AYER-SHIRLEY REGIONAL SCHOOL DISTRICT

Elementary Schools Facilities Assessment

April 6, 2018

FLANSBURGH

AYER-SHIRLEY REGIONAL SCHOOL DISTRICT

Elementary Schools Facilities Assessment

MARCH 30, 2018

Acknowledgments

Flansburgh Architects would like to acknowledge the following individuals for their dedication to the Ayer-Shirley Regional School District Elementary Schools Facilities Assessment and their assistance to the Flansburgh design team:

SCHOOL COMMITTEE

Dan Gleason	School Committee Chair
Jonathan Deforge	School Committee Vice Chair
Michele Granger	Secretary
Jim Quinty	Member
Joyce Reischutz	Member
Pat Kelly	Member

AYER-SHIRLEY REGIONAL SCHOOL DISTRICT ADMINISTRATION

Dr. Mary Malone	Superintendent
Robert Briggs	Facilities Director
Fred Deppe	Principal, Page Hilltop Elementary School
Varsha Desai	Principal, Lura A. White Elementary School

WORKING GROUP MEMBERS & WORKSHOP ATTENDEES

Roberta Aikey	Principal, Ayer-Shirley Regional Middle School
Tara Bozek	Special Education Director

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Overview

0.1 Introduction

In December 2017, the Ayer-Shirley Regional School District's (ASRSD) School Committee engaged Flansburgh Architects to perform an Elementary School Study that examined the District's two elementary schools. This study of master planning options intends to address concerns at the existing PreK-5th grade elementary schools, and develop long-term facility improvements with a goal of positioning both schools as 21st Century Learning environments.

The ASRSD currently serves approximately 1,700 students in grades PreK to 12. There are four school facilities in the district: two elementary schools, one middle school, and one high school. The age and condition of each of the facilities vary greatly with some buildings having few upgrades since their original construction. The most recent construction was seen at Ayer-Shirley Regional High School.

This study provides the following:

1. Documentation of existing conditions and physical assessment of each elementary school building and site with recommendations to address findings at each school.
2. Review of the District's enrollment projections and consideration of their impact on future needs.
3. Identification of Educational Program to meet the PreK–5th grade configuration.
4. The development of an educational vision for the PreK–5th grade configuration to best align with district goals.
5. Identification of the potential and suggested capital improvements necessary to extend the useful life of each facility.
6. Conceptual design options to address the elementary school facilities and educational needs.
7. Cost estimates associated with conceptual options for the PreK–5th grade new or addition/ renovation configuration(s).

DOCUMENTATION

This report is based on information gathered by visual observations of each facility and site conduced by Flansburgh Architects and its consultants, as well as the review of existing building drawings, documents, reports and enrollment projections provided by Ayer-Shirley Regional School District.

0.2 Executive Summary

BACKGROUND

The Facilities Assessment provides an independent architectural and engineering assessment of the Page Hilltop and Lura A. White Elementary Schools. This study serves as a tool to assist ASRSD in identifying and documenting the existing conditions of each facility, and to provide the District with an understanding of the need for renovations or improvements to maintain the long term viability of each facility. This also includes a conceptual solution to consolidate the two elementary schools into one PreK–5th grade facility.

Through the course of this study, Flansburgh Architects worked closely with the ASRSD Facilities Department, and gained input from school principals and district administration regarding the condition, ongoing maintenance plans, and functionality of each school. Meetings were held with representatives from the school community to assist in defining the educational vision for the PreK–5th grade facility. Throughout the course of researching and developing this report several meetings were held with the District's leadership team and School Committee. The extensive amount of information gathered herein should be used as a resource for any future work to be completed at each of these facilities and when reviewing educational reorganization goals. All future work, repairs and changes to the facilities should be reviewed in reference to their impact on the district-wide long-term goals.

0.2A EXISTING CONDITIONS

Overall the Page Hilltop Elementary School and Lura A. White Elementary School systems are in good to fair condition, but some are nearing the end of their useful life. The requirements to meet current codes will impact all spaces and effectively require full renovations of the schools where systems replacement is necessary to achieve compliance. Should the District opt to move forward with a particular school for renovation, additional testing and investigations will be required to further evaluate the existing conditions of the building and site:

The following additional investigations are anticipated:

- Catch basin and drainage structure inspection
- Grease trap inspection
- Structural investigation/testing
- Hydrant flow test
- Interior drainage and pipe inspection
- Brick tie investigation
- Roof cuts to determine roofing components and thicknesses
- Infrared roof scan
- Additional destructive testing for hazardous materials
- Geotechnical test pits/borings

Working in conjunction with the ASRSD, Flansburgh Architects has prepared this existing conditions report in the Winter of 2018. This report considers the quality and anticipated life of the physical plant of the schools, the buildings interior and exterior building components, play fields, and site features, structural systems, mechanical /electrical plumbing systems and technology infrastructure. The findings of this report will assist in finalizing the Town's capital plan and assure that systems and materials left in place are sound and appropriate for the school's anticipated life. The process involved a physical survey of the buildings by the following qualified architects and engineers:

- Flansburgh Architects – Architectural
- BALA Consulting Engineers – Mechanical, Plumbing Electrical, Fire Protection
- Boston Building Consultants – Structural
- WDA Design Group – Civil/Landscape
- Edvance – Data/Communications, Technology

The exterior envelopes of the older elementary schools are generally in fair condition with some evidence of cracking and spalling of masonry components. Under the current energy standards, the exterior walls R-Values are very low and options need to be explored to increase the R-Values to meet today's standards. Increasing the exterior walls R-Values will reduce the size of the HVAC systems and save energy.

The Existing Conditions Study of both elementary schools indicates that both facilities are serviceable as schools and pose no safety concerns that would impact the ongoing operations as an educational facility.

The existing building systems for both schools are at the end of their useful lives, and will need to be upgraded or replaced. The schools are not energy efficient and replacement or upgraded systems should include energy saving equipment and materials to improve the building's energy performance. There are no current building code impacts that would require significant changes to the facilities, however any capital expenditures that exceed 30% and 50% of the building's assessed value can have code implications.

If repairs, renovations, or upgrades over a three year period exceed 30% of the assessed value, then a full fire protection system and full handicap access requirements are required. If work over a three year period exceeds 50% of the assessed value, then the building structure will need upgrades to meet seismic requirements.

Results of the existing conditions reviews are as follows:

<u>Page Hilltop Elementary School:</u>

- Landscape
  - No compliant accessible route from parking lot to the main building
  - Parent drop-off area is inefficient and lacks proper student safety measures
  - Site vegetation in poor condition
  - Pedestrian circulation bituminous sidewalk in poor condition
  - Site drainage appears to be poor

- Architectural
  - Exterior Envelope: Low R-value and masonry requires repairs
  - Roof System: Low R-value, replace with proper insulation to increase R-value
  - Window System: Low R-value windows throughout, replace with high performing windows
  - Interior Walls: Repair and paint throughout; add acoustical treatment as needed
  - Flooring Replace all flooring throughout building
  - Ceilings: Replace ceilings throughout to accommodate new lighting and improve acoustics
  - Door & Hardware: Systems are in various states of disrepair. Replace and provide for handicap compliant hardware
  - Interior Trim: Needs to conform with NFPA Flame Spread code

- Equipment
  - Sink locations are not handicap accessible
  - Furniture is a variety of different manufacturers and vary in age
  - Kitchen needs updated cooking equipment and servery
  - Lack of storage space throughout school
  - Casework in fair/poor condition
- Mechanical
  - Air temperature controls are antiquated
  - Ductwork not distributing air efficiently
  - Air handling units have exceeded their expected maximum service life
  - Update boilers to efficient fas-fired style
  - Fuel oil storage not equipped with leak detection
- Electrical
  - The existing main disconnect and fused distribution panel should be tested and replaced, if needed
  - Interior lighting should be replaced
  - Existing exit signs should be replaced
  - All site lighting should be replaced
  - Duplex outlets are sparsely located throughout and need upgrades
  - Full smoke coverage required for fire alarm system
  - Fire alarm devices not mounted at ADA heights
  - Communications, clock, and sound systems are antiquated
- Fire Protection
  - Building does not have sprinklers
  - The service does not have a back-flow prevention device
- Plumbing
  - Existing water and waste piping systems have exceeded their life expectancy
  - Plumbing fixtures are in fair condition and non-compliant with current codes
  - No back-flow preventer on the domestic water system
  - Kitchen equipment needs additional grease traps
  - Water heaters nearing the end of their life expectancy

<u>Lura A. White Elementary School:</u>

- Landscape
  - No compliant accessible route from parking lot to the main building
  - Parent drop-off lacks proper student safety measures
  - Pedestrian circulation pavement in poor condition
  - Vegetation ranges from good to fair condition
- Architectural
  - Exterior Envelope: Low R-value and masonry requires repairs
  - Roof System: Replace to increase R-value
  - Window System: Low R-value windows throughout, replace with high performing windows
  - Interior Walls: Repair and paint throughout; add acoustical treatment as needed
  - Flooring Replace all flooring throughout building
  - Ceilings: Replace ceilings throughout to accommodate new lighting and improve acoustics

  - Door & Hardware: Systems are in various states of disrepair. Replace and provide for handicap compliant hardware
  - Interior Trim: Needs to conform with NFPA Flame Spread code

- Equipment
  - Sink locations are not handicap accessible
  - Furniture is a variety of different manufacturers and vary in age
  - Kitchen needs updated cooking equipment and servery
  - Lack of storage space throughout school
  - Casework in fair/poor condition

- Mechanical
  - Automatic temperature controls & pneumatic controls antiquated
  - Ductwork not distributing air efficiently
  - Air handling units have exceeded their expected maximum service life
  - Boilers in good condition
  - Fuel oil storage lacks leak detection
  - Heating piping system has exceed its life expectancy
- Electrical
  - The existing main disconnect and fused distribution panels should be tested and replaced, if needed
  - Interior lighting throughout the school is in fair condition and should be replaced
  - Existing exit signs should be replaced and additional signs provided
  - Duplex outlets are sparsely located throughout and need upgrades
  - Emergency lighting competent, to be checked and made operational
  - Full smoke coverage required for fire alarm system

- Fire Protection
  - Building does not have sprinklers
  - The service does not have a back-flow prevention device

- Plumbing
  - Existing water and waste piping systems have exceeded their life expectancy
  - Plumbing fixtures are in fair condition and non-compliant with current codes
  - No back - flow preventer on the domestic water system
  - Water heaters nearing the end of their life expectancy
  - Gas supply to kitchen needs hood interlock gas value

0.2B SUMMARY OF DESIGN OPTIONS

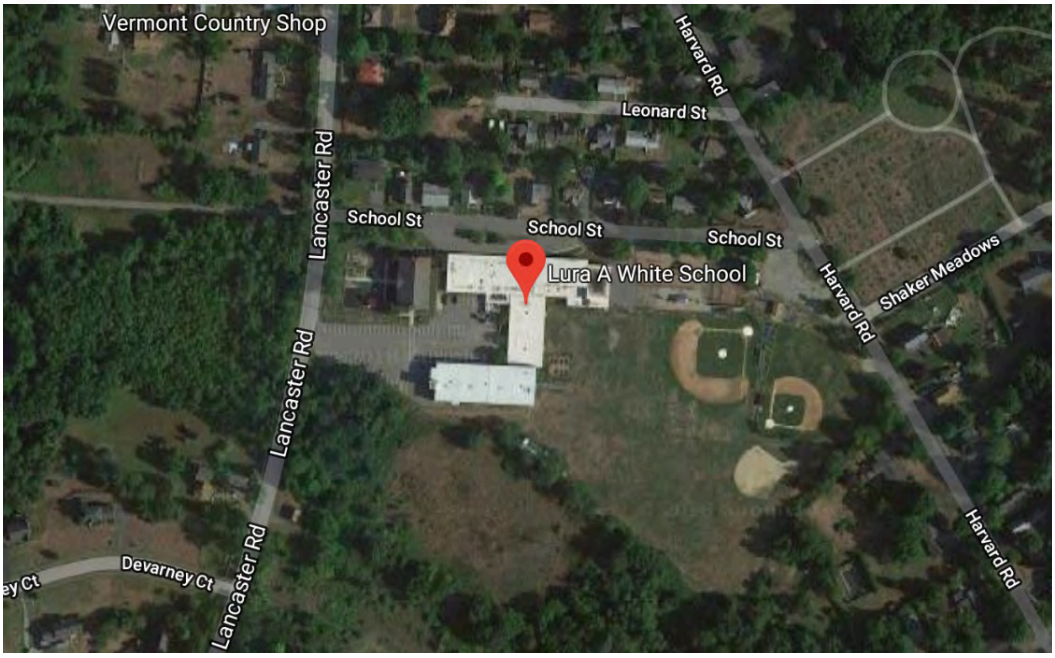
In an effort to define the educational goals of the District, a visioning session and deign workshop were conducted. The presentations are outlined as an attachment to this report. This group included members of the District's leadership team, school principals, teachers, and School Committee. The group, led by Superintendent Mary Malone, was tasked with defining the educational vision for the Page Hilltop and Lura A. White Elementary Schools. Meeting notes are included in this report.

The options developed are outlined in the following pages and presented in more detail in this report.

1. **Repair Option:** The repair option addresses the physical needs of each school facility as a capital improvement plan. This option retains the existing schools and corrects their physical deficiencies. This option does not address the full renovation of each facility, improvements in the educational plan, durability of finishes, or improvements in operations and maintenance

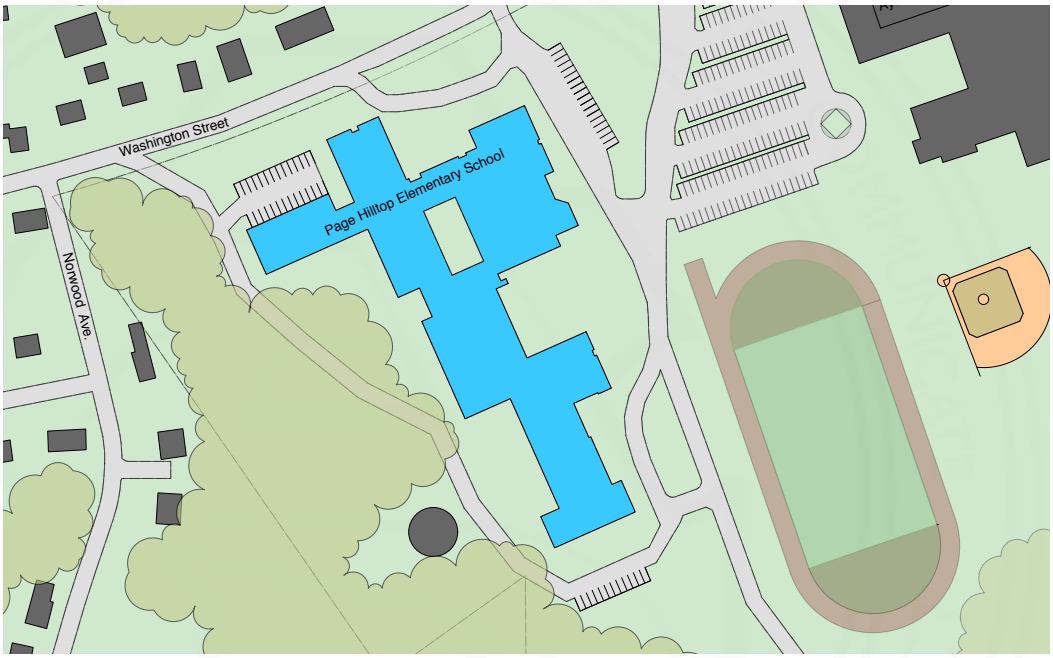
   The five-year repair option identifies priorities for each school to improve the facilities moving forward. Each year it is recommended that a capitol expenditure of $9.7 million per year be allocated to improve the facilities in health & safety, code compliance, handicap accessibility, and energy savings.

Page Hilltop Elementary School

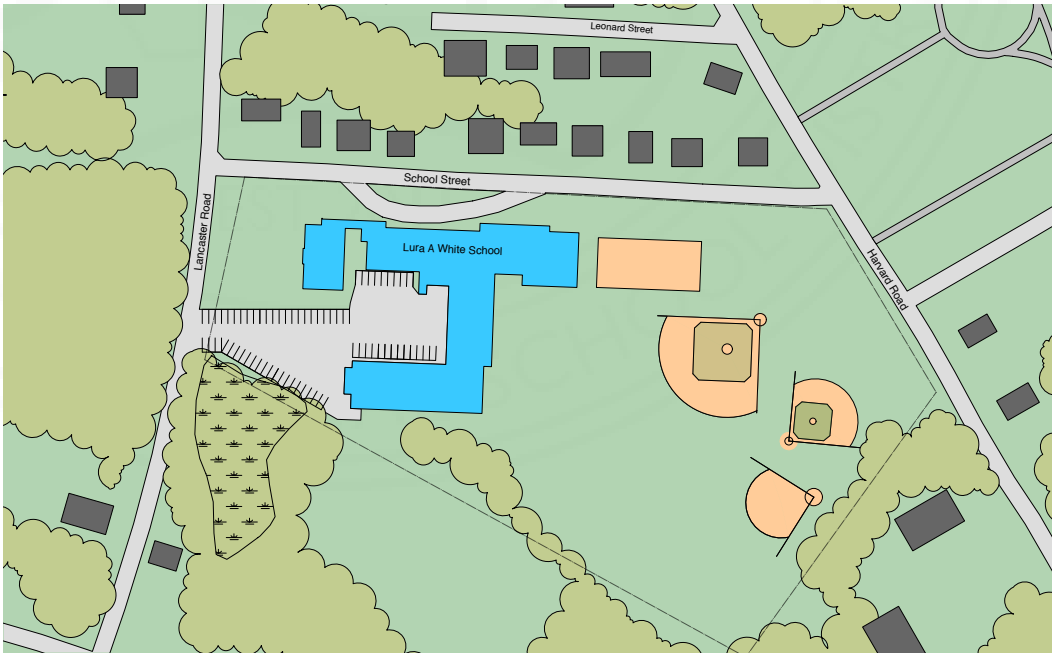


Lura A. White Elementary School

2. School Renovation Option: This option retains both elementary schools and renovates them to meet current standards. These renovations may include adding more classrooms to meet enrollment projections and other program elements that support a 21st century learning environment.



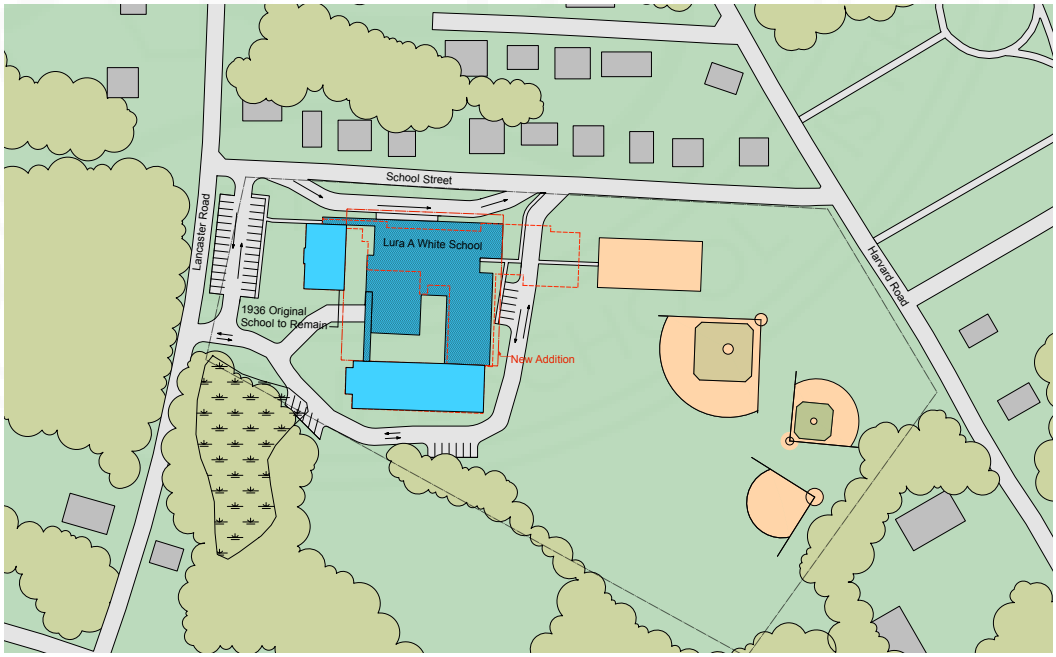
Page Hilltop Elementary School



Lura A. White Elementary School

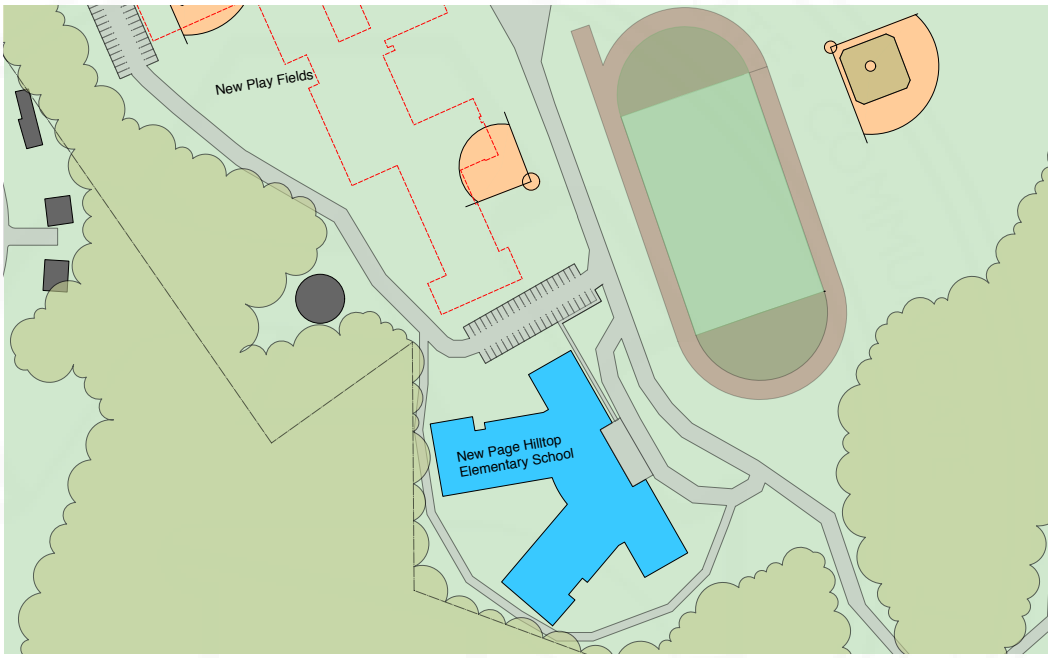
3. School Renovation/Addition Option: This option reorganized both schools to meet the state guidelines, the 21st century vision for the facilities, and allows for better community access for after-school activities.

Page Hilltop Elementary School

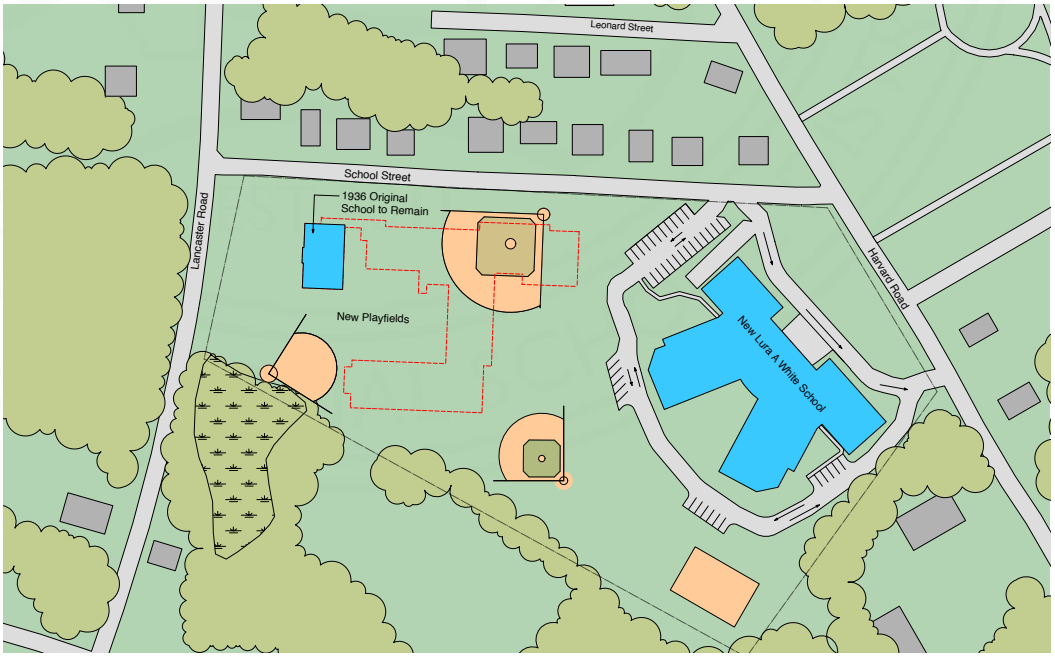


Lura A. White Elementary School

4. **New School Option:** Both sites allow for a new school to be constructed on adjacent Town owned land while maintaining existing school operations.



Page Hilltop Elementary School

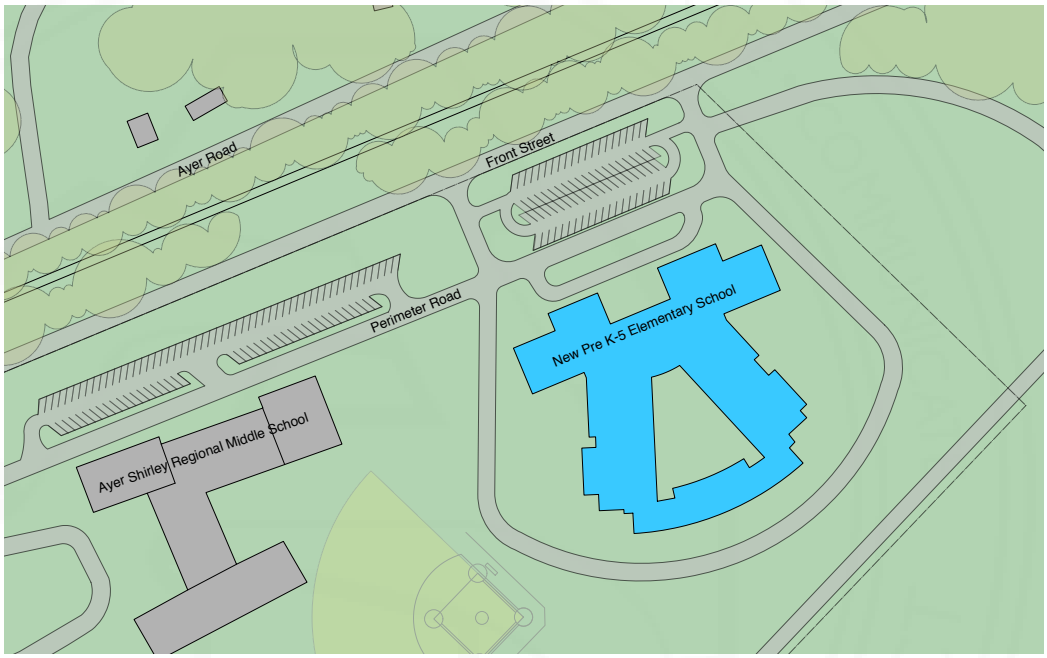


Lura A. White Elementary School

5. **Consolidation Option:** Consolidation recognized the option to bring both elementary schools into one new facility. This option resolves the District's needs in one expenditure.

   The cost of renovating both schools over a long period of time will cost approximately $88 million and will take several years to complete.

   The cost of designing and construction one new elementary facility will cost approximately $78 million and, assuming a reimbursement rate of 53%, will be less costly than all other options.



New Elementary School at Middle School Site

Section 1: Five Year-Plan

1.1 Total Five-Year Expenditures

1.2 Five-Year Priority Repairs/ Renovation

PAGE HILLTOP & LURA A. WHITE ELEMENTARY SCHOOLS—TOTAL FIVE-YEAR EXPENDITURES

2019—2023 Repairs

February 9, 2017

Year	Current Cost	Escalation @ 4%	Total Expenditure
2019	$8,683,590	$347,344	$9,030,934
2020	$8,683,590	$694,682	$9,378,277
2021	$8,683,590	$1,042,030	$9,725,620
2022	$8,683,590	$1,389,374	$10,072,964
2023	$8,683,590	$1,736,718	$10,420,308
	TOTAL FIVE-YEAR EXPENDITURE WITH ESCALATION **Capital Appropriations Commencing with FY2019 Budget*		**$48,628,103**
PROBABLE REPAIR COSTS			
Page Hilltop Elementary			$25,240,452
Lura A. White Elementary			$18,177,500
	TOTAL		**$43,417,952**

***PER YEAR PROBABLE REPAIR COSTS = $43,417,952 / 5 YEARS = $8,683,590**

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PAGE HILLTOP ELEMENTARY SCHOOL
Five-Year Priorities Repair

Flansburgh Architects | January 2018

Health & Safety		Code Compliance		HC Accessibility		Energy Savings	
▪ Fire Alarm system inspection and testing should be conducted in compliance with NFPA ▪ Test Emergency Standby generator system ▪ Install new automatic transfer switch ▪ Install full smoke detection equipment throughout the building ▪ Install CO2 demand control ventilation in gym, cafe, and classrooms ▪ Replace damaged bituminous concrete in all areas that pose a tripping hazard ▪ Remove ACT floor tile and replace with linoleum tile in building and in 1st and 2nd floor ▪ Replace domestic water service piping and add new water filtration system ▪ Replace damaged and deteriorated concrete stairs and hand rails ▪ Conduct an electrical distribution assessment of aging equipment and circuits		▪ Interlock cafeteria ventilating with exhaust fan and kitchen hood ▪ Install trap primes in all floor traps ▪ Provide hose bibs in all toilet rooms		▪ Provide HC hardware at exterior doors and missing interior doors ▪ Replace several doors to comply with 12” and 18” clearances per ADA requirements ▪ Replace furniture for HC accommodation ▪ Replace accessories in restrooms to accommodate the HC ▪ Reconstruct service area tables in cafeteria to accommodate the HC ▪ Install new signage for the visually impaired ▪ Provide assisted listening devices for the hearing impaired ▪ Modify casework in classrooms and offices to accommodate the HC ▪ New striping, signage, and paving for accessible parking spaces ▪ Replace non-conforming curb cuts with new curb cuts to meet requirements		▪ Replace existing roof system with new R-30 Membrane roofing system ▪ Replace all exterior doors and windows ▪ Add exterior insulation to exterior walls ▪ New water conserving plumbing fixtures ▪ New LED exteriors lighting system ▪ New occupancy sensors on lighting circuits ▪ New LED interior lighting fixtures ▪ Install variable frequency drives on HVAC equipment ▪ Replace air handling equipment with energy efficient equipment ▪ Replace all exterior sealants ▪ Install new gas fired hot water heater ▪ Provide new energy management system ▪ Install new gas fired boilers	
Construction Cost	**$42,852,000**						
Soft Cost @ 30%	**$12,855,600**						
Total	**$55,707,600**						

LURA A. WHITE ELEMENTARY SCHOOL
Five-Year Priorities Repair

Flansburgh Architects | January 2018

Health & Safety		Code Compliance		HC Accessibility		Energy Savings	
▪ Fire Alarm system inspection and testing should be conducted in compliance with NFPA ▪ Install full smoke detection equipment throughout the building ▪ Test Emergency Standby generator system ▪ Ventilate, clean, and remove stored items from main electrical room ▪ Install CO2 demand control ventilation in gym, cafe, and classrooms ▪ Replace damaged bituminous concrete in all areas that pose a tripping hazard ▪ Remove ACT floor tile and replace with linoleum tile in building ▪ Replace domestic water service piping and add new water filtration system ▪ Conduct an electrical distribution assessment of aging equipment and circuits ▪ Install new fire protection sprinkler system ▪ Install in kitchen hood an interlock gas valve		▪ Interlock cafeteria ventilating with exhaust fan and kitchen hood ▪ Install trap primes in all floor traps ▪ Provide hose bibs in all toilet rooms ▪ Insulate all hot water piping		▪ Provide HC hardware at exterior doors and missing interior doors ▪ Replace several doors to comply with 12” and 18” clearances per ADA requirements ▪ Replace furniture for HC accommodation ▪ Replace accessories in restrooms to accommodate the HC ▪ Reconstruct service area tables in cafeteria to accommodate the HC ▪ Install new signage for the visually impaired ▪ Provide assisted listening devices for the hearing impaired ▪ Modify casework in classrooms and offices to accommodate the HC ▪ New striping, signage, and paving for accessible parking spaces ▪ Replace non-conforming curb cuts with new curb cuts to meet requirements		▪ Replace existing roof system with new R-30 Membrane roofing system ▪ Replace all exterior doors and windows ▪ Add exterior insulation to exterior walls ▪ New water conserving plumbing fixtures ▪ New LED exteriors lighting system ▪ New occupancy sensors on lighting circuits ▪ New LED interior lighting fixtures ▪ Install variable frequency drives on HVAC equipment ▪ Replace air handling equipment with energy efficient equipment ▪ Install new unit ventilators for hot water system ▪ Replace all exterior sealants ▪ Install new gas fired hot water heater ▪ Provide new energy management system	
Construction Cost	**$25,258,400**						
Soft Cost @ 30%	**$7,577,500**						
Total	**$32,835,900**						

Section 2: Enrollments & Design Options

Projected Enrollments

PROJECTED ENROLLMENT BY GRADE COMBINATIONS*									
School Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2017-18	927	861	988	1231	524	370	243	652	409
2018-19	920	855	1003	1256	543	403	253	649	369
2019-20	928	860	996	1247	536	387	251	648	397
2020-21	900	831	976	1235	536	404	259	641	382
2021-22	905	835	963	1218	525	383	255	646	391
2022-23	902	831	969	1217	531	386	248	652	404
2023-24	895	823	964	1205	528	382	241	642	401
2024-25	886	813	955	1208	542	395	253	653	400
2025-26	878	799	942	1199	520	400	257	649	392
2026-27	890	815	932	1191	513	376	259	655	396
2027-28	890	814	947	1185	506	369	236	632	396

Enrollment Projections PreK-5th Grade

2019-2018 Projected Average: 899 Students

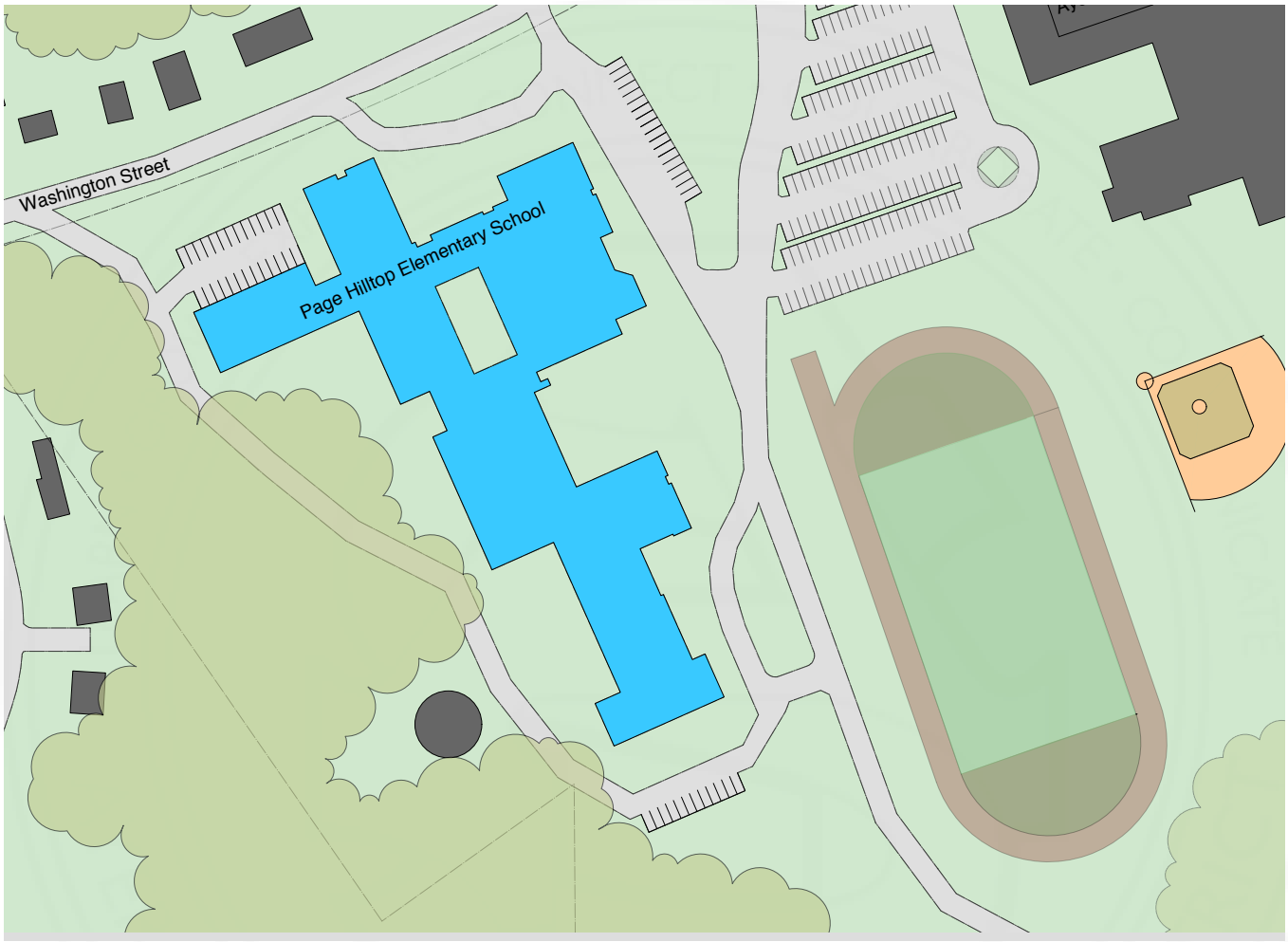
PROJECTED PERCENTAGE CHANGES			
School Year	K-12	Difference	Percentage (%)
2017-18	1640	0	0.0%
2018-19	1652	12	0.7%
2019-20	1644	-8	-0.5%
2020-21	1617	-27	-1.6%
2021-22	1609	-8	-0.5%
2022-23	1621	12	0.7%
2023-24	1606	-15	-0.9%
2024-25	1608	2	0.1%
2025-26	1591	-17	-1.1%
2026-27	1587	-4	-0.3%
2027-28	1579	-8	-0.5%
	Change	-61	-3.7%

10 Year-Average Enrollment: 900 Students

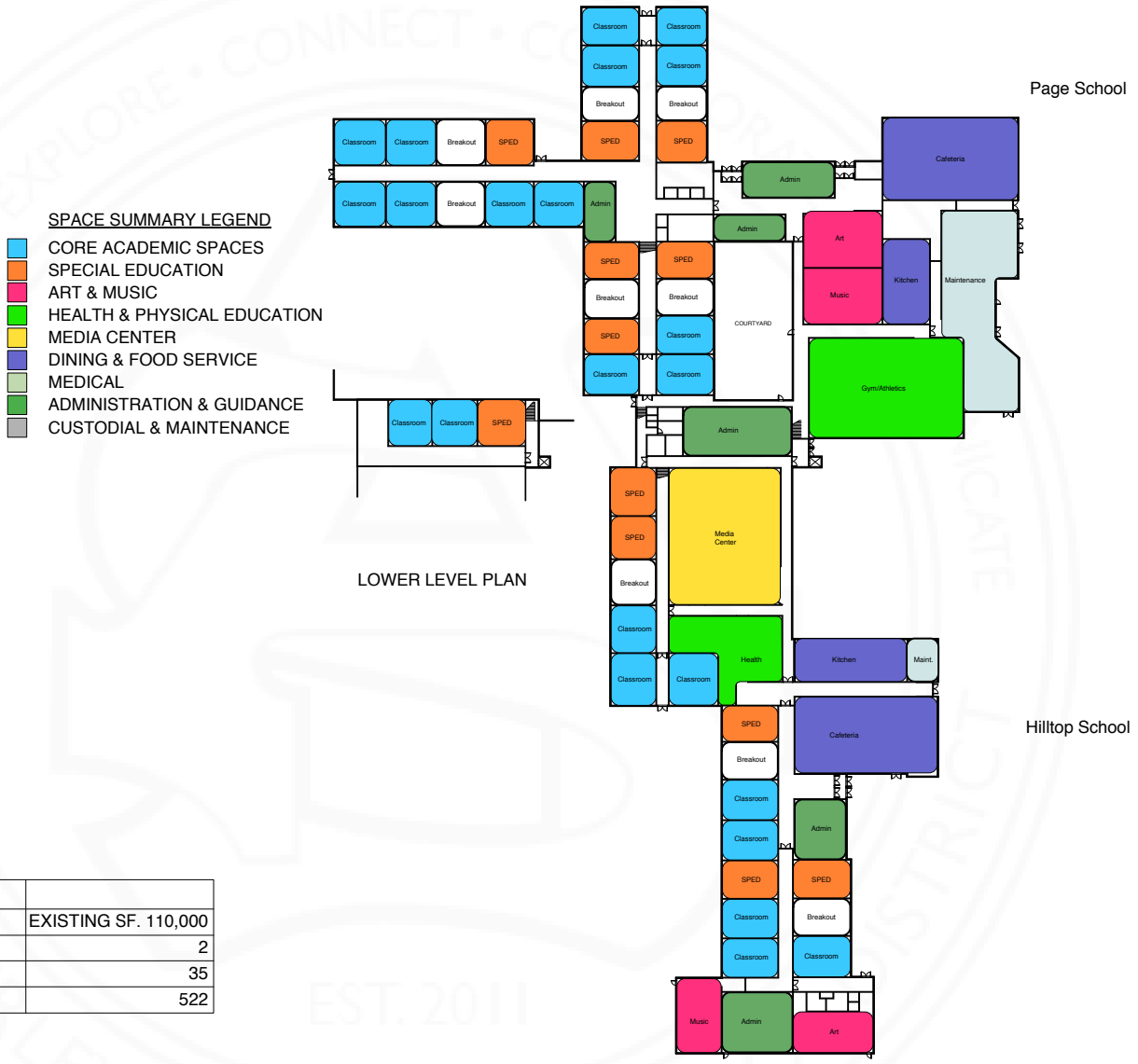
2.2 Space Program at Page Hilltop Elementary School

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Page Hilltop Elementary School at 522 Students	**Existing Conditions**		**MSBA Guidelines**	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	45	34,875	23	22,850
Special Education			12	6,040
Art & Music	4	3,800	8	325
Health & Physical Education	3	6,928	3	6,300
Media Center	8	5,395	1	3,019
Dining & Food Service	14	11,100	5	7,341
Medical	2	523	5	650
Administrative & Guidance	11	5,447	12	2,387
Custodial & Maintenance	0	0	7	2,122
Other—District Offices	7	2,284	0	0
Proposed Student Capacity/Enrollment				**522**
Total Building Gross Floor Area (GFA)[2]		110,000		**80,440**

2.2 Page Hilltop Elementary School Site Plan - Option 1 Renovation

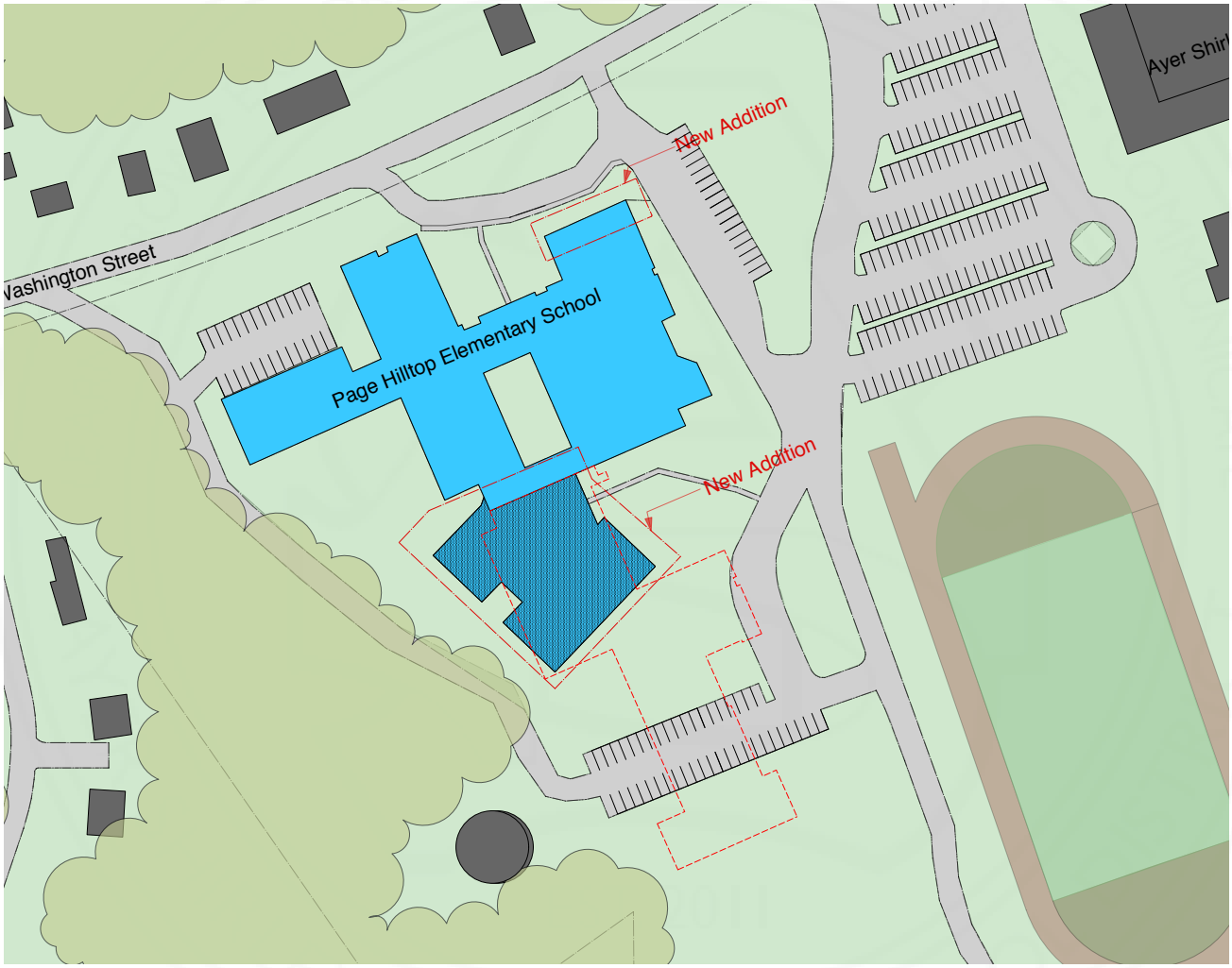


2.2 Page Hilltop Elementary School Floor Plan - Option 1 Renovation



OPTION 1	
RENOVATION	EXISTING SF. 110,000
# STORIES	2
# CLASSROOMS	35
PROPOSED ENROLLMENT	522

2.2 Page Hilltop Elementary School Site Plan - Option 2 Renovation/Addition



2.2 Page Hilltop Elementary School Floor Plan - Option 2 Renovation/Addition

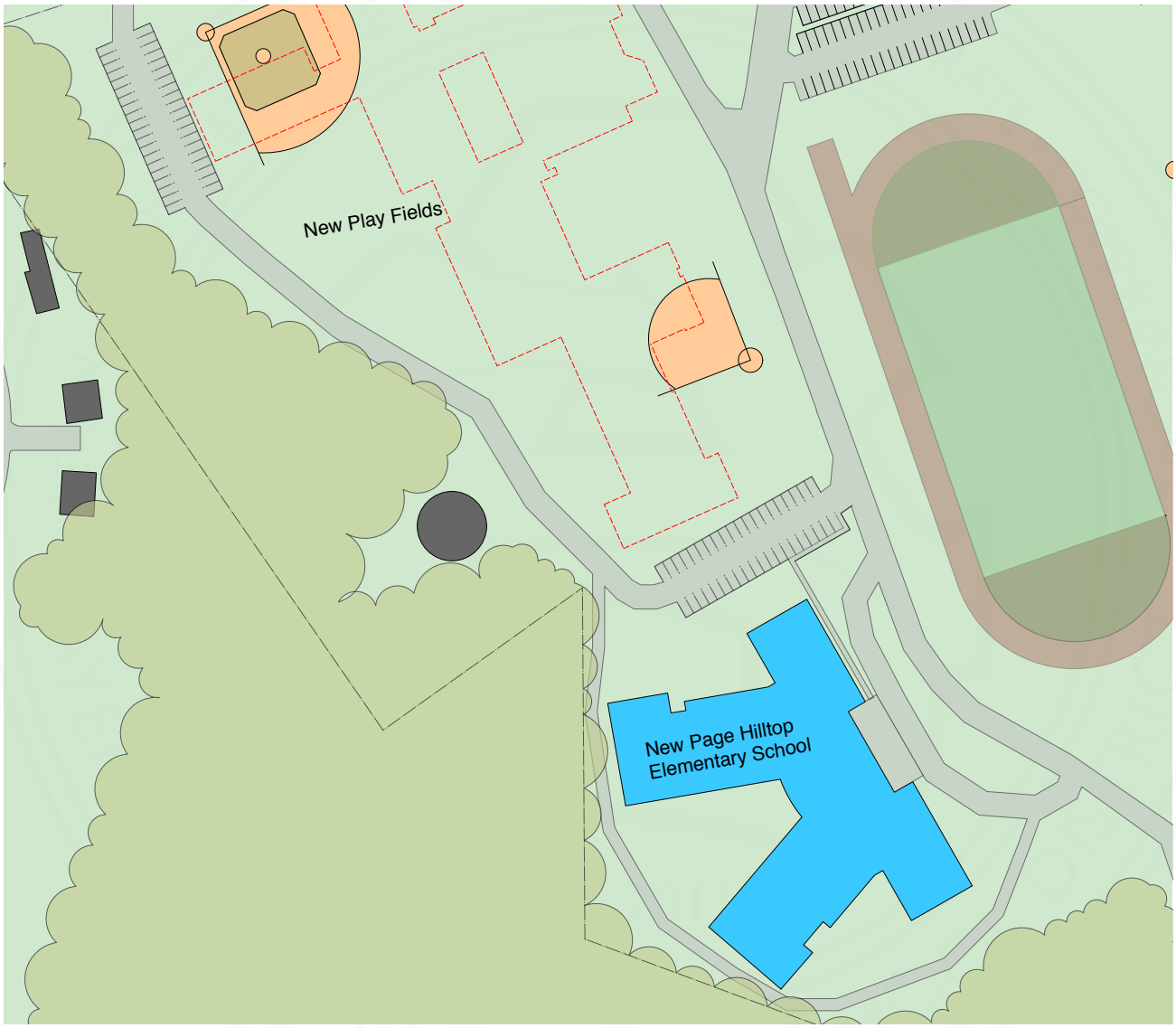
SPACE SUMMARY LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

FLOOR PLAN

OPTION 2	EXISTING SF. 110,000
ADDITION / RENOVATION	NEW SF. 81,000
# STORIES	2
# CLASSROOMS	35
PROPOSED ENROLLMENT	522

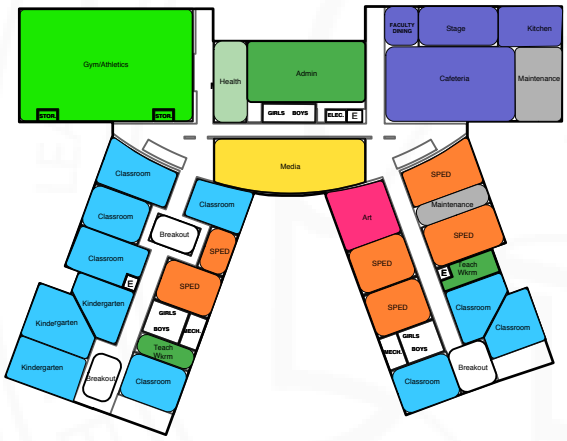
2.2 Page Hilltop Elementary School Site Plan - Option 3 New Construction



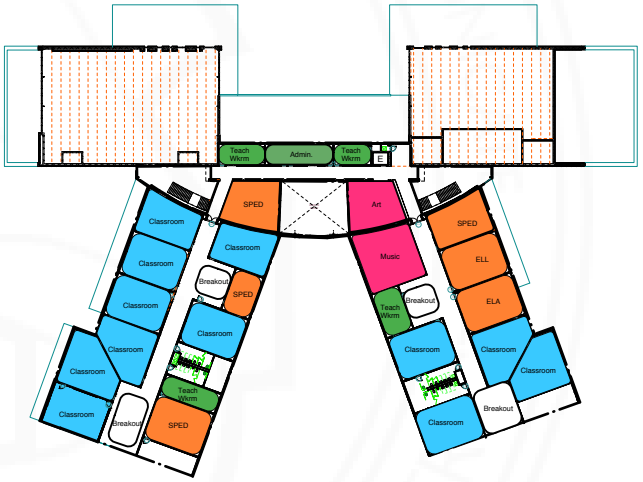
2.2 Page Hilltop Elementary School Floor Plan - Option 3 New Construction

SPACE SUMMARY LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE



FIRST FLOOR PLAN



SECOND FLOOR PLAN

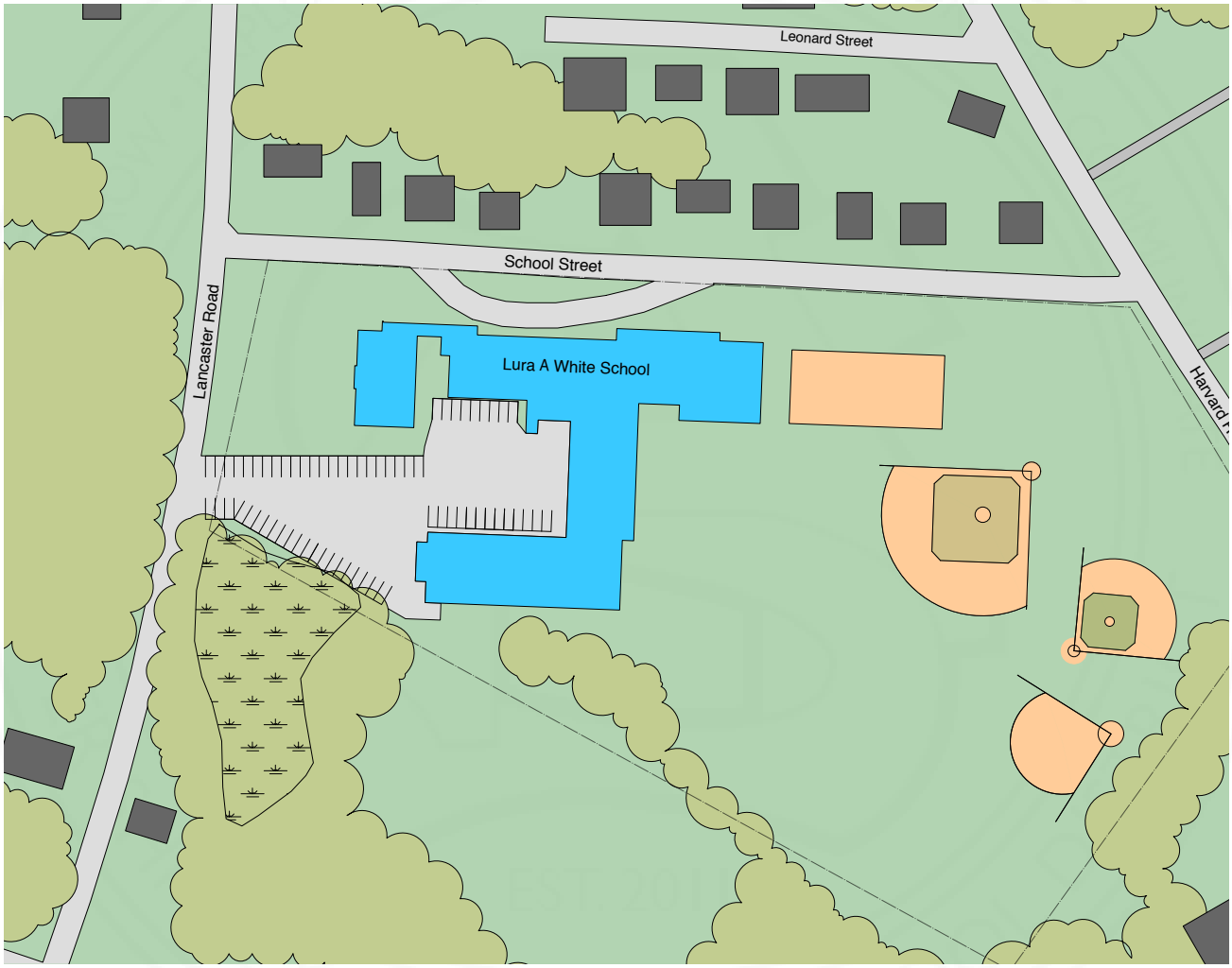
SPACE SUMMARY LEGEND

OPTION 3	
NEW SCHOOL	NEW SF. 87,000
# STORIES	2
# CLASSROOMS	35
PROPOSED ENROLLMENT	600

2.2 Space Program at Lura A. White Elementary School

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Lura A. White Elementary School at 378 Students	**Existing Conditions**		**MSBA Guidelines**	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	30	25,638	16	15,950
Special Education	4	1,202	9	4,530
Art & Music	[illegible]		6	2,575
Health & Physical Education	10	8,038	3	6,300
Media Center	3	2,428	1	2,371
Dining & Food Service	2	4,065	5	6,039
Medical	1	272	4	510
Administrative & Guidance	6	1,760	11	2,093
Custodial & Maintenance	0	0	6	1,978
Other—General Purpose Room/Storage	0	0	0	0
Proposed Student Capacity/Enrollment				**378**
Total Building Gross Floor Area (GFA)[2]		65,836		**64,600**

2.2 Lura A. White Elementary School Site Plan - Option 1 Renovation



2.2 Lura A. White Elementary School Floor Plan - Option 1 Renovation

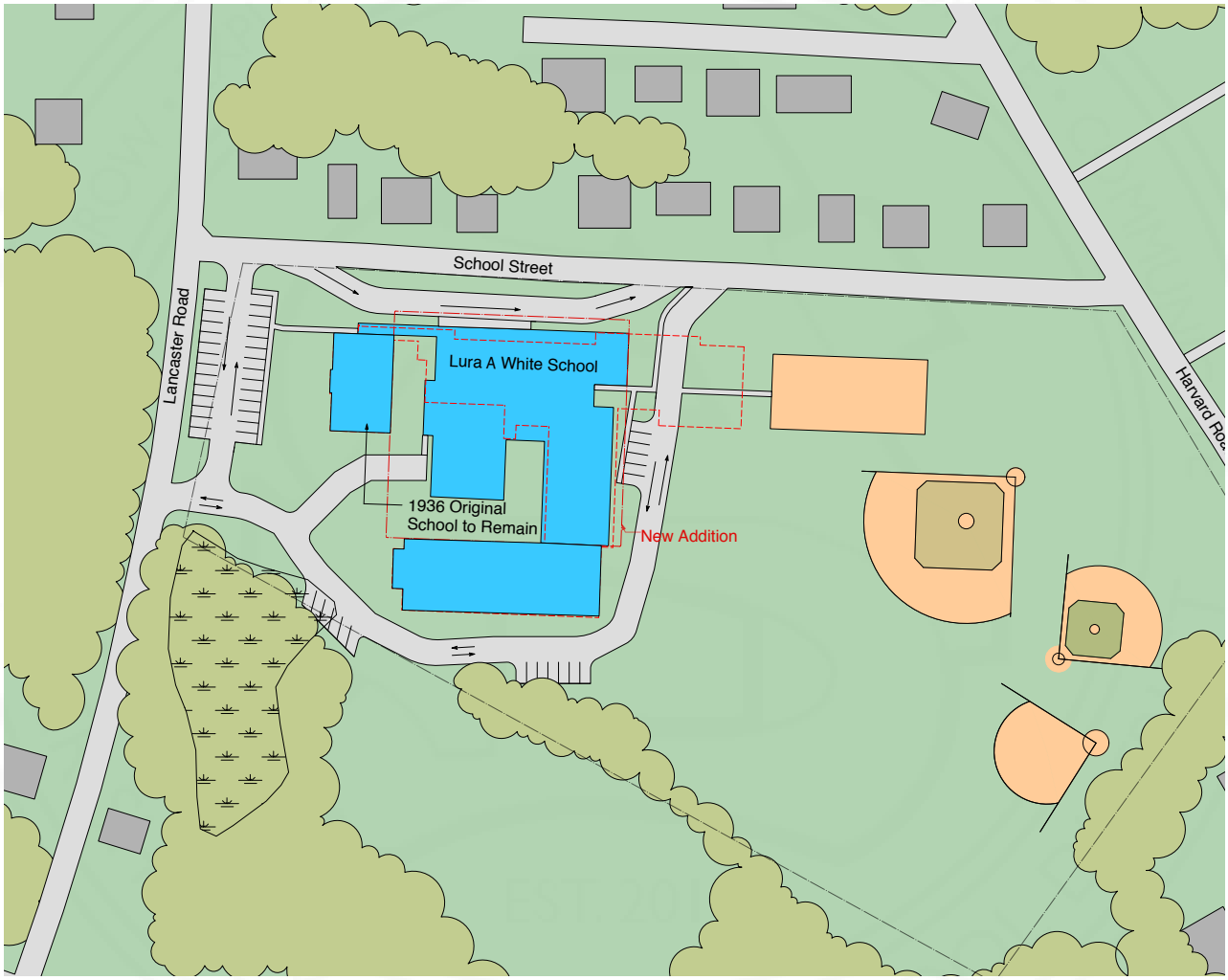
SPACE SUMMARY LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

BASEMENT PLAN FIRST FLOOR PLAN SECOND FLOOR PLAN

OPTION 1	
RENOVATION	EXISTING SF. 66,047
# STORIES	2
# CLASSROOMS	25
PROPOSED ENROLLMENT	378

2.2 Lura A. White Elementary School Site Plan - Option 2 Renovation/Addition



2.2 Lura A. White Elementary School Floor Plan - Option 2 Renovation/Addition

SPACE SUMMARY LEGEND

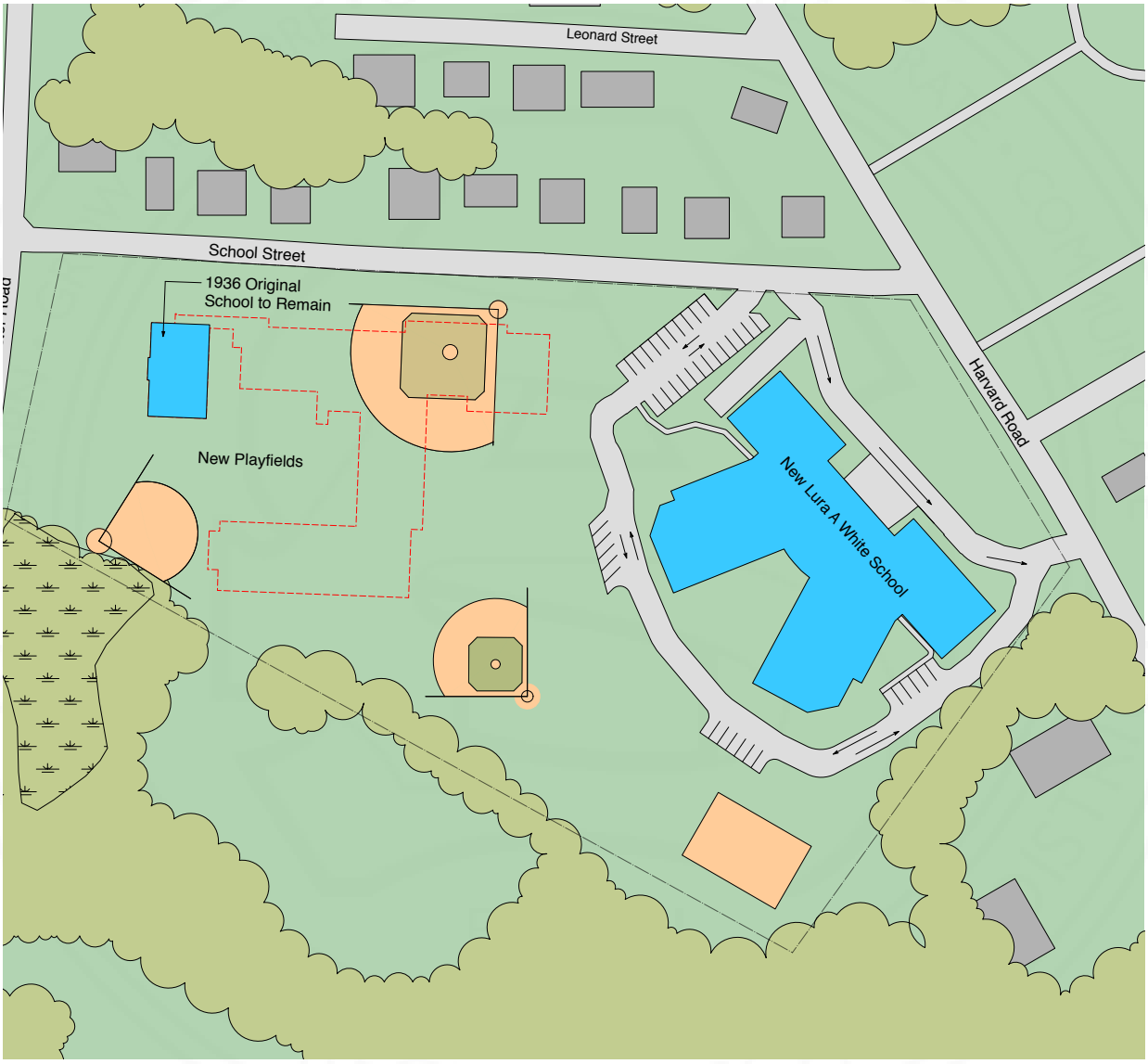
- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

BASEMENT PLAN FIRST FLOOR PLAN

SECOND FLOOR PLAN

OPTION 2	EXISTING SF. 66,047
ADDITION/RENOVATION	NEW SF. 64,600
# STORIES	2
# CLASSROOMS	25
PROPOSED ENROLLMENT	378

2.2 Lura A. White Elementary School Site Plan - Option 3 New Construction

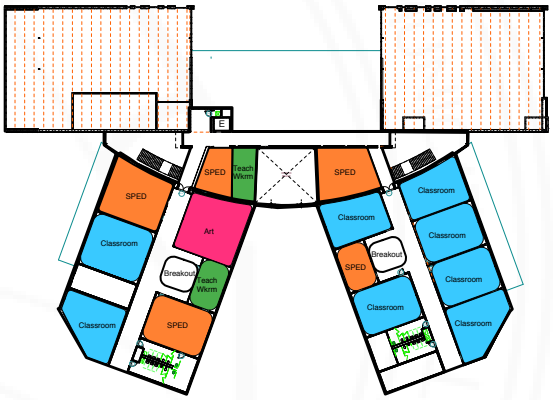


2.2 Lura A. White Elementary School Floor Plan - Option 3 New Construction

SPACE SUMMARY LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

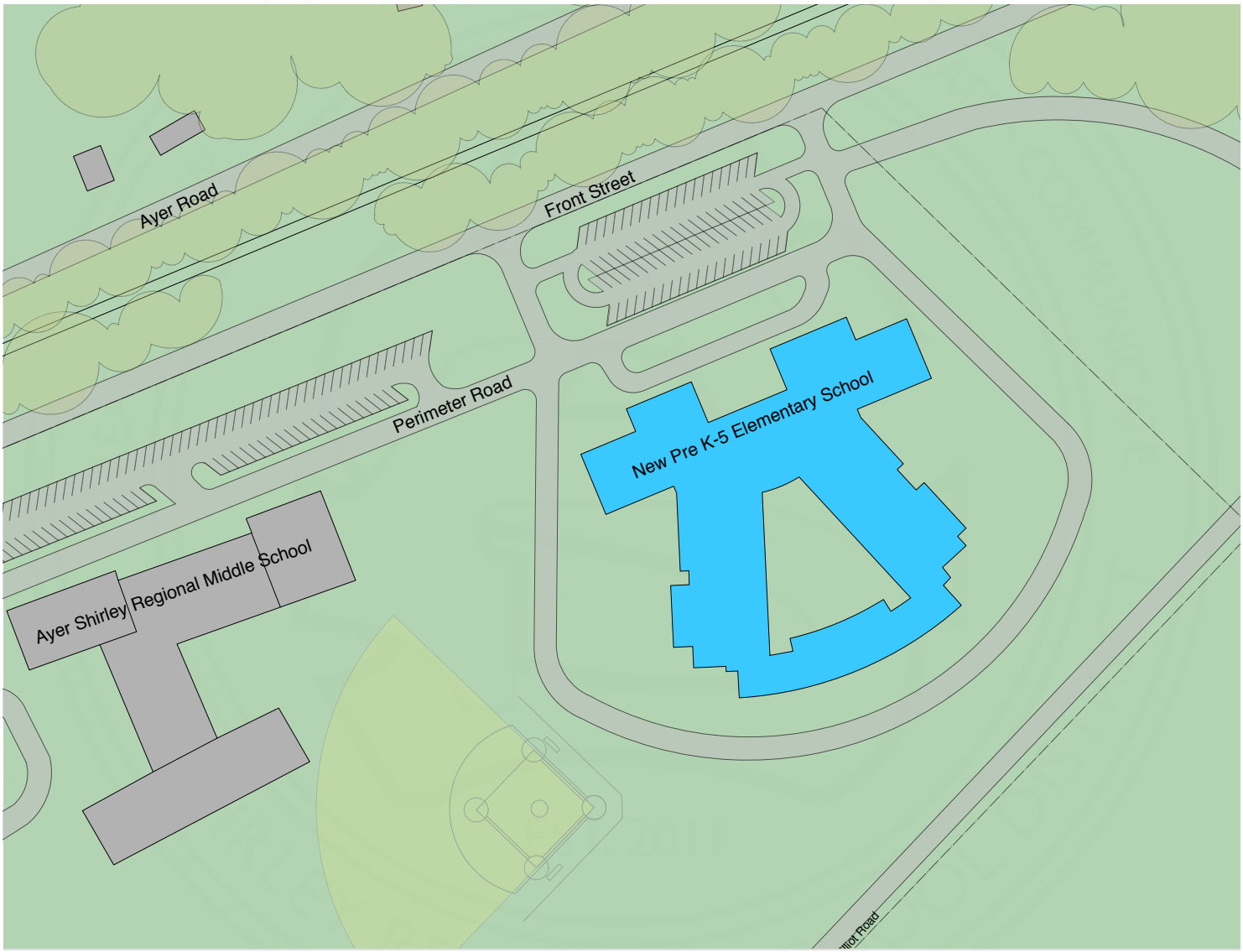
FIRST FLOOR PLAN



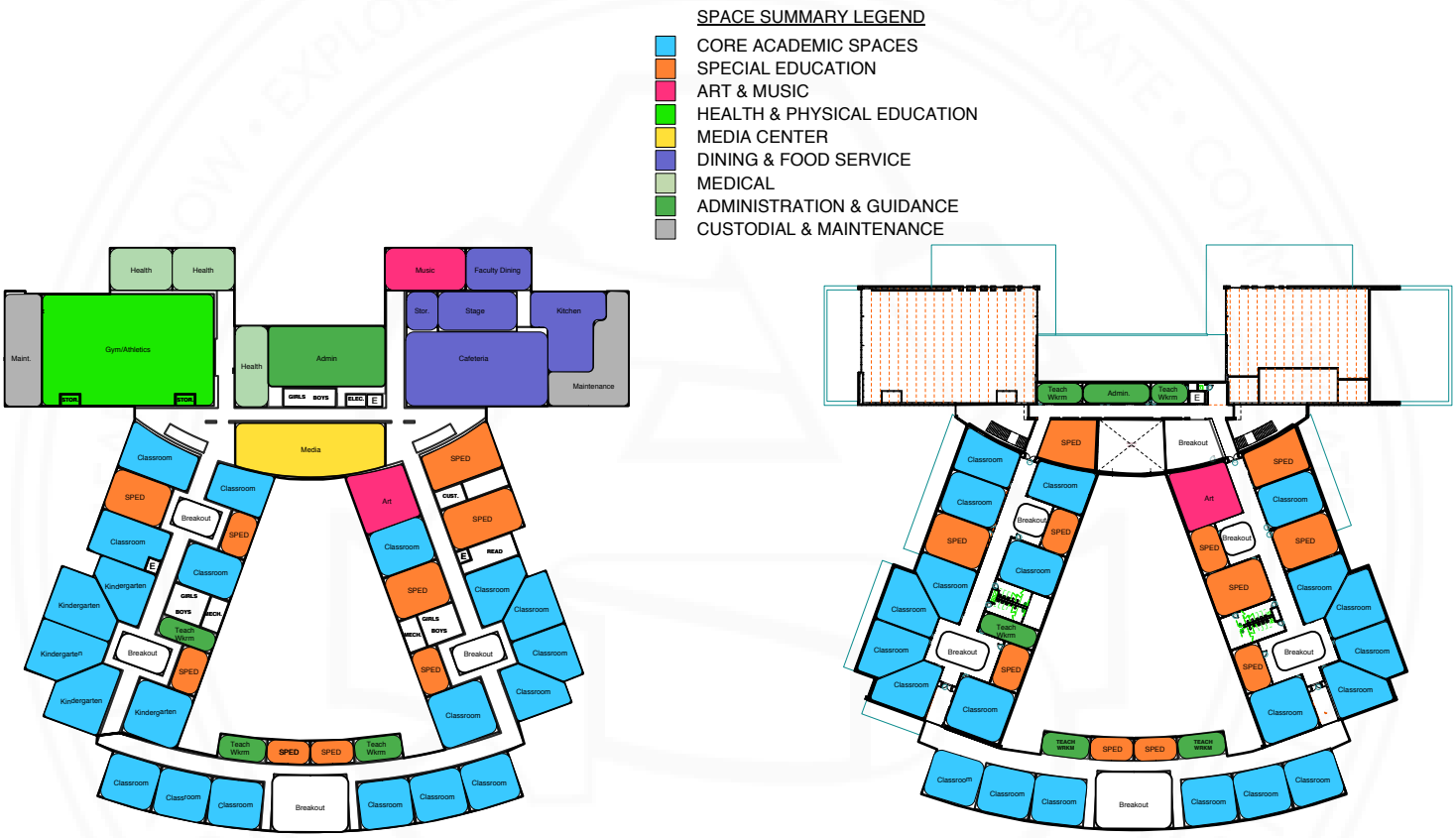
SECOND FLOOR PLAN

OPTION 3	
NEW SCHOOL	NEW SF. 68,000
# STORIES	2
# CLASSROOMS	25
PROPOSED ENROLLMENT	400

2.2 New Elementary School at Middle School Site Plan - New Construction



2.2 New Elementary School at Middle School Floor Plan - New Construction



FIRST FLOOR PLAN

SECOND FLOOR PLAN

OPTION 1	
NEW SCHOOL	NEW SF. 140,000
# STORIES	2
# CLASSROOMS	50
PROPOSED ENROLLMENT	900

Section 3: Existing Conditions Summary

Page Hilltop Elementary School

Landscape Architecture & Civil Engineering

Architecture

Structural Engineering

Mechanical Engineering

Electrical Engineering

Plumbing & Fire Protection

Data/Communications

Page Hilltop Elementary School Location & Property Card

Commercial Property Record Card

Parcel ID: 019/020.0-0000-0001.0 MAP: 020.0 BLOCK: 0000 LOT: 0001.0 Parcel Address: 115 WASHINGTON STREET FY: 2018

PARCEL INFORMATION									
Owner:	Use-Code:	903	Sale Price:	1	Book:	8135	Road Type:	T	Inspect Date:	09/19/2015
AYER TOWN OF	Tax Class:	E	Sale Date:	08/28/1953	Page:	81	Rd Condition:	P	Meas Date:	09/19/2015
Address:	Tot Fin Area:	246742	Sale Type:	L	Cert/Doc:		Traffic:	M	Entrance:	C
1 MAIN ST	Tot Land Area:	55.000	Sale Valid:	K			Water:	PS	Collect Id:	RB
AYER MA 01432	Sewer:		Grantor:	TAKEN BY COUNTY COMM			Sewer:	SW	Inspect Reas:	M
	Exempt-B/L%		Resid-B/L%		Comm-B/L%		Indust-B/L%		Open Sp-B/L%	

COMMERCIAL SECTIONS/GROUPS

Section: ID:101 Use-Code:351

Category	Grnd-Fl-Area	Story Height	Bldg-Class	Yr-Built	Eff-Yr-Built	Cost Bldg
5	83076	1.0	C	1964	2006	24792000

Groups:

Id	Cd	B-FL-A	Flrs	Flrs
1	351	83076	2	1

Section: ID:102 Use-Code:351

Category	Grnd-Fl-Area	Story Height	Bldg-Class	Yr-Built	Eff-Yr-Built	Cost Bldg
5	27457	2.0	C	2015	2015	9013200

Groups:

Id	Cd	B-FL-A	Flrs	Flrs
1	351	27457	2	1

Section: ID:201 Use-Code:351

Category	Grnd-Fl-Area	Story Height	Bldg-Class	Yr-Built	Eff-Yr-Built	Cost Bldg
5	105522	1.0	C	1971	2006	16777800

Groups:

Id	Cd	B-FL-A	Flrs	Flrs
1	351	1615	2	1
2	351	77731	1	1
3	351	4500	1	1
4	351	10226	1	1
5	351	13065	1	1

Sketch

LAND INFORMATION

NBHD CODE: 100 NBHD CLASS: ZONE: A1

Seg	Type	Code	Method	Sq-Ft	Acres	Influ-Y/N	Value	Class
1	P	903	A	1001880	23.000	N	3,192,400	
2	U	903	A	1393920	32.000	N	96,000	

DETACHED STRUCTURE INFORMATION

Str	Unit	Mar-1	Mar-2	E-YR-Blt	Grade	Cond	%Good P/F/E/R	Cost	Class
LI	C	11		1965	A	A	/W57	13,600	3
AS	S	50000		1965	A	A	50/W50	71,600	3
TC	C	2		1965	A	A	/W57	47,400	3
C6	F	350		1965	A	A	50/W50	3,400	3
GC	S	240		1968	A	A	/W60	4,100	3
OT	S	2784		1983	A	A	/W56	2,700	3
OT	S	428		1963	A	A	/W56	4,300	3
SI	S	156		1963	A	A	/W56	1,500	3
OT	S	3288		1971	A	A	/W63	3,300	3

VALUATION INFORMATION

Current Total:	54,023,500	Bldg:	50,735,100	Land:	3,288,400	MktLnd: 3,288,400
Prior Total:	51,528,900	Bldg:	48,332,500	Land:	3,196,400	MktLnd: 3,196,400

Photo

Space Summary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Page Hilltop Elementary School at 522 Students	**Existing Conditions**		**MSBA Guidelines**	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	45	34,875	23	22,850
Special Education			12	6,040
Art & Music	4	5,800	8	325
Health & Physical Education	3	6,928	3	6,300
Media Center	8	5,395	1	3,019
Dining & Food Service	14	11,100	5	7,341
Medical	2	523	5	650
Administrative & Guidance	11	5,447	12	2,387
Custodial & Maintenance	0	0	7	2,122
Other—District Offices	7	2,284	0	0
Total Building Net Floor Area (NFA)				**54,394**
Proposed Student Capacity/Enrollment				**522**
Total Building Gross Floor Area (GFA)[2]				**80,440**

Page Hilltop Elementary School Floor Plan

Ayer, MA

SPACE SUMMARY LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE

First Floor

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Landscape Architecture & Civil Engineering- WDA Design Group

VEHICULAR ENTRANCES & CIRCULATION

There exist four (4) curb cuts servicing the site from the south side of Washington Street. Heading eastward, the first curb cut accesses a faculty parking lot on the west side of the existing building. The next curb cut is access-only, and services the front entrance of the school where bus drop-off and visitor parking occur. This one-way loop exits the site from an egress-only curb cut shared by a one-way circulation faculty parking lot. The final curb cut is a shared access drive between Page Hilltop Elementary School and Ayer-Shirley Regional High School. This two-way drive separates the two school campuses and leads to the rear of the school. Vehicles for student drop-off bear right to the designated drop-off area near the parking and secondary entrance. Vehicles for faculty, staff and visitors continue into the rear parking areas. The pavement condition of the vehicular entrances and interior circulation system ranges from fair to poor throughout the site. There little evidence of repaving operations.

PARKING LOCATION, ARRANGEMENT, & QUANTITY

Approach to Page Hilltop

Page Hilltop Elementary signage

Existing parking for faculty, staff and visitors is located in (3) three main areas. The first has frontage on Washington Street and continues around the western wing of the school to the south. The second is located to the northeast of the school, and services the lower level main entrance. The third lot is located to the southeast of the school and services the upper level secondary entrance. There exist approximately 146 striped spaces between the three parking areas—43 in the west lot, 58 in the northeast and 45 in the southeast lot. The number of cars parked on the property may be higher because parking appears to occur in unmarked places. Accessible parking spaces do not appear to comply with current MAAB standards. The pavement condition of the parking areas mirrors that of the vehicular entrances, ranging from fair to poor throughout the site, with little evidence of recent repairs.

PEDESTRIAN CIRCULATION

There exists a bituminous concrete sidewalk that runs along the south side of Washington Street. This intersects with a connecting bituminous concrete walk which leads to the main building entrance. A bituminous concrete sidewalk lines the perimeter of the building on the east side. A concrete ramp and stairs lead to the secondary school entrance. There is no walkway that completes the connection around the entire perimeter of the building. The condition of the bituminous sidewalk pavement throughout the site should be characterized anywhere from fair to poor. The remaining doors on the building all open directly onto parking areas or onto concrete courtyards.

PEDESTRIAN ACCESSIBILITY & MAAB COMPLIANCE

A total of four (4) accessible parking spaces are located in three (3) separate parking areas. Two (2)


Pedestrian sidewalk


Pedestrian accessibility

accessible parking spaces are located in the northeast parking lot closest to the building entrance. The parking spaces, signage, access aisle and accessible route all do not appear to comply with current MAAB standards. Two (2) accessible spaces are located in the southeast parking lot adjacent to the concrete ramp leading to the secondary entrance. The parking spaces, signage, access aisle and accessible route all do not appear to comply with current MAAB standards. All of the curb cut ramps on the site do not appear to comply with MAAB standards, with the exception of one, which appears to have been part of the high school construction. Most of the existing doors leading into the building appear to be MAAB compliant.

LOADING DOCKS & SERVICE AREAS

There is no formal loading dock at this building, but there exists double-doors along the east side of the building adjacent to what appear to be other maintenance areas.

COURTYARDS AND OTHER EXTERIOR STUDENT CONGREGATION AREAS

There exist two exterior courtyards for formal student congregation. One is located on the south


Loading dock and service area


Student playground

side of the building adjacent to the faculty, staff and visitor parking lot. The area contains an asphalt surface with basketball hoops and painted schoolyard games. Immediately to the south there is an area of bark mulch surfacing which contains with metal play structures. There is a second play area for K-1 students located to the southwest of the existing building. This area has sand surfacing and contains smaller metal and plastic play structures. The condition of the bituminous concrete pavement should be characterized as poor, and the condition of the play areas should be characterized as good to fair.

SITE LIGHTING FOR BUILDING, VEHICULAR, AND PEDESTRIAN AREAS

Exterior wall-mounted or overhead-mounted lighting exists at most entrance doors to the building. The parking areas are predominantly illuminated by wall mounted lights. The shared access road is lit with pole mounted LED light fixtures, which appear to have been part of the High School construction.

SITE FURNISHINGS

Lighting near pedestrian sidewalk

Flag at near school entrance

Few site furnishings exist within the vicinity of the school building. There is a flagpole located adjacent to the secondary entrance. The flagpole does not appear to have an MAAB compliant accessible route.

The site signage is adequate, with some of the sign faces showing heavy wear and are becoming difficult to read. No bicycle racks, benches, tables or trash receptacles were observed around the perimeter of the building.

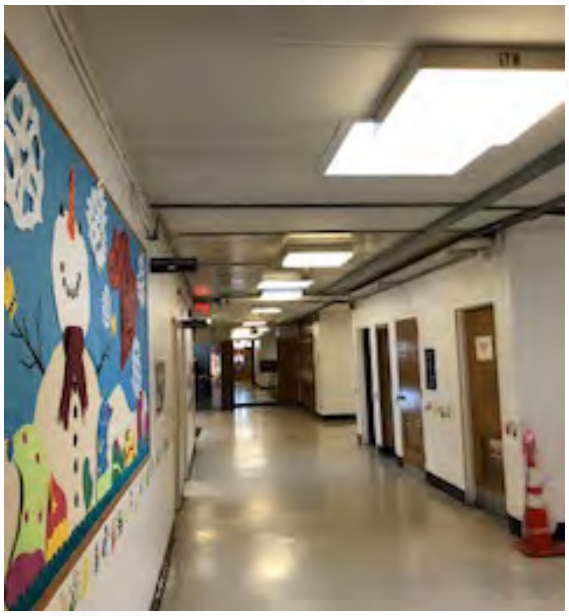
SITE VEGETATION

Site vegetation includes mature deciduous trees throughout the parking and vehicular circulation areas at the north and east sides of the building. Mature shrub plantings are found in the north of the building. There also exist formal lawn areas to the north and within the bus loop area. The condition of the site vegetation ranges from fair to poor, with many of the specimens reaching the end of their lifespan.

Architecture - Flansburgh Architects

ORGANIZATION

The Page Hiltop Elementary School was originally built in 1959, and renovated in 1980 and is approximately 110,000 square feet. The building contains classrooms, a cafetorium, gymnasium, library, multipurpose room and offices. The condition ranking for the school on the MSBA 2016 school survey is ranked a 3 (1 is the best and 4 is the worst).



Typical hallway

Cafetorium

CIRCULATION

The building is a two (2) story building with a basement and is a linear foot print. The gym and cafeteria to the east of the building. The library is centralized on the first level with classrooms to the south and west on the 1st and 2nd floors with double loaded corridors, the superintendents' offices, are on the north side.

PROGRAM & SPACE ISSUES

The School includes approximately 45 classroom spaces of various square feet from 750 – 1,200. Comparisons with current MSBA space standards indicate that classrooms and core academic spaces are undersized. See the chart below.

	Hilltop Elementary	MSBA Standards
Classroom	775 square feet	950 square feet
Music	750 square feet	1,200 square feet
Library	3,980 square feet	2,020 square feet
Art	750 square feet	1,000 square feet
Gymnasium	5,965 square feet	6,000 square feet

PHYSICAL CONDITIONS OF EXTERIOR ENVELOPE—WALLS

The building is faced with beige brick in a running bond pattern, with minimal roof overhangs and areas of hopper style windows. Generally, the exterior is in good condition. Aggregate panels below windows should be repaired, cleaned, and sealed.

Typical Exterior Walls -Existing	
4" Brick	0.39
1" Air Space	1.01
8" CMU	0.80
TOTAL R-VALUE	2.51
WINDOW SINGLE PANE R-VALUE	0.91

Typical Exterior Walls - Today's Minimum Requirements	
Face Brick	0.39
Air Space	2.02
Air & Vapor Barrier	0.15
1/2" Gypsum Sheathing	0.45
Insulation	22.00
Vapor Barrier	0.15
Interior Gypsum Board	0.45
TOTAL R-VALUE	25.61
WINDOW TRIPLE PANE R-VALUE	5.00

PHYSICAL CONDITIONS OF EXTERIOR ENVELOPE—WINDOWS

The windows are Harper style aluminum windows with single glazing. The windows are in fair to poor condition and should have routine maintenance to keep them operational. They should also be replaced in the near future.

PHYSICAL CONDITIONS OF EXTERIOR ENVELOPE—ROOF

The roofing is membrane and no active roof leaks or damages were observed. Generally, the roofing appears to be in good condition. See the charts below.

Hilltop Existing Roof Condition	
Rubber Membrane	0.40
3" Insulrock Insulation	7.00
Structure/Ceiling	5.00
TOTAL R-VALUE	12.40

Roof Construction - Today's Minimum Standard	
Rubber/PVC	0.40
4" Polyisocyanurate	30.00
Structure/Ceiling	5.00
TOTAL R-VALUE	35.40

INTERIOR

Finishes are well suited for school use, but are worn and many areas need to be replaced.

INTERIOR PARTITIONS

In general, all interior partitions appear to be in good/fair condition. The type of partition varies throughout the building as follows:

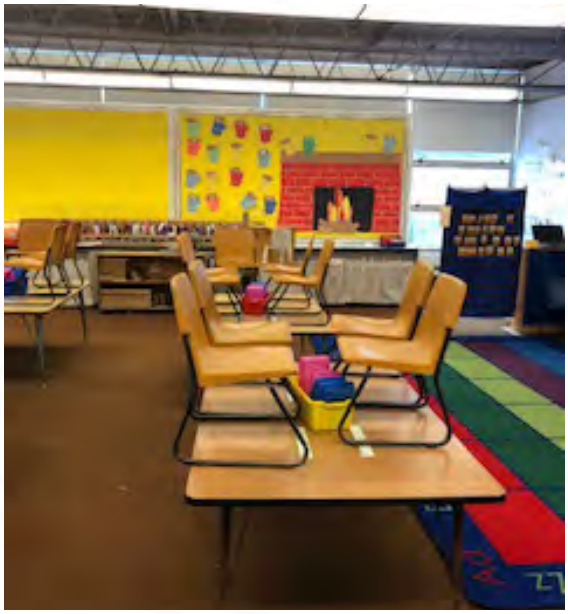
- Painted concrete masonry units
- Painted plaster
- Painted drywall

- Glass wall windows
- Exposed brick

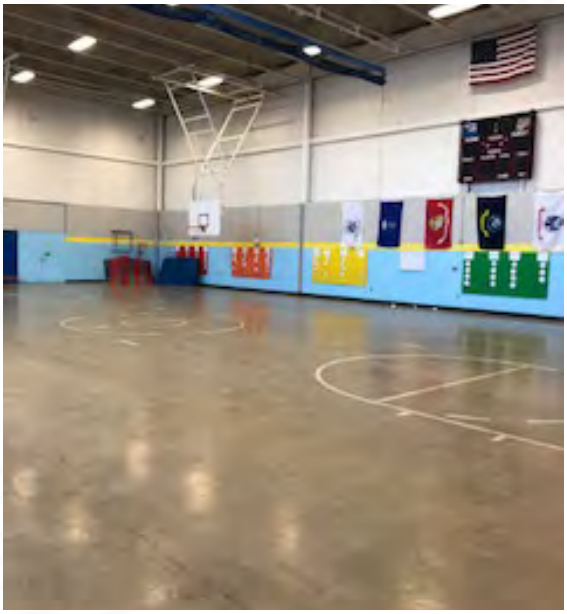
In a renovation, various walls to remain could be cut open to accommodate new electrical, plumbing and technology systems. All walls should have acoustical batt insulation to improve acoustical performance.

Typical hallway

Nurse's office



Student classroom



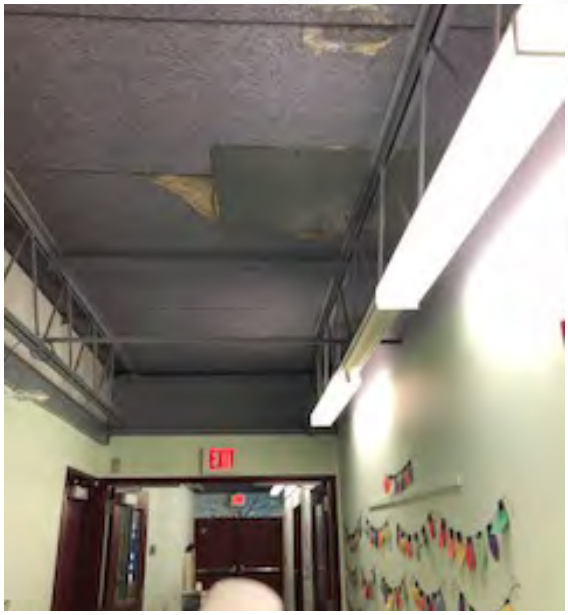
Flooring in gymnasium

FLOORING

In general, the flooring is VCT and minor damage was observed. The type of flooring that exists is as follows:

- Vinyl composition tile (12x12), (8x8)
- Wood floor at gymnasium/ stage

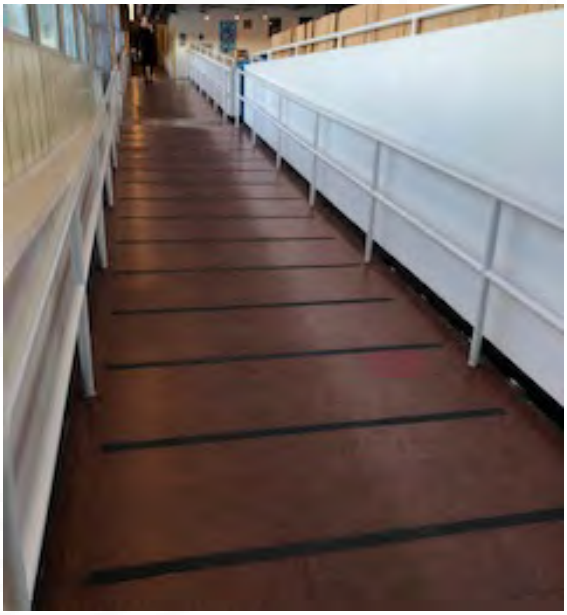
- Carpet
- Rubber Stairs
- Ceramic
- Quarry Tile



Ceiling in hallway


Missing panels in hallway ceiling


Teacher's workroom


Handicap ramp in hallway

WALL BASE

The wall base is rubber of various sizes. All base material appear to be in good/ fair condition.

CEILINGS

The ceilings are a combination of perforated metal 2x4 acoustical tile and are generally in good condition. The existing ceilings consist of the following types:

- Suspended Acoustical tile
- Exposed Structural Plank
- Perforated Metal

FIRE EXTINGUISHERS

All existing fire extinguishers appear to be operational and certified; it appears that fire extinguishers are located in areas in accordance with NFPA requirements.

TACKBOARDS & MARKERBOARDS

Both types of boards exist in various sizes and conditions.

REGULATIONS

The existing facility as a whole is in compliance with the original code. This does not mean that it meets every standard of the current code. In accordance with the code, an existing building is presumed to have met the codes and regulations in effect at the same time of its construction and is allowed to continue in its use, provided it is maintained per the original code. Current building codes are applicable to any alteration, addition or change in use of the structure.

2009 CODE IBC—INTERNATIONAL BUILDING CODE

The occupancy of the facility in non-separated mixed use with assembly and educational uses as follows:

Classrooms, Offices	E-Educational
Auditorium	A3-Assemble

CONSTRUCTION CLASSIFICATION

Based upon the definitions in the current code, the minimum classification of the building is as follows:

1959 (Original)	2C Noncombustible

A renovation project is governed by 2009 IEBC - International Existing Building Code. This chapter is “intended to maintain or increase public safety, health, and general welfare, without requiring full compliance with the code for new construction.”

i. Building renovation - For continuation of the same use groups the building shall comply with 2009 IEBC.

ii. New Building Systems - Any new building system or portion thereof shall conform to 2009 IEBC for new construction to the fullest extent practical.

iii. Alterations and Repairs - Alterations of repairs to existing buildings, which maintain or improve the performance of the building may be made with like material, unless required otherwise under 2009 IEBC - Structural Requirements for Existing Buildings.

iv. Number of Means of Egress - Egress for the existing facility is sufficient in accordance with the current building code.

v. Capacity of Exits - There is sufficient egress capacity to meet current codes at the doors throughout the facility.

vi. Length of Access Travel - Shall not exceed 200 feet, in building without a sprinkler system. All areas of the existing building are within 200 feet of an exit.

vii. Exit Signs and Lights - For notes on the existing system, refer to the Electrical Existing Conditions Report.

viii. Means of Egress Lighting - Refer to the Electrical Existing Conditions Report.

ix. Height and Area Limitations - Under 2009 IEBC the building is in conformance with applicable height and area limitations, so long as there is no change in use. Additions may be made to the structure.

x. Fire Protection Systems - Fire protection systems must be provided for existing buildings that are "substantially" altered or "substantially" renovated where required for the specific use group. 30% rule, if 30% of the assessed value is expended then fire protection must be installed.

xi. Enclosure of Stairways - Open egress stairways are prohibited. There shall be no minimum fire resistance rating required for an existing enclosure of a stairway.

xii. Assembly Use Groups - Any alteration within an assembly use group shall comply with the code for new construction. This applies to the cafeteria, auditorium and gymnasium.

xiii. Accessibility for Persons with Disabilities - Accessibility for persons with disabilities shall be provided in accordance with the regulations of the Architectural Access Board.

xiv. Energy Provisions for Existing Buildings - Alterations to components affecting energy conservation performance shall comply with 2009 IECC - International Energy Conservation Code.

xv. Evaluation of Existing Building - The structural engineer shall make a structural evaluation of the existing building to determine the adequacy of all structural systems that are affected by alteration or damage to be repaired.

xvi. Existing Lateral Load Capacity (Refer to Structural Existing Conditions Report for further information) - Alterations shall not be made to elements or systems contributing to the lateral load resistance unless the altered lateral load resisting system conforms to 2009 IEBC.

xvii. Earthquake Loads (Refer to Structural Existing Conditions Report for further information) - For no change in use groups, but alterations exceeding 50% of the assessed valuation of the building, the project is defined as Seismic Hazard Category 2.

xviii. Earthquake resistance shall comply with the requirements of 2009 IEBC.

xix. The provisions of NFPA govern Fire Resistant Materials - Fire resistance construction systems.

Interior trim and finishes altered as a part of a renovation shall conform to the requirements of the NFPA. Flame spread of Interior Finishes for the E and A-3 use Groups, shall conform to current requirements. Existing finishes are code compliant.

Appraised Value from Assessment Information = $54,023,500

Structural Engineering - Boston Building Consultants

1959 BUILDING

The roof is generally framed with some kind of metal panel system, with spans up to 27 feet or so. The panels are two feet wide, and generally exposed with no ceiling below; some have perforations on bottom panel for acoustic purposes. This appears to be some kind of proprietary long-span roof deck system, probably 6”-8” in depth.

The roof panels are generally supported by concrete masonry bearing walls, almost certainly unreinforced, as was typically for buildings of this vintage. In most cases, the panels are spanning parallel with the exterior walls, supported by the interior masonry walls that separate the classrooms. Steel header beams run across the corridor aligned with these bearing walls. The only visible evidence of these beams is a steel plate under the deck panels; this could potentially be a “T” beam, but is most likely a wide flange “I” beam with the deck bearing on the bottom flange. There are several four-foot wide skylights built into the roof.

The corridor walls are also concrete masonry, with clerestory windows for large sections. Although these walls are apparently not load-bearing, they will contribute to the lateral stability of the building.

The cafeteria roof has the same metal panel system, but here it is supported by large steel beams, underneath the panels, running across the space. These beams appear to bear on steel columns at the exterior wall and the masonry wall at the interior.

The floor appears to generally be slab on grade, but there are reportedly some underfloor service tunnels with concrete slabs on top.

1964 BUILDING

The roof is framed with the same metal panel system, supported by concrete masonry walls between classrooms and steel headers across corridors. There is a similar double-height gymnasium/auditorium space, similar to the Page cafeteria, with large steel beams supported by steel columns and masonry walls.

LINKS AND ADDITIONS, 1980

Some drawings are available from the various additions designed as a single project in 1980. This included at least four separate sections of building: a link between Page and Hilltop consisting of the library, a corridor and ramp, and a small section of two-story classroom space; a new eight-classroom wing on the west end of Page; a new double height gymnasium on the south side of Page, east of the link; and a small addition at the southwest corner of Hilltop. Except for the small two-story section noted, the various buildings of the addition are all single story with flat roofs.

The additions are generally framed with structural steel: tube columns, wide-flange “I” section girders, and open web joists. The roof deck consists of cementitious (“Tectum” or similar) roof planks. There are several masonry walls, but for the most part these do not appear to be load-bearing. No steel diagonal bracing appears on the structural drawings, so it is likely that the lateral load resistance is provided by infill masonry walls. Given the vintage, there is a possibility that these walls may be reinforced, but this is unlikely since they are not load-bearing.

In the link, there is a small area of two-story structure where the lower level of Page and the higher level of Hilltop overlap. The second floor in this area is framed with steel joists, with a spacing of about two feet, and corrugated steel deck, presumably with concrete topping.

The first floor in the additions is concrete slab on grade. The foundation system consists of shallow concrete spread footings and concrete foundation walls for frost protection at the perimeter.

BUILDING CODE REQUIREMENTS

All of these buildings (except, to some extent, the 1980 Page Hilltop addition) were constructed at a time when design procedures, material requirements and Building Code regulations were less stringent than they are today. Most notably, at the time these buildings were constructed, unreinforced masonry was permitted for load bearing elements, and lateral load analysis for wind was commonly ignored for low rise buildings, assuming that masonry walls and partitions would provide sufficient resistance. There were no seismic requirements.

There are no requirements for existing buildings to comply with the structural provisions of the current Building Code, unless they are subjected to alterations. Alterations and additions to existing buildings are covered by the International Existing Building Code (IEBC), with some amendments in Chapter 34 of the Massachusetts State Building Code. While we are not aware of any plans for alterations or additions to these schools, the following general considerations may be helpful in the event that they are planned:

- Alterations to buildings have a complex set of requirements depending on several factors.
- In general, renovations to the buildings, with minimal structural modifications, would require modest improvements of the seismic resistance, mainly ensuring that masonry walls are anchored to the roof.
- Modifications involving removal or relocation of walls could potentially require a large amount of structural work. Since there is no specifically designed system for lateral load resistance, all of the masonry walls are assumed to contribute some resistance. A new lateral load resisting system would likely be required, in compliance with current seismic requirements.
- Horizontal additions, structurally isolated from the existing buildings by expansion joints, would be relatively simple, provided they did not create conditions resulting in snow drifts on existing roofs.

Vertical additions on top of the existing buildings do not appear to be practical. In addition to requiring new floors to replace the existing roofs, they would not be permitted to use unreinforced walls for bearing. Where steel columns provide the structural support, they generally do not have adequate capacity to carry an additional floor, so extra columns and footings would be required. New lateral load resisting systems would also be required since both wind and seismic loads would be increased.

Mechanical Engineering—Bala Consulting Engineers

BOILERS

The school has two boiler rooms, both supporting oil-fired boilers. The original Page school (built in the 50's) has a single steam generating boiler of which serves the entire school with steam for heating. The only exception are eight classrooms (5th and 6th grade) of which are back-feed from the Hilltop schools hot water boiler system when they built the link between the two schools in the 1980's. This steam boiler is a cast-iron sectional boiler made by H.B. Smith. These boilers are no longer being made so spare parts will be getting hard to find. The boiler is in excess of 30 years old of which is its expected service life. The hilltop school is served with two steel fire-tube (hot water generating) boilers made by Cleaver Brooks. These boilers were installed in the 1980's (the school was built in 1964 so these may be replacement boilers to the originals) making them close to +/- 35 years old. The estimated useful life of steel fire-tube boilers is 30 years so these boilers are operating past this estimate. Maintenance costs will keep increasing as these boilers age.
It was reported that the steam boiler has had its condensate tank/pump unit replaced recently and that the pumps serving the hot water boilers are periodically rebuilt with one in the process of being rebuilt presently. These boilers and pumps are all operating beyond the service life expectancy and will be more expensive to maintain as they age.

Boiler

Piping system

FUEL OIL

There are separate fuel oil storage systems for the two boiler rooms. The steam boiler is being served with a 6000 gallon storage tank and the hot water boilers are served with a 10,000 gallon storage tank. Both tanks are direct buried type with no leak detection equipment. One of the tanks has its (fill) level controls malfunctioning requiring the tank level to be monitored using a "stick", requiring the operator to manually checking the level. The age of these tanks is unknown but it could be argued that the age must exceed 25 years each. Code would require direct buried fuel oil tanks to include leak detection as well as working fill level controls.

PIPING SYSTEM

The steam piping system serving the Page portion of the school is original to the building (1964) and is fraught with issues. Some of the steam piping is buried under the slab-on-grade to route to the various unit ventilators served. This piping fails on a regular basis requiring slab excavation

to repair the piping. The hot water piping is a combination of steel and copper piping with mixed ages from original equipment (54 years) to recent repairs and modifications. The steam piping is steel and a portion is original to the Page School with sections replaced/repaired through the years. All of the piping systems should be viewed as dated, operating well past the expected service life of 40 to 50 years.

HVAC AIR HANDLING EQUIPMENT

The school classrooms are served with Unit Ventilators located at the perimeter walls. These are either steam feed or served with hot water from the boiler system(s). There are various vintages of these unitary systems ranging from original equipment (55 years) to more recent renovations/repairs. Most of these units are well past the expected service life of 15 to 20 years. There is an array of roof fans handling the exhaust duty of the school. These units appear to be operable with occasional failures. These units are at/near/bey7ond their estimated service life of 20 years. Large interior spaces (gymnasiums, kitchens, etc.) are served with ducted air handling units located indoors in mechanical rooms. These units all appear to be operating but with various issues including accessibility and unit noise. These types of units have an estimated service life of 30 years and most of them have exceeded this projection. This equipment will get harder to service due to spare parts becoming harder to obtain as the units age.

DUCTWORK SYSTEMS

The ductwork systems observed were in reasonable shape for the various vintages of the systems. Ductwork systems have an estimated service life of 30 to 40 years. There are some spaces served with minimal ductwork thereby not distributing the air very effectively.

AUTOMATIC TEMPERATURE CONTROLS

The school is predominantly served with antiquated pneumatic automatic control systems. These systems are not working consistently and are generally under various stages of disrepair. We have been told that the teachers are turning the Unit Ventilator fans on and off where this is usually a function performed by the ATC system. We have been told that most of the issues with the HVAC system are controls related. Due to the inconsistency of the ATC system operation, energy is most probably being wasted with the thermostatic controls fail in the various spaces. Some electronic controls were installed during the various renovations/additions but all of the building controls are well past the expected service life of 15 to 20 years.

AIR CONDITIONING SYSTEM

There are no central air conditioning systems serving the school. There are many thru-wall residential style air conditioners serving various spaces including the classrooms. These units are of indeterminate age but the life expectancy for these units is 10 years so occasional failure with these units can be expected. The noise from these units may affect the classroom setting adversely.

CODE

The building HVAC systems, where they meet code back when being installed, do not meet today's codes/standards for energy and/or Indoor Air Quality. The boilers can be updated to gas-fired condensing-style that would make them 10 to 15% more efficient than the oil-fired boilers at the site. Ventilation standards have changed including proactively measuring indoor air quality levels so over (and under) ventilation is avoided in these spaces. The fuel oil storage systems at the site are antiquated and do not meet present code/standards for leak detection. There could be a contaminated soils issue once they do get excavated.

Electrical Engineering - Bala Consulting Engineers

MAIN ELECTRIC SERVICES

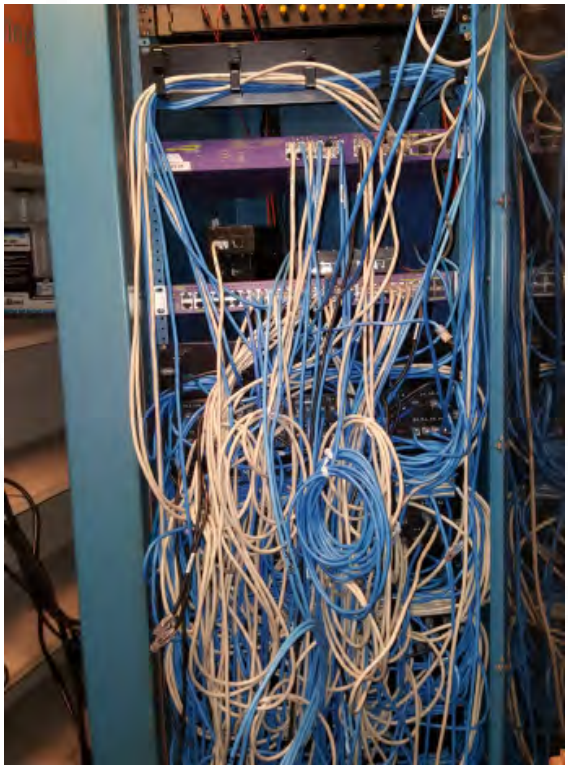
The main electric service is rated 208/120V, 1200A, three-phase, four-wire. The main service switch-board is manufactured by General Electric. The electric utility services are underground from street pole 5kV transformers. Pole transformers transform 13.8kV street distribution to 5kV to feed utility transformers located in building transformer vault with utility company access only.

The main electric serviced equipment appears to be in fair condition, although there are no signs of routine maintenance or testing. Power distribution throughout the school is supported by various equipment manufacturers and vintages based on when each section of the school was built. Part replacements for much of the electrical equipment requires procurement of reconditioned after-market materials due to their age. Most all the electrical distribution is operating beyond its expected useful life.

EMERGENCY ELECTRIC SERVICES

There is a 45kW, 208/120V diesel emergency generator located in a boiler room which appears to serve primarily standby equipment, such as heating system support. Emergency lighting is supported primarily by battery ballasts and independent battery packs with spot light heads.

The generator appears to be in fair condition, but there are no apparent signs of maintenance or testing to the generator, its automatic transfer switch (ATS), or emergency distribution panel-boards. The ATS is quite old and is not supported by newer technologies. Quite a few emergency luminaire battery packs were not operational when activating test switches. Emergency egress illumination is generally limited throughout the building and what is operating is well beyond its serviceable life.



Data/Communications closet

Electrical panel

FIRE ALARM

The main fire alarm panel is a Simplex 4005 non-addressable system. One remote annunciator was observed at the main entrance with an adjacent floor plan fire alarm zone map. Smoke detection coverage is not consistent throughout the school. Without fire protection sprinkler systems, the building requires full smoke detection coverage throughout the school. Manual initiation devices (pull stations) appear to be located at all egresses from the school, but device elevations do not all adhere to ADA requirements. Notification devices (audio/visual) appear to be non-voice type (horn only) and are located throughout the school, but are limited in placement quantities and not visible to building occupants in every case. Kitchen hood appears to include a dedicated fire suppression system, but no signaling controls could be observed to the fire alarm system. A red fire alarm beacon was not observed on the school, but the city fire alarm master box appears to be located on the street service pole directly in front of the school. Master box number 334.

The fire alarm system is generally antiquated with limited capabilities and beyond its economically serviceable life.

LIGHTING AND LIGHTING CONTROLS

Luminaires appear to be primarily fluorescent type and most are very old or original to the select building area construction. Lighting controls appear to be all manual type operation with no apparent energy efficiency operations, such as occupancy/vacancy sensing or daylight sensing.

Lighting and lighting controls are extremely inefficient throughout the building and luminaires and controls are well beyond their useful life.

CLOCK SYSTEM

There is no operational central clock system.

PHOTOVOLTAIC SYSTEM

There is no photovoltaic system at this building.

GENERAL COMMENTS

1. This school is a combination of multiple segments built at various times. The electrical, communications, fire alarm and sound systems appear to be expended with each addition and do not maintain a well-supported overall installation.

2. Gymnasium luminaires appear to be replaced with newer fluorescent type with integral motion sensing. This appears to be the only betterment to the lighting systems and relatively older lighting compared to current lighting technologies.

3. Convenience receptacles throughout common and classroom and office spaces are very limited in quantity.

Plumbing & Fire Protection - Bala Consulting Engineers

FIRE PROTECTION

Currently the building does not contain an automatic sprinkler system.

Massachusetts General Law M.G.L. c.148, s.26G requires that any existing building over 7,500 square feet that undergoes major alterations or modifications must be provided with a sprinkler system.

According to current code, an automatic sprinkler system would be required for the building.

PLUMBING

Currently the plumbing systems serving the building include cold water, hot water, hot water recirculation, sanitary, waste and vent system, roof drainage, and natural gas. Building is served by municipal water and municipal sewer.

Sanitary and roof drainage piping systems are made of cast iron. Where visible the piping appears to be in fair condition. Small pipe sizes appear to be copper.

Bubblers

Sink in classroom

Urinals in restroom

Toilet in restroom

FIXTURES

Most plumbing fixtures seen are in working condition. In general, the fixtures appear to have served their useful life. As far as water conserving fixtures, their use is governed by provisions of the Plumbing Code. Essentially, the code does not require that plumbing fixtures be up-graded, but where new fixtures are to be installed, as may be required by other codes or to address other building concerns, new fixtures need to be supplied with lead free water piping systems. However, in general all new compliant fixtures are recommended.

a. Water closets are predominately wall hung type vitreous china with manual flush valves. Existing water closets that were installed prior to 1992 are most likely not of the water conserving type and therefore are non-compliant.

b. Urinals are wall hung vitreous china with manual flush valves. Existing urinals that were installed prior to 1992 are most likely not of the water conserving type and there-fore are non-compliant.

c. Lavatories are wall hung vitreous china with hot and cold water manual handle type faucets. Some toilet rooms have an old-style wash fountain which have been disconnected and abandoned in place. It is to be assumed that these faucets would have been installed prior to 2014 and therefore would be non-compliant to the lead free law.

Majority of the classrooms have a sink with manual handle type faucets and a bubbler. It is to be assumed that these faucets would have been installed prior to 2014 and therefore would be non-compliant to the lead free law. Also, according to the maintenance staff all the class-room bubblers have been disconnected due to high lead content in the distribution piping. There is also signage at all classroom sinks which read “Flush for 1 Minute Before First Use Of Each Day.” Since the bubblers have been disconnected in the classrooms, additional surface mounted drinking fountains with a bottle filler have been installed in some of the corridors. Existing drinking fountains in the corridors that tested positive for lead have been replaced or retrofitted with filters. Gymnasium has recessed drinking fountain (retrofitted with filter) with cuspidor.

Janitor’s sinks are trap standard mounted service sinks. Faucets are equipped with vacuum breakers.

Kitchen fixtures appear to be in fair condition. The four-bowl pot sink is connected to a recessed grease interceptor. According to current code, additional grease traps and an exterior grease interceptor would probably also be required.

WATER SYSTEMS

Piping is generally copper with sweat joints. The majority of the piping is insulated except at location such as at equipment where repair work was completed over the years. In addition to the age of the system, the lead content for pipe joints completed prior to the 1980s would be non-compliant according to code requirements and this may be one of the reasons the existing drinking fountains have been fitted with filters. The Page and Hilltop schools were constructed around the 1950’s and therefore the copper piping in these sections of the building would be past its maximum life expectancy. The copper piping that was installed during the 1980 addition is nearing its end life expectancy.

The building is supplied by two water services, one into each boiler room. New water meters have been installed within the past year.

Domestic hot water for the building is generated through two gas-fired water heaters; Gas-fired storage type water heater and boiler type water heater. Storage type water heater has a 50 gallon capacity and a 40,000 BTUH input, manufactured 7/29/14 and has a 6 year manufacturer’s warranty. This water heater is near the end of its life expectancy and may need to be replaced in the near future. The boiler type has a 600,000 BTUH input and manufactured in 2002 and estimated life expectancy of 25 years. This boiler is nearing the end of its life.

GAS

Natural gas is supplied to the building. Gas piping is black steel with a combination of screwed and welded joints and fittings depending on pipe size. The building is supplied by an elevated

pressure service which feeds the building via an exterior meter located outside the boiler room and apparently serves the heating boilers, two gas-fired heaters and the kitchen.

Kitchen cooking equipment is gas-fired. Kitchen exhaust hood appears to be equipped with fire suppression system. It is our understanding that the gas supply the to kitchen does not have a hood interlock gas valve.

DRAINAGE SYSTEMS

Cast iron piping is used for sanitary and storm drainage systems. Where visible, the cast iron piping system appears to be in fair condition. According to the maintenance staff, an existing portion of the underground sanitary piping had to be relined to repair a leak. Video inspection of existing piping and review of pipe samples would be recommended to confirm the integrity of the pipe system. The Page and Hilltop schools were constructed around the 1950's and the cast iron piping in these sections of the building are past its minimum life expectancy. The cast iron piping that was installed during the 1980 addition should be acceptable for the most part.

MISCELLANEOUS OTHER CODE UPDATES

Based on the age of the original buildings and the addition it is assumed that floor drains are not provided with trap primer or trap seals. Trap primers or trap seals would need to be provided to make the existing floor drains code compliant.

Since school was in session during this site visit all existing toilet room conditions were not reviewed. Toilet rooms that were reviewed did not appear to have a hose bibb. Hose bibbs would need to be provided in all toilet rooms to comply with code.

Majority of water piping that was visible is insulated however insulation is to be provided on all hot water piping that does not have any and on all hot water piping that is required to be abated.

Data/Communications & Technology - Edvance Technology Designs

STRUCTURED CABLING SYSTEMS

There is a direct underground fiber backbone connecting Page Hilltop Elementary School to the High School. The fiber terminates in the MDF. Any future project or site work must take into consideration the requirement for continued connectivity between these facilities, and/or the replication of the existing termination points in a new facility. This would involve protection and relocation of the existing fiber during an add/reno project or the installation of new fiber during a new construction project.

Each school has several IDFs. The IDFs are not dedicated spaces, but wall mounted racks and/or cabinets in existing classrooms, offices or storage spaces. These spaces do not have adequate power or environmental treatment. The MDF and IDFs are connected via fiber backbone. Horizontal cabling for data and voice from the MDF and IDFs to endpoints is Category 5. A substantial amount of cabling at Lura A. White is run exposed with below ceiling penetrations.

Any future project should include the installation of horizontal cabling based on current standards at the time of design and dedicated MDF/IDF rooms with proper power and environmental treatments.

AP Installation

NEC phone system in MDF rack

DATA/COMMUNICATIONS SYSTEMS

The High School MDF serves as the district Head End. District servers are centralized at the high school. Internet services for all schools filter through the High School as well. The high school is serviced by two 100/100 Mbps connections and a leased firewall. Page Hilltop Elementary School obtains its Internet connectivity through the fiber backbone to the High School. Lura A. White also has an independent 50 Mbps service. Internet service is provided through Addition Networks (Xfinity reseller).

The wireless hardware at each school is Xirrus 802.11ac. Most of the APs were installed relatively recently and are based on current standards. Most APs within the schools are mounted based on availability of data outlets because of the difficulty in adding cabling due to building/ceiling conditions. Many are in less than ideal locations. Network hardware consists primarily of Extreme Networks (District Standard) Gigabit PoE switches. It is a relatively flat network, with VLANs configured for the wireless network.

Any future project should provide updated networking hardware for the MDF and IDFs based on current technology and expand upon the wireless infrastructure with special attention paid to coverage and bandwidth.

VOICE COMMUNICATION SYSTEM

The primary phone system for the district reside in the High School MDF serving all four school in the Ayer/Shirley district. The system is an NEC VoIP/Digital hybrid. The Page Hilltop and Lura A. White Schools connect to the High School system via fiber and virtual tunnel respectively. Each school has a satellite gateway connecting it to the High School system as well as independent POTS lines for backup, fax and miscellaneous systems connectivity systems (such as intrusion, fire alarm, elevators, etc.). The gateways cannot act independently from the main system at the High School. All voice mail is centralized at the High School.

There are phones in all classrooms and admin offices. Classrooms phones are single line and admin phones are primarily digital. Classrooms are configured for access to outside lines and voicemail, but are programmed not to ring directly. Outside calls must be forwarded by the Main Office.

Any future project should expand upon the NEC VoIP platform with the latest technology. Valley Communications is the district phone system vendor.

DISTRIBUTED COMMUNICATION SYSTEM

The Intercom systems at each facility are only partially functional and consist of various disparate parts that have been integrated over the years. Classrooms are equipped with two-way speakers, secondary clocks and call buttons. Much of the equipment is no longer functional. Many spaces are using battery operated clocks that are not synchronized. Bell system in not functional. Classroom speakers and call switches are original. Many of the speakers at each school are non-functional. All of the call switches at each school are non-functional. The corridors at Lura A. White do not have any intercom speakers at all. All classrooms depend on the classroom phones to initiate communication with the front office. The intercom main equipment is located in the Main Office of each school. Master clock systems at each school are non-functional for the most part. Any future project at either school should provide a new intercom and master clock system based on current technology and include redundant communication from all classrooms to the Main Office. New systems should be integrated with, but not dependent upon the phone system for functionality.

Intercom interface

Alarm keypad at Main Office

SECURITY SYSTEMS

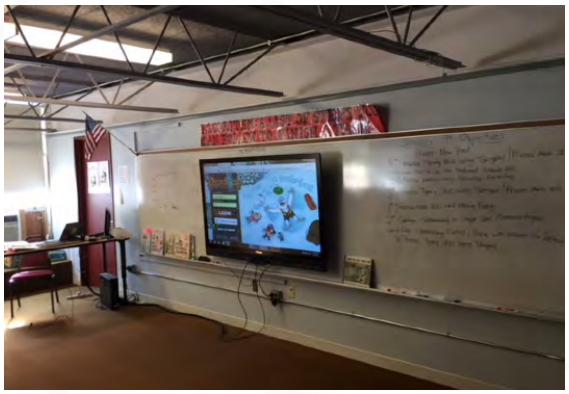
Neither school is equipped with extensive security systems or equipment. Each school has a Honeywell intrusion alarm system with keypads and motion sensors. Page Hilltop has a front door buzzer (AiPhone) with two independent static cameras for monitoring only. Lura A. White has a door bell and remote open for the front door. Nether school has card access, access control or video surveillance.

Any future project at either school should provide a new integrated security systems consisting of intrusion, access control and video surveillance/recording, preferably based on any standards developed at the High School.

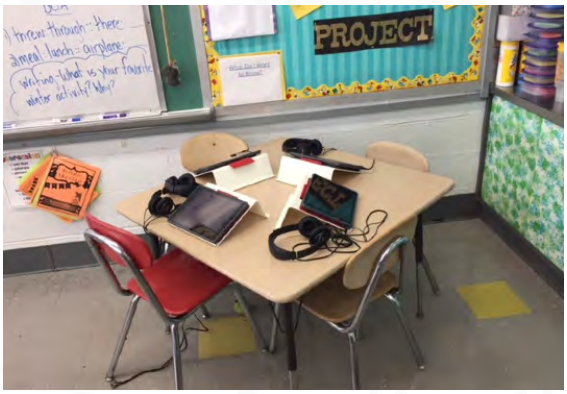
AUDIO VISUAL

The Cafeterias and Gymnasiums in each school do not have permanent audio/visual systems. Projectors on carts and portable systems are used on an as needed basis. Any future project at either school should provide permanent AV systems in these spaces, including assisted listening.

The district has been standardizing on Epson interactive UST projectors for classrooms at all grade levels. Most of the classrooms at Page Hilltop and Lura A. White have a mix of projectors. Some are older ceiling mounted models. Some have been upgraded to the district standard. Any future project at either school should provide permanent district standard projection systems in all classrooms and instructional spaces. We would also recommend audio reinforcement (Lightspeed TopCat or similar) in all classrooms and instructional spaces.



Interactive display



Student iPads

ADMINISTRATION, TEACHER, & STUDENT DEVICES

At both schools, every teacher has a desktop computer and a Chromebook. Every classroom with a permanent projector is equipped with a laptop. Classrooms are generally equipped with four iPads for student use. Griffin countertop charging stations are used in most classrooms for iPad charging. MDM is not used.

All admin are equipped with desktop workstations. Printing is centralized for the most part. A few classrooms and the Computer Labs have localized printing.

Page Hilltop is equipped with four Chromebook Carts (30 devices each) which are shared among all classrooms. Lura A. White is equipped with three Chromebook Carts (30 devices each) which are shared among all the classrooms.

Page Hilltop has one dedicated Computer Lab with 30 Chromeboxes and an interactive touch panel display. Lura White has one dedicated Computer Lab with 30 Chromeboxes and an Epson 685wi UST Interactive projector (district standard).

Any future project should provide quantities of student devices for a one-to-one computing environment as well as adequate storage, charging and an MDM solution. Depending on the timing of any project, it could be advisable to refresh with the most up to date products and technology in all categories.

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Lura A. White Elementary School

Landscape Architecture & Civil Engineering

Architecture

Structural Engineering

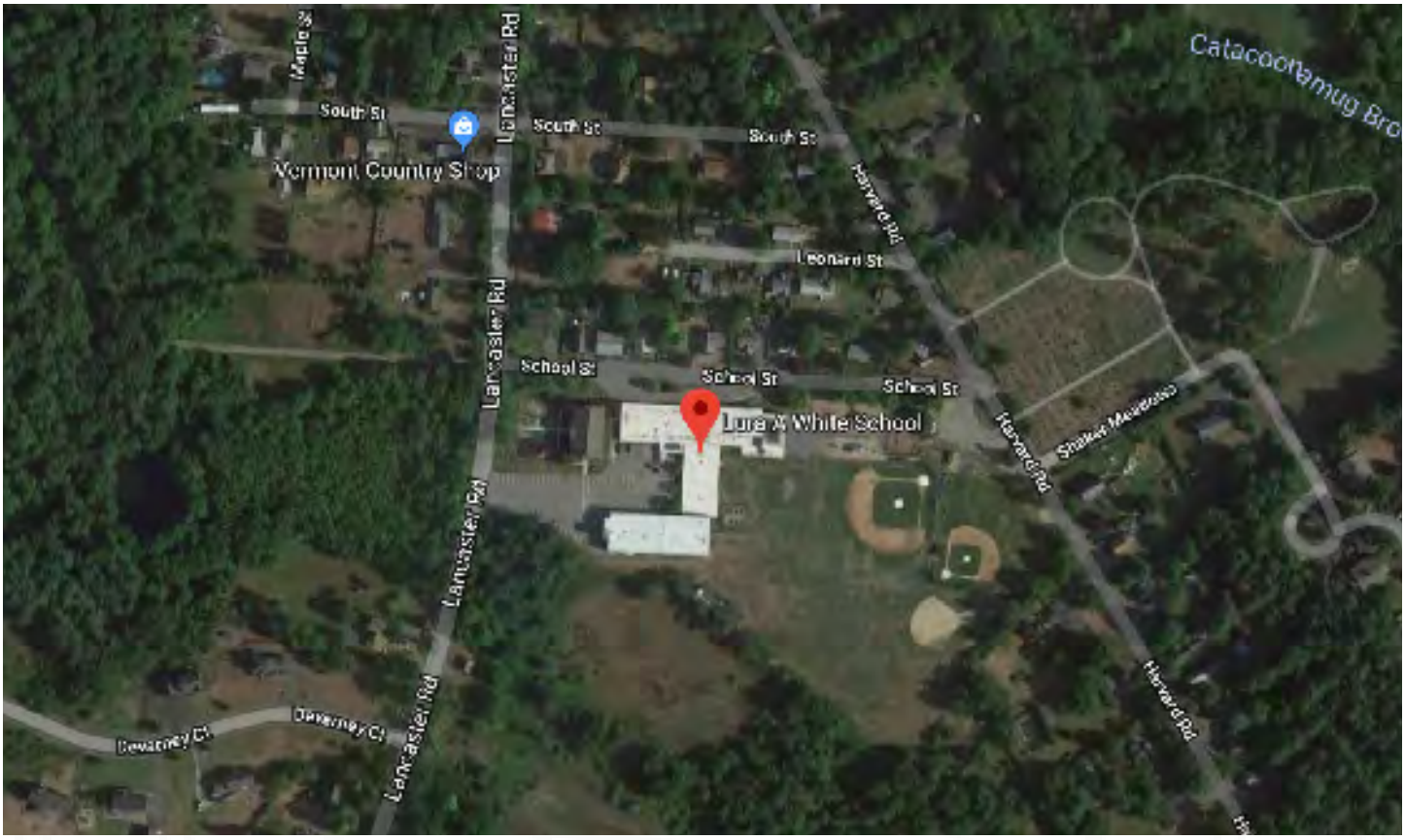
Mechanical Engineering

Electrical Engineering

Plumbing & Fire Protection

Data/Communications

Lura A. White Elementary School Location & Property Card



General Property Data

Parcel ID 12 C 1
Prior Parcel ID
Property Owner TOWN OF SHIRLEY
Mailing Address 7 KEADY WAY
City SHIRLEY
Mailing State MA Zip 01464
ParcelZoning R2

Account Number
Property Location 34 LANCASTER RD
Property Use MUNIMPEDU
Most Recent Sale Date 10/30/1934
Legal Reference 5874-424
Grantor FOWLER, FREDERICK
Sale Price 0
Land Area 10.330 acres

Current Property Assessment

Card 1 Value | Building Value 6,088,400 | Xtra Features Value 88,600 | Land Value 743,200 | Total Value 6,919,600

Building Description

Building Style SCHOOL
# of Living Units 1
Year Built 1936
Building Grade GOOD (-)
Building Condition Average
Finished Area (SF) 63416
Number Rooms 0
# of 3/4 Baths 0

Foundation Type BRICK/STN
Frame Type WOOD
Roof Structure GABLE
Roof Cover SLATE
Siding BRICK
Interior Walls PLASTER
# of Bedrooms 0
# of 1/2 Baths 0

Flooring Type ASPHL TILE
Basement Floor N/A
Heating Type FORCED H/W
Heating Fuel OIL
Air Conditioning 0%
# of Bsmt Garages 0
# of Full Baths 0
# of Other Fixtures 139

Legal Description

Lura White School

Narrative Description of Property

This property contains 10.330 acres of land mainly classified as MUNIMPEDU with a(n) SCHOOL style building, built about 1936 , having BRICK exterior and SLATE roof cover, with 1 unit(s), 0 room(s), 0 bedroom(s), 0 bath(s), 0 half bath(s).

Property Images

Disclaimer: This information is believed to be correct but is subject to change and is not warranteed

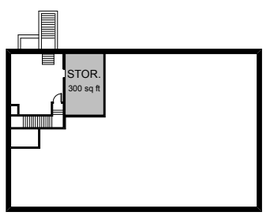
Space Summary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Lura A. White Elementary School at XX Students	**Existing Conditions**		**MSBA Guidelines**	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces			43	42,850
Special Education			21	10,510
Art & Music			16	7,575
Health & Physical Education			3	6,300
Media Center			1	5,107
Dining & Food Service			5	11,556
Medical			6	710
Administrative & Guidance			14	5,121
Custodial & Maintenance			7	2,586
Other—General Purpose Room/Storage			0	0
Total Building Net Floor Area (NFA)				**90,375**
Proposed Student Capacity/Enrollment				**986**
Total Building Gross Floor Area (GFA)[2]				**142,970**

Lura A. White Elementary School Floor Plans
Shirley, MA

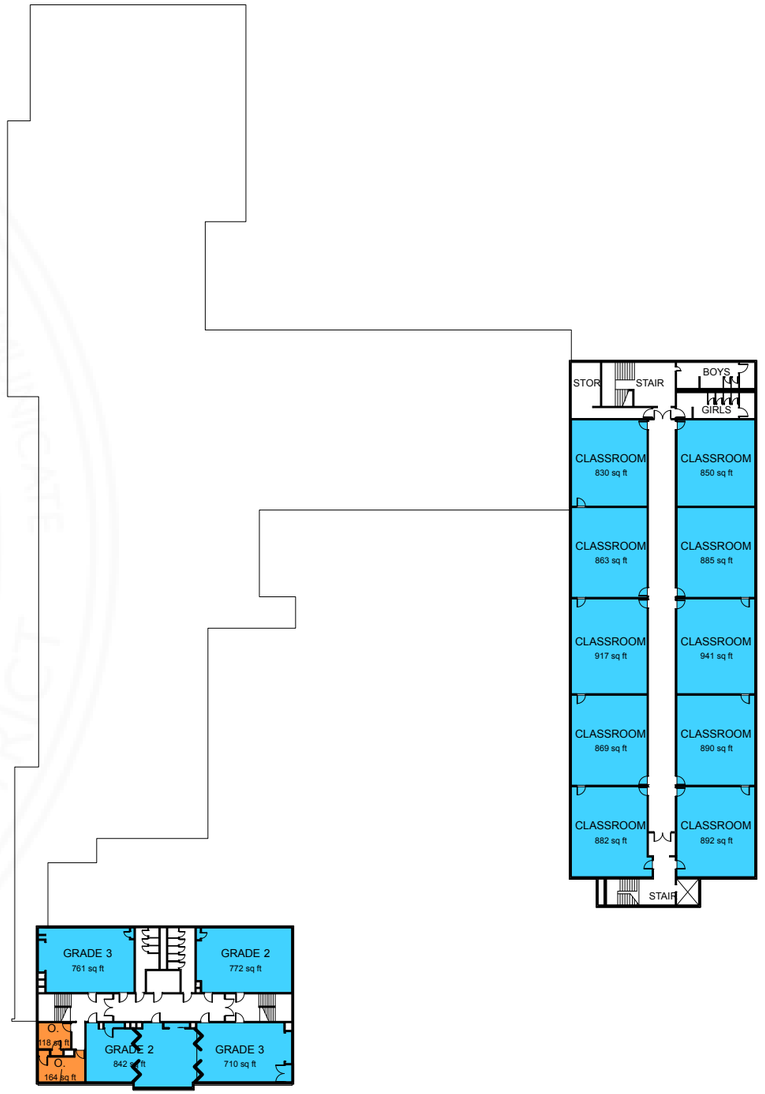
SPACE SUMMARY LEGEND

- CORE ACADEMIC SPACES
- SPECIAL EDUCATION
- ART & MUSIC
- HEALTH & PHYSICAL EDUCATION
- MEDIA CENTER
- DINING & FOOD SERVICE
- MEDICAL
- ADMINISTRATION & GUIDANCE
- CUSTODIAL & MAINTENANCE



Basement Floor

First Floor



Second Floor

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Landscape Architecture & Civil Engineering - WDA Design Group

VEHICULAR ENTRANCES & CIRCULATION

There exists one (1) curb cut accessing the site from the east side of Lancaster Road. The access leads to faculty and staff parking area. A series of orange traffic cones delineate a one-way loop for parents to enter, circle around and drop off students to the main entrance of the 1936 school building. There exist two (2) additional curb cuts, which service a one-way bus drop-off to the main entrance of the school. Visitors are to access the site from School Street as well. The pavement condition of the vehicular entrances and interior circulation system ranges from fair to poor throughout the site. There is little evidence of repaving operations and evidence of ponding within the faculty parking area.

PARKING LOCATION, ARRANGEMENT, & QUANTITY

Approach to Lura A. White Elementary

Parking signage near school entrance

Existing parking for faculty and staff is located in one (1) main area in the southwest portion of the site. Visitors to the site are to park in striped parallel spaces along School Street. There exist approximately 90 striped spaces between the two parking areas – 70 spaces in the faculty lot and 20 spaces along School Street. It is our understanding that the existing quantity of parking spaces is sufficient for normal school hours. Accessible parking spaces do not appear to comply with current MAAB standards. The pavement condition of the parking areas mirrors that of the vehicular entrances, ranging from good to fair throughout the site, with little evidence of recent repairs.

PEDESTRIAN CIRCULATION

There exists a bituminous concrete sidewalk that runs along the east side of Lancaster Road. This intersects with a connecting cement concrete walk which leads through a playground and to the front of the 1938 school. The walk then splits, heading to the north and south building entrances. There is no walkway that completes the connection around the entire perimeter of the building. The condition of the sidewalk pavement throughout the site is characterized from good to fair. The remaining doors on the building all open directly onto parking areas or onto concrete courtyards.

PEDESTRIAN ACCESSIBILITY & MAAB COMPLIANCE

A total of four (4) accessible parking spaces are located in three (3) separate parking areas. Two (2) accessible parking spaces are located in the faculty parking lot. The parking spaces, signage, access aisle and accessible route all do not appear to comply with current MAAB standards. Two (2) parallel accessible spaces are also located adjacent to the north (main) entrance of the building. The parking spaces, signage, access aisle and accessible route all do not appear to comply with current MAAB standards. Most of the existing doors leading into the building appear to be MAAB compliant.

LOADING DOCKS & SERVICE AREAS

There is no formal loading dock at this building, but there exists double-doors and striped pavement area along the south side of the building adjacent to what appear to be other maintenance areas.

Student playground

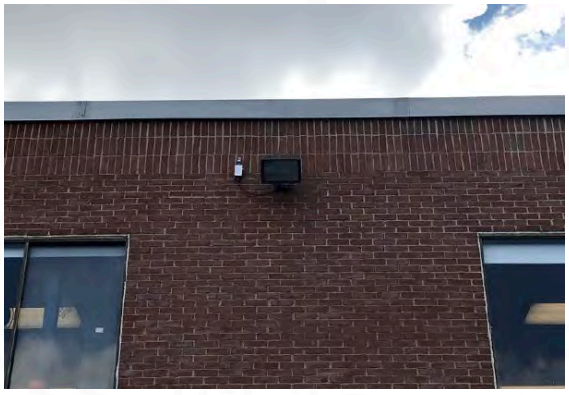
Student playground

COURTYARDS AND OTHER EXTERIOR STUDENT CONGREGATION AREAS

There exist two exterior courtyards for formal student congregation. One is located on the west side of the building with frontage along Lancaster Road. The area is enclosed by a white picket fence and gates, and contains a bark mulch surface with small play structures for younger students. To the west of the school there is an asphalt area with basketball hoops and painted schoolyard games. Immediately to the west of that is a bark mulch area that contains larger metal play structures. The condition of the bituminous concrete pavement should be characterized as fair, and the condition of the play areas should be characterized as good to fair.

SITE LIGHTING FOR BUILDING, VEHICULAR, AND PEDESTRIAN AREAS

Exterior wall-mounted or overhead-mounted lighting exists at most entrance doors to the building. The parking areas are predominantly illuminated by pole mounted lights.



Lighting on side of school

Lighting in parking lot

SITE FURNISHINGS

Few site furnishings exist within the vicinity of the school building. There is a flagpole located within one of the play areas along Lancaster Road. The flagpole does not appear to have an MAAB compliant accessible route. The site signage is adequate, with some of the sign faces beginning to show wear. There are several picnic tables on site that appear to have been relocated for snow clearing. No bicycle racks, benches or trash receptacles were observed around the perimeter of the building.

SITE VEGETATION

Site vegetation includes mature deciduous trees throughout the north and west sides of the building. Mature shrub plantings are found to the north of the building as well. There also exist formal lawn areas to the north and west. The condition of the site vegetation ranges from good (deciduous and evergreen trees) to fair (shrub plantings).

Vegetation near congregation areas

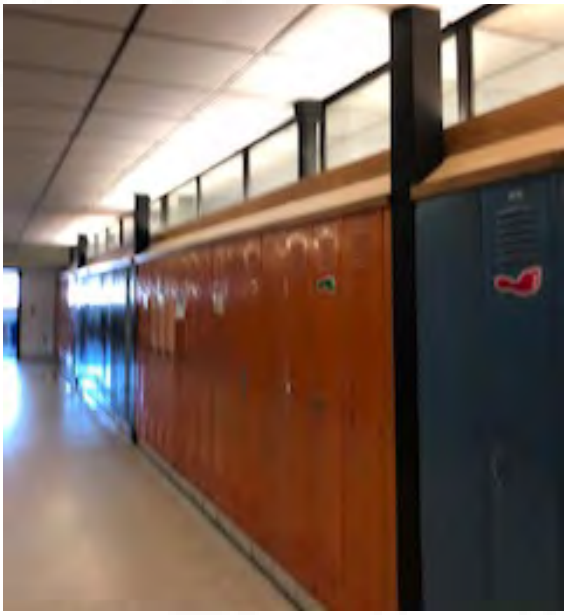
Vegetation lining pedestrian sidewalk

Architecture - Flansburgh Architects

ORGANIZATION

The Lura A. White Elementary School was originally built in 1936, and added onto in 1959 and 1972 with approximately 65,836 square feet. The building contains classrooms, a cafetorium, a gymnasium, and offices. The MSBA has ranked the condition of the school as 3 in their 2016 school survey (1 is the best and 4 is the worst).

Building exterior



Lockers in hallway

CIRCULATION

The Lura A. White Elementary School is a two (2) story building with a basement and attic in the 1936 building on a "U" shaped foot print. The gym and auditorium are to the north of the building. The cafeteria and gymnasium are located in the north east corner of the school, to the east and south. The first and second floors are double loaded corridors with classrooms and offices on both sides.

PROGRAM & SPACE ISSUES

The School includes approximately 30 classroom spaces of various square feet from 800 – 1,200. Comparisons with current MSBA space standards indicate that classrooms and core academic spaces are undersized. See the chart below.

	Lura A. White Elementary	MSBA Standards
Classroom	855 square feet	950 square feet
Music	(Included Above)	1,200 square feet
Library	2,428 square feet	2,020 square feet
Art	(Included in Classrooms)	1,000 square feet
Gymnasium	8,038 square feet	6,000 square feet

PHYSICAL CONDITIONS OF EXTERIOR ENVELOPE—WALLS

The building is faced with red brick in a running bond pattern, with minimal roof overhangs and large areas of double hung and fixed windows. Generally, the exterior is in good condition. Brick elements are cracked and should be repaired, cleaned, and sealed.

PHYSICAL CONDITIONS OF EXTERIOR ENVELOPE—WINDOWS

The windows are aluminum double hung or fixed windows with single glazing. The windows are in good/ fair condition and should have routine maintenance to keep them operational. They should also be replaced in the near future.

Typical Exterior Walls -Existing	
4" Brick	0.39
1" Air Space	1.01
TOTAL R-VALUE	2.51
WINDOW SINGLE PANE R-VALUE	0.91

Typical Exterior Walls - Today's Minimum Requirements	
Face Brick	0.39
Air Space	2.02
Air & Vapor Barrier	0.15
1/2" Gypsum Sheathing	0.45
Insulation	22.00
Vapor Barrier	0.15
Interior Gypsum Board	0.45
TOTAL R-VALUE	25.61
WINDOW TRIPLE PANE R-VALUE	5.00

PHYSICAL CONDITIONS OF EXTERIOR ENVELOPE—ROOF

The roofing is membrane and no active roof leaks or damages were observed. Generally, the roofing appears to be in good condition. See the charts below.

White Existing Roof Condition	
Rubber Membrane	0.40
3" Insulrock Insulation	7.00
Structure/Ceiling	5.00
TOTAL R-VALUE	12.40

Roof Construction - Today's Minimum Standard	
Rubber/PVC	0.40
4" Polyisocyanurate	30.00
Structure/Ceiling	5.00
TOTAL R-VALUE	35.40

INTERIOR

Finishes are well suited for school use, but are worn and many areas need to be replaced.

INTERIOR PARTITIONS

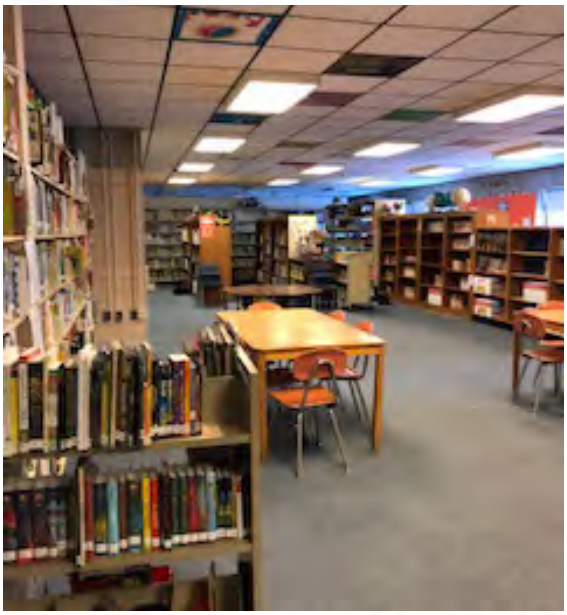
In general, all interior partitions appear to be in good condition. The type of partition varies throughout the building as follows:

- Painted concrete masonry units
- Painted plaster
- Painted drywall

- Glass wall windows
- Exposed brick

In a renovation, various existing walls to remain could be cut open to accommodate new electrical, plumbing and technology systems. All walls should have acoustical batt insulation to improve acoustical performance.

Typical classroom



Library

Teacher Copyroom

Administrative offices

FLOORING

In general, the flooring is VCT and minor damage was observed. The type of flooring that exists is as follows:

- Vinyl composition tile (12x12)
- Wood
- Carpet

WALL BASE

The wall base is rubber of various sizes. All base material appear to be in good/ fair condition.

CEILINGS

The ceilings are a combination of 2x4 acoustical tile plaster and exposed structural decor. They are generally in good condition. The existing ceilings consist of the following types:

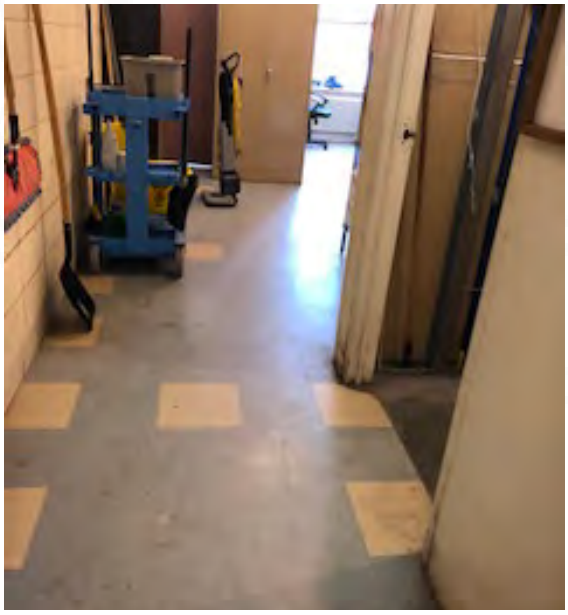
- Suspended Acoustical Tile
- Plaster
- Tectum Structural Deck

DOORS AND FRAMES

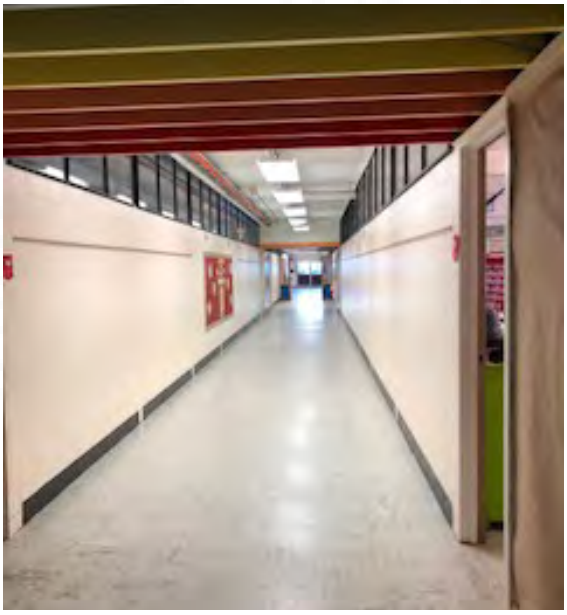
Doors are generally wood and metal and some are chipped. The conditions of the doors and frames are good. Lever handle hardware to meets accessibility guidelines.

Windows at building exterior

Typical doors



Typical flooring



Handicap ramp in hallway

FIRE EXTINGUISHERS
Fire extinguishers appear to meet code.

TACKBOARDS AND MARKERBOARDS
Tackboards and markerboards are existing throughout and appear to be in good condition. Fire code regulations do not allow for tackboards to be within 5 feet of egress doors.

REGULATIONS
The existing facility as a whole is in compliance with the original code, however, this does not mean it meets every standard of the current code. In accordance with the current code, an existing building is presumed to have met the codes and regulations in effect at the time of its construction and is allowed to continue in its use, provided it is maintained per the original code. Current building codes are applicable to any alteration or addition or change in use of the structure in accordance with 780 CMR 34.

CODE CLASSIFICATION 780 CMR 302.1
The occupancy of the facility is non-separated mixed use with assembly and educational uses as follows:

Classrooms, Offices	E-Educational
Auditorium	A3-Assemble

CONSTRUCTION CLASSIFICATION
Based upon the definitions in the current code, the minimum classification of the building is as follows:

1959 and 1972 (Additions)	2C Noncombustible

A renovation project is governed by 2009 IEBC - International Existing Building Code. This chapter is “intended to maintain or increase public safety, health, and general welfare, without requiring full compliance with the code for new construction.”

i. Building renovation - For continuation of the same use groups the building shall comply with 2009 IEBC.

ii. New Building Systems - Any new building system or portion thereof shall conform to 2009 IEBC for new construction to the fullest extent practical.

iii. Alterations and Repairs - Alterations of repairs to existing buildings, which maintain or improve the performance of the building may be made with like material, unless required otherwise under 2009 IEBC - Structural Requirements for Existing Buildings.

iv. Number of Means of Egress - Egress for the existing facility is sufficient in accordance with the current building code.

v. Capacity of Exits - There is sufficient egress capacity to meet current codes at the doors throughout the facility.

vi. Length of Access Travel - Shall not exceed 200 feet, in building without a sprinkler system. All areas of the existing building are within 200 feet of an exit.

vii. Exit Signs and Lights - For notes on the existing system, refer to the Electrical Existing Conditions Report.

viii. Means of Egress Lighting - Refer to the Electrical Existing Conditions Report.

ix. Height and Area Limitations - Under 2009 IEBC the building is in conformance with applicable height and area limitations, so long as there is no change in use. Additions may be made to the structure.

x. Fire Protection Systems - Fire protection systems must be provided for existing buildings that are "substantially" altered or "substantially" renovated where required for the specific use group. 30% rule, if 30% of the assessed value is expended then fire protection must be installed.

xi. Enclosure of Stairways - Open egress stairways are prohibited. There shall be no minimum fire resistance rating required for an existing enclosure of a stairway.

xii. Assembly Use Groups - Any alteration within an assembly use group shall comply with the code for new construction. This applies to the cafeteria, auditorium and gymnasium.

xiii. Accessibility for Persons with Disabilities - Accessibility for persons with disabilities shall be provided in accordance with the regulations of the Architectural Access Board.

xiv. Energy Provisions for Existing Buildings - Alterations to components affecting energy conservation performance shall comply with 2009 IECC - International Energy Conservation Code.

xv. Evaluation of Existing Building - The structural engineer shall make a structural evaluation of the existing building to determine the adequacy of all structural systems that are affected by alteration or damage to be repaired.

xvi. Existing Lateral Load Capacity (Refer to Structural Existing Conditions Report for further information) - Alterations shall not be made to elements or systems contributing to the lateral load resistance unless the altered lateral load resisting system conforms to 2009 IEBC.

xvii. Earthquake Loads (Refer to Structural Existing Conditions Report for further information) - For no change in use groups, but alterations exceeding 50% of the assessed valuation of the building, the project is defined as Seismic Hazard Category 2.

xviii. Earthquake resistance shall comply with the requirements of 2009 IEBC.

xix. The provisions of NFPA govern Fire Resistant Materials - Fire resistance construction systems.

Interior trim and finishes altered as a part of a renovation shall conform to the requirements of the NFPA. Flame spread of Interior Finishes for the E and A-3 use Groups, shall conform to current requirements. Existing finishes are code compliant.

Appraised Value from Assessment Information = $6,088,400

Structural Engineering - Boston Building Consultants

1936 BUILDING

The original building at this site, fronting Lancaster Road on the west side of the site, is currently used for Preschool and Kindergarten. It is a traditional brick building with a gable roof, with two stories plus an unoccupied attic space.

There is also a basement mechanical room and a shallow crawl space under the first floor, where the floor structure was observed (through a small access panel) to consist of small steel joists supporting what appears to be wood floor deck.

The roof framing, visible from the attic, consists of wood rafters supported by two rows of heavy timber purlins in a trussed system with raking wood posts and horizontal steel channel tie members. The two corridor walls appear to provide lines of structural support at the interior.

The structure is generally concealed by wall and ceiling finishes, but is most likely a similar system of steel and wood as that observed in the crawl space access panel. There appear to be two rows of interior columns (probably steel) about 10 to 12 feet apart, flanking the corridor, with a spacing of 12 to 15 feet in each row. The exterior walls seem likely to be load-bearing brick masonry.

1959 BUILDING

This is the largest section of the school, a single-story flat-roofed building with an L-shaped form in plan.

The general structural system is a steel frame with cementitious ("Tectum") roof panels. The steel framing is made up of wide-flange ("I") beam sections, about 8 feet on center, spanning about 30 feet. The outer ends of the beams are supported by steel columns that appear to be 4" "I" sections located at each beam, between windows.

In the northern wing of the "L" (along School Street), there is a single interior row of round pipe columns about 16 feet on center with interior girders spanning between columns. In the eastern wing towards the rear of the building, the interior columns are "I" sections, with a row at each side of the corridor. The cementitious panels change direction to span across the corridor.

There appears to be an expansion joint between the two parts of the "L", with a double row of columns and beams at the joint. Cracks are visible in the floor tile where the tiles straddle the lines of the joint.

The concrete masonry partition walls appear to be non-load bearing but will provide lateral load resistance.

1970s ADDITION

The additions of 1972, or thereabouts, consist of three separate sections: a two-story classroom wing on the south side of the school; a small link corridor between the two older buildings; and a pair of double-height gymnasium/auditorium spaces at the south end of the east wing. The two double-height spaces were evidently constructed at different times, and the link corridor is a different type of construction from the two-story classroom wing, so it seems likely that the buildings lumped together here as the "1970's Additions" were constructed in at least three (perhaps four) separate projects.

The two-story classroom wing on the south side is a simple rectangular form in plan. The roof is framed with steel roof deck spanning about five feet between steel joists, with steel "I" section girders. The second floor is similarly framed, with steel joists at about two feet on center and thin

corrugated steel deck, presumably with concrete topping. There are square steel tube columns on both sides of the corridor, and probably also at the exterior (hidden).

Partition walls are concrete block masonry, which is apparently not load-bearing, but is most likely relied upon to provide lateral load resistance.

The link corridor between the 1936 and 1959 buildings includes a large roof overhang providing a covered walkway along the north side of the building. The roof structure consists of cementitious ("Tectum") roof panels on steel beams, which cantilever beyond steel columns in the exterior wall to create the overhang. The interior concrete masonry walls may be load-bearing, or perhaps conceal steel columns.

The two double-height single story gymnasium/auditorium spaces at the south end of the east wing are both framed in a similar fashion, with cementitious roof panels on long-span steel joists and steel columns within the walls.

The southernmost space appears to have been constructed more recently: the wall on its north side (the south wall at the back of the stage in the first gym space) is mostly brick-faced and looks like it was once the exterior wall. This wall may be load-bearing, providing support for the inner end of the joists. The other three walls are masonry infill between steel columns, with clerestory panels at the top.

BUILDING CODE REQUIREMENTS

All of these buildings were constructed at a time when design procedures, material requirements and Building Code regulations were less stringent than they are today. Most notably, at the time these buildings were constructed, unreinforced masonry was permitted for load bearing elements, and lateral load analysis for wind was commonly ignored for low rise buildings, assuming that masonry walls and partitions would provide sufficient resistance. There were no seismic requirements.

There are no requirements for existing buildings to comply with the structural provisions of the current Building Code, unless they are subjected to alterations. Alterations and additions to existing buildings are covered by the International Existing Building Code (IEBC), with some amendments in Chapter 34 of the Massachusetts State Building Code. While we are not aware of any plans for alterations or additions to these schools, the following general considerations may be helpful in the event that they are planned:.

- Alterations to buildings have a complex set of requirements depending on several factors.
- In general, renovations to the buildings, with minimal structural modifications, would require modest improvements of the seismic resistance, mainly ensuring that masonry walls are anchored to the roof.
- Modifications involving removal or relocation of walls could potentially require a large amount of structural work. Since there is no specifically designed system for lateral load resistance, all of the masonry walls are assumed to contribute some resistance. A new lateral load resisting system would likely be required, in compliance with current seismic requirements.
- Horizontal additions, structurally isolated from the existing buildings by expansion joints, would be relatively simple, provided they did not create conditions resulting in snow drifts on existing roofs.

Vertical additions on top of the existing buildings do not appear to be practical. In addition to requiring new floors to replace the existing roofs, they would not be permitted to use

unreinforced walls for bearing. Where steel columns provide the structural support, they generally do not have adequate capacity to carry an additional floor, so extra columns and footings would be required. New lateral load resisting systems would also be required since both wind and seismic loads would be increased.

Mechanical Engineering - Bala Consulting Engineers

BOILERS

The boilers are hot water types that were replaced in 2002. These are Weil-McLain cast-iron sectional boilers with Gordon Piatt oil burners. These boilers are well maintained and are both functioning as per design. The boilers are 15 years old and boilers of this type can be expected to have 30 years of service life. The burners are 15 years old and burners of this type can be expected to have 20 years of service life. The circulation pumps were also changed at the time. Pumps have an expected service life of 20 years.

FUEL OIL

The boilers are supplied fuel oil from a 10,000 gallon underground buried tank. The tank and fuel delivery system are working adequately to serve the boiler burners. There does not appear to be a leak detection system for the buried tank. Buried tanks have an expected service life of 20 years as well as the fuel oil pumping system serving the oil storage system.

PIPING SYSTEM

The hot water for heating system is piped throughout building using a combination of steel and copper pipes. It is conceivable that some of the original 1936 vintage piping is still being used but that building wing has been renovated in the year 2002 including replacement of the boilers. It is noted that the other three wings of the school were built in 1959 and 1972. With these dates, that puts the piping at anywhere between as old as 82years to as young as 15 years. Piping systems have a service life expectancy of 40 to 50 years. With the exception of the 2002 renovation, most of the piping is approaching or past its expected service life. The insulation for the piping was observed as adequate and serviceable yet aged.

Boiler

Water heater

HVAC AIR HANDLING EQUIPMENT

There is an array of roof fans handling the exhaust duty of the school. These units appear to be operable with occasional failures. These units are at/near/beyond their estimated service life of 20 years. This is also true for the rooftop units serving some spaces. The air handling equipment located interior of the building (in mechanical rooms or suspended in or near the spaces served) are all in serviceable condition. This equipment will get harder to maintain as it becomes older due to its age. The estimated service life of this equipment is 30 years thereby establishing that most of the equipment is beyond its estimated service life. Classrooms are predominantly served with Classroom Unit Ventilators placed at the exterior wall and piped with hot water for heating purposes. The Unit Ventilators are all original to the wings with the exception to the 1936 wing (of which were replaced in 2002). The estimated service life for these units is 15 to 20 years putting most of these units past these estimates in service life.

DUCTWORK SYSTEMS

The ductwork systems observed were in reasonable shape for the various vintages of the systems. Ductwork systems have an estimated service life of 30 to 40 years. There are many spaces served with minimal ductwork thereby not distributing the air very effectively.

AUTOMATIC TEMPERATURE CONTROLS

The school is predominantly served with pneumatic control systems that are antiquated and problematic. The 2002 renovation work introduced a Johnson Controls DDC (Metasys) control platform. This was used for all the new equipment installed in 2002. It is unclear what has been integrated into the system as far as control of the non-renovated HVAC equipment. Due to the inconsistency of the ATC system operation, energy is most probably being wasted when the thermostatic controls fail in the various spaces. Most ATC Systems will have a reasonable expectation of useful life of 15 to 20 years.

AIR CONDITIONING SYSTEM

There are no central air conditioning systems. There are some small room Through-wall, residential type air conditioners and one split-system air conditioner serving the School Superintendent's office suite.

CODE

The building HVAC systems, where they meet code back when being installed, do not meet today's codes/standards for energy and/or Indoor Air Quality. The boilers can be updated to gas-fired condensing-style that would make them 10 to 15% more efficient than the oil-fired boilers at the site. Ventilation standards have changed including proactively measuring indoor air quality levels so over (and under)ventilation is avoided in these spaces.

Electrical Engineering - Bala Consulting Engineers

MAIN ELECTRIC SERVICES

The main electric service is rated 208/120V, 1200A, three-phase, four-wire. The main service switch-board is manufactured by Siemens and appears to be manufactured in October 2002. The electric utility services are underground from street pole.

The main electric serviced equipment appears to be in good condition, although there are no signs of routine maintenance or testing. Power panel-boards throughout the school appear to be replaced with Siemens equipment at the same time as the main switchboard installation. Although many power systems appear to be updated or replaced on or near 2002, there is little cleanliness or order to their operating conditions. Lack of adequate ventilations, storage obstructions and general cleanliness are not conducive to prolonged safe and reliable operation.

EMERGENCY ELECTRIC SERVICES

There is no emergency generator located at this site. Emergency lighting is supported with independent battery packs with spot light heads. These components are not all operational due to age or insufficient maintenance programs.

FIRE ALARM

The main fire alarm panel is manufactured by Notifier and appears to be an addressable system. One remote annunciator was observed at the administrative office along the School Street entrance. A hard copy school floor plan graphic is framed next to the main fire alarm panel. Smoke detection coverage is not consistent throughout the school. Without fire protection sprinkler systems, the building requires full smoke detection coverage throughout the school. Manual initiation devices (pull stations) appear to be located at all egresses from the school. Notification devices (audio/visual) appear to be voice type (speakers) and are located throughout the school. Kitchen hood appears to include a dedicated fire suppression system and appears to be connected to the fire alarm system. A red fire alarm beacon and city fire alarm master box appears to be located on the School Street side of school. Master box number 22.

Data/Communications panel

Electrical panels

The existing installations appear safe and operational, but the building is not supported by full smoke detection throughout the building. Full smoke detection coverage is required when no fire protection systems such as fire sprinklers are present.

LIGHTING AND LIGHTING CONTROLS

Luminaires appear to be primarily fluorescent type and most are very old or original to the select building area construction. Lighting controls appear to be all manual type operation with no apparent energy efficiency operations, such as occupancy/vacancy sensing or daylight sensing.

Lighting and lighting controls are extremely inefficient throughout the building and luminaires and controls are well beyond their useful life.

CLOCK SYSTEM

There appears to be a partially functioning central clock system. A limited quantity of existing clocks is controlled by a Simplex central clock control panel located in the School Street administrative office area. The school essential does not include a fully functional central clock system.

PHOTOVOLTAIC SYSTEM

There is no photovoltaic system at this building.

GENERAL COMMENTS

1. The electrical equipment and fire alarm system appear to be relatively new compared to the age of the various school sections.
2. Gymnasium luminaires appear to be replaced with newer fluorescent type with integral motion sensing. This appears to be the only betterment to the lighting systems and relatively older lighting compared to current lighting technologies.
3. Much of the power distribution and conduit systems are exposed along walls and ceilings.
4. Daycare space does not appear to include temper-resistant receptacle devices.
5. Convenience receptacles throughout common and classroom and office spaces are very limited in quantity.

Plumbing & Fire Protection - Bala Consulting Engineers

FIRE PROTECTION

Currently the building does not contain an automatic sprinkler system.

Massachusetts General Law M.G.L. c.148, s.26G requires that any existing building over 7,500 square feet that undergoes major alterations or modifications must be provided with a sprinkler system.

According to current code, an automatic sprinkler system would be required for the building.

PLUMBING

Currently the plumbing systems serving the building include cold water, hot water, hot water recirculation, sanitary, waste and vent system, roof drainage, and gas supplied from a pro-pane tank system according to the drawings that were available. This could not be field verified. Building is served by municipal water and sanitary discharges septic system.

Sanitary and roof drainage piping systems are made of cast iron. Where visible the piping appears to be in fair condition. Small pipe sizes appear to be copper.

Typical sink in restroom

Typical toilet in restroom

Bubbler

Typical sink in classroom

FIXTURES

Most plumbing fixtures seen are in working condition. In general, the fixtures appear to have served their useful life. As far as water conserving fixtures, their use is governed by provisions of the Plumbing Code. Essentially, the code does not require that plumbing fixtures be up-graded, but where new fixtures are to be installed, as may be required by other codes or to address other building concerns, new fixtures need to be supplied with lead free water piping systems. However, in general all new compliant fixtures are recommended.

a. Water closets are predominately wall hung type vitreous china with retrofit automatic flush valves, however a few water closets have a manual flush valve. Existing water closets that were installed prior to 1992 are most likely not of the water conserving type and therefore are non-compliant.

b. Urinals are wall hung vitreous chine with retrofit automatic flush valves. Existing urinals that were installed prior to 1992 are most likely not of the water conserving type and therefore are non-compliant.

c. Lavatories are wall hung vitreous china with hot and cold water manual handle type faucets. It is to be assumed that these faucets would have been installed prior to 2014 and therefore would be non-compliant to the lead free law.

Majority of the classrooms have a sink with manual handle type faucets and a bubbler. Gymnasium has recessed drinking fountain with cuspidor. It is assumed that these faucets and bubblers would have been installed prior to 2014 and therefore would be non-compliant to the lead free law.

Janitor's sinks are trap standard mounted service sinks. Faucets are equipped with vacuum breakers.

Kitchen fixtures appear to be in fair condition. The two-bowl pot sink is connected to a grease removal unit. According to current code, additional grease traps and an exterior grease interceptor would probably be required.

WATER SYSTEMS

Piping is generally copper with sweat joints. The majority of the piping is insulated except at location such as at equipment where repair work was completed over the years. In addition to the age of the system, their lead content would be non-compliant according to code requirements. In 2002 there were renovations to the existing mechanical room and some copper piping was replaced. All piping fittings with lead free solder could remain however all piping original to the building would not fall into that category. Extent of existing piping solder with non-lead free solder would need to be investigated.

The building is supplied by a water service that comes in the existing boiler room.

Domestic hot water for the building is generated through two storage type water heaters; one oil-fired storage type water heater and one electric storage type water heater. Oil-fired water heater has a 199,000 BTUH input, storage capacity of 68 gallons, warranty start is 6/3/16 and warranty end is 6/4/19. Electric water heater has a storage capacity of 119 gallons, manufactured 10/3/11, warranty expires 1/31/18. Both water heaters are near the end of the manufacturer's warranty or life expectancy.

GAS

Natural gas is supplied to the building via propane tank system. Gas piping is black steel with screwed fittings.

Kitchen cooking equipment is gas-fired. Kitchen exhaust hood appears to be equipped with fire suppression system. It is our understanding that the gas supply the to kitchen does not have a hood interlock gas valve.

DRAINAGE SYSTEMS

Cast iron piping is used for sanitary and storm drainage systems. Where visible, the cast iron piping system appears to be in fair condition. Video inspection of existing piping and review of

pipe samples would be recommended to confirm the integrity of the pipe system. Storm drainage system spills to grade. Cast iron installed in the original 1936 building would be beyond its maximum life expectancy. The cast iron piping in the 1959 addition and the1972 addition is near its end life expectancy.

MISCELLANEOUS OTHER CODE UPDATES

Based on the age of the original buildings and the addition it is assumed that floor drains are not provided with trap primer or trap seals. Trap primers or trap seals would need to be provided to make the existing floor drains code compliant.

Existing sump pump located at the basement level mechanical room is non-compliant as it has an open grate cover. Air tight cover and vent would be needed to make code compliant.

Since school was in session during this site visit all existing toilet room conditions were not re-viewed. Toilet rooms that were reviewed did not appear to have a hose bibb. Hose bibbs would need to be provided in all toilet rooms to comply with code.

Majority of water piping that was visible is insulated however insulation is to be provided on all hot water piping that does not have any and on all hot water piping that is required to be abated.

Data/Communications - Edvance Technology Designs

STRUCTURED CABLING SYSTEMS

There is a direct underground fiber backbone connecting Page Hilltop Elementary School to the High School. The fiber terminates in the MDF. Any future project or site work must take into consideration the requirement for continued connectivity between these facilities, and/or the replication of the existing termination points in a new facility. This would involve protection and relocation of the existing fiber during an add/reno project or the installation of new fiber during a new construction project.

Each school has several IDFs. The IDFs are not dedicated spaces, but wall mounted racks and/or cabinets in existing classrooms, offices or storage spaces. These spaces do not have adequate power or environmental treatment. The MDF and IDFs are connected via fiber backbone. Horizontal cabling for data and voice from the MDF and IDFs to endpoints is Category 5. A substantial amount of cabling at Lura A. White is run exposed with below ceiling penetrations.

Any future project should include the installation of horizontal cabling based on current standards at the time of design and dedicated MDF/IDF rooms with proper power and environmental treatments.

DATA/COMMUNICATIONS SYSTEMS

The High School MDF serves as the district Head End. District servers are centralized at the high school. Internet services for all schools filter through the High School as well. The high school is serviced by two 100/100 Mbps connections and a leased firewall. Page Hilltop Elementary School obtains its internet connectivity through the fiber backbone to the High School. Lura A. White also has an independent 50 Mbps service. Internet service is provided through Addition Networks (Xfinity reseller).

The wireless hardware at each school is Xirrus 802.11ac. Most of the APs were installed relatively recently and are based on current standards. Most APs within the schools are mounted based on availability of data outlets because of the difficulty in adding cabling due to building/ceiling conditions. Many are in less than ideal locations. Network hardware consists primarily of Extreme Networks (District Standard) Gigabit PoE switches. It is a relatively flat network, with VLANs configured for the wireless network.

Any future project should provide updated networking hardware for the MDF and IDFs based on current technology and expand upon the wireless infrastructure with special attention paid to coverage and bandwidth.

Corridor cabling

Typical phone in classroom

VOICE COMMUNICATION SYSTEM

The primary phone system for the district reside in the High School MDF serving all four school in the Ayer/Shirley district. The system is an NEC VoIP/Digital hybrid. The Page Hilltop and Lura A. White Schools connect to the High School system via fiber and virtual tunnel respectively. Each school has a satellite gateway connecting it to the High School system as well as independent POTS lines for backup, fax and miscellaneous systems connectivity systems (such as intrusion, fire alarm, elevators, etc.). The gateways cannot act independently from the main system at the High School. All voice mail is centralized at the High School.

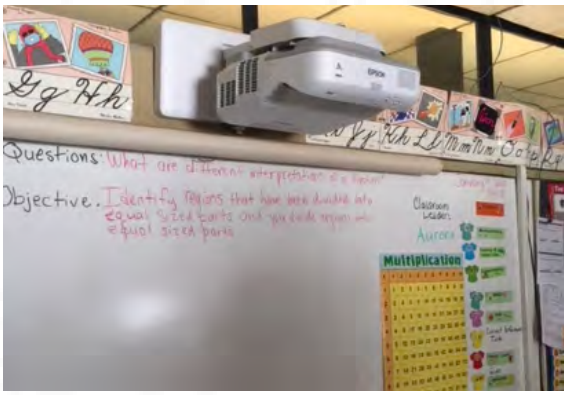
There are phones in all classrooms and admin offices. Classrooms phones are single line and admin phones are primarily digital. Classrooms are configured for access to outside lines and voicemail, but are programmed not to ring directly. Outside calls must be forwarded by the Main Office.

Any future project should expand upon the NEC VoIP platform with the latest technology. Valley Communications is the district phone system vendor.

DISTRIBUTED COMMUNICATION SYSTEM

The Intercom systems at each facility are only partially functional and consist of various disparate parts that have been integrated over the years. Classrooms are equipped with two-way speakers, secondary clocks and call buttons. Much of the equipment is no longer functional. Many spaces are using battery operated clocks that are not synchronized. Bell system in not functional. Classroom speakers and call switches are original. Many of the speakers at each school are non-functional. All of the call switches at each school are non-functional. The corridors at Lura A. White do not have any intercom speakers at all. All classrooms depend on the classroom phones to initiate communication with the front office. The intercom main equipment is located in the Main Office of each school. Master clock systems at each school are non-functional for the most part. Any future project at either school should provide a new intercom and master clock system based on current technology and include redundant communication from all classrooms to the Main Office. New systems should be integrated with, but not dependent upon the phone system for functionality.

Amplifiers and microphone



Interactive projector

SECURITY SYSTEMS

Neither school is equipped with extensive security systems or equipment. Each school has a Honeywell intrusion alarm system with keypads and motion sensors. Page Hilltop has a front door buzzer (AiPhone) with two independent static cameras for monitoring only. Lura A. White has a door bell and remote open for the front door. Nether school has card access, access control or video surveillance.

Any future project at either school should provide a new integrated security systems consisting of intrusion, access control and video surveillance/recording, preferably based on any standards developed at the High School.

AUDIO VISUAL

The Cafeterias and Gymnasiums in each school do not have permanent audio/visual systems. Projectors on carts and portable systems are used on an as needed basis. Any future project at either school should provide permanent AV systems in these spaces, including assistive listening.

The district has been standardizing on Epson interactive UST projectors for classrooms at all grade levels. Most of the classrooms at Page Hilltop and Lura A. White have a mix of projectors. Some are older ceiling mounted models. Some have been upgraded to the district standard. Any future project at either school should provide permanent district standard projection systems in all classrooms and instructional spaces. We would also recommend audio reinforcement (Lightspeed TopCat or similar) in all classrooms and instructional spaces.

ADMINISTRATION, TEACHER, & STUDENT DEVICES

At both schools, every teacher has a desktop computer and a Chromebook. Every classroom with a permanent projector is equipped with a laptop. Classrooms are generally equipped with four iPads for student use. Griffin countertop charging stations are used in most classrooms for iPad charging. MDM is not used.

All admin are equipped with desktop workstations. Printing is centralized for the most part. A few classrooms and the Computer Labs have localized printing.

Page Hilltop is equipped with four Chromebook Carts (30 devices each) which are shared among all classrooms. Lura A. White is equipped with three Chromebook Carts (30 devices each) which are shared among all the classrooms.

Page Hilltop has one dedicated Computer Lab with 30 Chromeboxes and an interactive touch panel display. Lura White has one dedicated Computer Lab with 30 Chromeboxes and an Epson 685wi UST Interactive projector (district standard).

Any future project should provide quantities of student devices for a one-to-one computing environment as well as adequate storage, charging and an MDM solution. Depending on the timing of any project, it could be advisable to refresh with the most up to date products and technology in all categories

Section 4: Enrollment Projections

NEW ENGLAND SCHOOL DEVELOPMENT COUNCIL **Ayer-Shirley RSD Historical Enrollment**

Date: December 18, 2017

PROJECTED ENROLLMENT BY GRADE*

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2012	157		2017-18	66	142	146	131	148	140	154	127	138	105	106	106	109	88	0	1640	1706
2013	168		2018-19	67	143	149	141	131	149	140	150	115	138	88	102	104	102	0	1652	1719
2014	169		2019-20	68	144	150	144	141	132	149	136	136	115	115	84	100	98	0	1644	1712
2015	137		2020-21	69	117	151	145	144	142	132	145	123	136	96	110	82	94	0	1617	1686
2016	157	(est.)	2021-22	70	134	125	146	145	145	142	128	132	123	114	92	108	77	0	1609	1686
2017	158	(est.)	2022-23	71	134	141	119	146	146	145	138	116	132	103	109	90	102	0	1621	1692
2018	158	(est.)	2023-24	72	134	141	136	119	147	146	141	125	116	110	99	107	85	0	1606	1678
2019	156	(est.)	2024-25	73	133	141	136	136	120	147	142	128	125	97	105	97	101	0	1608	1681
2020	153	(est.)	2025-26	74	130	140	136	136	137	120	143	129	128	105	93	103	91	0	1591	1665
2021	156	(est.)	2026-27	75	133	137	135	136	137	137	117	130	129	107	101	91	97	0	1587	1662
2022	156	(est.)	2027-28	76	133	140	132	135	137	137	133	106	130	108	103	99	86	0	1579	1655

**Projections should be updated annually to reflect changes in in/out-migration of families, real estate sales, residential construction, and births.*

Based on Estimate of Births *Based on Children Already Born* *Based on Students Already Enrolled*

PROJECTED ENROLLMENT BY GRADE COMBINATIONS*

School Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2017-18	927	861	988	1231	524	570	243	652	409
2018-19	920	855	1003	1256	543	403	253	649	369
2019-20	928	860	996	1247	536	387	251	648	397
2020-21	900	831	976	1235	536	404	259	641	382
2021-22	905	835	963	1218	525	383	255	646	391
2022-23	902	831	969	1217	531	386	248	652	404
2023-24	895	823	964	1205	528	382	241	642	401
2024-25	886	815	955	1208	542	395	253	653	400
2025-26	875	799	942	1199	520	400	257	649	392
2026-27	890	815	932	1191	513	376	259	655	396
2027-28	890	814	947	1183	506	369	236	632	396

PROJECTED PERCENTAGE CHANGES

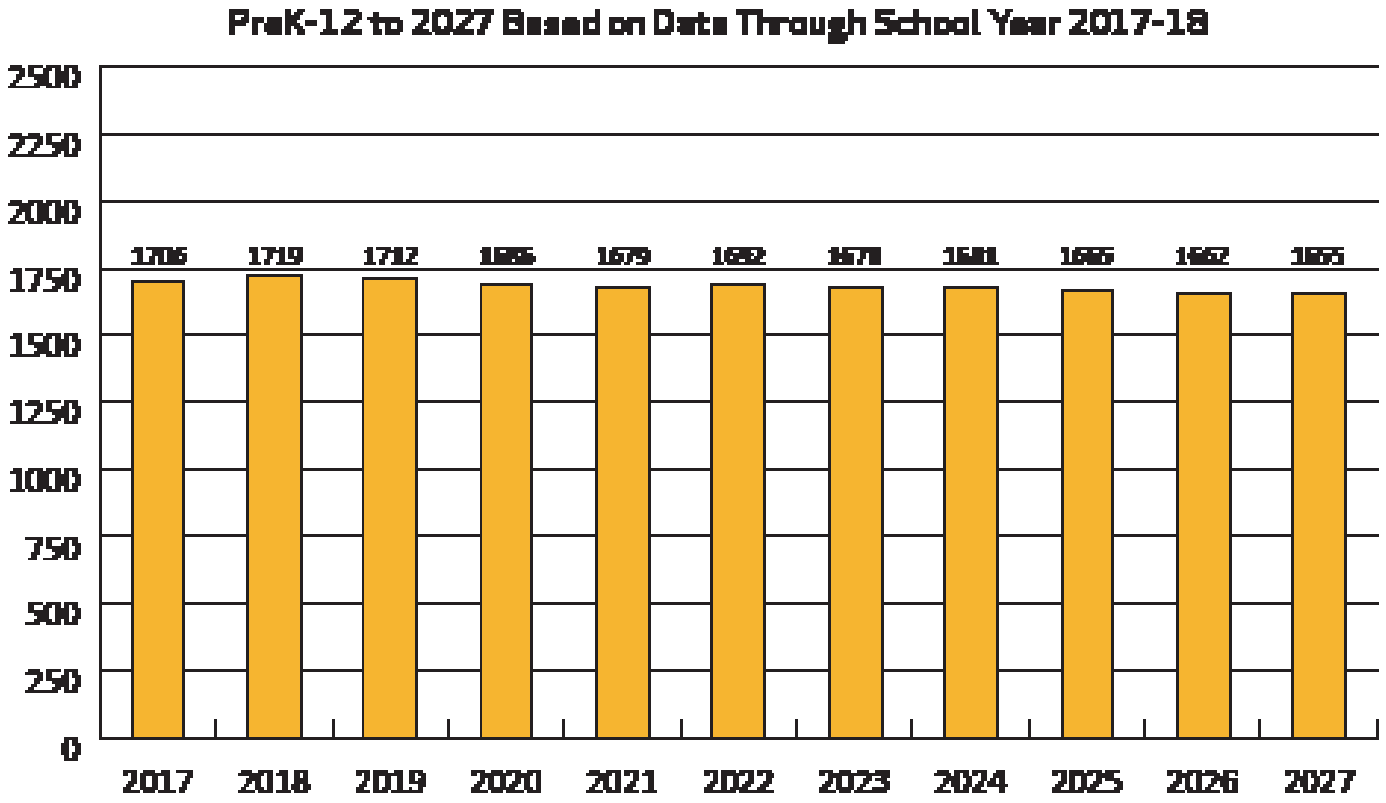
School Year	K-12	Difference	Percentage (%)
2017-18	1640	0	0.0%
2018-19	1652	12	0.7%
2019-20	1644	-8	-0.5%
2020-21	1617	-27	-1.6%
2021-22	1609	-8	-0.5%
2022-23	1621	12	0.7%
2023-24	1606	-15	-0.9%
2024-25	1608	2	0.1%
2025-26	1591	-17	-1.1%
2026-27	1587	-4	-0.3%
2027-28	1579	-8	-0.5%
	Change	-61	-3.7%

School Year	PK-5
2017-18	927
2018-19	920
2019-20	928
2020-21	900
2021-22	905
2022-23	902
2023-24	895
2024-25	886
2025-26	875
2026-27	890
2027-28	890

Enrollment Projections PreK-5th Grade

2018-2019 Projected Average: 899 Students

NEW ENGLAND SCHOOL DEVELOPMENT COUNCIL **Ayer-Shirley RSD Historical Enrollment**
Date: December 18, 2017



NEW ENGLAND SCHOOL DEVELOPMENT COUNCIL **Ayer-Shirley RSD Historical Enrollment**

Date: December 18, 2017

HISTORICAL ENROLLMENT BY GRADE

Birth Year	Births	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2002	179	2007-08	127	135	179	151	147	157	133	146	154	150	85	99	109	93	0	1738	1865
2003	192	2008-09	94	155	131	175	149	147	150	130	125	142	96	90	97	102	0	1689	1783
2004	168	2009-10	81	146	144	133	170	150	147	144	126	124	87	95	82	101	0	1649	1730
2005	175	2010-11	80	173	141	128	138	160	147	143	129	122	85	79	96	74	0	1615	1695
2006	165	2011-12	79	146	168	135	133	134	155	149	121	128	69	80	72	86	0	1576	1655
2007	166	2012-13	66	160	146	163	126	137	134	152	143	123	103	70	74	71	0	1602	1668
2008	181	2013-14	65	147	157	138	157	125	141	130	144	137	100	93	71	61	0	1601	1666
2009	168	2014-15	55	142	140	153	127	159	128	141	123	148	97	95	94	55	0	1602	1657
2010	180	2015-16	64	121	156	139	150	129	156	123	127	129	126	92	91	92	0	1631	1695
2011	153	2016-17	63	150	136	146	141	151	130	153	113	129	108	119	96	86	0	1658	1721
2012	157	2017-18	66	142	146	131	148	140	154	127	138	105	106	106	109	88	0	1640	1706

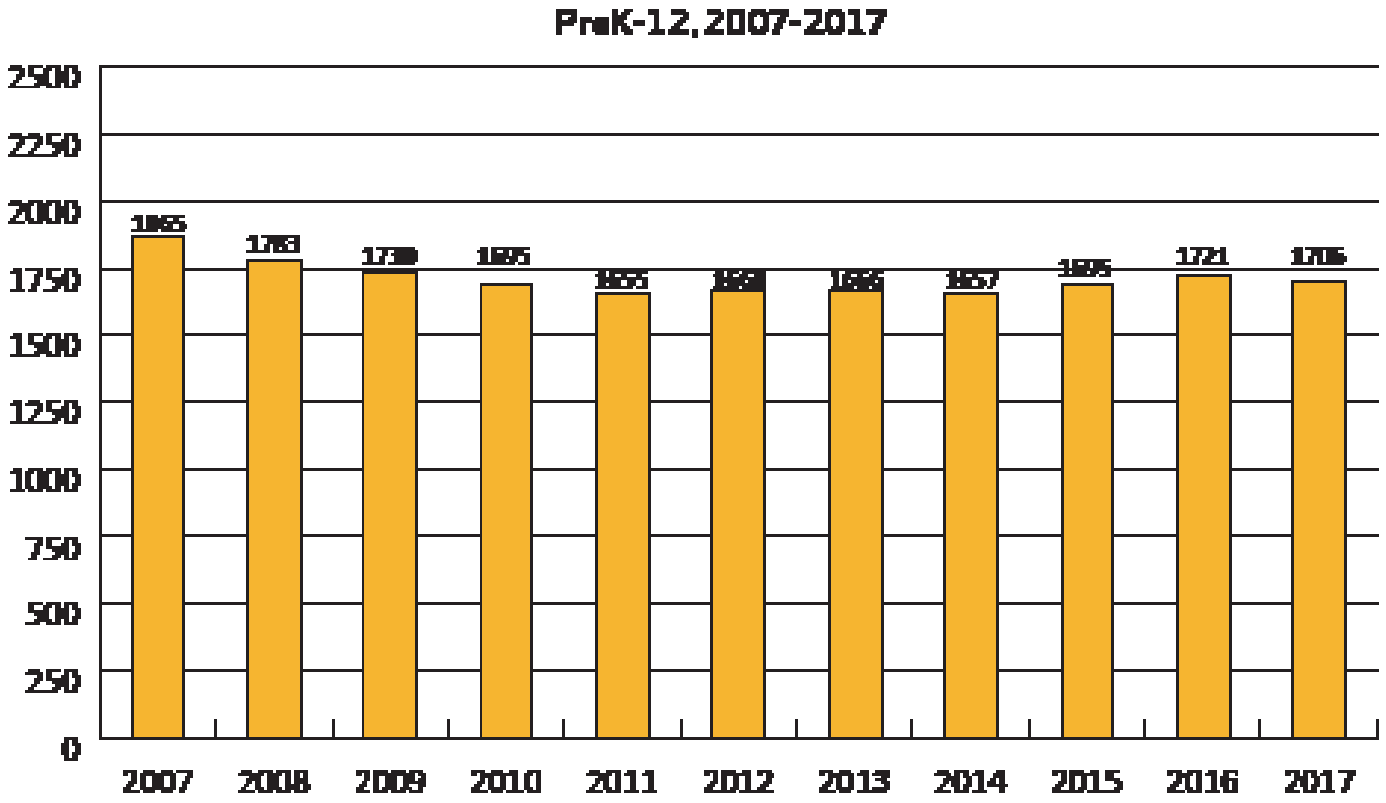
HISTORICAL ENROLLMENT BY GRADE COMBINATIONS

School Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2007-08	1029	902	1048	1352	583	450	304	690	586
2008-09	1001	907	1037	1304	547	397	267	652	585
2009-10	971	890	1034	1284	541	394	250	615	565
2010-11	967	887	1030	1281	541	394	251	585	534
2011-12	950	871	1020	1269	553	398	249	556	507
2012-13	932	866	1018	1284	552	418	266	584	518
2013-14	930	865	995	1276	552	411	281	606	525
2014-15	904	849	990	1261	540	412	271	612	541
2015-16	915	851	974	1230	535	379	256	657	401
2016-17	917	854	1007	1249	525	395	242	651	409
2017-18	927	861	988	1231	524	370	243	652	409

HISTORICAL PERCENTAGE CHANGES

School Year	K-12	Difference	Percentage (%)
2007-08	1738	0	0.0%
2008-09	1689	-49	-2.8%
2009-10	1649	-40	-2.4%
2010-11	1615	-34	-2.1%
2011-12	1576	-39	-2.4%
2012-13	1602	26	1.6%
2013-14	1601	-1	-0.1%
2014-15	1602	1	0.1%
2015-16	1631	29	1.8%
2016-17	1658	27	1.7%
2017-18	1640	-18	-1.1%
	Change	-98	-5.6%

NEW ENGLAND SCHOOL DEVELOPMENT COUNCIL **Ayer-Shirley RSD Historical Enrollment**
Date: December 18, 2017



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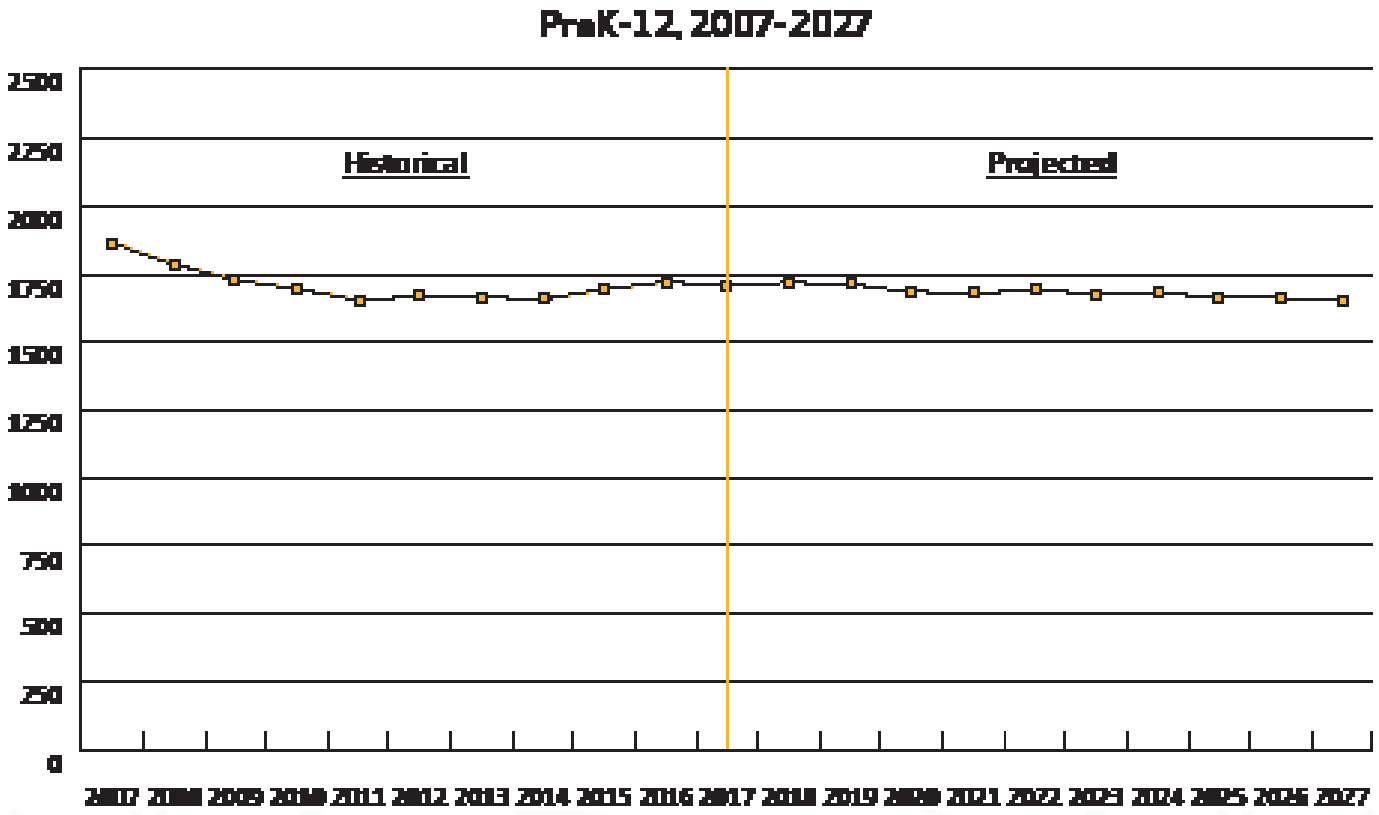

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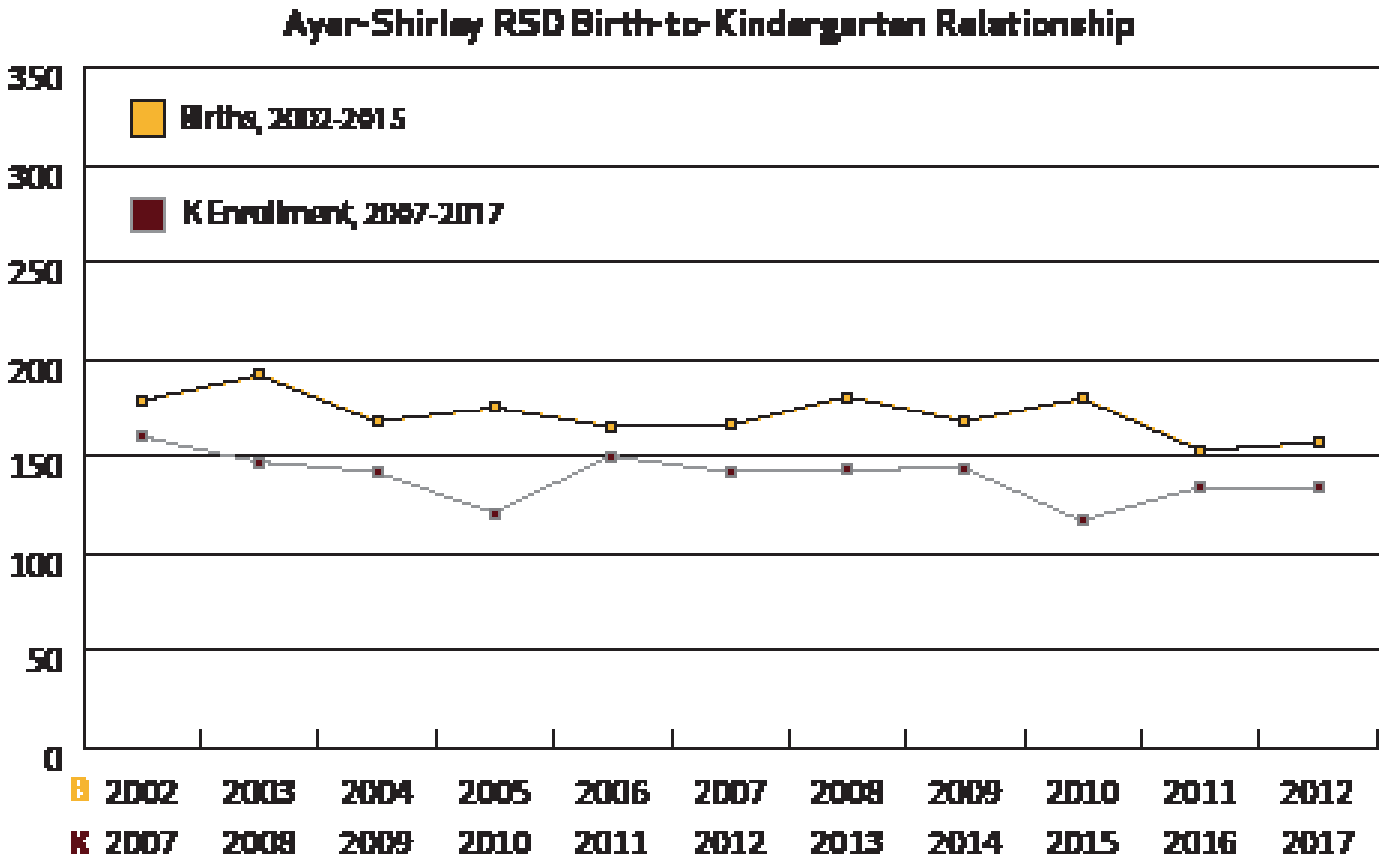

NEW ENGLAND SCHOOL DEVELOPMENT COUNCIL **Ayer-Shirley RSD Historical Enrollment**

Date: December 18, 2017

BUILDING PERMITS ISSUED		
Year	Single Family	Multi-Units
2005	49A 36S	14A
2013	30A 23S	6A 6S
2014	32A 17S	0
2015	37A 18S	6A
2016	26A 12S	0
2017	18A 9S to 10/31	0

**HUD and Building Department*

ENROLLMENT HISTORY		
Year	Career Tech 9-12 Total	Non-Public K-12 Total
2005-06	N/A	N/A
2013-14	N/A	N/A
2014-15	N/A	N/A
2015-16	N/A	N/A
2016-17	N/A	N/A
2017-18	100	N/A

RESIDENTS IN NON-PUBLIC INDEPENDENT AND PAROCHIAL SCHOOLS (GENERAL EDUCATION)														
Enrollments as of October 1	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12 Total
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

K-12 STUDENT DEMOGRAPHICS—OTHER				
	K-12 Home Schooled Students	K-12 Residents "Choiced-Out" or in Charter or Magnet Schools	K-12 Special Education Outplaced Students	K-12 Choiced-In, Tuitioned-In, & Other Non-Residents
2017	23	198	34	130

The above data were used in the preparation of the enrollment projections. If addition demographic work is needed, please contact our office.

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Section 5: Space Needs

Page Hilltop Elementary School Space Summary vs. State Standards

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Page Hilltop Elementary School at 522 Students	**Existing Conditions**		**MSBA Guidelines**	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	45	34,875	23	22,850
Special Education			12	6,040
Art & Music	4	3,800	8	325
Health & Physical Education	3	6,928	3	6,300
Media Center	8	5,595	1	5,019
Dining & Food Service	14	11,100	5	7,341
Medical	2	523	5	650
Administrative & Guidance	11	5,447	12	2,387
Custodial & Maintenance	0	0	7	2,122
Other—District Offices	7	2,284	0	0
Total Building Net Floor Area (NFA)				**54,394**
Proposed Student Capacity/Enrollment				**522**
Total Building Gross Floor Area (GFA)²				**80,440**

Lura A. White Elementary School Space Summary vs. State Standards

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Lura A. White Elementary School at XX Students	**Existing Conditions**		**MSBA Guidelines**	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces			43	42,850
Special Education			21	10,510
Art & Music			16	7,575
Health & Physical Education			3	6,300
Media Center			1	5,107
Dining & Food Service			5	11,556
Medical			6	710
Administrative & Guidance			14	5,121
Custodial & Maintenance			7	2,586
Other—General Purpose Room/Storage			0	0
Total Building Net Floor Area (NFA)				**90,375**
Proposed Student Capacity/Enrollment				**986**
Total Building Gross Floor Area (GFA)²				**142,970**

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Section 6: Presentation & Meeting Notes

Presentations & Meeting Notes

The following pages detail the presentations given to the ASRSD School Committee and general public, and meeting notes resulting from Visioning Workshops. **Copies of full presentations will be submitted with the Final Report.**

FEBRUARY 7, 2018 PRESENTATION

Ayer-Shirley Regional School District
PreK-5 Visioning Workshop
February 7, 2018

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1

Agenda

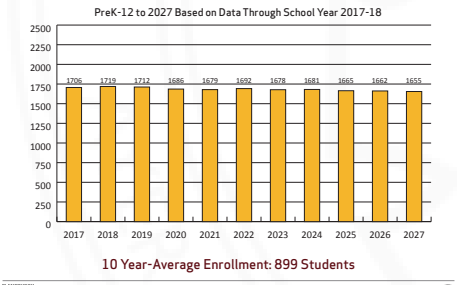
- Introductions
- What is the Enrollment?
- What is the Program?
- What are 21st Century Learning Environments?
- Guiding Principles to Consider
- Group Discussions
- Questions

2

Enrollments

3

Projected Enrollments



10 Year-Average Enrollment: 899 Students

4

PreK-5 Program

5

Space Program at Page Hilltop Elementary

Page Hilltop Elementary School at 522 Students	Existing Conditions		MSBA Guidelines	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	45	54,875	25	22,850
Special Education			12	6,040
Art & Music	9	5,631	6	4,125
Health & Physical Education	9	6,926	5	6,500
Media Center	3	3,399	1	3,219
Dining & Food Service	10	11,530	5	7,941
Medical	1	573	1	950
Administrative & Guidance	11	5,447	12	2,587
Custodial & Maintenance	0	0	7	2,163
Other—District Offices	7	2,284	0	0
Total Building Net Floor Area (NFA)				58,394
Proposed Student Capacity/Enrollment				522
Total Building Gross Floor Area (GFA)[2]				80,440

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Space Program at Lura A. White Elementary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES				
Lura A. White Elementary School at 378 Students	Existing Conditions		MSBA Guidelines	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	30	25,638	16	15,950
Special Education	4	1,202	9	4,530
Art & Music			6	2,575
Health & Physical Education	10	8,038	3	6,300
Media Center	3	2,428	1	2,371
Dining & Food Service	2	4,065	5	6,039
Medical	1	272	4	510
Administrative & Guidance	6	1,760	11	2,093
Custodial & Maintenance	0	0	6	1,978
Other—General Purpose Room/Storage	0	0	0	0
Proposed Student Capacity/Enrollment				378
Total Building Gross Floor Area (GFA)[2]		65,836		64,600

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21st Century Schools
Programs, Facilities, & Possibilites

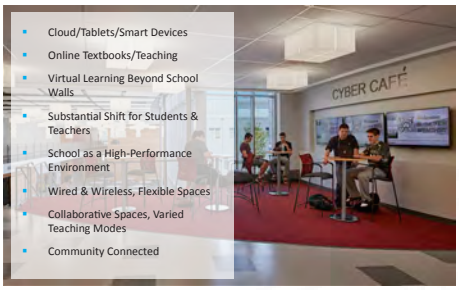
8

This is an Opportunity

- Think in Terms of the Next 50 Years
- Inevitable Changes in Teaching & Learning
- Respect & Keep What's Good
- The New Global Economy
- Bring Schools in 21st Century

9

21st Century Opportunities & Challenges



- Cloud/Tablets/Smart Devices
- Online Textbooks/Teaching
- Virtual Learning Beyond School Walls
- Substantial Shift for Students & Teachers
- School as a High-Performance Environment
- Wired & Wireless, Flexible Spaces
- Collaborative Spaces, Varied Teaching Modes
- Community Connected

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Design Issues to Consider

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Ubiquitous Technology

Cloud
Tablets
Online Textbooks
Smart Boards

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Flexible Spaces

Movable Walls
Furniture
Technology

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Varied Spaces

Varied Sizes:
Small
Medium
Large

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Gathering Spaces

Hubs of Learning
Presentations
Group Meetings
Collaboration

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Creating Streetscapes

Vistas
Displays
Gathering
Wayfinding

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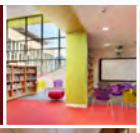
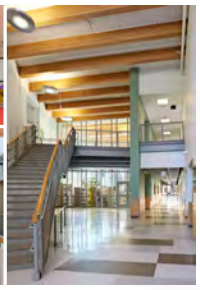
Transparency

Visible
Accountable
Supervision
Visual Interest





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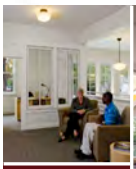
Teachers' Planning



Teacher Prep Rooms
Collaboration
Interaction
Cross Discipline

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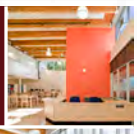
Learning Commons

Less Books
Virtual Learning
Flexible Space
Varied Seating



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Indoor/Outdoor Connections

Extended Learning Opportunities
Variety

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Sustainability

Energy Efficient
Daylight
Recycled Content
Solar Power

21

Building as a Teacher

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Elementary Educational Facilities

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Elementary Educational Facilities

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Elementary Educational Facilities

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25

Elementary Educational Facilities

FLANSBURGH

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Learning Environments—Flexible Spaces

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Learning Environments—Color

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Learning Environments—Color

FLANSBURGH

29

Learning Environments—Outdoor Spaces

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30

Learning Environments—Outdoor Spaces

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31

Learning Environments—Outdoor Spaces

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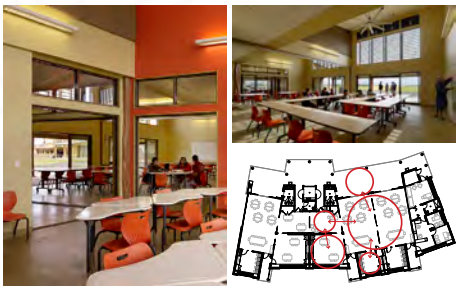
Our Collaborative Process—21st Century Learning



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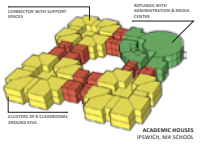
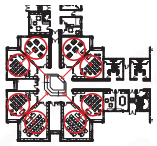
Our Collaborative Process—21st Century Learning





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What are ASRSD's Guiding Principles?

Some Examples from Other Schools

- Cooperative & Collaborative Learning Environments
- 21st Century Readiness
- Critical Thinking & Problem Solving
- Adaptability/Flexibility
- High-Performance Environment
- Small School Community/Large School Pride
- Focused Learning
- Identity & Purpose
- Community Connection
- Accountability
- Global Awareness
- Applied Learning
- Agility & Adaptability
- Personalized Learning

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FEBRUARY 12, 2018 PRESENTATION

AYER-SHIRLEY REGIONAL SCHOOL DISTRICT

Elementary Schools Existing Conditions

February 12, 2018

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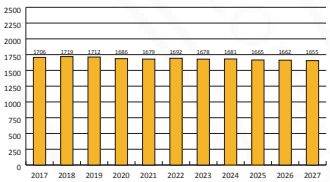
77 N. WASHINGTON ST
BOSTON, MA 02114

1

ENROLLMENT PROJECTIONS

2

PreK-12 to 2027 Based on Data Through School Year 2017-2018



School Year	PK-5
2017-18	927
2018-19	920
2019-20	928
2020-21	900
2021-22	905
2022-23	902
2023-24	895
2024-25	886
2025-26	873
2026-27	890
2027-28	890

Projected 10 Year PreK-5 Avg. Enrollment: 900 Students
Page Hilltop Elementary School: 522 Students
Lura A. White Elementary School: 378 Students

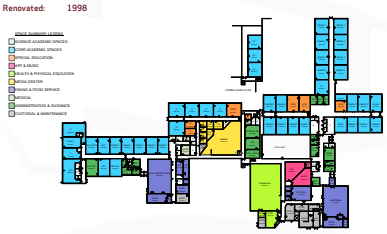
3

PAGE HILLTOP ELEMENTARY SCHOOL EXISTING CONDITIONS

4

Page Hilltop Elementary School Floor Plan

Constructed: 1959
Renovated: 1998



Assessed Building Value: $54,529,000

5

Page Hilltop Space Summary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES

Page Hilltop Elementary School at 522 Students	Existing Conditions		MSBA Guidelines	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	45	34,875	23	22,850
Special Education		Included Above	12	6,040
Art & Music	4	3,800	8	325
Health & Physical Education	3	6,928	3	6,300
Media Center	8	5,395	1	3,019
Dining & Food Service	14	11,100	5	7,341
Medical	2	523	5	650
Administrative & Guidance	11	5,447	12	2,387
Custodial & Maintenance	0	0	7	2,122
Other—District Offices	7	2,284	0	0
Total Building Net Floor Area (NFA)				54,394
Proposed Student Capacity/Enrollment				522
Total Building Gross Floor Area (GFA)[2]		110,000		80,440

Building Code Thresholds for Renovations
Fire Protection & Full H.C. Accessibility Required
30% of $54,529,000 = $16,358,700
Structural Code Upgrades
50% of $54,529,000 = $27,264,500

6

Page Hilltop—Landscape

- No compliant accessible route from parking lot to the main building
- Parent drop-off area is inefficient and lacks proper student safety measures
- Site vegetation in poor condition
- Pedestrian circulation bituminous sidewalk in poor condition
- Site drainage appears to be poor

7

Page Hilltop—Architectural

- Exterior Envelope: Low R-value and masonry requires repairs
- Roof System: Low R-value, replace with proper insulation to increase R-value
- Window System: Low R-value windows throughout, replace with high performing windows
- Interior Walls: Repair and paint throughout; add acoustical treatment as needed
- Flooring Replace all flooring throughout building
- Ceilings: Replace ceilings throughout to accommodate new lighting and improve acoustics
- Door & Hardware: Systems are in various states of disrepair. Replace and provide for handicap compliant hardware
- Interior Trim: Needs to conform with NFPA Flame Spread code

8

Page Hilltop—Equipment

- Sink locations are not handicap accessible
- Furniture is a variety of different manufacturers and vary in age
- Kitchen needs outdated cooking equipment and servery
- Lack of storage space throughout school
- Casework in fair/poor condition

9

Page Hilltop—Mechanical

- Air temperature controls are antiquated
- Ductwork no distributing air efficiently
- Air handling units have exceeded their expected maximum service life
- Update boilers to efficient fas-fired style
- Fuel oil storage not equipped with leak detection

10

Page Hilltop—Electrical

- The existing main disconnect and fused distribution panel should be tested and replaced, if needed
- Interior lighting should be replaced
- Existing exit signs should be replaced
- All site lighting should be replaced
- Duplex outlets are sparsely located throughout and need upgrades
- Full smoke coverage required for fire alarm system
- Fire alarm devices not mounted at ADA heights
- Communications, clock, and sound systems are antiquated

11

Page Hilltop—Fire Protection

- Building does not have sprinklers
- The service does not have a back-flow prevention device

12

Page Hilltop—Plumbing

- Existing water and waste piping systems have exceeded their life expectancy
- Plumbing fixtures are in fair condition and non-compliant with current codes
- No back-flow preventer on the domestic water system
- Kitchen equipment needs additional grease traps
- Water heaters nearing the end of their life expectancy

13

LURA A. WHITE ELEMENTARY SCHOOL EXISTING CONDITIONS

14

Lura A. White Elementary School Floor Plan

Constructed: 1936
Add./Reno.: 1959 and 1972

Assessed Building Value: $6,088,400

15

Lura A. White Space Summary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES

Lura A. White Elementary School at 378 Students	Existing Conditions		MSBA Guidelines	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	30	25,638	16	15,950
Special Education	4	1,202	9	4,530
Art & Music	(included above)		6	2,575
Health & Physical Education	10	8,038	3	6,300
Media Center	3	2,428	1	2,371
Dining & Food Service	2	4,065	5	6,039
Medical	1	272	4	510
Administrative & Guidance	6	1,760	11	2,093
Custodial & Maintenance	0	0	6	1,978
Other—General Purpose Room/Storage	0	0	0	0
Total Building Net Floor Area (NFA)				42,346
Proposed Student Capacity/Enrollment				378
Total Building Gross Floor Area (GFA)[2]		65,836		64,600

Building Code Thresholds for Renovations
Fire Protection & Full H.C. Accessibility Required
30% of $6,088,400 = $1,826,500
Structural Code Upgrades
50% of $6,088,400 = $3,044,200

16

Lura A. White—Landscape

- No compliant accessible route from parking lot to the main building
- Parent drop-off lacks proper student safety measures
- Pedestrian circulation pavement in poor condition
- Vegetation ranges from good to fair condition

17

Lura A. White—Architectural

- Exterior Envelope: Low R-value and masonry requires repairs
- Roof System: Replace to increase R-value
- Window System: Low R-value windows throughout, replace with high performing windows
- Interior Walls: Repair and paint throughout; add acoustical treatment as needed
- Flooring Replace all flooring throughout building
- Ceilings: Replace ceilings throughout to accommodate new lighting and improve acoustics
- Door & Hardware: Systems are in various states of disrepair. Replace and provide for handicap compliant hardware
- Interior Trim: Needs to conform with NFPA Flame Spread code

18

Lura A. White—Equipment

- Sink locations are not handicap accessible
- Furniture is a variety of different manufacturers and vary in age
- Kitchen needs outdated cooking equipment and servery
- Lack of storage space throughout school
- Casework in fair/poor condition

19

Lura A. White—Mechanical

- Automatic temperature controls & pneumatic controls antiquated
- Ductwork not distributing air efficiently
- Air handling units have exceeded their expected maximum service life
- Boilers in good condition
- Fuel oil storage lacks leak detection
- Heating piping system has exceed its life expectancy

20

Lura A. White—Electrical

- The existing main disconnect and fused distribution panels should be tested and replaced, if needed
- Interior lighting throughout the school is in fair condition and should be replaced
- Existing exit signs should be replaced and additional signs provided
- Duplex outlets are sparsely located throughout and need upgrades
- Emergency lighting competent to be checked and made operational
- Full smoke coverage required for fire alarm system

21

Lura A. White—Fire Protection

- Building does not have sprinklers
- The service does not have a back-flow prevention device

22

Lura A. White—Plumbing

- Existing water and waste piping systems have exceeded their life expectancy
- Plumbing fixtures are in fair condition and non-compliant with current codes
- Lack of flow preventer on the domestic water system
- Water heaters nearing the end of their life expectancy
- Gas supply to kitchen needs hood interlock gas value

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Short Term Recommendations

5 Year Repair Plan

Existing Conditions

- Site Work
- Envelope
- Interior
- Mechanical
- Electrical
- Plumbing/Fire Protection

Priority Ratings

- Health & Safety
- Code Compliance
- Accessibility/Universal Design
- Energy Savings

Currently working with the Facilities Department on recommendations and pricing.

24

Summary

- The schools are serviceable and have no safety concerns to continue operation
- The systems are exceeding their expected service lives and need to be replaces or upgraded
- The schools are not energy efficient and upgrades to systems should include energy savings equipment and materials
- A five-year repair recommendation list will be included in the final report
- Capital expenditures will be required and code thresholds need to be considered in a repair plan
- There are no code implications that require significant changes to the existing schools

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Questions?

26

MARCH 26, 2018 PRESENTATION

Ayer-Shirley Regional School District
PreK-5 Design Workshop

March 26, 2018

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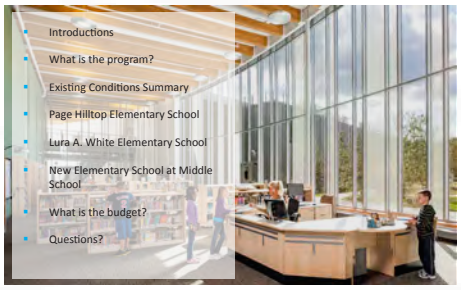
1

Agenda



- Introductions
- What is the program?
- Existing Conditions Summary
- Page Hilltop Elementary School
- Lura A. White Elementary School
- New Elementary School at Middle School
- What is the budget?
- Questions?

2

PreK—5 Program

3

Projected Enrollments

PROJECTED ENROLLMENT BY GRADE COMBINATIONS*

School Year	PK-5	K-5	K-6	K-8	5-8	6-8	7-8	7-12	9-12
2017-18	927	861	988	1231	524	370	243	652	409
2018-19	920	853	1003	1256	543	403	253	649	369
2019-20	928	860	996	1247	536	387	251	648	397
2020-21	900	831	976	1235	536	404	259	641	382
2021-22	905	835	963	1218	525	383	255	646	391
2022-23	902	831	969	1217	531	386	248	652	404
2023-24	895	823	964	1205	528	382	241	642	401
2024-25	886	813	955	1208	542	395	253	653	400
2025-26	873	799	942	1199	520	400	257	649	392
2026-27	890	815	932	1191	513	376	259	655	396
2027-28	890	814	947	1183	506	369	236	632	396

Enrollment Projections PreK-5th Grade
2019-2018 Projected Average: 899 Students

PROJECTED PERCENTAGE CHANGES

School Year	K-12	Difference	Percentage (%)
2017-18	1640	0	0.0%
2018-19	1652	12	0.7%
2019-20	1644	-8	-0.5%
2020-21	1617	-27	-1.6%
2021-22	1609	-8	-0.5%
2022-23	1621	12	0.7%
2023-24	1606	-15	-0.9%
2024-25	1608	2	0.1%
2025-26	1591	-17	-1.1%
2026-27	1587	-4	-0.3%
2027-28	1579	-8	-0.5%
Change		-61	-3.7%

10 Year-Average Enrollment: 900 Students

4

Existing Conditions Summary

5

Summary

- The schools are serviceable and have no safety concerns to continue operation
- The systems are exceeding their expected service lives and need to be replaced or upgraded
- The schools are not energy efficient and upgrades to systems should include energy savings equipment and materials
- A five-year repair recommendation list will be included in the final report
- Capital expenditures will be required and code thresholds need to be considered in a repair plan
- There are no code implications that require significant changes to the existing schools

6

Existing Conditions Summary

Site

- Update parent and bus drop-off
- Site drainage upgrades
- Pedestrians circulation repair/replacement

Building

- Improve building envelope
- Renovations for H.C. access
- Upgrades for educational needs
- Upgrades for security
- Replace HVAC system
- Replace plumbing system
- Improve normal electrical system
- Add emergency electrical distribution
- Replace outdated energy controls

Page Hilltop Elementary

Lura A. White Elementary

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AYER SHIRLEY REGIONAL SCHOOL DISTRICT

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Page Hilltop Elementary

8

Space Program at Page Hilltop Elementary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES

Page Hilltop Elementary School at 522 Students	Existing Conditions		MSBA Guidelines	
Room Type	# of Rooms	Area Totals	# of Rooms	Area Totals
Core Academic Spaces	45	34,875	23	22,850
Special Education		(included above)	12	6,040
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Custodial & Maintenance	0	0	7	2,122
Other—District Offices	7	2,284	0	0
Proposed Student Capacity/Enrollment				522
Total Building Gross Floor Area (GFA)[1]		110,000		80,440

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AYER SHIRLEY REGIONAL SCHOOL DISTRICT

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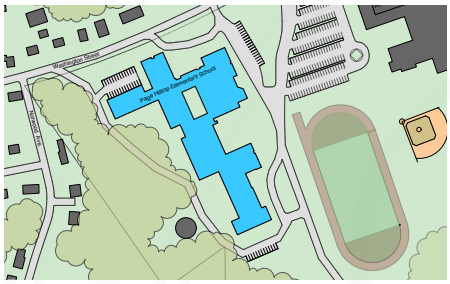
Page Hilltop Elementary School Site Plan—Option 1 Renovation



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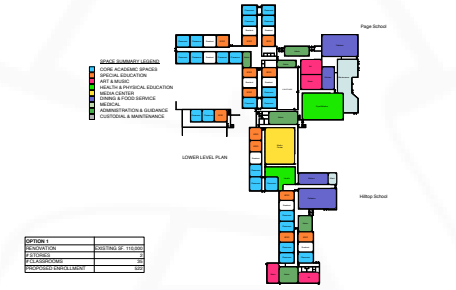
Page Hilltop Elementary School Floor Plan—Option 1 Renovation



OPTION 1	
RENOVATION	EXISTING SF: 110,000
# STORIES	2
# CLASSROOMS	30
PROPOSED ENROLLMENT	600

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Page Hilltop Elementary School Site Plan—Option 2 Renovation/Addition

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AYER SHIRLEY REGIONAL SCHOOL DISTRICT

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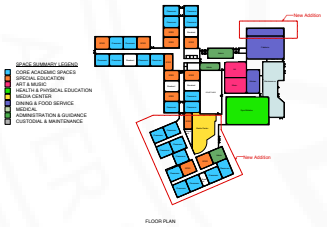
Page Hilltop Elementary School Floor Plan—Option 2 Renovation/Addition



OPTION 2	EXISTING SF: 110,000
ADDITION / RENOVATION	NEW SF: 87,000
# STORIES	2
# CLASSROOMS	30
PROPOSED ENROLLMENT	600

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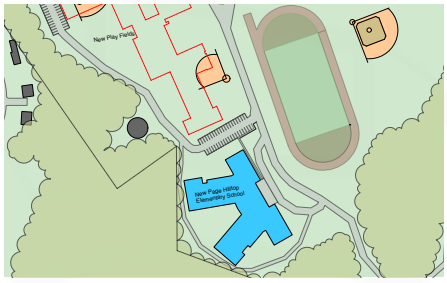
Page Hilltop Elementary School Site Plan—Option 3 New Construction



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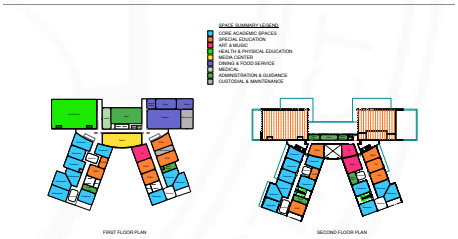
14

Page Hilltop Elementary School Floor Plan—Option 3 New Construction



OPTION 3	
NEW SCHOOL	NEW SF: 87,000
# STORIES	2
# CLASSROOMS	30
PROPOSED ENROLLMENT	600

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Lura A. White Elementary

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Space Program at Lura A. White Elementary

ACUTAL VS. MASSACHUSETTS SCHOOL BUILDING AUTHORITY (MSBA) GUIDELINES

Lura A. White Elementary School at 378 Students	Existing Conditions		MSBA Guidelines	
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Special Education	4	1,202	9	4,530
Art & Music		(included above)	6	2,575
Health & Physical Education	10	8,038	3	6,300
Media Center	3	2,428	1	2,371
Dining & Food Service	2	4,065	5	6,039
Medical	1	272	4	510
Administrative & Guidance	6	1,760	11	2,093
Custodial & Maintenance	0	0	6	1,978
Other—General Purpose Room/Storage	0	0	0	0
Proposed Student Capacity/Enrollment				378
Total Building Gross Floor Area (GFA)[1]		65,836		64,600

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AYER SHIRLEY REGIONAL SCHOOL DISTRICT

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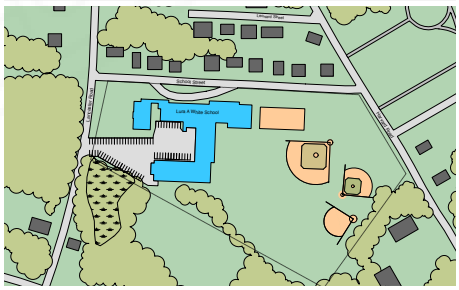
Lura A. White Elementary School Site Plan—Option 1 Renovation



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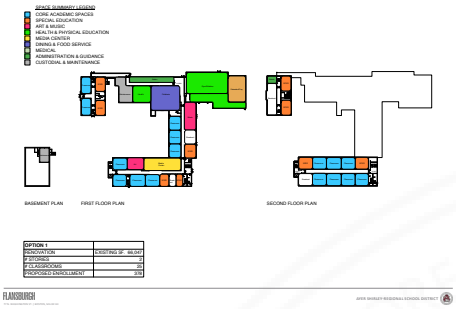
AYER SHIRLEY REGIONAL SCHOOL DISTRICT

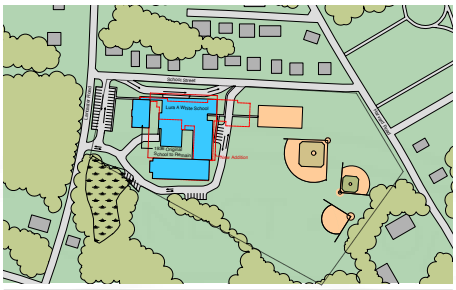
18

Lura A. White Elementary School Floor Plan—Option 1 Renovation



19

Lura A. White Elementary School Site Plan—Option 2 Renovation/Addition



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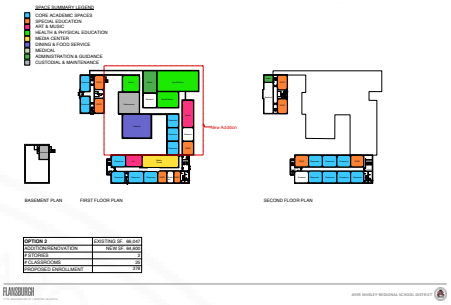
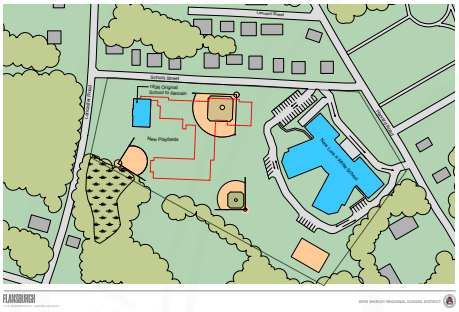
Lura A. White Elementary School Floor Plan—Option 2 Renovation/Addition



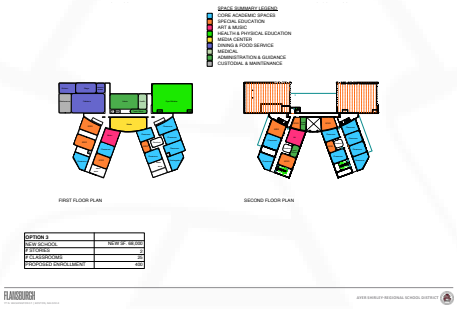
21

Lura A. White Elementary School Site Plan—Option 3 New Construction



22

Lura A. White Elementary School Floor Plan—Option 3 New Construction

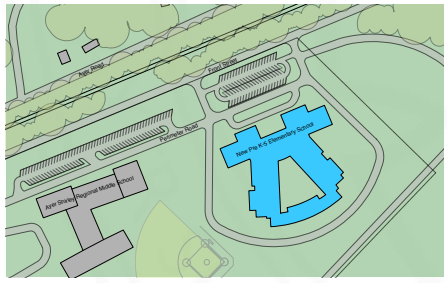


23

New Elementary School Option at Middle School

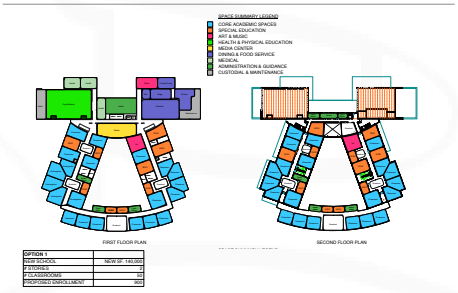
24

New Elementary School at Middle School Site Plan—New Construction



25

New Elementary School at Middle School Floor Plan—New Construction



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Projected Budgets for Elementary School Options

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Existing Schools Repair Cost

Page Hilltop Elementary School	$25,240,500
Lura A. White Elementary School	$18,177,500
Projected School Repair Cost	**$43,418,000**
5-Year Escalation at 4%/Year	$5,210,100
Projected School Repair Expenditure	**$48,628,100**

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Page Hilltop Elementary School Options

Option 1—Renovation	
Probable Construction Cost	$42,852,000
Soft Cost @ 30%	$12,855,600
Projected Total Budget	**$55,707,600**
Option 2—Renovation/Addition	
Probable Construction Cost	$38,169,500
Soft Cost @ 30%	$11,450,800
Projected Total Budget	**$49,620,300**
Option 2—Renovation/Addition	
Probable Construction Cost	$42,217,400
Soft Cost @ 30%	$12,665,200
Projected Total Budget	**$54,872,600**

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Lura A. White Elementary School Options

Option 1—Renovation	
Probable Construction Cost	$25,258,400
Soft Cost @ 30%	$7,577,500
Projected Total Budget	**$32,835,900**
Option 2—Renovation/Addition	
Probable Construction Cost	$31,636,300
Soft Cost @ 30%	$9,490,900
Projected Total Budget	**$40,127,200**
Option 2—Renovation/Addition	
Probable Construction Cost	$34,568,100
Soft Cost @ 30%	$10,370,400
Projected Total Budget	**$44,938,500**

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New Elementary School at Middle School

New Construction	
Probable Construction Cost	$60,466,000
Soft Cost @ 30%	$18,139,800
Projected Total Budget	**$78,605,800**

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MSBA Reimbursement Rate

The Statutory Formula starts all districts at a Base Rate of 31% reimbursement points. Assume 50% reimbursement for study purposes.

Base Rate (31 Points)
Community Income Factor (if any)
Community Property Wealth Factor (if any)
Community Property Factory (if any)
Incentive Points (if any, at the sole discretion of the MSBA)

Current Categories of Incentive Points
Model School Program (up to 5 Points)
Newley Formed Regional School District (up to 6 Points)
High Efficiency Green School Program (up to 2 Points)
Best Practices for Routine and Capital Maintenance (up to 2 Points)
Overlay Zoning (MGL 40R and 40S) (up to 2 Points)
Use of CM-at-Risk of Existing Facilities (up to 1 Point)
Renovation/Reuse of Existing Facilities (up to 5 Points)
Establishing a Maintenance Trust (up to 1 Point with District match)

PROBABLE MSBA REIMBURSEMENT AT 50% FOR DISCUSSION PURPOSES.

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Repairs vs. New School Cost Analysis

Cost of School Repairs @ 100% Town Share	$48,628,100

New School Option at Page Hilltop @ 50% Town Share	$27,436,300
New School Option at Lura A. White @ 50% Town Share	$22,469,200
Total Reimbursement	**$49,905,550**

New School Option at Middle School @ 50% Town Share	$39,302,900

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MEETING NOTES

DATE:	March 26, 2018	
PROJECT:	Ayer Shirley Regional School District (ASRSD) Study	
PROJECT NO:	1803.00	
PRESENT:	ASRSD School Committee	
	Jorge Cruz	Flansburgh
	Vince Dubé	Flansburgh
DISTRIBUTION:	All	

Plans presented include reducing layout to meet the MSBA guidelines. Might convert 3 classrooms to 2 classrooms of appropriate size with breakout space. The breakout space can be used as a project space (flex space).

The MSBA would prorate the costs of converting a 110,000 sf. school to the allowable 80,000 sf. included in the guidelines. Not all 110,000 would be paid for by the MSBA. Central Administration would be all at the town's costs.

Teacher's work space are separate spaces – not part of the breakout, but can reduce size of Teacher's space to create a breakout space.

A new elementary school would require 4-10 acres depending on field requirements. Baseball field at elementary school is little league size not high school (babe ruth) size.

Lura White School will require reducing the number of classrooms, but increase special needs rooms. Need to meet the MSBA guidelines for size of classrooms, by converting 3 classrooms to 2 classrooms. Collaborative classrooms are smaller than normal size – SPED is flexible.

"Co-teaching" model to use 24 student SPED classroom – if MSBA allows.

MSBA does not pay for portable classrooms.

New combined school at 140,000 sf to be proposed for the middle school site. Would need a larger site, roughly 10 – 12 acres with fields: 6 acres without fields. Combined school is more economical than two schools. Shared kitchen, cafeteria, servery and services (custodial, administrative). The school would be for 900 students and would be designed to allow for expansion of cafeteria and classroom bars.

Costs to repair building only improves the infrastructure systems, does not include any educational adds.

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Project costs include 30% soft costs (architect, engineers, etc.) as well as a 4% inflation cost for 2 years. (committee thinks a 4 to 5-year timeframe is more likely). Soft costs also includes some money for equipment and technology. (sf costs are between $400 - $500)

The base school reimbursement rate is anticipated at 50% conservatively for now. There are incentives that could bring it higher, ie. Green schools, or keeping existing school footprint, etc. No added incentive for new school but there is for addition / renovation.

Is it possible to build two schools at once? The response is that it is not very likely. Very unusual, but we know Winchester recently was able to do it with an elementary and high school projects.

One New and one Reno? Cost estimates include boiler replacement numbers at Page Hilltop. If the projects are renovations, then it would be wise to send a camera into the pipes and do a more thorough examination of the electrical system, as well as work to coordinate the BMS between facilities and the engineers.

Are we showing the model school as Option 3? Currently not, but Flansburgh has a model school with the MSBA which ASRSD can apply for. The Norfolk school is the Flasnburgh model school.

Funding from MSBA varies, and you need to show a need to go a certain way to replace.

Due to the regional district, a new combined school is more complicated politically, since both towns need to vote the override. More of a risk.

There was a request to include the Flansburgh Norfolk model school plan in the final report, for reference.

Cost of a Feasibility report is roughly $750,000, but more than $500,000. The report requires an Owner's Project manager, then the architect studies various options, including reno, add/reno, new, as well as various site locations etc.

A public forum is one week out with a new show. Link the final report on the school website.

MeetingNotes3.26.18

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MEETING NOTES

DATE:	February 27, 2018	
PROJECT:	Ayer-Shirley Regional School District Elementary Schools Study PreK-5 Visioning Workshop	
PROJECT NO:	1803.00	
PRESENT:	Roberta Aikey, Middle School Principal	Ayer-Shirley Regional School District
	Tara Bozek, Special Education Director	Ayer-Shirley Regional School District
	Varsha Desai, Lura A. White Principal	Ayer-Shirley Regional School District
	Fred Deppe, Page Hilltop Principal	Ayer-Shirley Regional School District
	Mary Malone, Superintendent	Ayer-Shirley Regional School District
	Jorge Cruz, Principal-in-Charge	Flansburgh Architects
	Kent Kovacs, Vice President	Flansburgh Architects
DISTRIBUTION:	Attendees	

1. Review spaces and square footage on program slides
    - Flexibility between classrooms
    - Common/breakout spaces
    - Consolidation with resources
    - Campus setting
    - Science/STEAM/robotics
    - Adaptable performance space
    - IT infrastructure, 1 on 1/own device
    - Inclusive environment
    - Small school feel
    - Universal design
    - Project-based learning
    - Maker space/Innovation Lab
    - Student display
    - Community spaces
    - Connection to outdoors
    - Connection to higher learning
    - Family partnership from birth to 5th grade
2. Design Workshops scheduled for March 14th and March 30th

[Dropbox (Flansburgh)/FAI Files/Projects/2018/1803 Ayer-Shirley RSD Study/05 PLANNING STUDIES/05A Planning Study Report/Cassie's Working File/Meeting Notes/cp]

Appendix

Project Cost & Management
Elementary School Cost Estimates

January 26, 2018—Feasibility Design Submission

March 26, 2018—Feasibility Design Estimate

Feasibility Design Submission

Jan. 26
Cost Estimate

Feasibility Design Submission

Page Hilltop Elementary

Design Options

Ayer, MA

PM&C LLC
20 Downer Avenue
Hingham, MA 02043
(T) 781-740-8007
(F) 781-740-1012

Prepared for:

Flansburgh Architects

January 26, 2018

PM&C

Page Hilltop Elementary
Design Options
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26-Jan-18

Feasibility Design Submission

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
HEALTH and SAFETY UPGRADES				
RENOVATION		110,000	$21.68	$2,385,310
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SUB-TOTAL	Jun-19	110,000	$21.68	$2,385,310
ESCALATION TO START - (assumed 4% PA)	6%			$143,119
DESIGN AND PRICING CONTINGENCY	17%			$405,503
SUB-TOTAL	Jun-19	110,000	$26.67	$2,933,932
GENERAL CONDITIONS	12.00%			$352,072
GENERAL REQUIREMENTS	3.00%			$88,018
BONDS	1.25%			$36,674
INSURANCE	1.15%			$33,740
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$73,348
PHASING PREMIUM	3%			$88,018
TOTAL OF ALL CONSTRUCTION HEALTH + SAFETY	Jun-19	110,000	$32.78	**$3,605,802**

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26-Jan-18

Feasibility Design Submission

CODE COMPLIANT UPGRADES

RENOVATION		110,000	$1.09	$120,000
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SITEWORK				NIC
SUB-TOTAL	Jun-19	110,000	$1.09	$120,000
ESCALATION TO START - (assumed 4% PA)	6%			$7,200
DESIGN AND PRICING CONTINGENCY	17%			$20,400
SUB-TOTAL	Jun-19	110,000	$1.34	$147,600
GENERAL CONDITIONS	12.00%			$17,712
GENERAL REQUIREMENTS	3.00%			$4,428
BONDS	1.25%			$1,845
INSURANCE	1.15%			$1,697
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$3,690
PHASING PREMIUM	3%			$4,428
TOTAL OF ALL CONSTRUCTION CODE COMPLIANCI	Jun-19	110,000	$1.65	**$181,400**

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Page Hilltop Elementary
Design Options
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26-Jan-18

Feasibility Design Submission

HC ACCESSIBILITY UPGRADES

RENOVATION		110,000	$14.42	$1,585,695
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SUB-TOTAL	Jun-19	110,000	$14.42	$1,585,695
ESCALATION TO START - (assumed 4% PA)	6%			$95,142
DESIGN AND PRICING CONTINGENCY	17%			$269,568
SUB-TOTAL	Jun-19	110,000	$17.73	$1,950,405
GENERAL CONDITIONS	12.00%			$234,049
GENERAL REQUIREMENTS	3.00%			$58,512
BONDS	1.25%			$24,380
INSURANCE	1.15%			$22,430
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$48,760
PHASING PREMIUM	3%			$58,512
TOTAL OF ALL CONSTRUCTION HC ACCESSIBILITY	Jun-19	110,000	$21.79	**$2,397,048**

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Page Hilltop Elementary
Design Options
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Feasibility Design Submission

ENERGY SAVINGS UPGRADES

RENOVATION		110,000	$80.75	$8,882,891
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SITEWORK				NIC
SUB-TOTAL	Jun-19	110,000	$80.75	$8,882,891
ESCALATION TO START - (assumed 4% PA)	6%			$532,973
DESIGN AND PRICING CONTINGENCY	17%			$1,510,091
SUB-TOTAL	Jun-19	110,000	$99.33	$10,925,955
GENERAL CONDITIONS	12.00%			$1,311,115
GENERAL REQUIREMENTS	3.00%			$327,779
BONDS	1.25%			$136,574
INSURANCE	1.15%			$125,648
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$273,149
PHASING PREMIUM	3%			$327,779
TOTAL OF ALL CONSTRUCTION ENERGY SAVINGS	Jun-19	110,000	$122.07	**$13,427,999**

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Page Hilltop Elementary
Design Options
Ayer, MA

26-Jan-18

Feasibility Design Submission

This Feasibility cost estimate was produced from drawings, outline specifications and other documentation prepared by Flansburgh Architects and their design team sent to our office on January 23rd, 2018. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractor's overhead, fee 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 manufacturers.

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.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- 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 as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency

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Page Hilltop Elementary
Design Options
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26-Jan-18

Feasibility Design Submission

GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HEALTH AND SAFETY							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	Toilets
	Lower Level			105,159	6,040	3,306	2,039
	First Floor			4,841			
	TOTAL GROSS FLOOR AREA (GFA)				**110,000**	***sf***	
C30	***INTERIOR FINISHES***						
C3020	**FLOOR FINISHES**						
	New linoleum tile; including floor prep	**97,021**	sf	8.00	776,168		
	SUBTOTAL					776,168	
	TOTAL - INTERIOR FINISHES						**$776,168**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Health and Safety						
	Replace domestic water piping and install water filtration system	**1**	ls	130,000.00	130,000		
	SUBTOTAL					130,000	
	TOTAL - PLUMBING						**$130,000**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Health and Safety						
	Install CO_2 demand control ventilation in gym, cafeteria and classrooms	**56,074**	sf	15.00	841,110		
	SUBTOTAL					841,110	
	TOTAL - HVAC						**$841,110**
D50	***ELECTRICAL***						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	Health and Safety						
	Fire alarm system inspection and testing report	**1**	ls	12,500.00	12,500		
	Test emergency standby generator system	**1**	ls	5,000.00	5,000		
	Install new automatic transfer switch	**1**	ls	15,000.00	15,000		
	Install full smoke detection equipment throughout the building	**110,000**	sf	1.00	110,000		
	Conduct an electrical distribution assessment of aging equipment and circuits	**1**	ls	12,500.00	12,500		
	SUBTOTAL					155,000	
	TOTAL - ELECTRICAL						**$155,000**
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Remove existing VCT flooring	**97,021**	sf	1.50	145,532		
	Miscellaneous demolition/dust control	**110,000**	sf	0.50	55,000		
	Demolition of MEP systems	**110,000**	sf	1.25	137,500		

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Page Hilltop Elementary
Design Options
Ayer, MA

26-Jan-18

Feasibility Design Submission

GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HEALTH AND SAFETY							
	Demolition of exterior stair	**1**	ls	20,000.00	20,000		
	SUBTOTAL					358,032	
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$358,032**
G10	***SITEWORK***						
	SITE REPAIR WORK						
	Replace damaged bituminous concrete in all areas that pose a tripping hazard	**5,000**	sf	10.00	50,000		
	Replace exterior stair & handrails	**1**	ls	75,000.00	75,000		
	SUBTOTAL					125,000	
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$125,000**
SUBTOTAL HEALTH and SAFETY							**2,385,310**

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Page Hilltop Elementary 26-Jan-18
Design Options
Ayer, MA

Feasibility Design Submission GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
CODE COMPLIANCE							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	Toilets
	Lower Level			105,159	6,040	3,306	2,039
	First Floor			4,841			
	TOTAL GROSS FLOOR AREA (GFA)				**110,000**	***sf***	
	C30 INTERIOR FINISHES						
C3030	**CEILING FINISHES**						
	No work required						
	SUBTOTAL					-	
	TOTAL - INTERIOR FINISHES						
	D20 PLUMBING						
D20	**PLUMBING, GENERALLY**						
	Code Compliance						
	Inspect and clean grease trap at kitchen sanitary	**1**	ls	2,000.00	2,000		
	Install trap primes in all floor traps	**21**	loc	2,800.00	58,800		
	Provide hose bibs in all toilet rooms	**19**	loc	1,800.00	34,200		
	SUBTOTAL					95,000	
	TOTAL - PLUMBING						**$95,000**
	D30 HVAC						
D30	**HVAC, GENERALLY**						
	No work required						
	SUBTOTAL					-	
	TOTAL - HVAC						
	D40 FIRE PROTECTION						
D40	**FIRE PROTECTION, GENERALLY**						
	No work required						
	SUBTOTAL					-	
	TOTAL - FIRE PROTECTION						
	D50 ELECTRICAL						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	Code Compliance						
	Interlock cafeteria ventilating with exhaust fan and kitchen hood	**1**	ls	25,000.00	25,000		
	SUBTOTAL					25,000	
	TOTAL - ELECTRICAL						**$25,000**
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
F2010	**BUILDING ELEMENTS DEMOLITION**						

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Page Hilltop Elementary
Design Options
Ayer, MA

26-Jan-18

Feasibility Design Submission

GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
CODE COMPLIANCE							
	No work required						
	SUBTOTAL					-	
	TOTAL - SELECTIVE BUILDING DEMOLITION						
	SUBTOTAL CODE COMPLIANCE						**$120,000**

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Page Hilltop Elementary
Design Options
Ayer, MA

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Feasibility Design Submission

GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HC ACCESSIBILITY							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	Toilets
	Lower Level			105,159	6,040	3,306	2,039
	First Floor			4,841			
	TOTAL GROSS FLOOR AREA (GFA)				**110,000**	***sf***	
	C10 INTERIOR CONSTRUCTION						
C1020	**INTERIOR DOORS**						
	Replace hardware at exterior doors with ADA compliant hardware	**25**	sets	900.00	22,500		
	Allowance to remove and expand door opening, add new door frame, leaf and hardware, replace general hardware as required	**110,000**	gsf	4.00	440,000		
	SUBTOTAL					462,500	
C1030	**SPECIALTIES / MILLWORK**						
	Replace toilet accessories for ADA	**19**	loc	5,000.00	95,000		
	Install new signage for the visually impaired	**110,000**	gsf	0.25	27,500		
	Miscellaneous sealants throughout building	**110,000**	sf	0.75	82,500		
	SUBTOTAL					205,000	
	TOTAL - INTERIOR CONSTRUCTION						**$667,500**
	D50 ELECTRICAL						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	HC Accessibility						
	Provide assisted listening devices for the hearing impaired	**50**	loc	3,000.00	150,000		
	SUBTOTAL					150,000	
	TOTAL - ELECTRICAL						**$150,000**
	E20 FURNISHINGS						
E2010	**FIXED FURNISHINGS**						
	Replace furniture as required for ADA requirements	**1**	ls	50,000.00	50,000		
	Reconstruct service area and tables in cafeteria to accommodate ADA requirements	**1**	ls	30,000.00	30,000		
	Modify counters, base cabinets, tall storage in classrooms and other rooms for ADA	**110,000**	gsf	5.00	550,000		
	SUBTOTAL					630,000	
	TOTAL - FURNISHINGS						**$630,000**
	F20 SELECTIVE BUILDING DEMOLITION						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Demolition of renovated areas; some finishes, doors, MEP systems, some casework and specialties	**110,000**	sf	1.00	110,000		
	SUBTOTAL					110,000	
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$110,000**
	G10 SITEWORK						

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Page Hilltop Elementary
Design Options
Ayer, MA

26-Jan-18

Feasibility Design Submission

GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HC ACCESSIBILITY							
	G10 SITEWORK						
G10	**SITE PREPARATION & DEMOLITION**						
	Allowance for pavement/curbing removal	**3,000**	sf	1.00	3,000		
	Misc. site demolition	**1**	ls	1,000.00	1,000		
	SUBTOTAL					4,000	
G20	**SITE IMPROVEMENTS**						
	Roadways and Parking Lots						
	Allowance to re-strip new and existing pavement	**1**	ls	3,000.00	3,000		
	New traffic signs	**1**	ls	1,500.00	1,500		
	Replace non-conforming curb cuts with new curb cuts to meet requirements	**3**	loc	1,200.00	3,600		
	SUBTOTAL					$8,100	
	Pedestrian paving						
	Allowance to add HC bituminous concrete paving/walks	*3,000*	sf				
	gravel base; 12" thick	**111**	cy	40.00	4,440		
	bituminous concrete; 3" thick	**333**	sy	35.00	11,655		
	SUBTOTAL					$16,095	
	TOTAL - SITEWORK						**$28,195**
	SUBTOTAL HC ACCESSIBILITY						**$1,585,695**

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Page Hilltop Elementary 26-Jan-18
Design Options
Ayer, MA

Feasibility Design Submission GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
ENERGY SAVINGS							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	Toilets
	Lower Level			105,159	6,040	3,306	2,039
	First Floor			4,841			
	TOTAL GROSS FLOOR AREA (GFA)				**110,000**	***sf***	
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**	*27,636*	sf				
	Replace all exterior sealants	**27,636**	sf	3.00	82,908		
	Interior skin						
	Allowance to insulate exterior; stud furring, spray insulation and new GWB	**27,636**	sf	14.00	386,904		
	SUBTOTAL					469,812	
B2020	**WINDOWS**	*18,424*	sf				
	Replace existing windows	**18,424**	sf	105.00	1,934,520		
	Backer rod & double sealant	**6,080**	lf	10.00	60,800		
	Wood blocking at openings	**6,080**	lf	4.00	24,320		
	SUBTOTAL					2,019,640	
B2030	**EXTERIOR DOORS**						
	Allowance for glazed entrance doors including frame and hardware; double door	**18**	pr	8,000.00	144,000		
	Allowance for HM doors, frames and hardware-Double	**4**	pr	3,600.00	14,400		
	Allowance for HM doors, frames and hardware-Single	**3**	ea	1,800.00	5,400		
	Backer rod & double sealant	**491**	lf	10.00	4,910		
	Wood blocking at openings	**491**	lf	4.00	1,964		
	SUBTOTAL					170,674	
	TOTAL - EXTERIOR CLOSURE						**$2,660,126**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	Flat roofing						
	Remove existing roof down to deck	**105,159**	sf	2.00	210,318		
	New EPDM roofing; R-30	**105,159**	sf	6.60	694,049		
	Insulation	**105,159**	sf	7.00	736,113		
	1/2" dens-deck protection board	**105,159**	sf	2.00	210,318		
	Reinforced vapor barrier	**105,159**	sf	1.00	105,159		
	Rough blocking	**3,290**	lf	8.00	26,320		
	Miscellaneous Roofing						
	Roof edge	**3,290**	lf	30.00	98,700		
	Walk pads	**1**	ls	20,000.00	20,000		
	SUBTOTAL					2,100,977	
B3020	**ROOF OPENINGS**						
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					2,500	
	TOTAL - ROOFING						**$2,103,477**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						

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Page Hilltop Elementary 26-Jan-18
Design Options
Ayer, MA

Feasibility Design Submission GFA 110,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
ENERGY SAVINGS							
	Energy Savings						
	New boilers for hot water	**1**	ls	130,000.00	130,000		
	New gas fired water heater	**1**	ls	120,000.00	120,000		
	Install new water conserving plumbing fixtures	**110,000**	sf	3.00	330,000		
	SUBTOTAL					580,000	
	TOTAL - PLUMBING						**$580,000**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Energy Savings						
	Install VFD's on HVAC equipment	**110,000**	gsf	1.10	121,000		
	Replace AHU's with energy efficient equipment	**110,000**	gsf	12.00	1,320,000		
	SUBTOTAL					1,441,000	
	TOTAL - HVAC						**$1,441,000**
D50	***ELECTRICAL***						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	Energy Savings						
	Install new exterior LED lighting	**1**	ls	50,000.00	50,000		
	Install new occupancy sensors on lighting circuits	**110,000**	gsf	1.50	165,000		
	Install new interior LED lighting	**110,000**	gsf	9.00	990,000		
	Install new energy management system	**1**	ls	500,000.00	500,000		
	Electrical to new VFD's on HVAC equipment	**110,000**	gsf	0.50	55,000		
	SUBTOTAL					1,760,000	
	TOTAL - ELECTRICAL						**$1,760,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Manual operated roller shades	**18,424**	sf	6.00	110,544		
	SUBTOTAL					110,544	
	TOTAL - FURNISHINGS						**$110,544**
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Demo of exterior windows	**18,424**	sf	6.00	110,544		
	Demo of exterior doors and frames, single	**3**	ea	200.00	600		
	Demo of exterior doors and frames, double	**22**	ea	300.00	6,600		
	Demolition of MEP systems	**110,000**	gsf	1.00	110,000		
	Demo of roof included in Divisions above						
	SUBTOTAL					227,744	
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$227,744**
	SUBTOTAL ENERGY SAVINGS						**$8,882,891**

Feasibility Design Submission

Laura A. White Elementary School

Design Options

Shirley, MA

PM&C LLC
20 Downer Avenue
Hingham, MA 02043
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(F) 781-740-1012

Prepared for:

Flansburgh Architects

January 26, 2018

PM&C

Laura A. White Elementary School
Design Options
Shirley, MA

26-Jan-18

Feasibility Design Submission

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
HEALTH and SAFETY UPGRADES				
RENOVATION		65,836	$29.53	$1,944,251
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SUB-TOTAL	Jun-19	65,836	$29.53	$1,944,251
ESCALATION TO START - (assumed 4% PA)	6%			$116,655
DESIGN AND PRICING CONTINGENCY	17%			$330,523
SUB-TOTAL	Jun-19	65,836	$36.32	$2,391,429
GENERAL CONDITIONS	12.00%			$286,971
GENERAL REQUIREMENTS	3.00%			$71,743
BONDS	1.25%			$29,893
INSURANCE	1.15%			$27,501
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$59,786
PHASING PREMIUM	3%			$71,743
TOTAL OF ALL CONSTRUCTION HEALTH + SAFETY	Jun-19	65,836	$44.64	**$2,939,066**

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Laura A. White Elementary School
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CODE COMPLIANT UPGRADES

RENOVATION		65,836	$2.56	$168,400
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SITEWORK				NIC
SUB-TOTAL	Jun-19	65,836	$2.56	$168,400
ESCALATION TO START - (assumed 4% PA)	6%			$10,104
DESIGN AND PRICING CONTINGENCY	17%			$28,628
SUB-TOTAL	Jun-19	65,836	$3.15	$207,132
GENERAL CONDITIONS	12.00%			$24,856
GENERAL REQUIREMENTS	3.00%			$6,214
BONDS	1.25%			$2,589
INSURANCE	1.15%			$2,382
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$5,178
PHASING PREMIUM	3%			$6,214
TOTAL OF ALL CONSTRUCTION CODE COMPLIANCI	Jun-19	65,836	$3.87	**$254,565**

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Laura A. White Elementary School
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HC ACCESSIBILITY UPGRADES

RENOVATION		65,836	$15.21	$1,001,609
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SUB-TOTAL	Jun-19	65,836	$15.21	$1,001,609
ESCALATION TO START - (assumed 4% PA)	6%			$60,097
DESIGN AND PRICING CONTINGENCY	17%			$170,274
SUB-TOTAL	Jun-19	65,836	$18.71	$1,231,980
GENERAL CONDITIONS	12.00%			$147,838
GENERAL REQUIREMENTS	3.00%			$36,959
BONDS	1.25%			$15,400
INSURANCE	1.15%			$14,168
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$30,800
PHASING PREMIUM	3%			$36,959
TOTAL OF ALL CONSTRUCTION HC ACCESSIBILITY	Jun-19	65,836	$23.00	**$1,514,104**

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Laura A. White Elementary School
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ENERGY SAVINGS UPGRADES

RENOVATION		65,836	$91.83	$6,045,571
REMOVE HAZARDOUS MATERIALS				Included In Contingency
SITEWORK				NIC
SUB-TOTAL	Jun-19	65,836	$91.83	$6,045,571
ESCALATION TO START - (assumed 4% PA)	6%			$362,734
DESIGN AND PRICING CONTINGENCY	17%			$1,027,747
SUB-TOTAL	Jun-19	65,836	$112.95	$7,436,052
GENERAL CONDITIONS	12.00%			$892,326
GENERAL REQUIREMENTS	3.00%			$223,082
BONDS	1.25%			$92,951
INSURANCE	1.15%			$85,515
PERMIT				NIC
OVERHEAD AND FEE	2.5%			$185,901
PHASING PREMIUM	3%			$223,082
TOTAL OF ALL CONSTRUCTION ENERGY SAVINGS	Jun-19	65,836	$138.81	**$9,138,909**

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Laura A. White Elementary School
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Shirley, MA

Feasibility Design Submission

This Feasibility cost estimate was produced from drawings, outline specifications and other documentation prepared by Flansburgh Architects and their design team sent to our office on January 23rd, 2018. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractor's overhead, fee 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 manufacturers.

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.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- 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 as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency

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Laura A. White Elementary School
Design Options
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Feasibility Design Submission

GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HEALTH AND SAFETY							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	TOILETS
	Lower Level			739	4,026	3,699	1,729
	First Floor			47,268			
	Second Floor			17,829			
	TOTAL GROSS FLOOR AREA (GFA)				**65,836**	***sf***	
C30	***INTERIOR FINISHES***						
C3020	**FLOOR FINISHES**						
	New linoleum tile; including floor prep	**52,027**	sf	8.00	416,216		
	SUBTOTAL					416,216	
C3030	**CEILING FINISHES**						
	Allowance for ceiling finishes; modifications as part of sprinkler install	**65,836**	sf	2.00	131,672		
	SUBTOTAL					131,672	
	TOTAL - INTERIOR FINISHES						**$547,888**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Health and Safety						
	Replace domestic water piping and install water filtration system	**1**	ls	90,000.00	90,000		
	SUBTOTAL					90,000	
	TOTAL - PLUMBING						**$90,000**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Health and Safety						
	Install in kitchen hood and interlock gas valve	**1**	ls	80,000.00	80,000		
	Install CO_2 demand control ventilation in gym, cafeteria and classrooms	**35,145**	sf	15.00	527,175		
	SUBTOTAL					607,175	
	TOTAL - HVAC						**$607,175**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Install new sprinkler system	**65,836**	sf	5.00	329,180		
	SUBTOTAL					329,180	
	TOTAL - FIRE PROTECTION						**$329,180**
D50	***ELECTRICAL***						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	Health and Safety						
	Fire alarm system inspection and testing report	**1**	ls	8,000.00	8,000		

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Laura A. White Elementary School
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Feasibility Design Submission

GFA 65,836

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HEALTH AND SAFETY							
54		Install full smoke detection equipment throughout the building	**65,836**	sf	1.00	65,836		
55		Test emergency standby generator system	**1**	ls	5,000.00	5,000		
56		Ventilate, clean, and remove stored items from main electrical room	**1**	ls	10,000.00	10,000		
57		Conduct an electrical distribution assessment of aging equipment and circuits	**1**	ls	5,000.00	5,000		
58		SUBTOTAL					93,836	
59								
60								
61		***TOTAL - ELECTRICAL***						**$93,836**
62								
63								
64	***F20***	***SELECTIVE BUILDING DEMOLITION***						
65								
66	**F2010**	**BUILDING ELEMENTS DEMOLITION**						
66		Remove and dispose existing VCT flooring	**52,027**	sf	1.50	78,041		
67		Miscellaneous demolition/dust control	**65,836**	sf	1.00	65,836		
68		Demolition of MEP systems	**65,836**	sf	1.25	82,295		
69		SUBTOTAL					226,172	
70								
71								
72		***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$226,172**
73								
74								
75	***G10***	***SITEWORK***						
76								
77		**SITE REPAIR WORK**						
78		Replace damaged bituminous concrete in all areas that pose a tripping hazard	**5,000**	sf	10.00	50,000		
79		SUBTOTAL					50,000	
80								
81		***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$50,000**
82								
83								
84		**SUBTOTAL HEALTH and SAFETY**						**1,944,251**

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Laura A. White Elementary School
Design Options
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Feasibility Design Submission

GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
CODE COMPLIANCE							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	TOILETS
	Lower Level			875	4,026	3,699	1,729
	First Floor			47,591			
	Second Floor			17,370			
	TOTAL GROSS FLOOR AREA (GFA)				**65,836**	***sf***	
	D20 PLUMBING						
D20	**PLUMBING, GENERALLY**						
	Code Compliance						
	Inspect and clean grease trap at kitchen sanitary	**1**	ls	3,000.00	3,000		
	Install trap primers in all floor traps	**22**	loc	2,800.00	61,600		
	Provide hose bibs in all toilet rooms	**16**	loc	1,800.00	28,800		
	Insulate all hot water piping	**1**	ls	50,000.00	50,000		
	SUBTOTAL					143,400	
	TOTAL - PLUMBING						**$143,400**
	D30 HVAC						
D30	**HVAC, GENERALLY**						
	No work required						
	SUBTOTAL					-	
	TOTAL - HVAC						
	D40 FIRE PROTECTION						
D40	**FIRE PROTECTION, GENERALLY**						
	No work required						
	SUBTOTAL					-	
	TOTAL - FIRE PROTECTION						
	D50 ELECTRICAL						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	Code Compliance						
	Interlock cafeteria ventilating with exhaust fan and kitchen hood	**1**	ls	25,000.00	25,000		
	SUBTOTAL					25,000	
	TOTAL - ELECTRICAL						**$25,000**
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	No work required						
	SUBTOTAL					-	
	TOTAL - SELECTIVE BUILDING DEMOLITION						

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Laura A. White Elementary School 26-Jan-18
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Shirley, MA

Feasibility Design Submission GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
CODE COMPLIANCE							
64	**SUBTOTAL CODE COMPLIANCE**						**$168,400**

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Laura A. White Elementary School 26-Jan-18
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Feasibility Design Submission GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HC ACCESSIBILITY							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	TOILETS
	Lower Level			875	4,026	3,699	1,729
	First Floor			47,591			
	Second Floor			17,370			
	TOTAL GROSS FLOOR AREA (GFA)				**65,836**	***sf***	
C10	***INTERIOR CONSTRUCTION***						
C1020	**INTERIOR DOORS**						
	Replace hardware at exterior doors with ADA compliant hardware	**23**	sets	900.00	20,700		
	Allowance to remove and expand door opening, add new door frame, leaf and hardware, replace general hardware as required	**65,836**	gsf	4.00	263,344		
	SUBTOTAL					284,044	
C1030	**SPECIALTIES / MILLWORK**						
	Replace toilet accessories for ADA	**16**	loc	5,000.00	80,000		
	Install new signage for the visually impaired	**65,836**	gsf	0.25	16,459		
	Miscellaneous sealants throughout building	**65,836**	gsf	0.75	49,377		
	SUBTOTAL					145,836	
	TOTAL - INTERIOR CONSTRUCTION						**$429,880**
D50	***ELECTRICAL***						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	HC Accessibility						
	Provide assisted listening devices for the hearing impaired	**31**	loc	3,000.00	93,000		
	SUBTOTAL					93,000	
	TOTAL - ELECTRICAL						**$93,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Replace furniture as required for ADA requirements	**1**	ls	10,000.00	10,000		
	Reconstruct service area and tables in cafeteria to accommodate ADA requirements	**1**	ls	15,000.00	15,000		
	Modify counters, base cabinets, tall storage in classrooms and other rooms for ADA	**65,836**		5.00	329,180		
	SUBTOTAL					354,180	
	TOTAL - FURNISHINGS						**$354,180**
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Demolition of renovated areas; some finishes, doors, MEP systems, some casework and specialties	**65,836**	gsf	1.50	98,754		
	SUBTOTAL					98,754	
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$98,754**
G10	***SITEWORK***						

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Laura A. White Elementary School
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Feasibility Design Submission

GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
HC ACCESSIBILITY							
G10	**SITE PREPARATION & DEMOLITION**						
	Allowance for pavement/curbing removal	**3,000**	sf	1.00	3,000		
	Misc. site demolition	**1**	ls	1,000.00	1,000		
	SUBTOTAL					4,000	
G20	**SITE IMPROVEMENTS**						
	Roadways and Parking Lots						
	Allowance to re-strip new and existing pavement	**1**	ls	3,000.00	3,000		
	New traffic signs	**1**	ls	1,500.00	1,500		
	Replace non-conforming curb cuts with new curb cuts to meet requirements	**1**	loc	1,200.00	1,200		
	SUBTOTAL					$5,700	
	Pedestrian paving						
	Allowance to add HC bituminous concrete paving/walks	*3,000*	sf				
	gravel base; 12" thick	**111**	cy	40.00	4,440		
	bituminous concrete; 3" thick	**333**	sy	35.00	11,655		
	SUBTOTAL					$16,095	
	TOTAL - SITEWORK						**$25,795**
SUBTOTAL HC ACCESSIBILITY							**1,001,609**

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Laura A. White Elementary School 26-Jan-18
Design Options
Shirley, MA

Feasibility Design Submission GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
ENERGY SAVINGS							
	GROSS FLOOR AREA CALCULATION						
					GYM	CAFÉ	TOILETS
	Lower Level			875	4,026	3,699	1,729
	First Floor			47,591			
	Second Floor			17,370			
	TOTAL GROSS FLOOR AREA (GFA)				**65,836**	***sf***	
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**	*23,579*	sf				
	Replace all exterior sealants	**23,579**	sf	3.00	70,737		
	Interior skin						
	Allowance to insulate exterior; stud furring, spray insulation and new GWB	**23,579**	sf	14.00	330,106		
	SUBTOTAL					400,843	
B2020	**WINDOWS**	*15,719*	sf				
	Replace existing windows	**15,719**	sf	105.00	1,650,495		
	Backer rod & double sealant	**5,187**	lf	10.00	51,870		
	Wood blocking at openings	**5,187**	lf	4.00	20,748		
	SUBTOTAL					1,723,113	
B2030	**EXTERIOR DOORS**						
	Allowance for glazed entrance doors including frame and hardware; single door	**3**	ea	4,000.00	12,000		
	Allowance for glazed entrance doors including frame and hardware; double door	**6**	pr	8,000.00	48,000		
	Allowance for HM doors, frames and hardware-Double	**1**	pr	3,600.00	3,600		
	Allowance for HM doors, frames and hardware-Single	**13**	ea	1,800.00	23,400		
	Backer rod & double sealant	**412**	lf	10.00	4,120		
	Wood blocking at openings	**412**	lf	4.00	1,648		
	SUBTOTAL					92,768	
	TOTAL - EXTERIOR CLOSURE						**$2,216,724**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	Flat roofing						
	Remove existing roof down to deck	**42,402**	sf	2.00	84,804		
	New EPDM roofing; R-30	**42,402**	sf	6.60	279,853		
	Insulation	**42,402**	sf	7.00	296,814		
	1/2" dens-deck protection board	**42,402**	sf	2.00	84,804		
	Reinforced vapor barrier	**42,402**	sf	1.00	42,402		
	Rough blocking	**1,865**	lf	8.00	14,920		
	Sloped roofing						
	Pitched roof; Asphalt shingles; R-30	**5,812**	sf	9.00	52,308		
	Underlayment; nailable insulation	**5,812**	sf	10.00	58,120		
	Ice & water shield	**5,812**	sf	3.00	17,436		
	Miscellaneous Roofing						
	Roof/drip edge	**1,865**	lf	30.00	55,950		
	Walk pads	**1**	ls	20,000.00	20,000		
	SUBTOTAL					1,007,411	
B3020	**ROOF OPENINGS**						
	Roof hatch	**1**	loc	2,500.00	2,500		

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Laura A. White Elementary School 26-Jan-18
Design Options
Shirley, MA

Feasibility Design Submission GFA 65,836

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
ENERGY SAVINGS							
	SUBTOTAL					2,500	
	TOTAL - ROOFING						**$1,009,911**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Energy Savings						
	New gas fired water heater	**1**	ls	30,000.00	30,000		
	Install new water conserving plumbing fixtures.	**65,836**	sf	3.00	197,508		
	SUBTOTAL					227,508	
	TOTAL - PLUMBING						**$227,508**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Energy Savings						
	Install VFD's on HVAC equipment	**65,836**	gsf	1.10	72,420		
	Replace AHU's with energy efficient equipment	**65,836**	gsf	12.00	790,032		
	Install unit ventilators for hot water systems	**65,836**	gsf	6.00	395,016		
	SUBTOTAL					1,257,468	
	TOTAL - HVAC						**$1,257,468**
D50	***ELECTRICAL***						
D5010	**COMPLETE ELECTRICAL SYSTEM**						
	Energy Savings						
	Install new energy management system	**1**	ls	300,000.00	300,000		
	Install new exterior LED lighting	**1**	ls	50,000.00	50,000		
	Install new occupancy sensors on lighting circuits	**65,836**	gsf	1.50	98,754		
	Install new interior LED lighting	**65,836**	gsf	9.00	592,524		
	Electrical to new VFD's on HVAC equipment	**65,836**	gsf	0.50	32,918		
	SUBTOTAL					1,074,196	
	TOTAL - ELECTRICAL						**$1,074,196**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Manual operated roller shades	**15,719**	sf	6.00	94,314		
	SUBTOTAL					94,314	
	TOTAL - FURNISHINGS						**$94,314**
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Demo of exterior windows	**15,719**	sf	6.00	94,314		
	Demo of exterior doors and frames, single	**16**	ea	200.00	3,200		
	Demo of exterior doors and frames, double	**7**	ea	300.00	2,100		
	Demolition of MEP systems	**65,836**	gsf	1.00	65,836		
	Demo of roof included in Divisions above						

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Laura A. White Elementary School
Design Options
Shirley, MA

26-Jan-18

Feasibility Design Submission

GFA 65,836

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	ENERGY SAVINGS							
119		SUBTOTAL					165,450	
120								
121		***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$165,450**
122								
123								
124		**SUBTOTAL ENERGY SAVINGS**						**$6,045,571**

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Feasibility Design Estimate

March 21
Cost Estimate

Feasibility Design Estimate

Ayer Shirley School Options

Design Options

Ayer Shirley, MA

PM&C LLC
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Prepared for:

Flansburgh

March 21, 2018

PM&C

Ayer Shirley School Options
Design Options
Ayer Shirley, MA

21-Mar-18

Feasibility Design Estimate

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -1 Lura White School Renovation				
	May-20			
RENOVATIONS TO EXISTING SCHOOL		66,047	$234.95	$15,517,538
REMOVE HAZARDOUS MATERIALS				$200,000
SITEWORK - 10% Allowance				$1,551,754
SUB-TOTAL		66,047	$261.47	$17,269,292
ESCALATION - (assumed 3% PA)	6.5%			$1,122,504
DESIGN AND PRICING CONTINGENCY	15%			$2,758,769
SUB-TOTAL		66,047	$320.24	$21,150,565
GENERAL CONDITIONS	6.0%			$1,269,034
GENERAL REQUIREMENTS	4.0%			$846,023
BONDS	1.25%			$264,382
INSURANCE	1.80%			$423,540
PERMIT				Waived
FEE	3.0%			$718,606
GMP CONTINGENCY	2.5%			$528,764
PHASING PREMIUM	5.00%			$1,057,528
TOTAL OF ALL CONSTRUCTION		66,047	$397.57	**$26,258,442**

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Ayer Shirley School Options
Design Options
Ayer Shirley, MA

21-Mar-18

Feasibility Design Estimate

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -2 Lura White School Renovation + Addition				
	May-20			
RENOVATIONS TO EXISTING SCHOOL		34,834	$230.31	$8,022,777
NEW ADDITION		29,766	$353.14	$10,511,473
DEMOLISH EXISTING SCHOOL		31,213	$7.00	$218,491
REMOVE HAZARDOUS MATERIALS				$200,000
SITEWORK - 10% Allowance				$1,853,425
SUB-TOTAL		64,600	$322.08	$20,806,166
ESCALATION - (assumed 3% PA)	6.5%			$1,352,401
DESIGN AND PRICING CONTINGENCY	15%			$3,323,785
SUB-TOTAL		64,600	$394.46	$25,482,352
GENERAL CONDITIONS	6.0%			$1,528,941
GENERAL REQUIREMENTS	4.0%			$1,019,294
BONDS	1.25%			$318,529
INSURANCE	1.80%			$510,284
PERMIT				Waived
FEE	3.0%			$865,782
GMP CONTINGENCY	2.5%			$637,059
PHASING PREMIUM	5.00%			$1,274,118
TOTAL OF ALL CONSTRUCTION		64,600	$489.73	**$31,636,359**

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Ayer Shirley School Options
Design Options
Ayer Shirley, MA

21-Mar-18

Feasibility Design Estimate

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -3 Lura White School New School				
	May-20			
NEW SCHOOL		68,000	$307.83	$20,932,727
DEMOLISH EXISTING SCHOOL		66,047	$7.00	$462,329
REMOVE HAZARDOUS MATERIALS				$200,000
SITEWORK - 10% Allowance				$2,093,273
SUB-TOTAL		68,000	$348.36	$23,688,329
ESCALATION - (assumed 3% PA)	6.5%			$1,539,741
DESIGN AND PRICING CONTINGENCY	15%			$3,784,211
SUB-TOTAL		68,000	$426.65	$29,012,281
GENERAL CONDITIONS	6.0%			$1,740,737
GENERAL REQUIREMENTS	4.0%			$1,160,491
BONDS	1.25%			$362,654
INSURANCE	1.80%			$580,971
PERMIT				Waived
FEE	3.0%			$985,714
GMP CONTINGENCY	2.5%			$725,307
PHASING PREMIUM	5.00%			NR
TOTAL OF ALL CONSTRUCTION		68,000	$508.36	**$34,568,155**

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Ayer Shirley School Options
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MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -1 Page Hilltop School Renovation				
	May-20			
RENOVATIONS TO EXISTING SCHOOL		110,000	$231.26	$25,438,508
REMOVE HAZARDOUS MATERIALS				$200,000
SITEWORK - 10% Allowance				$2,543,851
SUB-TOTAL		110,000	$256.20	$28,182,359
ESCALATION - (assumed 3% PA)	6.5%			$1,831,853
DESIGN AND PRICING CONTINGENCY	15%			$4,502,132
SUB-TOTAL		110,000	$313.78	$34,516,344
GENERAL CONDITIONS	6.0%			$2,070,981
GENERAL REQUIREMENTS	4.0%			$1,380,654
BONDS	1.25%			$431,454
INSURANCE	1.80%			$691,190
PERMIT				Waived
FEE	3.0%			$1,172,719
GMP CONTINGENCY	2.5%			$862,909
PHASING PREMIUM	5.00%			$1,725,817
TOTAL OF ALL CONSTRUCTION		110,000	$389.56	**$42,852,068**

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MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -2 Page Hilltop School Renovation + Addition				
	May-20			
RENOVATIONS TO EXISTING SCHOOL		57,153	$246.31	$14,077,590
NEW ADDITION		23,847	$344.91	$8,224,992
DEMOLISH EXISTING SCHOOL		52,847	$7.00	$369,929
REMOVE HAZARDOUS MATERIALS				$200,000
SITEWORK - 10% Allowance				$2,230,258
SUB-TOTAL		81,000	$309.91	$25,102,769
ESCALATION - (assumed 3% PA)	6.5%			$1,631,680
DESIGN AND PRICING CONTINGENCY	15%			$4,010,167
SUB-TOTAL		81,000	$379.56	$30,744,616
GENERAL CONDITIONS	6.0%			$1,844,677
GENERAL REQUIREMENTS	4.0%			$1,229,785
BONDS	1.25%			$384,308
INSURANCE	1.80%			$615,661
PERMIT				Waived
FEE	3.0%			$1,044,571
GMP CONTINGENCY	2.5%			$768,615
PHASING PREMIUM	5.00%			$1,537,231
TOTAL OF ALL CONSTRUCTION		81,000	$471.23	**$38,169,464**

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	Construction Start		Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -3 Page Hilltop School New School					
	Oct-19				
NEW BUILDING			87,000	$297.52	$25,884,131
DEMOLISH EXISTING SCHOOL			110,000	$7.00	$770,000
REMOVE HAZARDOUS MATERIALS					$200,000
SITEWORK - 12% Allowance					$3,106,096
SUB-TOTAL			87,000	$344.37	$29,960,227
ESCALATION - (assumed 3% PA)	5.0%				$1,498,011
DESIGN AND PRICING CONTINGENCY	12%				$3,774,989
SUB-TOTAL			87,000	$404.98	$35,233,227
GENERAL CONDITIONS		26	MTHS	$90,000	$2,340,000
GENERAL REQUIREMENTS	4.0%				$1,409,329
BONDS	1.25%				$440,415
INSURANCE	1.80%				$709,613
PERMIT					Waived
FEE	3.0%				$1,203,978
GMP CONTINGENCY	2.5%				$880,831
PHASING PREMIUM					Not Required
TOTAL OF ALL CONSTRUCTION			87,000	$485.26	**$42,217,393**

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	Construction Start	Gross Floor Area	$/sf	Estimated Construction Cost
OPTION -1 Middle School Site New School				
	Oct-19			
NEW BUILDING		131,000	$290.14	$38,008,500
DEMOLISH EXISTING SCHOOL				NR
REMOVE HAZARDOUS MATERIALS				NR
SITEWORK - 15% Allowance				$5,701,275
SUB-TOTAL		131,000	$333.66	$43,709,775
ESCALATION - (assumed 3% PA)	5.0%			$2,185,489
DESIGN AND PRICING CONTINGENCY	12%			$5,507,432
SUB-TOTAL		131,000	$392.39	$51,402,696
GENERAL CONDITIONS	26	MTHS	$90,000	$2,340,000
GENERAL REQUIREMENTS	4.0%			$2,056,108
BONDS	1.25%			$642,534
INSURANCE	1.80%			$1,015,944
PERMIT				Waived
FEE	3.0%			$1,723,718
GMP CONTINGENCY	2.5%			$1,285,067
PHASING PREMIUM				Not Required
TOTAL OF ALL CONSTRUCTION		131,000	$461.57	**$60,466,067**

This Feasibility Design cost estimate was produced from drawings, narratives and other documentation prepared by Tappe Architects, Inc. and their design team dated January 31, 2018. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, Construction Manager's fee and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149a of the Massachusetts General Laws to pre-qualified construction managers, and pre-qualified sub-contractors, open specifications for materials and manufactures. If a CM at risk C149a procurement is used costs will increase from the costs presented in this report.

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.

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ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- 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 as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency
- Contaminated soils removal

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Feasibility Design Estimate GFA 66,047

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 1 Lura White RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$25,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$90,945	**$115,945**	$1.76	0.7%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$243,150	**$243,150**	$3.68	1.6%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$1,411,797			
	B2020	Windows/Curtainwall	$1,122,200			
	B2030	Exterior Doors	$58,544	**$2,592,541**	$39.25	16.7%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,069,860			
	B3020	Roof Openings	$0	**$1,069,860**	$16.20	6.9%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$363,259			
	C1020	Interior Doors	$330,235			
	C1030	Specialties/Millwork	$501,522	**$1,195,016**	$18.09	7.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$32,000			
	C2020	Stair Finishes	$21,800	**$53,800**	$0.81	0.3%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$330,235			
	C3020	Floor Finishes	$726,517			
	C3030	Ceiling Finishes	$660,470	**$1,717,222**	$26.00	11.1%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$160,000	**$160,000**	$2.42	1.0%
D20	**PLUMBING**					
	D20	Plumbing	$792,564	**$792,564**	$12.00	5.1%
D30	**HVAC**					
	D30	HVAC	$2,972,115	**$2,972,115**	$45.00	19.2%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$396,282	**$396,282**	$6.00	2.6%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$2,113,504	**$2,113,504**	$32.00	13.6%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$8.63	3.7%

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Feasibility Design Estimate GFA 66,047

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 1 Lura White RENOVATION						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$700,477			
	E2020	Movable Furnishings	NIC	**$700,477**	$10.61	4.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$825,062			
	F2020	Hazardous Components Abatement	$0	**$825,062**	$12.49	5.3%
TOTAL DIRECT COST (Trade Costs)				***$15,517,538***	*$234.95*	*100.0%*

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	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Lura White RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	1st Floor				48,630		
	2nd Floor				17,417		
	TOTAL GROSS FLOOR AREA (GFA)				**66,047** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for foundation repair	**1**	ls	25,000.00	25,000		
	SUBTOTAL					25,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cut and patch existing slab for new plumbing	**48,630**	sf	1.50	72,945		
	Waterproof existing elevator pit	**1**	ea	8,000.00	8,000		
	Equipment pads	**1**	ls	10,000.00	10,000		
	SUBTOTAL					90,945	
	TOTAL - FOUNDATIONS						**$115,945**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	New lateral Bracing to roofs for new RTU;s	**48,630**	sf	5.00	243,150		
	SUBTOTAL					243,150	
	TOTAL - SUPERSTRUCTURE						**$243,150**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*26,186*	*sf*				
	Repoint existing brick exterior wall; 100%	**26,186**	sf	38.00	995,068		
	Furring, insulation and Interior GWB	**26,186**	sf	10.20	267,097		
	Staging	**37,408**	sf	4.00	149,632		
	SUBTOTAL					1,411,797	
	B2020 WINDOWS/CURTAINWALL	*11,222*			-		
	New windows/curtainwall	**11,222**	sf	100.00	1,122,200		
	SUBTOTAL					1,122,200	
	B2030 EXTERIOR DOORS						
	Replace exterior glazed door, double	**5**	pr	8,000.00	40,000		
	Replace exterior door, single	**4**	ea	2,000.00	8,000		
	Replace exterior door, double	**2**	pr	4,000.00	8,000		
	Backer rod & double sealant	**212**	lf	9.00	1,908		
	Wood blocking at openings	**212**	lf	3.00	636		
	SUBTOTAL					58,544	
	TOTAL - EXTERIOR CLOSURE						**$2,592,541**

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Ayer Shirley, MA

Feasibility Design Estimate **GFA** 66,047

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Lura White RENOVATION						
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems	**48,630**	sf	22.00	1,069,860		
	SUBTOTAL					1,069,860	
	B3020 ROOF OPENINGS						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						**$1,069,860**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Partitions; assume 25% new	**66,047**	gsf	5.50	363,259		
	SUBTOTAL					363,259	
	C1020 INTERIOR DOORS						
	Remove and replace doors	**66,047**	gsf	5.00	330,235		
	SUBTOTAL					330,235	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**66,047**	gsf	0.80	52,838		
	Lockers, full height	**66,047**	gsf	1.50	99,071		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**66,047**	sf	1.00	66,047		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	50,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Display cases	**66,047**	gsf	0.25	16,512		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**66,047**	sf	1.00	66,047		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**66,047**	sf	0.50	33,024		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**66,047**	sf	1.50	99,071		
101400	*SIGNAGE*						
	Code compliant signage	**66,047**	sf	0.25	16,512		
	SUBTOTAL					501,522	
	TOTAL - INTERIOR CONSTRUCTION						**$1,195,016**
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
	Code upgrades to stairs	**4**	flt	8,000.00	32,000		
	SUBTOTAL					32,000	

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Feasibility Design Estimate **GFA** 66,047

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Lura White RENOVATION						
	C2020 STAIR FINISHES						
	New rubber treads/risers/landings and painting to stairs	**4**	flt	5,450.00	21,800		
	SUBTOTAL					21,800	
	TOTAL - STAIRCASES						**$53,800**
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
	Painting/wall finishes	**66,047**	gsf	5.00	330,235		
	SUBTOTAL					330,235	
	C3020 FLOOR FINISHES						
	New flooring throughout including floor prep	**66,047**	sf	11.00	726,517		
	SUBTOTAL					726,517	
	C3030 CEILING FINISHES						
	Replace existing ceilings	**66,047**	sf	10.00	660,470		
	SUBTOTAL					660,470	
	TOTAL - INTERIOR FINISHES						**$1,717,222**
	D10 CONVEYING SYSTEMS						
	D1010 ELEVATOR						
	Replace existing elevator	**1**	ea	130,000.00	130,000		
	Decommission existing elevator	**1**	ea	30,000.00	30,000		
	SUBTOTAL					160,000	
	TOTAL - CONVEYING SYSTEMS						**$160,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing, complete	**66,047**	sf	12.00	792,564		
	SUBTOTAL					792,564	
	TOTAL - PLUMBING						**$792,564**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC, complete	**66,047**	sf	45.00	2,972,115		
	SUBTOTAL					2,972,115	
	TOTAL - HVAC						**$2,972,115**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	Fire Protection, complete	**66,047**	sf	6.00	396,282		
	SUBTOTAL					396,282	
	TOTAL - FIRE PROTECTION						**$396,282**

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	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Lura White RENOVATION						
	D50 ELECTRICAL						
	D5010 ELECTRICAL SYSTEMS						
	Electrical, complete	**66,047**	sf	32.00	2,113,504		
	SUBTOTAL					2,113,504	
	TOTAL - ELECTRICAL						**$2,113,504**
	E10 EQUIPMENT						
	E10 EQUIPMENT, GENERALLY						
	Kiln	**1**	ea	5,000.00	5,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
	E20 FURNISHINGS						
	E2010 FIXED FURNISHINGS						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**11,222**	sf	7.00	78,554		
	Casework allowance	**66,047**	gsf	9.00	594,423		
	SUBTOTAL					700,477	
	E2020 MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$700,477**
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior windows	**11,222**	sf	6.00	67,332		
	Remove roofing	**48,630**	sf	2.00	97,260		
	Interior demolition	**66,047**	gsf	8.00	528,376		
	Temporary enclosures/protection	**66,047**	sf	2.00	132,094		

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Feasibility Design Estimate

GFA 66,047

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Lura White RENOVATION						
242	SUBTOTAL					825,062	
243							
244	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
245	See summary						
246	SUBTOTAL						
247							
248	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$825,062**
249							

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Ayer Shirley School Options 21-Mar-18
Design Options
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Feasibility Design Estimate GFA 34,834

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Lura White RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$15,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$44,126	**$59,126**	$1.70	0.7%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$87,085	**$87,085**	$2.50	1.1%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$868,614			
	B2020	Windows/Curtainwall	$690,500			
	B2030	Exterior Doors	$50,340	**$1,609,454**	$46.20	20.1%
B30	**ROOFING**					
	B3010	Roof Coverings	$383,174			
	B3020	Roof Openings	$0	**$383,174**	$11.00	4.8%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$191,587			
	C1020	Interior Doors	$174,170			
	C1030	Specialties/Millwork	$289,272	**$655,029**	$18.80	8.2%
C20	**STAIRCASES**					
	C2010	Stair Construction	$32,000			
	C2020	Stair Finishes	$21,800	**$53,800**	$1.54	0.7%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$174,170			
	C3020	Floor Finishes	$383,174			
	C3030	Ceiling Finishes	$348,340	**$905,684**	$26.00	11.3%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$160,000	**$160,000**	$4.59	2.0%
D20	**PLUMBING**					
	D20	Plumbing	$418,008	**$418,008**	$12.00	5.2%
D30	**HVAC**					
	D30	HVAC	$1,567,530	**$1,567,530**	$45.00	19.5%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$209,004	**$209,004**	$6.00	2.6%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$1,114,688	**$1,114,688**	$32.00	13.9%
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Lura White RENOVATION						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$375,591			
	E2020	Movable Furnishings	NIC	**$375,591**	$10.78	4.7%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$424,604			
	F2020	Hazardous Components Abatement	$0	**$424,604**	$12.19	5.3%
TOTAL DIRECT COST (Trade Costs)				***$8,022,777***	*$230.31*	*100.0%*

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Feasibility Design Estimate GFA 34,834

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Lura White RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	1st Floor				17,417		
	2nd Floor				17,417		
	TOTAL GROSS FLOOR AREA (GFA)				**34,834** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for foundation repair	**1**	ls	15,000.00	15,000		
	SUBTOTAL					15,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cut and patch existing slab for new plumbing	**17,417**	sf	1.50	26,126		
	Waterproof existing elevator pit	**1**	ea	8,000.00	8,000		
	Equipment pads	**1**	ls	10,000.00	10,000		
	SUBTOTAL					44,126	
	TOTAL - FOUNDATIONS						**$59,126**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	New lateral Bracing to roofs for new RTU;s	**17,417**	sf	5.00	87,085		
	SUBTOTAL					87,085	
	TOTAL - SUPERSTRUCTURE						**$87,085**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*16,111*	*sf*				
	Repoint existing brick exterior wall; 100%	**16,111**	sf	38.00	612,218		
	Furring, insulation and Interior GWB	**16,111**	sf	10.20	164,332		
	Staging	**23,016**	sf	4.00	92,064		
	SUBTOTAL					868,614	
	B2020 WINDOWS/CURTAINWALL	*6,905*			-		
	New windows/curtainwall	**6,905**	sf	100.00	690,500		
	SUBTOTAL					690,500	
	B2030 EXTERIOR DOORS						
	Replace exterior glazed door, double	**5**	pr	8,000.00	40,000		
	Replace exterior door, single	**2**	ea	2,000.00	4,000		
	Replace exterior door, double	**1**	pr	4,000.00	4,000		
	Backer rod & double sealant	**195**	lf	9.00	1,755		
	Wood blocking at openings	**195**	lf	3.00	585		
	SUBTOTAL					50,340	
	TOTAL - EXTERIOR CLOSURE						**$1,609,454**

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Feasibility Design Estimate GFA 34,834

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Lura White RENOVATION						
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems	**17,417**	sf	22.00	383,174		
	SUBTOTAL					383,174	
	B3020 ROOF OPENINGS						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						**$383,174**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Partitions; assume 25% new	**34,834**	gsf	5.50	191,587		
	SUBTOTAL					191,587	
	C1020 INTERIOR DOORS						
	Remove and replace doors	**34,834**	gsf	5.00	174,170		
	SUBTOTAL					174,170	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**34,834**	gsf	0.80	27,867		
	Lockers, full height	**34,834**	gsf	1.50	52,251		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**34,834**	sf	1.00	34,834		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	50,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Display cases	**34,834**	gsf	0.25	8,709		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**34,834**	sf	1.00	34,834		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**34,834**	sf	0.50	17,417		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**34,834**	sf	1.50	52,251		
101400	*SIGNAGE*						
	Code compliant signage	**34,834**	sf	0.25	8,709		
	SUBTOTAL					289,272	
	TOTAL - INTERIOR CONSTRUCTION						**$655,029**
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
	Code upgrades to stairs	**4**	flt	8,000.00	32,000		
	SUBTOTAL					32,000	

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Feasibility Design Estimate GFA 34,834

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Lura White RENOVATION						
	C2020 STAIR FINISHES						
	New rubber treads/risers/landings and painting to stairs	**4**	flt	5,450.00	21,800		
	SUBTOTAL					21,800	
	TOTAL - STAIRCASES						**$53,800**
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
	Painting/wall finishes	**34,834**	gsf	5.00	174,170		
	SUBTOTAL					174,170	
	C3020 FLOOR FINISHES						
	New flooring throughout including floor prep	**34,834**	sf	11.00	383,174		
	SUBTOTAL					383,174	
	C3030 CEILING FINISHES						
	Replace existing ceilings	**34,834**	sf	10.00	348,340		
	SUBTOTAL					348,340	
	TOTAL - INTERIOR FINISHES						**$905,684**
	D10 CONVEYING SYSTEMS						
	D1010 ELEVATOR						
	Replace existing elevator	**1**	ea	130,000.00	130,000		
	Decommission existing elevator	**1**	ea	30,000.00	30,000		
	SUBTOTAL					160,000	
	TOTAL - CONVEYING SYSTEMS						**$160,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing, complete	**34,834**	sf	12.00	418,008		
	SUBTOTAL					418,008	
	TOTAL - PLUMBING						**$418,008**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC, complete	**34,834**	sf	45.00	1,567,530		
	SUBTOTAL					1,567,530	
	TOTAL - HVAC						**$1,567,530**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	Fire Protection, complete	**34,834**	sf	6.00	209,004		
	SUBTOTAL					209,004	
	TOTAL - FIRE PROTECTION						**$209,004**

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Feasibility Design Estimate GFA 34,834

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Lura White RENOVATION						
	D50 ELECTRICAL						
	D5010 ELECTRICAL SYSTEMS						
	Electrical, complete	**34,834**	sf	32.00	1,114,688		
	SUBTOTAL					1,114,688	
	TOTAL - ELECTRICAL						**$1,114,688**
	E10 EQUIPMENT						
	E10 EQUIPMENT, GENERALLY						
	Kiln	**1**	ea	5,000.00	With Addition		
	Electrically operated projection screens	**1**	loc	15,000.00	With Addition		
	Gym wall pads	**1**	ls	20,000.00	With Addition		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	With Addition		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	With Addition		
	Volleyball net and standards	**1**	ls	5,000.00	With Addition		
	Telescoping bleachers	**1**	ls	30,000.00	With Addition		
	Stage curtain and rigging	**1**	ls	35,000.00	With Addition		
	Food Service equipment	**1**	ls	350,000.00	With Addition		
	Loading dock equipment	**1**	ls	20,000.00	With Addition		
	SUBTOTAL					-	
	TOTAL - EQUIPMENT						
	E20 FURNISHINGS						
	E2010 FIXED FURNISHINGS						
	Entry mats & frames - recessed with carpet/rubber strips	**250**	sf	55.00	13,750		
	Window blinds	**6,905**	sf	7.00	48,335		
	Casework allowance	**34,834**	gsf	9.00	313,506		
	SUBTOTAL					375,591	
	E2020 MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$375,591**
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior windows	**6,905**	sf	6.00	41,430		
	Remove roofing	**17,417**	sf	2.00	34,834		
	Interior demolition	**34,834**	gsf	8.00	278,672		
	Temporary enclosures/protection	**34,834**	sf	2.00	69,668		

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Feasibility Design Estimate **GFA** 34,834

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Lura White RENOVATION						
242	SUBTOTAL					424,604	
243							
244	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
245	See summary						
246	SUBTOTAL						
247							
248	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$424,604**
249							

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Ayer Shirley School Options 21-Mar-18
Design Options
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Feasibility Design Estimate GFA 29,766

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Lura White ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$458,775			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$337,977	**$796,752**	$26.77	7.6%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$1,124,279	**$1,124,279**	$37.77	10.7%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$1,361,041			
	B2020	Windows	$786,652			
	B2030	Exterior Doors	$36,679	**$2,184,372**	$73.38	20.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$873,852			
	B3020	Roof Openings	$32,500	**$906,352**	$30.45	8.6%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$654,852			
	C1020	Interior Doors	$148,830			
	C1030	Specialties/Millwork	$194,427	**$998,109**	$33.53	9.5%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$208,362			
	C3020	Floor Finishes	$327,426			
	C3030	Ceiling Finishes	$223,245	**$759,033**	$25.50	7.2%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$416,724	**$416,724**	$14.00	4.0%
D30	**HVAC**					
	D30	HVAC	$1,339,470	**$1,339,470**	$45.00	12.7%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$133,947	**$133,947**	$4.50	1.3%
D50	**ELECTRICAL**					

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Design Options
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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Lura White ADDITION						
	D5010	Complete System	$952,512	**$952,512**	$32.00	9.1%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$19.15	5.4%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$329,923			
	E2020	Movable Furnishings	NIC	**$329,923**	$11.08	3.1%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$10,511,473***	*$353.14*	*100.0%*

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Ayer Shirley School Options
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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Lura White ADDITION							
	GROSS FLOOR AREA CALCULATION						
	Level 1			29,766			
	TOTAL GROSS FLOOR AREA (GFA)				**29,766**	***sf***	
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
033000	*CONCRETE*						
	Strip Footings	*85*	*CY*				
	Foundation Walls	*170*	*CY*				
	Spread Footings	*154*	*CY*				
	Piers	*18*	*CY*				
	Total Foundation Concrete	*427*	*CY*				
	Strip footings						
	Formwork	**2,190**	sf	11.00	24,090		
	Re-bar	**13,140**	lbs.	1.20	15,768		
	Concrete material; 3,000 psi	**85**	cy	130.00	11,050		
	Placing concrete	**85**	cy	70.00	5,950		
	Foundation walls						
	Formwork	**8,760**	sf	12.50	109,500		
	Re-bar	**21,900**	lbs.	1.20	26,280		
	Concrete material; 3,000 psi	**170**	cy	130.00	22,100		
	Placing concrete	**170**	cy	70.00	11,900		
	Form shelf	**1,095**	lf	10.00	10,950		
	Spread Footings						
	Formwork	**2,640**	sf	14.00	36,960		
	Re-bar	**16,940**	lbs.	1.20	20,328		
	Concrete material; 3,000 psi	**154**	cy	130.00	20,020		
	Placing concrete	**154**	cy	70.00	10,780		
	Set anchor bolts grout plates	**55**	ea	150.00	8,250		
	Piers/Pilasters						
	Formwork	**1,320**	sf	14.00	18,480		
	Re-bar	**2,700**	lbs	1.20	3,240		
	Concrete material; 3,000 psi	**18**	cy	130.00	2,340		
	Placing concrete	**18**	cy	80.00	1,440		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Dampproofing at brick shelf	**5,475**	sf	3.00	16,425		
072100	*THERMAL INSULATION*						
	Insulation	**5,475**	sf	3.00	16,425		
312000	*EARTHWORK*						
	Strip footings						
	Excavation	**649**	cy	15.00	9,735		
	Remove off site	**85**	cy	12.00	1,020		
	Backfill with existing material	**564**	cy	10.00	5,640		
	Spread footings						
	Excavation	**521**	cy	16.00	8,336		
	Remove off site	**154**	cy	12.00	1,848		
	Backfill with existing material	**367**	cy	10.00	3,670		
	Miscellaneous						
	Gravel fill beneath footings, 12"	**154**	cy	10.00	1,540		
	Perimeter drain	**1,095**	lf	18.00	19,710		
	Underslab E&B for plumbing	**1**	ls	10,000.00	10,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Lura White ADDITION						
	Dewatering for foundation work	**1**	ls	5,000.00	5,000		
	SUBTOTAL					458,775	
A1020	**SPECIAL FOUNDATIONS**						
	No work in this section						
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Structural fill, 8"	**739**	cy	36.00	26,604		
	Gravel fill, 8"	**739**	cy	40.00	29,560		
	Rigid insulation	**29,766**	sf	2.25	66,974		
	Vapor barrier	**29,766**	sf	0.75	22,325		
	Compact existing sub-grade	**29,766**	sf	0.50	14,883		
	Mesh reinforcing 15% lap	**34,231**	sf	0.80	27,385		
	Concrete - 5" thick; 4,000 psi	**486**	cy	125.00	60,750		
	Placing concrete	**486**	cy	45.00	21,870		
	Finishing and curing concrete	**29,766**	sf	1.50	44,649		
	Control joints - saw cut	**29,766**	sf	0.10	2,977		
	Miscellaneous						
	Connect to existing building	**1**	ls	20,000.00	20,000		
	SUBTOTAL					337,977	
	TOTAL - FOUNDATIONS						**$796,752**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		13.98	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	208	tns		-		
	No work required						
	SUBTOTAL					-	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns, 14#/SF	**208**	tns	4,000.00	832,000		
	Premium for HSS	**52**	tns	300.00	15,600		
	Roof Structure						
	1-1/2" 20 Ga. galvanized Metal Roof Deck	**29,766**	sf	3.50	104,181		
	Acoustic deck at gym; premium	**7,200**	sf	6.00	43,200		
	Miscellaneous						
	Concrete at roof, allow	**5,000**	sf	8.00	40,000		
	Fire proofing to columns, beams and deck	**29,766**	sf	3.00	89,298		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Lura White ADDITION							
	SUBTOTAL					1,124,279	
	TOTAL - SUPERSTRUCTURE						**$1,124,279**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*16,094*	sf				
042000	*MASONRY*						
	Brick veneer, 80% of solid area	**12,875**	sf	40.00	515,000		
	Staging to exterior wall	**22,991**	sf	4.00	91,964		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**16,094**	sf	6.50	104,611		
	Air barrier/flashing at windows	**4,057**	lf	6.25	25,356		
	Miscellaneous sealants to closure	**16,094**	sf	1.00	16,094		
072100	*THERMAL INSULATION*						
	Insulation	**16,094**	sf	3.00	48,282		
076400	*CLADDING*						
	Metal panel; 20% of solid area	**3,219**	sf	75.00	241,425		
	Roof equipment screen	**1**	ls	50,000.00	50,000		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**16,094**	sf	10.00	160,940		
	Gypsum Sheathing	**16,094**	sf	2.75	44,259		
	Drywall lining to interior face of stud backup	**16,094**	sf	3.30	53,110		
	SUBTOTAL					1,361,041	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*6,897*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**4,057**	lf	12.00	48,684		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**4,057**	lf	9.00	36,513		
080001	*METAL WINDOWS*						
	Windows, double glazed; 80% of glazed area	**5,518**	sf	90.00	496,620		
	Curtainwall, double glazed; 20% of glazed area	**1,379**	sf	115.00	158,585		
	Sunshades; horizontal	**1**	ls	30,000.00	30,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					786,652	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**4**	pr	8,000.00	32,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Lura White ADDITION							
	Glazed entrance doors including frame and hardware; single door	**1**	ea	4,000.00	4,000		
	Backer rod & double sealant	**97**	lf	4.00	388		
	Wood blocking at openings	**97**	lf	3.00	291		
	SUBTOTAL					36,679	
	TOTAL - EXTERIOR CLOSURE						**$2,184,372**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**29,766**	sf	22.00	654,852		
	New fascia/soffits	**1,095**	lf	200.00	219,000		
	SUBTOTAL					873,852	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	30,000.00	30,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$906,352**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Interior partitions	**29,766**	gsf	22.00	654,852		
	SUBTOTAL					654,852	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**29,766**	gsf	5.00	148,830		
	SUBTOTAL					148,830	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**29,766**	gsf	0.80	23,813		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**29,766**	sf	1.00	29,766		
	Room Signs	**29,766**	gsf	0.40	11,906		
	Fire extinguisher cabinets	**10**	ea	350.00	3,500		
	Lockers	**29,766**	gsf	1.60	47,626		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	with Reno		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Display cases	**29,766**	gsf	0.25	7,442		
	Miscellaneous metals throughout building	**29,766**	sf	1.25	37,208		
	Miscellaneous sealants throughout building	**29,766**	sf	1.00	29,766		
	SUBTOTAL					194,427	
	TOTAL - INTERIOR CONSTRUCTION						**$998,109**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	No work required						

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GFA 29,766

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Lura White ADDITION							
	SUBTOTAL					-	
C2020	**STAIR FINISHES**						
	No work required						
	SUBTOTAL					-	
	TOTAL - STAIRCASES						
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**29,766**	sf	7.00	208,362		
	SUBTOTAL					208,362	
C3020	**FLOOR FINISHES**						
	Floor finishes	**29,766**	sf	11.00	327,426		
	SUBTOTAL					327,426	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**29,766**	sf	7.50	223,245		
	SUBTOTAL					223,245	
	TOTAL - INTERIOR FINISHES						**$759,033**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - CONVEYING SYSTEMS						
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing, complete	**29,766**	sf	14.00	416,724		
	SUBTOTAL					416,724	
	TOTAL - PLUMBING						**$416,724**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC, complete	**29,766**	sf	45.00	1,339,470		
	SUBTOTAL					1,339,470	
	TOTAL - HVAC						**$1,339,470**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire Protection, complete	**29,766**	sf	4.50	133,947		
	SUBTOTAL					133,947	
	TOTAL - FIRE PROTECTION						**$133,947**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Electrical, complete	**29,766**	sf	32.00	952,512		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Lura White ADDITION							
	SUBTOTAL					952,512	
	TOTAL - ELECTRICAL						**$952,512**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Kiln	**1**	ea	5,000.00	5,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**250**	sf	55.00	13,750		
	Window blinds	**6,897**	sf	7.00	48,279		
	Counters, base cabinets, tall storage in classrooms and other rooms	**29,766**	gsf	9.00	267,894		
	SUBTOTAL					329,923	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$329,923**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	No items in this section						
	SUBTOTAL						
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3 Lura White NEW SCHOOL						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$632,740			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$585,040	**$1,217,780**	$17.91	5.8%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$916,138			
	B1020	Roof Construction	$1,683,091	**$2,599,229**	$38.22	12.4%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$2,235,021			
	B2020	Windows	$1,357,960			
	B2030	Exterior Doors	$77,400	**$3,670,381**	$53.98	17.5%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,263,814			
	B3020	Roof Openings	$32,500	**$1,296,314**	$19.06	6.2%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$1,496,000			
	C1020	Interior Doors	$340,000			
	C1030	Specialties/Millwork	$489,550	**$2,325,550**	$34.20	11.1%
C20	**STAIRCASES**					
	C2010	Stair Construction	$158,000			
	C2020	Stair Finishes	$25,149	**$183,149**	$2.69	0.9%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$476,000			
	C3020	Floor Finishes	$748,000			
	C3030	Ceiling Finishes	$510,000	**$1,734,000**	$25.50	8.3%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$120,000	**$120,000**	$1.76	0.6%
D20	**PLUMBING**					
	D20	Plumbing	$952,000	**$952,000**	$14.00	4.5%
D30	**HVAC**					
	D30	HVAC	$3,060,000	**$3,060,000**	$45.00	14.6%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$306,000	**$306,000**	$4.50	1.5%
D50	**ELECTRICAL**					

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3 Lura White NEW SCHOOL						
	D5010	Complete System	$2,176,000	**$2,176,000**	$32.00	10.4%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$8.38	2.7%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$722,324			
	E2020	Movable Furnishings	NIC	**$722,324**	$10.62	3.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$20,932,727***	*$307.83*	*100.0%*

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Lura White NEW SCHOOL							
	GROSS FLOOR AREA CALCULATION						
	First Floor			46,337			
	Second Floor			21,663			
	TOTAL GROSS FLOOR AREA (GFA)				**68,000**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
033000	*CONCRETE*						
	Strip Footings	*101*	*CY*				
	Foundation Walls	*202*	*CY*				
	Spread Footings	*241*	*CY*				
	Piers	*29*	*CY*				
	Total Foundation Concrete	*573*	*CY*				
	Strip footings						
	Formwork	**2,592**	sf	11.00	28,512		
	Re-bar	**15,552**	lbs.	1.20	18,662		
	Concrete material; 3,000 psi	**101**	cy	130.00	13,130		
	Placing concrete	**101**	cy	70.00	7,070		
	Foundation walls						
	Formwork	**10,368**	sf	12.50	129,600		
	Re-bar	**25,920**	lbs.	1.20	31,104		
	Concrete material; 3,000 psi	**202**	cy	130.00	26,260		
	Placing concrete	**202**	cy	70.00	14,140		
	Form shelf	**1,296**	lf	10.00	12,960		
	Spread Footings						
	Formwork	**4,128**	sf	14.00	57,792		
	Re-bar	**26,510**	lbs.	1.20	31,812		
	Concrete material; 3,000 psi	**241**	cy	130.00	31,330		
	Placing concrete	**241**	cy	70.00	16,870		
	Set anchor bolts grout plates	**86**	ea	150.00	12,900		
	Piers/Pilasters						
	Formwork	**2,064**	sf	14.00	28,896		
	Re-bar	**4,350**	lbs	1.20	5,220		
	Concrete material; 3,000 psi	**29**	cy	130.00	3,770		
	Placing concrete	**29**	cy	80.00	2,320		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Dampproofing at brick shelf	**6,480**	sf	3.00	19,440		
072100	*THERMAL INSULATION*						
	Insulation	**6,480**	sf	3.00	19,440		
312000	*EARTHWORK*						
	Strip footings						
	Excavation	**768**	cy	15.00	11,520		
	Remove off site	**101**	cy	12.00	1,212		
	Backfill with existing material	**667**	cy	10.00	6,670		
	Spread footings						
	Excavation	**815**	cy	16.00	13,040		
	Remove off site	**241**	cy	12.00	2,892		
	Backfill with existing material	**574**	cy	10.00	5,740		
	Miscellaneous						
	Gravel fill beneath footings, 12"	**211**	cy	10.00	2,110		
	Perimeter drain	**1,296**	lf	18.00	23,328		
	Underslab E&B for plumbing	**1**	ls	30,000.00	30,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Lura White NEW SCHOOL							
	Dewatering for foundation work	**1**	ls	25,000.00	25,000		
	SUBTOTAL					632,740	
A1020	**SPECIAL FOUNDATIONS**						
	No Work in this section						
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Structural fill, 8"	**1,150**	cy	36.00	41,400		
	Gravel fill, 8"	**1,150**	cy	40.00	46,000		
	Rigid insulation	**46,337**	sf	2.25	104,258		
	Vapor barrier	**46,337**	sf	0.75	34,753		
	Compact existing sub-grade	**46,337**	sf	0.50	23,169		
	Mesh reinforcing 15% lap	**53,288**	sf	0.80	42,630		
	Concrete - 5" thick; 4,000 psi	**757**	cy	125.00	94,625		
	Placing concrete	**757**	cy	45.00	34,065		
	Finishing and curing concrete	**46,337**	sf	1.50	69,506		
	Control joints - saw cut	**46,337**	sf	0.10	4,634		
	Miscellaneous						
	Elevator pit	**1**	ea	35,000.00	35,000		
	Loading dock	**1**	ls	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					585,040	
	TOTAL - FOUNDATIONS						**$1,217,780**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.00	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	476	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns, 14#/SF	**152**	tns	4,000.00	608,000		
	Premium for HSS	**38**	tns	300.00	11,400		
	Shear studs	**4,333**	ea	2.50	10,833		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**21,663**	sf	3.75	81,236		
	WWF reinforcement	**24,912**	sf	0.80	19,930		
	Concrete Fill to metal deck; 5-1/4" Light Weight	**369**	cy	160.00	59,040		
	Place and finish concrete	**21,663**	sf	2.00	43,326		
	Rebar to decks	**6,499**	lbs	1.20	7,799		
	Misc. angles	**21,663**	sf	0.50	10,832		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Lura White NEW SCHOOL							
	Miscellaneous						
	Fire proofing to columns and beams	**21,663**	sf	2.25	48,742		
	Fire stopping floors	**1**	ls	15,000.00	15,000		
	SUBTOTAL					916,138	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns, 14#/SF	**324**	tns	4,000.00	1,296,000		
	Premium for HSS	**81**	tns	300.00	24,300		
	Roof Structure						
	1-1/2" 20 Ga. galvanized Metal Roof Deck	**46,337**	sf	3.50	162,180		
	Acoustic deck at gym; premium	**7,200**	sf	6.00	43,200		
	Miscellaneous						
	Concrete at roof	**5,000**	sf	8.00	40,000		
	Fire proofing to columns, beams and deck	**39,137**	sf	3.00	117,411		
	SUBTOTAL					1,683,091	
	TOTAL - SUPERSTRUCTURE						**$2,599,229**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*27,608*	sf				
042000	*MASONRY*						
	Brick veneer, 80% of solid area	**22,086**	sf	38.00	839,268		
	Gym, assume 12" CMU back up	**6,615**	sf	28.00	185,220		
	Staging to exterior wall	**39,440**	sf	4.00	157,760		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**27,608**	sf	6.50	179,452		
	Air barrier/flashing at windows	**6,960**	lf	6.25	43,500		
	Miscellaneous sealants to closure	**27,608**	sf	1.00	27,608		
072100	*THERMAL INSULATION*						
	Insulation	**27,608**	sf	2.25	62,118		
076400	*CLADDING*						
	Metal panel; 20% of solid area	**5,522**	sf	75.00	414,150		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**20,993**	sf	9.00	188,937		
	Gypsum Sheathing	**20,993**	sf	2.75	57,731		
	Drywall lining to interior face of stud backup	**20,993**	sf	3.30	69,277		
	SUBTOTAL					2,235,021	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*11,832*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**6,960**	lf	12.00	83,520		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Lura White NEW SCHOOL							
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**6,960**	lf	8.50	59,160		
080001	*METAL WINDOWS*						
	Windows, double glazed; 80% of glazed area	**9,466**	sf	90.00	851,940		
	Curtainwall, double glazed; 20% of glazed area	**2,366**	sf	115.00	272,090		
	Sunshades; horizontal	**1**	ls	75,000.00	75,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					1,357,960	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	Glazed entrance doors including frame and hardware; single door	**2**	ea	4,000.00	8,000		
	HM doors, frames and hardware- Double	**2**	pr	2,000.00	4,000		
	Backer rod & double sealant	**200**	lf	4.00	800		
	Wood blocking at openings	**200**	lf	3.00	600		
	SUBTOTAL					77,400	
	TOTAL - EXTERIOR CLOSURE						**$3,670,381**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**46,337**	sf	22.00	1,019,414		
	New fascia/soffits	**1,296**	lf	150.00	194,400		
	Roof equipment screen	**1**	ls	50,000.00	50,000		
	SUBTOTAL					1,263,814	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	30,000.00	30,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$1,296,314**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Interior partitions	**68,000**	gsf	22.00	1,496,000		
	SUBTOTAL					1,496,000	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**68,000**	gsf	5.00	340,000		
	SUBTOTAL					340,000	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**68,000**	gsf	0.80	54,400		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**68,000**	sf	1.00	68,000		
	Room Signs	**68,000**	gsf	0.40	27,200		
	Fire extinguisher cabinets	**23**	ea	350.00	8,050		
	Lockers	**68,000**	gsf	1.60	108,800		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		

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		OPTION 3 Lura White NEW SCHOOL						
230		Janitors Closet Accessories	**2**	rms	300.00	600		
231		*Media*						
232		Reception desks	**2**	loc	25,000	50,000		
233		Library shelving at perimeters 7' Tall				F,F & E		
234		Library shelving at perimeters 3' Tall				F,F & E		
235		Display cases	**68,000**	gsf	0.25	17,000		
236		Miscellaneous metals throughout building	**68,000**	sf	1.25	85,000		
237		Miscellaneous sealants throughout building	**68,000**	sf	1.00	68,000		
238		SUBTOTAL					489,550	
239								
240		***TOTAL - INTERIOR CONSTRUCTION***						**$2,325,550**
241								
242								
243	***C20***	***STAIRCASES***						
244								
245	**C2010**	**STAIR CONSTRUCTION**						
246		Metal pan stair; egress stair	**2**	flt	25,000.00	50,000		
247		Metal pan stair; Lobby stair	**2**	flt	50,000.00	100,000		
248		Concrete fill to stairs	**4**	flt	2,000.00	8,000		
249		SUBTOTAL					158,000	
250								
251	**C2020**	**STAIR FINISHES**						
252		High performance coating to stairs including all railings etc.	**4**	flt	3,000.00	12,000		
253		Rubber tile at stairs - landings	**400**	sf	10.00	4,000		
254		Rubber tile at stairs - treads & risers	**480**	lft	19.06	9,149		
255		SUBTOTAL					25,149	
256								
257		***TOTAL - STAIRCASES***						**$183,149**
258								
259								
260	***C30***	***INTERIOR FINISHES***						
261								
262	**C3010**	**WALL FINISHES**						
263		Wall finishes	**68,000**	sf	7.00	476,000		
264		SUBTOTAL					476,000	
265								
266	**C3020**	**FLOOR FINISHES**						
267		Floor finishes	**68,000**	sf	11.00	748,000		
268		SUBTOTAL					748,000	
269								
270	**C3030**	**CEILING FINISHES**						
271		Ceiling finishes	**68,000**	sf	7.50	510,000		
272		SUBTOTAL					510,000	
273								
274		***TOTAL - INTERIOR FINISHES***						**$1,734,000**
275								
276								
277	***D10***	***CONVEYING SYSTEMS***						
278								
279	**D1010**	**ELEVATOR**						
280		New elevator; 2 stop; passenger	**1**	ea	120,000.00	120,000		
281		SUBTOTAL					120,000	
282								
283		***TOTAL - CONVEYING SYSTEMS***						**$120,000**
284								
285								
286	***D20***	***PLUMBING***						
287								
288	**D20**	**PLUMBING, GENERALLY**						
289		Plumbing, complete	**68,000**	sf	14.00	952,000		
290		SUBTOTAL					952,000	
291								
292		***TOTAL - PLUMBING***						**$952,000**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Lura White NEW SCHOOL							
	D30 HVAC						
D30	**HVAC, GENERALLY**						
	HVAC, complete	**68,000**	sf	45.00	3,060,000		
	SUBTOTAL					3,060,000	
	TOTAL - HVAC						**$3,060,000**
	D40 FIRE PROTECTION						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection	**68,000**	sf	4.50	306,000		
	SUBTOTAL					306,000	
	TOTAL - FIRE PROTECTION						**$306,000**
	D50 ELECTRICAL						
D5010	**ELECTRICAL SYSTEMS**						
	Electrical, complete	**68,000**	sf	32.00	2,176,000		
	SUBTOTAL					2,176,000	
	TOTAL - ELECTRICAL						**$2,176,000**
	E10 EQUIPMENT						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Kiln	**1**	ea	5,000.00	5,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
	E20 FURNISHINGS						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**11,832**	sf	7.00	82,824		
	Counters, base cabinets, tall storage in classrooms and other rooms	**68,000**	gsf	9.00	612,000		
	SUBTOTAL					722,324	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$722,324**
	F10 SPECIAL CONSTRUCTION						

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Ayer Shirley School Options 21-Mar-18

Design Options

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Feasibility Design Estimate GFA 68,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Lura White NEW SCHOOL							
	F10 SPECIAL CONSTRUCTION						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	No items in this section						
	SUBTOTAL						
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

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Ayer Shirley School Options 21-Mar-18
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Feasibility Design Estimate GFA 110,000

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 1 Page Hilltop RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$25,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$168,252	**$193,252**	$1.76	0.8%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$525,420	**$525,420**	$4.78	2.1%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$2,042,272			
	B2020	Windows/Curtainwall	$1,623,400			
	B2030	Exterior Doors	$194,756	**$3,860,428**	$35.09	15.2%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,311,848			
	B3020	Roof Openings	$0	**$2,311,848**	$21.02	9.1%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$605,000			
	C1020	Interior Doors	$550,000			
	C1030	Specialties/Millwork	$800,400	**$1,955,400**	$17.78	7.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$8,000			
	C2020	Stair Finishes	$5,450	**$13,450**	$0.12	0.1%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$550,000			
	C3020	Floor Finishes	$1,210,000			
	C3030	Ceiling Finishes	$1,100,000	**$2,860,000**	$26.00	11.2%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$160,000	**$160,000**	$1.45	0.6%
D20	**PLUMBING**					
	D20	Plumbing	$1,320,000	**$1,320,000**	$12.00	5.2%
D30	**HVAC**					
	D30	HVAC	$4,950,000	**$4,950,000**	$45.00	19.5%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$660,000	**$660,000**	$6.00	2.6%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$3,520,000	**$3,520,000**	$32.00	13.8%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$5.18	2.2%

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 1 Page Hilltop RENOVATION						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$1,131,138			
	E2020	Movable Furnishings	NIC	**$1,131,138**	$10.28	4.4%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$1,407,572			
	F2020	Hazardous Components Abatement	$0	**$1,407,572**	$12.80	5.5%
TOTAL DIRECT COST (Trade Costs)				***$25,438,508***	*$231.26*	*100.0%*

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Feasibility Design Estimate GFA 110,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Page Hilltop RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	Lower Level				4,916		
	Upper Level				105,084		
	TOTAL GROSS FLOOR AREA (GFA)				**110,000**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for foundation repair	**1**	ls	25,000.00	25,000		
	SUBTOTAL					25,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cut and patch existing slab for new plumbing	**100,168**	sf	1.50	150,252		
	Waterproof existing elevator pit	**1**	ea	8,000.00	8,000		
	Equipment pads	**1**	ls	10,000.00	10,000		
	SUBTOTAL					168,252	
	TOTAL - FOUNDATIONS						**$193,252**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	New lateral Bracing to roofs for new RTU;s	**105,084**	sf	5.00	525,420		
	SUBTOTAL					525,420	
	TOTAL - SUPERSTRUCTURE						**$525,420**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*37,880*	*sf*				
	Repoint existing brick exterior wall; 100%	**37,880**	sf	38.00	1,439,440		
	Furring, insulation and Interior GWB	**37,880**	sf	10.20	386,376		
	Staging	**54,114**	sf	4.00	216,456		
	SUBTOTAL					2,042,272	
	B2020 WINDOWS/CURTAINWALL	*16,234*			-		
	New windows/curtainwall	**16,234**	sf	100.00	1,623,400		
	SUBTOTAL					1,623,400	
	B2030 EXTERIOR DOORS						
	Replace exterior glazed door, double	**20**	pr	8,000.00	160,000		
	Replace exterior door, single	**4**	ea	2,000.00	8,000		
	Replace exterior door, double	**5**	pr	4,000.00	20,000		
	Backer rod & double sealant	**563**	lf	9.00	5,067		
	Wood blocking at openings	**563**	lf	3.00	1,689		
	SUBTOTAL					194,756	
	TOTAL - EXTERIOR CLOSURE						**$3,860,428**

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Feasibility Design Estimate GFA 110,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Page Hilltop RENOVATION						
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems	**105,084**	sf	22.00	2,311,848		
	SUBTOTAL					2,311,848	
	B3020 ROOF OPENINGS						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						**$2,311,848**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Partitions; assume 25% new	**110,000**	gsf	5.50	605,000		
	SUBTOTAL					605,000	
	C1020 INTERIOR DOORS						
	Remove and replace doors	**110,000**	gsf	5.00	550,000		
	SUBTOTAL					550,000	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**110,000**	gsf	0.80	88,000		
	Lockers, full height	**110,000**	gsf	1.50	165,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**110,000**	sf	1.00	110,000		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	50,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Display cases	**110,000**	gsf	0.25	27,500		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**110,000**	sf	1.00	110,000		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**110,000**	sf	0.50	55,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**110,000**	sf	1.50	165,000		
101400	*SIGNAGE*						
	Code compliant signage	**110,000**	sf	0.25	27,500		
	SUBTOTAL					800,400	
	TOTAL - INTERIOR CONSTRUCTION						**$1,955,400**
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
	Code upgrades to stairs	**1**	flt	8,000.00	8,000		
	SUBTOTAL					8,000	

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Feasibility Design Estimate **GFA** 110,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Page Hilltop RENOVATION						
	C2020 STAIR FINISHES						
	New rubber treads/risers/landings and painting to stairs	**1**	flt	5,450.00	5,450		
	SUBTOTAL					5,450	
	TOTAL - STAIRCASES						**$13,450**
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
	Painting/wall finishes	**110,000**	gsf	5.00	550,000		
	SUBTOTAL					550,000	
	C3020 FLOOR FINISHES						
	New flooring throughout including floor prep	**110,000**	sf	11.00	1,210,000		
	SUBTOTAL					1,210,000	
	C3030 CEILING FINISHES						
	Replace existing ceilings	**110,000**	sf	10.00	1,100,000		
	SUBTOTAL					1,100,000	
	TOTAL - INTERIOR FINISHES						**$2,860,000**
	D10 CONVEYING SYSTEMS						
	D1010 ELEVATOR						
	Replace existing elevator	**1**	ea	130,000.00	130,000		
	Decommission existing elevator	**1**	ea	30,000.00	30,000		
	SUBTOTAL					160,000	
	TOTAL - CONVEYING SYSTEMS						**$160,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing, complete	**110,000**	sf	12.00	1,320,000		
	SUBTOTAL					1,320,000	
	TOTAL - PLUMBING						**$1,320,000**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC, complete	**110,000**	sf	45.00	4,950,000		
	SUBTOTAL					4,950,000	
	TOTAL - HVAC						**$4,950,000**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	Fire Protection, complete	**110,000**	sf	6.00	660,000		
	SUBTOTAL					660,000	
	TOTAL - FIRE PROTECTION						**$660,000**

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Design Options
Ayer Shirley, MA

Feasibility Design Estimate GFA 110,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Page Hilltop RENOVATION						
	D50 ELECTRICAL						
	D5010 ELECTRICAL SYSTEMS						
	Electrical, complete	**110,000**	sf	32.00	3,520,000		
	SUBTOTAL					3,520,000	
	TOTAL - ELECTRICAL						**$3,520,000**
	E10 EQUIPMENT						
	E10 EQUIPMENT, GENERALLY						
	Kiln	**1**	ea	5,000.00	5,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
	E20 FURNISHINGS						
	E2010 FIXED FURNISHINGS						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**16,234**	sf	7.00	113,638		
	Casework allowance	**110,000**	gsf	9.00	990,000		
	SUBTOTAL					1,131,138	
	E2020 MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$1,131,138**
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior windows	**16,234**	sf	6.00	97,404		
	Remove roofing	**105,084**	sf	2.00	210,168		
	Interior demolition	**110,000**	gsf	8.00	880,000		
	Temporary enclosures/protection	**110,000**	sf	2.00	220,000		

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Feasibility Design Estimate

GFA 110,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 1 Page Hilltop RENOVATION						
242	SUBTOTAL					1,407,572	
243							
244	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
245	See summary						
246	SUBTOTAL						
247							
248	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$1,407,572**
249							

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Design Options
Ayer Shirley, MA
Feasibility Design Estimate GFA 57,153

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Page Hilltop RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$25,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$95,730	**$120,730**	$2.11	0.9%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$285,765	**$285,765**	$5.00	2.0%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$1,319,447			
	B2020	Windows/Curtainwall	$1,048,900			
	B2030	Exterior Doors	$131,076	**$2,499,423**	$43.73	17.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,257,366			
	B3020	Roof Openings	$0	**$1,257,366**	$22.00	8.9%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$314,342			
	C1020	Interior Doors	$285,765			
	C1030	Specialties/Millwork	$391,041	**$991,148**	$17.34	7.0%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$285,765			
	C3020	Floor Finishes	$628,683			
	C3030	Ceiling Finishes	$571,530	**$1,485,978**	$26.00	10.6%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$30,000	**$30,000**	$0.52	0.2%
D20	**PLUMBING**					
	D20	Plumbing	$685,836	**$685,836**	$12.00	4.9%
D30	**HVAC**					
	D30	HVAC	$2,571,885	**$2,571,885**	$45.00	18.3%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$342,918	**$342,918**	$6.00	2.4%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$1,828,896	**$1,828,896**	$32.00	13.0%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$9.97	4.0%

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Feasibility Design Estimate GFA 57,153

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Page Hilltop RENOVATION						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$615,300			
	E2020	Movable Furnishings	NIC	**$615,300**	$10.77	4.4%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$792,345			
	F2020	Hazardous Components Abatement	$0	**$792,345**	$13.86	5.6%
TOTAL DIRECT COST (Trade Costs)				***$14,077,590***	*$246.31*	*100.0%*

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Ayer Shirley, MA

Feasibility Design Estimate

GFA 57,153

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Page Hilltop RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	First Floor				57,153		
	TOTAL GROSS FLOOR AREA (GFA)				**57,153** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for foundation repair	**1**	ls	25,000.00	25,000		
	SUBTOTAL					25,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cut and patch existing slab for new plumbing	**57,153**	sf	1.50	85,730		
	Equipment pads	**1**	ls	10,000.00	10,000		
	SUBTOTAL					95,730	
	TOTAL - FOUNDATIONS						**$120,730**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	No work in this section						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	New lateral Bracing to roofs for new RTU;s	**57,153**	sf	5.00	285,765		
	SUBTOTAL					285,765	
	TOTAL - SUPERSTRUCTURE						**$285,765**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*24,473*	*sf*				
	Repoint existing brick exterior wall; 100%	**24,473**	sf	38.00	929,974		
	Furring, insulation and Interior GWB	**24,473**	sf	10.20	249,625		
	Staging	**34,962**	sf	4.00	139,848		
	SUBTOTAL					1,319,447	
	B2020 WINDOWS/CURTAINWALL	*10,489*			-		
	New windows/curtainwall	**10,489**	sf	100.00	1,048,900		
	SUBTOTAL					1,048,900	
	B2030 EXTERIOR DOORS						
	Replace exterior glazed door, double	**13**	pr	8,000.00	104,000		
	Replace exterior door, single	**1**	ea	2,000.00	2,000		
	Replace exterior door, double	**5**	pr	4,000.00	20,000		
	Backer rod & double sealant	**423**	lf	9.00	3,807		
	Wood blocking at openings	**423**	lf	3.00	1,269		
	SUBTOTAL					131,076	
	TOTAL - EXTERIOR CLOSURE						**$2,499,423**
	B30 ROOFING						

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Feasibility Design Estimate **GFA** 57,153

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Page Hilltop RENOVATION						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems	**57,153**	sf	22.00	1,257,366		
	SUBTOTAL					1,257,366	
	B3020 ROOF OPENINGS						
	No work in this section						
	SUBTOTAL					-	
	TOTAL - ROOFING						**$1,257,366**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Partitions; assume 25% new	**57,153**	gsf	5.50	314,342		
	SUBTOTAL					314,342	
	C1020 INTERIOR DOORS						
	Remove and replace doors	**57,153**	gsf	5.00	285,765		
	SUBTOTAL					285,765	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**57,153**	gsf	0.80	45,722		
	Lockers, full height	**57,153**	gsf	1.50	85,730		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**57,153**	sf	1.00	57,153		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	In Addition		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Display cases	**57,153**	gsf	0.25	14,288		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**57,153**	sf	1.00	57,153		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**57,153**	sf	0.50	28,577		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**57,153**	sf	1.50	85,730		
101400	*SIGNAGE*						
	Code compliant signage	**57,153**	sf	0.25	14,288		
	SUBTOTAL					391,041	
	TOTAL - INTERIOR CONSTRUCTION						**$991,148**
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
	Code upgrades to stairs				NR		
	SUBTOTAL					-	
	C2020 STAIR FINISHES						

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Feasibility Design Estimate GFA 57,153

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Page Hilltop RENOVATION						
	New rubber treads/risers/landings and painting to stairs				NR		
	SUBTOTAL					-	
	TOTAL - STAIRCASES						
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
	Painting/wall finishes	**57,153**	gsf	5.00	285,765		
	SUBTOTAL					285,765	
	C3020 FLOOR FINISHES						
	New flooring throughout including floor prep	**57,153**	sf	11.00	628,683		
	SUBTOTAL					628,683	
	C3030 CEILING FINISHES						
	Replace existing ceilings	**57,153**	sf	10.00	571,530		
	SUBTOTAL					571,530	
	TOTAL - INTERIOR FINISHES						**$1,485,978**
	D10 CONVEYING SYSTEMS						
	D1010 ELEVATOR						
	Decommission existing elevator	**1**	ea	30,000.00	30,000		
	SUBTOTAL					30,000	
	TOTAL - CONVEYING SYSTEMS						**$30,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing, complete	**57,153**	sf	12.00	685,836		
	SUBTOTAL					685,836	
	TOTAL - PLUMBING						**$685,836**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC, complete	**57,153**	sf	45.00	2,571,885		
	SUBTOTAL					2,571,885	
	TOTAL - HVAC						**$2,571,885**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	Fire Protection, complete	**57,153**	sf	6.00	342,918		
	SUBTOTAL					342,918	
	TOTAL - FIRE PROTECTION						**$342,918**
	D50 ELECTRICAL						

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Ayer Shirley School Options 21-Mar-18
Design Options
Ayer Shirley, MA

Feasibility Design Estimate GFA 57,153

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Page Hilltop RENOVATION						
	D5010 ELECTRICAL SYSTEMS						
	Electrical, complete	**57,153**	sf	32.00	1,828,896		
	SUBTOTAL					1,828,896	
	TOTAL - ELECTRICAL						**$1,828,896**
	E10 EQUIPMENT						
	E10 EQUIPMENT, GENERALLY						
	Kiln	**1**	ea	5,000.00	5,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
	E20 FURNISHINGS						
	E2010 FIXED FURNISHINGS						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**10,489**	sf	7.00	73,423		
	Casework allowance	**57,153**	gsf	9.00	514,377		
	SUBTOTAL					615,300	
	E2020 MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$615,300**
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior wall at gymnasium	**2,905**	sf	15.00	43,575		
	Remove exterior windows	**10,489**	sf	6.00	62,934		
	Remove roofing	**57,153**	sf	2.00	114,306		
	Interior demolition	**57,153**	gsf	8.00	457,224		
	Temporary enclosures/protection	**57,153**	sf	2.00	114,306		
	SUBTOTAL					792,345	

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Ayer Shirley School Options
Design Options
Ayer Shirley, MA

21-Mar-18

Feasibility Design Estimate

GFA 57,153

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2 Page Hilltop RENOVATION						
242	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
243	See summary						
244	SUBTOTAL						
245							
246	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$792,345**
247							

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Ayer Shirley School Options 21-Mar-18
Design Options
Ayer Shirley, MA
Feasibility Design Estimate GFA 23,847

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Page Hilltop ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$389,898			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$360,437	**$750,335**	$31.46	9.1%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$875,606	**$875,606**	$36.72	10.6%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$1,158,060			
	B2020	Windows	$671,144			
	B2030	Exterior Doors	$20,399	**$1,849,603**	$77.56	22.5%
B30	**ROOFING**					
	B3010	Roof Coverings	$712,034			
	B3020	Roof Openings	$32,500	**$744,534**	$31.22	9.1%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$524,634			
	C1020	Interior Doors	$119,235			
	C1030	Specialties/Millwork	$206,437	**$850,306**	$35.66	10.3%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$166,929			
	C3020	Floor Finishes	$262,317			
	C3030	Ceiling Finishes	$178,853	**$608,099**	$25.50	7.4%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$333,858	**$333,858**	$14.00	4.1%
D30	**HVAC**					
	D30	HVAC	$1,073,115	**$1,073,115**	$45.00	13.0%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$107,312	**$107,312**	$4.50	1.3%
D50	**ELECTRICAL**					

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Ayer Shirley School Options 21-Mar-18
Design Options
Ayer Shirley, MA
Feasibility Design Estimate GFA 23,847

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2 Page Hilltop ADDITION						
	D5010	Complete System	$763,104	**$763,104**	$32.00	9.3%
E10	**EQUIPMENT**					
	E10	Equipment	$0	**$0**	$0.00	0.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$269,120			
	E2020	Movable Furnishings	NIC	**$269,120**	$11.29	3.3%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$8,224,992***	*$344.91*	*100.0%*

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Ayer Shirley School Options

Design Options

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Feasibility Design Estimate

GFA 23,847

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Page Hilltop ADDITION							
	GROSS FLOOR AREA CALCULATION						
	Level 1			23,847			
	TOTAL GROSS FLOOR AREA (GFA)				**23,847**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
033000	*CONCRETE*						
	Strip Footings	*73*	*CY*				
	Foundation Walls	*146*	*CY*				
	Spread Footings	*126*	*CY*				
	Piers	*15*	*CY*				
	Total Foundation Concrete	*360*	*CY*				
	Strip footings						
	Formwork	**1,874**	sf	11.00	20,614		
	Re-bar	**11,244**	lbs.	1.20	13,493		
	Concrete material; 3,000 psi	**73**	cy	130.00	9,490		
	Placing concrete	**73**	cy	70.00	5,110		
	Foundation walls						
	Formwork	**7,496**	sf	12.50	93,700		
	Re-bar	**18,740**	lbs.	1.20	22,488		
	Concrete material; 3,000 psi	**146**	cy	130.00	18,980		
	Placing concrete	**146**	cy	70.00	10,220		
	Form shelf	**937**	lf	10.00	9,370		
	Spread Footings						
	Formwork	**2,160**	sf	14.00	30,240		
	Re-bar	**13,860**	lbs.	1.20	16,632		
	Concrete material; 3,000 psi	**126**	cy	130.00	16,380		
	Placing concrete	**126**	cy	70.00	8,820		
	Set anchor bolts grout plates	**45**	ea	150.00	6,750		
	Piers/Pilasters						
	Formwork	**1,080**	sf	14.00	15,120		
	Re-bar	**2,250**	lbs	1.20	2,700		
	Concrete material; 3,000 psi	**15**	cy	130.00	1,950		
	Placing concrete	**15**	cy	80.00	1,200		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Dampproofing at brick shelf	**4,685**	sf	3.00	14,055		
072100	*THERMAL INSULATION*						
	Insulation	**4,685**	sf	3.00	14,055		
312000	*EARTHWORK*						
	Strip footings						
	Excavation	**555**	cy	15.00	8,325		
	Remove off site	**73**	cy	12.00	876		
	Backfill with existing material	**482**	cy	10.00	4,820		
	Spread footings						
	Excavation	**427**	cy	16.00	6,832		
	Remove off site	**126**	cy	12.00	1,512		
	Backfill with existing material	**301**	cy	10.00	3,010		
	Miscellaneous						
	Gravel fill beneath footings, 12"	**129**	cy	10.00	1,290		
	Perimeter drain	**937**	lf	18.00	16,866		
	Underslab E&B for plumbing	**1**	ls	10,000.00	10,000		

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Ayer Shirley School Options
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Feasibility Design Estimate

GFA 23,847

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Page Hilltop ADDITION							
	Dewatering for foundation work	**1**	ls	5,000.00	5,000		
	SUBTOTAL					389,898	
A1020	**SPECIAL FOUNDATIONS**						
	No work in this section						
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Structural fill, 8"	**592**	cy	36.00	21,312		
	Gravel fill, 8"	**592**	cy	40.00	23,680		
	Rigid insulation	**23,847**	sf	2.25	53,656		
	Vapor barrier	**23,847**	sf	0.75	17,885		
	Compact existing sub-grade	**23,847**	sf	0.50	11,924		
	Mesh reinforcing 15% lap	**27,424**	sf	0.80	21,939		
	Concrete - 5" thick; 4,000 psi	**390**	cy	125.00	48,750		
	Placing concrete	**390**	cy	45.00	17,550		
	Finishing and curing concrete	**23,847**	sf	1.50	35,771		
	Control joints - saw cut	**23,847**	sf	0.10	2,385		
	Miscellaneous						
	Structural fill at existing building LL	**2,731**	cy	35.00	95,585		
	Connect to existing building	**1**	ls	10,000.00	10,000		
	SUBTOTAL					360,437	
	TOTAL - FOUNDATIONS						**$750,335**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.01	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	167	tns		-		
	No work required						
	SUBTOTAL					-	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns, 14#/SF	**167**	tns	4,000.00	668,000		
	Premium for HSS	**42**	tns	300.00	12,600		
	Roof Structure						
	1-1/2" 20 Ga. galvanized Metal Roof Deck	**23,847**	sf	3.50	83,465		
	Miscellaneous						
	Concrete at roof, allow	**5,000**	sf	8.00	40,000		
	Fire proofing to columns, beams and deck	**23,847**	sf	3.00	71,541		

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Feasibility Design Estimate GFA 23,847

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Page Hilltop ADDITION							
	SUBTOTAL					875,606	
	TOTAL - SUPERSTRUCTURE						**$875,606**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*13,583*	sf				
042000	*MASONRY*						
	Brick veneer, 80% of solid area	**10,866**	sf	40.00	434,640		
	Staging to exterior wall	**19,404**	sf	4.00	77,616		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**13,583**	sf	6.50	88,290		
	Air barrier/flashing at windows	**3,424**	lf	6.25	21,400		
	Miscellaneous sealants to closure	**13,583**	sf	1.00	13,583		
072100	*THERMAL INSULATION*						
	Insulation	**13,583**	sf	3.00	40,749		
076400	*CLADDING*						
	Metal panel; 20% of solid area	**2,717**	sf	75.00	203,775		
	Roof equipment screen	**1**	ls	50,000.00	50,000		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**13,583**	sf	10.00	135,830		
	Gypsum Sheathing	**13,583**	sf	2.75	37,353		
	Drywall lining to interior face of stud backup	**13,583**	sf	3.30	44,824		
	SUBTOTAL					1,158,060	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*5,821*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**3,424**	lf	12.00	41,088		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**3,424**	lf	9.00	30,816		
080001	*METAL WINDOWS*						
	Windows, double glazed; 80% of glazed area	**4,657**	sf	90.00	419,130		
	Curtainwall, double glazed; 20% of glazed area	**1,164**	sf	115.00	133,860		
	Sunshades; horizontal	**1**	ls	30,000.00	30,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					671,144	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**2**	pr	8,000.00	16,000		

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	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
		OPTION 2 Page Hilltop ADDITION						
172		Glazed entrance doors including frame and hardware; single door	**1**	ea	4,000.00	4,000		
173		Backer rod & double sealant	**57**	lf	4.00	228		
174		Wood blocking at openings	**57**	lf	3.00	171		
175		SUBTOTAL					20,399	
176								
177		***TOTAL - EXTERIOR CLOSURE***						**$1,849,603**
178								
179								
180	***B30***	***ROOFING***						
181								
182	**B3010**	**ROOF COVERINGS**						
183		New roofing complete	**23,847**	sf	22.00	524,634		
184		New fascia/soffits	**937**	lf	200.00	187,400		
185		SUBTOTAL					712,034	
186								
187	**B3020**	**ROOF OPENINGS**						
188		Skylights, allow	**1**	ls	30,000.00	30,000		
189		Roof hatch	**1**	loc	2,500.00	2,500		
190		SUBTOTAL					32,500	
191								
192		***TOTAL - ROOFING***						**$744,534**
193								
194								
195	***C10***	***INTERIOR CONSTRUCTION***						
196								
197	**C1010**	**PARTITIONS**						
198		Interior partitions	**23,847**	gsf	22.00	524,634		
199		SUBTOTAL					524,634	
200								
201	**C1020**	**INTERIOR DOORS**						
202		Interior doors, frames and hardware	**23,847**	gsf	5.00	119,235		
203		SUBTOTAL					119,235	
204								
205	**C1030**	**SPECIALTIES / MILLWORK**						
206		Toilet Partitions and accessories	**23,847**	gsf	0.80	19,078		
207		Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
208		Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**23,847**	sf	1.00	23,847		
209		Room Signs	**23,847**	gsf	0.40	9,539		
210		Fire extinguisher cabinets	**8**	ea	350.00	2,800		
211		Lockers	**23,847**	gsf	1.60	38,155		
212		Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
213		Janitors Closet Accessories	**3**	rms	300.00	900		
214		*Media*						
215		Reception desks	**2**	loc	25,000	50,000		
216		Library shelving at perimeters 7' Tall				F,F & E		
217		Library shelving at perimeters 3' Tall				F,F & E		
218		Display cases	**23,847**	gsf	0.25	5,962		
219		Miscellaneous metals throughout building	**23,847**	sf	1.25	29,809		
220		Miscellaneous sealants throughout building	**23,847**	sf	1.00	23,847		
221		SUBTOTAL					206,437	
222								
223		***TOTAL - INTERIOR CONSTRUCTION***						**$850,306**
224								
225								
226	***C20***	***STAIRCASES***						
227								
228	**C2010**	**STAIR CONSTRUCTION**						
229		**No work required**						

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Feasibility Design Estimate GFA 23,847

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 Page Hilltop ADDITION							
	SUBTOTAL					-	
C2020	**STAIR FINISHES**						
	No work required						
	SUBTOTAL					-	
	TOTAL - STAIRCASES						
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**23,847**	sf	7.00	166,929		
	SUBTOTAL					166,929	
C3020	**FLOOR FINISHES**						
	Floor finishes	**23,847**	sf	11.00	262,317		
	SUBTOTAL					262,317	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**23,847**	sf	7.50	178,853		
	SUBTOTAL					178,853	
	TOTAL - INTERIOR FINISHES						**$608,099**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - CONVEYING SYSTEMS						
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing, complete	**23,847**	sf	14.00	333,858		
	SUBTOTAL					333,858	
	TOTAL - PLUMBING						**$333,858**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC, complete	**23,847**	sf	45.00	1,073,115		
	SUBTOTAL					1,073,115	
	TOTAL - HVAC						**$1,073,115**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire Protection, complete	**23,847**	sf	4.50	107,312		
	SUBTOTAL					107,312	
	TOTAL - FIRE PROTECTION						**$107,312**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Electrical, complete	**23,847**	sf	32.00	763,104		

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Ayer Shirley School Options
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Feasibility Design Estimate

GFA 23,847

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
		OPTION 2 Page Hilltop ADDITION						
296		SUBTOTAL					763,104	
297								
298		***TOTAL - ELECTRICAL***						**$763,104**
299								
300								
301		***E10 EQUIPMENT***						
302								
303	E10	**EQUIPMENT, GENERALLY**						
304		**Included with renovation**						
305		SUBTOTAL					-	
306								
307		***TOTAL - EQUIPMENT***						
308								
309								
310		***E20 FURNISHINGS***						
311								
312	E2010	**FIXED FURNISHINGS**						
313		Entry mats & frames - recessed with carpet/rubber strips	**250**	sf	55.00	13,750		
314		Window blinds	**5,821**	sf	7.00	40,747		
315		Counters, base cabinets, tall storage in classrooms and other rooms	**23,847**	gsf	9.00	214,623		
316		SUBTOTAL					269,120	
317								
318	E2020	**MOVABLE FURNISHINGS**						
319		All movable furnishings to be provided and installed by owner						
320		SUBTOTAL					NIC	
321								
322		***TOTAL - FURNISHINGS***						**$269,120**
323								
324								
325		***F10 SPECIAL CONSTRUCTION***						
326								
327	F10	**SPECIAL CONSTRUCTION**						
328		No items in this section						
329		SUBTOTAL						
330								
331		***TOTAL - SPECIAL CONSTRUCTION***						
332								
333								
334		***F20 SELECTIVE BUILDING DEMOLITION***						
335								
336	F2010	**BUILDING ELEMENTS DEMOLITION**						
337		No items in this section						
338		SUBTOTAL						
339								
340	F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
341		See main summary for HazMat allowance				See Summary		
342		SUBTOTAL						
343								
344		***TOTAL - SELECTIVE BUILDING DEMOLITION***						

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Feasibility Design Estimate GFA 87,000

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3 Page Hilltop NEW SCHOOL						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$765,202			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$681,170	**$1,446,372**	$16.62	5.6%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$1,331,515			
	B1020	Roof Construction	$1,998,404	**$3,329,919**	$38.27	12.9%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$2,635,325			
	B2020	Windows	$1,594,986			
	B2030	Exterior Doors	$77,400	**$4,307,711**	$49.51	16.6%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,498,308			
	B3020	Roof Openings	$32,500	**$1,530,808**	$17.60	5.9%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$1,914,000			
	C1020	Interior Doors	$435,000			
	C1030	Specialties/Millwork	$611,350	**$2,960,350**	$34.03	11.4%
C20	**STAIRCASES**					
	C2010	Stair Construction	$158,000			
	C2020	Stair Finishes	$25,149	**$183,149**	$2.11	0.7%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$609,000			
	C3020	Floor Finishes	$957,000			
	C3030	Ceiling Finishes	$652,500	**$2,218,500**	$25.50	8.6%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$120,000	**$120,000**	$1.38	0.5%
D20	**PLUMBING**					
	D20	Plumbing	$1,218,000	**$1,218,000**	$14.00	4.7%
D30	**HVAC**					
	D30	HVAC	$3,915,000	**$3,915,000**	$45.00	15.1%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$391,500	**$391,500**	$4.50	1.5%
D50	**ELECTRICAL**					

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3 Page Hilltop NEW SCHOOL						
	D5010	Complete System	$2,784,000	**$2,784,000**	$32.00	10.8%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$6.55	2.2%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$908,822			
	E2020	Movable Furnishings	NIC	**$908,822**	$10.45	3.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$25,884,131***	*$297.52*	*100.0%*

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Page Hilltop NEW SCHOOL							
	GROSS FLOOR AREA CALCULATION						
	First Floor			55,339			
	Second Floor			31,661			
	TOTAL GROSS FLOOR AREA (GFA)				**87,000**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
033000	*CONCRETE*						
	Strip Footings	*120*	*CY*				
	Foundation Walls	*239*	*CY*				
	Spread Footings	*314*	*CY*				
	Piers	*37*	*CY*				
	Total Foundation Concrete	*710*	*CY*				
	Strip footings						
	Formwork	**3,078**	sf	11.00	33,858		
	Re-bar	**18,468**	lbs.	1.20	22,162		
	Concrete material; 3,000 psi	**120**	cy	130.00	15,600		
	Placing concrete	**120**	cy	70.00	8,400		
	Foundation walls						
	Formwork	**12,312**	sf	12.50	153,900		
	Re-bar	**30,780**	lbs.	1.20	36,936		
	Concrete material; 3,000 psi	**239**	cy	130.00	31,070		
	Placing concrete	**239**	cy	70.00	16,730		
	Form shelf	**1,539**	lf	10.00	15,390		
	Spread Footings						
	Formwork	**5,376**	sf	14.00	75,264		
	Re-bar	**34,540**	lbs.	1.20	41,448		
	Concrete material; 3,000 psi	**314**	cy	130.00	40,820		
	Placing concrete	**314**	cy	70.00	21,980		
	Set anchor bolts grout plates	**112**	ea	150.00	16,800		
	Piers/Pilasters						
	Formwork	**2,688**	sf	14.00	37,632		
	Re-bar	**5,550**	lbs	1.20	6,660		
	Concrete material; 3,000 psi	**37**	cy	130.00	4,810		
	Placing concrete	**37**	cy	80.00	2,960		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Dampproofing at brick shelf	**7,695**	sf	3.00	23,085		
072100	*THERMAL INSULATION*						
	Insulation	**7,695**	sf	3.00	23,085		
312000	*EARTHWORK*						
	Strip footings						
	Excavation	**912**	cy	15.00	13,680		
	Remove off site	**120**	cy	12.00	1,440		
	Backfill with existing material	**792**	cy	10.00	7,920		
	Spread footings						
	Excavation	**1,062**	cy	16.00	16,992		
	Remove off site	**314**	cy	12.00	3,768		
	Backfill with existing material	**748**	cy	10.00	7,480		
	Miscellaneous						
	Gravel fill beneath footings, 12"	**263**	cy	10.00	2,630		
	Perimeter drain	**1,539**	lf	18.00	27,702		
	Underslab E&B for plumbing	**1**	ls	30,000.00	30,000		

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	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
		OPTION 3 Page Hilltop NEW SCHOOL						
60		Dewatering for foundation work	**1**	ls	25,000.00	25,000		
61		SUBTOTAL					765,202	
62								
63	**A1020**	**SPECIAL FOUNDATIONS**						
64		No Work in this section						
65		SUBTOTAL					-	
66								
67	**A1030**	**LOWEST FLOOR CONSTRUCTION**						
68		New Slab on grade, 5" thick						
69		Structural fill, 8"	**1,373**	cy	36.00	49,428		
70		Gravel fill, 8"	**1,373**	cy	40.00	54,920		
71		Rigid insulation	**55,339**	sf	2.25	124,513		
72		Vapor barrier	**55,339**	sf	0.75	41,504		
73		Compact existing sub-grade	**55,339**	sf	0.50	27,670		
74		Mesh reinforcing 15% lap	**63,640**	sf	0.80	50,912		
75		Concrete - 5" thick; 4,000 psi	**904**	cy	125.00	113,000		
76		Placing concrete	**904**	cy	45.00	40,680		
77		Finishing and curing concrete	**55,339**	sf	1.50	83,009		
78		Control joints - saw cut	**55,339**	sf	0.10	5,534		
79		Miscellaneous						
80		Elevator pit	**1**	ea	35,000.00	35,000		
81		Loading dock	**1**	ls	40,000.00	40,000		
82		Equipment pads	**1**	ls	15,000.00	15,000		
83		SUBTOTAL					681,170	
84								
85		***TOTAL - FOUNDATIONS***						**$1,446,372**
86								
87								
88	***A20***	***BASEMENT CONSTRUCTION***						
89								
90	**A2010**	**BASEMENT EXCAVATION**						
91		**No Work in this section**						
92		SUBTOTAL					-	
93								
94	**A2020**	**BASEMENT WALLS**						
95		**No Work in this section**						
96		SUBTOTAL					-	
97								
98		***TOTAL - BASEMENT CONSTRUCTION***						
99								
100								
101	***B10***	***SUPERSTRUCTURE***						
102			14.00	lbs/sf		-		
103	**B1010**	**FLOOR CONSTRUCTION**	609	tns		-		
104		Floor Structure - Steel:						
105		Steel beams and columns, 14#/SF	**222**	tns	4,000.00	888,000		
106		Premium for HSS	**56**	tns	300.00	16,800		
107		Shear studs	**6,332**	ea	2.50	15,830		
108		Floor Structure						
109		2" 18 Ga. Metal galvanized floor Deck	**31,661**	sf	3.75	118,729		
110		WWF reinforcement	**36,410**	sf	0.80	29,128		
111		Concrete Fill to metal deck; 5-1/4" Light Weight	**539**	cy	160.00	86,240		
112		Place and finish concrete	**31,661**	sf	2.00	63,322		
113		Rebar to decks	**9,498**	lbs	1.20	11,398		
114		Misc. angles	**31,661**	sf	0.50	15,831		

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OPTION 3 Page Hilltop NEW SCHOOL							
	Miscellaneous						
	Fire proofing to columns and beams	**31,661**	sf	2.25	71,237		
	Fire stopping floors	**1**	ls	15,000.00	15,000		
	SUBTOTAL					1,331,515	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns, 14#/SF	**387**	tns	4,000.00	1,548,000		
	Premium for HSS	**97**	tns	300.00	29,100		
	Roof Structure						
	1-1/2" 20 Ga. galvanized Metal Roof Deck	**55,339**	sf	3.50	193,687		
	Acoustic deck at gym; premium	**7,200**	sf	6.00	43,200		
	Miscellaneous						
	Concrete at roof	**5,000**	sf	8.00	40,000		
	Fire proofing to columns, beams and deck	**48,139**	sf	3.00	144,417		
	SUBTOTAL					1,998,404	
	TOTAL - SUPERSTRUCTURE						**$3,329,919**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*32,774*	sf				
042000	*MASONRY*						
	Brick veneer, 80% of solid area	**26,219**	sf	38.00	996,322		
	Gym, assume 12" CMU back up	**6,615**	sf	28.00	185,220		
	Staging to exterior wall	**46,820**	sf	4.00	187,280		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**32,774**	sf	6.50	213,031		
	Air barrier/flashing at windows	**8,262**	lf	6.25	51,638		
	Miscellaneous sealants to closure	**32,774**	sf	1.00	32,774		
072100	*THERMAL INSULATION*						
	Insulation	**32,774**	sf	2.25	73,742		
076400	*CLADDING*						
	Metal panel; 20% of solid area	**6,555**	sf	75.00	491,625		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**26,159**	sf	9.00	235,431		
	Gypsum Sheathing	**26,159**	sf	2.75	71,937		
	Drywall lining to interior face of stud backup	**26,159**	sf	3.30	86,325		
	SUBTOTAL					2,635,325	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*14,046*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**8,262**	lf	12.00	99,144		

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OPTION 3 Page Hilltop NEW SCHOOL							
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**8,262**	lf	8.50	70,227		
080001	*METAL WINDOWS*						
	Windows, double glazed; 80% of glazed area	**11,237**	sf	90.00	1,011,330		
	Curtainwall, double glazed; 20% of glazed area	**2,809**	sf	115.00	323,035		
	Sunshades; horizontal	**1**	ls	75,000.00	75,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					1,594,986	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	Glazed entrance doors including frame and hardware; single door	**2**	ea	4,000.00	8,000		
	HM doors, frames and hardware- Double	**2**	pr	2,000.00	4,000		
	Backer rod & double sealant	**200**	lf	4.00	800		
	Wood blocking at openings	**200**	lf	3.00	600		
	SUBTOTAL					77,400	
	TOTAL - EXTERIOR CLOSURE						**$4,307,711**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**55,339**	sf	22.00	1,217,458		
	New fascia/soffits	**1,539**	lf	150.00	230,850		
	Roof equipment screen	**1**	ls	50,000.00	50,000		
	SUBTOTAL					1,498,308	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	30,000.00	30,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$1,530,808**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Interior partitions	**87,000**	gsf	22.00	1,914,000		
	SUBTOTAL					1,914,000	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**87,000**	gsf	5.00	435,000		
	SUBTOTAL					435,000	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**87,000**	gsf	0.80	69,600		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**87,000**	sf	1.00	87,000		
	Room Signs	**87,000**	gsf	0.40	34,800		
	Fire extinguisher cabinets	**29**	ea	350.00	10,150		
	Lockers	**87,000**	gsf	1.60	139,200		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		

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OPTION 3 Page Hilltop NEW SCHOOL							
	Janitors Closet Accessories	**2**	rms	300.00	600		
	Media						
	Reception desks	**2**	loc	25,000	50,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Display cases	**87,000**	gsf	0.25	21,750		
	Miscellaneous metals throughout building	**87,000**	sf	1.25	108,750		
	Miscellaneous sealants throughout building	**87,000**	sf	1.00	87,000		
	SUBTOTAL					611,350	
	TOTAL - INTERIOR CONSTRUCTION						**$2,960,350**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**2**	flt	25,000.00	50,000		
	Metal pan stair; Lobby stair	**2**	flt	50,000.00	100,000		
	Concrete fill to stairs	**4**	flt	2,000.00	8,000		
	SUBTOTAL					158,000	
C2020	**STAIR FINISHES**						
	High performance coating to stairs including all railings etc.	**4**	flt	3,000.00	12,000		
	Rubber tile at stairs - landings	**400**	sf	10.00	4,000		
	Rubber tile at stairs - treads & risers	**480**	lft	19.06	9,149		
	SUBTOTAL					25,149	
	TOTAL - STAIRCASES						**$183,149**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**87,000**	sf	7.00	609,000		
	SUBTOTAL					609,000	
C3020	**FLOOR FINISHES**						
	Floor finishes	**87,000**	sf	11.00	957,000		
	SUBTOTAL					957,000	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**87,000**	sf	7.50	652,500		
	SUBTOTAL					652,500	
	TOTAL - INTERIOR FINISHES						**$2,218,500**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New elevator; 2 stop; passenger	**1**	ea	120,000.00	120,000		
	SUBTOTAL					120,000	
	TOTAL - CONVEYING SYSTEMS						**$120,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing, complete	**87,000**	sf	14.00	1,218,000		
	SUBTOTAL					1,218,000	
	TOTAL - PLUMBING						**$1,218,000**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Page Hilltop NEW SCHOOL							
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC, complete	**87,000**	sf	45.00	3,915,000		
	SUBTOTAL					3,915,000	
	TOTAL - HVAC						**$3,915,000**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection	**87,000**	sf	4.50	391,500		
	SUBTOTAL					391,500	
	TOTAL - FIRE PROTECTION						**$391,500**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Electrical, complete	**87,000**	sf	32.00	2,784,000		
	SUBTOTAL					2,784,000	
	TOTAL - ELECTRICAL						**$2,784,000**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Kiln	**1**	ea	5,000.00	5,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**14,046**	sf	7.00	98,322		
	Counters, base cabinets, tall storage in classrooms and other rooms	**87,000**	gsf	9.00	783,000		
	SUBTOTAL					908,822	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$908,822**
F10	***SPECIAL CONSTRUCTION***						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 Page Hilltop NEW SCHOOL							
	F10 SPECIAL CONSTRUCTION						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	No items in this section						
	SUBTOTAL						
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 1 Middle School Site NEW SCHOOL						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$1,106,993			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$965,925	**$2,072,918**	$15.82	5.5%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$2,049,970			
	B1020	Roof Construction	$2,933,794	**$4,983,764**	$38.04	13.1%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$3,828,992			
	B2020	Windows	$2,301,813			
	B2030	Exterior Doors	$77,400	**$6,208,205**	$47.39	16.3%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,205,128			
	B3020	Roof Openings	$32,500	**$2,237,628**	$17.08	5.9%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$2,882,000			
	C1020	Interior Doors	$655,000			
	C1030	Specialties/Millwork	$893,800	**$4,430,800**	$33.82	11.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$158,000			
	C2020	Stair Finishes	$25,149	**$183,149**	$1.40	0.5%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$917,000			
	C3020	Floor Finishes	$1,441,000			
	C3030	Ceiling Finishes	$982,500	**$3,340,500**	$25.50	8.8%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$120,000	**$120,000**	$0.92	0.3%
D20	**PLUMBING**					
	D20	Plumbing	$1,834,000	**$1,834,000**	$14.00	4.8%
D30	**HVAC**					
	D30	HVAC	$5,895,000	**$5,895,000**	$45.00	15.5%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$589,500	**$589,500**	$4.50	1.6%
D50	**ELECTRICAL**					

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	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 1 Middle School Site NEW SCHOOL						
	D5010	Complete System	$4,192,000	**$4,192,000**	$32.00	11.0%
E10	**EQUIPMENT**					
	E10	Equipment	$570,000	**$570,000**	$4.35	1.5%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$1,351,036			
	E2020	Movable Furnishings	NIC	**$1,351,036**	$10.31	3.6%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$38,008,500***	*$290.14*	*100.0%*

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 1 Middle School Site NEW SCHOOL							
	GROSS FLOOR AREA CALCULATION						
	First Floor			81,999			
	Second Floor			49,001			
	TOTAL GROSS FLOOR AREA (GFA)				**131,000**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
033000	*CONCRETE*						
	Strip Footings	*182*	*CY*				
	Foundation Walls	*364*	*CY*				
	Spread Footings	*445*	*CY*				
	Piers	*53*	*CY*				
	Total Foundation Concrete	*1,044*	*CY*				
	Strip footings						
	Formwork	**4,682**	sf	11.00	51,502		
	Re-bar	**28,092**	lbs.	1.20	33,710		
	Concrete material; 3,000 psi	**182**	cy	130.00	23,660		
	Placing concrete	**182**	cy	70.00	12,740		
	Foundation walls						
	Formwork	**18,728**	sf	12.50	234,100		
	Re-bar	**46,820**	lbs.	1.20	56,184		
	Concrete material; 3,000 psi	**364**	cy	130.00	47,320		
	Placing concrete	**364**	cy	70.00	25,480		
	Form shelf	**2,341**	lf	10.00	23,410		
	Spread Footings						
	Formwork	**7,632**	sf	14.00	106,848		
	Re-bar	**48,950**	lbs.	1.20	58,740		
	Concrete material; 3,000 psi	**445**	cy	130.00	57,850		
	Placing concrete	**445**	cy	70.00	31,150		
	Set anchor bolts grout plates	**159**	ea	150.00	23,850		
	Piers/Pilasters						
	Formwork	**3,816**	sf	14.00	53,424		
	Re-bar	**7,950**	lbs	1.20	9,540		
	Concrete material; 3,000 psi	**53**	cy	130.00	6,890		
	Placing concrete	**53**	cy	80.00	4,240		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Dampproofing at brick shelf	**11,705**	sf	3.00	35,115		
072100	*THERMAL INSULATION*						
	Insulation	**11,705**	sf	3.00	35,115		
312000	*EARTHWORK*						
	Strip footings						
	Excavation	**1,387**	cy	15.00	20,805		
	Remove off site	**182**	cy	12.00	2,184		
	Backfill with existing material	**1,205**	cy	10.00	12,050		
	Spread footings						
	Excavation	**1,508**	cy	16.00	24,128		
	Remove off site	**445**	cy	12.00	5,340		
	Backfill with existing material	**1,063**	cy	10.00	10,630		
	Miscellaneous						
	Gravel fill beneath footings, 12"	**385**	cy	10.00	3,850		
	Perimeter drain	**2,341**	lf	18.00	42,138		
	Underslab E&B for plumbing	**1**	ls	30,000.00	30,000		

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OPTION 1 Middle School Site NEW SCHOOL							
	Dewatering for foundation work	**1**	ls	25,000.00	25,000		
	SUBTOTAL					1,106,993	
A1020	**SPECIAL FOUNDATIONS**						
	No Work in this section						
	SUBTOTAL					-	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Structural fill, 8"	**2,035**	cy	36.00	73,260		
	Gravel fill, 8"	**2,035**	cy	40.00	81,400		
	Rigid insulation	**81,999**	sf	2.25	184,498		
	Vapor barrier	**81,999**	sf	0.75	61,499		
	Compact existing sub-grade	**81,999**	sf	0.50	41,000		
	Mesh reinforcing 15% lap	**94,299**	sf	0.80	75,439		
	Concrete - 5" thick; 4,000 psi	**1,339**	cy	125.00	167,375		
	Placing concrete	**1,339**	cy	45.00	60,255		
	Finishing and curing concrete	**81,999**	sf	1.50	122,999		
	Control joints - saw cut	**81,999**	sf	0.10	8,200		
	Miscellaneous						
	Elevator pit	**1**	ea	35,000.00	35,000		
	Loading dock	**1**	ls	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					965,925	
	TOTAL - FOUNDATIONS						**$2,072,918**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.00	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	917	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns, 14#/SF	**343**	tns	4,000.00	1,372,000		
	Premium for HSS	**86**	tns	300.00	25,800		
	Shear studs	**9,800**	ea	2.50	24,500		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**49,001**	sf	3.75	183,754		
	WWF reinforcement	**56,351**	sf	0.80	45,081		
	Concrete Fill to metal deck; 5-1/4" Light Weight	**834**	cy	160.00	133,440		
	Place and finish concrete	**49,001**	sf	2.00	98,002		
	Rebar to decks	**14,700**	lbs	1.20	17,640		
	Misc. angles	**49,001**	sf	0.50	24,501		

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OPTION 1 Middle School Site NEW SCHOOL							
	Miscellaneous						
	Fire proofing to columns and beams	**49,001**	sf	2.25	110,252		
	Fire stopping floors	**1**	ls	15,000.00	15,000		
	SUBTOTAL					2,049,970	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns, 14#/SF	**574**	tns	4,000.00	2,296,000		
	Premium for HSS	**144**	tns	300.00	43,200		
	Roof Structure						
	1-1/2" 20 Ga. galvanized Metal Roof Deck	**81,999**	sf	3.50	286,997		
	Acoustic deck at gym; premium	**7,200**	sf	6.00	43,200		
	Miscellaneous						
	Concrete at roof	**5,000**	sf	8.00	40,000		
	Fire proofing to columns, beams and deck	**74,799**	sf	3.00	224,397		
	SUBTOTAL					2,933,794	
	TOTAL - SUPERSTRUCTURE						**$4,983,764**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*48,178*	sf				
042000	*MASONRY*						
	Brick veneer, 80% of solid area	**38,542**	sf	38.00	1,464,596		
	Gym, assume 12" CMU back up	**6,615**	sf	28.00	185,220		
	Staging to exterior wall	**68,826**	sf	4.00	275,304		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**48,178**	sf	6.50	313,157		
	Air barrier/flashing at windows	**12,146**	lf	6.25	75,913		
	Miscellaneous sealants to closure	**48,178**	sf	1.00	48,178		
072100	*THERMAL INSULATION*						
	Insulation	**48,178**	sf	2.25	108,401		
076400	*CLADDING*						
	Metal panel; 20% of solid area	**9,636**	sf	75.00	722,700		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**41,563**	sf	9.00	374,067		
	Gypsum Sheathing	**41,563**	sf	2.75	114,298		
	Drywall lining to interior face of stud backup	**41,563**	sf	3.30	137,158		
	SUBTOTAL					3,828,992	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*20,648*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**12,146**	lf	12.00	145,752		

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OPTION 1 Middle School Site NEW SCHOOL							
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**12,146**	lf	8.50	103,241		
080001	*METAL WINDOWS*						
	Windows, double glazed; 80% of glazed area	**16,518**	sf	90.00	1,486,620		
	Curtainwall, double glazed; 20% of glazed area	**4,130**	sf	115.00	474,950		
	Sunshades; horizontal	**1**	ls	75,000.00	75,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					2,301,813	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	Glazed entrance doors including frame and hardware; single door	**2**	ea	4,000.00	8,000		
	HM doors, frames and hardware- Double	**2**	pr	2,000.00	4,000		
	Backer rod & double sealant	**200**	lf	4.00	800		
	Wood blocking at openings	**200**	lf	3.00	600		
	SUBTOTAL					77,400	
	TOTAL - EXTERIOR CLOSURE						**$6,208,205**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**81,999**	sf	22.00	1,803,978		
	New fascia/soffits	**2,341**	lf	150.00	351,150		
	Roof equipment screen	**1**	ls	50,000.00	50,000		
	SUBTOTAL					2,205,128	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	30,000.00	30,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$2,237,628**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Interior partitions	**131,000**	gsf	22.00	2,882,000		
	SUBTOTAL					2,882,000	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**131,000**	gsf	5.00	655,000		
	SUBTOTAL					655,000	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**131,000**	gsf	0.80	104,800		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**131,000**	sf	1.00	131,000		
	Room Signs	**131,000**	gsf	0.40	52,400		
	Fire extinguisher cabinets	**44**	ea	350.00	15,400		
	Lockers	**131,000**	gsf	1.60	209,600		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		

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		OPTION 1 Middle School Site NEW SCHOOL						
230		Janitors Closet Accessories	**2**	rms	300.00	600		
231		*Media*						
232		Reception desks	**2**	loc	25,000	50,000		
233		Library shelving at perimeters 7' Tall				F,F & E		
234		Library shelving at perimeters 3' Tall				F,F & E		
235		Display cases	**131,000**	gsf	0.25	32,750		
236		Miscellaneous metals throughout building	**131,000**	sf	1.25	163,750		
237		Miscellaneous sealants throughout building	**131,000**	sf	1.00	131,000		
238		SUBTOTAL					893,800	
239								
240		***TOTAL - INTERIOR CONSTRUCTION***						**$4,430,800**
241								
242								
243	***C20***	***STAIRCASES***						
244								
245	**C2010**	**STAIR CONSTRUCTION**						
246		Metal pan stair; egress stair	**2**	flt	25,000.00	50,000		
247		Metal pan stair; Lobby stair	**2**	flt	50,000.00	100,000		
248		Concrete fill to stairs	**4**	flt	2,000.00	8,000		
249		SUBTOTAL					158,000	
250								
251	**C2020**	**STAIR FINISHES**						
252		High performance coating to stairs including all railings etc.	**4**	flt	3,000.00	12,000		
253		Rubber tile at stairs - landings	**400**	sf	10.00	4,000		
254		Rubber tile at stairs - treads & risers	**480**	lft	19.06	9,149		
255		SUBTOTAL					25,149	
256								
257		***TOTAL - STAIRCASES***						**$183,149**
258								
259								
260	***C30***	***INTERIOR FINISHES***						
261								
262	**C3010**	**WALL FINISHES**						
263		Wall finishes	**131,000**	sf	7.00	917,000		
264		SUBTOTAL					917,000	
265								
266	**C3020**	**FLOOR FINISHES**						
267		Floor finishes	**131,000**	sf	11.00	1,441,000		
268		SUBTOTAL					1,441,000	
269								
270	**C3030**	**CEILING FINISHES**						
271		Ceiling finishes	**131,000**	sf	7.50	982,500		
272		SUBTOTAL					982,500	
273								
274		***TOTAL - INTERIOR FINISHES***						**$3,340,500**
275								
276								
277	***D10***	***CONVEYING SYSTEMS***						
278								
279	**D1010**	**ELEVATOR**						
280		New elevator; 2 stop; passenger	**1**	ea	120,000.00	120,000		
281		SUBTOTAL					120,000	
282								
283		***TOTAL - CONVEYING SYSTEMS***						**$120,000**
284								
285								
286	***D20***	***PLUMBING***						
287								
288	**D20**	**PLUMBING, GENERALLY**						
289		Plumbing, complete	**131,000**	sf	14.00	1,834,000		
290		SUBTOTAL					1,834,000	
291								
292		***TOTAL - PLUMBING***						**$1,834,000**

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OPTION 1 Middle School Site NEW SCHOOL							
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC, complete	**131,000**	sf	45.00	5,895,000		
	SUBTOTAL					5,895,000	
	TOTAL - HVAC						**$5,895,000**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection	**131,000**	sf	4.50	589,500		
	SUBTOTAL					589,500	
	TOTAL - FIRE PROTECTION						**$589,500**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL SYSTEMS**						
	Electrical, complete	**131,000**	sf	32.00	4,192,000		
	SUBTOTAL					4,192,000	
	TOTAL - ELECTRICAL						**$4,192,000**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated	**1**	ls	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**1**	ls	30,000.00	30,000		
	Kiln	**1**	ea	5,000.00	5,000		
	Stage curtain and rigging	**1**	ls	35,000.00	35,000		
	Food Service equipment	**1**	ls	350,000.00	350,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	SUBTOTAL					570,000	
	TOTAL - EQUIPMENT						**$570,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**20,648**	sf	7.00	144,536		
	Counters, base cabinets, tall storage in classrooms and other rooms	**131,000**	gsf	9.00	1,179,000		
	SUBTOTAL					1,351,036	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$1,351,036**
F10	***SPECIAL CONSTRUCTION***						

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OPTION 1 Middle School Site NEW SCHOOL							
	F10 SPECIAL CONSTRUCTION						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	No items in this section						
	SUBTOTAL						
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

Ayer-Shirley Regional School District 141 Washington Street Ayer, MA 01432 T. 978-772-8600 F. 978-772-1863