

MARLBOROUGH SCHOOL DISTRICT

Elmer Thienes -Mary Hall Elementary School

25 School Drive, Marlborough, Connecticut, 06447

PUBLIC PRESENTATION: 12.11.2024

EDUCATIONAL FACILITY ASSESSMENT

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TABLE OF CONTENTS

1.0 INTRODUCTION
- 1.1 Executive Summary
- 1.2 Assessment Team
- 1.3 Use and Reliance Statement

2.0 SCHOOL GRANT FUNDING
- 2.1 Space Standard Calculation
  - Enrollment Data
  - Grant Reimbursement Percentage
  - Space Standards
  - Table 2.1.1 Space Standards Calculation
- 2.2 School Project Funding Considerations
  - Space Standard Waiver
  - Ineligible and Limited Eligible Projects
  - Extension and Alteration Projects
  - Renovation Status Projects
  - New Construction as an Alternative to Renovation
  - Conclusion
- 2.3 Enrollment Projections

3.0 EXISTING FACILITY ASSESSMENTS
- 3.1 Civil and Landscape Design Narrative
- 3.2 Building and General Construction Assessment
- 3.3 Plumbing & Fire Protection Systems Narrative
- 3.4 Mechanical Systems Narrative
- 3.5 Electrical & Technology Systems Narrative
- 3.6 Structural Systems Narrative

4.0 CONCEPTUAL OUTLINE SPECIFICATIONS

5.0 EXISTING BUILDING DRAWINGS
- 5.1 Existing Site Drawings
  - C-200 Phase 2 Site Layout-Materials Plan
  - C-300 Phase 2 Site Grading Plan
  - C-400 Phase 2 Site Utilities Plan
- 5.2 Existing Building / Architectural Drawings
  - A-1.1 Phase 2 Lower Level Plan
  - A-1.2 Phase 2 Lower Level Plan
  - A-1.3 Phase 2 Lower Level Plan
  - A-1.4 Phase 2 Upper Level Plan
  - A-1.5 Phase 2 Upper Level Plan
  - A-1.6 Phase 2 Upper Level Plan
  - A-1.7 Phase 2 Upper Level Plan
- 5.3 Existing Roofing Drawings

6.0 COST ESTIMATES
- 6.1 Cost Estimate Summary
  - Introduction
  - Quantities and Methodology

- Basis of Pricing
- Design and Estimating Contingency
- Escalation
- Construction Contingency
- Probable Cost
- Estimate Exclusions
- Risks to the Cost Estimate

6.2 Conceptual Capital Implementation Plan
6.3 Conceptual Alterations Project Plan
6.4 Comparative Cost Summary
6.5 Project Cost Analysis-Grant Funding



1.1 Executive Summary

1.2 Assessment Team

1.3 Use and Reliance Statement

BACKGROUND

The Elmer Thienes-Mary Hall Elementary School, referred to throughout this assessment as the *Marlborough Elementary School*, is located at 25 School Drive in Marlborough, CT. The school occupies a 20.65-acre parcel within Marlborough's village center. The property is bordered by commercially zoned property to the north and residential properties to its south. Walking trails extend from the site's northwest corner to a large recreational preserve to the southwest.

The school was last renovated under a comprehensive building project in 2002, executed over multiple phases, that increased the facility's size to 105,670 square feet.

PURPOSE

Though well maintained over the years following its last major renovation, many of the building's systems and assemblies have reached the end of their anticipated services life. Mechanical system performance has been the source of recent complaints from building users. While the mechanical systems were suitable when the project was renovated, advances in system performance that reduces energy consumption have advanced significantly. Similarly, windows and door assemblies installed as part of the 2002 renovation have also begun to reach the end of their service life. Broken seals within insulated glazing units, impacting view by clouding the vision glass, also diminishes the window's thermal performance resulting in higher energy bills for the School District.

Other more significant issues involve water infiltration through the school's building envelope. The assessment team observed active water infiltration through the school's roof and at a below grade foundation during a rain event. Significant deterioration impacting the structural integrity of existing south facing exits from the upper and lower levels Building 'B' was also observed.



Confronted with its aging infrastructure, Marlborough Public Schools has consulted profession design services to undertake a comprehensive analysis of the building and its systems in order that the district might budgetarily forecast the upgrade and replacement of major building elements, equipment, and assemblies of its Elementary School.

PROJECT GOALS

Utilizing field observations, a review of available historic data, and interviews with key stakeholders, this assessment has identified elements comprising the facility, assessed the condition and serviceability of these elements, and where appropriate, have made recommendations for repair, replacement, or upgrade. To facilitate the District's planning, the recommendations have been prioritized relative the recommended date of replacement. The prioritization, in conjunction with professional cost estimation, has been transferred to a long-range Capital Plan that allows the District to better forecast the anticipated work.

Through the generation of this report, the assessment team has endeavored to identify priority repairs that, if not addressed, could continue to deteriorate, and further damage building infrastructure. Of highest priority is an observed deteriorating structural concrete platform supported by Sono-tube columns at the southern end of the school's Building 'B'. This structure was not well defined in the record Construction Documents and been a source of regular water infiltration, which in turn, has begun to compromise the platform's integrity. Additionally, the previously mentioned water infiltration through the building envelope are high priority items. Rectifying these conditions are important to ensure that deterioration of building structure, or the possible development of mold in regularly wet areas, does not occur.

State legislation passed in 2023 requires existing schools to measure and document the performance of existing mechanical systems serving educational institutions. Subsequent State legislation passed in 2024 further mandates additional school mechanical systems performance requires with the implementation of system updates in 2026. These requirements will directly affect Marlborough Elementary School which currently relies upon unit ventilators and lacks air conditioning for the majority of the school. System upgrades that facilitate the ability to regulate indoor temperature and incorporate contemporary filtration systems for improved indoor air quality are aspects of the new legislation that will also address concerns expressed by building occupants. To augment the efficiency of the mechanical systems, ancillary improvements for the electrical system, roof and windows are also recommended.

The report also identifies tertiary repairs and improvements addressing items that do not pose a significant health or safety risk, but require attention as part of the school's maintenance and upkeep.

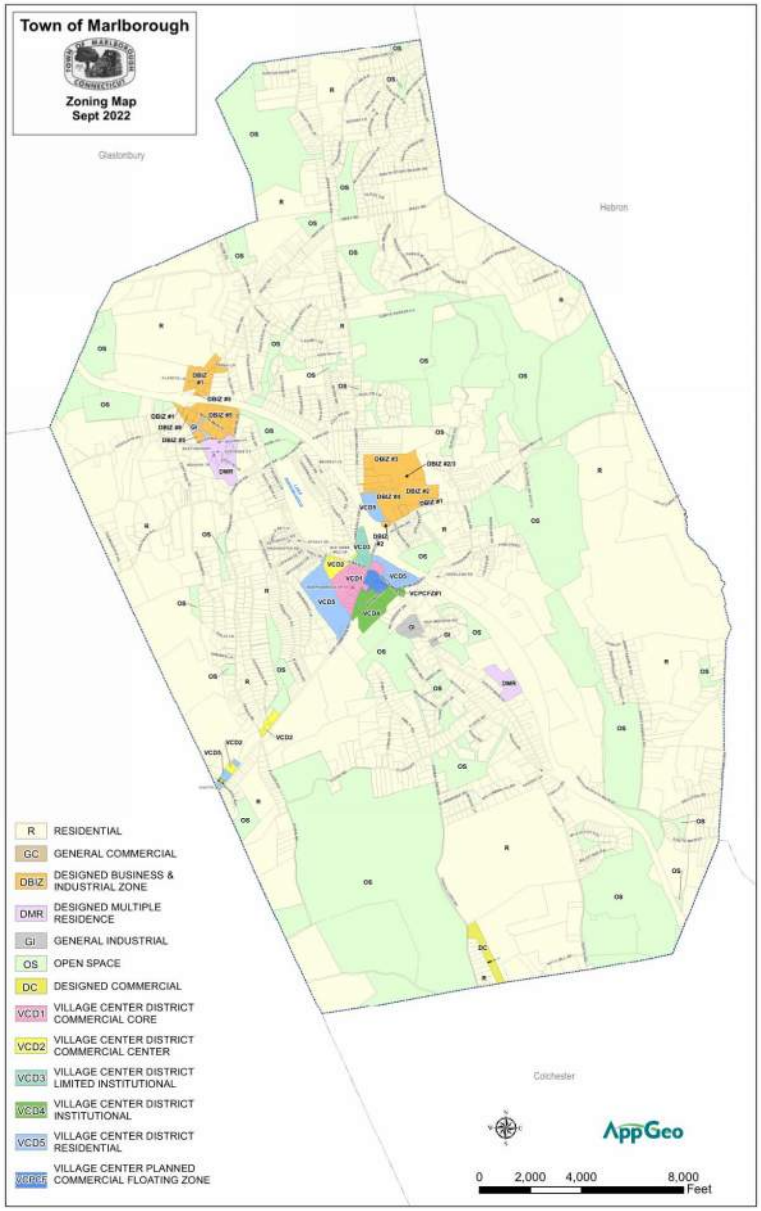
A prioritized Capital Improvements Plan (reference Section 6.0 of this Assessment) has been prepared to assist the district in forecasting costs to address repairs and improvements in a descending order of priority. For comparison, an Alteration Project Plan estimate has also been included to illustrate the financial benefits of executing repairs over a shorter duration.

SITE GEOLOGY AND GEOGRAPHY

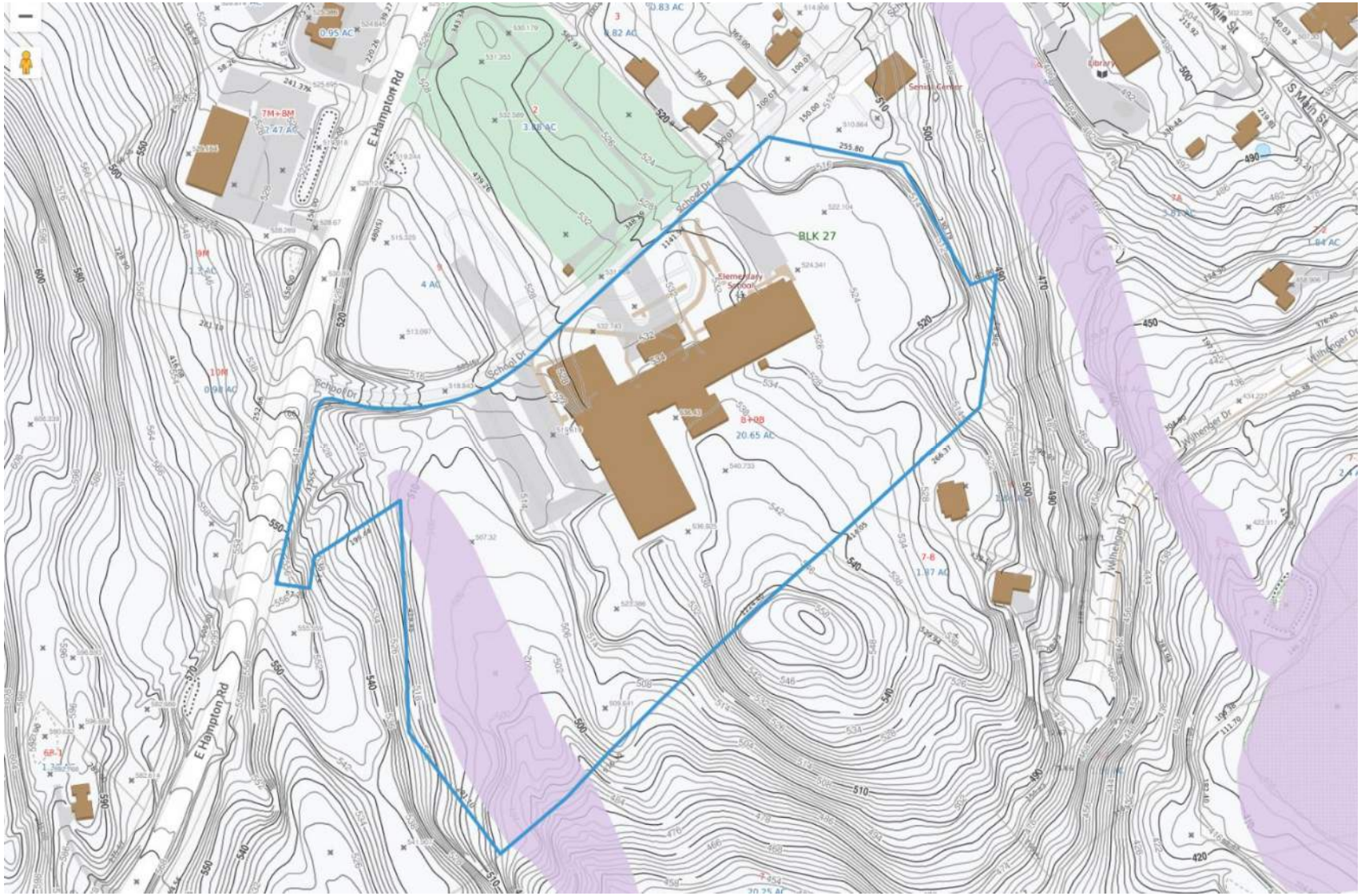
Available GIS mapping information indicates that the property occupied by Marlborough Elementary School is partially impacted by wetlands. A wetland boundary extends from the south along the site's western border.

Topography of the property slopes eastward and westward from a central high point of elevation 560 ft at the south border of the site. The majority of the school is positioned within a portion of the site having a median grade elevation of 534 ft. The grade drops steeply immediately beyond the school's eastern and western property borders.

The property falls within Village Center District Institutional Zone VCD4. Land zoned at Open Space is contiguous to the VCD4 Zone extending southward. The school is immediately tangent to Village Center District Commercial Core Zone VCD1 along its northwestern boundary. A Village Center District Commercial Floating Zone VCPCFZ#1 borders the institutional zone's north boundary. Village Center District Residential Zone VCD5 and Residential Zone R contact the eastern property border.



GIS MAP OF MARLBOROUGH ELEMENTARY SCHOOL PROPERTY



MARLBOROUGH SCHOOL REPRESENTATIVES

The following individuals with Marlborough Public Schools have provided guidance and detailed record documentation supporting the development of this assessment:

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USE AND RELIANCE STATEMENT

Antinozzi Associates PC; CLA Engineers, e2 Engineers, Consulting Engineering Services (CES), and Pan American Consulting Services, LLC (PACS), hereinafter referred to as the "Assessment Team," have produced the content of this document under agreements between Marlborough Public Schools and Antinozzi Associates, PC. All terms and conditions of that agreement are included within this document by reference. Other than Marlborough Public Schools, the Assessment Team disclaims any obligations to any other person or entity with respect to the material content presented in this document, and no person or entity may rely upon this document without advance and express written consent from Antinozzi Associates, PC and such person's or entity's written agreement is so bound by the limitations, qualifications, terms conditions and indemnities to Antinozzi Associates, PC set forth by that agreement.

The Assessment Team specifically states that their review of the property in question is subject to monetary and time restraints, as well as scope limitations. Given those restraints and limitations, they have made what is in their opinion a reasonable investigation and analysis. The materials presented in this document shall be considered "to the best of the Assessment Team's collective professional knowledge." This phrase means materials presented reflect the Assessment Team's actual knowledge of the subject matter after such inquiry the Preliminary Assessment Team considered reasonable given the constraints and limitations upon the contracted scope of work.

The extent of the physical observation to produce this Assessment has been limited to walk-around visual inspections of the property, and conversations with Marlborough Public Schools representatives, and other support personnel. Assumptions regarding the overall condition of the property have been developed based upon observation of representative areas of the subject site and review of previous studies and drawings. As such, the development of the assessment and improvements, along with associated costs, is based upon the team's prior knowledge of the facility from the extension and alternation of the original school the overview observation and is also limited with respect to completeness.

SCHOOL GRANT FUNDING 2.0



2.1 Space Standard Calculation
- Enrollment Data
- Grant Reimbursement Percentage
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- Table 2.1.1 Space Standards Calculation

2.2 School Project Funding Considerations
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2.3 Enrollment Projections

ENROLLMENT DATA

School enrollment plays a significant role in the determination of the construction grant funding available for a new school, an extension, or major alteration of an existing school project. As set forth by CT General Statutes Sec. 10-286 the largest projected enrollment over an eight-year period, in addition to the grade range and facility size, provide the basic information upon which a maximum eligible grant amount is based. Non-priority projects, such as projects to address code violations, roof replacement projects for systems having a minimum 20-year warranty; projects to remedy indoor air quality issues, may be subject to a determination of eligible percentages by the DAS Commissioner.

Although the scope of this report did not include a demographic analysis, Marlborough utilizes periodic enrollment updates from New England Association of Schools and Colleges (NEASC). The current enrollment data for Marlborough Elementary School is provided at the end of this section. As has been the case for many CT districts, Marlborough's enrollment is projected to increase steadily and then level off with approximately a 550-student population approaching 2030.

GRANT REIMBURSEMENT PERCENTAGE

Between 2019 and 2024 Marlborough has averaged a reimbursement rate for school construction grants of 47.68% for General Construction Projects and 37.67% for New Construction. The highest percentage reimbursement occurred in 2022 and 2023 (48.21% General Construction / 38.21% New), and began to decline in 2024. DAS FORM-SCG-1060 published in July 2024 indicates that Marlborough's reimbursement rate for school construction grants in 2025 will be 46.07% for General Construction and 36.07% for New Construction.

SPACE STANDARDS

The statutory determination of the Space Standard is determined using the "Building Area" defined by the CT State Building Code as the inside face of exterior walls. Utilizing the Building Areas provided on Drawing CD1.3 Phase II Code Information provided as part of record documents for review by this study, the Building Area of the existing Marlborough Elementary School is calculated as follows:

Building	Upper Level (Sq. Ft)	Lower Level (Sq. Ft.)	Building Total (Sq. Ft.)
Building A	461	9,506	9,967
Building B	29,815	15,563	45,378
Building C	21,241		21,241
Building D	11,845	17,239	29,084
		Total Building Area	**105,670**

In accordance with CT General Statute Section 10-286 (10)(c)(1), the maximum square footage per pupil can be increase by 25% for schools constructed prior to 1959. Local Assessor's property records indicate that the original portions of Marlborough Elementary School were originally constructed in 1949.

Utilizing Drawing CD1.3 Phase II Code Information, the existing school's Building Area prior to the 2002 construction project is indicated to be **84,429 square feet**.

With the above building area data, the Space Standard for the existing Marlborough School, and assuming no expansion, is calculated as follows on **Table 2.1.1**:

TABLE 2.1.1 SPACE STANDARD CALCULATION												
A. Grade Level												
Pre-K & K	**1**	**2**	**3**	**4**	**5**	**6**	7	8	9	10	11	12
B. Allowable Area Per Pupil and Total Enrollment												
351 to 750	**120**	**120**	**129**	**120**	**152**	**152**	176	176	176	190	190	190
C. Basic Building Area Computation												
Total Grades	908											
Number of Grades Housed	7											
Average Area per Pupil	129.71											
Highest Projected Enrollment (2031-2032)	578											
Maximum Building Area	74,645 square feet											
D. Total Building Area at Completion of Project												
Existing Building Area Pre-1959	0 square feet											
Adjusted Existing Building Area Pre-1959	0 square feet											
Building Area Constructed After 1959	105,670 square feet											
Building Area for Space Standard	**105,670** square feet											
Reduction Factor of Total Eligible Costs	0.70639322 *											

* The above computation indicates that, based upon the highest projected enrollment over an eight-year period and the school's existing Building Area, Marlborough Elementary exceeds the Space Standard. If no action is taken, the district's otherwise eligible reimbursement will be reduced by a factor of **0**.70639322.

SPACE STANDARD WAIVER

It is not uncommon for districts to have existing schools that exceed the State's Space Standard. Even in new construction, it can be challenging to design within these limitations. The State does offer the ability to submit a Space Standard Waiver Request. Traditionally, such request must document a specific hardship or unique programmatic goal to justify the waiver. The process includes the preparation of formal correspondence to the DAS Commissioner, but the application is reviewed in detail by DAS plan reviewers. Often districts struggle to identify sufficient justification to achieve a waiver, so careful consideration and early preparations are desirable.

INELIGIBLE AND LIMITED ELIGIBLE PROJECTS

A frequently stated adage at the Department of Administrative Services, Office of Grants Administration is that "*the State only pays for something once*." This doctrine summarizes the principles by which the State reviews work funded under construction grants. Except under the conditions where Renovation Status has been granted for a project, work considered repairs, replacement or maintenance associated with items installed or constructed under a previous construction grant are deemed as ineligible for reimbursement.

Within eligible building projects there also exist systems or assemblies that are considered "limited eligible" items. For example, fixed seating in auditoriums is eligible in a quantity up to half of school's projected enrollment. Similarly, natatoriums and pools are only eligible for reimbursement at half the district's fully eligible rate. Large assembly spaces and pools are often used after hours by the local community, and as such, the State limits their full reimbursement for items related to education use.

As part of Marlborough's fiscal planning, consideration should be given to existing infrastructure for which the State offers funding that is limited to only half of the amount otherwise available to the district for fully eligible work. Examples of these items include: District Central Offices, construction, extension or major alteration of outdoor athletic facilities, tennis courts or a natatorium. Similarly, only half of the eligible percentage of funding is available for spectator seating in a gymnasium or auditorium.

EXTENSION AND ALTERATION PROJECTS

The State classifies projects under several subcategory designations that impart a reference to the rate at which reimbursement is calculated and the statutory requirements that the project must follow. Extensions (E), commonly referenced for additions to a facility, and Alteration (A) are two common categories under which State grant funded projects fall. Extensions are funded at the district's *New Construction* reimbursement rate, which Alterations receive funding at the district's *General Construction* rate. Under certain circumstances, Extension and/or Alteration projects may offer a district the ability to establish a project scope that results in the lowest district cost (though not necessarily the lowest State cost). However, these projects typically have a greater number ineligible costs that are funded by the district in full.

RENOVATION STATUS PROJECTS

Statutory language exists that offers districts the opportunity to pursue Renovation Status (RNV) for an existing school. Incentives for projects that achieve Renovation Status include the eligibility of work that, under an Alteration or Expansion project, would be considered "repairs" that are not eligible for

reimbursement. Renovation Status projects also receive a reimbursement percentage 10% higher than the district's reimbursement rate for new school construction.

Per the guidance provided by the DAS Office of Grants Administration, Renovation is defined as: a school building project to totally refurbish an existing building,

(A) which results in the renovated facility taking on a useful life comparable to that of a new facility and which will cost less than building a new facility as determined by the Department of Administrative Services, provided the school district may submit a feasibility study and cost analysis of the project prepared by an independent licensed architect to the department prior to final plan approval,

(B) which was not renovated in accordance with this subdivision during the twenty-year period ending on the date of application, and

(C) of which not less than seventy-five per cent of the facility to be renovated is at least thirty years old.

To achieve Renovation Status, the District must demonstrate that renovation of the school is less expensive than the cost to build a new school. Application for Renovation Status requires that the District respond to 12 points of compliance which include a formal request from the Superintendent of Schools, a costs analysis comparing new construction and renovation costs; a facility assessment; certification from the design professional that the renovated facility will meet all applicable codes including accessibility; certifications for service life and performance of the roof, windows technology, and primary systems of the renovated building; certification that applicable section of the high performance building requirements will be met; and the district's certification that the site location is central to, and adequate for, the educational needs being served

NEW CONSTRUCTION AS AN ALTERNATIVE TO RENOVATION

In 2023, CT General Statute Section 10-285A(ii) was modified to provide a reimbursement percentage equivalent to Renovation Status for school construction projects that satisfactorily demonstrate that new construction is less expensive than renovation of an existing school.

CONCLUSION

Ultimately the funding option best suited for future Marlborough Elementary School projects will be determined by the extent of work required and a careful comparison between the available grant reimbursement percentages and the requirements necessary to meet the grant eligibility.

This assessment includes recommendations for infrastructure updates, improvements, or corrections with emphasis on systems and assemblies that demonstrate the greatest deterioration, or that have reached the end other useful service life. This information is intended to provide guidance as a tool that Marlborough Public Schools might utilize for budgetary planning. However, Marlborough Public Schools may opt to execute the work in a different sequence and quantity than proposed by this assessment. Doing so may result in the ability to maximize reimbursement by reducing ineligible expenses.

Opportunities may also exist to reduce the impact of cost escalation by advancing work of a lessor priority than is indicated by the assessment. This type of planning for work scope and budget is critical when embarking upon capital improvements or larger renovations.

Enrollment Projections

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	K-6	PK-6
2018	49		2023-24	35	52	58	70	56	67	57	56	416	451
2019	49		2024-25	40	54	52	57	70	56	67	57	413	453
2020	71		2025-26	40	85	54	52	57	70	56	67	441	481
2021	59	(prov.)	2026-27	40	71	85	54	52	57	70	56	445	485
2022	62	(prov.)	2027-28	40	74	71	85	54	52	57	70	463	503
2023	58	(est.)	2028-29	40	70	74	71	85	54	52	57	463	503
2024	60	(est.)	2029-30	40	72	70	74	71	85	54	52	478	518
2025	62	(est.)	2030-31	40	74	72	70	74	71	85	54	500	540
2026	60	(est.)	2031-32	40	72	74	72	70	74	71	85	518	558
2027	60	(est.)	2032-33	40	73	72	74	72	70	74	71	506	546
2028	60	(est.)	2033-34	40	72	73	72	74	72	70	74	507	547

Note: NESDEC enrollment projections used for Pre-K and incoming K; current actual K-5 enrollment rolled forward for grades 1-6.



3.1 Civil and Landscape Design Narrative

3.2 Building and General Construction Assessment

3.3 Plumbing & Fire Protection Systems Narrative

3.4 Mechanical Systems Narrative

3.5 Electrical & Technology Systems Narrative

3.6 Structural Systems Narrative

GENERAL

CLA Engineers observed the general condition of the following site related items:

1) Sanitary Sewer Service
2) Domestic Water Service
3) Site Storm Drainage
4) Sidewalks
5) Fencing
6) Landscape retaining walls

SANITARY SEWER SERVICE

Available school site plans (dated 2002) indicated that three existing school septic systems were to be abandoned and be replaced with a new central septic system located approximately 800 feet south of the renovated school. After review of the site, it appears that a central septic system was never implemented. Instead, the school was connected to Marlborough's municipal sanitary sewer system. Sewer manholes were observed within School Street. Additional manholes are in front of the school and extending eastward east.



Based upon this visual confirmation it is presumed that the existing septic system that served the school prior to its renovation in 2002 was abandoned. However, this assessment was not able to confirm that the existing septic system was abandoned when the school was connected to the municipal sewer system. Future improvements should include a confirmation that any existing septic system has been abandoned.

Based on available record documents, it appears there is an existing 1,500-gallon grease trap on site. A program of annual inspection and waste removal should be implemented as part of the school's regular maintenance operations.



DOMESTIC WATER SERVICE

According to 2002 record documents, the school is supplied by an existing site water system. The system consists of a 12,500-gallon atmospheric storage tank, a 5,000-gallon hydro pneumatic tank. The 2002 record documents indicate a water field exist.

Though installed for the school, we presume that the school is not responsible for the operation or maintenance of its domestic water supply.

It should be noted that eligibility for future State grant funding may require that the District document and confirm aspects associated with the water fields serving Marlborough Elementary School.





SITE STORM DRAINAGE

Based on available mapping, the storm drainage system consists of reinforced concrete piping and catch basins with three main discharge locations. prior to discharging to natural basins, the stormwater is routed through a Stormceptor oil/water separator at each location to address water quality.

Catch basins and piping observed during this assessment appear to be in working order.

Inspection of the Stormceptor oil/water separators should occur annually at a minimum or in accordance with requirements of local authorities having jurisdiction. The natural basins that receive storm water during rain events should similarly be cleared of brush annually.

Evidence of water infiltration at building entrances was reported by school representatives during the generation of this assessment. Surface drainage at entrances along the south east corner of school should be investigated due to apparent ponding. Additional positive drainage may be needed to ensure stormwater does not pond near these entrances.



Evidence of below grade Infiltration was observed along the east side of Building 'A'. This condition may similarly be improved through regrading to transfer surface water into an existing storm drain located at the northeast corner of Building 'A'. Surface water currently appears to collect along the base of the wall before reaching the catch basin,



SIDEWALKS & CURBING

Some existing sidewalk areas are showing age related cracking due to expansion. The assessment team observed limited spalling and pitting which may be due to long term exposure to snow-melt chemicals. We recommend that these areas be repaired individually by removing sections at formed panels.



Observed sections of existing bituminous curbing on the school's west side are broken. This type of damage can occur during snow plowing and cleaning activities.





The pitch of an existing walk leading from an existing classroom exist has been identified as a source of surface water infiltration during rain events. This walk might be improved with some additional site grading that pitches surface water away from the building exit.





Sections of concrete walk protected by building overhangs have performed generally better than section exposed directly to the weather as evidenced by edge cracking along flags of paving beyond the entry cover.

During the course of our observations, the District expressed an interest in replacing the existing concrete walks with concrete pavers to form an updated entry plaza.

FENCING

The existing school site is bordered by chain link fencing. In general, site fencing is in good condition and serviceable.



Galvanized chain link fencing around ball field is overgrown and appears to have been damaged by a fallen tree. This section of fencing needs repair.



Annual brush clearing around all site fencing is recommended.

LANDSCAPE RETAINING WALLS

In general, landscape retaining walls are in good condition. Individually blocks and capping elements may need to be replaced over time.

Staining observed below the cap and dark discoloration of the block retaining wall suggests areas of water infiltration that are moving soil through the porous concrete block. Periodic clearing of the exposed wall surface may reduce staining, but the replacement of broken caps, sealant joints and flashing are necessary maintenance items to ensure continued serviceability of unitized block site retaining walls.





Water System Station



Sidewalk spalling / pitting



Landscape retaining wall

OVERVIEW

The Marlborough Elementary School, otherwise known as the Elmer Thienes-Mary Hall Educational Building, is the single Elementary School Building in the District. Most of the current building was constructed in 1971, with a subsequent major additions and renovations project in 2002. Historians indicate parts of the original school building was constructed in the 50's and 60's.

The original building is primarily a brick veneer with block back up exterior perimeter wall with punched openings in both single story and two-story sections of building. Floor slabs are concrete, and interior partitions were primarily block (CMU). Roofing systems originally were a built-up roof system, with some metal roofing system is smaller specific areas.

The major renovation project in 2002 continued the exterior wall construction with brick, but with a combination of steel studs and CMU (block) back up, depending on the use areas. Interior partitions were mostly constructed of steel studs and gypsum board. Floor slabs are concrete, and roofing was mostly a singly ply fully adhered EPDM with smaller areas of metal roofing remaining.

EXISTING SITE

The existing school building is located near a congruence of busy roadways including Route 2, Rout 66, and the Town's Main Street. The immediate neighborhood is sparsely occupied with residential properties.

The site has a single-story drop in elevation from the entrance driveway at the north side of the building, to the rear on the southern and eastern sides of the building.

The school site is bordered by School Drive in the front of the building, and dominated primarily of asphalt covered parking lots and driveways, and concrete sidewalks. The main entrance to the building is well defined. The rear (south) as well as the east and west sides of the building is bordered by a variety of trees and indigenous vegetation ranging from light to heavy. A series of play fields and play areas, primarily on the southside of the building, lies between the school building and the vegetated border.

Reference the Civil & Landscape Narrative (Section 3.1) for more in-depth site related concerns around the existing site.

The Owner expressed their desire to upgrade the existing pavement at the immediate entry into the building in a way that will elevate the user experience as they approach the building's main entry. The plan is to upgrade the entry to replicate an entry plaza with pavers, seating, lighting, signage, and site furnishings. The potential costs are addressed in the cost estimate outline specifications.

BUILDING ENVELOPE

Exterior Walls

Reviews of the existing building drawings, as well as reviews of existing conditions in the field, the existing exterior walls systems

vary. Much of the original building is enclosed using a composite brick with block back up or interior finished block. The block is either a typical Cinder Blocks or Concrete Masonry Unit block, typically referred to by the acronym CMU.



Examples of Exterior Wall Gypsum Board finishes with cracks

The exterior wall construction in some areas of the building that were more recently constructed are a brick exterior with Steel Stud and Gypsum Board construction systems as the backup walls. This system generally works just fine in an Elementary School context, but may not have the durability to be sustained in a High School building context. Even when utilized in Elementary Schools, the use of this back up system should be preceded with proper thought and analysis to ensure its use is implemented in areas where there is a lower propensity for activities that may expose the wall to damage.

In addition, cracks like the ones illustrated in the interior photo above are sometimes a byproduct of using gypsum board back up assembly wall system. These cracks usually have to be maintained over time, and sometime require repairs that can be costly. In other cases, these cracks can exist for years without any adverse effects on performance.



Conditions at Control Joints and Caulking

The exterior brick work is in good condition in most instances. This is primarily due to ongoing brick repointing and repairs around the building perimeter. It is anticipated this work will continue, until all the repointing/upgrades are complete. This will bring all existing brick façade to an "as new" condition, enabling another 20 plus years of life expectancy.



Brickwork from the Roof

Furthermore, it is important to maintain those repointing/repair records, as they become available following the completion of each section of building facade. This will allow appropriate follow up in specific areas based on the various completion dates.

With the repointing being executed around the perimeter, it is a safe conclusion the exterior caulking and sealants are also being replaced and upgraded as part of the repointing process. This ensures the entire brick/masonry façade is fully repaired, extending its lifecycle well into the future. Cost of these ongoing upgrades are not captured in the outline specification / cost estimate.

It is assumed caulking and sealants around existing aging door and window openings will be upgraded when opening upgrades are implemented. Conditions analysis on the existing punched openings is outlined further in this report.

One of the threats to the building envelope are the Unit Ventilator openings that are too close to the existing grade surface. The lower lever classrooms in the two-story section of the existing building and those on the south elevation are particularly susceptible at the Unit Ventilator exterior wall grill openings (reference the photo below). The potential for moisture, vermin, chemicals, vegetation clippings, insects, etc., can accumulate at the opening and compromise the secure building perimeter, as well as accelerate the deterioration of the existing metal grill. In addition, this threat is also problematic because it allows foreign substances into the unit ventilation which is a direct route into the conditioned air of occupied spaces.



Venting and In-Takes for Unit Ventilators too close to grade

With an anticipated classroom mechanical systems upgrade, the unit ventilators will eventually be replaced, allowing the exterior wall to be infilled, resulting in this perimeter compromising condition going away.

Roof Systems

There is nearly 83,000 Square Foot of existing low sloped roofing on the building, all of which appear to have been either newer roofing over additions or re-roofed areas over existing building during the last major project undertaken for this building around 2002. In addition, there is nearly 1500 Square Feet of Standing Seam Metal Roofing system also existing on the MES building. Although the 2002 drawings call for a new 4-Ply Built-up Roofing System with a granular finish surface throughout both phases of the major project, only the Phase 1 construction project installed the built-up roofing system. The Second Phase of the project appears to have installed a fully adhered EPDM Roofing System.

Tapered insulation with cover board was specified as part of the new installation, and metal deck appears to have been consistently specified throughout the new roofing documents. Both insulation and coverboard also appear to be mechanically fastened to the roof deck. Prior to undertaking a new roofing project, the design of the new system must take the makeup of the various existing roofing systems into consideration, which will inform the most effective roofing replacement solution.

Although the roofing membrane and base system appear to be visually in good shape, they are at the 20-year service life, which coincides with the minimum warranty period required by the State for a State funded project. Several repairs were observed at the EPDM roof surface which reflects the proactive maintenance program of the Facilities Department. Although the types of rooting systems that were installed around 2002 typically have a lifespan beyond the State mandated warranty period, the district should be planning for a re-roofing project in the earlier part of their projected cost assessment.



Existing EPDM Roofing with good pitch and limited water ponding water

A good maintenance program may prolong the life of the existing roofing system far beyond the 20-year mark. However, a Roofing System Manufacturer's Representative can provide a detailed level of evaluation that will provide recommendations for an anticipated roofing replacement schedule. With the existing base system in place, the existing tapered insulation system and even perhaps the cover board (depending on how it was Installed) can be saved for reuse. In this case only a new roofing membrane would be required in order to restart a new 20-year warranty. If the existing coverboard cannot be saved during the process of removing the existing membrane, then a new coverboard would be required when the membrane replacement is scheduled.

A new re-roofing project is also likely to introduce an energy component. The current codes now require more insulating value (called R-Value) in the building envelope, including the roofing. This mandate will more than likely require additional insulation be added to the roofing system. The existing pitch of the tapered insulation would also impact the form the added insulation would take.



Existing Built-Up Roofing System with Aged Mechanical Unit

Existing metal fascia, metal flashing systems, and metal coping systems can last forever, and there is a significant amount of metal throughout this roofing system. However, with the advent of a re-roofing project the fate of the differing metal systems would have to be evaluated and determined. Depending on the installation process originally utilized, the existing metal could remain relatively intact and be reused, or it could be disfigured during the removal of the existing membrane, and be compromised in such a way that will require its replacement.



Metal Roof at Entrance

Metal Roofing. A small standing seam metal roofing system is installed around the entry, and at the existing mechanical screens. These metal roofs are still in great shape, and with continuous maintenance, can last a lifetime.

No signs of rust or distress was observed around the Standing Seam Roofing System. However, once re-roofing work is being planed for the rest of the building, a more destructive investigation is recommended to verify the exisitng metal roof is adequately insulation and no signs of condensation is visible in the system.



Rooftop equipment screen.



Equipment screen base detail with recently sealed pitch pocket at support bases.

Other roofing deficiencies existing throughout the fields of roofing includes the lack of proper safety mechanisms at existing roof hatches, minimal roof drain sumps and ponding at roof drains, and the need for replacement drain system mechanisms. In addition, the lack of adequate flashing height and proper flashing installation procedures around the brick chimney extension above the roof was also noted as a pressing threat. This problem is also evident at other high/low flashing conditions that could possibly be concerning if additional insulation is needed to meet current energy codes.



Roof Hatch without safety rails

Compounding concerns regarding the roof access is the deterioration of existing fiberglass safety rails. These rails appear to have deteriorated with long term exposure to ultraviolet light

which has eroded the resin binder and exposed the internal glass fibers. Contact with the exposed fibers can result in painful abrasions to exposed skin. It is recommended that safety rails, that conform to impact load requirements set forth by the current CT State Building Code, be installed at each roof hatch. Where fiberglass safety rails currently exist, it is further recommended that they be replaced with metal rails that have received a plastic coating that is not subject to deterioration by ultraviolet light.



An example of a deteriorated fiberglass roof hatch guard rail assembly.



Damaged roof drain screen.

ROOF SYSTEM DETAILS



Ponding at clogged roof drain.



Typical High/Low flashing at Roof Expansion Joint



Metal Roofing at Entry



Roofing at Chimney showing flashing issues



Flashing height might be compromised by added insulation

Metal Roof systems at canopy covers primarily at exits were reported to be a source of concern from a safety standpoint following snow falls. This is due to the ice and snow sliding off the roofs creating safety concerns around the base of the canopy structure. A simply remedy to this is to install snow stops on the roof.

Openings & Fenestration

The existing school building is adorned with a series of punched window openings of varying sizes, mostly within existing brick facades and wall systems.



Exterior Elevations near Main Entrance

Existing window opening are also varying types, ranging from sliding, to double hung, to casements. Although the windows don't look to be in bad condition overall, the users, including Janitors, teachers, and leaders, provided complaints and general dissatisfaction about their performance.

Although many of the windows were installed as part of the last major addition in 2002, they are mostly at the end of their useful life; prompting the need for a window replacement project. An extensive window replacement project would go a long way to improve the energy efficiency of the building.



Exterior Elevation near the east corner of the building

Coupled with mechanical upgrades, a window replacement project would extensively enhance overall energy performance and go hand in hand with complimenting the upgrades to the mechanical system. State funding is available for window focused replacement projects.

District leaders reported the insulated glazing on the existing windows are covered with a 3M security film that enhances the secure perimeter of the building. Any future window replacement project will require security features in the new product.



Exterior Elevation from the south

Inter-communicating & transaction capabilities obtained through a UL Rated Transaction Window Product is also required from a "lock-box" (Entry Vestibule). This will provide safe communication between a visitor and office personnel when needed.

Exterior doors are also a source of concern. The District reported some doors have been replaced, and there is an ongoing effort to replace aged exterior doors and hardware. with Enhanced glazing options at main entrance doors.



Exterior Elevation at the northeast end of the building



Rust at the base of a classroom exterior door

Exterior doors are almost entirely hollow metal doors and frame systems. Unfortunately, besides being cost effective, these doors lack significant thermal properties and generally begin to show deterioration and the onset of rust at the base of the door and frame system within their first year.

With direct exposure to the elements, these doors are a critical barrier in the building envelope. Even at interior locations like Toilet Room doors, the rust at the base of the hollow metal door and frame is quite noticeable, denigrating the overall look of the space and surrounding.



Rust at the base of a Stair exterior door.

A switch to a more sustainable door opening product at the building perimeter would provide better lifecycle cost benefits, and enhanced thermal performance to the district. The use of a Fiberglass Reinforced Polyester (FRP) door system with an aluminum frame system, is an example of an improved product that can yield immediate benefits to the District.

Exterior Envelope Concerns

Although the existing exterior wall construction around the school building is in great shape and the final steps are being put into motion to complete the repointing and resealing/recaulking exercises, giving the exterior envelope a new lease on life and significantly extending its life expectancy (with the exceptions of the roof and window/door openings); a

small problem was bought to light in the Gym/Community Room.



Exterior Wall - Moisture Concerns

Concerns that initially centered around alleviating the potential for mold in the future under the far corners of the Stage, led to a more in-depth search, which eventually bought the focus on the construction of the exterior/rear wall of the Stage, and the existing finish grading of the terrain and the resultant storm water drainage at the exterior of the building adjacent to the rear stage wall.

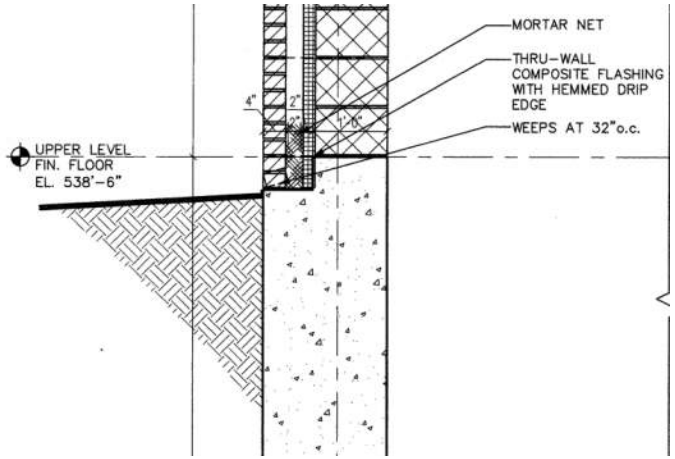
Upon examining the interior face of the exterior wall, clear signs of moisture infiltration were found. The question however becomes, what is allowing the moisture to make its way to the interior of the building.



Exterior Wall Moisture Infiltration

An examination of the design detail from the 2002 project, raises certain questions that will need to be explored in order to land on the right solution for the moisture infiltration problem. Current issues of concerns that surfaces immediately included the location of weeps, the elevation of the finish grade compared to the locations and elevations of flashings, the anticipating of snow or water building up due to the elevation of the finish grade directly outside of the building compared to the grade elevations further away from the building, the location and elevations of the installed flashing, and any associated solid mortar or grout filling, the lack of a sheet waterproofing system (as shown in the detail) at the exterior of the foundation wall, the condition of the brick wall on the façade and the potential for water infiltration, the conditions at the roof detail at the head/top of the wall that may be a contributing factor, the soil drainage capacity or ability considering the foundation drain shown in the detail, the effectiveness of the perforated footing drain, and the use of any damp proofing products that may

have been introduced and may have since been compromised. All of these conditions will have to be carefully examined before the actual solution can be reached.



Exterior Wall – Design Detail at Gym/Community Room

CONVEYING SYSTEMS

There are two elevators in the building. One in the old section of the original building and one in the newer section or addition area of the building. Both were installed as part of the last major project starting around 2002. One was installed as part of the Phase 1 project and the other was installed as part of the phase 2 project. The elevator close to the Media Center was mostly replaced since its installation. Both appear to be oil fueled hydraulic elevators, with Machine Rooms. It is not clear if either of the elevators are hole-less or holed.

The elevators appear to be in decent shape. With continued regular maintenance and manufactured upgrades where recommended (including operating software, if necessary, for operating efficiency) they can easily last another 20 years.



The two elevators in the building. The one on the left was installed in Phase 2. The other in Phase 1

BUILDING INTERIOR

General Interior Finishes

The interior conditions are generally in good shape. For the most part, interior finishes were upgraded during the last major project in 2002. Painted Walls, Acoustic Ceilings, and primarily Vinyl Floors, appears to have been well maintained over the years and presents in good condition with an excellent outlook for long life span.

Interior Floor Finish

The dominant finish floors throughout the building in spaces like classrooms, offices, workrooms, corridors, etc is a vinyl tile product.



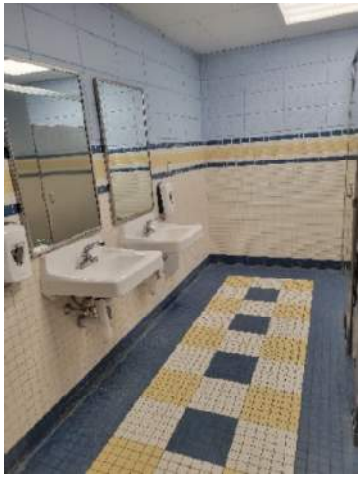
Existing interior finishes - Corridor

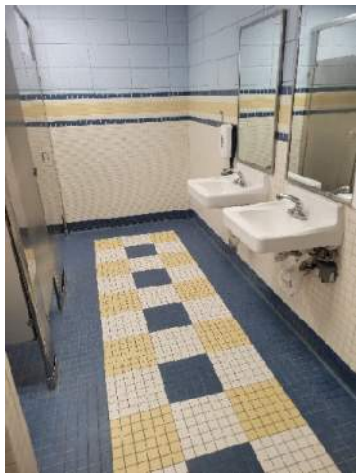
Patterns, primarily in corridors and public spaces provide visual enhancement to users. Classroom and other similar spaces are without patterns. This is common in Elementary Schools considering the floors are in many cases covered with throw rugs and carpets to accommodate specific programing catered to early education environments. Existing floor finishes in these spaces are in good shape, and have lots of life expectancy.



Existing interior finishes - Classroom

Floor finishes in Toilet Rooms are also in good shape for the most part.

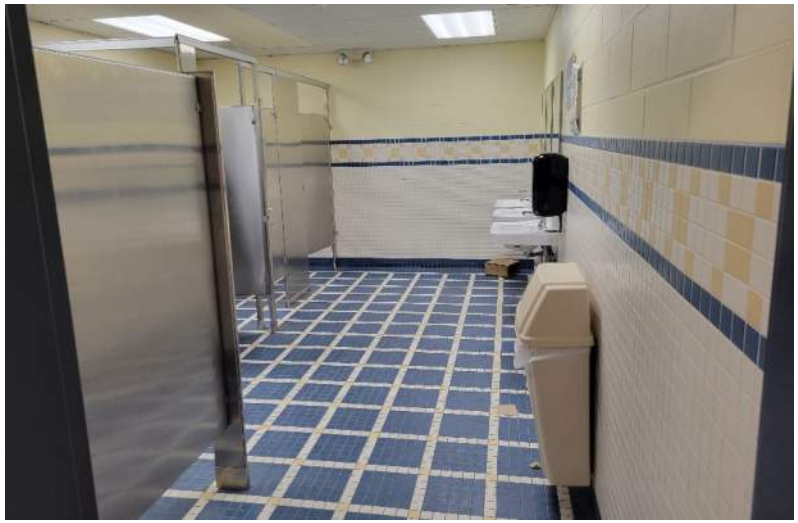




Existing interior finishes – Toilet Rooms

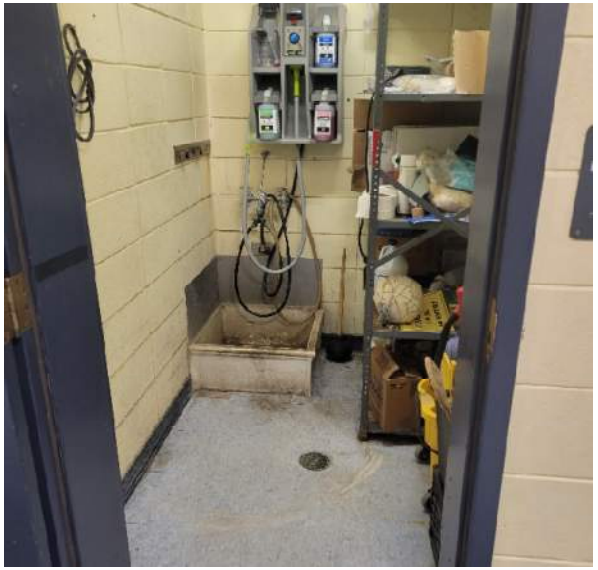
Toilet Rooms were fully renovated during the last major project in 2022. Floors and base were all redone as part of the renovation and the floor and base finish installed was primarily a ceramic tile (CT). Some patterning was added to enhance the visual appearance of the space. At first glance the CT floors appear to be in decent shape. However, the Janitorial Staff reported finish CT floor failures in certain areas. Since these failures seem to be isolated, perhaps in the immediate future a CT Representative can be bought in to evaluate the existing floors and make some recommendations.

Except for addressing the rusting and breaking down of the hollow metal door frame at the entrance to the Toilet Rooms and Janitor closets, and perhaps even the threshold at the door due to the impact of the frame removal, the floor finish in the Toilet rooms can remain in place for another 20 years.



Existing Conditions – Toilet Rooms

However, the custodial Staff reported several plumbing failures ongoing in the existing Toilet rooms. In certain areas reports of sinks not being attached to the wall and can potentially come loose or fall off the wall at any time. Fixtures are mostly wall mounted from hangers, but failure of some fixtures was reported to be eminent. Some water closets do not flush well or have flushing problems. Plumbing seals at urinals and toilets are also failing. The gang toilet rooms do not have floor drains, which is an ongoing problem with maintenance. This is not an easy fix, but it is a huge benefit in an institutional setting.



Existing Janitor Closet

The janitor slop sinks in the Janitor closets regularly back up the Custodial Staff reported. This problem is further exacerbated by the very nature and limitations of the existing sewer system. In some cases, the Staff pointed out the grinder pump at the lift

station needs to be a heavy-duty product, as well indicating Commercial Plumbers shy away from working on this building because of the innate conditions of the sewer/plumbing systems. A long-range plan to address the existing sewer/plumbing system, bringing it into a more conventional, reliable, more functional, and responsive capacity system, should be on the table for discussion, and eventually addressing these plumbing issues. In the meantime, an immediate fix or antidote to the slop sink clogging problem is to install a slop sink strainer, that can capture the various debris from the mop water.



Existing interior – Single Use Toilet Room

A single use Toilet Room that was renovated in the 2002 project, appear to have fared much better, and is in better shape overall. Although it is likely the problems with the fixtures in the gang toilet rooms is eventually going to surface in these single use toilet rooms, they do not appear to have so far. This indicated they potentially have some significant useful life left, but should be part of the future planning to upgrade fixtures in toilet rooms throughout the building.

Interior Wall Finish

Typical interior walls within general use spaces in the building are finished with an existing painted surface. The painted surfaces appear to be well maintained. Some painted surfaces in public areas are enhanced by murals on the wall, which is a great complement to the visual environment in the building.



Existing interior finishes - Corridor

Since most of the walls in the public areas like corridors are Concrete Masonry Units (CMU) or block wall, the painted finish by itself can be a very sterile environment, and not one that lends itself to a vibrant early childhood educational space.

However, the murals and decorations on the walls gives the building less of an institutional feel.

The wall surfaces in the classrooms are sometimes gypsum board and sometimes CMU construction. Most of these construction differences are sometimes barely noticeable, primarily because of all the displays hosted on these age-appropriate classroom walls.



Existing interior finishes – Classroom

Gypsum board finishes were used in many of the renovated areas, but CMU was mostly original to the building. CMU is obviously much more durable, and desirable for longevity; however, Gypsum board systems are more cost effective. The look of CMU as shown in the nearby image is a stacked bond, and offers some visual stimulation (where not extensively amass with displays) on the wall as opposed to what is typically possible with a gypsum partition system.

However, corridor walls do not have many opportunities for display, and can be a visually sterile environment. This is another reason the mural and other displays on the corridor wall, even multiple paint colors, is a welcoming factor that can be appreciated by every user.

<u>Corridor Lockers</u>

Corridor Lockers are showing signs of deterioration. They appear to have been around prior to the implementation of both phases of the 2002 project, which shows them as existing, with some undergoing relocations. This helps to sheds some light on their condition. Visible rust is obvious on banks of lockers throughout the corridors.



Existing interior finishes – Corridor Lockers.

The Custodial Staff confirmed existing lockers are old and quite aged. In some cases, they report some are not connected to

the wall. From the standpoint of safety, lockers should all be securely fastened to the wall to avoid mishaps or accidents. Lockers are not sitting on a concrete base as is typical in an institutional setting, but instead sits on the pre-manufactured metal base. This introduces a greater propensity for the presence of rust, particularly due to the high moisture associated with floor cleaning operations. The impact then imposes damages to the finish floor accelerating its demise. Locker bases are not covered with a finish floor base, which would help to protect the premanufactured base.



Existing interior finishes – Corridor Lockers.

Lockers also did not appear to have any identity markings or numbering, nor accessible signage and hardware.

In some cases, lockers are not as useful as they once were, and some districts, depending on the grade level, are opting to forego the use of lockers. This in many cases coincide with a more extensively based technology program, which minimizes the use of physical educational aids outside of a laptop or chrome book. If lockers are to remain a requirement for students, accessibility will have to be verified.

The storage of materials on lockers is a fire hazard, and should be avoided. The Corridors appear to be rated enclosures, and should be kept clear of material with flammability potential.

Interior Ceiling Finish & Acoustics

Existing ceilings are primarily a white suspended acoustical ceiling systems with 2 feet x 2 feet lay-in acoustic tile product in a metal grid system. With a few exceptions of what appears to be some minor ceiling problems, the existing ceiling for the most part is in good shape.



Existing interior finishes – Classroom Ceiling

Our review has not identified any complaints regarding acoustics in the classroom. Considering all the other hard surfaces in each classroom, the ceiling seems to do a fine job mitigating acoustic concerns in the classroom.

However, since the statutorily based acoustic standards for existing schools were not yet in place at the time of the last renovation, a more extensive acoustic evaluation is recommended.



Existing interior finishes – Classroom Ceiling

This evaluation can take place in a few classrooms that are representative of the typical classroom environment in the building. This will identify whether there is a need for acoustic enhancements in the typical classroom to comply with the State's Acoustic requirements for instructional spaces.

The existing gymnasium ceiling is a painted finish metal deck. It could not be determined if the existing deck is an acoustic product or not. However, the users did not have significant acoustical concerns in either of the Gymnasium, considering one of them has dual uses as a Gymnasium & Auditorium (A Gymatorium with a Stage).

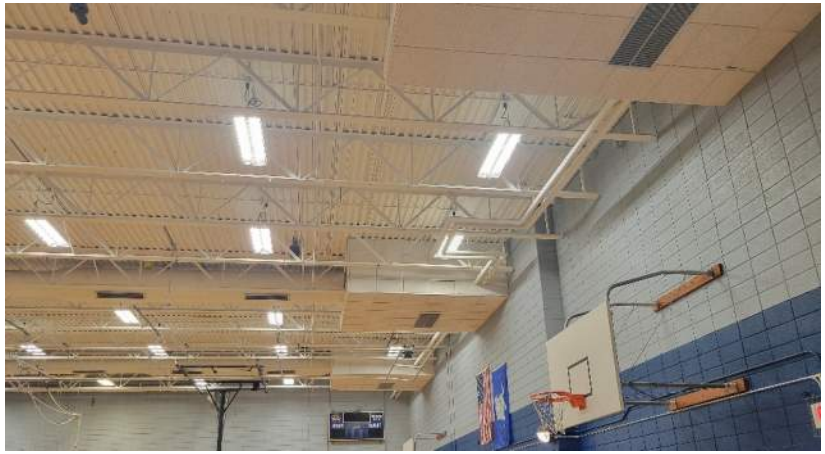
The biggest concern however expressed by a Music Teacher, was regarding the noise impacting the stage and the Kids performances, coming from the mechanical system conditioning the Gymatorium. This is an issue that should be addressed in future renovation projects, and particularly projects implemented to improve mechanical systems and indoor environments.



Existing interior finishes – Gymnasium Ceiling

An acoustic analysis is recommended in typical classrooms (and particularly classroom separated by gypsum board partitions), and all assembly spaces including the Gymnasiums, Media Center, Music Rooms, and Cafeteria. This will verify any required acoustic treatment in each space, based on the State's High Performance Acoustic requirements for teaching spaces. The need for acoustic treatment in the cafeteria was identified in meetings with various Staff members.

An acoustic ceiling grid system is being used in the original gymnasium as a sort of "plenum box."



Existing interior finishes – Gymnasium Ceiling

It is not certain what purposes these enclosures serve, but they are visually and mechanically concerning. A more in-depth evaluation of this enclosure will be undertaken as part of the mechanical system review.

Existing lighting is primarily recess in the ceiling system. District leaders indicated the existing lighting was upgraded throughout the building and is now all LED's. Classroom lighting control is limited to on or off. In addition, there is no dimming, which can be taken advantage with the use of LED products. Dimming and sometimes lamp temperature output is a critical tool in the classroom in regards to emotional and mental health. Some teachers have resorted to adding screening below the fixtures to minimize the impact and lumen output of the typical fixture. These added materials can become a hazard, particularly if they are not the correct class of material required in this code compliant setting.



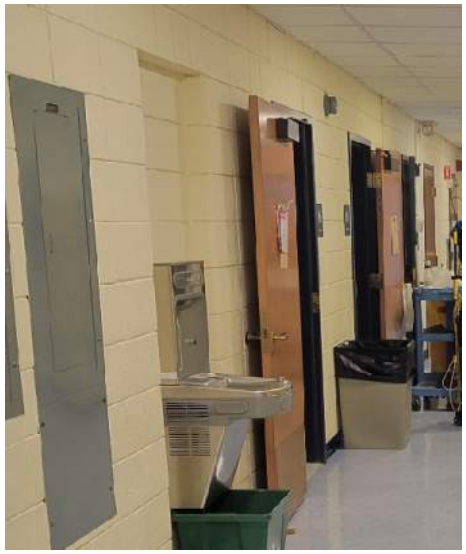
Existing interior finishes – Classroom Lighting

Lighting in Ceiling

To optimize energy efficiency, take advantage of the installed LED fixtures, provide options for Teachers and Students requiring dimming and lumen as well as temperature output adjustments, and to take advantage of daylighting capabilities; consideration should be given to installing a lighting control system throughout the building in the future.

Interior Doors and Finishes

The existing doors are mostly solid core wood, and some hollow metal doors, most with some glass lite (mostly wired glass for fire rating, which is no longer used) built into most of the doors. Some ore original to the building and others were replaced as part of the 2002 project. Doors are mostly in good shape, although some of the original doors are showing signs of aging.

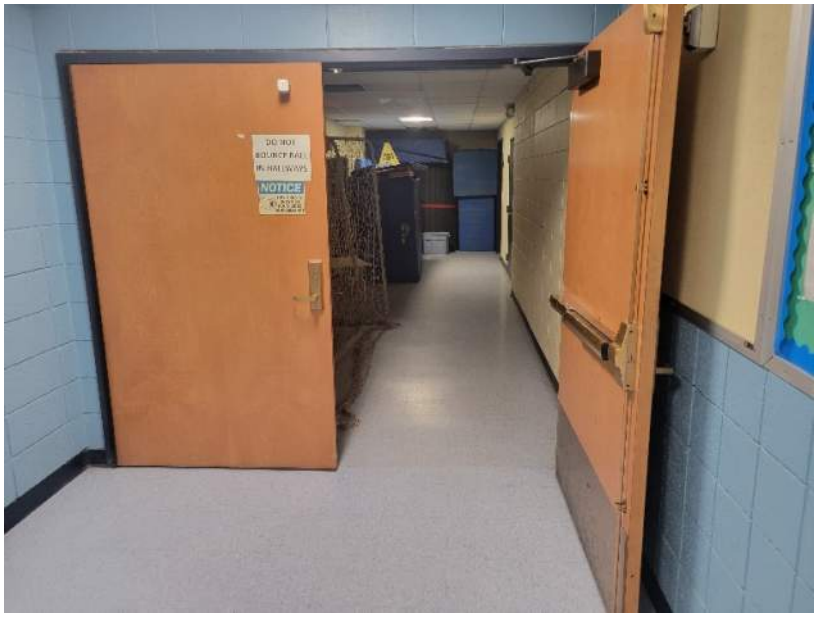
Existing Doors – Kick Plates Benefits, & lack of Hold Opens

Interior doors appear to be fitted with lever handle accessible locksets, exit devices and accompanying accessories that all appear solidly functional although aged. Hardware upgrades will be required on doors identified for replacement.




Existing Doors – Existing Hardware

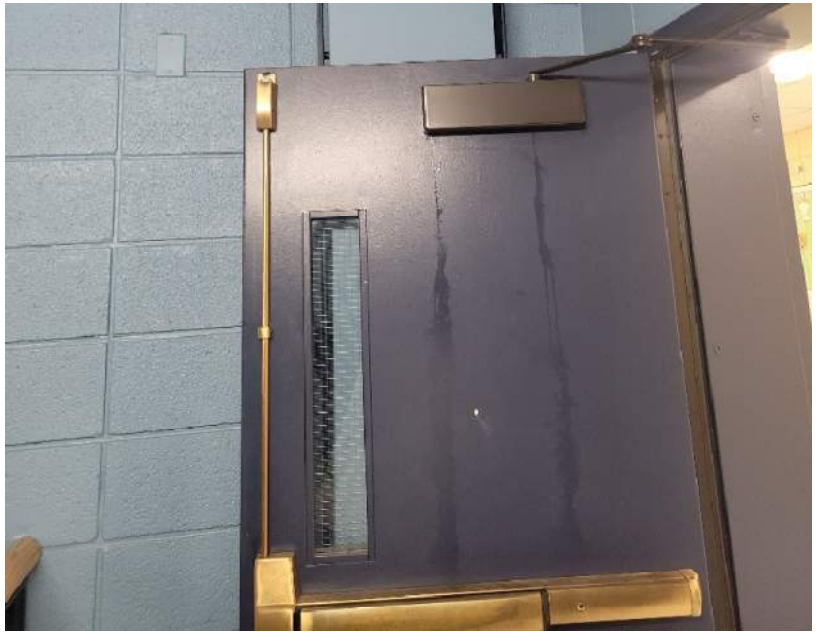
Corridors appear to be rated enclosures per the code drawings from the 2002 project. Most doors are tagged with a rated door and frame label, confirming the corridor rating. The acoustic rating of the doors could not be confirmed by this report, and no acoustic seals were observed on the existing doors. Acoustic seals on solid core doors are typically a required component to meet the State High Performance Acoustic Standards.



Existing Interior Solid Core Wood Doors

The majority of rated corridor doors are equipped with closers, swing out into the corridors from classroom, and therefore swing a complete 180 degrees. In some instances, hold opens are

present and in others, they are not. Some doors are being held open with wood wedges. This is not code compliant and can result in compromise of the fire protection barrier required for safe exiting. Any door opening to the exit corridor that has a functional need to remain open for extended periods of time must be equipped with devise that allow automatic closure upon activation of the Fire Alarm system.



Existing Interior Exit Stair HM Doors

Interior Environment

The existing interior environment is one of the readily referenced concerns in the building. From the custodial staff, to the PTO, the concerns over the lack of proper or adequate ventilation, including the air quality throughout occupied spaces; the fluctuation of temperatures – to the point where some spaces overheat (like the Conference Room, and the Exploratory Room) and others lack adequate heat (like the Superintendent's suite), even between spaces that may be on the same mechanical system or are in close proximity to each other; all contribute to a dissatisfied user experience with regard to building comfort.



Existing interior Environment – CO2 Detector

Many teachers are aware of the Carbon Dioxide (CO2) display on the walls and what it represents, particularly in terms of productivity, learning, and comfort. For some, this provides an additional level of scrutiny on the existing mechanical system.

Indoor air standard dictates specific ranges that are optimal for a classroom environment with teachers and students. A full replacement of the existing mechanical system would go a long way to embed a sense of trust and comfort in the minds of users of this facility, enabling them to focus more acutely on the educational purposes for which the building is used.



Existing interior Mechanical Environment – Unit Ventilator

The Unit Ventilator pictured here, is the primary heating and ventilating source in the classroom. Sometime it contributes to a noisy interior environment, and its mostly inefficient based on today's code requirements. It was a cost effective and functional way to condition a space 30 years ago, but has outlived its usefulness. In addition, it takes up valuable floor space in the classroom, and is inevitably used in a storage capacity as shown in the photo. In an education setting these experiences are not conducive to an environment that enhances learning, and in many cases may even be a distraction. Moving away from the systems of conditioning would greatly improve the classroom experience.

The Mechanical Systems Narrative identifies the source of these issues and addresses potential solutions that can be implemented or adapted to solve these persistent and, in some cases, distressing interior environmental

Interior Cabinetry

Much of the cabinetry in the existing building, appears to have been upgraded as part of the 2002 project. The cabinetry in general, and for the most part is in fair condition. In some areas like the Nurse's Office, the cabinetry has deteriorated significantly, and is in bad shape in certain areas.



Existing Cabinetry – Office Suite

Since most of the cabinetry was installed during the last major project, they appear to provide Classrooms accessibility compliance in accordance with the Americans with Disabilities

Act 2010 ADA Guidelines, and ICC/ANSI 117.1 requirements administered through the CT State Building Code. Accessibility in each classroom is a positive condition, and consistent with barrier free environments in school buildings.

The door panels were also identified as a deficiency or source of concern. Although problematic door panels can be changed out, issues of visual, and pattern consistency with the



Existing Cabinetry – Typical Hinge

existing laminate finish will be a concern. In addition, existing hinges are on the inferior side, which negatively impacts the operation and longevity of the door. New door hinges should be a more durable product like a 5-knuckle hinge, which has a much better life span.

At some point it may be more cost effective to replace the entire cabinet instead of just the doors and hardware. This issue will need to be addressed on a case-by-case basis to arrive at the most favorable solution for each given condition.



Existing Cabinetry – Nurse's Office

The existing cabinetry is a premanufactured laminated product, which is a plastic laminate veneer surface adhered to a fiber board core of 1/2-inch or 3/4-inch thickness, for panels and shelving units. Cabinetry hardware often represents a component that most is susceptible wear and often dictates the service-life of the assembly. In some cases, durable hardware, was not utilized which is leading to the failure of certain types of cabinetry hardware like hinges and pulls. These items can either be upgraded incrementally upon a point of failure.

<u>Interior Environment – Media Center</u>

The existing Media Center environment is aged, and various upgrades are recommended to provide a modern-day technology hub.



Existing Media Center

New finish floors are recommended. New technology upgrades including technology hubs/stations for individual and multiple (group) student use with internal communication capabilities and connectivity is recommended. New gypsum board construction systems that modernize the space as a technology center, and provides necessary segregation for unique activities as determined by educational programming. The use of new soffits, partitions that would not conflict with required monitoring, and new ceilings (hard and suspended systems) will enhance user experiences in the new Media Center.

PLUMBING SYSTEMS

Domestic water for the building comes from a potable water field. There is a 4" domestic water supply pipe and two (2) water meters piped in parallel that serve the school. Per the pressure gauge on the domestic cold water line, the building has a water delivery pressure of 62 psi. The domestic cold water pipe and insulation installations are a mixture of pipes and insulation from the original 1950's building and newer pipes and insulation from the 2003 renovation. Where visible, the piping and insulation were observed to be in good condition. The building backflow preventer appeared to have leaked and had rust visible on the surface.



Building water meters



Backflow Preventer with rust

The School is connected to public sewers for sanitary waste drainage. All plumbing fixtures located throughout the school are connected to this system. Sanitary pipes exit the building in three (3) locations, with one being grease waste. There are two (2) grinder pumps on site. The grease waste passes through an exterior buried grease interceptor before draining into one of the grinder pump stations. Condensate and ground water drain to a pit with a sump pump within the Boiler Room. The sanitary system and pumps were largely replaced during the 2002 renovation. The pumps are in working condition. The sanitary pipe installations inside of the building are a mixture of pipes

from the original 1950's building and newer pipes from the 2003 renovation. The visible sanitary piping throughout the building was observed to be in good condition.



Sump pump and pit in Boiler room

Most mechanical equipment in the school is powered by No. 2 fuel oil. Oil is pumped up to day tanks in mechanical rooms. It was noted on site that the day tanks are in poor condition and that the pumps and controls fail often. The current system is no longer supported by the company that installed it, so servicing the equipment through the company when it fails is no longer an option. Due to these issues, it is recommended that the day tanks and controls be replaced. Additionally, there is an LP gas tank that serves the kitchen equipment and a gas-fired makeup air unit for the kitchen. The gas tank and piping was installed during the 2003 renovation and is in good condition

The school has a primary storm system that is cast iron and fully insulated. Scuppers are provided on the roof as secondary drainage. The roof drains have cast iron grates that were observed to be in good condition. There was pooling observed on the roof at some of the roof drain locations. The storm pipe installations are a mixture of pipes from the original 1950's building and newer pipes from the 2003 renovation. The visible storm piping throughout the building was observed to be in good condition.



Roof drain with pooling water

There are three (3) domestic hot water heaters that serve the school. The first water heater is in the Boiler Room adjacent to

the Gym. This heater is a 67 gallon storage tank oil-fired water heater, model 72E, manufactured by Bock. The water heater is equipped with a Carlin burner. This water heater and burner were installed in 2014, is in good condition, and is within its useful life. The water heater has a Taco inline recirculating pump and a Symmons Temp Control thermostatic mixing valve. These were both observed to be in good condition.



Bock Oil-fired water heater



Temp Control mixing valve

The other two (2) water heaters are in the other Mechanical Room, in Building "B". One of these water heaters is also a 67 gallon storage tank oil-fired water heater, model 72E, manufactured by Bock. The water heater is also equipped with a Carlin burner. This water heater and burner were installed in 2021, is in good condition, and is within its useful life. The water heater has a Taco inline recirculating pump and a Symmons Temp Control thermostatic mixing valve. These were observed to be in good condition.



Bock oil-fired water heater

The second water heater in this mechanical room is an AO smith model EES 80 electric tank water heater that was installed in 2003. This water heater was observed to be in good condition, but it is past the end of its useful life and should be considered for replacement.



AO Smith electric water heater

The majority of the plumbing fixtures within the building were installed in 2003 during the building renovation. Plumbing fixtures were observed to be in good condition. Plumbing fixtures are as follows:

- Water closets are wall mounted, vitreous china, with battery powered flush valves.
- Urinals are wall mounted vitreous china, with battery powered flush valves.
- Lavatories are wall hung vitreous china with battery powered faucets.
- Electric Water Coolers are Elkay, stainless steel, wall mounted.
- Sinks in classrooms are drop-in, stainless steel, with manual faucets. Many classrooms have a drop in drinking fountain on the counter next to the sinks that are also stainless steel.
- Emergency shower and eyewash/face washes are Bradley, stainless steel
- Washing machine near the kitchen is a Maytag, residential style.
- Mop basins are fiberglass basins with wall mounted faucets, chrome finish.



Typical wall mount toilet



Typical classroom sink and drinking fountain



Typical bathroom lavatory

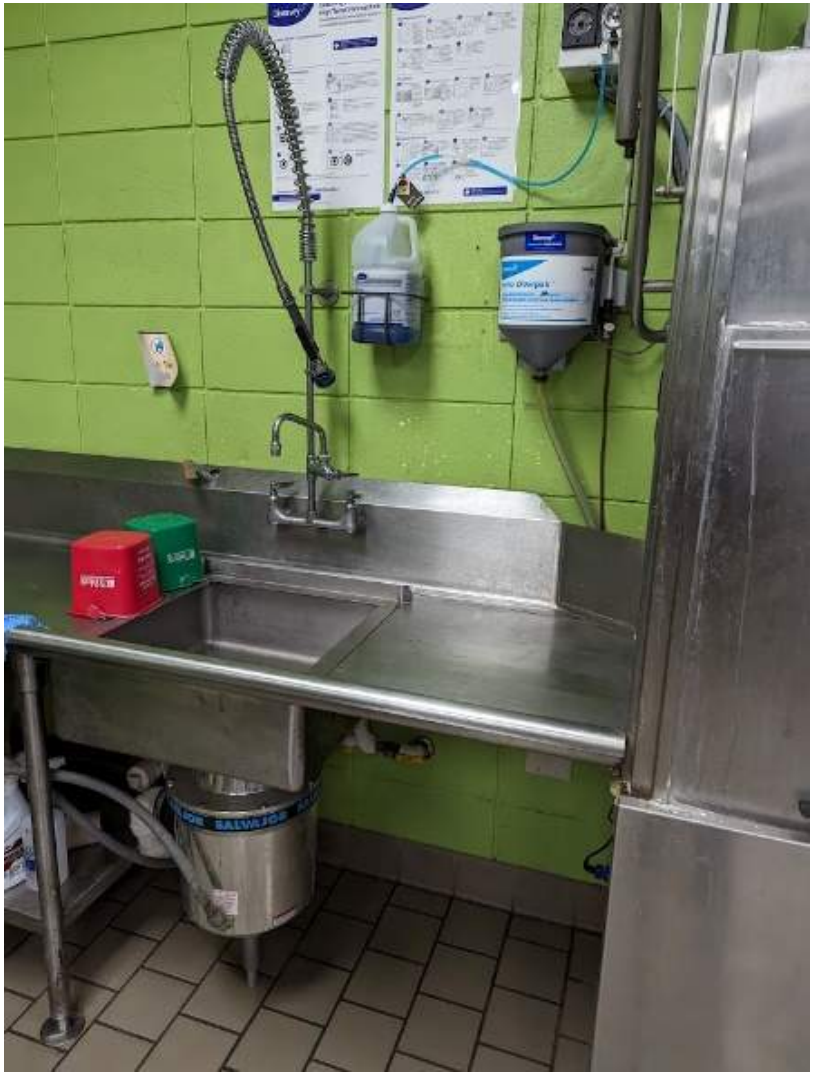


Typical mop basin



Eye wash and sink in nurse's office

The food prep kitchen was updated during the 2003 renovation and contains multiple stainless steel food prep, dishwashing, and hand washing sinks. One of the sinks was equipped with a garbage disposal. Each food prep sink is drained with an air gap to floor sinks. The kitchen cooking equipment is fueled with LP gas. Kitchen fixtures were all observed to be in good condition.



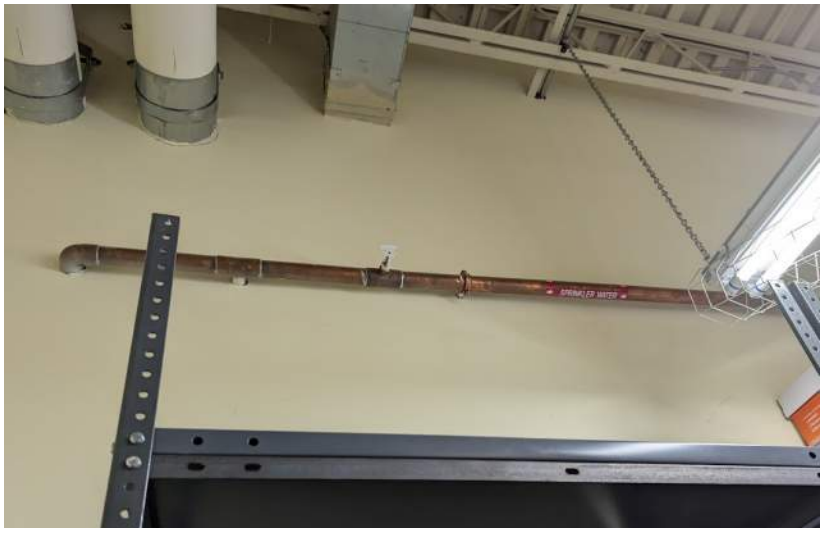
Kitchen sink with garbage disposal



Typical kitchen fixture drainage to floor sink



Typical ceiling sprinkler head in storage room



Typical pipe-mounted sprinkler head in storage room

FIRE PROTECTION SYSTEMS

The school does not have a designated fire service and is partially sprinklered. Sprinklers are piped off of the domestic cold water mains for a number of storage rooms that require sprinkler coverage. The fire protection pipes tap off the domestic water mains with a backflow preventer, isolation valve, and flow and tamper switch.

MECHANICAL SYSTEMS

The building is provided heat through four (4) cast iron sectional hot water boilers that are split between two different boiler rooms. Hot water pumps and supply and return piping distribute hot water to and from these boilers to serve unit ventilators, unit heaters, radiators, and hot water coils throughout the building. Visible hydronic hot water piping and insulation throughout the building was observed to be in good condition.

One boiler room has two (2) boilers with 14 sections each. They are each equipped with Carlin burners. Both boilers were installed in 2003. It was noted on site that one of the boilers is currently not being used because multiple sections are leaking. The school is currently working to get the boiler replaced. The working boiler is in good condition and is within its useful life. The boiler flues are connected to a shared duct within the boiler room and are routed into a chimney that runs up through the roof. The chimney and flue ducts were observed to be in good condition.



Boiler in Boiler Room

Each boiler has an associated vertical inline ¾ HP boiler pump. The pumps are manufactured by Armstrong, and were installed in 2003 with the boilers. Both pumps were observed to be in working condition but are towards the end of their useful life and should be considered for replacement. There are four (4) system hot water pumps. These pumps distribute hot water to the building heating systems. Two (2) pumps are 7.5 HP and are sized for 150 GPM and 85 ft. of head. Two (2) pumps are 7.5 HP and are sized for 160 GPM and 64 FT of head. All four pumps were observed to be in working condition but are towards the end of their useful life and should be considered for replacement.



(4) System Pumps

The air separator for the hydronic system in this Boiler room was installed in 2003 with the new boilers and pumps. The two (2) expansion tanks in this Boiler room were installed in 2006 and 2011. These hydronic accessories are in good condition and are within their useful life.



Air Separator and Expansion Tanks

This boiler room combustion air is brought in using an air handing unit (AHU). There is a rooftop air intake for this unit, and a hot water coil for heating the intake air entering the room. There is a vertical inline pump associated with the AHU hot water coil. The AHU is manufactured by Enviro-Tec, model V-30, and was installed in 2003. This unit is in good condition, but is at the end of its useful life and should be considered for replacement. The inline pump serving the hot water coil is a 1/3 HP Armstong pump. This pump was also installed in 2003, was observed to be in good condition, but is at the end of its useful life and should be considered for replacement.

There is a sidewall mounted exhaust fan serving this Boiler room manufactured by Cook, model 12S15D. The fan was observed to be in good condition. Additionally, there are two (2) hydronic unit heaters providing heat to the boiler room. These heaters are manufactured by Vulcan, model HV, and were installed in 2003. Both unit heaters are in good condition but are within their useful life.



Wall Mounted Exhaust Fan in Boiler Room



Typical Unit Heater in Boiler Room

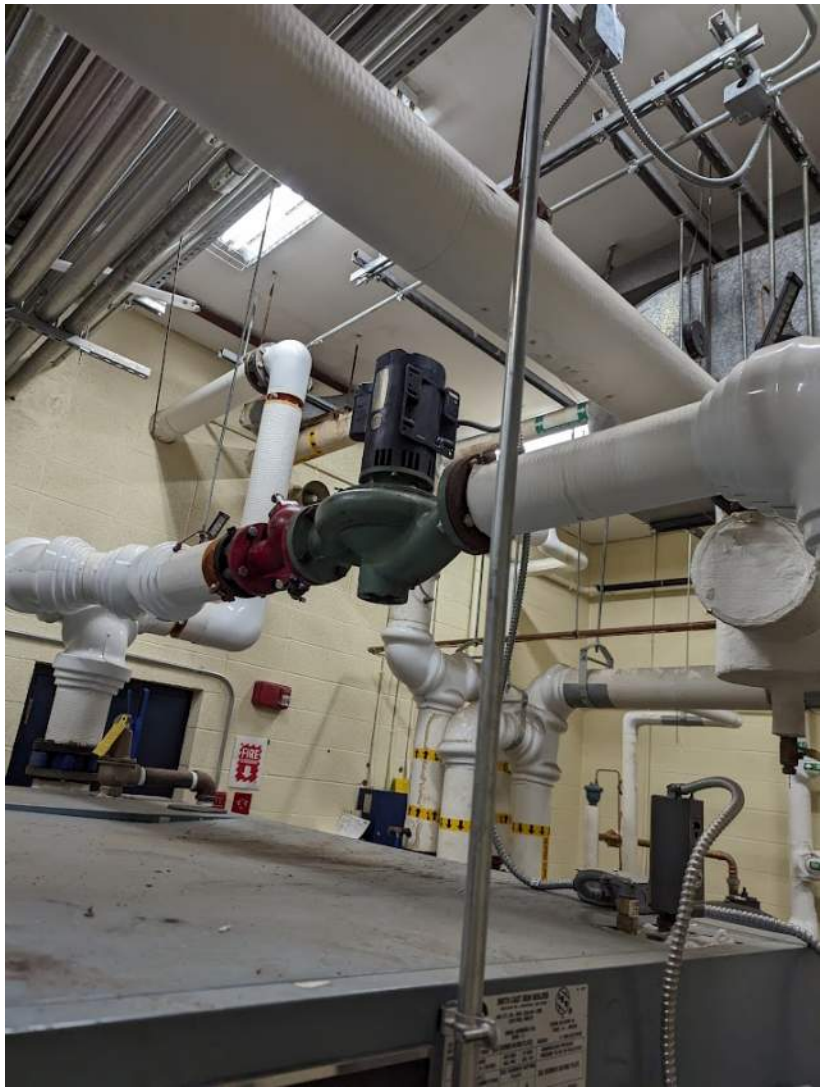
The other two (2) boilers are installed in Mechanical Room. These boilers are cast iron sectional boilers with 9 sections and Power Flame oil fired burners. They each have an input of 2,249 MBH. They were both installed in 2009, are in good condition, and are within their useful life. The boiler flues are connected to a shared duct within the boiler room and are routed into a chimney that runs up through the roof. The chimney and flue ducts were observed to be in good condition.



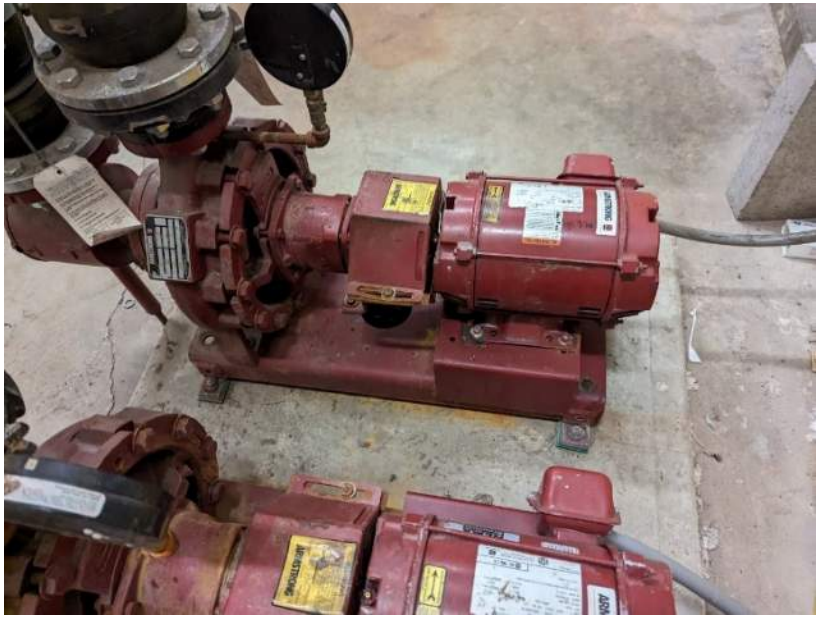
Boiler in Boiler Room

Each boiler has an associated vertical inline 2 HP boiler pump. The pumps are manufactured by Leeson, and were installed in 2009 with the boilers. Both pumps were observed to be in working condition and are within their useful life. There are two (2) system hot water end suction base mounted pumps. These pumps distribute hot water to the building heating systems. Each pump is 5 HP and is sized for 160 GPM and 64 ft. of head. Both pumps were installed in 2003, were observed to be in working condition, but are towards the end of their useful life and should be considered for replacement.

The air separator for the hydronic system in this Boiler room were installed in 2003 with the new boilers and pumps. There are also two (2) expansion tanks in this Boiler room. These hydronic accessories are in good condition and are within their useful life.



Typical boiler pump for boiler



System hot water pumps

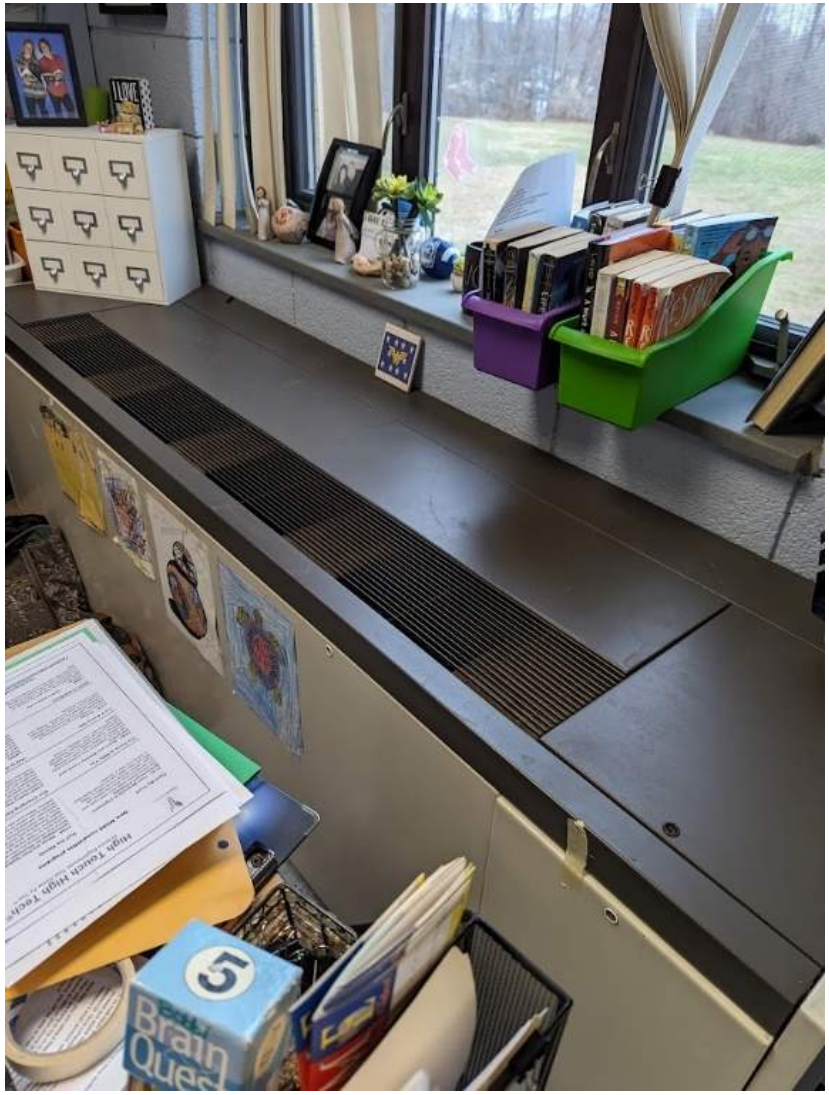
Combustion air for this boiler room is brought in using an inline duct and a wall louver for air intake. The fan was installed in 2003. There is a 2nd fan of the same manufacturer and model that is used for exhaust. Exhaust air is routed to a wall louver as well. Both fans are in good condition, but are at the end of their useful life and should be considered for replacement. The exhaust air and intake air wall louvers for this room are installed adjacent to each other with no separation. Per the current Connecticut Mechanical code, IMC 2021, there should be 10 feet of separation between mechanical intakes and exhausts. The louver installation observed here does not meet the current Connecticut mechanical code, and it is recommended to correct this code deficiency.



Exhaust and intake fans connected to wall louver

There are two (2) hydronic unit heaters providing heat to the boiler room and the attached electric room. These heaters are manufactured by Vulcan, model HV, and were installed in 2003. Both unit heaters are in good condition and are within their useful life.

Code required ventilation and heat to classrooms is provided through unit ventilators with hot water coils. Air is exhausted from the classrooms through ductwork and roof mounted or inline duct exhaust fans. The unit ventilators were installed in 2003. It was noted on site that many of the unit ventilators are very loud and make a banging noise. The units get serviced and work better for a short period of time, but then the issue reappears. The teachers often turn off the ventilators due to this noise. Additionally, many of the classrooms feel warm throughout most of the year. Teachers often open windows in the winter to cool the rooms down. The unit ventilators are past their useful life, and due to their age and the issues they are causing, they are recommended for replacement. The exhaust fans are ducted together to serve multiple classrooms. The fans were installed in 2003. These fans are in good condition, but are all towards the end of their useful life and should be considered for replacement.



Typical classroom unit ventilator



Typical rooftop fan

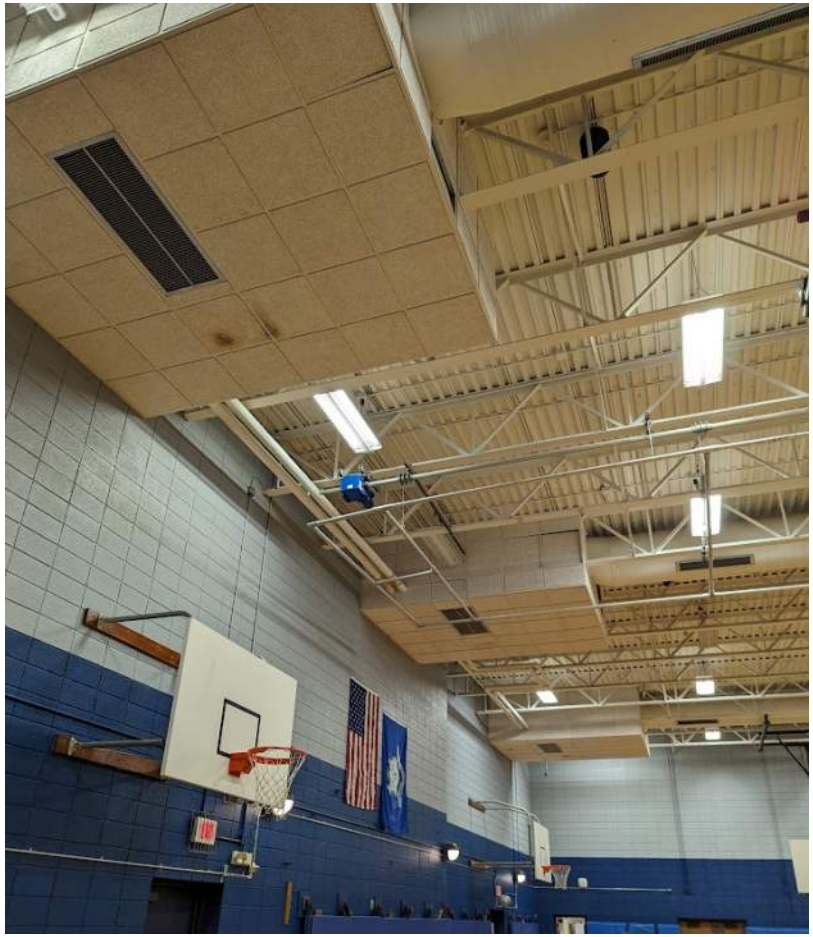
Approximately 12 classrooms have wall mount mini split air conditioners. The mini split air conditioners are Mitsubishi Mr. Slim condensing and indoor units. These units have been installed within the last 5 years, are in good condition, and are within their useful life.



Typical wall mount A/C in classrooms

There are two (2) Gyms in the building, one is in Building "D" and one is in Building "A". The Gym in Building "A" has a Stage and is used as an auditorium.

The Gym in Building "D" is heated and ventilated through three (3) indoor air handling units. Each AHU has a hot water coil and an exterior wall louver. The AHU's are each enclosed in soffits and are ducted with spiral ductwork and drum louver grilles to the gym. The ductwork and grilles were observed to be in good condition. The AHU's were not visible, but they are in working condition. The AHU's are over 20 year old, are past their useful life, and are recommended for replacement. There are two (2) roof mounted centrifugal exhaust fans that exhaust air from the gym. Both fans were installed in 2003 and were observed to be in good condition, but they are towards the end of their useful life and should be considered for replacement.



Gym Indoor AHU's

The Gym and Stage in Building "A" provides heating, cooling, and ventilation through two (2) rooftop units (RTU's). The RTU serving the Gym portion was installed in 2003. The RTU serving the stage was also installed in 2003. Both rooftop units have hot water heating coils and use R22 refrigerant for cooling, which is a refrigerant that has been phased out and is no longer acceptable. Both rooftop units are in working condition, but are starting to rust on the exterior. Both are towards the end of their useful life. Due to the age, outdated refrigerant, and rust, these RTU's are recommended for replacement. Ductwork in this space is in good condition, and is provided with adequate sound attenuation and duct lining for use as an auditorium.



Gym RTU



Stage RTU

The Cafeteria is air conditioned and ventilated with a 15 ton rooftop unit. Indoor duct mounted hot water coils and hydronic baseboard radiators provide heat for this space. The rooftop unit was installed in 2003. The rooftop unit uses R22 refrigerant, which is a refrigerant that has been phased out and is no longer acceptable. This unit was observed to have rust on the exterior and is at the end of its useful life. Due to the age, outdated refrigerant, and rust, this RTU is recommended for replacement. There are two (2) interior hot water duct coils that serve the cafeteria. It was observed on site that one of these coils was leaking and damaged the ceiling beneath it. This coil is recommended for replacement. The baseboard radiators are in good condition.



Ceiling stain from leaking hot water coil





Cafeteria RTU

The Kitchen has a hood that is served by a rooftop mounted upblast centrifugal grease exhaust fan and an LP gas-fired makeup air unit. Both pieces of equipment were installed in 2003. It was noted on site that the kitchen exhaust fan occasionally stops working and needs to be reset. The switch to reset the fan is above the kitchen ceiling in an area that is difficult for maintenance to access. The exhaust fan is also at the end of it's useful life and was observed on the roof to have rust on the surface. Due to these issues, this fan is recommended for replacement, and the fan shutoff switch should be relocated. The makeup air unit was observed to be in working condition, but has rust on the exterior and on the LP gas pipe serving it. Due to the age and rust appearing on the unit, it is recommended to replace the makeup air unit and the rusted piping serving it.



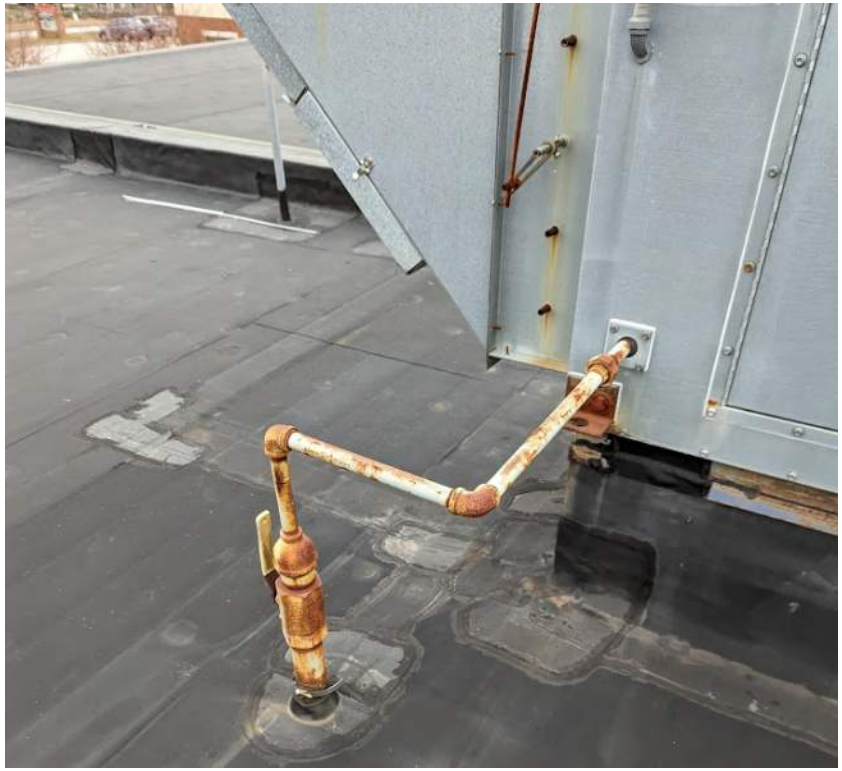
Kitchen Exhaust Hood with Makeup Air Diffusers



Kitchen hood exhaust fan



Kitchen hood makeup air unit



LP gas pipe and valve with rust

The Library/ Media Center is air conditioned and ventilated with a 12.5 ton rooftop unit. There is an interior duct mounted hot water coil that provides heat for the space through the main supply duct off of the rooftop unit. The RTU was installed in 2003. The rooftop unit uses R22 refrigerant, which is a refrigerant that has been phased out and is no longer acceptable. This unit was observed to have rust on the exterior and is at the end of its useful life. Due to the age, outdated refrigerant, and rust, this RTU is recommended for replacement.



Media Center RTU

The Computer Lab is air conditioned and ventilated with a 4 ton rooftop unit. There is an interior duct mounted hot water coil that provides heat for the space through the main supply duct off of the rooftop unit. The RTU was installed in 2003. The rooftop unit uses R22 refrigerant, which is a refrigerant that has been phased out and is no longer acceptable. This unit was observed to have rust on the exterior and is at the end of its useful life. Due to the age, outdated refrigerant, and rust, this RTU is recommended for replacement.



Computer lab RTU

The Administration offices are air conditioned and ventilated with a 10 ton rooftop unit with a bypass VAV system. There are two (2) interior duct mounted hot water coil that provides heat for the space through the main supply duct off of the rooftop unit. The RTU was installed in 2003. The rooftop unit uses R22 refrigerant, which is a refrigerant that has been phased out and is no longer acceptable. This unit was observed to have rust on the exterior and is at the end of its useful life. Due to the age, outdated refrigerant, and rust, this RTU is recommended for replacement. There are seven (7) VAV boxes with hot water reheat coils, and a bypass damper that serves the individual office spaces. The VAV and bypass system is manufactured by Enviro-Tec. The VAV boxes were all installed in 2003 and are in good condition.



Administration RTU

The center core area of Building "B" is air conditioned and ventilated with a rooftop unit. The nameplate was faded and no longer had any visible information, so the size could not be determined. There is an interior duct mounted hot water coil that provides heat for the space through the main supply duct off of the rooftop unit. The rooftop unit uses R22 refrigerant, which is a refrigerant that has been phased out and is no longer acceptable. This unit was installed in 2003 and is at the end of its useful life. Due to the age and outdated refrigerant this RTU is recommended for replacement.



Core building "B" RTU

The Art room is air conditioned and ventilated with a 4 ton rooftop unit. There is an interior duct mounted hot water coil that provides heat for the space through the main supply duct off of the rooftop unit. The RTU was installed in 2003. The rooftop unit uses R22 refrigerant, which is a refrigerant that has been phased out and is no longer acceptable. This unit was observed to have rust on the exterior and is at the end of its useful life. Due to the age, outdated refrigerant, and rust, this RTU is recommended for replacement.



Art room RTU

The choral, band, and staff work rooms are ventilated and heated with unit ventilators with hot water coils. A roof mounted exhaust fan is ducted to each of these rooms for exhaust. The unit ventilators were noted to have the same noise issues as the classroom ventilators. Additionally, one of the unit ventilators in the chorus room does not work and is not being used. With this

unit ventilator not working at all, it is likely that this room is not being provided with enough ventilation air to meet the mechanical code. The unit ventilators were installed in 2003 and are past their useful life. Due to their age, noise, and code issues, the unit ventilators in these areas are recommended for replacement. The exhaust fan was installed in 2003. The fan is in working condition, but is towards the end of its useful life and should be considered for replacement.



Typical band and choral unit ventilator

The Nurse's office is heated, cooled and ventilated with a 2 ton indoor ducted fan coil unit and outdoor condensing unit. The indoor ducted unit has a hot water coil for heating. The A/C unit was installed in 2003. The indoor and outdoor units are in working condition, but are past the end of their useful life and should be considered for replacement. Fresh air is brought in through a rooftop ventilator to the return side of the ducted fan coil unit.

The C&E room is heated, cooled and ventilated with a 2 ton ceiling recessed cassette mini split heat pump system. The indoor unit and roof mounted condensing unit were installed in 2003 and are past the end of their useful life and should be considered for replacement. Fresh air is brought in through a rooftop ventilator to the plenum of the cassette coil unit.



C&E ceiling cassette

Conference Room 218 is heated, cooled and ventilated with a 2 ton ceiling recessed cassette mini split heat pump system. The indoor unit and roof mounted condensing unit were installed in 2003 and are past the end of their useful life and should be considered for replacement. Fresh air is brought in through a rooftop ventilator to the plenum of the cassette coil unit.

The Technical Equipment room is cooled with a 1.5 ton ceiling recessed cassette mini split system. The indoor unit and roof mounted condensing unit were installed in 2003 and are past the end of their useful life and should be considered for replacement.



Technical equipment room ceiling cassette

Corridors, entrances, and storage rooms are heated with either hydronic fin-tube radiators, cabinet wall heaters, or unit heaters. The cabinet wall heaters and baseboard fin-tube heaters are original to the 1950's building construction. Many of these were showing signs of rust and are past the end of their useful life. Due to the age and rust, these should be considered for replacement. The unit heaters and cabinet ceiling heaters were installed in the 2003 building renovation and are in good condition.



Typical fin-tube radiator





Typical cabinet wall heaters with rust



Typical storage room unit heater



Typical ceiling cabinet unit heater

The building is equipped with multiple radon removal exhaust fans. The fans are manufactured by Radon Away and are inline duct fans connected to PVC piping routed through the building and into the basement. These fans were all observed to be in good condition.

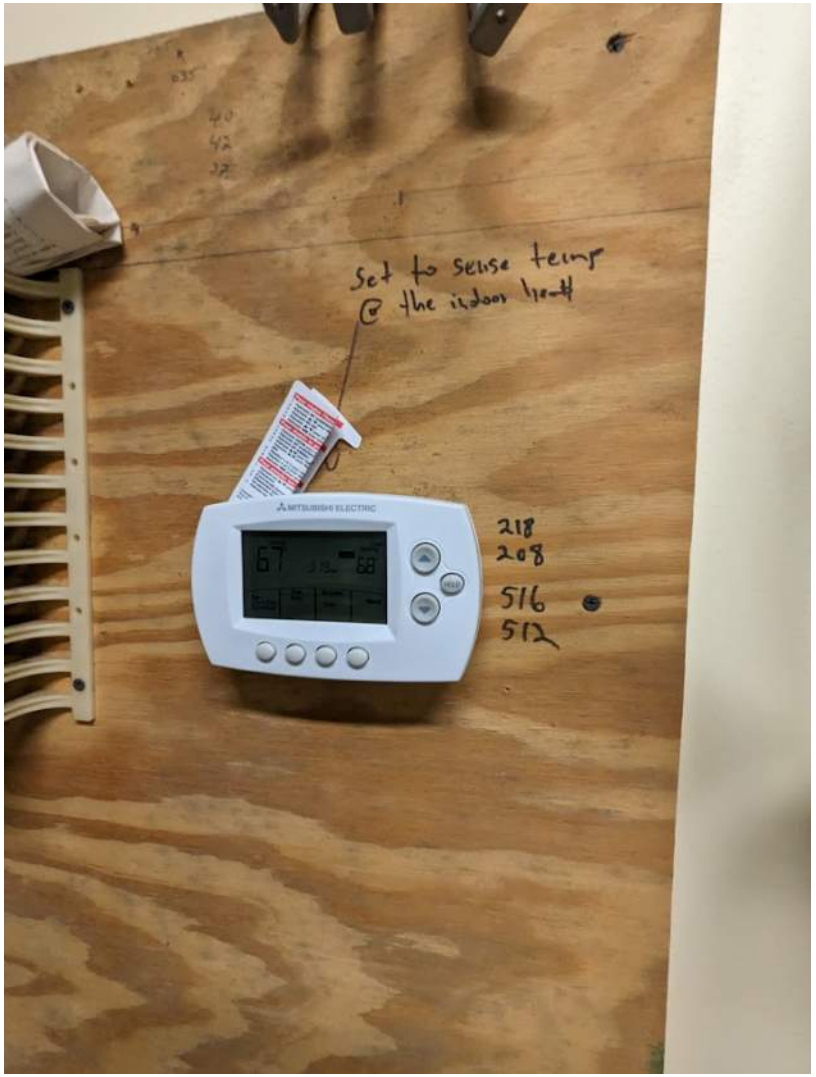


Typical radon exhaust fan

The building controls (the BMS) controls the packaged RTU's, AHU's, exhaust fans, boilers, pump VFDs, and motorized hot water valves. There are CO2 and temperature sensors throughout the building. Mini split systems have thermostats by the manufacturer. The controls system was updated during the 2003 renovation and all components were observed to be in good condition.



Typical pump VFDs



Typical mini-split thermostat





Typical classroom A/C thermostats and CO2 sensor

ELECTRICAL SYSTEMS

The electrical service is 208/120 volts, 3-phase, 4-wire rated for 2000 amperes. The service entrance switchboard has three sections. One section is for the main disconnect switch, the second for utility metering, and the final section for distribution. The main disconnect is a fusible switch rated for 2000 amperes. The equipment is in good operating condition. The main switchboard was installed during the 2002 renovation.



Main switchgear in the main electrical room

As part of the 2002 renovation, a new main switchgear was installed. The previous switchgear serving the building was maintained, and re-fed from the new gear. This old piece of gear is a 208/120 volt, 3-phase, 4-wire panelboard rated for 1200 amperes at 208/120 volts, and is an I Line panelboard. Its label indicates that it was once a 2-section switchboard, but it currently consists of a single distribution section. Most of the circuit breakers are in the OFF position, with a label indicating "void" next to the OFF breakers. Its primary active loads are panelboards and rooftop units. The equipment is in fair condition and does not need to be replaced.



Previous switchgear section repurposed as distribution panelboard. ATS is also pictured.

Electrical panels are distributed strategically throughout the building. In addition to the main electric room, there are panels in mechanical rooms and recessed into walls in the corridors.

The panels were in good working condition. Panel schedules were typically clean and up-to-date.

Backup power is provided by a generator. There is an automatic transfer switch in the main electrical room to transfer power to the generator upon loss of power. Emergency lighting, fire alarm systems, and selected plug loads in assembly areas were noted to be on backup power.

Corridor lighting mostly consisted of square recessed fixtures and circular downlights in a ceiling grid. The lights were noted to have LED lamps. Facilities confirmed that lamps were LED, but many fixtures were retrofit fixtures with ballasts. Also noted throughout the corridors were emergency bug-eye style units. However, facilities confirmed these were all abandoned in place, and emergency lighting is achieved via selected fixtures tied to the emergency lighting panel.



Typical corridor downlights and abandoned in place bug eye fixture. Occupancy sensor also noted on the wall.

Classroom lighting consisted of recessed 2x4 lights in a ceiling grid, or linear pendant lights depending on the room. The lights are in good working condition, with LED lamps. Vacancy sensors were noted within the classrooms

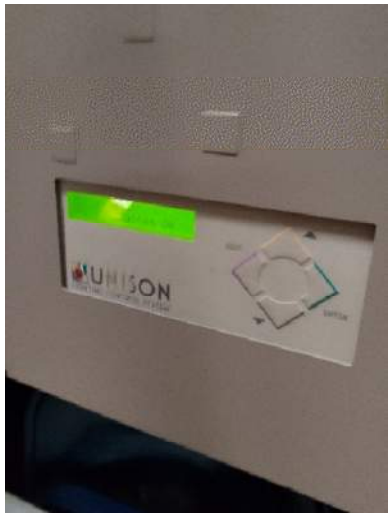
The gymnasium and auditorium have high bay fixtures throughout. The fixtures keep the spaces well-lit and are in good condition.

The auditorium has a theatrical lighting system. There are RGB fixtures in a single row on a piece of pipe rigging. There is a Unison panel and a switch-bank for controls. The system is in good condition.



Theatrical lighting layout





Theatrical lighting switches and lighting panel

Exit signage was placed appropriately throughout the building. In the mechanical space adjacent to the gymnasium, it was noted that exit signs were pieces of paper taped to the exit doorways. Electrical exit signage was all illuminated and in fair condition. There was one sign that was noted as having its enclosure partially open. It appears to be able to snap back closed, but if not, should be replaced.





Exit sign with open enclosure (left) and mechanical room exit signage (right).

The main fire alarm system has manual pull stations at exits, notification devices in each classroom, and audio/visual devices spaced throughout the corridors. There is sufficient heat/smoke detector coverage throughout the building. Detectors were noted in storage closets, mechanical rooms, the kitchen, and corridors. The system components are in fair condition. It is noted that the carbon monoxide detectors are not addressable nor hardwired. There were First Alert manufactured carbon monoxide detectors plugged into a wall outlet in the main electrical room and mechanical rooms.



Fire alarm panel



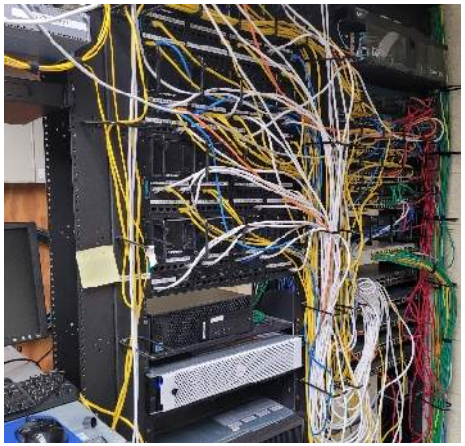
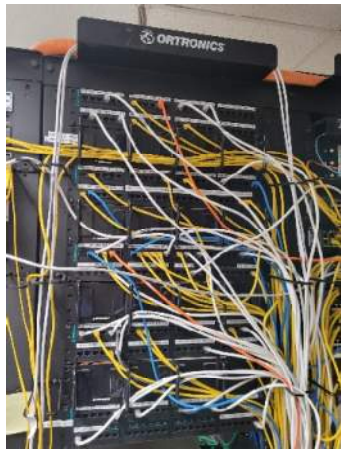
CO detector located in the main electrical room. Similar layout in the mechanical room.

The mechanical rooftop equipment in general were placed within 25' of a receptacle. Receptacles were located on the enclosures of various pieces of mechanical equipment. However, not all of the mechanical equipment had a local disconnecting means. A number of exhaust fans were without disconnect switches.






Typical rooftop unit with disconnect and receptacle with weatherproof cover.

Typical racks for servers and switches.

The security is done by Avigilon, including cameras throughout the building and a video entry station at the main entrance. All components are in good working condition.

TECHNOLOGY SYSTEMS

The incoming telecommunications services are both fiber optic cabling and analog/POTS. Equipment in the MDF is located in Ortronics racks, though some head end equipment is wall mounted. There are several available jacks in the patch panels, and the racks have space to mount other servers/patch panels if desired. There are also two IDF rooms in the building that also have Ortronics racks and wall mounted head-end equipment.



Avigilon head end equipment and typical camera located in corridor.

Each classroom has a wall mounted telephone system. The phones are in good condition. Notably, there is a pay phone wall mounted near one of the building exits. Facilities confirmed it was not functional and abandoned in place.



Typical classroom phone (left) and non-functional payphone abandoned in place (right).

The school PA system is done by Telecor. PA speakers are located in each classroom and regularly spaced in corridors. The system is functional and the headend equipment is in good condition.



Telecor head end equipment and typical classroom PA speaker.

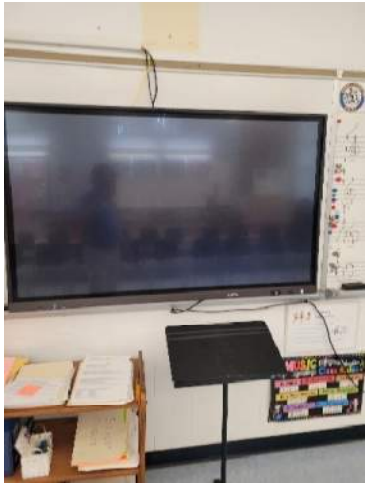
Wireless access points are in each classroom. The access points were recently upgraded and the number of them throughout the building expanded greatly. The access points are manufactured by Aruba and are in good condition.

Classroom AV layout is functional and in good condition. Classrooms each have a large monitor at the front of the room. There are some ancillary devices around the room including connections for VGA, audio, and USB A, but facilities says these are rarely used as a way to project onto the board. These devices are noticeably older than the other AV components in the room, but are still in working condition. Each room has a projector as well, manufactured by Epson.

They appear to have been recently installed and are in good condition.

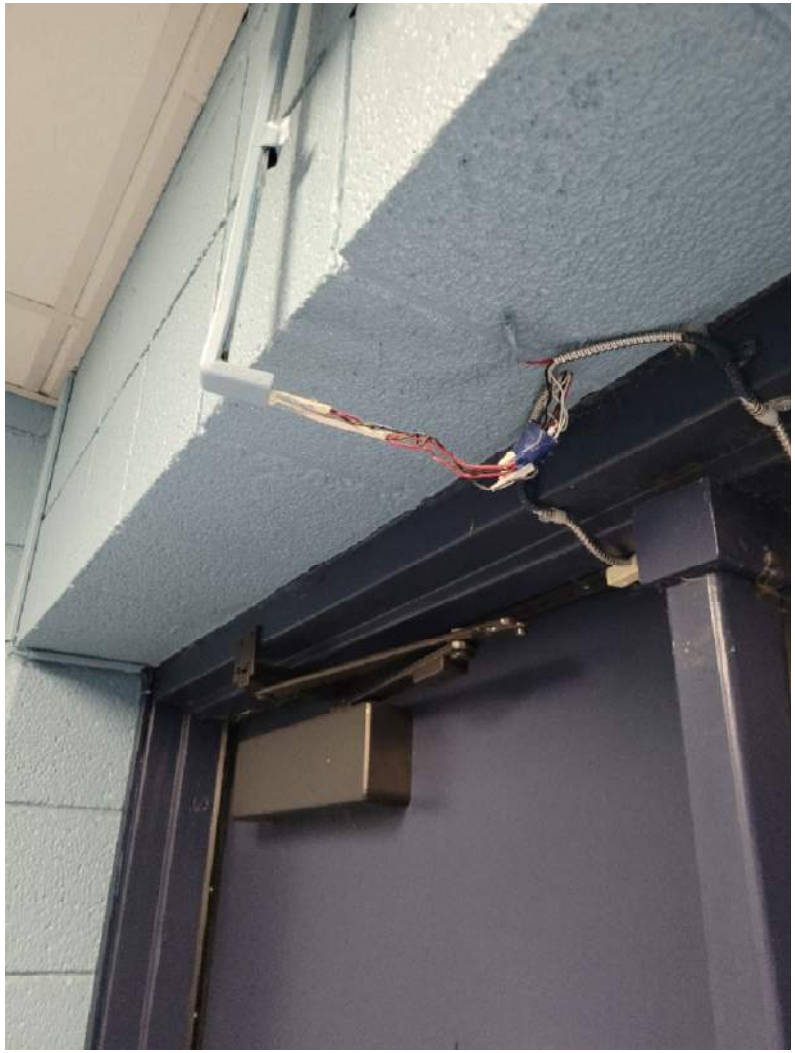


Typical classroom projector



Additional connections to monitor in classroom (left) and typical classroom monitor (right).

Door access control is functional, but in some areas of the building is in poor condition. The door pictured below has had its door contacts replaced at some point, and the new ones were installed as a quick temporary fix, but do not integrate well into the door hardware. There are low voltage wires exposed, and the conduit above the door frame is not securely affixed to the masonry. Further, this particular door has a latch that has worn away over time and doesn't naturally close fully any more. Facilities claims that there are periodic "door held open" alerts due to this deficiency.



Low voltage wires exposed, and conduit not secured



Latch worn away over time.


EASY FICTION
BIOGRAPHY

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
010000	GENERAL CONDITIONS	Throughout			Assume building/site WILL be occupied during construction. Anticipate the execution of work over multiple construction phases. Provide temporary separations between occupied spaces and construction zones.		
	Alternate off site student relocation instead of phased construction	N/A					
022600	HAZARDOUS MATERIALS	Roofing System	82,635		Verify abatement of hazardous materials in roofing is fully complete.	Allocate an allowance to cover this work if necessary.	
		Exterior Abatement			Verify abatement of hazardous materials at building exterior (sealants, chaulks, etc.) is fully complete.	Allocate allowance to cover this work if necessary	Localized.
		Interior Abatement			Verify abatement of hazardous materials that may remain at the interior of the buiding is fully complete.	Allocate allowance to cover this work if necessary	
024000	DEMOLITION						
		Exterior Concrete Canopy Construction	50	sf	Remove existing concrete canopy slab system, structural framing, chainlink fencing, concrete columns & foundation, applicable masonry, all in preparation for new two story vestibule construction.		
		Ceiling Demo Throughout	82,635		Remove existing ceiling throughout building to make way for new mechanical equipment, radiant heating panels, and sprinkler piping installations. Temporarily hang lights speakers, other electrical and security devices, for continued use until new ceiling is installed. Reinstall all existing devices in new ceiling.		
		Exterior Front Entrance slab removal	1,750	sf	Remove existing front entrance slab in order to create a new entry plaza, utilizing brick pavers that can be identified by contributor of each paver		
		Masonry Demo			Demolish masonry to accommodate boiler flue upgrades and or repacement.		
		Exterior Concrete Sidewalk	4,000	sf	Remove existing concrete sidewalk from main entrance to the public ROW, to accommodate new concrete sidewalk.		
		Asphalt Pavement: Bus Drop-off	10,000		Remove existing asphalt paving system(down to existing sub-grade) at the full extent of the Bus Drop-off.		
		Original Gym Basketball Backstop	2	ea	Remove existing basket ball backstops at the main basketball court in the original Gym		
		Roofing System Demo	82,635		Low Sloped Roofing System Demolition (down to structural roof deck) to accomodate full roof replacement. Remove existing fiber glass roof hatch railing assemblies.		

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
030000 CONCRETE							
		Slabs on Grade General	82,000	sf	Topical application of colloidal silicate treatment to resist moisture vapor transition. Apply to existing and new concrete slabs.		Implement at bare concrete slabs where exisitng floor finsih was removed and new floor finish is scheduled.
		Foundation Walls	100	sf	New foundations required at new two story vestibule		
		Cementitious Self Leveler	2,000	SF	Gang Toilet Rooms: Provide up to 2" of infill upon demolition of existing CT floors, where installation of new floors and floor drains are scheduled		Allocate 250 SF for each Gang
		New Concrete Sidewalk	4,000	sf			
040000 MASONRY							
		Exterior Walls:	1500	sf	Investigation required at exterior wall at Gym/Community Room to determine source of moisture Existing masonry wall infill (brick and block) where openings were created to replace large MEPF equipment located within building footprint	Allocate an allowance to address the investigation.	Treatment at moisture penetrations 1200 SF of CIP Concrete 300 SF of brick masonry
		Interior Masonry Walls:			Repairs to existing masonry partitions due to new MEPF installations		
		Masonry Chimney Repair			N/A - Currently, an on-going process Tooth new brick and CMU masonry infill into existing masonry wall where masonry removal for flue acess was provided.		
		Masonry Cleaning			N/A - Currently, an on-going process		
		Masonry Pointing			N/A - Currently, an on-going process		
		Masonry Replacement			N/A - Currently, an on-going process		
		Brick Masonry Pavers	1,750	sf	Install new brick pavers on new compacted fill and stone dust, to create new entry plaza. Each brick shall be identified based on contributions from the community		
		New Vestibule - New Exterior Brick	100	sf	install new exterior brick at new 2-Story Vestibule enclosure		
051000 STRUCTURAL STEEL							
		Mechanical Roof Screens	5725	sf	Steel framing assemblies on roof shall be maintained (a refinishing process) to prolong their natural lifespan.		

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Roof Frames			Provide supplemental steel framing where new roof top units (RTU's) or other roof mounted equipment will be installed as part of the full Mechanical System Upgrades, to comply with High performance requirments and current building and energy codes.		
		New Exterior Vestibule	100	sf	New structural steel roof framing at new 2-Story Vestibule		
		Structural Analysis of Roofing system loads			Structural capacity of exisitng frames in preparation for adding new mechanical equipment loads.		
053000	STRUCTURAL DECK						
		Steel Roof Deck		sf	Allowance for 1-1/2 galvanized steel roof deck for infils as required.		
		New Vestibule			New structural roof decking at new 2-Story Vestibule		
055000	METAL FABRICATIONS						
		Roof Drains			Provide new insert drains at each existing drain location. Provide 30'-0 of drain pipe insulation on all existing roof drain.		
		Restoration of joist bridging			Restore any cut joists bridging with horizontal bridging… typically to accommodate new douct work.	Allocate allowance	Add note on drawings to cover this scope
		Roof Access Ladder & Roof Hatch Railing Systems	3	ea.	Galvanized steel ladder providing roof level change access. Provide heavy duty exterior coating system like Duncan Color-Galv system. Provide roof hatch railing system replacement and at all existing roof hatches. All existing hatches are to be replaced.		
060000	WOOD						
		Misc Wood Blocking			Fire rated, preservative treated wood blocking. Provide allowance to provide preservative treated wood blocking at typical jambs, heads, and sills at each opening.		
		Roofing Systems			Fire rated, preservative treated wood blocking. Provide allowance based upon roof system replacement requirements. Fire rated, preservative treated wood blocking. Provide allowance for additon of wood curbs to accomodate small mechanical equipment associated with mechanical upgrades.		
070000	BUILDING ENVELOPE						

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Low Slope Roof System:	82,635	sf	SBS Modified-bitumen Roof Assembly (New): - Roof membrane with Cover Board throughout - 6-inches rigid base insulation (R-36) / Plus tapered insulation to facilitate drainage and alleviate ponding. - Self-adhering vapor barrier - 5/8-inch Type X exterior gypsum roof sheathing - 20-year non-prorated, no dollar limit full roof system warranty.		Include a decuct price for a single ply, fully adhered 90 Mils EPDM Membrane. Construction below membrane is similar to base bid.
		Pitched Roof System (At Entry & at Equipment Farm):	1,383	sf	Standing Seam metal Roofing: - Painted Standing Seam Metal Roof System with Panel Clips - Underlayment (#15 Building paper sheet) - Fully adhered self-sealing, waterproofing membrane (ice and water shield) - 5/8 Roof Sheathing - Retain existing vented decking (Add Insulation Baffle if necessary), Plus insulation (verify necessity and it does not exist above existing deck). - 20-year non-prorated, no dollar limit full roof system warranty.		UPDATE TO METAL STANDING SEAM
		Roof Edges & Copings	3,150	lf	Prefinished aluminum copings, and roof edge fascia systems, fluoropolymer coating with PVFD, .063 metal thickness. Including expansion joint covers.		
		Roofing System at New 2-Story Vestibule	100	sf	Install new SBS Modified-Bitumen Roofing System (Base & Cap Sheets) on Coverboard, with minimum 6" of insulation, Vapor barrier, Gypsum sheathing on metal deck. Provide minimum 20 year full system warranty.		
		Existing Exterior Masonry Walls	1185 & 180	sf	Repairs to leaks at exterior CMU block-masonry, and CIP concrete foundation wall-masonry at Gym/Stage back wall. Excavate and install waterproofing system and footing drains to daylight. Remove brick masonry just above weeps to top of foundation wall, and rebuild with new flashing and weeping system & materials		1185 SF of CIP Concrete 180 SF of Brick Masonry
		Existing Masonry Wall Infill	50	ea	Infill openings at existing Unit Ventilator intake/combustion air louver opening, using brick and block toothed into existing		
080000 OPENINGS							
		Exterior Punched Window Systems	145	each	Replace all existing exterior windows, with 1-1/8" Low E, high performance, insulated glass, and thermally broken Aluminum Window Frames, with a product that achieves AW certification. Window openings appears to primarily be 5'-4" wide X 5'-4" high. New windows shall be operable, and shall be equipped with window screens.		
		Exterior Storefront Systems (Buiding Entrances)	454	sf	There are not a lot of Storefront framing system around the building's exterior. Replace existing systems with fixed thermally broken aluminum frame storefront assembly. Glaze with 1-1/8", argon filled, insulating, high performance, glass with low E coating. Storefront systems shall be similar to EFCO Corporation 2" x 6-1/2" Series 406 T, Thermally Broken Storefront Framing system.		

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Exterior Door Systems	17 Doubles & 33 Singles		Replace all exterior Hollow Metal Doors (singles & pairs), and Hollow Metal Frames, with FRP fully insulated doors (with 8" X 36" lites), and 2" X 6" thermally broken Aluminum Frames, with full complement of hardware including removable mulliion and exit devices, and thresholds.		
			Access Control		Provide accomodations for access control systems at main and secondary entry doors, including doors terminating all corridors /		
		Interior Door & Frames	30		Replace existing Hollow Metal Doors and Frames at entrances to all Toilet Rooms, Storage Rooms, Interior Vestibule Doors, Stairs, and Janitor Closets, with new Wood Doors and accompanying full complement of hardware, with painted Hollow Metal Frames.		
		Secure Entry Vestibule - Main Entrance	100	SF	Replace existing opening between existing Main Office and Vestibule with secure Ballistic resistant inter-communicating transaction window allowing exchange of documents/ID, etc to provide security clearances as needed prior to allowing access into the Main Office.		
		Door Hardware		EA	Replace existing door hardware with accessible mortise lock with cylinders capable of receiving District standard keyway format. Provide allowance to install magnetic locks, card ccess, and power as needed at 5% of interior doors. Single use Toilet Room shall be equipped with privacy function locks to say in or out of use.	Verify District Standard	Hardware replacement at each interior door
090000 FINISHES							
		Classrooms, Science, Art, Corridors	82,000	sf	Floors: Luxury vinyl tile (LVT); 4-inch resilient base. Walls: Paint interior wall surfaces. Assume 10 ft height. Ceilings: Acoustic ceiling system, 2'-0" x 2'-0" pads, 15/16" grid. Allow 5% for gyp. bd. soffits.		
		Media Center Renovations / Upgrades	Floors	sf	Carpet tiles, 30" x 30" tiles; 4-inch resilient base.		
			Ceilings		Suspended Acoustical Ceiling (NRC 0.95) - 40% coverage / Tectum clouds ceiling system (NRC 0.70) - 40% coverage / Gypsum Board Soffit Systems - 20% coverage.		
			Gypsum Board Partitions	LF	Allow for complete gypsum board partions including studs, insulation, gypsum board, paint, throughout Media Center /		

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
			Technology Stations	Each	Allow for multiple technology centered interacive student focused stations/pods throughout the Media Center landscape.		
		Ceiling Replacement Throughout	82,000		Provide new suspended 2x2 ceiling tile/grid system throughout building. Utilize high acoustic value ceiling system, 2'-0" x 2'-0" pads, 15/16" grid. Allow 5% of floor total area for gyp. bd. soffits. Provide metal stud framed suspended gypsum board ceillings systems in all Toilet, Storage, and Janitor closets ceilings.		
		Gang Toilet Rooms	4	each	Install new Ceramic Tile or Porcelain Tile thin-set floors with integral 6" high base.		
		Choral and Band Rooms	100	lf	Repair existing cracks in gypsum board exterior walls		
		Acoustics Panels	1000	SF ea. Space	Alowance for acoustic treatment/panels in the Gymatorium. Allowance for acoustic treatment/panels in Band and Choral Rooms. Alowance for acoustic treatment/panels in the existing Cafeteria.		
		Original Gymnasium	6,000	sf	Repaint existing walls & ceiling (including new ductwork). Refinish existing wood athletic floor system to remain. Provide new court striping. Replace existing wall pads.		
100000 SPECIALTIES							
		Toilet Partitions		each	Existing Toilet Partitions to be replaced in all gang toilet rooms. Replace with 1" HDPE Partitions with SS hardware and accessories		
		Toilet Accessories		each	Replace existing toilet accessories mounted on toilet partions within each gang toilet room.		
		Corridors	2	each	Allowance for Display Cases around main entry corridor		
		Student Lockers New	450	qty	New, single tier replacement metal corridor lockers, 12"x12" for students.		
110000 EQUIPMENT							
		Gymnasium	5800	sf	Refinish and restripe existing wood gymnasium floor to remain.		
			2	each	Install new electric telescoping glass basketball backstops at main court in the original Gym		
			260	lf	Remove & Replace perimeter wall pads in the original existing Gymnasium, fire retardant, 6 feet high. Add new wall pads as requested in original Gymnasium. Account for 200 LF of additional 6'-0" high wall pads.		
114000 FOOD SERVICE							

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Kitchen	Allowance		Provide allowance for updating of specific equipment or replacement as required.		VERIFY WITH FS DIRECTOR!!!
		Servery	Allowance		Provide allowance for updating of specific equipment or replacement as required.		VERIFY WITH FS DIRECTOR!!!
120000 FURNISHINGS							
		Trash Receptacles	4		Provide trash receptacles at strategic locations (new Main entry Plaza and other publicly utilized primary building entrances and exits)		
		Steel Pipe Bollard	8		Provide bollards for safety at new Main Entry Plaza		
		Site Benches	4	EA	Provide site benches at new Main Entry Plaza		
		Window Treatments	Classrooms / labs / Office	each	Mecho roller shades, manual operation, 3% light transmission shade cloth.		
			Classrooms / labs / Office	each	Provide roller shades at interior doors and windows with vision lites.		
		Existing Play Areas		varies	Provide safety and maintenance upgrades & repairs, based on recommendations in report dated 10/25/23 by UltiPlay, and transmitted to Marlborough on 11/09/23.	Allocate allowance to cover report recomnedations.	
123000 MANUFACTURED CASEWORK							
		Classrooms	65	each	Upgrade Plastic Laminate Casework in all Classrooms, including Science and Specialty Rooms. Replace all doors and hardware.		
		Media Center	1	each	Plastic laminate base cabinets, wall hung cabinets and counters, 12'-6" long with (1) accessible stainless steel sink per classroom		
		Conference Rooms	30	lf	Replace existing Plastic laminate base cabinets, upper cabinets and counters, in existing Conference Room.		
		Nurse's Office	30	LF	All existing Built-in plastic Laminate casework in the Nurse's Office shall be replaced (one for one - Lower base cabinets with counter top, and upper wall cabinets)		
130000 SPECIAL CONSTRUCTION							
		Elevator Shaft Lighting	2	ea	Add additional lighting to elevator shafts (top and bottom) to meet current state lumen requirements.		
		Plumbing Fixtures - Gang Toilets			Replace Plumbing Fixtures in all Gang Toilet Rooms - Sinks, Water closets, Urinals. Include removal and replacement of chase walls to replace existing hangers.		Several fixture failures were reported by Custodial Staff.
142000 ELEVATORS							
		Electric Traction Elevators	2	ea	Replace existing hydraulic elevators with existing Elevator machine rooms, with Electric Tractor Elevators.	Recommend replacement within the next 5 to 10 years	
210000 FIRE SUPPRESSION							

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Existing		qty	Remove existing sprinklers supplied by the domestic water piping system. Remove associated sprinkler piping and backflow preventers back to domestic water main.		
		General		SF	Contingent on the level of alterations proposed for the building, a new automatic fire sprinkler system will be required. If the work area, defined as that portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents in accordance with the International Existing Building Code, exceeds 50 percent of the floor area, then automatic sprinkler protection is required to be installed.		
			1	qty	A buried 30,000 gallon steel water storage shall be provided on the site in accordance with NFPA 22. The tank shall be furnished with water fill connection from well-system, auxiliary quick fill water connection, vent line, tank level monitor system with float switches, two manhole access covers, ladder. Tank shall be buried below the frost level.		
			1	qty	A 750 GPM vertical turbine electric fire pump shall be provided in a pre-fabricated pump house installed directly over the buried storage tank. The fire pump assembly shall include a fire pump controller, automatic transfer switch, jockey pump and jockey pump controller. The fire pump assembly shall include a test header, bypass loop with flow meter. The pump house shall be a minimum of 50 feet from the building.		
			1	qty	A 6" fire line shall be provided underground from the pump house to the building. The 6" fire line shall rise up into the building's mechanical room from below slab.		
			2	qty	Wet alarm check valve risers shall be provided in the buildings mechanical room to properly zone the sprinkler system.		
				SF	Sprinklers shall be provided in all areas of the building in accordance with NFPA 13. Sprinkler densities shall be as defined by NFPA 13.		
				SF	Sprinklers shall be concealed, fully recessed in finished areas with ceilings. Sidewall, standard and extended coverage sprinklers shall be installed where appropriate. Upright sprinklers with protective baskets shall be installed within spaces where sprinklers are subject to damage. Quick response sprinkler heads shall be used in light hazard locations. Sprinklers, unless noted otherwise, shall have a ½" orifice and a 165°F temperature rating. Intermediate temperature classification sprinklers shall be installed within the mechanical room, skylights and other areas, as required by NFPA 13. 1. Sprinklers shall be provided above and below ceilings that include floating clouds or other similar features that permit the passage of heat from one ceiling level to another. 2. Sprinklers shall be provided to protect below ductwork 48" and larger in width.		
			2	qty	Inspector's test connections and drains shall be provided at remote areas of the building. Drains shall terminate at the building exterior at a splash block.		

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
			1	qty	The building elevators shall be provided with an intermediate temperature upright sprinkler at the top of the shaft and a sidewall sprinkler 24" above the finished elevator pit floor. The water supply to sprinkler at these shafts shall be monitored with a flow switch. (Sprinkler protection shall be not be required if the elevator shaft, cab & hydraulic fluid are non-combustible).		
		Materials & Methods		SF	Piping for the sprinkler system shall be steel pipe, ASTM A-53; Schedule 40 carbon steel. Schedule 10 pipe shall be allowed for pipe sizes larger than 1-1/4" diameter when roll grooved mechanical couplings are used. Sprinkler piping shall be installed above ceilings and concealed within chases where applicable.		
				SF	Fittings shall be grooved mechanical fittings: ANSI A21.10 ductile iron; ASTM A47 grade malleable iron. Couplings shall be ASTM A 536 ductile iron or malleable iron housing, EPDM gasket with nuts, bolts, locking pin, locking toggle or lugs to secure roll grooved pipe and fittings.		
220000 PLUMBING							
		Domestic Water Systems	1	qty	Existing 4" domestic water supply pipefrom the well and two (2) water meters shall remain.		
			1	qty	Remove and replace existing 4" backflow preventer at water service entrance.		
		Specialty Systems	1	qty	Two (2) 4,000 gallon buried oil tanks, installed in 2003, at the building exterior. Two (2) oil day tanks inside the buildings mechanical rooms. Day tanks appear in poor condition and pumps fail often. Replace oil day tanks and oil pumps.	Recommend removing buried tanks in the next 10 years and switching to propane for all equipment.	
			1	qty	There is an existing propane storage tank on site that supplies the kitchen equipment and make-up air unit. Tank and gas piping appear to be in good working condition.	In conjunction with removing the oil supply tanks, provide four (4) new 1,000-gallon propane storage tanks to supply new gas-fired equipment.	
			1	qty	67-gallon oil-fired water heater and burner in Boiler Room adjacent to Gym, installed in 2014. Water heater has approximately 5 years additional service life.	Recommend replacing with propane fired heater. Supply from existing propane tank.	

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
			1	qty	67-gallon oil-fired water heater and burner in Building B Mechanical room, installed in 2021. Water heater has approximately 12 years additional service life.	Recommend replacing with propane fired when buried oil tanks are removed.	
			1	qty	80-gallon electric water heater in Building B Mechanical Room, installed in 2003.	Recommend replacing within the next 1 year.	
230000	MECHANICAL SYSTEMS						
	Heat Generation			SF	Heating will be accomplished by a hybrid heating system approach. The primary heating method will utilize variable refrigerant flow (VRF) heat pumps powered by electricity. These will yield the highest efficiency and lowest carbon emissions. During colder weather or in the event of a power outage, the existing oil-fired heating plant will be utilized to heat the building via overhead perimeter radiation. Additionally, hot water from the heating plant will be utilized in air handling units as described below.	Recommended for adding A/C and electric powered heating	
			1	qty	The existing Burnham V11 series oil-fired boilers in the mechanical room adjacent to the gym are to remain. The two (2) existing Smith boilers in Mechanical room 626 are to remain.	Recommend in the next 10 years, in conjuction with removing the oil tanks, remove the oil-fired boilers and replace them with high efficiency propane-fired condensing boilers. Additionally, if the VRF system is installed, it is recommended to decrease the overall size of the boiler plant to account for heating provided through the VRF system.	

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
			1	qty	The primary heating hot water pumping plant will be replaced and generally consist of three pairs of pumps. Each of the pumps will be sized for 100% capacity, for complete redundancy. The pumping will be a primary secondary arrangement for the boilers and will send 140ºF water to the building for space heating systems and terminal heating units (Dedicated outdoor air units, air handling units, Rooftop units, cabinet units heaters, etc.) throughout the facility. The space heating hot water supply piping temperature will be reset inversely with outside air temperature, to minimize energy consumption. Heating hot water pumps shall be vertical inline type, 7.5 HP by Armstrong or approved equal	Recommend replacing all pumps within the next 5 years	
			1	qty	Hot water system shall operate with 30% propylene glycol/water solution. Provide 100 gallon Wessels type glycol tank/pump feed system with glycol refractometer to automatically monitor and report percent glycol in the system.		
			1	qty	Existing boiler flues through the roof shall remain. Flues to be reconnected into replaced boilers.		
	Cooling Generation		1	qty	Tel/Data IDF and MDF rooms shall be served by dedicated cooling only ductless split units. Each unit shall be rated for 2.0 ton units. Unit consists of indoor wall mount air handler and roof mounted condensing unit with refrigerant piping interconnecting. Condensing unit shall have low ambient features.		
		Gymnasium #1	1	qty	The combined gymnasium/auditorium will be served by (1) 9,150 CFM single zone variable air volume direct drive rooftop unit which will have hot water heating coils and direct expansion cooling with hot gas reheat. Existing ductwork will be remiain with minor adjustments throughout the gymnasium for distribution. Rooftop units shall be by Daikin or approved equal. The units will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2	Recommend replacing in the next 5 years	
		Gymnasium #2/ Auditorium	2	qty	The combined Gym/Auditorium and Stage rooftop units will be replaced with units of equal heating and cooling capacity to the existing. Replacement will consist of two (2) single zone variable air volume direct drive rooftop unit which will have hot water heating coils and direct expansion cooling with hot gas reheat. The Gym/Auditorium unit with provide 16,000 CFM, and the Stage unit will provide 4000 CFM. Existing ductwork will be reused throughout the gymnasium/auditorium for distribution. Rooftop units shall be by Daikin or approved equal. The units will also incorporate demand control ventilation which will modulate the amount of outside air to the space based on occupancy and CO2	Recommend replacing in the next 5 years	
		Cafeteria	1	qty	The Cafeteria rooftop unit will be replaced with a unit of equal heating and cooling capacity to the existing. The replacement rooftop unit will provide 3,700 CFM of airflow and will have a hot water coil, DX cooling, and hot gas reheat. Rooftop units shall be by Daikin or approved equal. Existing ductwork will be reused throughout the Cafeteria for distribution.	Recommend replacing in the next 5 years	

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Administration	1	qty	The Administration area rooftop unit will be replaced with a unit of equal heating and cooling capacity to the existing. The replacement rooftop unit will provide 4,000 CFM of airflow and will have a hot water coil, DX cooling, and hot gas reheat. Rooftop units shall be by Daikin or approved equal. Existing ductwork will be reused throughout the Administration area for distribution.	Recommend replacing in the next 5 years	
		Art Room	1	qty	The Art Room rooftop unit will be replaced with a unit of equal heating and cooling capacity to the existing. The replacement rooftop unit will provide 1,400 CFM of airflow and will have a hot water coil, DX cooling, and hot gas reheat. Rooftop units shall be by Daikin or approved equal. Existing ductwork will be reused throughout the Art Room area for distribution.	Recommend replacing in the next 5 years	
		Library/Media Center	1	qty	The Library/Media Center rooftop unit will be replaced with a unit of equal heating and cooling capacity to the existing. The replacement rooftop unit will provide 4,700 CFM of airflow and will have a hot water coil, DX cooling, and hot gas reheat. Rooftop units shall be by Daikin or approved equal. Existing ductwork will be reused throughout the Library/Media Center for distribution.	Recommend replacing in the next 5 years	
		Computer Lab	1	qty	The Computer Lab rooftop unit will be replaced with a unit of equal heating and cooling capacity to the existing. The replacement rooftop unit will provide 1,200 CFM of airflow and will have a hot water coil, DX cooling, and hot gas reheat. Rooftop units shall be by Daikin or approved equal. Existing ductwork will be reused throughout the Computer Lab for distribution.	Recommend replacing in the next 5 years	
		Classroom Wing (including Choral, Band, and Science Labs)	5	qty	The exhaust fans and unit ventilators serving these areas will be replaced with a Dedicated outside air systems (DOAS). The DOAS shall be 100% outside air/supply air and 100% exhaust air with total enthalpy energy recovery, DX cooling, and hot water coils for heating, Daikin model Rebel Applied or approved equal. Based on the layout of the classrroms, five (5) units shall be provided. Supply airflows for each unit are the following: 5,600 CFM, 8,750 CFM, 3,550 CFM, 2,000 CFM, and 800 CFM.	Recommended for adding A/C	
				SF	Ventilation Air: Each classroom shall be served with both outside air and exhaust air. A CO2 sensor shall be placed in the return duct from each classroom. This CO2 sensor shall be connected to the building management system which will poll all sensors connected to each DOA unit. The classroom with the highest CO2 percentage will dictate the amount of outside air to the group, complying with energy and ventilation code.		
				SF	Each space shall be served by VRF units (variable refrigerant flow) to provide cooling and heating. System shall be a three pipe system to provide energy recovery at certain times of the year. Heating shall be supplemented by the central hot water plant. In general, each classroom shall receive (1) cassette style VRF unit located within the ceiling grid. Units shall typically be 2.5-ton Daikin 3x3 ceiling cassette or approved equal.	Recommended for adding A/C	
				SF	VRF Outdoor Units: Provide multiple outdoor compressor/condensing units to serve the indoor units; which shall be connected via refrigerant piping to the outdoor units. Outdoor units shall typically be roof mounted on curbs or rails with vibration isolation pads.	Recommended for adding A/C	

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
				SF	The existing unit ventilators serving classrooms will be removed. All classrooms will have overhead radiant heating panels for perimeter heating to supplement the VRF system on colder winter days. Hot water branches throughout the building serving unit ventilators shall be repiped to new overhead perimeter radiation. Piping shall be sized for low velocities and reduced pressure drop to reduce overall operating pressure and motor HP.	Recommended for adding A/C	
				SF	Nurse and Staff Room Areas not covered by existing rooftop units will be configured with the same systems as classroom wings, only the indoor units will be generally smaller to match smaller space sizes. Typical VRF unit sizes will be 1-ton cassettes for smaller offices.	Recommended for adding A/C	
		Corridors/ Miscellaneous Areas		SF	The existing hot water convectors in the corridors shall be replaced and served by new hot water convectors with control valves, these convectors will be installed in existing wall recesses. In addition, each corridor shall receive a 1-ton VRF cassette unit spaced at approximately 100 ft intervals.	Recommend replacing in the next 5 years	
				SF	The existing hot water convectors in the restrooms shall be replaced and served by new hot water convectors with control valves.	Recommend replacing in the next 5 years	
				SF	The existing hot water convectors in the entrances and vestibules shall be replaced and served by new hot water cabinet unit heaters with control valves. All storage areas, mechanical rooms and electrical rooms shall be provided with hot water unit heaters	Recommend replacing in the next 5 years	
		Ventilation - Kitchen	2	qty	The existing Kitchen exhaust fan shall be removed and replaced with a new kitchen exhaust (Grease) fan. New fan shall be NFPA 96 compliant, up-blast exhaust fan with ventilated curb. Fan serving grease hood shall (3,200 CFM) be by Loren Cook or approved equal. Kitchen makeup air shall be propane gas-fired with Dx cooling, (3200 CFM) by Captive-Aire or approved equal. Existing makeup air and exhaust air ductwork to existing kitchen hood to remain and be reused. Existing propane gas piping between the roof penetration and the makeup air unit to be replaced due to corrosion on the existing pipe.	Recommend replacing in the next 5 years	
			6	qty	Exhaust: The majority of the building's exhaust air requirements shall be handled by the DOAS units as described above. These units incorporate energy recovery. Other specific fan systems shall be as listed below. 1.General Exhaust Fans: 1,990 CFM serves Building B Boiler Room general ventilation, 300 CFM serves Building B elevator machine room, 200 CFM serves Building B Dark Room, 200 CFM serves Room 526 Elevator Machine Room, 200 CFM serves Electrical Room 327 2.General Intake Fans: 1,990 CFM serves Building B Boiler Room general ventilation	Recommend replacing in the next 5 years	
260000 ELECTRICAL							

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		General Purpose Electrical Power	1	qty	1. Circuits for all HVAC equipment as required. 120V Wiring to control panels, control transformers, etc. shall be provided by the electrician while low voltage control wire shall be included in Division 23. 2. HVAC units mounted on the roof shall have a conduit for the feeders to the equipment NEMA 3R disconnect switch and another conduit to a 120V GFI duplex 3. Circuits for security equipment as required.		
		Miscellaneous Electrical Systems			Include the following basic materials and methods of construction: 1. Wiring shall be THHN/THWN copper, installed in EMT conduit for general circuits. 2. Wiring shall be XHHW copper, installed in conduit for underground branch lighting circuits. 3. Type MC cable shall be used as prescribed in sections above. 4. Devices shall be specification grade, NEMA 5-20R etc. 5. Disconnect switches shall be fusible heavy-duty type. NEMA 1, 3R or 4X as required for locations installed. 6. Circuit breakers shall be fixed element, thermal magnetic type. 7. All circuit breakers with frame sizes 125A and above shall include factory installed handle padlocking kit. 8. Panelboards shall have copper bussing, with hinged, lockable, door-in-door trim. 9. Branch circuit breakers shall be bolt-on type. 10. All conduits, circuits and devices shall be labeled. 11. Conduits below slabs shall be schedule 40 PVC, with rigid steel conduit sweeps.		
265000 LIGHTING							
		Exit Signage			Exit signs shall be universal mounted, LED illuminated, low energy usage fixtures. 1. Exit signs shall be located no further than two hundred feet apart and in every path of egress and above each egress doorway. 2. Lighted exit signs including the Connecticut Symbol of Accessibility shall be provided at all location on the discharge level where directing people to accessible exit doorways and where ever low-level exit signs are required. These signs shall have an LED lamp source. 3. Provide LED “Area of Refuge” signs at all area of refuge locations		

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
270000	COMMUNICATIONS						
	Public Address System & Master Clock System	Whole Building	82,000	SF	Consider full relacement within the next 5 to 10 years	$2.75 / SF	
	Communications Cabling	Whole Building	82,000	sf	Upgrade communications cabling over the next 5 years. Exisitng cabling is assumed to be Cat 5. Upgrade to a minimum of Cat 6A. Depending on the timing of the upgrade, an updated version of the cabling may be available.	$5.00 / SF	
280000	SECURITY						
	Access Control, Video Surveillance, Intrusion Detection, Fire Detection and Alarm System	General			The school shall be provided with a comprehensive electronic safety and security systems compatible with existing school systems including access control systems, IP based camera surveillance and storage, intrusion detection, and addressable fire alarm.		
		Access Control System	20	ea Door	Add access control to select doors that will benefit from the use of an electronic entry system	$3,500	
		Video Surveillance System	100	ea Cam.	Upgrade (replace), as well as add cameras around building. Camera life is 10 to 15 years.d	$1,500	
310000	EARTHWORK						
320000	SITE IMPROVEMENTS						
		New Asphalt Pavement	10,000	SF	Construct new Bus Drop-off asphalt paving using 4" bituminous concrete on 10" compacted stone base. Restripe new driveway as required.		
		New Asphalt Curbs	450	LF	Replace damaged curbs at the southwestcorner of the building.	Provide allowance for 100 LF of curbs.	
		Concrete Sidewalks	4,000	SF	install new concrete sidewalk from edge of new entry plaza to the existing curb at the public ROW. Include required handicap curb ramps. Slabs shall be 5" Concrete Sidewalk on 8" compacted stone base.		
					Replace sections of damaged concrete sidewalk at the northeast corner of the school building. Slabs shall be 5" Concrete Sidewalk on 8" compacted stone base.	Provide allowance for 100 LF of slab replacement.	

CSI DIV OR SECTION	CSI NAME	LOCATION	AREA OR QUANTITY	Qty	DESCRIPTION/COMMENTS	RECOMMENDATION	COMMENTS
		Concrete Curbs	500	LF	Repair Cast in place concrete curb along Bus Drop-off Driveway.		
		Site Lighting	10	each	Install new bollard lights, conduit, wiring, and circuittry at new entry plaza.		
		Landscape Masonry Retaining Walls	1,000	SF	Replace individual blocks or sections of wall over the next 10 years	Provide allowance for replacement.	
330000	SITE UTILITIES						
	Sanitary Waste	Grease / Oil Separator		each	Verify existing grease trap is functioning properly.		
		Septic Systems			Verify existing septic system is no longer in use and a functioning town sewer system is in place. See Plumbing above for specifics on the maintenance of the existing pumping system.		
	Water Service	Existing Domestic Well		each	Existing wells to remain. Verify additional treatment is needed		
		Sprinkler System storage tank		gal	See Fire Protection Section		
	Fuel Source	Future Propane Storage		gal			
	Storm Drainage	Catch Basins		each	New precast concrete catch basins in asphalt driveway scheduled for replacement		



5.1 Existing Site Drawings
- C-200 Phase 2 Site Layout-Materials Plan
- C-300 Phase 2 Site Grading Plan
- C-400 Phase 2 Site Utilities Plan

5.2 Existing Building / Architectural Drawings
- A-1.1 Phase 2 Lower Level Plan
- A-1.2 Phase 2 Lower Level Plan
- A-1.3 Phase 2 Lower Level Plan
- A-1.4 Phase 2 Upper Level Plan
- A-1.5 Phase 2 Upper Level Plan
- A-1.6 Phase 2 Upper Level Plan
- A-1.7 Phase 2 Upper Level Plan

5.3 Existing Roofing Drawings

DRAWINGS HAVE BEEN REDACTED FROM THIS REPORT FOR SCHOOL SAFETY REASONS.

IF NEEDED, COPIES OF DRAWINGS CAN BE OBTAINED BY REQUEST THROUGH THE SUPERINTENDENT OF SCHOOLS OR THE FACILITIES DIRECTOR OFFICES.

CONCEPTUAL COST ESTIMATE 6.0



6.1 Cost Estimate Summary
- Introduction
- Quantities and Methodology
- Basis of Pricing
- Design and Estimating Contingency
- Escalation
- Construction Contingency
- Probable Cost
- Estimate Exclusions
- Risks to the Cost Estimate

6.2. Conceptual Capital Implementation Plan (CIP)

6.3 Conceptual Alterations Project Plan

6.4 Comparative Cost Summary

6.5 Project Cost Analysis-Grant Funding

INTRODUCTION

Pan American Consulting (PACS) has been engaged by Antinozzi Associates, PC to prepare a Cost estimate for the Existing Facility Assessment of Marlborough Elementary School.

This Estimate is based on the following design information:

- Available existing conditions Phase 1 and Phase 2 project documents for the 2002 Renovation of Marlborough Elementary School.
- Existing Conditions Narratives containing photographic documentation of Site, Architectural, and Engineering Disciplines included under Section 3.0 of this report.
- Conceptual Outline Specifications prepared by the Assessment Team documenting proposed materials, systems, and assemblies to replace similar items identified under Section 5.0 of this report.

QUANTITIES AND METHODOLOGY

The cost estimate is based on the measurement of quantities wherever possible. Where actual measurements are not used, parametric measurements are used in conjunction with previous but similar project benchmarks. PACS uses a wide range of standard measurement and quantifying methods that are common practice in the construction industry today.

BASIS OF PRICING

The construction costs shown in this estimate represent the fair market value and are not intended to be a prediction of the lowest bid.

The costs include: labor, material, equipment, and the subcontractors overhead and profit, also referred to as the Subcontractor's Mark Up.

The cost of labor is based on local Prevailing wage rates for all trades. The construction rates used are based in "today's dollar" and an escalation allowance is included in the Estimate summary.

Our pricing assumes competitive bidding on all elements of the construction work, assuming a minimum of three competitive bidders for all general contractors, subcontractors, materials, and vendors. In our experience, when fewer bids are received or solicited, prices can be expected to be higher due to lack of competition.

The subcontractor's mark-ups include their own overhead, including the cost in the field as well as profit. Our estimate considers current market conditions, competition between trades and the cost fluctuations in the construction industry.

This estimate has been prepared assuming a Phased New Construction, Demolition of Existing Building and Site relocation, and is based on construction being performed during regular business hours, except what is required for noisy work and Building system tie-ins.

.DESIGN AND ESTIMATING CONTINGENCY

A Design and Pricing Contingency is used as a budgetary tool that allows for scope and detail not defined during the design stage. As the design becomes more defined as the project passes through the design stages, the Design and Pricing Contingency decreases as more scope and detail is now being shown in the documents and is therefore reflected in the cost estimate as actual trade cost. The Design and Pricing Contingency is reduced to zero at 100% Bid Documents.

ESCALATION

As outlined above the estimate is calculated using rates that are "today's dollar" and reflect the cost of the project as if it was to bid on the date of issue. Due to construction projects having long design phases and long construction schedules, it is imperative to project the construction cost further ahead into the future to the point at which it is bid – a practice referred to as cost escalation, or *escalation*. It is common practice to escalate the cost estimate to the midpoint of construction to accommodate for economic inflation. This percentage accounts for this increase.

CONSTRUCTION CONTINGENCY

PACS advises that a Construction Contingency be carried for unforeseen project conditions and field changes. Typically, we see this in the range of 3% to 7.5% of the direct (trade) costs depending upon the project scope and complexity.

PROBABLE COST

It is important for the Owner and Design team to carefully review this cost estimate including all line-item descriptions, clarifications, exclusions, unit prices, assumptions, allowances, mark ups and contingencies to ensure the estimate reflects the scope of the project.

In instances where the cost estimate is not in line with the Owner's budgetary objectives, PACS can suggest and evaluate alternate methods to assist bringing the project back in line with the desired budget.

PACS has produced the cost estimate based on the widely practiced methods of cost estimating and aims to reflect the fair market value of the construction project. Our aim is to be not the highest or the lowest in the range of bids but to use our experience and expertise in the construction industry to provide the client with a degree of confidence that the project will be close to our calculated estimate.

ESTIMATE EXCLUSIONS

This cost estimate excludes the following:

- Premiums for working in inaccessible or partially accessible spaces during construction.
- Surplus Stock and Spare Product, Materials.
- Unforeseen Conditions (Covered in Construction Contingency).
- Premiums for restrictive and uncompetitive bidding.
- Premiums for non-standard work times.
- Work beyond the project limits.
- CT Sales Tax - Assumes Tax Exempt.
- Wellpoints - Assumes open trench pumping only
- Rock or Unsuitable soils remediation - Except as specifically noted
- Hazardous, Contaminated or Polluted soils
- Underground Storage Tank (UST) removals
- Temporary Water, Power and Fuel - Assumed to be paid for by Owner.
- AV Equipment in Classrooms - Assumes part of Owner's FF&E / Technology Budget
- Student furniture (including tables) in Classrooms and Science Labs.
- Utility Costs - Electric, Gas, Water.

RISKS TO THE COST ESTIMATE

Items that may affect the cost estimate, the list as follows but not limited:

- Changes to the design after the issue of the documents stated above which this estimate is based.
- Unforeseen and Unknown Structural conditions.
- Non-Competitive Bid restrictions and the sole sourcing of products/materials from specific vendors.
- Restrictive technical specifications that produce and noncompetitive environment.
- Changes to the project schedule that delay the project and therefore have impact on cost.
- Incomplete and poorly coordinated documentation
- Access restrictions, unidentified out of hours work policies and phasing restrictions.

RECOMMENDED PRIORITIES

YEAR 1

- Demolish Canopy Structure, and construct new 2-Story Vestibule.
- Moisture infiltration at Gymatorium Stage.
- Roof replacement project (including replacement of skylights and roof hatches, and new roof drain inserts.

YEARS 2 - 3

- Upgrade Electric Service & Switchgear /
- New underground electric service.
- Mechanical System upgrades - Classrooms
- Install VRF Heat Pumps and Split system units in classrooms.
  - ❖ Install DOAS units & Associated ductwork for Classroom
  - ❖ Replace impacted ceilings & lighting.
- Replace AHU's (RTU's) throughout, new Controls Package – BMS/DDC Gymatorium & Stage
  - ❖ Original Gym
  - ❖ Admin**
  - ❖ Cafeteria
  - ❖ Media Center
  - ❖ Computer Lab
  - ❖ Art
  - ❖ Building B Core
  - ❖ Boiler room (combustion air
  - ❖ Replace impacted ceilings & lighting
- Clean & reconfigure ductwork as new AHU are replaced (Areas with more severe work – ceiling configurations etc. – may be delayed and completed simultaneously with Mechanical upgrade scope of work).
- Fire Suppression Sprinkler System Infrastructure.
- Fire water service line.
  - ❖ Fire water storage
  - ❖ Sprinkler riser assemblies
  - ❖ Fire Pump & fire pump building
- Fire Suppression Sprinkler System – Distribution system (implement simultaneously with mechanical upgrades).

YEARS 4 – 5

- Remove oil tanks (2 UST & 2 day tanks – one in each boiler room along with pumps) / Convert existing boilers to gas / Install new Propane Tank & Pad / Replace water heater to make gas fired (propane) (or simply replace the burner – for the one installed in 2021) / Provide new gas piping.
- Window replacement project.
- Replace / Add new window treatments throughout.
- Renovate Gang Toilet Rooms.
- Replace exhaust Fans.
  - ❖ General
  - ❖ Toilet rooms
  - ❖ Kitchen
- Add strainers to Janitor sinks (Inexpensive fix that can be completed immediately).

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Totals	Suggested 5-Year Capital Implementation Plan (1) 2027	(2) 2028	(3) 2029	(4) 2030	(5) 2031	Comments / Notes
DIVISION 01 - General Requirements													
01 00 00	Temprary Site Services - General Requirements - CIP Occupied Renovation		82,635.00	SF	$15	$1,210,603		$242,121	$242,121	$242,121	$242,121	$242,121	
01 00 00	Temprary Site Services - Student Swing Space accommodations / Temp classrooms / protection		48.00	MO	$20,000	$960,000		$240,000	$240,000	$240,000	$240,000		
01 00 00	Temporary Office Facilities		60.00	mo	$3,500	$210,000		$42,000	$42,000	$42,000	$42,000	$42,000	
01 00 00	IT Monthly Cost		60.00	mo	$4,500	$270,000		$54,000	$54,000	$54,000	$54,000	$54,000	
01 00 00	Reprographics, Postage, Photos		60.00	mo	$350	$21,000		$4,200	$4,200	$4,200	$4,200	$4,200	
01 00 00	Indoor Air Quality/Infectious Controls		60.00	mo	$2,500	$150,000		$30,000	$30,000	$30,000	$30,000	$30,000	
01 00 00	Weather / Winter Conditions		60.00	mo	$1,500	$90,000		$18,000	$18,000	$18,000	$18,000	$18,000	
01 00 00	Temp Toilets Rental, Service and Disposal		60.00	mo	$500	$30,000		$6,000	$6,000	$6,000	$6,000	$6,000	
01 00 00	Access, Scaffolding and Hoisting		< In Trades >			$0		$0	$0	$0	$0	$0	
01 00 00	Temporary Safety		60.00	mo	$1,000	$60,000		$12,000	$12,000	$12,000	$12,000	$12,000	
01 00 00	Temporary Protection		60.00	mo	$1,000	$60,000		$12,000	$12,000	$12,000	$12,000	$12,000	
01 00 00	Site Logistics		60.00	mo	$1,500	$90,000		$18,000	$18,000	$18,000	$18,000	$18,000	
01 00 00	Clean Up & Debris Management		60.00	mo	$4,000	$240,000		$48,000	$48,000	$48,000	$48,000	$48,000	
	Division 01 - TOTALS						**$3,391,603**						
DIVISION 02 - Existing Conditions													
02 26 00	Asbestos Abatement - Roofing	Asbestos abatement for roof - Allowance	82,635	sf	$1.25	$103,294		$103,294					
02 26 00	Exterior Haz-materials Abatemet	Haz-mat abatement for exterior envelope - Allowance	1	ls	$500,000.00	$500,000				$150,000	$350,000		
02 26 00	Interior Haz-materials Abatemet	Haz-mat abatement for Interior - Allowance	1	ls	$325,000.00	$325,000		$130,000	$130,000	$32,500	$32,500		
02 24 00	Roof Demolition	Rip roof for replacement	82,635	sf	$5.45	$450,361		$450,361					
02 24 00	Slab Demo for Contribution pavers	Demolish slabs for placement of contribution pavers	1,750	sf	$10.50	$18,375						$18,375	
02 24 00	Masonry Demolition	Demolish masonry partitions for Boiler equipment & flues	1	ls	$10,000.00	$10,000			$10,000				
02 24 00	Aluminum Windows-	Aluminum window - demolish and protect for replacement	4,386.25	sf	$10	$43,863					$43,863		
02 24 00	Aluminum-Framed Entrances and Storefronts	Aluminum storefront - Demolish & Protect	454.00	sf	$20	$9,080		$9,080					
02 24 00	Ceilings Demolition	Demolish ceilings for Mechanical Systems replacements	82,635	sf	$0.65	$53,713			$53,713				
02 24 00	Finishes demo - Gang toilet rooms	Demolish ceilings for Mechanical Systems replacements	1,600	sf	$8.00	$12,800					$12,800		
02 24 00	Specialties Demolition	Demo basketball backstops for replacement	2	ea	$725.00	$1,450						$1,450	
02 24 00	FP Demolition	Make safe, disconnect, drop Existing Domestic fed FP Systems for replacement	82,635	sf	$0.65	$53,713			$26,856	$26,856			
02 24 00	Plumbing Demolition	Make safe, disconnect, drop Plumbing Systems for replacement	82,635	sf	$1.35	$111,557			$44,623	$55,779	$11,156		
02 24 00	Mechanical Demolition	Make safe, disconnect, drop Mechanical Systems for replacement	82,635	sf	$3.25	$268,564			$107,426	$134,282	$26,856		
02 24 00	Mechanical Demolition	Demo existing unit ventilators	50	ea	$325.00	$16,250			$16,250				
02 24 00	Electrical Demolition	Make safe, disconnect, drop Electrcal Systems for replacement	82,635	sf	$1.95	$161,138			$80,569	$80,569			
	Division 02 - TOTALS						**$2,139,157**						
DIVISION 03 - Concrete													
03 01 30	Existing SOG - Vapor Mitigation	Provide topical vapor mitigation	82,635.00	sf	$1.95	$161,138			$53,713	$53,713	$53,713		
03 30 00	Cast-in-Place Concrete	Footings and foundations for vestibule addition	17.78	cyd	$865.00	$15,378		$15,378					
03 30 00	Cast-in-Place Concrete	Existing walls replaced @ Gym / Community room for moisture issue:	44.44	cyd	$1,025.00	$45,556		$45,556					
03 45 00	Concrete Slab on Grade	Concrete slab on grade - Addition Vestibule	100.00	sf	$18.00	$1,800		$1,800					
03 45 00	Concrete Slab on Deck	Concrete slab on Deck - Addition Vestibule	100.00	sf	$22.50	$2,250		$2,250					
03 45 00	Concrete Self leveling	Concrete slab on Deck - Addition Vestibule	100.00	sf	$22.50	$2,250		$2,250					
	Division 03 - TOTALS						**$228,372**						
DIVISION 04 - Masonry													
04 01 20	Maintenance of Unit Masonry - Restoration	Repointing; cracks	< NIC, Ongoing >										
04 01 20	Maintenance of Unit Masonry - Cleaning	Black stains; mildew	< NIC, Ongoing >										
04 01 40	Maintenance of Stone Assemblies - Restoration	Repointing; cracks	< NIC, Ongoing >										
04 01 40	Maintenance of Stone Assemblies - Cleaning	Black stains; mildew	< NIC, Ongoing >										
04 21 00	Clay Unit Masonry	Brick; glazed block @ Vestibule exterior	840.00	sf	$45	$37,800		$37,800					
04 21 00	Clay Unit Masonry	Brick; glazed block @ Moisture infiltration repairs	300.00	sf	$45	$13,500		$13,500					
04 21 00	Clay Unit Masonry	Brick; glazed block @ Unit Ventilator infills - toothed	1,200.00	sf	$95	$114,000			$57,000	$57,000			
04 22 00	Concrete Unit Masonry	Concrete masonry, backup for moisture infiltration repairs	300.00	sf	$31	$9,300		$9,300					
04 22 00	Concrete Unit Masonry	Concrete masonry, CMU penetrations at HVAC installation - Allowance	1.00	ls	$25,000	$25,000			$25,000				
04 23 00	Glass Unit Masonry	Glass block	< Excluded >										
	Division 04 - TOTALS						**$199,600**						

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Totals	Suggested 5-Year Capital Implementation Plan (1) 2027	(2) 2028	(3) 2029	(4) 2030	(5) 2031	Comments / Notes
DIVISION 05 - Metals													
05 12 00	Structural Steel	Structural Steel for added Vestibule	2.00	ton	$7,500	$15,000		$15,000					
05 12 00	Structural Steel - Decking - SOD	Steel Decking 2"	100.00	sf	$8.65	$865		$865					
05 12 00	Structural Steel - Decking - B Deck on roof	Steel Decking 2"	100.00	sf	$6.95	$695		$695					
05 12 00	Structural Steel - Roof infill structure and deck	Structural infill for removed rooftop equipment	82,635.00	sf	$2.75	$227,246			$113,623	$113,623			
05 50 00	Structural Steel - new opening support for new rooftop Mechanical Equipment	New opening support for new rooftop Mechanical Equipment	1.00	ls	$75,000	$75,000			$37,500	$37,500			
05 50 00	Metal Fabrications - Refinishing	Restore existing roof screens - Steel support and screen .	5,725.00	sf	$7.95	$45,514					$45,514		
05 51 00	Metal Stairs	Stairs	< Excluded >										
	Misc Metals - Ladders	Roof access	3.00	ea	$3,500	$10,500				$10,500			
05 52 00	Metal Railings	Pipe railings, tube railings	< Excluded >										
05 55 00	Metal Stair Treads and Nosings	Step nosing	< Excluded >										
	Division 05 - TOTALS						**$374,820**						
DIVISION 06 - Wood, Plastics, and Composites													
06 13 00	Rough Carpentry - Roof Blocking	Roof Blocking	1.00	ls	$65,000	$65,000		$65,000					
06 13 00	Heavy Timber Construction	Wood beams	< Excluded >										
06 40 13	Exterior Architectural Woodwork	Wood, finish carpentry	< Excluded >										
06 40 23	Interior Architectural Woodwork	Wood trim, casing	< Excluded >										
06 41 00	Architectural Wood Casework	Classroom Casework - 12'6" modules	65.00	ea	$8,500	$552,500				$276,250	$276,250		
06 41 00	Architectural Wood Casework	Media Center	1.00	ls	$17,500	$17,500						$17,500	
06 41 00	Architectural Wood Casework	Conference rooms	30.00	lf	$550	$16,500						$16,500	
	Division 06 - TOTALS						**$651,500**						
DIVISION 07 - Thermal and Moisture Protection													
07 31 00	Shingles and Shakes - Asphalt	Asphalt shingles	< Excluded >										
07 31 00	Shingles and Shakes - Slate	Slate shingles; composite	< Excluded >										
07 41 13	Metal Roof Panels	Standing seam system	1,383.00	sf	$65	$89,895		$89,895					
07 42 13	Metal Wall Panels	Metal panel	< Excluded >										
07 42 13	Metal Wall Panels - cleaning	Black stains; mildew	< Excluded >										
07 46 00	Siding Systems	Vinyl siding	< Excluded >										
07 51 00	Built-Up Bituminous Roofing	Asphalt roofing	< Excluded >										
07 52 00	Modified Bituminous Membrane Roofing	SBS Modified bituminous	82,635.00	sf	$29.50	$2,437,733		$2,437,733					
07 53 00	Elastomeric Membrane Roofing	EPDM; single-ply membrane	< Excluded >										
07 60 00	Flashing and Sheet Metal	Flashing	< Included >										
07 71 00	Roof Specialties	Coping, gravel stop, fascia	< Included >										
07 71 23	Manufactured Gutters and Downspouts	Gutter, downspout, leader	< Excluded >										
07 71 29	Manufactured Roof Expansion Joints	Expansion Joints Allowance	1.00	ls	$25,000	$25,000		$25,000					
07 81 00	Applied Fireproofing	Sprayed fire-resistive material (SFRM); fireproofing; intumescent paint	< Excluded >										
07 92 00	Joint Sealants	Sealant; caulk	1.00	ls	$75,000	$75,000		$15,000	$15,000	$15,000	$15,000	$15,000	
07 95 00	Expansion Control	Building joint	1.00	ls	$25,000	$25,000		$25,000					
	Division 07 - TOTALS						**$2,652,628**						
DIVISION 08 - Openings													
08 11 00	Metal Doors and Frames - exterior	HM Frame, FRP Door and Hardware - Remove & Replace existing single door	33.00	ea	$4,250	$140,250					$140,250		
08 11 00	Metal Doors and Frames - exterior	HM Frame, FRP Door and Hardware - Remove & Replace existing Double door	17.00	ea	$6,250	$106,250		$26,563			$79,688		
08 11 00	Metal Doors and Frames - interior	Interior HM Door, Frame & Hardware	30.00	ea	$3,500	$105,000					$105,000		
08 11 00	Access Controls Systems -	Access Control Door Systems - modifications for access control	1.00	LS	$75,000	$75,000					$75,000		
08 14 00	Wood Doors - interior	Modify existing doors for new hardware	1.00	ls	$50,000	$50,000					$50,000		
08 41 13	Aluminum-Framed Entrances and Storefronts	Aluminum storefront - replace	454.00	sf	$125	$56,750		$56,750					
08 41 13	Hardened Entrance Allowance	Ballistic Glazing, Security Windows and Man-trap access control	1.00	ls	$125,000	$125,000		$125,000					
08 51 13	Aluminum Windows	Aluminum window - replace	4,386.25	sf	$95	$416,694					$416,694		
08 62 00	Specialty Doors	Roof Access hatch	3.00	ea	$3,750	$11,250		$11,250					
08 62 00	Unit Skylights	Skylight	< Excluded >										
08 71 00	Door Hardware - interior	Interior Doors and Frames - Replace Hardware with District standard	1.00	ls	$225,000	$225,000					$225,000		
08 81 00	Glass Glazing	Insulated glass; IGU	< Excluded >										
08 90 00	Louvers and Vents	Louver; vent	< Excluded >										
	Division 08 - TOTALS						**$1,311,194**						
DIVISION 09 - Finishes													
09 21 13	Plaster Assemblies	Plaster	< Excluded >										
09 21 16	Gypsum Board Assemblies	Gypsum board - Repairs allowance for Choral and Band rooms	1.00	ls	$2,500	$2,500					$2,500		

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Totals	Suggested 5-Year Capital Implementation Plan (1) 2027	(2) 2028	(3) 2029	(4) 2030	(5) 2031	Comments / Notes
09 21 16	Gypsum Board Assemblies	Plumbing chase walls for fixture replacements	4,480.00	sf	$25.00	$112,000					$112,000		
09 21 16	Gypsum Board Assemblies	Gyp ceilings and soffits - assumes 20% coverage - Historic analysis	16,527.00	sf	$15.00	$247,905			$123,953	$123,953			
09 51 00	Acoustical Ceilings	Acoustical ceiling tile; ACT assumed to provide 75% coverage - Historic analysis	61,976.25	sf	$8.10	$502,008		$50,201	$200,803	$200,803	$50,201		
09 65 00	Ceramic Tile	Ceramic Tile flooring at Gang toilet rooms - fixture replacements	1,600.00	sf	$20.00	$32,000						$32,000	
09 65 13	Resilient Stair Treads and Risers	Rubber stair tread / riser	315.00	lf	$35.00	$11,025						$11,025	
09 65 16	Resilient Base	Vinyl; rubber	12,500.00	lf	$3.45	$43,125						$43,125	
09 65 19	Resilient Tile Flooring -	LVT	70,000.00	sf	$7.10	$497,000						$497,000	
09 65 19	Resilient Tile Flooring - rubber	Rubber tile	1,200.00	sf	$13.00	$15,600		$7,800				$7,800	
09 65 66	Athletic Wood Flooring	Refinish Gym floor, restripe & Logo	6,000.00	sf	$16.50	$99,000						$99,000	
09 66 00	Terrazzo Flooring		< Excluded >										
09 68 00	Carpeting	Carpet - broadloom, tile	4,800.00	sf	$16.50	$79,200		$15,840			$63,360		
09 72 00	Wall Coverings	Vinyl wall covering; wallpaper	< Excluded >										
09 72 00	Wall Coverings	Ceramic tile - replace wet walls for fixture replacements	4,480.00	sf	$18.00	$80,640						$80,640	
09 80 00	Acoustic Treatment	Acoustic panels and treatments allowance - Historic Analysis	1.00	ls	$110,000	$110,000						$110,000	
09 91 13	Exterior Painting	Paint	< Excluded >										
09 91 23	Interior Painting	Paint	61,976.25	sf	$2.65	$164,237		$41,059		$82,119	$41,059		
	Division 09 - TOTALS						**$1,996,240**						
DIVISION 10 - Specialties													
10 22 00	Partitions	Operable partitions, folding	< Excluded >										
10 21 13	Toilet Compartments	Stalls, toilet partitions, compartments	1.00	ls	$30,000	$30,000						$30,000	
10 21 13	Toilet Accessories	Replace toilet accessories at Gang toilets	1.00	ls	$15,400	$15,400						$15,400	
10 26 00	Wall and Door Protection	Corner guard; impact-resistant wall protection; FRP panels	< Excluded >										
10 26 00	Dispplay cases -	Provide display cases in Corridors	2.00	ea	$12,500	$25,000						$25,000	
10 51 13	Metal Lockers	Student Locker replacements	450.00	ea	$325	$146,250						$146,250	
10 00 00	Plastic Lockers	Plastic lockers	< Excluded >										
	Division 10 - TOTALS						**$216,650**						
DIVISION 11 - Equipment													
11 40 00	Foodservice Equipment - Allowance	Update specific equipment - Assumes 50% of new replacement cost	0.50	ls	$650,000	$325,000						$325,000	
11 61 23	Gym Equipment	New Telescoping backboards - electric glass	900.00	sf	$17.95	$16,155						$16,155	
11 61 23	Gym Equipment	New Gym wall pads	2,760.00	sf	$17.95	$49,542						$49,542	
11 68 13	Playground Equipment	Playground equipment - Existing Play Area Upgrades Alowance	1.00	ls	$200,000	$200,000						$200,000	
	Division 11 - TOTALS						**$590,697**						
DIVISION 12 - Furnishings													
12 35 39	Commercial Kitchen Casework	Kitchen casework	< Excluded >										
12 35 50	Educational/Library Casework	Casework - Media Stations	4.00	ea	$7,500	$30,000					$30,000		
12 48 00	Window Treatments	Window Treatments allowance - Historic analysis	1.00	ls	$75,000	$75,000						$75,000	
	Division 12 - TOTALS						**$105,000**						
DIVISION 13 - Special Construction													
13 11 00													
	Division 13 - TOTALS						**$0**						
DIVISION 14 - Conveying Equipment													
14 24 00	Hydraulic Elevators	Elevator - replace existing with MRL units 2 stop each	2.00	EA	$175,000	$350,000			$175,000	$175,000			
	Division 14 - TOTALS						**$350,000**						
DIVISION 21 - Fire Suppression													
21 13 00	Fire Suppression Sprinkler Systems	Fire Water Storage	30,000.00	gal	$ 10.50	$315,000		$315,000					
21 13 00	Fire Suppression Sprinkler Systems	Automatic sprinklers - Building entrance and riser assembly	1.00	ls	$22,500	$22,500		$22,500					
21 13 00	Fire Suppression Sprinkler Systems	Automatic sprinklers	82,635.00	sf	$ 7.10	$586,709			$293,354	$293,354			
21 13 00	Fire Suppression Sprinkler Systems	Electric fire pump	1.00	ls	$80,000	$80,000		$80,000					
21 13 00	Fire Suppression Sprinkler Systems	Fire Pump Building	1.00	ls	$100,000	$100,000		$100,000					
	Division 21 - TOTALS						**$1,104,209**						

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Totals	Suggested 5-Year Capital Implementation Plan (1) 2027	(2) 2028	(3) 2029	(4) 2030	(5) 2031	Comments / Notes
DIVISION 22 - Plumbing													
22 05 00	Plumbing	Domestic Water BF Preventer (4") - replace	1.00	ls	$7,500	$7,500		$7,500					
22 05 00	Plumbing	Stormwater Systems - replace roof drains	1.00	ls	$25,000	$25,000		$25,000					
22 05 00	Remove (2) 4,000 UST's (oil)	Remove UST's - remediation allowance	2.00	allow	$75,000	$150,000					$150,000		
22 05 00	Provide Propane Tanks and Pad	Provide Propane Tanks and Pad with gas entrance to replace existing UST's	1.00	allow	$50,000	$50,000					$50,000		
22 05 00	Provide Propane fired HWH	Replace existing HWH with Propane fired unit(s)	2.00	allow	$22,500	$45,000			$45,000				
22 05 00	Utility Distribution - Gas	Provide Gas piping to new Gas fired Equipment	1.00	ls	$40,000	$40,000		$40,000					
22 05 00	Plumbing Fixtures	Plumbing fixture - Replace plumbing fixtures, hangers and rough plumbing at Gang toilets	1.00	ls	$225,000	$225,000					$225,000		
	Division 22 - TOTALS						**$542,500**						
DIVISION 23 - Heating, Ventilating, and Air Conditioning (HVAC)													
23 21 16	Hydronic Specialties	New Boilers - Replace existing with reduced size Propane fired system - VRF backup	< Recently Replaced >			$0							
23 21 16	Hydronic Specialties	Boiler room fit-up	1.00	ea	$50,000	$50,000					$50,000		
23 21 23	Hydronic Pumps	Hot Water Pumps - Replace	4.00	ea	$7,500	$30,000					$30,000		
23 21 23	Hydronic Pumps	Hot Water Pumps - Replace	2.00	ea	$22,500	$45,000					$45,000		
23 21 23	Hydronic Systems	Glycol system, injector, air separator, make-up, pumps, glycol	1.00	ls	$45,000	$45,000					$45,000		
23 21 23	Hydronic Systems	Perimeter Ceiling mounted Radiant Panels	2,100.00	LF	$165	$346,500			$173,250	$173,250			
23 21 23	Hydronic Systems	Modify existing hydronic loop to accommodate Perimeter Ceiling mounted Radiant Panels	1,050.00	LF	$95	$99,750			$49,875	$49,875			
23 21 23	Hydronic Systems	Replace existing water convectors at vesttibules and corridors	25.00	ea	$5,250	$131,250		$32,813	$32,813	$65,625			
23 21 23	Hydronic Systems	Replace existing water convectors at Restrooms	8.00	ea	$3,500	$28,000				$28,000			
23 21 23	Hydronic Systems	Replace existing hydronic unit heaters at Mechanical areas	5.00	ea	$4,500	$22,500				$22,500			
23 70 00	Mechanical Systems	VRF Heat pumps provided throughout school	82,635.00	SF	$25.00	$2,065,875			$1,032,938	$1,032,938			
23 70 00	Air Handling Equipment	Packaged RTU Gym - replace with curb adapter	9,150.00	cfm	$23.95	$219,143			$109,571	$109,571			
23 70 00	Air Handling Equipment	Packaged RTU 2nd Gym / Auditorium - replace with curb adapter	16,000.00	cfm	$28.50	$456,000			$228,000	$228,000			
23 70 00	Air Handling Equipment	Packaged RTU Stage - replace with curb adapter	4,000.00	cfm	$23.95	$95,800			$47,900	$47,900			
23 70 00	Air Handling Equipment	Packaged RTU Café - replace with curb adapter	3,700.00	cfm	$28.95	$107,115			$53,558	$53,558			
23 70 00	Air Handling Equipment	Packaged RTU Admin - replace with curb adapter	4,000.00	cfm	$28.95	$115,800			$57,900	$57,900			
23 70 00	Air Handling Equipment	Packaged RTU Art - replace with curb adapter	1,400.00	cfm	$32.00	$44,800			$22,400	$22,400			
23 70 00	Air Handling Equipment	Packaged RTU Library / media - replace with curb adapter	4,700.00	cfm	$28.95	$136,065			$68,033	$68,033			
23 70 00	Air Handling Equipment	Packaged RTU Computer Lab - replace with curb adapter	1,200.00	cfm	$28.95	$34,740			$17,370	$17,370			
23 70 00	Air Handling Equipment	DOAS Units @ Classrooms	20,700.00	cfm	$32.00	$662,400			$331,200	$331,200			
23 70 00	Air Handling Equipment	Exhaust Fans - replace General	4,880.00	cfm	$7.95	$38,796			$19,398	$19,398			
23 70 00	Air Handling Equipment	Exhaust Fans - replace Toilet Rooms	8,800.00	cfm	$4.65	$40,920			$20,460	$20,460			
23 70 00	Air Handling Equipment	Exhaust Fans - Kitchen replace	2.00	ea	$9,500	$19,000			$9,500	$9,500			
23 70 00	Air Handling Equipment	Ductless Split for IT Closets	3.00	ls	$15,000	$45,000			$22,500	$22,500			
23 70 00	Ductwork & Distribution	Modify existing ductwork to coordinate with new equipment	1.00	ls	$250,000	$250,000			$125,000	$125,000			
23 70 00	Ductwork & Distribution	Ductwork - cleaning	1.00	ls	$25,000	$25,000			$12,500	$12,500			
23 09 23	Building Management System / Controls	Controls for new Mechanical Systems - Installation over CIP premium	82,635.00	sf	$10	$826,350			$275,450	$275,450	$275,450		
23 90 00	Mechanical Systems - Testing & Balancing	Testing & Balancing	82,635.00	sf	$0.75	$61,976				$30,988	$30,988		
23 90 00	Mechanical Systems - Other	System Start-ups	82,635.00	sf	$0.20	$16,527				$8,264	$8,264		
23 90 00	Mechanical Systems - Other	Coordination & Management - premium for phased installations	1.00	ls	$175,000	$175,000			$87,500	$87,500			
23 90 00	Mechanical Systems - Other	Permits and Fees	< Excluded >										
23 90 00	Mechanical Systems - Other	Coring & Patching / Firestopping	1.00	ls	$17,500	$17,500			$8,750	$8,750	$1		
23 90 00	Mechanical Systems - Other	Hoisting & Rigging / Floor Loading	1.00	ls	$75,000	$75,000			$37,500	$37,500			
23 90 00	Mechanical Systems - Other	Shop Drawings & Submittals	1.00	ls	$2,500	$2,500			$1,250	$1,250			
23 90 00	Mechanical Systems - Other	BIM Coordination & Mgmt	1.00	ls	$5,000	$5,000			$2,500	$2,500			
23 90 00	Mechanical Systems - Other	Record Drawings / as builts	1.00	ls	$3,500	$3,500			$1,750	$1,750			
23 90 00	Mechanical Systems - Other	Equipment Start up and Inspection - phased premium	1.00	ls	$17,500	$17,500			$8,750	$8,750			
23 90 00	Mechanical Systems - Other	Access panels - furnish only	1.00	ls	$7,500	$7,500			$3,750	$3,750			
23 90 00	Mechanical Systems - Other	Commissioning Assistance	1.00	ls	$17,500	$17,500			$8,750	$8,750			
	Division 23 - TOTALS						**$6,380,307**						

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Totals	Suggested 5-Year Capital Implementation Plan (1) 2027	(2) 2028	(3) 2029	(4) 2030	(5) 2031	Comments / Notes
DIVISION 26 - Electrical													
26 51 00	Interior Lighting	Lighting: Provide lighting at Elevator shafts	2.00	ea	$1,250	$2,500				$2,500			
26 52 00	Emergency Lighting	Replace /Add as needed	75.00	ea	$395	$29,625					$29,625		
26 52 00	Emergency Power	Generator	< Excluded >			$0							
23 64 00	Power - New Service Entrance - Electrical Gear	Power Distribution MDP upgrade, feeders and Distribution panels upgrade for new Mechanical Equipment	1.00	LS	$925,000	$925,000			$925,000				
23 64 00	Lighting - Remove, Clean Replace existing LED	Allowance	82,635.00	SF	$2.95	$243,773				$243,773			
23 64 00	Wiring & Power distribution	General Recepticles - upgrades - add 25%	82,635.00	SF	$1.50	$123,953				$123,953			
	Division 26 - TOTALS						**$1,324,851**						
DIVISION 27 - Communications													
27 11 23	Communications Cable Management & Ladder Rack	Wiring, cable management	< Included below >										
27 00 00	Data Communications - Upgrade communications cabling	Network, Data, Wireless, etc.	82,635.00	sf	$5.00	$413,175				$206,588	$206,588		
27 00 00	PA Systems / Master Clock	Telephones& Communications	82,635.00	sf	$3.85	$318,145				$159,072	$159,072		
27 41 00	Audio-Video Systems	Theater, Auditorium, etc.	< Excluded >										
27 51 00	Distributed Audio-Video Communications Systems	Public Address,	< Excluded >										
	Division 27 - TOTALS						**$731,320**						
DIVISION 28 - Electronic Safety and Security													
28 20 00	Video Surveillance - Upgrade, replace and add cameras throughout facility	Cameras, Video, etc.	100.00	ea	$1,850	$185,000					$185,000		
28 46 20	Access Control - Add access control to select locations	Access Control	20.00	ea	$9,500	$190,000					$190,000		
28 46 20	Security System	Security - intrusion detection	82,635.00	sf	$0.75	$61,976					$61,976		
26 52 13	Fire Alarm Systems -	Fire Alarm Systems - Update Head end and Devices	82,635.00	sf	$3.45	$285,091				$142,545	$142,545		
	Division 28 - TOTALS						**$722,067**						
DIVISION 32 - Exterior Improvements													
02 40 00	Asphalt Paving Demolition - Sawcut and remove pavement for replacement	Paving Demolition	151.11	cyd	$45	$6,800						$6,800	
02 40 00	Sidewalks Demolition - Sawcut and remove Concrete for replacement	Sidewalks Demolition	88.89	cyd	$55	$4,889						$4,889	
32 12 16	Asphalt Paving - Construct new Bus Drop-off asphalt paving using 4" bituminous on 10" base	Paving	10,000.00	sf	$11	$105,556						$105,556	
32 12 16	Asphalt Paving - Provide bituminous curbs	Paving	450.00	lf	$18	$8,100						$8,100	
32 13 13	Concrete Sidewalks with ADA Ramps	Paving	4,000.00	sf	$14	$55,000						$55,000	
32 13 13	Concrete Sidewalks replace 100 lf	Paving	500.00	sf	$18	$9,000						$9,000	
32 13 13	Concrete Sidewalks replace Northeast corner - allowance	Paving	1.00	ls	$25,000	$25,000						$25,000	
32 13 13	Concrete Paver Sidewalks - New entry plaza	Paving	1,750.00	sf	$30	$52,500		$52,500					
32 13 73	Concrete Curbing - rip and replace CIP	Curbing	500.00	lf	$50	$25,000						$25,000	
32 13 73	Site lighting - Bollards, conduit & conductors	Site Lighting	10.00	ea	$3,750	$37,500		$18,750				$18,750	
32 18 00	Landscape retaining walls - remove and repir segments as needed.	Landscape	1,000.00	sf	$150	$150,000						$150,000	
32 31 00	Metal Fence	Fencing	< Excluded >			$0							
32 93 00	Plants	Exterior plantings	< Excluded >			$0							
32 00 00	Site Furnishings	Trash Recepts	4.00	ea	$1,250	$5,000						$5,000	
32 00 00	Site Furnishings	Steel Pipe Bollard	8.00	ea	$1,375	$11,000						$11,000	
32 00 00	Site Furnishings	Sie Benches	4.00	ea	$2,100	$8,400						$8,400	
32 00 00	Site Furnishings	Trash Recepts	4.00	ea	$1,250	$5,000						$5,000	
	Division 32 - TOTALS						**$508,744**						
DIVISION 33 - Utilities													
33 05 00	Utility Structures	Grease / Oil Separator	1.00	ls	$ 2,500.00	$2,500			$2,500				
33 14 00	Sanitary Sewerage	Septic / Sanitary	1.00	ls	$ 5,000.00	$5,000			$5,000				
	Inspection, testing & treatment	Existing Domestic well	1.00	ls	$10,000	$10,000			$10,000				
	Fire Water Service	new 6" Fire Water service from Fire Pump to Building Entrance	150.00	lf	$125	$18,750			$18,750				
33 31 00	Sanitary Sewerage	Site Sanitary	< Excluded >										
33 42 00	Storm Drainage	Storm Structures- Replace catch basins and piping as needed - Allowance	1.00	LS	$225,000	$225,000			$90,000	$90,000	$45,000		
33 52 00	Hydrocarbon Transmission and Distribution	Site Gas											
33 71 00	Underground Electric Work	Site Electrical - New incoming electrical Service allowance	1.00	LS	$150,000	$150,000			$150,000				
		Lightning Protection / Service Ground	< Excluded >										
	Division 33 - TOTALS						**$411,250**						
Direct Construction Costs							**$25,932,706**	**$5,249,601**	**$6,407,067**	**$6,606,230**	**$4,914,232**	**$2,755,577**	
							$25,932,706						
Indirect Construction Costs													

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Totals	Suggested 5-Year Capital Implementation Plan (1) 2027	(2) 2028	(3) 2029	(4) 2030	(5) 2031	Comments / Notes
8.50%	DESIGN AND ESTIMATING ALLOWANCE						$2,204,280	$446,216	$544,601	$561,530	$417,710	$234,224	
3.00%	CONSTRUCTION CONTINGENCY						$777,981	$157,488	$192,212	$198,187	$147,427	$82,667	
1.23%	BUILDING PERMIT, STATE EDUCATION FUND, FM REVIEW FEE						$317,935	$64,360	$78,551	$80,992	$60,248	$33,783	
LS	GENERAL CONDITIONS (CONSTRUCTION MANAGER STAFFING)		$110,000	/ Month			$6,600,000	$1,320,000	$1,320,000	$1,320,000	$1,320,000	$1,320,000	
1.00%	PROFESSIONAL AND GENERAL LIABILITY INS						$358,329	$72,377	$85,424	$87,669	$68,596	$44,263	
0.25%	BUILDERS RISK						$64,832	$13,124	$16,018	$16,516	$12,286	$6,889	
3.00%	CM FEE						$876,987	$177,530	$216,673	$223,408	$166,189	$93,188	
1.00%	PERFORMANCE AND PAYMENT BONDS						$1,113,992	$225,021	$265,816	$272,836	$213,201	$137,118	
4.00%	ANNUAL ESCALATION TO MIDPOINT						$7,335,709	$927,086	$1,460,218	$1,873,474	$1,756,773	$1,318,158	
	PRECONSTRUCTION						$150,000	$150,000					
Indirect Construction Costs							**$19,800,044**	**$3,553,202**	**$4,179,512**	**$4,634,611**	**$4,162,429**	**$3,270,290**	
Total Construction Costs							**$45,732,751**						
Soft Costs @ 15%							**$6,859,913**						
	Architect Fees			< Included >									
	Owners Project Manager			< Included >									
	Commissioning			< Included >									
	Town Legal Services			< Included >									
	Advertising / Legal Notices			< Included >									
	Bid Document Reproduction			< Included >									
	Threshold Peer Review			< Included >									
	Environmental Consultant (Phase I & II)			< Included >									
	Testing and Inspection			< Included >									
	Environmental Monitoring			< Included >									
	Utility Charges (Eversource)			< Included >									
	Furniture, Fixtures and Equipment			< Included >									
	Bond Council Fees			< Included >									
	Owner Contingency			< Included >									
Total Project Costs							**$52,592,663**						

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 01 - General Requirements								
01 00 00	Temprary Site Services - General Requirements - Phased Occupied Renovation		82,635.00	SF	$15	$1,210,603		
01 00 00	Temprary Site Services - Student Swing Space accommodations / protection - No Portable Classrooms		24.00	MO	$25,000	$600,000		
01 00 00	Temporary Office Facilities		24.00	mo	$3,500	$84,000		
01 00 00	IT Monthly Cost		24.00	mo	$4,500	$108,000		
01 00 00	Reprographics, Postage, Photos		24.00	mo	$350	$8,400		
01 00 00	Indoor Air Quality/Infectious Controls		24.00	mo	$2,500	$60,000		
01 00 00	Weather / Winter Conditions		24.00	mo	$1,500	$36,000		
01 00 00	Temp Toilets Rental, Service and Disposal		24.00	mo	$500	$12,000		
01 00 00	Access, Scaffolding and Hoisting		< In Trades >			$0		
01 00 00	Temporary Safety		24.00	mo	$1,000	$24,000		
01 00 00	Temporary Protection		24.00	mo	$1,000	$24,000		
01 00 00	Site Logistics		24.00	mo	$1,500	$36,000		
01 00 00	Clean Up & Debris Management		24.00	mo	$4,000	$96,000		
	Division 01 - TOTALS						***$ 2,299,003***	
DIVISION 02 - Existing Conditions								
02 26 00	Asbestos Abatement - Roofing	Asbestos abatement for roof - Allowance	82,635	sf	$1.25	$103,294		
02 26 00	Exterior Haz-materials Abatemet	Haz-mat abatement for exterior envelope - Allowance	1	ls	$500,000.00	$500,000		
02 26 00	Interior Haz-materials Abatemet	Haz-mat abatement for Interior - Allowance	1	ls	$325,000.00	$325,000		
02 24 00	Roof Demolition	Rip roof for replacement	82,635	sf	$5.45	$450,361		
02 24 00	Slab Demo for Contribution pavers	Demolish slabs for placement of contribution pavers	1,750	sf	$10.50	$18,375		
02 24 00	Masonry Demolition	Demolish masonry partitions for Boiler equipment & flues	1	ls	$10,000.00	$10,000		
02 24 00	Aluminum Windows-	Aluminum window - demolish and protect for replacement	4,386.25	sf	$10	$43,863		
02 24 00	Aluminum-Framed Entrances and Storefronts	Aluminum storefront - Demolish & Protect	454.00	sf	$20	$9,080		
02 24 00	Ceilings Demolition	Demolish ceilings for Mechanical Systems replacements	82,635	sf	$0.65	$53,713		
02 24 00	Finishes demo - Gang toilet rooms	Demolish ceilings for Mechanical Systems replacements	1,600	sf	$8.00	$12,800		
02 24 00	Specialties Demolition	Demo basketball backstops for rreplacement	2	ea	$725.00	$1,450		
02 24 00	FP Demolition	Make safe, disconnect, drop Existing Domestic fed FP Systems for replacement	82,635	sf	$0.65	$53,713		
02 24 00	Plumbing Demolition	Make safe, disconnect, drop Plumbing Systems for replacement	82,635	sf	$1.35	$111,557		
02 24 00	Mechanical Demolition	Make safe, disconnect, drop Mechanical Systems for replacement	82,635	sf	$3.25	$268,564		
02 24 00	Mechanical Demolition	Demo existing unit ventilators	50	ea	$325.00	$16,250		
02 24 00	Electrical Demolition	Make safe, disconnect, drop Electrcal Systems for replacement	82,635	sf	$1.95	$161,138		
	Division 02 - TOTALS						***$ 2,139,157***	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 03 - Concrete								
03 01 30	Existing SOG - Vapor Mitigation	Provide topical vapor mitigation	82,635.00	sf	$1.95	$161,138		
03 30 00	Cast-in-Place Concrete	Footings and foundations for vestibule addition	17.78	cyd	$865.00	$15,378		
03 30 00	Cast-in-Place Concrete	Existing walls replaced @ Gym / Community room for moisture issue:	44.44	cyd	$1,025.00	$45,556		
03 45 00	Concrete Slab on Grade	Concrete slab on grade - Addition Vestibule	100.00	sf	$18.00	$1,800		
03 45 00	Concrete Slab on Deck	Concrete slab on Deck - Addition Vestibule	100.00	sf	$22.50	$2,250		
03 45 00	Concrete Self leveling	Concrete slab on Deck - Addition Vestibule	100.00	sf	$22.50	$2,250		
	Division 03 - TOTALS						***$ 228,372***	
DIVISION 04 - Masonry								
04 01 20	Maintenance of Unit Masonry - Restoration	Repointing; cracks	< NIC, Ongoing >					
04 01 20	Maintenance of Unit Masonry - Cleaning	Black stains; mildew	< NIC, Ongoing >					
04 01 40	Maintenance of Stone Assemblies - Restoration	Repointing; cracks	< NIC, Ongoing >					
04 01 40	Maintenance of Stone Assemblies - Cleaning	Black stains; mildew	< NIC, Ongoing >					
04 21 00	Clay Unit Masonry	Brick; glazed block @ Vestibule exterior	840.00	sf	$45	$37,800		
04 21 00	Clay Unit Masonry	Brick; glazed block @ Moisture infiltration repairs	300.00	sf	$45	$13,500		
04 21 00	Clay Unit Masonry	Brick; glazed block @ Unit Ventilator infills - toothed	1,200.00	sf	$95	$114,000		
04 22 00	Concrete Unit Masonry	Concrete masonry, backup for moisture infiltration repairs	300.00	sf	$31	$9,300		
04 22 00	Concrete Unit Masonry	Concrete masonry, CMU penetrations at HVAC installation - Allowance	1.00	ls	$25,000	$25,000		
04 23 00	Glass Unit Masonry	Glass block	< Excluded >					
	Division 04 - TOTALS						***$ 199,600***	
DIVISION 05 - Metals								
05 12 00	Structural Steel	Structural Steel for added Vestibule	2.00	ton	$7,500	$15,000		
05 12 00	Structural Steel - Decking - SOD	Steel Decking 2"	100.00	sf	$8.65	$865		
05 12 00	Structural Steel - Decking - B Deck on roof	Steel Decking 2"	100.00	sf	$6.95	$695		
05 12 00	Structural Steel - Roof infill structure and deck	Structural infoill for removed rooftop equipment	82,635.00	sf	$2.75	$227,246		
05 50 00	Structural Steel - new opening support for new rooftop Mechanical Equipment	New opening support for new rooftop Mechanical Equipment	1.00	ls	$75,000	$75,000		
05 50 00	Metal Fabrications - Refinishing	Restore existing roof screens - Steel support and screen .	5,725.00	sf	$7.95	$45,514		
05 51 00	Metal Stairs	Stairs	< Excluded >					
	Misc Metals - Ladders	Roof access	3.00	ea	$3,500	$10,500		
05 52 00	Metal Railings	Pipe railings, tube railings	< Excluded >					
05 55 00	Metal Stair Treads and Nosings	Step nosing	< Excluded >					
	Division 05 - TOTALS						***$ 374,820***	
DIVISION 06 - Wood, Plastics, and Composites								
06 13 00	Rough Carpentry - Roof Blocking	Roof Blocking	1.00	ls	$65,000	$65,000		
06 13 00	Heavy Timber Construction	Wood beams	< Excluded >					
06 40 13	Exterior Architectural Woodwork	Wood, finish carpentry	< Excluded >					
06 40 23	Interior Architectural Woodwork	Wood trim, casing	< Excluded >					
06 41 00	Architectural Wood Casework	Classroom Casework - 12'6" modules	65.00	ea	$8,500	$552,500		
06 41 00	Architectural Wood Casework	Media Center	1.00	ls	$17,500	$17,500		
06 41 00	Architectural Wood Casework	Conference rooms	30.00	lf	$550	$16,500		
	Division 06 - TOTALS						***$ 651,500***	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 07 - Thermal and Moisture Protection								
07 31 00	Shingles and Shakes - Asphalt	Asphalt shingles		< Excluded >				
07 31 00	Shingles and Shakes - Slate	Slate shingles; composite		< Excluded >				
07 41 13	Metal Roof Panels	Standing seam system	1,383.00	sf	$65	$89,895		
07 42 13	Metal Wall Panels	Metal panel		< Excluded >				
07 42 13	Metal Wall Panels - cleaning	Black stains; mildew		< Excluded >				
07 46 00	Siding Systems	Vinyl siding		< Excluded >				
07 51 00	Built-Up Bituminous Roofing	Asphalt roofing		< Excluded >				
07 52 00	Modified Bituminous Membrane Roofing	SBS Modified bituminous	82,635.00	sf	$29.50	$2,437,733		
07 53 00	Elastomeric Membrane Roofing	EPDM; single-ply membrane		< Excluded >				
07 60 00	Flashing and Sheet Metal	Flashing		< Included >				
07 71 00	Roof Specialties	Coping, gravel stop, fascia		< Included >				
07 71 23	Manufactured Gutters and Downspouts	Gutter, downspout, leader		< Excluded >				
07 71 29	Manufactured Roof Expansion Joints	Expansion Joints Allowance	1.00	ls	$25,000	$25,000		
07 81 00	Applied Fireproofing	Sprayed fire-resistive material (SFRM); fireproofing; intumescent paint		< Excluded >				
07 92 00	Joint Sealants	Sealant; caulk	1.00	ls	$75,000	$75,000		
07 95 00	Expansion Control	Building joint	1.00	ls	$25,000	$25,000		
	Division 07 - TOTALS						***$ 2,652,628***	
DIVISION 08 - Openings								
08 11 00	Metal Doors and Frames - exterior	HM Frame, FRP Door and Hardware - Remove & Replace existing single door	33.00	ea	$4,250	$140,250		
08 11 00	Metal Doors and Frames - exterior	HM Frame, FRP Door and Hardware - Remove & Replace existing Double door	17.00	ea	$6,250	$106,250		
08 11 00	Metal Doors and Frames - interior	Interior HM Door, Frame & Hardware	30.00	ea	$3,500	$105,000		
08 11 00	Access Controls Systems -	Access Control Door Systems - modifications for access control	1.00	LS	$75,000	$75,000		
08 14 00	Wood Doors - interior	Modify existing doors for new hardware	1.00	ls	$50,000	$50,000		
08 41 13	Aluminum-Framed Entrances and Storefronts	Aluminum storefront - replace	454.00	sf	$125	$56,750		
08 41 13	Hardened Entrance Allowance	Ballistic Glazing, Security Windows and Man-trap access control	1.00	ls	$125,000	$125,000		
08 51 13	Aluminum Windows	Aluminum window - replace	4,386.25	sf	$95	$416,694		
08 62 00	Specialty Doors	Roof Access hatch	3.00	ea	$3,750	$11,250		
08 62 00	Unit Skylights	Skylight		< Excluded >				
08 71 00	Door Hardware - interior	Interior Doors and Frames - Replace Hardware with District standard	1.00	ls	$225,000	$225,000		
08 81 00	Glass Glazing	Insulated glass; IGU		< Excluded >				
08 90 00	Louvers and Vents	Louver; vent		< Excluded >				
	Division 08 - TOTALS						***$ 1,311,194***	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 09 - Finishes								
09 21 13	Plaster Assemblies	Plaster		< Excluded >				
09 21 16	Gypsum Board Assemblies	Gypsum board - Repairs allowance for Choral and Band roos	1.00	ls	$2,500	$2,500		
09 21 16	Gypsum Board Assemblies	Plumbing chase walls for fixture replacements	4,480.00	sf	$25.00	$112,000		
09 21 16	Gypsum Board Assemblies	Gyp ceilings and soffits - assumes 20% coverage - Historic analysis	16,527.00	sf	$15.00	$247,905		
09 51 00	Acoustical Ceilings	Acoustical ceiling tile; ACT assumed to provide 75% coverage - Historic analysis	61,976.25	sf	$8.10	$502,008		
09 65 00	Ceramic Tile	Ceramic Tile flooring at Gang toilet rooms - fixture replacements	1,600.00	sf	$20.00	$32,000		
09 65 13	Resilient Stair Treads and Risers	Rubber stair tread / riser	315.00	lf	$35.00	$11,025		
09 65 16	Resilient Base	Vinyl; rubber	12,500.00	lf	$3.45	$43,125		
09 65 19	Resilient Tile Flooring -	LVT	70,000.00	sf	$7.10	$497,000		
09 65 19	Resilient Tile Flooring - rubber	Rubber tile	1,200.00	sf	$13.00	$15,600		
09 65 66	Athletic Wood Flooring	Refinish Gym floor, restripe & Logo	6,000.00	sf	$16.50	$99,000		
09 66 00	Terrazzo Flooring			< Excluded >				
09 68 00	Carpeting	Carpet - broadloom, tile	4,800.00	sf	$16.50	$79,200		
09 72 00	Wall Coverings	Vinyl wall covering; wallpaper		< Excluded >				
09 72 00	Wall Coverings	Ceramic tile - replace wet walls for fixture replacements	4,480.00	sf	$18.00	$80,640		
09 80 00	Acoustic Treatment	Acoustic panels and treatments allowance - Historic Analysis	1.00	ls	$110,000	$110,000		
09 91 13	Exterior Painting	Paint		< Excluded >				
09 91 23	Interior Painting	Paint	61,976.25	sf	$2.65	$164,237		
	Division 09 - TOTALS						***$ 1,996,240***	
DIVISION 10 - Specialties								
10 22 00	Partitions	Operable partitions, folding		< Excluded >				
10 21 13	Toilet Compartments	Stalls, toilet partitions, compartments	1.00	ls	$30,000	$30,000		
10 21 13	Toilet Accessories	Replace toilet accessories at Gang toilets	1.00	ls	$15,400	$15,400		
10 26 00	Wall and Door Protection	Corner guard; impact-resistant wall protection; FRP panels		< Excluded >				
10 26 00	Dispplay cases -	Provide display cases in Corridors	2.00	ea	$12,500	$25,000		
10 51 13	Metal Lockers	Student Locker replacements	450.00	ea	$325	$146,250		
10 00 00	Plastic Lockers	Plastic lockers		< Excluded >				
	Division 10 - TOTALS						***$ 216,650***	
DIVISION 11 - Equipment								
11 40 00	Foodservice Equipment - Allowance	Update specific equipment - Assumes 50% of new replacement cost	0.50	ls	$650,000	$325,000		
11 61 23	Gym Equipment	New Telescoping backboards - electric glass	6.00	ea	$6,950.00	$41,700		
11 61 23	Gym Equipment	New Gym wall pads	2,760.00	sf	$17.95	$49,542		
11 68 13	Playground Equipment	Playground equipment - Existing Play Area Upgrades Alowance	1.00	ls	$200,000	$200,000		
	Division 11 - TOTALS						***$ 616,242***	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 12 - Furnishings								
12 35 39	Commercial Kitchen Casework	Kitchen casework	< Excluded >					
12 35 50	Educational / Library Casework	Casework - Media Stations	4.00	ea	$7,500	$30,000		
12 48 00	Window Treatments	Window Treatments allowance - Historic analysis	1.00	ls	$75,000	$75,000		
	Division 12 - TOTALS						***$ 105,000***	
DIVISION 13 - Special Construction								
13 11 00								
	Division 13 - TOTALS						***$ -***	
DIVISION 14 - Conveying Equipment								
14 24 00	Hydraulic Elevators	Elevator - replace existing with MRL units 2 stop each	2.00	EA	$175,000	$350,000		
	Division 14 - TOTALS						***$ 350,000***	
DIVISION 21 - Fire Suppression								
21 13 00	Fire Suppression Sprinkler Systems	Fire Water Storage	30,000.00	gal	$10.50	$315,000		
21 13 00	Fire Suppression Sprinkler Systems	Automatic sprinklers - Building entrance and riser assembly	1.00	ls	$22,500	$22,500		
21 13 00	Fire Suppression Sprinkler Systems	Automatic sprinklers	82,635.00	sf	$7.10	$586,709		
21 13 00	Fire Suppression Sprinkler Systems	Electric fire pump	1.00	ls	$80,000	$80,000		
21 13 00	Fire Suppression Sprinkler Systems	Fire Pump Building	1.00	ls	$100,000	$100,000		
	Division 21 - TOTALS						***$ 1,104,209***	
DIVISION 22 - Plumbing								
22 05 00	Plumbing	Domestic Water BF Preventer (4") - replace	1.00	ls	$7,500	$7,500		
22 05 00	Plumbing	Stormwater Systems - replace roof drains	1.00	ls	$25,000	$25,000		
22 05 00	Remove (2) 4,000 UST's (oil)	Remove UST's - remediation allowance	2.00	allow	$75,000	$150,000		
22 05 00	Provide Propane Tanks and Pad	Provide Propane Tanks and Pad with gas entrance to replace existing UST's	1.00	allow	$50,000	$50,000		
22 05 00	Provide Propane fired HWH	Replace existing HWH with Propane fired unit(s)	2.00	allow	$22,500	$45,000		
22 05 00	Utility Distribution - Gas	Provide Gas piping to new Gas fired Equipment	1.00	ls	$40,000	$40,000		
22 05 00	Plumbing Fixtures	Plumbing fixture - Replace plumbing fixtures, hangers and rough plumbing at Gang toilets	1.00	ls	$225,000	$225,000		
	Division 22 - TOTALS						***$ 542,500***	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 23 - Heating, Ventilating, and Air Conditioning (HVAC)								
23 21 16	Hydronic Specialties	New Boilers - Replace existing with reduced size Propane fired system - VRF backup	< Recently Replaced >			$0		
23 21 16	Hydronic Specialties	Boiler room fit-up	1.00	ea	$50,000	$50,000		
23 21 23	Hydronic Pumps	Hot Water Pumps - Replace	4.00	ea	$7,500	$30,000		
23 21 23	Hydronic Pumps	Hot Water Pumps - Replace	2.00	ea	$22,500	$45,000		
23 21 23	Hydronic Systems	Glycol system, injector, air separator, make-up, pumps, glycol	1.00	ls	$45,000	$45,000		
23 21 23	Hydronic Systems	Perimeter Ceiling mounted Radiant Panels	2,100.00	LF	$165	$346,500		
23 21 23	Hydronic Systems	Modify existing hydronic loop to accommodate Perimeter Ceiling mounted Radiant Panels	1,050.00	LF	$95	$99,750		
23 21 23	Hydronic Systems	Replace existing water convectors at vesttibules and corridors	25.00	ea	$5,250	$131,250		
23 21 23	Hydronic Systems	Replace existing water convectors at Restrooms	8.00	ea	$3,500	$28,000		
23 21 23	Hydronic Systems	Replace existing hydronic unit heaters at Mechanical areas	5.00	ea	$4,500	$22,500		
23 70 00	Mechanical Systems	VRF Het pumps provided throughout school	82,635.00	SF	$25.00	$2,065,875		
23 70 00	Air Handling Equipment	Packaged RTU Gym - replace with curb adapter	9,150.00	cfm	$23.95	$219,143		
23 70 00	Air Handling Equipment	Packaged RTU 2nd Gym / Auditorium - replace with curb adapter	16,000.00	cfm	$28.50	$456,000		
23 70 00	Air Handling Equipment	Packaged RTU Stage - replace with curb adapter	4,000.00	cfm	$23.95	$95,800		
23 70 00	Air Handling Equipment	Packaged RTU Café - replace with curb adapter	3,700.00	cfm	$28.95	$107,115		
23 70 00	Air Handling Equipment	Packaged RTU Admin - replace with curb adapter	4,000.00	cfm	$28.95	$115,800		
23 70 00	Air Handling Equipment	Packaged RTU Art - replace with curb adapter	1,400.00	cfm	$32.00	$44,800		
23 70 00	Air Handling Equipment	Packaged RTU Library / media - replace with curb adapter	4,700.00	cfm	$28.95	$136,065		
23 70 00	Air Handling Equipment	Packaged RTU Computer Lab - replace with curb adapter	1,200.00	cfm	$28.95	$34,740		
23 70 00	Air Handling Equipment	DOAS Units @ Classrooms	20,700.00	cfm	$32.00	$662,400		
23 70 00	Air Handling Equipment	Exhaust Fans - replace General	4,880.00	cfm	$7.95	$38,796		
23 70 00	Air Handling Equipment	Exhaust Fans - replace Toilet Rooms	8,800.00	cfm	$4.65	$40,920		
23 70 00	Air Handling Equipment	Exhaust Fans - Kitchen replace	2.00	ea	$9,500	$19,000		
23 70 00	Air Handling Equipment	Ductless Split for IT Closets	3.00	ls	$15,000	$45,000		
23 70 00	Ductwork & Distribution	Modify existing ductwork to coordinate with new equipment	1.00	ls	$250,000	$250,000		
23 70 00	Ductwork & Distribution	Ductwork - cleaning	1.00	ls	$25,000	$25,000		
						$0		
23 09 23	Building Management System / Controls	Controls for new Mechanical Systems - Installation over 5 years premium	82,635.00	sf	$10	$826,350		
23 90 00	Mechanical Systems - Testing & Balancing	Testing & Balancing	82,635.00	sf	$0.75	$61,976		
23 90 00	Mechanical Systems - Other	System Start-ups	82,635.00	sf	$0.20	$16,527		
23 90 00	Mechanical Systems - Other	Coordination & Management - premium for phased installations	1.00	ls	$175,000	$175,000		
23 90 00	Mechanical Systems - Other	Permits and Fees	< Excluded >					
23 90 00	Mechanical Systems - Other	Coring & Patching / Firestopping	1.00	ls	$17,500	$17,500		
23 90 00	Mechanical Systems - Other	Hoisting & Rigging / Floor Loading	1.00	ls	$75,000	$75,000		
23 90 00	Mechanical Systems - Other	Shop Drawings & Submittals	1.00	ls	$2,500	$2,500		
23 90 00	Mechanical Systems - Other	BIM Coordination & Mgmt	1.00	ls	$5,000	$5,000		
23 90 00	Mechanical Systems - Other	Record Drawings / as builts	1.00	ls	$3,500	$3,500		
23 90 00	Mechanical Systems - Other	Equipment Start up and Inspection - phased premium	1.00	ls	$17,500	$17,500		

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
23 90 00	Mechanical Systems - Other	Access panels - furnish only	1.00	ls	$7,500	$7,500		
23 90 00	Mechanical Systems - Other	Commissioning Assistance	1.00	ls	$17,500	$17,500		
	Division 23 - TOTALS						***$ 6,380,307***	
DIVISION 26 - Electrical								
26 51 00	Interior Lighting	Lighting: Provide lighting at Elevator shafts	2.00	ea	$1,250	$2,500		
26 52 00	Emergency Lighting	Replace /Add as needed	75.00	ea	$395	$29,625		
26 52 00	Emergency Power	Generator	< Excluded >			$0		
23 64 00	Power - New Service Entrance - Electrical Gear	Power Distribution MDP upgrade, feeders and Distribution panels upgrade for new Mechanical Equipment	1.00	LS	$925,000	$925,000		
23 64 00	Lighting - Remove, Clean Replace existing LED	Allowance	82,635.00	SF	$2.95	$243,773		
23 64 00	Wiring & Power distribution	General Recepticles - upgrades - add 25%	82,635.00	SF	$1.50	$123,953		
	Division 26 - TOTALS						***$ 1,324,851***	
DIVISION 27 - Communications								
27 11 23	Communications Cable Management & Ladder Rack	Wiring, cable management	< Included below >					
27 00 00	Data Communications - Upgrade communications cabling	Network, Data, Wireless, etc.	82,635.00	sf	$5.00	$413,175		
27 00 00	PA Systems / Master Clock	Telephones& Communications	82,635.00	sf	$3.85	$318,145		
27 41 00	Audio-Video Systems	Theater, Auditorium, etc.	< Excluded >					
27 51 00	Distributed Audio-Video Communications Systems	Public Address,	< Excluded >					
	Division 27 - TOTALS						***$ 731,320***	
DIVISION 28 - Electronic Safety and Security								
28 20 00	Video Surveillance - Upgrade, replace and add cameras throughout facility	Cameras, Video, etc.	100.00	ea	$1,850	$185,000		
28 46 20	Access Control - Add access control to select locations	Access Control	20.00	ea	$9,500	$190,000		
28 46 20	Security System	Security - intrusion detection	82,635.00	sf	$0.75	$61,976		
26 52 13	Fire Alarm Systems -	Fire Alarm Systems - Update Head end and Devices	82,635.00	sf	$3.45	$285,091		
	Division 28 - TOTALS						***$ 722,067***	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
DIVISION 32 - Exterior Improvements								
02 40 00	Asphalt Paving Demolition - Sawcut and remove pavement for replacement	Paving Demolition	151.11	cyd	$45	$6,800		
02 40 00	Sidewalks Demolition - Sawcut and remove Concrete for replacement	Sidewalks Demolition	88.89	cyd	$55	$4,889		
32 12 16	Asphalt Paving - Construct new Bus Drop-off asphalt paving using 4" bituminous on 10" base	Paving	10,000.00	sf	$11	$105,556		
32 12 16	Asphalt Paving - Provide bituminous curbs	Paving	450.00	lf	$18	$8,100		
32 13 13	Concrete Sidewalks with ADA Ramps	Paving	4,000.00	sf	$14	$55,000		
32 13 13	Concrete Sidewalks replace 100 lf	Paving	500.00	sf	$18	$9,000		
32 13 13	Concrete Sidewalks replace Northeast corner	Paving	1.00	ls	$18	$18		
32 13 13	Concrete Paver Sidewalks - New entry plaza	Paving	1,750.00	sf	$30	$52,500		
32 13 73	Concrete Curbing - rip and replace CIP	Curbing	500.00	lf	$50	$25,000		
32 13 73	Site lighting - Bollards, conduit & conductors	Site Lighting	10.00	ea	$3,750	$37,500		
32 18 00	Landscape retaining walls - remove and repir segments as needed.	Landscape	1,000.00	sf	$150	$150,000		
32 31 00	Metal Fence	Fencing	< Excluded >			$0		
32 93 00	Plants	Exterior plantings	< Excluded >			$0		
32 00 00	Site Furnishings	Trash Recepts	4.00	ea	$1,250	$5,000		
32 00 00	Site Furnishings	Steel Pipe Bollard	8.00	ea	$1,375	$11,000		
32 00 00	Site Furnishings	Sie Benches	4.00	ea	$2,100	$8,400		
32 00 00	Site Furnishings	Trash Recepts	4.00	ea	$1,250	$5,000		
	Division 32 - TOTALS						***$ 483,762***	
DIVISION 33 - Utilities								
33 05 00	Utility Structures	Grease / Oil Separator	1.00	ls	$ 2,500.00	$2,500		
33 14 00	Sanitary Sewerage	Septic / Sanitary	1.00	ls	$ 5,000.00	$5,000		
	Inspection, testing & treatment	Existing Domestic well	1.00	ls	$10,000	$10,000		
	Fire Water Service	new 6" Fire Water service from Fire Pump to Building Entrance	150.00	lf	$125	$18,750		
33 31 00	Sanitary Sewerage	Site Sanitary	< Excluded >					
33 42 00	Storm Drainage	Storm Structures- Replace catch basins and piping as needed - Allowance	1.00	LS	$225,000	$225,000		
33 52 00	Hydrocarbon Transmission and Distribution	Site Gas						
33 71 00	Underground Electric Work	Site Electrical - New incoming electrical Service allowance	1.00	LS	$150,000	$150,000		
		Lightning Protection / Service Ground	< Excluded >					
	Division 33 - TOTALS						***$ 411,250***	
Direct Construction Costs							**$24,840,669**	

CSI Spec #	CSI Format Names	Report Item Names	Qty	Unit	Unit cost	Subtotal	Total	Comments / Notes
Indirect Construction Costs								
8.50%	DESIGN AND ESTIMATING ALLOWANCE						$2,111,457	
3.00%	CONSTRUCTION CONTINGENCY						$808,564	
1.23%	BUILDING PERMIT, STATE EDUCATION FUND, FM REVIEW FEE						$304,547	
LS	GENERAL CONDITIONS (CONSTRUCTION MANAGER STAFFING)		24.00	MOS	$110,000		$2,640,000	
1.00%	PROFESSIONAL AND GENERAL LIABILITY INS						$298,967	
0.25%	BUILDERS RISK						$75,489	
3.00%	CM FEE						$832,821	
1.00%	PERFORMANCE AND PAYMENT BONDS						$319,125	
4.00%	ANNUAL ESCALATION TO MIDPOINT		12%				$3,614,422	
	PRECONSTRUCTION						$150,000	
Indirect Construction Costs							**$11,155,391**	
Total Construction Costs							**$35,996,060**	
Soft Costs @ 15%							**$5,399,409**	
	Architect Fees		< Included >					
	Owners Project Manager		< Included >					
	Commissioning		< Included >					
	Town Legal Services		< Included >					
	Advertising / Legal Notices		< Included >					
	Bid Document Reproduction		< Included >					
	Threshold Peer Review		< Included >					
	Environmental Consultant (Phase I & II)		< Included >					
	Testing and Inspection		< Included >					
	Environmental Monitoring		< Included >					
	Utility Charges (Eversource)		< Included >					
	Furniture, Fixtures and Equipment		< Included >					
	Bond Council Fees		< Included >					
	Owner Contingency		< Included >					
Total Project Costs							**$41,395,469**	

CAPITAL IMPROVEMENTS PLAN	Capital Projects Timeline					
	2027	2028	2029	2030	2031	Subtotals
Direct Construction Costs	$5.25M	$6.41M	$6.61M	$4.91M	$2.76M	$25.93M
Indirect Construction Costs	$3.55M	$4.18M	$4.63M	$4.16M	$3.27M	$19.80M
					Total Construction Cost	$45.73M
					Owner Soft Costs (15% of Construction Cost)	$6.86M
					Total Project Cost (CIP)	$52.59M

ALTERATION PROJECT	Alteration Projects Timeline		
	2027	2028	Subtotals
Direct Construction Costs	$24.84M		$24.84M
Indirect Construction Costs	$11.16M		$11.16M
		Total Construction Cost	$35.99M
		Owner Soft Costs (15% of Construction Cost)	$5.40M
		Total Project Cost (CIP)	$41.40M

	Option 1 - Capital Improvements Project (CIP)
Space Standard Area (SF)	74,645
Project Building Area (SF)[1]	105,670
Estimated Construction Cost	$45,732,751
Estimated Soft Costs (15% construction cost)	$6,859,913
Total Project Cost:	$52,592,664
Reimbursement Rate[2]	46.07%
Reimbursement Rate Reduction[3]	0.70639322
Adjusted Reimbursement Rate[4]	32.54%
State Share	$17,113,653
Marlborough Share	$35,479,011
Marlborough Total Share:	$35,479,011

Marlborough Bonding Appropriation

State Retanage (11% of State Share)[5]	$1,882,502
Change Order Costs[6]	$685,991
Marlborough Total Appropriation:	**$38,047,504**

	Option 2 - Major Alteration Project
Space Standard Area (SF)	74,645
Project Building Area (SF)[1]	105,670
Estimated Construction Cost	$35,996,060
Estimated Soft Costs (15% construction cost)	$5,399,409
Total Project Cost:	$41,395,469
Reimbursement Rate[2]	46.07%
Reimbursement Rate Reduction[3]	0.70639322
Adjusted Reimbursement Rate[4]	32.54%
State Share	$13,470,086
Marlborough Share	$27,925,383
Marlborough Total Share:	$27,925,383

Marlborough Bonding Appropriation

State Retanage (11% of State Share)[5]	$1,481,709
Change Order Costs[6]	$539,941
Marlborough Total Appropriation:	**$29,947,034**

NOTES

1. Building Area is measured to the inside face of exterior walls. Total Building Area 105,870 sf per 2005 Code Plan, includes 874 sf allocated to Board of Education Administrative spaces. Grant reimbursement for Central Offices is eligible for only 50% of a district's percentage reimbursement. This reduction is negligible and has not been factored into this calculation.
2. Reimbursement Rate estimate based on 2025 General Construction State Reimbursement Rates. Percentages may be reduced due to ineligible and limited eligible costs.
3. Reimbursement Rate Reduction applies when the actual or proposed area exceeds the maximum net area allowed for reimbursement by State Space Standard. A Space Waiver could mitigate the reduction of eligible costs, if approved.
4. Adjusted Reimbursement Rate factors reduction of total eligible costs due to space in excess of maximum eligible for reimbursement.
5. State Retainage returned to Town after Audit Process.
6. Estimated at 1.5% of the Construction Cost.