



REGIONAL SCHOOL DISTRICT 18

Lyme & Old Lyme

Facility Study – Middle School

August 15, 2021



QuisenberryArcariMalik

195 Scott Swamp Road Farmington, CT 06032 + (860) 677-4594 + qamarch.com



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Lyme & Old Lyme
Facilities Study & Educational Specifications

August 15, 2021

Team Members

Architect:

Rusty Malik
Quisenberry Arcari Architects
195 Scott Swamp Rd
Farmington, CT 06032

Site:

Michael Kluchman
BSC Group
655 Winding Brook Drive
Glastonbury, CT 06033

Structural Engineer:

Johnathan A Hurlburt
Macchi Engineers, LLC
44 Gillett Street
Hartford, CT 06105

MEP & Fire Protection:

Michael Bouchard
Consulting Engineering Services, Inc.
811 Middle Street
Middletown, CT 06457



Existing Conditions Survey

1.0 Overview:

Old Lyme / Lyme Middle School is located at 53 Lyme Street in Old Lyme, CT. The school has gone through several renovations and additions throughout the years, it currently houses the towns 6-8 graders. The school is located in the center of Old Lyme off Lyme St / High School Road. It is part of a campus which also houses Center School as well as the Lyme-Old Lyme High School. The latest large-scale renovation / addition work was completed in 2002.

Original and subsequent additions to the middle school have been constructed out of a masonry design with brick and CMU finishes. The school is predominantly a single story design which houses classrooms, a gymnasium, administrative offices, auditorium, media center around a central courtyard. Due to its single story design the building is relatively spread out. The building is situated on a relatively flat portion of the site with minimal grade changes around the building.



Figure 1.01: Old Lyme / Lyme Middle School Aerial Photograph

This report contains an architectural systems conditions analysis, accompanied by photographs, a building systems and infrastructure report, and finally a site and utilities evaluation.

A summary of the major concerns of the building, MEP systems, and site are as follows:

Section 1: Architectural & Interiors

- Aging of exterior materials – CMU deterioration, control joint cracking

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- Aged interior finishes including flooring and ceramic tile
- Aged classroom millwork
- Deteriorating exterior hollow metal door frames
- Layout not conducive to current secured entry standards
- Potential non-compliance with code requirements, egress, and plumbing fixtures
- Outdated technology and design

Section 2: Building Systems & Infrastructure

- Structural
- Mechanical
- Plumbing
- Electrical

Section 3: Site & Site Utilities



1.1 Exterior Wall & Roof Assembly:

Masonry: The primary exterior wall assembly is consistent throughout the building. The exterior walls are typically a masonry wall with CMU backup and a Brick or CMU veneer. The CMU and brick have been maintained over the years however there are several areas where there are noticeable cracks and repair due to a lack of control joints in the veneer. At the CMU veneers specifically at the windows there appears to be a poor construction of the CMU with uneven finish and grouting, broken and chipped pieces, as well as improper flashing



Windows: The windows were replaced in a 2002 renovation project. They are double hung aluminum windows that are a more traditional design. The windows appear to be in good shape and have been maintained well. No cracked glazing was noticed or broken seals. The exterior aluminum flashing appears in good shape as well. The windows at the gymnasium appear like they could be older than the rest of the windows and might not have been replaced as part of the 2002 renovation.



Wall Insulation: Based on the existing construction documents and age of the building the brick and CMU exterior wall assemblies appear to have a mix of rigid insulation and a lack of it. The good portion of the building appears to have CMU with Brick and CMU veneer with no air space or insulation. Some additions such as the recent mechanical room addition do have a layer of rigid insulation and air space between as required by code. CMU walls below some of the windows appear so though they may be the only material between the interior and exterior (no brick or CMU veneer).

1.2 Roofing, Waterproofing, & Insulation:

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Review of the insulation and envelope protection systems was limited to the visible external components. Many of these protective systems are installed within the walls, below grade, and within the roof construction interstitial space.

Roof Assembly: The roof membrane system was replaced in 2002 with a new fully adhered PVC membrane. Portions of the roof deck were also replaced at the time due to the deterioration of them when uncovered in 2002. The PVC roof appears to be in good condition with general maintenance and repairs occurring over time. As it comes up on hitting 20 years old the PVC is starting to transition into its end of life. Photovoltaic panels have also been installed on most open portions of the roof as seen in the aerial image above.

Insulation: As mentioned above in the exterior wall section, the exterior walls on the existing building are a concern for their insulating value. It appears that a good portion of the walls do not have a layer of rigid insulation and rely only on the mass of the masonry to provide a thermal break between the interior and exterior.

1.3 Doors, Windows & Hardware:

Interior doors appear to be in reasonable shape and are consistent throughout the building. Hardware and doors were updated as part of the 2002 project and are in reasonable shape. Exterior hollow metal doors have weathered more than the interior doors. Being exposed to the elements the hollow metal frames have started to rust at the base and weather seals are no longer continuous. The main entrance doors are an aluminum storefront system and are in good condition.



Interior Doors: Interior doors are generally wood with a veneer finish and ½ height vision windows, they appear to be in good condition. The doors were replaced during the 2002 renovation of the building and have been maintained well since installation. Door hardware appears to be fully functional and consistent with today's standards.

Exterior Doors: Exterior doors located at primary egress areas (Main Entrance, Corridors, etc.) are a mix of hollow metal and aluminum. These doors are showing more wear than the interior doors due to their constant use and exposure to the elements. Water and salts have caused the hollow metal door frames at the base to begin to rust. Prolonged use has also caused some of



the rubber seals on the doors to break and or tear away completely. The main entrance doors as well as some secondary doors are constructed of aluminum as part of the aluminum storefront / window system. These doors and sills have stood up to the elements better than the hollow metal and appear to be in good condition. The vestibule created at the main entrance provides a level of security as the doors can be controlled by the main office the administrative offices are not directly connected to the vestibule providing a break in the security as visitors are buzzed into the school with full access without being forced to go through the main office or show identification beforehand.

Windows: As noted previously in the 1.1 Exterior Wall section the windows were replaced in 2002 and are generally in good condition and have been maintained well both from the inside and outside of the building. The building does not have central air conditioning however and window units have been installed in the windows for every exterior room. Since the windows weren't designed to house a window unit the sashes remain open providing a break in both the thermal envelope and acoustical separation from outside noise.

1.4 Interior Finishes:

There are a wide variety of finishes at the Middle School in a range of conditions. General maintenance of the building has been good throughout the years. There are several areas that are starting to show signs of wear and tear over the years and given the age and condition of the existing finishes, some consideration should be given to update areas of the building with new materials that would be consistent throughout the school.

Flooring:

- *Vinyl Tile:* Much of the school is vinyl tile that appears to be in good condition. The tiles have been maintained with minimal cracking or damage noted.
- *Ceramic Tile:* In lavatories, the ceramic tile floors also appear to be in good condition with no noticeable cracked or broken areas. Grout damage or discoloration was minimal and consistent with the age of the tile.
- *Wood Floors:* The gymnasium floor is done in a parquet style of narrow wood slats laid in parallel lines. The striping is old and deteriorating as is the floor finish. This style of wood floor typically does not meet the newer updated standards for sports play in middle school or above play.
- *Entrance Mat Systems:* As per the Connecticut high performance building standards, 3-part entrance mat systems are required to minimize particulars and maintain indoor



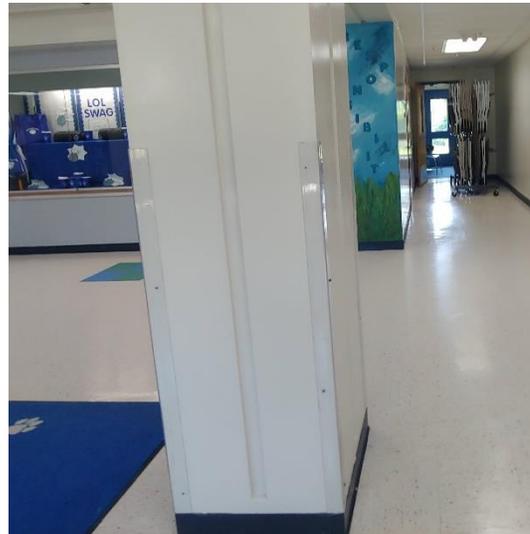
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air quality. The Middle School uses a mix of walk of carpet tile as well as portable surface mats. While some are doubled up a permanent full walk of system is suggested.

Wall Finishes: A majority of the wall finishes in the school is gypsum board. These walls have been painted and patched over the years and are predominantly in good condition. Outside corners of heavily trafficked areas showed increased damage and repair work. Clear plastic corner guards have been installed to help prevent this damage at certain areas. Other wall finishes include painted CMU which is in good condition but is more prone to exposed conduit and reworked exposed raceway.



Ceiling Systems: Ceiling products age more quickly than others and require consistent replacement. Often these systems are replaced completely with lighting upgrades or mechanical installations. The ceilings at the middle school seem to generally be in good condition. As expected, there are some areas where the ceiling should be replaced such as stained and damaged tiles in portions of the classrooms, and corridors; this most likely has been caused by ongoing maintenance or IT work in the school. Staining and damaged areas seemed to be located only within the drop acoustic ceilings as areas with gypsum soffits or ceilings seemed to be in good condition.

Interior Wood Casework:

The condition of the existing cabinets and millwork in the building appears to be in ok condition and has been maintained well over the years. There are certain rooms and departments that seem to be more worn than others. Rooms such as the home economics space seemed to have cabinets that are starting to show their age with water staining, broken hinges, and weathered plastic laminate faces. Millwork in the more standard classrooms appear to have been replaced more recently and appear to be holding up and accommodating the needs of the spaces.





1.5 Specialties & Equipment:

Visual Display Surfaces: The district maintenance and IT programs have updated the teaching walls in the classrooms to have smartboards and short throw projectors accessed by a desktop computer. As with all retrofits of a building this age, it is difficult to find a clean solution with power, data, and AV cables.



1.0 INTRODUCTION

Center School is located at 49 Lyme Street in Old Lyme, Connecticut, serving pre-K students. The school facility is located on a 12.34-acre parcel identified by the Town of Old Lyme as parcel I.D. 16-57, and is located in an R-40 Zone. The school shares this parcel with the Old Lyme Middle School (located to the northeast), and adjacent to the campus of Lyme-Old Lyme High School to the east. The school site's access is from a two-lane one-way driveway at Lyme Street (Middle School/Center School driveway). A diagram of the site is included herein as Figure 1.

This report presents the results of a facilities study that focused in exterior "site" elements of the school, and is organized into two main components as follows:

- Site operational conditions, including site ingress/egress, interior vehicle circulation, and general site security considerations; and
- Site physical plant, including utilities, driveways and parking facilities, pedestrian facilities, and exterior Handicapped Accessibility.

Code references utilized in this facilities study include the 2018 Connecticut State Building Code, and as referenced therein, the 2015 International Building Code (IBC) and International Code council (ICC) A117.1 (2019). It should be noted that this facility assessment did not include a complete code assessment of the "site" elements of the school facility. Rather, this assessment included a code "screening" with select items being evaluated. It is also important to note that these code items were compared to the codes currently in effect, and it is recognized that significant portions of the construction at the school pre-dated these codes. Ultimately, the local building official maintains authority for code items, and in the case of a public educational facility, the Connecticut State Department of Education, with regards to accessibility.

2.0 SITE OPERATIONAL CONDITIONS

2.1 Site Ingress/Egress and Interior Vehicle Circulation

Routine access to the school is from a single one-way driveway at Lyme Street (Middle School/Center School driveway). From this location, vehicles access the “rear” (east) portion of the school where a single parking lot (Lot 1) is located. The entrance to the school at Lyme Street is unconventional, as it presents the appearance of a two-way drive separated by an island, when it is actually two one-way entrance lanes. The right lane is used for the drop-off/pick-up of students to the Center School. Accessible parking spaces are located in Lot 1. Two spaces serve the school building and one space, located on its east side, is assumed to be located to serve the adjacent high school athletic facilities.

Because school was not in session at the time of the facilities study, BSC interviewed school staff to gain an understanding of school bus and parent vehicle routes, including ingress/egress, circulation and student drop-off/pick-up. Two buses serve the school and the remainder of students are transported via private vehicles. Buses and private vehicles discharge students within Drive 1 (the right lane of the entrance). From that location, students walk to the school and access the building at Doors 4 and 6 (north end of the building).

2.2.1 Recommendations

The drive at Lyme Street should be reconfigured to include only one lane of access. A portion of the island near the road should be removed and reconfigured to accommodate the single lane. The passenger loading zone and crosswalk associated with the Center School that is located on the access drive should be removed. This loading zone has the potential to cause vehicles to back-up in either lane, but there is limited queuing capacity, which could result in vehicles trying to access the driveway being stopped on Lyme Street. The reconfigured lane and center island could be configured with a right exit into the existing right (west) lane, which is currently used for Center School student drop-off, forming a dedicated passenger loading zone closer to the school building. Signage and directional arrows indicating access to the Middle School and access to the Center School drop-off and Lot 1 would direct drivers accordingly. This reconfiguration would also allow for the existing concrete sidewalk located along the right (south) lane to be reconfigured, to provide pedestrian access to both Center School and the Middle School and address deficiencies in the sidewalk’s configuration.

Based on the discussions with school representatives, additional parking is required on the Center School site. Based on the configuration of the site and building, and assuming that the front (west) lawn area is not a candidate, the only area that could accommodate additional parking is the rear (east) of the school. Lot 1 could be extended south, and the two accessible spaces at “HC1” relocated closer to access Doors 7, 8 and 9. Based on a basic dimensional layout, expansion of the lot to the south could accommodate approximately 8 additional vehicle spaces. If the portable classroom were removed or reduced in size, approximately 12 additional vehicle spaces could be added.

2.2 Site Security

BSC conducted a basic review of general site (exterior) security considerations such as site access controls, physical barriers, vehicle access/building proximity, lighting, surveillance systems, interior to exterior sight lines, vegetation, etc. The review did not include a review of the schools’ School Security and Safety Plan or similar plans. The security checklist is included in the “Tables” section of this report.

3.0 SITE PHYSICAL PLANT

3.1 Utilities

BSC interviewed the Region 18 Director of Facilities and Technology to gain an understanding of utility services currently in use at the school, including on-site utilities and directly-associated off-site utilities. This included information regarding the nature of these facilities and if any associated deficiencies have been noted. The school is served by the following utilities:

- Electricity: Local utility provider.
- Back-Up Electricity: Generator located on Middle School site (liquid fuel; buried tank in Lot 3).
- Gas: None
- Propane: None
- Water Supply: Regional School District 18 wells.
- Sanitary Sewage: Regional School District 18 system, collection and pump to subsurface disposal system (off-site).
- Telephone: Local utility provider.
- Data: Local utility provider.
- Storm Drainage: On-Site system with subsurface infiltration located on east side of site (see appendices).

Based on the information received from Region 18, no deficiencies in “site” utility systems serving the school facility have been identified. No obvious deficiencies or apparent failures (e.g. damage, obvious signs of failure, etc.) were observed at the time of the site visits portion of the study.

Site lighting appeared to be in a state of good repair. No photometric study was done to assess exterior lighting levels.

It was noted that numerous downspout connectors, particularly associated with the portable classrooms, were broken. It is recommended that these be repaired to avoid the discharge of water to walking surfaces.

3.2 Driveways and Parking Facilities

BSC conducted a general visual assessment of the existing driveways and parking areas to review 1) the condition of bituminous pavement, and 2) the condition of associated ancillary features such as pavement markings and signage.

3.2.1 Bituminous Pavement

To document the existing condition of the bituminous pavement, BSC utilized an approach to the assessment that focused on three major indicators: 1) surface defects, 2) surface deformations, and 3) cracking. The table below summarizes these pavement defects along with the specific nature of each defect that was considered.

Pavement Defect Classifications

Surface Defects	Ravelling and loss of surface aggregate
	Flushing
Cracking	Block Cracking
	Fatigue (Alligator) Cracking
	Longitudinal (Linear) Cracks
	Transverse Cracks
	Edge Cracks
	Slippage Cracks
	Joint Reflection Cracks
Surface Distortion or Deformation	Rippling and Shoving
	Rutting
	Distortion/Depression
	Potholes

Based on subjective observations guided by the defined types of pavement defects, the bituminous pavement was assigned into one of five categories, based on the observed conditions:

- “Satisfactory” (best condition).
- “Fair” (functional, with only minor repairs, such as crack sealing, required to maintain condition).
- “Poor” (functional, but repairs are needed to maintain condition or restore the pavement to “Fair” condition. Without repairs, the pavement will quickly deteriorate to “Serious” condition).
- “Serious” (functional, but generally beyond the point where basic repairs can restore the pavement to “Poor” or “Fair” condition. Repairs will only serve to maintain function; plan for pavement replacement).
- “Failed” (pavement is considered non-functional).

BSC segregated the access drives and parking areas into defined areas, which are depicted on Figure 1. The results of the pavement assessment are indicated in the table below. Photographs that support the pavement assessment are included in the “Photographs” section of this report.

Pavement Condition Summary

Area	Classification	Commentary
Drive 1	Fair	Crack repairs recommended.
Lot 1	Fair	Crack repairs recommended

3.2.1.1 Findings

Overall, the pavement condition at the Center School site can be classified in the “Fair” category at present, with some distinct, localized areas trending towards “Poor”. Globally, the pavement exhibits signs of weathering (loss of asphalt binder material over time) and is considered “aged”. In general, few pavement surface defects were noted. The surface defects that were noted are localized and typical for older pavement systems.

A combination of transverse cracking and longitudinal cracking was noted to varying degrees in all areas observed. These cracks are indicative of the pavement material’s age. Some block cracking and limited edge cracking were also observed. This is also a function of the pavement’s age. Pavement seams that have cracked at the edges of patching, presumably for utility installations, was also observed in several locations. Some areas of localized pavement deterioration/fatigue cracking were noted, including locations where block cracking, longitudinal crack or transverse crack propagation has occurred. In these areas, it is probable that progressive block cracking has allowed water to penetrate the base, resulting in localized structural compromise, which in-turn causes further pavement degradation/cracking. Based on the overall condition of the pavement at the school, these areas are not indicative of a global base failure.

Many of the cracks observed have been treated with asphaltic crack sealer while other areas of cracking have not been treated. It was also noted that some of the previously treated/sealed cracks exhibit signs of additional crack expansion/sealing failure, including the presence of grassy vegetation.

In general, very few surface deformations were noted. Again, this suggests that global structural failure of the pavement system’s granular base is not an issue.

3.2.1.2 Recommendations

The life cycle of bituminous pavement systems is not linear. Depending on design life (unknown) and preventive maintenance, a typical pavement condition trend is for a slight deterioration following initial construction followed by a levelling off period, where the deterioration condition slows relative to elapsed time. The period of slower deterioration is when most of the desired condition, use, and life of the pavement system occurs. At the end of the “leveling off” period, there is a transition point, after which the deterioration of the pavement will accelerate towards a “failed” state. Typically, if preventive maintenance is performed before the transition point is reached, the life and use of the pavement can be extended within the leveling off period. Also, any major restoration work, such as overlay, that is done before a pavement deteriorates below the transition point usually costs substantially less than would be required if the rehabilitation work is delayed, due to the better condition of the pavement system.

Because the pavement system is rated as “Fair”, the following actions are recommended to monitor and maintain the pavement system at the school to extend its condition and overall useful life to the extent practicable.

- A Routine Maintenance Program should be implemented and revisited on (at least) an annual basis. This maintenance program should incorporate the following:
 - 1) Monitoring of cracks.
 - 2) Frequent and consistent removal of vegetation and debris from cracks.

- 3) Removal of debris (sand, etc.) from the pavement surface.
- 4) Crack sealing.
- 5) Surface sealing; (select areas or full coverage).

The primary goal of the maintenance program is to minimize the infiltration of water into the pavement base material (as noted above). Cracks offer numerous routes for water entry into the base section. In general, water will flow directly into cracks that are over 1/8-inch in width. Cracks below this width also allow water intrusion, primarily through a “pumping” mechanism, that is essentially created when water is forced into the cracks by the passage of vehicle tires. Once water enters the pavement base, freeze-thaw cycles impose stresses on the pavement matrix that result in crack propagation and additional crack formation.

- Funding should be allocated for localized repairs (removal and patching) when warranted. These localized repairs should target areas where localized pavement deterioration/fatigue cracking is significant, including locations where block cracking, longitudinal crack or transverse crack propagation has occurred, and where this deterioration has resulted in potholes.
- Coordination with the recommendations of other aspects of this facilities study should be noted to avoid expending maintenance efforts on pavement areas that may be subject to reconfiguration or replacement as a result of other repair or mitigation efforts.

3.2.1.3 Service Life

The pavement system exhibits signs of aging, primarily evidenced by the shrinkage cracking noted and the localized areas of fatigue cracking noted. In general, with ongoing monitoring of pavement conditions and implementation of a consistent maintenance program, the pavement system on the campus could be extended another 3 to 5 years (this timeframe should be considered approximate). If consistent monitoring and maintenance is not undertaken, a noticeable acceleration in pavement deterioration will likely occur within the next three to five years as water penetrates the existing cracks and freeze-thaw cycles accelerate pavement deterioration.

Well-constructed asphalt pavement can typically last 20 years before requiring a major rehabilitation or full-depth reconstruction. Surface treatments or thin overlays every 7-10 years can extend a pavement system well beyond that range.

3.2.2 Pavement Markings and Signage

Pavement markings and signage were generally observed across the Center School site. These facilities include crosswalks, a stop bar, parking striping, vehicular signs (primarily in Drive 1) and parking signs (accessible parking signs).

3.2.2.1 Pavement Markings

Overall, pavement markings are in “Fair” condition. All pavement markings show signs of wear and/or discoloration, to varying degrees, with some being affected by crack sealing material. Pavement markings at accessible parking spaces or generally in “Satisfactory” to “Fair” condition, although as indicated herein, as marked, are not code compliant (refer to Section 3.4).

3.2.2.2 Signage

Overall, site signage is in “Fair” condition with some noted fading. All signs observed were metal sheeting on metal posts. Signs are mounted on a combination of U-channel and tube-type posts. All posts are ground penetration type configurations. No breakaway-type mounts were observed. Sign mounting height varied across the site. Several accessible parking signs are not mounted at the correct height (refer to Section 3.4) and one was observe mounted on a fence. It should be noted that sign retroreflectivity testing was not conducted during the study.

3.2.2.3 Recommendations

Based on the anticipated rate of deterioration, funding should be allocated for the re-painting of existing pavement markings in approximately 3 to 5 years. More directional arrow pavement markings should be added at the school’s driveways at several locations, particularly Drive 1 and Lot 1.

Site signage that is heavily faded or on damaged posts should be replaced. Other signs should be monitored for degradation and replaced as needed. The District should also select a standard sign type, mounting type, and post type to facilitate upkeep and maintenance. It is recommended that all signs be aluminum backing with retroreflective sign face sheeting, in conformance with the Manual on Uniform Traffic Control Devices (MUTCD). It is recommended that signposts be galvanized steel, either U-channel steel or square steel tube, with all sign mounting systems utilizing anti-theft measures. Sign location and mounting heights should conform with MUTCD or Connecticut State Building Code as applicable. Additionally, some “sign clutter” was noted at Drive 1 and Drive 2. Sign clutter can be confusing to drivers and/or hinder visibility of signs. Consideration should be given to consolidating, relocating, and/or eliminating unneeded signs.

A pavement markings and signage maintenance program should be established to create a defined framework for the ongoing monitoring, maintenance of these important facilities. This program will also provide a vehicle through which funding can be incrementally allocated to maintain these facilities in a state of good repair. The pavement markings and signage maintenance program should generally include the following:

- Inventory of all pavement markings and signage, including type and location.
- Conducting annual condition inspections of pavement markings and signage.
- Conducting bi-annual retroreflectivity inspections of signs using industry standards.
- Maintenance-related activities/corrective actions, including sign cleaning, vegetation control, anti-theft measures and sign support adjustments.
- Maintenance-related activities/corrective actions, including those done in response to damaged, deteriorated, or obscured pavement markings or missing, damaged, deteriorated, or obscured signs.

3.3 Pedestrian Facilities

BSC conducted a general visual assessment of exterior “site” sidewalks and walkways to document their existing condition. BSC segregated these facilities into defined areas based on their location relative to the school building and/or key building features, which are depicted on Figure 1. Photographs that support the assessment of pedestrian facilities are included in the “Photographs” section of this report. Many aspects of the pedestrian facilities assessment directly relate to handicapped accessibility, which is address in Section 3.4 of this report.

The assessment classified the existing condition of the various walking surfaces into one of three primary categories, based on the observed condition of the surface material:

- 1) “Acceptable”
- 2) “Needs Repair”
- 3) “Needs Replacement”

The sidewalks and walkways at the school are constructed of bituminous pavement. Overall, the pavement condition of the sidewalks and walkways can be classified in the “Acceptable” category at present. Globally, the pavement material exhibits signs of weathering (loss of asphalt binder material over time). Transverse cracking was noted to varying degrees in all areas observed. These cracks are indicative of the pavement material’s age. In general, few pavement surface defects were noted. A summary of pedestrian facilities assessed is provided in the table below.

Pedestrian Facilities Condition Summary

Walking Area	Condition	Commentary
1-Bluestone walkway at front (north) of school.	Needs Repair	<ul style="list-style-type: none"> - Remove vegetative growth between pieces. - Fill seams with setting material such as polymeric sand to hinder future vegetative growth, aid in stabilizing panels, bridging gaps, and minimizing water infiltration. Correct accessibility deficiencies.
2- Concrete sidewalk and bituminous segment east side of school.	Acceptable	<ul style="list-style-type: none"> - Concrete segment: Remove vegetative growth in cracks and monitor cracks for expansion. Repair cracks that exceed 1/8-inch. Correct accessibility deficiencies. - Bituminous Segment: Clean and repair cracks as needed. Fill cracks greater than 1/2 inch prior to crack sealing; and - Monitor for future cracks.
3-Bituminous sidewalk (east-west) along south side of building at Lot 1.	Acceptable	<ul style="list-style-type: none"> - Monitor for heaving or settlements. - Monitor for future cracks. - Correct accessibility deficiencies.
4-Bituminous walkway along west side of school in vicinity of playground.	Acceptable	<ul style="list-style-type: none"> - Clean and repair cracks as needed. - Monitor for cracks; monitor for settlements. - Address edge deterioration and grade differential between walking surface and playground surface. - Monitor for water accumulation/ice accumulation.
Stair 1 “S1” at Door 1	Physical material condition Acceptable (see commentary)	<ul style="list-style-type: none"> - Stair system not assessed. - Recommend detailed code inspection of stair and rails.
Stair 2 “S2” at Door 3	Physical material condition Acceptable (see commentary)	<ul style="list-style-type: none"> - Stairs not assessed. - Handrails do not comply with IBC 1014. - Recommend detailed code inspection of stair and rails.
Stair 3 “S3” at Door 10	Physical material condition Acceptable (see commentary)	<ul style="list-style-type: none"> - Stair tread depths are less than 11 inches (IBC 1011.5.2). - Top handrail (east) extension is less than 12 inches (IBC 1014.6). - Bottom handrail does not return to a wall, guard or the walking surface (IBC 1014.6). - Handrail does not continue to slope for the depth of one tread beyond the bottom riser (IBC 1014.6). - Recommend detailed code inspection of stair and rails.
Stair 4 “S4” at Door 11	Physical material condition Acceptable (see commentary)	<ul style="list-style-type: none"> - Bottom handrail does not return to a wall, guard or the walking surface (IBC 1014.6). - Handrail does not continue to slope for the depth of one tread beyond the bottom riser (IBC 1014.6). - Differential at landing (bottom step/bituminous surface)/non-uniform riser height represents tripping hazard. - Recommend detailed code inspection of stair and rails.

Stair 5 “S5” at Door 12	Physical material condition Acceptable (see commentary)	<ul style="list-style-type: none"> - Stair tread depths are less than 11 inches (IBC 1011.5.2). - Top handrail (east) extension is less than 12 inches (IBC 1014.6). - Bottom handrail does not return to a wall, guard or the walking surface (IBC 1014.6). - Handrail does not continue to slope for the depth of one tread beyond the bottom riser (IBC 1014.6). - Recommend detailed code inspection of stair and rails.
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At such time the District determines that the sidewalks and walkways have reached the end of their serviceable life, it is recommended that replacement facilities be constructed with concrete. Although higher in cost, concrete is a highly durable and stable material that can have a serviceable life beyond 20 years if installed and maintained properly. The sidewalks could be replaced in a phased manner or selective manner, with a prioritization based on condition (and projected condition over time) and/or use volume.

3.4 Exterior Handicapped Accessibility

BSC conducted a general assessment of exterior “site” handicapped accessibility at the Site relative to the 2018 Connecticut State Building Code. BSC conducted a visual assessment of each area along with notations and photo-documentation. The assessment included the following:

- Assessment of accessible parking spaces counts.
- Assessment of accessible parking spaces.
- Assessment of passenger loading zones.
- Assessment of “Accessible Routes”. A select number (sample set) of longitudinal and cross slopes were measured using a digital level (“smart-level”).
- Assessment of curb ramps.

3.4.1 Accessible Parking Spaces - Counts

The Center School site contains a total of 41 parking spaces in Lot 1. Key code provisions considered during the facilities study relative to the number of accessible parking spaces include:

- 2018 Connecticut State Building Code, 2015 International Building Code, Section 1106: Where more than one parking facility is provided on a site, the number of parking spaces required to be accessible is calculated separately for each parking facility.
- 2018 Connecticut State Building Code, 2015 International Building Code, Section 1106.1: The number of accessible parking spaces required is based on the number of parking spaces provided.
- 2018 Connecticut State Building Code, 2015 International Building Code Section 1106.5, (CT Amended): For every six or fraction of six accessible parking spaces, at least one shall be a van-accessible parking space.
- 2018 Connecticut State Building Code, 2015 International Building Code, Section 1106.6: Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible building entrance. In parking facilities that do not serve a particular building, accessible parking spaces shall be located on the shortest route to an accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located near the accessible entrances.

A summary of parking spaces and required accessible parking spaces is summarized as follows:

Lot	Space Count	Required Accessible Parking Spaces, Car (2015 IBC 1106.1)	Required Accessible Parking Spaces, Van (CTSBC Amd 1106.5)	Actual Accessible Parking Spaces, Car	Actual Accessible Parking Spaces, Van	Notes
1	41	1	1	3	0	Two spaces at northeast of lot at school building; third space southeast corner of lot assumed to be for athletic fields.

3.4.2 Accessible Parking Spaces - Configuration

The following table provides a summary of the evaluation of accessible parking spaces on the site. Tables with specific data summarized in comparison with the 2018 Connecticut State Building Code, 2015 International Building Code and ICC A117.1 are provided in the “Tables” section of this report.

Lot	Accessible Parking Space Number	Designation	Does the Space Comply with 2018 CTSB?	Notes
1	1(e)	PC	No	<ul style="list-style-type: none"> - Total space width exceeds 15-foot required width. - Non-hatched space should be 10 feet (NC); Access aisle is larger than required. - Slopes exceed 1:48 (2%). - Incorrect signage. - No connection to Accessible Route. Access Aisle ends at flush condition with bit walk but slopes exceed maximum. - No van-accessible space.
1	2(w)	PC	No	<ul style="list-style-type: none"> - Total space width less than required. - Access aisle width less than required. - Slopes exceed 1:48 (2%). - Incorrect signage. - No connection to Accessible Route. Access Aisle ends at non-flush condition with bit walk and slopes exceed maximum. - No van-accessible space.
1	SE at fields	PC	No	<ul style="list-style-type: none"> - Total space width less than required. - Access aisle width less than required. - No connection to Accessible Route. Access Aisle ends at grass. - Incorrect signage. - Incorrect sign height (mounted on fence). - No van-accessible space.

Notes:

- 1) Progression of multiple spaces in numbered sequence denoted by compass heading (n/s/e/w).
- 2) “PC” denotes passenger car accessible parking space; “V” denotes van accessible parking space.
- 3) “NC” denotes a non-code item but noted for best management.

3.4.3 Passenger Loading Zones

The site contains two passenger loading zones, identified on Figure 1 as “PL 1” and “PL 2”. Passenger loading zone PL 1 is located in Drive 1 near the northeast corner of the school and Passenger loading zone PL 2 is located in Drive 1 on the north side of the school near Doors 4, 5 and 6.

Key provisions 2018 Connecticut State Building Code considered during the facilities study relative to passenger loading zones includes Section 1106 of the 2015 International Building Code and Section 503 of ICC A117.1. Tables that summarize the specific elements of these codes and findings at each of the passenger loading zones are included in the “Tables” section of this report. Both PL1 and PL2 appear to be non-complaint relative to the codes referenced.

3.4.4 Accessible Routes

A screening was conducted of Accessible Routes based on the location of handicapped parking, passenger loading zones, curb ramps and building access/egress ramp systems. The screening was completed relative to key components of ICC A117.1, Chapter 4 and 2018 Connecticut State Building Code amendments. As a screening, a complete code review was not conducted, particularly with regard to key slopes. Rather, a select number (sample set) of longitudinal and cross slopes were measured using a digital level (“smart-level”). BSC segregated these facilities into defined areas based on their location relative to the school building and/or key building features, which are depicted on Figure 1. Photographs that support the assessment of pedestrian facilities are included in the “Photographs” section of this report. A summary of Accessible Routes assessed is provided in the table below.

Accessible Routes Screening Summary

Accessible Route	Commentary
1-From Accessible Parking in Lot 1 (HC1) to building entry at Door 2, 4,6, 7, 8 or 9.	<ul style="list-style-type: none"> - No direction signage indicating accessible entrance. - Accessible route adjacent to accessible spaces is non-compliant for slope and ramp configuration. - Sidewalk “2” exceeds 1:48 (2%) cross-slope (ICC A117.1 403.3). - Bluestone walkway at interface with Sidewalk “2” exceeds 1:20 (5%). - Bluestone walkway has openings that exceed 1/2-inch and changes in level that exceed 1/4-inch. - Bituminous walking surface approaching Doors 4 and 6 exceeds 1: 20 (5%) running slope (ICC A117.1 402.2). - Access at Doors 2, 4, 6 and 9 does not comply with ICC A117.1 404.2.3.2 and/or 403.3. - Concrete/bituminous walkway interface at Door 4 and 6 has differential greater than 1/4 inch which results in a change in floor surface greater than 1/4-inch (ICC A117.1 303.2). - Ramp for access to Door 7 exceeds 1:12 (8.33%); edge protection does not comply with ICC A117.1 405.9; bottom handrail extensions do not continue horizontally at least 12 inches beyond the bottom of the ramp run (IBC 1014.6); ramp only has a single handrail- handrails are required on both sides (IBC 1012.8); bottom landing exceeds 1:48 (2%).
3-From PL1 to Door 2, 4 or 6.	<ul style="list-style-type: none"> - See Passenger Loading Zone tables. - Curb ramp at Drive 1 crosswalk has running slope that exceeds 1/12 (8.33%) (ICC A117.1 405.2). - Sidewalk “2” exceeds 1:48 (2%) cross-slope (ICC A117.1 403.3). - Bituminous walking surface approaching Doors 4 and 6 exceeds 1: 20 (5%) running slope (ICC A117.1 402.2). - Access at Doors 2, 4 and 6 does not comply with ICC A117.1 404.2.3.2 and/or 403.3. - Concrete/bituminous walkway interface at Door 4 and 6 has differential greater than 1/4 inch which results in a change in floor surface greater than 1/4-inch (ICC A117.1 303.2). - Concrete/bituminous walkway interface at Door 4 and 6 has differential greater than 1/4 inch which results in a change in floor surface that is in conflict with ICC A117.1 303.2.
4-From PL2 to Door 2, 4 or 6.	<ul style="list-style-type: none"> - See Passenger Loading Zone tables. - See comments for PL1.

5-Ramp at Door 10	<ul style="list-style-type: none"> - Ramp exceeds 1:12 (8.33%) running slope (ICC A117.1 405.2). - Top landing is less than 60 inches (ICC A117.1 405.7.3). - Bottom handrail extensions do not continue horizontally at least 12 inches beyond the bottom of the ramp run (IBC 1014.6). - Ramp handrails do not extend horizontally above the landing 12 inches minimum beyond the top and bottom of ramp run (IBC 1014.6). - Bottom landing exceeds 1:48 (2%).
Exterior areas for assisted rescue	Exterior areas for assisted rescue should be confirmed and identified to comply with IBC 1009.7 which requires that these areas be accessed by an accessible route from the area served. Where the exit discharge does not include an accessible route from an exit located on the level of exit discharge to a public way, an exterior area of assisted rescue should be confirmed and identified on the associated exterior landing.
Public Access	<ul style="list-style-type: none"> - Curb ramp at Lyme Street and Drive 1 (concrete sidewalk) has running slope that exceeds 1/12 (8.33%) (ICC A117.1 405.2) and does not have a top landing (ICC A117.1 406.7). - No Site arrival points per CT Bld Amd Code 1104.1, "At least one accessible route within the site shall be provided from public transportation stops, accessible parking and accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance served."

3.4.5 Recommendations

It is recommended that a comprehensive review of accessible parking spaces and their corresponding accessible routes and passenger loading zones and their corresponding accessible routes be conducted. The assessment should include an evaluation of available space to determine if the required number of passenger car spaces and van spaces can be accommodated to the required dimensions, located as near as possible to a building entrance or walkway. Additionally, an accounting of accessible routes, including those that are associated with egress only and exterior areas for assisted rescue, should be conducted so a detailed assessment can be conducted to determine all areas of non-compliance. This would allow for a corrective strategy to be developed commensurate with the appropriate funding. Additionally, directional signage for accessibility should be provided to direct pedestrians to accessible building access points.

3.5 Recreation/Play Areas

3.5.1 General Assessment

A general overview was conducted of the playground area. This did not include any type of playground inspection or assessment of play equipment. A summary of the overview is provided below.

Area	Commentary
Play Area 1	<ul style="list-style-type: none"> - See Section 3.5.2. - Recommend inspection of play equipment by a qualified inspector. - Recommend de-compact/dress/replace playground mulch to applicable standards as needed. - Address edge deterioration and grade differential between walking surface and playground surface. - Re-set area drain to eliminate abrupt elevation differential. - Monitor for water accumulation/ice accumulation. - Numerous trees and fugitive vegetation adjacent to playground area. Recommend clearing of fugitive vegetation and trimming of trees. - Review accessibility to/from playground (See 3.5.2).

3.5.2 Accessibility

Access to various areas/components of the site's recreation/play areas does not appear to comply with the standards for accessibility defined in the 2018 Connecticut State Building Code, IBC and ICC A117.1. School Districts are "public entities" as defined by Title II, 42 U.S.C. § 12131(1), and are therefore subject to the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA). This requirement extends to playgrounds and their associated access for children with disabilities under Title II of the ADA, 42 U.S.C. §§ 12131–12134, and the United States Department of Justice's implementing regulation, 28 C.F.R. Part 35. It is recommended that the District conduct a review of their specific obligations in this regard and conduct a detailed assessment of accessible routes/accessibility relative the school's recreation/play areas to determine all areas of non-compliance. This would allow for a corrective strategy to be developed commensurate with the appropriate funding.

FIGURES

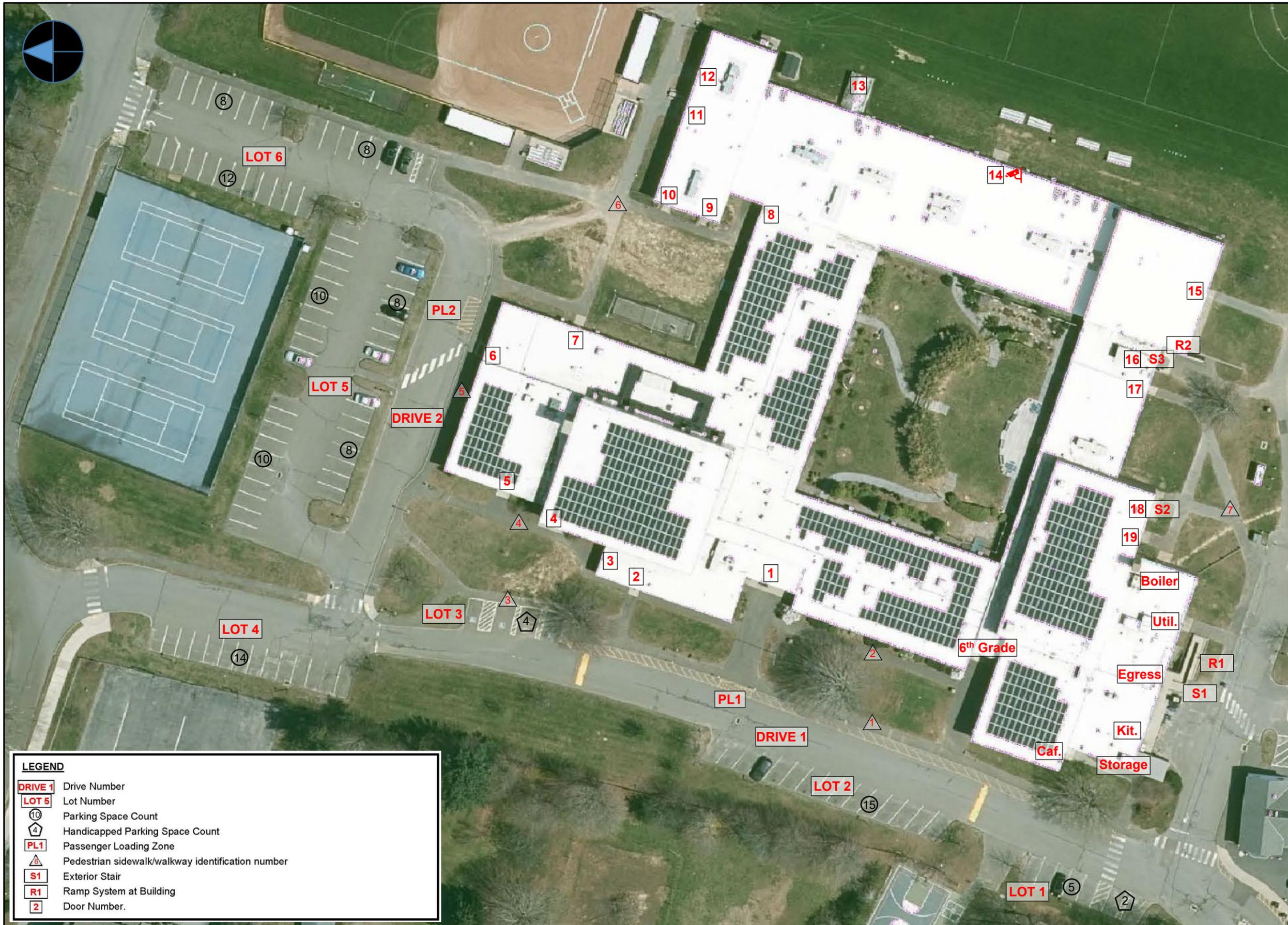


FIGURE 1 - SITE DIAGRAM

PHOTOGRAPHS

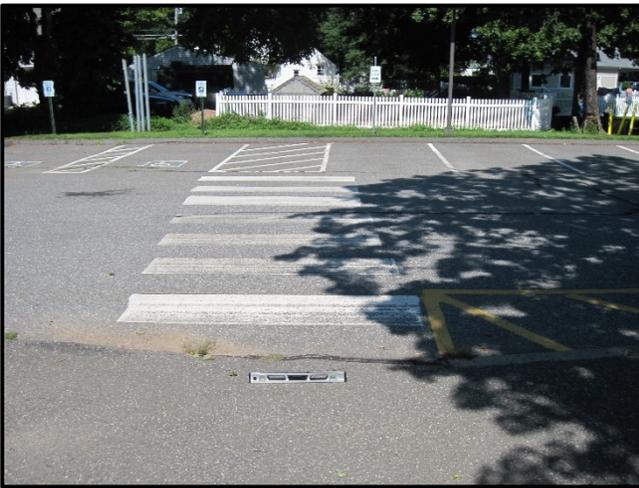
Bituminous Pavement



Drive 1 looking north; Lot 2 at left of photo.



Drive 2 looking west; school building at left of photo.



Lot 1 looking west from front of school.



Lot 2 along the driveway, looking north.



Lot 3 at front of school; HC parking only at this lot.



Lot 4 looking north.



Lot 5 looking west.



Lot 6 looking west.



Typical failure of crack sealant.



Localized area of block failure



Typical site pavement markings.



Typical site sign.

Pedestrian Facilities



Bituminous walkway at primary school entrance. Cracks showing vegetative growth visible.



Typical bituminous sidewalk, north end of school Building.



Bituminous site walkway, looking north at Door 7. Minor edge deterioration visible.



Bituminous site walkway, looking west from Door 7. Localized cracking and settlement visible.



Walkway at front of school with heaving/root damage.



Walkway at cafeteria egress door, looking south.

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53 Lyme Street, Old Lyme, Connecticut



Crosswalk from Lot 5 to Door 6 at north end of school building.



Bituminous walkway providing pedestrian access to and From south end of the school building.



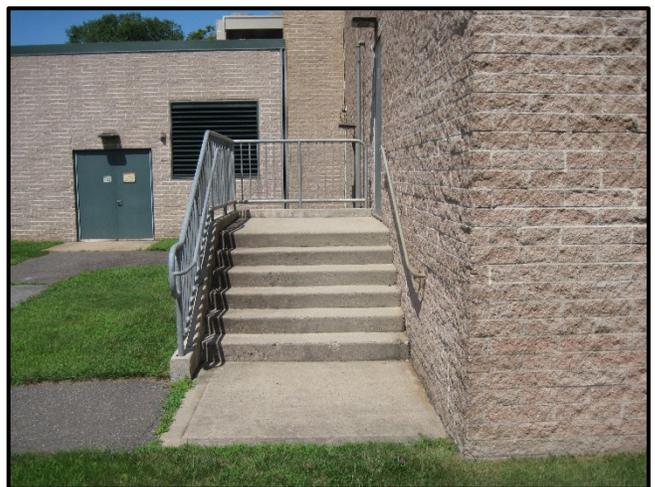
Stair 1 at south end of building.



Stair 1, remnants of tubular post base in path of travel.



Stair 1, west rail, top rail extension.



Stair 2 at south end of building, Door 18.



Stair 3 at south end of building, Door 16.



Stair 3, east rail, top rail extension.



Measurement of tread depth.



Measurement of riser height.

Accessibility



Accessible parking in Lot 1 (2 spaces). "Accessible Route" crosswalk to ramp at school sidewalk visible.



Existing accessible parking sign at Lot 1. Not compliant with CGS 14-253a subsection (h); CTBC Amd 1111.1.



Curb ramp across from accessible parking in Lot 1 at crosswalk. Lacking 36-inch level landing.



Accessible parking in Lot 3 (4 spaces). Bituminous "Accessible Route" adjacent to access aisles visible.



Walkway "Accessible Route" at Lot 3, looking south. Heaving and cracks from tree roots visible.



Passenger Loading zone 1 (PL1) at front of school, looking north. Main entrance at Door 1 to the right.

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Passenger Loading Zone 2 (PL2) at north end of school in Drive 2, proximal to Door 6.



Curb ramp at Door 6, south of PL2 at terminus of Crosswalk from Lot 5.



Typical ingress/egress door (Door 11) at north end of building.



Pedestrian ramp 1 (R1) at south end of building. (Egress only).



Pedestrian ramp 1 landing at change in direction.



Pedestrian ramp 1, walking surface damage at top Landing.

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Pedestrian ramp 2 (R2) at south end of building, Door 18. Ingress and egress at Door 18.



Typical "egress only" door with landing (Door 7).



Accessible Route from cafeteria egress door. Cracks



Bituminous sidewalk providing pedestrian connection



Seating area with memorial bricks at front (west side) of building. No accessible walkway.

Middle School, Lot #1



140"

33"

110"

92"

#2
VAN

#1
CAR

STALL
128 IN

Middle School, Lot #3



TABLES

TABLE 1 - SITE SECURITY CHECKLIST

Location: Lyme-Old Lyme Middle School

Address: 53 Lyme Street, Old Lyme, CT

Date:

	Item	Yes	No	Not Applicable	Not Assessed	Notes
Grounds and Building Exterior						
1	Graffiti is promptly documented/photographed then removed after discovery.				X	
2	All trash and recycling dumpsters are located outside a child's travel area and equipped with plastic covers in place of steel covers that could cause injury.	X				Located at loading dock area
3	All trash and recycling dumpsters are either enclosed in a designated service area or surrounded on three sides by a high wall, preferably a see-through, climbing-resistant fence, and provided with a securable gate.		X			
4	All trash and recycling dumpsters and their enclosures are positioned so that they cannot be used as ladders for gaining access to the school roof.	X				
5	A marquee or sign clearly indicating the school's name is visible from the road.	X				
6	The exterior numbers are clearly visible from a distance of at least 50'.	X				Un-numbered doors should be numbered/labelled
7	Access to the roof is restricted (no climbable plantings or architecture).	X				
8	Speed limits are posted at all entrances.		X			
9	Walkways are in good repair.	X				See discussion of pedestrian facilities
10	Walkways are cleared of snow and ice during periods of inclement weather.				X	
11	Covered walkways and adjoining posts, structures, walls, planters, or other building features do not provide climbing access to adjoining windows, roofs, or other upper-level areas.			X		
12	Covered walkways and their surroundings are adequately lit to promote visual surveillance while in use.			X		
13	Windows in occupied areas of the building overlook walkways for natural surveillance.	X				Some windows
14	Exterior entrance canopies and walkways are engineered to withstand high winds and seismic activity.				X	
15	Fire hydrants are clearly visible.	X				
16	Grounds are fenced in appropriate areas.		X			Open campus
17	Grounds are adequately lit and school boundaries clearly marked.	X				
18	Grounds are visually separated from adjacent properties.		X			Few areas; generally open
19	Gates, if present, are secured when not in use.			X		
20	The perimeter of the school building is monitored by direct visual sitelines or surveillance cameras.	X	X			Not all area visible; camera at one location (Door 14). Additional cameras recommended.
21	Mechanical, electrical, and other equipment on ground level is surrounded by a protective enclosure.		X			Generator and transformer are not enclosed
22	Electrical panel access doors are locked.	X				
23	Landscape surrounding the school is tidy, trimmed, and structured to enhance visibility of windows, doors, etc. and minimize chance of suspicious visitors hiding.		X			Some landscaping is obscuring windows and provides hiding space (Door 9, Door 10, along front of school).

SITE SECURITY CHECKLIST (CONT.)

	Item	Yes	No	Not Applicable	Not Assessed	Notes
24	Basement windows are protected from unauthorized entry by security grills or window well covers.			X		
25	Access beneath portables is restricted with grates, fencing, siding, or other material, which such minimal spaces are suitable for hiding people, contraband, weapons, or incendiary or explosive devices.			X		
26	All portables are secured to their location; consistent with local wind resistance requirements and building regulation.			X		
27	All portables are labeled/numbered.			X		
28	Areas surrounding portables are adequately lighted.			X		
29	Portables are surrounded by fencing requiring use of the school's main entry.			X		
30	All exterior doors have non-removable hinge pins.	X				
31	Exterior doors are sized and arranged to reduce congestion and avoid crowding.	X				
32	Exterior doors have narrow windows, sidelights, fish-eye viewers, or cameras to permit seeing who is on the exterior side.	X	X			Some doors are configured with windows; none are narrow sidelight type. Camera at Door 14.
33	Window and sidelights are sized and located so that if they are broken, vandals cannot reach through and open a door from the inside.		X			Some doors are configured with windows; none are narrow sidelight type.
34	Exterior doors are airtight. Airtight doors not only improve energy efficiency but they retard interior contamination during a hazardous chemical or other harmful outdoor release.				X	
35	Exterior doors are designed and certified to resist thrown and wind-blown objects.				X	
Buses and Parking						
36	The bus loading zone is visible from the main office or monitored by staff.				X	Not visible from office.
37	Unattended buses do not create a visual obstacle or hinder emergency access.				X	
38	Fire zones, bus unloading and drop off zones are clearly marked.	X	X			Fire lane marked
39	Student drop off and pick up areas are clearly marked.		X			
40	Staff members are required to obtain parking decals or some other form of identification to authorize parking on school property.				X	
41	High School students are required to obtain parking decals or some other form of identification to authorize parking on school property.			X		
42	Someone is assigned to check for unregistered vehicles in parking areas.				X	
43	Access points for parking lots are gated.		X			
44	Parking lots are bordered by a wall, chain link fence, or some physical barrier.		X			
45	Parking lot signs direct staff, students, and visitors to designated parking areas.		X			
46	Parking lots can be viewed from the building or monitored by security.	X	X			Some visibility
47	Bicycle parking can be viewed from the building or monitored by security.		X			

SITE SECURITY CHECKLIST (CONT.)

	Item	Yes	No	Not Applicable	Not Assessed	Notes
Play and Outdoor Recreation Areas						
48	Recreation/practice areas are fenced to restrict unauthorized access.		X			Ga Ga Ball is the only facility
49	Fences are in good condition and without gaps.			X		
50	Low-hanging tree branches are removed from the playground area.			X		
51	Painted and preserved surfaces are in good and safe condition.			X		
52	Playground surfaces are free of excess water buildup.	X				
53	Sandboxes are clean of debris and covered at night to prevent access by animals.			X		
54	Unsafe and/or obsolete playground equipment has been removed from activity use. (i.e. old wooden teeter-totters, wooden swing seats, high un-railed metal slides, dome-style jungle gyms, etc.)			X		
55	All equipment is anchored firmly, including footings below ground surface which are not exposed.				X	
56	Playground attendants (teachers/staff) are clearly designated (vests, etc.), and first aid kits are on hand during recess hours.				X	
57	Landscape around field areas, playground, and outdoor recreation areas minimize potential for injury/hiding.			X		
58	Vehicular access, except emergency vehicles, is restricted around play area.		X			
59	Play apparatus are free from sharp edges, and protruding or loose bolts or screws.				X	
60	Playground edging is well-maintained and away from fall area of equipment.			X		
61	Ground cover is adequate to provide protection from falls.			X		
62	Ground cover is free from holes and worn trenches.			X		
63	Outside drinking fountains are vandal-resistant by design, such as being wall-mounted and made of durable materials.			X		
64	Hard-surface play areas are located far enough from classrooms to protect windows and avoid being a classroom distraction.			X		
65	Benches/bleachers are well maintained (painted with no signs of rust or splinters)			X		

TABLE 2 - DOOR CHECKLIST

Location: Lyme-Old Lyme Middle School

Address: 53 Lyme Street, Old Lyme, CT

Date:

By: Kurt Prochorena

DOOR I.D.	Accessible Route (Y/N)	Door		Landing				NOTES
		Door Type	Width (Inches)	Dim A (Inches)	Dim B (Inches)	Running Slope %	Cross Slope %	
1	Y	a	36	Full Width	60+	<2	<2	Two sets of double doors at main entrance (measurement is each door); windows
2	No	EO	35	NA	44+	NM	NM	Concrete landing; connects to bit walkway; window; differential at concrete landing edge exceeds 1/4 inch
3	No	EO	35	NA	44+	<2	<2	Concrete landing; window; connects to bit walkway
4	No	EO	36	NA	44+	<2	<2	Two sets of double doors (measurement is each door); concrete landing; connects to bit walkway
5	No	EO	35	NA	44+	<2	<2	Double doors (measurement is each door); windows; concrete landing; connects to bit walk
6	Y	a	35	47	60+	<2	<2	At PL1; concrete landing; double doors w/single left handle on right door exterior; window.
7	No	EO	35	NA	44+	NM	NM	Concrete landing; connects to bit walkway; window
8	No	EO	36	NA	44+	NM	NM	Recessed; double doors; windows; concrete landing; connects to bit walkway.
9	No	EO	35	NA	44+	NM	NM	Concrete landing; connects to bit walkway; window
10	No	EO	35	NA	44+	NM	NM	Concrete landing; connects to bit walkway; window
11	Yes	Ra	35	48	60+	NM	NM	Recessed; double doors w/single left handle on right door exterior; windows; concrete landing; connects to bit walkway.
12	No	EO	36	NA	44+	NM	NM	Concrete landing; connects to bit walkway
13	No	NA	31	NA	None	NM	NM	At greenhouse; no landing; light-duty aluminum door; window; unlatched
14	No	EO	39	NA	44+	<2	<2	Double doors (measurement is each door); windows; concrete landing; no walkway adjacent (grass);
15	No	EO	35	NA	44+	NM	NM	Concrete landing; no walkway adjacent (grass);
16	Yes	a	44	53	60+	<2	<2	At Stair 3/Ramp 2; double doors (measurement is each door) w/single left handle on right door exterior; windows; concrete landing.
17	No	EO	35	NA	44+	NM	NM	Concrete landing; connects to bit walkway
18	No	EO	35	NA	44+	NM	NM	At stair 2; concrete landing; connects to bit walkway
19	No	EO	36	NA	44+	NM	NM	Concrete landing; connects to bit walkway
Auditorium/ Cafeteria Corridor egress south	Yes	EO	45	NA	44+	NM	NM	At Stair 1/Ramp R1; double doors (measurement is each door); windows; concrete landing.
6th Grade	Yes	a	41	77"	60+	<2	2.6	Single left handle on right door exterior; window; concrete landing; connects to bit walkway
Boiler	No	NA	36	NA	44+	NM	NM	Double doors with single left handle on right door exterior (measurement is each door); concrete landing; connects to bit walkway
Kitchen Receiving	No	a	34	18+	60+	NM	NM	Single door; latch right side exterior
Outdoor Storage	No	NA	35	NA	44+	NM	NM	Single storage room door at dock; single handle
Caf. Egress	Yes	EO	35	NA	44+	NM	NM	Concrete landing; connects to bit walkway; recommend repair of downspout that discharges to landing.
Basement	No	NA	Not Measured			NM	NM	Lower level steel door at bottom of ramp; recommend barrier be installed at top of ramp.

Notes:

- 1) For doors/landings that are not part of an Accessible Route (to the door/from the door) refer to 2015 IBC 1010.1.5 and 1010.1.6.
- 2) "EO" indicates egress only door type - Compliance with ICCA.117.1 404 not required at exterior; landing must be 44 inches in path of travel.
- 3) Door Types per ICC A.117.1 404- a,b,c,d,e,f,g or Recessed (R) a,b, c.
- 4) For Dimension "A" and "B" refer to ICC A 117.1 Figures 404.2.3.3, 404.2.3.5, and 404.2.5. For landings that are not part of an Accessible Route, refer to 2015 IBC 1010.1.5 and 1010.1.6 for landings.
- 5) "DD" denotes double door. Where no center jamb is present, record total width. Where center jamb is present, record width of each door.
- 6) Dimension A is cross dimension; Dimension B is path of travel dimension.

Passenger Loading Zones

References:
 2018 Connecticut Building Code
 2015 International Building Code
 Accessible Useable Buildings and Facilities ICC A117.1-2009

Location: Old Lyme Middle School **Location: Passenger Loading Zone 1 (PL1), Main Entrance**
Address: 53 Lyme Street
Date: August 2021
By: Kurt Prochorena

Item	Requirements	IBC 2015 Code Reference	Code Requirement	Complies?	Notes
Passenger Loading Zones	Accessible	1106.7	Passenger loading zones shall be accessible.	See ICC A117.1	
Item	Requirements	ICC A117.1- 2009 Code Reference	Code Requirement	Complies?	Notes
Vehicle Pull-up Space Size	Dimensions	503.2	Passenger loading zones shall provide a vehicular pull-up space 96 inches minimum in width and 20 feet minimum in length.	<input checked="" type="radio"/> Yes / No	1) Complies but not ideal - located within travel way of main drive (High School Road); 2) Potential vehicle conflict with backout from Parking Lot 2 into PL1.
Access Aisle	Access Aisles	503.3	Passenger loading zones shall have an adjacent access aisle complying with Section 503.3.	Present? <input checked="" type="radio"/> Yes / No	See 503.3 this sheet
Access Aisle, Location	Location	503.3.1	Access aisles shall adjoin an accessible route. Access aisles shall not overlap the vehicular way.	<input checked="" type="radio"/> Yes / No	
Access Aisle, width	Width, Dimension	503.3.2	Access aisles serving vehicle pull-up spaces shall be 60 inches minimum in width.	Yes <input checked="" type="radio"/> No	54 inches wide
Access Aisle, length	Length, Dimension	503.3.3	Access aisles shall be 20 feet minimum in length.	<input checked="" type="radio"/> Yes / No	
Access Aisle, marking	Markings	503.3.4	Access aisles shall be marked so as to discourage parking in them.	<input checked="" type="radio"/> Yes / No	Yellow cross hatch
Access Aisle, floor surfaces	Slope	503.4 1	Vehicle pull-up spaces and access aisles serving them shall comply with Section 302 and shall have slopes not steeper than 1:48 (2%).	<input checked="" type="radio"/> Yes / No	
Access Aisle, floor surfaces	Level	503.4 2	Access aisles shall be at the same level as the vehicle pull-up space they serve.	<input checked="" type="radio"/> Yes / No	Bituminous pavement, continuous.
Floor Surfaces	Surface type	302.1	Floor surfaces shall be stable, firm, and slip resistant, and shall comply with Section 302. Changes in level in floor surfaces shall comply with Section 303.	<input checked="" type="radio"/> Yes / No	Bituminous pavement.
Openings	Dimensions	302.3	Openings in floor surfaces shall be of a size that does not permit the passage of a 1/2 inch diameter sphere, except as allowed in Sections 407.4.3, 408.4.3, 409.4.3, 410.4, and 805.10. Elongated openings shall be placed so that the long dimension is perpendicular to the predominant direction of travel.	Yes No <input checked="" type="radio"/> NA	

Passenger Loading Zones

References:
 2018 Connecticut Building Code
 2015 International Building Code
 Accessible Useable Buildings and Facilities ICC A117.1-2009

Location: Old Lyme Middle School **Location: Passenger Loading Zone 2 (PL2), North Entrance, Door 6**
Address: 53 Lyme Street
Date: August 2021
By: Kurt Prochorena

Item	Requirements	IBC 2015 Code Reference	Code Requirement	Complies?	Notes
Passenger Loading Zones	Accessible	1106.7	Passenger loading zones shall be accessible.	See ICC A117.1	
Item	Requirements	ICC A117.1- 2009 Code Reference	Code Requirement	Complies?	Notes
Vehicle Pull-up Space Size	Dimensions	503.2	Passenger loading zones shall provide a vehicular pull-up space 96 inches minimum in width and 20 feet minimum in length.	<input checked="" type="radio"/> Yes / No	
Access Aisle	Access Aisles	503.3	Passenger loading zones shall have an adjacent access aisle complying with Section 503.3.	Present? <input checked="" type="radio"/> Yes / No	See 503.3 this sheet
Access Aisle, Location	Location	503.3.1	Access aisles shall adjoin an accessible route. Access aisles shall not overlap the vehicular way.	Yes <input checked="" type="radio"/> No	Adjacent to concrete curb, curb ramp is remote from access aisle
Access Aisle, width	Width, Dimension	503.3.2	Access aisles serving vehicle pull-up spaces shall be 60 inches minimum in width.	<input checked="" type="radio"/> Yes / No	
Access Aisle, length	Length, Dimension	503.3.3	Access aisles shall be 20 feet minimum in length.	<input checked="" type="radio"/> Yes / No	
Access Aisle, marking	Markings	503.3.4	Access aisles shall be marked so as to discourage parking in them.	<input checked="" type="radio"/> Yes / No	Yellow cross hatch
Access Aisle, floor surfaces	Slope	503.4 1	Vehicle pull-up spaces and access aisles serving them shall comply with Section 302 and shall have slopes not steeper than 1:48 (2%).	<input checked="" type="radio"/> Yes / No	
Access Aisle, floor surfaces	Level	503.4 2	Access aisles shall be at the same level as the vehicle pull-up space they serve.	<input checked="" type="radio"/> Yes / No	Bituminous pavement, continuous.
Floor Surfaces	Surface type	302.1	Floor surfaces shall be stable, firm, and slip resistant, and shall comply with Section 302. Changes in level in floor surfaces shall comply with Section 303.	<input checked="" type="radio"/> Yes / No	Bituminous pavement.
Openings	Dimensions	302.3	Openings in floor surfaces shall be of a size that does not permit the passage of a 1/2 inch diameter sphere, except as allowed in Sections 407.4.3, 408.4.3, 409.4.3, 410.4, and 805.10. Elongated openings shall be placed so that the long dimension is perpendicular to the predominant direction of travel.	Yes No <input checked="" type="radio"/> NA	

Accessible Parking Code Review Summary

References:
 2018 Connecticut Building Code
 2015 International Building Code
 Accessible Useable Buildings and Facilities ICC A117.1-2009

Location: Old Lyme Middle School Location: Lot #1
 Address: _____
 Date: 8/13/21
 By: Kurt Prochorena

Item	Requirements	IBC 2015 Code Reference	Code Requirement	Complies?	Notes
Parking and Passenger Loading Facilities	Required	1106.1, Required	Where parking is provided, accessible parking spaces shall be provided in compliance with Table 1106.1, except as required by Sections 1106.2 through 1106.4. Where more than one parking facility is provided on a site, the number of parking spaces required to be accessible shall be calculated separately for each parking facility.	Yes / No	2 accessible spaces this lot Varies
Parking and Passenger Loading Facilities - Exception	Exeption	1106.1	1106.1 does not apply to parking spaces used exclusively for buses, trucks, other delivery vehicles, law enforcement vehicles or vehicular impound and motor pools where lots accessed by the public are provided with an accessible passenger loading zone.	Applies / NA	
Automobile accessible parking spaces	Space dimension	1106.1.1, Automobile accessible parking spaces (Add CT Bld Code)	(Add) 1106.1.1 Automobile accessible parking spaces. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger motor vehicles designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 15 feet wide including 5 feet of cross hatch.	See Notes	Space 1 - Yes / No Space 2 - Yes / No NA Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No Remote space.
Van spaces, number required	Number required	1106.5, Van Spaces (Amd CT Bld Code)	(Amd) 1106.5 Van spaces. For every six or fraction of six accessible parking spaces, at least one shall be a van-accessible parking space. Each public parking garage or terminal shall have a minimum of two van-accessible parking spaces complying with this section.	Yes No	1 of 2 / Space #2
Van Spaces, location and dimensions	Space dimension	1106.5.1, Van accessible parking spaces (Add CT Bld Code)	(Add) 1106.5.1 Van accessible parking spaces. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger vans designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 16 feet wide including 8 feet of cross hatch.	See Notes	Space 1 - Yes / No NA Space 2 - Yes / No Space 3 - Yes / No NA Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No Remote space 140' + 33" Access = 14,4 FT
Van Spaces, vertical clearance	Vertical dimension	1106.5.1.1, Van access clearance (Add CT Bld Code)	(Add) 1106.5.1.1 Van access clearance. Pursuant to subsection (i) of section 14-253a of the Connecticut General Statutes, each public parking garage or terminal shall have 8 feet 2 inches vertical clearance at a primary entrance and along the route to at least two parking spaces for passenger vans that conform to Section 1106.5.1 and that have 8 feet 2 inches of vertical clearance.	Yes No NA	
Parking spaces, location	Location	1106.6, Location	Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible building entrance. In parking facilities that do not serve a particular building, accessible parking spaces shall be located on the shortest route to an accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located near the accessible entrances.	Yes / No	Remote from bld.
Parking spaces, location - Exception	Exception	1106.6	1. In multilevel parking structures, van-accessible parking spaces are permitted on one level. 2. Accessible parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee and user convenience.	Yes No NA	

Accessible Parking Code Review Summary (Cont.)

Parking signs, where required	Where Required	1111.1, Signs (Amd CT Bld Code)	1111.1 Signs. Required accessible elements shall be identified by the International Symbol of Accessibility at the following locations.	See below	
Parking signs, where required	Where Required	1111.1, Signs (1) (Amd CT Bld Code)	1. Accessible parking spaces as required by Section 1106. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, such spaces shall be designated by above-grade signs with white lettering against a blue background and shall bear the words "RESERVED Parking Permit Required" and "Violators will be fined" in addition to the International Symbol of Accessibility. When such a sign is replaced, repaired or erected, it shall indicate the minimum fine for a violation of subsection (l) of section 14-253a of the Connecticut General Statutes. Such indicator may be in the form of a notice affixed to such sign. Newly installed signs shall be 60 inches minimum above the floor or ground of the parking space, measured to the bottom of the sign.	Yes <input checked="" type="radio"/> No NA	Wrong color Sign heights = 45"
Parking signs, where required	Where Required	1111.1, Signs (2) (Amd CT Bld Code)	2. Accessible passenger loading zones.	Yes <input checked="" type="radio"/> No NA	
Parking signs, where required	Where Required	1111.1, Signs (4) (Amd CT Bld Code)	4. Accessible entrances where not all entrances are accessible.	Yes <input checked="" type="radio"/> No NA	
Parking signs, where required	Where Required	1111.1, Signs (8) (Amd CT Bld Code)	8. Exterior areas for assisted rescue in accordance with Section 1009.9.	Yes <input checked="" type="radio"/> No NA	None observed

Item	Requirements	ICC A117.1- 2009 Code Reference	Code Requirement	Complies?	Notes
Parking space dimensions	Space dimension	502.2, Vehicle Space Size (Amd CT Bld Code)	(Amd) 502.2 Vehicle space size. Pursuant to section 14-253a of the Connecticut General Statutes, car parking spaces shall be 15 feet in width including 5 feet of cross hatch. Van parking spaces shall be 16 feet in width including 8 feet of cross hatch.	See Notes	Space 1 - (Yes) / No Space 2 - Yes / (No) Car Space 3 - Yes / No Van Space 4 - Yes / No NA Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓
Parking space markings	Dimension measurements	502.3, Vehicle Space Marking	Vehicle Space Marking. Car and van parking spaces shall be marked to define the width. Where parking spaces are marked with lines, the width measurements of parking spaces and adjacent access aisles shall be made from the centerline of the markings.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No NA Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓
Parking space dimensions- Exeption	Exception	502.3	Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measurements shall be permitted to include the full width of the line defining the parking space or access aisle.	(Yes) No NA	Space #2 only
Access Isles	Required	502.4, Access Aisles	Access Aisle. Car and van parking spaces shall have an adjacent access aisle complying with Section 502.4 (Note: See CT Amendments).	See Below	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 1	(Amd) 502.4.1 Location. Access aisles (cross hatch) shall adjoin an accessible route.	Yes (No) NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 2	(Amd) 502.4.1 Location. Two parking spaces shall be permitted to share a common access aisle.	Yes No (NA)	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 3	(Amd) 502.4.1 Location. Two parking spaces shall be permitted to share a common access aisle. If a car and a van space share a common access aisle, that aisle shall be 96 inches minimum in width.	Yes No (NA)	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 4	(Amd) 502.4.1 Location. Access aisles shall not overlap with the vehicular way.	(Yes) No NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 5	(Amd) 502.4.1 Location. Parking spaces may have access aisles placed on either side of the car or van parking space.	(Yes) No NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 6	(Amd) 502.4.1 Location. Van parking spaces that are angled shall have access aisles located on the passenger side of the parking space.	Yes No (NA)	
Access Aisle width	Dimension (Width)	502.4.2, Width (Amd CT Bld Code)	(Amd) 502.4.2 Width. Access aisles (cross hatch) serving car parking spaces shall be 60 inches minimum in width. Access aisles serving van parking spaces shall be 96 inches minimum in width.	See Notes	Space 1 - (Yes) / No Space 2 - Yes / (No) Car = 92" Space 3 - Yes / No Van = 33" Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓
Access Aisle length	Dimension (Length)	502.4.3, Length	Access aisles shall extend the full length of the parking spaces they serve.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No NA Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓
Access Aisle markings	Markings required	502.4.4, Marking	Marking. Access aisles shall be marked so as to discourage parking in them. Where access aisles are marked with lines, the width measurements of access aisles and adjacent parking spaces shall be made from the centerline of the markings.	See Notes	Space 1 - (Yes) / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No NA Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓

Access Aisle markings-Exception	Exception	502.4.4	Where access aisles or parking spaces are not adjacent to another access aisle or parking space, measurements shall be permitted to include the full width of the line defining the access aisle or parking space.	<input checked="" type="radio"/> Yes No NA	Space #2
Parking space surface and slope (Floor Surface)	Slope	502.5, Floor Surfaces.	Parking spaces and access aisles shall comply with Section 302 and have surface slopes not steeper than 1:48 (2%) . Access aisles shall be at the same level as the parking spaces they serve.	See Notes and below.	Space 1 - <input checked="" type="radio"/> Yes / No Space 2 - <input checked="" type="radio"/> Yes / No Space 3 - Yes / No NA Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No Depth = 0.6% Cross = 0.6% Depth = 1.8% Cross = 1%
Floor surfaces	Surface type	302.1	Floor surfaces shall be stable, firm, and slip resistant, and shall comply with Section 302. Changes in level in floor surfaces shall comply with Section 303.	Yes / No	
Openings	Dimensions	302.3	Openings in floor surfaces shall be of a size that does not permit the passage of a 1/2 inch diameter sphere, except as allowed in Sections 407.4.3, 408.4.3, 409.4.3, 410.4, and 805.10. Elongated openings shall be placed so that the long dimension is perpendicular to the predominant direction of travel.	Yes / No	
Vertical clearance	Dimensions	502.6, Vertical Clearance (Amd CT Bld Code)	(Amd) 502.6 Vertical clearance. Vertical clearance for accessible van parking spaces shall be in accordance with Section 1106.5 and 1106.5.1.1 of the 2015 International Building Code portion of the 2018 Connecticut State Building Code.	Yes No <input checked="" type="radio"/> NA	
Accessible parking space identification	Identification (Signs)	502.7, Identification (Amd CT Bld Code)	(Amd) 502.7 Identification. Accessible parking spaces shall be identified by above grade signs in accordance with Section 1111.1 of the 2015 International Building Code portion of the 2018 Connecticut State Building Code.	See 1106.5.1.1 Van access clearance, above.	NA
Relationship to Accessible Routes	Location/Relationship to Accessible Route	502.8, Relationship to Accessible Routes	Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.	<input checked="" type="radio"/> Yes No NA	
Signage	Symbol Required	703.6.3.1 International Symbol of Accessibility (Amd CT Bld Code)	(Amd) 703.6.3.1 International Symbol of Accessibility. Pursuant to section 29-269c of the Connecticut General Statutes, references in this code to the International Symbol of Accessibility shall be deemed to mean Connecticut's symbol of access and shall comply with Figure 703.6.3.1.	See Notes	Space 1 - <input checked="" type="radio"/> Yes / No Space 2 - <input checked="" type="radio"/> Yes / No Space 3 - Yes / No NA Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No

Accessible Parking Code Review Summary

References:
 2018 Connecticut Building Code
 2015 International Building Code
 Accessible Useable Buildings and Facilities ICC A117.1-2009

Location: Old Lyme Middle School Location: Lot # 3
 Address: _____
 Date: 3/13/21
 By: Kurt Prochorena

Item	Requirements	IBC 2015 Code Reference	Code Requirement	Complies?	Notes
Parking and Passenger Loading Facilities	Required	1106.1, Required	Where parking is provided, accessible parking spaces shall be provided in compliance with Table 1106.1, except as required by Sections 1106.2 through 1106.4. Where more than one parking facility is provided on a site, the number of parking spaces required to be accessible shall be calculated separately for each parking facility.	Yes / No	4 accessible spaces this lot No van
Parking and Passenger Loading Facilities - Exception	Exeption	1106.1	1106.1 does not apply to parking spaces used exclusively for buses, trucks, other delivery vehicles, law enforcement vehicles or vehicular impound and motor pools where lots accessed by the public are provided with an accessible passenger loading zone.	Applies / NA	
Automobile accessible parking spaces	Space dimension	1106.1.1, Automobile accessible parking spaces (Add CT Bld Code)	(Add) 1106.1.1 Automobile accessible parking spaces. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger motor vehicles designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 15 feet wide including 5 feet of cross hatch.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No NA Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓
Van spaces, number required	Number required	1106.5, Van Spaces (Amd CT Bld Code)	(Amd) 1106.5 Van spaces. For every six or fraction of six accessible parking spaces, at least one shall be a van-accessible parking space. Each public parking garage or terminal shall have a minimum of two van-accessible parking spaces complying with this section.	Yes / No	No van
Van Spaces, location and dimensions	Space dimension	1106.5.1, Van accessible parking spaces (Add CT Bld Code)	(Add) 1106.5.1 Van accessible parking spaces. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, parking spaces for passenger vans designated for persons who are blind and persons with disabilities shall be as near as possible to a building entrance or walkway and shall be 16 feet wide including 8 feet of cross hatch.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No } No van Space 5 - Yes / No NA Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No ↓
Van Spaces, vertical clearance	Vertical dimension	1106.5.1.1, Van access clearance (Add CT Bld Code)	(Add) 1106.5.1.1 Van access clearance. Pursuant to subsection (i) of section 14-253a of the Connecticut General Statutes, each public parking garage or terminal shall have 8 feet 2 inches vertical clearance at a primary entrance and along the route to at least two parking spaces for passenger vans that conform to Section 1106.5.1 and that have 8 feet 2 inches of vertical clearance.	Yes No / NA	
Parking spaces, location	Location	1106.6, Location	Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible building entrance. In parking facilities that do not serve a particular building, accessible parking spaces shall be located on the shortest route to an accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located near the accessible entrances.	Yes / No	Good location. Direct to walkway.
Parking spaces, location - Exception	Exception	1106.6	1. In multilevel parking structures, van-accessible parking spaces are permitted on one level. 2. Accessible parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee and user convenience.	Yes No / NA	

Accessible Parking Code Review Summary (Cont.)

Parking signs, where required	Where Required	1111.1, Signs (Amd CT Bld Code)	1111.1 Signs. Required accessible elements shall be identified by the International Symbol of Accessibility at the following locations.	See below	
Parking signs, where required	Where Required	1111.1, Signs (1) (Amd CT Bld Code)	1. Accessible parking spaces as required by Section 1106. Pursuant to subsection (h) of section 14-253a of the Connecticut General Statutes, such spaces shall be designated by above-grade signs with white lettering against a blue background and shall bear the words "RESERVED Parking Permit Required" and "Violators will be fined" in addition to the International Symbol of Accessibility. When such a sign is replaced, repaired or erected, it shall indicate the minimum fine for a violation of subsection (l) of section 14-253a of the Connecticut General Statutes. Such indicator may be in the form of a notice affixed to such sign. Newly installed signs shall be 60 inches minimum above the floor or ground of the parking space, measured to the bottom of the sign.	Yes <input checked="" type="radio"/> No NA	Wrong color All sign heights above 60"
Parking signs, where required	Where Required	1111.1, Signs (2) (Amd CT Bld Code)	2. Accessible passenger loading zones.	Yes <input checked="" type="radio"/> No NA	
Parking signs, where required	Where Required	1111.1, Signs (4) (Amd CT Bld Code)	4. Accessible entrances where not all entrances are accessible.	Yes <input checked="" type="radio"/> No NA	
Parking signs, where required	Where Required	1111.1, Signs (8) (Amd CT Bld Code)	8. Exterior areas for assisted rescue in accordance with Section 1009.9.	Yes <input checked="" type="radio"/> No NA	None observed

Handicapped Parking Code Review Summary (Cont.)

Item	Requirements	ICC A117.1- 2009 Code Reference	Code Requirement	Complies?	Notes
Parking space dimensions	Space dimension	502.2, Vehicle Space Size (Amd CT Bld Code)	(Amd) 502.2 Vehicle space size. Pursuant to section 14-253a of the Connecticut General Statutes, car parking spaces shall be 15 feet in width including 5 feet of cross hatch. Van parking spaces shall be 16 feet in width including 8 feet of cross hatch.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No <i>Space = No / Cross Hatch = Yes</i> <i>Space = Yes / Cross Hatch = No</i>
Parking space markings	Dimension measurements	502.3, Vehicle Space Marking	Vehicle Space Marking. Car and van parking spaces shall be marked to define the width. Where parking spaces are marked with lines, the width measurements of parking spaces and adjacent access aisles shall be made from the centerline of the markings.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No <i>Space = Yes / No NA</i>
Parking space dimensions- Exemption	Exception	502.3	Where parking spaces or access aisles are not adjacent to another parking space or access aisle, measurements shall be permitted to include the full width of the line defining the parking space or access aisle.	Yes No NA	
Access Isles	Required	502.4, Access Aisles	Access Aisle. Car and van parking spaces shall have an adjacent access aisle complying with Section 502.4 (Note: See CT Amendments).	See Below	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 1	(Amd) 502.4.1 Location. Access aisles (cross hatch) shall adjoin an accessible route.	Yes No NA	<i>Bit sidewalk / see checklist</i>
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 2	(Amd) 502.4.1 Location. Two parking spaces shall be permitted to share a common access aisle.	Yes No NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 3	(Amd) 502.4.1 Location. Two parking spaces shall be permitted to share a common access aisle. If a car and a van space share a common access aisle, that aisle shall be 96 inches minimum in width.	Yes No NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 4	(Amd) 502.4.1 Location. Access aisles shall not overlap with the vehicular way.	Yes No NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 5	(Amd) 502.4.1 Location. Parking spaces may have access aisles placed on either side of the car or van parking space.	Yes No NA	
Access Aisle location	Location and Dimension (Width)	502.4.1, Location (Amd CT Bld Code) 6	(Amd) 502.4.1 Location. Van parking spaces that are angled shall have access aisles located on the passenger side of the parking space.	Yes No NA	
Access Aisle width	Dimension (Width)	502.4.2, Width (Amd CT Bld Code)	(Amd) 502.4.2 Width. Access aisles (cross hatch) serving car parking spaces shall be 60 inches minimum in width. Access aisles serving van parking spaces shall be 96 inches minimum in width.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No <i>95"</i> <i>32"</i> <i>32"</i> <i>33"</i> <i>No van</i>
Access Aisle length	Dimension (Length)	502.4.3, Length	Access aisles shall extend the full length of the parking spaces they serve.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No <i>Space = Yes / No NA</i>
Access Aisle markings	Markings required	502.4.4, Marking	Marking. Access aisles shall be marked so as to discourage parking in them. Where access aisles are marked with lines, the width measurements of access aisles and adjacent parking spaces shall be made from the centerline of the markings.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No <i>Space = Yes / No NA</i>

Handicapped Parking Code Review Summary (Cont.)

Access Aisle markings-Exception	Exception	502.4.4	Where access aisles or parking spaces are not adjacent to another access aisle or parking space, measurements shall be permitted to include the full width of the line defining the access aisle or parking space.	<input checked="" type="radio"/> Yes No NA	Space 1 and 4
Parking space surface and slope (Floor Surface)	Slope	502.5, Floor Surfaces.	Parking spaces and access aisles shall comply with Section 302 and have surface slopes not steeper than 1:48 (2%) . Access aisles shall be at the same level as the parking spaces they serve.	See Notes and below.	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No Depth = 3.0% Cross = 1% " = 1.9% " = 0.4% " = 2.0% " = 0.0% " = 1.8% " = 0.3% NA ↓
Floor surfaces	Surface type	302.1	Floor surfaces shall be stable, firm, and slip resistant, and shall comply with Section 302. Changes in level in floor surfaces shall comply with Section 303.	<input checked="" type="radio"/> Yes / No	
Openings	Dimensions	302.3	Openings in floor surfaces shall be of a size that does not permit the passage of a 1/2 inch diameter sphere, except as allowed in Sections 407.4.3, 408.4.3, 409.4.3, 410.4, and 805.10. Elongated openings shall be placed so that the long dimension is perpendicular to the predominant direction of travel.	<input checked="" type="radio"/> Yes <input checked="" type="radio"/> No	
Vertical clearance	Dimensions	502.6, Vertical Clearance (Amd CT Bld Code)	(Amd) 502.6 Vertical clearance. Vertical clearance for accessible van parking spaces shall be in accordance with Section 1106.5 and 1106.5.1.1 of the 2015 International Building Code portion of the 2018 Connecticut State Building Code.	Yes No <input checked="" type="radio"/> NA	
Accessible parking space identification	Identification (Signs)	502.7, Identification (Amd CT Bld Code)	(Amd) 502.7 Identification. Accessible parking spaces shall be identified by above grade signs in accordance with Section 1111.1 of the 2015 International Building Code portion of the 2018 Connecticut State Building Code.	See 1106.5.1.1 Van access clearance, above.	
Relationship to Accessible Routes	Location/Relationship to Accessible Route	502.8, Relationship to Accessible Routes	Parking spaces and access aisles shall be designed so that cars and vans, when parked, cannot obstruct the required clear width of adjacent accessible routes.	<input checked="" type="radio"/> Yes No NA	
Signage	Symbol Required	703.6.3.1 International Symbol of Accessibility (Amd CT Bld Code)	(Amd) 703.6.3.1 International Symbol of Accessibility. Pursuant to section 29-269c of the Connecticut General Statutes, references in this code to the International Symbol of Accessibility shall be deemed to mean Connecticut's symbol of access and shall comply with Figure 703.6.3.1.	See Notes	Space 1 - Yes / No Space 2 - Yes / No Space 3 - Yes / No Space 4 - Yes / No Space 5 - Yes / No Space 6 - Yes / No Space 7 - Yes / No Space 8 - Yes / No NA ↓

BACK COVER



MACCHI ENGINEERS, LLC

Diversified Structural and Civil Engineering Services

MICHAEL PLICKYS, P.E.
JOHN BROCHU, P.E.
DOUGLAS CAMP, P.E.

July 28, 2021

Ms. Angela Cahill, AIA
QuisenberryArcariMalik,LLC
195 Scott Swamp Road
Farmington, CT 06032

Re: Structural Engineering Evaluation
Middle School
49 Lyme Street
Old Lyme, CT 06371

Dear Angela,

Pursuant to your request, on 7/23/21 Macchi Engineers conducted a cursory visual inspection of the above referenced facility. The purpose of our inspection was to determine the general overall structural condition of the facility and provide recommendations for repairs where required. Our inspection included walking the facility along the interior and exterior. No finishes were removed during our inspection, therefore only those areas exposed to view were inspected. Our work also included a review of the available structural drawings.

Existing Conditions:

The original facility is comprised of mainly a single-story structure. No existing drawings were available for the original building. Existing drawings were available for the additions and renovations that were completed in 2002 and 2011. In 2002 it appears that new mechanical units were installed throughout the existing building. Also, a boiler room addition on the south side of the existing structure was constructed. In 2011 renovations were completed which mainly included the auditorium air conditioner replacement. Typical roof framing is comprised of steel joists that typically span between interior and exterior bearing walls.

Photovoltaic Panels were observed to be placed throughout the entire roof of the building.

Field Observations:

Our inspection indicates that overall, the existing building structures are in good overall condition. We did not observe any signs of significant structural distress in the perimeter walls, interior finishes, floors, or roofs. The basement area appeared to be dry with no significant signs of moisture infiltration. The existing roofing systems appear to be relatively

Tel. 860 / 549-6190

44 Gillett Street, Hartford, CT 06105-2694

Fax. 860 / 524-5088

An Equal Opportunity Employer

Ms. Angela Cahill, AIA
QA+M

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new and are in good overall condition. We did not observe any blistering, significant puddling or other signs of areas of deterioration.

In general, the building appears to be in good overall structural condition. However, due to its age and lack of maintenance, isolated areas will require remedial work. These include but are not limited to:

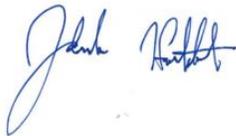
Multiple areas of cracked brick were observed at the North end of the building, reference Photos 1, 2, and 3. Several control joints were missing along the same elevation of wall reference Photo 4. As seen in Photo 4, a control joint was placed above the window opening but not below. As can be seen in Photo 4 as well as Photo 5, are cracks in the CMU above the window head. Several cracks in the mortar throughout the exterior envelope were observed to have been repaired with caulking instead of masonry mortar, reference Photo 6. Lastly, in an interior stairwell, cracks were observed below a window opening which can be seen in Photo 7.

Below is a summary of our findings:

1. Cracked Brick at multiple locations on North end of building. (Photo 1,2, and 3).
2. Missing control joints. (Photo 4).
3. Crack in CMU and mortar. (Photo 5)
4. Replacing caulk in between CMU members. (Photo 6).
5. Cracks in CMU stairwell. (Photo 7).

If you have any questions, please do not hesitate to call.

Sincerely,
MACCHI ENGINEERS, LLC



Johnathan A Hurlburt, P.E.
Structural Engineer

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Encl.

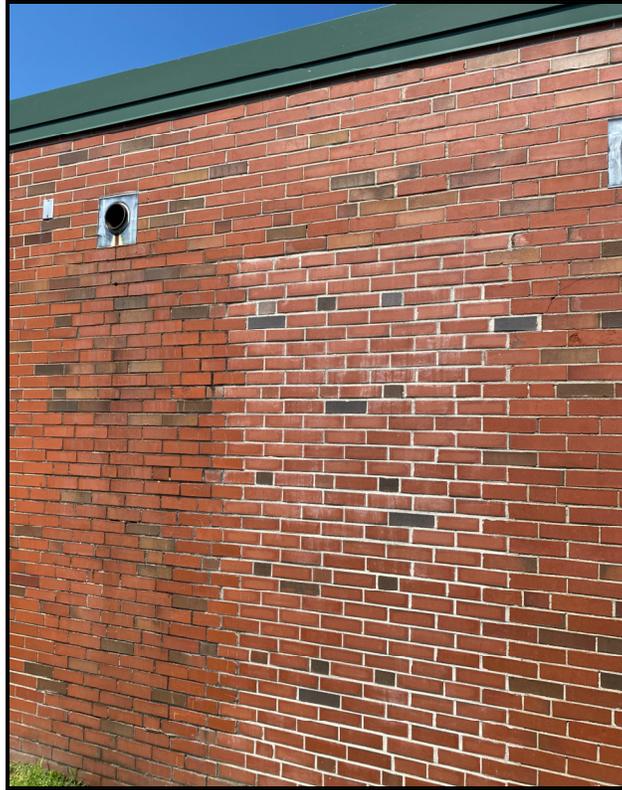


PHOTO 1: 7/23/2021 - Area D – East Wall - Cracked Brick and mortar joints requiring repointing.



PHOTO 2: 7/23/2021 – Area D – East Wall - Cracked Brick

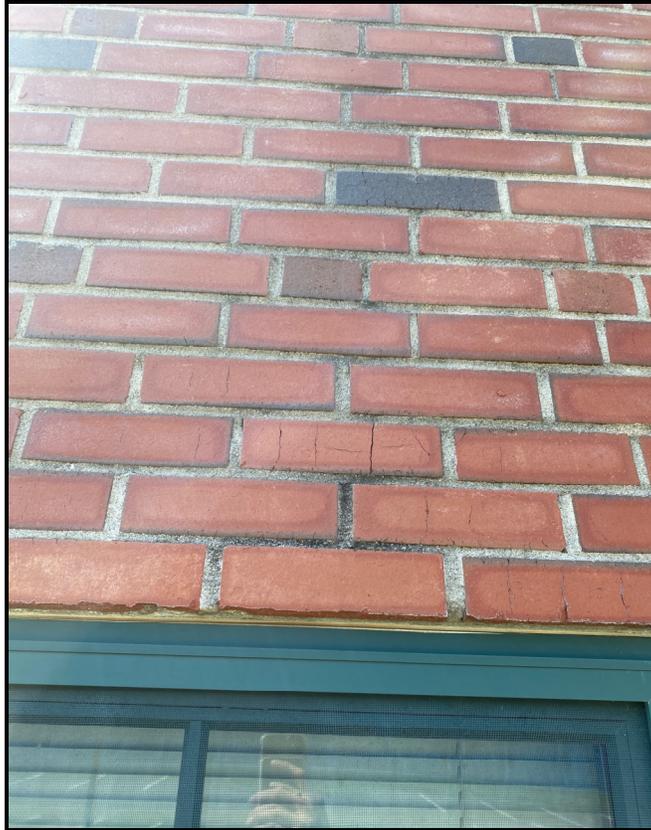


PHOTO 3: 7/23/2021 – South Elevation of Media Center – Cracked CMU and missing control joints



PHOTO 4: 7/23/2021 – South Elevation of Media Center – Cracked CMU and missing control joints

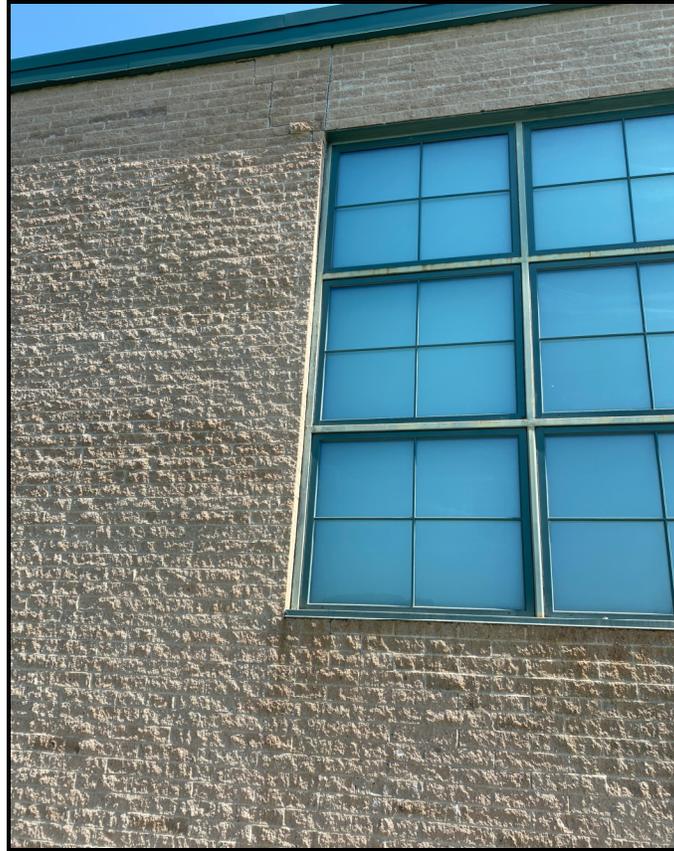


PHOTO 5: 7/23/2021 – South Elevation of Media Center – Cracked CMU and missing control joints

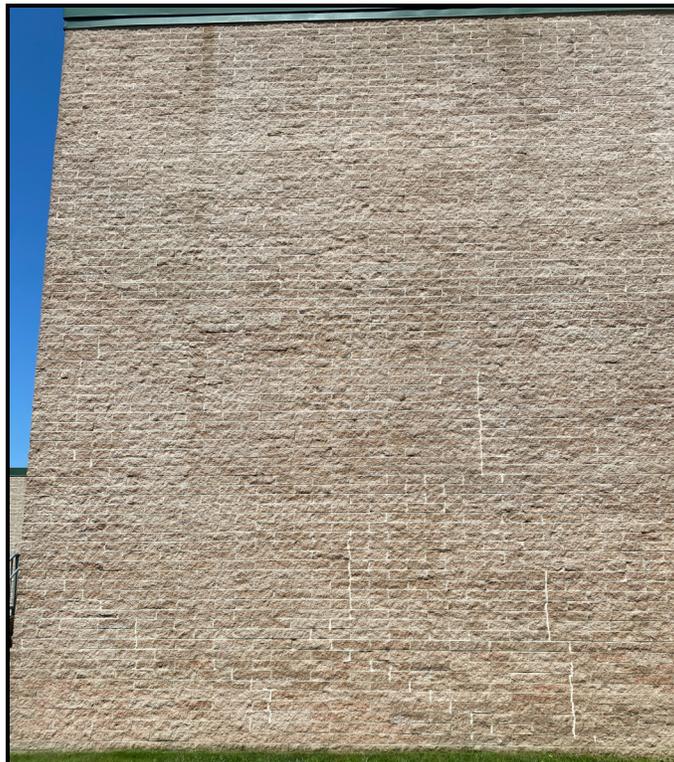


PHOTO 6: 7/23/2021 – North Elevation of Media Center – Cracked CMU caulked control joints

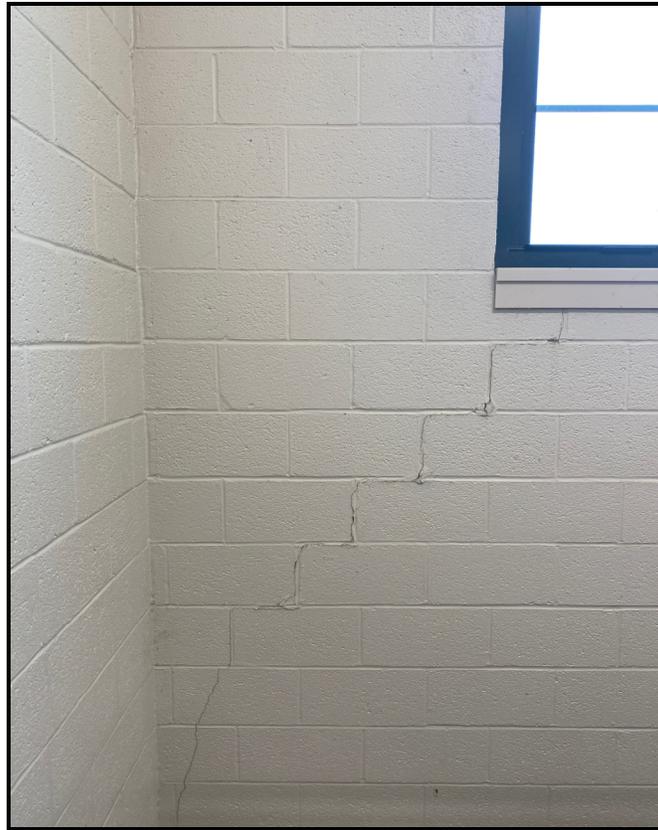


PHOTO 7: 7/23/2021 – Interior Stairwell – Settlement cracks

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE

APPLICABLE CODES AND STANDARDS

The mechanical, electrical, plumbing, and fire protection systems will be reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.

- 2018 Connecticut State Building Code
- 2015 International Building Code (IBC)
- 2015 International Existing Building Code (IEBC)
- 2015 International Mechanical Code (IMC)
- 2015 International Energy Conservation Code (IECC)
- Portions of the 2015 International Fire Code (IFC)
- Illuminating Engineering Society Lighting Handbook (IESNA), 10th Edition.
- NFPA, Latest Versions.
- ASHRAE 90.1.

EXECUTIVE SUMMARY

The hot water heating plant for the facility was installed in 2002 and is in fair condition. The majority of mechanical rooftop equipment and exhaust fans are due for replacement, while the piping and ductwork within the building are in fair condition. Domestic water heaters are due for replacement. Several issues with the building will be identified below.

Electrical infrastructure is in good operating condition overall. The majority of systems are well maintained with the exception of some upgrades which are recommended below.

MECHANICAL SYSTEMS

Heat Generation

1. Heating for the building is generated by three oil fired boilers manufactured by Smith. The boilers are 19 years old and nearing their approximately 25 year useful life. Regular maintenance appears to be occurring.
2. Hot water circulation pumps are in line and base mounted end suction pumps which appear to be regularly maintained.
3. Boilers also serve the adjacent Center School. Two pumps are dedicated to the Center School Piping drops down through the floor; buried to the adjacent school.



Heating Hot Water Boiler Plant



Base Mounted Hot Water Pumps

4. Oil for the boiler and water heater systems is circulated through a duplex Webster oil pump set. This appears to be 19 years old and nearing its useful life expectancy.
5. Hot water piping for the building exists both in tunnels and above ceilings. The majority of piping was replaced 19 years ago and is fair condition. Heating piping has a useful life of 40-50 years which this may be coming close to.



Fuel Oil Pumps



Hot Water Piping to Center School

Space Heating

1. Heating throughout the occupied portions of the building is provided by a combination of perimeter radiation, cabinet unit heaters and rooftop heating and ventilating units. The majority of the indoor heating devices are in fair condition, but cabinet unit heaters will need to be replaced in the near future. The outdoor rooftop units will be addressed in a later section.



Radiation Serving a Classroom

Ventilation / Exhaust Systems

1. Multiple rooftop units provide a majority of the ventilation to the building.. These units are over 19 years old and appear to be in poor condition. Casings for each unit are rusted and showing signs of wear. A typical rooftop unit has an approximately 20 year useful life which these are beyond. In addition, the motor efficiency, filter quality, and other features are not meeting today's standard for schools. Lastly, cooling or dehumidification systems are strongly recommended for modern schools.



Cooling

1. Certain areas of the building are served by packaged rooftop units; or heating and ventilation units with remote compressor / condensers. These units are over 19 years old and appear to be in poor condition.



Packaged Rooftop Unit

2. Window AC units are evident throughout the school. A significant amount of energy is being used on localized units without timed controls which can run 24/7 if not carefully monitored. Also, maintenance costs are utilized to maintain, install, and store these window units. It is strongly recommended that future projects consider a more substantial cooling system with better efficiency and maintainability.

Controls

1. Controls were observed to generally be within the 19 year age dating back to the previous renovation. This included Direct Digital Control (DDC) capabilities for all equipment with additional manual override switches in some areas. Numerous control cabinets serving the CT Controls Systems were observed to be in fair condition. Controls software changes regularly and should be reviewed with the CT Controls to ensure the latest security and efficiency upgrades are being applied. Controls hardware, devices, and wiring generally has a 20-30 year useful life. Any future renovations should include replacement of controls hardware and upgrade to a newer DDC platform. Existing systems can be integrated into the new platform if partial renovations occur.

ELECTRICAL SYSTEMS

Electrical Service

1. The Main Service Switch and distribution section is rated at 2500A, 277/480, 3-phase, and is manufactured by Siemens. The main switchgear is approximately 19 years old and is in good condition. All panelboards and conduits within the electrical room appear to be clean, dry, and well labeled. Switchgear which is well maintained has a useful life of 30-50 years or more.



Main Switchboard at Electrical Room

2. The PV on the roof is generated at 480V.
3. No lightning protection was observed in the facility.

4. There is a Kohler 400 emergency generator on the property which serves the Middle School and Center Schools. Power from the generator enters the school and is controlled by a Kohler automatic transfer switch. The output of the transfer switch is an emergency distribution panel. The transfer switch and panelboards are in good condition.



Emergency Generator

Electrical Distribution

1. The Main Service Switch and distribution section feed branch panels located throughout the building. Feeders are in conduit/EMT. Branch circuits are in armored cable, where these could be observed. Wiring within the attic and tunnels appears to be in conduit and is well protected.
2. Most of the electrical equipment (branch panelboards, disconnect switches, motor starters, etc.) appears to be dating back to the renovation 19 years ago. Panelboards are located throughout the building in concealed and exposed areas. All panelboards directories which could be observed appeared to be well labeled.

Lighting

1. Interior lighting in classrooms, corridors and office areas is generally LED type. Lighting control in classrooms is a combination of wall switches and occupancy sensor controls. The majority of the building uses recessed 2 x 2 and 2 x 4 LED fixtures installed in ACT ceilings.
2. All lighting observed in the facility appears to be energy efficient LED and in good condition.
3. Emergency lighting appears to be accomplished with lighting on the generator.
4. Exterior building mounted light fixtures and site lighting appear to be LED and in good condition.

Emergency Lighting

1. The use of exit signage in most areas of the building appeared to be compliant with current codes. Much of the exit signage is made up of backlit, code compliant, LED lighted signs with battery backup.

PLUMBING SYSTEMS

Plumbing Services

1. Domestic Water is served from a central well pump on site which serves other buildings also. Water service enters the boiler room through the floor slab.



Domestic Water Service

2. Storm: Much of the building's storm water appeared in good condition
3. Propane Tank: There is a buried propane tank at the northwest corner of the building that serves gas supply to the Science Rooms

Plumbing Fixtures

1. Plumbing fixtures within the building are generally of the 19 year age from the previous renovation. Fixtures appeared to be clean, well maintained, and in fair condition with a 30 year useful life.
2. In general plumbing fixtures are as follows:
 - Water Closets in gang bathrooms are wall mounted, vitreous china with manual flush valves.
 - Urinals are wall mounted, vitreous china with manual flush valves.
 - Lavatories serving single use bathrooms and in gang bathrooms are wall mounted vitreous china with manual faucets.
 - Electric drinking fountains are surface mounted and appear to be in good condition.
 - Classroom sinks are top mount stainless steel, with manual faucets. These fixtures appear to be in good condition.



Typical Lavatories

Domestic Hot Water Systems

1. Domestic hot water is generated by two oil fired water heaters manufactured by Bock and five storage tanks; Bock 119 gallons each. The water heaters and tanks are 19 years old and nearing their approximately 25 year useful life. Regular maintenance appears to be occurring
2. Two hot water mixing stations exist in this room. One serves general hot water at 110 degrees, and the other serves kitchen hot water at 140 degrees. Each service is served by a hot water recirculation pump which appear to be in fair condition.



Domestic Hot Water Storage Tanks



Water Heaters

FIRE PROTECTION SYSTEMS

Main Service

1. Fire services enter the building at multiple locations. The entrance in the boiler room and basement include a 6" double check valve assembly and zone valves. All valves and piping appear to be approximately 19 years old and in fair condition, with a 30-50 year useful life.
2. Sprinkler mains within the tunnels have minor corrosion on the exterior due to humidity, however, no significant corrosion or leaking was apparent.



Fire Protection Service @ Boiler Room



Fire Protection Service @ Basement

3. Sprinkler piping within the occupied building is generally a wet system with pendant heads protecting the entire building.
4. 4" Siamese connections located along the driveways provide fire department connection access. The exterior fire alarm bells are located nearby.

END OF REPORT

