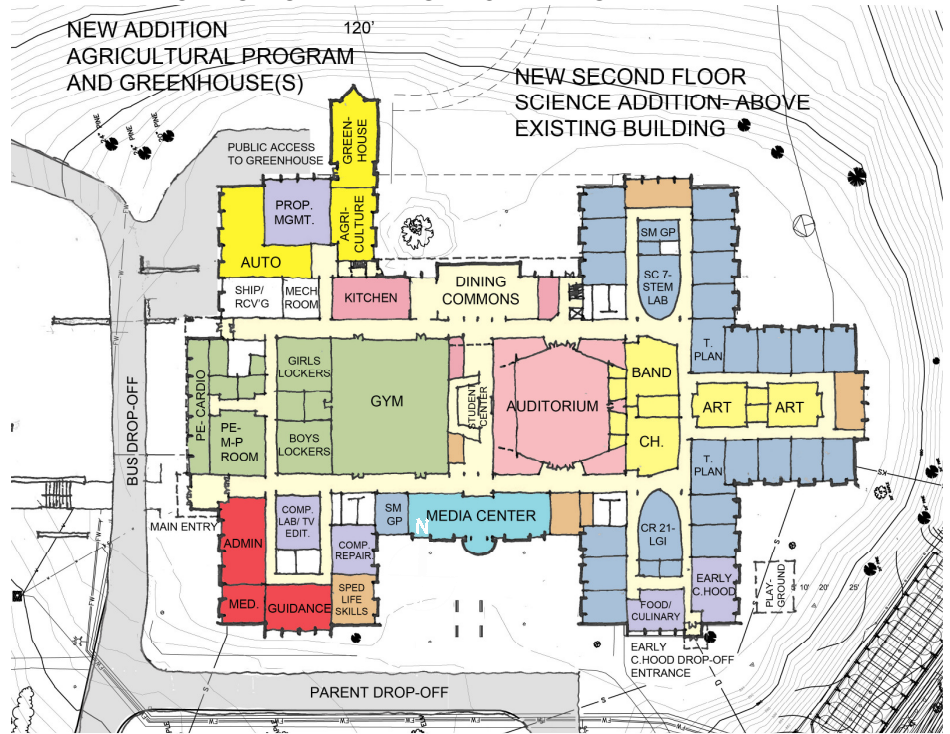
- Lower level addition eliminates enclosed courtyard and provides open views to the east
- Agricultural program is integrated with science classroom/labs and kitchen while maintaining public access for annual plant sales
- Potential for green roof and alternative exterior learning spaces

#### **Cons**

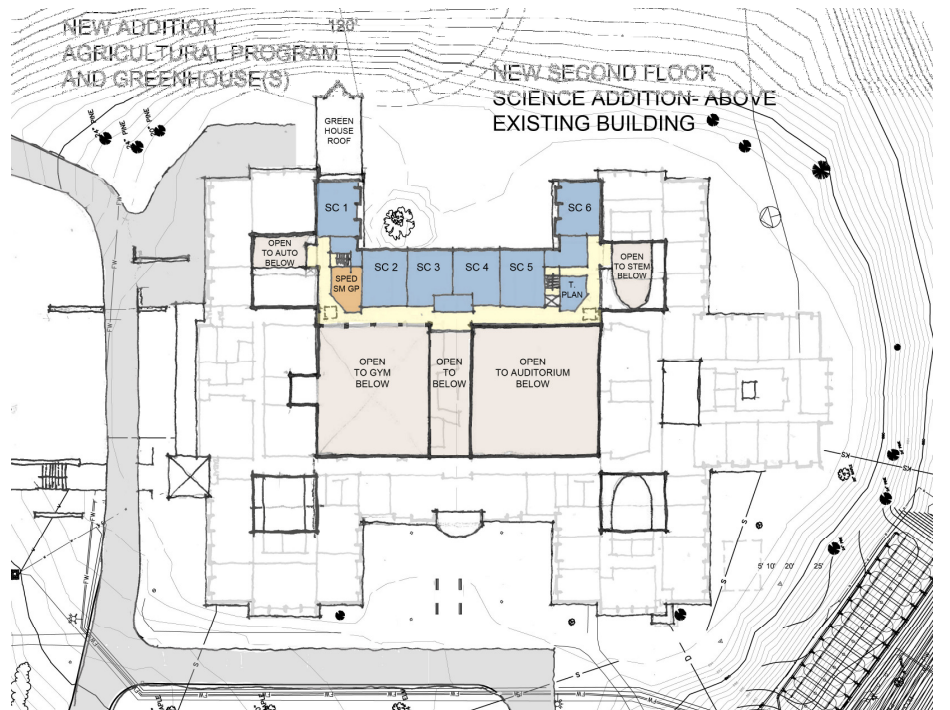
- Science classroom/lab spaces on the lower level does not provide for the most direct connection between STEM pods
- Public access to the Agriculture program is farther away from parking than desirable

3.3.3 OPTION 2F

TWO-STORY, UPPER LEVEL ACADEMIC ADDITION OVER A PORTION OF THE EXISTING MMRHS



OPTION 2F – First Floor Plan-- Two-story Addition over the existing MMRHS at the East side.



OPTION 2F – Second Floor Plan-- Two-story Addition over the existing MMRHS at the East side.

## Description

Option 2F is an addition and renovation option consisting of the construction of a new two-story academic wing of primarily science labs and Chapter 74 Agricultural greenhouse spaces. A large portion of the addition along the East side will be a second floor addition over the existing one-story building. The existing building foundations and structure will be reconstructed and/or upgraded as required to support the new second floor and to meet current building codes. On the first floor, a new greenhouse space will be constructed to support the Chapter 74 Agriculture/Horticulture program as defined in the revised Space Summary.

A new main entrance addition will be constructed on the north facade along with a new PE Alternative addition constructed under the existing bus drop-off roof canopy structure. A smaller addition to the West will highlight the Media Center at the center of the building. Total building size will be 135,117 square feet, meeting the space requirements set out in the Proposed Space Summary.

The existing building plumbing, HVAC, electrical and technology systems will be fully upgraded, including providing for full fire sprinkler system. The existing windows will be replaced and the minimally insulated terne metal mansard roof fascia panels are proposed to be re-clad with insulating metal panels. The roof will be replaced with new roofing and insulation. The asbestos will be abated through-out and new finishes provided. The significant accessibility issues throughout will be addressed, as well as life safety and egress code issues.

Option 2F- The proposed site work addresses the existing queuing problem at the driveway, improves parent and pedestrian circulation, creates a new and defined building entrance, refurbishes the worn and deteriorating parking lot, and upgrades the utility services including fire service lines.

## Schedule Overview

Option 2F will be constructed in three main phases over approximately 42 months, commencing with major demolition along the east side of the building and the construction of the new two-story academic addition. The addition will be occupied upon completion, followed by the renovation of the remaining academic wings. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break, commencing in the late spring and completing in the early fall.

## Cost Overview

The construction costs for Option 2F were estimated to be:

- Construction Cost: \$43.4 million
- Project Cost: \$57.5 million



## Conclusion

The Pros and Cons of Option 2F are summarized as follows:

### Pros

- Second floor addition eliminates the enclosed courtyard and provides open views to the east
- Agricultural program is integrated with the sciences and kitchen while still maintaining public access for annual plant sales
- Potential for two-story spaces with balconies and openings to spaces below

### Cons

- Most costly of the three options
- Sciences on the upper level does not provide the most direct connection with other STEM spaces
- Agricultural program is less visible
- Building over the existing building requires more structural work and complex construction phasing

## 3.4 DESCRIPTION OF MAJOR BUILDING STRUCTURAL SYSTEMS

### Foundations

The proposed Option 2D renovation will incorporate a new one-story classroom addition adjacent the existing structure. A geotechnical investigation will be required to verify the soil conditions and the bearing capacity of the soil. The existing building was designed with concrete spread footings, so the assumption is made that the new building additions will have a similar foundation system and allowable bearing pressure. At the preferred location of the addition, at the back of the school, the grade drops off significantly. This option will require permanent cast in place concrete retaining walls to support the soil at this addition. The geotechnical and civil engineers will make recommendations on whether it is more feasible to construct tall concrete retaining walls, to be backfilled with structural fill to support a new 1<sup>st</sup> floor slab on grade at the addition, or to construct the first floor as a structured slab (with either a crawl space or storage/mechanical space below).

The proposed Option 2E renovation will incorporate a new classroom wing adjacent to the existing structure that will be essentially underground with a Green Roof incorporated into the design. This option will require heavier reinforced concrete foundation/retaining walls, a more robust structural system to handle the increased loading from the green roof, and larger interior column footings.

The proposed Option 2F renovation will incorporate a new classroom addition above an existing roof area. In order to facilitate this, a U-shaped area of the existing building will need to be demolished and new spread

footings will need to be constructed in accordance with the required program.

The new exterior foundation walls for Options 2D and 2F will be approximately 16" thick, reinforced cast-in-place concrete walls with an 8" brick shelf resting on a 24" to 36" wide continuous reinforced concrete strip footings around the perimeter of the building. The bottom of the exterior wall footings will extend a minimum of 5'-0" below finished grade. The top of the foundation wall will equal the top of the ground floor slab.

The new exterior foundation walls for Options 2E will be approximately 12 to 14" thick, reinforced cast-in-place concrete walls resting on a 24" to 36" wide continuous reinforced concrete strip footing around the perimeter of the building. The bottom of the exterior wall footings will extend a minimum of 5'-0" below finished grade. The top of the foundation wall will be just below finished grade. Lateral earth pressure will be resolved into the roof structure if the backfill is balanced on opposing sides of the addition; otherwise, tall cantilevered retaining walls will be constructed.

Interior grade beams will be required between braced frame column footings for all of the proposed Options. These beams will be approximately 24" wide x 24" deep.

### **Roof Construction**

For the proposed addition options 2D and 2F, the typical new roof construction will consist of 1.5" x 20 gage galvanized "Type B" metal roof deck, supported on "K" Series Steel Bar Joists and wide flange steel beams. These members will in turn be supported by wide flange steel girders and square tubular columns.

The roof area under the new mechanical rooftop units will be a minimum 6" thick normal weight concrete slab on 1.5" x 20 gage galvanized composite metal deck extending at least 3 feet all around the unit. The composite slab will be supported on wide flange steel beams and girders.

For the proposed Option 2E, the Green Roof will be supported on composite wide flange steel beams, girders and columns. The roof deck will be a minimum 2" x 18 gage composite metal deck with a minimum of 4" of normal weight concrete topping, (6" total depth slab).

### **Lateral Load Resisting System**

Due to the extent of proposed renovations the lateral force resisting system will need to be evaluated and analyzed to resist wind and seismic forces. Currently, there are diagonal steel rods in many of the walls that were designed to resist these forces. However, the proposed renovations involve reconfiguring many of the interior spaces, which will likely result with alternations of the existing system. New steel braced frames will need to be incorporated with the structural modifications of the building. A structural analysis will determine the requirements for the size and extent of these

frames, which will be coordinated with the architectural layout to minimize their visibility. It is likely that the new frames will require new foundations to be installed in areas of the existing building.

Also, as part of the requirements to existing buildings, the condition of any existing masonry walls will need to be reviewed. The building code requires that these walls be adequately braced to resist minimal out of plane seismic loads.

### **3.5 DESCRIPTION OF MAJOR BUILDING MECHANICAL AND ELECTRICAL SYSTEMS**

#### PLUMBING SYSTEMS

The following is the Plumbing systems narrative, which defines the scope of work and capacities of the Water, Piping and Fixtures and Gas Systems as well as Basis of Design. The Plumbing systems shall be designed for LEED.

#### **Water, Piping and Fixtures System**

##### ***Cold Water***

The cold water supply system will be extended 10'-0" outside the building and connected to the underground yard main system. The service entrance will be equipped with a duplex arrangement of parallel, approved, master-reduced pressure principle backflow preventers.

A separate non-potable cold water system will be provided for the Science room sinks and equipment, including backflow preventers.

Domestic cold water piping will be copper, insulated and distributed throughout the building serving all fixtures and equipment requiring cold water such as kitchen appliances, boilers, and ice machines. Wall hydrants shall be provided around the building.

##### ***Hot Water***

Hot water for all kitchen, classroom sinks, and toilet rooms will be provided by two ASME gas-fired condensing water heaters in parallel. Each heater will be sized to provide 66% of the demand. Water will be heated to 140 deg. F. for delivery to the kitchen. A central, bronze, master thermostatic mixing valve will reduce the temperature to 120 deg. F. for delivery to hand wash lavatories, classroom sinks, showers, and kitchenette sinks. Digital mixing valves shall be provided in lieu of mechanical types. Lavatories will have integral temperature limit stops and / or point-of-use mixers to provide 110 deg. F. maximum temperature. A separate non-potable hot water distribution system will be required for the Science room sinks.

All hot water supply systems will be copper, insulated, circulated using bronze circulating pumps, and controlled by immersion aqua stats.



### **Waste and Vent**

Waste and vent piping shall be cast iron and will exit the building and connect by gravity to the site sanitary sewer system 10'-0" outside the building.

A separate kitchen waste system shall be provided to collect waste from all kitchen sinks and equipment that would discharge grease. A point-of-use grease trap will be provided to receive the waste discharge at the triple pot sink, dishwasher and other grease producing equipment/floor drains. The unit at the triple pot sink will be floor recessed, PDI and ASSE approved, supplied with a flush floor access plate, and equipped with automatic draw-off hose. Kitchen waste will be piped separately by gravity to 10'-0" outside the building to an exterior grease trap structure. Kitchen waste and vent piping will be cast iron.

A new Massachusetts State Plumbing Code compliant exterior gas/oil separator manhole structure will be provided for the Automotive Maintenance shop garage bay drains. Separator vents will be routed back into the building per Code. The waste from this structure will extend and connect to the site sanitary drainage system.

All vent piping on the roof shall be kept at least 25 feet away from the HVAC air intakes to eliminate sewer gases from entering the building. Trap primers shall be provided on all floor drains.

### **Roof Drainage System**

Roof drains will be cast iron construction, heavy duty, with flashing clamp for membrane roofing, under deck clamping device, and aluminum domes. Storm drain piping shall be cast iron and extend 10'-0" outside the building and connect to the site storm water system. Insulation will be applied to storm water piping and roof drain bodies within the building to prevent condensation.

### **Fixtures**

Water Closets shall be institutional grade, white vitreous china, wall hung, elongated bowl, low flow (1.28gpf) type, with exposed, sensor-operated, battery-powered/solar re-charged flush valves, and open front white plastic seat and self-sustaining check hinge. Urinals shall be institutional grade, white vitreous china, wall hung, low flow (0.1gpf) urinals with exposed, sensor-operated, battery-powered flush valves.

Multi-lavatory units shall be molded synthetic stone, multi-user units with sensor-operated, battery-powered/solar re-charged, above deck mixing and metering faucets. These fixtures will be located in the central toilet rooms for student use. Single lavatories shall be institutional grade, white vitreous china, and wall-hung type, with front overflow. Fixtures are to be provided with sensor-operated, battery-powered/solar re-charged, above deck mixing and metering faucets. Lavatories will include open grid drains, supplies with loose key stops, and "P" traps.

The flushometers and automatic faucets shall be battery-powered self-recharging (solar) type. Each fixture shall be connected to the piping with separate isolation valves for ease of maintenance. Batteries in self-recharging devices can last between 5-10 years depending on frequency of use.

#### **Natural Gas System**

Natural gas will be brought to the building by the gas company, and shall include a meter and primary pressure regulator as needed on the exterior of the building. From the outlet of the meter / regulator set, natural gas piping will be extended throughout the building and serve all equipment requiring gas service. Gas pressure within the building will be low pressure, under ½ psig. The primary gas utilization equipment will be boilers, make-up air units, rooftop HVAC equipment, kitchen cooking appliances, and central domestic water heaters.

#### FIRE PROTECTION SYSTEMS

#### **Fire Sprinkler System**

#### FIRE PROTECTION SYSTEMS

#### ***Fire Sprinkler System***

The proposed school building is to be protected throughout with Wet sprinkler systems. The system shall be hydraulically calculated in accordance with NFPA requirements. Sprinkler mains shall be equipped with control valves, inspector test stations, and flow switches. Sprinkler spacing shall comply with NFPA-13 requirements.

Sprinklers for areas with ceilings will be recessed type, chrome plated. Mechanical rooms and other unfinished areas are to be provided with brass finish, exposed sprinklers, protected by sprinkler guards. Sprinklers for areas subject to freezing shall be dry type.

Areas of the building that will not be provided with wet-pipe type sprinkler protection are: the main electrical room, and emergency electrical closets, which will be 2-hour rated construction.

The new fire main shall enter the water service room on the perimeter of the building. An approved type double check valve assembly will be provided on the fire service.

The system will include Class 1 (2 ½ inch) fire department valves at the exits from the Auditorium. Fire department connections shall be provided at the building's main entrance and the water service room entrance. The fire department connection and hose connections will match Fire Department requirements.

### **Standpipes**

The building will be protected throughout with combination standpipe / sprinkler systems. The fire main will enter the water service room on the perimeter of the building. An approved type double check valve assembly will be provided on the fire service.

The standpipes shall be located in the stairwells (where applicable- in the two-story options), and be equipped with Class 1 (2 ½ inch) fire department valves. The standpipes shall be interconnected by fire mains on the lowest level. Fire department connections will be provided at the building's main entrance and the water service room entrance. The fire department connection will match Fire Department requirements.

### **HVAC SYSTEMS**

The following is the HVAC systems narrative, which defines the scope of work and capacities of the Heating, Ventilating, Cooling and Control systems as well as Basis of Design. The HVAC systems shall be designed to meet LEED for Schools Silver criteria.

### **Heating System**

The preliminary concept for the HVAC system described below incorporates system types that will meet or exceed current energy code requirements. Energy modeling will be used during the Schematic Design Phase to consider selected design alternatives that would offer cost effective opportunities to optimize the overall energy efficiency of the school.

The heating system will be a gas-fired condensing hot water boiler system, optimized for operating efficiency through design of a high-delta-T terminal heating system. Each boiler will have a dedicated constant-volume primary pump to serve a primary loop. The secondary loop will include two (2) pumps (one as primary and one standby) with VFD control to serve the variable volume building load, which will use two-way modulating valves for temperature control for each terminal unit; a modulating differential bypass control valve will be installed to ensure minimum flow is maintained to the boilers at low-load conditions. The hot water system will be 30% propylene glycol for freeze protection. The boiler system and all ancillary components will be located in the mechanical room. The heating system (boilers, pumps, and controls) will be on emergency power.

Terminal heating units will be hot water based and will include cabinet unit heaters in vestibules, and corridors; unit heaters in back-of-house spaces; and radiant panels for classroom spaces and other occupied areas.

### **Heating and Ventilating Systems**

The classrooms will be heated and ventilated with rooftop energy recovery units, configured as defined below. Distribution to classrooms will be through two-position VAV terminal boxes for occupied / unoccupied control, and controlled by space occupancy sensors. The supply air distribution will be provided through overhead air distribution. Classroom exhaust will be

configured at ceiling or wall mounted grilles, located along the corridor side of the classrooms (the system will be controlled to provide mechanically enhanced natural ventilation through the use of operable windows).

Rooftop Energy Recovery Units will consist of:

Supply Air Section:

- Outdoor air intake weather hood with isolation damper
- MERV 7 Pre-Filter & MERV 13 Final Filter
- Sensible Energy Recovery Wheel
- Hot Water Coil
- DX Cooling Coil (for Gymnasium Only)
- Centrifugal Supply Fan with VFD Control
- Supply side smoke / isolation damper

Exhaust Air Section:

- Exhaust Intake Isolation Damper
- MERV 7 Pre-Filter
- Common Energy Wheel
- Exhaust Fan with VFD Control
- Exhaust Louver with Isolation Damper

### **Heating, Ventilating and Air Conditioning Systems**

For areas scheduled to be cooled, a combination of direct expansion packaged rooftop, ducted split air conditioning and ductless split air conditioning systems will be used.

#### ***Auditorium, Administration Suite, Computer Lab and Library/Media***

**Center:** For perimeter exposures heating and cooling shall be provided by fan powered series variable volume units. Heating, Cooling and Ventilation will be provided by separate variable volume packaged rooftop units with variable frequency drives. Air will be distributed through a system of lined ductwork, diffusers and lined return ductwork, using damper and a return/exhaust fan discharging up through roof.

Rooftop cooling units shall consist of:

- Outdoor air intake weather hood with isolation damper
- MERV 7 Pre-Filter & MERV 13 Final Filter
- Hot water heating coil
- DX cooling coil
- Supply and return fans with variable frequency drives

Tel/Data Closets will be served with ductless split air conditioning units or split fan coil units as appropriate. Condensate pumps will be provided where gravity drains are not feasible.

The greenhouse space will be heated and ventilated using gas fired unit heaters and ventilation fans and dampers controlled via a time-clock and/or temperature sensors.

The Kitchen will be served with a dedicated kitchen hood exhaust fan, compliant with NFPA 96. Exhaust ductwork will be constructed of 16-Gage welded steel with 2-hour rated enclosure to roof-mounted fan. Makeup air will be provided from a rooftop make-up air unit, configured as follows:

- Outdoor air intake weather hood with isolation damper
- MERV 7 Pre-Filter & MERV-13 Final Filter
- Gas-Fired Furnace
- Centrifugal Supply Fan

### **Building Management System**

The facility will be provided with a web-accessible, microprocessor-based, direct digital control (DDC), building management system (BMS). The BMS will consist of equipment and building level controllers that communicate via a local area network (LAN) to an operator workstation. Each controller will be capable of full, stand-alone operation and have integral permanent memory to maintain control and set points in case of network or power failure.

### **Approximate Space Loads**

The total estimated heating load for the facility is 5,200 MBH. The total estimated cooling load for the air conditioned spaces is approximately 85 tons for the proposed spaces to be served.

## **ELECTRICAL SYSTEMS**

The following is the Electrical systems narrative, which defines the scope of work and capacities of the Power, Lighting, Fire Alarm, Security and Technology systems as well as Basis of Design. The Electrical systems shall be designed for LEED for Schools Silver rating criteria.

New electrical service will originate from the riser pole of the existing National Grid medium voltage primary line installed overhead along Stockbridge Road (Route 7). Two underground concrete encased conduits will be provided from the riser pole to the location of the new utility pad-mounted transformer. If required by the National Grid, pre-cast manhole(s) will be installed to facilitate pulling of the primary feeder. Utility company will furnish and install a primary feeder cable from the riser pole to the pad-mounted transformer.

The service electrical transformer with secondary voltage of 480Y/277 volts will be furnished, installed, owned and maintained by National Grid, and it will be located in close proximity to the building's main electric room. The recommended distance from the transformer to the building is at least 10 ft. Concrete pad and grounding grid for the pad-mounted transformer will be provided by the Contractor. Transformer will be sized by the utility company based on the load data provided by Symmes, Maini & McKee Associates. Utility service metering will be at the transformer's secondary voltage.

Transformer secondary feeder of the copper conductors will be installed underground in the duct bank of (6) conduits from the pad-mounted transformer to the main electrical switchboard located in the new main electrical room.

The main electrical switchboard rated 2,000 Amperes at 480Y/277 volts, 3 phase will be of standard NEMA1 indoor type construction with a fixed mounted main power circuit breaker 100% rated and panel mounted molded case circuit breakers. In general, molded case circuit breakers will be of thermal-magnetic type, but electronic type circuit breakers will be furnished for the devices 250 Amp and larger. The switchboard will include a service entrance transient voltage surge protection device (SPD) and digital metering unit to monitor voltage, current, power factor and demand kW. The switchboard's short circuit rating shall be at least 50 KAIC.

New electrical service and the main switchboard shall be built in Phase1 construction. The existing electrical service including a riser pole, underground primary feeder, 120/208 volt 3 phase utility pad-mounted transformer and switchboard will continue to serve the existing loads that require remain operational until the end of the project construction.

Preliminary connected load:

Site Lighting:	15 KVA
Boilers and pumps	20 KVA
HVAC loads including partial A/C, AHUs and exhaust fans	320KVA
Interior Building Lighting	130 KVA
Computer and Small Power	200 KVA
Kitchen (full service)	75 KVA
Miscellaneous Power	50 KVA
<u>Auditorium Lighting</u>	<u>100 KVA</u>
Total Connected Load	910 KVA

New interior building 277/480 volt 3 phase power distribution system includes the power panels that will serve building HVAC loads (roof top units, AHUs, pumps, fans, etc.) and lighting panels. The dry-type energy efficient transformers will be provided to reduce 480 volt 3 phase interior distribution voltage to 208Y/120 volts for small and kitchen equipment power requirements, classroom power and convenience outlets. The panels and transformers will be located in the main electrical room and in the (5) electrical closets. Where required to accommodate computer equipment and other non-linear type loads (computer classrooms, data rooms, etc.), the K-rated transformers will be provided.

New electrical panels will be furnished with aluminum tin-plated phase and neutral busses, copper ground bus and molded case circuit breakers. SPD

device will be specified for the panels serving sensitive electronic equipment (computers, Head end room, etc.).

The panels will be sub-metered and monitored by the BMS system to meet the LEED sub-metering requirements

In general, wiring will be insulated copper conductors installed in the concealed metal raceways in the finished areas or running exposed in the unfinished areas such as a storage rooms, gymnasium, mechanical and electrical rooms. Metal clad MC type cable may be used for branch circuit wiring in the above suspended ceiling spaces and in the dry wall partitions where it is allowed by Massachusetts Electrical Code. Minimum wire size for power and lighting circuits will be # 12 AWG.

Underground conduits and conduits installed under a concrete slab will be PVC Schedule 40. Conduits exposed to weather, and penetrating foundation and concrete slabs will be rigid steel.

#### **Generator Power Systems**

A packaged diesel engine-generator system will be provided to supply power to both emergency (Life Safety) and standby building loads upon loss of the normal electric utility power source. A skid-based fuel tank of the diesel-generator set will be sized for 72 hours of the unit operation without re-fueling. Fuel tank will be of double-wall construction with a leak detection system.

Two automatic transfer switches (ATS) will be used for transfer emergency and standby loads to the generator power. The generator unit shall start automatically on loss of normal power and transfer emergency loads to the generator power within 10 seconds.

The proposed generator power system loads are:

Life safety emergency loads:

- Emergency exit and egress lighting (interior and exterior)
- Fire alarm system

Standby power loads:

- Heating system boilers with the associated pumps
- Boiler control panel and DDC panels
- Kitchen walk-in refrigerator and freezer equipment
- Nurse/medical areas lighting and power
- Security system equipment
- Communication systems (telephone and public address systems) and associated A/C equipment for the communication closets
- Site/access road lighting (minimum)

The proposed generator set will be located outdoor, adjacent to the utility pad-mounted transformer. The unit will be in a weatherproof and sound-



attenuated enclosure. The estimated size of the generator set – 150 kW at 277/480 volt 3 phase.

Emergency (life safety) power distribution equipment including ATS, panels and feeders shall be installed in 2-hour fire-rated closets and shafts in compliance with the requirements of the Massachusetts Electrical Code. Emergency ATS, main emergency power distribution panel, a lighting panel and dry-type transformer/panel will be located in the main emergency room. Remote emergency power electrical closets will be provided in the building to minimize length of the branch circuits, the feeders from the main emergency room to these closets will be MI type cables, UL listed for 2-hour fire rating.

The panels and dry-type transformers to serve the standby loads will be located in the “normal power” electrical closets.

### **Lighting System**

The overall intent of the lighting design is to provide a visual environment for the students, faculty, and community that is supportive of the educational activities within the building. Lighting system will comply with Massachusetts Building Code (latest edition) and the LEED requirements. Complete interior lighting system with the illumination levels per IES recommended value for applicable activity type will utilize the efficient fluorescent and LED fixtures to achieve the lighting power density 25-30% less than stated in IECC 2009.

In general, high-efficiency interior lighting fixtures will utilize fluorescent low-mercury energy-efficient T5 and T8 Super lamps, compact fluorescent lamps and the electronic ballasts.

Classroom lighting will be direct / indirect, pendant-mounted, fluorescent fixtures with T5HO lamps and electronic ballasts, controlled by the local switches and occupancy sensor. Lighting within the classrooms will be designed to approximately 30 -35 FC. Lighting within 15 feet of exterior windows will be equipped with electronic dimming ballasts and wired to a ceiling mounted lighting sensor that will dim light fixtures according to the amount of daylight entering the room. Daylight dimming will be in compliance with LEED.

The gymnasium lighting will use 2X4 high efficiency 6 lamp T5HO fluorescent high bay fixtures. The gymnasium lighting level will be approximately 60 -70 FC.

Corridor lighting will consist of fluorescent, ceiling-recessed, and LED down lighting. Corridor lighting will be designed to approximately 15 -20 FC. Lighting in the administration areas, nurse's offices, teacher support areas, and in the similar areas will be fluorescent recessed of the direct/indirect type. Lighting in the kitchen, locker rooms, preparation rooms, storage



rooms, and in the similar areas will be fluorescent recessed with prismatic lens.

Multi-level lighting control will be an energy-efficient and cost effective method to provide multiple illumination levels as required for the different working tasks and time of the day. Local switches and occupancy sensors will be provided for lighting control in the private offices and conference rooms.

Ambient light sensors will be installed in the areas where daylight harvesting is available. These sensors in conjunction with the fluorescent dimming type ballasts will result in the substantial energy savings.

Low-voltage programmable lighting control system will be furnished to facilitate automatic lighting shutoff on a scheduled basis with an occupant override in compliance with the Energy Code. This system will be provided for the areas without occupancy sensors and will be tied into the building DDC system for monitoring and overrides.

Emergency LED type exit signs and egress lighting fixtures will be connected to life-safety emergency power distribution system to provide illumination level required by Code for safe emergency egress in a case of the normal utility power failure. Egress lighting will not stay energized during the night unoccupied hours but will be automatically turned on in a case of normal utility power failure or fire alarm in the building, and also manually by Custodian. Auditorium theatrical lighting dimming system will be furnished with emergency transfer cabinet to transfer house lighting to the life safety emergency distribution system upon loss of normal power

Exterior building lighting will consist of building mounted LED (at egress doors) and pole mounted with two-level LED full cut-off fixtures for parking lot, roadways, and walkways. Exterior lighting will be time switched by the low-voltage programmable lighting control system to facilitate automatic lighting shutoff on a scheduled basis. Light fixtures and lighting levels will be designed in accordance with IESNA and LEED.

### **Fire Alarm System**

Addressable, non-coded, Class A supervised type fire detection and alarm system will be provided to meet the requirements of the Massachusetts Building Code, NFPA-72, and local Fire Department requirements. Fire alarm system will consist of a fire alarm control panel (FACP), a remote annunciator, automatic smoke and heat detectors, manual pull stations, audible and visible alarm signals, connections to automatic fire suppression systems and means for transmitting alarm signals to the local Fire Department.

New FACP should be installed under Phase 1 construction, and the existing zoned type fire alarm panel by Simplex will be re-wired to a new FACP as a

sub-panel and will stay operational to cover the existing (not renovated yet) areas. The new FACP shall be compatible with the existing system.

FACP will provide an alarm and annunciation capability in case of activation of any manual fire alarm station, smoke detector, heat detector, duct smoke detector, sprinkler water flow switch or kitchen fire suppression system. The fire alarm control panel will be located in the area approved by the local Fire Department (proposed location – in the main electric room). Remote annunciator will be located in the vestibule at the main entrance.

FACP will be provided with an amplifier, microphone, and zone selector for speaker alarm annunciation by Fire Department. Audible (speakers) and visual (high intensity strobes) alarm devices will be installed per NFPA-72. Speaker/strobe units will be used in the entire school building. Auditorium performance sound system will be automatically shut down and auditorium house lights will be automatically turned ON upon the building fire alarm initiation.

Area type smoke detectors will be installed in the main electrical room, electrical closets, data/telephone rooms, school corridors, library, art rooms, storage rooms/closets and at the top of the stairways to mezzanines. Beam type smoke detectors will be provided in the Gym and Auditorium if it will be requested by the local Fire Department. Smoke detectors will not be required in the classrooms, labs and offices. Addressable type duct smoke detectors will be installed in supply and return air ducts as required by NFPA-90A. Heat detectors (fixed and rate-of-rise type) will be used for release of the Auditorium fire curtain. Stage roof hatches will be released by the fusible links.

### **Security Systems**

The proposed IESS “integrated electronic security system” consists of 3 sub-systems Intrusion, CCTV and access control. The systems are then integrated and viewed as one via a single security GUI “graphical user interface”. The CCTV system consists of computer servers with image software, computer monitors and IP based closed circuit TV cameras. The head end server shall be located in the head end MDF room and will be rack mounted. The system can be accessed from any PC within the facility or externally via an IP address. Each camera can be viewed independently. The network video recorders NVR’s will record all cameras and store this information for 30 days. To balance the amount of NVR storage with the number of devices on the system, CCTV camera frame rates will be programmed to record at variable speeds – fewer frames per second during off-hours with automatic frame rate increase up to 30 frames per second when an event is detected. The system requires site licenses for each camera and a one year software support agreement. This agreement will require renewal on an annual basis. CCTV camera coverage will include corridors, Cafeteria and Gymnasium spaces, building entrances, exterior building locations where students will congregate, site access roads, the bus drop-off area and parking lots. All cameras shall be fixed-type. The

system shall fully integrate with the access control system to allow viewing of events from a single alarm viewer. Camera images and recorded video shall be linked to the access system to allow retrieval of video that is associated with the event.

The Intrusion system consists of security system control panel, keypads, motion detectors and door contacts. The system is designed so that each perimeter classroom will have motion detectors along the exterior wall and door contacts at each exterior door. The system can be partitioned into eight zones. Therefore, it is possible to use the Gym area while the remainder of the school remains alarmed.

The system shall be addressable which means that each device will be identified when an alarm occurs. The system shall include remote release buttons in offices that will allow the person to release the door locking mechanism from their desk. A digital communicating transmitter shall be provided to summons the local police department in the event of an actual alarm condition in the facility after hours.

The Access Control System shall include a card access controller, door controllers and proximity readers/keypads. The electrical hardware for each door is provided by the hardware contractor. Proximity readers will be located at various locations as shown on the security drawings. The purpose is to only allow access to authorized personnel at predetermined times. Each proximity reader will have a distinctive code to identify the user and a log will be kept in memory. The log within the panel can be accessed through a computer. The alarm condition shall also initiate real time recording on the integrated CCTV System that is included as part of this proposed system. The system is programmed with graphic maps allowing the end-user to quickly identify alarm conditions and lock/unlock doors.

The system shall be tested and complete documentation shall be provided to the Owner on the operational and programming functions available. The system may be easily expanded to accommodate any additional devices that may be added in the future.

The system is included with a site license to accommodate future expansion to include the entire district. This will allow the School Department to have a centralized solution that may be managed at a central location. This will insure consistency in all school/district buildings.

### **Technology Systems**

During construction, the existing communications service feeds to the building will be maintained to allow the school to continue operations without interruption. A new concrete encased underground communications duct bank will be provided with individual conduits to deliver telephone, CATV, fiber optic cabling and a spare duct for future services. The new duct bank will originate in the vicinity of the new electrical service duct bank on Stockbridge Road (Route 7) and extend to a new entrance facility that will be built next to the new Main Electric Room. Pre-cast manhole(s) will be

installed if required to accommodate the distance and number of bends in the cable path to facilitate cable pulling. The Communications Service Providers will furnish and install trunk cables from the riser pole to cross-connection equipment in the new Entrance Facility.

A secure, dedicated Communications Entrance Facility will be provided to receive fiber optic, CATV and Telephone services. A fiber optic, coaxial cable and multi-pair copper backbone network will be provided to connect the (MDF) main distribution frame with the Services at the Communications Entrance Facility. The (IDF) Intermediate Distribution Frames will connect to the (MDF) over a fiber optic and multi-pair copper backbone network.

Cable raceways and power will be provided in all educational spaces to support future interactive white board installations.

A voice and data distribution system will be provided consisting of Category 6 unshielded twisted pair (UTP) cabling systems and work area outlets for local area network (LAN) and voice communications. Outlets will be provided in all classrooms, offices, media center, computer lab, cafeteria, auditorium, and as additionally required. The entire building will be designed to support wireless access to the data network.

A video distribution head end system will be provided to receive local CATV programming from the local Service Provider. CATV programming will be distributed to all educational spaces over the IP network.

A GPS based wireless clock and program system will be provided for originating and distributing time and time correction signals, and for programming and initiating audible program signals. The system will consist of a master control unit, indicating clocks, and connections to the public address and music system. The master control unit will transmit wirelessly to the secondary clocks. Each secondary clock acts as a transceiver and synchs up with all other clocks. Clock correction is set for 1 second.

The Public Address System will be completely replaced and will include new head end equipment, ceiling mounted two-way talk back speakers each classroom and speakers with volume control will be provided in all other spaces. The volume control will be provided with override contacts so that emergency pages by-pass volume controls that are on the low or off position.

### **3.6 DESCRIPTION OF SOURCE UTILITIES**

The site is currently served by a public water supply well, wastewater treatment plant and storm drainage. According to available record plans, the water supply well was constructed in 2002 and the wastewater treatment plant was constructed in 2004.

The supply well is located approximately 1,600 feet east of the existing building. A 4-inch ductile iron water line runs from the well west to a pump

house vault located southwest of the existing building. The school is fed by a 4-inch ductile iron line from a storage tank, located at the pump house vault.

The sanitary sewer service consists of two 6-inch gravity lines that exit the west side of the building to a septic tank northwest of the building, and eventually connects to the wastewater treatment plant on the Middle School site. The treatment plant currently handles waste flow from the High, Middle and Elementary Schools.

Design documents of the existing sanitary sewer lines indicate they were constructed of vitrified clay pipe. This type of pipe may contain asbestos materials, therefore, special handling and disposal may be required for any removal or disruption of these utilities.

The existing storm drainage system consists of a series of shallow catch basins and manholes located in the main parking lot that collect stormwater runoff from paved surfaces and the existing building rooftop. The piped drainage system flows in the northerly direction and daylights to low areas of the site to the north. The rest of the site flows overland off the property.

Underground electrical and telecommunication services are provided from the existing overhead services in Stockbridge Road.

Due to the age of the existing utilities serving the site, most of the services for the new building will be replaced as described below:

#### **Water Distribution System**

The proposed water distribution system will consist of Class 52 cement-lined ductile iron (CLDI) water mains. The existing 4-inch ductile iron pipe that serves the building will be replaced with a new 10-inch line in order to provide additional flow to support the proposed sprinkler system for the building.

The existing 4-inch main will be removed and replaced with the 10-inch proposed main. Any existing water mains within the footprint of the proposed additions will have to be removed and disposed of in accordance with current regulations.

The new 10-inch main will generally follow the existing line. New fire hydrants will be provided around the perimeter of the building at approximately 300 foot intervals.

Independent domestic and fire protection services will be provided to the building. The new domestic service will be 4-inch diameter and will originate from the new 10-inch main. The fire protection service will be 8-inches and will originate from the pump house vault. The fire protection service will include a post indicator valve, as required by NFPA.

The fields are not currently irrigated. The project does not include any new irrigation.

### **Sanitary Sewer System**

The project will utilize the existing wastewater treatment plant, located on the Monument Valley Middle School property. The system was built in 2004 and was designed to be used by the High, Middle, and Elementary Schools. The proposed High School enrollment will be slightly increased from current enrollment, therefore proposed flow from the high school will be confirmed to be within the permitted capacity, which is 35,000 gallons per day. Design documents indicate that the original septic tank was a 30,000 gallon tank. Capacity of the tank will be confirmed as well for the future enrollment and addition.

The sanitary waste systems for the proposed addition will connect to the existing underslab plumbing prior to discharging to the existing on-site septic tank, located on the northwest side of the building.

A new 3,000 gallon precast concrete grease trap will be provided at the service area, to treat wastes generated from the new kitchen and culinary arts spaces; in accordance with the Plumbing Code and Title V. In order to connect the grease trap, the exterior sewer system will be extended to the proposed service area. The system will be extended utilizing precast concrete manholes and 8-inch PVC pipe.

A new gas/oil separator manhole structure, conforming to the Massachusetts state Plumbing Code will be provided for the Automotive Maintenance shop garage bay drains. Separator vents will be routed back into the building per Code.

### **Storm Drain System**

The proposed storm drain system will likely utilize the existing system whenever possible. Existing catch basins may be retrofitted with oil and grease hoods to provide stormwater treatment. Installation of water quality units may also be required to provide additional stormwater treatment prior to discharge. New storm drain pipe will consist of corrugated polyethylene pipe (CPE).

A subsurface recharge system will most likely have to be installed as part of the stormwater management design. Depending on the exact quantity of runoff generated from the project, detention structures, either above ground ponds or below ground systems, may be constructed in addition to the recharge structure.

### **Electricity/Telecommunications**

The project will require an upgrade in electrical and telecommunication services to the building, as discussed in Section 3.5 – Electrical Systems.

### **Natural Gas**

The project will require a new gas service as discussed in Section 3.5 – Plumbing Systems. The existing service onto the site will be maintained and extended where required.

### 3.7 CONSTRUCTION AND PROJECT COST ESTIMATES

The estimated construction costs and project costs for Options 2D.4, 2E and 2F are defined in the table below. The detailed estimates are appended at the end of this section.

Option (Description)	Total Gross SF	SF of Renovated Space (Cost*/SF)	SF of New* Construction (Cost*/SF)	Site, Building Takedown, WWTF, Haz Mat. Cost*	Estimated Total Construction (Cost*/SF)	Estimated Total Project Costs
OPTION 2D.4**	134,000 sf	113,705 sf \$238.62/sf	20,295 sf \$337.83/sf	\$6,767,361	\$40,755,908 \$304.15/sf	\$52,753,000
OPTION 2E	135,317 sf	113,705 sf \$238.62/sf	21,612 sf \$348.37/sf	\$7,382,393	\$42,043,652 \$310.70/sf	\$53,380,000
OPTION 2F	135,117 sf	113,705 sf \$238.62/sf	21,412 sf \$425.78/sf	\$7,150,192	\$43,399,280 \$321.20/sf	\$57,500,000

\* Marked up Construction Costs

\*\* Preferred Option

### 3.8 DESCRIPTION OF PERMITTING REQUIREMENTS

#### SITE PLAN REVIEW

The project will require Site Plan Approval from the Planning Board in accordance with Section 10.5 of the Town of Great Barrington Zoning By-Laws. The parcel is located within the R4 Large Acreage Residential zoning district. Educational Uses are allowed by right in this zoning district per Section 3.1.4.B (7).

The site plan review procedure requires a final decision from the Planning Board within 60 days of permit application. The final decision has a 20 day appeal period.

It is assumed that the District, as the applicant, will participate in all public hearings and that the application for Site Plan Approval will be submitted at the completion of the Design Development Phase.

#### ZONING BOARD OF APPEALS

The parcel is considered in compliance with the Great Barrington Zoning Bylaws and will most likely not require filing with the Zoning Board of Appeals.

#### CONSERVATION COMMISSION

The project will require a filing with the Great Barrington Conservation Commission because of the proposed work adjacent to resource areas. A Request for Determination (RDA) or Notice of Intent (NOI) will be filed, and the existing priority habitat will be addressed at this time as well, see below under MESA.

#### BOARD OF HEALTH

The project includes installation of an exterior grease trap in addition to modifications and expansions to the building sewer lines, which may require review by the Great Barrington Board of Health.

The project will likely require a Food Service permit for the new kitchen.

#### MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

MEPA review is applicable to projects that receive state funding and exceed certain defined environmental thresholds. If one or more of the thresholds is exceeded MEPA review is required.

Since the project will receive state funding we have reviewed the MEPA regulations and determined that the project will not exceed any of the defined thresholds.

#### MASSACHUSETTS HISTORICAL COMMISSION (MHC)

SMMA visited Massachusetts Historical Commission (MHC) on May 31, 2012 and confirmed that the school and greenhouse buildings and site are currently not listed on the Inventory of Archaeological and Historic Assets of the Commonwealth and the State Register of Historic Places. Therefore, no approvals from the MHC are required for the project.

#### MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (Mass DOT)

The project will require filing an Access Permit with Mass DOT because the project is accessed from a state roadway. The permit type will likely be a Category I – Minor Vehicle Access Permit for a Commercial Driveway, and multiple submissions may be reviewed by Mass DOT. This work will most likely be completed in coordination with the project's traffic consultant Bryant Associates.



#### MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

The project site includes some area of Priority Habitat, located on the eastern side of the undeveloped portion of the site, a filing with MESA is required. The MESA filing will be completed with the Conservation Commission filing concurrently.

#### MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (Mass DEP)

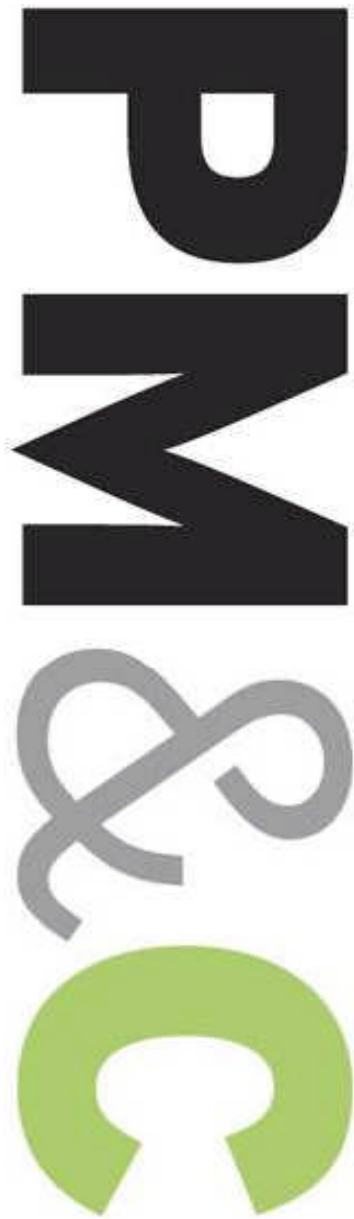
It is anticipated that a subsurface recharge system will be installed as part of the proposed stormwater management design. Mass DEP classifies stormwater recharge systems as Class V wells and registration is required through the Underground Injection Program. The registration would be filed before the system is installed.

### **3.9 DESIGN AND CONSTRUCTION SCHEDULE**

The project schedule anticipates MSBA Board of Director's approval to proceed into Schematic Design at their November 14, 2012 meeting and MSBA Board of Director's approval of the Project Scope and Budget Agreement at their March 2013 meeting. District-wide appropriation voting will occur immediately following, in the month of May 2013.

Following the District voting, the Design Documents will be developed, leading to construction commencement in the spring of 2014 and project completion the fall of 2017.





**Preferred Schematic Study**

**Monument Mountain Regional High School  
Design Options**

Great Barrington, MA

Prepared for:

**SMMA/ Margo Jones**

September 20, 2012





**Monument Mountain Regional High School**  
 Design Options  
 Great Barrington, MA

20-Sep-12

**Preferred Schematic Study**

**MAIN CONSTRUCTION COST SUMMARY**

		<b>Gross Floor Area</b>	<b>\$/sf</b>	<b>Estimated Construction Cost</b>
<b>OPTION 2D.4</b>				
RENOVATE EXISTING HIGH SCHOOL		113,705	\$171.67	\$19,519,657
ADDITIONS TO HIGH SCHOOL		20,295	\$243.04	\$4,932,536
Permanent greenhouses		3,770	\$100.00	\$377,000
REMOVE HAZARDOUS MATERIALS TO HS - Per CDW Report				\$2,015,800
SITWORK				\$2,563,498
SUB-TOTAL		134,000	\$219.47	\$29,408,491
GENERAL CONDITIONS <sup>1</sup>	42	mnts	\$90,000	\$3,780,000
PHASING PREMIUM	3%			\$882,255
ESCALATION (Two Years 3% per year)	6%			\$1,764,509
SUB-TOTAL				\$35,835,255
BONDS	0.65%			\$232,929
INSURANCE	1.25%			\$447,941
PERMIT				NIC
SUB-TOTAL				\$36,516,125
OVERHEAD AND FEE	2%			\$588,170
DESIGN AND PRICING CONTINGENCY	10%			\$3,651,613
<b>TOTAL OF ALL CONSTRUCTION OPTION 2D.4</b>		134,000	\$304.15	<b>\$40,755,908</b>



**Monument Mountain Regional High School**

Design Options

20-Sep-12

Great Barrington, MA

**Preferred Schematic Study**

**OPTION 2E**

RENOVATE EXISTING HIGH SCHOOL		113,705	\$171.67	\$19,519,657
ADDITIONS TO HIGH SCHOOL		21,612	\$247.07	\$5,339,662
Permanent greenhouses		3,770	\$100.00	\$377,000
REMOVE HAZARDOUS MATERIALS TO HS - Per CDW Report				\$2,015,800
SITework				\$2,653,498
SUB-TOTAL		135,317	\$221.00	\$29,905,617
GENERAL CONDITIONS <sup>1</sup>	42	mnths	\$90,000	\$3,780,000
PHASING PREMIUM	5%			\$1,495,281
ESCALATION (Two Years 3% per year)	6%			\$1,794,337
SUB-TOTAL				\$36,975,235
BONDS	0.65%			\$240,339
INSURANCE	1.25%			\$462,190
PERMIT				NIC
SUB-TOTAL				\$37,677,764
OVERHEAD AND FEE	2%			\$598,112
DESIGN AND PRICING CONTINGENCY	10%			\$3,767,776
<b>TOTAL OF ALL CONSTRUCTION OPTION 2E</b>		135,317	\$310.70	<b>\$42,043,652</b>



**Monument Mountain Regional High School**

Design Options

20-Sep-12

Great Barrington, MA

**Preferred Schematic Study**

**OPTION 2F**

RENOVATE EXISTING HIGH SCHOOL		113,705	\$171.67	\$19,519,657
ADDITIONS TO HIGH SCHOOL		21,412	\$304.13	\$6,511,982
Permanent greenhouses		3,770	\$100.00	\$377,000
REMOVE HAZARDOUS MATERIALS TO HS - Per CDW Report				\$2,015,800
SITework				\$2,553,498
<hr/>				
SUB-TOTAL		135,117	\$229.27	\$30,977,937
GENERAL CONDITIONS <sup>1</sup>	42	mnths	\$90,000	\$3,780,000
PHASING PREMIUM	5%			\$1,548,897
ESCALATION (Two Years 3% per year)	6%			\$1,858,676
<hr/>				
SUB-TOTAL				\$38,165,510
BONDS	0.65%			\$248,076
INSURANCE	1.25%			\$477,069
PERMIT				NIC
<hr/>				
SUB-TOTAL				\$38,890,655
OVERHEAD AND FEE	2%			\$619,559
DESIGN AND PRICING CONTINGENCY	10%			\$3,889,066
<hr/>				
<b>TOTAL OF ALL CONSTRUCTION OPTION 2F</b>		135,117	\$321.20	<b>\$43,399,280</b>
<hr/> <hr/>				

<sup>1</sup> Based on C. 149a CM at risk.

This cost estimate was produced from feasibility Design drawings and narratives, dated July, 2012 prepared by SMMA/Margo Jones Architects and their design team.

This estimate includes all direct construction costs, general contractor's overhead and profit and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149 of the Massachusetts General Laws to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufactures. If 149a CM at Risk is selected as the procurement method costs will in all likelihood increase from this estimate

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.



**Monument Mountain Regional High School**

Design Options

Great Barrington, MA

20-Sep-12

**Preferred Schematic Study**

**ITEMS NOT CONSIDERED IN THIS ESTIMATE**

Items not included in this estimate are:

- All professional fees and insurance
- Building Permit costs
- Land acquisition, feasibility, and financing costs
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items (e.g. draperies, furniture and equipment)
- Rock excavation; special foundations (unless indicated by design engineers)
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)





**CONSTRUCTION COST SUMMARY**

<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2D.4 RENOVATION</b>				
<b>A10 FOUNDATIONS</b>				
A1010 Standard Foundations	\$170,558			
A1020 Special Foundations	\$0			
A1030 Lowest Floor Construction	\$208,212	<b>\$378,770</b>	<b>\$3.33</b>	<b>1.9%</b>
<b>B10 SUPERSTRUCTURE</b>				
B1010 Upper Floor Construction	\$40,000			
B1020 Roof Construction	\$749,515	<b>\$789,515</b>	<b>\$6.94</b>	<b>4.0%</b>
<b>B20 EXTERIOR CLOSURE</b>				
B2010 Exterior Walls	\$624,956			
B2020 Windows/Curtainwall	\$1,384,493			
B2030 Exterior Doors	\$110,295	<b>\$2,119,744</b>	<b>\$18.64</b>	<b>10.9%</b>
<b>B30 ROOFING</b>				
B3010 Roof Coverings	\$1,838,795			
B3020 Roof Openings	\$231,520	<b>\$2,070,315</b>	<b>\$18.21</b>	<b>10.6%</b>
<b>C10 INTERIOR CONSTRUCTION</b>				
C1010 Partitions	\$863,016			
C1020 Interior Doors	\$435,160			
C1030 Specialties/Millwork	\$792,552	<b>\$2,090,728</b>	<b>\$18.39</b>	<b>10.7%</b>
<b>C20 STAIRCASES</b>				
C2010 Stair Construction	\$0			
C2020 Stair Finishes	\$0	<b>\$0</b>	<b>\$0.00</b>	<b>0.0%</b>
<b>C30 INTERIOR FINISHES</b>				
C3010 Wall Finishes	\$481,836			
C3020 Floor Finishes	\$981,485			
C3030 Ceiling Finishes	\$696,808	<b>\$2,160,129</b>	<b>\$19.00</b>	<b>11.1%</b>
<b>D10 CONVEYING SYSTEMS</b>				
D1010 Elevator	\$30,000	<b>\$30,000</b>	<b>\$0.26</b>	<b>0.2%</b>
<b>D20 PLUMBING</b>				
D20 Plumbing	\$844,083	<b>\$844,083</b>	<b>\$7.42</b>	<b>4.3%</b>
<b>D30 HVAC</b>				
D30 HVAC	\$3,183,740	<b>\$3,183,740</b>	<b>\$28.00</b>	<b>16.3%</b>
<b>D40 FIRE PROTECTION</b>				
D40 Fire Protection	\$540,099	<b>\$540,099</b>	<b>\$4.75</b>	<b>2.8%</b>
<b>D50 ELECTRICAL</b>				
D5010 Electrical Systems	\$3,162,348	<b>\$3,162,348</b>	<b>\$27.81</b>	<b>16.2%</b>



**CONSTRUCTION COST SUMMARY**

<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2D.4 RENOVATION</b>				
<b>E10 EQUIPMENT</b>				
E10 Equipment	\$508,900	<b>\$508,900</b>	\$4.48	2.6%
<b>E20 FURNISHINGS</b>				
E2010 Fixed Furnishings	\$919,000			
E2020 Movable Furnishings	NIC	<b>\$919,000</b>	\$8.08	4.7%
<b>F10 SPECIAL CONSTRUCTION</b>				
F10 Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 SELECTIVE BUILDING DEMOLITION</b>				
F2010 Building Elements Demolition	\$722,286			
F2020 Hazardous Components Abatement	\$0	<b>\$722,286</b>	\$6.35	3.7%
<b>TOTAL DIRECT COST (Trade Costs)</b>		<b>\$19,519,657</b>	<b>\$171.67</b>	<b>100.0%</b>

Preferred Schematic Study

GFA 113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 RENOVATION**

**GROSS FLOOR AREA CALCULATION**

Ground Floor				110,141			
First Floor Mechanical Spaces				3,564			

<b>TOTAL GROSS FLOOR AREA (GFA)</b>					<b>113,705</b>	<b>sf</b>	
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Allowance for new foundations for structural bracing etc.	<b>113,705</b>	sf	1.50	170,558		
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SUBTOTAL						<b>\$170,558</b>
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**A1020 SPECIAL FOUNDATIONS**

No work in this section

SUBTOTAL

**A1030 LOWEST FLOOR CONSTRUCTION**

Cut and Patching

Patch/level Existing slab on Grade at Lower level	<b>110,141</b>	sf	1.50	165,212		
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New Slabs for plumbing etc. at restrooms	<b>2,200</b>	sf	15.00	33,000		
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Miscellaneous Items

Equipment pads	<b>1</b>	ls	10,000.00	10,000		
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SUBTOTAL						<b>\$208,212</b>
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<b>TOTAL - FOUNDATIONS</b>							<b>\$378,770</b>
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**B10 SUPERSTRUCTURE**

**B1010 FLOOR CONSTRUCTION**

New ramps at library; including railings etc.	<b>2</b>	loc	20,000.00	40,000		
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SUBTOTAL						<b>40,000</b>
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**B1020 ROOF CONSTRUCTION**

CMU Seismic support/bracing	<b>113,705</b>	sf	3.00	341,115		
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New steel and decking at roof pop-up for new clerestory	<b>7,600</b>	sf	35.00	266,000		
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New steel for bracing etc. - assumed 0.50 lbs per sf	<b>28</b>	tns	3,800.00	106,400		
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New openings for main skylight	<b>2,000</b>	sf	10.00	20,000		
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New openings for skylights	<b>8</b>	loc	2,000.00	16,000		
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SUBTOTAL						<b>\$749,515</b>
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<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$789,515</b>
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**B20 EXTERIOR CLOSURE**

**B2010 EXTERIOR WALLS**

Exterior skin

Clean existing brick						NIC
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Preferred Schematic Study

GFA

113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>OPTION 2D.4 RENOVATION</b>								
52	Perform misc. exterior repairs to deteriorating/cracked wall components (brick and mortar, sills, sealant joints, etc.) and address any water ingress issues. - assumed 15% of exterior wall to receive repointing/repairs	3,888	sf	25.00	97,200			
53	Replace existing metal panels at mansard roof with new insulated metal panel system	8,616	sf	50.00	430,800			
54	At exterior walls, provide new steel stud framed, furred wall with 5/8" gypsum wall board, drainage plane, 3" spray applied foam insulation, paint and vinyl base.	25,918	sf	10.60	NIC			
55	<u>Miscellaneous</u>							
56	Form openings in exterior wall for new additions	2,576	sf	15.00	38,640			
57	Staging to exterior wall	25,918	sf	2.25	58,316			
58	SUBTOTAL						\$624,956	
59								
60	<b>B2020 WINDOWS/CURTAINWALL</b>							
61	Reconfigure main entrance	1	ls	50,000.00	50,000			
62	Replace existing window/storefront systems	11,280	sf	85.00	958,800			
63	New clerestory at interior classroom corridors	3,350	sf	90.00	301,500			
64	Exterior sunshades	1	ls	50,000.00	50,000			
65	Backer rod & double sealant	3,722	lf	4.00	14,888			
66	Wood blocking at openings	3,722	lf	2.50	9,305			
67	SUBTOTAL						\$1,384,493	
68								
69	<b>B2030 EXTERIOR DOORS</b>							
70	Replace glazed entrance doors including frame and hardware; double door	12	pr	5,500.00	66,000			
71	ADA door openers	2	loc	4,000.00	8,000			
72	HM doors, HM frames and hardware- Single	3	ea	1,300.00	3,900			
73	HM doors, frames and hardware- Double	8	pr	2,000.00	16,000			
74	New overhead doors	5	loc	2,600.00	13,000			
75	Backer rod & double sealant	485	lf	4.00	1,940			
76	Wood blocking at openings	485	lf	3.00	1,455			
77	SUBTOTAL						110,295	
78								
79	<b>TOTAL - EXTERIOR CLOSURE</b>							<b>\$2,119,744</b>
80								
81								
82	<b>B30 ROOFING</b>							
83								
84	<b>B3010 ROOF COVERINGS</b>							
85	<u>Flat roofing</u>							
86	Replace Roof System with new PVC roofing	110,141	sf	15.00	1,652,115			
87	Replace exterior soffits at overhangs and canopies	9,334	sf	20.00	186,680			
88	SUBTOTAL						\$1,838,795	
89								
90	<b>B3020 ROOF OPENINGS</b>							
91	Main skylight at central spline	2,000	sf	110.00	220,000			
92	New skylights allowance	8	loc	1,440.00	11,520			
93	SUBTOTAL						\$231,520	
94								
95	<b>TOTAL - ROOFING</b>							<b>\$2,070,315</b>
96								
97								
98	<b>C10 INTERIOR CONSTRUCTION</b>							



Preferred Schematic Study

GFA

113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 RENOVATION**

99								
100	<b>C1010 PARTITIONS</b>							
101	Modify/patch existing walls in bathrooms/locker	2,200	sf	15.00	33,000			
102	Replace corridor walls with new demising walls; two layers GWB corridor side	18,780	sf	11.50	215,970			
103	New/modify existing partitions in all other spaces except gym and auditorium	87,941	gsf	6.00	527,646			
104	Replace operable walls at renovated auditorium	1,728	sf	50.00	86,400			
105	SUBTOTAL					<b>863,016</b>		
106								
107	<b>C1020 INTERIOR DOORS</b>							
108	Replace interior door hardware to ADA compliant type	165	ea	450.00	74,250			
109	Replace interior door hardware to ADA compliant type	15	pr	900.00	13,500			
110	Modify door clearances; allow 20% of doors	33	loc	2,000.00	66,000			
111	Replace glazed entrance vestibule doors including frame and hardware; double door	10	pr	5,400.00	54,000			
112	Allowance for other new doors etc.	113,705	gsf	2.00	227,410			
113	SUBTOTAL					<b>\$435,160</b>		
114								
115	<b>C1030 SPECIALTIES / MILLWORK</b>							
116	Toilet Partitions and accessories	33	loc	1,300.00	42,900			
117	Toilet accessories	11	rms	2,000.00	22,000			
118	Backer panels in electrical closets	1	ls	1,000.00	1,000			
119	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	113,705	sf	0.70	79,594			
120	Building directory	1	loc	3,000.00	3,000			
121	Bronze dedication plaque	1	loc	2,500.00	2,500			
122	Staff mailboxes/casework	1	ls	5,000.00	5,000			
123	Wood paneling/trim to auditorium	1	ls	150,000.00	150,000			
124	Room Signs	165	loc	120.00	19,800			
125	Fire extinguisher cabinets	38	ea	350.00	13,300			
126	New lockers in gym	130	loc	250.00	32,500			
127	Replace lockers	570	loc	220.00	125,400			
128	New library shelving	1	ls	50,000.00	50,000			
129	New library reception counter	1	ls	25,000.00	25,000			
130	New admin reception counter	1	ls	20,000.00	20,000			
131	Display cases	1	ls	30,000.00	30,000			
132	Miscellaneous metals throughout building	113,705	sf	1.00	113,705			
133	Miscellaneous sealants throughout building	113,705	sf	0.50	56,853			
134	SUBTOTAL					<b>\$792,552</b>		
135								
136	<b>TOTAL - INTERIOR CONSTRUCTION</b>						<b>\$2,090,728</b>	
137								
138								
139	<b>C20 STAIRCASES</b>							
140								
141	<b>C2010 STAIR CONSTRUCTION</b>							
142	No work in this section							
143	SUBTOTAL							
144								



Preferred Schematic Study

GFA

113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 RENOVATION**

145 **C2020 STAIR FINISHES**  
 146 **No work in this section**  
 147 **SUBTOTAL**

<b>TOTAL - STAIRCASES</b>
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<b>C30 INTERIOR FINISHES</b>
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154 **C3010 WALL FINISHES**

155	New tile at bathrooms	4,568	sf	14.00	63,952		
156	New tile at corridor walls; 4'-8" high	7,309	sf	14.00	102,326		
155	Acoustic wall panels in auditorium and band	1	ls	50,000.00	50,000		
156	Miscellaneous wood wall panels	1	ls	75,000.00	75,000		
157	Patch and repair finishes in auditorium	1	ls	20,000.00	20,000		
158	Wall finishes; paint to existing walls etc.	113,705	gsf	1.50	170,558		
159	<b>SUBTOTAL</b>						<b>\$481,836</b>

161 **C3020 FLOOR FINISHES**

162	New ceramic tile at renovated bathrooms	2,200	sf	15.00	33,000		
163	New ceramic tile at renovated locker rooms	2,143	sf	15.00	32,145		
164	New linoleum	64,212	sf	7.00	449,484		
165	Cushioned rubber sport flooring in fitness area	410	sf	14.00	5,740		
166	New wood athletic floor in gym	8,560	sf	18.00	154,080		
167	Rubber flooring to corridors	14,424	sf	7.00	100,968		
168	Floor finishes to the kitchen; quarry tile	1,300	sf	15.00	19,500		
169	Floor finishes to main lobby; porcelain tile	5,522	sf	16.00	88,352		
170	Sealed concrete	3,564	sf	16.00	57,024		
171	Vented base in gym	372	lf	8.00	2,976		
172	Porcelain base	851	lf	13.00	11,063		
173	Ceramic tile base	730	lf	12.00	8,760		
174	Vinyl Cove Base	12,262	lf	1.50	18,393		
175	<b>SUBTOTAL</b>						<b>981,485</b>

177 **C3030 CEILING FINISHES**

178	New ACT ceilings 2 x 2	46,252	sf	4.00	185,008		
179	Wood slat ceiling at library/media	2,900	sf	32.00	92,800		
180	GWB ceilings	5,000	sf	10.00	50,000		
181	Metal Light valance above lockers	600	lf	60.00	36,000		
181	Ceiling finish at band; acoustic reflectors	1,500	sf	50.00	75,000		
182	Premium for ceiling finish at new circulation spine	5,400	sf	15.00	81,000		
183	Paint exposed Acoustic Metal Deck at gym	8,560	sf	2.50	21,400		
184	Paint to GWB ceilings	5,000	sf	1.00	5,000		
185	Staging for paint	1	ls	10,000.00	10,000		
186	Light Shelf in CR	940	lf	40.00	37,600		
187	Acoustic reflectors in auditorium	1	ls	50,000.00	50,000		
188	Allowance to patch auditorium ceiling	5,300	sf	10.00	53,000		
189	<b>SUBTOTAL</b>						<b>\$696,808</b>

<b>TOTAL - INTERIOR FINISHES</b>	<b>\$2,160,129</b>
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Preferred Schematic Study

GFA 113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 RENOVATION**

194	<b>D10 CONVEYING SYSTEMS</b>						
195							
196	Install H/C lift in auditorium at stage	1	ls	30,000.00	30,000		
197	SUBTOTAL					30,000	
198							
199	<b>TOTAL - CONVEYING SYSTEMS</b>						<b>\$30,000</b>
200							
201							
202	<b>D20 PLUMBING</b>						
203							
204	<b>D20 PLUMBING, GENERALLY</b>						
205	Replace hot water system	1	ls	30,000.00	30,000		
206	New acid neutralization system	1	ls	25,000.00	25,000		
207	Re-pipe shop drainage system	1	ls	15,000.00	15,000		
208	Plumbing; replace fixtures; connect to existing piping	113,705	gsf	1.50	170,558		
209	Replace water, storm and sanitary piping (above ground) throughout the school.	113,705	sf	5.00	568,525		
210	Add new roof drains; allowance	10	loc	2,500.00	25,000		
211	Clean and snake existing underground piping and repair as required	1	ls	10,000.00	10,000		
212	SUBTOTAL					844,083	
213							
214	<b>TOTAL - PLUMBING</b>						<b>\$844,083</b>
215							
216							
217	<b>D30 HVAC</b>						
218							
219	<b>D30 HVAC, GENERALLY</b>						
220	New HVAC system	113,705	sf	28.00	3,183,740		
221	SUBTOTAL					3,183,740	
222							
223	<b>TOTAL - HVAC</b>						<b>\$3,183,740</b>
224							
225							
226	<b>D40 FIRE PROTECTION</b>						
227							
228	<b>D40 FIRE PROTECTION, GENERALLY</b>						
229	Fire protection system	113,705	gsf	4.75	540,099		
230	SUBTOTAL					540,099	
231							
232	<b>TOTAL - FIRE PROTECTION</b>						<b>\$540,099</b>
233							
234							
235	<b>D50 ELECTRICAL</b>						
236							
237	<b>D5010 SERVICE &amp; DISTRIBUTION</b>						
238	Allowance for emergency generator and new feeders	113,705	gsf	1.50	170,558		
239	Gear & Distribution	113,705	gsf	7.00	795,935		
240	SUBTOTAL					966,493	
241							
242	<b>D5020 LIGHTING &amp; POWER</b>						
243	Lighting & Branch Power	113,705	gsf	8.00	909,640		
244	SUBTOTAL					909,640	
245							



Preferred Schematic Study

GFA

113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 RENOVATION**

246	<b>D5030 COMMUNICATION &amp; SECURITY SYSTEMS</b>							
247	<u>Fire Alarm</u>							
248	Fire alarm system; replace existing system	113,705	gsf	2.50	284,263			
249								
250	<u>Telephone/Data/CATV</u>							
251	Telephone/data/CATV	113,705	gsf	2.25	255,836			
252								
253								
254	<u>Clock/PA System (Rough-in only)</u>							
255	Wireless master clock/PA system	113,705	sf	0.20	22,741			
256								
257	<u>Security System (Rough-in only)</u>							
258	Security System (Rough-in only)	113,705	sf	0.30	34,112			
259								
260	<u>Clock/PA System</u>							
261	Wireless master clock/PA system	113,705	sf	1.00	113,705			
262								
263	<u>Auditorium</u>							
264	<u>Audiovisual System</u>							
265	AV system	1	ls	100,000.00	100,000			
266	<u>Performance Dimming</u>							
267	Performance/stage/lighting with dimming system	1	ls	150,000.00	150,000			
268								
269	Provide assistive listening devices in auditorium	1	ls	10,000.00	10,000			
270								
271	Sound system to cafeteria	1	ls	30,000.00	30,000			
272								
273	Sound system to gymnasium	1	ls	60,000.00	60,000			
274								
275	<u>Security System</u>							
276	Security System	113,705	sf	1.00	113,705			
277	Exterior CCTV security	1	ls	30,000.00	30,000			
278	SUBTOTAL					<b>\$1,204,362</b>		
279								
280	<b>D5040 OTHER ELECTRICAL SYSTEMS</b>							
281	<u>Miscellaneous</u>							
282	Temp power & lights	113,705	sf	0.50	56,853			
283	Fees & Permits	1	ls	25,000.00	25,000			
284	SUBTOTAL					<b>\$81,853</b>		
285								
286								
287	<b>TOTAL - ELECTRICAL</b>						<b>\$3,162,348</b>	
288								
289								
290	<b>E10 EQUIPMENT</b>							
291								
292	<b>E10 EQUIPMENT, GENERALLY</b>							
293	Theatrical Equipment Stage curtains, rigging and controls	1	ls	100,000	100,000			
294	Replace gymnasium bleachers with accessible system	300	seats	125	37,500			
295	Gym wall pads	1	ls	20,000.00	20,000			
296	Basketball backstops; swing up; electric operated	4	ea	9,800.00	39,200			
297	Basketball backstops; swing up; manual	2	ea	5,000.00	10,000			
298	Gymnasium dividing net; electrically operated	1	ls	45,000.00	45,000			



Preferred Schematic Study

GFA 113,705

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>OPTION 2D.4 RENOVATION</b>							
299	Volleyball net and standards	1	ea	2,000.00	2,000		
300	Allowance for TV studio equipment	1	ls	60,000	NIC		
301	New shop equipment	1	ls	50,000.00	50,000		
302	New kitchen equipment	1,140	sf	180.00	205,200		
303	SUBTOTAL					<b>\$508,900</b>	
<b>TOTAL - EQUIPMENT</b>							<b>\$508,900</b>
<b>E20 FURNISHINGS</b>							
<b>E2010 FIXED FURNISHINGS</b>							
311	Entry mats & frames - recessed with carpet/rubber strips	900	sf	25.00	22,500		
312	Fixed seats at auditorium; fully upholstered	600	seat	290.00	174,000		
313	Window blinds	11,280	sf	6.00	67,680		
314	Replace science classroom casework	4	loc	50,000.00	200,000		
315	Counters, base cabinets, tall storage in classrooms and other rooms	113,705	gsf	4.00	454,820		
316	SUBTOTAL					<b>919,000</b>	
<b>E2020 MOVABLE FURNISHINGS</b>							
319	All movable furnishings to be provided and installed by owner						NIC
320	SUBTOTAL						NIC
<b>TOTAL - FURNISHINGS</b>							<b>\$919,000</b>
<b>F10 SPECIAL CONSTRUCTION</b>							
<b>F10 SPECIAL CONSTRUCTION</b>							
328	No items in this section						
329	SUBTOTAL						
<b>TOTAL - SPECIAL CONSTRUCTION</b>							
<b>F20 SELECTIVE BUILDING DEMOLITION</b>							
<b>F2010 BUILDING ELEMENTS DEMOLITION</b>							
337	Demolition of all ceilings (floors in Haz Mat removal)	113,705	gsf	0.75	85,279		
338	Demolition of corridor walls	18,780	sf	1.25	23,475		
339	Demolition of other walls	87,941	gsf	2.00	175,882		
340	Remove windows (In Haz Mat)	11,280	sf				
341	Remove mansard roof	8,616	sf	4.00	34,464		
342	Remove roofing (In Haz Mat)	110,141	sf				
343	Remove exterior soffits	9,334	sf	3.00	28,002		
344	Remove roof structure for new clerestory	7,600	sf	10.00	76,000		
345	Remove exterior doors	8	ea	150.00	1,200		
346	Remove existing kitchen equipment	1	ls	15,000.00	15,000		



Monument Mountain Regional High School  
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	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>OPTION 2D.4 RENOVATION</b>								
347	Remove interior casework and specialties	113,705	sf	0.50	56,853			
348	Remove bus canopy	3,400	sf	10.00	34,000			
349	Miscellaneous protection dust control etc.	1	ls	50,000.00	50,000			
349	MEP demolition	113,705	sf	1.25	142,131			
350	SUBTOTAL					\$722,286		
351								
352	<b>F2020 HAZARDOUS COMPONENTS ABATEMENT</b>							
353	See summary							
354	SUBTOTAL							
355								
356	<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>						<b>\$722,286</b>	



<b>CONSTRUCTION COST SUMMARY</b>					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$354,815			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$308,003	<b>\$662,818</b>	\$32.66	13.4%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$0			
B1020	Roof Construction	\$394,423	<b>\$394,423</b>	\$19.43	8.0%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$567,919			
B2020	Windows	\$324,156			
B2030	Exterior Doors	\$44,920	<b>\$936,995</b>	\$46.17	19.0%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$454,683			
B3020	Roof Openings	\$2,500	<b>\$457,183</b>	\$22.53	9.3%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$365,310			
C1020	Interior Doors	\$81,180			
C1030	Specialties/Millwork	\$202,193	<b>\$648,683</b>	\$31.96	13.2%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$0			
C2020	Stair Finishes	\$0	<b>\$0</b>	\$0.00	0.0%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$81,180			
C3020	Floor Finishes	\$162,360			
C3030	Ceiling Finishes	\$121,770	<b>\$365,310</b>	\$18.00	7.4%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$0	<b>\$0</b>	\$0.00	0.0%
<b>D20 PLUMBING</b>					
D20	Plumbing	\$182,655	<b>\$182,655</b>	\$9.00	3.7%
<b>D30 HVAC</b>					
D30	HVAC	\$568,260	<b>\$568,260</b>	\$28.00	11.5%



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<b>CONSTRUCTION COST SUMMARY</b>					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL</b>					
<b>D40 FIRE PROTECTION</b>					
D40	Fire Protection	\$91,328	<b>\$91,328</b>	\$4.50	1.9%
<b>D50 ELECTRICAL</b>					
D5010	Service & Distribution	\$172,508			
D5020	Lighting & Power	\$162,360			
D5030	Communication & Security Systems	\$152,066			
D5040	Other Electrical Systems	\$27,251	<b>\$514,185</b>	\$25.34	10.4%
<b>E10 EQUIPMENT</b>					
E10	Equipment	\$2,500	<b>\$2,500</b>	\$0.12	0.1%
<b>E20 FURNISHINGS</b>					
E2010	Fixed Furnishings	\$108,196			
E2020	Movable Furnishings	NIC	<b>\$108,196</b>	\$5.33	2.2%
<b>F10 SPECIAL CONSTRUCTION</b>					
F10	Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>					
F2010	Building Elements Demolition	\$0			
F2020	Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>			<b>\$4,932,536</b>	\$243.04	100.0%



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL**

**GROSS FLOOR AREA CALCULATION**

Ground Floor 20,295

<b>TOTAL GROSS FLOOR AREA (GFA)</b>						<b>20,295</b>	<b>sf</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Strip footings to exterior walls - 3'-0" x 1'-0"

Excavation	883	cy	10.00	8,830
Store on site for reuse	883	cy	6.00	5,298
Backfill with existing fill	804	cy	8.00	6,432
Formwork	1,362	sf	8.00	10,896
Re-bar	1,430	lbs	1.00	1,430
Concrete material; 3,000 psi	79	cy	115.00	9,085
Placing concrete	79	cy	45.00	3,555

Foundation walls at exterior - 16" thick

Formwork	5,448	sf	9.00	49,032
Re-bar	10,896	lbs	1.00	10,896
Concrete material; 4,000 psi	141	cy	120.00	16,920
Placing concrete	141	cy	45.00	6,345
Dampproofing foundation wall and footing	4,086	sf	1.60	6,538
Insulation to foundation walls; 2" thick	2,724	sf	2.00	5,448
Form shelf	681	lf	8.00	5,448

Foundation walls at exterior - 16" thick; 14ft high at grade change

Formwork	7,560	sf	9.00	68,040
Re-bar	15,120	lbs	1.00	15,120
Concrete material; 4,000 psi	196	cy	120.00	23,520
Placing concrete	196	cy	45.00	8,820
Form shelf	270	lf	8.00	2,160

Column footings 6' x 6' x 1'-7" - Perimeter

Excavation	423	cy	8.00	3,384
Store on site for reuse	423	cy	6.00	2,538
Backfill with existing fill	343	cy	8.00	2,744
Formwork	1,365	sf	8.00	10,920
Re-bar	4,000	lbs	1.00	4,000
Concrete material; 3,000 psi	80	cy	115.00	9,200
Placing concrete	80	cy	45.00	3,600
Set anchor bolts grout plates	36	ea	150.00	5,400

Column footings 8' x 8' x 2'-0" - Interior

Excavation	220	cy	8.00	1,760
Store on site for reuse	220	cy	6.00	1,320
Backfill with existing fill	155	cy	8.00	1,240
Formwork	832	sf	8.00	6,656
Re-bar	3,900	lbs	1.00	3,900
Concrete material; 3,000 psi	65	cy	115.00	7,475
Placing concrete	65	cy	45.00	2,925
Set anchor bolts grout plates	13	ea	150.00	1,950

Miscellaneous

Form key in footing	681	lf	4.00	2,724
Structural fill to bottom of footings	282	cy	30.00	8,460

Piers/Pilasters; 24" x 12"

Formwork	784	sf	9.00	7,056
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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL</b>								
56	Re-bar	1,350	lbs	1.00	1,350			
57	Concrete material; 3,000 psi	15	cy	115.00	1,725			
58	Placing concrete	15	cy	45.00	675			
59	SUBTOTAL					354,815		
61	<b>A1020 SPECIAL FOUNDATIONS</b>							
62	<b>No Work in this section</b>							
63	SUBTOTAL							
65	<b>A1030 LOWEST FLOOR CONSTRUCTION</b>							
66	<u>New Slab on grade, 5" thick</u>							
67	Structural fill to bring up levels	4,074	cy	30.00	122,220			
67	Gravel fill, 12"	752	cy	28.00	21,056			
68	Rigid insulation	20,295	sf	1.87	37,952			
69	Vapor barrier	20,295	sf	0.50	10,148			
70	Compact existing sub-grade	20,295	sf	0.50	10,148			
71	Mesh reinforcing 15% lap	23,339	sf	0.80	18,671			
72	Concrete - 5" thick; 4,000 psi	331	cy	120.00	39,720			
73	Placing concrete	331	cy	45.00	14,895			
74	Finishing and curing concrete	20,295	sf	1.50	30,443			
75	Control joints - saw cut	20,295	sf	0.10	2,030			
76	Isolation joints at columns	288	lf	2.50	720			
77	SUBTOTAL					\$308,003		
79	<b>TOTAL - FOUNDATIONS</b>							<b>\$662,818</b>
82	<b>A20 BASEMENT CONSTRUCTION</b>							
84	<b>A2010 BASEMENT FILL</b>							
85	<b>No Work in this section</b>							
86	SUBTOTAL							
88	<b>A2020 BASEMENT WALLS</b>							
89	<b>No Work in this section</b>							
90	SUBTOTAL							
92	<b>TOTAL - BASEMENT CONSTRUCTION</b>							
95	<b>B10 SUPERSTRUCTURE</b>							
96		10	lbs/sf		-			
97	<b>B1010 FLOOR CONSTRUCTION</b>							
98	<b>No Work in this section</b>							
99	SUBTOTAL							
101	<b>B1020 ROOF CONSTRUCTION</b>							
102	<u>Roof Structure - Steel:</u>							
103	Steel beams/Joists; allowance 10 lbs per SF	101	tns	2,800.00	282,800			
104	<u>Roof Structure</u>							
105	2" 20 Ga. galvanized Metal Roof Deck	20,295	sf	3.00	60,885			
106	<u>Miscellaneous</u>							



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL</b>							
107	Fire proofing to columns, beams and deck	20,295	sf	2.50	50,738		
108	SUBTOTAL					\$394,423	
<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$394,423</b>
<b>B20 EXTERIOR CLOSURE</b>							
<b>B2010 EXTERIOR WALLS</b>							
116	Exterior skin	6,129	sf		-		
117	Brick exterior/metal panels	6,129	sf	40.00	245,160		
118	Brick exterior/metal panels to high wall at grade chang	3,780	sf	40.00	151,200		
119	New 6" light gauge framing to face of existing wall	6,129	sf	7.50	45,968		
120	Spray Foam insulation to new exterior cavity	6,129	sf	3.00	18,387		
121	Sheathing	6,129	sf	2.00	12,258		
122	Air barrier	6,129	sf	4.00	24,516		
123	Miscellaneous						
124	Allowance for exterior closure at media center	1	ls	50,000.00	50,000		
125	Staging to exterior wall	10,215	sf	2.00	20,430		
126	SUBTOTAL					\$567,919	
128	<b>B2020 WINDOWS</b>	4,086	sf		-		
129	Windows/storefront	4,086	sf	75.00	306,450		
130	Backer rod & double sealant	2,724	lf	4.00	10,896		
131	Wood blocking at openings	2,724	lf	2.50	6,810		
132	SUBTOTAL					\$324,156	
134	<b>B2030 EXTERIOR DOORS</b>						
135	Glazed entrance doors including frame and hardware; double door	7	pr	5,500.00	38,500		
136	HM doors, frames and hardware- Double	3	pr	2,000.00	6,000		
137	Backer rod & double sealant	60	lf	4.00	240		
138	Wood blocking at openings	60	lf	3.00	180		
139	SUBTOTAL					\$44,920	
<b>TOTAL - EXTERIOR CLOSURE</b>							<b>\$936,995</b>
<b>B30 ROOFING</b>							
<b>B3010 ROOF COVERINGS</b>							
147	Flat roofing						
148	PVC roof membrane fully adhered	20,295	sf	6.50	131,918		
149	Insulation; R-30	20,295	sf	5.50	111,623		
150	Insulation tapered	1	ls	5,000.00	5,000		
151	1/2" dens-deck protection board	20,295	sf	1.50	30,443		
152	Reinforced vapor barrier	20,295	sf	0.45	9,133		
153	Rough blocking	4,086	lf	6.00	24,516		
154	Miscellaneous Roofing						
155	Canopy	1	ls	100,000.00	100,000		
156	Roof fascia/cornice	681	lf	50.00	34,050		
157	Roof ladder	1	ls	3,000.00	3,000		
158	Walk pads	1	ls	5,000.00	5,000		
159	SUBTOTAL					\$454,683	
161	<b>B3020 ROOF OPENINGS</b>						
162	Roof hatch	1	loc	2,500.00	2,500		



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL**

163	SUBTOTAL					\$2,500		
164	<b>TOTAL - ROOFING</b>							<b>\$457,183</b>

**C10 INTERIOR CONSTRUCTION**

170	<b>C1010 PARTITIONS</b>							
171	Interior partitions	20,295	gsf	18.00	365,310			
172	SUBTOTAL					\$365,310		
174	<b>C1020 INTERIOR DOORS</b>							
175	Interior doors, frames and hardware	20,295	gsf	4.00	81,180			
176	SUBTOTAL					\$81,180		
178	<b>C1030 SPECIALTIES / MILLWORK</b>							
179	Toilet Partitions and accessories	20,295	gsf	0.80	16,236			
180	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	20,295	gsf	0.70	14,207			
181	Acoustical wall panels	1	ls	15,000.00	15,000			
182	Room Signs	20,295	gsf	0.25	5,074			
183	Fire extinguisher cabinets	7	ea	350.00	2,450			
184	Lockers	20,295	gsf	1.60	32,472			
185	Glazed walls and borrowed lights	1	ls	50,000.00	50,000			
186	Janitors Work Shop Accessories	1	ls	1,500.00	1,500			
187	Janitors Closet Accessories	3	rms	300.00	900			
188	Misc. metal Support to counters and casework etc.	1	ls	20,000	20,000			
189	Display cases	1	ls	20,000.00	20,000			
190	Miscellaneous metals throughout building	20,295	sf	1.00	20,295			
191	Miscellaneous sealants throughout building	20,295	sf	0.20	4,059			
192	SUBTOTAL					\$202,193		
194	<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$648,683</b>

**C20 STAIRCASES**

199	<b>C2010 STAIR CONSTRUCTION</b>							
200	No Work in this section							
201	SUBTOTAL							
203	<b>C2020 STAIR FINISHES</b>							
204	No Work in this section							
205	SUBTOTAL							
207	<b>TOTAL - STAIRCASES</b>							

**C30 INTERIOR FINISHES**

212	<b>C3010 WALL FINISHES</b>						
213	Wall finishes	20,295	gsf	4.00	81,180		
214	SUBTOTAL					\$81,180	
216	<b>C3020 FLOOR FINISHES</b>						
217	Floor finishes	20,295	gsf	8.00	162,360		
218	SUBTOTAL					\$162,360	
220	<b>C3030 CEILING FINISHES</b>						
221	Ceiling finishes	20,295	gsf	6.00	121,770		





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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL</b>							
	SUBTOTAL					\$121,770	
<b>TOTAL - INTERIOR FINISHES</b>							<b>\$365,310</b>
<b>D10 CONVEYING SYSTEMS</b>							
<b>D1010</b>	<b>ELEVATOR</b>						
	No Work in this section						
	SUBTOTAL						
<b>TOTAL - CONVEYING SYSTEMS</b>							
<b>D20 PLUMBING</b>							
<b>D20</b>	<b>PLUMBING, GENERALLY</b>						
	Plumbing	20,295	gsf	9.00	182,655		
	SUBTOTAL					\$182,655	
<b>TOTAL - PLUMBING</b>							<b>\$182,655</b>
<b>D30 HVAC</b>							
<b>D30</b>	<b>HVAC, GENERALLY</b>						
	HVAC	20,295	gsf	28.00	568,260		
	SUBTOTAL					\$568,260	
<b>TOTAL - HVAC</b>							<b>\$568,260</b>
<b>D40 FIRE PROTECTION</b>							
<b>D40</b>	<b>FIRE PROTECTION, GENERALLY</b>						
	Fire protection system	20,295	gsf	4.50	91,328		
	SUBTOTAL					\$91,328	
<b>TOTAL - FIRE PROTECTION</b>							<b>\$91,328</b>
<b>D50 ELECTRICAL</b>							
<b>D5010</b>	<b>SERVICE &amp; DISTRIBUTION</b>						
	Allowance for emergency generator and new feeders	20,295	gsf	1.50	30,443		
	Gear & Distribution	20,295	gsf	7.00	142,065		
	SUBTOTAL					\$172,508	
<b>D5020</b>	<b>LIGHTING &amp; POWER</b>						
	Lighting & Branch Power	20,295	gsf	8.00	162,360		
	SUBTOTAL					\$162,360	
<b>D5030</b>	<b>COMMUNICATION &amp; SECURITY SYSTEMS</b>						
	<u>Fire Alarm</u>						
	Fire alarm system	20,295	gsf	2.25	45,664		
	<u>Telephone/Data/CATV</u>						
	Telephone/data/CATV	20,295	gsf	2.25	45,664		
	<u>Clock/PA System (Rough-in only)</u>						
	Wireless master clock/PA system	20,295	sf	0.20	4,059		
	<u>Security System (Rough-in only)</u>						
	Security System (Rough-in only)	20,295	sf	0.30	6,089		



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL**

286	<u>Clock/PA System</u>							
287	Wireless master clock/PA system	20,295	sf	1.00	20,295			
288								
289	Classroom SMART boards					F,F&E		
290								
291								
292	<u>Security System</u>							
293	Security System	20,295	sf	1.00	20,295			
294	Exterior CCTV security	1	ls	10,000.00	10,000			
295	SUBTOTAL						\$152,066	
296								
297	<b>D5040 OTHER ELECTRICAL SYSTEMS</b>							
298	Lightning protection	20,295	sf	0.35	7,103			
299	<u>Miscellaneous</u>							
300	Temp power & lights	20,295	sf	0.50	10,148			
301	Fees & Permits	1	ls	10,000.00	10,000			
302	SUBTOTAL						\$27,251	
303								
304	<b>TOTAL - ELECTRICAL</b>							<b>\$514,185</b>

**E10 EQUIPMENT**

309	<b>E10 EQUIPMENT, GENERALLY</b>							
310	Electrically operated projection screens	1	loc	2,500.00	2,500			
311	SUBTOTAL						\$2,500	
312								
313	<b>TOTAL - EQUIPMENT</b>							<b>\$2,500</b>

**E20 FURNISHINGS**

318	<b>E2010 FIXED FURNISHINGS</b>							
319	Entry mats & frames - recessed with carpet/rubber strips	100	sf	25.00	2,500			
320	Window blinds	4,086	sf	6.00	24,516			
321	Counters, base cabinets, tall storage in classrooms and other rooms	20,295	gsf	4.00	81,180			
322	SUBTOTAL						\$108,196	
323								
324	<b>E2020 MOVABLE FURNISHINGS</b>							
325	All movable furnishings to be provided and installed by owner							
326	SUBTOTAL						NIC	
327								
328	<b>TOTAL - FURNISHINGS</b>							<b>\$108,196</b>

**F10 SPECIAL CONSTRUCTION**

333	<b>F10 SPECIAL CONSTRUCTION</b>							
334	No items in this section							
335	SUBTOTAL							
336								
337	<b>TOTAL - SPECIAL CONSTRUCTION</b>							

**F20 SELECTIVE BUILDING DEMOLITION**

342	<b>F2010 BUILDING ELEMENTS DEMOLITION</b>						
343	See main summary for demolition of existing buildings						
344	SUBTOTAL						



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2D.4 NEW ADDITIONS TO HIGH SCHOOL**

345  
346  
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**F2020 HAZARDOUS COMPONENTS ABATEMENT**

See main summary for HazMat allowance

See Summary

SUBTOTAL

<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>							
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Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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SITWORK OPTION 2D.2

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**G SITEWORK**

**G10 SITE PREPARATION & DEMOLITION**

Site construction fence/barricades	3,400	lf	8.00	27,200			
Miscellaneous demolition	1	ls	30,000	30,000			
<u>Site Earthwork</u>							
Strip topsoil, store	1,852	cy	12.00	22,224			
Cuts/Fills	1	ls	30,000.00	30,000			
Regarding at rear addition and interface with track	1	ls	50,000.00	50,000			
Silt fence/erosion control, wash bays, stock piles	3,400	lf	10.00	34,000			
Silt fence maintenance and monitoring	1	ls	5,000.00	5,000			
Dust control/sweeper & water truck	1	ls	10,000.00	10,000			
<u>Hazardous Waste Remediation</u>							
Dispose/treat contaminated soils/water					NIC		
SUBTOTAL						208,424	

**G20 SITE IMPROVEMENTS**

<u>Resurface Roadways and Parking Lots</u>							
Resurface bituminous concrete	18,667	sy	16.00	298,672			
Granite curbs; 20%	1,352	lf	30.00	40,560			
Precast curbs; 80%	5,409	lf	16.00	86,544			
Nw bus loop	1	ls	100,000.00	100,000			
<u>New right turn only lane</u>							
Bituminous concrete paving							
gravel base; 8" thick	124	cy	26.00	3,224			
dense grade base; 6" thick	93	cy	26.00	2,418			
bituminous concrete; 4" thick	556	sy	22.00	12,232			
Granite curbs; 6" x 18"	500	lf	28.00	14,000			
Modify entrance	1	ls	15,000.00	15,000			
<u>Pedestrian Paving</u>							
Concrete paving							
gravel base; 8" thick	149	cy	26.00	3,874			
4" concrete paving	6,000	sf	4.50	27,000			
New traffic signs	1	ls	15,000.00	15,000			
New HC ramps	2	loc	40,000.00	80,000			
New 8 high retaining wall	75	lf	560.00	42,000			
Masonry loading dock screen wall	1	ls	100,000.00	100,000			
Site canopy	1	ls	100,000.00	100,000			
Site stairs/ramps	1	ls	50,000.00	50,000			
Miscellaneous site improvements; benches, trash receptacles etc.	1	ls	75,000.00	75,000			
Replace play equipment and surfacing	1	ls	120,000.00	120,000			
New building entrance sign	1	loc	10,000.00	10,000			
Renovate main entrance plaza	15,000	sf	10.00	150,000			
Courtyard paving/planting	12,000	sf	15.00	180,000			
<u>Landscaping</u>							
Landscaping allowance	1	ls	100,000.00	100,000			
SUBTOTAL						1,625,524	

**G30 CIVIL MECHANICAL UTILITIES**

<u>Water supply</u>							
New water CLDI: 8"	200	lf	45.00	9,000			
Relocate existing water line	300	lf	80.00	24,000			
Connect to existing line/tank	1	loc	5,000.00	5,000			
Wet Tap to existing 8" w/T reducers	1	loc	3,500.00	3,500			
New fire hydrant	3	loc	2,600.00	7,800			



Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>SITWORK OPTION 2D.2</b>							
55	FD connection	1	loc	2,000.00	2,000		
56	Gate valves	1	ls	5,000.00	5,000		
57	Miscellaneous connection, tee's and fittings	1	ls	3,000.00	3,000		
58	<u>Sanitary sewer</u>						
59	Relocate existing FM	300	lf	100.00	30,000		
60	<u>Storm Sewer</u>						
61	Allowance for new storm system including underground detention	1	ls	300,000.00	300,000		
62	SUBTOTAL					389,300	
63							
64	<b>G40 ELECTRICAL UTILITIES</b>						
65	<u>Power</u>						
66	Riser	1	ea	1,200.00	1,200		
67	Primary ductbank 2-5" empty concrete encased (allow)	700	lf	90.00	63,000		
68	Transformer pad	1	ea	1,500.00	1,500		
69	2000A secondary service concrete encased	50	lf	450.00	22,500		
70	Generator ductbank 3-4", 4-2" conduits	50	lf	275.00	13,750		
71	<u>Communications</u>						
72	Riser	1	ea	1,500.00	1,500		
73	Communications ductbank 4-4" concrete encased (allow)	700	lf	124.00	86,800		
74	<u>Site Lighting</u>						
75	Allowance	1	ls	150,000.00	150,000		
76	SUBTOTAL					340,250	
77							
78							
<b>TOTAL - SITE DEVELOPMENT OPTION 2D.2</b>							<b>\$2,563,498</b>



<b>CONSTRUCTION COST SUMMARY</b>					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2E NEW ADDITIONS TO HIGH SCHOOL</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$202,680			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$243,391	<b>\$446,071</b>	\$20.64	8.4%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$113,340			
A2020	Basement Walls	\$141,668	<b>\$255,008</b>	\$11.80	4.8%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$314,810			
B1020	Roof Construction	\$206,607	<b>\$521,417</b>	\$24.13	9.8%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$373,100			
B2020	Windows	\$285,600			
B2030	Exterior Doors	\$44,920	<b>\$703,620</b>	\$32.56	13.2%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$650,234			
B3020	Roof Openings	\$2,500	<b>\$652,734</b>	\$30.20	12.2%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$389,016			
C1020	Interior Doors	\$86,448			
C1030	Specialties/Millwork	\$208,184	<b>\$683,648</b>	\$31.63	12.8%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$33,000			
C2020	Stair Finishes	\$8,950	<b>\$41,950</b>	\$1.94	0.8%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$86,448			
C3020	Floor Finishes	\$172,896			
C3030	Ceiling Finishes	\$129,672	<b>\$389,016</b>	\$18.00	7.3%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$90,000	<b>\$90,000</b>	\$4.16	1.7%
<b>D20 PLUMBING</b>					
D20	Plumbing	\$194,508	<b>\$194,508</b>	\$9.00	3.6%
<b>D30 HVAC</b>					
D30	HVAC	\$605,136	<b>\$605,136</b>	\$28.00	11.3%



Monument Mountain Regional High School  
 Design Options  
 Great Barrington, MA

20-Sep-12

Preferred Schematic Study

GFA 21,612

<b>CONSTRUCTION COST SUMMARY</b>					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2E NEW ADDITIONS TO HIGH SCHOOL</b>					
<b>D40 FIRE PROTECTION</b>					
D40	Fire Protection	\$97,254	<b>\$97,254</b>	\$4.50	1.8%
<b>D50 ELECTRICAL</b>					
D5010	Service & Distribution	\$183,702			
D5020	Lighting & Power	\$172,896			
D5030	Communication & Security Systems	\$161,284			
D5040	Other Electrical Systems	\$28,370	<b>\$546,252</b>	\$25.28	10.2%
<b>E10 EQUIPMENT</b>					
E10	Equipment	\$2,500	<b>\$2,500</b>	\$0.12	0.0%
<b>E20 FURNISHINGS</b>					
E2010	Fixed Furnishings	\$110,548			
E2020	Movable Furnishings	NIC	<b>\$110,548</b>	\$5.12	2.1%
<b>F10 SPECIAL CONSTRUCTION</b>					
F10	Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>					
F2010	Building Elements Demolition	\$0			
F2020	Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>			<b>\$5,339,662</b>	\$247.07	100.0%



Preferred Schematic Study

GFA 21,612

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2E NEW ADDITIONS TO HIGH SCHOOL**

**GROSS FLOOR AREA CALCULATION**

Lower Floor	11,029
Ground Floor	10,583

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>21,612 sf</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Strip footings to exterior walls - 3'-0" x 1'-0"

Excavation	778	cy	10.00	7,780
Store on site for reuse	778	cy	6.00	4,668
Backfill with existing fill	708	cy	8.00	5,664
Formwork	1,200	sf	8.00	9,600
Re-bar	1,260	lbs	1.00	1,260
Concrete material; 3,000 psi	70	cy	115.00	8,050
Placing concrete	70	cy	45.00	3,150

Foundation walls at exterior - 16" thick

Formwork	4,800	sf	9.00	43,200
Re-bar	9,600	lbs	1.00	9,600
Concrete material; 4,000 psi	124	cy	120.00	14,880
Placing concrete	124	cy	45.00	5,580
Dampproofing foundation wall and footing	3,600	sf	1.60	5,760
Insulation to foundation walls; 2" thick	2,400	sf	2.00	4,800
Form shelf	600	lf	8.00	4,800

Column footings 6' x 6' x 1'-7" - Perimeter

Excavation	352	cy	8.00	2,816
Store on site for reuse	352	cy	6.00	2,112
Backfill with existing fill	286	cy	8.00	2,288
Formwork	1,138	sf	8.00	9,104
Re-bar	3,300	lbs	1.00	3,300
Concrete material; 3,000 psi	66	cy	115.00	7,590
Placing concrete	66	cy	45.00	2,970
Set anchor bolts grout plates	30	ea	150.00	4,500

Column footings 8' x 8' x 2'-0" - Interior

Excavation	169	cy	8.00	1,352
Store on site for reuse	169	cy	6.00	1,014
Backfill with existing fill	119	cy	8.00	952
Formwork	640	sf	8.00	5,120
Re-bar	3,000	lbs	1.00	3,000
Concrete material; 3,000 psi	50	cy	115.00	5,750
Placing concrete	50	cy	45.00	2,250
Set anchor bolts grout plates	10	ea	150.00	1,500

Miscellaneous

Form key in footing	600	lf	4.00	2,400
Structural fill to bottom of footings	237	cy	30.00	7,110

Piers/Pilasters: 24" x 12"

Formwork	640	sf	9.00	5,760
Re-bar	1,080	lbs	1.00	1,080
Concrete material; 3,000 psi	12	cy	115.00	1,380
Placing concrete	12	cy	45.00	540

SUBTOTAL				202,680
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Preferred Schematic Study

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21,612

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2E NEW ADDITIONS TO HIGH SCHOOL**

55	<b>A1020 SPECIAL FOUNDATIONS</b>							
56	No Work in this section							
57	SUBTOTAL							
58								
59	<b>A1030 LOWEST FLOOR CONSTRUCTION</b>							
60	<u>New Slab on grade, 5" thick</u>							
61	Structural fill to bring up levels	4,074	cy	30.00	122,220			
62	Gravel fill, 12"	408	cy	28.00	11,424			
63	Rigid insulation	11,029	sf	1.87	20,624			
64	Vapor barrier	11,029	sf	0.50	5,515			
65	Compact existing sub-grade	11,029	sf	0.50	5,515			
66	Mesh reinforcing 15% lap	12,683	sf	0.80	10,146			
67	Concrete - 5" thick; 4,000 psi	180	cy	120.00	21,600			
68	Placing concrete	180	cy	45.00	8,100			
69	Finishing and curing concrete	11,029	sf	1.50	16,544			
70	Control joints - saw cut	11,029	sf	0.10	1,103			
71	Elevator pit	1	ls	20,000.00	20,000			
72	Isolation joints at columns	240	lf	2.50	600			
73	SUBTOTAL					\$243,391		
74								
75	<b>TOTAL - FOUNDATIONS</b>							<b>\$446,071</b>

**A20 BASEMENT CONSTRUCTION**

80	<b>A2010 BASEMENT FILL</b>							
81	Basement excavation into hill	3,778	cy	30.00	113,340			
82	SUBTOTAL					\$113,340		
83								
84	<b>A2020 BASEMENT WALLS</b>							
85	<u>Strip footings to retaining walls - 3'-0" x 1'-0"</u>							
86	Excavation	358	cy	10.00	3,580			
87	Store on site for reuse	358	cy	6.00	2,148			
88	Backfill with existing fill	316	cy	8.00	2,528			
89	Formwork	430	sf	8.00	3,440			
90	Re-bar	452	lbs	1.00	452			
91	Concrete material; 3,000 psi	42	cy	115.00	4,830			
92	Placing concrete	42	cy	45.00	1,890			
93	<u>Foundation walls at exterior - 16" thick; 15ft high at retaining wall</u>							
94	Formwork	6,450	sf	9.00	58,050			
95	Re-bar	12,900	lbs	1.00	12,900			
96	Concrete material; 4,000 psi	167	cy	120.00	20,040			
97	Placing concrete	167	cy	45.00	7,515			
98	Waterproofing	3,225	sf	7.00	22,575			
99	Form shelf	215	lf	8.00	1,720			
100	SUBTOTAL					141,668		
101								
102	<b>TOTAL - BASEMENT CONSTRUCTION</b>							<b>\$255,008</b>

**B10 SUPERSTRUCTURE**

106		11	lbs/sf		-		
107	<b>B1010 FLOOR CONSTRUCTION</b>	119	tns		-		



Preferred Schematic Study

GFA

21,612

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2E NEW ADDITIONS TO HIGH SCHOOL**

108	<u>Floor Structure - Steel:</u>							
109	Beams and columns	66	tns	3,000.00	198,000			
110	Moment connections	1	ls	15,000.00	15,000			
111	Shear studs	2,206	ea	2.50	5,515			
112	<u>Floor Structure - Typical</u>							
113	Metal galvanized floor Deck;1-1/2" 20 Ga. Deck	11,029	sf	2.25	24,815			
114	WWF reinforcement	12,683	sf	0.70	8,878			
115	Concrete Fill to metal deck; 4-1/2" thick; NW	172	cy	125.00	21,500			
116	Place and finish concrete	11,029	sf	2.00	22,058			
117	<u>Miscellaneous</u>							
118	Fire proofing to columns and beams	11,029	sf	1.50	16,544			
119	Fire stopping floors	1	ls	2,500.00	2,500			
120	SUBTOTAL					\$314,810		
121								
122	<b>B1020 ROOF CONSTRUCTION</b>							
123	<u>Roof Structure - Steel:</u>							
124	Steel beams/Joists; allowance 10 lbs per SF	53	tns	2,800.00	148,400			
125	<u>Roof Structure</u>							
126	2" 20 Ga. galvanized Metal Roof Deck	10,583	sf	3.00	31,749			
127	<u>Miscellaneous</u>							
128	Fire proofing to columns, beams and deck	10,583	sf	2.50	26,458			
129	SUBTOTAL					\$206,607		
130								
131	<b>TOTAL - SUPERSTRUCTURE</b>						<b>\$521,417</b>	
132								
133								
134	<b>B20 EXTERIOR CLOSURE</b>							
135								
136	<b>B2010 EXTERIOR WALLS</b>							
137	<u>Exterior skin</u>	5,400	sf		-			
138	Brick exterior/metal panels	5,400	sf	40.00	216,000			
139	New 6" light gauge framing to face of existing wall	5,400	sf	7.50	40,500			
140	Spray Foam insulation to new exterior cavity	5,400	sf	3.00	16,200			
141	Sheathing	5,400	sf	2.00	10,800			
142	Air barrier	5,400	sf	4.00	21,600			
143	<u>Miscellaneous</u>							
144	Allowance for exterior closure at media center	1	ls	50,000.00	50,000			
145	Staging to exterior wall	9,000	sf	2.00	18,000			
146	SUBTOTAL					\$373,100		
147								
148	<b>B2020 WINDOWS</b>							
149	Windows/storefront	3,600	sf		-			
150	Backer rod & double sealant	3,600	sf	75.00	270,000			
151	Wood blocking at openings	2,400	lf	4.00	9,600			
152	Wood blocking at openings	2,400	lf	2.50	6,000			
153	SUBTOTAL					\$285,600		
154	<b>B2030 EXTERIOR DOORS</b>							
155	Glazed entrance doors including frame and hardware; double door	7	pr	5,500.00	38,500			
156	HM doors, frames and hardware- Double	3	pr	2,000.00	6,000			
157	Backer rod & double sealant	60	lf	4.00	240			
158	Wood blocking at openings	60	lf	3.00	180			
159	SUBTOTAL					\$44,920		
160								
161	<b>TOTAL - EXTERIOR CLOSURE</b>						<b>\$703,620</b>	
162								



Preferred Schematic Study

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2E NEW ADDITIONS TO HIGH SCHOOL**

163	<b>B30 ROOFING</b>						
164							
165							
166	<b>B3010 ROOF COVERINGS</b>						
167	Flat roofing						
168	PVC roof membrane fully adhered	10,583	sf	6.50	68,790		
169	Insulation; R-30	10,583	sf	5.50	58,207		
170	Insulation tapered	1	ls	5,000.00	5,000		
171	1/2" dens-deck protection board	10,583	sf	1.50	15,875		
172	Reinforced vapor barrier	10,583	sf	0.45	4,762		
173	Green roof	7,600	sf	40.00	304,000		
174	Railing at roof	170	lf	200.00	34,000		
175	Rough blocking	3,600	lf	6.00	21,600		
176	Miscellaneous Roofing						
177	Canopy	1	ls	100,000.00	100,000		
178	Roof fascia/cornice	600	lf	50.00	30,000		
179	Roof ladder	1	ls	3,000.00	3,000		
180	Walk pads	1	ls	5,000.00	5,000		
181	SUBTOTAL					\$650,234	
182							
183	<b>B3020 ROOF OPENINGS</b>						
184	Roof hatch	1	loc	2,500.00	2,500		
185	SUBTOTAL					\$2,500	
186							
187	<b>TOTAL - ROOFING</b>						<b>\$652,734</b>
188							
189							
190	<b>C10 INTERIOR CONSTRUCTION</b>						
191							
192	<b>C1010 PARTITIONS</b>						
193	Interior partitions	21,612	gsf	18.00	389,016		
194	SUBTOTAL					\$389,016	
195							
196	<b>C1020 INTERIOR DOORS</b>						
197	Interior doors, frames and hardware	21,612	gsf	4.00	86,448		
198	SUBTOTAL					\$86,448	
199							
200	<b>C1030 SPECIALTIES / MILLWORK</b>						
201	Toilet Partitions and accessories	21,612	gsf	0.80	17,290		
202	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	21,612	gsf	0.70	15,128		
203	Acoustical wall panels	1	ls	15,000.00	15,000		
204	Room Signs	21,612	gsf	0.25	5,403		
205	Fire extinguisher cabinets	7	ea	350.00	2,450		
206	Lockers	21,612	gsf	1.60	34,579		
207	Glazed walls and borrowed lights	1	ls	50,000.00	50,000		
208	Janitors Work Shop Accessories	1	ls	1,500.00	1,500		
209	Janitors Closet Accessories	3	rms	300.00	900		
210	Misc. metal Support to counters and casework etc.	1	ls	20,000	20,000		
211	Display cases	1	ls	20,000.00	20,000		
212	Miscellaneous metals throughout building	21,612	sf	1.00	21,612		
213	Miscellaneous sealants throughout building	21,612	sf	0.20	4,322		
214	SUBTOTAL					\$208,184	
215							
216	<b>TOTAL - INTERIOR CONSTRUCTION</b>						<b>\$683,648</b>
217							



Preferred Schematic Study

GFA 21,612

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2E NEW ADDITIONS TO HIGH SCHOOL**

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**C20 STAIRCASES**

**C2010 STAIR CONSTRUCTION**

Egress staircase	2	flt	15,000.00	30,000	
concrete material in pan infill	2	flt	1,500.00	3,000	
<b>SUBTOTAL</b>					<b>\$33,000</b>

**C2020 STAIR FINISHES**

Rubber treads/risers to egress stair	240	lfr	20.00	4,800	
Rubber to landings	300	sf	5.50	1,650	
Paint to staircases	2	flt	1,250.00	2,500	
<b>SUBTOTAL</b>					<b>\$8,950</b>

**TOTAL - STAIRCASES \$41,950**

**C30 INTERIOR FINISHES**

**C3010 WALL FINISHES**

Wall finishes	21,612	gsf	4.00	86,448	
<b>SUBTOTAL</b>					<b>\$86,448</b>

**C3020 FLOOR FINISHES**

Floor finishes	21,612	gsf	8.00	172,896	
<b>SUBTOTAL</b>					<b>\$172,896</b>

**C3030 CEILING FINISHES**

Ceiling finishes	21,612	gsf	6.00	129,672	
<b>SUBTOTAL</b>					<b>\$129,672</b>

**TOTAL - INTERIOR FINISHES \$389,016**

**D10 CONVEYING SYSTEMS**

**D1010 ELEVATOR**

New two stop elevator	1	ls	90,000.00	90,000	
<b>SUBTOTAL</b>					<b>\$90,000</b>

**TOTAL - CONVEYING SYSTEMS \$90,000**

**D20 PLUMBING**

**D20 PLUMBING, GENERALLY**

Plumbing	21,612	gsf	9.00	194,508	
<b>SUBTOTAL</b>					<b>\$194,508</b>

**TOTAL - PLUMBING \$194,508**

**D30 HVAC**

**D30 HVAC, GENERALLY**

HVAC	21,612	gsf	28.00	605,136	
<b>SUBTOTAL</b>					<b>\$605,136</b>

**TOTAL - HVAC \$605,136**

**D40 FIRE PROTECTION**

**D40 FIRE PROTECTION, GENERALLY**

Fire protection system	21,612	gsf	4.50	97,254	
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Preferred Schematic Study

GFA 21,612

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2E NEW ADDITIONS TO HIGH SCHOOL**

283	SUBTOTAL					\$97,254		
284	<b>TOTAL - FIRE PROTECTION</b>						<b>\$97,254</b>	

**D50 ELECTRICAL**

**D5010 SERVICE & DISTRIBUTION**

291	Allowance for emergency generator and new feeders	21,612	gsf	1.50	32,418		
292	Gear & Distribution	21,612	gsf	7.00	151,284		
293	SUBTOTAL					\$183,702	

**D5020 LIGHTING & POWER**

296	Lighting & Branch Power	21,612	gsf	8.00	172,896		
297	SUBTOTAL					\$172,896	

**D5030 COMMUNICATION & SECURITY SYSTEMS**

300	<u>Fire Alarm</u>						
301	Fire alarm system	21,612	gsf	2.25	48,627		
303	<u>Telephone/Data/CATV</u>						
304	Telephone/data/CATV	21,612	gsf	2.25	48,627		
306	<u>Clock/PA System (Rough-in only)</u>						
307	Wireless master clock/PA system	21,612	sf	0.20	4,322		
309	<u>Security System (Rough-in only)</u>						
310	Security System (Rough-in only)	21,612	sf	0.30	6,484		
312	<u>Clock/PA System</u>						
313	Wireless master clock/PA system	21,612	sf	1.00	21,612		
315	Classroom SMART boards				F,F&E		
318	<u>Security System</u>						
319	Security System	21,612	sf	1.00	21,612		
320	Exterior CCTV security	1	ls	10,000.00	10,000		
321	SUBTOTAL					\$161,284	

**D5040 OTHER ELECTRICAL SYSTEMS**

324	Lightning protection	21,612	sf	0.35	7,564		
325	Miscellaneous						
326	Temp power & lights	21,612	sf	0.50	10,806		
327	Fees & Permits	1	ls	10,000.00	10,000		
328	SUBTOTAL					\$28,370	

<b>TOTAL - ELECTRICAL</b>						<b>\$546,252</b>	
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**E10 EQUIPMENT**

**E10 EQUIPMENT, GENERALLY**

336	Electrically operated projection screens	1	loc	2,500.00	2,500		
337	SUBTOTAL					\$2,500	

<b>TOTAL - EQUIPMENT</b>						<b>\$2,500</b>	
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**E20 FURNISHINGS**

**E2010 FIXED FURNISHINGS**



Preferred Schematic Study

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>OPTION 2E NEW ADDITIONS TO HIGH SCHOOL</b>								
345	Entry mats & frames - recessed with carpet/rubber strips	100	sf	25.00	2,500			
346	Window blinds	3,600	sf	6.00	21,600			
347	Counters, base cabinets, tall storage in classrooms and other rooms	21,612	gsf	4.00	86,448			
348	SUBTOTAL					\$110,548		
349								
350	<b>E2020 MOVABLE FURNISHINGS</b>							
351	All movable furnishings to be provided and installed by owner							
352	SUBTOTAL						NIC	
353								
354	<b>TOTAL - FURNISHINGS</b>							<b>\$110,548</b>
355								
356								
357	<b>F10 SPECIAL CONSTRUCTION</b>							
358								
359	<b>F10 SPECIAL CONSTRUCTION</b>							
360	No items in this section							
361	SUBTOTAL							
362								
363	<b>TOTAL - SPECIAL CONSTRUCTION</b>							
364								
365								
366	<b>F20 SELECTIVE BUILDING DEMOLITION</b>							
367								
368	<b>F2010 BUILDING ELEMENTS DEMOLITION</b>							
369	See main summary for demolition of existing buildings							
370	SUBTOTAL							
371								
372	<b>F2020 HAZARDOUS COMPONENTS ABATEMENT</b>							
373	See main summary for HazMat allowance						See Summary	
374	SUBTOTAL							
375								
376	<b>TOTAL - SELECTIVE BUILDING DEMOLITION</b>							



Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>SITWORK OPTION 2E</b>								
<b>G</b>	<b>SITWORK</b>							
<b>G10</b>	<b>SITE PREPARATION &amp; DEMOLITION</b>							
	Site construction fence/barricades	3,400	lf	8.00	27,200			
	Miscellaneous demolition	1	ls	30,000	30,000			
	<u>Site Earthwork</u>							
	Strip topsoil, store	1,852	cy	12.00	22,224			
	Cuts/Fills	1	ls	30,000.00	30,000			
	Regarding at rear addition and interface with track	1	ls	50,000.00	50,000			
	Silt fence/erosion control, wash bays, stock piles	3,400	lf	10.00	34,000			
	Silt fence maintenance and monitoring	1	ls	5,000.00	5,000			
	Dust control/sweeper & water truck	1	ls	10,000.00	10,000			
	<u>Hazardous Waste Remediation</u>							
	Dispose/treat contaminated soils/water					NIC		
	SUBTOTAL						208,424	
<b>G20</b>	<b>SITE IMPROVEMENTS</b>							
	<u>Resurface Roadways and Parking Lots</u>							
	Resurface bituminous concrete	18,667	sy	16.00	298,672			
	Granite curbs; 20%	1,352	lf	30.00	40,560			
	Precast curbs; 80%	5,409	lf	16.00	86,544			
	Nw bus loop	1	ls	100,000.00	100,000			
	<u>New right turn only lane</u>							
	Bituminous concrete paving							
	gravel base; 8" thick	124	cy	26.00	3,224			
	dense grade base; 6" thick	93	cy	26.00	2,418			
	bituminous concrete; 4" thick	556	sy	22.00	12,232			
	Granite curbs; 6" x 18"	500	lf	28.00	14,000			
	Modify entrance	1	ls	15,000.00	15,000			
	<u>Pedestrian Paving</u>							
	Concrete paving							
	gravel base; 8" thick	149	cy	26.00	3,874			
	4" concrete paving	6,000	sf	4.50	27,000			
	New traffic signs	1	ls	15,000.00	15,000			
	New HC ramps	2	loc	40,000.00	80,000			
	New 8 high retaining wall	75	lf	560.00	42,000			
	Masonry loading dock screen wall	1	ls	100,000.00	100,000			
	Site canopy	1	ls	100,000.00	100,000			
	Site stairs/ramps	1	ls	50,000.00	50,000			
	Miscellaneous site improvements; benches, trash receptacles etc.	1	ls	75,000.00	75,000			
	Amphitheater	1	ls	90,000.00	90,000			
	Replace play equipment and surfacing	1	ls	120,000.00	120,000			
	New building entrance sign	1	loc	10,000.00	10,000			
	Renovate main entrance plaza	15,000	sf	10.00	150,000			
	Courtyard paving/planting	12,000	sf	15.00	180,000			
	<u>Landscaping</u>							
	Landscaping allowance	1	ls	100,000.00	100,000			
	SUBTOTAL						1,715,524	
<b>G30</b>	<b>CIVIL MECHANICAL UTILITIES</b>							
	<u>Water supply</u>							
	New water CLDI: 8"	200	lf	45.00	9,000			
	Relocate existing water line	300	lf	80.00	24,000			
	Connect to existing line/tank	1	loc	5,000.00	5,000			



Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>SITWORK OPTION 2E</b>							
56	Wet Tap to existing 8" w/T reducers	1	loc	3,500.00	3,500		
57	New fire hydrant	3	loc	2,600.00	7,800		
58	FD connection	1	loc	2,000.00	2,000		
59	Gate valves	1	ls	5,000.00	5,000		
60	Miscellaneous connection, tee's and fittings	1	ls	3,000.00	3,000		
61	<u>Sanitary sewer</u>						
62	Relocate existing FM	300	lf	100.00	30,000		
63	<u>Storm Sewer</u>						
64	Allowance for new storm system including underground detention	1	ls	300,000.00	300,000		
65	SUBTOTAL					389,300	
66							
67	<b>G40 ELECTRICAL UTILITIES</b>						
68	<u>Power</u>						
69	Riser	1	ea	1,200.00	1,200		
70	Primary ductbank 2-5" empty concrete encased (allow)	700	lf	90.00	63,000		
71	Transformer pad	1	ea	1,500.00	1,500		
72	2000A secondary service concrete encased	50	lf	450.00	22,500		
73	Generator ductbank 3-4", 4-2" conduits	50	lf	275.00	13,750		
74	<u>Communications</u>						
75	Riser	1	ea	1,500.00	1,500		
76	Communications ductbank 4-4" concrete encased (allow)	700	lf	124.00	86,800		
77	<u>Site Lighting</u>						
78	Allowance	1	ls	150,000.00	150,000		
79	SUBTOTAL					340,250	
80							
81	<b>TOTAL - SITE DEVELOPMENT OPTION 2E</b>						<b>\$2,653,498</b>





<b>CONSTRUCTION COST SUMMARY</b>					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2F NEW ADDITIONS TO HIGH SCHOOL</b>					
<b>A10 FOUNDATIONS</b>					
A1010	Standard Foundations	\$158,163			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$235,400	<b>\$393,563</b>	\$18.38	6.0%
<b>A20 BASEMENT CONSTRUCTION</b>					
A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	<b>\$0</b>	\$0.00	0.0%
<b>B10 SUPERSTRUCTURE</b>					
B1010	Upper Floor Construction	\$1,812,944			
B1020	Roof Construction	\$218,791	<b>\$2,031,735</b>	\$94.89	31.2%
<b>B20 EXTERIOR CLOSURE</b>					
B2010	Exterior Walls	\$373,100			
B2020	Windows	\$285,600			
B2030	Exterior Doors	\$44,920	<b>\$703,620</b>	\$32.86	10.8%
<b>B30 ROOFING</b>					
B3010	Roof Coverings	\$642,632			
B3020	Roof Openings	\$2,500	<b>\$645,132</b>	\$30.13	9.9%
<b>C10 INTERIOR CONSTRUCTION</b>					
C1010	Partitions	\$385,416			
C1020	Interior Doors	\$85,648			
C1030	Specialties/Millwork	\$207,274	<b>\$678,338</b>	\$31.68	10.4%
<b>C20 STAIRCASES</b>					
C2010	Stair Construction	\$33,000			
C2020	Stair Finishes	\$8,950	<b>\$41,950</b>	\$1.96	0.6%
<b>C30 INTERIOR FINISHES</b>					
C3010	Wall Finishes	\$85,648			
C3020	Floor Finishes	\$171,296			
C3030	Ceiling Finishes	\$128,472	<b>\$385,416</b>	\$18.00	5.9%
<b>D10 CONVEYING SYSTEMS</b>					
D1010	Elevator	\$90,000	<b>\$90,000</b>	\$4.20	1.4%
<b>D20 PLUMBING</b>					
D20	Plumbing	\$192,708	<b>\$192,708</b>	\$9.00	3.0%
<b>D30 HVAC</b>					
D30	HVAC	\$599,536	<b>\$599,536</b>	\$28.00	9.2%



<b>CONSTRUCTION COST SUMMARY</b>					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
<b>OPTION 2F NEW ADDITIONS TO HIGH SCHOOL</b>					
<b>D40 FIRE PROTECTION</b>					
D40	Fire Protection	\$96,354	<b>\$96,354</b>	\$4.50	1.5%
<b>D50 ELECTRICAL</b>					
D5010	Service & Distribution	\$182,002			
D5020	Lighting & Power	\$171,296			
D5030	Communication & Security Systems	\$159,884			
D5040	Other Electrical Systems	\$28,200	<b>\$541,382</b>	\$25.28	8.3%
<b>E10 EQUIPMENT</b>					
E10	Equipment	\$2,500	<b>\$2,500</b>	\$0.12	0.0%
<b>E20 FURNISHINGS</b>					
E2010	Fixed Furnishings	\$109,748			
E2020	Movable Furnishings NIC		<b>\$109,748</b>	\$5.13	1.7%
<b>F10 SPECIAL CONSTRUCTION</b>					
F10	Special Construction	\$0	<b>\$0</b>	\$0.00	0.0%
<b>F20 HAZMAT REMOVALS</b>					
F2010	Building Elements Demolition	\$0			
F2020	Hazardous Components Abatement	\$0	<b>\$0</b>	\$0.00	0.0%
<b>TOTAL DIRECT COST (Trade Costs)</b>			<b>\$6,511,982</b>	<b>\$304.13</b>	<b>100.0%</b>



Preferred Schematic Study

GFA

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2F NEW ADDITIONS TO HIGH SCHOOL**

**GROSS FLOOR AREA CALCULATION**

Upper Floor	10,141
Ground Floor	11,271

<b>TOTAL GROSS FLOOR AREA (GFA)</b>	<b>21,412 sf</b>
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**A10 FOUNDATIONS**

**A1010 STANDARD FOUNDATIONS**

Strip footings to exterior walls - 3'-0" x 1'-0"

Excavation	519	cy	10.00	5,190
Store on site for reuse	519	cy	6.00	3,114
Backfill with existing fill	472	cy	8.00	3,776
Formwork	800	sf	8.00	6,400
Re-bar	840	lbs	1.00	840
Concrete material; 3,000 psi	47	cy	115.00	5,405
Placing concrete	47	cy	45.00	2,115

Foundation walls at exterior - 16" thick

Formwork	3,200	sf	9.00	28,800
Re-bar	6,400	lbs	1.00	6,400
Concrete material; 4,000 psi	83	cy	120.00	9,960
Placing concrete	83	cy	45.00	3,735
Dampproofing foundation wall and footing	2,400	sf	1.60	3,840
Insulation to foundation walls; 2" thick	1,600	sf	2.00	3,200
Form shelf	400	lf	8.00	3,200

Column footings 6' x 6' x 1'-7" - Perimeter

Excavation	352	cy	8.00	2,816
Store on site for reuse	352	cy	6.00	2,112
Backfill with existing fill	286	cy	8.00	2,288
Formwork	1,138	sf	8.00	9,104
Re-bar	3,300	lbs	1.00	3,300
Concrete material; 3,000 psi	66	cy	115.00	7,590
Placing concrete	66	cy	45.00	2,970
Set anchor bolts grout plates	30	ea	150.00	4,500

Column footings 8' x 8' x 2'-0" - Interior

Excavation	169	cy	8.00	1,352
Store on site for reuse	169	cy	6.00	1,014
Backfill with existing fill	119	cy	8.00	952
Formwork	640	sf	8.00	5,120
Re-bar	3,000	lbs	1.00	3,000
Concrete material; 3,000 psi	50	cy	115.00	5,750
Placing concrete	50	cy	45.00	2,250
Set anchor bolts grout plates	10	ea	150.00	1,500

Miscellaneous

Form key in footing	400	lf	4.00	1,600
Structural fill to bottom of footings	207	cy	30.00	6,210

Piers/Pilasters: 24" x 12"

Formwork	640	sf	9.00	5,760
Re-bar	1,080	lbs	1.00	1,080
Concrete material; 3,000 psi	12	cy	115.00	1,380
Placing concrete	12	cy	45.00	540

SUBTOTAL

158,163



Preferred Schematic Study

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2F NEW ADDITIONS TO HIGH SCHOOL**

55	<b>A1020 SPECIAL FOUNDATIONS</b>						
56	<b>No Work in this section</b>						
57	SUBTOTAL						
58							
59	<b>A1030 LOWEST FLOOR CONSTRUCTION</b>						
60	<u>New Slab on grade, 5" thick</u>						
61	Structural fill to bring up levels	4,074	cy	30.00	122,220		
62	Gravel fill, 12"	376	cy	28.00	10,528		
63	Rigid insulation	10,141	sf	1.87	18,964		
64	Vapor barrier	10,141	sf	0.50	5,071		
65	Compact existing sub-grade	10,141	sf	0.50	5,071		
66	Mesh reinforcing 15% lap	11,662	sf	0.80	9,330		
67	Concrete - 5" thick; 4,000 psi	166	cy	120.00	19,920		
68	Placing concrete	166	cy	45.00	7,470		
69	Finishing and curing concrete	10,141	sf	1.50	15,212		
70	Control joints - saw cut	10,141	sf	0.10	1,014		
71	Elevator pit	1	ls	20,000.00	20,000		
72	Isolation joints at columns	240	lf	2.50	600		
73	SUBTOTAL						\$235,400

<b>TOTAL - FOUNDATIONS</b>	<b>\$393,563</b>
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**A20 BASEMENT CONSTRUCTION**

80	<b>A2010 BASEMENT FILL</b>						
81	<b>No Work in this section</b>						
82	SUBTOTAL						
83							
84	<b>A2020 BASEMENT WALLS</b>						
85	<b>No Work in this section</b>						
86	SUBTOTAL						-

**TOTAL - BASEMENT CONSTRUCTION**

**B10 SUPERSTRUCTURE**

92		11	lbs/sf		-		
93	<b>B1010 FLOOR CONSTRUCTION</b>	117	tns		-		
94	<u>Floor Structure - Steel:</u>						
95	Beams and columns	61	tns	3,000.00	183,000		
96	Moment connections	1	ls	15,000.00	15,000		
97	Shear studs	2,028	ea	2.50	5,070		
98	<u>Floor Structure - Typical</u>						
99	Metal galvanized floor Deck; 1-1/2" 20 Ga. Deck	10,141	sf	2.25	22,817		
100	WWF reinforcement	11,662	sf	0.70	8,163		
101	Concrete Fill to metal deck; 4-1/2" thick; NW	158	cy	125.00	19,750		
102	Place and finish concrete	10,141	sf	2.00	20,282		
103	<u>Miscellaneous</u>						
103	Allowance to rebuild existing building to allow construction above	10,141	sf	150.00	1,521,150		
104	Fire proofing to columns and beams	10,141	sf	1.50	15,212		



Preferred Schematic Study

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2F NEW ADDITIONS TO HIGH SCHOOL**

105	Fire stopping floors	1	ls	2,500.00	2,500			
106	SUBTOTAL						\$1,812,944	
107								
108	<b>B1020 ROOF CONSTRUCTION</b>							
109	<u>Roof Structure - Steel:</u>							
110	Steel beams/Joists; allowance 10 lbs per SF	56	tns	2,800.00	156,800			
111	<u>Roof Structure</u>							
112	2" 20 Ga. galvanized Metal Roof Deck	11,271	sf	3.00	33,813			
113	<u>Miscellaneous</u>							
114	Fire proofing to columns, beams and deck	11,271	sf	2.50	28,178			
115	SUBTOTAL						\$218,791	
116								
117	<b>TOTAL - SUPERSTRUCTURE</b>							<b>\$2,031,735</b>

**B20 EXTERIOR CLOSURE**

122	<b>B2010 EXTERIOR WALLS</b>							
123	<u>Exterior skin</u>	5,400	sf		-			
124	Brick exterior/metal panels	5,400	sf	40.00	216,000			
125	New 6" light gauge framing to face of existing wall	5,400	sf	7.50	40,500			
126	Spray Foam insulation to new exterior cavity	5,400	sf	3.00	16,200			
127	Sheathing	5,400	sf	2.00	10,800			
128	Air barrier	5,400	sf	4.00	21,600			
129	<u>Miscellaneous</u>							
130	Allowance for exterior closure at media center	1	ls	50,000.00	50,000			
131	Staging to exterior wall	9,000	sf	2.00	18,000			
132	SUBTOTAL						\$373,100	
133								
134	<b>B2020 WINDOWS</b>	3,600	sf		-			
135	Windows/storefront	3,600	sf	75.00	270,000			
136	Backer rod & double sealant	2,400	lf	4.00	9,600			
137	Wood blocking at openings	2,400	lf	2.50	6,000			
138	SUBTOTAL						\$285,600	
139								
140	<b>B2030 EXTERIOR DOORS</b>							
141	Glazed entrance doors including frame and hardware; double door	7	pr	5,500.00	38,500			
142	HM doors, frames and hardware- Double	3	pr	2,000.00	6,000			
143	Backer rod & double sealant	60	lf	4.00	240			
144	Wood blocking at openings	60	lf	3.00	180			
145	SUBTOTAL						\$44,920	
146								
147	<b>TOTAL - EXTERIOR CLOSURE</b>							<b>\$703,620</b>

**B30 ROOFING**

152	<b>B3010 ROOF COVERINGS</b>						
153	<u>Flat roofing</u>						
154	PVC roof membrane fully adhered	11,271	sf	6.50	73,262		
155	Insulation; R-30	11,271	sf	5.50	61,991		
156	Insulation tapered	1	ls	5,000.00	5,000		
157	1/2" dens-deck protection board	11,271	sf	1.50	16,907		
158	Reinforced vapor barrier	11,271	sf	0.45	5,072		
159	Green roof	7,600	sf	40.00	304,000		
160	Railing at roof	170	lf	200.00	34,000		



Preferred Schematic Study

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2F NEW ADDITIONS TO HIGH SCHOOL**

161	Rough blocking	2,400	lf	6.00	14,400			
162	<u>Miscellaneous Roofing</u>							
163	Canopy	1	ls	100,000.00	100,000			
164	Roof fascia/cornice	400	lf	50.00	20,000			
165	Roof ladder	1	ls	3,000.00	3,000			
166	Walk pads	1	ls	5,000.00	5,000			
167	SUBTOTAL					\$642,632		
168								
169	<b>B3020 ROOF OPENINGS</b>							
170	Roof hatch	1	loc	2,500.00	2,500			
171	SUBTOTAL					\$2,500		
172								
173	<b>TOTAL - ROOFING</b>							<b>\$645,132</b>
174								
175								
176	<b>C10 INTERIOR CONSTRUCTION</b>							
177								
178	<b>C1010 PARTITIONS</b>							
179	Interior partitions	21,412	gsf	18.00	385,416			
180	SUBTOTAL					\$385,416		
181								
182	<b>C1020 INTERIOR DOORS</b>							
183	Interior doors, frames and hardware	21,412	gsf	4.00	85,648			
184	SUBTOTAL					\$85,648		
185								
186	<b>C1030 SPECIALTIES / MILLWORK</b>							
187	Toilet Partitions and accessories	21,412	gsf	0.80	17,130			
188	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	21,412	gsf	0.70	14,988			
189	Acoustical wall panels	1	ls	15,000.00	15,000			
190	Room Signs	21,412	gsf	0.25	5,353			
191	Fire extinguisher cabinets	7	ea	350.00	2,450			
192	Lockers	21,412	gsf	1.60	34,259			
193	Glazed walls and borrowed lights	1	ls	50,000.00	50,000			
194	Janitors Work Shop Accessories	1	ls	1,500.00	1,500			
195	Janitors Closet Accessories	3	rms	300.00	900			
196	Misc. metal Support to counters and casework etc.	1	ls	20,000	20,000			
197	Display cases	1	ls	20,000.00	20,000			
198	Miscellaneous metals throughout building	21,412	sf	1.00	21,412			
199	Miscellaneous sealants throughout building	21,412	sf	0.20	4,282			
200	SUBTOTAL					\$207,274		
201								
202	<b>TOTAL - INTERIOR CONSTRUCTION</b>							<b>\$678,338</b>
203								
204								
205	<b>C20 STAIRCASES</b>							
206								
207	<b>C2010 STAIR CONSTRUCTION</b>							
208	Egress staircase	2	flt	15,000.00	30,000			
209	concrete material in pan infill	2	flt	1,500.00	3,000			
210	SUBTOTAL					\$33,000		
211								
212	<b>C2020 STAIR FINISHES</b>							
213	Rubber treads/risers to egress stair	240	lfr	20.00	4,800			
214	Rubber to landings	300	sf	5.50	1,650			
215	Paint to staircases	2	flt	1,250.00	2,500			
216	SUBTOTAL					\$8,950		



Preferred Schematic Study

GFA 21,412

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2F NEW ADDITIONS TO HIGH SCHOOL**

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<b>TOTAL - STAIRCASES</b>							<b>\$41,950</b>
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**C30 INTERIOR FINISHES**

<b>C3010 WALL FINISHES</b>							
Wall finishes	21,412	gsf	4.00	85,648			
SUBTOTAL						\$85,648	
<b>C3020 FLOOR FINISHES</b>							
Floor finishes	21,412	gsf	8.00	171,296			
SUBTOTAL						\$171,296	
<b>C3030 CEILING FINISHES</b>							
Ceiling finishes	21,412	gsf	6.00	128,472			
SUBTOTAL						\$128,472	

<b>TOTAL - INTERIOR FINISHES</b>							<b>\$385,416</b>
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**D10 CONVEYING SYSTEMS**

<b>D1010 ELEVATOR</b>							
New two stop elevator	1	ls	90,000.00	90,000			
SUBTOTAL						\$90,000	

<b>TOTAL - CONVEYING SYSTEMS</b>							<b>\$90,000</b>
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**D20 PLUMBING**

<b>D20 PLUMBING, GENERALLY</b>							
Plumbing	21,412	gsf	9.00	192,708			
SUBTOTAL						\$192,708	

<b>TOTAL - PLUMBING</b>							<b>\$192,708</b>
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**D30 HVAC**

<b>D30 HVAC, GENERALLY</b>							
HVAC	21,412	gsf	28.00	599,536			
SUBTOTAL						\$599,536	

<b>TOTAL - HVAC</b>							<b>\$599,536</b>
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**D40 FIRE PROTECTION**

<b>D40 FIRE PROTECTION, GENERALLY</b>							
Fire protection system	21,412	gsf	4.50	96,354			
SUBTOTAL						\$96,354	

<b>TOTAL - FIRE PROTECTION</b>							<b>\$96,354</b>
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**D50 ELECTRICAL**

<b>D5010 SERVICE &amp; DISTRIBUTION</b>							
Allowance for emergency generator and new feeders	21,412	gsf	1.50	32,118			
Gear & Distribution	21,412	gsf	7.00	149,884			
SUBTOTAL						\$182,002	
<b>D5020 LIGHTING &amp; POWER</b>							
Lighting & Branch Power	21,412	gsf	8.00	171,296			



Preferred Schematic Study

GFA 21,412

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>OPTION 2F NEW ADDITIONS TO HIGH SCHOOL</b>								
283	SUBTOTAL					\$171,296		
284								
285	<b>D5030 COMMUNICATION &amp; SECURITY SYSTEMS</b>							
286	<u>Fire Alarm</u>							
287	Fire alarm system	21,412	gsf	2.25	48,177			
288								
289	<u>Telephone/Data/CATV</u>							
290	Telephone/data/CATV	21,412	gsf	2.25	48,177			
291								
292	<u>Clock/PA System (Rough-in only)</u>							
293	Wireless master clock/PA system	21,412	sf	0.20	4,282			
294								
295	<u>Security System (Rough-in only)</u>							
296	Security System (Rough-in only)	21,412	sf	0.30	6,424			
297								
298	<u>Clock/PA System</u>							
299	Wireless master clock/PA system	21,412	sf	1.00	21,412			
300								
301	Classroom SMART boards				F,F&E			
302								
303								
304	<u>Security System</u>							
305	Security System	21,412	sf	1.00	21,412			
306	Exterior CCTV security	1	ls	10,000.00	10,000			
307	SUBTOTAL					\$159,884		
308								
309	<b>D5040 OTHER ELECTRICAL SYSTEMS</b>							
310	Lightning protection	21,412	sf	0.35	7,494			
311	<u>Miscellaneous</u>							
312	Temp power & lights	21,412	sf	0.50	10,706			
313	Fees & Permits	1	ls	10,000.00	10,000			
314	SUBTOTAL					\$28,200		
315								
316	<b>TOTAL - ELECTRICAL</b>						<b>\$541,382</b>	
317								
318								
319	<b>E10 EQUIPMENT</b>							
320								
321	<b>E10 EQUIPMENT, GENERALLY</b>							
322	Electrically operated projection screens	1	loc	2,500.00	2,500			
323	SUBTOTAL					\$2,500		
324								
325	<b>TOTAL - EQUIPMENT</b>						<b>\$2,500</b>	
326								
327								
328	<b>E20 FURNISHINGS</b>							
329								
330	<b>E2010 FIXED FURNISHINGS</b>							
331	Entry mats & frames - recessed with carpet/rubber strips	100	sf	25.00	2,500			
332	Window blinds	3,600	sf	6.00	21,600			
333	Counters, base cabinets, tall storage in classrooms and other rooms	21,412	gsf	4.00	85,648			
334	SUBTOTAL					\$109,748		
335								
336	<b>E2020 MOVABLE FURNISHINGS</b>							
337	All movable furnishings to be provided and installed by owner							
338	SUBTOTAL					NIC		
339								
340	<b>TOTAL - FURNISHINGS</b>						<b>\$109,748</b>	





Preferred Schematic Study

GFA 21,412

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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**OPTION 2F NEW ADDITIONS TO HIGH SCHOOL**

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**F10 SPECIAL CONSTRUCTION**

**F10 SPECIAL CONSTRUCTION**  
 No items in this section  
 SUBTOTAL

**TOTAL - SPECIAL CONSTRUCTION**

**F20 SELECTIVE BUILDING DEMOLITION**

**F2010 BUILDING ELEMENTS DEMOLITION**  
 See main summary for demolition of existing buildings  
 SUBTOTAL

**F2020 HAZARDOUS COMPONENTS ABATEMENT**  
 See main summary for HazMat allowance  
 SUBTOTAL

See Summary

**TOTAL - SELECTIVE BUILDING DEMOLITION**



Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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SITWORK OPTION 2F

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**G SITEWORK**

**G10 SITE PREPARATION & DEMOLITION**

Site construction fence/barricades	3,400	lf	8.00	27,200			
Miscellaneous demolition	1	ls	30,000	30,000			
<u>Site Earthwork</u>							
Strip topsoil, store	1,852	cy	12.00	22,224			
Cuts/Fills	1	ls	30,000.00	30,000			
Regarding at rear addition and interface with track	1	ls	50,000.00	50,000			
Silt fence/erosion control, wash bays, stock piles	3,400	lf	10.00	34,000			
Silt fence maintenance and monitoring	1	ls	5,000.00	5,000			
Dust control/sweeper & water truck	1	ls	10,000.00	10,000			
<u>Hazardous Waste Remediation</u>							
Dispose/treat contaminated soils/water					NIC		
SUBTOTAL						208,424	

**G20 SITE IMPROVEMENTS**

Resurface Roadways and Parking Lots

Resurface bituminous concrete	18,667	sy	16.00	298,672			
Granite curbs; 20%	1,352	lf	30.00	40,560			
Precast curbs; 80%	5,409	lf	16.00	86,544			
Nw bus loop	1	ls	100,000.00	100,000			
<u>New right turn only lane</u>							
Bituminous concrete paving							
gravel base; 8" thick	124	cy	26.00	3,224			
dense grade base; 6" thick	93	cy	26.00	2,418			
bituminous concrete; 4" thick	556	sy	22.00	12,232			
Granite curbs; 6" x 18"	500	lf	28.00	14,000			
Modify entrance	1	ls	15,000.00	15,000			

Pedestrian Paving

Concrete paving						
gravel base; 8" thick	149	cy	26.00	3,874		
4" concrete paving	6,000	sf	4.50	27,000		
New traffic signs	1	ls	15,000.00	15,000		
New HC ramps	2	loc	40,000.00	80,000		
New 8 high retaining wall	75	lf	560.00	42,000		
Masonry loading dock screen wall	1	ls	100,000.00	100,000		
Site stairs/ramps	1	ls	50,000.00	50,000		
Miscellaneous site improvements; benches, trash receptacles etc.	1	ls	75,000.00	75,000		

Amphitheater	1	ls	90,000.00	90,000			
Replace play equipment and surfacing	1	ls	120,000.00	120,000			
New building entrance sign	1	loc	10,000.00	10,000			
Renovate main entrance plaza	15,000	sf	10.00	150,000			
Courtyard paving/planting	12,000	sf	15.00	180,000			
<u>Landscaping</u>							
Landscaping allowance	1	ls	100,000.00	100,000			
SUBTOTAL						1,615,524	

**G30 CIVIL MECHANICAL UTILITIES**

Water supply

New water CLDI: 8"	200	lf	45.00	9,000		
Relocate existing water line	300	lf	80.00	24,000		
Connect to existing line/tank	1	loc	5,000.00	5,000		
Wet Tap to existing 8" w/T reducers	1	loc	3,500.00	3,500		



Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
<b>SITework OPTION 2F</b>								
56	New fire hydrant	3	loc	2,600.00	7,800			
57	FD connection	1	loc	2,000.00	2,000			
58	Gate valves	1	ls	5,000.00	5,000			
59	Miscellaneous connection, tee's and fittings	1	ls	3,000.00	3,000			
60	<u>Sanitary sewer</u>							
61	Relocate existing FM	300	lf	100.00	30,000			
62	<u>Storm Sewer</u>							
63	Allowance for new storm system including underground detention	1	ls	300,000.00	300,000			
64	SUBTOTAL					389,300		
65								
66	<b>G40 ELECTRICAL UTILITIES</b>							
67	<u>Power</u>							
68	Riser	1	ea	1,200.00	1,200			
69	Primary ductbank 2-5" empty concrete encased (allow)	700	lf	90.00	63,000			
70	Transformer pad	1	ea	1,500.00	1,500			
71	2000A secondary service concrete encased	50	lf	450.00	22,500			
72	Generator ductbank 3-4", 4-2" conduits	50	lf	275.00	13,750			
73	<u>Communications</u>							
74	Riser	1	ea	1,500.00	1,500			
75	Communications ductbank 4-4" concrete encased (allow)	700	lf	124.00	86,800			
76	<u>Site Lighting</u>							
77	Allowance	1	ls	150,000.00	150,000			
78	SUBTOTAL					340,250		
79								
80	<b>TOTAL - SITE DEVELOPMENT OPTION 2F</b>							<b>\$2,553,498</b>



Preferred Schematic Study

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
<b>NEW ACCESS ROAD TO MONUMENT VALLEY ROAD ALTERNATE</b>							
<b>G SITEWORK</b>							
<b>G10</b>	<b>SITE PREPARATION &amp; DEMOLITION</b>						
	Site construction fence/barricades	<b>800</b>	lf	8.00	6,400		
	<u>Site Earthwork</u>						
	Strip topsoil, store	<b>1,111</b>	cy	12.00	13,332		
	Cuts/Fills	<b>1</b>	ls	25,000.00	25,000		
	Silt fence/erosion control, wash bays, stock piles	<b>800</b>	lf	10.00	8,000		
	SUBTOTAL					52,732	
<b>G20</b>	<b>SITE IMPROVEMENTS</b>						
	<u>New access road; 800 ft x 34 ft</u>						
	Bituminous concrete paving						
	gravel base; 8" thick	<b>695</b>	cy	26.00	18,070		
	dense grade base; 6" thick	<b>519</b>	cy	26.00	13,494		
	bituminous concrete; 4" thick	<b>3,111</b>	sy	22.00	68,442		
	Granite curbs; 6" x 18"	<b>1,800</b>	lf	28.00	50,400		
	Modify entrance	<b>1</b>	ls	20,000.00	20,000		
	<u>Landscaping</u>						
	Landscaping buffer	<b>1</b>	ls	50,000.00	50,000		
	SUBTOTAL					220,406	
<b>G30</b>	<b>CIVIL MECHANICAL UTILITIES</b>						
	<u>Storm Sewer</u>						
	Allowance for new storm system; catch basins etc.	<b>1</b>	ls	50,000.00	50,000		
	SUBTOTAL					50,000	
<b>G40</b>	<b>ELECTRICAL UTILITIES</b>						
	<u>Road Lighting</u>						
	Allowance	<b>1</b>	ls	25,000.00	25,000		
	SUBTOTAL					25,000	
<b>TOTAL NEW ACCESS ROAD</b>						<b>\$348,138</b>	

## SECTION FOUR      PREFERRED ALTERNATIVE

### 4.1 EDUCATIONAL PROGRAM

This Educational Program has been modified by administration, the School Committee, and the School Building Committee (SBC) and is reflected in the preferred construction alternative, Renovation/Addition Option 2D.4. Select excerpts from Section Two of the PDP follow, with updated responses in italics.

#### 4.1.1      GRADE AND SCHOOL CONFIGURATION POLICY

Monument Mountain Regional High School educates students in grades 9 – 12 on the Berkshire Hills Regional School District Pre-K – 12 campus which accommodates its' three schools including MMRHS, the Muddy Brook Regional Elementary School and the Monument Valley Regional Middle School.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program above by clustering science classroom / labs in the proposed addition and renovating the other wings to provide more cohesive departmental centers, while also providing for easy access and cross-disciplinary interactions. The classroom arrangements provide for better collaboration and communication, critical components for increasing interdepartmental curricular activities. The STEM Lab and Large Group Instruction classrooms allow for combining two academic classrooms while providing opportunities for larger, interactive academic sessions and projects. The preferred schematic reinforces the goals of integrating the STEM related programs through inclusion of the Agricultural/Horticultural program at the back of the school adjacent to the Sciences and Vocational Wing. This program will also be connected to the School's kitchen and will be linked by growing fresh produce and herbs and processing compost.*

#### **Campus Planning:**

*The SBC will continue to analyze the pros and cons of building a new internal connector road to allow southbound high school traffic to bypass the Route 7 intersection. An internal roadway will also allow pedestrian and small vehicle connections between the elementary and middle schools and Agricultural Program with the high school. The SBC recognizes that this road would not be a reimbursable expense.*

#### 4.1.2      CLASS SIZE POLICY

The District recognizes the importance of maintaining class sizes conducive to learning. Therefore, with the exception of classes such as band, physical education, chorus and any other classes customarily larger in size, the District

will strive to maintain average class sizes that do not exceed 25 students in the building.

Current average core curriculum class size at MMRHS is 16.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program while coordinating with the existing physical elements of the high school that continue to serve the school population in a highly effective manner - by maintaining as many of the existing general classrooms (sizes average 750 sf) unnecessary renovations can be avoided while providing for improved flexibility with a few larger classrooms, including two flex “lab/classrooms”, science labs designed to MSBA standards (slightly smaller sized to reflect the class sizes 1,340 vs. 1,440sf), and two small seminar rooms. Given the relatively small average class size, this approach makes the most fiscal and educational sense.*

#### **4.1.3 SCHEDULING METHODOLOGY**

The high school runs a two semester schedule with some courses being year-long, others semester-long. Students are scheduled for eight classes, and they attend seven each day. One period is dropped each day on a rotating schedule. Class periods are 50 minutes long. The daily schedule has long included “community” time, either in the form of community groups (i.e. what is commonly known as advisory) or in a school wide common study/activity period. MMRHS adjusts its schedule each year in its ongoing pursuit to design a daily schedule that not only serves but guarantees student engagement and success as well as the preservation of a professional learning community. There are two thirty-minute lunch periods. The high school day begins at 8:00 a.m. and concludes at 2:45 p.m.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing a centrally located cafeteria/student commons in the existing portion of the building and by creating the central corridor where the current Band room is located Circulation throughout the building is greatly improved, helping further the district’s intent of fostering a strong sense of community with improved passive socialization spaces.*

#### **4.1.4 TEACHING METHODOLOGY**

Monument Mountain Regional High School operates with a departmental structure organized around the content areas including science; mathematics; social studies; English; world languages; music; art; physical education; special education; and career, vocational and technical education. The faculty uses any number of instructional methodologies ranging from a traditional, teacher-centered model to co-teaching to interdisciplinary teaching to experiential, place-based instruction and student inquiry.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing a variety of classroom spaces, organized around well defined departmental wings, with clear connections so that departments are not isolated from each other or from the rest of the school. The centralized large instruction spaces will allow for greater access and visibility to the back of the “pods” which currently are a concern for staff and administration.*

#### **4.1.5 TEACHER PLANNING POLICY**

Monument Mountain Regional High School teachers are assigned to departments. Almost all departments have a shared office space. This design fosters professional collaboration and support and is valued by the faculty.

Most teachers are assigned to one classroom and use their assigned classrooms for instruction. Additionally, teachers are provided by contract a teachers’ lounge/lunchroom.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by continuing the tradition of providing common teacher planning rooms centrally located near the department’s classrooms. The staff lounge is more appropriately sized, and utilizes the existing student center space, recently renovated this space can also serve as an additional conference room or dining space adjacent to the Culinary Arts program and is located near the front entrance to serve as a community use space.*

#### **4.1.6 BREAKFAST AND LUNCH PROGRAMS**

Breakfast is served daily to all students at 7:30 am. Lunch is served daily in two seatings between 10:40 am and 12:10 pm to the over five hundred students who currently attend the school.

*The Option 2D.4 preferred alternative reinforces the Educational Program by providing a centrally located cafeteria/commons in the existing portion of the building. Along with being more central, the space will be efficiently organized, so that the dishwashing space is not separate from the kitchen space, and so that the servery can operate more efficiently as a scramble style more appropriate to age groups of the students and the types of food being served.*

#### **4.1.7 TECHNOLOGY INSTRUCTION POLICY**

The Berkshire Hills Regional School District has recently invested both funds and other resources to the development of education technology at the high school. The FY12 refresh equipped all teachers with new computers; outfitted technology labs and the library with new computers; upgraded

computers in the art rooms and the audio visual (AV) room; upgraded the entire LAN infrastructure throughout the building; and opened the wireless access for students, staff and guests.

However, there is still a need to upgrade existing hardware at the high school, unlike at the other two schools.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing a technology infrastructure to support teacher and student needs well into the future. The infrastructure will be multi-platformed and will include a wireless campus network that will support one student to one device (1:1) computing in the future.*

*The administration and school committee have proactively moved to combine some separate computer program/labs together such as the on-site TV studio editing lab and the vocational computer lab which will be located adjacent to the Library/MediaCenter to further strengthen these programs.*

#### **4.1.8 ART**

The Visual Arts program at MMRHS is very strong and well enrolled and includes a dozen courses in drawing, painting, ceramics, sculpture, photography, graphic design, art history, portfolio design and independent programming. The three-teacher art department utilizes three spaces within the high school: a computer lab, and two art rooms.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing spaces for the robust Art program and centralizing them in one common area closely associated with the Music program and the humanities. Storage areas, a kiln, and a dark room are provided to meet the needs of the district.*

#### **4.1.9 PERFORMING ARTS**

The current music and performing arts program includes courses in theater, band, chorus, orchestra, music appreciation, and music theory. The current program is under served with only one classroom space – the Band Room.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by retaining and updating, the highly successful existing Auditorium space and providing new appropriately sized spaces for the Band and Chorus programs.*



#### **4.1.10 PHYSICAL EDUCATION**

MMRHS has an active and well-subscribed athletics program for both male and female athletes with student-athlete participation rates regularly exceeding 40% of the total student population. The current summer weight training facility is a converted vocational space; the school year space is a storage area. Locker room space is limited.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by renovating the existing Gymnasium and providing appropriate new alternate physical education spaces such as a weight training room, Cardio fitness equipment, and a multipurpose room for wrestling, dance, cheerleading, etc., which are noticeably lacking from the current school.*

#### **4.1.11 SPECIAL EDUCATION**

The Special Education program at MMRHS consists of four components:

- The grade 9/10 Learning Lab is designed to provide academic support and accommodations to students on IEPs.
- The grade 11/12 Learning Lab is designed to develop the students' capacity for self-advocacy, voice and responsibility in managing their learning styles/disabilities and their education.
- The Spectrum program is designed for students on the autism spectrum.
- The fourth program is the Life Skills program.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing spaces for the four programs, and achieving a balance of keeping them central to one another, while well-dispersed throughout the school.*

#### **Counseling**

The school counseling office consists of three full-time guidance counselors, a school adjustment counselor and two clerical support personnel. School guidance counselors work closely with the administration to determine needs related to scheduling, lead all aspects for college and career planning, monitor academic progress of all and especially at-risk students, provide social-emotional support to students in crisis, and work with students, their teachers and their families to ensure a meaningful and successful high school experience.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing appropriate spaces for counseling and a guidance center, centrally located near the administration area and a Life Skills classroom.*

**4.1.12 VOCATIONAL EDUCATION PROGRAM**

Throughout its forty-five year history, MMRHS has strived to provide its students comprehensive course offerings. MMRHS is the only south Berkshire County high school offering Chapter 74 programming. Access to vocational and technical education offerings for the students who reside in the district and neighboring towns is limited to courses offered at MMRHS, and so programs serve the needs of a small but important population.

One credit must be earned in one of the following CVTE courses:

<b>Business and Computers</b>	<b>Technology Education</b>	<b>Vocational</b>
Computer Management	Building Design	Automotive
Business Management	Woodworking	Horticulture
Adv. Computer Mgmt.	Science & Technology	Pre-School Program
Virtual Enterprise	Construction Skills	
	Advanced Woodworking	
	Web Page Design	
	Computer Repair A+	
	Computer Repair Net+	

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing a comprehensive vocational program that matches the needs of the school. The agricultural program is incorporated with the rest of the school, as is automotive and property management. These programs have improved access to the rest of the building, while still preserving the necessary service access to the exterior.*

**4.1.13 TECHNOLOGY EDUCATION**

The Computer Education program includes courses in programming, computer applications, multimedia, computer languages, desktop publishing, computer aided design, video production, broadcast journalism and web design.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing a computer lab and a computer repair lab. The district will continue its partnership with a local TV station and use an off-site location for their TV studio while providing an editing lab near the media center.*

**4.1.14 TRANSPORTATION POLICY**

The transportation policy of the Berkshire Hills Regional School District is to provide bussing for all high school students. Given the rural nature of the District, and the lack of sidewalks and safe walking routes for the few students that live within 1.5 miles of the school, all of the students are

transported to school either by the bus or private transportation. Parking is provided for staff, students and visitors.

*The Option 2D.4 Preferred Alternative reinforces the Educational Program by providing for improved and more intuitive parking and drop-off. The main entrance to the school is more prominent and clear with better administration control of the entrance and site supervision of the parking lots. Areas requiring differentiated access are separated – such as the Early Childhood center and the vocational spaces. An improved loading and service area will serve the new custodial and kitchen locations.*

#### **4.1.15 FUNCTIONAL AND SPECIAL RELATIONSHIP AND ADJACENCIES**

To sustain MMRHS’s mission and goals, the facility should:

- support 21<sup>st</sup> century teaching and learning
- integrate technology in all areas of the building
- provide vibrant, flexible teaching and learning spaces
- facilitate student and teacher initiative and engagement
- ensure safety and security
- welcome the community and educational partners

*The Option 2D.4 Preferred Alternative most reinforces the functional and spatial relationships established by the Educational Program.*

#### **4.1.16 SECURITY AND VISUAL ACCESS REQUIREMENTS**

Teaching and learning in a safe environment is of critical importance in the member communities. The over 35 exterior doors found in the current school design impede security and safety protocols. There is no access control system, i.e. doorbell or buzzer mechanism, managing school day entrance into the building. The current main office design does not provide a view of the main entrance doorways.

*The Option 2D.4 Preferred Alternative reinforces the functional and spatial relationships established by the Educational Program by creating a secure single point of entry with administration immediately adjacent to the main entrance. The number of exterior doors has also been reduced.*

## **4.2 SPACE SUMMARY**

Two Space Summaries were included in the PDP and submitted in July of 2012 – “All New” and “Add/Reno”. A revised Space Summary was developed through discussions with the District and is the basis for the preferred construction alternative Option 2D.4 – Add/Reno. Please see the attached Space Summary spreadsheet, which includes both the proposed spaces and a column that references the Add/Reno option included with the

PDP. The cells highlighted in orange reflect significant changes from the PDP submission.

The following summarizes the revised Space Summary for Option 2D.4.

#### **4.2.1 CORE ACADEMIC SPACE**

##### **Classrooms**

The District is proposing a total of 20 standard classrooms, a large-group classroom that compensates for the smaller existing rooms and two small group seminar rooms to provide more variety and flexibility. The District believes that this arrangement best meets the existing and future needs of the high school. The classrooms are smaller than MSBA guidelines, but are based on the existing sizes and are appropriate for the average class sizes at Monument Mountain (16). The large-classroom space is critical to the District's vision of an educational environment that provides flexible learning space, fosters the exhibition of student work and performance, promotes collaboration, and can be used for interdisciplinary work and projects. The two small group seminar rooms match MSBA guidelines and provide additional flexibility.

##### **Science Labs**

The District is proposing seven science classrooms: six (6) identified as "science labs" and one (1) identified as the "STEM (science, technology, engineering, and math)" lab, which will be used as a "dry" lab and enhances the District's programming needs for general sciences, physics, and robotics. While the number of classrooms is above the MSBA guidelines, the size of those classrooms is reduced slightly to carefully match the needs of Monument Mountain. As outlined in the Planned Program spreadsheets included in Section 3 of the PDP, projected class loads show a need for 7.2 science classrooms.

##### **Teacher Planning Spaces**

The District believes strongly that the consolidation of teacher space is a better, more-efficient use of space for teacher planning, an approach intended also to promote greater collaboration among faculty. These proposed spaces mimic the highly-successful existing spaces, and match the overall MSBA square footage guidelines.

#### **4.2.2 SPECIAL EDUCATION**

Special Education spaces have been programmed based upon the District's existing programs as currently provided at the high school. Upon further examination since the PDP submission, the Life Skills room has been reduced from 1,500 SF (proposed in the PDP) to 1,000 SF, better reflecting the needs of the district. The District's Special Education Director, working

with the design team, will provide the necessary data and information required for the DESE to approve the plan.

#### **4.2.3 ART & MUSIC**

##### **Art**

The high school currently has a vibrant (and well-enrolled) art program, with separate spaces for “regular” and 3-D (pottery, ceramics, sculpture) art. It is very much the District’s intention to continue (and expand) this highly successful program. Along with the two distinctly and functionally different art classrooms, there is a need for a kiln room, dark room and adequate storage. The Berkshires is home to many unique and special Arts venues and groups and MMRHS takes special care to reach out and coordinate the resources and exposure available to all students.

##### **Music**

The Music and Chorus proposed spaces match the MSBA guidelines.

#### **4.2.4 VOCATIONS & TECHNOLOGY**

The Vocations and Technology category has been reduced since submission of the PDP from 8,400 SF to 6,600 SF – more in alignment with the MSBA guidelines. The TV studio has been removed as the district plans to maintain its relationship with an existing local TV station and provide an editing classroom space to support this important program.

The Early Childhood, Multi-Purpose Computer Lab, Computer Repair, Property Management, and Culinary / Hospitality are all programs that are well established at Monument Mountain.

#### **4.2.5 VOCATIONAL TECHNICAL ED, CHAPTER 74**

Monument Mountain has two programs that meet the requirements of Massachusetts General Law Chapter 74, which meet the federal Perkins Act definition of career and technical education. The district and the design team have therefore used Chapter 74 guidelines to help determine the appropriate size of the Automotive and Agricultural programs.

Since the submission of the PDP, both programs have been reduced slightly, to conform more to Monument Mountain’s needs as well as the physical space conditions that have served the District for many years, rather than the minimum requirements of the Chapter 74 guidelines.

#### **4.2.6 HEALTH AND PHYSICAL EDUCATION**

The Physical Education spaces are undersized compared to MSBA Guidelines, but are greatly improved upon with Option 2D.4 than the existing conditions to meet the needs of the district. The current gym is “undersized”, but meets the needs of the school and community.

Alternative physical education spaces are lacking in the existing building, and this is addressed in the proposed design. Since the PDP submission, the Multi-Purpose Room has been reduced by 500 sf, while the Weight/Cardio Room has grown by just 100 sf.

#### **4.2.7 MEDIA CENTER**

The proposed Media Center meets the MSBA guidelines, but its location has been greatly improved to support the programs at MMRHS.

#### **4.2.8 AUDITORIUM/ DRAMA**

The auditorium is an existing space that is integral to the educational program and an important community asset. It is used—frequently at or near capacity—for a variety of musical and drama productions, as well as civic functions, throughout the year.

All other spaces are sized to meet MSBA guidelines.

#### **4.2.9 DINING & FOOD SERVICE**

The proposed Dining and Food Service area matches MSBA guidelines but its location has been greatly improved to support the programs at MMRHS with direct access to all community use spaces.

#### **4.2.10 MEDICAL**

The proposed Medical area matches MSBA guidelines but its location has been greatly improved to support the Medical needs of the students.

#### **4.2.11 ADMINISTRATION & GUIDANCE**

The proposed Administrative and Guidance areas match the MSBA guidelines, except for the addition of two Afterschool Program Coordinator offices, which is a well-established and well-used part of the district's offering.

#### **4.2.12 CUSTODIAL & MAINTENANCE**

The proposed Custodial and Maintenance area matches MSBA guidelines but has been better positioned to serve the vocational wing of the school and the kitchen and cafeteria.

#### **4.2.13 OTHER**

The Student Center is a space that currently exists in the school. It is well used and is supported, in part, by community groups, but it will be best served as part of a more open commons style space associated with the new corridor being proposed between the Auditorium and the Gymnasium.

#### 4.2.14 TOTAL NET BUILDING FLOOR AREA

Option 2D.4 net space area is 97,238 square feet. The net area is above MSBA guidelines primarily due to the existing auditorium, Chapter 74 vocational spaces and proposed additional Art and Science Classrooms serving existing program offerings. The net area has been reduced significantly since the PDP submission, after a thorough review by the Administration, School Building Committee, and the School Committee.

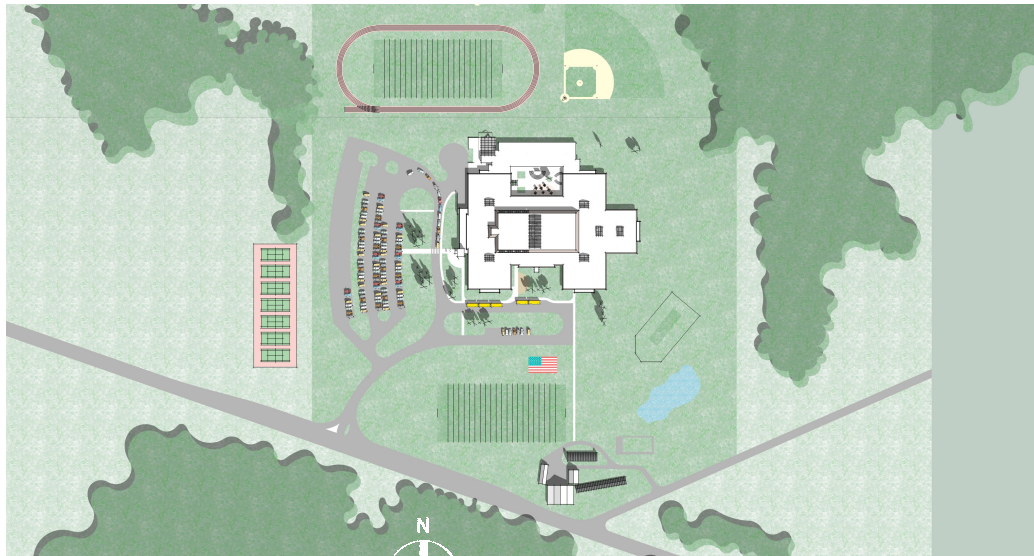
#### 4.2.15 TOTAL BUILDING GROSS FLOOR AREA

Option 2D.4 total gross floor area is 134,000 square feet and has been added to the Space Summary for MSBA review.

The Space Summary for the preferred construction alternative Renovation/Addition Option 2D.4 is appended to the end of this section.

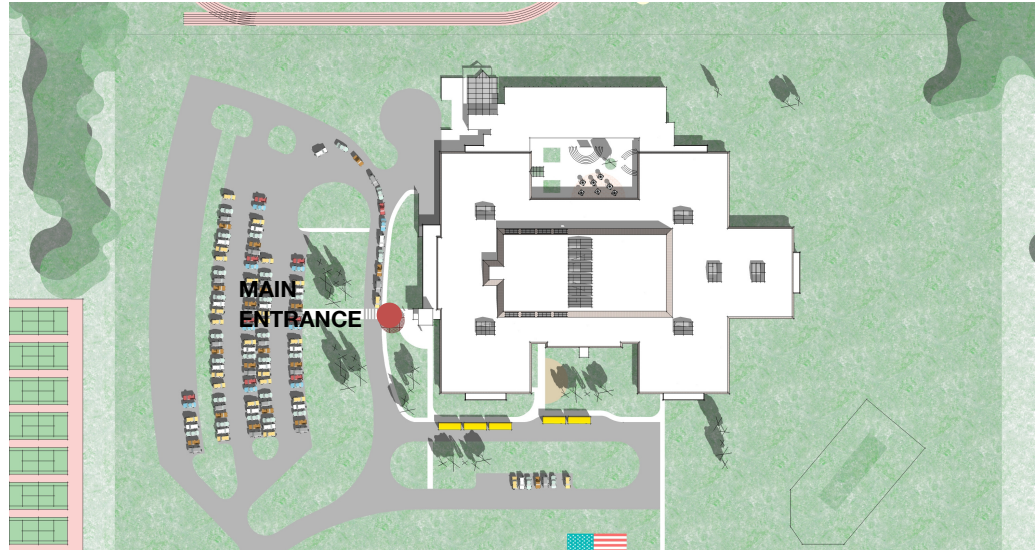
### 4.3 SITE PLAN

RENOVATION/ADDITION OPTION 2D.4 - ONE-STORY ACADEMIC ADDITION EAST OF THE EXISTING MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL



OPTION 2D.4- Overall Site Plan.





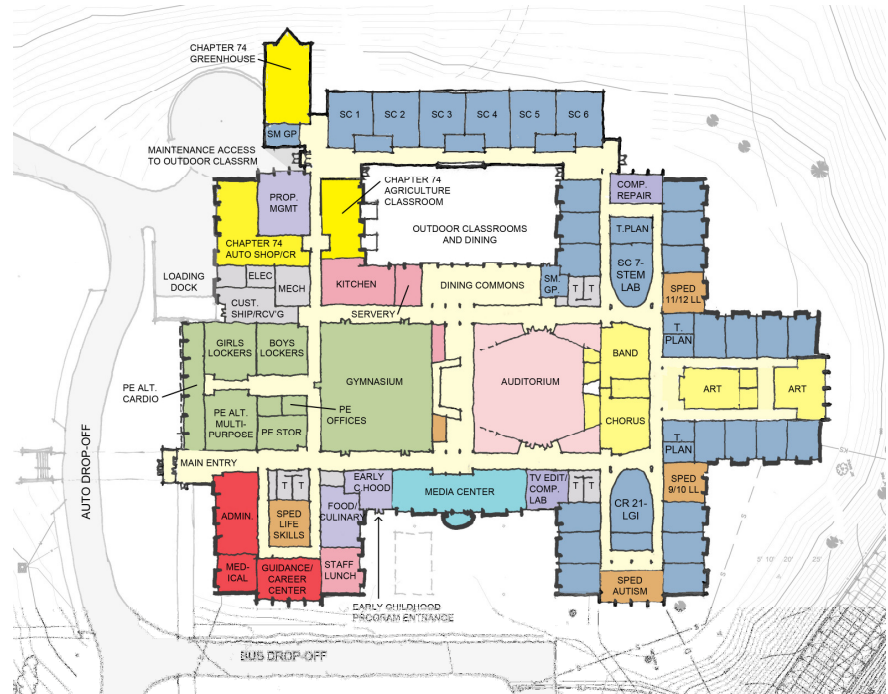
*OPTION 2D.4 – Site Plan*

The site work will address the entrance drive safety issue for automobile stacking on site by potentially switching the auto and bus loop locations and making some geometry changes on site and, refurbishes the worn and deteriorating parking lot, improves the bus and parent circulation, and upgrades the utility services including fire mains. Site accessibility may be addressed as a separate access road between the school and Valley Road. Stockbridge Road (Route 7) is a State highway and as such will not undergo any changes as part of this project.



#### 4.4 BUILDING PLANS

Option 2D.4 is an addition and renovation option to accommodate the proposed Program, consisting of the construction of a new one-story academic wing.



*OPTION 2D.4 – First Floor Plan*

The existing building plumbing, HVAC, electrical and technology systems will be fully upgraded, including providing for full fire sprinklering. The existing windows will be replaced. The roof will be replaced with new roofing and insulation. The asbestos will be abated through-out and new finishes are to be provided. The significant accessibility issues throughout will be addressed, as well as life safety and egress code issues.



*OPTION 2D.4 – Exterior Rendering*

#### **4.5 SUSTAINABLE DESIGN GOALS**

The project will strive to meet the threshold of 50 points defined by the LEED for Schools 2009 rating system and minimum requirements established by the MSBA.

Sustainable design considerations and goals that are in the current cost evaluation and are anticipated to be in the project are:

##### **SUSTAINABLE SITES (SS)**

- Impervious surfaces are limited as much as is practical on site to retain the current open space.
- Community shared recreational space.
- Bike racks for 5% of building occupants, along with showers.
- Roof shall be designed to reduce heat island effect by using a light colored roof membrane.
- Low-emitting and fuel-efficient vehicle preferred parking spaces will be set aside.
- Exterior light fixtures and layout are to meet ANSI/ASHRAE/IESNA 90.1-2007 and “dark sky” requirements.
- Full cut-off, cut-off and glare-free exterior fixtures will reduce light spillage from the site (light pollution reduction).
- High efficiency, long-life LED fixtures will be used to illuminate school parking lots, access roads and walkways. LED fixtures will be reviewed for use as an exterior building-mounted option.

##### **WATER EFFICIENCY (WE)**

- No irrigation for landscaped and lawn areas.

- No irrigation for new athletic fields.
- Drought resistant plants to minimize irrigation demand.
- Sensor operated toilets, urinals and lavatory faucets.
- Low flow urinals, toilets, showerheads and faucets.

#### **ENERGY AND ATMOSPHERE (EA)**

- The total building energy consumption reduction shall exceed the ANSI/ASHRAE/IESNA Standard 90.1-2007 allowance by 25%. High performance building components including but not limited to Building enclosure, HVAC and Electrical systems will contribute to achieving the project goal.
- Ventilation rates per ASHRAE 62.1 – 2007.
- No CFC refrigerants in any HVAC or refrigeration system.
- CO<sub>2</sub> monitors and/or equivalent controls to provide demand ventilation, where applicable.
- Combination of mechanical and natural ventilation (operable windows) in classrooms.
- Energy recovery at air handling units where applicable.
- High-efficiency (90% to 95%) condensing boilers.
- High-efficiency domestic water heaters.
- Variable frequency drives for air, hot water, and chilled water distribution systems.
- Radiant panels providing quiet, efficient heating and no loss of floor space.
- Unoccupied setback for classroom airflow.
- Building management system to control and monitor energy use, HVAC system components, lighting systems, security systems.
- Third party commissioning of Electrical, HVAC, Plumbing systems and building enclosure, provided by MSBA.
- High-efficiency interior lighting fixtures with energy-saving lamps and ballasts. High performance T8 or T5 fluorescent lamps.
- Extensive automatic lighting control system consisting of programmable relay systems, occupancy and daylight control devices. Dedicated groups of lighting fixtures will turn off when spaces are not occupied. Dedicated groups of lighting fixtures will be dimmed or turned off when appropriate daylight levels are achieved.
- Low Light Power Density (LPD): less than 1.0 watt/square foot for the entire building and approximately 0.85 watts/square foot for the classrooms.

- High-efficiency high bay fluorescent lights in gymnasium.
- Facility staff training on Operations and Maintenance for Electrical, HVAC, and Plumbing systems.
- High-performance building envelope.
- Higher R-value insulation at roofs and walls. R-18 at walls and R-25 at roof.
- High-performance glazing system selection, Assembly U-value: 0.42 or better, Glazing U-value: 0.29 or better, SHGC: 0.38 or better.
- Require Energy Star equipment and appliances.
- Solar PV-ready roof with optimal South exposure. Includes increased superstructure on new addition for future weight of panels, conduit, and dedicated space for electrical inverters.

#### **MATERIALS AND RESOURCES (MR)**

- Designated recycling collection areas and recycling separation area.
- 95% minimum diversion goal for construction and demolition waste.
- Sealed concrete in art and technology classrooms.
- Linoleum tack boards, which are rapidly renewable as well as a highly functional product.
- Maximal use of high recycled content materials and finishes, such as acoustical ceiling panels.
- Forest Stewardship Council certified wood for 50% or more of wood and wood products, with a further goal of 95%.
- Use of regional materials (extracted/harvested/recovered and manufactured within 500 miles) for 10% or more of materials.
- Paperless hand-dryers.

#### **INDOOR ENVIRONMENTAL QUALITY (IEQ)**

- Indoor Air Quality plan created and followed during construction to minimize contamination, including best practices such as using containment barriers, sealing ducts and protecting building materials from moisture and mold.
- Permanent indoor air quality design features such as walk-off mats and isolation of areas of chemical use using partitions and negative air pressure.
- Daylight modeling.
- Skylights, clerestories and/or interior glazing to introduce daylight to central rooms and spaces.

- Optimize access to views for all regularly occupied spaces.
- All classrooms and other learning spaces will have a high performance lighting system consisting of direct/indirect high efficiency glare-free pendant lights, local “general” and “task” switches, occupancy and daylight sensors – to enable automatic and manual adjustments to suit individual task needs and performances.
- Ventilation rates per ASHRAE 62.1-2007.
- Electronic ignitions for all gas-fired equipment.
- Air intakes located away from contaminant sources.
- No fossil-fuel burning equipment permitted indoors.
- Comply with thermal comfort standards per ASHRAE 55 – 2004.
- Low VOC (volatile organic compound) materials selected for interior paints, coatings, adhesives, sealants, resilient flooring and adhesives, carpet and adhesives, floor finishes, tile setting adhesives and grout, acoustical wall and ceiling panels, wall board, cabinetry and furniture.
- Formaldehyde-free, low-VOC particleboard and composite wood products.
- Pollutant control through the use of high efficiency MERV filters (MERV 13 or better).
- Building ventilation flush-out performed prior to occupancy.
- HEPA vacuuming prior to substantial completion.
- High performance acoustical design for classrooms.
- Operable windows in classrooms and offices.
- Individual temperature and lighting controls for each classroom and all other learning spaces. Consideration of individual temperature controls for 50% of office spaces.

#### **INNOVATION IN DESIGN (ID)**

- School bus anti-idling measures.
- Curriculum and features to teach about the innovative environmental elements of the school.
- Exemplary performance in construction waste management (95% diversion from landfill).
- Low mercury content lamps.
- Green Housekeeping policies.
- Exemplary performance in Certified Wood (95%)

### **REGIONAL PRIORITY (RP)**

The LEED for School rating system rewards teams already pursuing specific LEED criteria with considerable regional environmental impact. Additional points are awarded for the following credits within Great Barrington's zip Code:

- MRc1.1 - Building Re-use

### **Utility Incentives Programs**

The project will pursue an applicable utility incentives program. National Grid is the electrical utility and Berkshire Gas Co. is the natural gas utility. We will meet with each to address the utility incentive program process and support and obtain optimal incentives aligned with the project's energy efficiency goals.

#### **4.5.1 CONSTRUCTION WASTE RECYCLING PLAN**

The goal of the project is to salvage, recycle, or reuse at least 95 percent (by weight) of non-hazardous demolition and construction waste and qualify for LEED Materials and Resources Credit MRc2, as well as an Innovation in Design credit for Exemplary Performance.

The Contractor will be required to develop a Construction Waste Management Plan that ensures that this goal will be met and is in compliance with 310 CMR 19.017, Massachusetts Waste Disposal Ban Regulation, and with hauling and disposal regulations of authorities having jurisdiction.

The Contractor will employ a Waste Management Coordinator, who will be on site and be responsible for implementing, monitoring, and reporting status of waste management work. The Coordinator will provide on-site waste collection and recycling bins and train workers, including subcontractors' and suppliers' personnel working on site, to use them. The Contractor will have the option to perform on-site or off-site separation (commingled collection on-site), provided the 95% goal can be met.

The Contractor will be required to prepare and submit monthly progress reports documenting waste reduction quantities and recipients. Upon completion of the work, the Contractor will be required to submit a summary document, a cost/revenue analysis of the waste management plan, and any other auditing information which may be required by LEED for Schools.

The following are examples of materials which can be salvaged or recycled to meet this goal:

- Concrete and concrete masonry units (CMU)
- Brick

- Paper, including cardboard, mixed paper, packing materials, and packaging
- Paint: Excess materials not required to be turned over to the Owner
- Glass
- Plastics
- Carpet
- New gypsum wallboard; excess after installation and scraps
- New acoustical ceiling panels; excess after installation and scraps
- Steel and iron, including, but not limited to: structural steel, stud framing, ductwork, piping, and reinforcing steel (rebar)
- Other metals, including, but not limited to: piping, wiring, roofing, aluminum, copper, zinc, lead, brass, and bronze
- Wood, including clean dimensional wood, pallet wood, crates, plywood and other types of wood-based panels
- Insulation
- Manufactured items reclaimed during building demolition, including but not limited to: windows (provided they are not contaminated with asbestos caulking), doors and frames, door hardware, porcelain plumbing fixtures, casework
- General waste generated by on-site workers, including beverage containers, paper, and plastic food containers

#### **4.5.2 LEED SCORECARD**

The Monument Mountain Regional High School will be designed and constructed in accordance with the principles and criteria of the LEED for Schools 2009 Reference Guide, published by the U.S. Green Building Council. The project will strive to meet the threshold of 50 points, equivalent to a Silver rating.

A preliminary LEED scorecard is appended at the end of this section. This scorecard identifies the project design criteria and associated credits which are under consideration for this project.

This is an acknowledgement that the Monument Mountain Regional School District has identified a goal of 2% additional reimbursement from the MSBA High Efficiency Green School Program. As their Designer, we have submitted this completed LEED Scorecard showing 50 attempted points, which will meet this goal.

The scope of work for this project will include the construction elements and performance tasks to achieve that goal, and all subsequent documents, including but not limited to, specifications, drawings, cost estimates will match the scope of work indicated in the submitted scorecard.



Specifications will include instructions to Contractor regarding waste management and waste diversion goals (95%), material procurement goals, and construction indoor air quality goals.

#### **4.6 BUDGET**

The Budget for the preferred construction alternative Renovation/Addition Option 2D.4 is defined in the two following sections.

The estimated construction costs are based on the PM+C cost estimate, dated September 20, 2012, appended to the end of this section. This cost estimate was prepared to provide a more in depth review of the costs of Option 2D.4 in order to evaluate the comparative costs of the different alternatives as depicted in the matrix in Section 3.7.

The cost estimates will be continually refined throughout the design process, to maximize the potential of a renovation and addition project, upgrading of major building systems, and site work.

During the Schematic Design phase, both SMMA and SBS (Strategic Building Solutions) will perform concurrent cost estimates to maintain rigorous cost control.

Additionally, the design phase includes a cost estimating and value engineering period during the Design Development Phase, a constructability review, cost estimating and budget validation period during the Construction Document Phase, to ensure the project remains within the approved budget.

##### **4.6.1 PROJECT BUDGET**

The Project Budget for Option 2D.4 is \$52,752,861, defined in the completed 3011 Project Budget Form, dated September 19, 2012 as prepared by Strategic Building Solutions (SBS). The budget is appended to the end of this section and represents the District's not to exceed Total Project Budget.

##### **4.6.2 CONSTRUCTION BUDGET**

The Construction Budget for Option 2D.4 is \$40,755,908, defined in the detailed construction estimate, dated September 20, 2012 as prepared by PM+C. The estimate is appended to the end of this section

##### **4.6.3 ESTIMATED FUNDING CAPACITY**

The Berkshire Hills regional School District began operations on April 8, 1965 and has outstanding debt in the amount of \$15.9 million for construction of the elementary and middle schools. The District will be reviewing all options in regards to this outstanding debt when it seeks funding for the high school project, in order to minimize the financial impact to its member towns.



#### **4.6.4 CURRENT OTHER PROJECTS**

There are no other major capital projects presently under consideration by the Berkshire Hills Regional School District.

#### **4.6.5 LOCAL PROCESS FOR FUNDING APPROVAL**

The Berkshire Hills Regional School District will have the option to seek debt authorization through Ch. 71 Section 16(n), which would require approval of voters in a district referendum. Member towns would then be required to hold debt exclusion votes under Proposition 2 ½ in order to exclude debt service costs from the levy limit.

#### **4.6.6 IMPACT ON TAXES**

Many factors are presently unknown, which makes projecting the property tax impact quite speculative. Undetermined variables include:

- Project cost
- District bond rating
- Cost allocation between members
- Interest rates
- Debt structure (level principal or level payment)
- Debt duration

Based on one cost and debt scenario, the property tax impact can be roughly estimated. Assumptions:

- \$52.8 million debt for a high school
- District bond rating: AA
- Anticipated term (not finalized)- Twenty years
- Level payments
- Mid-range interest rates- The District will work with financial and debt counsel to secure the most advantageous rates.
- The cost allocation per member town is determined annually based on resident student enrollment per member town. For FY13 the allocation of costs is as follows: Great Barrington – 67.60%; Stockbridge – 14.85%; West Stockbridge – 17.55%. This allocation may change prior to or during the project life cycle.

The BHRSD has consulted with their financial advisors about the potential tax impact upon member communities. Obviously there are a wide variety of factors that will contribute to the final figure including those listed above. Additionally, the BHRSD is considering the impact of refinancing outstanding loans from the Middle and Elementary School projects to take advantage of low borrowing costs that currently exist. With these thoughts in mind, the tax impact for the High School project is projected to be between \$100 and \$400 per year for the average homeowner in the three member towns of Great Barrington, Stockbridge and West Stockbridge. This range is dependent upon specific outcome of the factors described above as well as the specific town.

#### **4.6.7 BUDGET STATEMENT**

The completed Budget Statement for the Preferred Alternative is appended to the end of the section.

#### **4.7 DESIGN AND CONSTRUCTION SCHEDULE**

The project schedule anticipates MSBA Board of Director's approval to proceed into Schematic Design at their November 27, 2012 meeting and MSBA Board of Director's approval of the Project Scope and Budget Agreement at their March 2013 meeting. District-wide appropriation voting will occur immediately following, in the month of May 2013. The project schedule follows.









Proposed Space Summary - High Schools (ADD / RENO)- Option 2D-4

9/14/2012

Monument Mountain		Existing Conditions		
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals	
Guidance Office	140	2	280	
Afterschool Program Coord.	85	2	170	
Afterschool Program Coord.	168	1	168	
Guidance Waiting Room	254	1	254	
Guidance Storeroom	0	1	0	
Career Center	0	0	0	
Records Room	0	0	0	
Teachers' Work Room	0	0	0	
<b>CUSTODIAL &amp; MAINTENANCE</b>			<b>1,980</b>	
Custodian's Office	161	1	161	
Custodian's Workshop	272	1	272	
Custodian's Storage	25	4	100	
Recycling Room / Trash	197	1	197	
Receiving and General Supply	1,190	1	1,190	
Storeroom	60	1	60	
Network / Telecom Room	0	0	0	
<b>OTHER</b>			<b>1,090</b>	
Student Center	1,090	1	1,090	
High School Building Net Floor Area (NFA) without Chapter 74 Programs			78,439	
Chapter 74 - Auto			2,915	
Chapter 74 - Hort (Separate Building)			6,835	
<b>Total Campus Net</b>			<b>88,189</b>	
Proposed Student Capacity / Enrollment				
High School Building Gross Floor Area (GFA)			113,705	
<b>Total Campus Gross Floor Area (GFA)<sup>2</sup></b>			<b>122,591</b>	
Grossing factor (GFA/NFA)				
			1.39	

1,688

Existing

Existing

PROPOSED								
Existing to Remain/Renovated			New			Total		
ROOM NFA <sup>1</sup>	# OF RMS	area totals	ROOM NFA <sup>1</sup>	# OF RMS	area totals	ROOM NFA <sup>1</sup>	# OF RMS	area totals
150	3	450						
85	2	170						
168	1	168						
100	1	100						
100	1	100						
300	1	300						
100	1	100						
300	1	300						
		<b>2,075</b>			<b>0</b>			<b>2,075</b>
150	1	150						
250	1	250						
375	1	375						
400	1	400						
300	1	300						
400	1	400						
200	1	200						
		<b>1,100</b>			<b>0</b>			<b>1,100</b>
1,100	1	1,100						
		<b>79,323</b>			<b>11,000</b>			<b>90,323</b>
								<b>2,915</b>
								<b>4,000</b>
								<b>97,238</b>
								<b>134,000</b>
					<b>Total Additions</b>			<b>20,295</b>
								<b>1.38</b>

PDP- Submission			
New			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	
150	3	450	
85	2	170	
168	1	168	
100	1	100	
100	1	100	
300	1	300	
100	1	100	
300	1	300	
		<b>2,075</b>	
150	1	150	
250	1	250	
375	1	375	
400	1	400	
300	1	300	
400	1	400	
200	1	200	
		<b>1,100</b>	
1,100	1	1,100	
			<b>95,103</b>
			<b>4,125</b>
			<b>6,310</b>
			<b>105,538</b>
			<b>156,675</b>
			<b>42,970</b>
			<b>1.48</b>

MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments
150	3	450	
100	1	100	
100	1	100	
300	1	300	
100	1	100	
300	1	300	
		<b>2,075</b>	
150	1	150	
250	1	250	
375	1	375	
400	1	400	
300	1	300	
400	1	400	
200	1	200	
		<b>0</b>	
			<b>86,775</b>
			<b>86,775</b>
		<b>570</b>	226
			<b>128,820</b>
			<b>1.48</b>

<sup>1</sup> Individual Room Net Floor Area (NFA) Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.


<sup>2</sup> Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls

**Architect Certification**

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architect Firm: Symmes Maini McKee Associates, Inc

Name of Principal Architect: Philip J. Poinelli, FAIA

Signature of Principal Architect: 

Date: Friday, September 14, 2012







# LEED 2009 for Schools New Construction and Major Renovations

## Project Checklist

Monument Mountain Regional HS  
DRAFT Preliminary September 12 2012

### 8 6 10 Sustainable Sites Possible Points: 24

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
Y			Prereq 2	Environmental Site Assessment	
	1		Credit 1	Site Selection	1
		4	Credit 2	Development Density and Community Connectivity	4
	1		Credit 3	Brownfield Redevelopment	1
		4	Credit 4.1	Alternative Transportation—Public Transportation Access	4
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
2			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	2
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		Credit 5.1	Site Development—Protect or Restore Habitat	1
	1		Credit 5.2	Site Development—Maximize Open Space	1
		1	Credit 6.1	Stormwater Design—Quantity Control	1
	1		Credit 6.2	Stormwater Design—Quality Control	1
		1	Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
1			Credit 8	Light Pollution Reduction	1
	1		Credit 9	Site Master Plan	1
1			Credit 10	Joint Use of Facilities	1

### 6 2 2 Water Efficiency Possible Points: 11

Y	?	N			
Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
		1	Credit 2	Innovative Wastewater Technologies	2
2	1	1	Credit 3	Water Use Reduction	2 to 4
	1		Credit 3	Process Water Use Reduction	1

### 12 6 15 Energy and Atmosphere Possible Points: 33

Y	?	N			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
8	4	7	Credit 1	Optimize Energy Performance	1 to 19
	1	6	Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
1			Credit 4	Enhanced Refrigerant Management	1
1	1		Credit 5	Measurement and Verification	2
		2	Credit 6	Green Power	2

### 7 3 2 Materials and Resources Possible Points: 13

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	
1	1		Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 2
	1		Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2

### Materials and Resources, Continued

Y	?	N			
		1	Credit 3	Materials Reuse	1 to 2
2			Credit 4	Recycled Content	1 to 2
1	1		Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

### 11 6 2 Indoor Environmental Quality Possible Points: 19

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
Y			Prereq 3	Minimum Acoustical Performance	
	1		Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
3	1		Credit 4	Low-Emitting Materials	1 to 4
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
	1		Credit 7.1	Thermal Comfort—Design	1
	1		Credit 7.2	Thermal Comfort—Verification	1
1	1	1	Credit 8.1	Daylight and Views—Daylight	1 to 3
	1		Credit 8.2	Daylight and Views—Views	1
1			Credit 9	Enhanced Acoustical Performance	1
	1		Credit 10	Mold Prevention	1

### 5 1 1 Innovation and Design Process Possible Points: 6

Y	?	N			
1			Credit 1.1	Innovation in Design: Low mercury (Hg)	1
1			Credit 1.2	Innovation in Design: Green housekeeping or TBD Pilot Credit	1
1			Credit 1.3	Innovation in Design: Certified Wood 95%	1
	1		Credit 1.4	Innovation in Design: Enhanced Acoustical Performance (NC 30) or TB1	1
1			Credit 2	LEED Accredited Professional	1
1			Credit 3	The School as a Teaching Tool	1

### 1 3 1 Regional Priority Credits Possible Points: 4

Y	?	N			
1			Credit 1.1	Regional Priority: MRc1.1 Building Re-use (75%)	1
	1		Credit 1.2	Regional Priority: SSC6.2 Storm water quality control	1
	1		Credit 1.3	Regional Priority: SSC3 Brownfield Redevelopment (Asbestos)	1
	1		Credit 1.4	Regional Priority: Renewable Energy (1%)	1

### 50 27 31 Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110



Total Project Budget

Berkshire Hills: Monument Mountain Regional High School

Option 2D.4

9/19/2012

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Basis of Estimated Total Facilities Grant or Otherwise Ineligible	Basis of Estimated Total Facilities Grant <sup>1</sup>	Estimated Maximum Total Facilities Grant <sup>1</sup>
<b>Feasibility Study Agreement</b>				
OPM Feasibility Study	\$186,000		\$186,000	
A&E Feasibility Study	\$450,000		\$450,000	
Enviro. & Site			\$0	
Survey	\$40,000		\$40,000	
Hazardous Materials	\$5,000		\$5,000	
Geotech & Geo-Env.	\$30,000		\$30,000	
Wetlands	\$10,000		\$10,000	
Other	\$19,000		\$19,000	
Estimates	\$10,000		\$10,000	
<b>Feasibility Study Agreement Subtotal</b>	<b>\$750,000</b>	<b>\$0</b>	<b>\$750,000</b>	<b>\$387,563</b>
<b>Administration</b>				
Legal Fees	\$15,000	\$15,000	\$0	
Owner's Project Manager				
Design Development		\$0	\$0	
Construction Contract Documents		\$0	\$0	
Bidding		\$0	\$0	
Construction Contract Administration	\$1,528,347	\$287,890	\$1,240,457	
Closeout		\$0	\$0	
Extra Services		\$0	\$0	
Reimbursable & Other Services		\$0	\$0	
Cost Estimates		\$0	\$0	
Advertising	\$5,000	\$0	\$5,000	
Permitting	Not Included	Not Included	\$0	
Owner's Insurance	Not Included	\$0	\$0	
Other Administrative Costs	\$0	\$0	\$0	
<b>Administration Subtotal</b>	<b>\$1,548,347</b>	<b>\$302,890</b>	<b>\$1,245,457</b>	<b>\$643,590</b>
<b>Architecture and Engineering</b>				
<b>Basic Services</b>				
Design Development		\$0	\$0	
Construction Contract Documents		\$0	\$0	
Bidding		\$0	\$0	
Construction Contract Administration	\$3,871,811	\$246,220	\$3,625,591	
Closeout		\$0	\$0	
Other Basic Services		\$0	\$0	
<b>Basic Services Subtotal</b>	<b>\$3,871,811</b>	<b>\$246,220</b>	<b>\$3,625,591</b>	
<b>Reimbursable Services</b>				
Construction Testing		\$0	\$0	
Printing (over minimum)	\$45,000	\$0	\$45,000	
Other Reimbursable Costs	\$90,000	\$0	\$90,000	
Peer Review	\$10,000	\$0	\$10,000	
<b>Hazardous Materials</b>	<b>\$75,000</b>	<b>\$0</b>	<b>\$75,000</b>	
<b>Geotech &amp; Geo-Env.</b>	<b>\$50,000</b>	<b>\$0</b>	<b>\$50,000</b>	
Site Borings	\$15,000	\$0	\$15,000	
Site Survey	\$15,000	\$0	\$15,000	
Wetlands	\$15,000	\$0	\$15,000	
Traffic Studies	\$20,000	\$0	\$20,000	
<b>Architectural/Engineering Subtotal</b>	<b>\$4,206,811</b>	<b>\$246,220</b>	<b>\$3,960,591</b>	<b>\$2,046,635</b>
<b>CM &amp; Risk Preconstruction Services</b>				
Pre-Construction Services		\$0	\$0	\$0
<b>Site Acquisition</b>				
Land/Building Purchase		\$0	\$0	
Appraisal Fees		\$0	\$0	
Recording fees		\$0	\$0	
<b>Site Acquisition Subtotal</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Construction Costs</b>				
<b>SUBSTRUCTURE</b>				
Foundations	\$1,041,588	\$0		
Basement Construction	\$0	\$0		
<b>SHELL</b>				
Superstructure	\$1,183,938	\$0		
<b>Exterior Closure</b>				
Exterior Walls	\$1,192,875	\$0		
Exterior Windows	\$1,708,649	\$0		
Exterior Doors	\$155,215	\$0		
Roofing	\$2,527,498	\$0		
<b>INTERIORS</b>				
Interior Construction	\$2,739,411	\$0		
Staircases	\$0	\$0		
Interior Finishes	\$2,525,439	\$0		
<b>SERVICES</b>				
Conveying Systems	\$30,000	\$0		
Plumbing	\$1,026,738	\$0		
HVAC	\$3,752,000	\$0		
Fire Protection	\$631,427	\$0		
Electrical	\$3,676,533	\$0		

Total Project Budget

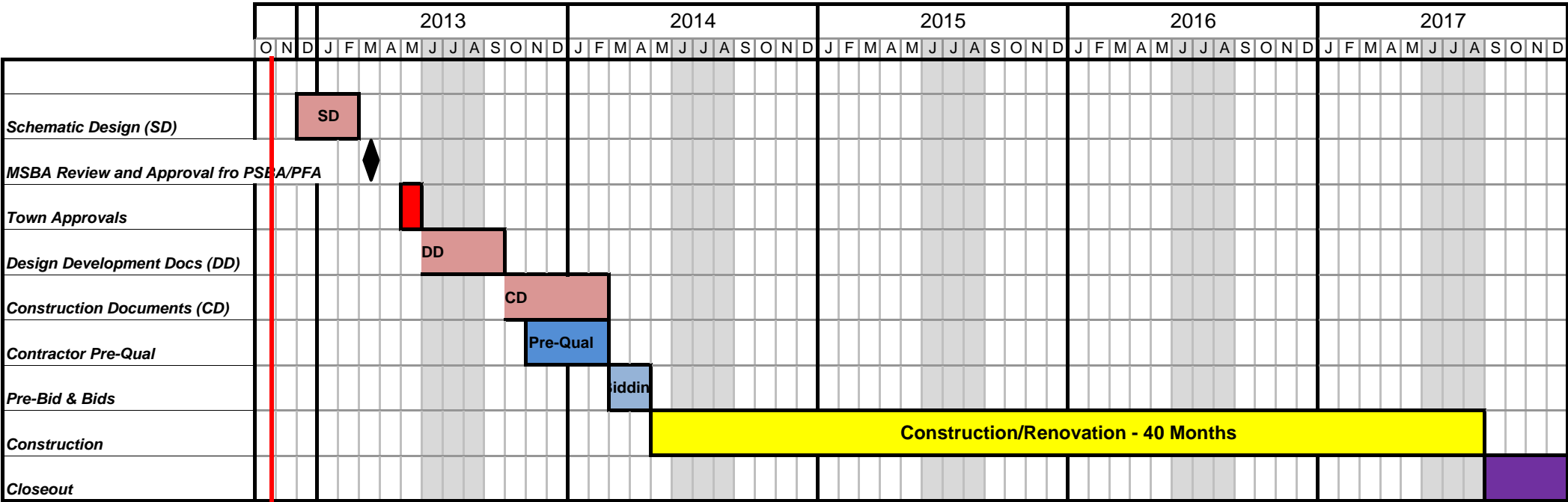
Berkshire Hills: Monument Mountain Regional High School

Option 2D.4

9/19/2012

Total Project Budget: All costs associated with the project are subject to 963 CMR 2.16(5)	Estimated Budget	Scope Items Excluded from the Basis of Estimated Total Facilities Grant or Otherwise Ineligible	Basis of Estimated Total Facilities Grant <sup>1</sup>	Estimated Maximum Total Facilities Grant <sup>1</sup>
<b>EQUIPMENT &amp; FURNISHINGS</b>				
Equipment	\$511,400	\$0		
Furnishings	\$1,027,196	\$0		
<b>SPECIAL CONSTRUCTION &amp; DEMOLITION</b>				
Special Construction	\$377,000	\$0.00		
Existing Building Demolition	\$722,286	\$0.00		
In-Bldg Hazardous Material Abatement	\$1,655,800	\$0.00		
Asbestos Cont'g Floor Mat'l Abatement	\$360,000	\$360,000		
Other Hazardous Material Abatement	\$0	\$0.00		
<b>BUILDING SITEWORK</b>				
Site Preparation	\$208,424	\$0		
Site Improvements	\$1,625,524	\$0		
Site Civil/ Mechanical Utilities	\$389,300	\$0		
Site Electrical Utilities	\$340,250	\$0		
Other Site Construction	\$0	\$0		
Scope Excluded Site Cost		\$665,105		
<b>Construction Trades Subtotal</b>	<b>\$29,408,491</b>	<b>\$1,025,105</b>		
Contingencies (Design and Pricing)	\$3,651,613	\$127,286		
D/B/B Sub-Contractor Bonds	\$232,929	\$8,119		
D/B/B Insurance	\$447,941	\$15,614		
D/B/B General Conditions	\$3,780,000	\$131,761		
D/B/B Overhead & Profit	\$588,170	\$20,502		
GMP Insurance	\$0	\$0		
GMP Fee	\$882,255	\$30,753		
GMP Contingency	\$0	\$0		
Escalation to Mid-Point of Construction	\$1,764,509	\$61,506		
Overall Excluded Construction Cost		\$0		
<b>Construction Budget</b>	<b>\$40,755,908</b>	<b>\$1,420,646</b>	<b>\$39,335,262</b>	<b>\$20,326,497</b>
<b>Alternates</b>				
	\$0	\$0	\$0	\$0
			\$0	\$0
			\$0	\$0
<b>Alternates Subtotal</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Miscellaneous Project Costs</b>				
Utility Company Fees	\$25,000	\$25,000	\$0	\$0
Testing Services	\$75,000	\$0	\$75,000	\$75,000
Swing Space/Modulars (incl. OPM, A/E, conting, etc.)	\$0	\$0	\$0	\$0
Other Project Costs	\$0	\$0	\$0	\$0
Moving	\$75,000	\$0	\$75,000	\$75,000
Misc.	\$15,000	\$0	\$15,000	\$15,000
<b>Misc. Project Costs Subtotal</b>	<b>\$190,000</b>	<b>\$25,000</b>	<b>\$165,000</b>	<b>\$85,264</b>
<b>Furnishings and Equipment</b>				
Furnishings	\$855,000	\$0	\$855,000	\$855,000
Equipment	\$54,000	\$54,000	\$0	\$0
Computer Equipment	\$855,000	\$342,000	\$513,000	\$513,000
<b>FF&amp;E Subtotal</b>	<b>\$1,764,000</b>	<b>\$396,000</b>	<b>\$1,368,000</b>	<b>\$706,914</b>
Soft Costs that exceed 20% of Const'n Cost		\$0		
<b>Project Budget Before Contingencies</b>	<b>\$49,215,066</b>	<b>\$2,390,756</b>	<b>\$46,824,310</b>	<b>\$24,196,462</b>

Board Authorization		47.64 Reimbursement Rate Before Incentive Points	
Design Enrollment	570	403.50%	Total Incentive Points
Total Building Gross Floor Area (GSF)	153,580	51.68%	MSBA Reimbursement Rate
Project Budget	\$49,215,066		
Scope Items Excluded or Otherwise Ineligible	-\$2,390,756		
Third Party Funding (Ineligible)	\$0	1.00	(0-2) Maintenance
Basis of Estimated Total Facilities Grant <sup>1</sup>	\$46,824,310	1.00	(0-1) CM @ Risk
Reimbursement Rate	51.68%	0.00	(0-6) Newly Formed Regional School District
Estimated Maximum Total Facilities Grant <sup>1</sup>	\$24,196,462	3.50%	(0-5) Major Reconstruction or Reno/Reuse
			0
			153,580
Potentially Eligible Construction Contingency <sup>2</sup>	\$2,037,795	0.00	(0-1) Overly Zoning 40R and 40S
Potentially Eligible Owner's Contingency <sup>2</sup>	\$1,500,000	0.00	(0-0.5) Overlay Zoning 100 units or 50% of units 1,2, or 3 family structures
Total Potentially Eligible Contingency <sup>2</sup>	\$3,537,795		
Reimbursement Rate	51.68%	2.00	(0-2) Energy Efficiency - "Green Schools"
Potential Additional Contingency Grant Funds <sup>2</sup>	\$1,828,156	0.00	(5) Model Schools
Maximum Total Facilities Grant	\$26,024,618	4.04	Total Incentive Points
Total Project Budget	\$52,752,861		



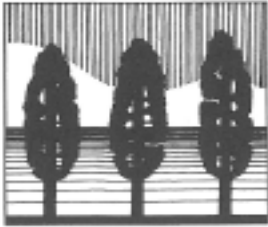


## SECTION FIVE LOCAL ACTIONS AND APPROVALS

Refer to attached Local Actions Letter dated September 27, 2012, provided by Owners Project Manager.







September 26, 2012

Ms. Diane Sullivan  
Senior Capital Program Manager  
40 Broad Street  
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The Berkshire Hills Regional School District Building Committee (“SBC”) has completed its review of the Preferred Schematic Report for the Monument Mountain Regional High School Improvement Project (the “Project”), and on September 19, 2012 the SBC voted to approve and authorize the Owner’s Project Manager to submit the Preferred Schematic Report related materials to the MSBA for its consideration. A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.

### **SCHOOL BUILDING COMMITTEE MEETINGS**

The MSBA’s Board of Directors approved the District to proceed into feasibility study/schematic design on September 29, 2010 the SBC has held 13 meetings regarding the Project since the Owner’s Project Managers have been hired in compliance with the state Open Meeting Law. These meetings include:

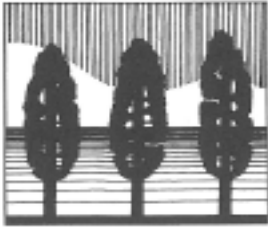
#### **January 18, 2012, School Building Committee, 6:30 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: Strategic Building Solutions (SBS) - Jon Winikur, Carl Weber

Discussion:

1. Introductions of SBS OPM Team and Building Committee Members
2. Discussion of project goals and thoughts
3. MSBA Feasibility Study process, schedule and potential dates
  - Design Team Selection, MSBA DSP process
  - MSBA Enrollment Projections review
  - MSBA Feasibility Study Agreement (FSA)
  - Feasibility Study – Spring/Summer 2012
4. Schematic Design Process, MSBA review, MSBA FAS presentation
5. Member Town Approval
6. Future Meetings - February 23, March 21, April 11, May 16, June 20



**February 23, 2013 School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington

Notice published on District website

Presentation: Strategic Building Solutions (SBS) - Jon Winikur, Carl Weber

Discussion:

1. Review initial project goals
2. Designer selection submissions, evaluation criteria
3. In depth discussion of RFS submissions
4. Selection of Flansburgh, Kaestle Boos, SMMA/Margo Jones, TetraTech as most responsive
5. MSBA Designer Selection Panel shortlist and interview process, and schedule

**March 21, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington

Notice published on District website

Presentation: Strategic Building Solutions (SBS) - Jon Winikur

Discussion:

1. MSBA Designer Selection Panel interview results on March 13.
2. Symmes, Maini & McKee Associates (SMMA) ranked as the #1 candidate.
3. SBS and the District's Administration to contact SMMA for proposal/contract.
4. Discussed draft schedule for the Feasibility Study Phase
5. Marianne Young distributed a draft Vision Statement for SBC review.
6. Chapter 74 Vocational Programs (Automotive & Vo-Ag) discussion as to nature of inclusion/reimbursement in project.
7. Based on agreed pupil population of 570 students, our project reimbursement would be based on a facility of 128,820 GSF.
8. Discussed the process for obtaining Member Town Approval.

**April 24, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington

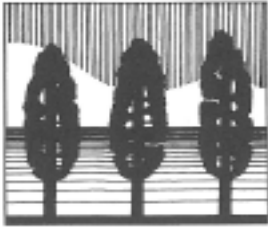
Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber

SMMA - Alex Pitkin, Phil Poinelli

Discussion:

1. Architect introductions and SMMA overview with Building Committee
2. Schedule review
3. SMMA organized High School site tours for SBC information - May 3
4. Review of initial project goals with SMMA
5. Finance Sub-committee formed – Dick Coons, Sharon Harrison, Steve Soule



**May 16, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington

Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber  
SMMA - Alex Pitkin, Dan Ruiz, Jennifer Soucy, Sylvia Schwartz  
Margo Jones (MJA) – Margo Jones

Discussion:

1. Schedule Review & Project Status
2. High School Site tour discussion, likes and dislikes
3. Working Group Meeting Update – May 8
4. Existing Conditions draft report
5. Project sustainability introduction

**June 13, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington

Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber  
SMMA - Alex Pitkin, Dan Ruiz, Jennifer Soucy, Sylvia Schwartz  
Margo Jones (MJA) – Margo Jones

Discussion:

1. Project Update
2. Local decision process, BC PDP approval dates and schedule review
3. SMMA presented the Space Summary review for new and addition/renovation
4. Project Goals and Options Matrix handout for discussion next meeting
5. SMMA presented some preliminary options for SBC initial thoughts
6. BC Preliminary Design Program review of updated materials for next meeting

**June 20, 2012, School Building Committee, 6:00PM**

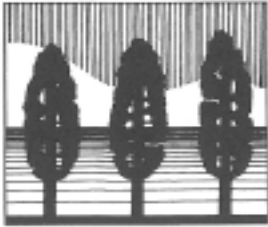
Monument Mountain Regional High School, Great Barrington

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: SBS - Jon Winikur and Carl Weber  
SMMA – Alex Pitkin, Phil Poinelli

Discussion:

1. Space Summary Review
2. Project Goals and Options Matrix
3. Preliminary Option Review and Input
4. Existing Conditions Review
5. Educational Program Review
6. PDP Introduction Review



## 7. Schedule

### **July 12, 2012, School Building Committee, 6:00 PM**

BHRSD District Offices, Stockbridge

Notice published on District website

Presentation: SBS - Jon Winikur  
SMMA - Dan Ruiz, Jennifer Soucy  
Margo Jones (MJA) – Margo Jones

#### **Discussion:**

##### **Review of Process**

1. Review of the MSBA Preliminary Design Program elements, process and concepts.
2. Discussed that the preliminary options presented for the PDP.
3. SMMA to work with BC to refine the presented options until a preferred option emerges.
4. PDP submission to request all of the desired program spaces and wait MSBA review.
5. With MSBA reimbursement participation, project cost determined, and SC priorities are established appropriate scope can be determined.

##### **Review of PDP**

1. Reviewed PDP and approved the materials with edits. Final review will be conducted by the working group.
2. Motion made by Ms. Harrison to approve Sections 1, 2 and 3 with modifications as discussed by the SBC and seconded by Mr. Bannon. Motion approved unanimously.
3. Motion made by Mr. Bannon to approve Sections 4.1 and 4.2 with corrections and seconded by Ms. Harrison. Motion approved unanimously
4. The BC agreed that the working group would complete the remaining sections of the PDP with SBS and SMMA and submit to School Committee with the full endorsement of the SBC.
5. Hazardous Materials assessment was distributed indicating initial construction cost estimates of approximately \$2.0 million to address existing issues.

##### **LEED/Green Discussions**

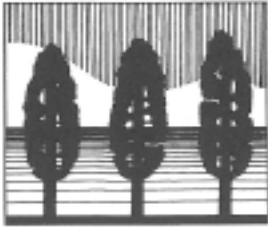
1. SMMA will distribute an updated LEED scorecard for SBC review after PDP submission.

### **August 2, 2012, Public Information Meeting, School Building Committee, 6:00PM**

Monument Mountain Regional High School, Great Barrington

Notice published on District website, in local papers and high school placard at least 2 days prior to meeting according to MGL

Presenters: BHRSD BC – Dick Coons, Marianne Young  
SBS - Jon Winikur



# BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT

GREAT BARRINGTON • STOCKBRIDGE • WEST STOCKBRIDGE

50 MAIN STREET • P.O. BOX 617 • STOCKBRIDGE, MA 01262 • (413) 298-4017

## Discussion:

1. Toured existing conditions of building
2. Reviewed MSBA process
3. Reviewed educational program needs
4. Educational program review

### **August 16, 2012, School Building Committee, 6:00 PM**

Berkshire Hills Regional School District Offices, Stockbridge

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: SBS - Jon Winikur and Carl Weber  
SMMA – Alex Pitkin, Dan Ruiz, Jennifer Soucy

## Discussion:

1. Review likely project costs of preliminary options
2. Review of space program development and prioritization
3. Approved moving forward with Options 2

### **September 4, 2012, School Building Committee, 6:00PM**

Berkshire Hills Regional School District Offices, Stockbridge

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: SBS - Jon Winikur and Carl Weber  
SMMA – Alex Pitkin, Dan Ruiz, Jennifer Soucy

## Discussion:

1. Review of Series 2 Options
2. Review cost impacts
3. Reviewed timeline and schedule
4. Reviewed public outreach process

### **September 11, 2012, Public Information Meeting, School Building Committee, 6:00PM**

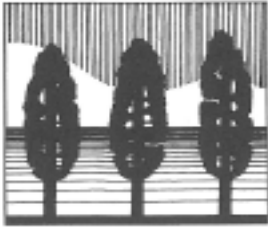
Monument Mountain Regional High School, Great Barrington

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: BHRSD BC – Dick Coons, Peter Dillon, Marianne Young  
SBS - Jon Winikur  
SMMA – Alex Pitkin

## Discussion:

1. Review of preliminary options
2. Review of preferred option
3. Discussion with community on funding level and process
4. Review of educational needs and impact



# BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT

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## **September 19, 2012, School Building Committee, 6:00PM**

Berkshire Hills Regional School District Offices, Stockbridge

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: SBS - Carl Weber  
SMMA – Dan Ruiz, Jennifer Soucy

Discussion:

1. Reviewed and modified the Preferred Schematic Report
2. Approved by unanimous vote to submit the Preferred Schematic Report to the MSBA

## **DISTRICT MEETINGS**

In addition to the SBC meetings listed above, the District held eight public meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed. These meetings include:

### **January 26, 2012, BHRSD School Committee Meeting, 7:00 PM**

Muddy Brook Regional Elementary School

Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber

Discussion:

1. Introductions of SBS OPM Team
2. Discussion of Building Committee initial thought on project goals
3. MSBA Feasibility Study process, schedule and potential dates
4. Schematic Design Process, Cost Estimates, MSBA review
5. Member Town Approval

### **June 18, 2012, West Stockbridge Board of Selectmen Meeting, 6:00PM**

West Stockbridge Town Hall

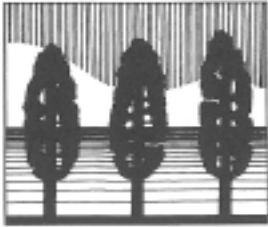
Notice published on Town website

Presentation: Peter Dillon, Superintendent, BHRSD  
Dick Coons, Chairman, School Building Committee

Discussion:

1. New Project Process Flow
2. Preliminary Reimbursement Rate
3. Feasibility Study Phase
4. Schematic Design Phase

### **June 19, 2012, Great Barrington Board of Selectmen Meeting, 6:00PM**



# BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT

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Great Barrington Town Hall  
Notice published on Town website

Presentation: Peter Dillon, Superintendent, BHRSD  
Dick Coons, Chairman, School Building Committee

Discussion:

1. New Project Process Flow
2. Preliminary Reimbursement Rate
3. Feasibility Study Phase
4. Schematic Design Phase

## **July 26, 2012, BHRSD School Committee Meeting, 7:00 PM**

Monument Valley Regional Middle School – Library

Notice published on District website

Presenters: Presentation: SBS - Carl Weber

Discussion:

1. Process Review
2. Major Findings –Existing Conditions
3. Educational Space Program Needs
4. Schedule and Next Steps
5. The PDP is a preliminary report of the ideal program which will be submitted to the MSBA for review. Program and scope may be altered after MSBA and School District Review and discussions. Unanimous vote to approve the PDP for submission to the MSBA.

## **August 6, 2012, Stockbridge Board of Selectmen Meeting, 6:00PM**

Stockbridge Town Hall

Notice published on Town website

Presentation: Peter Dillon, Superintendent, BHRSD  
Dick Coons, Chairman, School Building Committee

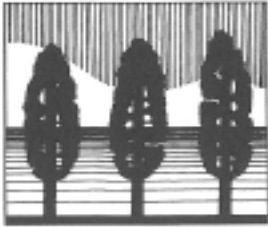
Discussion:

1. New Project Process Flow
2. Preliminary Reimbursement Rate
3. Feasibility Study Phase
4. Schematic Design Phase

## **August 23, 2012, BHRSD School Committee Meeting, 7:00 PM**

Monument Valley Regional Middle School – Library

Notice published on District website at least 2 days prior to meeting according to MGL



# BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT

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Presenters: Presentation: Dick Coons, Peter Dillon, Sharon Harrison

Discussion:

1. Review of MMRHS Career, Vocational, & Technical Education Programs
2. School Committee Approval to incorporate Administrations Recommendation Regarding CVTE Programming
3. Reviewed Basic Details of the Series 2 Options
4. Current Phase Reimbursement Rate
5. School Committee Approval for SBC to Move Forward with Option 2C Proposal

## **September 5, 2012, BHRSD School Committee Meeting, 7:00 PM**

Monument Valley Regional Middle School – Library

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: Presentation: Dick Coons, Peter Dillon, Sharon Harrison

Discussion:

1. Presentation of Preliminary Design Proposal
2. Review of SBC Preference of Option 2 & 2D.2
3. Review of Next Steps of the Feasibility Study Process
4. School Committee Approved Submitting PDP with Option 2D.2 Preference to MSBA

## **September 20, 2012, BHRSD School Committee Meeting, 7:00 PM**

Monument Valley Regional Middle School – Library

Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: Presentation: Dick Coons, Peter Dillon, Sharon Harrison

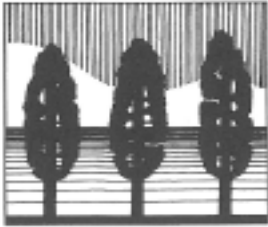
Discussion:

1. Presentation of Preferred Schematic Study Report
2. Review of SBC Preferred Option 2D.4 (revision of PDP Option 2D.2)
3. Review of SBS Construction & Project Cost Estimates
4. School Committee Approved Submitting Preferred Schematic Study Report to MSBA

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at the Berkshire Hills Regional School District office located in Stockbridge Massachusetts.

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq.*





# BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT

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If you have any questions or require any additional information, please contact Peter Dillon, Superintendent.

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

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---

**By:**

**Title: Chief Executive Officer**

**Date:**

---

**By:**

**Title: Superintendent of Schools**

**Date:**

---

**By:**

**Title: Chair of the School Committee**

**Date:**



## SECTION SIX APPENDIX

The Appendix contains the following documents:

### **6.1 PRELIMINARY DESIGN PROGRAM**

### **6.2 PREFERRED ALTERNATIVE PLANS**



# PRELIMINARY DESIGN PROGRAM

MSBA Submission

**Monument Mountain Regional High School**  
*Great Barrington, Massachusetts*

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*JULY 27, 2012*

*Submitted by,*

**SMMA**

*Symmes Maini & McKee Associates*  
*Cambridge, MA*

  
MARGO JONES  
*Architects*

---

*SMMA No. 12029.00*





July 27, 2012

Mr. Christopher Alles  
Project Manager  
Massachusetts School Building Authority  
40 Broad Street, 5<sup>th</sup> Floor  
Suite 500  
Boston, MA 02109

**Subject: *Berkshire Hills Regional School District  
Monument Mountain Regional High School Project  
OPM Approval of Designer Submission- Preliminary Design Program***

Dear Mr. Alles:

Strategic Building Solutions, LLC (SBS) has reviewed the materials provided by the design team of Symmes Maini McKee Associates for the Preliminary Design Program submission as part of the Feasibility Study Phase for the Monument Mountain Regional High School Project. The School District has approved the material for submission to the MSBA. Based on our conversations with the MSBA and our review of the materials assembled and included in the attached package, we hereby certify the completeness of this submission with one exception. As discussed with your office the Local Actions and Approval Certification letter submitted with this report is a draft and a final certified letter will be forwarded in the near future.

As requested, we have included the following information per MSBA Module 3 for the above referenced Project:

- (1) Binder of materials per Module 3
- (1) Electronic file in PDF format

Please feel free to contact me with any questions or additional requests.

Sincerely,

A handwritten signature in blue ink that reads "Carl Weber". The signature is fluid and cursive, with the first name "Carl" being more prominent than the last name "Weber".

Carl Weber  
Project Director

CC: Peter Dillon, Superintendent  
Dick Coons, Chair School Building Committee  
Jon Winikur, SBS  
Alex Pitkin, SMMA





## **TABLE OF CONTENTS PRELIMINARY DESIGN PROGRAM**

### **SECTION ONE Introduction**

- 1.1 Statement of Interest Summary
- 1.2 Invitation to Feasibility Study
- 1.3 Design Enrollment
- 1.4 Capital Budget Statement
- 1.5 Project Directory
- 1.6 Project Schedule

### **SECTION TWO Educational Program**

- 2.1 Grade and School Configuration Policy
- 2.2 Class Size Policy
- 2.3 Scheduling Methodology
- 2.4 Teaching Methodology
- 2.5 Teacher Planning and Room Assignment Policy
- 2.6 Lunch Programs
- 2.7 Technology Instruction Policy
- 2.8 Art
- 2.9 Music and Performing Arts
- 2.10 Physical Education
- 2.11 Special Education
- 2.12 Vocational Education
- 2.13 Transportation Policy
- 2.14 Functional and Spatial Relationships and Adjacencies
- 2.15 Security and Visual Access Requirements

**MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL**

**SECTION THREE Initial Space Summary****SECTION FOUR Evaluation of Existing Conditions**

- 4.1 Existing Site Conditions
- 4.2 Existing Building Conditions
- 4.3 Existing Food Service Conditions
- 4.4 Hazardous Materials Report
- 4.5 Traffic Report
- 4.6 Geo-Environmental Report

**SECTION FIVE Preliminary Evaluation of Alternatives**

- 5.1 School Assignment Practices and Available Space
- 5.2 Tuition Agreements with Adjacent School Districts
- 5.3 Rental or Acquisition of Existing Buildings for School Use
- 5.4 Project Goals
- 5.5 Construction Alternates including cost Estimate and Schedules

**SECTION SIX Local Actions and Approvals****SECTION SEVEN Appendix**

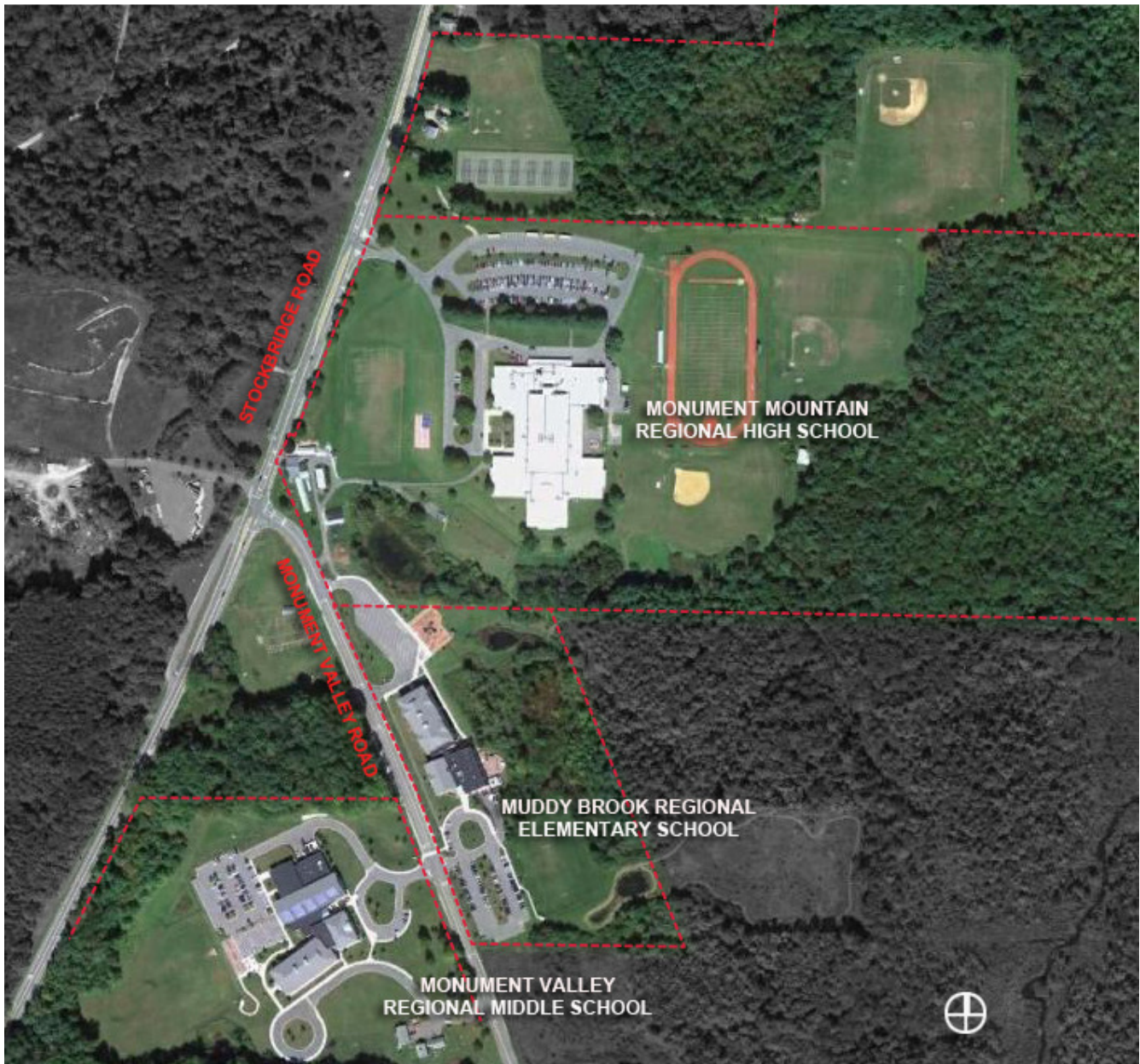
- 7.1 Statement of Interest
- 7.2 Invitation to Feasibility Study
- 7.3 Approved Design Enrollment

**MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL**

## SECTION ONE INTRODUCTION

### 1.1 STATEMENT OF INTEREST SUMMARY

The existing 46 year old Monument Mountain Regional High School is located at 600 Stockbridge Road in Great Barrington, MA. The primary site measures approximately 143.3 acres, and is adjacent to two sites where the other two Berkshire Regional School District schools are located: Monument Valley Regional Middle School (Grades 5-8) and the Muddy Brook Regional Elementary School (PK – Gr 4). There is a second parcel of land associated with the school located to the north, where the tennis courts and a baseball field are located.



On or about November 12, 2008 and November 12, 2009, the Berkshire Hills Regional School District (the "District") submitted a Statement of Interest (SOI) to the Massachusetts School Building Authority (MSBA) for the High School. In September 29, 2010, the MSBA Board voted to issue an invitation to the Owner to conduct a feasibility study.

The SOI lists six major areas of health, safety and welfare concern: lack of sprinklers, inadequate science laboratories with deficient safety equipment, possible PCB contamination in three transformers, poor indoor air quality, inadequate electrical infrastructure, and no security system. The existing 113,705 square foot building, constructed in 1966 and occupied in 1968, has a concrete foundation with masonry bearing exterior walls and a steel frame roof with interior structural columns. The exterior is comprised of minimally insulated brown brick with a pitched mansard section above, clad in terne metal with wood battens. The mansard portion defines the structural depth of the roof. At the gym and auditorium, where the ceiling heights are taller, the pitched siding continues to a greater height, with masonry backup behind.

There does not appear to be any lateral force resisting structural system in the building, and a prior structural report indicates that snow loading exceeds existing strength in areas of drifting. Barrier-free access issues are a pervasive problem throughout the building and extensive work is required to make the building accessible. The insulation levels in the wall and roof are minimal, and single glazing exists throughout the building. There are a number of issues regarding code compliance with the electrical systems and safety issues. Asbestos-contained flooring is found in numerous locations.

In addition, there are a number of general educational concerns in the building including: inadequate science and technology lab space; inadequate library and media space; classrooms not equipped for 21st century instruction; and a lack of storage. Additional existing conditions information is included in Section 4 and the complete SOI is included in Appendix 7.1.

The Chapter 74 Agricultural/ Horticulture program is housed in a wood-framed former fox farm, down the hill near Route 7 (Stockbridge Road), where there are also greenhouses and a storage shed. The size of those assembled structures is 6,835 net square feet. These structures are not accessible, with aged systems. They do benefit from the street side location when plant sales are held, and the location is easier for middle and elementary school students to also use the facility.

The high school is also the town's emergency shelter.

## **1.2 INVITATION TO FEASIBILITY STUDY**

On March 10, 2011, the Berkshire Hill Regional School District School Committee voted in support of conducting a feasibility study, and authorizing funding for the Feasibility Study portion of the Feasibility and Schematic Design project. An Owner's Project Manager was advertised for, and hired in November 2011.

Working closely with the MSBA throughout the process, the District was invited to collaborate with the MSBA in conducting a Feasibility Study for the Monument Mountain Regional High School on September 29, 2010. The invitation is included in Appendix 7.2. On March 9, 2012, the School Committee approved funding for the Schematic Design phase of the project, pending town approval of the full FY 13 operating budget. In May, 2012 the operating budget was approved by the District's town members.

## **1.3 Design Enrollment**

The District and the MSBA met and reviewed population, student enrollment and school choice migration patterns from 2000 and projections through 2018. On March 18, 2011 the district and the MSBA agreed to a design enrollment of 570 students for the Monument Mountain Regional High School, housing grades 9 – 12. The design enrollment agreement is included in Appendix 7.3.

## **1.4 Capital Budget Statement**

The preliminary estimated project cost is approximately \$57 million. The local share of debt service is planned to be allocated through the regional assessment, and funded via debt exclusions supported by the tax levy of member towns.

The base reimbursement share for this project from MSBA is 47.64%, with a preliminary estimate of 4 additional incentive points. The following are the incentive points that are being considered: High Efficiency Green School Program, Best Practices for Routine and Capital Maintenance, Use of CM-at-Risk, and Renovation/Re-use of Existing Facilities. The remaining percentage would be locally funded as explained above.

## **1.5 Project Directory**

The project directory with contact information of the project's key stakeholders is as follows:



Contact and Address		Telephone	Fax
<b>District</b>	<p><b>Berkshire Hills Regional School District</b> 50 Main Street Stockbridge, MA 01262</p> <p>Mr. Steven Soule, Director of Operations steven.soule@bhrsd.org</p>	413-298-4017  X23	
<b>MSBA</b>	<p><b>Massachusetts School Building Authority</b> 40 Broad Street, Suite 500 Boston, MA 02109 Christopher Alles, Project Manager <a href="mailto:Chris.alles@massschoolbuildings.org">Chris.alles@massschoolbuildings.org</a></p>	617-720-4466	617-720-5260
<b>BHRSD School Building Committee</b>	<p>Dick Coons, Chairman <a href="mailto:rtclac@roadrunner.com">rtclac@roadrunner.com</a></p> <p>Fred Clark, Architect <a href="mailto:fredclarksc@yahoo.com">fredclarksc@yahoo.com</a></p> <p>Steve Bannon, School Committee Chair <a href="mailto:scbannon@gmail.com">scbannon@gmail.com</a></p> <p>Alan Wilken, Engineer <a href="mailto:arwilken@verizon.net">arwilken@verizon.net</a></p> <p>Peter Dillon, Superintendent <a href="mailto:Peter.Dillon@bhrsd.org">Peter.Dillon@bhrsd.org</a></p> <p>Sharon Harrison, Business Administrator <a href="mailto:Sharon.Harrison@bhrsd.org">Sharon.Harrison@bhrsd.org</a></p> <p>Steve Soule, Director of Operations <a href="mailto:Steven.Soule@bhrsd.org">Steven.Soule@bhrsd.org</a></p> <p>Marianne Young, Principal MMRHS <a href="mailto:Marianne.Young@bhrsd.org">Marianne.Young@bhrsd.org</a></p> <p>Kristi Farina <a href="mailto:Kristina.Farina@bhrsd.org">Kristina.Farina@bhrsd.org</a></p> <p>Kara Staunton-Shron <a href="mailto:Kara.Staunton-Shron@bhrsd.org">Kara.Staunton-Shron@bhrsd.org</a></p> <p>Nancy Graham <a href="mailto:Nancy.Graham@bhrsd.org">Nancy.Graham@bhrsd.org</a></p> <p>Jack Spencer <a href="mailto:jsjackspencer4@gmail.com">jsjackspencer4@gmail.com</a></p> <p>Chris Williams, Construction <a href="mailto:cwe2007@verizon.net">cwe2007@verizon.net</a></p> <p>Beryl Jolly <a href="mailto:bjolly@mahaive.org">bjolly@mahaive.org</a></p>		



<p><b>School Committee</b></p>	<p>Stephen Bannon, Chairman <a href="mailto:scbannon@gmail.com">scbannon@gmail.com</a>, GB</p> <p>Alan Wilken <a href="mailto:arwilken@verizon.net">arwilken@verizon.net</a>, Stockbridge</p> <p>Frederick Clark <a href="mailto:fredclarksc@yahoo.com">fredclarksc@yahoo.com</a>, GB</p> <p>Christine Shelton, Secretary <a href="mailto:christine_shelton@yahoo.com">christine_shelton@yahoo.com</a> GB</p> <p>Dan Weston <a href="mailto:dwestonsc@gmail.com">dwestonsc@gmail.com</a>, Stockbridge</p> <p>Richard Bradway <a href="mailto:richbradway@gmail.com">richbradway@gmail.com</a> Stockbridge</p> <p>Richard Coons, Vice Chairman <a href="mailto:rtclac@roadrunner.com">rtclac@roadrunner.com</a> GB</p> <p>Deborah Kain, Asst. Treasurer <a href="mailto:deborah.kain@gmail.com">deborah.kain@gmail.com</a> GB</p> <p>John Krahm <a href="mailto:krahm@hotmail.com">krahm@hotmail.com</a>, WS</p> <p>Carol Kuller <a href="mailto:carolkuller@gmail.com">carolkuller@gmail.com</a> WS</p>		
<p><b>Architect/ Engineer</b></p>	<p><b>Symmes, Maini &amp; McKee Associates, Inc. (SMMA)</b> 1000 Massachusetts Ave. Cambridge, MA 02138</p> <p>Daniel Ruiz <a href="mailto:druiz@smma.com">druiz@smma.com</a></p> <p>Alex Pitkin <a href="mailto:apitkin@smma.com">apitkin@smma.com</a></p> <p>Phil Poinelli <a href="mailto:ppoinelli@smma.com">ppoinelli@smma.com</a></p> <p>Jennifer Soucy <a href="mailto:jsoucy@smma.com">jsoucy@smma.com</a></p>	<p>617-547-5400</p> <p>617-308-3429</p> <p>617-233-5768</p> <p>617-520-9219</p> <p>617-520-9261</p>	<p>800-648-4920</p>
<p><b>Consulting Architect</b></p>	<p><b>Margo Jones Architects (MJA)</b> 308 Main Street, 3<sup>rd</sup> Floor Greenfield, MA 01301</p> <p>Margo Jones <a href="mailto:mj@margojones.com">mj@margojones.com</a></p> <p>Kristian Whitsett <a href="mailto:kw@margojones.com">kw@margojones.com</a></p>	<p>413-773-5551</p>	<p>413-773-5552</p>
<p><b>Owner's Project Manager</b></p>	<p><b>Strategic Building Solutions</b> 67 Hunt Street, Suite 119 Agawam, MA 01001</p> <p>Jonathan Winikur, Principal <a href="mailto:jwinikur@go-sbs.com">jwinikur@go-sbs.com</a></p>	<p>860-395-0055</p>	



	Carl Weber, Director <a href="mailto:cweber@go-sbs.com">cweber@go-sbs.com</a>	413-575-6721	413-285-8592
<b>Hazardous Materials Consultant</b>	<b>CDW</b> 40 Speen Street, Suite 301 Framingham, MA 01701  Kathleen Campbell <a href="mailto:kcampbell@cdwconsultants.com">kcampbell@cdwconsultants.com</a>	508-875-2657	508-875-6617
<b>Site Surveyor</b>	<b>Guntlow &amp; Associates, Inc.</b> 55 North Street Williamstown, MA 01267  Vincent P. Guntlow <a href="mailto:vinceg@guntlowassociates.com">vinceg@guntlowassociates.com</a>	413-458-2198	413-458-2712
<b>Geotechnical Consultant</b>	<b>(TBD)</b>		
<b>Accessibility Consultant</b>	<b>Deborah A. Ryan Associates</b> 592 East Broadway South Boston, MA 02127 <a href="mailto:dryan@dryanassociates.com">dryan@dryanassociates.com</a>	617-268-9423	617-268-9437
<b>Food Service Consultant</b>	<b>Foodservice Design, LLC</b> 4 Ashbrook Rd. Exeter, NH 03833  Lisa May <a href="mailto:lmaydesign@comcast.net">lmaydesign@comcast.net</a>	603-969-0009	
<b>FF&amp;E Consultant</b>	<b>Stefura Associates, Inc</b> 77 North Washington St. 7 <sup>th</sup> Floor Boston, MA 02114  Marcy Stefura <a href="mailto:marcy@stefura.com">marcy@stefura.com</a>	617-723-5164	
<b>Acoustical &amp; AV Consultant</b>	<b>Acentech, Inc.</b> 33 Moulton St. Medford, MA 02115  Chris Savereid <a href="mailto:csavereid@acentech.com">csavereid@acentech.com</a>	617-499-8000	617-499-8074
<b>Cost Estimating Consultant</b>	<b>PM&amp;C</b> 59 South Street Hingham, MA 02043  Peter Bradley <a href="mailto:peterbradley@pmc-ma.com">peterbradley@pmc-ma.com</a>	781-740-8007	
<b>Theatrical Consultant</b>	<b>Robert Lorelli Associates, Inc.</b> 18 Hickory Bend P.O. Box 446 Speonk, NY 11972 Robert Lorelli <a href="mailto:rlorelli@optonline.net">rlorelli@optonline.net</a>	631-801-2511	631-801-2512
<b>Traffic Consultant</b>	<b>Bryant Associates</b> 14 Breakneck Hill Rd. Suite 200 Lincoln, RI 02865  Todd Brayton	401-722-7660	

	<a href="mailto:TBrayton@bryant-engrs.com">TBrayton@bryant-engrs.com</a>		
<b>Code Consultant</b>	<b>Hughes Associates</b> 5 Mount Royal Avenue, 3 <sup>rd</sup> Floor Marlborough, MA 01752  Eric Cote <a href="mailto:ecote@haifire.com">ecote@haifire.com</a>	508-624-7766	508-624-7718

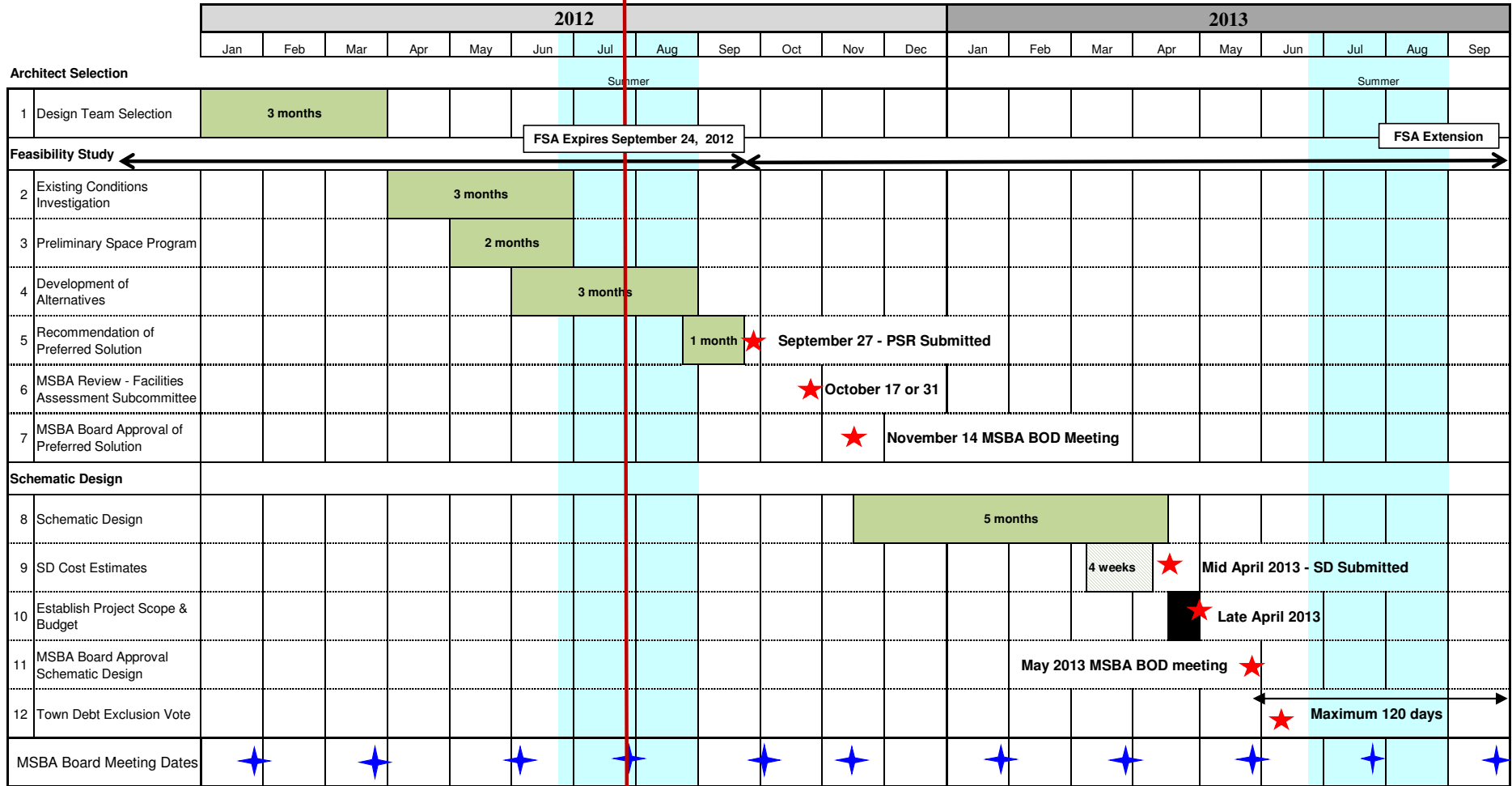
**1.6 PROJECT SCHEDULE**

The project schedule anticipates MSBA Board of Director’s approval to proceed into Schematic Design at their November 14, 2012 meeting and MSBA Board of Director’s approval of the Project Scope and Budget Agreement at their May 2013 meeting. District-wide appropriation voting will occur immediately following, in the months of May/June 2013. The project schedule follows.

# Berkshire Hills Regional School District Monument Mountain Regional High School

## FEASIBILITY STUDY & SCHEMATIC DESIGN SCHEDULE

July 23, 2012



**Current Status**  
**7/27/12**



## SECTION TWO EDUCATIONAL PROGRAM

### STUDENT VOICE

“As a student, I take part in both mental exploration and corporal interaction each day within Monument Mountain Regional High School. I experience my school through an extremely vital duality. As an individual yearning to explore design in a meaningful way, this duality gives me an advantageous foundation from which to birth a concept of what my school should be. Specifically, the design must stem from two ideals: the first being the freedom and continuity of education and the other being the maximization of the relationship between the school and its environment. The design’s utmost goal must be to inform healthy relationships between a user of the building and its community as well as a healthy relationship between the external environment and the structure of the school itself. The design must accomplish this while informing one’s perception of education. The design must simultaneously encourage learning for the sake of learning and foster the creation of skills needed to educate oneself.”

“Throughout a high school, students, teachers, and other faculty all strive to achieve different goals. The building must exist to construct an environment where said goals lead toward an educational end, where one can learn as much from the building as one can learn from the classes it houses. The key to this psychological development is a sense of flexibility and openness within the defined space to both offer purpose and yet allow that purpose to be redefined. One should feel that one exists in a place that has identity. Human beings fundamentally rely on a sense of orientation. Without this, the user loses a sense of control. In this way, the design must empower each user within the space to give the individual a sense of ownership. In the words of Alain de Botton, in his book *The Architecture of Happiness*, ‘Belief in the significance of architecture is premised on the notion that we are, for better or for worse, different people in different places—and on the conviction that it is architecture’s task to render vivid to us who we might ideally be.’”

“A hut, a house, an office, a school, must be built to both represent the user and encourage said user to be his or her best self. To do this, the design must represent the vital intersection between the program and the site, the informational, philosophical, gestural matter defined by the sentiments and needs of the users superimposed upon the physical environment in which the building may one day exist. What must be acknowledged is that the building, the place, must be as equally alive as those that utilize it and that it is the architect’s charge to bestow his or her divine spark; to understand the external forces that will influence its personality; to design the form in such a way that its being reflects its environment, that it reflects its purpose, and that it reflects the perception that it is undeniably at home.”

*Written by 2012 Valedictorian Loren Amdahl-Culleton for his W.I.S.E. (Wise Individual Senior Experience) project. Presented in May 2012.*

Ensuring innovative, meaningful and beneficial educational programming for all students is at the heart of Monument Mountain Regional High School’s (MMRHS) mission and the significant component of the feasibility study for an upgraded secondary school facility for the Berkshire Hills Regional School District (BHRSD).

The Superintendent of Schools, high school principal, faculty and community members have all offered perspective through meetings with the school committee's facilities subcommittee and the architectural team of Symmes, Maini and McKee Associates including SMMA's Educational Programmer, Philip Poinelli, to develop the space summary for this proposed project.

## **2.1 GRADE AND SCHOOL CONFIGURATION POLICY**

Monument Mountain Regional High School educates students in grades 9 – 12 on the Berkshire Hills Regional School District Pre-K – 12 campus which accommodates its three schools including MMRHS, the Muddy Brook Regional Elementary School and the Monument Valley Regional Middle School. It is BHRSD's intent to construct a grade nine through twelve high school that is comparable to the six-year old middle and elementary school facilities and provides all resources necessary for a 21<sup>st</sup> century high school education.

Monument Mountain Regional High School maintains a legacy of providing educational opportunities that are student-centered, collaborative and innovative. Students are well-prepared for college and the workplace: faculty is inventive, and the community is invested. Faculty and staff continue to build strong grade-centered programming including a foundation freshman experience, a strong sophomore course of studies that allows for interdisciplinary connections, a junior year designed to encourage college and career experiences and exploration, and a senior year that includes myriad options for student-directed learning.

The BHRSD building subcommittee and MMRHS faculty began discussions about the facility in September 2011 by identifying needs and vision for the secondary school program.

## **2.2 CLASS SIZE POLICY**

Recommendations for class size at the high school can be found in the negotiated agreement between the Berkshire Hills Regional School District and the Berkshire Hills Education Association. "The District recognizes the importance of maintaining class sizes conducive to learning. Therefore, with the exception of classes such as band, physical education, chorus and any other classes customarily larger in size, the District will strive to maintain average class sizes that do not exceed in a building as follows: Grades 9 – 12: 25."

Current average class size at MMRHS is 14. This data does not include the 65 member band, nor does it include the courses/programs that provide independent, student-directed learning opportunities. There are over 100 students involved in programs such as WISE (Wise Independent Senior Experience), the Independent Project, individual independent studies, and the internship program.

**2.3 SCHEDULING METHODOLOGY**

The high school runs a two semester schedule with some courses being year-long, others semester-long. Students are scheduled for eight classes, and they attend seven each day. One period is dropped each day on a rotating schedule. Class periods are 50 minutes long. The daily schedule has long included “community” time, either in the form of community groups (i.e. what is commonly known as advisory) or in a school wide common study/activity period. MMRHS adjusts its schedule each year in its ongoing pursuit to design a daily schedule that not only serves but guarantees student engagement and success as well as the preservation of a professional learning community. There are two thirty-minute lunch periods. The high school day begins at 8:00 a.m. and concludes at 2:45 p.m.

Semester-long courses earn .5 credit; year-long courses earn 1 credit. The master schedule of classes is completed by the guidance department in conjunction with the administration. The high school Curriculum Steering Committee, a shared leadership group responsible for annual review of the Program of Studies, is the vehicle for determining courses that will be offered.

2012 MMRHS Graduation Requirements:

All students must earn a minimum number of credits in the following subject areas:

COURSES	CREDITS
English	4
Social Studies (1)	3
Science (2)	3
Mathematics	3
Physical Education	1.5
The Arts (3)	1
Career – Technical – Vocational (CVTE) (4)	1
Required Credits . . . . .	16.5
Elective Credits . . . . .	7
Total Credits Needed . . . . .	23.5

Note: the 2012 – 2013 school year will find the MMRHS faculty reviewing graduation requirements to assure alignment with the Common Core State Standards, PARCC and BHRSD expectations.

**2.4 TEACHING METHODOLOGY**

**BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT MISSION**

To ensure all students are challenged through a wide range of experiences to become engaged and curious learners and problem solvers who effectively communicate, respect diversity, and improve themselves and their community

**BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT GOALS**  
***Student Achievement/ Growth/ Enlightenment***

- Foster an intellectually challenging and supportive education that expands academic and career opportunities for all
- Expand learning beyond the school walls to include nature, the community and with partners
- Excite and engage students in learning
- Problem solving shall be used as an educational tool in and across disciplines
- Students will demonstrate their achievement and growth in a variety of ways and the data will be used effectively in the evaluation and revision of curriculum and instruction
- Use flexible schedule to meet varied student needs: pre-test, post-test, in order to allocate resources efficiently
- Use personal relationships to maximize a social-emotional safety net
- Explicitly make curricular connections between and across grades, schools, and districts
- The school experience is engaging, verdant, and empowering
- Challenge our expectations and approaches to working with the underserved

**MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL MISSION**

The Monument Mountain Regional High School community creates opportunities and challenges that ensure intellectual growth and empower all to become courageous learners, involved citizens, and individuals of integrity.

**EXPECTATIONS FOR STUDENT PERFORMANCE**

**Academic**

Students will communicate effectively.

Students will locate, analyze, evaluate, and use information effectively and with integrity.

Students will make connections across disciplines and identify interrelations with life experiences.

Students will demonstrate creative and analytical thinking.

**Social**

Students will respect themselves and others.

Students will make informed decisions regarding their health and well-being.

Students will participate appropriately in school activities.

**Civic**

Students will contribute positively to the school community.

Students will contribute positively to the larger community.

Monument Mountain Regional High School is a community of learners that works to ensure that:



- powerful learning is provided for all;
- a vibrant, respectful learning environment is created;
- every student is known, challenged, supported and inspired;
- faculty support and challenge each other;
- faculty and staff are enthusiastic about their own work, their colleagues' work, and their students' work, and they are committed to their own professional development and expertise;
- ideas and new approaches are welcomed;
- innovation and experimentation are supported;
- the administration knows and communicates current knowledge regarding best educational practices and programs;
- community support is earned and maintained;
- the school is safe, clean, and designed to enable the realization of the MMRHS mission;
- produce outstanding graduates who are ready to contribute to their communities and world, and thrive in whatever arena they pursue;
- MMRHS fosters courage and compassion, supports creativity, and expects excellence.

Monument Mountain Regional High School operates with a departmental structure organized around the content areas including science; mathematics; social studies; English; World Languages; music; art; physical education; special education; and career, vocational and technical education. The faculty uses any number of instructional methodologies ranging from a traditional, teacher-centered model to co-teaching to interdisciplinary teaching to experiential, place-based instruction and student inquiry. It is the goal of the administration to continue to focus on the school's commitment to and capacity for varied and robust teaching and learning as a cornerstone for the proposed facility.

The current Program of Studies supports the study of high school core academics and electives in several levels designed and organized to meet the needs of every student. Courses are offered in the academic, vocational and elective domains. Courses are offered in four levels: standard, college preparatory, honors, and advanced or Advanced Placement. The school partners with the Berkshire Community College and participates in Virtual High School. Additionally, community partners like Kripalu, Shakespeare & Co., Jacob's Pillow and the Railroad Street Youth Project team with teachers to provide programming during the school day.

## **2.5 TEACHER PLANNING POLICY**

Monument Mountain Regional High School teachers are assigned to departments. Almost all departments have a shared office space. This design fosters professional collaboration and support and is valued by the faculty.

Most teachers are assigned to one classroom and use their assigned classrooms for instruction. Additionally, teachers are provided by contract a teachers' lounge/lunchroom.

Teachers are assigned five instructional periods and one supervisory period per day. They have two preparation periods per day, one of which is often used for meetings and other professional tasks.

## **2.6 BREAKFAST AND LUNCH PROGRAMS**

Breakfast is served daily to all students at 7:30 am. Lunch is served daily in two seatings between 10:40 am and 12:10 pm to over five hundred ten students who currently attend the school. Lunch service consists of two lines that enter through one door located mid-line. There are two cashiers at either end of the line, with the majority of students using one cashier due to the limited line circulation and food location necessitated due to the original kitchen layout.

The kitchen maintains its original 1968 layout. The dishwasher is located in a separate room across the hall from the kitchen and serving line. There is limited space for “grab-and-go” or a la carte service, limiting students’ choices to the regular hot lunch served or salads and sandwiches.

Due to the current configuration, lines are monitored on an ongoing basis to limit the amount of time spent waiting in line. With a redesigned kitchen, server and dining spaces, more of the high school population could be served, with increased options in the two lunch periods.

Refer to Section 4.3 for Existing Food Services Report

## **2.7 TECHNOLOGY INSTRUCTION POLICY**

The Berkshire Hills Regional School District has recently invested both funds and other resources to the development of education technology at the high school. The FY12 refresh equipped all teachers with new computers; outfitted technology labs and the library with new computers; upgraded computers in the art rooms and the audio visual (AV) room; upgraded the entire LAN infrastructure throughout the building; and opened the wireless access for students, staff and guests. It was anticipated that students would bring their own devices to school in the new school year, changing the way the District thinks about the use of technology at the high school. This is in fact the case. However, there is still a need to upgrade existing hardware at the high school, unlike at the other two schools.

There is one PC computer lab, one Mac lab, and one video technology lab/AV lab. The library/media center houses a laptop cart, several iPads, and a number of desktop computers, all available to students and faculty. There is one interactive whiteboard in the math department, and LCD projectors are installed in almost every classroom.

An ongoing partnership with the Berkshire Technology Fund, a community based initiative and funder, has provide innovative technology such as iPads to several teachers to use in the development of 21<sup>st</sup> century curriculum.

The District has recently upgraded and equipped six classrooms with presentation stations that include both video and audio tools.

## **2.8 ART**

The goal of the art program is to prepare students to be competent in visual thinking, learning, and creative communication—a must to be successful in the future, which most certainly will utilize more and more visuals in varied materials to express information and ideas. The interests of all students can be explored and mastered through this wide variety of art courses.

Over half of the MMRHS student body is enrolled in visual and performance arts courses each semester. Teachers work with The Norman Rockwell Museum, the Clark, and Mass MoCA. They maintain strong communication with art schools, colleges and universities, and they participate in local and state initiatives.

The Visual Arts program includes a dozen courses in drawing, painting, ceramics, sculpture, photography, graphic design, art history, portfolio design and independent programming. The three-teacher art department utilizes three spaces within the high school: a computer lab, and two art rooms.

Room A18 is a computer lab classroom space that is a repurposed vocational/technical space. It is a narrow room, limited in its options for teacher-directed instruction or student presentations. It is used for photography and graphic design, the yearbook and independent studies.

K01 is a traditional art classroom that serves ceramics, sculpture and portfolio along with introductory courses focused on painting and drawing. A number of upgrades to this and the art room in the F wing have had to be completed to meet fire and safety codes.

F25 is originally a science classroom that was reassigned to the art department as a result of increased enrollment. It is used primarily for painting and drawing.

The main hallway provides display space, though the amount of display space has been significantly reduced as a result of new fire codes. There is little storage space in the classrooms or in the rest of the building.

## **2.9 PERFORMING ARTS**

The current music and performing arts program includes courses in theater, band, chorus, orchestra, music appreciation, and music theory.

MMRHS's 500 seat auditorium is a focal point of the building and a valuable resource to the community. The stage is shared by the band, chorus, orchestra, drama classes, Fall Festival of Shakespeare, the spring musical, the talent show, guest speakers, assemblies, the annual crafts fair, town meetings – it is well used. Originally designed to be broken into three smaller seminar sections, the auditorium holds its original seats and structures.

The band room is large and is equipped with permanent risers. The band, orchestra and chorus use this space, which limits some of the scheduling options available to the school as a whole. An adjacent classroom has been repurposed to serve as a music technology lab; there are no rehearsal

spaces. The permanent risers in the band room work well, though they are not handicapped accessible. As is the case throughout the building, there is a lack of secure storage space.

## **2.10 PHYSICAL EDUCATION**

The Physical Education program at MMRHS includes traditional courses in physical education as well as innovative programming in the areas of health and wellness. Health education is an integrated health/physical education course currently offered throughout each semester. Physical Education is available for all grade levels.

The physical education curriculum offers a combination of required and elective activities to all students. Students are required to earn 1.5 credits in physical education to graduate. The curriculum includes fitness, adventure, community safety, first aid, and activity classes. Students receive a numerical grade which is weighted into the G.P.A.

Of note: for the past five years, MMRHS has partnered with the renowned Kripalu Yoga Center in a Harvard University study on the effects of yoga on high school aged students and their academic performance. MMRHS partners with the Railroad Street Youth Project, the Berkshire South Community Center, the Brien Center for Mental Health, the Elizabeth Freeman Center, CrossFit, among others to provide programming on physical, mental, sexual and emotional wellness. The Alternative PE program allows students to earn PE credit despite scheduling conflicts, and uses place-based curriculum as the focus.

Indoor PE programming is provided in one gymnasium, one small weight room, and one classroom repurposed to accommodate the yoga classes. The one gymnasium provides one regulation sized basketball court, and hosts volleyball and wrestling during those athletic seasons. Scheduling of team practices/games presents challenges as teams are competing for the same space nearly year round. Outdoor facilities include tennis courts, track, soccer and football field, and baseball and softball fields. MMRHS is fortunate to be surrounded by pristine hiking trails including the Trustees of Reservations' Monument Mountain.

MMRHS has an active and well-subscribed athletics program for both male and female athletes with student-athlete participation rates regularly exceeding 40% of the total student population. The current summer weight training facility is a converted vocational space; the school year space is a storage area. Locker room space is limited.

## **2.11 SPECIAL EDUCATION**

The Special Education program at MMRHS consists of four components:

- The grade 9/10 Learning Lab is designed to provide academic support and accommodations to students on IEPs. The two teachers and one paraprofessional assigned to this program work closely with

- teachers, focus on study and organizational skills, and build the foundation for students to become independent learners. One regular education classroom has been repurposed to support this program.
- The grade 11/12 Learning Lab is designed to develop the students' capacity for self-advocacy, voice and responsibility in managing their learning styles/disabilities and their education. The two teachers and one paraprofessional assigned to this program work closely with teachers, guidance counselors, the school adjustment counselor and families to support students as they develop and build their autonomy. A double classroom has served as the main special education classroom since the school's opening and houses this program.
  - The Spectrum program is designed for students on the autism spectrum. The mission of the Spectrum program is to provide students with Autism Spectrum Disorders the opportunity to acquire the tools that will help them achieve their highest level of independence in the areas of academics, social, vocational, and daily living skills. This program utilizes a small classroom as its home base.
  - The fourth program is the Life Skills program. This program serves students who have been diagnosed with significant cognitive disabilities ranging from Down's Syndrome to cerebral palsy. This program utilizes an oversized classroom designed to provide a simulated daily living environment including a kitchen, living and learning area, and direct access to the outdoors.

The Vision of the Special Education Department at MMRHS is to provide support and opportunities for students with learning challenges to become independent learners and to help them make successful transitions to post-secondary goals. Special education programs at MMRHS are inclusionary and involve the entire learning community.

### **Counseling**

The school counseling office consists of three full-time guidance counselors, a school adjustment counselor and two clerical support personnel. School guidance counselors work closely with the administration to determine needs related to scheduling, lead all aspects for college and career planning, monitor academic progress of all and especially at-risk students, provide social-emotional support to students in crisis, and work with students, their teachers and their families to ensure a meaningful and successful high school experience. The counseling office currently operates in an area adjacent to the main office. Each guidance counselor has his/her own office. The secretaries are located in a relatively small space at the front of guidance area. There is very limited space for students to work, and no guidance conference room for larger meetings. The school adjustment counselor supports all MMRHS faculty through her work with students, their families and community support service personnel and organizations. The school adjustment counselor's office is located in the main lobby of the school, separated from all other personnel.

Of note is the role the school nurse plays in the support services area. As is the case in most high schools, this position and space is vital to student well-being. This office is a safe space for many students, and the layout is conducive to privacy. The nurse's office is located in the hallway leading to

the cafeteria away from the offices of other support services personnel. The office is adequate consisting of two private consulting rooms, a main office space, and a private back room that locks and provides safe storage of medications, supplies and other equipment, and a rest room.

**2.12 VOCATIONAL EDUCATION PROGRAM**

Throughout its forty-five year history, MMRHS has strived to provide its students comprehensive course offerings. Over the years, our vocational and technical program has experienced many iterations including building based programming, community based programming, and multi-district collaborative programming. Our programs have been supported by The Carl Perkins grant, Regional Employment Board, and Massachusetts DESE Chapter 74 funding. The scope of programs offered over the years has included horticulture, agriculture, woodworking, metals, electronics, allied health, culinary arts, house building, computer technology and repair, cosmetology, and early childhood education.

MMRHS is the only south Berkshire County high school offering Chapter 74 programming. Access to vocational and technical education offerings for the students who reside in the district and neighboring towns is limited to courses offered at MMRHS, and so programs serve the needs of a small but important population.

Students are strongly urged to select courses from all departments within the school rather than limiting their choices to one field. Experiencing a variety of programs introduces them to new areas of interest never before considered as possible college study or career options. Students in a college preparatory program, once college entrance requirements are fulfilled, are encouraged to take courses in art, business, family and consumer science and CVTE. Business students, vocational students, and technology education majors are encouraged to explore possibilities within other departments of the high school. “You will never know where your aptitudes or interests lie unless you allow yourself the opportunity to get involved in a variety of experiences.” (MMRHS Program of Studies)

One credit must be earned in one of the following CVTE courses:

<b>Business and Computers</b>	<b>Technology Education</b>	<b>Vocational</b>
Computer Management	Building Design	Automotive
Business Management	Woodworking	Horticulture
Advanced Computer Management	Science & Technology	Pre-School Program
Virtual Enterprise	Construction Skills	
	Advanced Woodworking	
	Web Page Design	
	Computer Repair A+	
	Computer Repair Net+	

**TECHNOLOGY EDUCATION**

“Recognizing that individuals have native potential for reasoning and problem solving, for imagining and creating, for constructing and expressing with tools and materials, Technology Education capitalizes on this rich

potential. It develops content and learning experiences to contribute to this growth and development of human beings commensurate with their potential. Technology Education is a basic and fundamental study for all persons, regardless of their educational or career goals. “  
(MMRHS Program of Studies)

Technology Education will help students:

- Know and appreciate the importance of technology
- Apply tools, materials, processes, technical concepts and safety principles
- Uncover and develop individual talents
- Apply problem solving techniques
- Apply other school subjects (math and sciences etc.)
- Apply creative abilities (the arts)
- Deal with forces that influence the future (change)
- Make informed career choices

### **VOCATIONAL PROGRAMS**

“Vocational-Technical education is designed to educate and prepare students for employment and continuing academic and occupational preparation through a balance of classroom instruction, supportive services and occupational experience to develop life-long skills so that upon completion of vocational-technical programs, students are qualified to pursue opportunities emanating from such vocational-technical programs. Students enrolling in a vocational program should be aware of the daily time commitment required for each program.

“Based on emerging technology impacting on vocational education, certain experiences are considered essential components of a comprehensive program. Individual student career goals are considered in structuring a schedule of study.”  
(MMRHS Program of Studies)

MMRHS CVTE enrollment:

Agriculture	30
Automotive	50
Pre-K Program/Early Childhood	30
Exploring Childhood	14
Business	39
Woodworking	55
Computer Technology	90

### **2.13 TECHNOLOGY EDUCATION**

The Computer Education program includes courses in programming, computer applications, multimedia, computer languages, desktop publishing, computer aided design, video production, broadcast journalism and web design.

### **2.14 TRANSPORTATION POLICY**



The transportation policy of the Berkshire Hills Regional School District is to provide bussing for all high school students. Given the rural nature of the District, and the lack of sidewalks and safe walking routes for the few students that live within 1.5 miles of the school, all of the students are transported to school either by the bus or private transportation. Parking is provided for staff, students and visitors.

Segregated parent drop-off and pick-up from the bus drop-off and pick-up is essential to the transportation and traffic plan. The plan must also accommodate a clearly identified and located delivery route and drop-off.

A clearly marked entrance to the high school with clear site lines to and from the parking will provide a defined, controlled and welcoming point of entry into the high school for students, staff and the community.

## **2.15 FUNCTIONAL AND SPECIAL RELATIONSHIPS AND ADJACENCIES**

To sustain MMRHS's mission and goals, the facility should:

- support 21<sup>st</sup> century teaching and learning
- integrate technology in all areas of the building
- provide vibrant, flexible teaching and learning spaces
- facilitate student and teacher initiative and engagement
- ensure safety and security
- welcome the community and educational partners

Key to design will be flexible learning spaces for students and teachers to engage in both teacher-directed and student-directed learning. To ensure the best learning opportunities for students, this project should include:

- Refurbished classrooms including 21<sup>st</sup> century science, technology and mathematics learning areas and labs
- Building upon the current "wing" or "pod" design allowing for close proximity of all STEM classrooms, another for the humanities, etc.
- Art and music classrooms designed for performance and collaboration; multiple display areas
- General presentation and seminar spaces
- Upgraded vocational space. The following are the programs under review by the School Committee and could potentially be included in the program: automotive, horticulture, TV Studio, property management/carpentry, culinary, and early childhood program facilities;
- Learning/meeting areas for alternative programming for special needs and at-risk students
- Collaborative faculty planning and working spaces
- Library/media center central to all content areas
- Redesigned library/media center supporting multi-media, flexible group space, and current research practices
- Renovated auditorium including seating, lighting, sound, stage and storage spaces
- Renovated gymnasium including ADA compliant bleachers, alternative programming and wellness center



- Refurbished athletic program space including more efficient locker room design and space for indoor sports programming, i.e. wrestling, weight training
- Renovated dining/cafeteria area to ensure safe and accessible eating areas for all students, and food preparation areas that support healthy and varied alternatives
- Renovated main office space designed for clear view and management of main entrance, storage and office machine space, conference/meeting space, efficiency and access
- Renovated guidance area designed for confidentiality, admissions and registration, resource library, inclusion of school adjustment counselor and school nurse, and support for students and their families
- Storage space including renovated school lockers
- Community, student-centered areas that provide community access to auditorium and gymnasium
- Comprehensive lighting and ventilation upgrades
- Efficient, effective security systems

## **2.16 SECURITY AND VISUAL ACCESS REQUIREMENTS**

Teaching and learning in a safe environment is of critical importance in the member communities. The over 35 exterior doors found in the current school design impede security and safety protocols. The school has a security system in place that includes cameras and alarms in most areas of the building. The monitor for camera review is located in the assistant principal's office. There is no access control system, i.e. doorbell or buzzer mechanism, managing school day entrance into the building. The current main office design does not provide a view of the main entrance doorways. While all other doors are locked during the school day, it is difficult to monitor people exiting the building, and often doors are not closed securely. Although the District does not employ a school resource officer, the school maintains a positive relationship with the Great Barrington and Stockbridge Police Departments. These are valuable and dependable resources for the school.

Additionally, the current classroom and office windows are positioned rather low to the ground, and most do not have screens. The building can be entered or exited by simply stepping through an open window.

All design options viewed to date have included a clearly identified front entrance with careful attention paid to safety in regards to student drop off/pickup.



## SECTION THREE INITIAL SPACE SUMMARY

The Initial Space Summary was developed to address the goals and vision of the Educational Program through a series of interviews with the District administration and the High School, teachers, staff, and students. This section includes the Initial Space Summary and High School Curriculum.

A number of deficiencies were also identified with respect to the ability of the existing facility to support the Educational Program and curriculum. The Initial Space Summary addresses these deficiencies.

The following is a summary of the educational space deficiencies:

- A majority of the standard classrooms are undersized < 760 sq ft.
- Some science classroom / labs are undersized
- Appropriate spaces to provide SPED (special education) services is lacking:
  - ❖ Life Skills room is undersized for the curriculum and services
  - ❖ There are no appropriate small group rooms, tutoring and testing.
- Art and music classrooms are undersized and poorly located to function with critical program adjacencies.  
Storage and technology not well supported by the building.
- Vocations and Technology - Is currently a combination of traditional shop programs and up to date business and computer business and repair programs. The curriculum is currently evolving to reflect comprehensive offerings to serve both collage and work bound students.
- Vocational Technical Education, Chapter 74 - The school currently offers multiple Chapter 74 programs. MMRHS is the only south Berkshire County high school offering Massachusetts DESE Chapter 74 programming. The automotive program is undersized. All of the programs lack accessibility.
- The administration offices are undersized and are without direct control of the main entrance, which impedes supervision and control over ingress and egress to the building.
- The gymnasium is significantly under MSBA standards. The school lacks alternative PE spaces that have been identified as important to fitness for life.
- The auditorium is slightly oversized for the school population but poorly supports the technical needs of the Dramatic and Performing Arts programs. Lighting, acoustics, and back stage space is all poorly organized.

- Building organization does not support the educational model of both school programs and the 21st Century methodologies incorporated by many of the teachers at the school.
- The Initial Summary of Spaces addresses the needs of the Educational Program, the Curriculum, and reflects maximizing the use of the existing building.

**MEMORANDUM**

To: Carl Weber, Jon Winikur Date: 5/24/2012  
From: Phil Poinelli, FAIA Rev. 5/07/2012  
Project: MMRHS Project No.: 10029  
Re: Chapter 74 Programs  
Distribution: P.Dillon, M.Young, A.Pitkin, M.Jones, (MF)

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Monument Mountain High School currently has two Chapter 74 Programs within the schools' Program of Studies. Chapter 74 is the Chapter in the Massachusetts General Laws that addresses vocational technical education. (M.G.L. c.74) Vocational Technical Education Regulations 603 CMR4.00 identifies detailed regulations that govern the Chapter 74 program. <http://www.doe.mass.edu/cte/603cmr4.pdf>

The programs at MMRHS are: automotive and agriculture. Within these programs, there are a number of course offerings for each program. The School department has expressed the intention of continuing these programs in the school curriculum and therefore needs to be accommodated within the Feasibility Study and subsequent phases.

The Automotive Technology program currently occupies approximately 2,835 sf. The governing regulations call for program space of 4,125 sf.

The Agriculture (Horticulture) program currently has a variety of facilities including classroom, lab, greenhouses and support spaces for a total of approximately 6,980 sf. This includes multiple greenhouses and although are heated, they would likely not qualify as permanent structures. The governing regulations call for program space of 3,500 sf. In the Add/Reno Summary, we have assumed 3,000 sf of space plus 3,310 sf of existing greenhouse space assuming it remains remote from the main building.

These programs are in addition to the standard "Vocations and Technology" programs offered at the school and standard within the MSBA's standard Summary of Spaces. As such, we have added the Chapter 74 programs to the Summary of Spaces for review and discussion with the MSBA.

As part of the Educational Program portion of the MSBA submittal, the School Department will need to define the program goals and requirements.

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**Proposed Space Summary - High Schools (ALL NEW)**

7/20/2012

SMMA  
MJA

Monument Mountain	Existing Conditions		
	ROOM NFA <sup>1</sup>	# OF RMS	area totals
ROOM TYPE			
<b>CORE ACADEMIC SPACES</b>			<b>25,354</b>
<i>(List classrooms of different sizes separately)</i>			
Classroom - General	395	3	1,185
Classroom - General	700	1	700
Classroom - General	735	4	2,940
Classroom - General	740	10	7,400
Classroom - General	760	3	2,280
Classroom - General	1,150	1	1,150
Teacher Planning	500	2	1,000
Teacher Planning	454	1	454
Teacher Conference	120	3	360
Computer Classroom	550	1	550
Small Group Seminar (20-30 seats)	0	0	0
Science Classroom / Lab / Allied Health	1,500	1	1,500
Science Classroom / Lab	750	1	750
Science Classroom / Lab	915	1	915
Science Classroom / Lab	1,150	3	3,450
Prep Room	180	4	720
Central Chemical Storage Rm	0	0	0
<b>SPECIAL EDUCATION</b>			<b>3,227</b>
<i>(List classrooms of different sizes separately)</i>			
Self-Contained SPED			0
9 - 10 Learning Lab	750	1	750
11 - 12 Learning Lab	930	1	930
ESL	180	1	180
Life Skills	750	1	750
Autism	391	1	391
Adjustment Counselor	226	1	226
Self-Contained SPED Toilet	0	0	0
Resource Room	0	0	0
Small Group Room	0	0	0
Tutoring			
Testing			
<b>ART &amp; MUSIC</b>			<b>5,426</b>
Art Classroom - 25 seats	1,125	1	1,125
Art Classroom - 25 seats	1,114	1	1,114
Art Workroom w/ Storage & kiln	60	1	60
Art - Dark Room	123	1	123
Computer Classroom	609	1	609
Band - 50 - 100 seats	1,330	1	1,330
Chorus - 50 - 100 seats	0	0	0
Ensemble	535	1	535
Music Practice	360	1	360
Music Practice	85	2	170
Music Storage	0	0	0
<b>VOCATIONS &amp; TECHNOLOGY</b>			<b>7,704</b>
Tech Clrm. - (Early Childhood, including a nursery school component)	742	1	742
2 existing AV rooms, 251+175	426	1	426
TV Classroom / Editing (only) Multi-purpose computer lab			
TV Studio Off-Site (*not counted)	*	*	*
Computer Repair	550	1	550
Tech Shop - (Metal)	2,300	1	2,300
Property Management, including carpentry and wood shop component			
Tech Shop - (Wood)	1,780	1	1,780
Wood Storage	80	1	80
Shop Storage	140	1	140
Voc Storage	60	1	60
Tech Shop - (Early Childhood / Foods) <b>Foods / Culinary / Hospitality</b>	1,290	1	1,290
Teacher Planning	216	1	216
Teacher Planning	60	2	120

PROPOSED		
New		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
		<b>31,280</b>
850	20	17,000
		-
400	5	2,000
		-
500	2	1,000
1,440	7	10,080
250	4	1,000
200	1	200
		<b>5,040</b>
850	1	850
850	1	850
180	1	180
1,500	1	1,500
500	1	500
150	1	150
60	2	120
		-
500	1	500
200	1	200
190	1	190
		<b>6,525</b>
1,200	2	2,400
150	1	150
200	1	200
1,500	1	1,500
1,500	1	1,500
200	1	200
75	1	75
500	1	500
		<b>8,400</b>
1,200	1	1,200
		-
1,200	1	1,200
1,000	1	1,000
1,000	1	1,000
		-
2,000	1	2,000
		-
2,000	1	2,000

MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments
	25	28,400	
850	20	17,000	825 SF min - 950 SF max
100	20	2,000	use as flexible meeting areas around classrooms
500	2	1,000	
1,440	5	7,200	3 x85% ut=20 Seats-1 per /day/student
200	5	1,000	
200	1	200	
	6	5,040	
950	4	3,800	assumed 8% of pop. in self-contained SPED
60	4	240	
500	1	500	1/2 size Genl. Clrm.
500	1	500	1/2 size Genl. Clrm.
1,200	1	1,200	Assumed use - 25% Population - 5 times/week
150	1	150	
1,500	1	1,500	Assumed use - 25% Population - 5 times/week
1,500	1	1,500	
200	1	200	
75	1	75	
500	1	500	
	4	6,400	
1,200	2	2,400	Assumed use - 50% Population - 5 times/week
2,000	2	4,000	Assumed use - 50% Population - 5 times/week
			Ch. 74: Auto Tech.
			Ch. 74: Horticulture





Proposed Space Summary - High Schools (ALL NEW)

7/20/2012

SMMA  
MJA


Monument Mountain		Existing Conditions	
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals
Conference Room	136	1	136
Guidance Office	140	2	280
Afterschool Program Coord.	85	2	170
Afterschool Program Coord.	168	1	168
Guidance Waiting Room	254	1	254
Guidance Storeroom	0	1	0
Career Center	0	0	0
Records Room	0	0	0
Teachers' Work Room	0	0	0
<b>CUSTODIAL &amp; MAINTENANCE</b>			<b>1,980</b>
Custodian's Office	161	1	161
Custodian's Workshop	272	1	272
Custodian's Storage	25	4	100
Recycling Room / Trash	197	1	197
Receiving and General Supply	1,190	1	1,190
Storeroom	60	1	60
Network / Telecom Room	0	0	0
<b>OTHER</b>			<b>1,296</b>
Student Store	206	1	206
Student Center	1,090	1	1,090
Total Building Net Floor Area (NFA) without Chapter 74 Programs			<b>78,439</b>
Chapter 74 Auto			<b>2,915</b>
Chapter 74 Agriculture/Horticulture			<b>6,835</b>
<b>Total Campus Net</b>	existing		<b>88,189</b>
Proposed Student Capacity / Enrollment			
<b>Total Campus Gross Floor Area (GFA)<sup>2</sup></b>			<b>122,591</b>
Grossing factor (GFA/NFA)	Main building only		<b>1.39</b>

PROPOSED		
New		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
450	1	450
150	3	450
		0
		0
100	1	100
100	1	100
300	1	300
100	1	100
300	1	300
		<b>2,075</b>
150	1	150
250	1	250
375	1	375
400	1	400
300	1	300
400	1	400
200	1	200
		0
		0
		0
		<b>93,305</b>
		<b>4,125</b>
		<b>6,310</b>
existing w/ additions		<b>103,740</b>
		<b>153,535</b>
		<b>1.48</b>

MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments
450	1	450	
150	3	450	
100	1	100	
100	1	100	
300	1	300	
100	1	100	
300	1	300	
		<b>2,075</b>	
150	1	150	
250	1	250	
375	1	375	
400	1	400	
300	1	300	
400	1	400	
200	1	200	
		0	
		0	
		<b>86,775</b>	
		<b>570</b>	226
		<b>128,820</b>	
		<b>1.48</b>	

<sup>1</sup> Individual Room Net Floor Area (NFA) Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storerooms.

<sup>2</sup> Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls.

Architect Certification
<p>I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.</p> <p><b>Name of Architect Firm:</b> Symmes Maini McKee Associates, Inc _____</p> <p><b>Name of Principal Architect:</b> Philip J. Poinelli, FAIA _____</p> <p><b>Signature of Principal Architect:</b>  _____</p> <p><b>Date:</b> Friday, July 27, 2012 _____</p>

Proposed Space Summary - High Schools (ADD / RENO)

7/27/2012

SMMA  
MJA

Monument Mountain		Existing Conditions	
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>CORE ACADEMIC SPACES</b>			<b>25,354</b>
<i>(List classrooms of different sizes separately)</i>			
Classroom - General	395	3	1,185
Classroom - General	700	1	700
Classroom - General	735	4	2,940
Classroom - General	740	10	7,400
Classroom - General	760	3	2,280
Classroom - General	1,150	1	1,150
Teacher Planning	500	2	1,000
Teacher Planning	454	1	454
Teacher Conference	120	3	360
Computer Classroom	550	1	550
Small Group Seminar (20-30 seats)	0	0	0
Science Classroom / Lab / Allied Health	1,500	1	1,500
Science Classroom / Lab	750	1	750
Science Classroom / Lab	915	1	915
Science Classroom / Lab	1,150	3	3,450
Prep Room	180	4	720
Central Chemical Storage Rm	0	0	0
<b>SPECIAL EDUCATION</b>			<b>3,433</b>
<i>(List classrooms of different sizes separately)</i>			
Self-Contained SPED			0
9 - 10 Learning Lab	750	1	750
11 - 12 Learning Lab	930	1	930
ESL	180	1	180
Life Skills	750	1	750
Life Skills - Student Store	206	1	206
Autism	391	1	391
Adjustment Counselor	226	1	226
Self-Contained SPED Toilet	0	0	0
Resource Room	0	0	0
Small Group Room	0	0	0
Tutoring			
Testing			
<b>ART &amp; MUSIC</b>			<b>5,426</b>
Art Classroom - 25 seats	1,125	1	1,125
Art Classroom - 25 seats	1,114	1	1,114
Art Workroom w/ Storage & kiln	60	1	60
Art - Dark Room	123	1	123
Computer Classroom	609	1	609
Band - 50 - 100 seats	1,330	1	1,330
Chorus - 50 - 100 seats	0	0	0
Ensemble	535	1	535
Music Practice	360	1	360
Music Practice	85	2	170
Music Storage	0	0	0
<b>VOCATIONS &amp; TECHNOLOGY</b>			<b>7,704</b>
Tech Cirm. - (Early Childhood, including a nursery school component)	742	1	742
2 existing AV rooms, 251+175	426	1	426
TV Classroom / Editing (only) Multi-purpose computer lab			
TV Studio (*Offsite - not counted)	*	*	*
Computer Repair	550	1	550
Tech Shop - (Metal)	2,300	1	2,300
<b>Property Management, including carpentry and wood shop component</b>			
Tech Shop - (Wood)	1,780	1	1,780
Wood Storage	80	1	80
Shop Storage	140	1	140
Voc Storage	60	1	60
Tech Shop - (Early Childhood / Foods) <b>Foods / Culinary / Hospitality</b>	1,290	1	1,290
Teacher Planning	216	1	216
Teacher Planning	60	2	120

PROPOSED		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>New</b>		
		<b>31,980</b>
850	10	8,500
740	10	7,400
1,800	1	1,800
400	5	2,000
		-
500	2	1,000
1,440	7	10,080
250	4	1,000
200	1	200
<b>5,240</b>		
		-
850	1	850
850	1	850
180	1	180
1,500	1	1,500
200	1	200
500	1	500
150	1	150
60	2	120
		-
500	1	500
200	1	200
190	1	190
<b>6,525</b>		
1,200	2	2,400
150	1	150
200	1	200
1,500	1	1,500
1,500	1	1,500
200	1	200
75	1	75
500	1	500
<b>8,400</b>		
1,200	1	1,200
		-
1,200	1	1,200
1,000	1	1,000
1,000	1	1,000
		-
2,000	1	2,000
		-
2,000	1	2,000

MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments
	25	28,400	
850	20	17,000	825 SF min - 950 SF max
100	20	2,000	use as flexible meeting areas around classrooms
500	2	1,000	
1,440	5	7,200	3 x85% ut=20 Seats-1 per /day/student
200	5	1,000	
200	1	200	
<b>5,040</b>			
950	4	3,800	assumed 8% of pop. in self-contained SPED
60	4	240	
500	1	500	1/2 size Genl. Cirm.
500	1	500	1/2 size Genl. Cirm.
<b>4</b>			
1,200	1	1,200	Assumed use - 25% Population - 5 times/week
150	1	150	
1,500	1	1,500	Assumed use - 25% Population - 5 times/week
1,500	1	1,500	
200	1	200	
75	1	75	
500	1	500	
<b>4</b>			
1,200	2	2,400	Assumed use - 50% Population - 5 times/week
2,000	2	4,000	Assumed use - 50% Population - 5 times/week
			Ch. 74: Auto Tech.
			Ch. 74: Horticulture

Proposed Space Summary - High Schools (ADD / RENO)

7/27/2012

SMMA  
MJA

Monument Mountain		Existing Conditions	
ROOM TYPE	ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>VOCATIONAL TECHNICAL EDUCATION, CHAPTER 74</b>			<b>9,750</b>
Automotive Shop	2,100	1	2,100
Automotive Classroom	735	1	735
Automotive Storage	80	1	80
Agriculture / Horticulture			
Agriculture/Horticulture Lab	636	1	636
Agriculture/Horticulture Classroom	698	1	698
Agriculture/Horticulture Soil Mixing	636	1	636
Agriculture/Horticulture Garage / Storage	1,115	1	1,115
Greenhouse	2,060	1	2,060
Greenhouse	490	1	490
Greenhouse	1,200	1	1,200
<b>HEALTH &amp; PHYSICAL EDUCATION</b>			<b>13,629</b>
Gymnasium	8,400	1	8,400
PE Alternatives	530	1	530
PE Alternatives	390	1	390
(Alternative) New Multi-Purpose Rm			
(Alternative) New Weight / Cardio Rm			
Gym Storeroom	367	1	367
Locker Rooms - Boys / Girls w/ Toilets	997	1	997
Locker Rooms - Boys / Girls w/ Toilets	980	1	980
Locker Rooms - Boys / Girls w/ Toilets	665	1	665
Locker Rooms - Boys / Girls w/ Toilets	565	1	565
Phys. Ed. Storage	90	1	90
Athletic Director's Office	110	2	220
Health Instructor's Office w/ Shower & Toilet	149	2	298
Training Room	127	1	127
<b>MEDIA CENTER</b>			<b>3,464</b>
Media Center / Reading Room	2,779	1	2,779
Media Staff Office	123	1	123
Media Staff Office	180	1	180
Media Staff Office	262	1	262
Media Storage Rm	120	1	120
<b>AUDITORIUM / DRAMA</b>			<b>7,510</b>
Auditorium	5,230	1	5,230
Stage	2,127	1	2,127
Auditorium Storage	0	1	0
Make-up / Dressing Rooms	0	0	0
Controls / Lighting / Projection	153	1	153
<b>DINING &amp; FOOD SERVICE</b>			<b>5,777</b>
Cafeteria / Student Lounge / Break-out	3,076	1	3,076
Chair / Table Storage	0	0	0
Scramble Serving Area	145	1	145
Kitchen	1,720	1	1,720
Staff Lunch Room	730	1	730
Kitchen Office	106	1	106
<b>MEDICAL</b>			<b>632</b>
Medical Suite Toilet	0	0	0
Nurses' Office / Waiting Room	206	1	206
Interview Room	218	1	218
Examination Room / Resting	208	1	208
<b>ADMINISTRATION &amp; GUIDANCE</b>			<b>2,440</b>
General Office / Waiting Room / Toilet	773	1	773
Teachers' Mail and Time Room	0	1	0
Duplicating Room	199	1	199
Records Room	56	1	56
Principal's Office w/ Conference Area	254	1	254
Principal's Secretary / Waiting	0	0	0
Assistant Principal's Office - AP1	150	1	150
Assistant Principal's Office - AP2	0	1	0
Supervisory / Spare Office	0	0	0

PROPOSED		
New		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
<b>10,435</b>		
4,125	1	4,125
2,915		
3,000	1	3,000
6,835		
<b>17,192</b>		
8,400	1	8,400
		-
2,500	1	2,500
1,400	1	1,400
300	1	300
3,192	1	3,192
500	1	500
150	1	150
250	2	500
250	1	250
<b>3,650</b>		
3,650	1	3,650
<b>8,503</b>		
5,230	1	5,230
2,127	1	2,127
393	1	393
300	2	600
153	1	153
<b>6,020</b>		
2,850	1	2,850
300	1	300
600	1	600
1,870	1	1,870
400	1	400
		0
<b>710</b>		
60	1	60
250	1	250
100	1	100
100	3	300
<b>3,708</b>		
300	1	300
100	1	100
200	1	200
200	1	200
375	1	375
125	1	125
150	1	150
150	0	-
120	1	120

MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments
<b>19,392</b>			
12,000	1	12,000	
3,000	1	3,000	
300	1	300	
3,192	1	3,192	5.6 sf/student total
500	1	500	
150	1	150	
250	1	250	
<b>3,650</b>			
3,650	1	3,650	
<b>6,593</b>			
3,800	1	3,800	2/3 Enrollment @ 10 SF/Seat - 750 seats MAX
1,600	1	1,600	
393	1	393	
300	2	600	
200	1	200	
<b>6,020</b>			
2,850	1	2,850	3 seatings - 15SF per seat
300	1	300	
600	1	600	
1,870	1	1,870	1600 SF for first 300 + 1 SF/student Add'l
400	1	400	20 SF/Occupant
<b>710</b>			
60	1	60	
250	1	250	
100	1	100	
100	3	300	
<b>3,370</b>			
300	1	300	
100	1	100	
200	1	200	
200	1	200	
375	1	375	
125	1	125	
150	1	150	
150	0	-	
120	1	120	

**Proposed Space Summary - High Schools (ADD / RENO)**

7/27/2012

SMMA  
MJA


Monument Mountain	Existing Conditions		
	ROOM NFA <sup>1</sup>	# OF RMS	area totals
Conference Room	136	1	136
Guidance Office	140	2	280
Afterschool Program Coord.	85	2	170
Afterschool Program Coord.	168	1	168
Guidance Waiting Room	254	1	254
Guidance Storeroom	0	1	0
Career Center	0	0	0
Records Room	0	0	0
Teachers' Work Room	0	0	0
<b>CUSTODIAL &amp; MAINTENANCE</b>			<b>1,980</b>
Custodian's Office	161	1	161
Custodian's Workshop	272	1	272
Custodian's Storage	25	4	100
Recycling Room / Trash	197	1	197
Receiving and General Supply	1,190	1	1,190
Storeroom	60	1	60
Network / Telecom Room	0	0	0
<b>OTHER</b>			<b>1,090</b>
Student Center	1,090	1	1,090
Total Building Net Floor Area (NFA) without Chapter 74 Programs			<b>78,439</b>
Chapter 74 - Auto			<b>2,915</b>
Chapter 74 - Hort			<b>6,835</b>
<b>Total Campus Net</b>	existing		<b>88,189</b>
Proposed Student Capacity / Enrollment			
<b>Total Campus Gross Floor Area (GFA)<sup>2</sup></b>			<b>122,591</b>
Grossing factor (GFA/NFA)			<b>1.39</b>

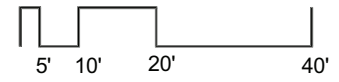
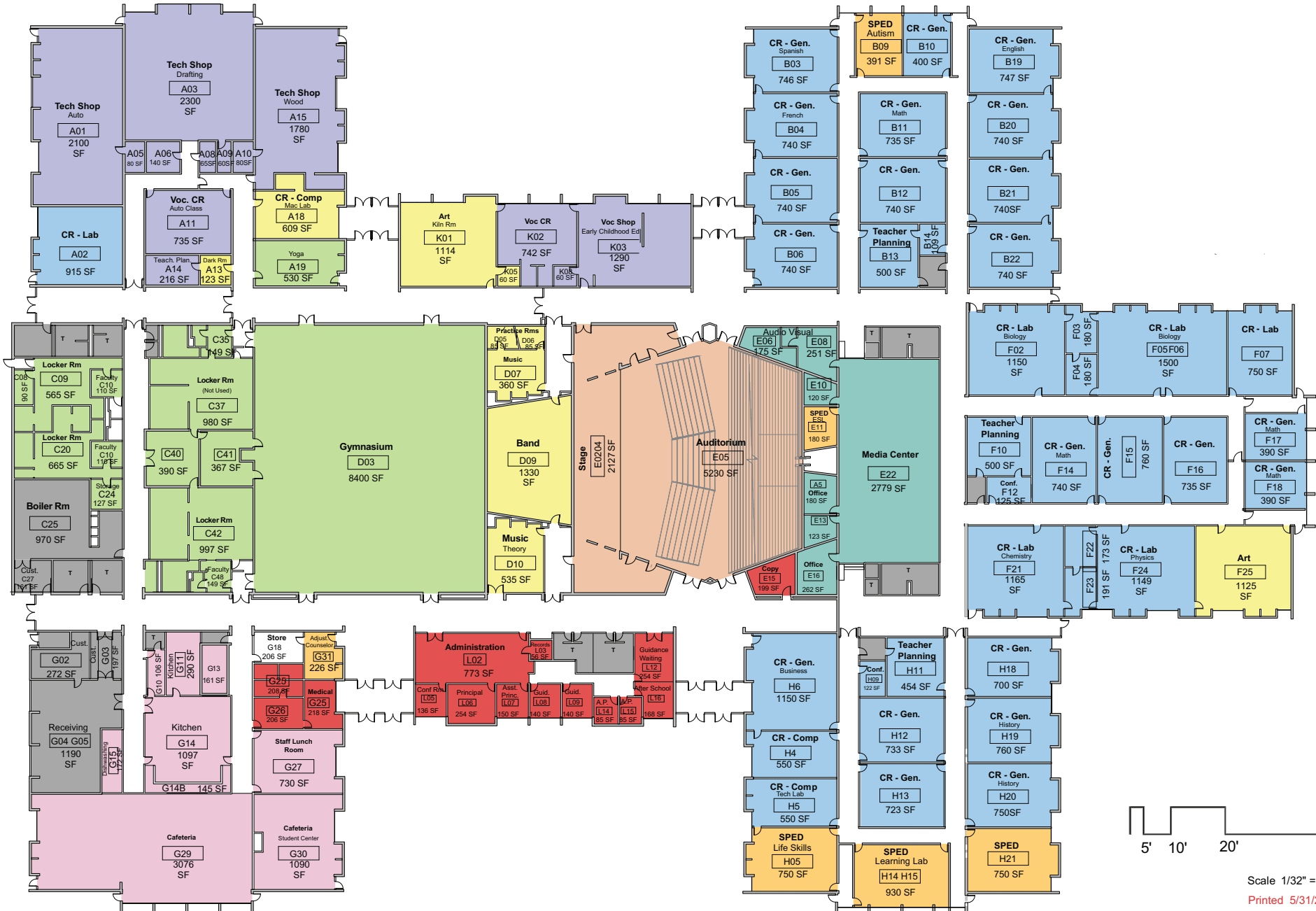
PROPOSED		
New		
ROOM NFA <sup>1</sup>	# OF RMS	area totals
450	1	450
150	3	450
85	2	170
168	1	168
100	1	100
100	1	100
300	1	300
100	1	100
300	1	300
		<b>2,075</b>
150	1	150
250	1	250
375	1	375
400	1	400
300	1	300
400	1	400
200	1	200
		<b>1,100</b>
1,100	1	1,100
		<b>95,103</b>
		<b>4,125</b>
		<b>6,310</b>
existing w/ additions		<b>105,538</b>
		<b>156,675</b>
		<b>1.48</b>

MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
ROOM NFA <sup>1</sup>	# OF RMS	area totals	Comments
450	1	450	
150	3	450	
100	1	100	
100	1	100	
300	1	300	
100	1	100	
300	1	300	
		<b>2,075</b>	
150	1	150	
250	1	250	
375	1	375	
400	1	400	
300	1	300	
400	1	400	
200	1	200	
		<b>0</b>	
		<b>86,775</b>	
		<b>570</b>	226
		<b>128,820</b>	
		<b>1.48</b>	

<sup>1</sup> Individual Room Net Floor Area (NFA) Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storerooms.

<sup>2</sup> Total Building Gross Floor Area (GFA) Includes the entire building gross square footage measured from the outside face of exterior walls.

<p><b>Architect Certification</b></p> <p>I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.</p> <p align="center"><b>Name of Architect Firm:</b> Symmes Maini McKee Associates, Inc _____</p> <p align="center"><b>Name of Principal Architect:</b> Philip J. Poinelli, FAIA _____</p> <p align="center"><b>Signature of Principal Architect:</b>  _____</p> <p align="center"><b>Date:</b> Friday, July 27, 2012 _____</p>
--



Scale 1/32" = 1'-0"  
 Printed 5/31/2012



**Basic Educational Space  
for Planned Program**

**ENGLISH**

**570 STUDENTS**

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>ENGLISH</b>									
003	Honors English 9	64	24	3	5.0	15	35	0.43	
006	CP English 9	44	24	2	5.0	10	35	0.29	
007	ST English 9	13	24	1	5.0	5.0	35	0.14	
008	CP English 10	43	24	2	5.0	10.0	35	0.29	
009	Honors English 10	69	24	3	5.0	15.0	35	0.43	
013	ST English 10	9	24	1	5.0	5.0	35	0.14	
014	Honors Contemporary Fiction	62	24	3	2.5	7.5	35	0.21	Semester
018	CP Contemporary Fiction	49	24	2	2.5	5.0	35	0.14	Semester
020	ST Contemporary Fiction	14	24	1	2.5	2.5	35	0.07	Semester
022	Honors Contemp Non-Fiction	30	24	2	2.5	5.0	35	0.14	Semester
024	CP Contemp Non-Fiction	32	24	2	2.5	5.0	35	0.14	Semester
026	ST Contemp Non-Fiction	17	24	1	2.5	2.5	35	0.07	Semester
028	Honors College Writing	55	24	3	2.5	7.5	35	0.21	Semester
030	CP College Writing	74	24	3	2.5	7.5	35	0.21	Semester
033	CP Business Writing	28	24	2	2.5	5.0	35	0.14	Semester
034	ST Business Writing	15	24	1	2.5	2.5	35	0.07	Semester
053	Honors Journalism	39	24	2	2.5	5.0	35	0.14	Semester
054	CP Journalism	19	24	1	2.5	2.5	35	0.07	Semester
055	Classics	37	24	2	2.5	5.0	35	0.14	Semester
056	Creative Writing	63	24	3	2.5	7.5	35	0.21	Semester
057	AP Language & Composition	20	24	1	5.0	5.0	35	0.14	
058	AP Literature & Composition	15	24	1	5.0	5.0	35	0.14	
099	Fact and Fiction	29	24	2	10.0	20.0	35	0.57	
801	Acting and Directing	28	24	2	5.0	10.0	35	0.29	
810	Advanced Drama F	28	24	2	2.5	5.0	35	0.14	Semester
812	Advanced Drama S	28	24	2	2.5	5.0	35	0.14	Semester
								5.14	
						<b>5.14</b>	<b>/ .85 =</b>	<b>6.1</b>	<b>Say 6</b>
	<b>ENGLISH SUBTOTAL</b>	<b>924</b>							<b>ASSUME 6 ENGLISH CLASSROOMS</b>

**Basic Educational Space  
for Planned Program**

**ENGLISH**

**570 STUDENTS**

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
	<b>ENGLISH</b>								
	Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.								



Basic Educational Space  
for Planned Program

**SOCIAL STUDIES**

570 STUDENTS

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>SOCIAL STUDIES</b>									
101	H Social Studies 9	69	24	3	5.0	15	35	0.43	
103	CP Social Studies 9	49	24	2	5.0	10	35	0.29	
105	ST Social Studies 9	10	24	1	5.0	5	35	0.14	
107	Honors US History	55	24	3	5.0	15	35	0.43	
109	CP US History	59	24	3	5.0	15	35	0.43	
111	ST US History	10	24	1	5.0	5	35	0.14	
112	Politics	9	24	1	2.5	2.5	35	0.07	Semester
114	Sociology	29	24	2	2.5	5	35	0.14	Semester
115	Global Village	12	24	1	2.5	2.5	35	0.07	Semester
116	Psychology 1	54	24	3	2.5	7.5	35	0.21	Semester
118	Psychology 2	19	24	2	2.5	5	35	0.14	Semester
122	Life / Death	17	24	1	2.5	2.5	35	0.07	Semester
124	Berkshire History	44	24	2	2.5	5	35	0.14	Semester
128	Discovering Psychology	14	24	1	2.5	2.5	35	0.07	Semester
133	European History Honors	33	24	2	2.5	5	35	0.14	Semester
134	Discovering Current Issues	42	24	2	2.5	5	35	0.14	Semester
166	Philosophy	72	24	3	2.5	7.5	35	0.21	Semester
164	American Culture	11	24	1	2.5	2.5	35	0.07	Semester
169	Ancient Civilization and Warfare	18	24	1	2.5	2.5	35	0.07	Semester
170	Civics and Economics	11	24	1	2.5	2.5	35	0.07	Semester
								3.50	
						<b>3.50</b>	<b>/ .85 =</b>	<b>4.1</b>	<b>Say 4</b>
	<b>SOCIAL STUDIES SUBTOTAL</b>	<b>637</b>							<b>ASSUME 4 SOCIAL STUDIES CLASSROOMS</b>
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									

Basic Educational Space  
for Planned Program

**WORLD LANGUAGES**

570 Students

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	
Course No.	Subject	Projected Students, Ea. Class	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>WORLD LANGUAGE</b>									
401	French I	5	24	1	5.0	5.0	35	0.14	
403	French II	37	24	2	5.0	10.0	35	0.29	
407	French Culture	6	24	1	5.0	5.0	35	0.14	
442	French 3	28	24	2	5.0	10.0	35	0.29	
								0.86	say 1
415	Spanish 1	34	24	2	5.0	10.0	35	0.29	
417	Spanish 2	90	24	4	5.0	20.0	35	0.57	
421/427	Spanish 4 & 5	11	24	1	5.0	5.0	35	0.14	
429	AP Spanish	11	24	1	5.0	5.0	35	0.14	
443	Spanish 3	49	24	2	5.0	10.0	35	0.29	
								1.43	say 2
441	Latin and Comparative Lang.	12	24	1	5.0	5.0	35	0.14	
	<b>TOTAL</b>	<b>283</b>						<b>2.43</b>	Combined
						<b>2.43</b>	<b>/ .85 =</b>	<b>2.9</b>	<b>Say 3</b>

Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.

Basic Educational Space  
for Planned Program

MATH

570 STUDENTS

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>MATHEMATICS</b>									
205	Algebra 1	62	24	3	5.00	15.0	35	0.43	
207	Algebra 2	53	24	3	5.00	15.0	35	0.43	
209	Fundamentals of Algebra 1	13	24	1	5.00	5.0	35	0.14	
211	Fundamentals of Algebra 2	15	24	1	5.00	5.0	35	0.14	
214	Fundamentals of Geometry	16	24	1	5.00	5.0	35	0.14	
215	CP Calculus	13	24	1	5.00	5.0	35	0.14	
218	Honors Algebra 1	19	24	1	5.00	5.0	35	0.14	
220	Honors Algebra 2	63	24	3	5.00	15.0	35	0.43	
223	AP Calculus	20	24	1	5.00	5.0	35	0.14	
225	Probability	14	24	1	2.50	2.5	35	0.07	Semester
227	Applied Math	24	24	1	5.00	5.0	35	0.14	
228	Statistics	11	24	1	2.50	2.5	35	0.07	Semester
230	Honors Pre-Calculus	31	24	2	5.00	10.0	35	0.29	
232	Honors Geometry	65	24	3	5.00	15.0	35	0.43	
281	CP Pre-Calculus	45	24	2	5.00	10.0	35	0.29	
282	CP Geometry	65	24	3	5.00	15.0	35	0.43	
								3.86	
						<b>3.86</b>	<b>/ .85 =</b>	<b>4.5</b>	<b>Say 5</b>
	<b>MATHEMATICS SUBTOTAL</b>	<b>529</b>							<b>ASSUME 5 MATH CLASSROOMS</b>

Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom

**Basic Educational Space  
for Planned Program**

**SCIENCE**

**570 STUDENTS**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
	<b>Biology</b>								
301	CP Biology	49	24	2	7.5	15.0	35	0.43	
305	Honors Biology	87	24	4	7.5	30.0	35	0.86	
315	Anatomy & Physiology	29	24	2	7.5	15.0	35	0.43	
318	Honors Anatomy & Physiology	35	24	2	7.5	15.0	35	0.43	
343	Biology AP	20	24	1	7.5	7.5	35	0.21	
376	Fundamentals of Biology	12	24	1	5.0	5.0	35	0.14	
514	People and their Environment	30	24	1	2.5	2.5	35	0.07	
								2.57	
						<b>2.57</b>	<b>/.85 =</b>	<b>3.0</b>	say 3
	<b>Physics</b>								
313	CP Physics	11	24	1	7.5	7.5	35	0.21	
327	Honors Physics	11	24	1	7.5	7.5	35	0.21	
336	Honors Science & Technology	21	24	1	5	5	35	0.14	
337	Science & Technology	38	24	2	5	10	35	0.29	
338	ST Science & Technology	7	24	1	5	5	35	0.14	
369	Honors Introduction to Physics	35	24	2	5	10	35	0.29	
371	CP Introduction to Physics	15	24	1	5	5	35	0.14	
372	Fundamentals of Physics	9	24	1	5	5	35	0.14	
								1.57	
						<b>1.57</b>	<b>/.85 =</b>	<b>1.8</b>	Say 2
	<b>Chemistry</b>								
307	Honors Chemistry 1	46	24	2	7.7	15.4	35	0.44	
309	CP Chemistry 1	60	24	3	7.5	22.5	20	1.13	
311	AP Chemistry	20	24	1	7.5	7.5	20	0.38	
								1.94	
						<b>1.94</b>	<b>/.85 =</b>	<b>2.28</b>	Say 2
	<b>SCIENCE SUBTOTAL</b>	<b>535</b>							

Currently 6

**Basic Educational Space  
for Planned Program**

**SCIENCE**

**570 STUDENTS**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>			
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments		
	Interhangeable labs					2.57					
						1.57					
						1.94					
						<b>6.08</b>		<table border="1" style="display: inline-table;"><tr><td><b>/.85 =</b></td><td><b>7.2</b></td></tr></table>	<b>/.85 =</b>	<b>7.2</b>	
<b>/.85 =</b>	<b>7.2</b>										
	<b>NOTE: All science courses are to be taught in a lecture / lab</b>					<b>ASSUME 7 or 8 SCIENCE LECTURE / LABS</b>					
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.											

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>Business &amp; Computer</b>									
602	Web Page Design	30	24	2	2.5	5	35	0.14	computer lab
603	Virtual Enterprise	9	24	1	10	10	35	0.29	
604	Computer Management	50	24	2	2.5	5	35	0.14	computer lab
623	Business Management	5		1	5	5	35	0.14	
650	Accounting	10	24	1	5	5	35	0.14	
734	Advanced Computer Management	9	24	1	2.5	2.5	35	0.07	
916	Business Law	22	24	1	2.5	2.5	35	0.07	
928	Marketing	17	24	1	2.5	2.5	35	0.07	
								1.07	
						<b>1.07</b>	<b>/ .85 =</b>	<b>1.26</b>	
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									

Basic Educational Space  
for Planned Program

ART

570 STUDENTS

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>FINE ARTS</b>									
<b>3D</b>									
818	Ceramics 1	53	24	3	2.5	7.5	35	0.21	Semester
828	Sculpture / 3D Design 1	10	24	1	2.5	2.5	35	0.07	Semester
836	Ceramics 2	9	24	1	2.5	2.5	35	0.07	Semester
								0.36	
						<b>0.36</b>	<b>/ .85 =</b>	<b>0.42</b>	
<b>2D</b>									
820	Foundation Art 1	99	24	4	2.5	10	35	0.29	Semester
822	Foundation Art 2	85	24	4	2.5	10	35	0.29	Semester
824	Advanced Art	34	24	2	2.5	5	35	0.14	Semester
826	Studio Art	18	24	1	2.5	2.5	35	0.07	Semester
838	Drawing	17	24	1	2.5	2.5	35	0.07	Semester
								0.86	
						<b>0.86</b>	<b>/ .85 =</b>	<b>1.01</b>	
<b>Computer Art</b>									
830	Design Computer Graphics	23	18	2	2.5	5	35	0.14	Semester
835	Portfolio	32	18	2	2.5	5	35	0.14	Semester
								0.29	
						<b>0.29</b>	<b>/ .85 =</b>	<b>0.34</b>	
611	Photography	73	15	5	2.5	12.5	35	0.36	
<b>FINE ARTS SUBTOTAL</b>		<b>453</b>							
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									

Basic Educational Space  
for Planned Program

**MUSIC**

570 Students

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>MUSIC</b>									
803	Band	74	74	1	5	5	35	0.14	
809	Orchestra	27	27	1	5	5	35	0.14	
807	Music Theory	19	25	1	5	5	35	0.14	
								0.43	
						0.43	/ .85 =	<b>0.50</b>	
805	Chorus	46	46	1	5	5	20	0.25	
806	Chorus .5	5	24	1	2.5	2.5	20	0.13	Semester
814 & 816	Music Appreciation 1 & 2	12	24	1	2.5	2.5	20	0.13	
								0.50	
						<b>0.50</b>	/ .85 =	<b>0.59</b>	
									<b>ASSUME 2 MUSIC ROOMS</b>
	<b>MUSIC SUBTOTAL</b>	183							
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									



**Health and PE**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
	<b>Health</b>								
	Health		18		1.25	0	20	0.00	
								0.00	
						<b>0.00</b>	<b>/ .85 =</b>	<b>0.0</b>	one required
	<b>Physical Education</b>								
501	Physical Education 9/10	262	35	8	2.5	20	35	0.57	Semester
503	Physical Education 9/10 L	23	35	1	2.5	2.5	35	0.07	
505	Physical Education 11/12	117	35	4	2.5	10	35	0.29	
507	Physical Education 11/12 L	9	35	1	2.5	2.5	35	0.07	
513	Alternate PE 11/12	49	35	2	2.5	5	35	0.14	
						0		1.14	
						<b>1.14</b>	<b>0.85</b>	<b>1.34</b>	
	<b>PHYS. ED. SUBTOTAL</b>	<b>460</b>							<b>ASSUME _ PHYS. ED. STATIONS</b>
	Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.								

Basic Educational Space  
for Planned Program

Vocational - Chapter 74 Programs

570 Students

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>Vocational Chapter 74 Programs</b>									
709	Automotive 1	12	15	1	10.0	10.0	35	0.29	
710	Automotive .5	22	15	2	5.0	10.0	35	0.29	Semester
711	Automotive 2	28	15	1	10.0	10.0	35	0.29	
756	Intro to Mechanics	32	16	3	2.5	7.5	35	0.21	
								1.07	
	<b>Automotive Subtotal</b>	<b>94</b>				1.07	<b>/ .85 =</b>	<b>1.43</b>	
701	Agriculture 1	11	20	1	10	10	35	0.29	
703	Agriculture 2	8	20	1	10	10	35	0.29	
708	Agriculture .5	5	20	1	5	5	35	0.14	Semester
755	Intro Aggriculture	14	20	1	10	10	35	0.29	
								1.00	
						1.00	<b>/ .85 =</b>	<b>1.18</b>	
	<b>Agriculture Subtotal</b>	<b>38</b>							
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>Technology Education</b>									
733	Woodworking	23	20	2	5	10	35	0.29	
735	Advanced Woodworking	15	20	1	5	5	35	0.14	
607	Building Design Technology	10	20	1	2.5	2.5	35	0.07	
609	Construction Skills	15	20	1	2.5	2.5	35	0.07	
								0.57	
						0.57	/ .85 =	<b>0.76</b>	
736	Computer Repair Net +	3	20	1	2.5	2.5	35	0.07	
622	Program Python	18	20	1	2.5	2.5	35	0.07	
736	Net Plus	4	20	1	2.5	2.5	35	0.07	
								0.21	
						<b>0.07</b>	/ .85 =	<b>0.08</b>	
745	MMTV	48	20	3	2.5	7.5	35	0.21	
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									

Basic Educational Space  
for Planned Program

Family Consumer Science

570 STUDENTS

	A	B	C	D	E	F	G	H	
Course No.	Subject	Projected Students, per Subject	Class Size	Sections	Sessions Per Week	Total Sessions	Periods Per Week	Total Stations Required	Comments
<b>Family and Consumer Science</b>									
740	Foods	32	20	2	5.0	10.0	35	0.29	
								0.29	
						0.3	<b>/ .85 =</b>	<b>0.38</b>	
743	Pre-Kindergarten Program	46	15	3	5.0	15.0	35	0.43	
738	Nursary School	10	15	1	5.0	5.0	35	0.14	
744	Exploring Childhood	12	15	1	2.5	2.5	35	0.07	
								0.64	
						<b>0.64</b>	<b>/ .85 =</b>	<b>0.76</b>	
Courses listed as "Semester" are adjusted to Full Time Equivalent (FTE). This is done by reducing "sessions per week" by half to give an equivalent year classroom requirement.									

		Classrooms Required	Current Classrooms	Comments
Core Academic				
	English	6		
	Social Studies	4		
	World Languages	3		
	Math	5		
	Health	1	0	none currently
	Business & Computer			
	Classroom	1		
	Computer lab	1		
	<b>Classroom total</b>	<b>21</b>		
	Science			
	Biology	3		
	Physics	2		
	Chemistry	2		
	<b>Sci Total</b>	<b>7</b>		
Special Education				
Art and Music				
	Art 2D	1	1	
	Art 3D	1	1	
	Darkroom	1	1	very small currently, larger proposed
	Band / Orchestra	1		
	Chorus / Music App	1		
Vocational & Technology				
	Wood or other shop	1		
	Computer repair, etc	1		
	Foods	1		
	Early Childhood	1		
Vocational Chapter 74				
	Auto Shop	1	1	
	Agriculture CR/Lab	1		
Health and Physical Education				



**MEMORANDUM**

To: Monument Mountain HS SBC Date: 5/30/2012  
From: Alex Pitkin Project No.: 12029.00  
Project: Monument Mountain Regional High School  
Re: Project Goals  
Distribution: SBC (MF)

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The intent of this document is to facilitate goal setting for the High School and to establish the criteria by which the SBC will evaluate the Construction Alternatives in Section Five (5.4) of the Preliminary Design program submission.. Since first thoughts are often the best or most important, begin by listing the goals that are the “most intuitively important” next to each aspect of the project:

**COMMITTEE**

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**PROCESS**

---

**EDUCATION**

---

**COMMUNITY**

---

**BUILDING**

---

**SITE**

---

**CONSTRUCTION**

---

To: MMRHS SBC  
Date: 5/30/2012

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The following list is intended to consolidate and build upon the School Building Committee's list of goals for the high school project. Edit the following list of goals down to those which are appropriate for Monument Mountain Regional High School:

#### **COMMITTEE**

#### **PROCESS**

- Results in a schedule efficient design
- Conduct timely community information meetings and program of outreach through a variety of means, including social media, website and student involvement
- Engage key stakeholders
- Develop best project solution and champion it to the community

#### **EDUCATION**

- Provides flexibility to accommodate future educational needs and instructional practices, including a greater emphasis on project-based learning, interdisciplinary instruction, 21<sup>st</sup> century skills, collaboration, and exhibition of student work.
- Maintains the unique "feel" and qualities of the current building and program
- Promotes and enhances educational excellence in all program areas, with a particular emphasis on state-of-the-art facilities for science, technology, and "the arts".
- Creates a state-of-the-art media center at the heart of the school
- Creates the environment to integrate the arts into core curriculum
- Maximizes use of technology to enhance learning
- Supports Special Education with appropriate spaces, facilities and program
- Provides appropriate facilities for PE, fitness for life and athletics programs
- Creates informal gathering spaces to enhance the student experience

#### **COMMUNITY**

- Maximizes Sustainable and green building strategies
- Maximizes community use / access potential
- Provides secured community access
- Is a resource and gathering place for residents
- Provides parking and circulation for special events



## **BUILDING**

- A cost effective design
- Is cost effective to maintain
- Aesthetically improves the exterior of the building
- Creates a sense of community within the facility
- Maximizes natural daylight and sustainable design opportunities
- Maximizes student display prominently throughout
- Addresses safety and security needs
- Provides a School Store
- Maximizes sustainable design opportunities
- High standard for indoor air quality
- Considers various systems of thermal comfort for year round use

## **SITE**

- Is integrated with the natural elements surrounding the site
- Optimizes site circulation for drop-off and pick-up
- Accommodates traffic safety concerns
- Maximizes accessibility to all points of the campus
- Provides sufficient parking for teachers, staff and visitors
- Accommodates neighborhood walkers and bicyclists
- Creates/improves outdoor learning spaces
- Creates an identifiable front door

## **CONSTRUCTION**

- Minimizes impacts to learning for students and staff during construction

Lastly, consolidate/refine the list of goals into the most differentiated and relevant criteria by which the SBC might judge or compare the conceptual options in order to arrive at the preferred schematic solution as required by the MSBA process. The goals and criteria matrix should serve as a reference throughout all phases of design.



OPTIONS CRITERIA MATRIX

CRITERIA	Conceptual Design Options				
	Option 1A Base Repair (No Build)	Option 2A Add/Reno 1	Option 3A Add/Reno 2	Option 4A Add/Reno 3	Option 5A All New
<b>Students **</b>	570	570	570	570	570
<b>Total Gross Area (Square Feet)</b>					
<b>Total Approximate Project Cost *</b>					
<b>Approximate Construction Commencement Date</b>					
<b>Approximate Construction Duration</b>	___ months	___ months	___ months	___ months	___ months
<b>PROCESS</b>					
Supportable by each community					
Maximize State reimbursement to communities					
<b>Educational - Propose a facility which:</b>					
Fosters a safe, positive learning environment and increases opportunities for students and teachers					
Flexibility to accommodate current and future educational needs					
State-of-the-art facilities for science, technology and the arts					
Creates informal gathering spaces					
Maximizes useable space for educational programming , considers the entire school and site for learning					
Large and Small Group Instruction Spaces					
Supports teaches with appropriate work spaces outside the classroom for: collaboration on curriculum to support the educational goals; professional development					
Meets all programmatic goals of the school community					
Modernizes and expands athletic spaces					
<b>Community - Propose a project that:</b>					
Maximizes sustainable and green design strategies					
Promotes use by all communities					
Reflects the values of all communities					
Connects to nature					
Provides spaces for community use					
Increases building rental opportunities					
<b>Building - Propose a project in which the building:</b>					
Maximizes sustainable design opportunities					
Cost effective to operate and maintain					
Is a cost effective design with emphasis on "value for the investment"					
Safety and security requirements are met					
Inspires student learning through a well designed and comfortable environment where people want to attend and participate					
Creates clear and logical student circulation					
Maximizes use of natural light					
Improves indoor air quality					
Provides appropriate and visible entrance(s)					
Considers Net Zero Systems - particularly for the future					
Provides Emergency Shelter					
Modernizes All Systems					
Sufficient storage to support programs					
<b>Site - Propose a project in which the site:</b>					
Creates clear and logical building accessibility for services as well as people, traffic and pedestrian flow, parking, and public spaces					
Separates Drop Off/Pick Up traffic flow and entrance access					
Creates educational campus with elementary and middle schools					
Improves Route 7 Street Exit / Entry					
Provides accessible and appropriate outdoor pedestrian circulation					
Upgrades Exterior Sports Facilities					
Provides outdoor learning spaces					

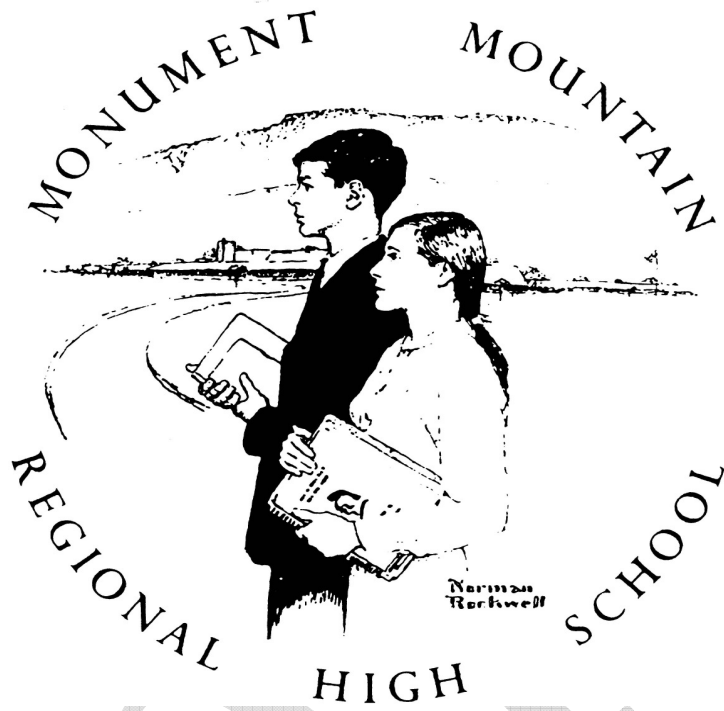
OPTIONS CRITERIA MATRIX

CRITERIA	Conceptual Design Options				
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Students **	570	570	570	570	570
Total Gross Area (Square Feet)					
Total Approximate Project Cost *					
Approximate Construction Commencement Date					
Approximate Construction Duration	___ months	___ months	___ months	___ months	___ months
<b>Construction - Propose a project that:</b>					
Is cost effective					
Minimizes impact to students					
Is cost effective					

Legend		
<input type="radio"/>	1	= Does not meet criteria or no change
<input type="radio"/>	2	= Partially meets criteria or minimal change
<input type="radio"/>	3	= meets or exceeds criteria

DRAFT

# Program of Studies



2011 – 2012

**BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT**

**SCHOOL COMMITTEE**

Mr. Stephen Bannon, Chairman  
Mr. Richard Coons, Vice Chairman  
Ms. Christine Shelton, Secretary  
Ms. Andrea Wadsworth, Treasurer  
Ms. Deborah Kain, Assistant Treasurer

Mr. Alan Wilken  
Mr. John Krahm  
Mr. Fred Clark

Ms. Carol Kuller  
Mr. Dan Weston  
Mr. Richard Bradway

**ADMINISTRATION**

SUPERINTENDENT OF SCHOOLS  
Dr. Peter Dillon

DIRECTOR OF STUDENT SERVICES  
Mr. Thomas Simon

DIRECTOR OF TEACHING AND LEARNING  
Dr. Susan Engel

TECHNOLOGY ADMINISTRATOR  
Mr. Diego Solis

BUSINESS ADMINISTRATOR  
Ms. Sharon Harrison

ASSISTANT BUSINESS ADMINISTRATOR  
Mr. Steven Soule

MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
Ms. Marianne Young, Principal  
Mr. Scott Annand, Assistant Principal

GUIDANCE DEPARTMENT  
Mr. Michael Powell, Guidance Counselor  
Mr. Sean Flynn, Guidance Counselor  
Ms. Loren Lauffer, Guidance Counselor  
Ms. Marcie Velasco, Guidance Counselor

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## PROGRAM OF STUDIES

Dear Students and Families of Monument Mountain Regional High School:

With the reading of this Program of Studies, you begin the process of selecting and scheduling your educational program for the upcoming school year as well as setting a course of study for the years to come. Together with your parents and guidance counselor, you will be putting together an educational plan, a plan that can help to shape your future.

The MMRHS Program of Studies has been developed through the cooperative efforts of all academic departments, guidance, and the administration. This Program of Studies outlines the courses that each department offers and graduation requirements as well. We are proud to be able to offer a wide range of academic, technical and vocational courses.

We encourage you to widen your scope of study to include both core courses and electives from a variety of disciplines to create a schedule that meets both our graduation requirements and your individual interests. It is our goal to provide you days at school in which you will find success and enjoyment in learning.

Again, give this Program of Studies your attention and consideration. The faculty, staff and administration of Monument Mountain Regional High School are committed to providing you a valuable and memorable educational experience.

Respectfully, and on behalf of the MMRHS Faculty and Administration,

*Marianne R. Young*  
Marianne R. Young  
Principal



## EDUCATIONAL LEGISLATION

### CHAPTER 766 / SPECIAL NEEDS REFERRAL POLICY

The Principal or Assistant Principal shall determine whether a referral should be made under Chapter 766 if any of the following conditions exist:

- a. Any child who at midyear presents a substantial risk of non-promotion. For purposes of this paragraph, a substantial risk of non-promotion shall be considered to exist if a child is failing in two or more non-elective subjects.
- b. Any child who fails to be promoted at the end of the year.
- c. Any child who has been suspended for more than five school days in any quarter or excluded from school.
- d. Any child who has been absent without a medical excuse for more than fifteen school days in any quarter.
- e. Any child, age sixteen through twenty-one, who is planning to leave school without a high school diploma.

### TITLE IX / CHAPTER 622 REGULATIONS

In accordance with Title IX regulations of the Education amendments of 1972, and Chapter 622 of the General Laws of Massachusetts, Acts of 1971, the Berkshire Hills Regional School District restates its adherence to the following policies.

Title IX states: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal Funds."

Chapter 622 of the General Laws states: "No person shall be excluded from or discriminated against in admission to a public school of any town, or in obtaining the advantages, privileges and courses of study of such public school on account of race, color, sex, religion, national origin or sexual orientation.

Information on Grievance Procedures for any of the above regulations is available as is any information relative to the regulations. For information please contact:

Assistant Principal

Title IX / Chapter 622 Coordinator

Monument Mountain Regional High School

Great Barrington, MA 01230

telephone: 413-528-3346

## STATEMENT OF PHILOSOPHY

We, the faculty and administration of Monument Mountain Regional High School, seek to provide an educational experience that promotes intellectual growth, fosters a love of learning, and prepares students for the challenges, responsibilities and opportunities that they will face. Through cooperation with the home and the community, the school encourages students to know and understand themselves, their associates, their communities and the world. We nurture both individuality and respect for human dignity within a safe yet open environment.

The school offers diverse programs to cultivate our students' physical and mental awareness, to develop critical and creative thinking, and to encourage active involvement in society. Students have a voice in formulating school policies, in developing curricular and co-curricular activities and in designing independent learning experiences. Based upon the principles stated above, we believe that an important component of the educational process is to offer students the knowledge and experiences to empower them to shape their own values and conclusions.

## MISSION STATEMENT

The Monument Mountain Regional High School community creates opportunities that foster intellectual and personal growth and challenge all to become courageous learners, engaged citizens, and individuals of integrity.

## EXPECTATIONS FOR STUDENT PERFORMANCE

### ACADEMIC

1. Students will communicate effectively.
2. Students will locate, analyze, evaluate, and use information effectively and with integrity.
3. Students will make connections across disciplines and identify interrelations with life experiences.
4. Students will demonstrate creative and analytical thinking.

### SOCIAL:

1. Students will respect themselves and others.
2. Students will make informed decisions regarding their health and well-being.
3. Students will participate appropriately in school activities.

### CIVIC:

1. Students will contribute positively to the school community.  
Students will contribute positively to the larger community.

## SCHOLASTIC INFORMATION

The course selection process for students at Monument Mountain Regional High School is one that is geared toward student growth. Students will select their program of study for the following school year in March. Prior to the actual selection, time is set aside for students to explore the various courses and to consult with teachers, counselors and parents.

Changes in programs can be accomplished in June and during the summer. Changes in programs, during the actual school year however, are difficult and many times impossible. Most course change requests will be made only for the following reasons: obvious scheduling errors, to meet graduation requirements and by administrator or teacher recommendation.

In planning your program each year, serious thought should be given to your post-high school plans. The kind of programs pursued in high school will affect school and college admissions as well as job opportunities available to you.

Students are strongly urged to select courses from all departments within the school rather than limiting your choices to one field. Experiencing a variety of programs may introduce you to a new area of interest never before considered as a possible career. Students in a college preparatory program, once college entrance requirements are fulfilled, are encouraged to take courses in art, business, family and consumer science and technology education. Business students, vocational students, and technology education majors should also explore possibilities within other departments of the high school. You will never know where your aptitudes or interests lie unless you allow yourself the opportunity to get involved in a variety of experiences.

Students who plan to enter college upon graduation must be certain that their courses reflect a challenge to their academic potential. Colleges look at the senior program carefully for signs of involvement in challenging courses of an academic nature.

<b>COURSE CREDIT</b>
----------------------

Any course which meets the equivalent of at least one period each day for five days each week for the full school year receives 1 unit of credit.

Any course that meets the equivalent of at least one period each day for five days each week for one-half of the school year receives .5 unit of credit.

Students who have successfully completed the following courses at Monument Valley Middle School or an equivalent middle school may receive credit toward high school graduation requirements as noted below:

Algebra I	1 Credit
Two years of French	1 Credit
Two years of Spanish	1 Credit

No credit will be given for completion of only one year of foreign language at the middle school level.

**MINIMUM COURSE ENROLLMENT**

Insufficient enrollment may result in a course not being offered.

## GRADUATION REQUIREMENTS

All students must earn a minimum number of credits in the following subject areas:

COURSES	CREDITS
English	4
Social Studies (1)	3
Science (2)	3
Mathematics	3
Physical Education	1.5
The Arts (3)	1
Career – Technical – Vocational (CVTE) (4)	1

Required Credits .....	16.5
Elective Credits .....	7
 Total Credits Needed .....	 23.5

(1) Social Studies 9 and U.S. History are required.

(2) Students must select Biology and one physical science: Introduction to Physics, Science and Technology, Chemistry, or Physics.

(3) One full credit must be attained in one or a combination of the following courses:

<b>Art</b>	<b>Music</b>	<b>Drama</b>
Advanced Art	Band	Acting and Directing
Portfolio	Chorus	Advanced Drama
Ceramics I, II	Music Theory	
Design & Computer Graphics	Orchestra	
Foundation Art I		
Foundation Art II		
Sculpture/3D Design I		
Studio Art		
Drawing		

(4) One credit must be earned in one of the following CVTE courses:

<b>Business and Computers</b>	<b>Technology Education</b>	<b>Vocational</b>
Computer Management	Building Design	Automotive
Business Management	Woodworking	Pre-School Program
Advanced Computer Management	Science & Technology	
Virtual Enterprise	Construction Skills	
	Advanced Woodworking	
	Web Page Design	
	Computer Repair A+	
	Computer Repair Net+	

Elective credits may be earned in any of the courses of study offered at Monument.

<b>ADMISSION STANDARDS TO MASSACHUSETTS COLLEGES and UNIVERSITIES</b>
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For a guide to help understand Massachusetts Board of Higher Education minimum standards for admission to the Commonwealth's four year public institutions go to <http://www.mass.edu>

Minimum Required Grade Point Average (GPA)

The GPA must be achieved based on all college preparatory courses completed at the time of application and should be weighted for accelerated (Honors or Advanced Placement) courses. The minimum GPA requirements is 3.0 (83 average for MMRHS students).

SAT Scores - Applicants who meet the GPA requirement do not have to use the sliding scale for admission, but still must submit SAT or ACT test scores for consideration if they are applying to a state college or UMass within three years of high school graduation .

Sliding Scale (used when GPA is lower than the minimum required GPA)

If an applicant's GPA falls below the required minimum, a sliding scale will apply. This scale should be used only when an applicant's GPA falls below the required minimum for admission to the state colleges or UMass, as outlined in the GPA table on the previous page.

Sliding Scale for Freshman Applicants to UMass

High School GPA	Combined SAT-I V&M Must Equal or Exceed (ACT Equivalent in Italics)
2.51-2.99	950 (20)
2.41-2.50	990 (21)
2.31-2.40	1030 (22)
2.21-2.30	1070 (23)
2.11-2.20	1110 (24)
2.00-2.10	1150 (25)

**EFFECTIVE FALL 2000, NO APPLICANT WITH A HIGH SCHOOL GPA BELOW 2.00 MAY BE ADMITTED TO A STATE COLLEGE OR UNIVERSITY CAMPUS.**

High School GPA Must Equal or Exceed	Combined SAT-I V&M (ACT Equivalent in Italics)
2.51-2.99	920 (19)
2.51-2.89	n/a
2.41-2.50	960 (20)
2.31-2.40	1000 (21)
2.21-2.30	1040 (22)
2.11-2.20	1080 (23)
2.00-2.10	1120 (24)

The following is the Conversion table used for MMRHS students when computing a GPA:

98 – 100	A+	78 – 79	C+
93 – 97	A	73 – 77	C
90 – 92	A-	70 – 72	C-
88 – 89	B+	68 – 69	D+
83 – 87	B	65 – 67	D
80 – 82	B-	0 – 64	F

*Adopted 2008*

## COURSE DESIGNATIONS

Courses designated as standard, college preparatory, honors and advanced or advanced placement are listed below by department. Course placement for transfer students is determined by guidance counselors and the principal, using the student transcript and course descriptions outlined by the student's former school.

Standard courses prepare the student for post-secondary options including work, certificate programs, associate degrees, and technical schools.

### STANDARD/FUNDAMENTAL

#### **General**

Study Skills

#### **Art**

Ceramics I, II  
Foundation Art I  
Foundation Art II

#### **Business**

Accounting  
Law  
Marketing  
Web Page Design  
Virtual Enterprise Program

#### **Computers**

Programming with Python

#### **English**

Acting and Directing I  
Advanced Drama  
English 9, 10, 11, 12 (Level 3)

#### **Independent Educational Experience**

Independent Study  
Internship  
Links

#### **Mathematics**

Applied Mathematics  
Math Survey I, II, III

#### **Music**

Band  
Chorus  
Orchestra

#### **Reading**

#### **Physical Education**

#### **Science**

Fundamentals of Science & Technology  
Fundamentals of Biology  
Fundamentals of Chemistry  
Fundamentals of Physics

**Family & Consumer Science**

Foods  
 Exploring Childhood  
 Nursery School

**World Languages**

Fundamentals of Spanish IA  
 Fundamentals of Spanish IB

**Technology Education**

Woodworking  
 Advanced Woodworking  
 Construction Skills  
 Building Design  
 Web Page Design

**Social Studies**

Berkshire History  
 Discovering Current Issues  
 Discovering Psychology  
 Social Studies I (Level 3)  
 U .S. History (Level 3)  
 Ancient Civilization and Warfare  
 Civics and Economics

**Vocational**

Automotive  
 Agriculture  
 Computer Repair Net+  
 Computer Repair A+

**COLLEGE PREPARATORY****Art**

Design Computer Graphics  
 Sculpture/3D Design  
 Drawing  
 Advanced Art  
 Studio Art

**Computers**

Advanced Computer Management  
 Computer Management

**English**

Creative Writing  
 English 9, 10, 11, 12 (Level 2)

**World Languages**

French I, II  
 Spanish I, II  
 Latin and Comparative Languages

**Independent Educational Experience**

Independent Study  
 Independent Project

**Mathematics**

College Prep Math 1, 2, 3, 4  
 Interactive Mathematics  
 Programs I, II, III, IV  
 Probability and Statistics I, II

**Music**

Music Theory

**Science**

Anatomy and Physiology  
 Biology  
 Chemistry  
 Introduction to Physics  
 Physics  
 Science & Technology

**Social Studies**

Current Issues  
 Life and Death  
 Politics  
 Psychology I  
 Social Studies I (Level 2)  
 U .S. History (Level 2)  
 Global Village  
 Philosophy

**Technology Education**

Science & Technology



## HONORS

### English

English 9, 10, 11, 12

Fact and Fiction

### World Languages

French III

French Culture and Civilization

Spanish III, IV

### Independent Educational Experience

WISE

Independent Study

### Math

Honors Algebra II

Honors Geometry

Advanced Math

Calculus

Honors Interactive Math Program I, II, III, IV

Honors Math Elective

### Science

Honors Chemistry

Honors Physics

Honors Introduction to Physics

Honors Biology

Honors Anatomy and Physiology

Honors Science & Technology

### Social Studies

Psychology II

Social Studies I Honors

Sociology

U.S. History Honors

Fact and Fiction

Philosophy

## ADVANCED & ADVANCED PLACEMENT

### Art

Portfolio

### English

AP English 11

AP English 12

### World Languages

AP French

AP Spanish

### Science

AP Biology

AP Chemistry

AP Physics

### Social Studies

American Culture Studies

Modern European History

### Mathematics

AP Calculus

\* Although this curriculum is not the College Board AP curriculum, students interested in taking the AP exam may access assistance from the teacher.

## GENERAL COURSES

### STUDY SKILLS

Credit: 1

Grade 9

Prerequisite: Prior approval from special education department

Study Skills is a course designed to instruct students in organizational strategies including using an agenda, keeping an organized notebook, note-taking, and outlining. Students will also practice using test-taking strategies, memory techniques, and reading comprehension strategies. A strong focus of Study Skills is the writing process. Students will gain practice with sentence and paragraph structure, writing essays through templates, writing a research paper, and editing and revising their completed written work. Students will leave the Study Skills course with hard copies of graphic organizers that they can use over and over again throughout their high school years. Particular practice with writing essays commonly found on high stakes tests is also a component on the course.

## ART

Knowing how to communicate through art is important to every student's future. The goal of the art program is to prepare students to be competent in visual thinking, learning, and creative communication—a must to be successful in the future, which most certainly will utilize more and more visuals in varied materials to express information and ideas. The interests of all students can be explored and mastered through a wide variety of art courses.

Students learn to develop skills needed to communicate visual ideas in an effective way. Specifically, students have an opportunity to explore and master visual skills through a broad range of sequential courses using a wide variety of traditional materials in drawing, painting, designing, ceramics, sculpture, and in the more modern media of computer graphics.

Through the Art Department, students also learn from the best. Students study the work of critically acclaimed artists in order to use the artists' proven communicating skills to create their own art, and be capable of creating visual information for assignments/ reports for their academic classes at MMRHS.

Students in every course have the opportunity to submit their art work to local, regional, and national art competitions.

Possible enrichment activities in each course could include presentations by professional artists, videos, slides, live models in drawing and painting classes, and visits to museums, galleries, and art studios. One credit fulfills the graduation arts requirement.

**FOUNDATION ART I**

Credit: .5

Grades 9-12

Prerequisite: None

One semester course

Foundation Art I teaches any student that he/she can easily learn to draw. Drawing is what all types of artists use to imagine. Through learning to draw, students develop visual thinking, learning, and creative communication skills which they can utilize in reports for academic classes at MMRHS, and later, in a career.

Drawing skills are developed through a study of concepts and techniques using black and white media that includes professional drawing pencils, charcoal, India ink, and crayon. These drawing skills are then utilized in an introduction to basic painting, 2D, and 3D in Foundation Art II, the second half of the total course.

Students also become familiar with art styles, history, criticism, and develop personal artistic judgment as part of the process of learning to be creative.

This course is the prerequisite for Foundation Art II. Together these courses provide the foundation for other art courses offered at MMRHS.

Foundation I and II are offered in both the fall and spring semesters.

**FOUNDATION ART II**

Credit: .5

Grades 9-12

Prerequisite: Foundation Art I

Drawing skills mastered in Foundation Art I are utilized in Foundation Art II through color when learning basic painting, 2D and 3D design concepts and techniques . A variety of art materials and techniques are explored.

Students continue to become familiar with art styles, history, criticism, and develop personal artistic judgment in the process of becoming more creative. Creative communicating skills can be utilized to enhance academic reports/assignments at MMRHS.

Foundation Art II and I prepare students for other art courses offered at MMRHS.

**DRAWING**

Credit: .5

Grades 10-12

Prerequisite: Foundation Art I and II

In this course, students will expand on drawing techniques acquired in FAI and FAII and will focus on pure drawing methods in all forms of media. Classic drawing techniques and methods of the Masters will be explored, with an emphasis on drawing from life. The first steps in drawing techniques will be on training the human eye to truly 'see' the subject being drawn . Emphasis will be on obtaining realism of the human form, gesture and action drawings, landscapes, technical and perspective drawings, still-life and contour drawing, and line techniques. Students will work in pencil, pen and ink, charcoal, conte, oil sticks and pastels. Students will also maintain a sketchbook along with weekly drawing exercises.

**ADVANCED ART**  
Grades 10-12

Credit: .5 or 1  
Prerequisite: Foundation Art I and II

In Advanced Art, students raise established basic art skills to a higher level through creative thinking and problem solving. An in-depth study of techniques and concepts is made in drawing and painting. In addition, students are exposed to 3-D design. There is an emphasis on technique, craftsmanship, and presentation of work in learning the process of making art. Through the process, a creative personal style emerges.

There is further study of art styles, history, and criticism as a source of inspiration, and to develop artistic judgment.

Advanced Art students are invited to attend professional level workshops in addition to experiencing enrichment activities mentioned in the introduction to art courses. An introduction to art career opportunities is also presented.

**STUDIO ART**  
Grades 10-12

Credit: .5 or 1  
Prerequisite: Advanced Art or approval of the Art Dept. Supervisor

This course is designed to allow art students the opportunity to concentrate on long term projects with a focus of interest developed by the student. Through the process of making art, creative thinking is stressed based on the art concepts and techniques developed in previous art courses. Besides making personal art, mastered creative communicating skills can be utilized to enhance academic reports/assignments at MMRHS.

This course provides students the opportunity to use a variety of media based on their personal style and interests. Craftsmanship and presentation of work is also stressed. According to personal preference, students study art styles, history and criticism to further develop their aesthetic and a solid portfolio of work to present along with an application to an art or academic college or university, or an employer.

Professional level workshops and internships are made available to Studio Art students along with enrichment activities mentioned in the introduction to art courses.

**SCULPTURE/3D DESIGN I**  
Grades 10-12

Credit: .5  
Prerequisite: Foundation Art I and II

In this course students design, imagine, solve, experience, and produce through their hands. Students first learn how to create sculptural objects based on the basic art concepts learned in Foundation I and II. Then students additionally learn three dimensional concepts and the techniques to control materials such as paper, wire, straws, thread, plaster, wood, and other materials in the 3D form.

This course teaches students to make different materials suit various needs in a variety of projects. For inspiration, students study sculptors from ancient to modern times.

**CERAMICS I**                      Credit: .5  
Grades 10-12                      Prerequisite: Foundation Art I and II

In this course students learn to appreciate the process of building, coloring, and firing clay based on concepts learned in Foundation Art I and II. Students learn hand building techniques using the methods of coil/additive, molds, slab, and pinching in creating practical and sculptural pieces. A focus is made on the technical processes of glazing and firing clay.

**CERAMICS II**                      Credit: .5  
Grades 10-12                      Prerequisite: Ceramics I

Ceramics II allows time for the dedicated ceramist to further develop and refine the skills begun in Ceramics I. Students continue to utilize slab, coil, and reductive process while also incorporating new techniques such as slip molds, stackable structures, and larger mosaics. Alternative styles of coloring ceramics are also explored such as oxide stains and slip glazes. The creative process is emphasized and stretched as the student risks failure to find success. Students are invited to explore the unlimited possibilities of ceramics.

**DESIGN COMPUTER GRAPHICS**                      Credit: .5  
Grade 10-12                      Prerequisite: Foundation Art I and II

This course focuses on the role of design in visual communication and the use of the computer as a design tool. We begin with a comprehensive study of design elements and principles as a basic means of organizing two-dimensional space. We also look at how the world of advertising uses the elements and principles to communicate and persuade its audience. Using Adobe Creative Suite we learn the basics of both vector and raster based images. We spend most of our time with Illustrator and Photoshop. One project will use InDesign a page layout program.

In addition, the class has the unique opportunity to work with Tracey Edwards Advertising, a professional ad agency, and Berkshire Bank (our Partner in education), to produce ads which are published in local newspapers.

**PORTFOLIO**                                      Credit: .5  
Grades 11-12                                      Prerequisite: Studio Art, or approval by the Art Depart.  
Supervisor.

Portfolio is a course for Architecture, Fine Art and Photography students that are interested in creating a significant body of artwork. Students will choose their own ideas, define the parameters, necessary medium and techniques to effectively communicate what it is that they are expressing. Emphasis will be put on evolution and development of ideas and creative problem solving within their own defined parameters.

The course is designed to start in the spring semester of your junior year and continue through the fall semester of your senior year so that portfolios are ready for college applications. Summer work will be expected. Art teacher permission is required.

## BUSINESS

It is strongly recommended that students take the following sequence of courses during the recommended grade/year:

Grade 10        Advanced Computer Management, Accounting

Grade 11-12    Law, Marketing, Internship

### **COMPUTER MANAGEMENT Credit: .5**

Grades 9-12

Word processing, spreadsheet, and database applications are explored using real-world data/problems. Learn to enhance your presentations with graphics, sound, and various style formats. Accessing the Internet for class materials is an important part of the curriculum.

### **VIRTUAL ENTERPRISE PROGRAM**

Credit: 2

Grades 11-12

Prerequisite: None

This course allows students to experience, in a simulated business environment, all facets of being an employee in a firm. It provides instruction and in-school work experience to develop school-to-career skills.

Students work in one of the following departments: Fundraising, Human Resources, Accounting, Web Page Design, and Sales and Marketing. Each person will be assigned to a department based on their interest and application. Students will be communicating with other companies from across the country and around the world to buy and sell virtual products with virtual money. A trip to the New York City trade fair, where all Virtual Enterprises meet to buy and sell virtual products from each other, is how the class culminates.

### **ACCOUNTING**

Credit: 1

Grades 10-12

Prerequisite: None

As owners and employees in the business world, a background in accounting is essential to build a strong foundation for your career. Topics include payroll, taxes, preparing financial statements, and investing. College preparatory students interested in Business Administration and Finance should take this course to obtain skills/ experience for continuance in business careers. This fulfills one unit of credit in Math.

### **LAW**

Credit: .5

Grades 11-12

Prerequisite: None

This course makes use of a case study approach to understanding your legal responsibilities. Criminal Law, Tort Law, Constitutional Law, and Consumer Law are all investigated. Past field trips have included trips to the Berkshire County House of Correction and the Southern Berkshire District Court House.

**MARKETING** Credit: .5  
Grades 11-12 Prerequisite: None

With an emphasis on sports marketing, this course will discuss topics such as advertising, selling, pricing strategies, store/stadium layout, inventory, and customer relations. This is a project-oriented course where students will be involved in fantasy sports, market research, advertising, and display research of sports franchise that they will create from the beginning. Everything from the franchise name, to the mascot, uniforms, even the stadium in which your franchise will play will be considered.

**BUSINESS MANAGEMENT** Credit: 1  
Grades 10-12 Prerequisite: 2 Business Courses or permission of the instructor

An advanced level business course that focuses on the opportunities and challenges of ethically managing a business in the free enterprise system. Students will attain an understanding of management theories and processes that contribute to the achievement of organizational goals. The management of human and financial resources is emphasized. International business will also be discussed. The class will culminate with the analyzation of an actual business.

## COMPUTERS

**COMPUTER MANAGEMENT** Credit: .5  
Grades 9-12 Prerequisite: None

Word processing, spreadsheet, and database applications are explored using real-world data/problems. Learn to enhance your presentations with graphics, sound, and various style formats. Accessing the Internet for class materials is an important part of the curriculum.

**ADVANCED COMPUTER MANAGEMENT** Credit: .5  
Grades 10-12 Prerequisite: Computer Management

Current computer application software, including database and spreadsheet programs, will be utilized to solve realistic consumer, home, and work-related problems. This course will allow students to apply existing applications software knowledge to practical problem solving while expanding their knowledge and skill level in applications programming.

**PROGRAMMING with PYTHON** Credit: .5  
Grades 9-12 Prerequisite: None

Are you new to programming? Learn the basics of Python programming through simple game creation. Python offers clear syntax, easy access to functional and object-oriented programming styles and runs on everything from a Unix server to a desktop PC running Windows. Python is a very popular language in Web development circles, the scientific community and the world of 3D graphics and animation.

## ENGLISH

In an increasingly complex world, the ability to read and evaluate information is essential. The English department's goal is to develop our students' skills in a variety of areas, including reading, writing, and public speaking, discussion, and media analysis.

All ninth and tenth grade students will receive a complete course in English with emphasis on literature, writing, grammar and vocabulary. Acting and Directing and Advanced Drama are electives.

Eleventh and twelfth graders choose from a variety of electives to fulfill their third and fourth years of required English credits. All students are required to take a writing and a literature elective. For example, a student must take College Writing, or Business Writing to fulfill the writing requirement and Contemporary Fiction, Contemporary Non-fiction or Classics to fulfill the literature requirement. Advanced Placement Language and Composition and/or Advanced Placement Literature and Composition fulfill the writing and literature requirements. Students complete the final required English credit by taking two additional electives.

In grades 9-12, students are grouped according to performance and ability. An English level is determined by a student's performance in previous English classes, results of any reading or writing tests that he or she has taken, and input from teachers, counselors and parents. Our Reading course supports students who need to improve skills in reading, studying, or preparing for MCAS.

### ENGLISH 9

Honors  
College Prep  
Standard

Credit: 1  
Prerequisite: English 8

The ninth grade English course provides students with skills in many aspects of English including reading, writing, grammar, speaking and listening. The first year will give students a foundation for the next three years of English.

### ENGLISH 10

Honors  
College Prep  
Standard

Credits: 1  
Prerequisite: English 9

In grade 10 English, students will continue to develop the skills begun in grade 9. American novels, plays, poetry, short stories and non-fiction will be assigned. Composition skills are emphasized in preparation for the MCAS test in the spring of the tenth-grade year. Periodically, a combined English and social studies course will be offered. This course is team taught and interdisciplinary, and requires a student to delve deeply into the literary, philosophical, and historical connections found in American society.



## **FACT AND FICTION: THE HISTORY AND LITERATURE OF AMERICA**

Grade 10  
Honors

Credits:  
1 English, 1 Social Studies  
Prerequisite: None  
Limited to 25 students

Fact and Fiction is a team-taught, double-period course staffed by one English and one Social Studies teacher. It offers an integrated approach to the study of American history and literature from the colonial period up through contemporary times—focusing primarily on the study of historical texts, essays, short stories, novels, poems, and plays, and including film, the fine arts, music, television, emerging media, and the performing arts. The topics are organized chronologically, beginning with the colonial experience, followed by a study of the revolutionary era, antebellum America, the Civil War and Reconstruction period, the modernization of America that took place in the late 19<sup>th</sup> century, and ending with a comprehensive examination of 20<sup>th</sup> century American history, society, and culture. The particular materials, texts, and approaches will be distributed in a balanced manner so that the students are able to examine and explore the American experience and condition from a wide variety of perspectives.

### **CONTEMPORARY FICTION**

Credit: .5

Grades 11 or 12  
Honors  
College Prep  
Standard

Prerequisite: English 10

Students will read and write about contemporary fiction. They will identify and analyze points of view, patterns of imagery, symbolism, themes, mood and tone. They will relate the fiction to the seminal ideas of its time. They will analyze, evaluate and apply knowledge of how authors use techniques and elements in fiction for rhetorical and aesthetic purposes. They will engage in different types of writing: analytical essays, journals and creative pieces.

### **CONTEMPORARY NON-FICTION**

Credit: .5

Grades 11 or 12  
Honors  
College Prep  
Standard

Prerequisite: English 10

Students will read and write about contemporary non-fiction: biography, autobiography, travel, memoir, science and nature writing, journalism, etc. They will analyze and evaluate the logic and use of evidence in an author's argument and identify and analyze characteristics of genre. Students will identify, analyze and evaluate an author's use of rhetorical devices. They will write coherent compositions with a clear focus, objective presentation of alternate views, rich detail, well-developed paragraphs and logical argumentation. They will use effective rhetorical techniques and demonstrate understanding of purpose, speaker, audience and form when completing expressive, persuasive or literary writing assignments.

**COLLEGE WRITING**

Grades 11 or 12

Honors

College Prep

Credit: .5

Prerequisite: Grade 10 English

Students will read and analyze sample writing and compose their own expository pieces. A portion of the course will be devoted to writing various types of paragraphs: classification/division, definition, examples/illustration, process, description and narrative. Another portion of the class will focus on various forms of essay writing: comparison/contrast, argument/opinion, literary analysis, cause and effect, personal essays and research. Grammar, usage and mechanics will be addressed according to the state frameworks and student need.

**BUSINESS WRITING**

Grades 11 or 12

College Prep

Standard

Credit: .5

Prerequisite: Grade 10 English

The Business Writing course focuses on the variety of written communication currently occurring in a variety of workplaces and careers. In this course, students examine actual examples of written materials produced to communicate within the workplace as well as outside the workplace for the customer and general public. Since conveying information is at the heart of much of workplace and technical writing, students will practice gathering information through research as well as communicating information through various kinds of writing.

**ADVANCED PLACEMENT ENGLISH Language and Composition**

Grade 11-12

Credit: 1

Prerequisite: English 10 &  
AP Application Process

AP Language and Composition is offered to eleventh grade students at Monument Mountain. The emphasis of the course is on examining a variety of texts and on writing in various modes and styles. This is a college level course, and students are asked to undertake rigorous exercises in analysis and effective expression. The reading material is almost entirely non-fiction. Summer reading and writing are required in advance of the course. This course is taken instead of English 11. Students are encouraged to take the Advanced Placement Exam in May.

**ADVANCED PLACEMENT ENGLISH Literature and Composition**

Grade 11-12

Credit: 1

Prerequisite: English 10 &  
AP Application Process

The Advanced Placement Program affords the academically qualified student the opportunity to pursue college-level studies while still in high school. A student who elects this course should demonstrate superior aptitude for reading literature perceptively and for cogently expressing his or her responses to that literature. An Advanced Placement examination in May gives the student a chance to demonstrate mastery of the subject.

Summer reading and writing are required in advance of this course. This course is taken instead of English 12.

**CLASSICS** Credit: .5  
Grades 11-12 Prerequisite: English 10

Classics is a course based on in-depth study of literature ranging from Greek epics and plays to medieval, romantic and contemporary British and World literature. Possible titles include Beowulf, "The Rhyme or the Ancient Mariner," Jane Eyre, As I Lay Dying and My Name is Asher Lev.

**JOURNALISM** Credit: .5  
Grades 11-12 Prerequisite: English 10

This course will serve as an introductory overview of the field of journalism. In it, students will have the opportunity to learn about and create various forms of journalistic content, ranging from text to photography to film. We will offer both CP and Honors level courses.

**ACTING AND DIRECTING** Credit: 1  
Grades 9-12 Prerequisite: None

Participants will become acquainted with basic theater arts and stagecraft. This class gives students a thorough background in acting, from improvisation to monologues and from scenes to complete plays. Also, in directing, from lights to set design and costumes to props. The history of the theater and varied approaches to movement, voice and technique are covered through text analysis, peer and teacher critiques, and the creation of theatrical works.

**ADVANCED DRAMA** Credit: .5  
Grades 10-12 Prerequisite: Acting and Directing or Permission of Instructor

This is an advanced course in Theatre Arts. The expectation is that students taking the course are familiar with and experienced in various aspects of the theatre, from acting expertise to production excellence. Students are required to produce one play per semester. Plays will range in style from the tragic to the comic and from the classical to the modern.

**CREATIVE WRITING** Credit: .5  
Grades 9-12 Prerequisite: None

Creative Writing is a one-semester course designed to increase students' understanding and mastery of effective language and literary techniques in poetry and short stories. Exercises and activities include reading, modeling, sharing, discussion, frequent writing assignments, critical peer workshops, revision, recitation, and a personal writing project.

Note: Any interested student may elect Acting and Directing, Advanced Drama, or Creative Writing in addition to his/her regular English course.

## ENGLISH LANGUAGE LEARNERS' EDUCATION PROGRAM

There are students enroll in school whose native language is not English. These students, known as English Language Learners, are defined as one of the following:

- 1.) A student who was not born in the United States and whose native tongue is a language other than English and who is incapable of performing ordinary class work in English.
- 2.) A student who was born in the United States of non English speaking parents and who is incapable of performing ordinary class work in English.

The goal of the ELL Program is to support the progress of Limited English Proficient students in the four language domains of reading, writing, listening and speaking in English so that they will be able to perform successfully in the classroom, pass the MCAS, and graduate from high school.

### ENGLISH AS A SECOND LANGUAGE

Grades 9-12

Credit: 1

Prerequisite: none

The English Language Program assesses non-native speakers of English in English Language Proficiency; placing students into one of four levels: Beginning, Early Intermediate, Intermediate or Transitioning. Skills are developed in the four domains of reading, writing, speaking and listening through instruction from a certified language and research skills are among the many focuses of instruction. All instruction and materials are in English. The number of hours of instruction per day varies according to proficiency level. Instruction continues until students have reached proficiency as defined by state assessment.

### ENGLISH AS A SECOND LANGUAGE SUPPORT

Grades 9-12

Credit: .5

Prerequisite: none

Classes are conducted to assist the English Language Learner in content area class work. Assistance may be provided in research, writing, computer, citation and other areas in order to help students understand and participate in their academic subjects. Classroom teachers work in consultation with the ESL teacher to assist the student in class work.

## FAMILY and CONSUMER SCIENCE

These courses provide the student with the opportunity to experience and develop skills in food purchasing and preparation, and human development. Human development deals with early childhood development, personal and family relationships, human sexuality and parenting.

### FOODS

Grades 9-12

Credit: .5

Prerequisite: None

Basic nutrition, food purchasing, preparation and serving, regional and foreign cooking and careers in food service are all part of this offering.

**EXPLORING CHILDHOOD** Credit: .5  
Grades 10-12 Prerequisite: None

This course is a study of the emotional, social, intellectual and physical growth of the child from infancy through four years. Students enrolled in this course are encouraged to enroll in the Pre-school Program course upon completion of this course.

**PRE-KINDERGARTEN PROGRAM** Credit: 1 or 2  
Grades 11-12 Prerequisite: Exploring Childhood or permission of teacher

(Full year course with lab component: 1 period or 2 periods )

This course provides the opportunity for the practical application of the knowledge acquired in Exploring Childhood. Emphasis will be placed on working with preschool children in a laboratory situation. Each student will be involved in teaching lessons, supervising activities and observing the children in various situations.

An essay must be written and approved by the teacher before admission.

### INDEPENDENT EDUCATION EXPERIENCES

**INDEPENDENT STUDY** Credit: .5  
Grades 11-12 Prerequisite: Departmental and administrative approval

The Independent Study Program is designed to allow any student in Grade 11 and 12 to study an area that is not offered in the regular curriculum. The student is assigned to a teacher who is most proficient in the field being studied. The student works on his/her own, and by meeting with the teacher and writing papers, demonstrates what he or she has been doing. The program offers a unique opportunity for a student to become involved in a subject which interests him/her. A student must receive approval of the department supervisor to participate.

The following steps must be followed in applying for an Independent Study:

1. Student contacts department supervisor to discuss the initial Independent Study topic.
2. The department supervisor gives preliminary approval and assigns the Independent study teacher.
3. The student and teacher meet to discuss the proposed program and negotiate the contract.
4. The student, with the aid of the teacher, writes and signs the contract and has parents sign it.
5. The contract is reviewed and approved by the teacher, student, department supervisor and principal.
6. A copy of the contract is distributed to the student, teacher, department supervisor, guidance chairperson and principal.

It should be noted that an independent study option is less structured than a traditional classroom situation. For this reason, an independent study, in some ways, is more demanding of the student. A student who qualifies for independent study must have exhibited in his or her classroom performance the necessary interest, aptitude and motivation to succeed. The teacher and/or department supervisor who approves a student for independent study, therefore, will

consider the following: grades which the student has received, ability of the student to meet established course expectations, class participation, and interest exhibited in the subject by the student. In short, to succeed, it should be understood that the student is mature, motivated and a "self-starter."

All Independent Studies will be given a numerical grade, and credit designation will be determined by the principal.

### **INDEPENDENT PROJECT**

(2<sup>nd</sup> year pilot)

Grades 11 and 12

4 Elective credits

Prerequisite: Completion of application and interview process

Students will study four disciplines: science, history, math, and reading and writing. They will also work on an individual endeavor, and at the end of the class will work on a collective endeavor as a group. In each of the four disciplines, students will work the way someone working in that field would work (they would work like a scientist, a historian, a writer etc). For example, in science, a student might explore the natural world, make observations (and in so doing break down basic assumptions), and *design* and conduct experiments. The student will talk about how science relates to democracy, and they will read studies from popular and scientific journals. In reading and writing, students will simply read and write. For example an assignment might be to write a story about a family from the point of view of a dog, or to write a murder scene from the point of view of the murderer and then to write about the same scene from the point of view of the victim. Students might spend some time reading their own books and discussing them together, or they might find a book that would work for the whole group (and different students might get a different level of experience of that book). The best way to learn to write is to write often and to write things you care about. The best way to become an astute reader is to read things that interest you and explore them with other readers. The individual endeavor (lasting two thirds of the semester) will entail each student picking something they are interested in become expert in this area. This could mean writing a novel, building a shed, designing computer programs, starting a social movement, or writing a play. Each student will connect with a mentor who is an expert in that field.

The collective endeavor will entail the group picking a serious issue in the world, be it the financial crisis, water, education, or the environment, and pool together what they have gained from history and their individual endeavors to tackle the problem collaboratively.

The program will last one semester and will be all day. The program will be open to any upperclassmen, and will be made up of 10 to 12 students. Interested students will write a preliminary application to the program, answering one or two questions. Guidance counselors will be encouraged to seek out students who would benefit from the program but who might not write an application by their own volition.

### **INTERNSHIP PROGRAM**

Grades 10-12

Credit: 1.5 semester

Prerequisite: None

This program provides individual training to students with professional or vocational interests in a specific field. It is based on the apprenticeship philosophy whereby students are placed with trades people and professionals who follow contract outlines and specific objectives. Because it is a training situation, students are not paid. Students are expected to provide their own transportation to and from the internship site.

**WISE**  
Grade 12

Credit: 2  
Prerequisite: See below

WISE (Wise Individualized Senior Experience) offers all levels of students the opportunity to complete an extensive, in-depth project of their own creation and choice. The WISE opportunity empowers students to shape their own education outside the walls of school. The project can be academic, creative, service or career oriented, and the students spend about 20 hours a week on WISE. WISE students meet once a week with a staff mentor of their choosing and meet regularly with other WISE students. Students keep daily journals describing their progress. All WISE students, whether they are involved in a research project, an apprenticeship, or an artistic creation, work toward an oral and written presentation before the public and members of the WISE Task Force. The WISE Task Force is the steering committee for the program, and is composed of students, faculty, parents and community members. Members of the WISE Task Force in cooperation with the mentor evaluate students through the presentation. Mentors evaluate by reading student journals and interim reports. Mentors submit a written evaluation to the WISE coordinator. A WISE student will earn a pass or a fail for a grade.

Prerequisite: In the spring of their junior year, students must present a written proposal for approval of a WISE project before members of the WISE Task Force.

**LINKS**  
Grades 10-12

Credit: 1.5  
Prerequisite: Preapproval of committee

Links is an alternative educational experience for students who have been identified by a meeting, consisting of an administrator, guidance counselor, parents, the student, and if necessary, special education liaison and/or school psychologist, to be eligible for this program. The student will spend part of the school day at an approved job training site for each term that is approved for the program.

**VIRTUAL HIGH SCHOOL**  
Grades 10-12

Credit: .5  
Prerequisite: Permission of guidance counselor and available seats

Virtual High School offers over 200 full semester on-line courses in arts, business, English, language arts, world language, life skills, math, science, social studies and technology. In addition, VHS offers 15 Advanced Placement full year courses. Information about the Virtual High School may be obtained at [www.govhs.org](http://www.govhs.org). Information about courses offered at Monument may be obtained from your guidance counselor.

## MATHEMATICS

The Mathematics Department of MMRHS believes a strong mathematics program emphasizes problem solving, communicating, reasoning and making connections to real life problems. The curriculum offers students opportunities to learn important mathematical concepts and procedures with understanding. Our teachers help students make, refine, and explore conjectures on the basis of evidence and use of a variety of reasoning techniques to confirm or disprove those conjectures. Students are expected to work productively and reflectively, whether alone or in groups, with the guidance of their teachers.

**ALGEBRA I** Credit: 1  
Grades 9-12 Prerequisite: None

The first mathematics course for college-bound students, Algebra is taught through systematic instruction emphasizing skills and reasoning and provides a strong background for all future mathematics. This course may be taken at the honors level with permission of the teacher.

**GEOMETRY** Credit: 1  
Grades 10-12 Prerequisite: None

This course is designed to give students a background in informal geometry and right triangle trigonometry. Students will explore geometric concepts and relationships with hands on activities and with the use of technology. This course will reinforce basic algebra concepts.

**ALGEBRA II** Credit: 1  
Grades 11-12 Prerequisite: Algebra I

This course is designed to review and delve more deeply into topics from algebra. The course explores systems of linear equations, quadratic, polynomial, rational and exponential functions. Possible topics include conic sections and probability and statistics.

**PRE-CALCULUS** Credit: 1  
Grade 12 Prerequisite: Algebra II

The fourth year of the CP sequence is designed to prepare students for college mathematics, including calculus. The concepts explored are functions, trigonometry, exponents and logs, sequences and limit.

**CALCULUS** Credit: 1  
Grade 12 Prerequisite: Pre-calculus

This course is designed for the above average mathematics student in their senior year. Students will learn to use derivatives and integrals to solve a wide variety of problems. This course will cover many of the topics in A .P . Calculus but will be done on a less rigorous basis.



**FUNDAMENTALS OF ALGEBRA I**

Grades 9-12

Credit: 1

Prerequisite: None

Fundamentals of Algebra teaches the basic concepts of algebra in a step-by step approach and meets the standards set by the National Council of Teachers of mathematics.

**FUNDAMENTALS OF GEOMETRY**

Grades 10-12

Credit: 1

Prerequisite: None

Fundamentals of Geometry is designed to teach students informal geometry. Students will explore geometric concepts and relationships with hands on activities and the use of technology.

**FUNDAMENTALS OF ALGEBRA II**

Grades 11-12

Credit: 1

Prerequisite: Fundamentals of Algebra

The topics explored in Fundamentals of Algebra II are quadratic functions, systems of equations, exponents, radicals, inequalities, and trigonometry. The course is designed to improve students' computational skills and to enhance their understanding of the algebraic process.

**APPLIED MATHEMATICS**

Grades 10-12

Credit: 1

Prerequisite: One credit in mathematics

This course consists of a series of activities that will emphasize the application of mathematical principles in the context of real world situations. These activities are designed for students who learn best by applying skills in concrete and visual situations that are relevant to their lives.

**HONORS ALGEBRA II**

Grades 9-12

Credit: 1

Prerequisite: Honors Algebra I

Algebra I skills are further developed to explore the concepts involved in more advanced mathematics studies. After a thorough review of Algebra I principles in greater complexity, the concepts of function and functional notation are applied to quadratic, exponential and logarithmic relations. Additional topics include an introduction to conic sections, sequences and series and probability and statistics.

**HONORS GEOMETRY**

Grades 10-12

Credit: 1

Prerequisite: Honors Algebra II

This full year course will help the student make the transition from concrete to conceptual mathematics. Comprehensive in scope, this course thoroughly develops mathematical proof techniques. Problem-solving strategies develop vital reasoning skills and help students prepare for college entrance exams.

**HONORS PRE-CALCULUS**

Grades 11-12

Credit: 1

Prerequisite: Honors Algebra II

This is a full year course in introductory analysis for the mathematically-inclined and a preparation for Calculus. The course content includes elementary functions and their limits, trigonometry, sequences, series, data analysis and probability. Graphing calculators are used extensively in this course.

**HONORS MATH ELECTIVE**

Grades 10-12

Credit: .5

Prerequisite: Teacher recommendation

This course is designed for students who have an interest in and an aptitude for mathematics. The course can be taken as a second math course in a student's schedule or as the only math course. Students may take the course more than once because the topics will vary from semester to semester. Course content will be determined by the teacher and interests of the students. Possible areas of study include, but are not limited to: Discrete Math, Number Theory, Chaos Theory, Non-Euclidian Geometry and the math of Numb3rs. Material from math leagues will also be used.

**ADVANCED PLACEMENT CALCULUS**

Grade 12

Credit: 1

Prerequisite: Honors Pre-calculus

AP Calculus is an advanced placement course offering the mathematically talented student opportunity for a college level course. It consists of an academic year of work in calculus and related topics comparable to courses on the college level. Most colleges grant college level credit for this course, providing the advanced placement scores are adequate.

**PROBABILITY**

Grade 11-12

Credit: .5

Prerequisite: Algebra I

This one-semester course covers basic introduction to probability.  
Students will:

- Explore, summarize, and display data
- Design experiments
- Use probability to understand random behavior

This course is strongly recommended for students who will pursue studies in the social sciences, psychology, sociology, education, business, economics, the humanities, the physical sciences and communication.

**STATISTICS**

Grade 11-12

Credit: .5

Prerequisite: Algebra I

Students will pursue statistical topics such as making inferences about populations, correlation and regression, analysis of variance and non-parametric statistics. This course is strongly recommended for students who will pursue studies in the social sciences, psychology, sociology, education, business, economics, the humanities, the physical sciences and communication. The course takes a hands-on approach rather than a theory based approach.

## MUSIC

The objective of the music program is to offer a variety of opportunities for students to become involved with music. One of the best ways to experience music is through participation in a performing group such as Chorus, Band or Orchestra. While excellence in performance is indeed an important goal for these groups, their primary function is the development of MUSICIANSHIP in each student. This includes the various skills needed for successful music making, as well as a basic knowledge of music composition and history.

In addition to the performing groups, the music department offers a number of academic courses in music. These courses will offer the students who do not sing or play an instrument a chance to learn something about the art of music, as well as giving the opportunity for performing musicians to broaden their knowledge and widen their understanding of music.

It should be noted that, according to Massachusetts Music Educators Association bylaws, any student wishing to audition for Honors Ensembles, such as Western Massachusetts District and All-State performing groups must be a member of their school's respective group for which they are auditioning.

**BAND** Credit: 1  
Grades 9-12 Prerequisite: None

The band offers the student an opportunity to study instrumental music through participation in a performing group. The band performs at a variety of events including concerts, festivals, parades and football halftime shows. Each band member is expected to practice on a regular basis in addition to attending rehearsals, sectionals and performances. Private study is encouraged whenever possible. The goal of the band program is to provide each student with the best possible experience with music through the pursuit of group excellence.

**CHORUS** Credit: 1  
Grades 9-12 Prerequisite: None

This course provides students with the opportunity to study vocal music through participation in a performing ensemble. The chorus performs repertoire in a variety of language and styles. Students will work on developing skills for proper vocal technique and sight-reading and will also learn the fundamentals of music theory. Attendance at all scheduled concerts and rehearsals is expected and concert dress is required for all scheduled performances. The goal of the choral program is to provide each student with the best possible musical experience.

**ORCHESTRA** Credit: 1  
Grades 9-12 Prerequisite: None

Orchestra provides the student musician the opportunity to study and perform a wide variety of music from the standard orchestral repertoire, as well as arrangements of compositions taken from folk music, jazz, Broadway and popular idioms. Emphasis will be placed on learning bowing, phrasing and listening skills. More advanced wind and brass players have the opportunity to develop their solo and small ensemble skills by joining with the strings to perform full orchestra compositions.

**MUSIC THEORY**

Grades 9-12

Credit: 1

Prerequisite: Department Approval

Music Theory teaches music literacy through the study of pitch, rhythm, intervals, harmony, ear training and composition. Students will also work in the technology lab and will have exposure to the music notation software, *Sibelius*.

<b>PHYSICAL EDUCATION</b>
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The physical education curriculum offers a combination of required and elective activities to all students. Students are required to participate in three semesters of physical education, for which 1/2 credit is earned per semester. The curriculum includes fitness, adventure, community safety, first aid, and activity classes. Students receive a numerical grade which is weighted into the G.P.A. This grade is based on preparation, attitude and attendance.

**PHYSICAL EDUCATION**

Grades 9-12

Credit: .5 per semester

Prerequisite: None

Course topics include:

**MUSCULAR FITNESS:**

The course is offered in either ninth or tenth grade. Students learn the principles of weight training, machines and free weights and circuit training. Pre and post assessment allows students to chart their progress. Students complete the course by designing a personal strength program.

**ADVENTURE:**

The course is offered in either ninth or tenth grade. The course is designed to develop teamwork, cooperative skills, trust and responsibility for one another. Students perform problem solving initiatives both in the gym and on the adventure course. Students are challenged to take risks and to learn the value of working together to achieve a goal.

**CARDIOVASCULAR FITNESS:**

The course is offered in either ninth or tenth grade. The course is designed to teach students the value of cardiovascular endurance as a means of conditioning one physically as well as for disease prevention. Students perform cardiovascular exercise on equipment and in circuits. Students complete the course by designing a personal program for attainment and maintenance of cardiovascular fitness.

**COMMUNITY SAFETY AND FIRST AID:**

The course is offered to all students. Students receive certification upon successful completion of the class.

**ACTIVITY CLASSES:**

Activity classes are scheduled throughout the semester. The activities offered can include: team games such as basketball or floor hockey, volleyball, cooperative games and individual sports such as: tennis, golf and archery. The activities vary from semester to semester and from year to year. The choices are based on student interests and overall value as a leisure time pursuit.

## ALTERNATIVE PHYSICAL EDUCATION

Grades 11 and 12

Credits: .5

Prerequisite: This course is designed to address scheduling conflicts – limited space.

This course is designed as a semester course that is available to juniors and seniors. It is designed for students who have a full schedule and are not able to fulfill the PE requirement in a regular school day. Students will participate in five full-day Physical Education activities that involve lifelong activities. Students will participate in these activities on half days during the semester. Attendance is mandatory for all days, in order to fulfill the requirement. Examples of activities include the Albany rock climbing wall, hiking Mt. Greylock, kayaking on Stockbridge bowl, a day at Berkshire South, etc. Students are only allowed to take Alternative PE once in order to fulfill the PE credit.

People and Their Environment

Grades 11 and 12

.5 credit

Physical Education or General Elective

Prerequisite: Successful Application

This class educates students about the natural world, basic first aid, and backcountry survival skills. It seeks to create connections between students and their environments. There is a one, three and five day hike as part of the course so students need to have solid time management skills and realize there is a nine day commitment when all other parts of their bus lives are put on hold. This course also focuses on team building, building leadership and communication skills, and there are a number of physical challenges during the semester. There is an application process to get into the course. See Mr. Powell in the Guidance Office for more details.

## SCIENCE

The Science Department offers a solid selection of the core physical and biological sciences. Inquiry and laboratory work is emphasized in each course. Students will study some of the interrelationships between the physical and biological environments. Scientific and environmental problems facing mankind will be examined.

All students must successfully complete a course in Physics, Biology and Chemistry.

## RECOMMENDED COURSE SEQUENCES

### *Post-secondary Training and Employment, Technical School, Allied Health or 2-year College*

9th:	Introduction to Physics or Science and Technology
10th:	Biology
11th:	Chemistry
12 <sup>th</sup> :	Physics
11 <sup>th</sup> or 12 <sup>th</sup> :	Anatomy and Physiology (strongly recommended for students interested in Allied Health)

### *Four-year College*

9th:	Introduction to Physics or Science and Technology
10th:	Biology
11th:	Chemistry
12th:	Physics , AP Physics, AP Biology or AP Chemistry
11 <sup>th</sup> or 12 <sup>th</sup> :	Anatomy and Physiology

### *Four-year College (Science Intensive -by application only)*

9th:	Biology
10th:	Chemistry
11th:	AP Chemistry
10th or 11th:	Anatomy & Physiology
12th:	AP Biology and Physics or AP Physics

Acceptance into the intensive sequence is at the discretion of the science department. Application qualifications are as follows:

- A 90 average or better in science and math for all terms in eighth grade and on the Honor Roll during all terms in eighth grade
- Completion of Algebra I in 8th grade
- Strong recommendation of current science teacher
- Completed student application form and essay

It is very important to understand that if a student takes Biology as a 9th grader, he/she is committing to completing the entire intensive sequence of courses. (Note: The only difference between the intensive sequence and the traditional four-year college sequence is that the intensive sequence allows students to take both AP Biology and AP Chemistry.)

### **INTRODUCTION to PHYSICS**

Grade 9-12

Honors

College Prep

Credit: 1

CP Prerequisite: None

Honors Prerequisite: Concurrent Algebra

This course addresses the fundamental laws, concepts and theories that govern the physical world. Through an investigative, hands-on approach, students will study energy, motion (including Newton's Laws), heat, electricity, magnetism, and wave energy (light and sound). Wherever possible these topics will be related to daily life.

**SCIENCE & TECHNOLOGY**

Credit: 1

Grade 9-12

Prerequisite: None

Honors

College Prep

Fundamentals

Science & Technology addresses topics of physics within the framework of engineering. Students will study the engineering design process, basic engineering drawing, manufacturing processes, strength of materials, thermal energy, pressure (and its application to pneumatic and hydraulic systems), electric circuits and electricity production. Students will participate in several group design projects during the year.

**BIOLOGY**

Credit: 1.5

Grades 10-12

Prerequisite: None

Honors

College Prep

Fundamentals

Through laboratory experiments and current readings, students study ecology, evolution, DNA and genetics, cell organization and chemistry, and cell processes such as meiosis and mitosis, protein synthesis, photosynthesis, and cellular respiration. Also investigated are microbiology, the three domains, body systems, and current biological technology.

**AP BIOLOGY**

Credit: 1.5

Grades 11-12

Prerequisite: See below

This is an Advanced Placement Biology course. The course will include topics usually covered in a college biology course for majors. The major themes of the course are:

Science as Process	Evolution
Energy Transfer	Continuity and
Relationship of Structure to Function	Change
Regulation	Science, Technology
Interdependence in Nature	and Society

Primary emphasis in the course will be in developing and understanding concepts rather than memorizing terms and technical details. Students should have completed a first year biology course and a first year chemistry course with an 85 average or better and have the recommendation of their biology teacher. (Suggested Honors Biology and Honors Chemistry).

Although not required to take this course, students expecting to take the AP Biology exam to earn college credits, should also take Anatomy and Physiology.

**CHEMISTRY**

Grades 10-12  
Honors  
College Prep  
Fundamentals

Credit: 1.5

Prerequisite: College Prep Mathematics

This course is a survey of topics regarding the structure and properties of matter with an emphasis on inquiry lab work.

Through emphasis on lab experimentation, this course provides a firm foundation for the understanding of principles underlying basic chemical concepts of matter, stoichiometry, the periodic table and the dynamics of chemistry.

**AP CHEMISTRY**

Grades 11-12

Credit: 1.5

Prerequisite: Chemistry I and  
recommendation of Chemistry I instructor

This is an advanced chemistry course that gives the advanced science student an opportunity to continue studying the principles and concepts developed in Chemistry I. The course includes physical chemistry, organic chemistry, qualitative, and quantitative analysis. (Please visit [www.collegeboard.com](http://www.collegeboard.com) for a detailed list of topics covered.)

**PHYSICS**

Grades 12  
Honors  
College Prep  
Fundamentals

Credit: 1.5

Prerequisite: Math CP I & II are recommended  
Honors Prerequisite: Enrollment in Calculus

This course surveys the physical laws governing the universe. Through lab studies, consequences of these laws are examined and concepts in motion, energy and light are developed.

**AP PHYSICS**

Grade 12

Credit: 1.5

Prerequisite: Concurrent enrollment in Calculus

This course focuses on mechanics and electricity and magnetism. Our approach to the analysis of systems is calculus based, emphasizing analytical skills and recognizing symmetries within systems. Since this is an intensive analytical college-level course, motivation and mathematical achievement are important prerequisites.

**ANATOMY AND PHYSIOLOGY**

Grades 10-12  
Honors  
College Prep

Credit: 1

Prerequisite: Biology

Anatomy and Physiology examines the structures and functioning of human systems. The program is highly recommended for students interested in health related careers. Anatomy and Physiology does not fulfill the life science graduation requirement.



## SOCIAL STUDIES

The Social Studies Department is dedicated to the goal of creating an environment in which serious conversation and careful thought become a habit, a daily rhythm and a way of life for students as they study individuals and societies. Our courses present students with a variety of intellectual activities including writing thesis-oriented essays, creating collages and other artistic projects and presentations, engaging in debates, simulations and student-centered discussions, and conducting oral history projects. Central to all of these activities is careful thought. Students are asked to be imaginative, empathetic and honest, to be aware of their own biases and the biases of the people they study, to consider all the information at their disposal, to raise and consider obvious antithetical ideas, to avoid unsupported claims, and to develop a complex view of the meaning and implications of the key terms they use to structure their work. They are repeatedly asked to let detail lead them to honest and logical conclusions and to be specific, concise, precise and profound in their written and oral conversation.

Our courses are centered on Story, Ideas, and Introspection, and by raising deep, universal human concerns, they give students repeated opportunities to activate their own sense of morality and their own respect for life. Paperback histories, historical essays, philosophical essays, old and current newspapers and periodicals, poems, plays, novels, movies, guest speakers and autobiographical works are all used to present students with stories and ideas to study.

While our curriculum encourages students to think at a high level, it is designed to include all of our students. Thus we offer a variety of courses in order to ensure that students are asked to engage in activities and complete tasks which are appropriate to their own needs and abilities.

Factual knowledge is fundamental to any study of human life and an integral part of the units we teach, but the amount of historical information is far too vast for any person to master. True learning comes with meaningful experiences repeated over a period of years and is best developed when students have a passion to understand. Thus we offer a variety of social science electives, and we build all of our courses around in-depth units rather than broad surveys. It is through these units that we offer students the opportunity to develop the desire, the habit and the skills necessary to investigate the human past and present for themselves.

To meet graduation requirements for Social Studies each student must earn a passing grade in Social Studies I, United States History, and at least one full credit of Social Studies electives (two .5 -credit electives or one full-credit elective).

**RECOMMENDED SOCIAL STUDIES COURSE SEQUENCES**

The Social Studies department strongly suggests that each student select from the elective courses available those appropriate for his/her future academic plans.

<b>Definitely College Bound</b>	<b>Possible College Bound</b>	<b>Non-College Bound</b>
Modern European History	Berkshire History	Berkshire History
Politics	Current Issues	Discovering Current Issues
Psychology II	Life and Death	Discovering Psychology
Sociology	Politics	Civics and Economics
U.S. History	Psychology I	Ancient Civilization and Warfare
American Culture Studies	Global Village	
Fact and Fiction	Civics and Economics	
Philosophy	Ancient Civilization and Warfare	
	Philosophy	

**REQUIRED COURSES – FULL YEAR**

**SOCIAL STUDIES I**

Grade 9  
Honors  
College Prep  
Standard

Credit: 1  
Prerequisite: None

This course examines individuals in a variety of fictional and actual situations and explores the personal, psychological, societal and economic influencers that shape their perception and behavior. Topics studied in this course include Renaissance and Reformation, Twentieth Century Russia, World War I, the Rise of Hitler and the Holocaust, Gandhi and India's Struggle for Independence, and "Brave New World."

During the course, each student will discuss or write about the following concepts: Ethics, Status, Role and Norms, Rationalization, Prejudice and Racism, Feudalism, Capitalism and Imperialism, Democracy, Revolution, Fascism, Communism and Totalitarianism, Faith and Freedom.

**U.S. HISTORY**

Grade 10  
Honors College  
Prep Standard

Credit: 1  
Prerequisite: None

This course examines individuals in a variety of fictional and actual situations from the American past and explores the personal, psychological, societal, economic and political influences that shaped their perception and behavior. The majority of units in the course focus on United States History after 1865, although attention is given to essential aspects of the American Revolution, the Constitution and the Civil War.

## **FACT AND FICTION: THE HISTORY AND LITERATURE OF AMERICA**

Grade 10  
Honors

Credits:  
1 English, 1 Social Studies  
Prerequisite: None  
Limited to 25 students

Fact and Fiction is a team-taught, double-period course staffed by one English and one Social Studies teacher. It offers an integrated approach to the study of American history and literature from the colonial period up through contemporary times—focusing primarily on the study of historical texts, essays, short stories, novels, poems, and plays, and including film, the fine arts, music, television, emerging media, and the performing arts. The topics are organized chronologically, beginning with the colonial experience, followed by a study of the revolutionary era, antebellum America, the Civil War and Reconstruction period, the modernization of America that took place in the late 19<sup>th</sup> century, and ending with a comprehensive examination of 20<sup>th</sup> century American history, society, and culture. The particular materials, texts, and approaches will be distributed in a balanced manner so that the students are able to examine and explore the American experience and condition from a wide variety of perspectives.

### **SOCIAL STUDIES ELECTIVES**

**POLITICS**  
Grades 10-12

Credit: .5  
Prerequisite: None

This course deals with political decision making in the context of economic, legal and ethical pressures. Problems regarding war, religion, race and economic disparity will be presented in a political context. Materials will include novels, films and current news stories. Students will be evaluated based on discussion, student journals and essays.

**SOCIOLOGY**  
Grades 10-12

Credit: .5  
Prerequisite: None

This course focuses on the study of human social behavior: how individuals and groups of individuals behave in relation to one another, what sociological forces influence their behavior, and why those forces have such strong influence on our individual and collective ways of being. The course opens with a unit on sociology as social science, followed by a unit on sociology as social theory, and closes with a unit on sociology as social criticism. The first unit focuses on a variety of sociological studies on the central institutions and forces that shape our social behavior; the second examines a number of theoretical texts by thinkers such as Jean-Jacques Rousseau, Karl Marx, William Graham Sumner, Sigmund Freud, and Erich Fromm; and the third includes various works of fiction, including *Notes From Underground*, *The Stranger*, and *One Flew Over the Cuckoo's Nest*. Students can take the class for either an honors or a college preparatory credit. All students are expected to complete the reading assignments, write a number of analytical essays, and be prepared to participate in class discussions. Students seeking honors credit will be expected to write essays that meet more demanding criteria, and to write a final paper at the end of the semester.

**PSYCHOLOGY I**

Grades 10-12

Credit: .5

Prerequisite: None

This course deals with a variety of psychological subjects that hopefully will increase the student's self-awareness. Included among the major areas of discussion will be theories of personality, conditioning, motivation and behavior, emotions and feelings, stress and subsequent coping techniques, sleep, dreaming and other altered states of consciousness, experimental psychology, as well as other relevant areas of interest .

**DISCOVERING PSYCHOLOGY**

Grades 10-12

Credit: .5

Prerequisite: None

This course gives students an understanding of the fundamental ideas associated with human behavior. Included among the major areas of discussion will be theories of personality, conditioning, motivation, stress, dreams, child development and abnormal behavior. Sources will be film, paperbacks, notes and class discussion.

**PSYCHOLOGY II**

Grades 11-12 .

Credit: .5

Prerequisite: A grade of 80 in Psychology I or permission of the instructor.

Also open to sophomores with the permission of the instructor.

Included among the topics of discussion will be well-known theories of psychosexual, cognitive, moral, and psychosocial development. Students will learn about behavior modification, and create personal projects. The history of abnormality will be discussed, and a plethora of abnormal behaviors researched. Gestalt psychology and patterns of communication will also be studied. Students are expected to participate in the teaching.

**CURRENT ISSUES**

Grades 10-12

Credit: .5 or 1. May be taken one or two semesters.

Prerequisite: None

The focus is on recent events occurring in the world and the issues that they represent. The Boston Globe or some other suitable sources will be used as a basic text, supplemented by various media articles. This course is intended for the student who wishes to learn about events and how to analyze their significance.

**DISCOVERING CURRENT ISSUES**

Grades 10-12

Credit: .5 or 1

(may be taken one or two semesters.)

Prerequisite: None

The course will study various national, state, and local issues by reading a daily newspaper of the instructor's choice. The goal of the course is to make the student more informed about what and why it is occurring as it is.

**LIFE and DEATH**

Grades 10-12

Credit: .5

Prerequisite: None

The major premise of the course is that in dealing with death and dying, an individual can better understand and appreciate his/her own life. Three major units are covered: life and its value, problems of life and death, and death and dying. Topics may include individual values, life philosophies, biomedical ethics, assisted suicide as well as various areas of death and dying which focus upon individual and social perspectives.

**BERKSHIRE HISTORY**

Grades 10-12

Credit: .5

Prerequisite: None

This course will focus on Berkshire County, past and present, particularly its people and its many "claims to fame." Students will learn how to use as "tools" not only books but also interviews, old records, newspapers, cemeteries and buildings.

The goal is to develop the ability to understand and evaluate the economic, geographic, and historical background of Berkshire County.

Units will be covered pertaining to Native Americans, the Shakers, early settlers, Monument Mills, and the development of the South Berkshire area.

**AMERICAN CULTURE STUDIES**Grades 11 – 12  
Honors

Credits: 1

Prerequisite: Successful completion of  
US History

This intensive course will examine American culture (history, philosophy, literature, art, architecture, music, etc.) from the Puritan era to the late 20<sup>th</sup> century. The objective of this course is for students to make connections between historical events, cultural trends, and changes in philosophy and other ideas. Students who take this course should have an interest in U.S. History and /or culture. Students who wish to take the AP exam in U.S. History will have the opportunity to prepare for that test by meeting independently with the teacher. American Culture Studies will replace Advanced U.S. History in 2011 – 2012.

**MODERN EUROPEAN HISTORY**

Grades 11-12

Credit: 1

Prerequisite: 88 or higher average in Honors U.S.  
History or Fact and Fiction

"Modern Euro" deals with Philosophy and Revolution in Modern Europe. It is an intensive course designed for people who are interested in great ideas and great revolutions. Students will explore the ideas of major philosophers including Descartes, Rousseau, Hegel, and Sartre, great authors including Dostoyevsky and Camus, and major revolutionary leaders such as Danton, Robespierre, and Lenin. The final unit in the course will focus on World War II.

**PHILOSOPHY**

Grades 10-12

Honors, College Prep

Credit: 1/2

Prerequisite: None

This course will serve as an introduction to the study of philosophy. Philosophy is the study of commonly asked questions about our experience as human beings, questions about the nature of existence, the boundaries of knowledge, the origin of values, the limits of freedom of the will, and the bases of moral responsibility. Those who practice philosophy are simply attempting to put into words that which they intuitively sense are the best answers to those questions—and to then test the accuracy and trustworthiness of those answers through collective critical discourse and rational thought. The course will offer students the opportunity to engage in such work, to explore the ideas of leading ancient, modern, and contemporary philosophers, and to assess their answers to these common and fundamental questions about the human condition. Students can take the class for either an honors or a college preparatory credit. All students will be expected to complete the reading assignments, write a number of analytical essays, and be prepared to participate in class discussions. Students seeking honors credit will be expected to write essays that meet more demanding criteria, and to write a final paper at the end of the semester.

**GLOBAL VILLAGE**

Grades 11-12

Credit: .5

Prerequisite: None

Our world is a global village, where easy access to information has shrunk our borders and allows us to connect almost instantaneously to places thousands of miles away. However, there is a need for an understanding of these places. What are human and physical components of these countries? This course will examine the links and barriers between our country and countries from the developed and developing world. It will look at basic geographic concepts of where things are located and how that location impacts culture. The course will hopefully raise students' awareness of their own role as global citizens and highlight the troubles facing the world's peoples. Course materials will include maps, atlases, culture-based novels, short stories, and the use of the Internet, especially the CIA website: [www.cia.gov/cia/publications/factbook](http://www.cia.gov/cia/publications/factbook).

Students will be expected to work with and know several maps, read all materials and novels, complete essays, participate in various group activities, and be part of the model UN meetings as the country of their choice.

**ANCIENT CIVILIZATION AND WARFARE**Grades 11 – 12  
Standard

Credit: .5

Prerequisite: Successful completion of  
US History

This is a semester course, taught at the Standard Level. It will focus on the features of ancient civilizations with particular emphasis on military and warfare – the clashes between ancient people, how they happened and what was the outcome. The course will begin with a brief survey of several early civilizations (Mesopotamia, Africa, Asia, and Central America) in order to understand the common features of all civilizations and how each adapted to its own environment. The majority of the course will focus on Greece and Rome. Particular attention will be paid to Spartan military culture, Alexander the Great, Julius Caesar, the spread of the Roman Empire and Barbarian invasions. The objective of this course will be to understand the characteristics of human civilization and the features of land and territorial warfare.

**CIVICS AND ECONOMICS**

Grades 10 – 12

Standard

Credit: .5

Prerequisite: None

This course will examine the roles citizens play in the political, governmental, and economic systems in the United States. Students will identify the rights, duties, and responsibilities of U.S. citizens and describe the structure and operation of government at the local, state, and federal levels. Students will investigate the process by which decisions are made in the American market economy and the role government plays in it. Students will develop an individual perspective of patriotism, civic duty and respect for the law by discovering how they fit into their government. Practical applications such as registering to vote, paying local taxes, applying for a building permit, and filing state and local tax returns will be included.

<b>TECHNOLOGY EDUCATION</b>
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Recognizing that individuals have native potential for reasoning and problem solving, for imagining and creating, for constructing and expressing with tools and materials, Technology Education capitalizes on this rich potential . It develops content and learning experiences to contribute to this growth and development of human beings commensurate with their potential. Technology Education is a basic and fundamental study for all persons, regardless of their educational or career goals.

Technology Education will help students:

- know and appreciate the importance of technology
- apply tools, materials, processes, technical concepts and safety principles
- uncover and develop individual talents
- apply problem solving techniques
- apply other school subjects (math and sciences etc.)
- apply creative abilities (the arts)
- deal with forces that influence the future (change)
- make informed career choices

**WOODWORKING**

Grades 9-12

Credit: 1

Prerequisite: None

This is an introductory course available to all students interested in the design and construction of various woodworking projects. Emphasis will be placed on the safe and proper use of hand and power tools as well as construction techniques and procedures. Each student will produce both assigned projects as well as self-designed chosen projects.

**ADVANCED WOODWORKING**

Grades 10-12

Credit: 1

Prerequisite: Woodworking

The goal of this course is to provide the student with the opportunity to further refine and develop the skills introduced in Woodworking. Emphasis will be placed on the technical and more advanced procedures relating to woodworking designs and construction. Students will need to design, draw and estimate some projects. Machinery operation, maintenance and repair will also be a focus of study.

**CONSTRUCTION SKILLS**

Grades 10-12

Credit: .5

Prerequisite: Woodworking

This is an introductory course into the wide field of construction for students with a strong interest in the building trades. Students will build a shed gaining carpentry experience; framing the floor to the roof and applying sidings and roofing. An introduction into electrical wiring is also anticipated. Further, they will get experience with the tools, equipment and materials of those trades. Most of the experience will be outside. However, some time will also be spent in the classroom and the shop. Students will have to be prepared for the weather.

**BUILDING DESIGN TECHNOLOGY**

Grades 9-12

Credit: .5

Prerequisite: None

Students will design, specify and build a model house from the foundation to the roof. The emphasis will be on design using the latest technologies and engineering to construct an energy efficient and green building. Students will have to estimate the construction costs of their building and stay within a budget. Students will need to be motivated to solve problems and be creative. To develop and communicate their solutions, students will practice their manual drafting skills as well as CAD. Therefore, students can expect spending time researching, time in the classroom, and time in the shop using various hand and power tools.

**COMMUNICATIONS**

Grades 10-12

Credit: .5

Prerequisite: None

This course is designed to acquaint students with the graphic/ electronic systems that people use to communicate and career opportunities within communications. The course will focus on graphic electronic systems such as printing, photography, audiovisual, video and computer imaging and their personal, social, environmental and economic relationships.

**WEB PAGE DESIGN**

Grades 10-12

Credit: .5

Prerequisite: None

This course will provide students an opportunity to learn HTML programming, the basic programming language that is the basis for World Wide Web communications. Students would learn about Web page creation, design, and publishing. Students would integrate many applications (MS Word, MS Excel, MS PowerPoint, CorelDraw) and technology tools (scanners, digital cameras, video) in the making of Web pages.

**METAL WORKING**

Grades 9-12

Credit: .5

Prerequisite: None

This course is designed to introduce students to a variety of metal working processes. Students will have the opportunity to develop skills by participating in hands-on activities. Among some of the topics covered are: various machine processes, forging and casting, metallurgy, welding, sheet metal lay-out and fabrication, using metal as an artistic medium. This course will be particularly useful for those who wish to explore metal working as a career option, those who wish to use metal as an artistic medium or those interested in engineering.



**EXPLORING TECHNOLOGY**

Grade 9

Credit: .5

Prerequisite: None

This course allows 9<sup>th</sup> grade students to be exposed to each of the following programs: Automotives, Health, Agriculture, the Library, Audio Visual, Woodworking and Metal Working. Students are exposed to each of these programs for approximately two weeks so that they can get a solid understanding of what each of them has to offer. This will allow students to make informed decisions about entering such programs.

**VOCATIONAL PROGRAMS**

Vocational-Technical education is designed to educate and prepare students for employment and continuing academic and occupational preparation through a balance of classroom instruction, supportive services and occupational experience to develop life long skills so that upon completion of vocational-technical programs, students are qualified to pursue opportunities emanating from such vocational-technical programs . Students enrolling in a vocational program should be aware of the daily time commitment required for each program. Based on emerging technology impacting on vocational education, the following experiences are considered essential components of a comprehensive program. Individual student career goals should be considered in structuring a schedule of study.

**AGRICULTURE**

Grades 9-12

Credit: 2-4

Prerequisites: None

This program provides occupational preparation and exploration in plant science and environmental fields, as represented by the following areas:

- Greenhouse Operations/Floriculture
- Landscaping/Turf management
- Environmental Conservation

Students in the program gain skills and knowledge through the learning by doing process. Class activities in the greenhouse and outdoor areas are complemented by other selected activities during the year.

**AUTOMOTIVE TECHNOLOGY**

Grades 9-12

Credit: 2-4

Prerequisite: None

This program will expose the students to all phases of mechanics including automotive, recreational and the commercial areas. Students will possess entry level skills for employment upon graduation.

**COMPUTER REPAIR, A+ CERTIFICATION**

Grades 11-12

(Grade 10 with permission of instructor)

Credit: 2

Prerequisite: 1 year math, IPS or Science &amp; Technology

The A+ Certification is a one-year course that prepares students for a career in computer repair and to take and pass the Comp TIA A+ Certification core and specialty exam.

## **COMPUTER REPAIR, NETWORK++ CERTIFICATION**

Grades 11-12

Credit: 1

Prerequisite: Computer Repair A+ or recommendation of the instructor

This course covers the basic components of networking including routing, switching, integrated networks, and emerging technologies. Students will develop knowledge in networking and communication technology to give them the foundation they need for a future in the information technology industry. Topics to be covered include internet working fundamentals, routing, switching and network management, unified networks and emerging technologies.

The course also includes skills in communications, human relationships, and employment standards. Students work as partners or in teams to develop their human relationship skills. This project-based course will include lectures and quizzes to test basic understanding, hands-on activities and labs to further competency, and extension activities to challenge more able and willing students. Homework will be assigned as necessary to support the objectives of the course. Upon successful completion of the course, students are eligible to take the Network + Industry Certification Exam.

## **WORLD LANGUAGES**

The World Languages program in French, Spanish and Latin is carefully planned to develop the communications skills of listening, speaking, reading and writing. The program is enriched at all levels by audiovisual and other teacher-prepared materials to provide a varied and fast-paced approach to language learning. Throughout all courses, the World Languages Department offers a variety of personalized, student-centered activities and an up-to date authentic look at the countries and their people. Teachers in the World Languages Department encourage intermediate and advanced level students to take part in trips abroad that offer them the opportunity for direct cultural contact and foster great appreciation of other ways of life.

In today's job market, world languages can be a very practical supplement to many career choices. Although world language study is not required to graduate from high school, the vast majority of colleges, nursing schools and some business schools require at least 2 years of world language study at the high school level for admission.

### **FRENCH I**

Grades 9-12

Credit: 1

Prerequisite: None

This course introduces and systematically develops the four communications skills of listening, speaking, reading and writing. Students will also have the opportunity to learn about many aspects of the French-speaking world and its people.

### **FRENCH II**

Grades 9-12

Credit: 1

Prerequisite: French I

French II continues to reinforce and develop basic communications skills. Expanded cultural units are also presented through a wide variety of culturally authentic materials.

**FRENCH III**  
Grades 10-12

Credit: 1  
Prerequisite: French II

French III reviews and reinforces previously learned language skills, gradually leading to more sophisticated activities in all areas.

**CULTURE OF THE FRENCH-SPEAKING WORLD**

Credit: 1  
Prerequisite: French III

French Culture continues the development of the four language skills with heavier emphasis on the productive skills of writing and speaking. The cultural element of the course includes an exposure to the entire French-speaking world using music, film, literature and contemporary readings.

**ADVANCED PLACEMENT FRENCH**  
Grade 12

Credit: 1  
Prerequisite: French Culture and Civilization

This is a university level course taught entirely in French. The four language skills are developed to an advanced level. Students write extensively, give oral presentations and study more advanced literature from the French-speaking world. Students are required to use only French in class. AP French students are encouraged to take the advanced placement examination in May, which can lead to university credit.

**SPANISH I**  
Grades 9-12

Credit: 1  
Prerequisite: None

This course introduces and systematically develops the four communication skills of listening, speaking, reading, and writing. Students will also have the opportunity to learn about many aspects of the Spanish-speaking world and its people. Throughout the year, students will experience an increased use of the target language so that by the end of Spanish I, students will be comfortable listening to the target language. This class requires organization, study skills, motivation, and class participation.

**FUNDAMENTALS OF SPANISH IA**

Credit: 1  
Prerequisite: None

This course is designed for students who are interested in a world language, but lack a strong foundation in languages. Greater emphasis will be placed on knowledge of different Hispanic cultures and grammatical concepts will be covered at a slower pace than a traditional Spanish I course. Successful completion of both Fundamentals of Spanish IA and IB will meet the prerequisite for students who wish to take Spanish II.

**FUNDAMENTALS OF SPANISH IB**

Credit: 1  
Prerequisite: Fundamentals of Spanish IA or approval of instructor

This course is a continuation of Fundamentals of Spanish IA. Successful completion of both Fundamentals of Spanish IA and IB will meet the prerequisite for students who wish to take Spanish II.

**SPANISH II**  
Grades 9-12

Credit: 1  
Prerequisite: Successful completion of Spanish I and recommendation of the instructor

This course will reinforce the four communication skills of listening, speaking, reading and writing with an increased emphasis on speaking and writing. Expanded cultural units are also presented through a wide variety of textbook and teacher prepared materials. Much of the material will be presented in Spanish.

**SPANISH III**  
Grades 10-12

Credit: 1  
Prerequisite: Successful completion of Spanish II and recommendation of the instructor

Spanish III reviews and reinforces previously learned language skills while gradually introducing more sophisticated language and structure appropriate to intermediate language learners. At this level, instructors will conduct virtually all classroom activities in the target language. Students will be required to demonstrate their ability to comprehend and actively use the target language with their classmates and teachers.

**SPANISH IV**  
Grade 12

Credit: 1  
Prerequisite: Successful completion of Spanish III and recommendation of the instructor

For fourth year students the primary objective is to strengthen the reading, speaking and writing skills. Students view full-length foreign films to increase vocabulary and to develop composition topics. Reading selections provide an introduction to the more noted Spanish authors. Grammatical and structural skills are reinforced through composition work, leading from controlled to more independent writing activities.

**ADVANCED PLACEMENT SPANISH**  
Grade 12

Credit: 1  
Prerequisite: Successful completion of Spanish IV and recommendation of the instructor

Advance Placement Spanish will further develop and refine the four communication skills with an increased emphasis placed on reading and writing. Selected readings include short stories, novels, plays and poetry.

Advanced Placement students must use the target language exclusively in class. AP Spanish students will be encouraged to take the Advanced Placement examination in the spring.

**LATIN AND COMPARATIVE LANGUAGES**  
Grades 9-12

Credit: 1  
Prerequisite: None

Latin and Comparative Languages is a one-year, stand-alone, enrichment elective. The course introduces the basic grammar and vocabulary of Latin, explores historical and linguistic relationships among Latin, English, and other languages, and considers the underlying structures and idea of language itself.

## COURSE ACCELERATION REQUEST PROCEDURE

In order to accelerate course enrollment, a student must complete a general and department specific application. The following procedures will be followed when a student requests acceleration:

1. It is recommended that students indicate their intention to enroll in courses other than the typical grade level course by May 1<sup>st</sup> of the previous school year.
2. A cumulative grade point average of 90 with no grade lower than a 90 in the specific discipline is recommended for course acceleration.
3. The student and parents/guardians will set up a meeting with a guidance counselor and complete the following:
  - a. The student will submit a written request including his/her rationale for the acceleration and why he/she is a strong candidate for acceleration.
  - b. The parent(s) will provide a written statement supporting the request.
  - c. Students requesting acceleration in:

**Art** will submit a sketchbook and portfolio of at least five (5) pieces of work, three (3) of which should be drawings. Additionally, students will submit a letter of recommendation from his/her previous art teacher addressing academic, social and emotional readiness for the acceleration.

**English** will provide a portfolio of writing samples along with a list required and independent reading completed during the most recent school year. Students will submit will also provide a written recommendation from his/her previous English teacher addressing academic, social and emotional readiness for the acceleration.

**Mathematics** will complete a placement assessment or submit a letter of recommendation from his/her previous mathematics teacher addressing academic, social and emotional readiness for the acceleration.

**Science** will submit a written request and a letter of recommendation from his/her previous science teacher addressing academic, social and emotional readiness for the acceleration. Students seeking course acceleration in science must complete Algebra I or equivalent before 9<sup>th</sup> grade.

**Social Studies** will submit a written request and a letter of recommendation from his/her previous social studies teacher addressing academic, social and emotional readiness for the acceleration.

**World Languages** will submit a portfolio of writing samples and oral recordings (MP3 file) along with a letter of recommendation from his/her 8<sup>th</sup> grade World Languages teacher addressing academic, social and emotional readiness for the acceleration.

4. Members of the academic department will meet to review all applications and make a recommendation to each student's guidance counselor. Based on the recommendation of the academic department and the guidance counselor, the Principal will approve or disapprove each request for course acceleration. If a student disagrees with the recommendation of the Principal, the request may be appealed to the superintendent.

*Please note: other than mathematics and World Language, as stated on page 8 in this document, course acceleration does not change the credit requirements for students enrolled at MMRHS.*

2012

## EARLY GRADUATION POLICY

The BHRSD School Committee acknowledges that most students will satisfactorily complete the requirements for graduation as set forth by the Department of Elementary and Secondary Education and the Berkshire Hills Regional School District in the traditional four years, while other students may satisfactorily complete the requirements in three or five years. Therefore, the BHRSD School Committee will accept modification to the traditional four-year high school attendance requisite for high school graduation provided the student has satisfactorily met all standards and expectations.

Students planning to graduate early must notify the Principal by December 1 of their junior year.

In order to graduate early, a student must complete six (6) semesters or three years of high school attendance and have successfully completed the terms of the Berkshire Hills Regional School District Graduation Requirements.

The following procedures must be followed when a student requests early graduation:

1. It is recommended that students indicate their intention to graduate early to a counselor any time during their sophomore year, but must do so before the deadline of December 1 of their junior year.
2. A cumulative grade point average of 80 is recommended to apply for early graduation.
3. The student must have met the Massachusetts Comprehensive Assessment Program (MCAS) requirement
3. The student and parents/guardians will set up a conference with the counselor to complete the following:
  - a. Academic credit check.
  - b. Document reasons for early graduation that align with post-high school plans.
  - c. Set up a tentative final schedule.
  - d. Give parental/guardian permission form for early graduation, which must be completed before February 1 of their Junior year. This form is returned to the Principal.
  - e. Instruct student to have parent/guardian and student request conference with counselor, Principal, student and parent/guardian after the permission form is completed.
4. A conference with the Principal is mandatory. The Principal will approve or disapprove the student's request for early graduation. If the student disagrees with the recommendation of the Principal, the request may be appealed to the superintendent.

**Early Graduation Request Form**

**To the Principal of Monument Mountain Regional High School:**

Regarding the early graduation of \_\_\_\_\_, we, the parent/guardian of the student named above, have discussed the pros and cons of early graduation from Monument Mountain Regional High School. We request that our student named above be allowed to graduate early, upon completion of all requirements.

Signature of Parent/Guardian: \_\_\_\_\_ Date: \_\_\_\_\_

I, \_\_\_\_\_, hereby request the privilege of graduating from Monument Mountain Regional High School after three years of attendance. I assume full responsibility for meeting all the requirements and deadlines. My parent/guardian approves my plan and will set up a conference with the high school principal.

Signature of student: \_\_\_\_\_ Date: \_\_\_\_\_

**NOTE:** A conference including the student, parent/guardian, counselor and high school principal is mandatory. It is the parent/guardian responsibility to contact the principal to schedule this conference.

The principal will approve or disapprove the request. If the student disagrees with the recommendation of the principal, the request may be appealed to the superintendent.

***THIS DOCUMENT WILL BE PLACED IN THE STUDENT'S PERMANENT FILE***



**MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
PHONE NUMBERS**

Main Office:	(413) 528-3346
Guidance Office:	(413) 528-8506
Athletic Office:	(413) 528-8510
Cafeteria Office:	(413) 528-3410
School Nurse:	(413) 528-3411
Main Office Fax:	(413) 528-9267
Guidance Office Fax:	(413) 528-8509

**EMAIL CONTACT INFORMATION**

Principal	Marianne R. Young	<a href="mailto:marianne.young@bhrsd.org">marianne.young@bhrsd.org</a>
Secretary to the Principal	Tracy Clark	<a href="mailto:tracy.clark@bhrsd.org">tracy.clark@bhrsd.org</a>
Assistant Principal	Scott Annand	<a href="mailto:scott.annand@bhrsd.org">scott.annand@bhrsd.org</a>
Secretary to the Assistant Principal	Tina Tarnawa	<a href="mailto:christine.tarnawa@bhrsd.org">christine.tarnawa@bhrsd.org</a>
Guidance Counselors:	Mike Powell	<a href="mailto:mike.powell@bhrsd.org">mike.powell@bhrsd.org</a>
	Sean Flynn	<a href="mailto:sean.flynn@bhrsd.org">sean.flynn@bhrsd.org</a>
	Loren Lauffer	<a href="mailto:loren.lauffer@bhrsd.org">loren.lauffer@bhrsd.org</a>
	Marcie Velasco	<a href="mailto:Marcie.velasco@bhrsd.org">Marcie.velasco@bhrsd.org</a>
Guidance Secretaries	Rebecca Campetti	<a href="mailto:rebecca.campetti@bhrsd.org">rebecca.campetti@bhrsd.org</a>
	Deborah Caffrey	<a href="mailto:deborah.caffrey@bhrsd.org">deborah.caffrey@bhrsd.org</a>



## SECTION FOUR: EVALUATION OF EXISTING CONDITIONS

### 4.1 EXISTING SITE CONDITION

The following information is based on walk through of the site performed on May 8, 2012 and a review of available record plans (see Prentice Bradley & Norman G. A. Day Associates plan set dated April 26, 1966).

#### GENERAL SITE INFORMATION

The existing Monument Mountain Regional High School is located at 600 Stockbridge Road (Route 7) in Great Barrington, MA. It is shown as Assessors Map #39, Parcels 3c, 4, & 19 and Map #35, Parcel 22 and is located within the R4 Large Acreage Residential zoning district. The site is not located within any special zoning overlay districts. The site is bound by Stockbridge Road to the west, Monument Valley Road and Muddy Brook Regional Elementary School to the southwest, tennis courts and a ball field to the north and land to the east and southeast owned by Massachusetts Land Conservation Trust, Inc. The eastern property line follows the Konkapot Brook, identified as a perennial stream on 2009 U.S. Geological Survey quadrangle maps.

The site measures approximately 143.3 acres, 40 acres of which make up the developed and western region of the site. The existing high school building is centrally located within the developed area. There is also a farmhouse building with accessory greenhouse structures located on the western corner of the site, at the intersection of Stockbridge Road and Monument Valley Road. There is a small play structure and basketball court to the east of the school building. A track and field complex with bleachers and a press box are to the east of the existing school building, along with practice field space and baseball and softball fields. The site accommodates parking for approximately 290 vehicles mostly concentrated in a large parking lot to the north of the school building. The rest of the site, approximately 55 acres, is densely wooded and undeveloped. There is at-grade loading area on the northwest corner of the building.

As previously noted the site is located within the R4 Large Acreage Residential zoning district. The R4 district has the following dimensional requirements:

Min. Lot Area	Min. Lot Width	Min. Front Yard	Min. Side Yard	Min. Rear Yard	Max. Building Coverage	Max. # Stories	Max. Height
87,120 sf	200 ft	50 ft	20 ft	30 ft	10%	2 ½	35 ft

The project site may require Site Plan Approval from the Great Barrington Planning Board. Based on the dimensional requirements above, the existing building and site are likely in conformance. Any expansion of the school will likely require a variance with the Great Barrington Zoning Board of Appeals if the dimensional requirements are exceeded.

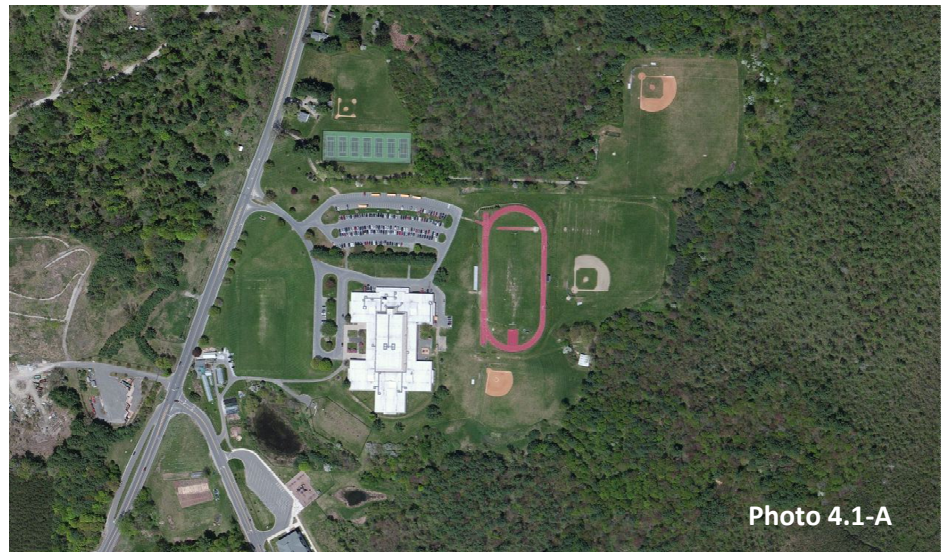
Topography on the project site ranges significantly from the southwest corner at elevation 864 where the greenhouse building exists up to elevation

896 where the high school exists and down to a rough elevation of 830 along the east side of the property at the Brook. The school is one story with the same floor elevation throughout the building. In general, the site slopes away from the high school building in all directions as steep as 3h:1v.

Based on review of the Massachusetts Geographic Information (MassGIS) wetland resource database, there are resources areas identified on and adjacent to the site. There is a large resource area associated with the Brook along the eastern side of the site; however, it is mostly within the undeveloped portion of the site. There is a resource area indicated between the high school and greenhouse in a low portion of the site, and a large resource area just north of the property. The owner has also furnished a partial existing conditions plan that has much of the lower areas of the site to the north and south of the school hatched and identified as wetlands. A preliminary site walk will be scheduled with a wetlands consultant and will help define the resources areas that could impact the project.

A review of the Massachusetts Natural Heritage Atlas (online viewer) indicates there is a Priority Habitat on the project site within the undeveloped eastern area of the site. Although this area is most likely outside the project development it will require a filing in accordance with the Massachusetts Endangered Species Act (MESA).

According to the Flood Insurance Rate Map (FIRM) for Berkshire County (Community Panel Number 250024-0010-B, Panel 10 of 20, dated July 19, 1982), the site is located within an un-shaded Zone C. FEMA defines this area as an area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.



## **PARKING AND CIRCULATION**

The site is accessed from Stockbridge Road via a single curb cut on the western side of the site. Access to the main parking lot splits off the drive to the left. The parent drop-off/pick-up for students is at the front door of the school, on the west side of the building. The bus drop-off/pick-up location is immediately adjacent and north of the building. Emergency vehicular access

around the school is provided only around the west and north sides of the building.

Vehicular access to the greenhouse building is from a single curb cut off Monument Valley Road. There is a paved un-striped parking area for roughly 6-10 cars. There is also additional access up to the high school by a paved pathway approximately 10' wide.

The existing pavement and walkways are in fair condition. Some longitudinal surface cracks and alligator cracking were observed within driveways and parking lots. Curbing is in place at the majority of the drives and parking areas, and is vertical granite curb, pre-cast concrete curb, or bituminous berm. The general condition of the curbing is poor. The curbing is cracked and broken in many places, and portions have deteriorated completely. There are sections of bituminous within concrete curb suggesting attempts to repair the damaged portions.

A more detailed analysis of the existing traffic conditions, prepared by our traffic consultant Bryant Associates, is included in Section 4.5 of this report.

#### **MAAB/ ADA ACCESSIBILITY**

There is a general lack of compliance with current MAAB/ ADA accessibility requirements throughout the site. There are roughly 5 accessible parking spaces located adjacent to building entrances, 3 of which are within fire access and drop-off/pick-up zones parallel to the curb at the main entrance. Current regulations require a minimum of 7 accessible spaces including 1 van accessible space. Curb ramps are provided at the majority of walkways however most do not meet the code requirements and will need to be replaced.

Exterior building doors on the high school appear to be within compliance. Access to the greenhouse from the high school is not in compliance with current MAAB/ ADA accessibility requirements as the existing paved walkway exceeds the maximum allowable slopes. The track and field complex does not meet the current MAAB/ ADA accessibility requirements, specifically accessible access onto bleachers and into the press box. Currently there are no accessible routes in place leading from the high school building to the track and the other fields on the project site.

#### **HISTORICAL PRESERVATION**

The Massachusetts Historical Commission (MHC) was visited on May 31, 2012 by SMMA staff to review Inventory of Archaeological and Historic Assets of the Commonwealth and the State Register of Historic Places. It was found that the school building is not listed on the State Register of Historical Places. MHC base map no. 113 and the computerized street index for Stockbridge Road was reviewed and was determined there are no Historical Assets on the Inventory of the Commonwealth mapped on the project site. In addition, MHC base maps no. 54 and 151 were reviewed and it was determined that there are no Pre-Historical Archaeological Assets of the Commonwealth mapped on our project site.

## **ATHLETIC FACILITIES**

The track and field on site consists of a 6-lane, 400-meter track with a multi-purpose field used for multiple sports including football and soccer and is equipped with stadium lighting. Also within the track are 2 long jump pits and a pole vault area. The condition of the track is generally good. Along the west side of the track there are a set of aluminum bleachers that are in fair condition. On the east side of the track there is a small press box in fair condition. The field is also equipped with an electronic scoreboard in poor condition and wood post-mounted field light fixtures.

The other ball fields on the site include 2 general practice fields and a baseball and a softball field. Both the baseball and softball fields have benches along the third and first base line and adequate backstop fencing. A small set of aluminum bleachers that could roughly accommodate 50 people also exists at both fields along the first base lines. Each of the outfields and practice fields are shared. It appears there was once a second baseball field but currently does not seem to be used as originally intended.

## **UTILITIES AND DRAINAGE**

The site is currently served by a public water supply well located within the undeveloped eastern portion of the site. This was installed in 2002 and also serves the Muddy Brook Regional Elementary School and Monument Valley Regional Middle School, located south of the high school site. There are 2 other wells on site; one north of the school building which currently serves as an emergency supply, and another located near the agricultural/greenhouse building currently providing irrigation for activities associated with the greenhouse. The permitted withdrawal rate will have to be confirmed as acceptable to serve the Monument Mountain project.

A wastewater treatment plant was built in 2004 on the Monument Valley Regional Middle School property and serves the Middle, Elementary and High Schools. The treatment plant will have to be confirmed acceptable to serve the Monument Mountain project.

It appears that surface runoff from the parking lots is captured by catch basins and is piped daylight to low areas of the site to the north. It is not known if the catch basin structures have deep sumps or hoods. It also appears the rooftop runoff is captured and piped to join flows from the parking lots. The remainder of the site appears to flow overland off the property.

The gas service to the high school is from the municipal line in Stockbridge Road. It is unknown where the electrical service is provided from, although the telecommunication service is provided from the greater school campus complex to the south according to an undated survey plan provided by the owner.

## **SITE LIGHTING**

The existing lighting system is comprised of pole mounted fixtures within the existing parking lot and in areas adjacent to the building's main entrance. The number of existing fixtures appears to be inadequate to provide the town's light distribution design standard of a minimum 0.6 foot candles along roadways, parking lots, and pedestrian circulation areas. There were no lighting fixtures along the entrance driveway. There was no pedestrian lighting along the walkway to the greenhouse building. No other lighting fixtures were observed at the greenhouse. The existing exterior lighting will be analyzed and changes may be required to meet the town's standards and LEED guidelines.

## **SOILS AND GEOTECHNICAL INVESTIGATION**

According to the USDA Soil Survey of Middlesex County, the majority of on-site soils in the developed portion of the site consist of Pittsfield Loam of varying slopes. This type of soil is generally classified as moderately well drained soils with moderate infiltration rates. The remaining site is classified as Oakville Loamy Sand toward the west in the area of Stockbridge Road, Fredon Fine Sandy Loam to the south in the area of the greenhouse building and areas north of Monument Valley Road, and Palms and Carlisle Mucks to the east which is associated with Konkapot Brook.

A review of the emergency existing water supply well on site also identifies bedrock at approximately 4' below grade. Based on the terrain of the region it is anticipated that bedrock could exist at varying depths below the ground surface. A detailed geotechnical investigation of the site will be performed to confirm the soil profile of the site and to establish design parameters for the project during the Schematic Design phase.

SMMA recommends that the geotechnical investigation be expanded to include radon levels within the existing building and any proposed building addition. A review of available information on radon levels in Massachusetts indicated a potential for elevated radon levels in existing buildings in Berkshire County.

## **4.2 EXISTING BUILDING CONDITION**

The following information is based on a walk through performed on April 19, 2012 and a review of available record plans (see Prentice Bradley & Norman G. A. Day Associates plan set dated April 26, 1966).

Plans and specifications received from the District appear to be accurate and true to what is built; however, there are several minor repairs and renovations that have occurred through the years, in particular, the addition of the Student Center as well as some added interior wall partitions at classroom spaces. Documentation for these alterations were not provided.



## BUILDING DESCRIPTION

113,705 GSF built in 1966

Use Group: Education (A - Auditorium/Gym/Library/ Cafeteria)

Type of Construction: IIB – no-sprinkler

One story, with several mezzanine levels at Gym-press box and Auditorium.

The entire building is clad in brick veneer and aluminum single pane glass constitutes the windows and entrances.

All roofs are flat with internal roof drains and a continuous terne metal clad “mansard” fascia around the perimeter of the building.

There are 10 distinctive portions in the building (As broken down on the original drawings):

- Wing A – Technology, Shops
- Wing B – English and Foreign Language Classrooms, Faculty Office
- Wing C –Bus Loading, Locker Rooms, Boiler Room
- Wing D – Gymnasium and Locker Rooms
- Wing E – Auditorium, Music/Chorus Rooms
- Wing F – Science and Math Classrooms and Labs, Faculty Office
- Wing G – Dining, Kitchen, Receiving, Student Center, Nurse
- Wing H- Business/Technology and Social Studies Classrooms, Faculty Office
- Wing K- Art, Preschool Program, Foods
- Wing L- Main Entry, Administration, Guidance





## EXTERIOR WALLS

The exterior walls are masonry and topped by a continuous band of terne metal panel/ mansard roof fascia. The majority of the masonry construction appears to be constructed of 4" brick veneer with 8" masonry backup. According to the existing documents and specifications received dated 1966, there is minimal cavity insulation (1-1/2" rigid insulation) in the full height brick exterior walls. The masonry is in generally good condition inside and out. There are a few areas, at the bus loading area, for instance, in which the brick has been damaged and chipped. (Photo 4.2-B) The foundation wall where exposed to view appears to be in good condition.



## EXTERIOR WINDOWS

The windows are single glazed aluminum windows with operable projecting sash window units. The windows are generally fair to poor in condition and do not comply with current energy codes. It was noted that existing window curtains often remain closed during cold months due to the draft as the single pane units offer very little thermal resistance. Replacement of the existing windows to thermally broken insulated units would be recommended.

Glare conditions exist in some of the classroom spaces due to building orientation and lack of sun shading devices.



Security concerns were also discussed in regards to the size and height of the existing casement windows. Students often "walk" right out of the full height operable windows.

## ROOFING

The building has an adhered vinyl roof membrane (Sarnafil) which is in fair condition although nearing the end of its useful life, installed in the late

80's/early 90's. Maintenance reports occasional leaks mainly occurring near the expansion joints. There are currently no skylights or clerestory windows. Metal roof-edge, coping and flashing are in generally fair condition with discoloration at many locations.

According to the original construction documents and specifications, it appears that only 1" of rigid insulation was installed behind the terne metal (mansard) portion of the roof. The terne metal, appears to be in relatively good condition given its age; however, paint is chipping on most surfaces. Removal and replacement of this system would allow proper insulation to be installed, potentially addressing energy goals and LEED prerequisites.

According to the Facilities Department, ¾" hardboard and 1" of rigid insulation was installed under the newer existing roof. This is well below current energy code standards and will need to be addressed upon replacement of the roof.



Photo 4.2-F

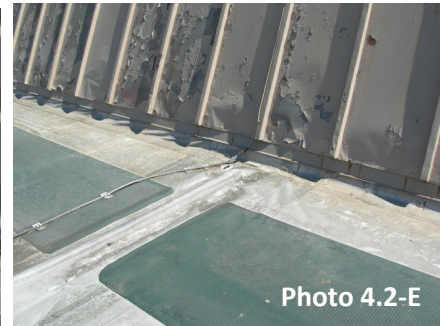


Photo 4.2-E

## INTERIOR PARTITIONS

The interior partitions separating classroom spaces and corridors are typically painted GWB with the walls separating each classroom wing being brick or painted CMU.

Most classroom partitions are generally covered with casework, marker boards or tack boards. The visible portions of these partitions appear to be in good condition and well maintained.

The partitions of the gymnasium and locker rooms are of painted masonry construction. The Auditorium walls are mainly brick veneer with wood paneling which give the space a very heavy, dark appearance.

Hand-painted wall murals by students are scattered throughout the hallways, mainly in the Science/Math wing. Some of these corridor partitions have been clad over with plywood and painted out for a more durable finish. This could be a building/fire code issue and will need to be addressed.

Generally, all interior and exterior masonry walls are in good condition and don't show any cracks or signs of structural movement.

## FLOORING

Corridors have resilient floor tiles which are in fair condition or carpet which is in very good condition (Photo 4.2-H). The resilient tiles at egress door threshold locations are chipping away and in some toilet/storage locations tiles are missing (Photo 4.2-G). Most of the classrooms have resilient floor

tiles. Refer to a separate report for the extent of the asbestos containing floor tiles. The wood flooring on the stage of auditorium is in fair/poor condition. The gymnasium floor appears to be in fair/good condition. The ceramic tile flooring in the locker rooms appears to be in fair condition.



Photo 4.2-H



Photo 4.2-G

### SIGNAGE

Signage is obsolete and should be replaced to comply with current ADA/MAAB accessibility standards and requirements.

### LOCKERS

The student lockers are original to the building, narrow and require frequent repair (Photo 4.2-I). Maintenance reports that repair is difficult as replacement parts are not available given the age of the lockers, thus custom pieces often need to be fabricated which is costly and time-consuming.

Current MAAB/Accessibility codes require that 5% of the lockers provided (including athletic and gym lockers) be accessible. Currently, existing lockers do not meet this requirement.



Photo 4.2-I



Photo 4.2-J

### CASEWORK

Science room casework is original, worn and does not meet accessibility standards or current lab needs. MAAB/ADA Codes require that 5% (or a minimum of at least 1 workstation, sink, or kitchen per space) should be accessible, and currently there are no accessible stations/sinks. It is recommended that all existing science room casework be replaced as part of this project. The general classroom casework is in similar condition and it is recommended to be replaced as well.





Photo 4.2-K



Photo 4.2-L

### MEANS OF EGRESS AND DOORS

The configuration of the corridor egress system, number of exits and capacity of the egress doors appears to meet egress code requirements to allow the calculated population of the various building wings to safely exit the building. However there are several conditions existing in the system. Many of the egress doors have damaged hardware or are in disrepair to a point that they will not close into a correct latched position. Also, many of the exit egress doors do not meet MAAB/Accessibility requirements for door clearances, clear floor space, thresholds and level landings on both sides of the door. Refer to Photo 4.2M indicating an exit egress door that does not meet MAAB requirements due to the existing step down (roughly 6"-7") at the threshold. This does not meet the level landing requirements for exit doors along an accessible means of egress.

In most corridors, there are several pairs of non-latching doors that limit corridor lengths. It cannot be determined if these doors were intended as fire separation assemblies or smoke compartment doors, which earlier codes may have required. Many of these doors may be able to be eliminated as a result of the introduction of a fire-sprinkler system.



Photo 4.2-M



Photo 4.2-N

All toilet room doors in addition to some other doors leading into teacher conference rooms and administration offices do not currently meet MAAB/Accessibility requirements for door width and door clearances required at latch side of doors. Most toilet room doors are only 2'-4" or 2'-8" doors which would not provide the 32" clear opening width (with the door in the 90 degree open position) required by MAAB.

## **PASSAGEWAYS AND CORRIDORS**

The widths of the existing passageways and corridors are adequate to allow the existing calculated building population to exit the building. Calculations and further code analysis will be required to confirm this will remain the case based upon the proposed new floor plan layout and proposed occupancy.

## **GENERAL ACCESSIBILITY ISSUES**

Given that the existing building is one-story, the extent of MAAB/Accessibility upgrades are greatly minimized and will not require any major infrastructure changes; however, there are many issues that need to be addressed.

There are several code and accessibility issues in the auditorium: currently there is no wheelchair accessible spaces/seating. The existing orchestra pit is not accessible due to the existing stepped aisles. This could be addressed through the introduction of a lift or a ramp.

There are currently no accessible work stations or fume hoods in the science rooms.

Many of the secondary corridor egress doors are without the necessary side maneuvering clearances required to meet accessibility code.

Accessible showers and lockers are required by MAAB/ADA Guidelines in the Locker rooms.

## **TOILET ROOMS**

In general, most of the toilet rooms available to the students are in fair to poor condition. None of the existing toilet rooms or locker rooms have been upgraded to accommodate current accessibility codes. Fixtures are outdated and inefficient. Overall, all toilet rooms require comprehensive renovation and repair.



## **FIRE SEPARATION OF THE BUILDINGS**

Due to the large floor plate of the first floor, the area may need to be separated into multiple sections or “buildings” after the installation of sprinklers throughout. This separation will be done by the means of fire walls. As indicated in the original drawings, fire walls are present between some of the assembly spaces to meet building codes at the time of construction. Depending on the area of work and amount of construction,

upgrades to these fire wall assemblies and/or new fire walls may need to be constructed to meet current building codes.

### **ENERGY CODE AND EXTERIOR ISSUES**

For the most part the existing facility has very minimal insulation installed within the wall cavities and at the roof level.

According to the original drawings and specifications, it appears that only 1 ½" of rigid insulation was installed within the full-height masonry wall cavity. Insulation behind the terne metal "mansard" fascia was specified only at 1", and site inspections above the ceiling revealed fiberglass batt insulation above the exterior soffits. According to maintenance, only 1" of rigid insulation (over ¾" hardboard) was installed at the time the newer roof membrane was installed. The extent of the existing insulation is grossly inadequate and the full extent of upgrades will have to be explored as part of this renovation in any attempt to satisfy LEED requirements to provide increased energy efficiency. All new systems and elements installed will be required to meet current energy codes.

The existing aluminum non-thermally broken single glazed windows do not meet today's energy code. These windows have almost no resistance to energy loss. It is recommended that all existing exterior windows and doors be replaced as part of the renovation project.

### **CEILINGS**

Most classrooms have the original acoustical tile ceiling, 1'x1', at 9'-4" above finished floor. The main corridors, Art Room, faculty offices and renovated interior classrooms have been updated to a 2'x2' ACT ceiling with some newer lighting (9'-4" ceiling height). The Media Center/Library has also been more recently updated to a 2'x4' ACT ceiling. All Shop spaces are exposed to structure above.

The Band Room maintains the existing 1'x1' ACT ceiling at a height of 25'-1" above finished floor. The Auditorium ceiling is composed of the original hung 1'x1' ACT ceilings stepping down at 3 levels. The Gymnasium is exposed to structure with a clear space under structure of roughly 24'-5 ¾" (28'-2" to underside of metal roof deck)

Faculty offices are 2'x2' ACT with artwork painted in various ceiling tiles.

### **AUDITORIUM**

The Auditorium is generally in good condition, but is dated and appears very dark with the majority of the walls covered in brick and dated wood paneling. The existing control booth located at the rear of the Auditorium space is currently not MAAB/ADA accessible. The original sliding partitions that were installed to separate the 2 rear seating areas from the main Auditorium space are old and not currently operable.



### INTERIOR FINISHES

Overall, interior finishes are in good condition and well maintained, but dated. There are no cracks in the interior masonry. Existing asbestos floor tile is installed in most classroom spaces should be properly abated if new finishes are to be installed.

### ACCESSORY BUILDINGS/STRUCTURES

#### Agricultural Building/ Greenhouses

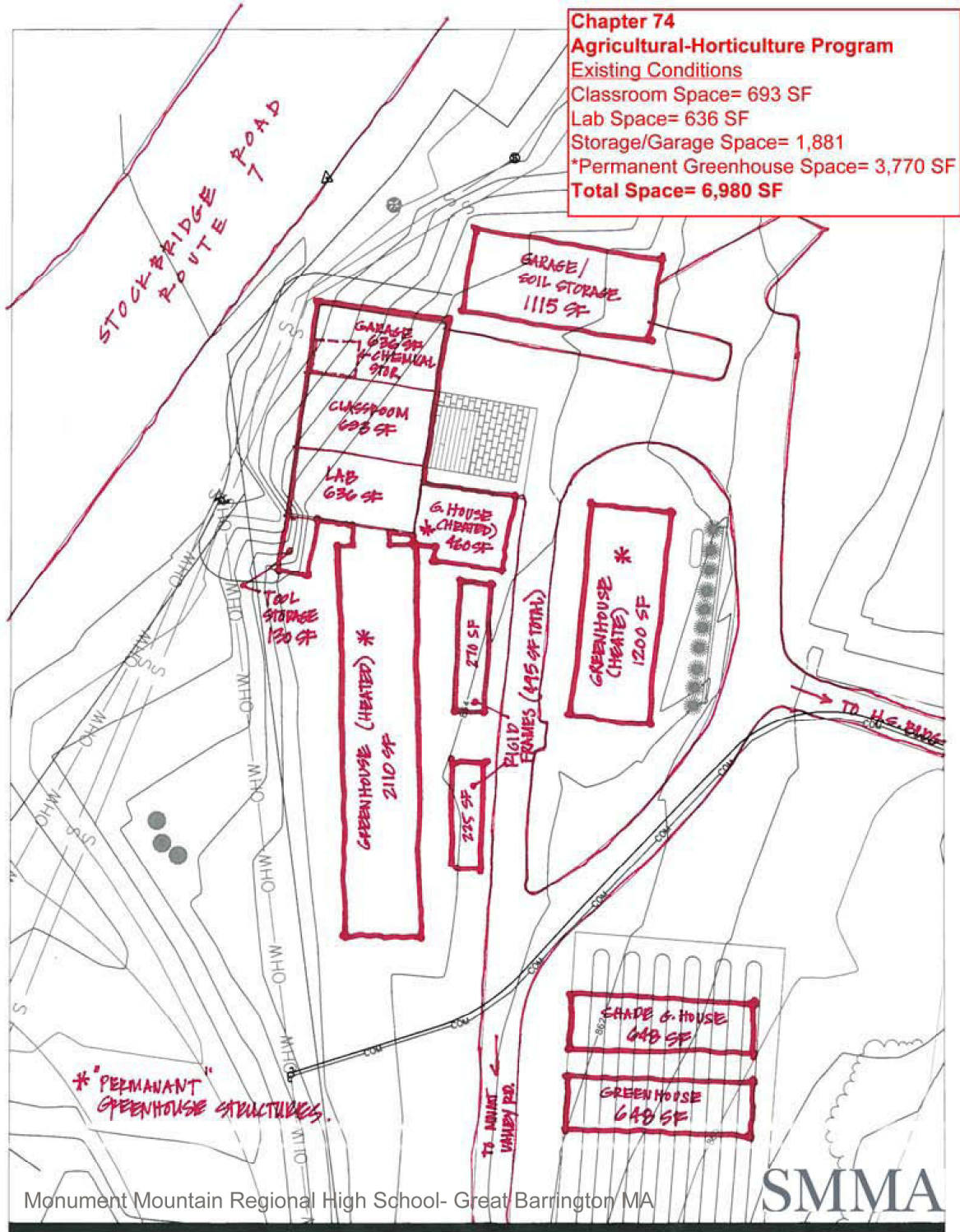
Situated along Route 7 at the bottom of the hill, the remote location and general site accessibility to these buildings is of concern and ADA/MAAB accessibility will need to be addressed if the program is to remain in the current location.

The main building housing the lab space and classroom is not ADA/MAAB accessible due to multiple level changes; non-compliant threshold conditions; non-compliant work stations and transaction counters; and door hardware and door clearance issues. The greenhouses, which are often accessed by the public during the annual plant sales, are not accessible-also having multiple level changes and non-compliant door conditions.

One potential recommendation would be to demolish the existing structure and construct a new accessible building and greenhouses as required to meet the curriculum and Chapter 74 guidelines. The location on the site, whether to remain at the bottom of the hill or relocate adjacent to/within the school, is still to be explored and determined.







Agricultural Program- Existing Building Square Footages

May 8, 2012



**Press Box**

The existing press box, located along the centerline of the track, facing the back of the school is also not MAAB/ADA compliant. General access to the box is not code-compliant with a very steep wood staircase. The interior of the box is unfinished with exposed conduit and wood frame structure.

**STRUCTURAL SYSTEM**

The following information is based on a walk through performed on April 19, 2012 and a review of the original structural construction drawings prepared by Harvey & Tracy dated April 26, 1966. The original structural drawing set appears to correctly match what was installed at the school.

**Existing Structural Systems**

The structure of the Monument Mountain High School appears to be in relatively sound condition with no visual signs of structural distress anywhere in the building, nor were there any visible signs either interior or exterior of excessive settlement. The interior floor slabs, whether elevated framed slabs or slabs-on-grade at the ground floor level, show very little cracking.

The structure is essentially a one story steel framed building, with a higher roof above the Gymnasium and Auditorium, and some elevated mezzanine type slabs within the footprint of the higher roofs. The foundation consists of isolated concrete spread footings at the interior building columns, and continuous wall footings at the perimeter of the building. The first floor consists of a 4" or 5" thick concrete slab-on-grade. Subsurface soil information was not included on the existing documents.

The roofs of the various wings of the building are typically framed with open web steel joists supported on wide flange steel beams, supported by wide flange steel or square tube steel columns. The roof in Part "A" of the building (the vocational classroom wing) is framed entirely by wide flange steel beams, without open-web joists. The elevated mechanical and mezzanine slabs (that occur within the footprint of the gymnasium or auditorium) consist of 6" or 4" concrete slabs on wide flange steel beams. The typical roof deck appears to be 1.5" metal roof deck. The Gymnasium and Auditorium high roofs are framed with 48" deep long span LH joists supported on wide flange steel girders.

The drawings indicate "vertical x-bracing" throughout the building, which acts as the lateral force resisting system. The lateral bracing consists of steel rods and flat steel bars, all acting in tension. This bracing was not visible during the walk through as it is hidden in the interior and exterior walls. Given the age of this building, it was likely designed for wind loads, but may be sufficient for minimal seismic loads. If substantial renovations are made to the building, the ability for these braces to resist seismic forces should be reviewed. This review will likely be required by the building code, depending on scope of renovations. By current building code standards, this region falls under Seismic Design Category "B", which is on the lower end of seismicity classification.

Another item of note related to the seismic review of the existing conditions has to do with the existing masonry (CMU) walls. There are several CMU

partition walls in the school, which are likely ‘unreinforced’, meaning that they may not have been constructed with steel reinforcing bars. If this is the case, the building code for existing structures prescribes methods to evaluate if additional seismic bracing of the walls is required. Often this involves mechanically fastening the top of the walls to the steel roof structure to prevent the walls from falling over during a seismic event. During the review, where the top of the walls were visible, they did not appear to be mechanically fastened to the steel structure. Depending on the level and type of renovations proposed to the existing building, it may be required to add fasteners to the CMU walls to properly secure them to the steel structure.

The original drawings indicate the following design loads for the various building spaces:

Corridors and Stairs.....	100psf
Machine Room.....	150psf
Roofs.....	40psf
Classrooms.....	50psf
Press Box Machine Room.....	125psf

Under the current building code, the flat-roof snow load for this building type in this area is calculated to be 50 PSF, which is greater than what is noted on the drawings. Furthermore, the current calculated snow load is even higher at locations where drifting snow can collect, such as where the high and low roofs intersect. As a result, it is recommended that a more extensive analysis/evaluation be performed, and include the loads from the drifting snow.

The proposed building renovation will occur under the 8th edition of the Massachusetts Building Code, 780 CMR, which is based on the 2009 edition of the International Building Code (IBC 2009). Under this code, the scope of structural upgrades will be largely dependent on the scope of the overall building renovation. However, at a minimum, any renovation will likely require a more “in-depth” review of the existing lateral system, roof load capacity, and review of un-braced masonry walls with possible upgrades to these systems.

### **Agricultural Buildings- Existing Structural Systems**

The agricultural complex on the high school campus consists of several greenhouse structures, an agricultural building/learning space and an equipment/landscape storage building.

The greenhouse structures are prefabricated steel structures and appear to be suitable structurally for the intended uses solely as agricultural structures.

The agricultural building appears to be converted from a wood framed house or cabin type structure into the classroom/learning space that it is currently used as. The building appears to be older than the high school, likely built in the mid-20th century or earlier. It is a wood framed building

with a stone foundation, with a basement below a portion of the building. The classroom type space is located above the basement area and framed with wood joists and girders. It appears that at one point additional wood framing was added below the center of the joist spans to reinforce this floor. It appears that new concrete footings were installed at the time of the floor reinforcing.

The building appears to be designed to be used as a residential space, but converted to be used as a learning space. Under the current building code, there are certain requirements that should be reviewed when a building changes its occupancy type. It is not clear if such a review was performed when the use of the building was converted to an "E" educational use group. While there may be no immediate structural repairs or alterations required to the structure, the proposed architectural and MEP alterations may dictate the scope of structural renovation.

The landscape/storage building is framed with metal roof deck supported by steel frames with wood purlins. The steel frames are supported on concrete or CMU foundation wall. The walls are framed with CMU block. The structure appears to be structurally adequate for its use as a storage building.

## **PLUMBING/FIRE PROTECTION SYSTEMS**

The following evaluation is based upon a site visit walk-thru on April 19, 2012 and review of original drawings.

### **General**

In general, all plumbing systems appear to have adequate capacity for present conditions and systems are generally of original 1966 vintage. Most piping is not visible and some system conditions noted herein are presumed due to age and the condition of piping which was visible.

### **Fire Protection**

There is no existing fire protection system anywhere in the existing facility.

### **Domestic Cold Water**

A 4" cold water main with water meter is located in the basement space adjacent to the Boiler/Mechanical Room. This water main feeds the entire building from the site domestic water supply system. In addition, there is a well water system feeding irrigation for the Greenhouse complex. All piping appears to be original, and has been reported to have suffered substantial thinning of pipe walls. Valves appear to be original and in fair to poor condition, with many of the gate valves not functioning. In addition, there are very few valves located to keep system shutdowns to a minimum. Domestic cold water piping appears to be close to exhibiting widespread problems and possible failures.

The existing water service does not include a backflow preventer assembly, and there is no separate non-potable water system for the Lab spaces.

### **Domestic Hot Water**

The entire main building is fed from two original Patterson Kelley PK-500, 1966 vintage hot-water fired storage heat exchangers in the Boiler room, fed from boiler water. Hot water is circulated from the hot water distribution loop by pump in the Mechanical Room. The existing tanks are very large and no longer needed at such a large storage capacity. The main hot water circulating pump appears to be original and is in fair to poor condition.

There is no separate non-potable hot water system for lab spaces in the building.

The Kitchen dishwasher is fed by a separate electric hot water booster. Domestic hot water systems are not expected to last much longer without exhibiting widespread problems, due to age, and the same pipe wall thinning issues mentioned for the domestic cold water.

Domestic hot water in the Greenhouse building is fed from a dated 80 gallon Sepco electric water heater.

### **Natural Gas**

The existing natural gas system enters the building adjacent to the Boiler/Mechanical Room via a 4 inch main. Gas is distributed throughout for the kitchen equipment, boilers and various lab classrooms to bench top gas turrets. Piping appears to be in fair to good condition.

### **Sanitary Waste and Vent**

The building sanitary system collects below grade and exits the facility via two 5 inch main drains through Wing "G" and wing "K".. The piping was largely not visible but is expected to be in fair to poor condition due to its age, particularly in lab areas, where there is no acid neutralization system present. Sanitary drainage piping may not last more than 10 years without exhibiting problems.

The Kitchen does not have a separate kitchen waste system, and there is no exterior grease trap present.

### **Storm Drainage**

The existing storm drainage system is largely below slab and is collected to four points of exit. Three existing 10 inch storm drains exit the building; one each through "A" wing, "B" wing and "K" wing. A fourth (12 inch) storm drain exits the facility through "G" wing. Piping is original to the building and is expected to be in fair condition due to its age, but may not last another 15 years without problems.

### **Plumbing Fixtures**

Most plumbing fixtures are original to the building and vary from fair to poor condition. Most fixtures do not meet today's water conserving standards and are not ADA/MAAB compliant..

Water closets are primarily wall mounted and units with manual non-water saving flush valves.

Urinals are wall mounted with manual flush valves. Flush valves were viewed to be non-water –saving units.

Lavatories are primarily wall hung with manual faucets.

There are both gang (boys) and individual stall (girls) type showers. Showers generally have manual on-off valves.

Drinking fountains are scattered throughout and are generally in fair to poor condition and are generally not ADA/MAAB accessible units.

#### **Miscellaneous**

Science Lab sinks are fed from domestic hot and cold water systems. They are now required to be fed from separate, (non-potable) laboratory hot and cold water systems that are created by connections to the domestic water systems but protected by reduced pressure backflow preventers.

Emergency shower and eyewash units were viewed in the facility but are not ADA/MAAB compliant and are fed from the cold water system, not tepid water as required by ANSI.

#### **MECHANICAL SYSTEMS**

The following evaluation is based on one site visit on April 19, 2012. We met with Steve Soule and Matt McDermott. The existing drawings, H1 through H12, dated April 26, 1966 were reviewed prior to and during the walk through.

#### **Boiler Room Equipment and Systems**

The heat generation plant consists of two 20 section HB Smith hot water boilers. Most, if not all, parts and/or accessories are original. Boiler capacities are unknown. The custodial staff mentioned these boilers have operated very well over the years with regularly scheduled preventative maintenance. Based on ASHRAE Handbook, HVAC Applications, 2011 the average service life of a boiler of this type is approximately 35 years and the burners are 21 years.

The burners are dual fuel type however natural gas is only being used as the fuel source. The oil tank was removed some time ago. #2 Fuel Oil is still piped to the burners.

A two pipe hot water system with two automatic 3-way mixing valves and three (one standby) constant volume end suction pumps are used to provide hot water to the building air handling units. The pumps manufacturer and sizes could not be confirmed at time of visit. The design flow and pressure is not known. It's not listed on the original drawings. The hot water system is currently running with a supply temperature of 210°F and a return temperature of 190°F. There appears to be two piping loops that are routed through the building serving different wings. Loop 1 serves wings A, B, C, part of D, part of E and F while loop 2 serves wings G, part of D, part of E, H and L.

### **Air Handling Equipment and Systems**

The air handling system is completely ducted (both supply and return). Several units are multi-zoned with pneumatically controlled dampers tied to space mounted thermostats to control temperature. Each unit has an exhaust fan that's used to relieve the outside air quantity. The units do not appear to have economizer controllability. Units A-1, B-1, C-1, F-1, G-1, and H-1 are all suspended from steel above the spaces they serve and located within small roof bump-outs (dog houses). These spaces are extremely tight and very difficult to access.

The wings of the building are broken down as follows:

Wing A – Vocational Areas

Wing B – Classrooms and Faculty Office

Wing C – Locker Rooms, Storage and Boiler Room

Wing D – Gymnasium and Music Hall

Wing E – Auditorium, Stage and Library

Wing F – Science Labs and Classrooms

Wing G – Dining Hall, Kitchen and Receiving

Wing H – Classrooms and Faculty Office

Wing K – Classrooms

Wing L – Administration

Wings A, B, C, F, H, K and L each are served by their own air handling unit. Wing D is served by three separate units. Two serve the Gymnasium and one serves the Auditorium. Wing E is served by four separate units. Three serve the Auditorium/Stage and one serves the Library space. Wing G is served primarily by one large unit however a smaller heating and ventilating unit located above the shipping and receiving area provides make-up air to the kitchen.

In addition to heating and ventilating, the Auditorium, Gymnasium, Library and Administration air handling units provide cooling to their respective spaces. Each air handler contains a DX type cooling coil tied to a roof mounted condensing unit with refrigerant piping. All other units are heating and ventilating only. All hot water coils in equipment throughout the building appear to be in a 2-way configuration.

The kitchen has one 6,600 cfm exhaust hood and one 4,000 cfm, 100% outside air make-up air unit. Heating for the kitchen is provided by the make-up air unit.

Several exhaust fans are mounted on the roof for toilet rooms and hood exhaust.

Various cabinet unit heaters are located throughout the building in corridors and vestibules.

There is currently a pneumatic control system in the building. Maintenance has indicated that it works fine with no real issues. The air compressor appears newer. There are no electric controls in the building.

### **Agricultural Buildings**

Electric finned tube radiation is the main source of heat within the majority of the greenhouses spaces with the exception of a few gas fired unit heaters.

Existing ventilation dampers and fans are controlled by a time clock.

All systems/equipment must be upgraded because of age and controllability. These new systems should be kept with energy efficiency in mind.

The greenhouse facilities are primarily electrically heated with a couple gas fired heaters. The ventilation dampers and fans are controlled by a time clock.

## **ELECTRICAL SYSTEMS**

### **Electrical Distribution System**

#### **Green House**

- Separate electrical service; pole-mounted transformer, 120/240V, single-phase service with 200A main disconnect switch and outdoor, pole-mounted meter
- Spaces available in existing panel for additional loads, panels appear to be in good working condition
- Time-clock control of greenhouse fans/dampers
- Pump House
- Separate electrical service; 200A exterior building-mounted disconnect and meter; diesel emergency generator (size tbd?)
- Diesel fire pump with controller

#### **Press Box/Site Lighting**

- 100A 3pole exterior panel feeds football field lights and small 100A single phase loadcenter in Pressbox
- Pole-mounted disconnect switches on several light poles (rusted, may need to be replaced)

#### **Main Electric Room**

- 2000A main circuit breaker (3000A frame) Westinghouse 120/208V, 3phase 4wire Main Electrical Switchboard. Switchboard fed from utility transformer via overhead busway. Utility meter located in same room. Utility transformer located in vault adjacent to Main Electric Room
- Tenant Meter on switchboard broken, not able to determine current loading/ available spare capacity
- Spare circuit breakers/space available



- Main switchboard provides power to downstream panels, located in various rooms throughout building. No other electrical rooms on site.
- 160kW Onan generator provides life-safety power via Russ-Electric transfer switch (downstream life-safety panels not enclosed in dedicated 2-hour room – code violation)
- Life Safety distribution panel EDP1, located opposite generator, feeds all other life safety panels and loads in building. Code required clearance in front of panel did not appear to be met.
- 2000A switchboard in main electric room requires either 2 exit doors or double clearance per code. Neither condition met.
- Incoming fire alarm feed in main electric room was exposed, wiring appeared to be degrading.

### Lighting

- Library – new recessed 2x4 direct/indirect fixtures provided a good quality of light
- Typical classrooms – recessed 1'x4' light fixtures, poor quality of light, installed in late 1980s, need replacement
- Corridors – recessed 2'x2' light fixtures, poor quality of light (dark wood paneling/exposed brick absorbed much of light)
- No lighting control other than switches in all areas
- Shop classrooms chain-hung strip fixtures
- Some classrooms upgraded with pendant direct/indirect fixtures, high quality of light
- Art rooms renovated with new track lighting for displays/2'x2' recessed direct/indirect lighting for general illumination
- Exterior classrooms had ample amounts of natural daylighting, opportunity to incorporate daylight-sensing light control for energy savings
- Auditorium includes small lighting control scene-panel behind stage
- Some scene control options for lighting in cafeteria
- Gym lighting- older strip fixtures with wire guard surface-mounted to underside of beam

### Classroom power

- Loads in metal shop, wood shop and other similar spaces supplied via Siemens overhead busway/busplug system. Busway appears to be in good working condition.
- Art rooms supplied with new ceiling-mounted cord-reel receptacles
- Most branch circuit panels appeared to be in good working condition; some panels had exposed ground-bus and wiring, which poses a safety hazard; some panels were starting to rust



- Floor receptacles in business/computer labs protruded from floor, creating tripping hazard
- Gym power – no backboard operators, no motors for batting cage or other equipment located in ceiling (all equip appears to be manual, including bleachers)

#### **Fire Alarm**

- Simplex, zone-model conventional FACP
- 14 zones, alarm and trouble signal at FACP located outside main electric room
- Wiring to newer FACP appears to be subfed through older model
- Coverage (notification, pull stations and smoke detection) throughout building appears adequate, few end of corridor locations where FA speaker/strobe required per code
- System upgrade within last 20 years
- Fire Dept. telephone connection via telephone cabinet in Main electric room; wiring exposed, appears to be in poor condition. Could not locate fire alarm master box, meaning transmission to fire dept. is most likely only through this telephone cabinet.

#### **COMMUNICATIONS**

##### **Agricultural/ Greenhouse Buildings**

- Noted two telephone feeds to the building coming from two separate utility poles along the road. These could not be confirmed by the District to be Centrex lines and are presumed to be direct voice lines.
- Noted a fiber optic service that enters the building at the basement and extends up to a media converter at the Teacher's desk. It is unclear where this cable originates and whether it is owned by the service provider or the school.
- Did not observe any video feeds to the building. The District confirmed that presently, video feeds do not exist at the agricultural/greenhouse buildings.
- No intercom system connecting the Green House with the High School was observed. The District confirmed that intercom connectivity between the existing high school building and the agricultural/greenhouses buildings does not presently exist.
- No electronic security system components (CCTV, Access Control, Intrusion Detection) were observed in the building. The District confirmed that an electronic security system does not presently exist at the agricultural/greenhouse buildings.

##### **Pump House**

- A 50-pair copper cable that serves fire and safety systems was observed.

### **Press Box**

- Noted a telephone and CATV outlet in the space. The District noted that the telephone connection is “not functional” and that this was originally an intercom connection to the old metal shop. “There are provisions for two functions: public address and scoreboard.”
- Noted speakers on the light poles located across the field from the Press Box. The District confirmed: “There is a portable 100 watt TOA amplifier that is locked up when not in use that is used for PA purposes in the press box. It is connected to the speakers on the light poles. There is #12 gauge underground direct burial feeder cable between the press box and the speakers. The amplifier outputs a 70V signal to the horns. The transformers on the horns facing the stadium hill are set to 30 watts each, and the horns facing the field are set for 15 watts each.”
- No electronic security system components (CCTV, Access Control, Intrusion Detection) were observed.

### **High School Roof**

- Noted two antennas on the roof near the Main Entry. Learned that one serves the Bus System radio communications. The District confirmed that the other antenna “is a repeater for mobile hand held communication between the buildings in case of emergency.”
- Noted a weather station.
- Noted a satellite dish. The District confirmed that this is no longer in use and can be removed.

### **Building Exterior**

- Noted a small Telecomm box on the side of the road that leads from the Green House to the High School. The District confirmed that this is believed to be “the copper CATV feed to the High School. It terminates outside of the school at another small telecomm box at the junction of the B & F wing. The feed then continues to the AV room.”
- Noted a 4” conduit and large pull box wall mounted on the south side of the School. The District confirmed that this is believed to be “is the fiber and copper feeds from the new schools to the High School. This feed terminates at the MDF noted below.”

### **Auditorium Loft**

- Noted data network equipment, bus radio transmitter and telephone service lines in this location.
- Did not observe fiber optic cable extending from this location to the switches that are distributed throughout the building. The District confirmed that the existing building is a mix of “Cat 5, 5E, 6 and Fiber. There originally was cat 5 to all switches and hubs, that was replaced with Fiber”

### **Auditorium Sound System**

- Noted that the existing mixing console is on an open table top with cables exposed and running across the stairs.
- No wireless microphones or assistive listening systems were observed.
- Video is projected onto a screen on the stage from the same table top as the sound system.
- The District has noted that the existing sound system was installed in 1994, and that although in condition is nearing the end of its useful life. In addition, the light dimmers in the Auditorium were noted as needing to be upgraded as well.

### **Typical Classrooms**

- Noted wireless access points installed in corridors on ceiling grid. Teachers all use laptop computers.
- Typical classrooms are equipped with a wall mounted telephone at the entry, ceiling mounted projector, cabling from projector to Teacher station installed in raceway, manual screens, newer clocks, original intercom speakers.

### **Typical Computer Labs**

- Noted a combination of wired and wireless network access.
- Network hubs are installed in the room or in Teacher work rooms.

### **CATV**

- The School records video programming and edits in an AV Room located next to the Library.
- School produced programs are broadcast to the community from another facility in the District.
- CATV Provider is Time Warner.

### **Library**

- There is a large format wall mounted LCD screen located at one end of the Library.
- The opposite wall had a manual projection screen and a ceiling mounted projector. Signal cable to the projector is snaked under a door into a side room where it connects to a laptop computer.

### **Gymnasium**

- There are two sets of speakers in the ceiling. One set is newer. The other set is original to the Gym.
- There is wireless access in the Gym.

- A Press Box is located above the first floor overlooking the playing area.

#### **Kitchen**

- Noted that there are two point-of-sale cash registers. Signal cables are not in raceway.
- All students can pay for meals using ID cards.

#### **Cafeteria**

- The Cafeteria includes two wireless access points.
- The adjoining Student center includes a local sound system.

#### **Security**

- Noted that there are currently 16 IP CCTV cameras distributed in the building and on the exterior.
- The School is divided into two security zones. Each is armed and disarmed with a dedicated keypad.
- There are no card access readers or door position switches at the entries.
- There are no motion sensors installed in corridors or rooms with exterior windows.

### **4.3 EXISTING FOOD SERVICE CONDITIONS**

The Food Services Investigation was completed on the Monument Mountain Regional High School. The details of the finding are defined in the following report by Food Service Design dated July 7, 2012.

### **4.4 HAZARDOUS MATERIALS REPORT**

The Preliminary Hazardous Materials Investigation was completed on the Monument Mountain Regional High School. The details of the finding are defined in the following report by CDW Consultants, Inc dated July 11, 2012.

### **4.5 TRAFFIC REPORT**

The Traffic Investigation was completed on the Monument Mountain Regional High School. The details of the findings are defined in the following report by Bryant Associates, dated June 29, 2012.

#### **4.6 GEO-ENVIRONMENTAL REPORT**

##### **PHASE I INITIAL SITE INVESTIGATION IN ACCORDANCE WITH 310 CMR**

The Phase I Initial Site Investigation was completed on the Monument Mountain Regional High School. The details of the finding are defined in the following report by CDW Consultants, Inc. dated July 12, 2012.



**4.3 EXISTING FOOD SERVICE CONDITIONS**







## FOODSERVICE DESIGN

### **Consultant's Overview of Foodservice Operations – Monument Mountain High School**

Site visit date: 7/7/12

Consultant: Lisa C May FCSI

#### **Overview of Kitchen and Servery**

Existing Conditions:

The open kitchen and service area are split into two straight service lines running right and left of the center entrance doors. The registers are on the service line at the end of the counters. The facility serves 150-200 students per lunch period. The facility currently offers two lunch periods. The school also has an express area for snacks and express to go items that they would like to incorporate into the new facility. The right side line is hot entrée and the left is cold salads and deli. Bottle beverage is available at the register.





## FOODSERVICE DESIGN



The existing kitchen is open to the service area but the equipment is not arranged efficiently for the kitchen staff and it does not relate to the service functions of the line format. The equipment is in good repair and some items would be available for use in the new facility. The back to back arrangement and its orientation to the service line does not meet the needs of the program.



## FOODSERVICE DESIGN



The facility features one stainless steel service line featuring an 8 pan hot well and a refrigerated well for salads. The service line is original and will not be reused in the new plan. The program offers hot entrees, pizza, salads and deli sandwiches. The work area in the kitchen is adequate but the service area will require additional square footage. A scatter servery was discussed and further format discussions will be required.





## FOODSERVICE DESIGN

The kitchen currently has some newer equipment. The ovens and the kettle were recently purchased and are in good condition. The existing freezers and coolers are small and they will need to be replaced with 8' x 14' boxes to allow for storage requirements for daily production as well as commodity storage. The cooler and the freezer are undersized for the production level.

The production platform consists of the following items:

### Cooking Equipment

- 2 Double stack convection oven
- 1 Tilt Skillet
- 1 Stationary kettle
- 2 Pressurized steamers
- 1 6 Burner Range

### Preparation equipment

- 40 qt. Floor mixer
- Stainless steel tables
- Large pot sink and drain board assembly
- Two hole prep sink with drain board
- Dish machine room
- Slicer
- Hot holding mobile boxes
- Soup Kettle
- Double door refrigeration unit
- Pot sink with drain boards at 20'-0" length

The kitchen has no natural light or windows. Day lighting for this space is desired. The current floor is quarry tile. The kitchen square footage is adequate. The pot sink is of high quality but takes up a large amount of space. This sink is still in good condition and would be considered for reuse. A washing and dryer unit machine is required for this area in a janitorial space. The hood system is original. The fire system and venting is original and should be upgraded in the new facility.

The foodservice offices are located adjacent to the kitchen for production staff. The offices will be surveyed to determine the correct desk allotment and allocation. The unit is currently operating with three staff members. Staff function as both production and service line workers.

A full dish room with a dishwasher and drop off tables is located adjacent to the servery in the dining room. The room is well sized and equipped with a conveyor dishwasher of unknown vintage. The unit appears to be installed within the last 12 years. The unit is currently operating on paper service. It is desired to have this dishwashing function become part of the service area in the kitchen. A stand alone dishroom is creating labor issues due to limited staffing.



FOODSERVICE DESIGN



Current Dishroom as a separate facility



## FOODSERVICE DESIGN



### Current Dining Room

Diversification of the Dining Room is desired with various seating arrangements, bar height seating and activation of the dining venue by combining it with other functions such as the media area or internet access modules.

**4.4 HAZARDOUS MATERIALS REPORT**







July 11, 2012

Mr. Daniel Ruiz  
Symmes Maini & Mckee  
1000 Massachusetts Avenue  
Cambridge, MA 02138

RE: Preliminary Hazardous Materials Summary Report  
Monument Mountain High School  
600 Stockbridge Road  
Great Barrington, Massachusetts

Dear Mr. Ruiz:

CDW Consultants, Inc. (CDW) is pleased to present this letter report summarizing the findings of the preliminary hazardous materials survey in support of the Feasibility Study for the Monument Mountain High School and associated greenhouse (“Site”) in the town of Great Barrington, Massachusetts. The scope was to visually identify and quantify potential asbestos-containing building materials (ACM), poly-chlorinated biphenyl (PCB) containing building materials, mercury switches, transformers, light ballasts, fluorescent tubes, and other visible hazardous materials to estimate costs for the feasibility design. No testing was conducted.

CDW reviewed reports the AHERA 3-Year Re-inspection Report, dated May 21, 2010, prepared by O’Reilly, Talbot & Okun Associates. This AHERA report summarizes ACM present in the subject school, listed below.

<b>Suspect ACM</b>	<b>Location</b>	<b>Quantity</b>
Transite in Greenhouse	Greenhouse	1,000 SF
Sheet Flooring	Greenhouse	600 SF
Transite	Boiler Room	1,000 SF
Hard Fittings on Pipe	Throughout	869 Each
Boiler Insulation	Boiler Room	336 SF
Boiler Breeching	Boiler Room	1,200 SF
Flex Connectors	Janitor’s Room, GO2, C41, 2D1, 2D2, Athletic Supply	100 SF
Floor Tile	Throughout	90,000 SF



**Suspect Asbestos Containing Materials**

During the month of June 2012, Susan Cahalan (Massachusetts Licensed Asbestos Inspector # 060784), conducted a visual inspection of accessible areas of the site building(s). The presumed ACM was categorized by type, location and quantity. No testing was performed. The ACM was categorized by type, location and quantity.

The visual results are provided in Table 1.

**TABLE 2: ACM Visual/Assumed**

<b>Description</b>	<b>Result</b>	<b>Estimated Quantity</b>
Carpet Glue and/or Remnant Mastic – Admin, Main Hall, Library, Auditorium	Visual	10,000 SF
1' x 1' AT and Glue Daubs – Admin, Café and Hallway Outside Café, Inside Classrooms of Each Wing	Visual	50,000 SF
Black/Grey Sink Coating	Visual	35 Each
Wooden Classroom Door Window Glaze - Offices	Visual	60 Each
Fire Door Assembly Window Glaze	Visual	20 Each
Foundation Coating	Assumed	15,000 SF
Vapor Barrier Behind Masonry	Assumed	15,000 SF
Remnant Roofing Materials and Flashing	Assumed	50,000 SF
Hidden Transite Panels	Assumed	1,000 SF
Blackboard/White Boards/Cork Boards Glue Daubs – Throughout*	Assumed	500 SF
Paper/Mastic Under Gym Floor	Assumed	6,400 SF
Flex Connectors	Visual	100 SF
Block Expansion Joint – Gym and A Wing Hall	Visual	1,500 LF
Interior Caulk at Garage Doors Tech Wing	Visual	120 LF
Interior Window Caulk	Visual	1,800 LF
Interior Window Glaze**	Visual	2,200 LF
Exterior Door Caulk	Visual	450 LF

**TABLE 2 - Continued**

<b>Sample #</b>	<b>Description</b>	<b>Result</b>	<b>Estimated Quantity</b>
--	Exterior Window Caulk	Visual	1,800 LF
--	Exterior Window Glaze**	Visual	2,200 LF
--	Covebase and Glue-Admin, Classrooms and Hallways	Visual	3,500 LF
--	Transite Panel Under Windows – A Wing (Tech)	Visual	500 SF
--	Black Table Tops, A-11, A-03, A-15 , all Science Classrooms	Visual	2,000 SF
--	Transite Display Cases	Visual	500 SF
--	Kilns in Art Room	Visual	2 Each
--	Transite Fume Hoods	Visual	400 SF
--	Laminate Counters-Select Classrooms Throughout	Visual	500 SF
--	Coating on Strapping Under Gym Floor	Assumed	100 SF
--	Remnant Fire Doors	Assumed	20 Each
--	Boiler Insulation on 2 Boilers	Visual	400 SF
--	Interior Boiler Components – Roping, 2 Boilers and Old Hot Water Boiler	Visual	750 LF
--	Interior Boiler Components – Insulation/Burn Chamber Material, Also on Old Hot Water Boiler	Assumed	600 SF
--	Boiler Fire Brick	Assumed	600 SF
--	Boiler Breeching	Visual	1,000 SF
--	Hard fittings on Fiberglass Pipes and Pipe Insulation Throughout Behind Walls, Boiler Room	Visual and Assumed	2,000 LF
--	Floor Tile and Mastic – various Throughout	Visual	90,000 SF
--	Transite Vent in Boiler Room	Visual	1,000 SF
--	Walk In Refrigerator and Freezer Coating	Visual	1 Each
--	Sheet Rock/Joint Compound/Plaster Above Lockers in Halls	Visual	5,000 SF
--	Plaster Ceiling Boiler Room	Visual	1,000 SF



**TABLE 2 - Continued**

<b>Sample #</b>	<b>Description</b>	<b>Result</b>	<b>Estimated Quantity</b>
--	Subsurface Transite and Roof Drains	Assumed	1,000 LF
--	Grout-Bathrooms, Ceramic Covebase	Assumed	1,000 SF
--	Glazing Greenhouse (Old)	Visual	500 LF
--	Roofing Greenhouse Building	Visual	1,000 SF
--	Stage Fire Curtain	Visual	1 Each
--	Paper Under Stage Auditorium	Assumed	500 SF
--	PCBs in Caulking @ Windows, Interior Expansion Joints	Assumed	5,100 LF
--	Possible Mercury Containing Rubber Flooring at Stairways/Landings and Ramps	Assumed	750 SF

\*Glue Daub Area Only

\*\* Some window glaze is silicone

### **Other Hazardous Materials**

Throughout the project Site, CDW identified approximately 500 light ballasts, which are suspect PCB-containing. Hydraulic oil associated with hydraulic car lifts are present, tanks intact. Refrigerants associated with air conditioners are located onsite. Fluorescent bulbs contain mercury and should be disposed of properly prior to demolition. Approximately 1,500 fluorescent bulbs were identified throughout the project Site. Compact florescent bulbs also contain mercury and were noted periodically throughout. Items potentially containing lead include approximately 30 emergency light batteries. Other mercury containing items identified include thermostats in classrooms and offices throughout and switches in the boiler room(s), possible mercury in science sink traps and associated plumbing system. Lead in paint may also be present. Other potential hazardous materials are noted in the Phase I Environmental Site Assessment.

### **Recommendations**

Based on the results of the visual hazardous materials survey, we have the following recommendations:

- Collect samples of suspect ACM listed above as well as the roofs and exterior vapor barriers/foundation coatings to confirm if positive for asbestos.
- Perform destructive testing to look for hidden ACM, drill doors.
- Identify the extent of work areas that will potentially affect ACM, and develop more detailed estimates of quantities to be removed and costs.
- Collect samples of paint chips for laboratory analysis of lead.



- Collect samples of caulking/glazing/expansion Joint for PCB content.
- Remove each ACM identified prior to construction work activities by a Massachusetts licensed asbestos abatement contractor, and dispose of ACM at an appropriate hazardous non-recycling landfill facility.
- Identify and compile a detailed list of other hazardous materials that will need to be managed, abated or removed as part of the renovation scheme.

### **Limitations**

The conclusions and recommendations are limited to the information available at the time of the field survey and the scope of services as defined. No subsurface soil or groundwater testing was performed. Where access to portions of the Site or to structures on the site was unavailable or limited, CDW renders no opinion as to the presence of hazardous material or the presence of indirect evidence related to hazardous material in that portion of the site or structure. No other conclusions, interpretations or recommendations are contained or implied in this report other than those expressed. No other use of this report is warranted without the written consent of CDW Consultants, Inc.

CDW appreciates the opportunity to provide our services for your project.

Very truly yours,

CDW CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read "Susan Cahalan".

Susan Cahalan, PG  
Project Manager



**CDW CONSULTANTS, INC.**  
CIVIL & ENVIRONMENTAL ENGINEERS

PRINCIPALS AND ASSOCIATE

*Yee Cho, P.E., L.S.P.  
Kathleen Campbell, P.E., L.S.P., LEED, AP  
John Goodhall, P.E.*

July 11, 2012

Mr. Daniel Ruiz  
Symmes Maini & Mckee  
1000 Massachusetts Avenue  
Cambridge, MA 02138

RE: Preliminary Hazardous Materials Summary Report – Cost Memorandum  
Monument Mountain High School  
600 Stockbridge Road  
Great Barrington, Massachusetts

Dear Mr. Ruiz:

CDW Consultants, Inc. (CDW) is pleased to present this preliminary estimate of abatement construction costs based upon the findings of the visual hazardous materials survey of the Monument Mountain High School in Great Barrington, Massachusetts.

The associated costs for the asbestos abatement and other hazardous materials are presented in the tables on the next page.

Please call if you have any questions or require additional information.

Very truly yours,

CDW CONSULTANTS, INC.

Susan Cahalan, P.G.  
Project Manager

**TABLE 1**  
**Asbestos Containing Materials Costs**

<b>Description</b>	<b>Location</b>	<b>Approximate Quantity</b>	<b>Unit Cost</b>	<b>Total Estimated Cost</b>
Floor Tiles and Mastic	Throughout	90,000 SF	\$4/SF	\$360,000
Exterior/Interior Window Caulk	Windows, Classroom Wings, Café, Admin	3,600 LF	\$10/LF	\$36,000
Exterior/Interior Window Glaze	Windows, Classroom Wings, Café, Admin	4,400 LF	\$10/LF	\$44,000
Exterior Door Caulk	Exterior Doors	450 LF	\$10/LF	\$4,500
Ceiling AT with Glue Daubs	Throughout	50,000 SF	\$5/SF	\$250,000
Black and Gray Sink Coating	Throughout	35 Each	\$50 Each	\$1,750
Boiler Breeching	Boiler Room	1,000 SF	\$15/SF	\$15,000
Boiler Insulation	Boiler Room	450 SF	\$15/SF	\$12,800
Boiler Roping	Boiler Room	750 LF	\$15/SF	\$11,250
Interior Boiler Components, Fire Brick etc	Boiler Room	1,200 SF	\$15/SF	\$18,000
Flex Connectors	Gym, Janitors Room	100 SF	\$15/SF	\$1,500
Transite Fume Hoods	Science	400 SF	\$5/SF	\$500
Fire Curtain	Auditorium	1 Each	\$5,000	\$5,000
Block Expansion Joints	Gym, A Wing	1,500 LF	\$10/SF	\$15,000
Fittings on Fiberglass Pipe and Asbestos Pipe Wrap all Diameters	Throughout, Wet Walls, Trenches	2,000 LF	\$15/LF	\$30,000
Carpet Glue and Remnant Mastic	Admin, Hallway, Auditorium	10,000 SF	\$4/SF	\$40,000
Classroom Door Window Glaze	Classroom Doors – Admin, Various	60 Doors	\$100/Each	\$60,000
Fire Door Assembly Glaze	Various	20 Each	\$250/Each	\$5,000
Transite Panels Under Windows – A Wing	A Wing	500 SF	\$5/SF	\$2,500

TABLE 1 (Continued)

Description	Location	Approximate Quantity	Unit Cost	Total Estimated Cost
Walk in Refrigerator and Freezer Coating	Assumed	2 Each	\$5,000 Each	\$10,000
Blackboard / Whiteboard/Corkboard Glue Daubs	Throughout	500 SF	\$5/SF	\$2,500
Subsurface Transite Pipe and Roof Drains	Assumed	1,000 LF	\$15/LF	\$15,000
Interior Caulk at Garage Doors	Visual	120 LF	\$5/LF	\$600
Foundation Coating	Foundation	15,000 SF	\$10/SF	\$150,000
Vapor Barrier Behind Masonry	Behind Masonry	15,000 SF	\$10/SF	\$150,000
Remnant Roofing Materials and Flashing	Roofing	50,000 SF	\$7/SF	\$350,000
Hidden Transite Panels	Assumed	1,000 SF	\$5/SF	\$5,000
Paper/Mastic Under Gym Floor	Assumed	6,400 SF	\$5/SF	\$32,000
Coating on Strapping Under Gym Floor	Assumed	100 SF	\$5/SF	\$500
Covebase and Glue	Visual	3,500 LF	\$5/LF	\$17,500
Black Table Tops	Visual	2,000 SF	\$4/SF	\$8,000
Remnant Fire Doors	Assumed	20 Each	\$100/Each	\$2,000
Transite	Display Cases, Greenhouse, Boiler Room Vent	2,500 SF	\$5/SF	\$12,500
Kilns in Art Room	Visual	Two	\$200/Each	\$400
Sheet Rock/Joint Compound/Ceiling Plaster	Visual	6,000 SF	\$4/SF	\$24,000



TABLE 1 (Continued)

Description	Location	Approximate Quantity	Unit Cost	Total Estimated Cost
Laminate Counters	Visual	500 SF	\$4/SF	\$2,000
Grout-Bathrooms, Ceramic Covebase	Assumed	1,000 SF	\$5/SF	\$5,000
Sheet Flooring Greenhouse	AHERA	600 SF	\$4/SF	\$2,400
Old Greenhouse Glazing	Visual	500 LF	\$10/LF	\$5,000
Greenhouse Building Roofing	Visual	1,000 SF	\$7/SF	\$7,000
Paper Under Stage Auditorium	Assumed	500 SF	\$5/SF	\$2,500
PCBs in Caulking @ Windows, Interior and Exterior Expansion Joints, Vent Caulking, Glazing	Assumed	5,100 LF	Worst Case: Includes EPA Plans, Substrate and Soil Sampling and Abatement Costs	\$250,000
Possible Mercury Containing Rubber Flooring at Stairways/landings and Ramps	Assumed	750 SF	\$50/SF	\$37,500

LF = Linear Foot

SF = Square Foot

**Table 1A**  
**Other Hazardous Materials**

<b>Description</b>	<b>Location</b>	<b>Approximate Quantity</b>	<b>Unit Cost</b>	<b>Total Estimated Cost</b>
Ballasts (PCBs)	Remnant	500	\$5/ea	\$2,500
Florescent Bulbs (Mercury)	Throughout	1,500	\$1/ea	\$1,500
Thermostats and Switches (Mercury)	Throughout	70	\$20/ea	\$1,400
Emergency Light Batteries (Lead)	Throughout	30	\$20/ea	\$600
Refrigerants Associated with AC Units	Throughout	30	\$20/ea	\$600
Lead Paint	Assumed	--	TLCP Waste Stream Testing Only	\$5,000
<b>TOTAL ALL COSTS</b>				<b>\$2,015,800</b>

**4.5 TRAFFIC REPORT**



June 29, 2012  
BAI #212054



Mr. John Hart, PE  
Senior Associate  
Symmes Maini & McKee Associates, Inc.  
1000 Massachusetts Avenue  
Cambridge, MA 02138

**REFERENCE: Preliminary Traffic Analysis  
Monument Mountain Regional High School  
Great Barrington, Massachusetts**

Dear Mr. Hart:

At your request, Bryant Associates, Inc. has conducted a preliminary traffic analysis for the proposed renovation/replacement of the Monument Mountain Regional High School in Great Barrington, Massachusetts.

The following reviews were conducted in the preparation of this report:

1. A review of the "Access Report Monument Mountain Regional High School, Great Barrington, Massachusetts" prepared by Fuss & O'Neill dated July 2006 (see enclosed).
2. A review of the Berkshire Hills Regional School Department (BHRSD) Buildings & Grounds Subcommittee meeting minutes from December 13, 2005.
3. A review of the BHRSD School Committee meeting minutes from December 1, 2005.
4. A review of the memorandum from Marianne Young to the BHRSD School Committee regarding high school transportation and vehicle safety issues, dated November 11, 2005.
5. A review of the memoranda from the Town of Great Barrington, Massachusetts Office of the Town Manager and Police Department dated March 17, 2005 and December 8, 2005 regarding the use of a police detail at the school driveway.
6. A review of the accident data summary for the Monument Mountain Regional High School site and driveway from 1990 through 2005.
7. A review of the Berkshire Hills Regional School District Monument Mountain Regional High School Preliminary Evaluation of Alternatives prepared by SMMA dated June 8, 2012.
8. A field review of the study area on June 6, 2012.

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*Celebrating 35 Years*

The project site is located on the east side of Stockbridge Road (U.S. Route 7) in Great Barrington, Massachusetts. The existing Monument Mountain Regional High School currently has approximately 570 students. The existing school has one driveway on Stockbridge Road. The intersection of Stockbridge Road and the Monument Mountain Regional High School driveway is a three-way unsignalized intersection, which is stop-controlled on the driveway. A flashing warning beacon is also located at the driveway. The northbound approach of Stockbridge Road consists of a 12-foot travel lane, a 12-foot right turn lane, and a 2.5-foot shoulder. The channelized right turn lane providing access into the site is 18 feet in width with 2-foot shoulders. The southbound approach of Stockbridge Road consists of a 12-foot travel lane, a 12-foot left turn lane into the site, and a 2-foot shoulder. There is no curb or sidewalk. There are utility poles located on the west side of the roadway. The Monument Mountain Regional High School driveway approach consists of a 13-foot left turn lane with 1-foot shoulders and an 18-foot channelized right turn lane with 2-foot shoulders. The channelized right turn lane provides access to a 12-foot acceleration lane for vehicles merging onto Stockbridge Road northbound. In addition, there is a raised grassed island separating entering and exiting traffic. There is curb on both sides of the Monument Mountain Regional High School driveway. Land use in the area is institutional, commercial, and recreational.

The intersection of Stockbridge Road and Monument Valley Road, located to the south of the site, is a three-way signalized intersection. The southbound approach of Stockbridge Road consists of a 12-foot travel lane, a 12-foot left turn lane, and a 1-foot shoulder. The northbound approach consists of a 12-foot travel lane and a 6-foot shoulder. There is no curb or sidewalk. There are utility poles located on the west side of the roadway to the north of the intersection. The Monument Valley Road approach consists of a 14-foot right turn lane, an 11-foot left turn lane, and a 1-foot shoulder. There is no curb or sidewalk. There are utility poles located on the north side of the roadway. The driveway for the Great Barrington Transfer Station, which is only open on Saturdays, is located within the intersection, however, it is not controlled by the signal.

Sketches of the intersections of Stockbridge Road and the Monument Mountain Regional High School driveway and Stockbridge Road and Monument Valley Road are enclosed.

The speed limit on Stockbridge Road southbound is posted at 50 mph to the north of the site. A flashing warning beacon with a School Bus Entering sign, while flashing, changes the speed limit to 40 mph in the vicinity of the Monument Mountain Regional High School driveway. To the south of the intersection of Stockbridge Road and Monument Valley Road, the speed limit increases to 55 mph. In the northbound direction of Stockbridge Road, the speed limit is posted at 50 mph throughout the area of the school.

Pertinent field observations including existing stopping sight distance, location of existing utilities, posted speed limits, traffic control devices, etc. were made on June 6, 2012. This field review also included a review of operations on the site during the afternoon dismissal period, which occurs at 2:45. It should be noted, however, that the graduating seniors were no longer attending school on this date. It is expected that any observations of the traffic operations would

be worsened with the additional senior student drivers. There was no police presence at the intersection during the dismissal on this day.

Upon entering the Monument Mountain Regional High School site, vehicles may choose to turn left to go towards the staff and student parking lots or continue up the hill towards the main entrance of the school and visitor parking. A one-way loop is located in front of the main entrance of the school which contains visitor parking and accessible parking spaces. Parents were observed to park in this area during the afternoon dismissal. School buses enter the site and wait in the northernmost parking lot. Ten school buses were observed to enter the site for the afternoon dismissal. Approximately five minutes before the dismissal, the buses line up, double-stacked at the northern end of the school. Students and staff wishing to walk to the parking lots are required to cross the lines of buses.

The majority of vehicles leaving the site were observed to turn left to travel southbound on Stockbridge Road, which is in accordance with the traffic counts conducted previously. At 2:50, approximately five minutes after dismissal, the buses leave the school. At this point, queues of student and parent vehicles have already formed on the Monument Mountain Regional High School driveway. The queue of left turning vehicles prevents right turning vehicles from exiting the site. The queue quickly extends past the parking lots access road up towards the school. Vehicles were observed cutting through the South Berkshire Educational Collaborative access road, located to the north of the site, to avoid the queues on site. Both parent and student drivers were observed making this movement.

The majority of the buses are required to turn left out of the driveway to pick up students at the middle school located on Monument Valley Road. After leaving the middle school, they were then observed driving past the high school to continue northbound on Stockbridge Road.

The traffic signal at Monument Valley Road requires vehicles to stop in the northbound direction, which creates gaps in this direction for vehicles exiting the Monument Mountain Regional High School driveway. When these gaps were not present, vehicles turning left onto Stockbridge Road were observed to accept shorter than acceptable gaps in order to make the turn. The driver of the first vehicle in the queue may feel pressure to accept a shorter gap due to the length of the queues behind them. In addition, with inexperienced student drivers, they may not accurately judge the amount of time they are given to make the turn.

All of the queues on site were clear by 3:00, fifteen minutes after dismissal. It should be reiterated, however, that with the absence of the senior student drivers, operations most likely were better than on a day with all students present.

Based on our review of the existing Monument Mountain Regional High School site and afternoon dismissal period operations, we present the following preliminary recommendations:

- As previously mentioned in the background information, we agree with the recommendation that buses should be given a separate access point to Monument Valley Road so that they are not required to enter Stockbridge Road. If a separate access point is not feasible, buses should be given priority exiting the site. Student and parent drivers should be held back to allow the buses to leave and maintain their schedule. If the secondary access to Monument Valley Road is feasible, consideration should be given to allowing student and parents traveling to the south to use this access.
- Although adequate sight distance to the north from the driveway is provided, relocating the access driveway to the south to provide for additional sight distance should be investigated.
- A second access driveway on Stockbridge Road should also be investigated. This second access would allow entering and exiting traffic to be separated, which may improve operations.
- If the options are not feasible, regular use of police to control traffic during the school A.M. and P.M. peak hours should be continued. Although not observed, based on the documentation review and experience, police control would provide for better operations and improved safety at the driveway intersection.
- Changing the traffic signal at the intersection of Stockbridge Road and Monument Valley Road to pre-timed operations during the school peak hours could provide additional gaps at the driveway by consistently stopping northbound traffic.
- The existing Monument Mountain Regional High School driveway should be widened to allow right turning vehicles to bypass the queue of left turning vehicles. Extension of the right turn lane to the parking lot access road would allow vehicles exiting the parking lot to turn right without having to enter the queue.
- Currently, students are required to cross the lines of buses to access the parking lots. If possible, this crossing should be eliminated.
- Signage and pavement markings should be installed throughout the site to better direct vehicular circulation. There is no signage indicating that the loop road in front of the school is one-way. In addition, there are no stop signs or stop bar pavement markings on the site. An upgrade to the existing signage at the intersection of Stockbridge Road and the Monument Mountain Regional High School driveway is also required.



A preliminary evaluation of the site circulation shown in the alternatives for the site has been performed. Based on this evaluation, the following comments have been prepared:

- Without a secondary access, the alternatives do not separate bus traffic from parent/student/staff traffic at the Stockbridge Road intersection. None of the alternatives consider a second access point on Stockbridge Road.
- With Concept A and Concept C2, queues from the parent drop off/pick up, especially at dismissal, may block access to the parking for the staff/students.
- Concept B does not adequately separate buses and parents internally at the drop off/pick up. There is not much space for parent queues. Concept B does remove the bus and parent traffic from the north side of the building, which does eliminate conflict between that traffic and students/staff walking to the parking lot.
- Concept C may not provide enough space for both parent and bus queues.
- Concept C2 does not provide much space for bus queues.
- Concept D shows a good location for access to Monument Valley Road, pending topographic and regulatory approval issues.
- For the secondary exit road options, there may be concern with the proximity of the access road to Monument Valley Road depending on how the access road is located. If the access road is parallel to Monument Valley Road, there may be confusion with the headlights on the vehicles on the access road. This concern could be mitigated with solid fencing/screening or dense vegetation that do not restrict sight distance at the access road intersection.

We are prepared to review the results of this study with you at your convenience. If you have any questions, please do not hesitate to call Todd E. Brayton, PE (Ext. 2202) or me (Ext. 2205).

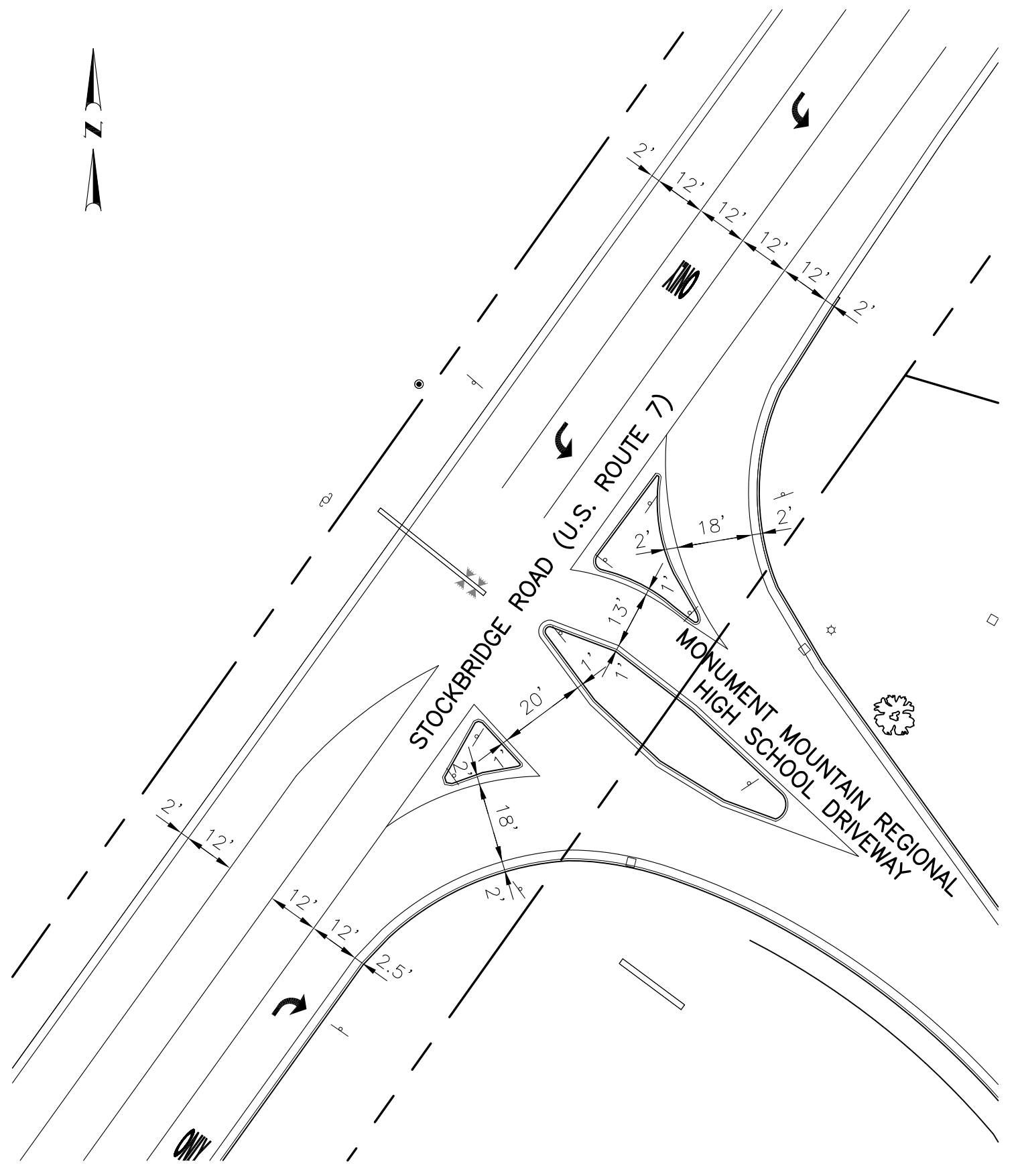
Very truly yours,

**BRYANT ASSOCIATES, INC**



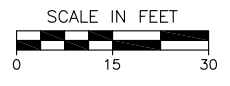
Michael W. Desmond, PE  
VICE PRESIDENT  
Regional Transportation Manager

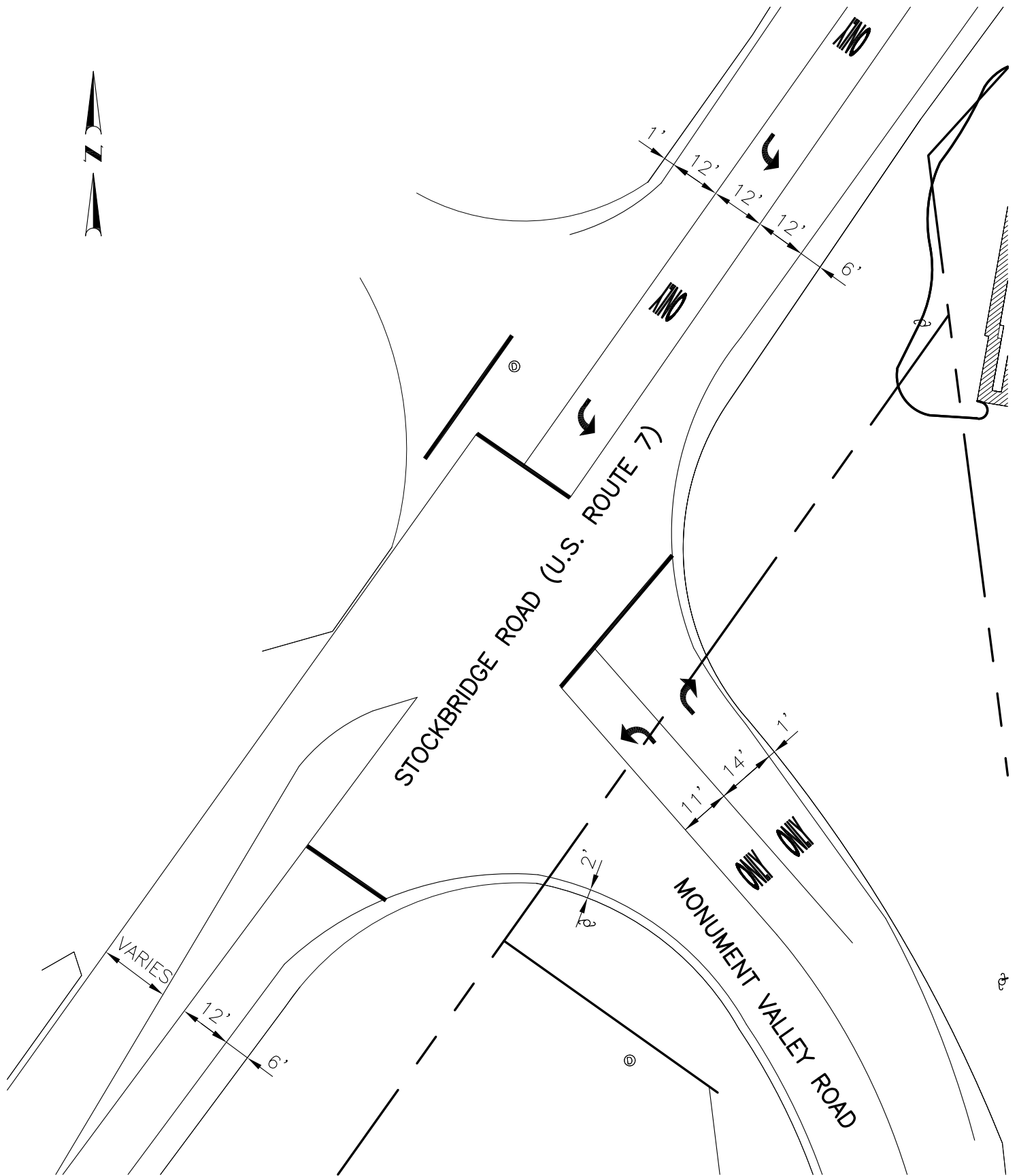
MWD/DBC:TEB  
enclosures



**BRYANT ASSOCIATES, INC.**  
Engineers - Surveyors - Construction Managers  
640 George Washington Hwy, Bldg. B, Suite 100  
Lincoln, Rhode Island 02865-4332

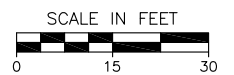
MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
INTERSECTION OF STOCKBRIDGE ROAD AND THE  
MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL DRIVEWAY





 **BRYANT ASSOCIATES, INC.**  
Engineers - Surveyors - Construction Managers  
640 George Washington Hwy, Bldg. B, Suite 100  
Lincoln, Rhode Island 02865-4332

MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL  
INTERSECTION OF STOCKBRIDGE ROAD AND  
MONUMENT VALLEY ROAD





*RT Coors*

**ACCESS REPORT**  
**MONUMENT MOUNTAIN HIGH**  
**SCHOOL**  
**GREAT BARRINGTON,**  
**MASSACHUSETTS**

**Berkshire Hills Regional School District**  
Housatonic, MA

July 2006



Fuss & O'Neill  
78 Interstate Drive  
West Springfield, MA 01089





## ACCESS REPORT

### MONUMENT MOUNTAIN HIGH SCHOOL

#### INTRODUCTION

The Berkshire Hills Regional School District is evaluating alternatives for the improvement of traffic operations at the intersection of the Monument Mountain High School driveway with Stockbridge Road (Route 7). The intersection is located north of Monument Valley Road and is shown in [Figure 1](#).

This report quantifies existing and projected traffic conditions and identifies capacity and safety improvements to address current deficiencies. In addition, this report describes existing conditions, projected future traffic conditions, and recommendations of improvement measures to be considered for implementation. Appended data include daily and peak period traffic count data, traffic accident report and crash rate summaries, and capacity analysis results.

Traffic signal control was recently installed at the intersection of Stockbridge Road and Monument Valley Road in conjunction with the development of the Middle and Elementary Schools in the vicinity, with the result being safe and efficient operation at that location. The unsignalized intersection of the Monument Mountain High School driveway with Stockbridge Road has historically experienced unacceptable levels of peak period congestion and delay, traffic accidents, and long queues of stopped vehicles under peak demand conditions during weekday school arrival and dismissal periods. The Great Barrington Police Department has recently been operating the intersection under uniformed officer control, which has improved intersection operations, although there is still considerable internal congestion on the high school site during peak demand periods.

#### EXISTING CONDITIONS

The study area includes the intersections of Stockbridge Road with The Monument Mountain Regional High School driveway and Monument Valley Road. Stockbridge Road is classified as a Principal Arterial and is under the jurisdiction of the Massachusetts Highway Department. Daily traffic volumes on Stockbridge Road are approximately 12,000 vehicles per day. A total of 2,300 entering and exiting (one way) vehicle trips travel on the high school driveway on a typical weekday.

##### *Traffic Volumes*

Traffic data collection was undertaken in May 2006 consisting of peak period manual turning movement counts. Weekday morning and afternoon peak hour turning movement traffic volumes were derived from these counts at the intersections. The weekday AM and PM peak hour associated with maximum school activity was determined to be from 7:00 to 8:00 AM and 2:15 to 3:15 PM respectively. Existing morning and afternoon peak hour traffic volumes at the intersections near the site are indicated in [Figure 2](#).



### *Geometrics*

#### MMRHS Driveway

The Stockbridge Road northbound approach consists of a single through lane and a right turn deceleration lane for vehicles entering the high school. The Stockbridge Road southbound approach consists of a single through lane and a separate left turn lane for vehicles entering the high school. The driveway westbound approach is channelized with a raised median island separating entering and exiting flow and a raised triangle island directing right turning vehicles to the north into a northbound acceleration lane on Stockbridge Road.

The driveway left turn movement is under stop sign control supplemented by an overhead flashing warning beacon mounted on a mast arm that displays amber indications north and south and red indications east. The right turn movement is channelized into the northbound acceleration lane and has no regulatory control. Under peak demand conditions, especially with the high proportion of buses exiting the driveway, the queue of left turning vehicles consistently extends beyond the right turn channelization, thus blocking right turn vehicles from exiting the driveway and forcing them to wait in the left turn queue on the single lane portion of the driveway.

#### Monument Valley Road

The improvements to the monument Valley Road intersection implemented with the development of the new schools resulted in widening of the Monument Valley Road approach to provide separate left and right turn lanes, and maintained the southbound left turn lane on Stockbridge Road.

### *Signal Control*

The existing signal control at Monument Valley Road operates on a fully actuated three phase cycle with an exclusive phase for the southbound left turns. A right turn overlap allows right turns from Monument Valley Road to proceed on a green right arrow indication simultaneously with the southbound lefts. This is typically the most efficient phasing for a T intersection.

### *Accident Data*

Intersection accident data for the most recent three years available was obtained from the Massachusetts Highway Department and summarized to identify the number of incidents at the studied intersections. Table 1 below presents a summary of the number of accidents by year.

The Crash rate was calculated for the intersection utilizing the MHD Crash Rate Worksheet methodology. A crash rate of 0.15 accidents per million entering vehicles was calculated for the both intersections. These rates are well below the MHD statewide average rates for





signalized and unsignalized intersections. Crash rates lower than average for similar facilities are an indication that there are no predominant safety concerns or hazardous conditions warranting mitigation. This safety record is considerably improved over the historical experience prior to the signalization of Monument Valley Road and police officer control at MMRHS, when both locations routinely experienced several crashes per year.

**TABLE 1  
ACCIDENT DATA**

	2002	2003	2004	Average	Crash Rate*	MHD Average Rate*
Monument Valley Road	0	0	2	0.7	0.15	0.87
MMRHS Driveway	0	1	1	0.7	0.15	0.66

\*Crashes/Million Entering Vehicles

### PROJECTED TRAFFIC CONDITIONS

Traffic volumes for the study area were prepared using counts conducted in May 2006. These volumes were projected to a future year of 2011 to establish the appropriate design traffic conditions for this analysis. Future traffic conditions were estimated by applying a traffic growth factor to all current peak hour turning movement traffic volumes to account for regional growth characteristics such as other developments, increasing population, vehicle ownership, and other travel characteristics. Historical data from MassHighway permanent count stations indicates an estimated 1.8 percent annual increase in traffic in southern Berkshire County. This estimate was used as the background traffic growth factor to project the future conditions. The resulting traffic projections for the year 2011 are shown in Figure 3.

### CAPACITY ANALYSIS

Evaluation of the relative quality of the operational condition of the intersections, defined as level of service, was conducted by the method of capacity analysis. Capacity analysis assigns letter grades A through F to the relative levels of congestion as measures of the quality of the experience of users of the facilities in terms of delay, proximity of other vehicles, freedom to maneuver, and comfort and convenience. Results of the intersection capacity analysis of the existing and projected conditions for the two intersections are summarized in [Table 2](#).

For purposes of more accurately modeling the high school driveway operation under police officer control, we have analyzed the intersection as a three way stop. As a result, the northbound and southbound approaches experience long delays when being stopped to allow vehicles to exit the driveway. This is consistent with the observed conditions under



officer control during the arrival and dismissal periods, when long queues of stopped vehicles form in the northbound and southbound through lanes for short periods.

**TABLE 2**  
**INTERSECTION CAPACITY ANALYSIS**  
**Weekday AM Peak / Weekday PM Peak**

	Existing		2011	
	Delay	LOS	Delay	LOS
<b>Route 7 at Monument Mountain Regional High School Driveway</b>				
Westbound	11.7 / 24.7	B / C	12.1 / 29.3	B / D
Northbound	39.9 / 123.4	E / F	61.2 / 177.3	F / F
Southbound	111.3 / 66.1	F / F	160.7 / 103.1	F / F
<b>Route 7 at Monument Valley Road</b>				
Northbound Through/Right	11.3 / 11.7	B / B	16.1 / 12.8	B / B
Southbound Left	5.6 / 8.4	A / A	8.8 / 6.1	A / A
Southbound Through	2.4 / 4.2	A / A	3.1 / 4.4	A / A
Westbound Left	30.6 / 29.7	C / C	31.3 / 32.6	C / C
Westbound Right	21.8 / 20.7	C / C	22.6 / 21.6	C / C
<b>Overall Intersection</b>	<b>10.2 / 11.4</b>	<b>B / B</b>	<b>12.9 / 12.0</b>	<b>B / B</b>

*data on 7 at monument 15 min block of work I have received.*

**RECOMMENDED IMPROVEMENT**

With signalization of the Monument Valley Road intersection and police office control of the Monument Mountain high School Driveway, generally acceptable operation is being provided during the peak school arrival and dismissal times. The safety of intersection operations at both locations has also been improved over the previous stop sign control.

In order to promote more orderly driveway operations and enhance internal circulation on the high school property, it is recommended that the driveway exit be widened to provide two exit lanes. Currently the preponderance of left turning vehicles who are also experiencing the longest delays, including most of the buses, queue up on the single lane approach all the way into the high school site, thus blocking the exit to right turning vehicles oriented to and from the north and exacerbating the queue length problem.

By extending the full two lane driveway approach easterly to the parking area, right turning vehicles will be able to bypass the queue of left turners and reduce congestion on the driveway and in the parking areas. The free flow of northbound exiting vehicles will not cause undue conflicts at the intersection, as they are provided with the northbound acceleration lane north of the driveway. By removing the right turning vehicles from the single lane approach, queuing will also be significantly reduced in the left lane.

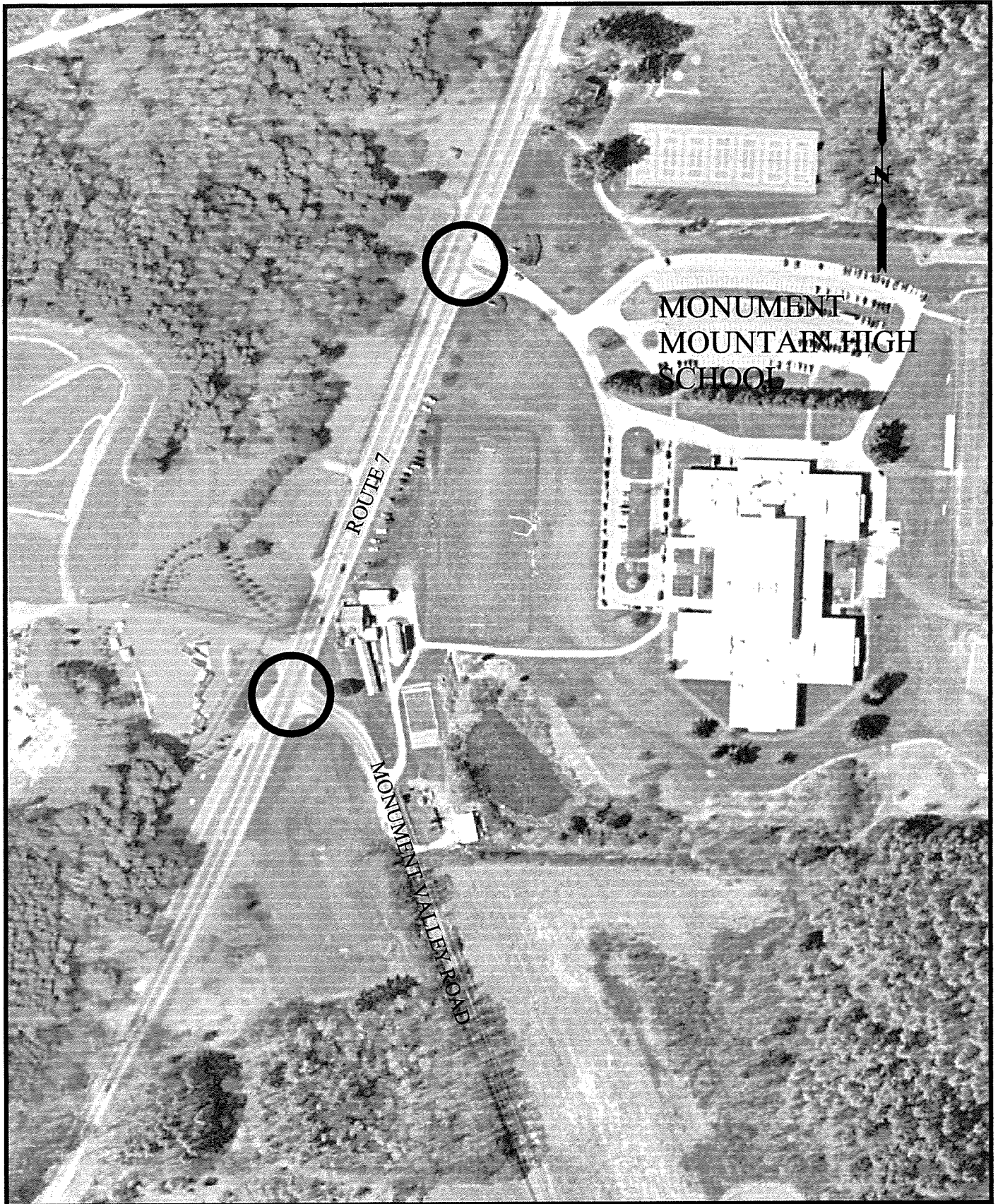
A conceptual plan of the recommended improvement is appended.



## APPENDIX A

## FIGURES





UGS: | MS VIEW: | LMAN: | CTB:

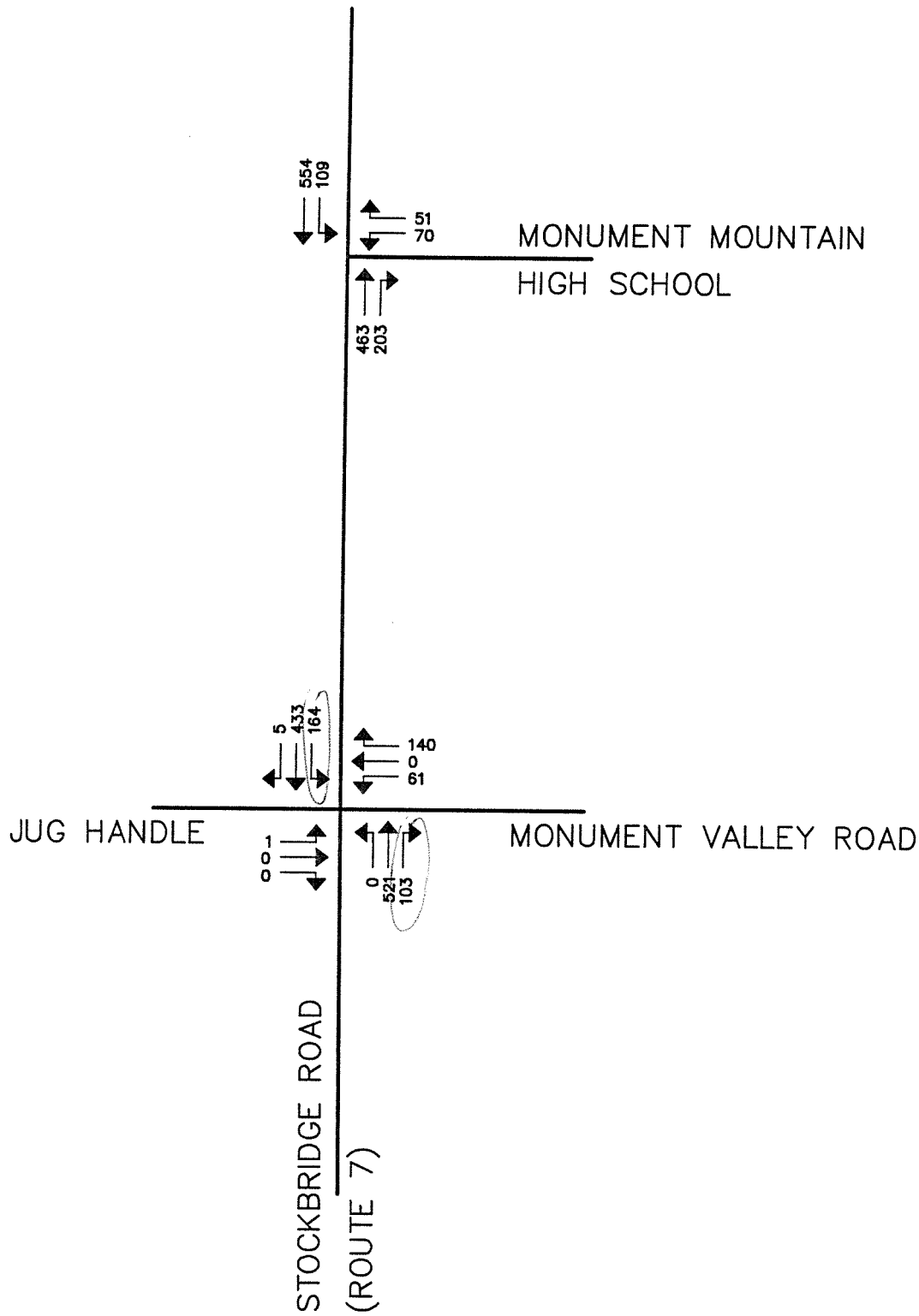
SCALE:	HORZ: NTS
	VERT.:
DATUM:	HORZ:
	VERT.:
GRAPHIC SCALE	

**FUSS & O'NEILL**  
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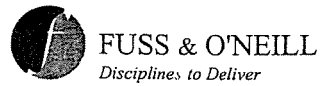
78 INTERSTATE DRIVE, WEST SPRINGFIELD, MA 01080  
413.452.0445 [www.FandO.com](http://www.FandO.com)

TRAFFIC COUNT LOCUS  
 MONUMENT MOUNTAIN HIGH SCHOOL  
 GREAT BARRINGTON MASSACHUSETTS

PROJ. No.: 2001825.A12
DATE: APRIL 2006
<b>FIG 1</b>



SCALE:
HORZ: NTS
VERT:
DATUM:
HORZ:
VERT:
0 .5 1
GRAPHIC SCALE



78 INTERSTATE DRIVE, WEST SPRINGFIELD, MA 01089

413.452.0445

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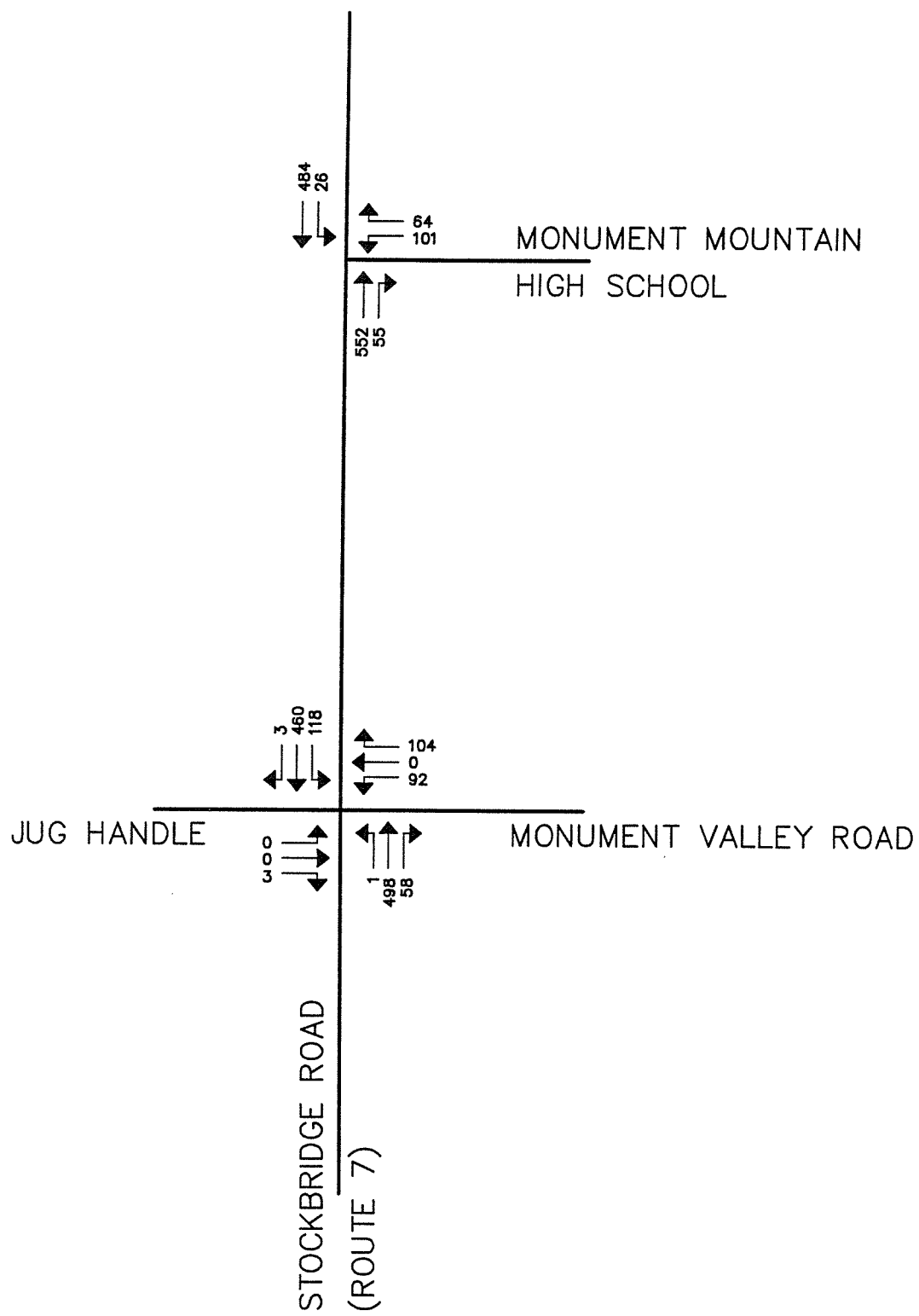
AM PEAK HOUR  
2006 EXISTING TRAFFIC VOLUMES  
MONUMENT MOUNTAIN HIGH SCHOOL

GREAT BARRINGTON

MASSACHUSETTS

PROJ. No.: 2001825.A12  
DATE: JULY 2006

FIG 2



SCALE:
HORIZ.: NTS
VERT.:
DATUM:
HORIZ.:
VERT.:
0 .5 1
GRAPHIC SCALE



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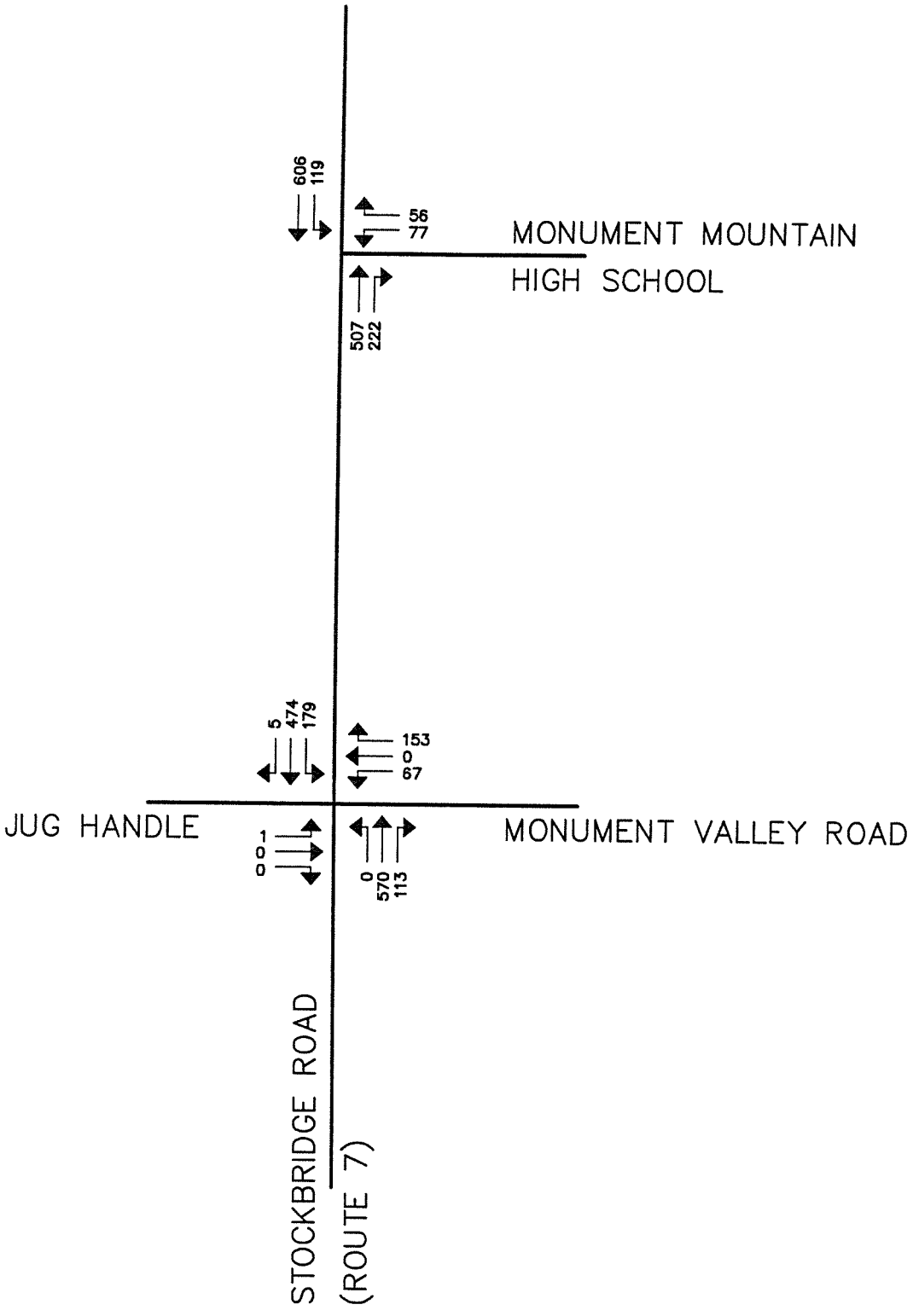
PM PEAK HOUR  
2006 EXISTING TRAFFIC VOLUMES  
MONUMENT MOUNTAIN HIGH SCHOOL

GREAT BARRINGTON

MASSACHUSETTS

PROJ. No.: 2001825.A12  
DATE: JULY 2006

FIG 3



SCALE:
HORZ: NTS
VERT:
DATUM:
HORZ:
VERT:
0 .5 1
GRAPHIC SCALE



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AM PEAK HOUR  
2011 NO BUILD TRAFFIC VOLUMES  
MONUMENT MOUNTAIN HIGH SCHOOL

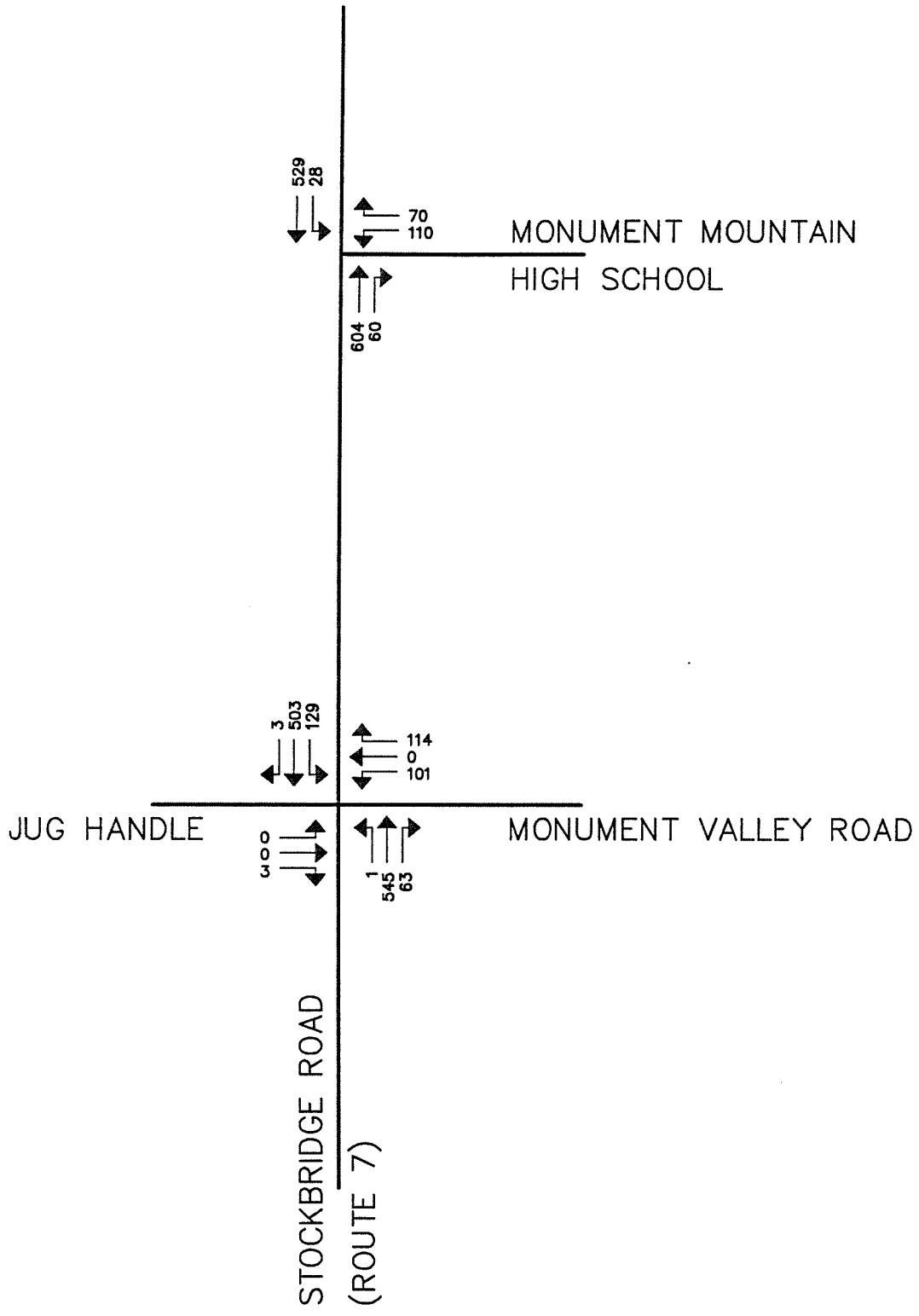
GREAT BARRINGTON

MASSACHUSETTS

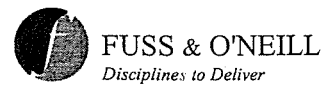
PROJ. No.: 2001825.A12  
DATE: JULY 2006

FIG 4





SCALE:
HORZ.: NTS
VERT.:
DATUM:
HORZ.:
VERT.:
0 .5 1
GRAPHIC SCALE



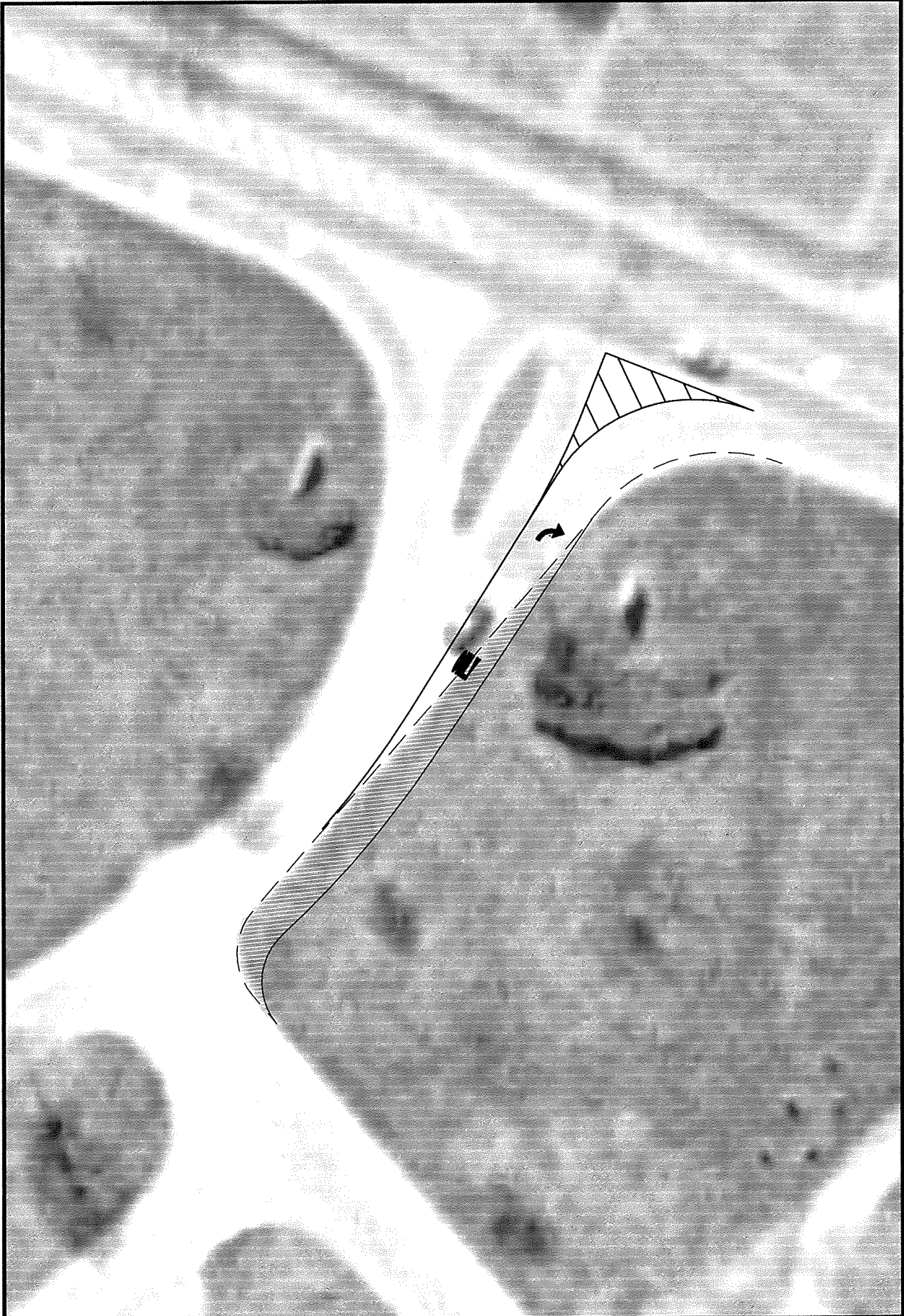
76 INTERSTATE DRIVE, WEST SPRINGFIELD, MA 01089  
413.452.0445  
www.FandO.com

PM PEAK HOUR  
2011 NO BUILD TRAFFIC VOLUMES  
MONUMENT MOUNTAIN HIGH SCHOOL

GREAT BARRINGTON MASSACHUSETTS

PROJ. No.: 2001825.A12  
DATE: JULY 2006

FIG 5



SCALE:	HORIZ: 1" = 40'
DATUM:	VERT.:
HORIZ:	VERT.:

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BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT  
DRIVEWAY WIDENING PLAN  
MONUMENT MOUNTAIN HIGH SCHOOL  
GREAT BARRINGTON  
MASSACHUSETTS

PROJ. NO.:	2001825_A12
DATE:	AUGUST 2006



**APPENDIX B**  
**ACCIDENT SUMMARIES**



TABLE 3  
ACCIDENT DATA SUMMARY - 2002 THROUGH 2004  
SIGNALIZED INTERSECTIONS

Criteria	Stockbridge Road (Route 7) at Monument Mounatin High School	Stockbridge Road (Route 7) at Monument Valley Road	TOTAL
<b>YEAR</b>			
2002	0	0	0
2003	1	0	1
<u>2004</u>	<u>1</u>	<u>2</u>	<u>3</u>
Total	2	2	4
Average No. of Crashes	0.7	0.7	-
Crash Rate	0.08	0.11	-
<b>TYPE</b>			
Angle	0	0	0
Rear-End	0	0	0
Head-On	1	1	2
Sideswipe	1	0	1
<u>Unknown/Other</u>	<u>0</u>	<u>1</u>	<u>1</u>
Total	2	2	4
<b>SEVERITY</b>			
Property Damage Only	0	0	0
Personal Injury	2	0	2
Fatality	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	2	0	2
<b>WEATHER</b>			
Clear	1	1	2
Rain	0	0	0
Snow/Ice	0	0	0
Clouds	1	1	2
Fog	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	2	2	4
<b>TIME</b>			
Weekday 7:00 AM - 9:00 AM	0	0	0
Weekday 1:30 PM - 3:30 PM	1	0	1
<u>Other</u>	<u>1</u>	<u>2</u>	<u>3</u>
Total	2	2	4

Source: Massachusetts Highway Department Crash Data Report





APPENDIX C  
CAPACITY ANALYSIS





Fuss & O'Neill Inc.

TABLE A

LEVEL OF SERVICE CRITERIA  
FOR  
INTERSECTIONS

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)
A	$\leq 10$
B	$>10$ and $\leq 20$
C	$>20$ and $\leq 35$
D	$>35$ and $\leq 55$
E	$>55$ and $\leq 80$
F	$>80$

Source: Highway Capacity Manual, Special Report 209, 1998, Table 9-1.

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY TO TRAFFIC (Sec. Per Vehicle)
A	$\leq 10$
B	$>10$ and $\leq 15$
C	$>15$ and $\leq 25$
D	$>25$ and $\leq 35$
E	$>35$ and $\leq 50$
F	$>50$

Source: Highway Capacity Manual, Special Report 209, 1998, Table 10-7.

HCM Unsignalized Intersection Capacity Analysis  
 6: Monument Mtn H.S. & Stockbridge Rd (Rt 7)

2006 - Weekday AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↘	↑	↗	↙	↑
Sign Control	Stop		Stop			Stop
Volume (veh/h)	70	51	463	203	109	554
Peak Hour Factor	0.61	0.61	0.83	0.83	0.80	0.80
Hourly flow rate (veh/h)	115	84	558	245	136	692

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	115	84	558	245	136	693
Volume Left (vph)	115	0	0	0	136	0
Volume Right (vph)	0	84	0	245	0	0
Hadj (s)	0.4	-0.5	0.1	-0.5	0.3	0.1
Departure Headway (s)	8.1	7.2	6.2	5.6	6.5	6.3
Degree Utilization, x	0.26	0.17	0.96	0.38	0.25	1.21
Capacity (veh/h)	436	489	573	627	539	578
Control Delay (s)	12.6	10.4	52.6	10.9	10.4	131.1
Approach Delay (s)	11.7		39.9		111.3	
Approach LOS	B		E		F	

Intersection Summary						
Delay	69.2					
HCM Level of Service	F					
Intersection Capacity Utilization	53.3%		ICU Level of Service		A	

HCM Signalized Intersection Capacity Analysis  
 4: Monument Valley Rd & Stockbridge Rd (Rt 7)

2006 - Weekday AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵	↗	↗	↵	↵	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Fr <sub>t</sub>	1.00	0.85	0.98		1.00	1.00
Fl <sub>t</sub> Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1626	1509	1769		1736	1810
Fl <sub>t</sub> Permitted	0.95	1.00	1.00		0.23	1.00
Satd. Flow (perm)	1626	1509	1769		418	1810
Volume (vph)	61	140	521	103	164	433
Peak-hour factor, PHF	0.70	0.70	0.88	0.88	0.84	0.84
Adj. Flow (vph)	87	200	592	117	195	515
Lane Group Flow (vph)	87	200	709	0	195	515
Heavy Vehicles (%)	11%	7%	5%	5%	4%	5%
Turn Type	pm+ov			pm+pt		
Protected Phases	8	1	2		1	6
Permitted Phases	8			6		
Actuated Green, G (s)	5.4	11.7	35.1		47.4	47.4
Effective Green, g (s)	6.4	14.7	37.1		49.4	49.4
Actuated g/C Ratio	0.10	0.23	0.58		0.77	0.77
Clearance Time (s)	5.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	163	442	1029		495	1401
v/s Ratio Prot	0.05	0.06	0.40		0.05	0.28
v/s Ratio Perm	0.07			0.25		
v/c Ratio	0.53	0.45	0.69		0.39	0.37
Uniform Delay, d <sub>1</sub>	27.3	21.1	9.3		5.1	2.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d <sub>2</sub>	3.3	0.7	1.9		0.5	0.2
Delay (s)	30.6	21.8	11.3		5.6	2.4
Level of Service	C	C	B		A	A
Approach Delay (s)	24.5		11.3		3.3	
Approach LOS	C		B		A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 6: Monument Mtn H.S. & Stockbridge Rd (Rt 7)

2011 - Weekday AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↖	↗	↑
Sign Control	Stop		Stop			Stop
Volume (veh/h)	77	56	507	222	119	606
Peak Hour Factor	0.61	0.61	0.83	0.83	0.80	0.80
Hourly flow rate (veh/h)	126	92	611	267	149	758

Direction Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	126	92	611	267	149	758
Volume Left (vph)	126	0	0	0	149	0
Volume Right (vph)	0	92	0	267	0	0
Hadj (s)	0.4	-0.5	0.1	-0.5	0.3	0.1
Departure Headway (s)	8.1	7.2	6.3	5.8	6.6	6.4
Degree Utilization, x	0.29	0.18	1.07	0.43	0.27	1.36
Capacity (veh/h)	434	486	579	616	529	570
Control Delay (s)	13.1	10.7	82.8	11.8	10.9	190.2
Approach Delay (s)	12.1		61.2		160.7	
Approach LOS	B		F		F	

Intersection Summary						
Delay			100.9			
HCM Level of Service			F			
Intersection Capacity Utilization			57.4%	ICU Level of Service		A

HCM Signalized Intersection Capacity Analysis  
 4: Monument Valley Rd & Stockbridge Rd (Rt 7)

2011 - Weekday AM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.98		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1626	1509	1769		1736	1810
Flt Permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1626	1509	1769		317	1810
Volume (vph)	67	153	570	113	179	474
Peak-hour factor, PHF	0.70	0.70	0.88	0.88	0.84	0.84
Adj. Flow (vph)	96	219	648	128	213	564
Lane Group Flow (vph)	96	219	776	0	213	564
Heavy Vehicles (%)	11%	7%	5%	5%	4%	5%
Turn Type	pm+ov			pm+pt		
Protected Phases	8	1	2		1	6
Permitted Phases		8			6	
Actuated Green, G (s)	8.0	16.6	38.9		53.5	53.5
Effective Green, g (s)	9.0	19.6	40.9		55.5	55.5
Actuated g/C Ratio	0.12	0.27	0.56		0.77	0.77
Clearance Time (s)	5.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	202	491	998		450	1386
v/s Ratio Prot	0.06	c0.07	c0.44		0.07	0.31
v/s Ratio Perm		0.08			0.29	
v/c Ratio	0.48	0.45	0.78		0.47	0.41
Uniform Delay, d1	29.6	21.9	12.3		8.0	2.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.8	0.6	3.9		0.8	0.2
Delay (s)	31.3	22.6	16.1		8.8	3.1
Level of Service	C	C	B		A	A
Approach Delay (s)	25.3		16.1			4.7
Approach LOS	C		B			A

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	B

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 6: Monument Mtn H.S. & Stockbridge Rd (Rt 7)

2006 - Weekday PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↑	↗	↙	↑
Sign Control	Stop		Stop			Stop
Volume (veh/h)	101	64	552	55	26	484
Peak Hour Factor	0.50	0.50	0.86	0.86	0.90	0.90
Hourly flow rate (veh/h)	202	128	642	64	29	538

Direction Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	202	128	642	64	29	538
Volume Left (vph)	202	0	0	0	29	0
Volume Right (vph)	0	128	0	64	0	0
Hadj (s)	0.4	-0.4	0.1	-0.3	0.3	0.1
Departure Headway (s)	7.9	7.0	6.6	6.2	6.8	6.6
Degree Utilization, x	0.44	0.25	1.17	0.11	0.05	0.99
Capacity (veh/h)	451	506	555	568	512	538
Control Delay (s)	15.8	11.1	116.5	8.8	9.0	59.3
Approach Delay (s)	14.0		106.7		56.7	
Approach LOS	B		F		F	

Intersection Summary						
Delay			69.9			
HCM Level of Service			F			
Intersection Capacity Utilization		51.6%		ICU Level of Service		A



HCM Signalized Intersection Capacity Analysis  
 4: Monument Valley Rd & Stockbridge Rd (Rt 7)

2006 - Weekday PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Fr't	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1671	1442	1762		1612	1810
Flt Permitted	0.95	1.00	1.00		0.33	1.00
Satd. Flow (perm)	1671	1442	1762		568	1810
Volume (vph)	92	104	498	58	118	460
Peak-hour factor, PHF	0.61	0.61	0.97	0.97	0.80	0.80
Adj. Flow (vph)	151	170	513	60	148	575
Lane Group Flow (vph)	151	170	573	0	148	575
Heavy Vehicles (%)	8%	12%	6%	9%	12%	5%
Turn Type	pm+ov			pm+pt		
Protected Phases	8	1	2		1	6
Permitted Phases	8			6		
Actuated Green, G (s)	10.6	17.0	37.0		49.4	49.4
Effective Green, g (s)	11.6	20.0	39.0		51.4	51.4
Actuated g/C Ratio	0.16	0.28	0.55		0.72	0.72
Clearance Time (s)	5.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	273	487	968		535	1310
v/s Ratio Prot	c0.09	0.04	c0.33		0.03	c0.32
v/s Ratio Perm	0.08			0.17		
v/c Ratio	0.55	0.35	0.59		0.28	0.44
Uniform Delay, d1	27.3	20.3	10.7		8.2	4.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	0.4	1.0		0.3	0.2
Delay (s)	29.7	20.7	11.7		8.4	4.2
Level of Service	C	C	B		A	A
Approach Delay (s)	25.0		11.7		5.1	
Approach LOS	C		B		A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	A

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 6: Monument Mtn H.S. & Stockbridge Rd (Rt 7)

2011 - Weekday PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Volume (veh/h)	110	70	604	60	28	529
Peak Hour Factor	0.50	0.50	0.86	0.86	0.90	0.90
Hourly flow rate (veh/h)	220	140	702	70	31	588

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	220	140	702	70	31	588
Volume Left (vph)	220	0	0	0	31	0
Volume Right (vph)	0	140	0	70	0	0
Hadj (s)	0.4	-0.4	0.1	-0.3	0.3	0.1
Departure Headway (s)	7.9	7.0	6.7	6.3	7.0	6.7
Degree Utilization, x	0.48	0.27	1.31	0.12	0.06	1.10
Capacity (veh/h)	451	505	548	558	503	545
Control Delay (s)	16.9	11.5	170.2	9.0	9.2	91.8
Approach Delay (s)	14.8		155.6		87.7	
Approach LOS	B		F		F	

Intersection Summary	
Delay	102.6
HCM Level of Service	F
Intersection Capacity Utilization	55.8%
ICU Level of Service	A



HCM Signalized Intersection Capacity Analysis  
 4: Monument Valley Rd & Stockbridge Rd (Rt 7)

2011 - Weekday PM



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Fr <sub>t</sub>	1.00	0.85	0.99		1.00	1.00
Fl <sub>t</sub> Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1671	1442	1762		1612	1810
Fl <sub>t</sub> Permitted	0.95	1.00	1.00		0.26	1.00
Satd. Flow (perm)	1671	1442	1762		440	1810
Volume (vph)	101	114	545	63	129	503
Peak-hour factor, PHF	0.61	0.61	0.97	0.97	0.80	0.80
Adj. Flow (vph)	166	187	562	65	161	629
Lane Group Flow (vph)	166	187	627	0	161	629
Heavy Vehicles (%)	8%	12%	6%	9%	12%	5%
Turn Type	pm+ov			pm+pt		
Protected Phases	8	1	2		1	6
Permitted Phases	8			6		
Actuated Green, G (s)	10.8	17.6	38.4		51.2	51.2
Effective Green, g (s)	11.8	20.6	40.4		53.2	53.2
Actuated g/C Ratio	0.16	0.28	0.55		0.73	0.73
Clearance Time (s)	5.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	270	486	975		462	1319
v/s Ratio Prot	c0.10	0.05	c0.36		0.04	c0.35
v/s Ratio Perm		0.08			0.21	
v/c Ratio	0.61	0.38	0.64		0.35	0.48
Uniform Delay, d <sub>1</sub>	28.5	21.1	11.3		5.7	4.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d <sub>2</sub>	4.1	0.5	1.5		0.5	0.3
Delay (s)	32.6	21.6	12.8		6.1	4.4
Level of Service	C	C	B		A	A
Approach Delay (s)	26.8		12.8			4.7
Approach LOS	C		B			A

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B

c Critical Lane Group





APPENDIX D  
MANUAL TURNING MOVEMENT COUNTS





# Data Acquisition, Transformation, & Analysis

50 Alden Avenue  
Belchertown, MA 01007

N/S: Route 7  
E/W: High School Driveway  
City, State: Great Barrington, MA  
Client: FandO / S.Savaria

File Name : Route 7 @ School Driveway (AM)  
Site Code : 04050601  
Start Date : 5/4/2006  
Page No : 1

## Groups Printed- HVs and Bikes - Busses

Start Time	Route 7 From North				Monument Mountain High School Driveway From East				Route 7 From South				None From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
07:00 AM	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	7
07:15 AM	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5
07:30 AM	0	4	3	0	2	0	5	0	10	10	0	0	0	0	0	0	0	34
07:45 AM	0	4	0	0	2	0	5	0	3	5	0	0	0	0	0	0	0	19
Total	0	16	3	0	4	0	10	0	13	19	0	0	0	0	0	0	0	65
08:00 AM	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	8
08:15 AM	0	8	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	13
08:30 AM	0	12	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	17
08:45 AM	0	6	0	0	0	0	1	0	0	4	0	0	0	0	0	0	0	11
Total	0	31	0	0	0	0	1	0	3	14	0	0	0	0	0	0	0	49
Grand Total	0	47	3	0	4	0	11	0	16	33	0	0	0	0	0	0	0	114
Apprch %	0	94	6	0	26.7	0	73.3	0	32.7	67.3	0	0	0	0	0	0	0	
Total %	0	41.2	2.6	0	3.5	0	9.6	0	14	28.9	0	0	0	0	0	0	0	
HVs and Bikes	0	40	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	68
% HVs and Bikes	0	85.1	0	0	0	0	0	0	0	84.8	0	0	0	0	0	0	0	59.6
Busses	0	7	3	0	4	0	11	0	16	5	0	0	0	0	0	0	0	46
% Busses	0	14.9	100	0	100	0	100	0	100	15.2	0	0	0	0	0	0	0	40.4

Start Time	Route 7 From North					Monument Mountain High School Driveway From East					Route 7 From South					None From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:30 AM	0	4	3	0	7	2	0	5	0	7	10	10	0	0	20	0	0	0	0	0	34
07:45 AM	0	4	0	0	4	2	0	5	0	7	3	5	0	0	8	0	0	0	0	0	19
08:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
08:15 AM	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
Total Volume	0	21	3	0	24	4	0	10	0	14	13	23	0	0	36	0	0	0	0	0	74
% App. Total	0	87.5	12.5	0		28.6	0	71.4	0		36.1	63.9	0	0		0	0	0	0		
PHF	.000	.656	.250	.000	.750	.500	.000	.500	.000	.500	.325	.575	.000	.000	.450	.000	.000	.000	.000	.000	.544

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

# Data Acquisition, Transformation, & Analysis

50 Alden Avenue  
Belchertown, MA 01007

N/S: Route 7  
E/W: Monument Valley Road  
City, State: Great Barrington, MA  
Client: FandO / S.Savaria

File Name : Route 7 @ Monument Valley (AM)  
Site Code : 05040602  
Start Date : 5/4/2006  
Page No : 1

## Groups Printed- Passenger Cars and Peds - HVs and Bikes - Busses

Start Time	Route 7 From North				Monument Valley Road From East				Route 7 From South				Jug Handle From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
07:00 AM	0	66	11	0	10	0	0	0	7	61	0	0	0	0	0	0	0	155
07:15 AM	1	101	21	0	14	0	2	0	7	78	0	0	0	0	0	0	0	224
07:30 AM	0	83	50	0	36	0	14	0	28	116	0	0	0	0	0	0	0	327
07:45 AM	2	123	55	0	44	0	28	0	25	152	0	0	0	0	0	1	0	430
Total	3	373	137	0	104	0	44	0	67	407	0	0	0	0	0	1	0	1136
08:00 AM	0	120	33	0	31	0	12	0	25	150	0	0	0	0	0	0	0	371
08:15 AM	3	107	26	0	29	0	7	0	25	103	0	0	0	0	0	0	0	300
08:30 AM	0	115	27	0	37	0	28	0	29	89	1	0	0	0	0	0	0	326
08:45 AM	1	125	14	0	23	1	16	0	22	78	0	0	0	0	0	0	0	280
Total	4	467	100	0	120	1	63	0	101	420	1	0	0	0	0	0	0	1277
Grand Total	7	840	237	0	224	1	107	0	168	827	1	0	0	0	0	1	0	2413
Apprch %	0.6	77.5	21.9	0	67.5	0.3	32.2	0	16.9	83	0.1	0	0	0	100	0	0	
Total %	0.3	34.8	9.8	0	9.3	0	4.4	0	7	34.3	0	0	0	0	0	0	0	
Passenger Cars and Peds	2	800	226	0	210	0	98	0	158	794	1	0	0	0	0	0	0	2289
% Passenger Cars and Peds	28.6	95.2	95.4	0	93.8	0	91.6	0	94	96	100	0	0	0	0	0	0	94.9
HVs and Bikes	4	36	1	0	1	1	0	0	0	27	0	0	0	0	0	1	0	71
% HVs and Bikes	57.1	4.3	0.4	0	0.4	100	0	0	0	3.3	0	0	0	0	0	100	0	2.9
Busses	1	4	10	0	13	0	9	0	10	6	0	0	0	0	0	0	0	53
% Busses	14.3	0.5	4.2	0	5.8	0	8.4	0	6	0.7	0	0	0	0	0	0	0	2.2

Start Time	Route 7 From North					Monument Valley Road From East					Route 7 From South					Jug Handle From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:30 AM	0	83	50	0	133	36	0	14	0	50	28	116	0	0	144	0	0	0	0	0	327
07:45 AM	2	123	55	0	180	44	0	28	0	72	25	152	0	0	177	0	0	1	0	1	430
08:00 AM	0	120	33	0	153	31	0	12	0	43	25	150	0	0	175	0	0	0	0	0	371
08:15 AM	3	107	26	0	136	29	0	7	0	36	25	103	0	0	128	0	0	0	0	0	300
Total Volume	5	433	164	0	602	140	0	61	0	201	103	521	0	0	624	0	0	1	0	1	1428
% App. Total	0.8	71.9	27.2	0		69.7	0	30.3	0		16.5	83.5	0	0		0	0	100	0		
PHF	.417	.880	.745	.000	.836	.795	.000	.545	.000	.698	.920	.857	.000	.000	.881	.000	.000	.250	.000	.250	.830

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:30 AM

# Data Acquisition, Transformation, & Analysis

50 Alden Avenue  
Belchertown, MA 01007

N/S: Route 7  
E/W: Monument Valley Road  
City, State: Great Barrington, MA  
Client: FandO / S.Savaria

File Name : Route 7 @ Monument Valley (AM)  
Site Code : 05040602  
Start Date : 5/4/2006  
Page No : 1

### Groups Printed- HVs and Bikes - Busses

Start Time	Route 7 From North				Monument Valley Road From East				Route 7 From South				Jug Handle From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	7
07:15 AM	1	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
07:30 AM	0	5	6	0	6	0	2	0	5	12	0	0	0	0	0	0	36
07:45 AM	1	4	1	0	3	0	4	0	0	5	0	0	0	0	1	0	19
<b>Total</b>	<b>2</b>	<b>16</b>	<b>7</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>5</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>67</b>
08:00 AM	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	0	8
08:15 AM	2	6	0	0	1	0	1	0	0	4	0	0	0	0	0	0	14
08:30 AM	0	7	4	0	4	0	2	0	5	1	0	0	0	0	0	0	23
08:45 AM	1	6	0	0	0	1	0	0	0	4	0	0	0	0	0	0	12
<b>Total</b>	<b>3</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>57</b>
<b>Grand Total</b>	<b>5</b>	<b>40</b>	<b>11</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>10</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>124</b>
Apprch %	8.9	71.4	19.6	0	58.3	4.2	37.5	0	23.3	76.7	0	0	0	0	100	0	
Total %	4	32.3	8.9	0	11.3	0.8	7.3	0	8.1	26.6	0	0	0	0	0.8	0	
HVs and Bikes	4	36	1	0	1	1	0	0	0	27	0	0	0	0	1	0	71
% HVs and Bikes	80	90	9.1	0	7.1	100	0	0	0	81.8	0	0	0	0	100	0	57.3
Busses	1	4	10	0	13	0	9	0	10	6	0	0	0	0	0	0	53
% Busses	20	10	90.9	0	92.9	0	100	0	100	18.2	0	0	0	0	0	0	42.7

Start Time	Route 7 From North					Monument Valley Road From East					Route 7 From South					Jug Handle From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	5	6	0	11	6	0	2	0	8	5	12	0	0	17	0	0	0	0	0	36
07:45 AM	1	4	1	0	6	3	0	4	0	7	0	5	0	0	5	0	0	1	0	1	19
08:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
08:15 AM	2	6	0	0	8	1	0	1	0	2	0	4	0	0	4	0	0	0	0	0	14
<b>Total Volume</b>	<b>3</b>	<b>20</b>	<b>7</b>	<b>0</b>	<b>30</b>	<b>10</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>17</b>	<b>5</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>77</b>
<b>% App. Total</b>	<b>10</b>	<b>66.7</b>	<b>23.3</b>	<b>0</b>		<b>58.8</b>	<b>0</b>	<b>41.2</b>	<b>0</b>		<b>17.2</b>	<b>82.8</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>100</b>	<b>0</b>		
<b>PHF</b>	<b>.375</b>	<b>.833</b>	<b>.292</b>	<b>.000</b>	<b>.682</b>	<b>.417</b>	<b>.000</b>	<b>.438</b>	<b>.000</b>	<b>.531</b>	<b>.250</b>	<b>.500</b>	<b>.000</b>	<b>.000</b>	<b>.426</b>	<b>.000</b>	<b>.000</b>	<b>.250</b>	<b>.000</b>	<b>.250</b>	<b>.535</b>







# Data Acquisition, Transformation, & Analysis

50 Alden Avenue  
Belchertown, MA 01007

N/S: Route 7  
E/W: Monument Valley Road  
City, State: Great Barrington, MA  
Client: FandO / S.Savaria

File Name : Route 7 @ Monument Valley (PM)  
Site Code : 05040602  
Start Date : 5/4/2006  
Page No : 1

## Groups Printed- Passenger Cars and Peds - HVs and Bikes - Busses

Start Time	Route 7 From North				Monument Valley Road From East				Route 7 From South				Jug Handle From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
01:30 PM	0	77	5	0	3	0	1	0	2	97	0	1	0	0	0	0	0	186
01:45 PM	1	77	10	0	3	0	6	0	4	104	1	0	0	0	0	0	0	206
Total	1	154	15	0	6	0	7	0	6	201	1	1	0	0	0	0	0	392
02:00 PM	0	105	11	0	15	0	8	0	6	98	0	0	0	0	0	0	0	243
02:15 PM	1	93	15	0	11	0	3	0	8	100	0	0	0	0	0	1	0	232
02:30 PM	1	90	17	0	19	0	8	0	15	115	1	0	1	0	0	0	0	267
02:45 PM	0	147	35	0	26	0	26	0	14	130	0	0	1	0	0	0	0	379
Total	2	435	78	0	71	0	45	0	43	443	1	0	2	0	1	0	0	1121
03:00 PM	1	122	44	0	15	0	22	0	16	122	0	0	0	0	0	0	0	342
03:15 PM	1	101	22	0	44	0	36	0	13	131	0	0	1	0	0	0	0	349
Grand Total	5	812	159	0	136	0	110	0	78	897	2	1	3	0	1	0	0	2204
Apprch %	0.5	83.2	16.3	0	55.3	0	44.7	0	8	91.7	0.2	0.1	75	0	25	0	0	
Total %	0.2	36.8	7.2	0	6.2	0	5	0	3.5	40.7	0.1	0	0.1	0	0	0	0	
Passenger Cars and Peds	5	757	142	0	124	0	101	0	71	830	2	0	3	0	0	0	0	2035
% Passenger Cars and Peds	100	93.2	89.3	0	91.2	0	91.8	0	91	92.5	100	0	100	0	0	0	0	92.3
HVs and Bikes	0	50	1	0	1	0	1	0	0	58	0	1	0	0	0	0	0	112
% HVs and Bikes	0	6.2	0.6	0	0.7	0	0.9	0	0	6.5	0	100	0	0	0	0	0	5.1
Busses	0	5	16	0	11	0	8	0	7	9	0	0	0	0	1	0	0	57
% Busses	0	0.6	10.1	0	8.1	0	7.3	0	9	1	0	0	0	0	100	0	0	2.6

Start Time	Route 7 From North					Monument Valley Road From East					Route 7 From South					Jug Handle From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:30 PM	1	90	17	0	108	19	0	8	0	27	15	115	1	0	131	1	0	0	0	1	267
02:45 PM	0	147	35	0	182	26	0	26	0	52	14	130	0	0	144	1	0	0	0	1	379
03:00 PM	1	122	44	0	167	15	0	22	0	37	16	122	0	0	138	0	0	0	0	0	342
03:15 PM	1	101	22	0	124	44	0	36	0	80	13	131	0	0	144	1	0	0	0	1	349
Total Volume	3	460	118	0	581	104	0	92	0	196	58	498	1	0	557	3	0	0	0	3	1337
% App. Total	0.5	79.2	20.3	0	53.1	0	46.9	0	0	10.4	89.4	0.2	0	0	100	0	0	0	0	0	
PHF	.750	.782	.670	.000	.798	.591	.000	.639	.000	.613	.906	.950	.250	.000	.967	.750	.000	.000	.000	.750	.882

Peak Hour Analysis From 01:30 PM to 03:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:30 PM

# Data Acquisition, Transformation, & Analysis

50 Alden Avenue  
Belchertown, MA 01007

File Name : Route 7 @ Monument Valley (PM)

Site Code : 05040602

Start Date : 5/4/2006

Page No : 1

V/S: Route 7  
E/W: Monument Valley Road  
City, State: Great Barrington, MA  
Client: FandO / S.Savaria

## Groups Printed- HVs and Bikes - Busses

Start Time	Route 7 From North				Monument Valley Road From East				Route 7 From South				Jug Handle From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
01:30 PM	0	5	0	0	0	0	1	0	0	7	0	1	0	0	0	0	0	14
01:45 PM	0	8	1	0	0	0	1	0	0	12	0	0	0	0	0	0	0	22
Total	0	13	1	0	0	0	2	0	0	19	0	1	0	0	0	0	0	36
02:00 PM	0	9	0	0	0	0	0	0	2	8	0	0	0	0	0	0	0	19
02:15 PM	0	9	2	0	0	0	0	0	0	9	0	0	0	0	0	1	0	21
02:30 PM	0	4	1	0	2	0	0	0	2	12	0	0	0	0	0	0	0	21
02:45 PM	0	10	9	0	7	0	5	0	0	5	0	0	0	0	0	0	0	36
Total	0	32	12	0	9	0	5	0	4	34	0	0	0	0	0	1	0	97
03:00 PM	0	7	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	11
03:15 PM	0	3	4	0	3	0	2	0	3	10	0	0	0	0	0	0	0	25
Grand Total	0	55	17	0	12	0	9	0	7	67	0	1	0	0	1	0	0	169
Apprch %	0	76.4	23.6	0	57.1	0	42.9	0	9.3	89.3	0	1.3	0	0	100	0	0	
Total %	0	32.5	10.1	0	7.1	0	5.3	0	4.1	39.6	0	0.6	0	0	0.6	0	0	
HVs and Bikes	0	50	1	0	1	0	1	0	0	58	0	1	0	0	0	0	0	112
% HVs and Bikes	0	90.9	5.9	0	8.3	0	11.1	0	0	86.6	0	100	0	0	0	0	0	66.3
Busses	0	5	16	0	11	0	8	0	7	9	0	0	0	0	1	0	0	57
% Busses	0	9.1	94.1	0	91.7	0	88.9	0	100	13.4	0	0	0	0	100	0	0	33.7

Start Time	Route 7 From North					Monument Valley Road From East					Route 7 From South					Jug Handle From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 01:30 PM to 03:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:00 PM																					
02:00 PM	0	9	0	0	9	0	0	0	0	0	2	8	0	0	10	0	0	0	0	0	19
02:15 PM	0	9	2	0	11	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	21
02:30 PM	0	4	1	0	5	2	0	0	0	2	2	12	0	0	14	0	0	0	0	0	21
02:45 PM	0	10	9	0	19	7	0	5	0	12	0	5	0	0	5	0	0	0	0	0	36
Total Volume	0	32	12	0	44	9	0	5	0	14	4	34	0	0	38	0	0	1	0	1	97
% App. Total	0	72.7	27.3	0		64.3	0	35.7	0		10.5	89.5	0	0		0	0	100	0		
PHF	.000	.800	.333	.000	.579	.321	.000	.250	.000	.292	.500	.708	.000	.000	.679	.000	.000	.250	.000	.250	.674

H-  
FyI

MEMORANDUM

TO: Danny Brown, Berkshire Hills Regional School District

FROM: Jon Dietrich, Fuss & O'Neill, Inc. JWD  
Matthew Chase, Fuss & Oneill, Inc.

DATE: January 31, 2002

RE: Monument Mountain High School Traffic/Pedestrian Review

---

This memorandum summarizes Fuss & O'Neill's review of pedestrian, traffic, and parking observations at the Monument Mountain High School. Included are comments on existing conditions as observed during the morning start times and during the afternoon when school is dismissed. In addition, this memorandum looks at three future conditions and the discusses the possible improvement that should be considered for each of the following situations:

- Maintain status quo at the existing high school
- Future construction of elementary schools on the high school property
- Future construction of two elementary schools on Mountain Valley Road

**1. EXISTING CONDITIONS**

1.1 Monument Mountain High School has the following characteristics:

- Student enrollment: Approximately 660 students (Grades 9-12)
- Parking Spaces: approximately 240 parking spaces exist in the main parking lot
- Observations: Morning: 7:30-7:50 AM, Afternoon: 2:20-2:50 PM

1.2 Pedestrian Activity

- No pedestrian activity was observed at the high school as students drove themselves to school, were dropped off, or used the bus. There are no sidewalks along Route 7 that fronts the school.

Page 2 was not included in original report this was scanned from

## 2.0 FUTURE CONDITIONS – STATUS QUO WITH EXISTING HIGH SCHOOL

- Currently the existing intersection of Route 7 / High School Driveway does not warrant a traffic signal and will not warrant a signal during the year 2007. Table 1 illustrates that the warrants met for this intersection. The signal warrants met are Warrant 2, the minimum vehicular volume warrant for 4-hours, Warrant 3, and the peak hour warrant. This indicates that volumes at the high school driveway only meet the warrant during the peak hours of the school for no more than 4 hours of the day. From an engineering standpoint a traffic signal would disrupt the progression of traffic along Route 7 and should meet at least Warrant 1 for 8-hours of the day, or for as many hours as possible.
- Analysis of this intersection during the year 2007 indicates that the delay will increase as traffic increases in Route 7. During the year 2007, traffic turning left onto Route 7 southbound will operate at a Level of Service (LOS) F during both the morning and the evening peak hour. Table 2 illustrates the LOS for the 2002 existing and 2007 future conditions.
- Installation of a traffic signal to control driveway traffic leaving the school (i.e. red, yellow, and green signal operation) requires the review and approval of the Massachusetts Highway Department, since Stockbridge road is State Highway.

## 3.0 SCENARIO OF FUTURE CONSTRUCTION OF NEW ELEMENTARY SCHOOLS ON THE HIGH SCHOOL PROPERTY

- This scenario assumes that a new elementary school is constructed on the existing regional high school site. Approximately 900 new students have been assumed as the school enrollment. It is assumed that access to the school would be via the existing high school driveway.
- The proposed new elementary school is expected to generate approximately 270 vehicle trips during the morning peak (157 vehicles entering and 113 exiting) and 234 vehicle trips during the weekday afternoon peak (108 entering and 126 exiting). The site will generate approximately 918 trips daily (459 vehicles entering and 459 exiting).
- With the addition of the new elementary school delays on site will remain the same but will occur more frequently since the dismissal times are different. A traffic signal warrant analysis was conducted for the intersection of Route 7 / High School Driveway and indicates that a warrant for a traffic signal is met for at least 8-hours of the day, under Warrant 1B, Vehicular Volume, Interruption of Continuous Traffic.





**APPENDIX**

FIGURES 1 - 4

TABLES 1 AND 2

MANUAL TURNING MOVEMENT COUNT SUMMARIES

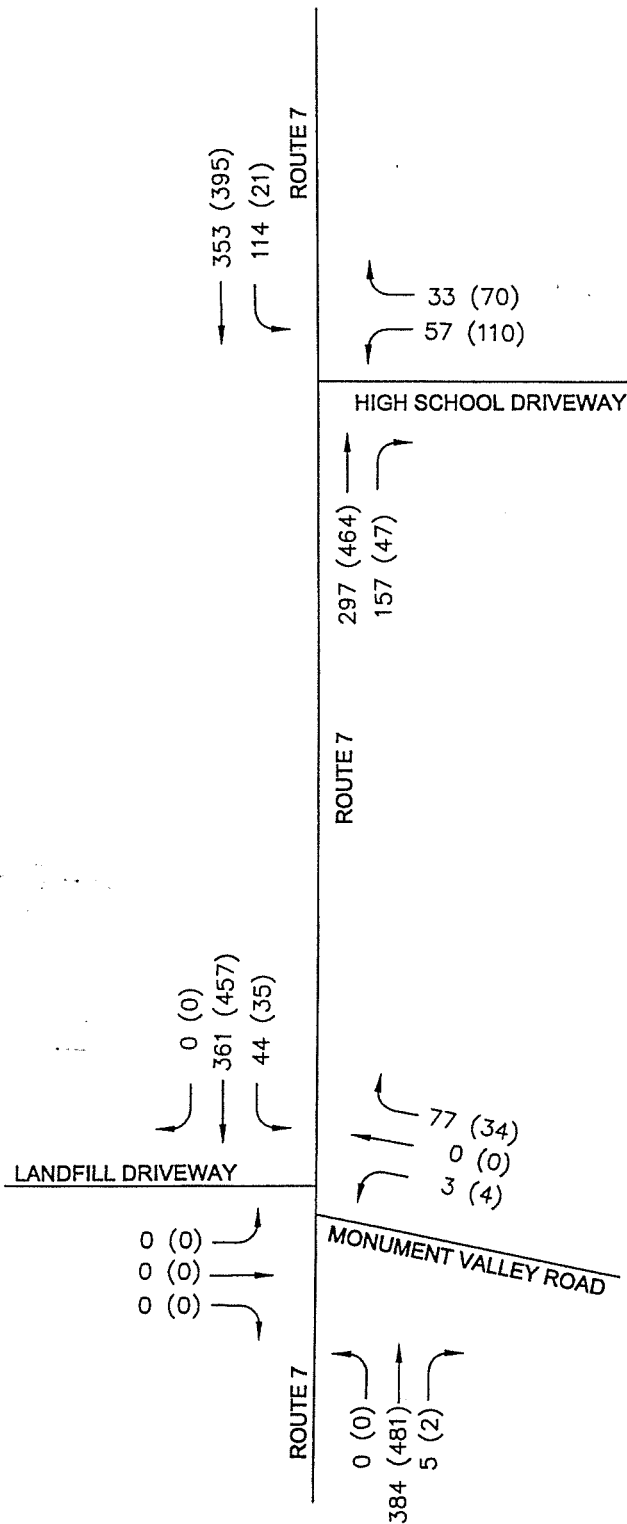
AUTOMATED TRAFFIC RECORDER COUNTS

ACCIDENT DATA SUMMARY

CAPACITY ANALYSIS WORKSHEETS

WARRANT ANALYSIS WORKSHEETS





FILENAME: F...825 VOLFIG


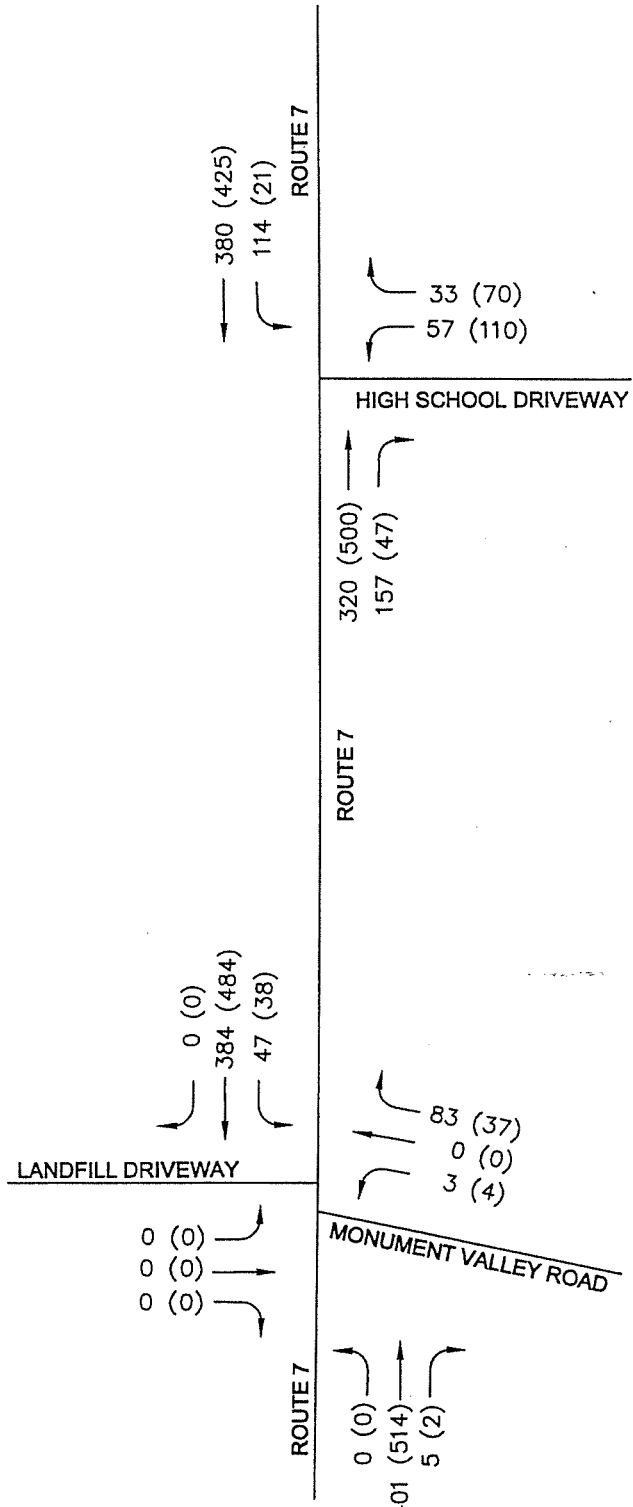

**Fuss & O'Neill**  
 Consulting Engineers  
 78 Interstate Drive, West Springfield, MA 01089  
 (413) 452-0445

FIGURE 1  
 2002 EXISTING  
 TRAFFIC VOLUMES

XX MORNING PEAK SCHOOL HOUR (7-8AM)  
 (XX) AFTERNOON PEAK SCHOOL HOUR (2:15-3:15PM)



(NO NEW SCHOOL TRAFFIC)

- XX MORNING PEAK SCHOOL HOUR (7-8AM)
- (XX) AFTERNOON PEAK SCHOOL HOUR (2:15-3:15PM)



**Fuss & O'Neill**  
*Consulting Engineers*

78 Interstate Drive, West Springfield, MA 01089  
 (413) 452-0445

FILENAME: F:\...825 VOLFIG

**FIGURE 3**  
**2007 FUTURE**  
**TRAFFIC VOLUMES**

TABLES 1 AND 2



**TABLE 2  
INTERSECTION LEVEL OF SERVICE SUMMARY  
WEEKDAY MORNING/WEEKDAY AFTERNOON**

INTERSECTION	2002 Existing		2007 Future (without New School)		2007 Build (with new School on Monument Valley Rd)	
	Delay	LOS	Delay	LOS	Delay	LOS
<b>Route 7 / High School Driveway</b>						
High School Dr WB Left	115/44	F/E	155/56	F/F	155/56	F/F
High School Dr WB Right	12/13	B/B	12/14	B/B	12/14	B/B
Route 7 SB Left	10/9	B/A	11/9	B/A	11/9	B/A
<b>Route 7 / Monument Valley Road</b>						
Monument Valley WB Left/Thru/Right	16/14	C/B	17/15	C/C	535/128	F/F
Route 7 SB Left	9/9	A/A	9/9	A/A	10/9	B/A





**4.6 GEO-ENVIRONMENTAL REPORT**





CDW CONSULTANTS, INC.

CIVIL & ENVIRONMENTAL ENGINEERS

PRINCIPALS AND ASSOCIATE

Yee Cho, P.E., L.S.P.

Kathleen Campbell, P.E., L.S.P., LEED, AP

John Goodhall, P.E.

July 12, 2012

Mr. Daniel Ruiz  
Symmes Maini & McKee Associates, Inc.  
1000 Massachusetts Avenue  
Cambridge, MA 02138

RE: Preliminary Phase I Site Assessment Summary  
Monument Mountain High School  
600 Stockbridge Road, Great Barrington, Massachusetts

Dear Mr. Ruiz:

CDW Consultants, Inc. (CDW) is pleased to present this letter report summarizing the preliminary findings of the Phase I Site Assessment of in support of the Feasibility Study for the Monument Mountain High School ("Site") in the town of Great Barrington, Massachusetts. We have summarized the key observations based upon our preliminary findings of the Phase I Preliminary Site Assessment. A detailed and final report will be provided to be included with the Final Existing Conditions Report.

CDW has made the following preliminary observations:

- The subject Site is located on a Town-owned parcel of land that totals approximately 94 acres. The Site occupies a portion of that parcel and consists of the buildings, athletic fields, and the protection areas of the water supply wells. The forested area located within the parcel is outside the scope of this assessment.
- The school building was constructed in 1966. Historic documentation identified the prior use as a fox farm.
- The school has two natural gas fired boilers, which were converted from dual fuel (oil and natural gas). According to the head custodian, one underground storage tank was removed within the past year. It was at that time that the boilers were converted to natural gas.



- The school has active high school science (biology and chemistry) laboratories, art classes and an auto-mechanics shop with a floor drain. The Plant Science Building also has greenhouses with floor drains. Quantities of laboratory chemicals, oil, paints and lubricants are used and stored on site. The discharge point for the floor drains is unknown.
- According to the Great Barrington Fire Department, two (2) 15,000 gallon USTs were removed from the Site on June 13, 2011, based upon the FP-290R permits. The USTs were not registered with the MADEP.
- The Site is not identified as a DEP Waste Disposal Site. There is one DEP listed site located within one half mile of the Site.
- The Site is identified as a RCRA Small Quantity Generator of Hazardous Waste. The years that the hazardous waste manifests for the Site were filed are as follows: 1987, 1988, 1989, and 2005.

Conclusions and recommendations based upon CDW's observations and Site research will be provided in the final Phase I Preliminary Site Assessment.

CDW appreciates the opportunity to provide our services for your project.

Very truly yours,

CDW CONSULTANTS, INC.

A handwritten signature in black ink that reads "Denise Bartone". The signature is written in a cursive, flowing style.

Denise Bartone  
Project Manager

18806

COMPARES

MASSACHUSETTS

Statute Form of

BY *R. J. Johnson*

**Warranty Deed**

(INDIVIDUAL)

Sarah A. Davies  
TO

The  
Berkshire Hills Regional  
School District

RECORDED

\$7.00

*R. J. Johnson*

March 10, 1956  
at 10 o'clock and 33 minutes A.M.  
Received and entered with *Southern*  
Berkshire Registry of Deeds  
Book 351 Page 198

Attest:

*James J. Conroy*  
Register.

FROM THE OFFICE OF  
McCormick & Murtagh  
314 Main Street  
Great Barrington, Mass.

(Please print or type)

RETURN TO →

HOBBS & WARREN, INC.  
PUBLISHERS STANDARD LEGAL FORMS  
BOSTON - MASS.

Form 872



K N O W      A L L      M E N      B Y      T H E S E      P R E S E N T S

That I, SARAH A. DAVIES

of Great Barrington

, Berkshire County, Massachusetts,

being unmarried, for consideration paid, grant to <sup>THE</sup> BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT a public authority established under the laws of the Commonwealth of Massachusetts and conducting its business in said Town of Great Barrington \*

with warranty covenants

the land in said Great Barrington, bounded and described as follows:

~~Description and encumbrances, if any.~~

PARCEL 1: Beginning at a point in the easterly line of the 1953 State Highway Layout, said point being 147.34 feet southwesterly from a Massachusetts Highway Bound (M. H. B.) which is opposite base line station 381 + 46.18; thence the following five courses in the said easterly line of the 1953 State Highway Layout: south 21° 47' 19" west 393.24 feet to a M. H. B.; north 68° 12' 41" west 17.00 feet to a M. H. B.; south 21° 47' 19" west 25.79 feet to a M. H. B.; south 28° 42' 07" west 65.80 feet to a M. H. B.; south 20° 54' 41" east 36.75 feet to a M. H. B. at the intersection of said 1953 State Highway Layout with the easterly side line of Monument Valley Road; thence the same course south 20° 54' 41" east in the said easterly line of Monument Valley Road a distance of 429.06 feet to a point;

thence south 87° 49' 20" east along land now or formerly of one O'Hara, a distance of 3056.11 feet to a point; thence the same course south 87° 49' 20" east a distance of 65 feet, more or less to the center of the Konkapot Brook;

thence in a general northeasterly direction along the center line of said brook about 1300 feet to the southerly line of land now or formerly of one Borgnis;

thence north 87° 49' 20" west a distance of 51 feet, more or less, along land of said Borgnis to a point; thence continuing the same course north 87° 49' 20" west and still along land of the said Borgnis a distance of 3238.53 feet to the place of beginning, all as shown on a plan filed in the Southern Berkshire Registry of Deeds at Great Barrington, Massachusetts. (March, 1966-J.K. Kelly in map file #3.)

PARCEL 2: All of that triangular parcel within the intersection of the westerly side line of said Monument Valley Road with the easterly line of the 1953 State Highway Layout and lying north of the southerly line of Parcel 1 extended westerly to cross the aforementioned two road side lines, said parcel also to be shown on the above mentioned plan filed in the said Registry of Deeds.

Being a portion of those premises conveyed by Ralph De Baun to Sarah A. Davies and Mary B. Davies, as joint tenants, dated January 4, 1947, recorded in said Registry of Deeds in Book 280, Page 358. The said Mary B. Davies having deceased, title vests in the within grantor, Sarah A. Davies.

Also conveying to the grantee a right of way passing through the above described premises which was originally granted for the

benefit of the Tracey Lot by a conveyance from Elisha Collins to James Tracey, dated March 1, 1870, recorded in said Registry in Book 132, Page 447. Meaning and intending by this conveyance to terminate and hereby terminating said right of way.





husband of said grantor,  
wife

release to said grantee all rights of tenancy by the curtesy and other interests therein  
dower and homestead

Witness my hand and seal this 17<sup>th</sup> day of March 1966

*Sarah A. Davies*  
Sarah A. Davies

The Commonwealth of Massachusetts

Berkshire, ss.

March 17, 1966

Then personally appeared the above named Sarah A. Davies

and acknowledged the foregoing instrument to be her free act and deed, before me

*William R. Murtagh*  
Notary Public - Justice of the Peace

My commission expires October 22, 1966

Received March 14, 1966 at 10:33 A.M.  
Southern Berkshire Registry of Deeds

*Jamaica J. Comerford*

Re

(THE FOLLOWING IS NOT A PART OF THE DEED, AND IS NOT TO BE RECORDED.)

GENERAL LAWS, (TER. ED.) CHAPTER 183, SECTION 10.

A deed in substance following the form entitled "Warranty Deed" shall, when duly executed, have the force and effect of a deed in fee simple to the grantee, his heirs and assigns, to his and their own use, with covenants on the part of the grantor, for himself, his heirs, executors, administrators and successors, with the grantee, his heirs, successors and assigns, that, at the time of the delivery of such deed (1) he was lawfully seized in fee simple of the granted premises, (2) that the granted premises were free from all encumbrances, (3) that he had good right to sell and convey the same to the grantee and his heirs and assigns, and (4) that he will, and his heirs, executors and administrators shall, warrant and defend the same to the grantee and his heirs and assigns against the lawful claims and demands of all persons.

MCCORMICK & MURTAGH  
ATTORNEYS AT LAW  
NATIONAL MAHAWE BANK BUILDING  
GREAT BARRINGTON, MASSACHUSETTS 01230

GEORGE R. MCCORMICK  
WILLIAM P. MURTAGH

TELEPHONE  
AREA CODE 413 528-0630

March 27, 1967

Mr. William Webber  
Chairman  
Regional School District  
Great Barrington, Mass.

Dear Mr. Webber:

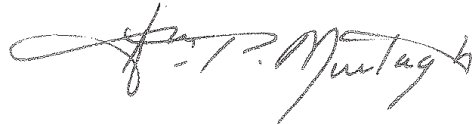
Enclosed is the easement whereby The Trustees of Reservations granted to The Berkshire Hills Regional School District the right to use approximately 6 acres of land south of the triangle parcel owned by the School District for a leaching field for the disposal system; said easement deed, dated January 4, 1967, is recorded in Book 355, Page 467.

Enclosed is a map of the premises; the original of said map has been recorded in the Southern Berkshire Registry of Deeds in Map Book 3, Page 30.

The negotiations for this easement started some months ago and oral approval was, last summer, received. However, the Trustees felt that a map should be placed on record before granting final approval. The Trustees gave final approval to the conveyance at a meeting on December 14, 1966.

Legal services and disbursements in this matter have been paid in full.

Very truly yours,



WPM:ad  
Enclosures

That, THE TRUSTEES OF RESERVATIONS, a Massachusetts corporation established under Chapter 352 of the Acts of 1891 with headquarters in Boston, and before 1954 known as "The Trustees of Public Reservations", for consideration paid, does hereby grant without covenants to THE BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT, a public authority established under the laws of the Commonwealth of Massachusetts and conducting its business in the Town of Great Barrington, Massachusetts, its successors or assigns, the right, so long as the adjoining premises and premises of the Grantee (Berkshire Hills Regional School District) located northeasterly of Monument Valley Road shall be used for educational purposes, to use the following described land for leaching field for Grantees (Berkshire Hills Regional School District) disposal system and to enter upon said land at any time for the purpose of constructing, repairing and maintaining said leaching field and disposal system:

Beginning at a point in the easterly side line of Auto Route 7, as altered and laid out in 1953, said point being marked by an iron pipe set 92.34 feet northeasterly from a granite marker; thence north  $25^{\circ} 54' 18''$  east in the said easterly line of Route 7 a distance of 448.05 feet to a granite marker; thence curving to the left with a radius of 5050 feet along the said easterly line of Route 7 a distance of 191.16 feet to an iron pipe (set) at the southeasterly corner of land of the Regional School; thence south  $87^{\circ} 49' 20''$  east along the southerly line of land of said Regional School a distance of 239.86 feet to an iron pipe (set) in the assumed westerly side line of Monument Valley Road; thence south  $22^{\circ} 49' 30''$  east in the said assumed westerly line of Monument Valley Road a distance of

635.86 feet to a fence post in the northerly line of land of one O'Hara, now or formerly; thence north 88° 49' 20" west in the said northerly line of land of O'Hara 677.16 feet to an iron pipe (set); thence north 86° 59' 20" west still in the said northerly line of land of O'Hara a distance of 85.53 feet to the point of beginning.

IN WITNESS WHEREOF, the said THE TRUSTEES OF RESERVATIONS, has caused its corporate seal to be hereto affixed and these presents to be signed, acknowledged and delivered in its name and behalf by Richard L. Frothingham /

its Treasurer this 4<sup>th</sup> day of January in the year one thousand nine hundred and sixty seven

Signed and sealed in presence of

John L. Plak THE TRUSTEES OF RESERVATIONS

By: R. L. Frothingham  
Treasurer

THE COMMONWEALTH OF MASSACHUSETTS

Suffolk  
Berlshire, ss.

January 4, 1967

Then personally appeared the above named R. L. Frothingham and acknowledged the foregoing instrument to be the free act and deed of The Trustees of Reservations, before me

Dorothy E. Lempers  
Notary Public

My commission expires: July 15, 1972



I, Arthur H. Phillips, Secretary, hereby certify that at a meeting of the Standing Committee of The Trustees of Reservations held at Boston, Massachusetts, on December 14, 1966, a quorum being present, it was

VOTED: That the President or the Treasurer be and they hereby are authorized and directed to execute the necessary instruments to grant a sewage easement over the land of the Trustees shown on a "Plan of Land of The Trustees of Public Reservations in Great Barrington, Massachusetts, dated September 1966, by J. R. Kelly-H. D. Granger, Engineers" for the new Berkshire Hills Regional School near Monument Mountain.



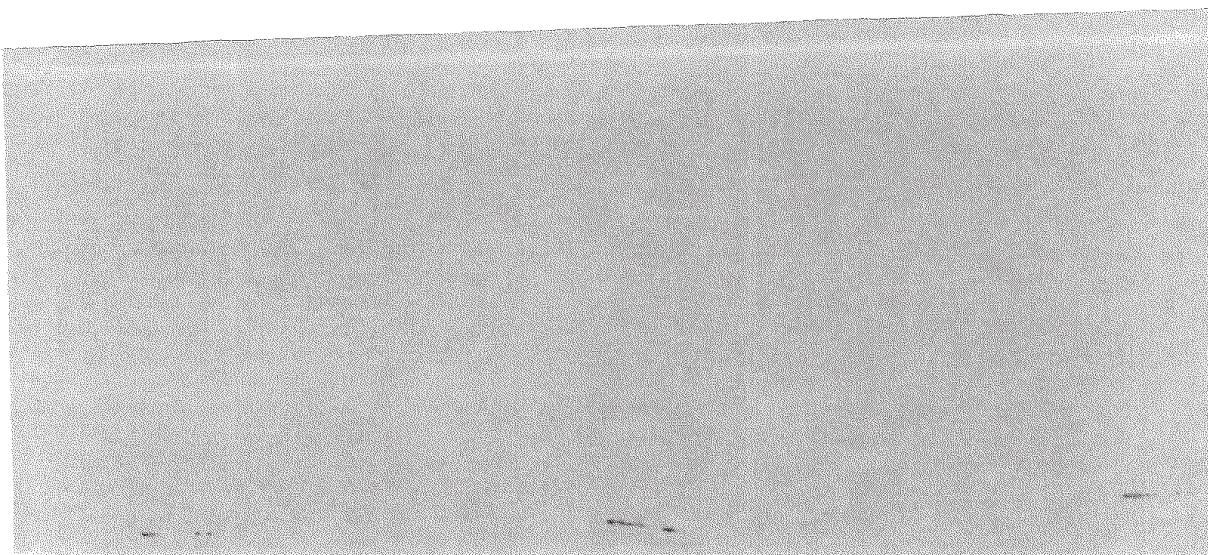
Attest:

*Arthur H. Phillips*  
Arthur H. Phillips, Secretary

Date Dec 28, 1966

Received January 30, 1967 at 2:43 P.M.  
Southern Berkshire Registry of Deeds

*James J. Comerford* Register



KNOW ALL MEN BY THESE PRESENTS:

THAT I, ROSE E. BORGNIS, of Great Barrington, Massachusetts, for consideration paid of NINETY-EIGHT THOUSAND (\$98,000.00) DOLLARS, grant to THE BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT, a public authority established under the laws of the Commonwealth of Massachusetts and conducting its business in the Towns of Great Barrington, Stockbridge, and West Stockbridge, Massachusetts, whose prinipal office is located at Main Street, Stockbridge, Massachusetts 01262, with QUITCLAIM COVENANTS, the land situated in the Town of Great Barrington, Berkshire County, Commonwealth of Massachusetts, bounded and described as follows:

A certain piece of real estate, together with the buildings thereon, situate on the easterly side of the highway in Monument Valley, in said Great Barrington, and bounded and described as follows:

BEGINNING at a stake and stones in the southwest corner of land formerly of A. Gaines and now or formerly of one Drumm;

thence South 81 degrees East, on south line of said Drumm's land, now or formerly, 219 rods 21 links to Konkapot Brook;

thence southerly on line of brook to a point 32 rods at right angles from above line;

thence to line parallel with first mentioned line, and 32 rods therefrom, North 81 degrees West, 219 rods, 21 links to the east line of the highway leading from Stockbridge to Great Barrington;

thence northerly, in line of highway, to place of beginning; containing 44 acres of land, more or less.

The said premises being conveyed is subject to that certain easement given by Joseph Ptak to the New England Power Engineering and Service Corporation, dated September 28, 1931 and recorded in the Southern Berkshire Registry of Deeds in Book 248, Page 432.

The premises conveyed herein are subject to the following restriction: That the dwelling house on the premises herein conveyed not be demolished or destroyed for a period of ten (10) years from the date of this deed. The grantees herein, and their heirs and assigns, shall have the right to make alterations and renovations to said dwelling house, as well as to use it for purposes other than a dwelling house.

The above restriction shall inure only to the benefit of the Grantor herein.

Excepting a taking dated February 17, 1953 of .15 acres of land by the Commonwealth of Massachusetts recorded in the Southern Berkshire Registry of Deeds in Book 300, Page 225.

Stockbridge Road  
Great Barrington, MA

CORBETT & CORBETT - ATTORNEYS AT LAW - 335 MAIN STREET - GREAT BARRINGTON, MA 01230 - (413) 525-3232

Being all and the same entire premises conveyed to Camillo Borgnis and Rose E. Borgnis by deed of Camillo Borgnis dated January 25, 1940 and recorded in the Southern Berkshire Registry of Deeds in Book 257, Page 345. The said Camillo Borgnis having deceased, title vests in the grantor herein, Rose E. Borgnis, by rights of survivorship.

WITNESS our hands and seals this 13<sup>th</sup> day of December, 1985.

*Rose E. Borgnis*  
ROSE E. BORGNIS

STATE OF Massachusetts  
COUNTY OF Worcester

December 13, 1985

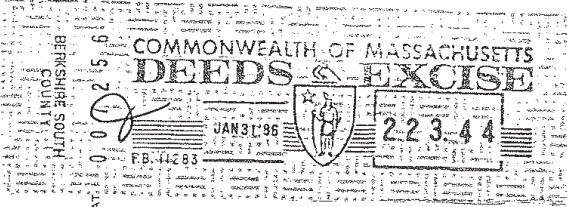
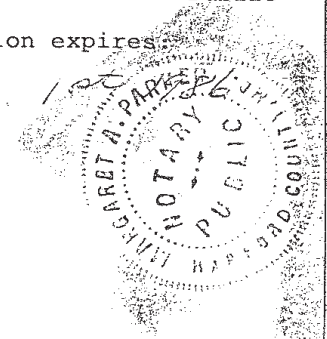
Then personally appeared the above-named ROSE E. BORGNIS and acknowledged the foregoing instrument to be her free act and deed, before me

*Margaret A. Parker*  
Notary  
Public

My commission expires

*July 1st*

(SEAL)



RECEIVED SOUTHERN BERKSHIRE  
REGISTRY OF DEEDS

*Jan 31* 19*86* AT *2* H *38* M *P.* M  
*Catherine B. Comerford* REG.

NEAT BARRINGTON, MA 01230 - (413) 528-3232  
CORBETT & CORBETT - ATTORNEYS AT LAW  
BERKSHIRE SOUTHERN





**KNOW ALL PERSONS BY THESE PRESENTS**

**MONUMENT MOUNTAIN SCHOOL CENTER, INC., a**

Corporation duly organized under the Laws of the Commonwealth of Massachusetts, and having a principal place of business at Monument Mountain Regional High School, Route 7, Great Barrington, Massachusetts, 01230, for no consideration paid as this is a transfer and not a sale, grant to **BERKSHIRE HILLS REGIONAL SCHOOL DISTRICT**, whose principal place of business and postal address is c/o Berkshire Hills Regional School District, 50 Main Street, Stockbridge, MA 01262 with **QUITCLAIM COVENANTS**, the following described parcel of land situated off the easterly side of Stockbridge Road, Route 7, in Great Barrington, Berkshire County, Massachusetts;

LOCUS: STOCKBRIDGE ROAD, GREAT BARRINGTON, MA.

Beginning at a point and iron pipe set in the southwesterly corner of the within-described parcel and the northerly sideline of other land of the Grantee;

Running thence North  $06^{\circ} 55' 17''$  East a distance of 439.35 feet to an iron pipe set (said pipe being in the northerly line of Grantor's land, 904.31 feet easterly on a course South  $82^{\circ} 09' 18''$  East from the easterly sideline of Stockbridge Road);

Running thence on a line South  $82^{\circ} 09' 18''$  East a total distance of 2,047.58 feet, more or less, to the center line of the Konkapot Brook, such line passing through an iron pipe found at 909.58 feet and an iron pipe set at 1,309.58 feet;

Running thence along the centerline of said Brook in a southerly direction to a point;

Running thence on a line North  $87^{\circ} 45' 54''$  West about 484 feet to an iron pipe set;

Running thence North  $87^{\circ} 45' 54''$  West a distance of 650 feet to an iron pipe found, and thence in the same course 953.57 feet to the point and place of beginning.

Being that land shown as Parcel 2 (Area 16.0+ acres) on a survey plan of the School Center, Inc. Stockbridge Road, a/k/a Route 7, Great Barrington, MA., prepared by Foresight Land Services and dated 3-29-99, recorded at the Southern Berkshire Registry of Deeds in Plat File K-32. The parcel is not a building lot and is intended to be merged with abutting land of the Berkshire Hills Regional School District, described in Book 558, Page 172 in said Registry.

Being all and the same premises conveyed by deed of Faith Baptist Church of Great Barrington, dated May 14, 1999 and recorded in the Southern Berkshire Registry of Deeds in Book 1129, Page 237 and corrected by Corrective Deed dated March 29, 2001 and recorded in said Registry of Deeds in Book 1242, Page 100.

IN WITNESS WHEREOF, this 17 day of April, 2001, the said MONUMENT MOUNTAIN SCHOOL CENTER, INC. has caused its corporate seal to be hereto affixed and these presents to be signed, acknowledged and delivered in its name and behalf by Jack Komer, President hereunto duly authorized,

*William Bailey*  
Witness

Monument Mountain School Center, Inc.

BY: *Jack Komer*  
Jack Komer, President

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss.

APRIL 17, 2001

Then personally appeared the above-named Jack Komer, President, and acknowledged the foregoing instrument to be the free act and deed of said Monument Mountain School Center, Inc., before me.

*Edward G. McCormick*  
Edward G. McCormick, Notary Public  
My Commission Expires: 10-13-06

**CERTIFICATE OF VOTE**

The undersigned, being the duly elected and acting Clerk of Berkshire Hills Regional School District, does hereby certify that at a meeting of the School Committee of the Berkshire Hills Regional School District duly held on 3<sup>rd</sup> day of May 2001, the following resolution was adopted:

Upon a motion duly made and seconded, it was by vote of 8 in favor and 0 opposed,

**VOTED:** The Berkshire Hills Regional School District hereby accepts pursuant to the provisions in the Massachusetts General Laws, Chapter 71, Section 16(i), a gift of real estate as described in a deed from Monument Mountain School Center, Inc., a/k/a School Center, Inc., to the Berkshire Hills Regional School District dated April 17, 2001, the original deed of which has been tendered at this meeting. Further, the Superintendent is directed to accept delivery of the aforementioned deed on behalf of the Berkshire Hills Regional School District and to cause it to be immediately recorded in the Southern Berkshire Registry of Deeds along with such other documents as may be necessary or advisable to accomplish the foregoing.

The undersigned does FURTHER CERTIFY that the above vote has not been altered, amended, rescinded or repealed.

Dated at Great Barrington, Massachusetts, this 7<sup>th</sup> day of May 2001.

  
Clerk of Berkshire Hills Regional School District

## SECTION FIVE PRELIMINARY EVALUATION OF ALTERNATIVES

### 5.1 SCHOOL ASSIGNMENT PRACTICES AND AVAILABLE SPACE

The Berkshire Hills Regional School District only has one 9-12 high school, along with a PK-4 elementary school and 5-8 middle school, both of which are at or near capacity. Given this fact, Monument Mountain Regional High School is the only building suitable for the education of the District's high school population within the District.

### 5.2 REGIONALIZING OR TUITION AGREEMENTS WITH ADJACENT SCHOOL DISTRICTS

The Berkshire Hills Regional School District is, as the name implies, a regional school system with the member towns of Great Barrington, Stockbridge, and West Stockbridge. It attracts 131 school choice students. Formed in 1967, the region covers almost 100 square miles and has consolidated all of the small neighborhood schools that existed at the time of formation into three buildings on a 100+ acre campus.

The District has tuition agreements with two neighboring school systems. Richmond Consolidated School, a K-8 system, has a tuition agreement with the District to send their students in grades 9-12 to the high school. Farmington River Regional School District is a K-6 school system that tuitions their students in grades 7 and 8 to the District's middle school and students in 9-12 to the high school. There are a total of 84 tuitioned-in students.

### 5.3 LEASING, RENTING, ACQUISITION OF EXISTING BUILDINGS FOR SCHOOL USE

The only District-owned buildings are Muddy Brook Regional Elementary School, Monument Valley Regional Middle School, Monument Mountain Regional High School, a small cape-style house, and a farmhouse, in which the maintenance department is located. Therefore, there are no District-owned facilities to relocate the high school students. There are no publically-owned or leased facilities (by the member towns) that are appropriate or adequate in space to relocate the high school students for their education. Since a suitable space for possible relocation is not available, this alternative is not viable.

### 5.4 PROJECT GOALS

The Monument Mountain Regional High School Building Committee developed a list of project goals at the study outset. These goals will be reviewed with the community during the Preferred Schematic design selection process. The Committee discussed and evaluated each option with these goals in mind.

## **Educational**

Propose a facility which:

- Provides flexibility to accommodate future educational needs and instructional practices, including a greater emphasis on project-based learning, interdisciplinary instruction, 21<sup>st</sup> century skills, collaboration, and exhibition of student work.
- Maintains the unique “feel” and qualities of the current building and program
- Promotes and enhances educational excellence in all program areas, with a particular emphasis on state-of-the-art facilities for science, technology, and “the arts”.
- Creates a state-of-the-art media center at the heart of the school
- Creates a physical environment that supports all curricula in a collaborative and integrated environment.
- Maximizes use of technology to enhance learning
- Supports Special Education with appropriate spaces, facilities and program
- Provides appropriate facilities for PE, fitness for life and athletics programs
- Creates informal gathering spaces to enhance the student experience
- Connects sustainable design into the curriculum

## **Community**

Propose a project that:

- Maximizes Sustainable and green building strategies
- Maximizes community use / access potential
- Provides secured community access
- Is a resource and gathering place for residents
- Provides parking and circulation for special events
- Accommodates community use of athletic spaces and facilities

## **Building**

Propose a project in which the building:

- A cost effective design
- Is cost effective to maintain
- Aesthetically improves the exterior of the building
- Creates a sense of community within the facility
- Maximizes natural daylight and sustainable design opportunities
- Maximizes student display prominently throughout

- Addresses safety and security needs
  - Limits entrance and exit points
  - Visibility and supervision is greatly improved
- Provides a School Store
- Maximizes sustainable design opportunities
- High standard for indoor air quality
- Considers various systems of thermal comfort for year round use
- Takes advantage of visual access to exterior environment

### **Site**

Propose a project in which the site:

Is integrated with the natural elements surrounding the site

Optimizes site circulation for drop-off and pick-up

Accommodates traffic safety concerns

Maximizes accessibility to all points of the campus

Provides sufficient parking for teachers, staff and visitors

Creates/improves outdoor learning spaces

Creates an identifiable front door

Connects the high school to the larger surrounding educational campus (elementary and middle school)

### **Construction**

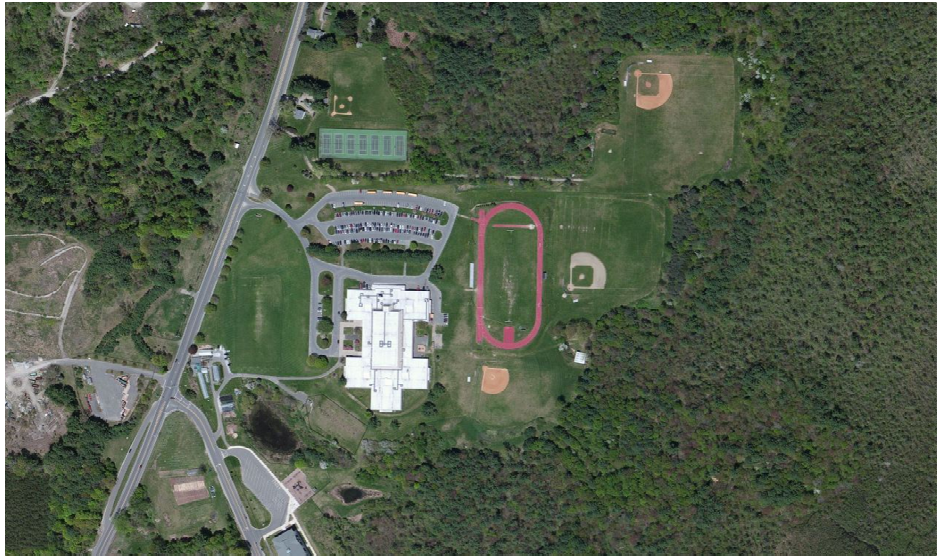
Propose a project that:

- Minimizes impacts to learning for students and staff during construction

## **5.5 CONSTRUCTION ALTERNATES INCLUDING COST ESTIMATE AND SCHEDULES**

Multiple construction alternatives were developed, including a base repair option, renovation and additions options and a new building option.





*Existing Site Plan*

The following sections provide a description of each construction alternative:

**Base Repair Only Alternative (No-Build):**

5.5.1 Option 1A – Base repair alternative, no addition, does not meet educational program. The high school campus is 121,591 square feet including the agricultural program (113,705 square feet main building only) with an estimated project cost of \$42 million.

**Addition/Renovation Alternatives:**

5.5.2 Option 2A – One-story STEM addition to the East of the building and Alternative PE/ Multi-Purpose addition to the North. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57.7 million.

5.5.3 Option 3A – One-story STEM addition to the East of the building and New Gym addition to the North. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57.1 million.

5.5.4 Option 4A – One-story addition to the West with new entrance and Alternative PE/ Multi-Purpose addition to the North. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57.1 million.

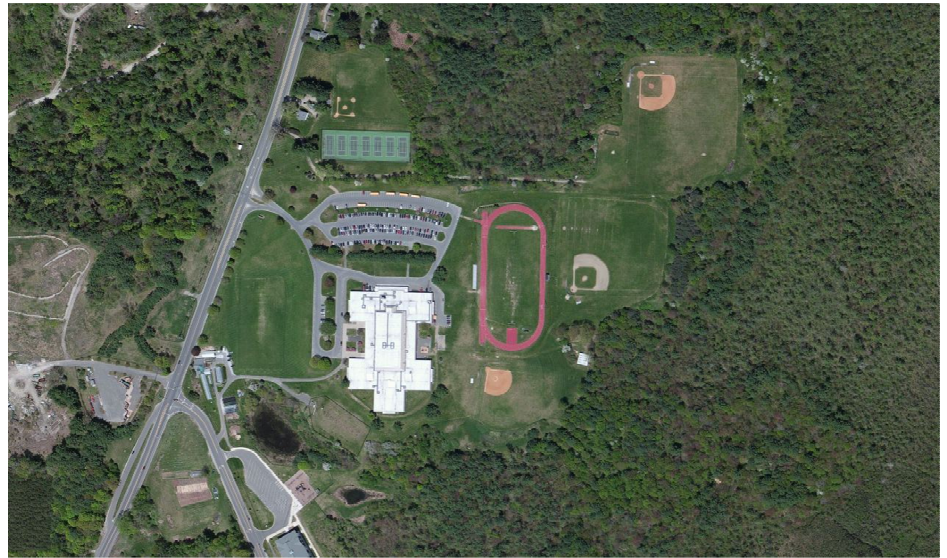
5.5.5 Option 4B – One-story addition to the West with new entrance courtyard and Alternative PE/ Multi-Purpose addition to the North. The existing building is 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program) with an estimated project cost of \$57 million.



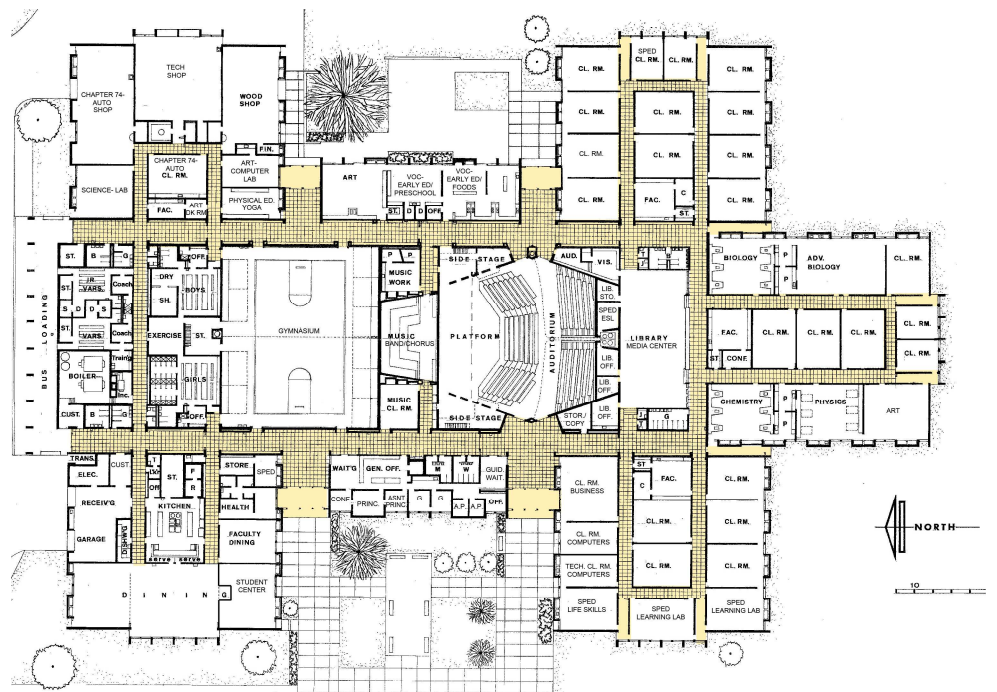
**New Construction Alternative:**

5.5.6 **Option 5A** – Two-story new High School on the location of the existing baseball field to the Northeast corner of the site. The proposed building is 153,535 square feet with an estimated project cost of \$66.4 million.

**5.5.1 Option 1A - Base Repair ONLY Alternative (NO-BUILD)**



*OPTION 1A – No new construction, internal renovations and repairs only*



*OPTION 1A – Existing Floor Plan*

## **Description**

The Base Repair no-build option requires the assessment of impact and cost to address the following deficiencies without a major building project:

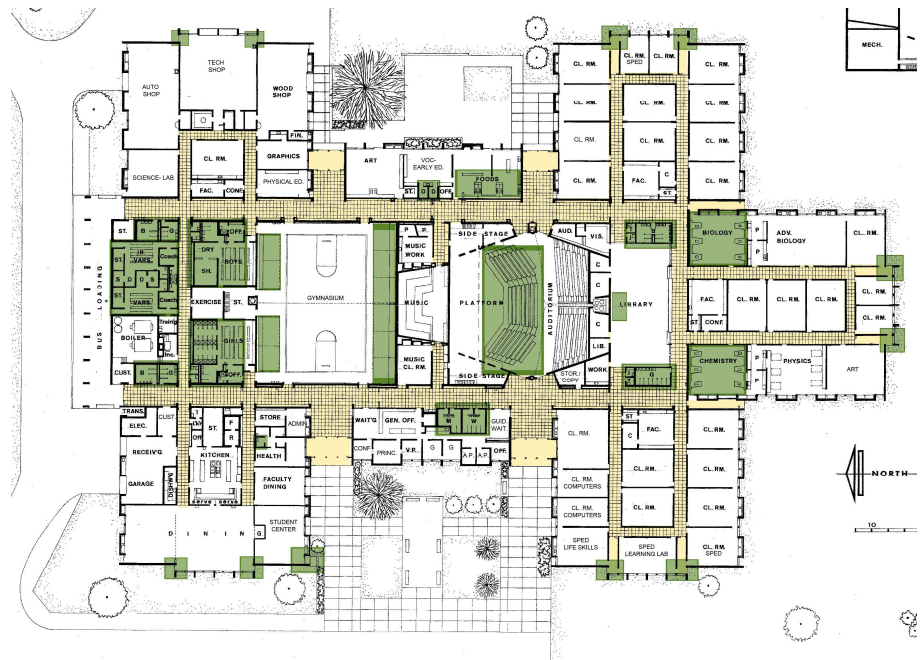
- Life Safety Code Compliance;
- Accessibility Code limitations;
- Energy code;
- Physical plant deterioration;
- Hazardous materials;
- Capacity constraints;
- Program delivery impediments.

## **Life Safety Code Compliance**

The configuration of the corridor egress system and capacity of the egress doors appears to meet egress code requirements to allow the calculated population of the various building wings to safely exit the building. However, there are several non-compliant conditions through-out the building in addition to major space and/or operational deficiencies that will be addressed. A large number of doors are damaged to the point that they will not close into a correct latched position, or open easily due to racking or other hardware damage.

## **Accessibility Code Limitations**

There are significant accessibility deficiencies in the school facility. All the casework is original and does not meet accessibility code, and in particular, the science room casework does not meet accessibility standards or current lab needs. Door hardware though-out requires replacement. Toilet rooms require updating to fully meet accessibility code. Fire alarm and other life safety systems require updating to meet accessibility codes.



OPTION 1A- MAAB/ACCESSIBILITY DEFICIENCIES- Green shaded areas represent areas that need to be upgraded to meet MAAB/Accessibility Guidelines.

### Energy Code

The building exterior walls are comprised of minimally insulated metal fascia panels and end walls of un-insulated or minimally insulated brick and concrete block back-up. The existing aluminum non-thermally broken single glazed windows do not meet current energy code. Roof insulation was installed when the roof was replaced, however minimal insulation that was provided will not meet current code. HVAC systems are inefficient and do not meet code.

### Physical Plant Deterioration

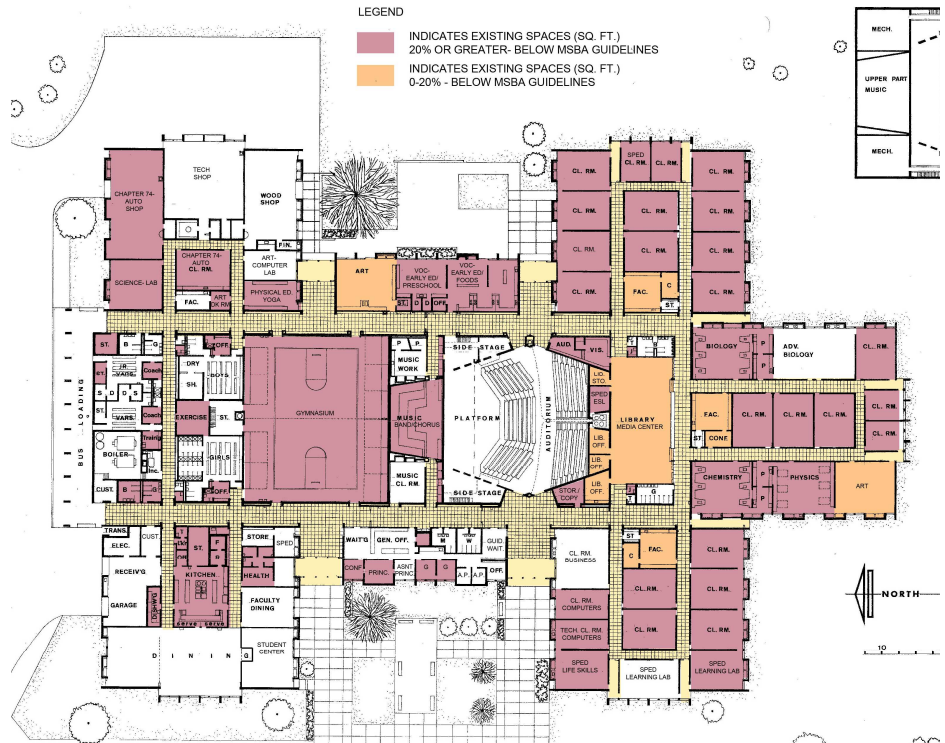
A comprehensive review of the Monument Mountain High School physical plant revealed major and extensive system deficiencies despite long-term and continued maintenance carried out by the District. An evaluation of all major building systems has shown that the HVAC, plumbing, electrical, technology, fire alarm, and emergency power systems are all at the end of their useful life. The existing 113,705 square foot building, constructed in 1967, has a concrete foundation with steel frame and an exterior of minimally insulated masonry walls and mansard style metal roof panels. There does not appear to be any lateral force resisting structural system for earthquake/seismic forces in the building.

### Hazardous Materials

A comprehensive review of the Monument Mountain Regional High School is in progress and will be included in the final version of this report.

### Capacity Constraints

The projected enrollment and design capacities as noted in the MSBA Enrollment Projection letter, dated March 18, 2011 indicates a design enrollment of 570 students. This enrollment and the corresponding space needs cannot be remedied with a no-build option, therefore no work related to increasing the capacity of the facility is included in the scope of this option.



*OPTION 1A- PROGRAM DEFICIENCIES- Red shaded areas represent significantly under-sized (greater than 20%) educational spaces per MSBA Space Guideline.*

### Program Delivery Impediments

A late 1960's educational structure, the Monument Mountain Regional High School exhibits many features that no longer meet the pedagogical requirements of a modern high school.

### High School Requirements

Space at the Monument Mountain Regional High School building is at least 10-15% less than what is considered appropriate for 570 students, Grades 9-12. For general classrooms, there are 19 general classrooms, 18 of which are 100 square feet smaller in size than the accepted norm of 850 nsf for high school use. Science is taught in very small laboratories, with outdated equipment. Programming analysis indicates that they are lacking at least three properly outfitted lecture/laboratory spaces for the curriculum offered at MMHS. Eight academic classrooms are both undersized and located in interior locations without benefit of exterior views.



The smaller sized classrooms are suitable for the average class size found at MMHS—14 students/class. However, future budget projections indicate that the typical class size for languages, social studies, and mathematics will be increasing, and thus crowding the basic unit of school, the classroom.

This school offers a very strong arts program, with over half the enrollment involved in the arts every term. The two art classrooms do not have proper sinks, storage, or lighting, are undersized and not located near each other. Computer graphics is offered, and must be conducted in a 600 sf space. The MMHS band, orchestra, and chorus practice in a room only slightly undersized, but sharing the space with three robust programs is challenging. The music department has been assigned former storage spaces, one third the allowable size, and there are no practice rooms, and no adequate, locked instrument storage. The auditorium is much loved and very heavily used, with seating for 500. Taking full advantage of their Berkshires location, outside arts groups offer many programs at this school, and students are included in workshops, training, and performances. There is a strong tradition of community participation in these events, and energetic support of the arts in general at MMHS.

There are three teacher planning rooms in the major academic wings—Humanities, Science, and Languages. These spaces are used intensively, fostering collaboration between faculty of these disciplines. Students are also welcome in these spaces to interact with teachers positively. However, the arts and vocational departments do not have such shared faculty offices. There is one staff lunchroom, not heavily used but required by contract.

Athletic facilities do not provide adequate space for the offered programs, and lockers and support spaces are lacking. The gymnasium is smaller than the standard allowable high school gym. However, since the prominence of indoor team sports has waned, the School Building Committee believes that it is adequate for their future needs. MMHS emphasizes life long physical activities such as aerobics, dance, and other alternative programs, for which there is no space. The wrestling team is forced to practice in the hall, and storage of athletic equipment is virtually nonexistent.

The vocational programs taught at MMHS, detailed in the second chapter, are operating in spaces which are out of date, generally undersized and poorly equipped. Having the horticulture program distinctly separate at the bottom of the hill may have the advantage of utilizing existing spaces and being accessible to the public, but it hinders participation of potential students, and is isolated from the main building. Given the mission of MMHS to offer educational opportunities for all students, the vocational spaces in the building are significantly lacking in many aspects—size, configuration, accessibility, equipment, air quality, and connection to the rest of the school.

Other deficiencies are outlined in the Space Summary found in Section 3 of this report.

### **Schedule Overview**

Option 1A would be implemented over an approximate ten year period, consisting of small to medium sized capital repair projects, to allow for maintaining ongoing school operation. The school would be fully occupied with no excess capacity to create swing space.

### **Cost Overview**

The estimated project cost for Option 1A is:

\$42 million

It should be noted that this estimate is based on implementing the work under a single project and within a similar time period as the other alternatives to provide for comparison purposes. The most probable schedule would be considerably longer, as the project would be undertaken over a ten year period, consisting of small to medium sized capital repair projects.

### **Conclusion**

The Pros and Cons of Option 1A are summarized as follows:

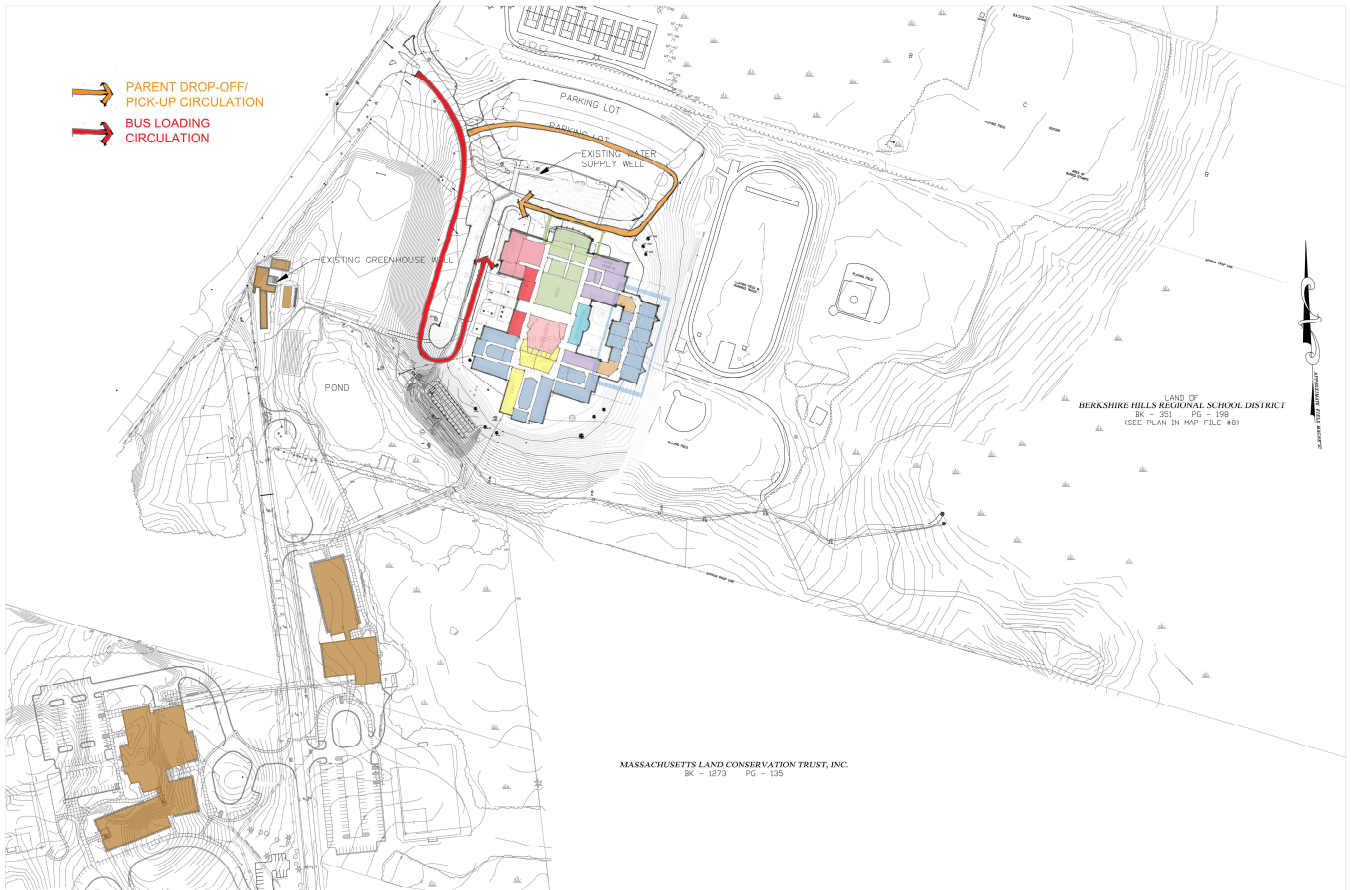
Pros

- None

Cons

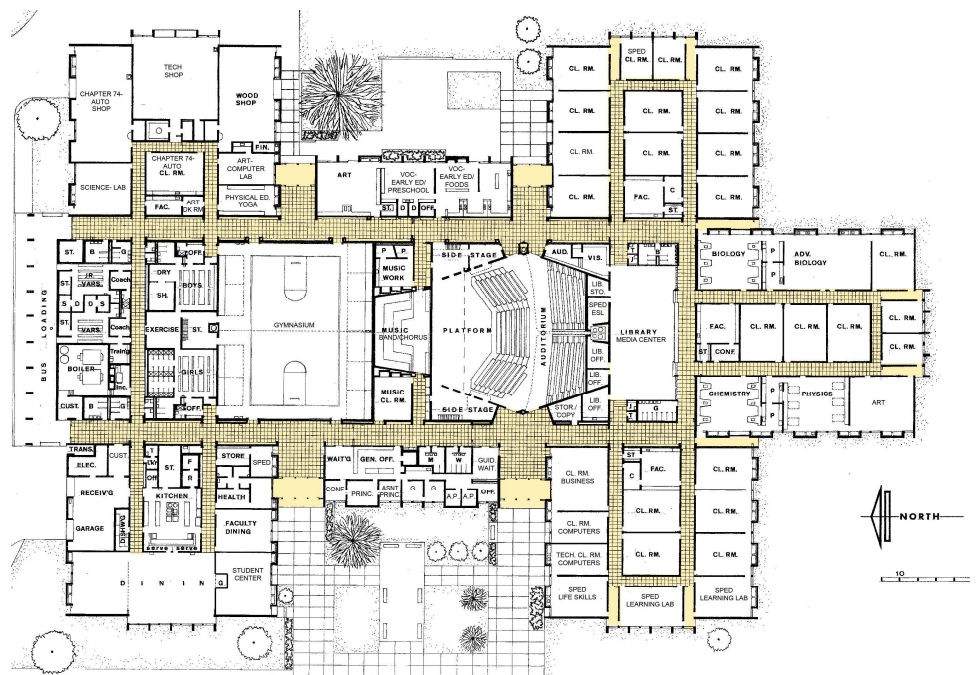
- The construction duration is excessive
- The completed construction would not accommodate the current educational program

5.5.2 Option 2A - One-story STEM addition to the East of the building and Alternative PE/ Multi-Purpose addition to the North

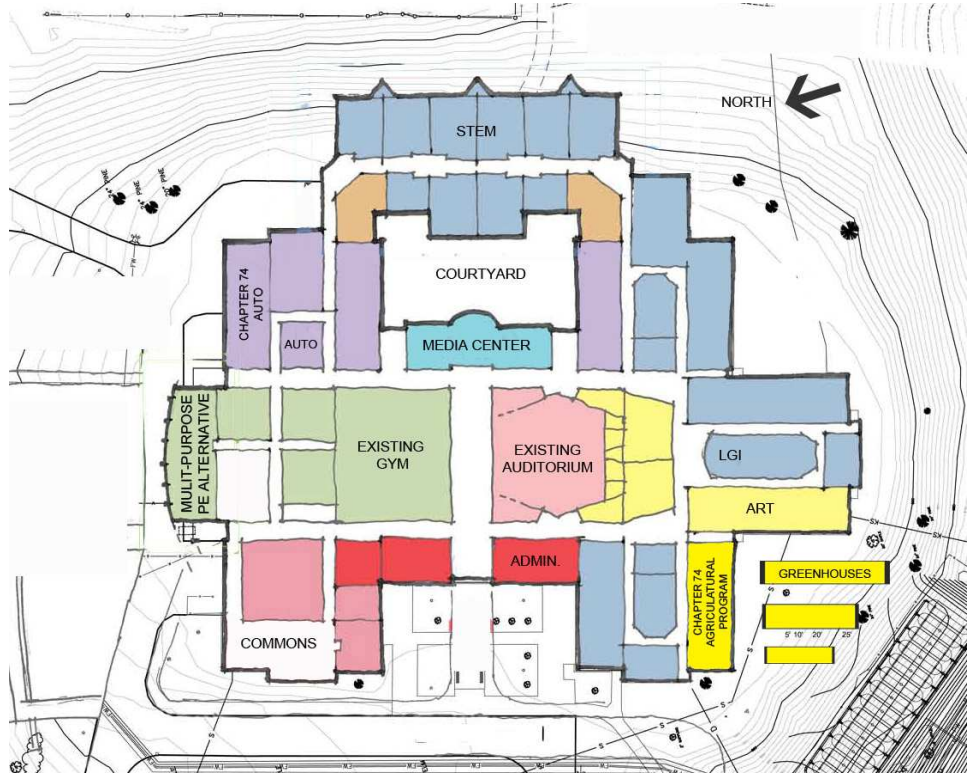


OPTION 2A – PROPOSED SITE PLAN- site circulation patterns

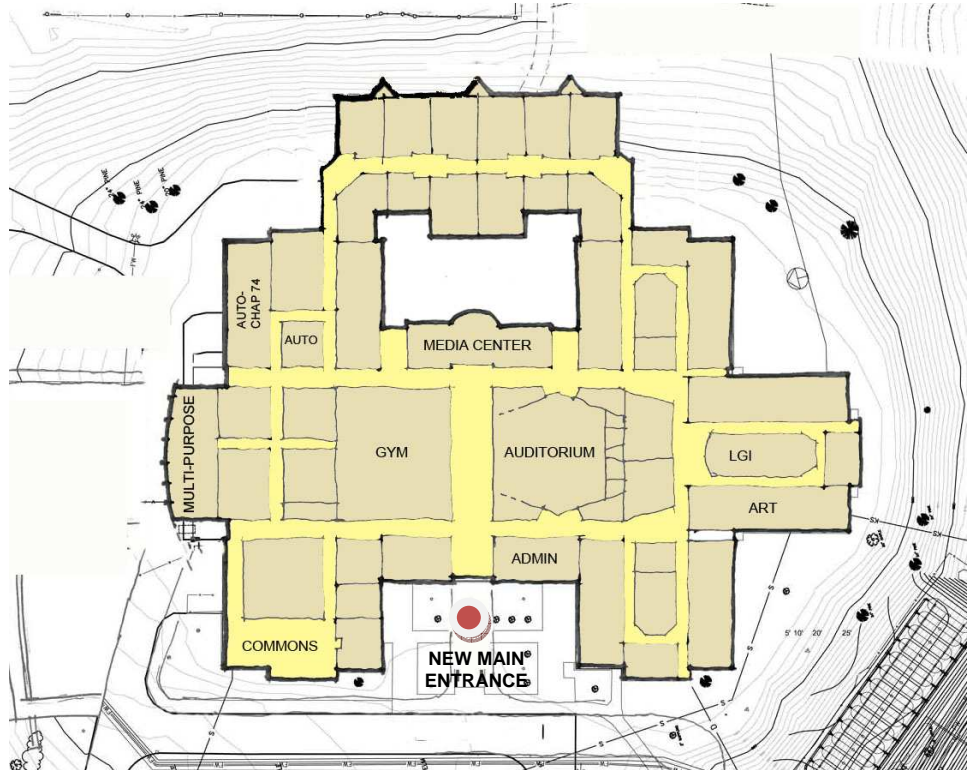
OPTION 2A – Existing Floor Plan



OPTION 2A – One-story new additions North and East of the existing Monument Mountain Regional High School building. Colors indicate various program elements and correspond to the colors highlighted in the Space Summary spreadsheet.



OPTION 2A – One-story new additions North and East of the existing Monument Mountain Regional High School building. Yellow indicates internal building circulation.



**Description**

Option 2A is an addition and renovation option consisting of the construction of a new one-story academic wing housing the STEM program on the eastern side of the existing school. This option also has the potential



to expand to a two-story addition given the topography changes along this elevation. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program), meeting the space requirements set out in the Proposed Space Summary.

The existing gymnasium and auditorium spaces will remain in their existing location at the core of the building; however, the existing Band Room will be relocated to create a cross axis circulation spine that will open up the main core of the building and align with the new centralized main entrance. This will address security concerns with previous multiple main entrance points as well as help to create a strong sense of identity and internal orientation. The loading dock and service area are re-positioned for improved visual appearance at the secondary/bus loading entrance at the NW corner of the building.

The existing building plumbing, HVAC, electrical and technology systems are fully upgraded, including providing for full fire sprinklering. The existing windows are replaced and the existing terne metal fascia panels are re-clad with insulating panels. The roof is replaced with new roofing and insulation. The asbestos is abated through-out and new finishes are provided. The significant accessibility issues throughout are addressed, as well as life safety and egress code issues.

The site work addresses the existing entrance drive safety issue on Route 7, refurbishes the worn and deteriorating parking lot, improves the bus and parent circulation, and upgrades the existing site lighting. Site accessibility is addressed, including accessible paths/routes to site elements and the non-conforming football field bleachers.

### **Schedule Overview**

Option 2A will be constructed in four main phases over approximately 42 months, commencing with the new STEM addition. The addition will be occupied upon completion, creating additional swing space to complete the renovation, which will be accomplished in three main phases. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break depending on final scope, commencing in the late spring and completing in the early fall.

### **Cost Overview**

The estimated project costs for Option 2A is:

\$ 57.7 million

### **Conclusion**

The Pros and Cons of Option 2A are summarized as follows:

#### Pros

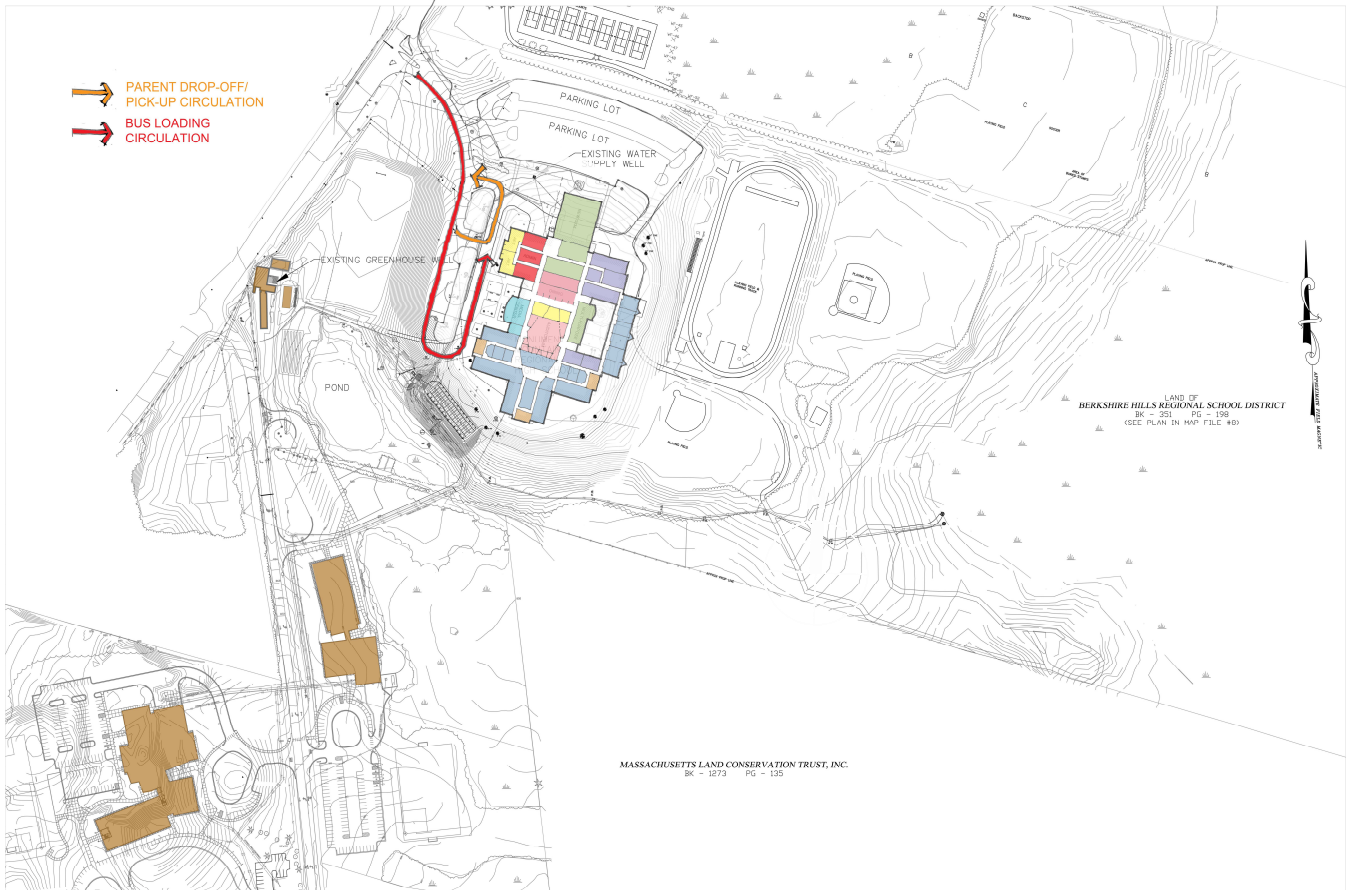
- New STEM addition links the existing academic wings to the vocational spaces which have been perceived to be remotely located
- Reduction of number of entry points addresses security concerns while also improving internal circulation and orientation

- New Alternative PE/ Multi-Purpose Addition at the north of the building creates an aesthetically pleasing facade facing the parking lot and proposed parent drop-off entrance
- Site circulation issues are addressed by re-organizing the bus and parent drop off areas to allow the bus drop-off to occur at the main entrance
- Multi-Purpose Room/PE Alternative space location is ideal for potential public use
- New center spine/corridor opens up the circulation in the center of the building
- Potential for significant storage and/or the agricultural program to be relocated to the lower level of the new STEM addition
- Large addition creates more “swing” space for construction phasing

Cons

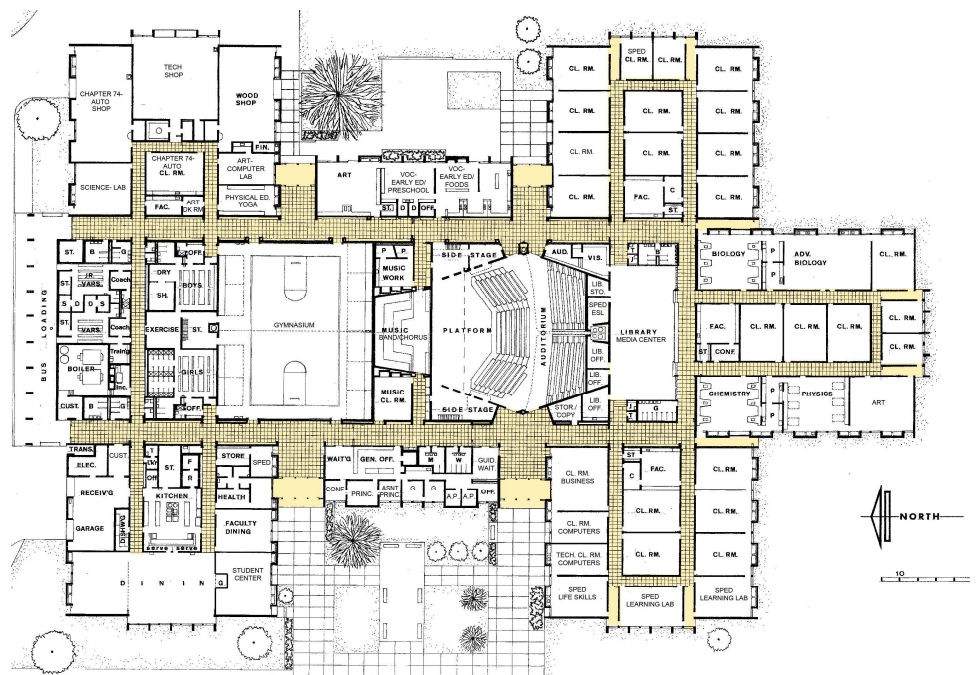
- Substantial site work and re-grading will be required for a new addition along the eastern side of the building given the topography changes
- Successful enclosed courtyards require conscious programming and maintenance

**5.5.3 Option 3A - One-story STEM addition to the East of the building and New Gym addition to the North**

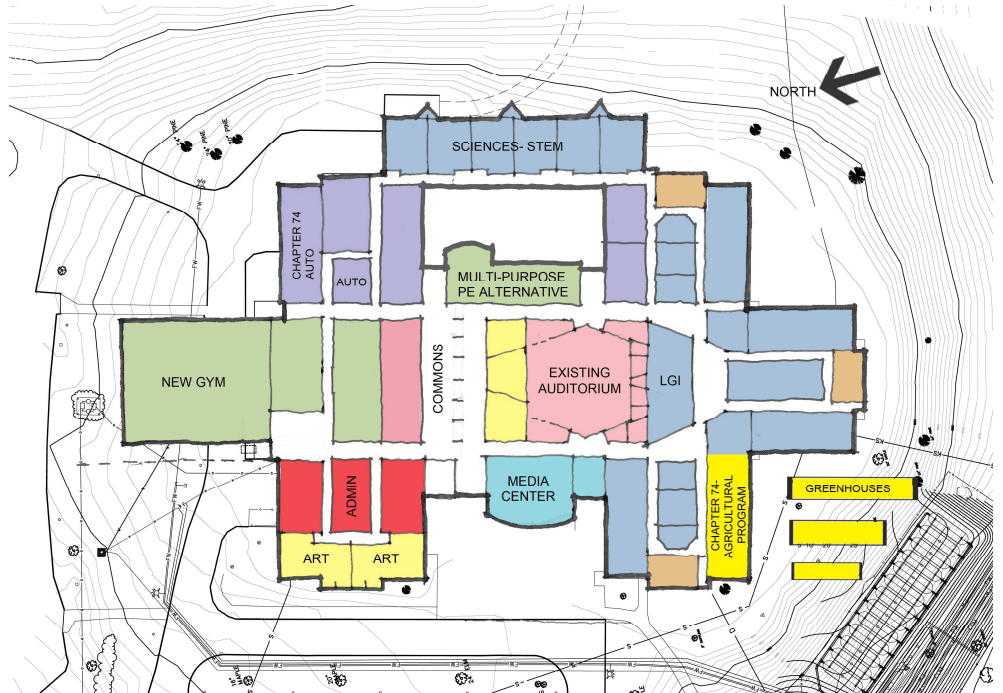


OPTION 3A – PROPOSED SITE PLAN- site circulation patterns

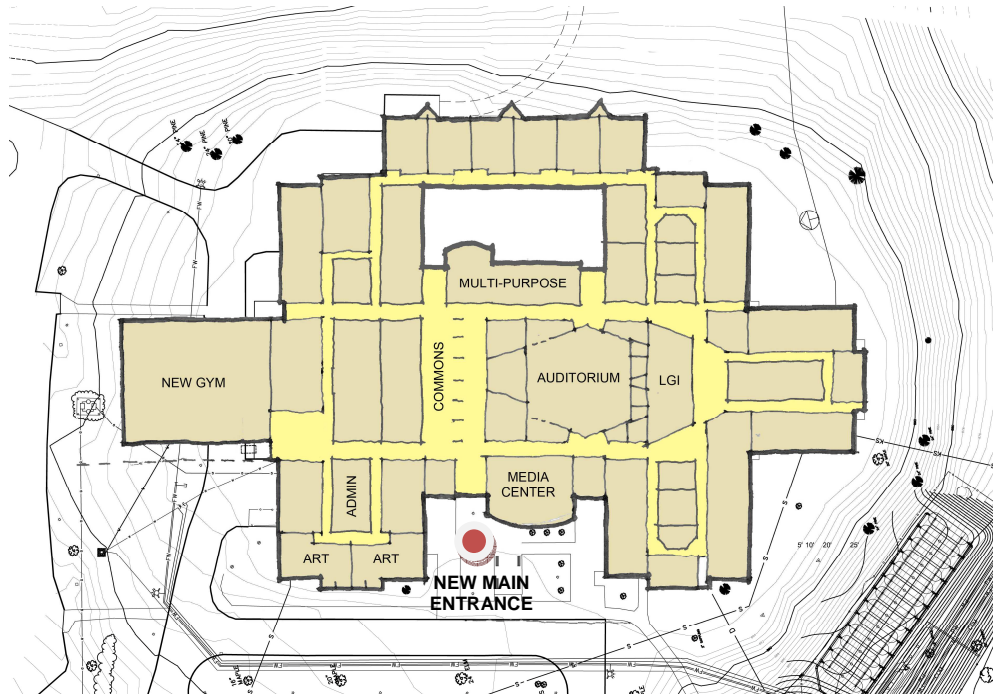
OPTION 3A – Existing Floor Plan



OPTION 3A – One-story new additions North and East of the existing Monument Mountain Regional High School building. Colors indicate various program elements and correspond to the colors highlighted in the Space Summary spreadsheet.



OPTION 3A – One-story new additions North and East of the existing Monument Mountain Regional High School building. Yellow indicates internal building circulation.



**Description**

Option 3A is an addition and renovation option consisting of the construction of a new one-story academic wing housing the STEM program on the eastern side of the existing school. This option also proposes a new Gym to the north that meet MSBA guidelines. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program), meeting the space requirements set out in the Proposed Space Summary.



The existing auditorium spaces will remain in their existing location at the core of the building; however, relocating the Gym creates a cross axis circulation spine with Dining Commons that will open up the main core of the building and align with the new main entrance. This will address security concerns with previous multiple main entrance points as well as help to create a strong sense of identity and internal orientation. The loading dock and service area are re-positioned for improved visual appearance at the secondary entrance at the NW corner of the building.

The existing building plumbing, HVAC, electrical and technology systems are fully upgraded, including providing for full fire sprinklering. The existing windows are replaced and the existing terne metal fascia panels are re-clad with insulating panels. The roof is replaced with new roofing and insulation. The asbestos is abated through-out and new finishes are provided. The significant accessibility issues throughout are addressed, as well as life safety and egress code issues.

The site work addresses the existing entrance drive safety issue on Route 7, refurbishes the worn and deteriorating parking lot, improves the bus and parent circulation, and upgrades the existing site lighting. Site accessibility is addressed, including accessible paths/routes to site elements and the non-conforming football field bleachers.

### **Schedule Overview**

Option 3A will be constructed in four main phases over approximately 38 months, commencing with the science lab and gymnasium additions. The additions will be occupied upon completion, creating additional swing space to complete the renovation, which will be accomplished in three main phases. The public spaces, such as the cafeteria and auditorium will be phased to take advantage of the summer break, commencing in the late spring and completing in the early fall.

### **Cost Overview**

The estimated project cost for Option 3A is:

\$57.1 million

### **Conclusion**

The Pros and Cons of Option 3A are summarized as follows:

#### Pros

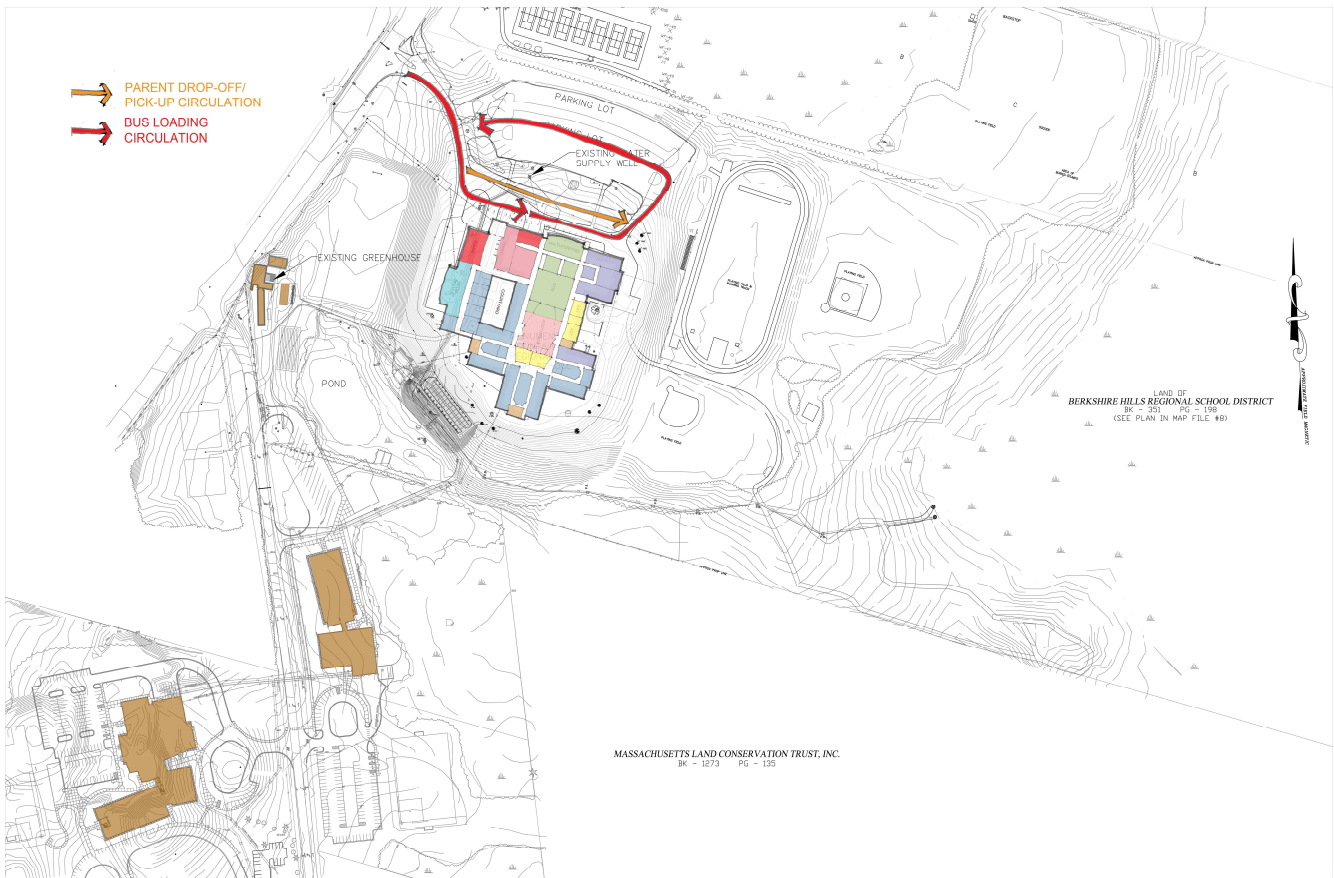
- New STEM addition links the existing academic wings to the vocational spaces which have been perceived to be remotely located
- Reduction of number of entry points addresses security concerns while also improving internal circulation and orientation
- New center spine and Dining Commons opens up the circulation in the center of the building and creates a true center to the school and for the community
- New full-size Gym that meets MSBA guidelines for space
- New Gym addition location allows direct access to the exterior- for potential community access

- There is an opportunity for a prominent architectural feature at the new entrance which will make the new entry clear and visible to all visitors
- Media center is afforded the very best view from the site, awarding the academic “heart” of the building the prime location
- Band/Music program is maintained in its current location which is a more functional location given the auditorium’s orientation

Cons

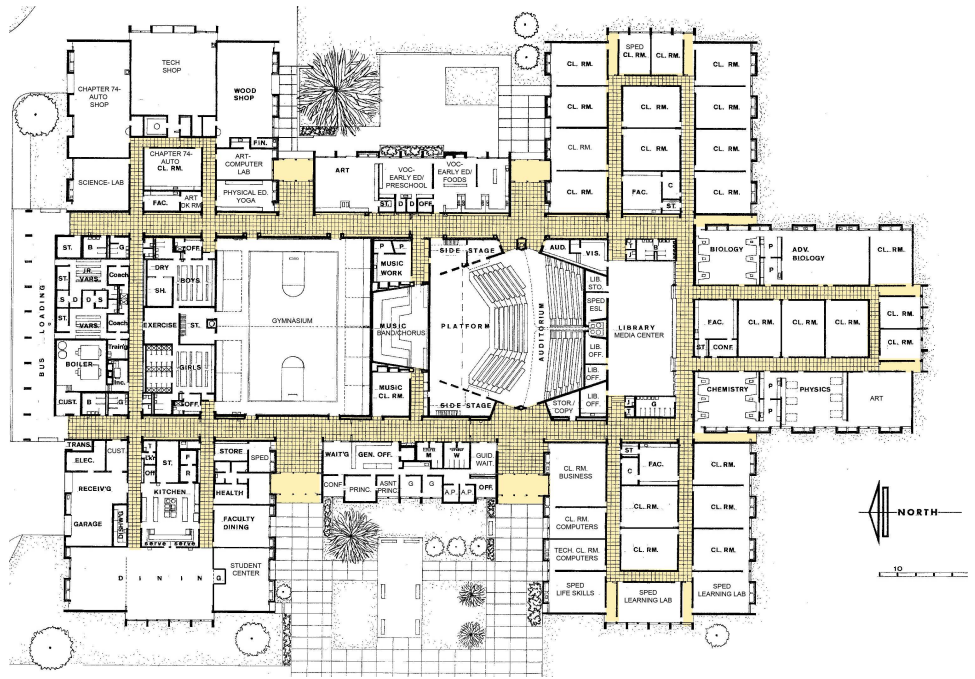
- Added expense for larger gym is not necessarily required by the District
- Significant increases to site development in the existing parking areas due to existing topography in relationship to the new Gym addition
- Successful enclosed courtyards require conscious programming and maintenance
- Gym mass “competes” with the existing building mass
- Main entrance is somewhat disconnected from the Auditorium
- Dining Commons location is visible from front entrance- could be perceived as too open

**5.5.4 Option 4A - One-story addition to the West with new entrance and Alternative PE/ Multi-Purpose addition to the North**

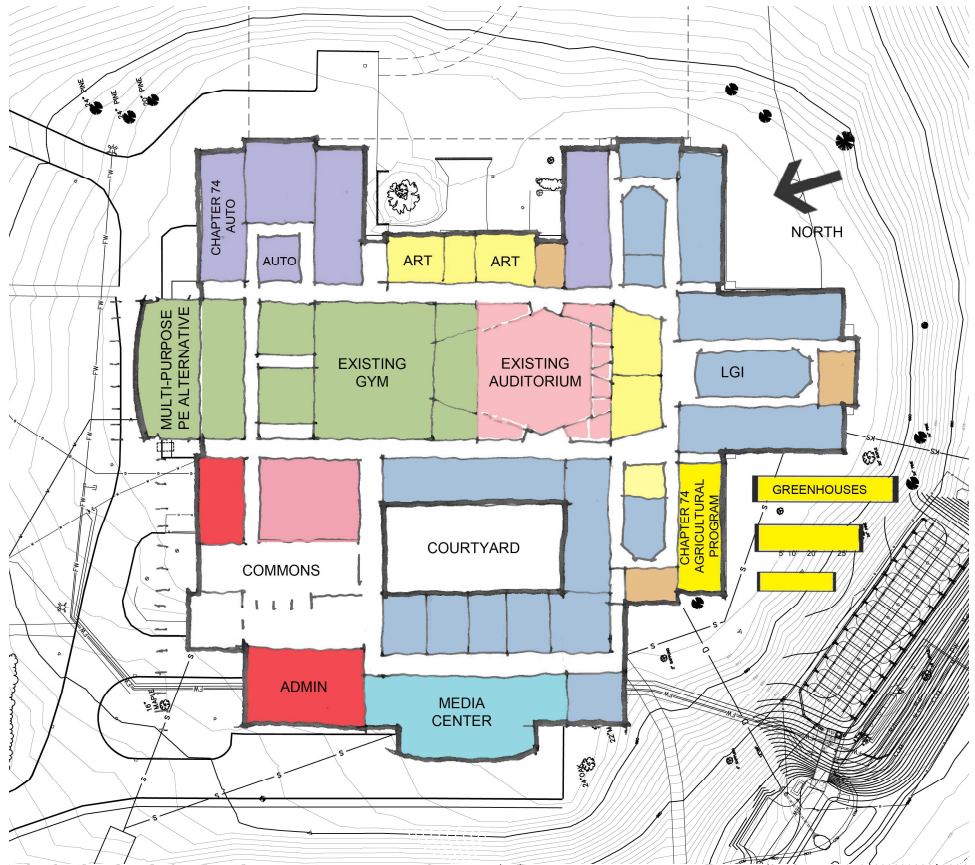


OPTION 4A – PROPOSED SITE PLAN- site circulation patterns

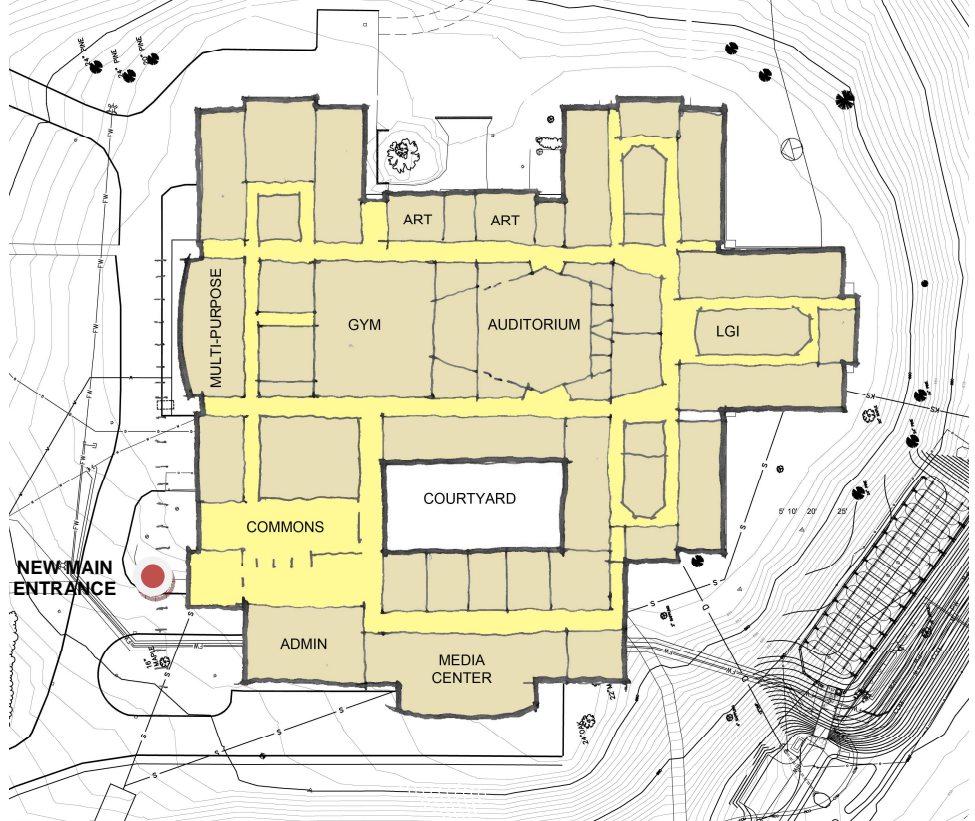
OPTION 4A – Existing Floor Plan



OPTION 4A – One-story new additions North and West of the existing Monument Mountain Regional High School building. Colors indicate various program elements and correspond to the colors highlighted in the Space Summary spreadsheet.



OPTION 4A – One-story new additions North and West of the existing Monument Mountain Regional High School building. Yellow indicates internal building circulation.





**Description**

Option 4A is an addition and renovation option consisting of the construction of a new one-story academic wing housing academic spaces as well as the Media Center and Administration spaces. This option provides an opportunity to create a new facade and entry sequence that would address site circulation and building security concerns. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program), meeting the space requirements set out in the Proposed Space Summary.

The existing gymnasium and auditorium spaces will remain in their existing location at the core of the building. The Dining Commons will also remain; however, with the location of the new addition, the western wall of this area becomes interior and is opened up towards the new entrance and entry circulation. The loading dock and service area are re-positioned for improved visual appearance at the main entrance at the NW corner of the building.

The existing building plumbing, HVAC, electrical and technology systems are fully upgraded, including providing for full fire sprinklering. The existing windows are replaced and the terne metal fascia panels are re-clad with insulating panels. The roof is replaced with new roofing and insulation. The asbestos is abated through-out and new finishes are provided. The significant accessibility issues throughout are addressed, as well as life safety and egress code issues.

The site work addresses the existing entrance drive safety issue on Route 7, refurbishes the worn and deteriorating parking lot, reconfigures the bus and parent circulation based on the new entrance addition, and relocates the Agricultural Program from its remote location at the bottom of the hill into the main building. Site accessibility is addressed, including accessible paths and addressing the non-conforming football field bleachers and press box.

**Schedule Overview**

Option 4A will be constructed in four main phases over approximately 42 months, commencing with the new STEM addition. The addition will be occupied upon completion, creating additional swing space to complete the renovation, which will be accomplished in three main phases. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break depending on final scope, commencing in the late spring and completing in the early fall.

**Cost Overview**

The estimated project cost for Option 4A is:

\$57.1 million

**Conclusion**

The Pros and Cons of Option 4A are summarized as follows:

#### Pros

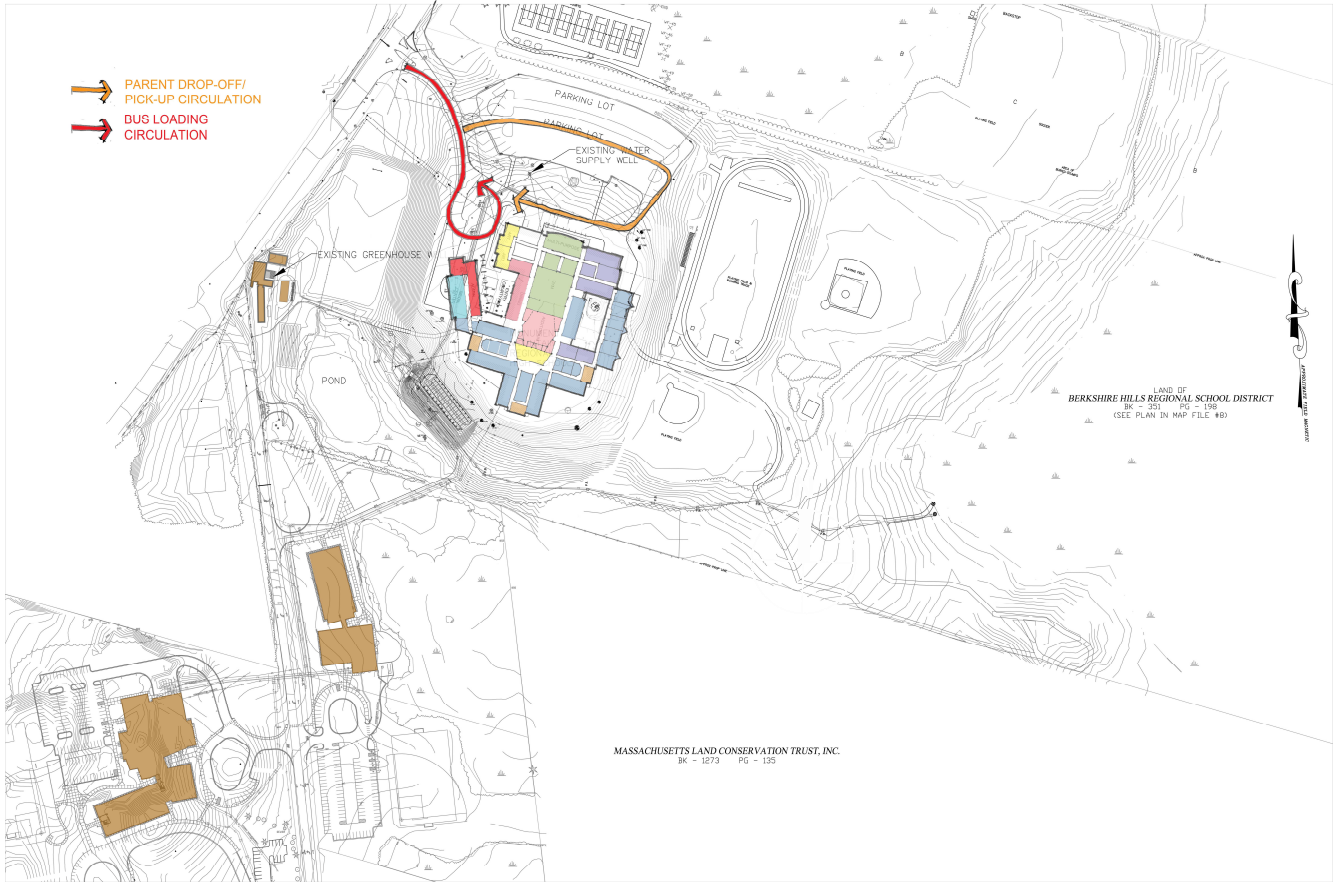
- Additions at the NW corner of the existing building are highly visible to visitors and occupants from the road (Route 7) while reorientation of the main entrance provides an improved connection to the existing parking lot, particularly for community access to the building
- Media center is afforded the very best view from the site, awarding the academic “heart” of the building the prime location
- Opportunity to address existing site circulation issues
- One main entrance addresses security concerns regarding existing multiple entry points while also improving internal circulation and orientation
- Multi-Purpose Room location is ideal for potential public use
- Creation of a courtyard will provide connection to nature that is protected and a potential eating area.
- Large addition creates more “swing” space for construction phasing

#### Cons

- Potential isolation of some administration spaces and Media Center
- Does not address existing circulation issues through the central core of the building
- New bus loading and parent drop-off circulation will be parallel to one another requiring well-planned and controlled pedestrian circulation to the building entrance
- Reduction in parking spaces up at the building level
- Re-routing of existing water and fire protection utility lines at new addition to the west.
- Successful enclosed courtyards require conscious programming and maintenance
- Community use of gymnasium and auditorium requires circulation through the building

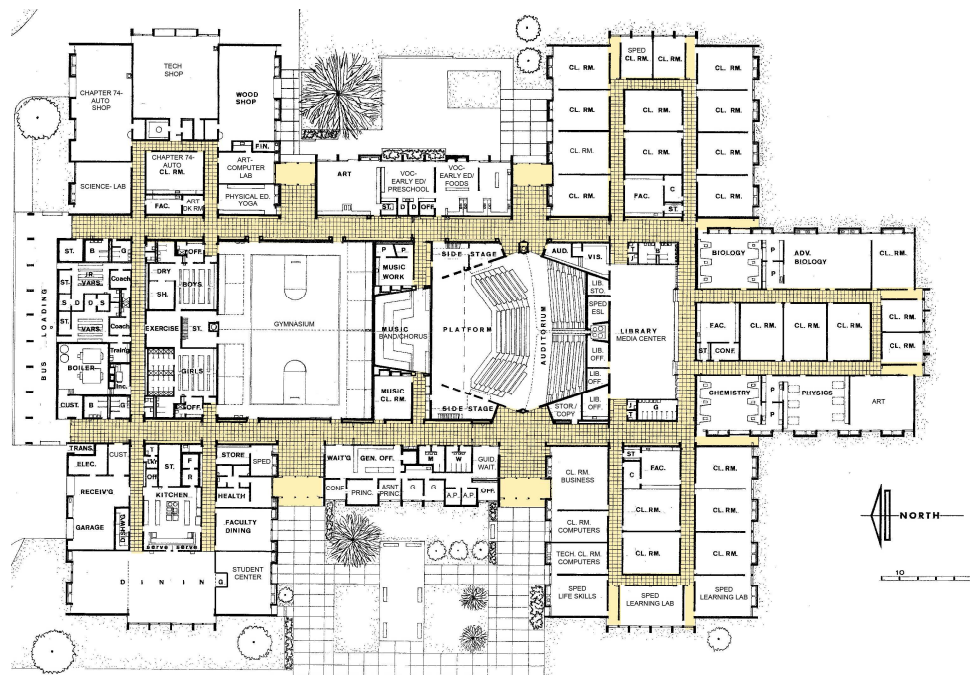
5.5.5

Option 4B - One-story addition to the West with new entrance courtyard and Alternative PE/ Multi-Purpose addition to the North

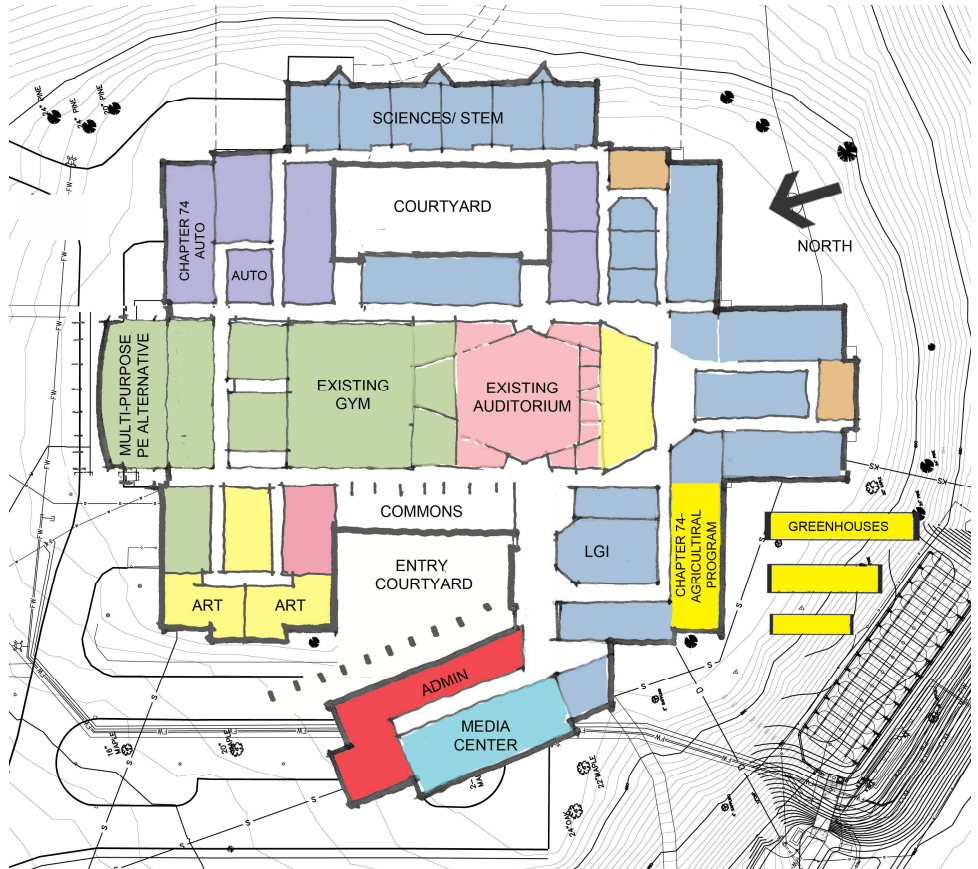


OPTION 4B - PROPOSED SITE PLAN- site circulation patterns

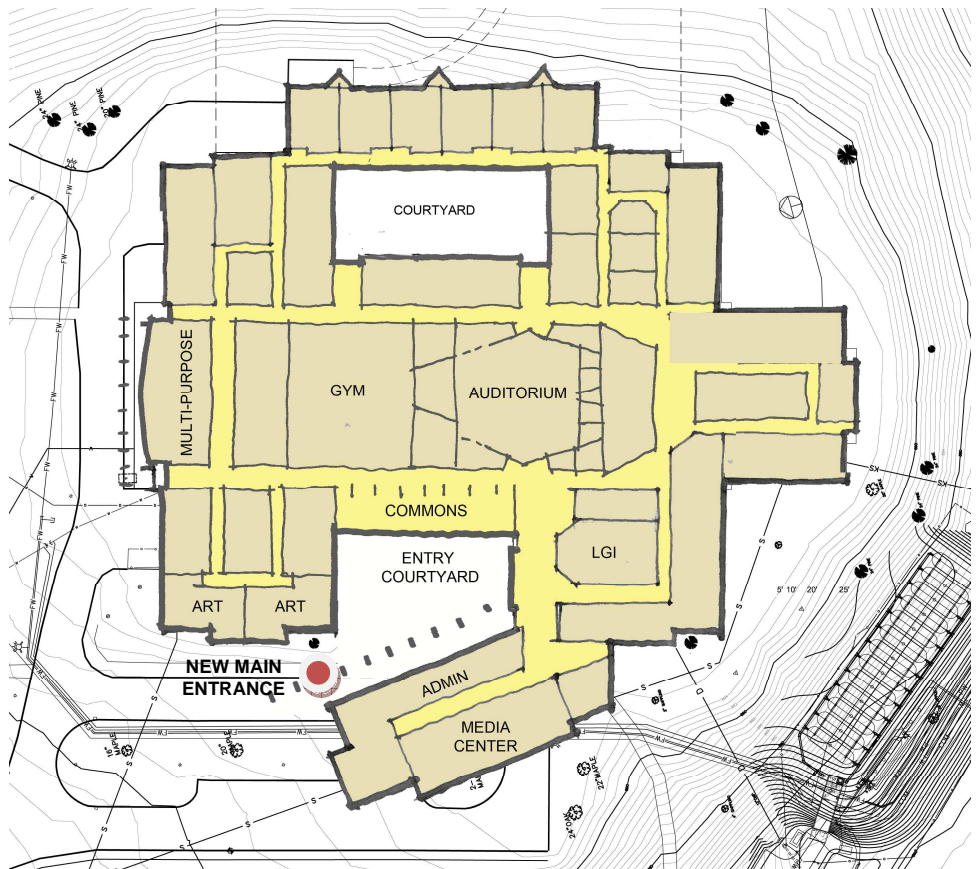
OPTION 4B - Existing Floor Plan



OPTION 4B – One-story new additions North and West of the existing Monument Mountain Regional High School building. Colors indicate various program elements and correspond to the colors highlighted in the Space Summary spreadsheet.



OPTION 4B – One-story new additions North and West of the existing Monument Mountain Regional High School building. Yellow indicates internal building circulation.





### **Description**

Option 4B is an addition and renovation option consisting of the construction of a new one-story academic wing housing academic spaces as well as the Media Center and Administration spaces. This option provides an opportunity to create a new facade and entry sequence that would address site circulation and building security concerns. The existing buildings total 122,591 square feet with an addition of 34,084 square feet for a total of 156,675 square feet (including the agricultural program), meeting the space requirements set out in the Proposed Space Summary.

The existing gymnasium and auditorium spaces will remain in their existing location at the core of the building. The Dining Commons will also remain; however, with the location of the new addition, opens up towards the new entrance and entry circulation. The loading dock and service area are re-positioned for improved visual appearance at the main entrance at the NW corner of the building.

The existing building plumbing, HVAC, electrical and technology systems are fully upgraded, including providing for full fire sprinklering. The existing windows are replaced and the terne metal fascia panels are re-clad with insulating panels. The roof is replaced with new roofing and insulation. The asbestos is abated through-out and new finishes are provided. The significant accessibility issues throughout are addressed, as well as life safety and egress code issues.

The site work addresses the existing entrance drive safety issue on Route 7, refurbishes the worn and deteriorating parking lot, reconfigures the bus and parent circulation based on the new entrance addition, and relocates the Agricultural Program from its remote location at the bottom of the hill into the main building. Site accessibility is addressed, including accessible paths and addressing the non-conforming football field bleachers and press box.

### **Schedule Overview**

Option 4B will be constructed in three main phases over approximately 40 months, commencing with the both additions. The additions will be occupied upon completion, creating additional swing space to complete the renovation, which will be accomplished in two main phases. The public spaces, such as the cafeteria, gymnasium and auditorium will be phased to take advantage of the summer break, commencing in the late spring and completing in the early fall.

### **Cost Overview**

The estimated project cost for Option 4B is:

\$57 million

### **Conclusion**

The Pros and Cons of Option 4B are summarized as follows:

Pros

- Additions at the NW corner of the existing building are highly visible to visitors and occupants from the road (Route 7) while reorientation of the

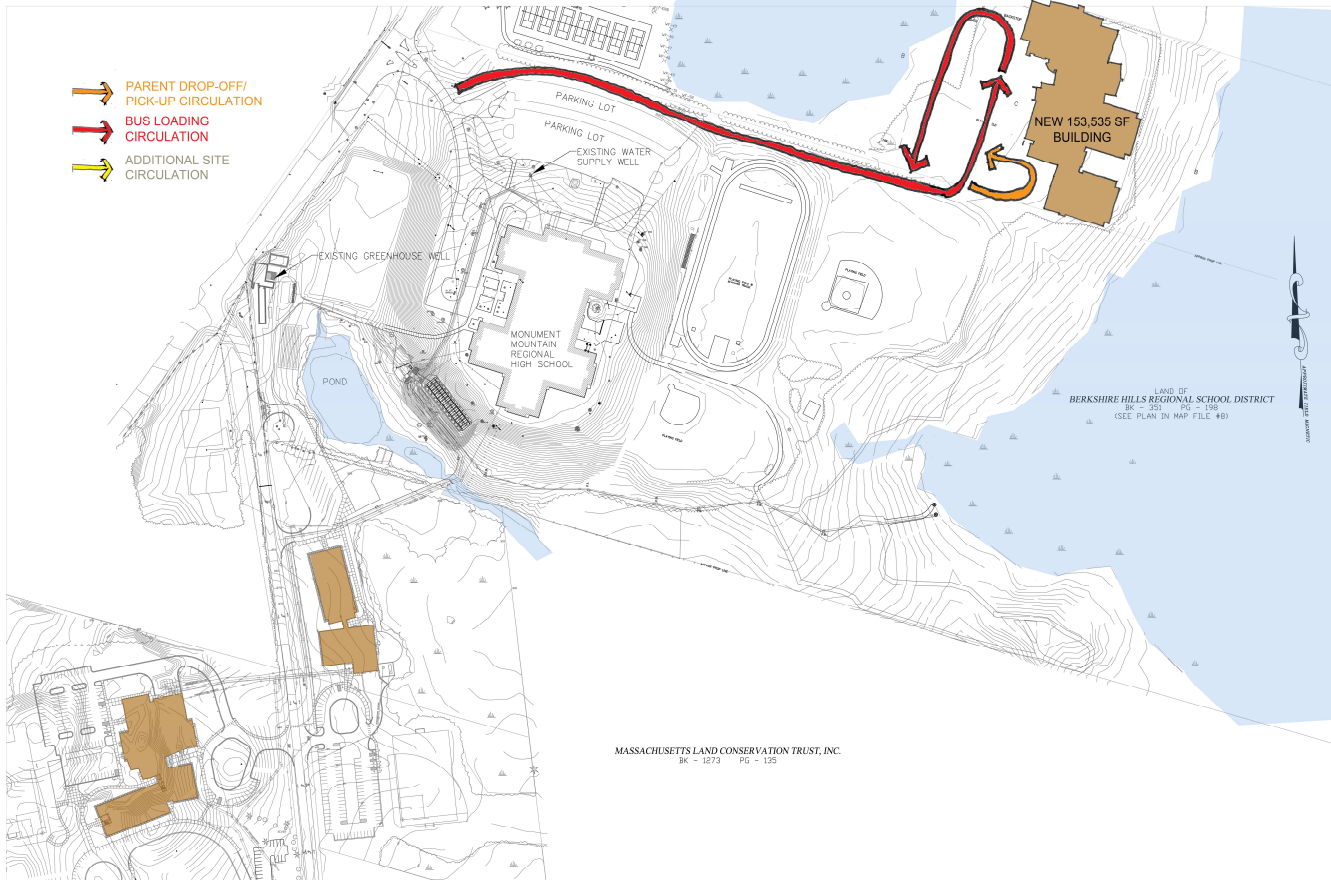
main entrance provides an improved connection to the existing parking lot, particularly for community access to the building

- Entry sequence from a new turnaround into the entry courtyard will provide a pleasing exterior walkway, with visual connections to the dining commons.
- Entry into the middle of the open courtyard allows direct access to the Auditorium and new Large Group Instruction (LGI) spaces
- Gym, Commons, Auditorium, and LGI are clustered together, which is the “public” domain of the school, providing clear community access.
- Multi-Purpose Room/PE Alternative space location is ideal for potential public use
- Media center is afforded the very best view from the site, awarding the academic “heart” of the building at the prime location
- Opportunity to address existing site circulation issues
- One main entrance addresses security concerns regarding existing multiple entry points while also improving internal circulation and orientation
- Large addition creates more “swing” space for construction phasing

#### Cons

- Potential isolation of some administration spaces
- New bus loading and parent drop-off circulation will be parallel to one another requiring well-planned and controlled pedestrian circulation to the building entrance
- While art rooms have an improved, “front” location, they are not accessible from the new main entry, and will either require their own entry point or considerable circulation to get to them.
- Reduction in parking spaces up at the building level
- Successful enclosed courtyards require conscious programming and maintenance
- Re-routing of existing water and fire protection utility lines at new addition to the west.
- New construction on both sides of the existing building creates difficult construction phasing
- Limited access to proposed new Agricultural program location at SW corner

**5.5.6 Option 5A - Two-story new High School on the location of the existing baseball field to the Northeast corner of the existing site**



OPTION 5A – PROPOSED SITE PLAN- site circulation patterns

**Description**

Option 5A is a new high school building sited in the NE corner of the site, on the existing baseball field to the north and east of the existing building. The existing building will be demolished once construction is complete. Existing track and remaining ball fields will remain. Total building size will be 153,535 square feet, meeting the space requirements set out in the Proposed Space Summary.

The site work addresses the existing entrance drive safety issue on Route 7, provides new bus and parent circulation, and football/track complex.

**Schedule Overview**

Option 5A will be constructed in two main phases over approximately 30 months, commencing with the new building. The new school will be occupied upon completion, followed by the existing building demolition and site work.

### **Cost Overview**

The estimated project cost for Option 5A is:

\$66.4 million

### **Conclusion**

The Pros and Cons of Option 5A are summarized as follows:

#### Pros

- All new school
- Simplified construction
- Greatest potential energy conservation and lowest operating cost
- More compact layout; greater response to current educational programming needs

#### Cons

- Most costly
- Loses location at top of hill, with beautiful views across valley and over to Monument Mountain
- Questionable community support
- Increases site development costs

### **5.5.7 Conclusions**

The Addition/Renovation Options most meet the project goals, educational program and cost efficiencies and will be studied further leading to a preferred alternative.



## SECTION SIX LOCAL ACTIONS AND APPROVALS

Refer to attached Draft Local Actions Letter dated July 27, 2012, provided by Owners Project Manager.



## **DRAFT**

### **[Letterhead of City/Town/Regional School District]**

July 27, 2012

Ms. Diane Sullivan  
Senior Capital Program Manager  
40 Broad Street  
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The Berkshire Hills Regional School District Building Committee (“SBC”) has completed its review of the Feasibility Study Preliminary Design Program for the Monument Mountain Regional High School Improvement Project (the “Project”), and on July 12, 2012 the SBC voted to approve and authorize the Owner’s Project Manager to submit the Feasibility Study related materials to the MSBA for its consideration. **A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.**

#### **SCHOOL BUILDING COMMITTEE MEETINGS**

The MSBA’s Board of Directors approved the District to proceed into feasibility study/schematic design on September 29, 2010 the SBC has held eight meetings regarding the Project since the Owner’s Project Mangers have been hired in compliance with the state Open Meeting Law. These meetings include:

#### **January 18, 2012, School Building Committee, 6:30 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: Strategic Building Solutions (SBS) - Jon Winikur, Carl Weber  
Discussion:

1. Introductions of SBS OPM Team and Building Committee Members
2. Discussion of project goals and thoughts
3. MSBA Feasibility Study process, schedule and potential dates
  - Design Team Selection, MSBA DSP process
  - MSBA Enrollment Projections review
  - MSBA Feasibility Study Agreement (FSA)
  - Feasibility Study – Spring/Summer 2012
4. Schematic Design Process, MSBA review, MSBA FAS presentation
5. Member Town Approval
6. Future Meetings - February 23, March 21, April 11, May 16, June 20

**February 23, 2013 School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: Strategic Building Solutions (SBS) - Jon Winikur, Carl Weber

Discussion:

1. Review initial project goals
2. Designer selection submissions, evaluation criteria
3. In depth discussion of RFS submissions
4. Selection of Flansburgh, Kaestle Boos, SMMA/Margo Jones, TetraTech as most responsive
5. MSBA Designer Selection Panel shortlist and interview process, and schedule

**March 21, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: Strategic Building Solutions (SBS) - Jon Winikur

Discussion:

1. MSBA Designer Selection Panel interview results on March 13.
2. Symmes, Maini & McKee Associates (SMMA) ranked as the #1 candidate.
3. SBS and the District's Administration to contact SMMA for proposal/contract.
4. Discussed draft schedule for the Feasibility Study Phase
5. Marianne Young distributed a draft Vision Statement for SBC review.
6. Chapter 74 Vocational Programs (Automotive & Vo-Ag) discussion as to nature of inclusion/reimbursement in project.
7. Based on agreed pupil population of 570 students, our project reimbursement would be based on a facility of 128,820 GSF.
8. Discussed the process for obtaining Member Town Approval.

**April 24, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber

SMMA - Alex Pitkin, Phil Poinelli

Discussion:

1. Architect introductions and SMMA overview with Building Committee
2. Schedule review
3. SMMA organized High School site tours for SBC information - May 3
4. Review of initial project goals with SMMA
5. Finance Sub-committee formed – Dick Coons, Sharon Harrison, Steve Soule

**May 16, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber  
SMMA - Alex Pitkin, Dan Ruiz, Jennifer Soucy, Sylvia Schwartz  
Margo Jones (MJA) – Margo Jones

Discussion:

1. Schedule Review & Project Status
2. High School Site tour discussion, likes and dislikes
3. Working Group Meeting Update – May 8
4. Existing Conditions draft report
5. Project sustainability introduction

**June 13, 2012, School Building Committee, 6:00 PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website

Presentation: SBS - Jon Winikur, Carl Weber  
SMMA - Alex Pitkin, Dan Ruiz, Jennifer Soucy, Sylvia Schwartz  
Margo Jones (MJA) – Margo Jones

Discussion:

1. Project Update
2. Local decision process, BC PDP approval dates and schedule review
3. SMMA presented the Space Summary review for new and addition/renovation
4. Project Goals and Options Matrix handout for discussion next meeting
5. SMMA presented some preliminary options for SBC initial thoughts
6. BC Preliminary Design Program review of updated materials for next meeting

**June 20, 2012, School Building Committee, 6:00PM**

Monument Mountain Regional High School, Great Barrington  
Notice published on District website at least 2 days prior to meeting according to MGL

Presenters: Jon Winikur and Carl Weber, SBS  
SMMA  
MJA

Discussion:

1. Space Summary Review
2. Project Goals and Options Matrix
3. Preliminary Option Review and Input
4. Existing Conditions Review
5. Educational Program Review
6. PDP Introduction Review
7. Schedule

**July 12, 2012, School Building Committee, 6:00 PM**

BHRSD District Offices, Stockbridge

Notice published on District website

Presentation: SBS - Jon Winikur  
SMMA - Alex Pitkin, Dan Ruiz, Jennifer Soucy  
Margo Jones (MJA) – Margo Jones

**Discussion:**

**Review of Process**

1. Review of the MSBA Preliminary Design Program elements, process and concepts.
2. Discussed that the preliminary options presented for the PDP.
3. SMMA to work with BC to refine the presented options until a preferred option emerges.
4. PDP submission to request all of the desired program spaces and wait MSBA review.
5. With MSBA reimbursement participation, project cost determined, and SC priorities are established appropriate scope can be determined.

**Review of PDP**

1. Reviewed PDP and approved the materials with edits. Final review will be conducted by the working group.
2. Motion made by Ms. Harrison to approve Sections 1, 2 and 3 with modifications as discussed by the SBC and seconded by Mr. Bannon. Motion approved unanimously.
3. Motion made by Mr. Bannon to approve Sections 4.1 and 4.2 with corrections and seconded by Ms. Harrison. Motion approved unanimously
4. Working group meet and complete the remaining sections of the PDP and submit to School Committee with the full endorsement of the SBC.
5. Hazardous Materials assessment was distributed indicating initial construction cost estimates of approximately \$2.0 million to address existing issues.

**LEED/Green Discussions**

1. SMMA will distribute an updated LEED scorecard for SBC review after PDP submission.

**DISTRICT MEETINGS**

In addition to the SBC meetings listed above, the District held four public meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed. These meetings include:

*[Insert a complete list of all public meetings held to discuss and/or present to the public material related to the Project and include the following information for each meeting: who hosted the meeting (e.g., School Committee, Board of Selectmen), the time and location of the meeting who presented (if applicable), a brief summary of the concerns and comments presented, a list of the materials discussed or made available for public review, a list of votes taken and the results, and when and where notice of each meeting was posted.*

**January 26, 2012, BHRSD School Committee Meeting, 7:00 PM**  
Muddy Brook Regional Elementary School  
Notice published on Town website

Presentation: SBS - Jon Winikur, Carl Weber

Discussion:

1. Introductions of SBS OPM Team
2. Discussion of Building Committee initial thought on project goals
3. MSBA Feasibility Study process, schedule and potential dates
4. Schematic Design Process, Cost Estimates, MSBA review
5. Member Town Approval

**June 18, 2012, West Stockbridge Board of Selectmen Meeting, 6:00PM**  
West Stockbridge Town Hall  
Notice published on Town website

Presenters: Peter Dillon, Superintendent, BHRSD  
Dick Coons, Chairman, School Building Committee

Discussion:

- 1.
- 2.
- 3.

**June 19, 2012, Great Barrington Board of Selectmen Meeting, 6:00PM**  
Great Barrington Town Hall  
Notice published on District website

Presentation: Peter Dillon, Superintendent BHRSD  
Dick Coons, Chairman School Building Committee

Discussion:

- 1.
- 2.
- 3.

**July 26, 2012, BHRSD School Committee Meeting, 7:00 PM**  
Monument Valley Regional Middle School – Library  
Notice published on District website

Presenters: SBS - Carl Weber

Discussion:

1. MSBA process review
2. Existing conditions major findings
3. Education space needs.

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at Berkshire Hills Regional School District office located in Stockbridge Massachusetts. *(insert location of materials (e.g. website, town hall, superintendent's office etc))*.

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq.*

If you have any questions or require any additional information, please contact *(insert name, title, and contact information)*.

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

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\_\_\_\_\_  
**By:**

**Title: Chief Executive Officer**

**Date:**

\_\_\_\_\_  
**By:**

**Title: Superintendent of Schools**

**Date:**

\_\_\_\_\_  
**By:**

**Title: Chair of the School Committee**

**Date:**



## SECTION SEVEN      APPENDIX

The Appendix contains the following documents:

- 7.1 STATEMENT OF INTEREST
- 7.2 INVITATION TO FEASIBILITY
- 7.3 APPROVED DESIGN ENROLLMENT



## Massachusetts School Building Authority

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School District Berkshire HillsDistrict Contact Donna Moyer TEL: (413) 274-6400Name of School Monument Mt Reg HighSubmission Date 11/12/2009

### Note

#### The following Priorities have been included in the Statement of Interest:

1.  Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children, where no alternative exists.
2.  Elimination of existing severe overcrowding.
3.  Prevention of the loss of accreditation.
4.  Prevention of severe overcrowding expected to result from increased enrollments.
5.  Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility.
6.  Short term enrollment growth.
7.  Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements.
8.  Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

Potential Project Scope: Repair Project

Is this SOI the District Priority SOI? YES

The MSBA ID for the District Priority SOI: 2010 Monument Mt Reg High

#### District Goal for School: Please explain the educational goals of any potential project at this school

To understand the educational goals of this project, it is important to first understand the mission and objectives of the Berkshire Hills Regional School District. The mission is: "In cooperation with the community, the Berkshire Hills Regional School District will provide all students the highest quality education and challenge them to explore and maximize their potential, ensuring the acquisition of knowledge and skills necessary to lead fulfilling lives." One of the District's objectives is that 100% of students will successfully complete their individual achievement programs. Two of the strategies to ensure that this happens involve providing "a learning environment that is equitable and consistently excellent" and developing and implementing "a facilities plan that fully supports the District's mission and objectives." (To read more about this District's mission, objectives and strategies, go to <http://www.bhrsd.org/district/mission.pdf>.) Each of the schools within the District is working diligently to bring all curricula into compliance with the state curriculum frameworks. At Monument Mountain Regional High School, this is particularly challenging. Built in 1968, the building could be considered educationally obsolete. A 21st-century education requires an educational environment that is vastly different than what had been conceived in the mid-20th century. Technology and its requisite wiring and networking alone is an excellent example of the changes and challenges facing the high school. Much of today's education is enhanced by technology, such as data streaming when studying world geography. In many cases, this technology is required to bring the most up-to-date information into the classroom. Berkshire Hills participates in the Virtual

High School, in collaboration with the other members of the South Berkshire Educational Collaborative. This type of instruction provides the District with entirely new access to a variety of class options. The proposed project would include reconfiguration of the technology infrastructure to facilitate distribution of data. It would also include upgrades to science labs that no longer meet today's educational requirements. The physical education department was designed based on a sports concept, not a wellness concept. Therefore the project would include upgrades to the gymnasium, including wellness facilities. As the reader will see, the objectives of providing an educational experience that allows each student to achieve his or her greatest academic potential is hampered by the current high school. Within our goal is the understanding that all students, no matter what their abilities or challenges, will succeed to the best of his or her abilities. Unfortunately, the building is not configured to truly make this possible. There are only one minimally accessible bathroom in the school and the entire horticulture program is not handicapped accessible. The ability to meet state frameworks is also hampered. Additionally, the District works to provide a safe learning environment for all students. Unlike the new elementary and middle schools on the campus, the building is not equipped with a security system, nor does it have a fire-suppression system. You will also see that the examples provided here for inclusion within the project are only a small part of the necessary upgrades. The School Committee recognizes the need to provide a facility that reflects today's educational requirements to ensure that Berkshire Hills is able to meet its mission and objectives.

**District's Proposed Schedule: What is the District's proposed schedule to achieve the goal(s) stated above?**

**Is this part of a larger facilities plan?** YES

**If "YES", please provide the following:**

**Facilities Plan Date:** 8/29/2009

**Planning Firm:** Roy S. Brown Architects

**Please provide an overview of the plan including as much detail as necessary to describe the plan, its goals and how the school facility that is the subject of this SOI fits into that plan:**

In the spring of 2007, Roy S. Brown Architects prepared a feasibility study for the high school building. This study included an evaluation of the building, architecturally and structurally, as well as an evaluation of the HVAC, plumbing and electrical systems. A Massachusetts state building code compliance analysis was requested as well as a list of prioritized recommendations in all of the above areas with corresponding budget estimates for corrections and renovations. In addition, there was a Facilities Improvement Plan for: the greenhouse; auto shop; telephone system; fire alarm system; science labs; and, library. The final component was to create an energy audit for the building and for an opinion regarding the process to follow for installing a sprinkler system. The entire study will be mailed for your reference.

**Please provide the current student to teacher ratios at the school facility that is the subject of this SOI: 20 students per teacher.**

**Please provide the originally planned student to teacher ratios at the school facility that is the subject of this SOI: 20 students per teacher.**

**Is there overcrowding at the school facility?** NO

**If "YES", please describe in detail, including specific examples of the overcrowding.**

**Has the district had any recent teacher layoffs or reductions** NO

**If "YES", how many teaching positions were affected?** 0

**At which schools in the district?**

**Please describe the types of teacher positions that were eliminated(i.e art, math, science, physical education, etc.):**

**Has the district had any recent staff layoffs or reductions** NO

**If "YES", how many staff positions were affected?** 0

**At which schools in the district?**

**Please describe the types of staff positions that were eliminated(i.e guidance, administrative, maintenance, etc.):**

**Please provide a description of the program modifications as a consequence of these teacher and/or staff**

**reductions,including the impact on district class sizes and curriculum.**

Does Not Apply

**Please provide a detailed description of your recent budget approval process including a description of any budget reductionsand the impact of those reductions on te District's school facilities, class sizes and educational program.**



## General Description

**BRIEF BUILDING HISTORY:** Please provide a detailed description of when the original building was built, and the date(s) and project scopes(s) of any additions and renovations (maximum of 5000 characters):

**TOTAL BUILDING SQUARE FOOTAGE:** Please provide the original building square footage PLUS the square footage of any additions.:

**SITE DESCRIPTION:** Please provide a detailed description of the current site and any known existing conditions that would impact a potential project at the site (maximum of 5000 characters):

With the construction of new elementary school and middle schools, the Berkshire Hills Regional School District consolidated a wide-spread school system into a self-contained campus on approximately 50 acres off Route 7 in Great Barrington, Massachusetts, in the southern Berkshires. Monument Mountain Regional High School sits on top of a hill overlooking the rest of the campus and is bordered by Route 7 on the west, Muddy Brook Regional Elementary School on the south and wood land on the north and east. Much of the property to the east is protected by the Trustees of the Reservation. Areas to the far north of the property are considered wetlands. None of the existing conditions of the surrounding property should impact the potential project due to the proposed project scope.

**BUILDING ENCLOSURE:** Please provide a detailed description of the building enclosure, types of construction materials used, and any known problems or existing conditions (maximum of 5000 characters):

Building Enclosure: The building envelope is made of cinder block with a brick façade on a one-story structure. There are structural steel beams throughout the building.

- All of the exterior walls are 40 years old (building's first year was 1968).
- There have been no known repairs or replacements of the exterior walls.
- The current roof system was installed September 21, 1998 (date of substantial completion).
- All of the windows in the building are also 40 years old. They are single paned windows - most of which run the from ground level to the ceiling all along the first floor.

**Age of EXTERIOR WALLS (In Years):** 40

**Year of Last Repair or Replacement:** 1968

**Description of Last Repair or Replacement:**

No known repairs or replacements.

**Age of ROOF(In Years):** 10

**Year of Last Repair or Replacement:** 1998

**Type Of ROOF**

**Description of Last Repair or Replacement:**

Roof system was completely replaced in 1998, with the removal of the old system and installation of a complete new roof.

**Age of WINDOWS(In Years):** 40

**Year of Last Repair or Replacement:** 1968

**Type Of WINDOWS**

**Description of Last Repair or Replacement:**

Panes are replaced with similar single-pane glass as they are broken.

**MECHANICAL and ELECTRICAL SYSTEMS:** Please provide a detailed description of the current mechanical and electrical systems, and any known problems or existing conditions (maximum of 5000 characters):

MMRHS has a hot water heating system serviced by two boilers. The boilers are HB Smith Mils 640, 20 sections. The

burners are industrial combustion Model MMG 23S. The rating of each boiler/burner is 6,800,000 BTU/hr gross output. The burners are dual fuel, natural gas and number 2 fuel oil. The oil is stored in an underground single-walled 15,000 gallon storage tank. The oil piping within the boiler room has been replaced with copper piping and pressed fittings.

There is also a dedicated gas-fired hot water boiler, an H. B. Smith 28A. This boiler provides hot water to two 1,050 gallon indirect water heaters.

There are two zones (north and south halves of the building) served by three circulating pumps. One pump is designated as a stand-by for the two zones. The pumps are 10hp each and are furnished with high efficiency motors.

The building is heated by 9 multi-zone air handling units. The air handling units have been fitted with high efficiency motors, but are considered to be past their useful life. There are single- and multi-zone units. The multi-zone units have no control valves and the single zone units have 3-way control valves. Two of the single-zone units have had the bypass leg for the hot water piping disconnected. The pumping systems are essentially constant volume.

The controls system is pneumatic and has an energy management system that provides only for occupied and unoccupied settings.

**Age of BOILERS(In Years): 40**

**Year of Last Repair or Replacement: 1968**

**Description of Last Repair or Replacement:**

Repairs are made to gaskets, nipples, etc., as needed.

**Age of HVAC SYSTEM (In Years): 40**

**Year of Last Repair or Replacement: 1968**

**Description of Last Repair or Replacement:**

Although called an "HVAC" system, the system at the high school is not what would be considered a true heating ventilation and air conditioning system by today's standards. Air handling and air exchange is minimal with this system.

**Age of ELECTRICAL SERVICES AND DISTRIBUTION SYSTEM(In Years): 40**

**Year of Last Repair or Replacement: 1968**

**Description of Last Repair or Replacement:**

Annual maintenance as needed.

**BUILDING INTERIOR: Please provide a detailed description of the current building interior including a description of the flooring systems, finishes, ceilings, lighting, etc. (maximum of 5000 characters)::**

The entire building sits on a concrete slab. The flooring within the building includes VCT tile, carpet tiles, broad loom carpet, ceramic tile (locker rooms), hardwood flooring (gym and stage) and painted concrete (auto shop, carpentry shop, metals shop).

The interior walls are painted sheetrock.

The ceiling is an old 4-tab 9-inch interlocking ceiling tile system, which is being replaced with 2' x 2' drop in ceilings as needed. Approximately 20 percent of this work has been completed. Most of the lights are fluorescent; however, there are still some incandescent lights. A high majority of the fluorescent lights are T-8's. There are T-12 high output lights in our gym and in most of the shop rooms.

The lighting system is an "old-fashioned" one switch per room, with lights getting turned on in the morning and truned off in the evening, regardless of occupancy.

The horticulture program is housed in a farm-type wooden structure, with glass greenhouses in need of repair and weather-proofing.



**PROGRAMS and OPERATIONS: Please provide a detailed description of the current programs offered and indicate whether there are program components that cannot be offered due to facility constraints, operational constraints, etc.:**

Monument Mountain Regional High School offers a broad range of academic and vocational programming. The academic program includes five "levels" of programming: standard; intensive; honors; college placement; and, advanced placement. The core subject areas - English Language Arts, Social Studies, Science and math, as well as Foreign Language - offer these different levels. Electives range from Life & Death to Politics in Social Studies to Probability & Statistics in Math and Anatomy in Science. Band, music theory, photography, ceramics, drama, and sculpture are a few examples of classes offered in the Fine and Performing Arts programs. A+ programming and law are examples in the Business Education program. Within the Vocational program, MMRHS has certified automotives and horticulture programs. Rounding out the vocational educational opportunities are Family & Consumer Sciences, early childhood education, nursing, woodworking, and metals, to name a few. Various science, physical education, horticultural, and automotive programs cannot be offered due to existing facility constraints.

**CORE EDUCATIONAL SPACES: Please provide a detailed description of the Core Educational Spaces within the facility, a description the number and sizes (in square feet) of classrooms, a description of science rooms/labs including ages and most recent updates, and a description of the media center/library (maximum of 5000 characters).:**

"A" wing - VocEd: one classroom, 750sf; auto -2,261sf; drafting -1,003sf; metals - 2,875sf; woodshop - 2,040sf; photography -1,224sf. "B" wing - ELA & Foreign Languages: 8 classrooms at 816sf ea., 2 @ 792sf, 1 @ 756sf; "F" wing - math & science - 3 classrooms at 1,224sf, 2 @ 1,632sf, 1 @ 816sf, 3 @ 768sf, one @ 731sf. Labs not handicap accessible. No updates to labs in 40 years. "H" wing - Business Technology & Social Studies: 2 classrooms at 1,224sf, 1 @ 888sf, 5 @ 816sf and 2 @ 719sf. Art: 1 classroom @ 1,470sf, 1 @ 1,200sf, 1 @ 1,050sf. Music - band room at 1,600sf, one classroom - 556sf, 2 practice rooms @ 112sf. Gym - 9,200sf; boys locker room - 1,064sf; girls locker room - 1,064sf; JV locker room - 793sf; varsity locker room - 793sf; storage - 400sf, "workout room" - 402sf. Auditorium - 10,800sf. Library/media center - 2,888sf. The "B", "F" and "H" wing rooms are painted sheetrock walls with VCT tile floors. Ceilings are 4-tab 9-inch interlocking tile systems, with fluorescent lighting. Classrooms along the outside walls have windows for the exterior wall. The library/media center is in an interior space with no natural light. The original library was divided to make room for other necessary educational spaces. The lighting is fluorescent and the flooring is carpet tiles. Most of the wall space is solid wood paneling; some walls are painted sheetrock. Separate non-ADA compliant classroom and greenhouse for horticulture program 200 yards from main building.

**CAPACITY and UTILIZATION: Please provide a detailed description of the current capacity and utilization of the school facility. If the school is overcrowded, please describe steps taken by the administration to address capacity issues. Please also describe in detail any spaces that have been converted from their intended use to be used as classroom space (maximum of 5000 characters).:**

Based on pure square footage, the building in total is large enough to accomodate the number of students currently enrolled in the high school. The major true capacity issue presently is in the cafeteria. Beginning in the fall of 2008, the daily schedule was altered to provide for three lunch periods, so that all of the students could eat in the cafeteria at lunch time. Even with this change, the space is filled to capacity with little additional room. The aisles between the chairs at each table are barely large enough for students to get through. The density within the space would create an extremely hazardous situation during an emergency.

Due to the various levels of programming, all classrooms are used consistently throughout the day. Ex-tech classes need to be taught in the library, due to the lack of available "free" classroom space. Shop space has been used for additional art studio space, due to the classroom limitations within that department.

**MAINTENANCE and CAPITAL REPAIR: Please provide a detailed description of the district's current maintenance practices, its capital repair program, and the maintenance program in place at the facility that is the subject of this SOI. Please include specific examples of capital repair projects undertaken in the past, including if any**

**override or debt exclusion votes were necessary (maximum of 5000 characters):**

The largest repair to the building was in 1998, with the replacement of the roof, which required a bond to fund the expense. Over the forty year life of the building, annual maintenance and repairs have been funded through the operating budget. There are annual service maintenance contracts for major systems and smaller repairs are done with in-house staff.

Capital repairs consist of: replacement of central area carpeting, in 2006; upgrade to the telephone system, summer of 2008; and, boiler gasket and sections replacement, also done in the summer of 2008. Six sets of exterior doors were replaced in September 2008. All of the projects mentioned were funded through the operating budget. Although the high school has been well-maintained annually, most of it is forty years old and is beginning to "show its age." For example, the building has many energy inefficiencies that newer facilities do not face, resulting in higher operational costs. This last point is detailed in the Priority 5 discussion.

**Priority 1**

*Please provide a detailed description of the perceived health and safety problems below. Attach copies of orders or citations from state and/or local building and/or health officials.*

There are six primary areas of concern within the high school that present an imminent danger to our students and staff. First, the building was constructed without a fire suppression system. Even though the building is "grand-fathered" due to the age of construction, it is a serious safety issue and one that causes concern for the District, town building inspector and fire chief. It is self-evident why this is a concern.

Second is the condition of the science labs. Subsequent to the original construction, the labs were retro-fitted with eye wash stations and emergency pull showers that only have cold water running to them. The District is preparing to remedy this situation prior to the acceptance of this project by the MSBA, by doing work on these two systems over the 2008-2009 school year. There are also some areas that still do not have emergency stations within the lab rooms themselves. The gas shut-offs in the labs are old ball valves housed in access panels within the wall. The panel must be opened, a person then reaches into the wall to find the valve and then shuts it off. Again, this problem will be remedied within the current school year by relocating the shut-offs valves in an open and accessible location within the rooms. This does not rectify the need for completely upgraded science labs, which cannot support classroom instruction as well as experimentation. Moving back and forth between classrooms, particularly for science experiments creates a hazardous situation.

Third, there are three oil-filled transformers suspected to be contaminated with PCB's housed within the building in the transformer closet. There is also a single-walled underground oil tank proximate to the building.

Fourth, there are serious concerns with air quality and ventilation within the high school. The following information is quoted from an January, 2008 Air Quality study conducted by Massachusetts Department of Public Health (MDPH).

Ventilation – Carbon dioxide levels were elevated above 800 parts per million (ppm) in 35 of 68 areas surveyed, indicating poor air exchange in approximately half of the areas evaluated. It is important to note that several of the classrooms had open windows and/or were empty or sparsely occupied [at the time]. Typically, open windows and low occupancy can greatly reduce carbon dioxide levels. Carbon dioxide levels would be expected to be higher with full occupancy and with windows closed. (p. 3)

Carbon dioxide is not a problem in and of itself. It is used as an indicator of the adequacy of the fresh air ventilation. As carbon dioxide rises, it indicates that the ventilating system is malfunctioning or the design occupancy of the room is being exceeded. When this happens, a buildup of common indoor air pollutants can occur, leading to discomfort or health complaints. The Occupational Safety and Health Administration (OSHA) standard for carbon dioxide is 5,000 parts per million (ppm) parts of air. Workers may be exposed to this level for 40 hours/week, based on a time-weighted average (OSHA, 1997). The MDPH uses a guideline of 800 ppm for publicly occupied buildings. A guideline of 600ppm or less is preferred in schools due to the fact that the majority of occupants are young and considered to be a more sensitive population in the evaluation of health status. (p. 4)

The exhaust system used in the general classrooms was employed in the wood shop. In particular, a heavy amount of sawdust had accumulated at the base of the storage closet. The exhaust vent can draw the sawdust up into the exhaust system. A shared system exhausts the vocational wing of MMRHS; therefore, sawdust can be distributed into areas of the wing, posing a fire hazard. (p. 3)

As previously mentioned, the classrooms and shops of the vocational wings share an exhaust system. This exhaust configuration is prone to drawing a pollutant from one area and distributing it to another area as the wood shop serves as a potential example. In order to alleviate this situation, the general exhaust system should be disconnected from each shop. Therefore it is important that each local and specialized exhaust system in each shop must be in good standing and have the ability to operate continuously during school hours. (p. 5)

Additional Issues - Cutting and grinding machines in the meal shop did not have dedicated local exhaust ventilation to remove

metal fumes produced during operation. (p. 8)

The fifth area of primary concern involves the entire electrical system within the high school. As with most schools built in the 1960's, electrical needs were limited to, possibly, an overhead projector in a classroom and very little else. Therefore, most classrooms have one or two double outlets per classroom. The 21st-century classroom has much greater electrical needs for everything from computers and printers to LCD projectors, through Smart Boards. In many classrooms, to meet these needs, there are power strips plugged into power strips, an extremely hazardous situation.

The sixth area of concern is the lack of a modern security system. The current system is a basic motion-activated security system. Unfortunately times have changed from 1968 and a more comprehensive security system is necessary, both technologically and operationally. Basic issues such as a locked-door system, whereby either a daily locked procedure is followed or a system-wide lock-down is initiated at the touch of a button, need to be addressed at the school. The school is unable to provide differentiated access to areas of the building for public organizations to use classrooms or the gymnasium. The current configuration limits the ability of school administration to know when someone enters the building and where they go in the building. Finally, there are no security cameras anywhere on the high school property or in the building.

MMRHS doubles as the town's emergency shelter. In addition to the security issues mentioned above, an additional area of concern is an emergency generator that has been determined to be past its useful life.

**Priority 1**

*Please describe the measures the School District has taken to mitigate the problem(s) described above.*

The school district has taken several of the first steps in order to address the concerns surrounding the age, safety, inefficiencies and limitations in the current high school. First, a feasibility study was done to analyze current standings with respect to building and fire/safety code, architectural condition, HVAC, Plumbing, and Electrical systems and an energy study. Subsequent to that study's presentation, a 5-10 year maintenance plan was developed to try to address all of the study's findings. We are currently in year one of the plan, which focuses on building security and safety. For safety and security, an antiquated phone/intercom system was replaced with a new phone system over the summer of 2008. This new system provides for fully functioning phones in all classrooms. There are more than 46 exterior doors in the high school and some were in such poor condition they needed continuous maintenance in order to fully close and lock; six sets were replaced in the summer of 2008. We will be addressing the relative inaccessibility of the gas shut offs in the labs and hope to run a hot water line to the safety showers and eye wash stations in order to have tempered water in those safety mechanisms. Major safety renovations/installations needed include the installation of a security system, fire suppression system, magnetic door hold-opens tied into a new up-to-date fire alarm system.

As previously stated, there is a concern about the air quality at the high school. To that end, the old ventilation system, which was shut down during the energy crisis in the 1970's was re-activated in the 2007-2008 school year. While this now allows fresh air to be brought in, it does not resolve the ventilation issue and creates another heating challenge in the winter.

After the top safety and security priorities are addressed, we will turn our attention to more significant problem areas, including: replacement windows; replacement boilers; an energy controls system; replacement lighting; upgraded fresh air systems; and a new emergency generator. (The high school is also the town's emergency shelter site.) The list is a long one and the costs are very significant. A fiscally responsible approach is to tie as many projects together so that when walls and ceilings are open, more work can be done at one time, thereby limiting costs.



**Priority 1**

*Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.*

In addition to everything else cited in this statement, one of the larger areas of concern for the school building facility is that many areas are educationally obsolete. There is a lack of adequate space necessary for today's educational requirements. Each department has an area of the building that is used continuously throughout the day for that respective department's purpose. This fact prevents two different departments from sharing the same space. Within several of the departments, there is a lack of space to properly offer the curriculum designed to meet State requirements. One example is within the science labs. Science lab classes are being taught in rooms that are not labs. The current standard is to have classrooms that are set up for both lecture and labs. Right now schedules are juggled in order to take advantage of the labs; however, there just are not enough lab spaces. Also, the science department lacks a dedicated chemical storage room with proper ventilation. Currently, the chemicals are stored in a prep room which also contains one of the eye wash stations, so it cannot be locked while the class is in session. The biology program is built around a "hands-on" program, which requires some "greenhouse" windows/areas in order to fully execute the curriculum. None of the science labs are handicapped accessible.

Another area that is lacking space is the PE department. As PE is transitioning into a wellness-based program, we need smaller spaces and workout rooms, in addition to the larger gymnasium. Unfortunately, we currently have no space for either of these. Rather, there is only the gym itself to teach all of our PE classes in, which results in a curtailed program.

A third curriculum area that is restricted due to space limitations is the music program. The band room is used most of the day for large ensembles and band rehearsal. There are no other spaces for individual or smaller groups to practice or rehearse. The high school has most of the equipment necessary for a recording studio yet, no place to set it up. There are also no "traditional" classrooms to teach theory, music reading or any non-instrumental classes. There is no instrument storage facility in the building.

Because the library was carved up to make room for other needed space, there is limited space for study hall students to use the library during school hours. The problem is further exacerbated by the fact that, since there isn't a computer lab, computers were lined up against one wall to provide student access to computers for projects, as well as to house the computer instruction program. This configuration short-changed both the library and media center functions.

In the Family & Consumer Science room, the stoves and ranges are out-of-date and out of compliance with current safety requirements. There are no exhaust systems for this room, either. This room is always an area of concern for the administration, the town building inspector and fire chief.

With the increase in Special Education students in public schools, more space is needed for quiet tutorial sessions, as well as an area for autistic students to "cool down."

Throughout the building, improvements are necessary for interior lighting, air quality and access to electricity. These three areas were consistently cited as areas that desperately needed improvement throughout the building and within each department.

**Please also provide the following:****Name of Firm that performed the Study/Report:**

Roy S. Brown Architects

**Date of Study/Report:** 5/3/2008

**Synopsis of Study/Report:**

The study was very focused and developed recommendations for: greenhouse; windows; overhead doors; ceilings; white boards; library; science labs; dust collector; handicap toilets; other structural improvements; and, HVAC system. In other sections of this SOI there are additional areas that the School Committee needs and/or would like to address, such as the Physical Education department, cafeteria and kitchen, main office, security systems, technology infrastructure and fire suppression as well as a fire alarm system.

Synopsis:

Greenhouse-new classroom and flower arrangement building; new greenhouses and heating system.

Windows - replace with insulated windows.

Overhead doors - replace with newer, more energy efficient models.

Ceilings - complete conversions.

White Boards - replace chalk boards with new white boards.

Library - redesign current space. (Did not address space needs)

Science labs - the study merely recommended making the labs more accessible. It did not address current educational needs.

Handicap Access - bring building up to ADA compliance, including bathrooms.

Structural - includes modifications of roof drift areas.

HVAC system - replace out-dated system with new computer controlled system.

See report sent under separate cover.

The District recognizes that additional substantial upgrades and renovations are necessary to other systems and structural components of the high school, as mentioned in the first paragraph of the section.

**Is the perceived Health and Safety problem related to asbestos?:** YES

**If "YES", please describe the location in the facility, if it is currently friable, and the mitigation efforts that the district has undertaken to date.:**

Our high school does have asbestos in it, however, none is currently friable. We have had several abatements done over the years with a goal of removing all of the asbestos from the building. Currently we only have floor tile that is in good shape and pipe-wrap, again in good shape. We believe that the walls of our lab hoods are made of an asbestos containing material.

As was stated earlier we have three oil-filled transformers housed inside the building that we believe to contain PCBs.

**Is the perceived Health and Safety problem related to an electrical condition?:** NO

**If "YES", please describe the electrical condition, any imminent threat, and the mitigation efforts that the district has undertaken to date.:**

**Is the perceived Health and Safety problem related to a structural condition?:** NO

**If "YES", please describe the structural condition, any imminent threat, and the mitigation efforts that the district has undertaken to date.:**

**Is the perceived Health and Safety problem related to the building envelope?:** NO

**If "YES", please describe the building envelope condition, any imminent threat, and the mitigation efforts that the district has undertaken to date.:**

**Is the perceived Health and Safety problem related to the roof?:** NO

**If "YES", please describe the roof condition, any imminent threat, and the mitigation efforts that the district has undertaken to date.:**

**Is the perceived Health and Safety problem related to accessibility?:** YES

**If "YES", please describe the areas that lack accessibility and the mitigation efforts that the district has undertaken to date. In addition, please submit to the MSBA copies of any federally-required ADA Self-Evaluation Plan and Transition Plan.:**

The science labs are not handicapped accessible. The horticulture program is not handicapped accessible. There is only one partially handicapped-accessible bathroom in the entire high school. Doors do not have the necessary ADA hardware. Front walkways have been replaced to provide more accessibility to the building.



**Priority 5**

*Please provide a detailed description of the energy conservation measures that are needed and include an estimation of resultant energy savings as compared to the historic consumption.*

The high school has two 40-year old boilers that have been described as "past their useful life" by Robert W. Hall, Consulting Engineers. The air handling units were also described as "past their useful life," again by Robert W. Hall. The heating and HVAC systems alone result in exceptionally high energy consumption and costs. Due to the age of the systems, there is no way to retro-fit the systems. They should be completely replaced with modern, controlled systems. The current controls only allow for one daytime set-point and one evening setback.

As described in other areas of this SOI, the exterior walls in classroom and office areas are primary floor to ceiling single-pane windows. Significant energy is lost through these window walls. The solution to this problem is to replace all of the windows with smaller thermo pane windows, at a considerable expense since this would also require re-construction of exterior walls.

In addition to replacing doors for security purposes, they need to be replaced with more energy efficient models. This measure would apply to both the personal doors and the large overhead doors.

Specific recommendations from the Spring, 2008 study include:

**Recommendations**

1. Reconnect outdoor air ductwork to the air handling units. Current codes require that mechanical ventilation be provided for these areas. The ductwork should be reinstalled and the functionality of the controls verified. The function of the exhaust fans that correspond to the air handling units.
2. Replace the boilers. The boilers are original to the building and are nearing the end of the useful life. The boilers are currently operating at good combustion efficiencies. We believe this is due to under-firing of the units. Modern boilers would be more efficient than the present boilers.
3. Upgrade the control system of DDC control. DDC is an acronym for direct digital control. The recommendation is to replace the present pneumatic control with a computer based control system. The new control system will perform the following functions
  - a. Provide 2 way control valves on all the air handling units. Provide variable speed drives on the pumps. The pumps will be controlled by differential pressure in the building loops. This will result in pump energy savings.
  - b. Control the building pumps so that they are only operational above when heat is required by any of the air handling units during occupied periods and only when ambient is below 40 degrees during unoccupied periods.
  - c. Provide control of all air handling units.
  - d. Provide demand controlled ventilation on all the air handling units. This involves using CO2 sensors to modulate the quantity of outdoor air. This matches the ventilation rate to the building occupancy and eliminates waste from over ventilating spaces.
  - e. Add variable speed drives to the units serving the Gymnasium, Auditorium and Library. Control the units as single zone variable units. This will result in fan energy savings.
  - f. The new DDC system will also control occupied/unoccupied cycles.
4. Add Air Conditioning to the Library.

**Recommendation**

1. Replace the indirect water heaters. The existing indirect water heaters date back to the original construction and have exceeded their useful life. The indirect water heaters are 1050 gallons each. They could be replaced with smaller heaters.

*Emergency Power*

Investigate with the contracted service provider (Weld/Power) whether components are and will be available in the foreseeable future for continued operation of this generator. If it is determined that this generator will not be capable of being maintained, then a new generator should be considered. Since this generator is classified as an emergency generator, the local electrical inspector in accordance with the MEC may require that the emergency generator transfer switch and emergency panels presently located in the same room as the main switchboard be installed in a 2-hour dedicated room. This could become extremely costly. Another consideration would be to provide life safety emergency and egress lighting via self contained emergency lighting fixtures. These fixtures can be separate fixtures either wall or ceiling mounted or self-contained emergency ballasts added to existing fluorescent fixtures to illuminate one of the fluorescent tubes for the minimum of 90 minutes. This measure would allow the emergency generator to be replaced in its existing location and by not accommodating life safety, be classified as a standby generator. Standby generators are not required to be installed in a dedicated 2-hour room (or outdoors).

Panel Boards

Test all original existing circuit breakers to verify reliability and replace any found to operate improperly or faulty. Replacement breakers shall be UL Listed and Approved for Panel board manufacturer.

*Interior Lighting*

Replace or upgrade all remaining existing fluorescent fixtures containing magnetic ballasts and T12 lamps with new electronic ballasts and either T8 or T5 lamps. Decision should be made upon the recommendation of National Grid Energy Conservation Department and current available rebates. Hazardous materials (PCB's in ballast and lamps with mercury) shall be disposed of per Federal Regulations.

Replace all incandescent lamping (outside of Auditorium) with compact fluorescent lamps with corresponding lumen output. Where fixtures are not suitable for upgrade to compact fluorescent lamps, new fixtures containing compact fluorescent lamps shall be provided.

Provide ceiling occupancy sensors for control of all lighting fixtures in classrooms, corridors, offices, storage rooms, toilets, etc. In areas with sufficient daylight illumination, provide ambient and occupancy sensors. Existing room switches in classrooms shall remain to allow over-ride should need for room darkness be necessary. All room switches in toilets, storage rooms and offices (not containing ceiling sensor) shall be replaced with wall type occupancy sensors. Shop areas, Boiler Rooms, Mechanical and Electrical spaces will not contain sensors due to possibility of task injury.

All occupancy sensors shall be dual technology (passive and infrared) with adjustable time setting beyond the factory pre-set levels. Contact National Grid's Energy Conservation-Department for available rebates.

**ENERGY CONSERVATION MEASURE SUMMARY CHART**

ECM#	Monument High School	Annual Savings (kWh)	Annual Elect. Savings (\$)	Annual Gas/Oil Savings Mill BTU	Annual Gas/Oil Savings (\$)	Annual Net Savings (\$)	Installed Cost (\$)	Simple P.B. Payback Years

1	Update the EMS	26,135	2,091	1,361	24,534	26,624	235,088	8.8
2	Vending machine energy misers	2,097	168	0		168	287	1.7
3	Upgrade lighting	84,338	6,747	0	0	6,747	40,382	6.0
4	Add VSD to heating pumps	54,632	4,371	0	0	4,371	34,975	8.0
5	Replace windows	0	0	1,132	20,401	20,401	269,985	13.2
6	Replace boiler	0	0	938	16,898	16,898	17.2	17.2
	Building total	167,203	13,376	3,430	61,833	75,209	870,716	11.6

**Priority 5**

*Please describe the measures the School District has already taken to reduce energy consumption.*

As a whole, the District practices energy conservation as much as possible. The new middle school is a green school and both the middle and elementary schools have a complex modern HVAC system that can be controlled room by room, both day and night. We are currently evaluating "power-down" systems that turn off energy supplies to unnecessary electrical units, such as computers, computer labs and other sources of continuous draw. The District is instituting tighter temperature controls throughout each of its buildings. The outstanding issue in the high school that presents conservation challenges is outlined in Question 1 of this section.

**Priority 5**

*Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.*

Energy costs directly impact the District's bottom line. Any expense that cannot be controlled due to out-dated systems is a loss to the educational expenditures the District would like to make. Students and teachers are impacted in a number of ways. On a day-to-day basis, the antiquated HVAC system creates an unpleasant environment, when air quality, temperature and flow is impacted.

**Please also provide the following:****Age of Exterior Walls (Years):**

**Were any major repairs or renovations of the exterior walls undertaken in the past?:** NO

If "YES", please provide the year of the last major repair/renovation of the exterior walls:

**Age of Roof (Years):** 10

**Were any major repairs or renovations of the roof undertaken in the past?:** YES

If "YES", please provide the year of the last major repair/renovation of the roof: 1998

**Age of Windows (Years):** 40

**Were any major repairs or renovations of the windows undertaken in the past?:** NO

If "YES", please provide the year of the last major repair/renovation of the windows:

**Age of Boilers (Years):** 40

**Were any major repairs or renovations of the boilers undertaken in the past?:** NO

If "YES", please provide the year of the last major repair/renovation of the boilers:

**Age of HVAC (Years):** 40

**Were any major repairs or renovations of the HVAC undertaken in the past?:** NO

If "YES", please provide the year of the last major repair/renovation of the HVAC:

**Age of Electrical System (Years):** 40

**Were any major repairs or renovations the electrical system undertaken in the past?:** NO

If "YES", please provide the year of the last major repair/renovation of the electrical system:

**Have the systems identified above been examined by an engineer or other trained building professionals?:** YES

If "YES", please provide the name of the individual and his/her professional affiliation:

Roy S. Brown, Architects

**Please also provide the date of the inspection::** 5/1/2008

**Please describe how addressing the system will extend the useful life of the facility that is the subject of this SOI (maximum of 5000 characters):**

In the feasibility study conducted in May 2008, the District was pleased to have confirmed that the building was structurally sound and in good condition. However, the systems cited here, and in other sections of the SOI are in serious need of upgrade, repair and/or renovation. A modern system would provide a safe/healthy environment and enable more control, energy efficiency and cost savings.

**Priority 7**

***Please provide a detailed description of the programs not currently available due to facility constraints, the state or local requirement for such programs and the facility limitations precluding the programs from being offered.***

As previously discussed, the science labs do not meet current educational requirements, in size, accessibility, location and lab layout. The science curriculum is compromised due to limitations on the number and type of labs that can be run.

The library doubles as the media center. The space does not meet current space standards for either a library or a media center. The current configuration does not allow for a computer lab, where students can learn the latest in technology, which is a key component of technology proficiency.

The current physical education program does not align with the state curriculum frameworks. There are space constraints that prohibit wellness programs/activities and class instruction.

Coming into compliance with the state mandate for technology proficiency is problematic due to the extremely limited infrastructure in the building.

Drafting programs and classes are limited by both the physical limitations and the technology infrastructure. Due to space and electric limitations, CAD and other similar types of programs cannot be offered at Monument Mountain, limiting access to this training.

Automotive program limited in type of classes offered and type of vehicles which can be worked on due to outdated equipment.

Horticulture program not handicapped accessible. Upgrades needed to all structures.

**Priority 7**

*Please describe the measures the School District has taken or is planning to take in the immediate future to mitigate the problem(s) described above.*

The science department is "creative" in their use of available space through scheduling. However, since the issue is space limitations and no other space is available, there is a limited amount they can do to address this problem.

The PE program has had a curtailed program due to the space limitations. However, they must increase offerings to become compliant with the state frameworks. The District is in year two of a three-year plan to become compliant. An additional PE teacher will be hired for the 2009-2010 school year. However, the greatest constraint is the physical structure, which will be addressed in the over-all facility plan.

Since many of the constraining factors on programs are due to the physical structure, the District is putting together a long-term plan to address a renovation and upgrade. In the meantime, security issues, like the upgraded phone system, relocation of gas shut-offs, and new doors have been addressed. The District recognizes that a prudent course of action balances the financial realities of a construction project with the recognition of efficiencies realized by doing major repair, renovation and upgrade work within one construction cycle.



**Priority 7**

***Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

As previously stated, Monument Mountain Regional High School was designed and built for a 1960's education. This space severely hampers the efforts to offer a 21st-century education.

The biology/botany program is limited in its offerings due to space configurations that do not allow for living specimens to be propagated. Within the Science department, program offerings are limited by the current lab configuration and construction. Current requirements advise that instruction and experimentation should occur in one room. Unfortunately, this is not possible at MMRHS. Work stations do not have the necessary equipment, water source or proximity to emergency eyewash stations and showers.

The library doubles as the media center. The space does not meet current space standards for either a library or a media center. Computers are crowded against one wall, limiting access to both the computers and the study space in the library. The Librarian teaches an exploratory technology class one period a day, each day. Because all classrooms are used in other areas of the building, she must hold class in the library. During that time, the library is closed to other users. At other times, if a teacher wants to bring in a class for research, other students are often turned away due to space constraints. The space is too small for more than one activity. Students with study halls often cannot use the library because a full class is doing research at that time.

In all academic wings, all classrooms are used constantly throughout the day, as above indicated. There is no "extra" space for additional/new classes.

The Physical Education program primarily consists of sports related activities. In the 1960's when this building was designed and constructed, physical education was built around sports programs, such as soccer, volleyball, etc. Today's frameworks are built around wellness, not just sports. The current physical configuration of this area of curriculum consists of a gym. There is a small storage room that houses some workout equipment, but the space is basically a closet and should not be used by students, since the egress is questionable. Wellness classes, such as yoga and Pilates, health programs and classes, true weight training, and other similar programs cannot be offered at this time. The District is in year two of a three-year process to bring the PE/health curriculum into compliance with state requirements. While the personnel can be hired, and the gym can be portioned off to hold mini-classes, only with a renovation of this part of the building will true compliance be able to be obtained.

Technology instruction is severely hampered in this building. The District has made a sizable investment in fiber optics throughout the campus, and the investment at the high school is at considerable risk due to the infrastructure. Because the building was built before computers and other forms of technology - other than early electronic typewriters - there are no communication ports or drops built into the classrooms. It is not uncommon to either find the fiber optic cabling wrapped snug along the walls at the floor or hanging from the ceiling, providing a drop to plug into. In addition to risking the investment, this situation creates a fire hazard. Data streaming is nearly impossible due to the configuration, or really, lack thereof, of the network

To bring the vocational program up to standards, a considerable investment will be needed in the automotive shop for new lifts and electronic machinery. As will be shown in other sections of this SOI, reconfiguration of electrical services will be critical to this upgrade. Work on "modern technology" in current vehicle models is hampered by the current operations in the automotive program.

As stated previously, the horticulture program is not handicapped accessible. All of the structures that house the program are in need of upgrade, including fire suppression, watering, climate control, and classroom accommodations. More, and better organized, space is necessary to expand the program into a broader educational program.

The area for fine and performing arts is limited; again, it has not expanded to reflect today's educational needs. For example,



there are no "traditional" classrooms available to teach non-instrumental classes, such as music theory, composition, and music appreciation. These types of classes provide experience for the musician and non-musician alike. If different instrument sections are to hold class or practice at the same time, the strings are sent out onto the stage in the auditorium. Not only are they away from the music program itself, they then become a hindrance to the performing arts classes, which then cannot use the auditorium. Although not educational, the lack of safe storage space for instruments causes a problem for students.

The Food Service operations suffer from age as well. Modern in 1968, the cafeteria and kitchen are not configured to meet current wellness models for school food programs. The kitchen is about 60% of the size of the new kitchens in the elementary and middle schools, which serve about 34% fewer students. Since time on learning has increased the amount of time students must be in class, time for lunch has decreased. Getting a healthy meal into some of the students can be a challenge with the current time constraints and space configuration. Updated space would alleviate some of this problem. With more fresh food being served on the menus, more storage space is required as well. A well outfitted kitchen that provides healthy meal choices is a key component to school Wellness programs. The current space constraints limits the opportunities to incorporate a greater food choice.

One of the greatest operational challenges arises from the lack of a security system in the building. As was mentioned, the District includes community involvement in its mission statement. Unfortunately, the community does not have access to the building except to attend school-related functions. At both the elementary and middle schools, the state-of-the-art security system enables section by section security so the gym, community rooms and classrooms can be made available to the public, while ensuring the remainder of the building is secure. This type of system is necessary at the high school. With more than 47 exterior doors, basic security is compromised. Part of the facilities plan for this building is to replace old doors as well as replace unnecessary doors with knee walls and windows.

## Vote

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Vote of Municipal Governing Body YES: NO: Date:

Vote of School Committee YES: NO: Date:

Vote of Regional School Committee YES: 10 NO: 0 Date: 11/6/2008

### Form of Vote

The following form of vote should be used by both the City Council/Board of Aldermen, Board of Selectmen/equivalent governing body AND the School Committee in voting to approve this Statement of Interest.

If a regional school district, the regional school district should use the following form of vote.

Resolved: Having convened in an open meeting on \_\_\_\_\_, the \_\_\_\_\_ *[City Council/Board of Aldermen, Board of Selectmen/Equivalent Governing Body, School Committee]* of \_\_\_\_\_ *[City/Town/School District]*,

in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated \_\_\_\_\_ for the \_\_\_\_\_ *[Name of School]* located at

\_\_\_\_\_ *[Address]* which

describes and explains the following deficiencies and the priority category(s) for which

\_\_\_\_\_ *[Name of City/Town/District]* may be invited to apply to the

Massachusetts School Building Authority in the future

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ *[Insert a description of the priority(s) checked off on*

*the Statement of Interest and a brief description of the deficiency described therein for each priority]* and hereby further specifically

acknowledges that by submitting this Statement of Interest, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the

\_\_\_\_\_ *[Name of City/Town/District]* to filing an application for funding with the

Massachusetts School Building Authority.

**CERTIFICATIONS**

The undersigned hereby certifies that, to the best of his/her knowledge, information and belief, the statements and information contained in this statement of Interest and attached hereto are true and accurate and that this Statement of Interest has been prepared under the direction of the district school committee and the undersigned is duly authorized to submit this Statement of Interest to the Massachusetts School Building Authority. The undersigned also hereby acknowledges and agrees to provide the Massachusetts School Building Authority, upon request by the Authority, any additional information relating to this Statement of Interest that may be required by the Authority.

**LOCAL CHIEF EXECUTIVE OFFICER/DISTRICT SUPERINTENDENT/SCHOOL COMMITTEE CHAIR  
(E.g., Mayor, Town Manager, Board of Selectmen)**

**Chief Executive Officer**

**School Committee Chair**

**Superintendent of Schools**

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
(signature)

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(signature)

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(signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

# Massachusetts School Building Authority

Timothy P. Cahill  
Chairman, State Treasurer

Katherine P. Craven  
Executive Director

September 29, 2010

Stephen Bannon, Chair  
Berkshire Hills Regional School Committee  
Post Office Box 617  
Stockbridge, MA 01262

Re: Berkshire Hills Regional School District, Monument Mountain High School

Dear Mr. Bannon:

I am pleased to report that the Board of the Massachusetts School Building Authority ("MSBA") voted to invite the Berkshire Hills Regional School District to collaborate with the MSBA in conducting a Feasibility Study for the Monument Mountain High School.

I do want to emphasize that this invitation to collaborate on a Feasibility Study is *not* approval of a project, but is strictly an invitation to the District to work with the MSBA to explore potential solutions to the problems that have been identified. Moving forward in the MSBA's process requires collaboration with the MSBA, and communities that "get ahead" of the MSBA without MSBA approval will not be eligible for grant funding. To qualify for any funding from the MSBA, local communities must follow the MSBA's statute and regulations, which require MSBA collaboration and approval at each step of the process.

During the Feasibility Study phase, the District and the MSBA will collaborate to find the most fiscally responsible and educationally appropriate solution to the problems identified at the Monument Mountain High School. The Feasibility Study, which will be conducted pursuant to the MSBA's regulations, will require the District to complete a number of pre-requisites prior to executing a Feasibility Study Agreement with the MSBA. These pre-requisites, which must be completed within six months of this invitation, require the District to submit the following information to the MSBA for its review, within the timeframes noted below\*:

- a preliminary overview of available or projected local funding for any proposed project (within 30 days);

- Sent 10/27/10
- Sent 10/27/10
2. • a current routine and capital maintenance plan for the District's school facilities (within 90 days);
  3. • an operational budget statement (within 90 days);
  4. • the enrollment data required to complete the MSBA's enrollment tool, including information and data about the existing use and capacity (e.g., number of classrooms, total number of rooms, utilization rates, etc.) of each public school facility in the District (within 60 days); the District and the MSBA must discuss and agree on a design enrollment (within 120 days);
  5. • an Initial Compliance Certificate executed by the District, to ensure that the District understands and will comply with the MSBA's requirements and regulations (within 30 days);
  6. • the School Building Committee form completed by the District and submitted to the MSBA for approval (within 60 days); and
  7. • Certified votes of the local funding appropriation (within 180 days).

~~8. •~~  
\* All timeframes noted above are based on the date of this letter.

If you have any concerns about meeting any of the above time frames, please let us know as soon as possible. We will be contacting you soon to discuss these next steps in more detail. Once these initial steps have been completed, the MSBA and the District will then work on procuring the project management and design professionals, which will help bring the District's Feasibility Study to fruition. In the meantime, however, I wanted to share with you the Board's decision and provide a brief overview of what this means for the Berkshire Hills Regional School District.

I look forward to continuing to work with you as the MSBA's new grant program progresses. As always, feel free to contact me or my staff at (617) 720-4466 should you have any questions.

Sincerely,



Katherine Craven  
Executive Director

Cc. Senator Benjamin Downing  
Representative William Pignatelli  
Peter Dillon, Superintendent, Berkshire Hills Regional School District  
File (Letters 10.2)

# Massachusetts School Building Authority

Steven Grossman  
Chairman, State Treasurer

Katherine P. Craven  
Executive Director

March 18, 2011

Peter Dillon  
Superintendent  
Berkshire Hills Regional School District  
50 Main St  
Stockbridge, MA 01262

RE: Enrollment Projections for Monument Mountain Regional High School

Dear Superintendent Dillon:

I would like to thank you for speaking with the Massachusetts School Building Authority ("MSBA") staff on February 11, 2011 regarding enrollment projections and methodologies. As discussed, the next critical step is for the MSBA and the District to agree on the design enrollment for the proposed project at Monument Mountain Regional High School.

The Monument Mountain Regional High School accommodates the District's enrollment in grades 9-12, and accordingly, this analysis will be particularly focused on the enrollment projections for those grades.

The table below illustrates the District's K-12 enrollment during the most recent ten year period, as reported annually in October to the Department of Elementary and Secondary Education. The District's total enrollment in grades 9-12 during the 2009-2010 school year was 595 students. The total 9-12 enrollment during the 2009-2010 school year reflected a decline of approximately 3% from the preceding school year, and a decline of 29 students (-4.6%) from the previous year, and a decline of 97 students (-14%) from the peak 9-12 enrollment of 692 students reported during the 2000-2001 school year. The average total 9-12 enrollment during the most recent ten year period was 645 students, and the most recent five year average was 637 students.

Year	K-4	5-8	9-12	Total
2000	457	443	692	1,592
2001	433	435	653	1,521
2002	392	443	661	1,496
2003	356	409	642	1,407
2004	356	413	612	1,381
2005	391	416	637	1,444
2006	382	383	683	1,448
2007	382	370	647	1,399
2008	449	354	624	1,427
2009	388	369	595	1,352

The MSBA understands the District is seeking a design enrollment to accommodate approximately 650 students in grades 9-12 at the Monument Mountain Regional High School.

The MSBA's base enrollment forecast for Berkshire Hills projects total enrollment for grades 9-12 to fluctuate within a range between approximately 540-600 students through the 2017-2018 school year. The base forecast projects that the total 9-12 enrollment in the District will decline as low as 538 students during the 2012-2013 school year, and then to fluctuate within a range between approximately 560-600 students for the remainder of the projection. The average total enrollment for grades 9-12 in the base forecast through 2017-2018 school year is 569 students. Following the last kindergarten class generated in the base projection through the entrance of that class into the 9<sup>th</sup> grade enables the observation of a longer term enrollment projection for the high school enrollment. The longer term trend in the base forecast for Berkshire Hills Regional School District is consistent with the average enrollment observed in the base projection through the 2017-2018 school year, as the longer term projection indicates that the District's high school enrollment will average 565 students through the 2026-2027 year.

As a result of a sensitivity analysis performed by the MSBA on this base enrollment projection, as well as from further discussion with the District, the following adjustment has been made to the base enrollment projection. It should be noted that during the enrollment conference call with the District on February 11, the District indicated additional data would be provided regarding the potential for local employment growth which may impact student in-migration to the District. To date, the MSBA has not received the referenced data.

- Out-of-District Enrollment
  - In order to adjust for fluctuations in the out-of-district enrollment patterns of the District's residents over time, the MBSA has made an additional adjustment to the base enrollment projection.
  - The grade-to-grade survival ratios for grades 9-12 have been increased by a total of 3.3% throughout a four year period in the projection.
  - This adjustment added a total of approximately 7 students to the average total enrollment for grades 9-12, as compared to the projection without this adjustment.

As a result of an analysis of the base enrollment projection, and the adjustment to the base projection described above, the MSBA recommends a design enrollment of 570 students for the Monument Mountain Regional High School.

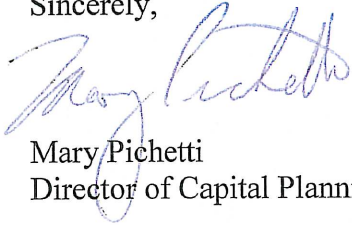
The MSBA is forwarding the attached Design Enrollment Certification for your review. Please sign and return the attached certification within 21 calendar days to confirm agreement on the design enrollment for the proposed Monument Mountain Regional High School project. If the District feels that this design enrollment does not meet the needs of the District, please respond to this letter via e-mail to Kevin Sullivan, and



propose three meeting/conference call times for which the District can be available to discuss enrollment.

If you have any questions, please do not hesitate to contact me or Kevin Sullivan ([Kevin.Sullivan@MassSchoolBuildings.org](mailto:Kevin.Sullivan@MassSchoolBuildings.org)) at 617-720-4466. Thank you very much.

Sincerely,



Mary Pichetti  
Director of Capital Planning

Cc. Senator Benjamin Downing  
Representative William Smitty  
Stephen Bannon, Chair, BHRSD School Committee  
Sharon L. Harrison, Business Administrator, BHRSD  
Steven Soule, BHRSD School Building Committee  
File *Enrollment Projections 1.2 (Region 1)*



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## MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL

600 STOCKBRIDGE ROAD  
GREAT BARRINGTON, MA 01230

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PREFERRED SCHEMATIC STUDY 09/27/12

PROJECT #12029.00

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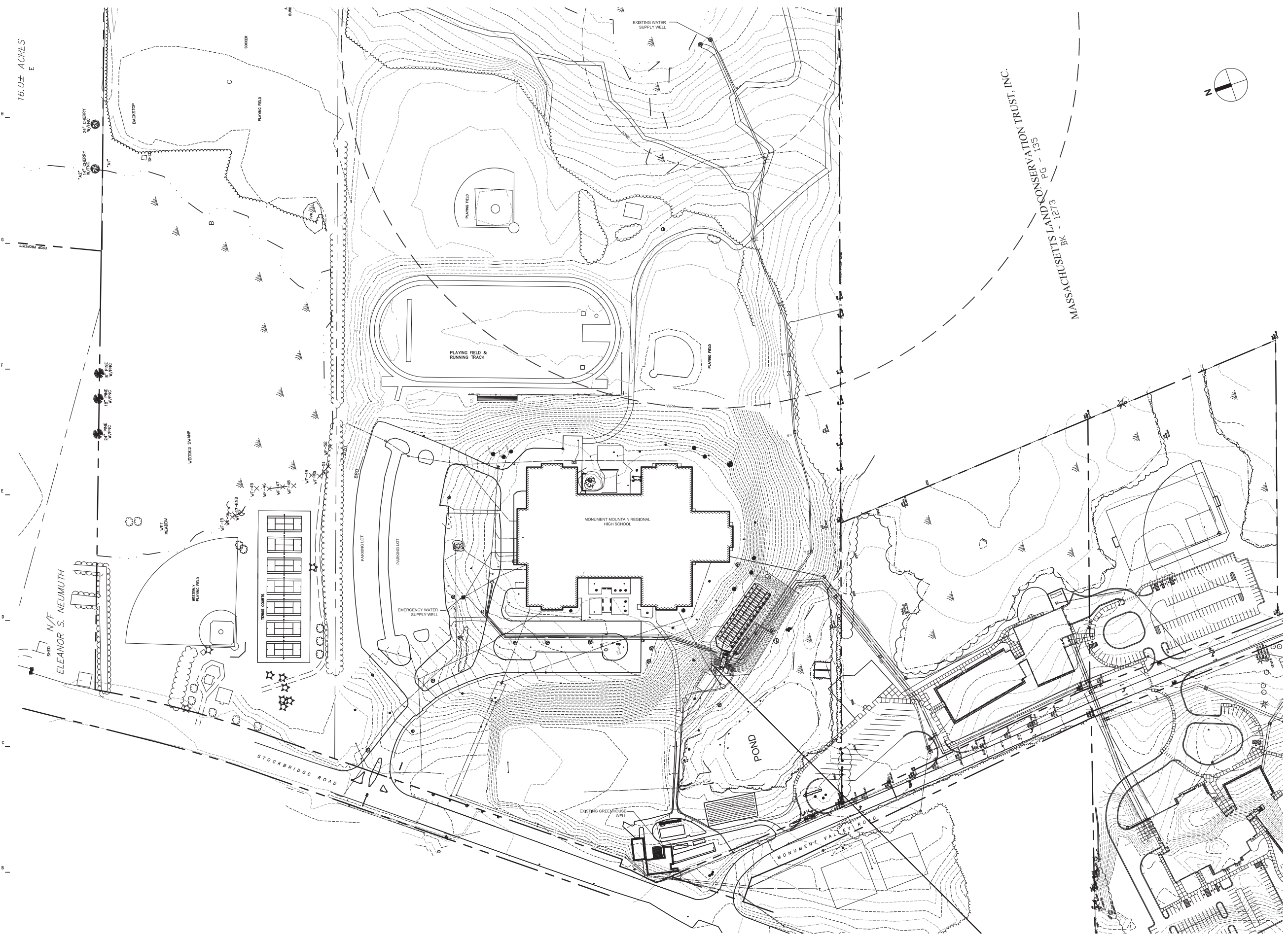
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- C-2 SITE PLAN
- C-3 UTILITIES PLAN
- A-1 EXISTING FLOOR PLAN
- A-2 PROPOSED FLOOR PLAN- OPTION 2D.4



**Monument Mountain Regional High School**  
800 Stockbridge Road  
Great Barrington MA 01230

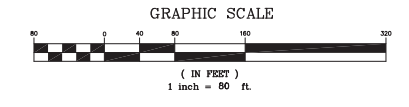
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**EXISTING CONDITIONS PLAN**



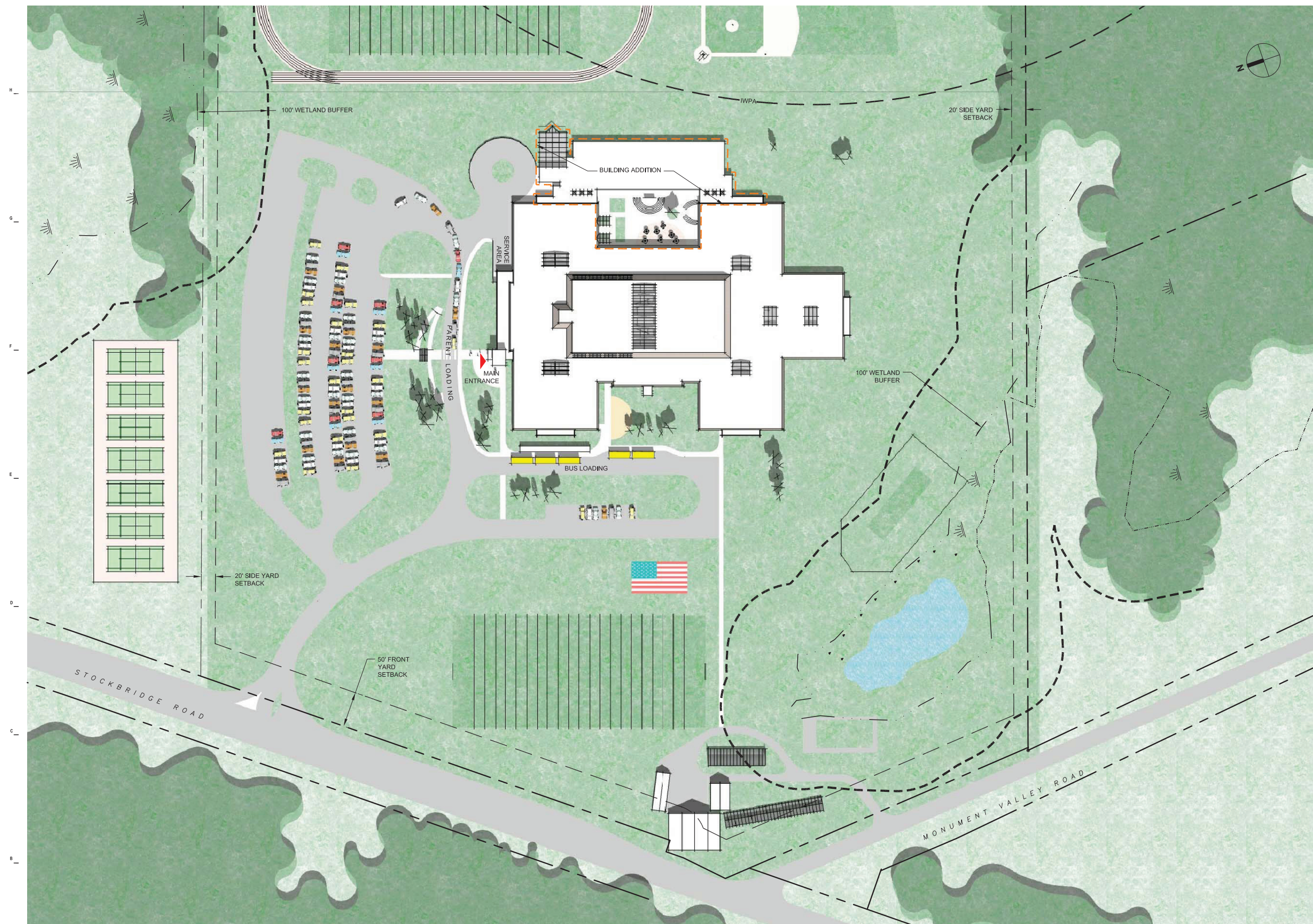
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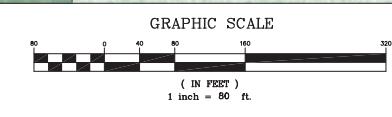


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**SITE PLAN**















CONSULTANTS

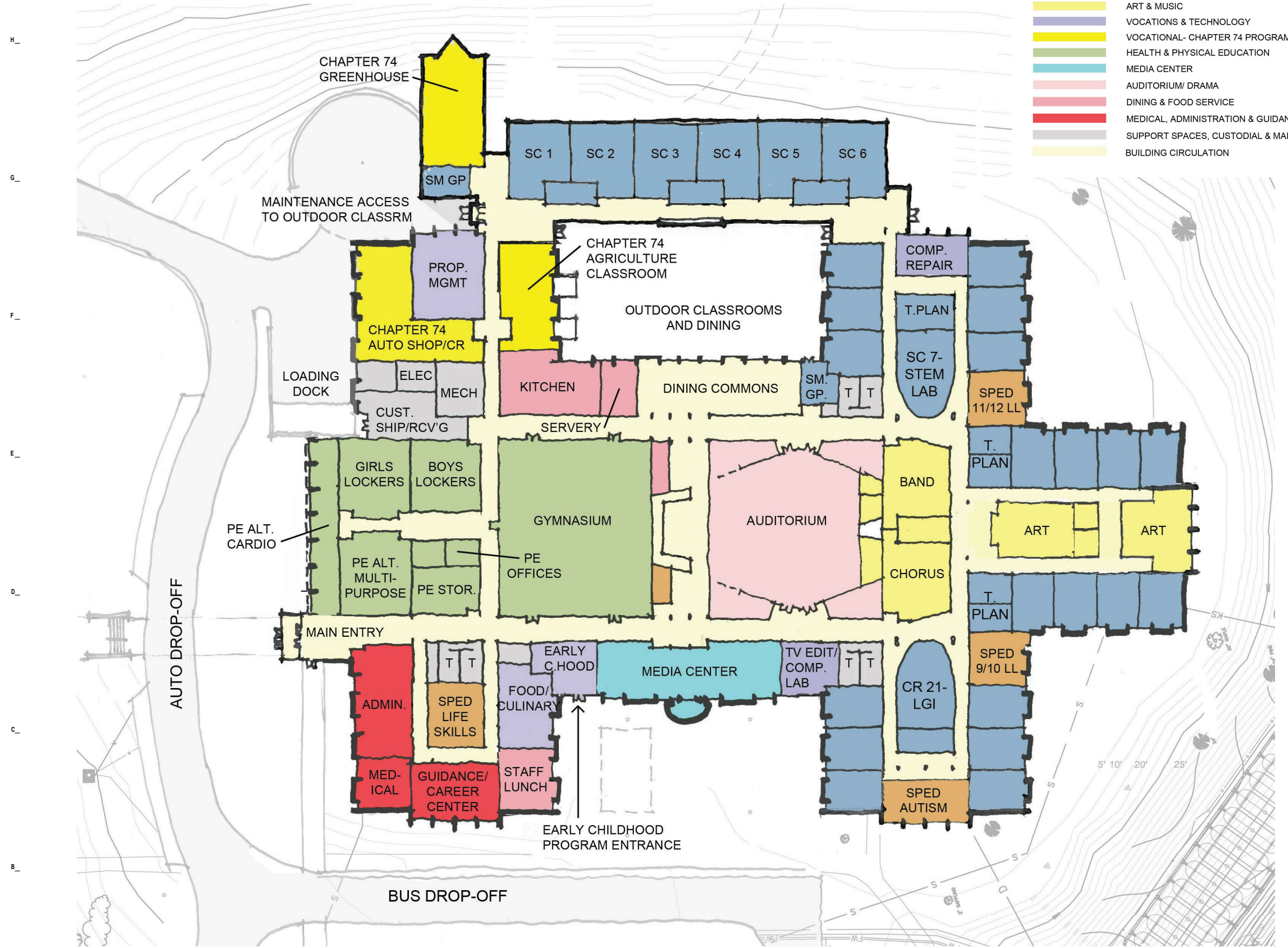
CLIENT LOGO

Monument  
Mountain Regional  
High School

600 Stockbridge Road  
Great Barrington MA 01230

LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- VOCATIONS & TECHNOLOGY
- VOCATIONAL- CHAPTER 74 PROGRAMS
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- AUDITORIUM/ DRAMA
- DINING & FOOD SERVICE
- MEDICAL, ADMINISTRATION & GUIDANCE
- SUPPORT SPACES, CUSTODIAL & MAINTENANCE
- BUILDING CIRCULATION



MARK	DATE	DESCRIPTION
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ISSUE LOG		
△	CLOUDED CHANGE	

SCALE	
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CHECK BY	Cherler
PROJ. ARCH. ENGR.	J.S.
PROJ. MGR.	DPBR
JOB NO.	12029.00
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PROPOSED FLOOR  
PLAN-  
OPTION 2D.4



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