EXISTING CONDITIONS ASSESSMENT

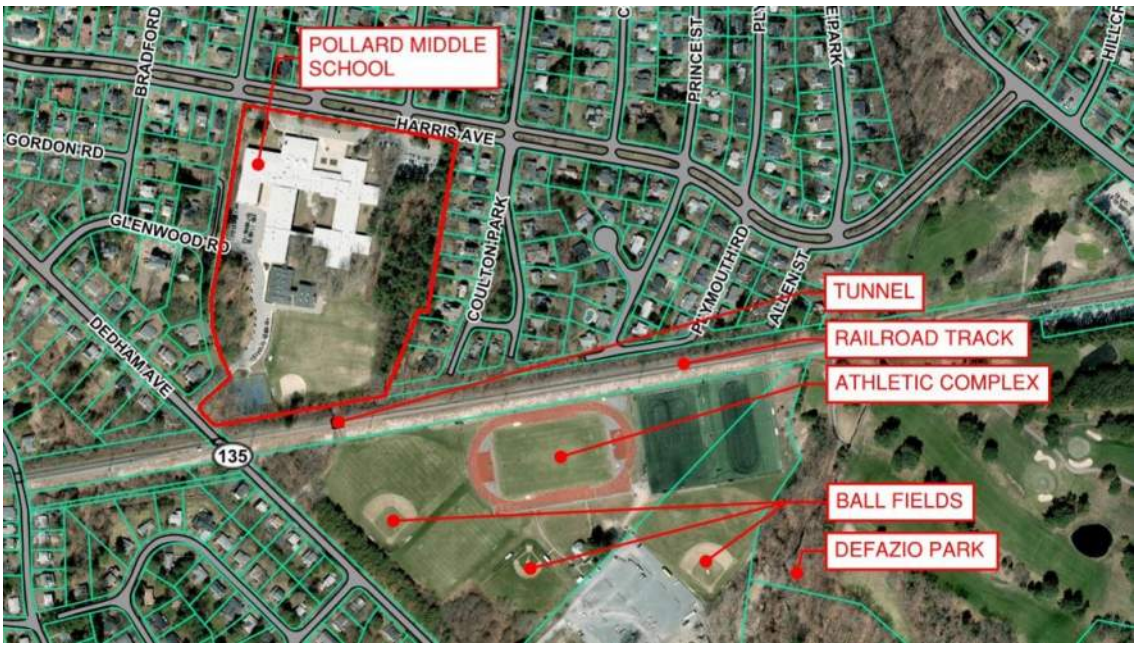
EXISTING SITE & BUILDING DATA

General Site Description

Pollard Middle School is one of eight public schools in the town of Needham, Massachusetts and the only school serving grades 7 and 8. The school is located at 200 Harris Avenue in the south east section of town just east of RT 135 (Dedham Ave) and adjacent to DeFazio Park. The property is bound on the south side by Dedham Ave and the Massachusetts Bay Transportation Authority (MBTA) commuter rail line. A tunnel under the tracks provides access from the school property to DeFazio Park, a multi-field athletic complex. The west edge of the property abuts a densely populated neighborhood of single family homes. The east side of the school is bounded by a wooded area with residential homes just beyond the woods. The north side and front entrance abut Harris Avenue. The neighborhood is moderately dense and mostly single family homes. Harris Avenue is a wide boulevard with adjoining side streets. Access to the site is provided via Harris Avenue, Glenwood Road, and (for emergency use only) Dedham Avenue.

Topography

The site topography is a gradual slope form Harris Avenue to Dedham Avenue, with some steep transitions immediately adjacent to the building and in the courtyard. An open field, ball field, and tennis courts are located on the south end of the site. A 2011 property survey plan notes the school site is 15.38 acres, a full size copy of this survey is included in the appendix of this report. The 2011 survey was included in the submission to the planning board for the 'Newman at Pollard' modular classroom renovations. This plan noted that the addition to the school required a special permit for maximum lot coverage, transition area, and landscape requirements.



Map 1 - MA GIS aerial image of Pollard Middle School

Parking

The site includes a striped parking lot for 48 cars located along the east side of the building accessible from Harris Avenue and an adjacent lot of 14 spaces accessed from the east parking lot. Additionally, there is a striped parking lot for 30 cars located on the west side accessed from Glenwood Road and 33 marked spaces along the emergency access drive at the rear of the school. The emergency access drive is connected to the west parking area. Emergency vehicle access is provided via a gated entrance point from Dedham Ave.

Handicap accessible spaces are provide in the front lot however, access to the front door may exceed the allowable travel distance. Some, but not all, of the exterior pathways are accessible. Handicap accessible spaces are also located in the west parking area, accessible to the lower level entrance near the gymnasium, and along the emergency access road for access to the playfields.

Zoning & Land Use

The 2019 property tax card (see appendix AX.1) indicates that the facility sits on 26.05 acres of land with a land value of $633,200. However it should be noted that the property, per the most recent survey, is 15.38 acres which could reduce the land value. In addition to the Pollard School site shown on page II-A.1-4 approximately 10 acres of land on the south side of the MBTA tracks was originally purchased for school use and under the jurisdictional control of the School Committee. A jurisdictional transfer was made in 2019 that provided control of the DeFazio Park field area to the Park & Recreation Commission, while control of the parking lot area of DeFazio Park was transferred to the School Department for the potential use of a school. The Town of Needham is the owner of both the Pollard School and DeFazio Park.

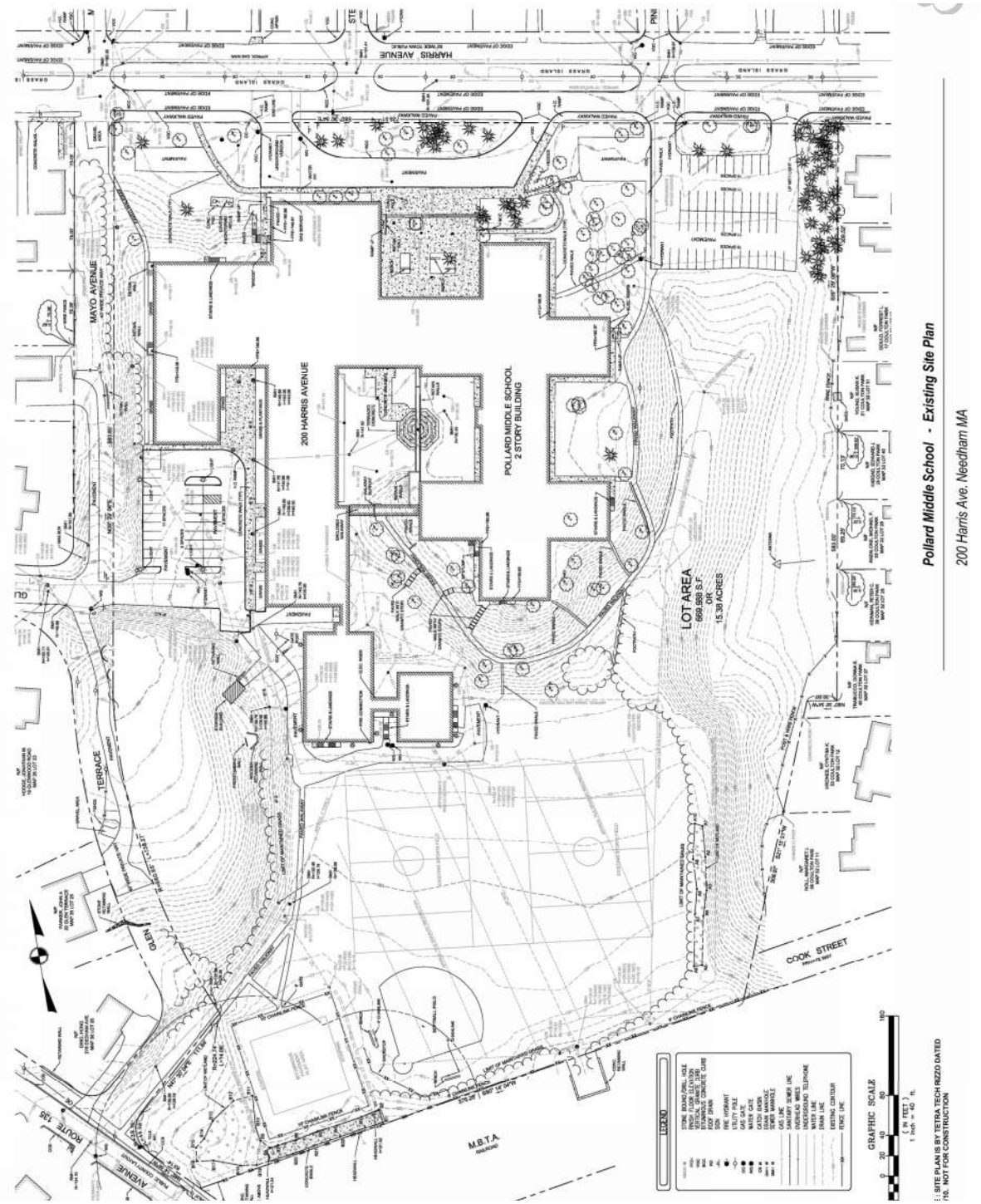
The Pollard Middle School is located in zoning district 'Single Residence B (SRB)'. Public Schools are permitted in this zone. The existing school, including the modular classrooms, is "existing non-conforming". Special Permits and Waivers were requested and granted in 2011 as part of the 'Newman at Pollard' project which renovated the modular classrooms and changed the site plan design to allow for the pre-school program to be located at the Pollard School. The Special Permits and Waivers requested, and granted, at that time included the request for additional parking, modifications to pre-existing non-conforming transition area, pre-existing non-conforming site coverage, off street parking and number of parking spaces, parking illumination, size of parking spaces, landscape requirements in the parking area and the number of trees required in the parking area. Information from the 'Table of Use Regulations' from the January 13, 2011 submission to the planning board for the 'Newman at Pollard' project and updated zoning information, and the 'Table of Special Permits (SP) and Waivers (W) ' from the January 13, 2011 Planning Board submission are provided in the charts on the following page. Any major project on this site will need to address the existing non-conforming conditions as measured against the current Zoning By-laws and apply for additional Special Permits or Waivers as needed.

TABLE OF USE REGULATIONS / ZONING DIMENSION TABLE -POLLARD MIDDLE SCHOOL			
	SCHOOL - UPDATED 10/2017 SRB REQ.	EXST. CONDITIONS*	
MIN. AREA	10,000 S.F.	669,952.8 S.F.	complies
MIN. FRONTAGE	80'	725.5 '	complies
MIN YARD - FRONT	25'	79.8'	complies
MIN YARD - SIDE	25'	39.5'	complies
MIN YARD - REAR	25'(d)	341.4 '	complies
MAX F.A.R.	0.3	0.226	complies
MAX % LOT COVERAGE	15%	16.69%	Pre-Existing non-conforming Complies by Special Permit
MAX STORIES (schools)	3	2	complies
MAX HEIGHT (schools)	45'	26'	complies

Existing conditions dimensions are noted from the 2011 site survey and include the existing modular classrooms

TABLE OF SPECIAL PERMITS & WAIVERS - NEWMAN AT POLLARD PROJECT –2011		
BY-LAW	SP / W	DESCRIPTION
7.4	SP	Request for a major project (more than 25 new parking spaces
1.4.6	SP	Modify pre-existing non-conforming use: site coverage for institutional use per
4.2.1(f)	SP	Pre-existing non-conforming site coverage for an institutional use
4.2.8	SP	Temporary use of existing tennis court for parking within the 25 foot transition area and return to tennis court use. **The tennis courts have since been restored.**
5.1.1.5	SP	Off –Street Parking
5.1.2	W	Required number of off-street parking spaces
5.1.3(a)	W	Parking illumination, average of 1 fc with a min of .25 fc
5.1.3(f))	W	9'x18' Parking spaces in the Upper (East Side) lot
5.1.3(l))	W	Required number of trees within parking areas

The topographical site plan below, dated 12/14/10 , shows the steep grades on the east and west sides of the property and the change in elevation from 161 at the entrance drive on Harris Avenue to 135 at the access drive on Dedham Ave. The site plan also indicates a small area of wetlands on the south west corner between the tennis court and the railroad tracks and on the south east side of the playing field. The MA GIS map (map 3) does not indicate any wetland areas on the property but does identify wetlands on adjacent parcels.



Map 2 - 12/14/10 Site Survey of Pollard School Property

Map 3 - MA GIS map of Pollard Middle School

Image 4 - Arial View of Pollard Middle School

Image 5 - View of front entrance from Harris Ave.

Image 6—Entrance Plaza (North Elevation)

Image 7 - View of School from Harris Ave. Parking area (East side of Entrance)

Image 8 - Looking back at Harris Ave. parking Lot

Image 9—Walkway on east side of building from Harris Ave. parking area to back fields

Image10- Sidewalk Leading from Harris Ave. parking area toward the back fields of School

Image 11—Walkway on east side of building from Harris Ave. parking area to back fields

Image 12—Walkway on east side of building from Harris Ave. parking area to back fields looking north

Image 13—Walkway on east side of building from Harris Ave. wrapping around back of school

Image 14—view looking north toward the school

Image 15—view of the courtyard from under the connecting corridor bridge

Image 16—view of the fields from the east corner—tunnel to DeFazio in center of photo

Image 17—view of the fields looking south toward the railroad tracks and tunnel to DeFazio Park (in center of photo)

General Building Description

The original (1956) one and two story structure was completed in 1958. In 1968-9 a major addition included the construction of a second gymnasium and a two story classroom wing. In 1996, a significant building renovation was completed which included accessibility upgrades, in 1992 a small addition was added and included the library and cafeteria and in 2002 a modular classroom addition was added to the building. Recent energy efficiency upgrades include a new roof in 2011 and new high efficiency boilers in 2013.

Most recently the school has undergone various improvements including upgrades to the student restrooms, revisions to the administration and library, and renovations to both gymnasiums. The building currently serves approximately 893 students in grades 7 and 8.

The 2019 property tax card indicates that the 118,080 sq. ft. facility has a value of $20,421,500. The 2006 Master Plan study shows this total building area as 133,975 sq. ft, and a previous Dore and Whittier report notes the gross square footage as 147,224 inclusive of the modular classroom addition. Floor plans showing the progress of the additions included on the following pages, followed by programmatic floor plans showing the current use of spaces.

Construction	Year	Sq. Ft. (approx.)
Original Construction	1956	73,370 sf
Addition—Classroom wing	1968	52,586 sf
Addition—Cafeteria & Library	1992	8,471 sf
Addition—Modular Classrooms	2002	12,797 sf
TOTAL		**147,224 sf**

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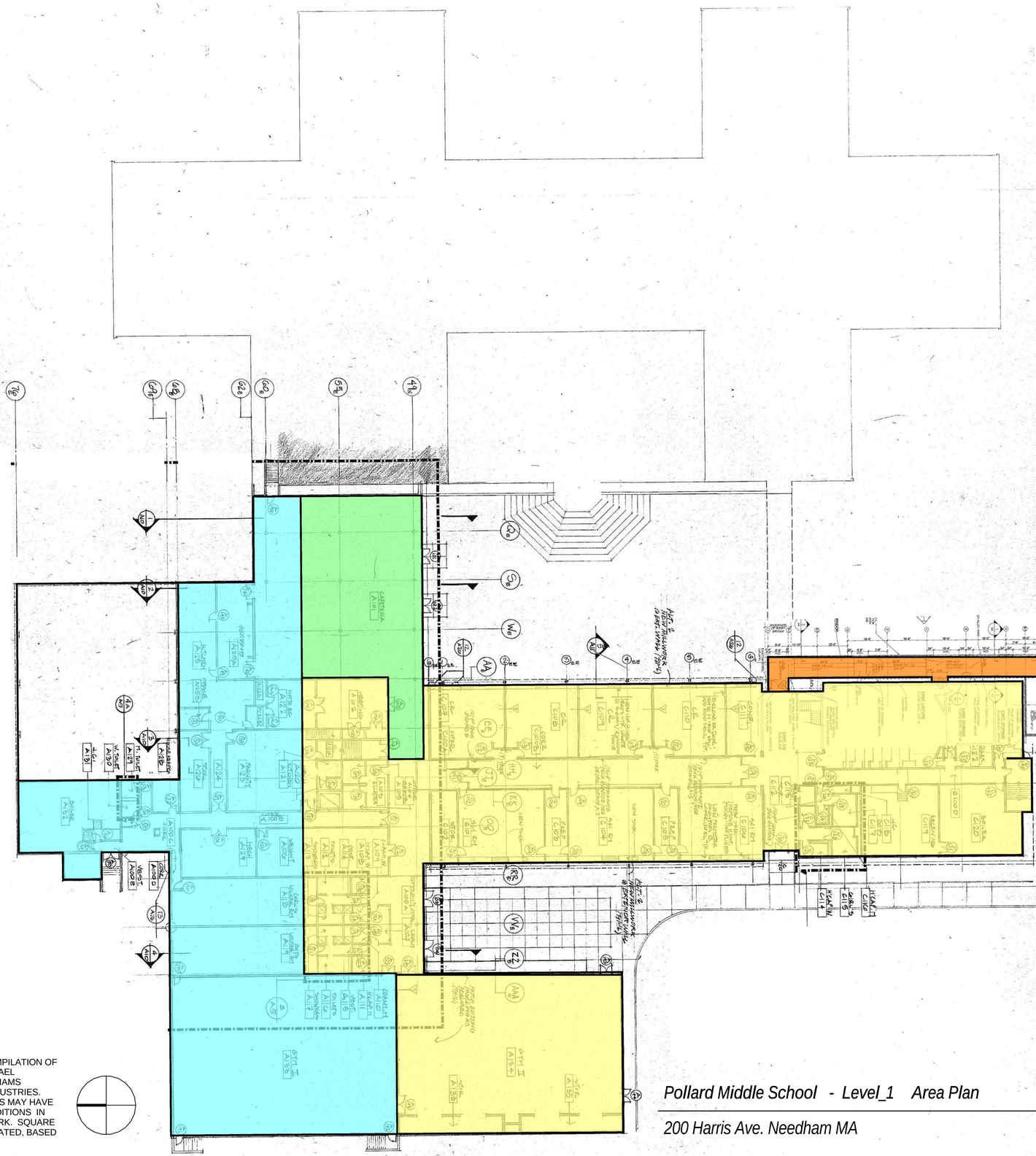
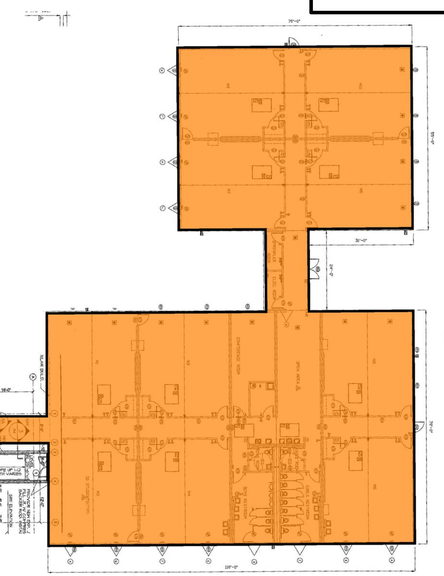
SCHEDULE OF AREA	
Department	Area
1956 ORIGINAL CONSTRUCTION	
1956 ORIGINAL CONSTRUCTION	56467 SF
1956 ORIGINAL CONSTRUCTION	16902 SF
	73370 SF
1968 ADDITION	
1968 ADDITION	22751 SF
1968 ADDITION	23826 SF
1968 ADDITION	5902 SF
	52479 SF
1992 ADDITION	
1992 ADDITION	4076 SF
1992 ADDITION	4396 SF
	8471 SF
2002 CORRIROR AND MODULARS	
2002 CORRIROR AND MODULARS	12580 SF
	12580 SF
Grand total: 8	146900 SF





AREA KEY PLAN

- 1956 ORIGINAL CONSTRUCTION
- 1968 ADDITION
- 1992 ADDITION
- 2002 CORRIROR AND MODULARS

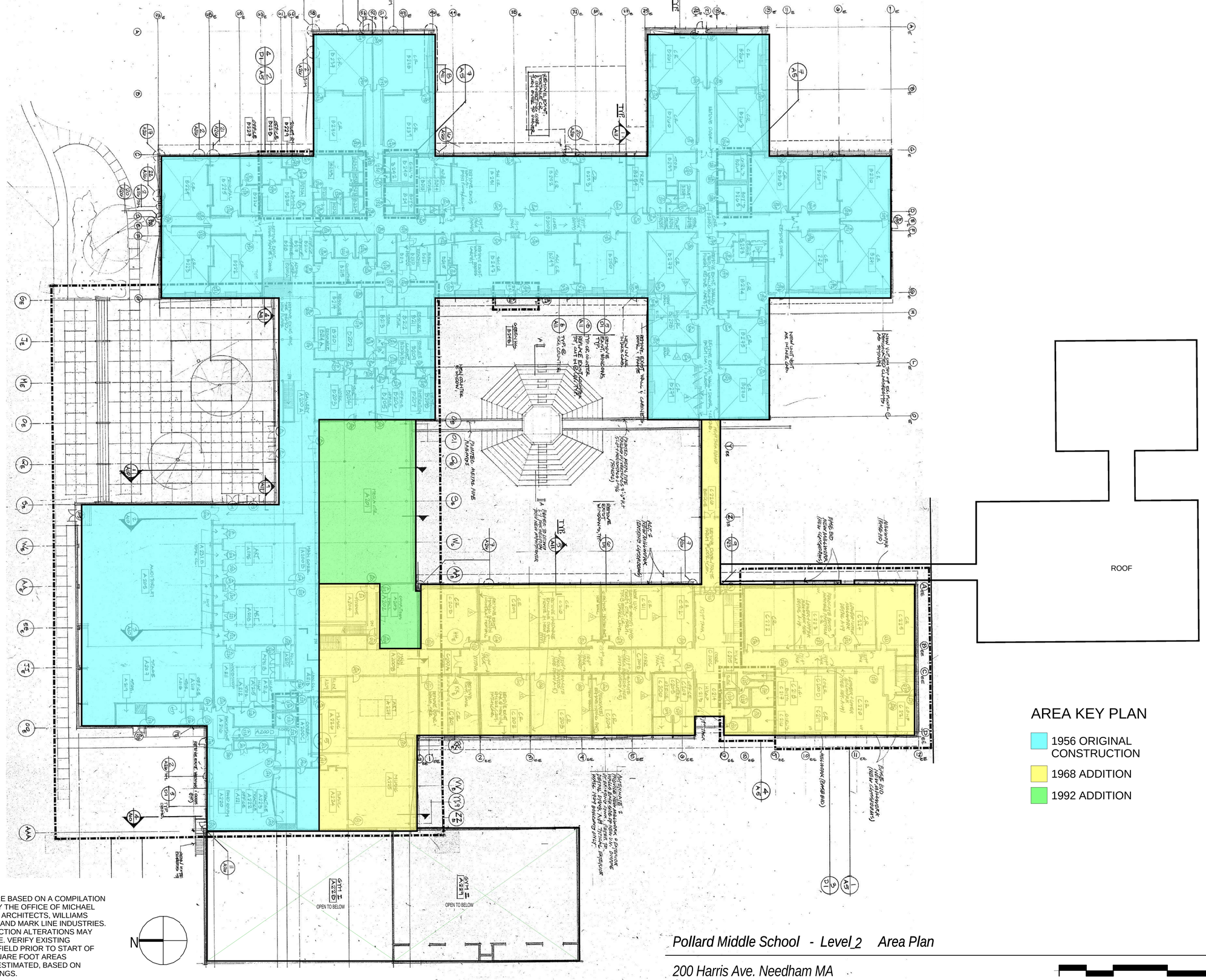
NOTE : PLANS ARE BASED ON A COMPILATION OF DRAWINGS BY THE OFFICE OF MICHAEL ROSENFELD INC. ARCHITECTS, WILLIAMS SCOTSMEN, INC AND MARK LINE INDUSTRIES. POST- CONSTRUCTION ALTERATIONS MAY HAVE BEEN MADE. VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO START OF NEW WORK. SQUARE FOOT AREAS INDICATED ARE ESTIMATED, BASED ON ORIGINAL DRAWINGS.

Pollard Middle School - Level_1 Area Plan

200 Harris Ave. Needham MA

0' 10' 20' 40' 80'

DORE & WHITTIER ARCHITECTS, INC.



AREA KEY PLAN

- 1956 ORIGINAL CONSTRUCTION
- 1968 ADDITION
- 1992 ADDITION

NOTE : PLANS ARE BASED ON A COMPILATION OF DRAWINGS BY THE OFFICE OF MICHAEL ROSENFELD INC. ARCHITECTS, WILLIAMS SCOTSMEN, INC. AND MARK LINE INDUSTRIES. POST- CONSTRUCTION ALTERATIONS MAY HAVE BEEN MADE. VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO START OF NEW WORK. SQUARE FOOT AREAS INDICATED ARE ESTIMATED, BASED ON ORIGINAL DRAWINGS.

N

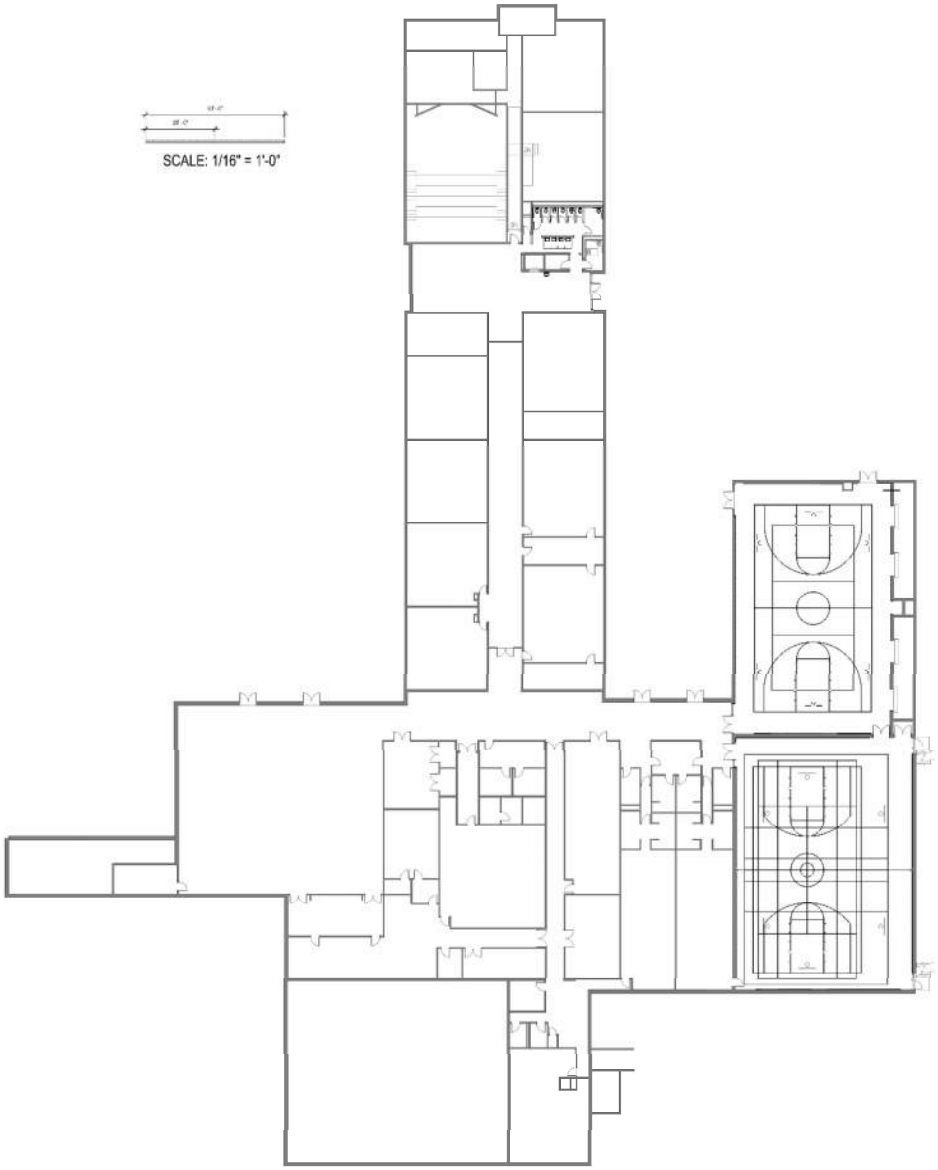
Pollard Middle School - Level 2 Area Plan

200 Harris Ave. Needham MA

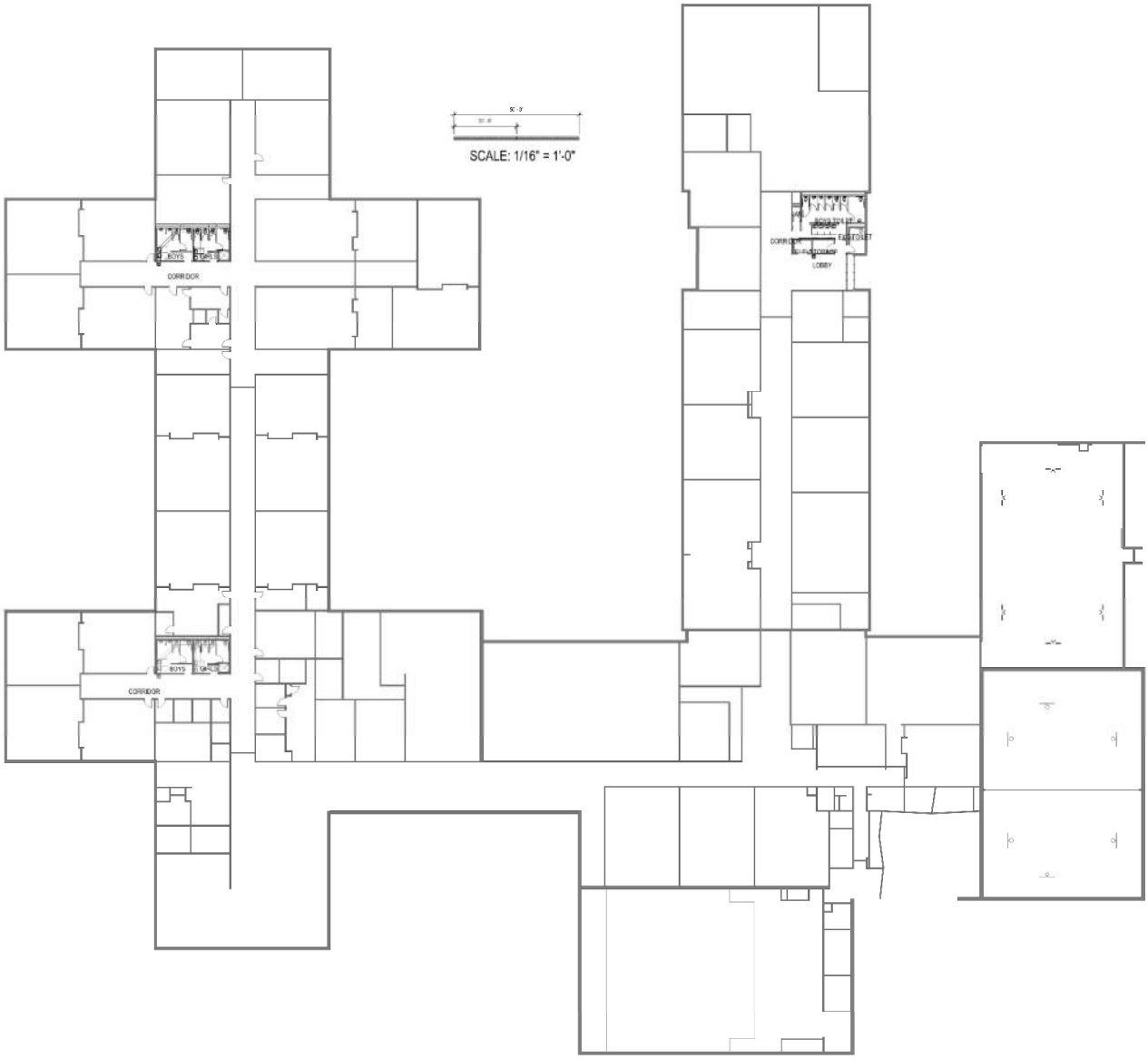
0' 10' 20' 40' 80'

DORE & WHITTIER ARCHITECTS, INC.

EXISTING BUILDING FLOOR PLANS



Floor Plan Level 1 - Pollard Middle School



Floor Plan Level 2 - Pollard Middle School

Image 1 - North Façade Main Entry Drive

Image 2 - North Façade Main Entry Courtyard—looking east

Image 3 - North Façade Main Entry Courtyard– east wall

Image 4 - North Façade Main Entry Courtyard– main entrance

Image 5—East Wing—North Facade

Image 6 - East Wing Classrooms—North Facade

Image 7—Rear Facade

Image 8 - Courtyard North Facade

Figure 9 - Modular Building South Facade

Figure 10 - Modular Classroom Corridor Facade

REGULATORY ASSESSMENT

INTRODUCTION

This Regulatory Assessment will seek to convey to what degree the **Pollard Middle School**, in its current condition, complies with current building codes and regulations. The Assessment does not attempt to define a scope of work, but rather highlight specific non-complying conditions and identify which conditions would require correction if a repair, alteration, addition, or change of use were to be proposed for the facility.

It is important to note that a building or a portion of a building does not require correction simply because it does not comply with current codes; any building that is legally occupied and adequately maintained can remain so without bringing the building into full compliance with codes and regulations. This *principal of non-conforming rights* (that a newly adopted regulation cannot impose the undue burden of compliance on legally existing occupancies) is reflected in how the codes identify to what degree existing buildings must be brought into compliance when a scope of work is proposed. The greater the scope of work, the greater the burden of compliance with a given code or regulation will be required.

For some regulations, such as 521 CMR Accessibility Rules or the Massachusetts special sprinkler provisions of MGL c.148 s.26G, these compliance thresholds are "hard lines" comprised of specific dollar value thresholds. When determining the dollar value thresholds for compliance, the cash value of the building is used as the basis for the determining the requirements for compliance. The full and fair cash value of the *building*, as determined from the Town Assessor's online database is calculated as follows:

Property Value	**$ 21,054,700**
Land Value	**($ 633,200)**
Full and Fair Cash Value	**$ 20,421,500**

This value will be used later in this Assessment to calculate the applicable compliance thresholds. The Existing Building Code uses the type of work and the affected area to determine when increasing levels of compliance are required. When considering a proposed scope of work for the building, a careful consideration of the various degrees of compliance will need to be considered. Refer to the Regulatory Overview section of this report for a more detailed description of the various compliance paths outlined in the Existing Building Code.

The International Existing Building Code (IEBC)

The Performance Compliance path provides a simple yet comprehensive overview of the general life safety aspects of a building. Although designed as a building code compliance path, it can also be used as an assessment tool. This assessment will utilize the value and scoring based method of the Performance Compliance path to assign a score to the building as it is currently configured and maintained. Similar to previous comments, a failing score in any category as part of an assessment does not compel any corrective action - it simply indicates how the building would be viewed under current codes. It is intended to illustrate the relative general and life safety performance of the existing building.

The majority of the school building is constructed with non-combustible steel framing floors, and roof decks. However, some portions of the interior appear to be wood framed and portions of the roof utilize combustible wood fiber composite decking (Tectum). Because of these combustible elements, the building would classified as type III-B construction.

The Pollard school has undergone several additions and reconfigurations over the years. However, life-safety measures have not kept pace with the building's physical growth. The most glaring life safety deficit is the relatively large building area and a lack of a complete sprinkler system. While there is a partial system, the building code does not recognize partial coverage as a compliant fire safety measure and the building would essentially be classified as un-sprinklered. This lack of a compliant sprinkler system coupled with a large floor area for the construction type means that the school far exceeds its allowable area.

The relatively large fire area (non-compartmentalized floor area) along with a general lack of adequate fire separations in corridors or stairwells, long dead-end corridor conditions, and outdated fire alarm and detection systems results in a low score under the Performance Compliance path. While some attempts have been made over the years to improve the general life safety of the building with partial separation improvements and door hardware upgrades, these measures are inconsistently applied throughout the facility.

One relative asset is the large number and good distribution of exits from the building. The short exit travel distance and options for egress allow for easy evacuation and fire fighting opportunities.

Table 1401.7 Summary Sheet - IEBC PERFORMANCE GRADE - 1956 CONSTRUCTION AND ADDITIONS

Existing Occupancy	**Educational**	Proposed Occupancy	**Educational**		
Year building was constructed	**1956**	Number of Stories	**2**	Height in feet	**24**
Type of construction	**III-B**	Area per floor	**98,898 / 50,326**		
Percentage of open perimeter increase	**100%**				
Completely Supressed	**No**	Corridor wall rating	**0 hr**		
		Type	**N/A**		
Compartmentation	**No**	Required door closers	**Yes**		
Fire resistance rating of vertical opening enclosures	**None**				
Type of HVAC system	**Unit Vent**	serving number of floors	**2**		
Automatic fire detection	**Yes**	Type and location	**Smoke, pull station. Loc. Varies**		
Fire alarm system	**Yes**	Type	**Horn/Strobe, no voice evacuation**		
Smoke control	**No**	Type			
Adequate exit routes	**Yes**	Dead ends	**Yes**	Length in feet	**57'-6"**
Maximum exit access travel distance	**164'**	Elevator controls	**No**	N/A	
Means of egress lighting	**Yes**	Mixed Occupancies	**No**		
Standpipes	**No**	Patient abilty for self preservatior			
Incidental use	**No**	patient concentration			
Smoke compartment less than 22,500 sq. ft.	**No**	Attendant-to-patient ratio			

Safety Parameters	Fire Safety (FS)	Means of Egress (ME)	General Safety (GS)
1401.6.1 Building Height	0	0	0
1401.6.2 Building Area	-48	-48	-48
1401.6.3 Compartmentation	0	0	0
1401.6.4 Tenant and Dwelling Unit Separations	0	0	0
1401.6.5 Corridor Walls	-5	-5	-5
1401.6.6 Vertical Openings	-7	-7	-7
1401.6.7 HVAC Systems	0	0	0
1401.6.8 Automatic Fire Detection	8	8	8
1401.6.9 Fire Alarm System	-5	-5	-5
1401.6.10 Smoke Control	****	0	0
1401.6.11 Means of Egress	****	0	0
1401.6.12 Dead Ends	****	-2	-2
1401.6.13 Maximum Exit Access Travel Distance	****	3	3
1401.6.14 Elevator Control	0	0	0
1401.6.15 Means of Egress Emergency Lighting	****	0	0
1401.6.16 Mixed Occupancies	0	****	0
1401.6.17 Automatic Sprinklers	-12	-6	-12
1401.6.18 Standpipes	0	0	0
1401.6.19 Incidental Use	-1	-1	-1
1401.6.20 Smoke Compartmentation	0	0	0
1401.6.21.1 Patient Ability for Self-preservation	****	0	0
1401.6.21.2 Patient Concentration	****	0	0
1401.6.21.3 Attendant-to-patient Ratio	****	0	0
Building Score - total value	-70	-63	-69

Table 1401.9 Evaluation Formula

1956 Original Construction & Additions Evaluation:				Score	Pass	Fail
-70	(FS) -	*29*	(FS)=	-99		X
-63	(ME) -	*40*	(ME)=	-103		X
-69	(GS) -	*40*	(GS)=	-109		X

(FS)= Fire Safety (ME)= Means of Egress (GS) = General Safety

Sprinkler Protection Requirements

The building is partially protected with an automatic sprinkler system. There are two separate fire services; one for the school building and one for the modular classroom building. The main building system was installed in 1992. Because the building is larger than 7500 Gross Square Feet (GSF), any scope of work meeting the criteria of a "major alteration" would require a sprinkler system to be installed throughout the facility. In Massachusetts, a building's *fire area* includes all portions of the building enclosed by the exterior walls regardless of interior sub-division with fire walls or fire barriers. This is important to understand because the sub-division of a building into separate fire areas (with fire walls and fire barriers, for example) would not be considered a compliance strategy in Massachusetts. To be considered a "major alteration" the scope of work would have to meet both the "nature of work" and "scope of work" criteria. For the scope of work criterion, the Division of Fire Services provides two separate thresholds - if the project exceeds one of these thresholds, then the project is considered "major" in scope. For the Pollard Middle School, if the work area exceeds **48,585** square feet (33% of the total building area of **147,224** square feet) ***OR*** if the cost of work exceeds **$6,739,095** (33% of the value of the building, calculated above), the project *scope* would be considered "major". Any addition to the building, even if separated from the existing building with a fire wall, would compel the installation of a sprinkler system for the entire school facility.

The "nature of work" criterion is less specific, but essentially if any work is being done that would not make the installation of sprinklers substantially more difficult, it would be considered “major” in nature. Examples include the demolition of ceilings, walls, or floor decking exposing the structural framing.

Accessibility

Any proposed work will be required to comply with the accessibility requirements of 521 CMR (The Massachusetts Architectural Access Board, or MAAB Rules).

If the cost of the proposed work exceeds $100,000, an accessible entrance, toilet room, drinking fountain, and telephone (if drinking fountains and telephones are provided) will be required in addition to the compliance requirements of the proposed work.

When the cost of work exceeds 30% of the full and fair cash value (calculated above), then the entire facility will be required to comply with the MAAB Rules. For the Pollard Middle School, this 30% threshold dollar value would be **$6,126,450.**

Because the building is a public school, owned and operated by the local municipality, it is considered a Title II facility under the Americans with Disabilities Act (ADA). As such, any proposed work to the facility would be required to comply to the maximum extent feasible with the ADA Architectural Guidelines (the ADAAG) except where it would be structurally impractical. The ADA does not have a threshold for requiring full facility compliance, but does require that when there are alterations to an area of "primary function" (including classrooms, gymnasium, cafeteria, and administration areas), then the path of travel as well as the restrooms, telephones, and drinking fountains serving the areas of primary function are also accessible.

Specific deficiencies or non-compliant conditions were noted at the Pollard Middle School. If a major alteration exceeding the 30% threshold were undertaken, all of these items would require correction.

Entrances and Site Access

- The main entry at Harris Ave. leads to a sunken concrete plaza accessed by a short ramp. The ramp handrails are non-compliant.
- Exterior stairways at egress doors around the facility do not have compliant handrails. Many are constructed from open grating which is a non-compliant surface.
- Several exterior doors terminate at a concrete landing with either a step down to a path, or no pathway at all.
- Various pathways throughout the site are constructed of bituminous concrete. The surfaces are worn and are not longer compliant and in many locations are too steep to be considered an accessible route.
- The large central courtyard has two levels. Access between the two levels is only by the concrete amphitheater seating tiers which do not meet accessibility requirements for stairs. There is no accessible path communicating between the levels that coincides with the route for the general public.

Doors

- Doorways to classrooms and some publicly accessed spaces like the cafeteria do not have required pull-side clearances. Some doors with closers do not have the required push-side clearance.

Accessible Route

- Interior stairways handrails that do not provide the required extensions at the top and bottom of each flight. In many locations the handrails do not comply with graspability requirements.
- In the Lecture room, there is no accessible path to the presentation area that coincides with the path for the general public.
- The wood-chip surface of the playground does not provide for an accessible path to playground equipment. An adaptive-use swing is provided, but there is no accessible path to this swing.
- The ramp to the stage does not have compliant handrails.

Toilet Rooms & Fixtures

- Accessible lavatories in gang toilet rooms do not have a means of drying hands (paper towel dispenser or hand dryers) within reach of someone at the lavatory.
- Sinks in gang toilet rooms do not have the appropriate piping protection below the sink.
- Not all lavatory faucets are compliant.
- In some locations, grab bars are not the required 42 inches in length.

- Toilet paper dispensers within accessible stalls are not mounted in the appropriate location or height.
- Drinking fountains in various locations do not include both low and high spout heights.
- Some classroom sinks that have knee clearances use the knee space as storage—like a base cabinet without doors.
- The entry desk in the administration area does not have a lower height transaction counter.

Controls & Miscellaneous

- Fire alarm pull stations are not mounted within the allowable reach range.
- Accessible room identification signage was not provided at all classrooms and public spaces.

Standards for the Treatment of Historic Structures

The building and property is not listed on, nor is it eligible for listing on the National Register of Historic Buildings. See section 3.1.4 A for Historical Regulations.

CIVIL ASSESSMENT

General Building Information

Nitsch Engineering has performed research of the existing site conditions for the Pollard School at 200 Harris Avenue in Needham, Massachusetts. Nitsch Engineering also conducted a site visit on December 13, 2019 to observe the overall site, take pictures and provide a preliminary outline of short and long term needs for the school. Nitsch Engineering included anticipated site permitting requirements for the Pollard School for any proposed site work in this report.

Nitsch Engineering's research included an initial site visit/walk through the school and review of existing conditions plans compiled by Dore and Whittier. Nitsch Engineering's observations and findings are summarized on the following pages.

The Pollard School is in a residential area bound by Harris Avenue to the north of the existing school building and the Massachusetts Bay Transportation Authority (MBTA) commuter rail line to the south. The school is bound on the east and west by residential development.

Parking and Access

The main entrance access to the Pollard School is a U-shaped, one way drive off of Harris Avenue. This loop is used for bus pick up and drop off at the beginning and end of the day. Parent drop off for students takes place on Harris Avenue (images 1 & 2). A drop off with handicapped accessibility is available at the entry drive, which leads to a set of stairs and ramp into a sunken concrete plaza (image 3 & 4). Guest parking is available in the loop during school hours (between 8:30 am and 1:00 pm), however there are no marked parking spaces in this area with the exception of two handicap accessible parking spaces (one for vans) at the far end of the drive aisle (image 5 & 6). The pavement in the drop off area is in fair condition (image 1 & 2). The sidewalk and curb are in good to fair condition with some cracking and disrepair in need of patching.

A parking area with 62 striped parking spaces is located just east of the school building and accessed from Harris Street. The lot has three (3) designated handicap spaces. The lot was expanded toward the east by adding a bituminous ramp over the existing concrete curb, which is not a smooth transition for cars. This is also one of the paths a handicap person would use to access the front plaza and front door, another path brings a handicap person to the former administration entrance (now the nurse and guidance area) and then around the building into the front plaza. The distance between the accessible parking spaces and the front door is long and circuitous, it is unlikely that the distance is within the ADA / AAB guidelines. Additionally the slope of the sidewalk paths should be surveyed to verify that they meet the requirements for accessible access.

An additional parking area with 65 striped parking spaces is located on the west side of the building and along the emergency access road. This parking is accessible from Glenwood Avenue. This lot is not accessible by vehicles from the bus loop or from the Harris Ave lot. Four (4) accessible spaces are located in this area, two closest to the gymnasium entrance and two closest to the playfields. A marked cross walk directs two of the spaces across the parking area to a textured curb cut. There are no directional signs leading visitors to the accessible entrance. An accessible ramp leads to door #24 where there is no visible communication method with the front office for unlocking the doors at this location. An AI-phone is located at door #25.

An emergency access drive connects the Glenwood Avenue parking area with Dedham Ave. Overflow parking occurs along this access drive and on Harris Avenue.

Numerous bicycle racks are located around the site with a bank of racks located at the front of the school. These racks are heavily used as many students ride their bike to school.

There are sidewalks leading to the school and sidewalks around the campus. The sidewalks leading to the school appear to be handicapped accessible. However, the sidewalks around the school building are not handicap accessible due to stairs and excessive sidewalk grades.

A site topographic study would be required to determine that all site walkways and ramps are within acceptable requirements.

Image 1: Front drop-off loop—looking west

Image 2: Front drop-off loop—looking east

Image 3: Steps & Ramp to Entrance Plaza

Image 4: Lower plaza with concrete paving

Image 5: HC parking spaces in loop

Image 6: HC parking spaces in loop

There are sidewalks leading to the school and sidewalks around the campus. The sidewalks leading to the school appear to be handicapped accessible. However, the sidewalks around the school building are generally not handicap accessible. Many paths are steeply pitched and have stairs.

A site topographic study would be required to determine the best routes to create accessible paths.

Specific Issues	*Recommendations*
Pavement in drop-off loop and parking areas are cracking and in need of repair	Mill and overlay pavement where cracking has occurred
Vehicle access to extended parking area on the east side is steep (ramps up over granite curb)	Remove curb between parking areas, level extended parking are to match exiting grade of the adjacent parking lot, repave area and add ADA accessible parking for both cars and vans to this location to reduce the travel distance.
HC marked parking spaces are located far from the entrance door.	An assessment of the site and accessible entrance doors and path should be conducted. Parking spaces should be relocated as noted above. Regrade and resurface pathways to main entrance.
Lack of directional signage from the west parking area	Add signage to direct persons toward the door with the AI-phone for access
Parent drop off is on street and buses are double stacked in drop off loop	Review parking and drop off needs, extend bus loop and develop site circulation that allows student drop off / pick up on site

UTILITIES

WATER

The Pollard School is serviced by a 4-inch water service off a 12-inch water main in Harris Avenue. An 8-inch water line off Harris Avenue connects to a fire hydrant at the parking lot east of the school and connects to a fire hydrant at the parking lot entrance at Harris Avenue. There is a water line off Dedham Avenue that services a fire hydrant at the back of the school at the edge of the playing field.

Image 7: Parking on the east side of the building

Image 8: East parking lot with HC parking

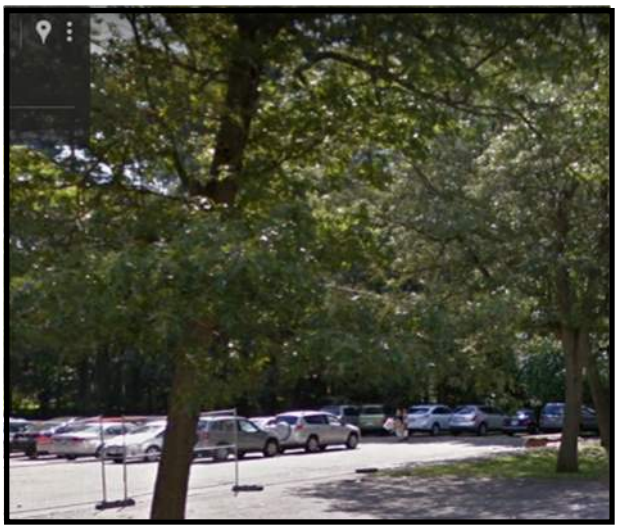


Image 9: East parking lot

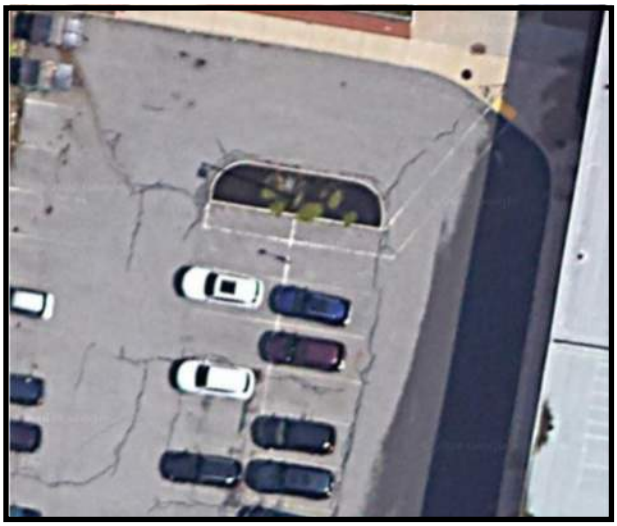


Image 10: West parking area—crosswalk from HC spaces

Image 10: West parking area—HC parking spaces

Gas

A gas line services the Pollard School off Harris Avenue. It should be noted that the volume of natural gas is reduced to the school during extended cold weather. Nitsch Engineering understands from school officials that the gas main in Harris Avenue is undersized and cannot deliver adequate gas service to the school and surrounding neighborhood in the winter. It has been noted that the underground oil tank was removed during the 2013 boiler upgrade.

Sewer

Sewer service consists of an 8-inch sewer line. One 8-inch sewer service collects waste at the interior courtyard of the school and sends the waste under the school building to the sewer main on the west side of the school. This sewer line finally discharges into the sewer main in Dedham Avenue (Rte 135) near Glen Terrace.

Drainage

The drainage system has grown with the original school and has been pieced together over the years. The existing system consists of leaching catch basins, catch basins and area drains that move stormwater toward the west side of the school into the town drainage system. The new parking area on the west side of the site, constructed for the Newman at Pollard project, included infiltration structures to capture parking lot runoff in compliance with the NEPDES standards. This also helped reduce the runoff from the hill and upper parking lot onto the playfield. There are no provisions to capture and treat stormwater at the east side of the site. However, there is a large swale that starts at the edge of the east parking lot which routes stormwater to the playing field behind the school where some of the flow is captured in the existing catch basin and into the storm drainage system. Stormwater not captured by the catch basin sheet flows onto the playing field. Roof drains capture all of the roof runoff at the west side of the school and send the flow into the 36-inch drain line main just west of the school. There have been reports of freeze/thaw issues with the roof drains.

It appears that the drainage system is adequate for moving stormwater off the site. However, the existing drainage system does not meet current Massachusetts Department of Environmental Protection (MADEP) Stormwater Standards.

Electric

Electric service comes from Harris Avenue to an electric riser on the east corner of the school near the administration entrance. Telecommunications service comes in from Harris Avenue parallel to the gas service and into the building. The modular classrooms are served by an independent electric service from Glenwood Ave.

Image 11: HC curb cut and ramp to door #24

Image 12: Glenwood Ave access to west parking

Image 13: Emergency access drive to west parking area

Image 14: Sidewalk along the east side of the building

Image 15: Sidewalk stairs along the east side of the building

Specific Issues	*Recommendations*
Hydrant flow test needed	A hydrant flow test is needed to verify water pressure is sufficient to extend the fire protection system to cover the entire facility (see fire protection report)
Gas service is unreliable during the heating season	Provide a new gas main in Harris Avenue to accommodate gas boiler service and provide consistent, reliable gas service during heating season
Sewer and Water line connections are more than 50 years old	Provide new sewer and water line connections
The existing drainage system does not meet current Massachusetts Department of Environmental Protection (MADEP) Stormwater Standards.	Provide new drainage structures and pipe including water quality structures, review overall drainage system for the site
Washout is occurring around drainage pipes and roof drains down spouts have freeze thaw issues, some drain spouts are missing connections	Review roof drain down spouts and connections to underground drainage and surface drains outlets

WETLANDS

There is a small pocket of wetlands located at the south eastern edge of the site near the MBTA train tracks and a small wetland located on the west side of the fields, also near the MBTA tracks. Discussion with the Conservation Agent is recommended to determine whether these wetlands are jurisdictional and require Conservation Approval.

PERMITTING

Any site work at the Pollard School would require Planning Board Approvals, compliance with MADEP stormwater management, and Conservation Commission Approval if working within the jurisdictional buffer zone.

Image 16: Eroded sidewalk south of the building

Image 17: Drainage swale

Image 18: Catch basin & fire hydrant on south side

Image 19: Area drain south of the building

Image 20: Disconnected downspout

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STRUCTURAL ASSESSMENT

Basis of the Report & General Information

The purpose of this report is to assess the structure of the existing building and provide comments regarding the existing structure and the structural integrity of the building. This report is a follow-up to the assessment that was conducted by our firm, Engineers' Design Group (EDG) in April of 2011 and assessment of the cracks in the cmu wall in the gymnasium in January of 2017 (image 5).

This report is based on the report issued during the 2011 assessment and the assessment of cracks in the Gymnasium wall in January 2017, observations made during our visit on December 12, 2019, and a review of the available drawings of the original construction prepared by The Architects Collaborative dated August 1956; Additions and Renovations drawings prepared by Drummey, Rosane and Anderson, Inc. dated August 1969 and Additions and Renovations drawings prepared by The Office of Michael Rosenfeld dated September 1992. During our visit we did not remove any finishes or conduct any structural investigations; so, our understanding of the structure is limited to visual observations only.

Existing Conditions

The Pollard School is located on Harris Avenue in Needham, Massachusetts. The original school was constructed as a one and two story structure in 1956-58. In 1969, a Gymnasium and two story classroom wing were added to the original school. In 1996, a two story addition was constructed and the Gymnasium and the single story Academic Wing were renovated.

Original 1956-58 Building

Foundations are all traditional cast-in-place concrete footings. The lower and first floor level slabs are 4" concrete on grade. Interior masonry partitions are placed on 12" wide thickened slabs. The second floor slab around the Auditorium/Gymnasium area has open web steel joists at 2'-0" on center supporting 2 ½" deep concrete on form deck. Columns supporting the 21" wide flange girders are typical WF8. The slab over the boiler room has concrete encased steel beams supporting 4" cast-in-place slab to achieve rating.

The roof framing at the gymnasium has a 44" deep plate girder at the center supporting 24" deep open web joists at 4'-0" on center. The roof over the auditorium has steel rigid frame bents at 20' on center supporting 16" deep joists at 4'-7" on center. The roof substrate at the gymnasium has tectum panels on bulb tees while the auditorium and media center have a steel roof deck.

The single story academic wing has steel framing supporting open web joists at 5'-0" on center with steel deck. There is a typical outrigger at a number of locations where 5" columns at each roof joist have a welded 5'-0" cantilevered overhang. These bents are exposed on the exterior.

The cracks in the cmu wall in the gymnasium that were observed in 2011 and 2017 appear to be stable and do not appear to have increased in length or width. The observations are subjective

since we did not map the cracks during our previous observations. The existing wall is a non-bearing interior wall and the cracks do not pose a significant structural concern at this time.

1969 Addition

This addition included a gymnasium and a two story classroom wing. The gymnasium has traditional cast-in-place concrete foundations with a 5" slab-on-grade at the floor. The roof is supported on a steel frame with 8" wide flange columns and 16" deep beams. Long span joists support a tectum deck system. Exterior walls are un-reinforced CMU. The classroom wing has traditional concrete foundations with a 5" concrete slab-on-grade. The boiler room is depressed 4'-0" and has a 6" concrete slab-on-grade. The second floor framing has typical HSS 6x6 columns with 27" deep girders, 16" deep beams and 1 ½" deep steel deck with concrete fill for an overall depth of 4".

Roof framing consists of 14" deep beams and 16" deep girders along corridor support lines and a 1 ½" deep steel deck. Beams are typically connected over columns and have a 5'-0" cantilever at the roof level. The exterior has block backup with cavity and brick at the first and second floor. Brick is typically hung at the second floor with channels at 4'-0" on center, continuous galvanized angle and kickers back to the slab.

1992-96 Additions

These additions included a two story addition and alteration between the gymnasium and the single story classroom wing. Underpinning and sheet piling were placed against existing footings at the academic wing. Foundations were traditional concrete column footings. The lower level has a 4" slab-on-grade while the upper level has framing which consists of wide flange steel columns supporting steel beams and a 1 ½" steel deck with concrete fill to an overall depth of 3 ½" at the first floor and bent steel beams at the roof level with a 1 ½" deep galvanized steel deck.

Findings

There are no signs of any foundation settlement or distress. There is localized cracking at the brickwork at the corner of the auditorium and decay at the brick/pavement interface. The bridge that was in poor shape during our last assessment on the west side of the auditorium has been demolished The exposed slab along the exterior at the band room is supported on exposed steel beams and exhibits cracking due to ingress of moisture and corrosion to the 8" steel columns above (image 2).

The concrete at the base of the column on the far right side of the bridge (image 4) has spalled due to the corrosion of the base of the column and the base plate. To repair this condition, the concrete will have to be chipped around the column base, the column base and the base plate will have to be wire

Image 1: Location of former bridge

Image 2: Exposed Slab at Music Room

Image 3: Elevated bridge connecting classroom wings

brushed removing all the rust and coated with rust inhibiting and bonding primer and recast the concrete around base of the column. Reinforcement of the column base and the base plate may be required if the damage from the corrosion is severe and there is a section loss in the column, this can only be determined once the column and the base plate are exposed.

The exposed structure at the two story academic wing appears to be in sound condition with no evidence of corrosion to steel, brick or siding.

The elevated bridge connecting the academic wings appears to be in sound condition with no evidence of corrosion to the exposed steel (image 3). There is distress to the brick at the south corners of the single story academic wing due to rain leader problems. On the interior, there is some cracking in the block at the gymnasium.

Overall, we found that the structure is performing well. The façade appears in good repair except for some minor cracks. We did not observe any unusual vibration due to footfall over the supported slabs. We did not observe any signs of foundation settlement. The exterior exposed steel shows no signs of corrosion and internally the exposed structure both floors and roof substrate are in sound condition.

Recommendations

The existing conditions have not changed much from our last visit in 2011 except the pedestrian bridge adjacent to the Auditorium that was in poor condition has been demolished. The structure is in good repair and performing well. There are no major concerns for any immediate repairs.

Image 4: Corrosion of column base plate

Image 5: Image from 1/4/2017 Structural Assessment

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ARCHITECTURAL ASSESSMENT

General Building Information

The Pollard Middle School was originally constructed in 1956-58 with significant additions/renovations in 1968-69, 1992, and 2002. Additional building renovations and upgrades have occurred subsequently including renovations to the administration area, restrooms, and gymnasiums. A full list is noted below.

List of documented improvements to the school are as follows:

- 1956 –58 Original Construction
- 1962 Significant Renovations and Addition—2 story class room wing
- 1992 Addition and Renovations
- 1996 Handicap Accessibility Renovations
- 1998 –99 Air Balancing, HVAC / Electrical System Improvements
- 2002 Modular Addition with access corridor & Modifications to cafeteria
- 2010 Various improvements made related to temporarily relocating Newman Kindergarten & Preschool at Pollard Modular classrooms. Site vehicular circulation and additional parking
- 2011 Roof replacement
- 2013 Boiler replacement and oil tank removal
- 2016-2018 Renovations to multi-user toilet rooms
- 2019-2021 Renovations to both Gymnasiums

In 2011 D+W developed a comprehensive facilities assessment of the Pollard School as part of a three school facility assessment report. Several of the upgrades, repairs, and on going maintenance recommendations noted in that report have been addressed. D+W has also participated in the renovation of several student restroom projects and the renovation of the two gymnasiums. The Pollard Middle school was also included in 2014 HKT Facilities Master Plan of the Town's public buildings. This report also noted the need for replacement of the modular classrooms, upgrades to the science rooms, relocation of the administration area, improvements to the auditorium, upgrades to meet current ADA / MAAB requirements and new building systems. The District has relocated the administration area and made some ADA / MAAB upgrades but the majority of the above noted recommendations have not been addressed.

The original building and the main additions were primarily constructed of simple steel framed columns, floors and roof systems, load bearing masonry walls, flat roofs, and cast in place concrete slabs (some slabs are elevated over old heat distribution tunnels). The building is in good to fair condition overall as the Town has continued to maintain the building structure, systems & finishes. However, numerous areas of the building envelope have little to no thermal insulation creating an atypically low performing building in terms of energy waste and thermal comfort.

EXTERIOR

FOUNDATION WALLS

Foundation walls are uninsulated cast-in-place concrete. In many areas the foundation wall supports the exterior wall and exterior structural system (see image 1 and 5). Most areas appear to be in good condition. However, there are areas of the foundation wall that have severe deterioration due to water infiltration, freeze / thaw cycles and rusting of the structural support system.

Specific Issues	*Recommendations*
Majority of facility is built with uninsulated concrete foundations, areas extending above grade do not indicate waterproofing.	Install of minimum R-10 rigid insulation, above grade insulation protection, and appropriate flashing / trim components over a complete waterproofing system as part of a significant facility envelope upgrade / or renovation project.
Grading adjacent to the foundation wall slopes toward the wall (image 2)	Remove bituminous sidewalks immediately adjacent to the building. Install proper drainage and slope landscape and sidewalks away from building foundation
Severe foundation deterioration has occurred under structural supports at bridge connection (image 3 and 4)	Remove section of glass wall, remove structural column, repair foundation wall with new supporting pier, replace structural column.
Damaged / cracked concrete (image 6 and 7)	Remove loose / damaged materials, and repair cracks in foundation walls to prevent continued damage from moisture infiltration
Cracking of foundation wall at grade (image 8). Cracking in these conditions occur because the top of the foundation wall in level with the sidewalk and not pitched for drainage. Once water enters the cracks the freeze / thaw cycles increase the cracking	Remove sidewalk, install drainage and properly pitched landscaping to direct waterflow away from building. Install new sidewalk away from building foundation
Evidence of water intrusion throughout sub-grade areas (image 9). Efflorescence and dampness in areas below grade as significant concrete and masonry deterioration.	Continue monitoring and mitigating areas of moisture. Maintain sump pump systems—especially in mechanical areas. Patch areas damaged as part of an ongoing maintenance program.

Image 1: Exposed foundation wall and structural columns

Image 2: Foundation wall

Image 3: Exposed foundation wall and structural columns

Image 4: Deterioration below structural supports

Image 5: Exposed foundation wall and structural columns

Image 6: Cracks in foundation wall

Retaining Walls

The exterior retaining walls are at stairwells on the west side of the building and throughout the courtyard. The walls generally in are in good condition. The construction, condition, and purpose of the cmu wall adjacent to the poured in place retaining wall that leads to the gym is in question

Specific Issues	*Recommendations*
CMU wall adjacent to poured in place retaining wall (image 10). Open cells of CMU block will fail overtime continue to monitor condition or repair and replace as recommended	Remove grading and sidewalk adjacent to the retaining wall. Remove cmu block wall. Repair any damage to the poured in place wall. Install grading and sidewalk at proper slope and pitch
Where the retaining walls support stairs and ramps and handrails water has entered the concrete at the handrail post locations and begun to deteriorate the walls (Image 13 and 14)	Remove handrails, patch and repair concrete , replace handrail post with non-shrink epoxy grout. MR-

Image 13: Entrance courtyard ramp retaining wall

Image 14: Railing post in concrete

Image 7: Damage / deterioration foundation wall

Image 8: Foundation wall adjacent to sidewalk

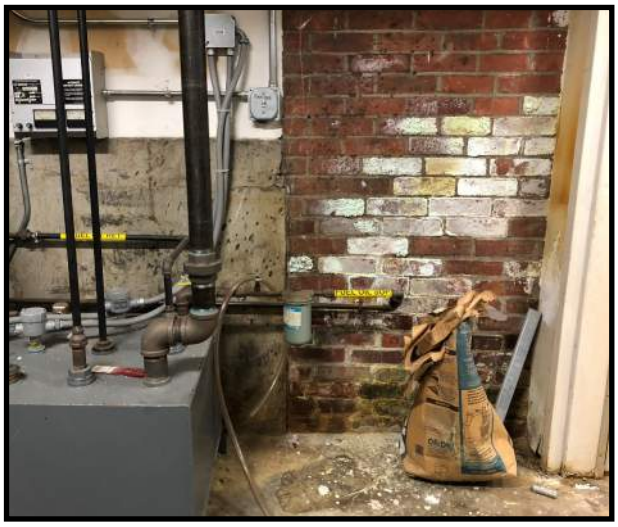

Image 9: Interior sub-grade foundation wall

Image 10: Exterior stairs to gym

Image 11: Access to the boiler room

Image 12: Courtyard retaining wall

Exposed Structural System

Several portions of the building were designed with structural elements such as columns exposed on the exterior of the building. This was a common practice in the 50's and 60's but over the years has proved to be detrimental to the integrity of the structural system and the thermal envelope. Exposing structural elements to the exterior accelerates weathering and deterioration of the structural elements themselves. At each location where structural elements need to pass through the thermal envelope (the insulating layers of the building), several complicating factors are introduced. Every such location creates a "thermal bridge" where cold steel members are exposed on the warm air interior of the building; these locations can introduce condensation and further deterioration of structural elements and finishes. Each of these locations are difficult to properly seal and also create opportunities for air leakage through the building envelope.

The photos attached are typical conditions around the building where the structural system is exposed to the weather.

Specific Issues	*Recommendations*
Structural columns and beams that are exposed to the exterior conditions	Assess the extent of rust on each column, beam, base plate and bolts. Scrape paint and rust from structural members . Paint members with rust protection paints . Consider wrapping columns with exterior finish materials
Stressed air sealants	Review condition of sealants at all transitions of exterior columns to interior spaces. Repair areas where the sealants have failed

Exterior Walls

The exterior walls of 1958 building are primarily constructed of brick veneer with concrete block back-up walls and aluminum storefront framing above structural glazed facing tile knee walls (image 20). The 1962 addition includes exterior walls with brick veneer and wood siding and aluminum storefront system with metal and spandrel panels and insulated glass (image 21). The modular buildings are wood framed construction with vinyl siding and cement board skirt.

The exterior brick and glazed tile walls in several locations have visible cracks, (image 24). On the southwest gym wall some bowing of the wall was noted in the previous 2011 report and does not appear to have changed over time. Some of the wood panels are in poor condition with peeling paint and mold (image 25).

The modular classroom buildings and connecting corridor are wood frame construction with vinyl siding, which is in fair to poor condition. The crawl space below the modulars have a cement-board skirt siding installed over Tyvek building wrap attached to exterior sheathing. The cement board skirt

Image 15: Typical building structure

Image 16: Structure at connection bridge corridor

Image 17: Exposed columns and beams

Image 18: Exposed column and base plate (typical)

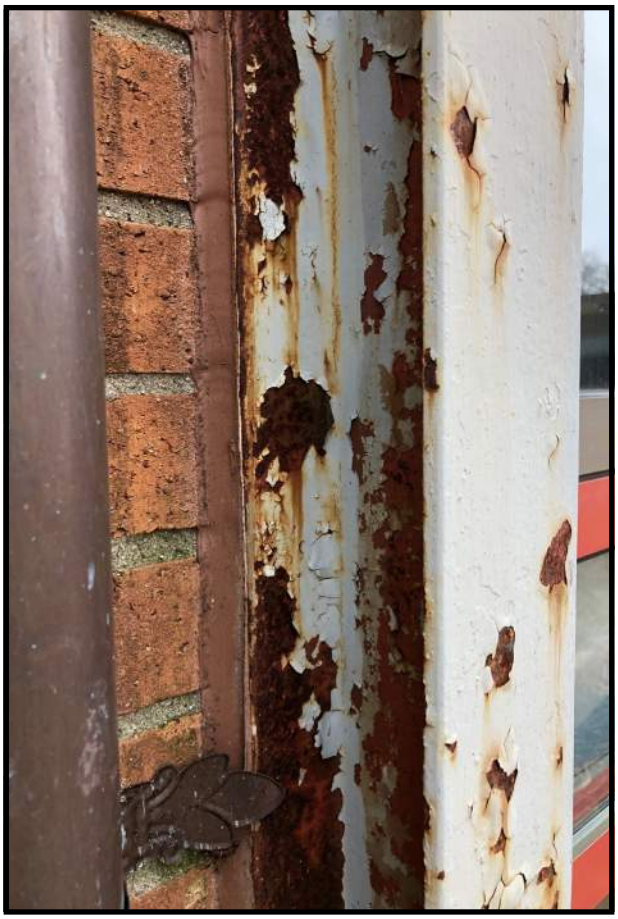

Image 19: Exposed column (typical)

of the modular classrooms show damage and mold growth on the face of the siding. In several areas the vinyl siding of the modular has fallen off exposing the vapor barrier and sheathing. A large portion of vertical wood paneling is missing on the south gym wall (image 28)

Damage to the modular skits was evident in the 2011 report, and has continued to deteriorate. The modular classroom buildings were constructed for temporary use and have reached the end of their expected serviceable life.

Specific Issues	*Recommendations*
Majority of facility is built with uninsulated exterior wall systems of brick, block, storefront / spandrel panels, and wood siding	Install minimum R-21 wall insulation systems, with a envelope upgrade / renovation project.
Cracking at brick walls appear to be related to settling, however movement of the building does not appear to be on going. Cracks will continue to expand with moisture infiltration	Repair cracked bricks, mortar and joints to prevent further deterioration due to moisture infiltration
Cracked and damaged glazed cmu block walls	Where the glazed cmu has been cracked repairs should be made to the cracks to prevent further damage. Where extensive damage has been done the block should be removed and replaced.
Sever mold build up is occurring on walls both on the main building and on the modular classroom buildings	Remove mold from walls, address moisture infiltration through the bricks, at the roof, or through improper roof drainage systems. Replace cement boards at modular that are damaged and growing mold. In areas with vertical wood siding such as image 25 the wood panel should be removed. Investigate the cause of both water infiltration and retention. Repair all areas and replace siding. Where possible replace the wood siding with more durable siding materials.
Modular classroom siding is in disrepair. Modular buildings in general are beyond their useful life	Replace modular classrooms with a permanent building addition If modular cannot be replaced in the near future repair and replace damaged siding to prevent the infiltration of water
Large section of vertical wood siding is missing above gym wall	Replace missing siding and repair other loose board to avoid further deterioration.

Image 20: Glazed cmu wall

Image 21: Aluminum storefront with spandrel glass

Image 22: Cracks in brick wall

Image 23: Mold on brick wall

Image 24: Cracking in glazed cmu wall

Image 25: Mold on vertical wood panel

Doors

A number of the exterior doors were replaced with insulated flush metal doors in 2009-2010. The doors remain in good condition, most are properly sealed and have working hardware. There are several doors with damaged or misaligned thresholds and missing or damaged weather striping (image 27). On the west side of the building a bridge was removed, as recommended in the 2011 report, and the door was blocked from the inside (image 28—door on the left side of the image). On the right side of the same image (image 28) the door opens and swings in the wrong direction and reduces the required egress width to less than half of the clear width for proper egress down the exit stairway. The number of doors should be reviewed as they do not appear to follow a logical order. Doors 6 and 35 are located at the front entrance (image 29) and door 1 is found on the west side of the building (image 28). Door hardware should be verified to meet ADA / MAAB requirements. The overhead door and frame is in poor condition.

Specific Issues	*Recommendations*
Missing, damaged, misaligned threshold and weather seals at exterior doors.	Review all doors and repair, replace, or install missing, damaged, or misaligned threshold and weather sealants.
Rusted doors and frames.	Clean & prep corroded doors and frames apply proper corrosion resistant paint system.
Doors with improper swing directions	Review the egress paths for each door and verify that the doors swing in the proper direction and that there is clearance for exiting in the path of travel. Replace doors or redirect egress paths that do not meet code requirements.
ADA / MAAB hardware	Verify door hardware meets pull requirement—the ability to open the door with a closed fist.
Door numbers are not sequential	Review door numbering with public safety officials to verify the door numbers meet the requirements and address any issues that require change.

Exterior Windows & Vents

Windows throughout the building are primarily an insulated (two-pane) aluminum window system. These were installed as part of the 1992 renovation project and appear to be in fair condition. The operable windows are in fair condition, however several screens are in disrepair. The aluminum frames do not appear to be thermally broken and contribute to the thermal bridging. Windows in the gymnasium (image 32) appear to have loose or broken sealants.

Most of the unit vent panels are in good shape (image 34) and were replaced during the renovation. Soffit vents are in poor condition (images 35 and 36) some have screening to prevent nesting animals however, the screens are in disrepair and there is evidence of animal nesting.

Image 28: Doors located on the west side of the building & Image of missing vertical siding above gym

Image 26: Typical doors

Image 27: Example of door with damaged threshold

Image 29: Front entrance doors

Image 30: Overhead door

Specific Issues	*Recommendations*
Aluminum window systems are appear to not be thermally broken—exacerbating the thermal bridging / heat loss condition.	As part of a comprehensive facility envelope upgrade / renovation project the entire exterior façade including the window systems should be redesigned to modulate thermal performance, daylighting, and interior comfort.
Window frame gasketing & primary seals are loose or inadequate at the gym high windows.	Inspect, repair, replace gaskets and sealants)))) as needed to maintain air and water-tightness.
Soffit vents are in disrepair	Review all soffit vent conditions, remove vents and debris, install screening behind the vent where insect and animal nesting is occurring

Soffits & Facia

There are a variety of soffit materials around the building. Image 35 shows a horizontal wood plank soffit, image 36 indicates a gypsum soffit, image 33 shows a metal soffit and images such as image 15 and 20 show the more typical corrugated metal soffit. The wood plank and gypsum soffits are in disrepair while the metal soffit (image 33) is in good condition. The corrugated metal soffits in the front courtyard (entrance area) appear to have been cleaned and painted (or replaced) while the corrugated soffits around the rest of the building are rusting . In some areas the facia has been replaced and is in good condition. However, much of the building is in poor condition and in need of maintenance or replacement.

Image 35: Soffit vent in horizontal wood soffit

Image 36: Soffit vents in Gypsum Soffit

Image 31: Typical classrooms windows

Image 32: Gymnasium windows

Image 33: South end of 1968 addition

Image 34: Uni-vent covers (typical)

Image 37: Corrugated Metal Soffit

Image 38: Metal Soffit

Specific Issues	*Recommendations*
Horizontal wood soffits are in poor condition	Examine all horizontal wood soffits for rot or moisture infiltration, replace all damaged board, scrape and repaint all remaining boards. Consider replacing wood soffits with metal soffits
Gypsum soffits are in poor condition	Review all gypsum soffits for water infiltration, remove and replace damaged boards—consider replacing with metal soffit
Corrugated metal soffits are in poor condition	Scrape paint from corrugated metal soffits, repair any area that have sever rust, repaint soffits with rust protecting paint
Facia is in fair condition	Examine metal facia around the building, repair or replace facia where gaps or rusting have occurred

Roof

The entire roof assembly, exterior roof drain / leader assemblies, trim, and flashings were replaced in 2011 and appears to be in good condition with at least 10 years of useful life remaining. One area of repair was noted along the northern portion of the roof. The roof has a 20 year warranty and requires annual inspections and repairs by the manufacturer.

Roofing at the modular classrooms was not replaced in 2011 and is likely at the end of its useful service life. (20 years old). This roof will require replacement if continued use of the modular classrooms is expected. The recommendation is to replace the modular classrooms with permanent construction if the classroom space is required.

Specific Issues	*Recommendations*
Modular classroom roof is at the end of useful life	Replace roof if modular classrooms are to remain in use

Image 39: Corrugated metal soffit

Image 40: Corrugated metal soffit and fascia

Image 41: Copper fascia

Image 42: Metal fascia

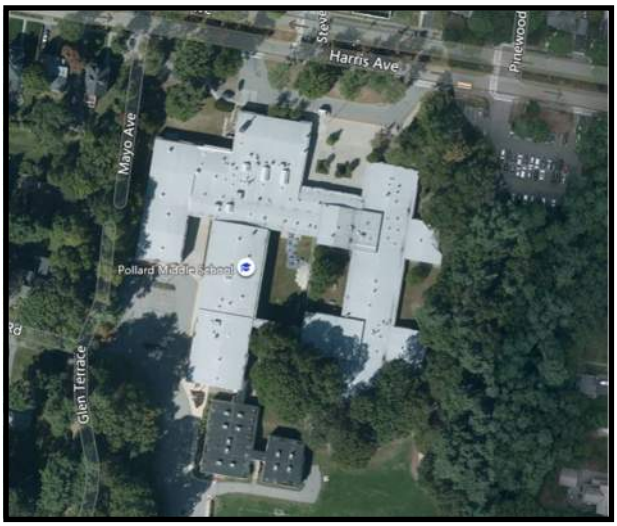

Image 43: Roof

Ramps, Stairs, Railings & Guardrails

In general exterior railings are in fair condition. Many guardrails are missing handrails, or handrails do not comply with grasp requirements and do not meet ADA / MAAB requirements. The heights of several guard rails do not meet the code required height of 48" above floor or treads. The seating steps in the amphitheater appear to be very steep, there are no steps or handrails within the amphitheater or the platform steps that lead to the lower courtyard.

Specific Issues	*Recommendations*
Steep steps and no handrails at amphitheater and platform steps (image 45)	Install steps between the seating and platform steps with handrails.
Missing handrails at exit stairs (image 46 and 47)	Install handrails on each side of the stairway with extensions to meet ADA / MAAB
Handrails have chipped and pealing paint	Repaint handrails that chipped and pealing paint

Other

Around the building there are areas where there are holes where work has been done but holes through the wall have remained which invite moisture and insects. .

Specific Issues	*Recommendations*
Holes in exterior walls	Patch and repair all holes with like materials

Image 45: Amphitheater and platform steps

Image 46: Steps with missing handrails

Image 47: Steps with missing handrails

Image 48: Handrails with chipped paint

Image 49: Ramp with missing handrail extension

Image 50: Hole in brick wall

Interior

Floors

The flooring throughout the facility varies in both material and condition. The entrance area and most of the hallways, classrooms, and cafeteria is Vinyl Composition Tile (VCT) with rubber base. The VCT is in fair to good condition and well maintained. There are several areas throughout the facility that have patches of mis-matched tiles where replacements have been done (image 3). In many areas the VCT appears wavy and uneven. It is unclear if the VCT has been applied over the original Vinyl Asbestos Tile (VAT) or if the VAT was removed prior to installation. In areas where the original VAT remains, and it is in good condition, no further work is required. However, any area where the VAT is chipped, cracked or in poor condition it should be removed with the appropriate abatement procedures. The VCT in the connection bridge corridor gets very slippery at times as the floor "sweats" with the thermal conditions of the corridor. The VCT was found to be in very poor condition in the mechanical room adjacent to the cafeteria (image 5). The VCT in the modular classroom wing is in fair condition.

The kitchen and servery have quarry tile floors in good to fair condition (image 6). The tiles themselves are in good condition however the tile and grout appear to be dirty and aged.

Carpeted areas include portions of the administration offices, the media center and the teachers lounge. The carpet in these areas appear to be in good condition (images 7).

Multi-student use restrooms have epoxy floors that have been recently installed (images These floors are in very good condition, however close attention should be paid to cleaning methods to avoid soap build up on the floors. Single use toilet rooms have VCT floors and ceramic mosaic tile flooring in fair condition.

Stairs treads are raised rubber flooring with yellow paint or tape at the noising (image 10). In most areas the tape is worn through. In general the flooring is in good condition. The flooring in the lecture hall has been replaced with VCT and the stair nosings are black rubber, in at least one area the nosing is missing, in general the floor and steps are in good condition (images 11 and 12)

The south gym floor has an entirely new vinyl resilient floor system that was installed in 2019 (image 14) The north gym has a rubber 'pour and pad' floor system that is in very poor condition (image 13). This flooring does not appear to have any shock absorption properties. It has delaminated from the gypcrete slab—which was found to be installed on top of old damp proofing or mastic from a previous wood floor system, that contains Asbestos. The entire floor—rubber mat, gypcrete infill, and ACM are scheduled to be removed during the summer 2020. A rubberized, cushioned floor system, meeting DIN requirements for ball bounce and shock absorption will be installed to match the south gym floor.

Image 1: Typical corridor with VCT flooring

Image 2: Typical classroom with VCT floor & Rubber base

Image 3: Mismatched VCT patching

Image 4: Bridge corridor

Image 5: Damaged flooring in mechanical room

Image 6: Quarry tile in kitchen

Specific Issues	*Recommendations*
Patching and mis-matched flooring	For esthetic purposes the patches should be replaced with matching VCT tiles, if the existing tiles can not be matched a pattern can be established to weave in the new tiles
The floor in the bridge corridor is slippery	The dampness in the bridge corridor causes the flooring to get slippery. The cause for this is the condensation that develops on the floor due to the lack of proper insulation below the floor and in the walls. Install insulation below bridge and replace exterior soffit boards. Replace VCT flooring with non-slip flooring materials.
Floor in mechanical room is in poor condition	Remove damaged flooring and replace with new VCT
The quarry tile and grout in the kitchen appear dirty	Clean tile and grout, if staining remains consider replacing tiles or re-grouting floor
Stair treads have worn tape on the nosing	Remove existing tape and replace
Missing tread nosing in lecture hall	Replace stair nosing
Delaminating gym floor	Green gym floor to be replaced (June 2020)

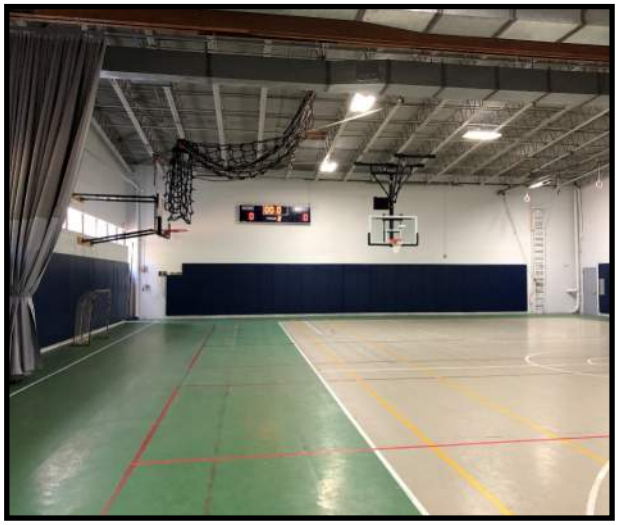

Image 13: Green gym floor

Image 14: New Blue gym floor

Image 7: Carpet in teacher lounge

Image 8: Epoxy floor in restroom

Image 9: Epoxy floor in restroom

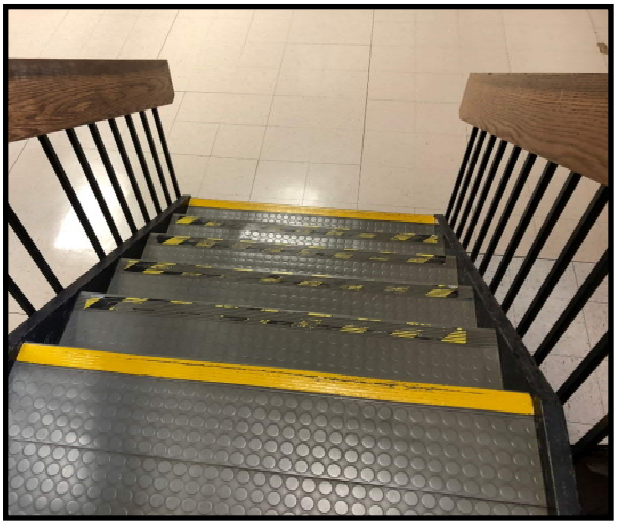

Image 10: Raised rubber flooring on stairway

Image 11: Lecture hall flooring and steps

Image 12: Missing rubber edge in lecture hall

Walls

Wall finishes in the are a mix of drywall, wood paneling, painted CMU, fluted CMU (image 21), glazed cmu (image 19), brick, plaster, FRP, tectum acoustic panels (image 20) and exposed structure. The conditions of these materials varies. The more durable / institutional surfaces, where maintained—have held up well and remain in good condition. Drywall in high abuse areas, wood trim and finishes, light duty wallcoverings and other less durable finishes are showing signs of wear.

Areas that have been recently updated including both gymnasiums—where old broken wood paneling was removed, masonry patched, and all wall surfaces prepped & painted in 2019 and multi student use toilet rooms (renovated in 2017 and 18) are in very good condition (image 22).

The wall finishes in the modular classroom area are in poor to very poor condition due to the construction methods typically used in temporary, short term type buildings. As noted in previous reports, and in areas in this—these modular classrooms should be removed and replaced with permanently constructed educational spaces that fit the need.

Cracks in the masonry wall in the gym area have been present for several years. In 2017 a structural study was conducted. The study noted that the walls of the gymnasium appear to be unreinforced masonry shear walls. The portion of the wall in question was an exterior wall at the time of the original construction. Photos form the 2011 Existing Conditions Report were compared to site observations made in 2017 and the cracks had not appeared to have increased in length or width over that period of time. No new cracks were observed at the time of the 2017 study and, based on photographs, no new cracks were observed in 2019. The cracks were deemed in 2017 not to be of significant structural concern. As a precaution monitoring strips were installed and the cracks have been monitored over time with no significate change.

Specific Issues	*Recommendations*
Wood paneling in main lobby and corridor is in fair condition but show age and wear	Sand existing paneling, patch any damaged areas or replace panels where damage is extensive, refinish wood paneling. Consider using a lighter stain to look less dated and match other woodwork in the building
Homasote bulletin boards have been added over former window locations. These boards are in poor condition (image 17)	Replace existing bulletin boards with new boards built into the existing frame work.
Interior brick walls are stained (image 18)	Wash brick walls, refinish grout, consider painting walls for a fresh look
Tectum panels in cafeteria are dirty and stained	Replace tectum panels with cleanable wall surface and add acoustical wall solutions to address any noise issues

Image 15: Main Lobby

Image 16: Corridor

Image 17: Corridor

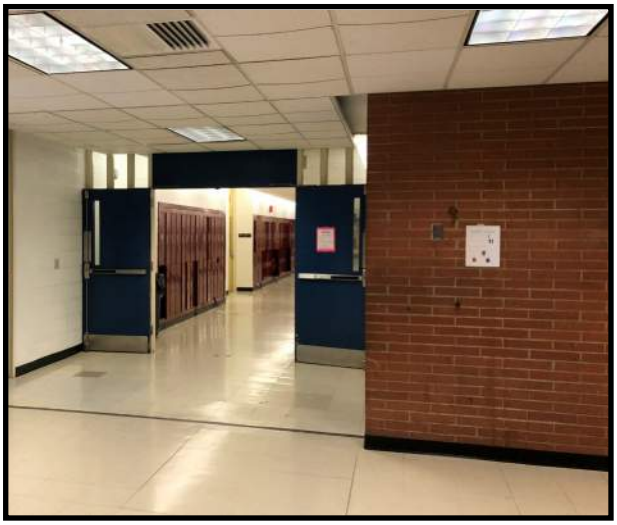

Image 18: Corridor

Image 19: Classroom glazed walls

Image 20: Tectum wall panels in cafeteria

Ceilings

Ceiling finishes are mostly dropped acoustical ceiling tiles in 2x2 grid. The condition of the tiles varies throughout the facility, in several areas they are stained and in poor condition (image 23). In several areas the ceiling tiles are bowing, (image 24) which could be a result of high humidity or moisture from past roof leaks. There is evidence of previous leaks, either from the roof or from above ceiling equipment, which has left stains on the ceiling tiles. In the older portions of the building the sloped roof structure and above ceiling equipment has created very low ceiling heights.

Several areas that have gypsum wallboard ceilings are in disrepair and damage. In the old boiler room there have been numerous sections of the ceiling that were demolished to access equipment above the ceiling and left in an unfinished state (image 26). Other areas where the structure has been intentionally left exposed appear to have adequate spray applied fire proofing installed (image 27). Care should be given to protect the fireproofing from damage. Moisture build up in bridge corridor is creating damage to beams and finishes .

Specific Issues	*Recommendations*
Stained ceiling tiles	Remove damaged tiles and locate the source of the staining (equipment, pipes, roof) repair leaking and replace ceiling tiles
Bowing ceiling tiles	In areas where the bowing is a result of humidity confirm proper airflow, insulation and thermal protection of the spaces above the ceiling. If these issues can not be resolved replace existing tiles with ceiling tiles appropriate for areas of high humidity
Ceiling are damaged / demolished to provide access to the equipment above	Replace damaged ceiling soffits, grids and tiles
Moisture build up on the wood beams and pealing paint	The temperature difference between the non-insulated space and the insulated space creates moisture that leads to rusting on the beams and peeling paint at the wood beams

Image 27A: Fireproofing on exposed structure

Image 27B: Peeling paint & rust due to moisture

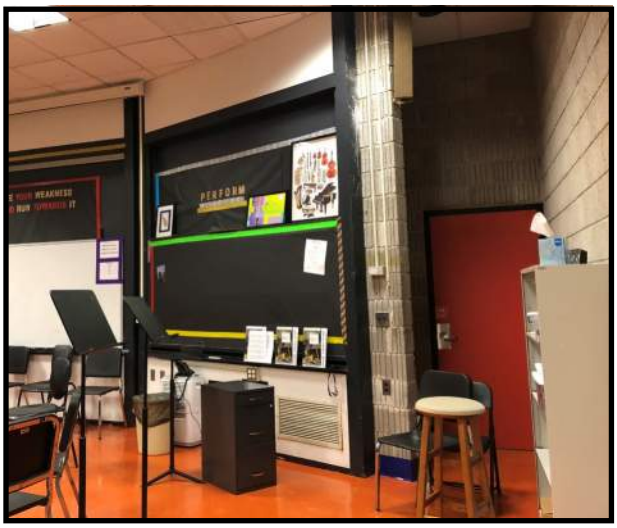

Image 21: Corrugated cmu walls in lecture hall

Image 22: Renovated restrooms

Image 23: Stain ceiling tiles

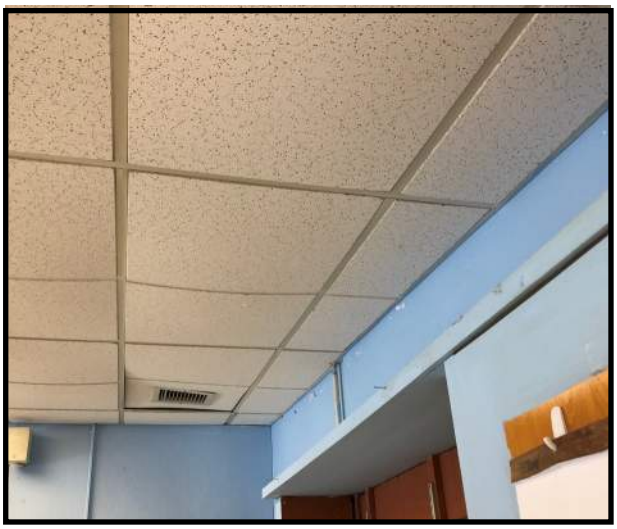

Image 24: Bowed ceiling tiles

Image 25: Damaged ceiling

Image 26: Damaged ceiling

Doors, Frames & Hardware

Interior doors in the older portion of the school are primarily solid wood veneer. Office doors and corridor have vision glass. Most hardware has been upgraded to lever hardware and corridor and exits have panic bar egress systems with surface mounted rods (top and bottom). Doors in the newer wing of the building are hollow metal with narrow vision glass. In general the doors are in fair condition with wood doors showing stains and age and metal doors tend to have rust at the bottom of the doors. Hardware is in good condition however surface mounted hardware on the lower portion of the door does not comply with ADA requirements.

Door frames in general are hollow metal frames and most are in fair condition. Rusting is prevalent at the base of most frames. Other door components such as thresholds, automatic hold open /or closer devices are in varying states of repair.

Numerous areas have recessed door opening with zero latch side push / pull clearance. These areas require significant remodeling to meet ADA / MAAB requirements or the addition of low voltage power for access hardware.

As an additional note entrance doors do not have an airlock vestibule. The addition of a vestibule in these locations would improve both an energy efficiency and security.

Specific Issues	*Recommendations*
Wood doors show staining and age (image 28)	Clean, sand, and re-stain wood doors
Smoke partition doors are being held open with door stops, this prevents the doors from closing on their own and contradicts fire code.	Install magnetic hold opens tied to fire alarm for all corridor doors
Surface mounted hardware (image 30)	Surface mounted hardware interferes with clear push area for accessibility
Rusting hollow metal doors, The base of metal doors are rusting, this is most likely due to cleaning around the doors	Sand and scrape rust from doors, repaint using a rust prohibitive paint
Rusting hollow metal frames Metal door frames are rusting. This is occurring mostly around the base of the frame and likely due to floor cleaning.	Sand and scrape rust from doors, repaint using a rust prohibitive paint
Many doors do not have the push / pull clearance to meet ADA / MAAB requirements (image 33)	Add electronic door openers if relocation of doors is not feasible

Image 28: Wood door (typical)

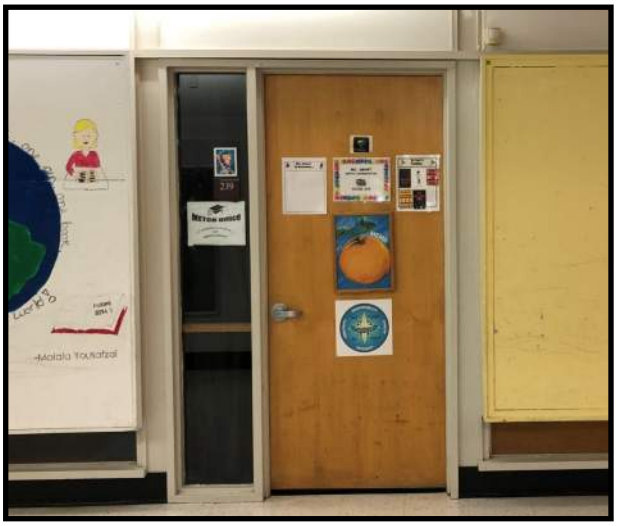

Image 29: Wood doors (typical classroom)

Image 30: Wood doors—with doorstop

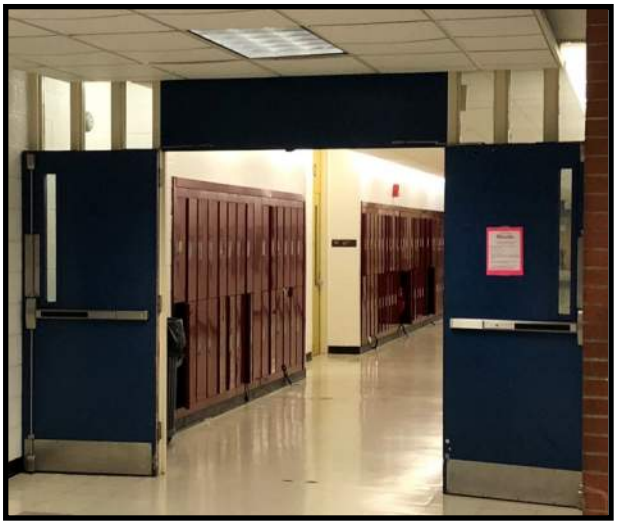

Image 31: Metal doors on hold openers

Image 32: Metal doors

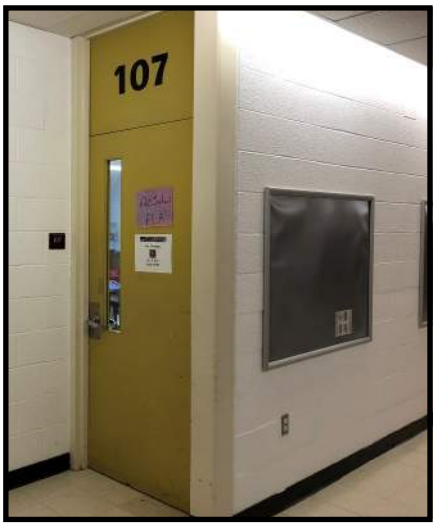

Image 33: No push / pull clearance

Windows

Interior glazing is a mix of clear vison glass (image 28) at office spaces and wire safety glass in corridors and clearstory. All interior glazing appears to be part of the original construction. In some areas the glazing has been replaced with wood or Homasote panels

Specific Issues	*Recommendations*
Clearstory glazing with wire glass previously used in areas that required fire rated separation is no longer acceptable means to meet fire ratings (image 34)	Replace wire glazing with fire rated glass or assembly
Wire glazing at sidelights no longer acceptable for fire rating or safety (image 36)	Replace glazing in the sidelights with tempered glass

Built-In furnishings & Equipment

Most of the lockers in corridors are in good condition and have been recently installed (image 38). Library furnishings and shelving are in good to fair condition. Science lab casework in the 1958 wing is in very poor condition. Some sinks are no longer used and gas has been disconnected. Casework in the Science labs in 1968 wing appears to be in better condition than 1958 (image 41) but renovations of all science labs should be considered in a building remodeling project. Some Science rooms have retrofitted handicap accessible sinks, but not all. Counter tops in the classrooms are delaminating (image 39), and built-in shelving units and casework are in poor condition.

Classrooms in the 1968 wing have built-in book cases along the perimeter of the room, with plastic laminate tops and hardwood edges; these appear to be in fair to poor condition with evidence of wear and tear (image 40).

The Lecture Hall (image 42), currently used as the Music Room, has fixed seating and desks. These have been recently upgraded and are in good condition. There is no ramp within this space therefore, handicap access and seating is limited to the top tier where a desk is available or the lower tier where a built in desk is not present. The A/V cabling, systems, and controls are inoperable and in various states of disassembly or failure.

The cafeteria kitchen equipment is in good condition and staff report most systems work well. The Staff lounge has been recently updated with new furniture, finishes, lighting, and flooring (image 45) and is in very good condition.

Most multi-user restrooms have new fixtures and partitions. (image 43) The modular classroom restrooms are in very poor condition (image 44)

Image 34: Clearstory windows

Image 35: Blocked clearstory windows

Image 36: Wire glass sidelights

Image 37: Sidelight replaced with wood panel

Image 38: Lockers

Image 39: Science counter tops

Security

The main entrance is locked throughout the day with and AI Phone –Camera / Electronic door opener to control access to the building. The front desk can visibly see visitors at the door however, it is at a distance and through the office door and corridor. There is no vestibule that allows for credentials to be verified prior to entering the building. Several classrooms have exterior doors which can be propped open and left unattended. The remaining doors around the building are observed via cameras monitored at the front office.

Current security practices for school environments include a mix of technology and architectural barriers which limit the number of access points, provide visual observation of entrances and grounds, and the inclusion of delayed entry glazing such as School Guard Glass or bullet resistant glass and construction. These additions should be considered during a building renovation project.

Specific Issues	*Recommendations*
Lack of entrance vestibule for security and delayed entrance	Install an entrance vestibule and method for checking credentials prior to accessing the building.

Functional Use of Space

The Pollard Middle School was designed as a Junior High School in 1958. Since that time the school has undergone several additions and updates. Currently the building serves 900 students in grades 7 and 8 and is projected to reach 1000 students in the near future. The building is not positioned to meet the needs of 21st Century Learning environments. This includes technology demands, flexible learning environments , expanded science labs, maker spaces, and extensive special education learning environments.

Image 40: Built in shelving and cabinets

Image 41: Built in shelving

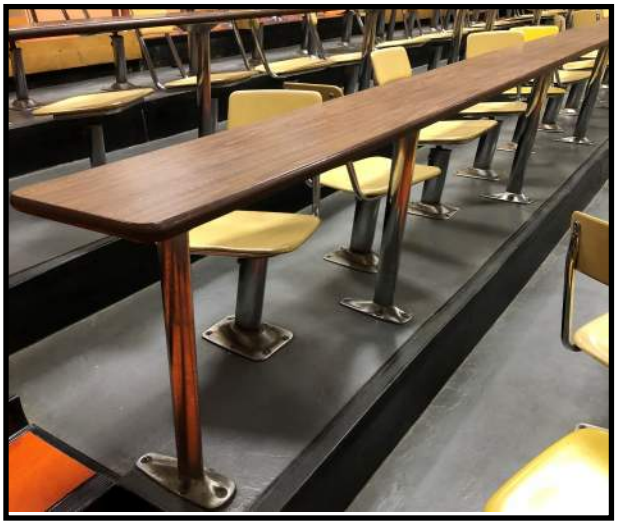

Image 42: Lecture hall

Image 43: New restroom partitions

Image 44: Modular restrooms

Image 45: Staff lounge

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MECHANICAL ASSESSMENT

General Building Information

In general the mechanical systems at the Pollard School are in good to fair condition. Many parts of the system are at or reaching the end of their serviceable life and will become more difficult and costly to repair over time. Except for the recently replaced, 2015, gas fired condensing boilers and gas fired condensing domestic hot water heaters the overall the building and its systems are not energy efficient due to the building envelope and the age of the equipment.

Heating System

The active building heating plant was installed in 2015 and consists of three (3) natural gas-fired "Lochinvar" model FBN3500 hot water boilers with modulating burners. The boilers each have a max. input of 3500 MBH and are of the high-efficiency condensing type. A primary-secondary piping arrangement includes an in line 3 HP primary pump for each boiler (Image 1).

A combined Stainless steel double-wall vent system transfers the boiler flue gasses up through the roof within a masonry chimney. Insulated combustion air ducts are routed from each boiler to the outdoors as is common for direct-vent applications. Two (2) base-mounted secondary pumps circulate water through the building to terminal heating and air-handling units; each pump is provided with a "Yaskawa" VFD for speed modulation (Image 2). One of the secondary pumps is 20 HP and the other is 30 HP.

A duplex fuel oil pump set is installed in the boiler room with two (2) 275 gallon fuel oil storage tanks to serve the standby generator in the adjacent room (Image 3) (Image 4).

Building terminal heating units consist of cabinet hot water unit heaters in the stairways and vestibules, propeller-type hot water unit heaters in the mechanical room, and Air handling units with hot water coils (Image 5).

Perimeter baseboard fin-tube radiators are provided at the majority of exterior walls as the primary heat source for regularly occupied areas (Image 6).

The hot water piping insulation within the mechanical room is in good condition and includes PVC covers at all fittings. Hot water piping insulation routed throughout the building to terminal units is primarily original to the build or was installed in 1993; in either case, the insulation is frequently damaged/ missing and in need of replacement (Image 7). There is also an abandoned heating plant in the 1969 building addition consisting of two (2) "Smith" model 28A-9 gas-fired hot water boilers that are no longer in-service (Image 8).

Specific Issues	*Recommendations*
Hot water piping insulation is damaged and/or missing in many places.	Repair/ replace all damaged/ missing piping insulation as needed.
Terminal heating units have surpassed their expected service life of 20 years.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain as necessary.

Ventilation System

Ventilation for the building spaces is provided by indoor air-handling units (AHU's) manufactured by both "Trane" and "Carrier". The modular classroom HVAC systems are isolated from the building HVAC systems; twelve (12) Packaged DX gas-fired roof-mounted air handling units provide heating, ventilation, and air conditioning to the areas within the modular.

Image 1: Primary pump

Image 2: Secondary pump

Image 3: Duplex fuel oil pump

Image 4: Duplex fuel oil pump

Image 5: Air handling unit

Image 6: Fin-tube radiator

The music room was converted from a lecture hall and is provided with an above-ceiling air-handling unit including a hot water coil and outside air duct connection for heating and ventilation of the space. Similar to the music room, indoor air handling units with hot water coils and outdoor air louver ducted connections are provided for the cafeteria, both of the gyms, the kitchen/ server, the weight room, the locker rooms, home economics 136, meeting room 134, the auditorium, and the art classrooms (Image 9) (Image 10).

Exterior classrooms are generally provided with vertical hot water unit ventilators communicating with an exterior wall outdoor air intake louver (Image 11). The exhaust air from these classrooms is provided by a series of rooftop exhaust fans installed in the 1990's which serve two or four classrooms and help balance airflow within each room. The roof top fans (approximately 40 of them) work in conjunction with the unit ventilators but are extremely inefficient as tey limit the reuse of heated air in the colder months.

Toilet rooms are provided with general exhaust grilles connected to roof-mounted exhaust fans and door-mounted transfer grilles communicating with adjacent corridors for make-up air. The Kitchen is provided with a range hood including cleanable grease filters and a roof exhaust fan (Image 12).

Make-up air for the range exhaust hood is pulled from the air-handling unit serving the servery. There is a laundry room beside the kitchen that includes a dryer ducted to an exterior wall cap for exhaust of heat, lint, and combustion by-products (Image 13).

The indoor generator is contained within a dedicated room adjacent to the boiler room; this generator engine-cooling fan is ducted to an exterior wall louver; make-up air is introduced to the space through a duct system connected to an exterior wall louver (Image 14).

The main electric room includes a roof-mounted fan interlocked with a space temperature sensor for cooling of the space; make-up air for this system is transferred from the adjacent corridor. The abandoned boiler room includes a heating & ventilating unit with a hot water coil to provide tempered combustion air and heat to the space; this unit is abandoned in place with the rest of the equipment in this room (Image 15).

Specific Issues	*Recommendations*
All ventilation equipment has surpassed its expected service life of 20 years.	Review currently installed systems in-depth to determine condition and proper operation; service/ maintain/ replace as necessary.
Damaged duct insulation was noted at many of the exposed air handling units and within the various mechanical rooms.	Repair/ replace all duct insulation as necessary including a vapor barrier for ducts carrying cooled air.

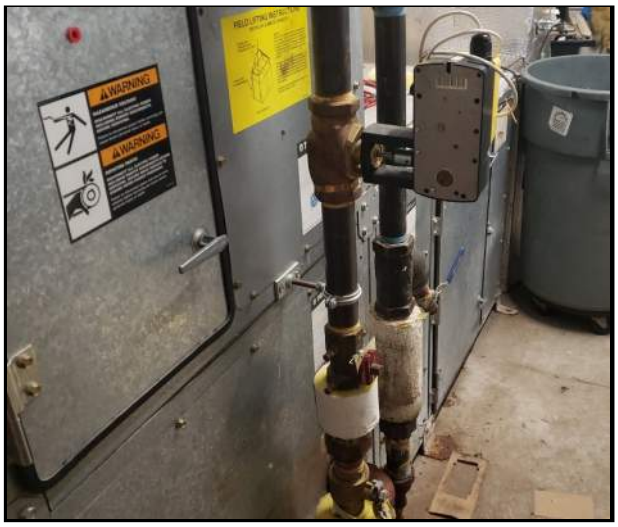

Image 7: Damage insulation

Image 8: Abandon heating plant

Image 9:

Image 10:

Image 11: Unit Ventilator

Image 12: Kitchen range hood

COOLING SYSTEM

The building is not provided with a central cooling system. Classroom 281 is the only regularly-occupied classroom provided with air conditioning by means of an above-ceiling fan coil unit inclusive of a split DX coil and roof-mounted condenser. The modular classrooms all have rooftop DX cooling units that provide cooling to all modular classrooms.

The Cafeteria Trane AHU includes a DX coil and appears to be ready for connection to a split condenser to add cooling to the cafeteria. Approximately 10 dedicated split cooling systems were noted to be installed to serve individual offices, data, and electrical rooms.

The indoor AHU serving the teacher's lounge & admin areas is provided with a split DX cooling coil and roof-mounted condenser (Image 16).

Specific Issues	*Recommendations*
Non-air-conditioned learning spaces generally have poor air quality and lead to lacking attendance and poor learning environments.	Provide a means of air-conditioning for all learning spaces.

CONTROLS

The majority of the building's HVAC systems are monitored and controlled by a direct digital central building control system manufactured by "Barber Coleman Company". The main automatic temperature control (ATC) panel is located in the active boiler room (Image 17).

Blank-plate temperature sensors are located in each space; these do not offer adjustment by the space occupants other than temporary occupancy over-ride, but adjustments of set points may be made through the central control system at a front end workstation (Image 18).

The large spaces with widely varying occupant loads (Gyms and cafeteria) are provided with CO2 sensors and demand control ventilation control for energy conservation.

A Pneumatic control system remains in operation including an air compressor system in the hallway outside of the boiler room, building timeclocks, a number of zone thermostats, and about 50% of the valve & damper actuators. All DDC control components and systems appear to be in good working order while the pneumatic control system is well past its prime and un-reliable.

Specific Issues	*Recommendations*
Pneumatic control system is leaky, antiquated, and un-reliable.	Upgrade all pneumatic control components to be tied into the existing DDC system.
Abandoned pneumatic controls appeared to be present in some spaces.	Upgrade all pneumatic control components to be tied into the existing DDC system.

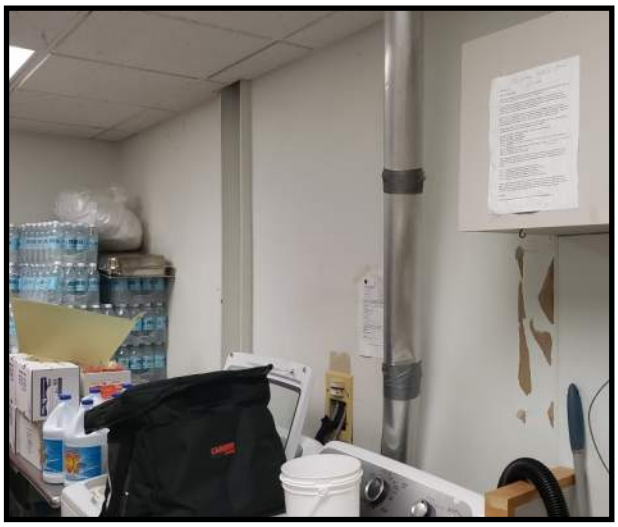

Image 13: Laundry room

Image 14: Indoor generator

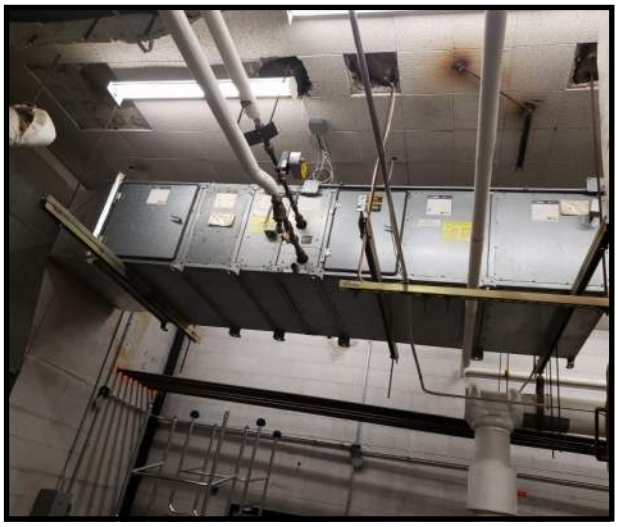

Image 15: Abandon boiler room

Image 16: Indoor AHU

Image 17: ATC in Boiler Room

Image 18: Temperature sensor

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ELECTRICAL ASSESSMENT

General Building Information

The Pollard Middle School was originally constructed in 1956-58. Major renovations and additions took place in 1969 and in 1996. In 2002 modular classrooms added. All major electrical systems have been upgraded from the original 1950's vintage. The condition of the systems vary depending on the date of the installation but in general they are in fair condition and met the code at the time of the installation. There have been some recent computer panel installations in which the equipment is in excellent condition. Several code compliant issues exist and should be addressed.

Power Distribution System

The building is fed by two electric services. The main school service is fed from a utility vault mounted transformer. A new main disconnect has been installed in the boiler room rated at 1200Amperes with (3) 4" conduits that serves a 2000Ampere buss duct to the main switchboard that is rated at 2000Amperes 120/208V 3phase, 4 wire.

The secondary conductors from the vault to the buss-duct including the main disconnect are undersized and not rated to the full capacity of the main switchboard.

The second service is fed from a pole mounted transformer to the modular and is rated at 800 amperes 120/208V 3phase 4 wire.

In general the distribution equipment is manufactured by GE and is in fair condition, however there is minimal spare capacity. A recent addition of computer equipment panels installed to serve computer labs has been installed using square D equipment.

Specific Issues	*Recommendations*
The main service secondary conductors appear to be undersized for the 2000Amp main breaker. (Image 1) (Image 2) (Image 3) (Image 4)	Review and repair as it seems to be a code violation. A service upgrade with a new exterior pad mounted transformer should be provided to remove the vault mounted transformer and correct the secondary conductor issue. This will also provide additional capacity as the existing switchboard does not contain room for expansion.

Interior Lighting

Interior lighting, in general, consists of fluorescent lamps with electronic ballasts. Lighting in classrooms consists of 2x2 or 2x4 troffers with prismatic lenses or 9 cell parabolic louvers. There have been renovations to multiple bathrooms that contain new LED cove and downlights that are in good condition.

Lighting is generally controlled with local line voltage switches with the occasional occupancy sensor installed in spaces that have had some improvements done.

Image 1:

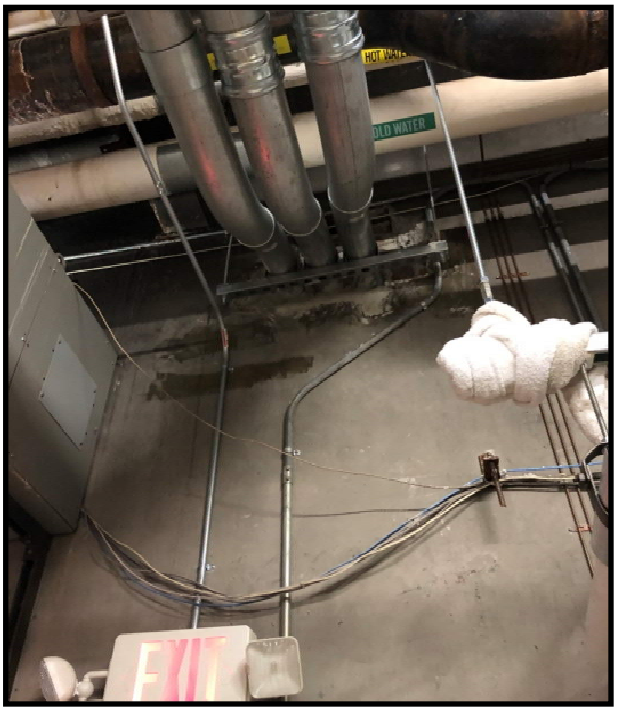

Image 2:

Image 3:

Image 4:

Specific Issues	*Recommendations*
Lighting levels appear adequate for classrooms and offices. Fixtures are in fair to poor condition and are inefficient	Lighting throughout the building should be upgraded to energy efficient LED lighting
Lighting controls in general are local line voltage switches. There are some occupancy sensors installed in various locations.	A new lighting control system should be installed with occupancy sensors and daylight harvesting to reduce energy usage.
There is an occupancy sensor in the main electrical room. This is an electrical code violation.	Replace occ sensor with toggle switch.

Exterior Lighting

Building mounted sconces are installed at egress doors and HID flood lights are installed around the building for safety and security lighting. These lights are not dark sky compliant.

Specific Issues	*Recommendations*
Flood lights mounted to building are HID and non-dark sky compliant	As they fail or as part of an energy saving initiative replace with LED dark sky compliant fixtures.

Fire Alarm System

The fire alarm system is an addressable system manufactured by FCI. Smoke detectors are installed in egress paths. There is no voice evacuation. Voice evacuation is now required in E use groups. The fire alarm system does not meet current codes.

Specific Issues	*Recommendations*
Fire alarm system is not compliant with current code, as it is not equipped with voice evacuation.	Although the system was complaint at the time of installation, any major renovation or alteration will result in the requirement of replacing the fire alarm system.

General Miscellaneous

The facility does not have a lightning protection system. The facility does not have a bi-directional system.

Specific Issues	*Recommendations*
There is no BDA system present in the building, although this is not a requirement for existing buildings, the fire dept. may require this to improve safety.	Contract with a Radio systems vendor on the state contract to determine if the building requires a BDA system.
The BMS workstation is set up in the required working clearance of the electrical panels in the mechanical room.	The workstation needs to be re-located.
There are receptacles in classrooms installed face up. This is a safety concern as debris can get lodged in the receptacles. (Image 5)	Replace receptacles with tombstone style receptacles.
GFI protection in science labs is not code compliant. (Image 6)	Replace non-GFI receptacles with GFI type receptacles that are within 6' of a water source.
Bonding jumper is missing at the water service meter; this is a code violation. (Image 7)	Add bonding jumper.

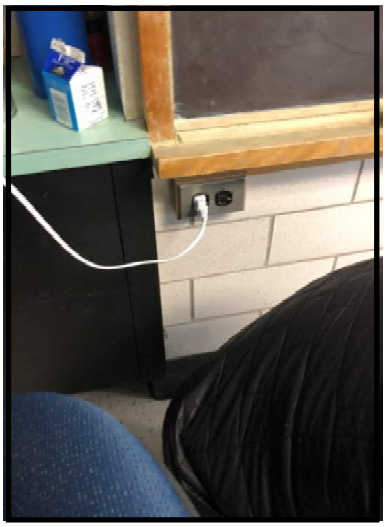

Image 5:

Image 6:

Image 7:

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PLUMBING ASSESSMENT

General Building Information

Presently, the Plumbing Systems serving the building are cold water, hot water, sanitary waste and vent system, storm drain system, and natural gas. The Pollard Middle School was originally constructed in 1956-58, major renovations/additions took place in 1969 then in 1996 with modular classrooms added in 2002.

In general, the plumbing systems are in good condition.

Plumbing Fixtures

Water closets are wall hung vitreous china with exposed manual flush valves. (Image 1); Modular classroom water closets are floor mounted tank type (Image 2).

Urinals are wall hung china with manual flush valves (Image 3).

Lavatories are wall hung vitreous china with mixtures of manual faucets and metering faucets (Image 4). Classroom/Staff sinks are counter mounted stainless steel with gooseneck faucets (Image 6). Janitor's sinks are trap standard enamel sinks with wall mounted faucet equipped with vacuum breakers.

Drinking fountains are wall mounted stainless steel.

The kitchen fixtures are in good condition. Three-bowl pot sink is connected to a grease interceptor. Grease interceptors are located in mechanical room below kitchen.

Specific Issues	*Recommendations*
Not all fixtures are water conserving type.	Consider replacing toilet fixtures with high efficient, low flow fixtures, to increase water savings.

Domestic Water System

The main building water service enters the building Mechanical Room. Water service is 4-inch in size. There is a 2-inch water meter (Image 7). Water piping where exposed is copper tubing with sweat joints. Piping appears to be in good condition. Majority of piping is insulated.

The hot water for the main building is generated through two natural gas fired, tank type water heaters, Lochinvar Shield model SNA401-125 installed in 2015. Water heaters each have a natural gas input of 399,999 BTUH and 120 gallon water storage (Image 9). Water heaters are in good condition. The system includes a thermostatic mixing valve. There are two temperatures provided to the building fixtures. There is a 120 degree F water loop for general fixtures and a 140 degree F loop for the kitchen. The hot water systems are circulated through the building (Image 10).

The Modular building water service enters a closet along side the fire service. Domestic water service is 2-inch in size. There is a 1-inch water meter (Image 8). Water piping where exposed is copper tubing with sweat joints. Piping appears to be in good condition. Majority of piping is insulated.

The hot water for the Modular building is generated through an electric tank type water heater located in a storage closet. (Image 11) The system includes a thermostatic mixing valve. (Image 12) The hot water system is circulated through the modular building.

Image 1: Wall hung water closet

Image 2: Floor Mounted WC in Modular Building

Image 3: Urinals in Modular Building

Image 4: Lavs in Modular Building

Image 5: Drinking Fountains in Modular Building

Image 6: Classroom sink in Modular Building

Specific Issues	*Recommendations*
Domestic water service main shutoff valve is antiquated.	Replace main shutoff valve.

Natural Gas Systems

Natural gas is provided to the building. Gas meter is located on the exterior. Gas supplies the heating boilers, water heaters, kitchen and rooftop HVAC equipment.

Gas piping is black steel with threaded or welded fittings depending on pipe size.

Kitchen cooking equipment is gas fired. The kitchen hood is equipped with a fire suppression system.

Gas pressure to the boilers is not reliable, see Civil report for additional information

Specific Issues	*Recommendations*
None	None

Drainage Systems

Sanitary, waste and vent piping is cast iron piping. Original cast iron is hub and spigot type. Where renovations have occurred cast iron piping is no-hub with no-hub coupling fittings. Cast iron drainage piping appears to be in good condition where visible. Maintenance staff has reported the cast iron drainage piping below the Modular classroom building is susceptible to freezing.

In Science classrooms piping is dur-iron, acid resistant piping. Piping is antiquated.

Specific Issues	*Recommendations*
Science classroom piping is antiquated.	Replace special waste piping with acid-resistant plastic pipe with heat-fused joints.
Modular classroom drains susceptible to freezing.	Provide heat maintenance tape along with fiberglass pipe insulation on exposed drainage piping below Modular classroom building.

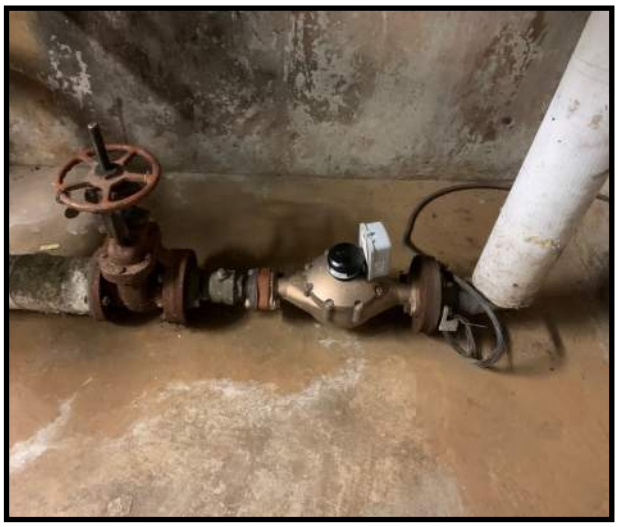

Image 7: Water Meter

Image 8: Modular Building Water Service

Image 9: Water Tank

Image 10: Circulation System

Image 11: Modular Water Tank

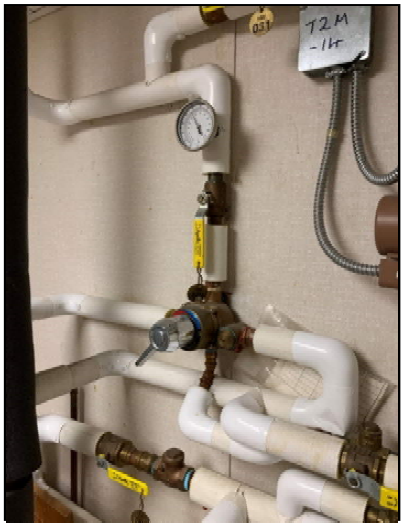

Image 12: Modular circulation

Image 13

Image 14:

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FIRE PROTECTION ASSESSMENT

General Building Information

The Pollard Middle School was originally constructed in 1956-58, major renovations/additions took place in 1969 and in 1996. Modular classrooms were added in 2002. The building is partially protected with an automatic sprinkler system. There are two separate fire services; one for the school building and one for the modular classroom building. The main building system was installed in 1996.

In general, Massachusetts General Law M.G.L. c.148, s.26G requires that any existing building over 7,500 square feet that undergoes ***major*** alterations or building addition must be fully sprinklered. Examples of major alterations are demolition or reconstruction of existing ceilings or installation of suspended ceilings; removal of sub flooring; demolition and/or reconstruction of walls, doors, or stairways; or removal or relocation of a significant portion of the building's mechanical or electrical systems. Alterations are considered major when such work affects 33% or more of the building area or when total work (excluding sprinkler installation) is equal to 33% or more of the assessed value of the building.

If the proposed project scope exceeds these thresholds then the existing building, and its additions if applicable, will require installation of an automatic sprinkler system in all building areas that are not currently protected.

Existing Condition

The main building fire service is located in the existing Mechanical Room. The fire service is 6-inch in size and then reduces to a 4-inch double check valve assembly. There is a 4-inch wet alarm valve. (Image 1) The sprinkler system for the main building includes two zones. Zone control assemblies include a supervised shutoff valve, flow switch an test station. (Image 2)

The modular building fire service is located in an existing closet. The fire service is 3-inch in size and includes a 3-inch double check valve assembly. (Image 3). There is a 3-inch wet alarm valve. The sprinkler system is a single zone for the Modular building.

Existing sprinkler heads appear to be standard response type. Sprinklers in ceiling areas are semi-recessed pendent type. (Image 4) Where piping is exposed, sprinklers are either upright or pendent type. (Image 5)

Fire Department connections are 4" Storz type.

Specific Issues	*Recommendations*
Portions of the existing building are not protected with an automatic sprinkler system.	Expand/extend the existing system to provide full protection throughout the existing building.

Sprinkler Area Plans

A copy of building plans indicating the areas of the building which have an automatic fire protection system can be found in Appendix AX.2 of this section.

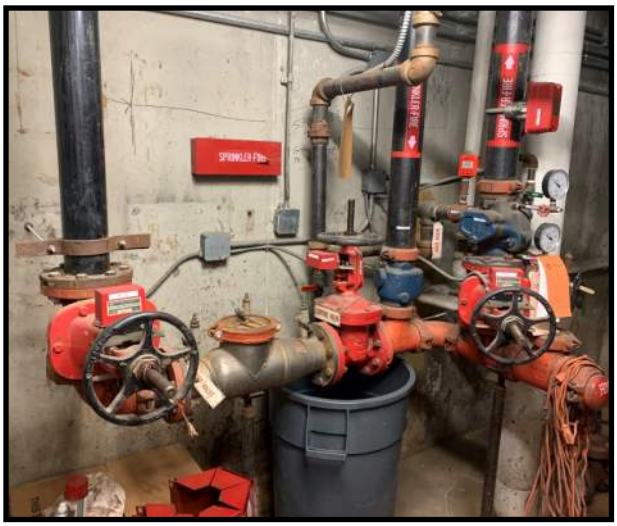

Image 1: Wet Alarm Valve

Image 2: Zone Control

Image 3: Modular Check Valve Assembly

Image 4: Semi-recessed sprinkler

Image 5: Pendent sprinkler

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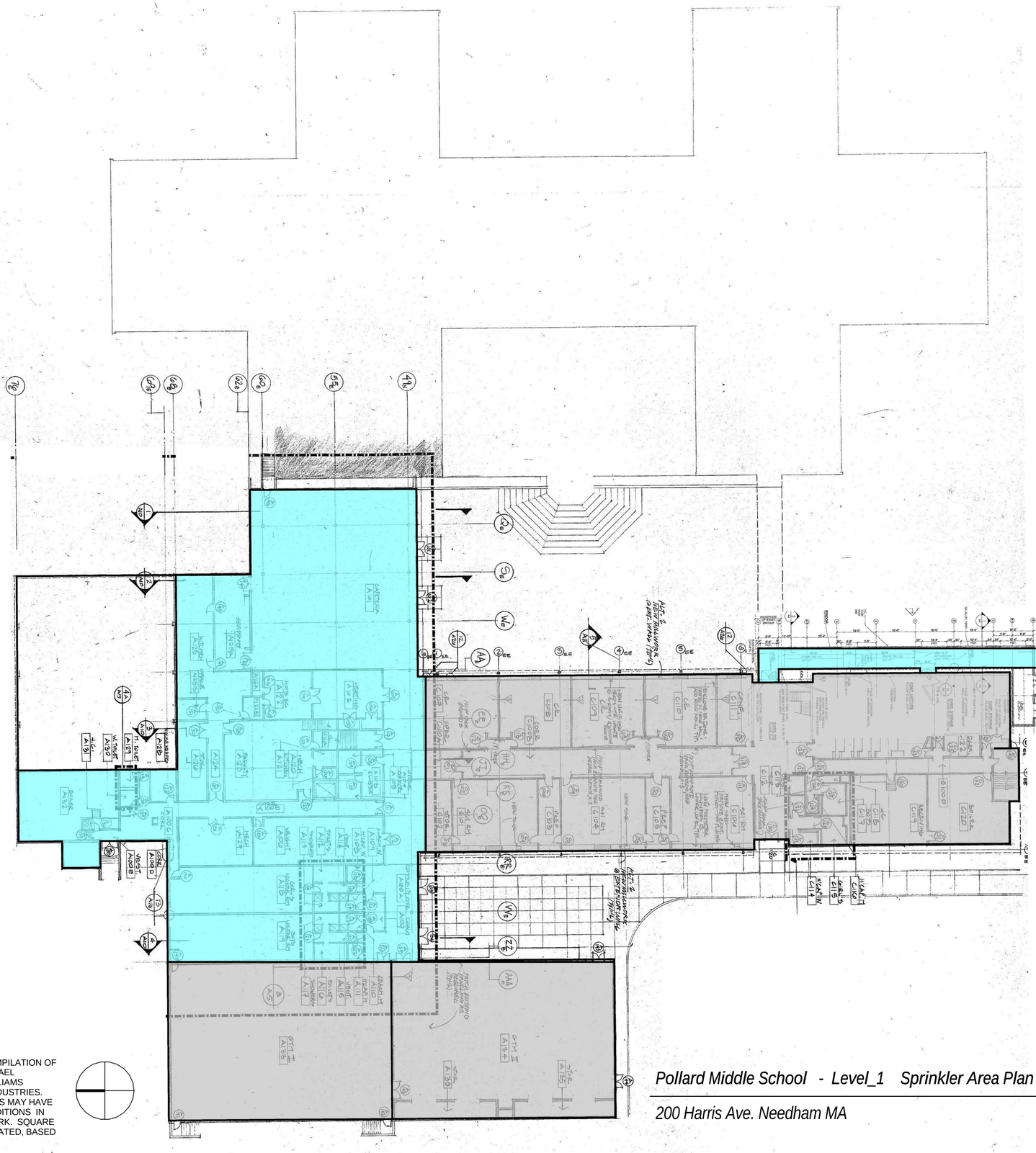
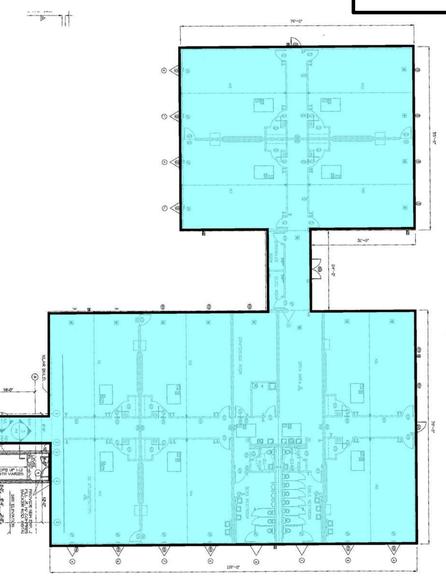
SCHEDULE OF AREA	
Department	Area
NON-SPRINKLERED AREA	
NON-SPRINKLERED AREA	17105 SF
NON-SPRINKLERED AREA	5945 SF
NON-SPRINKLERED AREA	5902 SF
NON-SPRINKLERED AREA	39008 SF
NON-SPRINKLERED AREA	15414 SF
NON-SPRINKLERED AREA	5570 SF
NON-SPRINKLERED AREA	6879 SF
	95824 SF
SPRINKELERED AREA	
SPRINKELERED AREA	11923 SF
SPRINKELERED AREA	12580 SF
SPRINKELERED AREA	20787 SF
SPRINKELERED AREA	5713 SF
	51003 SF
Grand total: 11	146827 SF





AREA KEY PLAN

SPRINKELERED AREA

NON-SPRINKLERED AREA

NOTE : PLANS ARE BASED ON A COMPILATION OF DRAWINGS BY THE OFFICE OF MICHAEL ROSENFELD, INC. ARCHITECTS, WILLIAMS SCOTSMAN, INC. AND MARK LINE INDUSTRIES. POST- CONSTRUCTION ALTERATIONS MAY HAVE BEEN MADE. VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO START OF NEW WORK. SQUARE FOOT AREAS INDICATED ARE ESTIMATED, BASED ON ORIGINAL DRAWINGS.

Pollard Middle School - Level_1 Sprinkler Area Plan

200 Harris Ave. Needham MA

0' 10' 20' 40' 80'

DORE & WHITTIER ARCHITECTS, INC.

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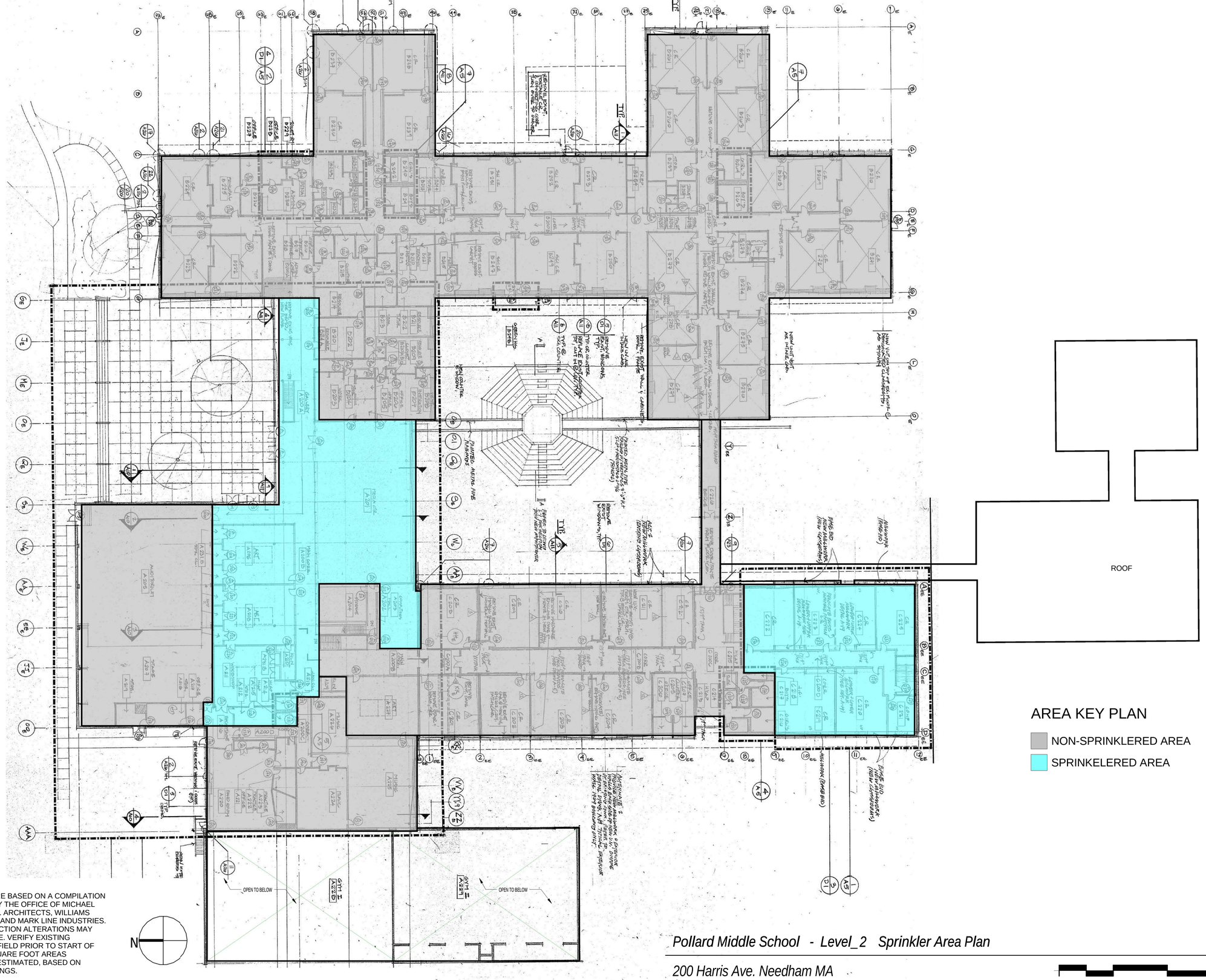

AREA KEY PLAN

NON-SPRINKLERED AREA

SPRINKELERED AREA

NOTE : PLANS ARE BASED ON A COMPILATION OF DRAWINGS BY THE OFFICE OF MICHAEL ROSENFELD, INC. ARCHITECTS, WILLIAMS SCOTSMAN, INC. AND MARK LINE INDUSTRIES. POST- CONSTRUCTION ALTERATIONS MAY HAVE BEEN MADE. VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO START OF NEW WORK. SQUARE FOOT AREAS INDICATED ARE ESTIMATED, BASED ON ORIGINAL DRAWINGS.

Pollard Middle School - Level_2 Sprinkler Area Plan

200 Harris Ave. Needham MA

0' 10' 20' 40' 80'

DORE & WHITTIER ARCHITECTS, INC.

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	POLLARD MIDDLE SCHOOL	Health, Safety & Welfare	Code Compliance	Functional Use of Building or Site	Handicap Accessibility	Extended Life of Building Elements	Efficiency / Energy, Water	Hazardous Material Abatement	Quantity	Cost of Repair / Replacement (xx)	Designer / Pricing Contingency (15%)	Soft Cost (20%)	Estimated Project Cost (xx)	High Priority (1-3 yrs.)	Medium Priority (4-6 yrs.)	Low Priority (7-10 yrs.)	On Going Maintenance	High Priority (1-3 yrs.)	Medium Priority (4-6 yrs.)	Low Priority (7-10 yrs.) or under full renovation project	On Going Maintenance	Notes
	147,225 GSF (including modular classrooms)								Today's Dollars XX/XX/2020													
1	**Site & Civil**								Approximate													
1.01	Mill and overlay pavement where cracking has occurred in parking areas at the front and east side of the school			x					35,465 sq. ft.	$127,674	$19,151	$29,365	$176,190		X				$176,190			
1.02	Mill and overlay pavement where cracking has occurred in parking areas at the rear of the school and the drive aisle toward Dedham Ave			x					40,120 sq. ft	$144,432	$21,665	$33,219	$199,316		X				$199,316			
1.03	Remove curb between parking areas, level extended parking area to match existing grade of the adjacent parking lot, repave area and add ADA accessible parking for both cars and vans to this location to reduce the travel distance to entrances.			x	x				3610 sq. ft.	$51,984	$7,798	$11,956	$71,738		X				$71,738			
1.04	Determine parking requirements for School and provide parking expansion locations on site and improved site circulation for student pick up and drop off, expansion cost to assume removal of soil, installation of drainage structure and installation of parking area for the noted sq.f.t	x		x					21,100 sq. ft	$621,720	$93,258	$142,996	$857,974		X				$857,974			
1.05	An assessment of the site and accessible entrance doors and path should be conducted. Regrade and resurface sidewalks and pathways to all entrances / exits.			x	x				6000 sq. ft. sloped sidewalk and grading	$108,000	$16,200	$24,840	$149,040		X				$149,040			
1.06	Add handrails to exterior steps where none currently exist; includes concrete patching				x				250 lf	$47,400	$7,110	$10,902	$65,412	X				$65,412				
1.06	Add signage for ADA parking spaces and to direct persons toward the accessible entrances			x	x				4 locations	$7,680	$1,152	$1,766	$10,598	X				$10,598				
1.07	Extend bus loop and develop site circulation that allows parent drop off / pick up on site	x		x					7500 sq. ft.	$135,000	$20,250	$31,050	$186,300		X				$186,300			
1.08	A hydrant flow test is needed to verify water pressure is sufficient to extend the fire protection system to cover the entire facility (see fire protection report)	x	x	x					3 locations	$1,800	$270	$414	$2,484		X				$2,484			
1.09	Provide a new gas main in Harris Avenue to accommodate gas boiler service and provide consistent, reliable gas service during heating season.	x		x					300 lf	$54,000	$8,100	$12,420	$74,520		X			$74,520				
1.10	Provide new sewer and water line connections	x		x					300 lf each	$112,800	$16,920	$25,944	$155,664			X		$155,664				
1.11	Provide new drainage structures and pipe including water quality structures to meet MADEP Stormwater Standards		x						site	$570,204	$85,531	$131,147	$786,882			X				$786,882		
1.12	Review roof drain down spouts and connections to underground drainage and surface drains outlets repair areas that are causing washout and deterioration of sidewalks			x					34 locations	$28,560	$4,284	$6,569	$39,413		X				$39,413			
1.13	Review roof drain down spouts on the west side of the school and resolve existing freeze/thaw issues.			x					10 locations	$12,000	$1,800	$2,760	$16,560	X				$16,560				
1.14	Remove underground storage tanks that are still located on site - reports indicate that two tanks may still be on site							x	2 tanks	$108,000	$16,200	$24,840	$149,040	X				$149,040				
1.15	Renovate tiered courtyard to meet ADA / MAAB accessibility		x		x				10,000 sq. ft.	$180,000	$27,000	$41,400	$248,400	X				$248,400				
1.16	Remove grading and sidewalk adjacent to the retaining wall near gym. Remove cmu block wall. Repair any damage to the poured in place wall. Install grading and sidewalk at proper slope and pitch					x			15 lf	$17,100	$2,565	$3,933	$23,598			X				$23,598		
1.17	Remove exterior stair and ramp handrails that are in poor condition, patch and repair concrete , replace handrail post with surface mounted post to avoid water infiltration	x	x		x				40 lf	$9,600	$1,440	$2,208	$13,248	X				$13,248				
	TOTAL									**$2,337,954**	**$350,693**	**$537,729**	**$3,226,377**					$395,784	39412.8	786881.52	0	$1,222,078
2	**Structural Elements**																					
2.01	Repair localized cracking of the brickwork on exterior wall					x			20,000 sq. ft	$120,000	$18,000	$27,600	$165,600	X				$165,600				
2.02	Scrape and repaint exterior columns, baseplates, and beams to avoid damage from rust.					x			100 locations	$144,000	$21,600	$33,120	$198,720	X				$198,720				
2.03	Where columns that sit on the ground have rusting base plates and there is deterioration of the column cut lower portion of the column and install new concrete pier with base plate for the column to sit on					x			30 locations	$90,000	$13,500	$20,700	$124,200	X				$124,200				
	TOTAL									**$354,000**	**$53,100**	**$81,420**	**$488,520**					$165,600	$0	$0	$0	$165,600
3	**Exterior Architectural Elements**																					
3.01	Install complete foundation waterproofing and minimum R-10 rigid insulation around foundation wall with protection board.						x		1400 lf	$370,800	$55,620	$85,284	$511,704			X				$511,704		
3.02	Where foundation wall has deteriorated around structural columns at connection bridge remove or support the glass wall section - cut column, install new concrete pier and base plate for structural support					x			40 lf	$30,000	$4,500	$6,900	$41,400	X				$41,400				
3.03	Repair foundation cracks by removing loose / damaged materials, and repair cracks in foundation walls to prevent continued damage from moisture infiltration					x			200 lf	$18,000	$2,700	$4,140	$24,840		X				$24,840			
3.04	Continue monitoring and mitigating moisture of foundation walls below grade. Patch and repair areas damaged by moisture.								200 sq. ft.	$28,800	$4,320	$6,624	$39,744				X				$39,744	

	POLLARD MIDDLE SCHOOL	Health, Safety & Welfare	Code Compliance	Functional Use of Building or Site	Handicap Accessibility	Extended Life of Building Elements	Energy / Efficiency / Energy, Water	Hazardous Material Abatement	Quantity	Cost of Repair / Replacement (xx)	Designer / Pricing Contingency (15%)	Soft Cost (20%)	Estimated Project Cost (xx)	High Priority (1-3 yrs.)	Medium Priority (4-6 yrs.)	Low Priority (7-10 yrs.)	On Going Maintenance	High Priority (1-3 yrs.)	Medium Priority (4-6 yrs.)	Low Priority (7-10 yrs.) or under full renovation project	On Going Maintenance	Notes
3.05	Upgrade building envelope to include minimum R-21 wall insulation systems and resolve thermal bridging of the structural system								3000 lf perimeter	$621,000	$93,150	$142,830	$856,980			X				$856,980		
3.06	Replace the entire facilities window assemblies with thermally broken high performing systems					x			1500 lf	$1,386,000	$207,900	$318,780	$1,912,680		X				$1,912,680			
3.07	Remove mold from brick walls, address moisture infiltration through the bricks, at the roof, or through improper roof drainage systems. I					x			5000 sq. ft	$90,000	$13,500	$20,700	$124,200				X				$124,200	
3.08	In areas with mold on vertical wood siding remove and replace the wood panel. Investigate the cause of both water infiltration and retention. Repair all areas and replace siding. Where possible replace the wood siding with more durable siding materials.					x			800 sq. ft.	$43,200	$6,480	$9,936	$59,616	X				$59,616				
3.09	Replace missing siding and repair other loose board to avoid further deterioration.					x			200 sq. ft.	$9,600	$1,440	$2,208	$13,248	X				$13,248				
3.10	Replace modular classrooms with a permanent building addition			x					16,000 sq. ft.	$6,720,000	$1,008,000	$1,545,600	$9,273,600		X				$9,273,600			
3.11	Repair, replace, or install new weather sealing gaskets and associated hardware at exterior doors			x		x			10 doors	$4,800	$720	$1,104	$6,624	X				$6,624				
3.12	Rusted doors & hardware. Clean & prep corroded doors and apply proper corrosion resistant paint system.			x		x			30 doors	$10,800	$1,620	$2,484	$14,904	X				$14,904				
3.13	Review all doors and repair, replace, or install missing, damaged, or misaligned thresholds			x		x			5 doors	$1,800	$270	$414	$2,484	X				$2,484				
3.14	Review the egress paths for each door and verify that the doors swing in the proper direction and that there is clearance for exiting in the path of travel. Replace doors or redirect egress paths that do not meet code requirements.		x	x	x				6 doors	$14,400	$2,160	$3,312	$19,872	X				$19,872				
3.15	Verify door hardware meets pull requirement—the ability to open the door with a closed fist.		x	x	x				25 doors	$45,000	$6,750	$10,350	$62,100	X				$62,100				
3.16	Review door numbering with public safety officials to verify the door numbers meet the requirements and address any issues that require change.			x					50 doors	$9,000	$1,350	$2,070	$12,420		X				$12,420			
3.17	As part of a comprehensive facility envelope upgrade / renovation project the entire exterior façade including the window systems should be redesigned to modulate thermal performance, daylighting, and interior comfort.			x		x	x		3000 lf perimeter	Included in 3.04 + 3.05 above	$0	$0	$0			X				$0		
3.18	Inspect, repair, replace window gaskets and sealant(s) as needed to maintain air and water-tightness.			x		x			800 lf	Included in 3.05 above	$0	$0	$0	X				$0				
3.19	Review all soffit vent conditions, remove vents and debris, install screening behind the vent where insect and animal nesting is occurring					x			200 sq. ft	$3,600	$540	$828	$4,968	X				$4,968				
3.20	Examine all horizontal wood soffits for rot or moisture infiltration, replace all damaged board, scrape and repaint all remaining boards. Consider replacing wood soffits with metal soffits (pricing includes replacement)			x		x			2000 sq. ft.	$192,000	$28,800	$44,160	$264,960	X				$264,960				
3.21	Review all gypsum soffits for water infiltration, remove and replace damaged boards—consider replacing with metal soffit (pricing includes replacement)			x		x			2000 sq. ft.	$192,000	$28,800	$44,160	$264,960	X				$264,960				
3.22	Scrape paint from corrugated metal soffits, repair any area that have sever rust, repaint soffits with rust protecting paint			x		x			2500 sq. ft.	$45,000	$6,750	$10,350	$62,100	X				$62,100				
3.23	Examine metal facia around the building, repair or replace facia where gaps or rusting have occurred					x			800 lf	$28,800	$4,320	$6,624	$39,744	X				$39,744				
3.24	Window frame gasketing & primary seals are loose or inadequate at the gym high windows. Inspect, repair, replace gaskets and sealant(s) as needed to maintain air and water-tightness.			x		x			200 sq. ft.	$4,800	$720	$1,104	$6,624	X				$6,624				
3.25	Install steps between the seating and platform steps with handrails.	x		x	x				360 lf	$67,200	$10,080	$15,456	$92,736	X				$92,736				
3.26	Install handrails on each side of the stairway with extensions to meet ADA / MAAB	x	x	x	x				50 lf	$9,000	$1,350	$2,070	$12,420	X				$12,420				
3.27	Repaint handrails that chipped and pealing paint					x			300 lf	$7,200	$1,080	$1,656	$9,936				X				$9,936	
3.28	Assess locations of existing holes and surrounding materials. Patch and repair all holes with like materials					x			50 sq. ft.	$7,200	$1,080	$1,656	$9,936	X				$9,936				
3.29	Exits from north / green gym are non-compliant due to stairwell(s) leading to grade. Substantial re-grading required at exterior, construct new ramp, stairs, landing, railings, and proper door(s) needed to make exits compliant with current accessibility code.			x	x				100 lf ramp	$126,000	$18,900	$28,980	$173,880			X					$173,880	
3.30	Handrails and Guardrails throughout are not code compliant. Fabricate and install proper steel hand and guard rail assemblies at all stairs, ramps, ledges, and balconies.	x	x	x	x				350 lf	$126,000	$18,900	$28,980	$173,880	X				$173,880				

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	TOTAL									$10,212,000	$1,531,800	$2,348,760	$14,092,560					$978,696	$11,223,540	$1,368,684	$347,760	$13,918,680
4	**Interior Architectural Elements**																					
4.01	Remove VAT (currently VAT is either covered or in good condition - removal and abatement is recommended). Some VAT is located under VCT flooring, in these areas both flooring materials should be removed and replaced					x		x	2600 sq. ft.	$21,840	$3,276	$5,023	$30,139		X				$30,139			
4.02	For esthetic purposes the patches should be replaced with matching VCT tiles, if the existing tiles can not be matched a pattern can be established to weave in the new tiles					x			1500 sq. ft.	$16,200	$2,430	$3,726	$22,356		X				$22,356			
4.03	Remove damaged flooring in Mechanical Room and replace with new VCT	x		x		x		x	200 sq. ft	$2,400	$360	$552	$3,312	X				$3,312				
4.04	Clean quarry tile and grout in kitchen and servery, if staining remains consider replacing tiles or re-grouting floor (pricing is based on replacement)					x			2000 sq. ft.	$72,000	$10,800	$16,560	$99,360				X				$99,360	
4.05	Remove existing caution tape on stair nosing and replace or replace treads with integral colored nosing edge				x				2 stairways	$8,640	$1,296	$1,987	$11,923	X				$11,923				
4.06	Replace stair nosing in lecture hall	x							4 locations	$960	$144	$221	$1,325	X				$1,325				
4.07	Green gym floor (scheduled for June 2020)					x			6000 sq. ft.	$158,400	$23,760	$36,432	$218,592									
4.08	Wood paneling in main lobby and corridor is in fair condition but show age and wear Sand existing paneling, patch any damaged areas or replace panels where damage is extensive, refinish wood paneling. Consider using a lighter stain to look less dated and match other woodwork in the building					x			270 lf	$58,320	$8,748	$13,414	$80,482		X				$80,482			
4.09	Replace existing bulletin boards with new boards built into the existing frame work.			x					200 lf	$24,000	$3,600	$5,520	$33,120			X				$33,120		
4.10	Wash brick walls, refinish grout, consider painting walls for a fresh look					x			300 lf	$46,800	$7,020	$10,764	$64,584				X				$64,584	
4.11	Replace tectum panels in cafeteria with cleanable wall surface and add acoustical wall solutions to address any noise issues					x			500 lf	$138,000	$20,700	$31,740	$190,440		X				$190,440			
4.12	Non-structural masonry cracks and holes. Patch and prep for paint all masonry surfaces. Remove loose materials and pre-treat or prime as needed for new interior paint system.					x			200 lf	$6,000	$900	$1,380	$8,280		X				$8,280			
4.13	Remove damaged tiles and locate the source of the staining (equipment, pipes, roof) repair leaking and replace ceiling tiles					x			2000 sq. ft.	$31,200	$4,680	$7,176	$43,056	X				$43,056				
4.14	Replace damaged, bowing, missing, or otherwise deformed with new tile / grids where needed. During any ceiling tile replacement, new tiles should be "humidity/sag resistant".					x			2000 sq. ft.	$21,600	$3,240	$4,968	$29,808	X				$29,808				
4.15	Missing / damaged hard ceiling in old boiler room. Remaining ceiling should be completely demolished and removed—and replaced, or determine if spray applied fireproofing is needed / desired in lieu of a finished ceiling in the utility space.					x			400 sq. ft	$12,000	$1,800	$2,760	$16,560	X				$16,560				
4.16	Fire rating tags missing, obscured, or not present on doors. Confirm need and rating for doors at various areas—then confirm existing doors are appropriately rated, replacing non-rated or damaged doors where needed. Install magnetic hold opens tied to fire alarm for all corridor doors		x						6 locations	$36,000	$5,400	$8,280	$49,680	X				$49,680				
4.17	Clean, sand, and re-stain wood doors					x			34 doors	$8,160	$1,224	$1,877	$11,261		X				$11,261			
4.18	Surface mounted hardware interferes with clear push area for accessibility				x				6 doors	$6,480	$972	$1,490	$8,942	X				$8,942				
4.19	The base of metal doors are rusting, this is most likely due to cleaning around the doors					x			30 doors	$18,000	$2,700	$4,140	$24,840	X				$24,840				
4.20	Metal door frames are rusting. This is occurring mostly around the base of the frame and likely due to floor cleaning.					x			100 frames	$72,000	$10,800	$16,560	$99,360	X				$99,360				
4.21	Add electronic door openers to meet ADA / AAB requirements where relocation of doors is not feasible.		x	x	x				10 doors	$54,000	$8,100	$12,420	$74,520		X				$74,520			

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4.22	Replace wire glass at borrowed lights and sidelights with appropriate fire rate, tempered, or security glass as required.	x	x						36 locations	$55,296	$8,294	$12,718	$76,308		X				$76,308			
4.23	Install ADA / AAB compliant handrails at the main staircases and provide proper extensions at both the top and the bottom of the stairway.	x	x		x				2 locations	$24,000	$3,600	$5,520	$33,120	X				$33,120				
4.24	Install an entrance vestibule and method for checking credentials prior to accessing the building.	x		x			x		1 location	$180,000	$27,000	$41,400	$248,400	X				$248,400				
4.25	Install vestibule at doors near gym to improve heating efficacy	x		x			x		2 location	$60,000	$9,000	$13,800	$82,800		X				$82,800			
4.26	Damaged / missing A/V system components in Music Room / Lecture Hall. Remove all old wiring, equipment, and controls and replace with updated system compatible with instructional needs.			x					1 location	$24,000	$3,600	$5,520	$33,120		X				$33,120			
4.27	Chemical (Science) storage remains inadequate, provide lockable storage area for chemicals	x	x	x					4 locations	$12,000	$1,800	$2,760	$16,560	X				$16,560				
4.28	Provide storage area for Items stored in rooms with electrical distribution panels,	x	x						1 location	$600	$90	$138	$828				X	$828				
4.29	Place guard rail or wall below the spiral staircase in custodial office	x	x						1 location	$3,600	$540	$828	$4,968		X				$4,968			
	TOTAL									**$1,172,496**	**$175,874**	**$269,674**	**$1,618,044**					$587,714	$614,674	$33,120	$163,944	$1,399,452
5	**Mechanical - HVAC**																					
5.01	Repair and/or replace all damaged/missing hot water piping insulation as needed.					x	x		200 lf	$12,000	$1,800	$2,760	$16,560				X				$16,560	
5.02	Review currently installed terminal heating systems in-depth to determine condition and proper operation; service/ maintain as necessary, or replace					x	x		5 locations	$12,000	$1,800	$2,760	$16,560				X				$16,560	
5.03	Review currently installed ventilation equipment in-depth to determine condition and proper operation; service/ maintain/ replace as necessary. (priced as replacement)	x	x			x	x		entire facility	$2,650,050	$397,508	$609,512	$3,657,069	X				$3,657,069				
5.04	Repair/ replace all duct insulation as necessary including a vapor barrier for ducts carrying cooled air.					x	x		entire facility	$1,056,000	$158,400	$242,880	$1,457,280			X				$1,457,280		
5.05	Provide a means of air-conditioning for all learning spaces.			x					entire facility	$4,416,750	$662,513	$1,015,853	$6,095,115		X				$6,095,115			
5.06	Upgrade all pneumatic control components to be tied into the existing DDC system.						x			$1,060,020	$159,003	$243,805	$1,462,828	X				$1,462,828				
	TOTAL									**$9,206,820**	**$1,381,023**	**$2,117,569**	**$12,705,412**					$5,119,897	$6,095,115	$1,457,280	$33,120	$12,705,412
6	**Electrical**																					
6.01	The main service secondary conductors appear to be undersized for the 2000Amp main breaker. This should be reviewed and repaired as it appears to be a code violation. A service upgrade with a new exterior pad mounted transformer should be provided to remove the vault mounted transformer and correct the secondary conductor issue.	x	x	x		x			1 main service	$202,500	$30,375	$46,575	$279,450	X				$279,450				
6.02	Lighting throughout the building should be upgraded to energy efficient LED lighting.						x		entire facility	$1,501,695	$225,254	$345,390	$2,072,339		X							
6.03	Provide a new lighting control system installed with occupancy sensors and daylight harvesting to reduce energy usage.						x		entire facility	$353,340	$53,001	$81,268	$487,609		X							
6.04	There is an occupancy sensor in the main electrical room. This is an electrical code violation. Replace occ sensor with toggle switch.	x	x						1 location	$600	$90	$138	$828	X				$828				
6.05	Flood lights mounted to building are HID and non-dark sky compliant. As they fail or as part of an energy saving initiative replace with LED dark sky compliant fixtures.		x				x		entire facility	$18,000	$2,700	$4,140	$24,840	X				$24,840				
6.06	Fire alarm system is not compliant with current code, as it is not equipped with voice evacuation. Although the system was complaint at the time of installation, any major renovation or alteration will result in the requirement of replacing the fire alarm system.	x	x						entire facility	$1,236,690	$185,504	$284,439	$1,706,632		X							
6.07	There is no BDA system present in the building, although this is not a requirement for existing buildings, the fire dept. may require this to improve safety. Contract with a Radio systems vendor on the state contract to determine if the building requires a BDA system.	x							1 location	$54,000	$8,100	$12,420	$74,520		X							
6.08	The BMS workstation is set up in the required working clearance of the electrical panels in the mechanical room. The workstation needs to be re-located.	x		x					1 location	$12,000	$1,800	$2,760	$16,560	X				$16,560				
6.09	There are receptacles in classrooms installed face up. This is a safety concern as debris can get lodged in the receptacles. Replace receptacles with tombstone style receptacles.	x	x	x					16 locations	$9,600	$1,440	$2,208	$13,248	X				$13,248				
6.10	GFI protection in science labs is not code compliant. Replace non-GFI receptacles with GFI type receptacles that are within 6' of a water source.	x	x	x					16 locations	$6,720	$1,008	$1,546	$9,274	X				$9,274				
6.11	Bonding jumper is missing at the water service meter; this is a code violation. Add bonding jumper.	x	x						1 location	$900	$135	$207	$1,242	X				$1,242				
	TOTAL									**$3,396,045**	**$509,407**	**$781,090**	**$4,686,542**					$345,442	$0	$0	$0	$345,442
7	**Plumbing**																					

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7.01	Replace toilet fixtures with high efficient, low flow fixtures, to increase water savings.			x			x		single user toilet rooms	$43,200	$6,480	$9,936	$59,616		X				$59,616			
7.02	Replace domestic water service main shutoff valve.			x					1 location	$6,000	$900	$1,380	$8,280	X				$8,280				
7.03	Replace special waste piping in Science Classroom with acid-resistant plastic pipe with heat-fused joints.	x	x	x					8 locations	$48,000	$7,200	$11,040	$66,240	X				$66,240				
7.04	Modular classroom drains susceptible to freezing. Provide heat maintenance tape along with fiberglass pipe insulation on exposed drainage piping below Modular classroom building. If modular classrooms remain	x		x		x				$18,000	$2,700	$4,140	$24,840	X				$24,840				
	TOTAL									**$115,200**	**$17,280**	**$26,496**	**$158,976**					$99,360	$59,616	$0	$0	$158,976
8	**Fire Protection**																					
8.01	Portions of the existing building are not protected with an automatic sprinkler system. Expand/extend the existing system to provide full protection throughout the existing building.	x	x						entire facility	$1,501,695	$225,254	$345,390	$2,072,339									
	TOTAL									**$1,501,695**	**$225,254**	**$345,390**	**$2,072,339**					$0	$0	$0	$0	$0
9	**Hazardous Material**																					
	HAZMAT ALLOWANCE											$0	$0								$0	
	TOTAL									$28,296,210	$4,244,432	$6,508,128	$39,048,770					$7,692,493	$18,032,358	$3,645,966	$544,824	
											$32,540,642											
											$221.03											
										$3,691,770												

GENERAL NOTES

1. Refer to each section of the Report for more detailed information. Before moving forward with a specific project, a detailed review of the scope of work and a re-assessment of the cost estimate for that scope should be performed.

2. Some items should be completed in combination with other items. Some of these suggestions may be noted above. We recommend that once a scope of work is desired to be pursued, a mini-study should be done to confirm which work should be done together. See the next general note below for additional information.

3. Due to the conceptual nature of these recommendations and estimates and the complexity of existing conditions, several solutions may be provided to achieve the end result. Existing conditions in some areas may limit the ability to fully implement the proposed scope of work. Part or all of this work may trigger other renovation requirements related to code, seismic, sprinklers or handicap accessibility. Once a determination is made to move forward with a specific improvement line item, a mini study specific to the scope of work should be done to confirm the scope of work, prepare sketches as necessary and prepare a refined cost estimate.