Auburn Village School
Auburn, New Hampshire

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Facility Assessment
Final Report

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TURNER GROUP

The H.L. Turner Group Inc.

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INTRODUCTION

Auburn Village School
Auburn School District
Auburn, New Hampshire

Facility Assessment Audit

1.0 Introduction

On February 27th, March 6th and April 1, 2013 representatives from The H.L. Turner Group Inc. (TTG), consisting of architectural, civil, structural, mechanical, and electrical engineers, visited the Auburn Village School located at 11 Eaton Hill Road, to perform an in-depth assessment of the current condition of the facilities. Accurate and concise condition assessment data is essential for proper planning for maintenance, improvements, and capital improvements. This condition assessment is intended for use by the Auburn School District as a tool for budget planning for the allocation of resources on a priority basis. It is hoped that by determining the nature and extent of problems, and providing options for corrective action, items may be addressed before more serious damage or failure can occur. The purpose of this facility audit is to report conditions that are in need of repairs and upgrade, conditions that do not comply with current building and safety codes, and confirm that the facility operates as designed structurally, mechanically, and electrically.

Project Objectives

- To provide an accurate accounting of all items that may be classified as code and life-safety compliance issues, deferred maintenance or capital repair/improvements.

- To calculate opinions of cost for all identified maintenance repair, replacement and capital improvement items using an established method of construction and cost estimating data.

In reviewing the building features, finishes and various systems we identified items that require immediate attention due to life-safety or code compliance or items that are considered deferred maintenance. On the summary spreadsheets, included throughout the body of the report, these items are listed under the “short term” category and generally a life expectancy was not applicable. Other items that are included in the “short term” category are systems that are nearing the end of their useful life and should be repaired or replaced within the next two to three years. “Mid-term” items are systems or specific items that require upgrade, repair or replacement within the next 4 to 6 years and “Long term” items are generally beyond 7 years. For certain items it was determined that a yearly budget should be established for partial replacement or upgrades such as in the case of tile, carpeting and ceiling tile. In all cases, costs are listed in 2013 dollars.

It is the intention that the results of this facility audit will ultimately be used to identify a prioritization of capital repair and replacement projects for the Auburn Village School.

- To review current and projected enrollment numbers for the Auburn Village School to determine if the current spaces meet present and future needs. Further discussion of

this subject is included in a separate document entitled “Enrollment Analysis and Space Needs Study”.

- Conduct a survey of the building users to better understand the needs and issues with the current facility. This included the distribution of a written form for prioritizing various categories relating to the building environment as well as one-on-one discussions with some of the staff and teachers. The results of the survey and discussions have been compiled and are included in a separate document entitled “Enrollment Analysis and Space Needs Study”

- Conduct a public session to solicit input from the community regarding the Auburn Village School. This took place on April 26, 2013. A summary of the public session is included in a separate document entitled “Enrollment Analysis and Space Needs Study”

LIMITATIONS: The H.L. Turner Group Inc. (TTG) has prepared this report for the Auburn School District, Auburn, New Hampshire, based on visual observations only and therefore it did not involve destructive demolition, scientific testing, or any other tests. The information/data in this report has been provided in general accordance with accepted engineering/architectural consulting practices and TTG makes no warrantee, either expressed or implied on the conclusions or cost estimates/opinions of cost provided.

1.1 Executive Summary

In general, Auburn Village School is a well-maintained facility and the maintenance staff has done an excellent job keeping the building operational and in a very presentable condition; however, some of the building systems are definitely showing their age. Many of the finishes including walls, ceilings, and floors are worn but still serviceable. Many of the roofs were patched and re-seamed in 2002/2003, but the membranes are aging and many will have to be replaced in the next 2 to 3 years. Some of the shingle roofs are also nearing the end of their useful life and they too will require replacement within this same time frame. The mechanical, electrical, and other systems and equipment have aged and many are at, or have exceeded, their useful life. The following list summarizes what we have judged to be the most critical issues.

Life Safety Issues

- Installation of proper exhaust hood for the kiln in the art room.
- Installation of proper length exhaust hood for kitchen appliances, including grease baffles.
- Insure that all glass windows within 18-inches of the floor and all glass windows in doorways must be wire glass or preferably tempered glass.
- Install GFCI receptacles at all locations above countertops and within 6-feet of a sink.
- Provide additional devices for fire alarm notification such as horns and strobes in areas that need more coverage.
- Provide additional emergency battery units in the corridors, restrooms, and locker rooms.

Mechanical Systems

- Replace the existing boiler plant and combustion air intake system. The boilers are at the end of their useful life, the condensate lines are badly corroded, and the combustion air, which is taken directly from the boiler room, does not meet code.

Roofing

- Within the next two years, replace the shingles on the 1995 stick-built classrooms and replace the membrane roofing on the cafeteria, and the roofing on the 1988 classroom wing.

Electrical

- Replace the existing 200-amp and 800-amp main distribution switchgear.

Accessibility

- The School District should be proactive in preparing a plan to address accessibility issues throughout the school. These issues include ADA accessible doorways, particularly those that serve as egress paths, code compliant ramps at the portable classrooms, and general accessibility throughout all the spaces in the school, including the restrooms.

Traffic Concerns

- The current dismissal procedure developed by the school functions well given the limitations of this site. Potential hazards exist with respect to busses exiting the rear parking lot, as well as students that walk across Eaton Hill Road at the crosswalk near Hooksett Road. This situation is exacerbated during the winter, forcing walkers to move to the street or through a parking lot. This is discussed in more detail under the Civil/Site section. To alleviate most of these concerns we recommend that further consideration be given to the construction of a loop road around the entire school. However, there is not enough room between the lot line and the existing building to install a roadway. Ultimately, to implement such a plan it would require obtaining an easement from Manchester Water Works, the abutting land owner, or obtaining the land outright from MWW in exchange perhaps for a section of land on the uphill side of the site.

School Security and Safety

School safety and security is at the forefront of any discussion when it comes to a school assessment. With all that has occurred with regard to school intrusions and violence in school buildings it has prompted renewed discussions on this subject. Many articles have been written on the subject but some key steps for any School District to take with regard to reinforcing school safety should include as a minimum the following:

- Conduct a formal review of all safety policies and procedures to ensure that all school safety issues are adequately covered in the current school crisis plans and emergency response procedures.

- Review communication systems and methods within the school district and with community responders.

- Communicate with community partners such as emergency responders, area hospitals, etc., to review emergency response plans. Identify any weaknesses and short term needs.

- Provide training to staff based on a needs assessment

- Inform the public of what's being done at the school to improve safety and security.

There is always a balance between sufficient building security and providing students a healthy, nurturing, normal school environment. Some prevention activities should include:

- Limited access to the school building
- Establish a lock down procedure should a threat exist
- Monitoring of school parking lots and student common areas such as hallways, cafeterias, exterior walkways and playgrounds
- Presence of a school resource officer
- Monitoring school guests
- Encourage students to take responsibility for their part in maintaining a safe school environment
- Establish anonymous reporting systems such as student hot lines, “suggestion" boxes etc.
- Presence of security systems such as door alarms and video monitoring

Auburn Village School scores high in most of these areas. One concern however is the movement of students between the main building and the portable classrooms. Students are vulnerable as they move from building to portable even though there are some cameras monitoring the area. This in itself is reason enough to advocate for elimination of the portable classrooms and constructing a permanent addition to the school.

BUILDING ARCHITECTURAL FEATURES

BUILDING INTERIOR

Auburn Village School
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ARCHITECTURAL

General Observations of Interior Spaces

The Auburn Village School consists of approximately 73,000 square feet and is comprised of the original 1940's building and a series of additions completed in the early 1960's, 1965 and 1970, with the most recent addition completed around 1988.
There is also an attached stick-built section on the north side of the main building that was constructed in 1995 and three stand-alone portables varying in age from 2002 to 2004, and the latest arrival in 2012. Reference the key plans at the end of this report.

The original school, located at the center of the complex, consists of a one-story brick structure with a floor area of approximately 5,300 square feet. It houses the main entry, the main administrative offices, nurse's offices, special education and guidance offices, and the old electrical/boiler room. It is constructed of brick and CMU block walls with a wood-framed roof.

In the late 50's/early 60's a one-story wing was added on the north side with a floor area of about 5,900 square feet. This first addition was constructed of concrete masonry (CMU) walls with a brick veneer. The roof is framed with steel bar joists. The wing consists primarily of four classroom spaces.

In the mid-1960's, a large, single-story wing was added on the south side of the central core. It consisted of classroom space as well as a gymnasium, with a stage, locker rooms and a new boiler room. The 1965 addition, constructed of CMU walls with brick veneer and a steel framed roof, covers 18,000 square feet. A partial second floor was added over this wing in the early 1970's and included just over 8,000 square feet of additional classroom space.

The largest addition to the school was completed in 1988. It is a two-story, CMU, brick and steel-framed addition, and includes almost 26,500 square feet of classrooms, a new music room, art rooms, cafeteria and kitchen space. The 1988 addition has a main entry from the rear parking lot. It is used for community activities outside of normal school hours as it provides direct access to the gymnasium and cafeteria.

Also in 1995, a wood-framed, stick-built section of three classrooms was constructed at the north side of the 1960's addition. It is constructed over a crawlspace and was finished with vinyl siding on the outside. The three-room addition added approximately 3,500 square feet of classroom space. The three portables, each holding two classrooms, provide additional square footage of about 1,850 square feet per unit.

The Detached Portable Classrooms

Three, two classroom, stand-alone buildings are connected by a covered walkway that starts at the north side of the main building. The portables were purchased in 2002 and 2004, and in 2012 a new leased unit was installed. The two older units are beginning to show wear on the ceiling, walls, and flooring. These types of buildings are designed for temporary use and therefore are generally not very energy efficient. Having the portables poses safety and security issues when students have to travel outside to these spaces.

We recommend that the portables should be removed in the not too distant future and replaced with permanent classrooms that are attached to the main building.

The 1995 Wood-Framed Addition (i.e. The Attached Portables)

Attached to the northwest side of the main building, there are three temporary classrooms that have been in place over 25 years (1988). These rooms lack many of the standard items in a typical classroom, such as phones and windows. Each classroom has a 6-foot, French-style swinging door that provides light, ventilation, and an egress point for the classroom. These doors are failing and blankets have been hung in front of the doors to help prevent drafts. There is minimal insulation in the spaces, the roof structure does not meet current code requirements (see section on roofing), and the finishes in the classrooms are showing signs of wear. Since the units are constructed over an earthen crawlspace, humidity and musty odors work their way up into the classroom during warmer weather. The three classrooms have exceeded their expected life expectancy and for all of the reasons cited above, we recommend that these three classrooms should be removed and replaced.

Main Building Finishes, Equipment and Spaces

Flooring

Flooring throughout the building consists of a mix of carpet and vinyl composition tile (VCT). Most of the carpeting shows signs of wear and there are several areas where the carpeting has delaminated. With regard to the VCT, large gaps between tiles appeared in several rooms. There is no sign of structural issues near these separations, so this may have to do with the original installation, failing adhesive, or shrinkage of the floor tile. We did observe a few areas such as the kitchen where 9x9 tiles were installed. These areas should be checked for possible asbestos.

A phased approach should be established for replacing floor tile and carpet. The new carpet should be a higher grade then currently installed to prevent delamination. VCT patterns could be designed in the new floors to allow interest and “way finding” elements throughout the building. The present carpet locations appear to be satisfactory for noise and the type of space where it is installed.

Ceilings

Most ceilings throughout the building are 2x4 acoustic ceiling tile mounted in a suspended grid system. There are some spaces, particularly the 1940's wing where there are hard gypsum ceilings and in some of the storage areas and mechanical spaces the underside of the roof deck and structural joists are exposed. The 2x4 ceiling tiles are a mix of old and new refinished tiles. Some tiles are stained from previous roof leaks but all roof leakage has been repaired and currently, to the best of our knowledge, there are no active roof leaks. Many classrooms in the newest 1988 wing have new ceiling tiles with a single older tile in the center of the room. These odd tiles were put in when the mechanical units were installed above the ceiling space. In many locations in the 1940 and 1960 wing, the batt insulation that was installed above the ceiling tiles has been moved aside and bunched up in various locations when the sprinkler system was installed or when some electrical work was done. This leaves large gaps in the insulation blanket and virtually renders it ineffective in helping to reduce heat loss. Some ceiling tiles in the 1960 and 1965 classrooms are curled and warped, indicating high humidity in these areas. Reference the section covering the HVAC systems.

Isolated ceiling tiles that are water stained, dirty, or damaged should be replaced on a yearly basis at the end of each school year. Since appearance is purely aesthetic, replacement is not mandatory. The additional insulation placed above the ceiling should be realigned as it was originally intended.

Wall Materials and Finishes

Most walls are in good condition. Many of the walls are constructed of block or brick and are well suited for taking the abuse of a school, particularly a middle school. In the pre-1988 wings, the insulation value of the exterior walls is somewhat questionable. In the 1988 wing where there is gypsum on the inside face of the exterior walls, there are sealant failures around windows causing wall damage. In addition, there is wall damage at many areas fitted with baseboard radiators. This type of damage results in air infiltration, which creates an energy issue.

In the short-term, we recommend repairing all the holes in the gypsum walls. Sealant failures near the windows should be addressed and the wall areas in back of the radiators should be repaired. The areas behind the radiators will most likely require the addition of blocking to help better support the radiator.

A long-term approach calls for the installation of a new interior insulation wall system in certain areas to go against the existing exterior walls, in order to improve the R-rating of the walls, resulting in a large energy savings.

Interior Doors and Frames

In the older wings, the wood doors are showing their age. The glass panels in some of these doors are not tempered and thus are questionable. All door glass must be wire glass or tempered glass by code. The newer sections of the school are fitted with steel doors and frames. Some are full glass and some have no vision panels. Some of the doors are 90 min rated doors with no closers, while others have closers and are not rated. There are several surface scratches on some of the doors; however, there is no major damage. Several of the interior doors and doors that communicate between classrooms do not have code-required lever handles.

During a full code review study that would be accomplished as part of a full design process, we recommend that all doors and fire separation areas be reviewed and evaluated per code. Based on the results of this study, we recommend that all doors, hardware, and frames be upgraded as needed. With regard to vision glass, half glass, or full glass doors, we recommend that these door types be coordinated with the schools policy on safety and security. As part of the security discussion, the locking of internal classroom/office doors should be reviewed.

Exterior Windows

The primary windows in the pre-1988 areas of the building are steel windows with Kalwall panels above. The windows are single pane and do not seal correctly. They provide minimal thermal resistance. Some areas have fixed windows. The lower level wing has replacement casement windows that appear to operate correctly. New, up-to-date, energy efficient windows would offer a much better building envelope performance in terms of energy efficiency. The Kalwall windows are somewhat better than single pane windows, but fall short of new windows, with better seals and high performance insulated glass.

The 1988 section of the building has fixed type and casement type windows. These windows are similar to the replacement windows. There are a few windows, such as in the cafeteria, where the window seals have failed. In these cases it is a relatively simple matter to replace the glass in the existing frame. Large Kalwall skylight panels on the roof allow light to enter the cafeteria and second level center hallway (see section on roofing for discussion on skylight film).

In the short-term, the old steel windows and Kalwall panels in the pre-1988 sections of the school should be replaced with new energy saving windows.

As a long-term building project, all windows should be replaced with more energy efficient windows. This work should be done in conjunction with work on the exterior walls.

Interior Windows

There are several interior windows throughout the school. All windows near the floor or adjacent to the doors need to be impact resistant and constructed of tempered glass. It appears that most of the interior windows meet this requirement. At some of the windows in the classroom walls in the 1988 wing, the seals on the windows are failing. Overall attention to safety and security should be part of a discussion with regard to the use of these windows.

Restrooms

Most of the restrooms show signs of wear and tear; however; all appear to be in working order. Eventually the fixtures should be replaced to newer, more energy efficient fixtures. ADA fixtures could be added and proper grab bars added. Overall adjustment to the restrooms could be done to provide a more durable and easy to clean environment. Hand washing areas in the hallway are dated and could be modified if desired. Consideration should be given to waterless urinals in order to conserve water usage.

We recommend that consideration be given to an upgrade of all restrooms over a long-term capital improvement project. A budget should be established to renovate a fixed number of spaces each year or every other year.

Furniture

Furniture throughout the building varies. It is comprised of different styles, eras, and condition. Some of the pieces appear to be over 35 years old and show signs of significant wear. Develop a furniture standard and a particular style of furniture for the overall school. Establish a plan to replace one grade level every year or every other year. Add standardized bookcases and replace teacher's workstations with something that is functional and durable.

Technology and Communications

Overall the school appears to have kept pace with the current technology trends. There are mobile computers, "Smart Boards", projectors, computer stations in the classrooms, etc. There are also several computer labs. The second floor computer lab should be reconfigured and enlarged to provide a more functional space.

Overall, the school is headed in the right direction with respect to technology. Many of the key elements are in place, although it is unknown what software or machine power is available. The school should continue along this path. In the future, the school should endeavor to increase space allocations to provide more space in the Tech Ed, Media Center, and computer labs.

General Notes Regarding the Americans with Disabilities Act

Certain sections of the building meet the ADA standards that were in effect at the time the addition was constructed. Older areas have been somewhat modified in an attempt to meet ADA standards. Some of the shortcomings include knee clearance at classroom sinks, heights of countertops, fixture types, maneuvering clearances at doorways and in the bathrooms, and missing 3rd grab bars in ADA accessible bathroom stalls. In addition, several rooms have furniture permanently located near the doors impacting the required clear space for accessing the door.

We recommend that the minor ADA issues should be addressed. In addition, several new single stall, fully accessible ADA restrooms should be constructed.

Fire Water Storage Tank

There is a large 16-foot diameter by 20-foot high steel tank that provides water storage for fire protection. The tank has a manhole access. To the best of our knowledge, the tank has never been completely drained and has never undergone an internal inspection. The fire pump is tested annually, and during the test, the tank does lose some water. Following the fire pump tests the tank is refilled by manually opening the gate valve that feeds the tank. The tank is equipped with a site glass to monitor the fill level.

We recommend that the tank be drained and inspected internally. Inspection should include an evaluation of the tank's shell by performing a series of non-destructive, ultrasonic, metal thickness readings. The welds and seams should be thoroughly inspected for any abnormalities.

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL General Observation of Interior Spaces			**$ Opinion of Cost**			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Detached Portable Classrooms (2002, 2004 and 2012)	Older units beginning to show wear on ceiling, walls, and flooring. Buildings are designed for temporary use. These buildings are not energy efficient. Safety and security are jeopardized by students traveling to these spaces.	Replace with permanent addition. Construction cost roughly 6 classrooms at 900 sf = 5,400 sf + 35% for circulation, mech, and restrooms = 7,290 sf @ $180/sf = $1.3M. Does not include any "soft" costs.	Varies from 2 to 10 years			To be estimated
Attached Portables (Stick-built 1988)	These rooms lack many of the standard items in a typical classroom (such as phones and windows). There are large double doors that act as light, ventilation, and egress points for the classroom; however, these are failing and have blankets to help prevent drafts. Finishes are showing signs of wear and the rooms have passed their expected life.	These spaces should be removed and new permanent classrooms be added. Construction cost roughly 3 classrooms at 900 sf = 2,700 sf + 35% for circulation, mech, and restrooms = 3,645 sf @ $180/sf = $.66M. Does not include any soft costs.	5 to 7 years			To be estimated

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL General Observation of Interior Spaces			**$ Opinion of Cost**			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Flooring	Much of the carpet shows signs of wear and several spots of delamination. In several spaces the tile has large gaps that appear to be from the tiles moving. 9x9 tiles observed in kitchen area.	Develop a CIP plan to replace a set amount of floor tile and carpet each year. New VCT (includes demo) $2.50/sf @ 1,800 sf/yr. New carpet (including demo) $6.50/sf @ 1,000 sf/yr.	Every year	$4,500 per year $6,500 per year		
Ceilings	Some stained tiles, some are cupped and curled.	Develop a CIP plan to replace a set amount of ceiling tiles each year. Replace 2,000 square feet of tile per year @ $1.25/sf.	Every year	$2,500 per year		
Wall Material & Finish	The 1988 wing has gypsum exterior walls. There is major sealant failure and damage at the walls near the windows and radiators.	Short Term: Fix the holes in the gypsum walls and repair sealant failures near the windows. Patch and add blocking for radiators.	1 to 2 years	$5,000		

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL General Observation of Interior Spaces			**$ Opinion of Cost**			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Doors & Frames	In the older wing, wood doors show sign of their age. The glass panels in some of these doors do not meet code. In the newer wing there are steel doors and frames. Some are full glass and some have no vision panels. Some of the doors are 90 min rated doors with no closers, while others have closers and are not rated. Several of the interior doors/communicating doors are non-lever handles.	Upgrade doors, hardware, and frames as needed. Vision/flush/full glass doors should be coordinated with the schools policy on safety and security. As well as locking of internal classroom/office doors.	0 to 3 years	$50,000		

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ARCHITECTURAL General Observation of Interior Spaces			**$ Opinion of Cost**			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Exterior Windows						
Aluminum awning windows with Kalwall and metal panels	The windows are single pane and do not seal correctly. They provide minimal thermal resistance. Metal panels are rusting.	Replace the Kalwall units: approximately 19 large units and 12 smaller units in rear.	4 to 6 years		$47,500 $21,600	
Wood windows in 1940's wing	Poorly performing, single pane glass, leaking.	Replace the 8 large wood window units.	4 to 6 years		$24,000	
Windows in nurse's office at front of building	Poorly performing aluminum frame windows and single pane glass.	Replace 5 windows.	4 to 6 years		$2,500	
Cafeteria Windows	There are two windows that have failed.	Replace windows that have failed.	2 to 3 years	$2,000		
Interior Windows	At some of the windows in the 1988's current wall classrooms, the seals on the windows are failing.	Fix seals at interior windows. Allowance for seal replacement: $5,000.	5 to 6 years		$5,000	
Technology & Communications	The second floor computer lab is tight for space and the functionality of the space could be improved.	The second floor lab should be reconfigured and enlarged to a more functional space.	5 to 7 years		$75,000	

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL General Observation of Interior Spaces			**$ Opinion of Cost**			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
General ADA Notes	Current standards are not met, i.e. knee clearance at classroom sinks, counter heights, fixtures, maneuvering clearances, 3rd grab bars. In addition, several rooms have furniture near the doors impacting the clear space required at doors.	Minor ADA improvements should be addressed. In addition, several new single stall fully ADA restrooms should be constructed. During a major renovation, all space should be addressed and brought up to current code.	N/A	$5,000	$36,000	$.5M
Restrooms	Restrooms show signs of wear; however, all appear to be in working order. Hand washing areas in hallway are dated. Fixtures are not energy efficient type.	Fix all restrooms over a long-term capital project. Overall adjustment to the restrooms could be done to provide a more durable and easy to clean environment. Fixtures should be replaced to newer more energy efficient fixtures. ADA fixtures should be adjusted and proper grab bars added. Budget a number of renovated spaces per year or renovate all during a major construction project.	Varies			$25,000 Per Restroom
		SUBTOTALS		**$75,500**	**$211,600**	**Varies**

* All above cost numbers from 2012 RS MEANS and reflect current pricing.

Flooring Examples

1. Flooring Example: Note the large cracks/separation in floor tile joints. (Photo from: First floor music room - 80's wing.)

2. Flooring Examples: Another example of floor tile joint separation. (Photo from: First floor perimeter classroom.)

3. Flooring Example: Several areas of carpet with fray/delamination.
(Photo from: Attached modular classrooms.)

4. Flooring Example: Areas of tile joint separation.
(Photo from: Second floor interior classrooms - 80's wing.)

Ceiling Examples

5. Ceiling Example: Mix of different styles and conditions of ceiling tile. (Photo from: First floor perimeter classrooms in the 80's wing.)

6. Ceiling Example: Several areas of ceiling tiles cupping and curling. Signs of moisture and air leakage about the ceilings. (Photo from: 60's wings.)

7. Ceiling Example: Exposed ductwork running through classroom. (Photo from: Second floor computer lab.)

8. Ceiling Example: Most tiles throughout the building are fair condition; however, there are a few that are damaged and stained.

Wall Examples

9. Wall Issue Examples: Several areas of fin tube pulling away from the wall. The fin tube is not properly attached to the stud and gypsum walls.
(Photo from: Lower level classroom - 80's wing.)

10. Wall Issue Example: Large gaps between interior window trim and gypsum wall board. This shows signs of wood trim warping and sealant joint failures.
(Photo from: Second floor art room - 80's wing.)

Door & Frame Examples

11. Door Rating: Interior classroom doors with 90 minute rated labels. (Photo from: First floor perimeter classroom.)

12. Doors/ADA: Most interior communicating doors do not have lever handles as required by ADA standards. (Photo from: Second floor interior classroom. Renovated 80's classroom.)

Exterior Window Examples

13. Windows: A few windows in the 80's wing have failed or show signs of window failure. (Photo from: Cafeteria windows.)

14. Windows: Older 60's windows are single glazed windows and do not shut correctly. (Photo from: Second floor 60's wing.)

15. Window Example: Some windows in 40's area of building are failing and screws are coming out of frames and grilles.
(Photo from: Assistant Principals Office.)

16. Window Examples: Large interior window openings to corridor with wire glass. (Photo from: First floor 60's classroom.)

17. Window Leaks: Exterior window has visible water pooling on the window sill from failing windows. (Photo from: 40's classroom.)

18. Windows: Kalwall panels over single glazed casement windows. (Photo from second floor 60's classroom.)

ADA Examples

19. ADA Issues: Lack of knee clearance at sinks.
(Photo from: First floor teacher's break room.)

20. ADA Issues: Furniture impacting the required clearance near door and no door lever handle. Rule of thumb: 18" on pull side and 12" on push side.
(Photo from: Second floor perimeter classroom.)

21. ADA Issue: Countertop height and no knee clearances at sinks.

22. ADA Issues: Large deep sink in art room does not meet current ADA requirements for depth. (Photo from: Second floor art room.)

23. IT Example: Exposed wiring that should be in a secure IDF room. (Photo from: Second floor computer room.)

24. ADA Clearances: Furniture/file cabinets in the way of clear space required for door swings. (Photo from: First floor 60's classroom.)

25. ADA Issues: Sink height for ADA/“Kiddie ADA” not met. Restrooms are small.
(Photo from: First floor 60’s era classroom.)

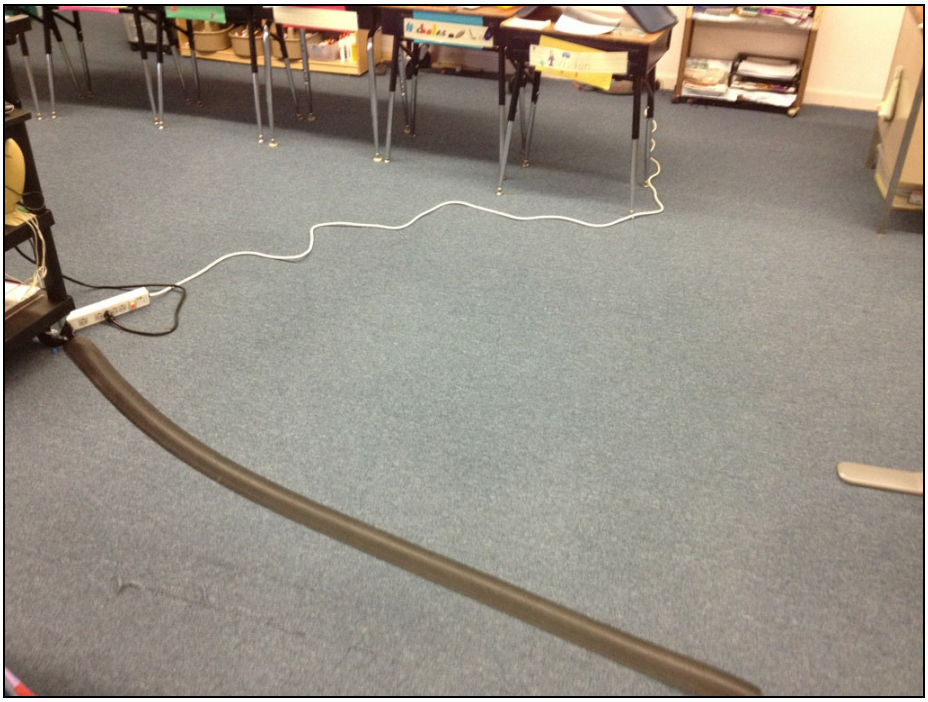
26. Fire Protection Example: It appears that all closets have sprinkler piping; however, the location of the pipe is not ideal.
(Photo from: First floor 40’s classroom.)

27. ADA Issues: Science labs do not have lower area for ADA required work station. (Photo from: Second floor renovated 60's wing.)

28. Lack of windows in attached modular classroom. These spaces only have double doors with blankets to stop draft and extra insulation. (Photo from: Attached modular classroom.)

29. Cracking Examples: Settlement and cracking dissimilar materials or eras in construction.

30. Old clocks and PA system. Some do not work and many have already been replaced. (Photo from: Second floor 60's/80's wing.)



31. Tripping Hazard: Power cords/power strips stretched across the floor.
(Photo from: Attached modular classroom.)

32. ADA Issues: Example of door with non-lever handle at exterior door. Also note fin tube coming away from the wall.
(Photo from: First floor music classroom - 80's wing.)

BUILDING EXTERIOR

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL – Building Exterior			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Windows – 1940's Wing	Sealants and caulking around windows is deteriorated.	Strip out old caulking and re-caulk windows.	0 to 1 year	$4,000		
Lintels over 1940's and some 1960's Windows	Lintels are rusting.	Wire brush and repaint lintels over windows.	2 to 3 years	$2,500		
Kalwall Window Units	Metal panels below some of the lower window units are rusting, some have rusted through.	Replace metal panels on approximately 9 window units. 9 units @ $800 each M & L.	0 to 1 year	$7,200		
Boiler – Combustion Air and Exhaust Pipe Manifold	Large gaps around manifold frame.	Replace frame and/or seal all around frame.	0 to 1 year	$1,000		
Boiler Room Door	Door is beyond useful life, door requires replacement.	Replace boiler room door.	0 to 2 years	$2,500		
Gymnasium Exterior Doors	Weather seals are worn and deteriorated.	Replace seals and gaskets all around door – 2 doors at $750 each.	1 to 2 years	$1,500		

ARCHITECTURAL – Building Exterior			**$ Opinion of Cost**			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Old Boiler Room Door	Weather seals are worn and deteriorated.	Replace seals and gaskets all around door.	2 to 3 years	$750		
Foundation	Cracks at various locations around building.	All cracks over 1/16" wide should be routed out and filled with an epoxy based crack filler/sealer.	3 to 5 years		$2,000	
Wood Trim at 1940's Wing and 1988 Stick-Built Classrooms	Large gaps between trim boards and masonry at 1940's wing. Gaps and peeling paint and some split boards, 1988 classrooms.	Fill gaps, repair deteriorated trim boards, scrape and paint as required.	2 to 3 years	$3,500		
Stair Set and Handrail at 1988 Classroom	Two stair sets and handrail is non-code compliant.	Replace stair set and handrail with platform and code compliant stairs and handrail.	N/A	$2,500		
Sliding Door in Corridor between 1988 and 1960's Wings	Door is deteriorated and is no longer used as an exit.	Replace door with a window system.	5 years		$3,500	

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL – Building Exterior			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Vinyl Siding on 1988 Classroom Wing	Many areas where siding is damaged or has pulled away from the sheathing. Areas where the siding is misaligned and or deformed.	Repair all damaged and loose siding.	5 years		$4,000	
		SUB TOTALS		**$25,450**	**$9,500**	

Main entrance of the Auburn Village School.

View from Eaton Hill Road showing Kalwall window units.

View from Eaton Hill Road showing rear of gym, locker rooms, and kitchen freezer.

Main entrance at rear of school. Cafeteria is on the left.

Rear of school – Old dust collection system at center.

North side of two-story 1988 addition.

Intersection of 1940 original wing with 1988 addition to the left.
Note aluminum-framed Kalwall window units.

Back side of 1940's wing with Kalwall window units.

Typical concrete infill panel with casement windows on 1960's wing.

Typical 1988 "stick-built" attached classroom.

Rusted lintels over windows (1940's wing).

Deteriorated caulking around window (1940's wing).

Gaps between trim boards and brick allow birds to nest.

Rusted metal panel below Kalwall window, Eaton Hill Road side.
Note grade is at bottom of window unit frame.

Large gaps at trim around boiler combustion air intake.

Boiler room door is in need of replacement.

Damaged and missing edge trim at cafeteria.

Main entrance from rear parking lot.

Damaged and deteriorated weather-stripping at door to the original boiler room.

Failed caulking around Kalwall window frame (rear of 1940's wing).

Foundation crack, intersection of 1940's wing and 1960's wing.

Wood framed roof over walkway to portables.
Roof is framed directly to the main building.

Moss growing on concrete panel. Moisture is from roof over covered walkway. Wood post supports walkway roof.

Non-compliant stairway from 1988 classroom.

Damaged screen door (1988 classrooms).

Paint peeling from trim boards at rake and soffit (note open gaps).

Sliding door in corridor between 1988 classrooms and 1960's wing
Door is badly deteriorated and is not used as an egress.

Typical crawlspace vent opening below 1988 classrooms.

Distressed vinyl siding (1988 classroom wing).

Damaged vinyl siding along lower sections of 1988 classroom wing.

BUILDING ROOFING

Auburn Village School
Auburn, New Hampshire
Facility Assessment Report

Report on the Roofing

On Wednesday, March 6, 2013, Paul M. Becht, P.E., a senior structural engineer with The H.L. Turner Group Inc. walked the roof at the Auburn Village School to observe the type of roofing used on each section of the school and evaluate the general condition of the roofing material. A drawing depicting the type of roofing for each area of school is included at the end of this section. Note: The portable classrooms are not shown on the sketch but are briefly discussed below.

Portable Classrooms

The northern most portable was new in 2004 and it houses the fourth grade classrooms. The asphalt shingle roofing was replaced in 2012. The next portable moving southerly is vintage 2002. It houses second grade classrooms and it too had a new asphalt shingle roof installed in 2012. The third portable houses third grade classrooms. It was installed in 2012 replacing a 1996 unit.

The Main Building

Area “A”

The roof areas denoted as “A” include the three sloped roofs over the classrooms at the northwest corner of the main building. The three classrooms in this section of the school were “stick-built” around 1988. The total area of the three roofs is about 3,300 square feet. These roofs are asphalt, three tab shingles, installed over a plywood-sheathed roof. The shingles are in poor condition. They are worn, and we observed broken shingles, missing shingles, particularly along the edges, as well as a few areas where the nails are beginning to work loose. The main structure of the roof consists of site-built trusses and 2x10 rafters. The trusses and rafters are spaced at 24 inches on center and each span about 13' to 13'-6". Calculations indicate the safe rated load carrying capacity of this framing system to be about 25 pounds per square foot. Based on the current Building Code requirements for the Town of Auburn, the design snow load for the roof of a school is approximately 50 pounds per square foot.

As a minimum, the roofing in Area “A” should be replaced and the structure should be upgraded for current code required snow loads.

Area “B”

The roof noted as Area “B” is a low-slope EPDM elastomeric membrane roof. The technical name for EPDM is Ethylene Propylene Diene Monomer and it is a synthetic rubber. This section at the west end of the building was constructed in the early 60’s and includes an area of about 6,000 square feet. Based on several stamp marks on the roofing membrane, the thickness was noted to be .045. The roof appeared to be in generally good condition. Any roof leaks were patched back in 2001/2002 and the roof was re-seamed in 2003. In the south corner we noted a large area covered with lichen, a moss-like fungus that can be attributed to the overhanging tree which constantly shades the roof. The tree should be removed or at the very least trimmed back, so the branches do not overhang the roof. We also noted a large area of water ponding around one of the roof drains. The drain should be cleaned of all debris so water may flow unimpeded. Generally an EPDM roof has a life expectancy of approximately 20 years. Patching and re-seaming may extend the life of the roof for an additional 5 to 7 years. Based on our observations, the roof should be slated for replacement in the next 4 to 5 years.

A roof support system in this area of the building consists of 14-inch deep, open web bar joists. The joists are spaced at 32 inches on center and span approximately 28 feet between bearing walls. The structural assessment of this roof system indicates that it is adequate to support snow loads between 40 and 50 pounds per square foot depending on the exact bar joist installed.

Areas “C” and “I”

Area “C” is the sloped roof over the original 1940’s section of the building and area “I” is the flat roof section over this same section. The combined area of “C” and “I” is approximately 5,300 square feet. The sloped section, Area “C”, is covered with standard, three tab asphalt shingles. The shingles appear to be in fair condition but are showing wear. There is a loss of granules on the surface of the shingles and the edges of the shingles are beginning to break down. Many areas of the shingles are covered with lichen, which accelerates the breakdown of the shingle. This may be due to the shading from nearby trees. The shingles should be scheduled for replacement within the next five years.

Area “I” is covered by a .060 EPDM elastomeric membrane roof. The roof appeared to be in generally good condition, although we noted a large area of water ponding around the south half of the roof. The roof drain should be checked to insure the screen is not blocked or the drain is not clogged. The seams on this roof were re-seamed in 2003.

There is a brick chimney that penetrates the roof at Area “I”. The chimney served the original boiler room, but it is our understanding that the chimney no longer serves a purpose. The mortar cap is deteriorating, allowing moisture to penetrate between the flue liner and the chimney and into the exposed brick joints on the upper course of bricks. The chimney should be permanently capped with a stainless steel cap plate. Some of the brick joints around the perimeter of the chimney may need re-pointing as well to maintain watertight integrity.

There is a wood framed/wood sheathed cupola at the edge of roof area “I”, over the main entrance to the building. The cupola has a shingled roof, matching the shingles of Area “C”. Having just received a new coat of paint, the cupola is in good condition with no visible signs of rot or deterioration.

Although we were not able to access the attic area to closely examine the roof structure, we were able to ascertain that the roof is timber framed. The vintage of the building and the type of framing would indicate that the roof was most likely designed for a snow of between 30 and 40 pounds per square foot, slightly below what is required by today’s building code.

Area “D”

Area “D” is a low-sloped roof section at the front of the building over the speech and physical therapy rooms. The roofing is .060 EPDM. We observed a large area of water ponding around the west most drain. The drain should be checked to insure the strainer is clear. The roof appears to be in good condition and any roof leaks were patched back in 2001/2002. We believe the roof was re-seamed in 2002/2003. The trim boards under the overhang of the shingled roof of Area “C”, adjacent to this roof are loose, and some of the boards show signs of rot. The roof counterflashing may be compromised as well. The counterflashing and trim boards should be replaced under the overhang.

The structural support system for the roof consists primarily of 18-inch deep steel bar joists spaced at 24 inches and spanning about 30 feet. The roof deck is 2-1/2" thick concrete. This system is capable of supporting a live load of up to 70 pounds per square foot which exceeds the current Building Code requirements.

Area “E”

Area “E” is a low slope roof and includes that portion of the roof over the second level classrooms. This large area of roof covers just under 17,000 square feet. The roofing material is a single ply .060 EPDM elastomeric membrane. It was originally installed in 1988. The roof leaks were patched in 2001 and the roof was re-seamed in 2002/2003. The roof appeared to be in generally good condition. We did note that some of the flashing strips around roof penetrations had started to separate. Re-seaming does not guarantee that the roof will last another 15 years, but since the majority of leaks do occur at seams or flashing, future leaks, should they occur, should be minor and relatively easy to repair. The normal life expectancy for an EPDM roof is about 20 years. Re-seaming probably extends the life 25 to 27 years. The roof is now 25 years old and should be scheduled for replacement in the next 2 to 4 years.
This area of roof also has an extensive array (over 2,500 square feet) of Kalwall translucent skylights. The assemblies, including the seals and caulking, were in good condition with no reported leaks. The units facing the south side were covered with a reflective film to help reduce the amount of sunlight and ultraviolet light from reaching the interior of the building. We noticed the film is starting to fail and peel off from some of the Kalwall units. The reflective film should be scheduled for replacement in the next 3 to 5 years.

The vintage of this wing of the building would indicate that it has been designed for the current Building Code required snow load of 50 pounds per square foot.

Area "F"

Area "F" is a low slope roof over the gymnasium. The roof area is approximately 7,100 square feet. Originally constructed in 1965 and after battling roof leaks for a number of years, the roofing was replaced in 2006. The roof is currently covered with a TPO (Thermoplastic polyolefin), single ply roofing membrane. The white material is naturally heat reflective and the seams are heat-welded making them stronger than the base material. The roof is in very good condition with no issues to report.

At the edge of the gym roof of the south side, adjacent to Area "E", a brick chimney penetrates the roof. The chimney requires re-pointing and a new mortar cap.

Area "G"

Area "G" includes approximately 1,800 square feet over the gym locker rooms and a portion of the kitchen food storage. This roof was replaced with a PIB membrane in 2001. PIB (Polyisobutylene) is similar to EPDM. It is a synthetic elastomer with a 60 mil rubber top and a 40 mil polyester fleece backing for a total thickness of 100 mil. The roof is in very good condition and can be expected to last another 10 to 15 years.

Area "H"

Area "H" is part of the 1988 addition and includes approximately 2,600 square feet of low slope roofing. The current roofing is .060 EPDM black membrane roofing. The roof was re-seamed in 2002/2003. Re-seaming will extend the life of the membrane by about 5 to 7 years to 25 to 27 years. The roof is now 25 years old and should be scheduled for replacement in the next 2 to 4 years.

We observed a large area of water ponding around the southerly-most roof drain. The drain should be checked to insure the strainer is clear.

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL - Roofing			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Shingles over 1988 "Stick-Built" Classrooms	Shingles are worn and structure needs upgrade to meet current code requirements for snow load.	Replace shingles on 3,300 sq. ft. roof @ $6.50/sq. ft. Upgrade wood framed structure.	2 years N/A	$21,500 $15,000		
Trim Boards and Flashing where Walkway Roof Joins Main Building	Trim boards are rotted. Lack of flashing.	Upgrade trim boards and install new flashing.	2 years	$1,500		
EPDM Roof over 1960's Wing	Roof has been re-seamed but roof is over 20 years old and will require replacement in 4 to 5 years.	Replace existing .045 EPDM with a new .060 EPDM membrane roof and insulation- 6,000 square feet @ $10.00/square foot.	4 to 5 years		$60,000	
Shingled roof over 1940's Wing at Main Entrance	Shingles show loss of granules and worn edges. Structure probably not designed for current code required snow loads.	Replace shingles on 3,900 sq. ft. roof @$6.50/sq. ft. Upgrade wood framed structure.	5 years		$25,400 $20,000	
Chimney on 1940's Section at Main Entrance	Chimney is no longer used. Chimney cap is deteriorated.	Install a metal cap over chimney.	3 to 5 years		$3,000	

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL - Roofing			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Sloped Roof Overhang onto Spec Ed/PT Wing	Rotted trim boards, flashing needs upgrade.	Replace trim boards and flashing under overhang.	0 to 2 years	$1,800		
Roof Drains	Many roof drains are clogged with debris.	Clean all roof drains at least 2 to 3 times a year.	N/A	$250		
EPDM Roof over Second Story Classrooms	Roof was re-seamed in 2001 but EPDM membrane is nearing the end of its useful life.	Replace EPDM 17,000 sq. ft. membrane @ $10.00/sq. ft.	2 to 4 years	$170,000		
Kalwall Skylights	Solar film is starting to peel off.	Replace reflective film on south side of skylights 1,200 sq. ft @ $12.50/sq.ft.	3 to 5 years		$15,000	

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL~ FACILITY ASSESSMENT

ARCHITECTURAL - Roofing			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Chimney Near Gymnasium	Chimney needs repointing and a new mortar cap.	Re-point chimney, install new mortar cap.	2 to 3 years	$2,000		
EPDM on Low Roof over One-Story Cafeteria	Roofing was re-seamed back in 2001 but it is over 25 years old.	Replace 2,600 sq. ft. roof over cafeteria @ $10.00/sq. ft.	2 to 4 years	$26,000		
Corrugated Plastic Roof Panels over Walkway to Portables	Panels are warped and twisted and appear to be nearing the end of their useful life.	Replace plastic roof panels (only if portables are to remain long-term).	5 to 6 years		$15,000	
		SUBTOTALS		**$238,050**	**$138,400**	**---**

Roof over stick built classrooms – nails popping.

Roof over stick built classrooms – missing shingles along edge.

Deteriorated trim and loose siding where walkway roof joins classroom.

Water ponding around AH unit. Low room of 1960's wing.

Shingles on 1940's wing, worn and covered with lichen.

Overview of shingles on 1940's wing, granules and edges are worn.

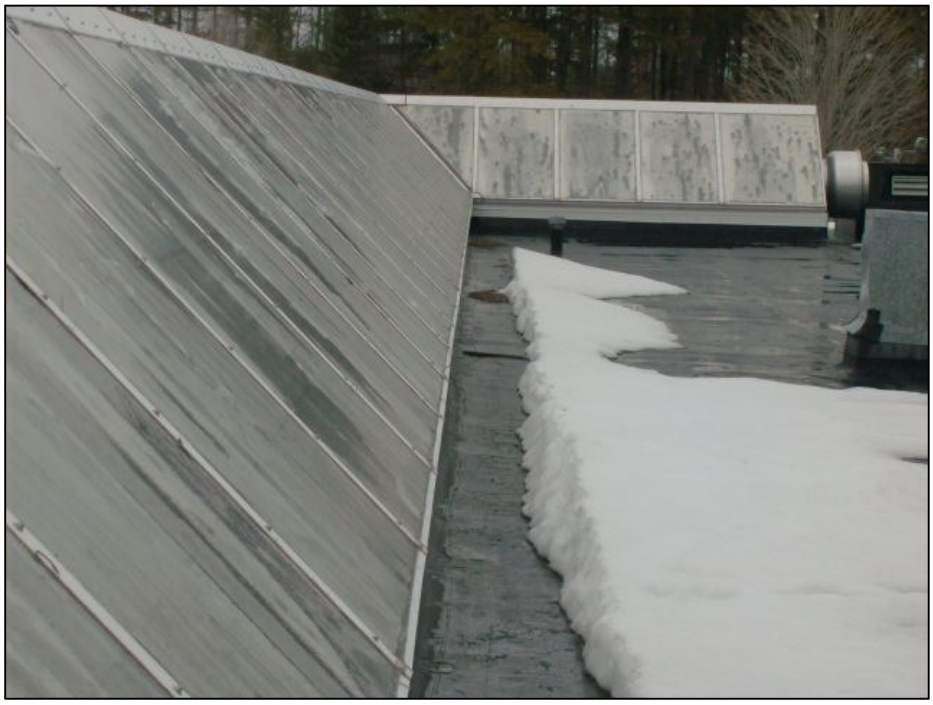
Lichen and moss covering shingles (1940's wing).

Flashing and trim under overhang requires replacement (re-attach het cable).

Water ponding on low roof over physical therapy classroom.

Chimney near gym needs repointing and cap restoration.

Water ponding on low roof over cafeteria.

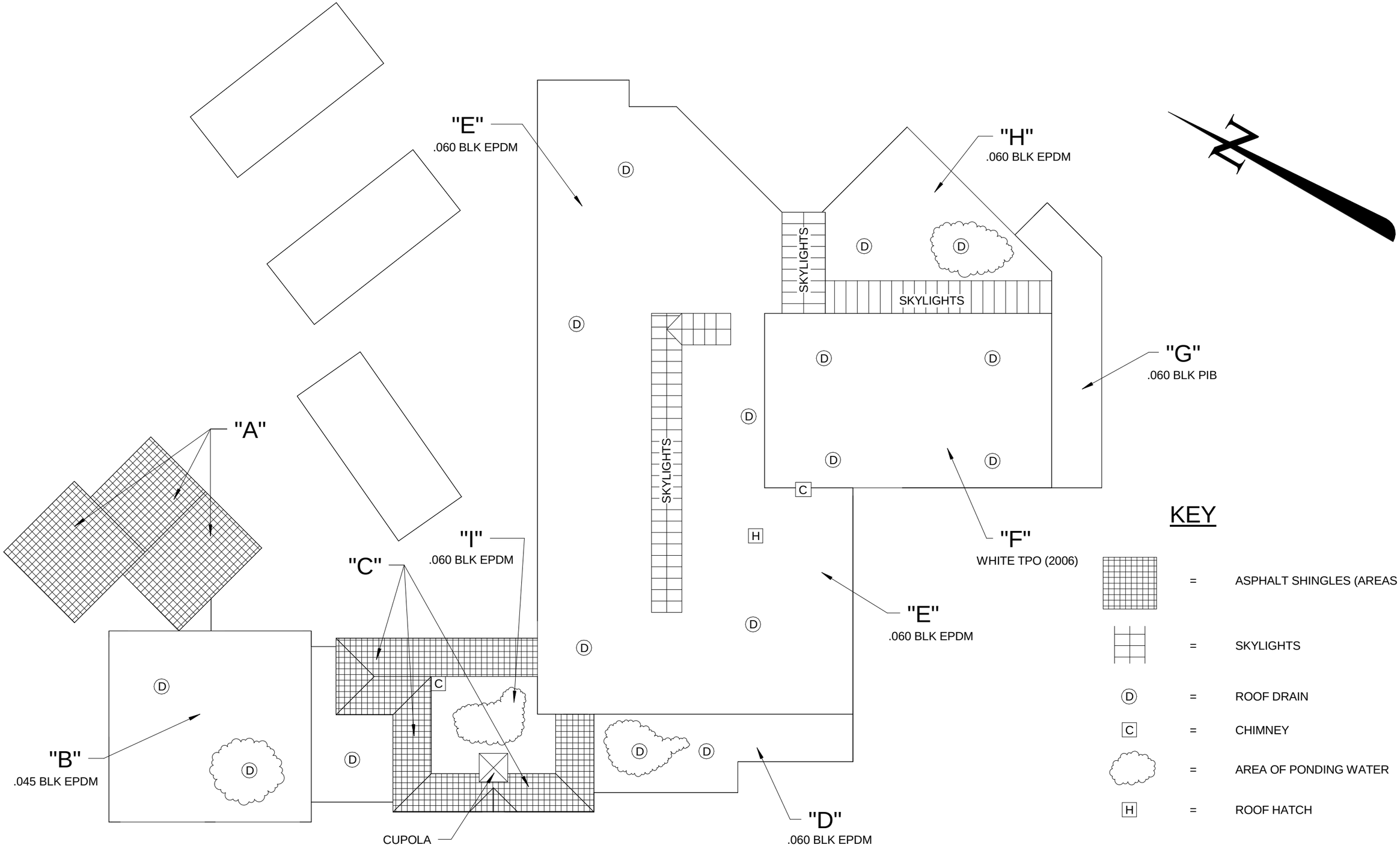


UV blocking low E film on skylights is breaking down.

Chimney no longer in use, should be capped.

Membrane overlay is delaminating.

Corrugated fiberglass roof panels over walkway to portables are in poor condition.



AUBURN VILLAGE SCHOOL

SCALE: 1/32" = 1'-0"

BUILDING ASSESSMENT

ROOF PLAN

DATE: 03.26.13

SHEET: A0.3

PROJECT: 3933

TURNER GROUP

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HEATING, VENTILATING & AIR CONDITIONING EQUIPMENT AND SYSTEMS

Auburn Village School
Auburn, New Hampshire
Facility Assessment Report

Heating, Ventilating and Air Conditioning Equipment and Systems

On Wednesday, Steve Caulfield, P.E., a senior mechanical engineer with Turner Building Science & Design, LLC (TBS) a sister company to The H.L. Turner Group Inc., visited the Auburn Village School to observe and evaluate the heating, ventilating and air conditioning systems and equipment currently in use throughout the school and report on their condition.

The heating plant for the Auburn Village School is located in the Boiler Room near the gymnasium. Eighteen Hydrotherm Multi-Pulse propane-fired boilers (90,000 BTU input each) provide the hot water for heating the school. One of the boilers has been replaced completely in the 25 years since installation. Several others have been taken out of service to be used for parts. The boilers were installed with copper condensate piping, which has completely corroded. The 18 PVC intake pipes have been cut after entering the exterior wall and the boilers now receive combustion air from the room. It is our understanding that the pipes were cut because the long runs were continually tripping the boilers as the boiler purge fans cannot overcome the static load of the intake pipe length. The way this combustion air intake is currently configured with these pipes, plus the 24"x24" louver in the exterior door, does not meet building code requirements. The 18 CPVC exhaust pipes have holes within the Boiler Room and are leaking condensate and some flue gases into the space. Two main hot water circulating pumps operate in a lead/lag configuration, with either pump providing the necessary pumping power. An additional circulator pump in the Boiler Room provides the hot water for heating the original wing of the school. The expansion tank for the heating system is reportedly too small and the pressure is adjusted based on the outside temperature.

The original 1940's section of Auburn Village School (Rooms 100-108) is heated with radiators that are supplied with hot water from the main boiler plant. In this section of the building there are multiple rooms that have their temperature controlled by a single thermostat. Ventilation for the classrooms (Rooms 100-104) is provided by a roof-mounted energy recovery unit. The supply air from the energy recovery unit is not further tempered and in winter and can be colder than desired. No exhaust was evident in the bathrooms located within these classrooms. Rooms 103, 105, 106, 108, and the Nurse's Office have no mechanical ventilation. The small bathroom in Room 105 has no working exhaust. The Main Office area has hot water fin tube radiation for heat and a direct expansion (DX) air handler for cooling.

Rooms 109, 112, 116, 118, and 120 are ventilated by two small 200 cfm energy recovery ventilators (ERVs) located in the ceiling plenum. No air flow was detected from the ceiling grilles in these rooms during our evaluation. (It is our understanding that the units are operational however air supply is very limited.) Heat in these rooms is provided by hot water fin tube radiators. Room 122 in this area also has fin tube radiation for heat and the ERV serving this space appears to be activated by a motion sensor in the space.

The Media Center is heated by hot water fin tube radiation. A small, switch-activated, ERV provides ventilation to this space, but does not appear to be sized to provide sufficient outdoor air for the anticipated occupancy. The small supply grille in the center of the room creates

locally drafty conditions during cold outdoor weather. Many computers are located in the space, as well as a large copier and server equipment in the closet, but no air conditioning unit was evident to offset the heat generated by this equipment. A musty smell was noted in this space, which may relate to insufficient ventilation and excessive humidity in the space.

The Teacher's Room has significant heat generating equipment in the space. This includes a soda machine, large copier, laminator, microwave oven, and a full-sized refrigerator/freezer. Some type of air conditioning unit should be installed to provide cooling to offset the heat produced by the equipment in the space.

The gymnasium has two heating and ventilating units suspended from the roof structure. Reportedly only one of these units is operational and the units have to be manually started and stopped. The locker room exhaust was not operating during our site visit.

On the roof above the stage there is an ERV that is ducted to the Athletic Director's Office, Teacher's Room, and Classrooms 126/128. These spaces do not appear to have mechanical cooling. The Robotics Room (128) in particular has over twenty computer workstations that generate significant heat.

Classrooms 111, 113, 115, and 117 on the first floor and Classrooms 202, 204, 206, 208, 210, 212, and 214 on the second floor all have similar heating and ventilating systems. They consist of hot water fin tube radiation on the perimeter walls for heat. Ventilation for these spaces is provided by small (reportedly 200 cubic feet per minute) ERV's located above the ceiling. This amount of ventilation would only be sufficient for a class size of 12 to 13 students. The single supply grille in each classroom is small (roughly 6"x 6") and distributes locally cold, drafty air in the cooler weather. Additionally, the exhaust duct was disconnected from the back of a dryer located in the closet in Room 214. The dryer does not currently exhaust to the outside.

Kindergarten Rooms A&B, located in the former Industrial Arts area of the building have a wall-mounted ERV with a tempering coil for ventilation in each room. Although these units function satisfactorily, they create significant noise while operating. Heat for the two rooms is provided by hot water fin tube radiators.

The cafeteria and kitchen area are ventilated by an air handling unit located above the cafeteria entry. Heat is provided in the cafeteria by hot water fin tube radiation, with hot water cabinet unit heaters providing heating in the office and storage areas of the kitchen. The custodial closet in the kitchen area is not exhausted and there is no exhaust hood over the dishwashing equipment. The kitchen grease hood does not completely cover the cooking equipment under it, and the hood itself is not equipped with grease baffles.

Classrooms 205, 207, 209, and 211 all have similar mechanical configurations. These rooms are heated by hot water fin tube radiation. Cooling is provided by Sanyo wall-mounted, ductless, split air conditioners. Ventilation for these spaces comes from a roof mounted ERV ducted into each space. Distribution appears to be less drafty in these spaces than in other classrooms with smaller supply grilles.

The Art Room (213) has a small ERV for ventilation, with a 6"x6" supply grille that appears to provide drafty conditions. Heating is provided by hot water fin tube radiation. The smaller

storage room has an exhaust that was not operational during our evaluation. The larger storage room has a kiln in one corner and a custodial sink in the opposite corner. Although this room appears to be exhausted, the kiln is not provided with a hood-type dedicated exhaust to remove the heat from the space.

Computer Lab 201 is heated by hot water fin tube radiation. Cooling is provided by a 7-1/2 ton rooftop air conditioner, which appears to be approximately three times what would be required for the heat generated in the space. The adjacent science classroom (203) also is heated by hot water fin tube radiators. Ventilation comes from a rooftop ERV. The ceiling tiles in this room are severely bowed, indicating excessive humidity above the suspended ceiling.

Bathrooms throughout the school have either switch-operated or motion sensor activated exhausts. Except as noted in the paragraphs above, all of the bathroom exhausts appeared to be in working order during our evaluation. Some exhausts were noted to be extremely noisy.

The three manufactured portable classroom buildings (placed on-site in 2002, 2004 and 2012 respectively) all have wall mounted Bard units that provide propane-fired heat and DX cooling. These units are noisy and drafty in the classroom space. Bathroom exhaust in the portables is activated by the light switch. The 1988 stick-built portable classrooms that are attached to the school building have propane-fired wall units with overhead supply air distribution. These units are less drafty and noisy than those in the free-standing portables.

MECHANICAL – HVAC			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
Boiler Plant	Boilers are failing at an increasing rate and have reached the end of their useful life.	Replace boiler plant with new condensing equipment.	0 to 5 years	$100,000		
Combustion Air Intake - Main Boiler Room	Current boiler intake does not meet building code and could result in excess soot production.	Install high/low combustion air intake with dampers and controls on exterior wall.	0 years	$10,000		
Circulator Pumps Main Boiler Room	Current pumps are constant speed and over-pressurize system when warm weather causes valves to close on terminal equipment.	Add variable frequency drives to main circulator pumps, along with HWS/R differential pressure control to maintain constant pressure whenever pumps are operating.	4 to 5 years		$8,000	
Ventilation in Portable Classrooms	Current Bard units provide noisy and drafty conditions in classrooms.	Install new ventilation units for 6 classroom spaces engineered with ductwork to disperse air and eliminate drafts/noise.	4 to 5 years		$90,000	

MECHANICAL – HVAC				$ Opinion of Cost		
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
1940's Wing Ventilation (Classrooms 100-104, Nurse, Offices)	ERV unit on roof showing signs of age and does not have any tempering capabilities for cold weather.	Replace ERV with new unit and duct heating coil for tempering air in cold weather.	5 years		$50,000	
Heat - Original 1940's Building	Multiple rooms are controlled with single thermostat, causing overheating and under heating issues.	Add piping and additional valves/thermostats/controls to improve heating zoning.	N/A	$20,000		
Gymnasium Heating & Ventilating Units	One unit not operational. Both units have manual start and stop from electrical panel.	Repair/replace heating and ventilating units for gym (cost is for replacement).	N/A	$50,000		
Computer Lab (201) Cooling	Air conditioning unit is oversized for space, leading to inadequate dehumidification.	Replace rooftop air conditioner with smaller, ductless split unit.	2 to 3 years		$8,000	

MECHANICAL – HVAC			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
Ventilation for Classrooms 202, 204, 206, 208, 210, 212, 214, 111, 113, 115, 117	ERV units above ceiling do not have sufficient capacity for ventilation for occupancy. Supply grilles are too small and cause drafts.	Replace ERV units with those that provide ventilation at current code levels and use appropriate diffusers to more evenly disperse air.	1 to 2 years	$175,000		
Rooftop ERVs for Interior Classrooms	The ERV units are nearing the end of their useful life and are exhibiting significant rusting and duct joint failures.	Replace aging ERV units on roof.	5 to 6 years		$130,000	
Kiln Exhaust in Storage Room	Kiln should have a hood type exhaust to capture and remove heat and contaminants.	Add hood type kiln exhaust with duct to outside louver.	4 to 6 years		$3,000	
Kitchen Range Hood	Range hood is too small for appliances and has no required grease baffles.	Replace main kitchen exhaust hood.	0 years	$35,000		

MECHANICAL – HVAC			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
Dishwashing Hood	No hood provided to collect heat and moisture from dishwashing station.	Provide additional condensate hood over dishwashing station.	0 years	$4,000		
Teacher's Room Cooling	Currently, there does not appear to be sufficient cooling for heat generating equipment in Teacher's Room.	Add ductless split cooling system.	5 years		$5,000	
Media Center Ventilation/Cooling	Ventilation quantity appears inadequate to meet current code for occupancy. Significant heat generation from computers, servers, and copier in space.	Replace existing ventilation equipment with unit designed to ventilate and cool space appropriately.	6 to 7 years			$40,000
Kindergarten Ventilation Units	The ventilation units in the Kindergarten rooms are noisy.	Add a discharge plenum with sound attenuation to decrease the noise level of the units.	5 years		$4,000	

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL FACILITIES ASSESSMENT

MECHANICAL – HVAC			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
Ventilation for Rooms 109, 112, 116, 118, and 120	No ventilation air was being supplied to the spaces during our evaluation.	Repair/replace current ERVs to provide ventilation to the spaces in accordance with current codes (cost is for replacement).	0 years	$25,000		
		SUBTOTALS		**$419,000**	**$298,000**	**$40,000**

Overview of Boiler Plant.

Condensation on exterior of CPVC boiler exhaust pipes.

Custodial closet in kitchen with no exhaust.

Deteriorated copper boiler condensate pipes.

Disconnected dryer vent in Room 214.
(Note, We were informed the dryer is out of service and will be replaced in summer of 2013.)

Disconnected PVC intake pipes and louver in door.

No condensate hood over dishwashing equipment.

ERV unit in Kindergarten B.

Exhaust in closet of 1940's wing.

Main hot water circulating pumps.

Media Center with small supply grille at top center.

Radiators in 1940's section of school.

Range hood not covering appliances - no grease baffles.

Teacher's room with heat generating equipment.

Typical ERV above ceiling in classroom.

Typical interior classroom with ceiling supply grille,
fin tube radiator and Sanyo ductless split AC unit.

ELECTRICAL SYSTEMS & EQUIPMENT

MAIN SCHOOL ELECTRICAL SYSTEMS

ELECTRICAL SERVICE & DISTRIBUTION

Summary of Existing Conditions, Observations and Assessment

The Auburn Village School has two main electrical services for the main building. There are four overhead electrical services and exterior utility meters for the modular classrooms and stick building. The original building, constructed (ca. 1940's), has a 200A, 120/240V, 1-phase, 3-wire electrical service. The service enters electrical room 1 of 2 from underground and terminates in a 200A, 240V main service disconnect. The peak demand data for the 200A, 1-phase service was not available in the PSNH utility bill information that was provided. The 200Amp main building electrical service disconnect feeds a wire trough which is tapped to feed a couple of panelboards and various mechanical equipment disconnects. There is a 2-pole circuit breaker panel and a 100A, 12-fuse load center located directly above the wire trough. There is a 200A, 120/240V, 1-phase, 3-wire, 22-pole, GE recessed panel located in the main building 1st floor corridor which is fed from the 200Amp service. Most of the electrical service equipment is original to the buildings construction (ca. 1940's) and well beyond its useful life expectancy. Overall, the switchgear is old, in fair condition and there is no potential for future expansion.

The school's main building addition (ca. 1965) has an 800A, 120/208V, 3-phase, 4-wire electrical service fed from pole-mounted (3) 50kVA utility transformers. The service enters electrical room 2 of 2 (located in the boiler room) from overhead and terminates in a main distribution board (MDP) 800A, 120/208V, 3-phase, 4-wire manufactured by Siemens. The MDP contains molded-case circuit breakers. Review of the past year's electric bills from January 2012 to January 2013 indicates a peak demand of approximately 105kW, which equates to 36% capacity of the 800A electrical service. The existing 800A electrical service is more than sufficient for the maximum demand load. The 800A MDP backfeeds the original 400A service panels (ca. 1965)

Main Building Electrical Service 1 of 2
200A Main Service Disconnect & Wire Trough

1st Floor Recessed Corridor 200Amp Panelboard

as well as various other electrical equipment including numerous panelboards, generator automatic transfer switch, elevator and rooftop mechanical equipment. Although, the 800Amp MDP is newer than the original 400A distribution panels (ca. 1965), the switchboard has a lot of corrosion on its enclosure. The corrosion is caused by the damp ambient environment of the boiler room.

The original 400A electrical main distribution panel along with a couple of original power and lighting panelboards (ca. 1965) are located in the boiler room. These panels as well as the stage panel are original to the addition (ca. 1965) and are in fair condition. There are several newer recessed panels located in the 1st and 2nd floor corridors that are in good condition, but don't have a lot of spare circuit breakers and space. Also, there are three (3) generator panelboards located in the boiler room that feed various standby loads including server room computer equipment, telephone equipment, 1st floor corridor and gym lighting, fire alarm control panel, sewer ejector pump, boilers and associated pumps, miscellaneous main office and nurse station outlets and equipment, kitchen lights and outlets. The generator panels are fed from a 40kW exterior generator located outside the boiler room via an automatic transfer switch (ATS). The 40kW exterior generator is newer and in good condition.

Recommendations

The existing 200A electrical service in electrical room 1, including the switchgear and panelboards for the original (1940's) building are old and have reached the end of their useful life. Therefore, it is recommended that the equipment be replaced in their entirety. The existing equipment service disconnects that are old and in fair condition should be replaced as needed. The existing electrical incoming service including secondary conductors from pad mounted transformer should be replaced when new switchgear is provided. At that time a new 3-phase service should be provided and properly sized for future expansion. The existing 800A MDP in electrical room 2 has corrosion on the enclosure. At a minimum, the switchboard terminals and breakers should be tested for integrity and conductor insulation resistance test for leakage currents. It is recommended that a new non-corrosive or weather-

Addition Electrical Service 2 of 2
800A Main Distribution Board (MDP)

Original 400A Electrical Service Distribution for Addition and Generator Panelboards

proof rated switchboard should be provided if located in same damp ambient conditions or the new electrical switchgear should be segregated from the boiler room equipment. Also, an infrared scanning test should be performed on all old (original) panelboards and switchgear (including disconnects, contactors, etc.) to detect heat build-up at weak termination points.

Hot spots (heat build-up) at termination points in panelboards and switchgear should be tightened, connections repaired or switchgear replaced as required. An insulation resistance test should be performed on all old switchgear feeders to detect any leakage currents as a result of poor/degraded conductor insulation due to age, corrosive atmospheres, moisture and heat or excessive heat or cold.

40kW Standby Generator

2nd Floor Recessed Corridor Panelboard

FIRE ALARM

Summary of Existing Conditions, Observations and Assessment

The existing fire alarm system is a conventional (zoned) fire alarm control panel (FACP), located in the side entrance vestibule. The FACP is manufactured by Pyrotrol. The FACP is in good condition, but it is original to the 1988 addition. It is approaching the end of its useful life expectancy and does not have room for future expansion. Detection consists of heat detectors throughout the classrooms and smoke detectors in the corridors, cafeteria, media center, common areas and stairways. Heat detectors are also utilized in utility closets, kitchens and boiler rooms. Since, the building is protected with sprinkler heads throughout, the smoke and heat detection coverage is adequate. All exit doors had required pull stations. On the other hand, the notification device coverage was inadequate in some areas. To be specific, all common (gang) restrooms and gym locker rooms should have strobe notification. Some of the corridors on the 1st and 2nd floors need more horn/strobe coverage.

Recommendations

It is recommended that the existing fire alarm control panel be replaced in the near future with a new addressable panel that is compatible with existing conventional devices and system wiring. Also, it is recommended that more notification devices are added throughout the common areas including corridors and restrooms per NFPA 72 and NFPA 101. Furthermore, strobe devices should be added to the boys and girls locker rooms.

Conventional Fire Alarm Control Panel

Horn/Strobe Notification Device

LIGHTING

Summary of Existing Conditions, Observations and Assessment

The lighting fixtures throughout the building have recently been upgraded by a utility incentive program and consisted of the following:

The classroom lighting consisted mainly of tandem surface mounted 1'x8' acrylic lensed fixtures with T8 lamps. The lighting levels appear to be adequate throughout the space and the light fixtures were in good condition. The industrial arts classrooms had 2x4 recessed direct/indirect fixtures which were in good condition and provided adequate light levels.

The corridors, stairways and common areas lighting consisted mainly of recessed 2'x4' acrylic lensed fixtures with T8 lamps. The second floor had recessed 2'x4' parabolic fixtures with T8 lamps and 1'x4' surface mounted lensed fixtures with T8 lamps. The lighting levels appear to be adequate throughout the space and the light fixtures were in good condition.

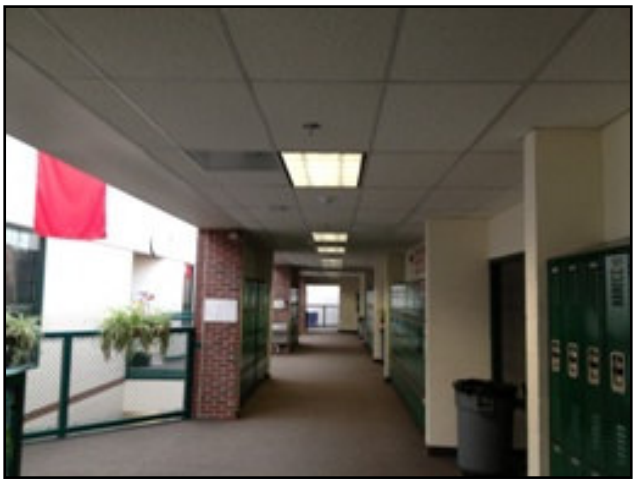
The gym lighting consisted of pendant mounted linear high bay fixtures with T5HO lamps. The locker rooms had 1'x4' vaportight lensed fixtures with T8 lamps. The kitchen had surface mounted 1'x8' lensed fixtures with T8 lamps. The cafeteria had recessed 2'x4' acrylic lensed fixtures with T8 lamps. The light fixtures for these areas are all in good condition and provided adequate levels.

The site lighting consisted of some building mounted wall packs along the perimeter of the building.

Lighting Controls

The building common areas, including vestibules, stairways and corridor lighting, were controlled by key-lock switches. Most of the restroom and classroom lighting was controlled by wall and ceiling mounted occupancy sensors with manual override toggle switches. Some of the offices and storage rooms did not have occupancy sensors. There are time clocks that control the exterior lighting.

Classroom Surface Mounted 1'x8' Fixture

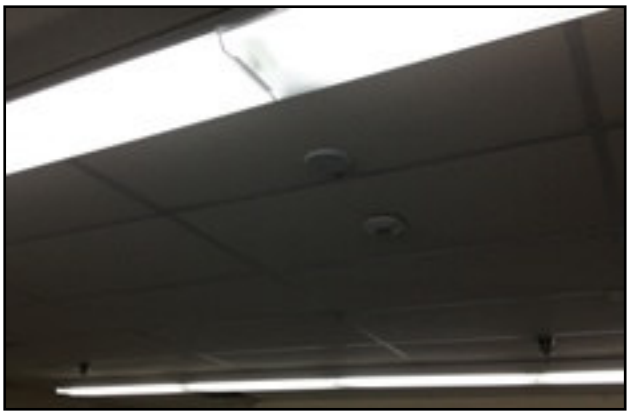


Corridor Recessed 2'x4' Parabolic Fixtures

Gym High Bay Linear Fluorescent Fixture

Recommendations

Occupancy sensors should be provided in all offices and storage rooms. The site lighting fixtures that are damaged or contain discolored lenses should be repaired or replaced with new energy efficient fixtures and lenses replaced.



Classroom Ceiling Mounted Occupancy Sensor

LIFE SAFETY/EMERGENCY

Summary of Existing Conditions, Observations and Assessment

The main building has a 40kW standby emergency generator that feeds numerous critical standby loads and 1st floor corridor, gym, kitchen and cafeteria emergency lighting. The remaining building emergency lighting consisted primarily of wall mounted self-contained emergency battery units (EBU's). There were some older EBU's located in the 1st floor corridors and new EBU's in most of the 1st floor classrooms. It was noted that EBU's are being installed as recommended and approved by the Fire Marshall. One half of the building is fitted with new EBU's and the remainder is scheduled for the summer of 2013. Some of the areas where more emergency lighting coverage is needed are the common restrooms, gym locker rooms, 2nd floor corridors and more coverage in the 1st floor corridors. The exit signs throughout the building consisted of newer illuminated type exit signs with battery backup. Overall, most of the exit signs were in very good condition and the coverage was adequate.

Recommendations

Emergency battery units should be provided in recommended areas as mentioned above and in accordance with NFPA 101 the Life Safety Code. Furthermore, additional emergency battery units should be provided in all areas that require a minimum of 90-minutes of emergency lighting per NFPA 101 and where lighting and exit signs are already fed by the existing standby generator. The National Electrical Code (NEC) requires that all life safety loads including (emergency lighting and exit signs) are separated from all the other standby loads on an emergency power generator. Currently, emergency lighting, exit signs and standby loads are not separated. Therefore, it is recommended that EBU's are provided throughout the areas that are currently on the emergency generator.

Corridor EBU

Classroom EBU

Illuminated Exit Sign

TELEPHONE/DATA/CATV

Summary of Existing Conditions, Observations and Assessment

The building's tele/data/CATV systems consisted of mainly surface mounted tele/data/CATV devices with wire mold in the classrooms and other various rooms. The surface mounted tele/data/CATV devices and cabling appear to be newer and in good condition.

RECEPTACLES

Summary of Existing Conditions, Observations and Assessment

The building's power receptacle devices consisted of mainly recessed outlets and some surface mounted plug mold throughout the classrooms and other various rooms. The devices were in good condition and the coverage was adequate. Most of the classroom countertop receptacles near sinks were the ground-fault (GFCI) type, which are required by the National Electrical Code (NEC), as were the countertop receptacles located in the kitchen. It appeared though that the janitor's closet near the kitchen did not have a GFCI device.

Recommendations

All countertop receptacles or receptacles within six feet of a sink should be GFCI type and provided in accordance with National Electrical Code (NEC 210.8).

CLOCK/INTERCOM SYSTEMS

Summary of Existing Conditions, Observations and Assessment

The building has an existing Simplex master clock/bell system and Valcom public address/intercom system is in good condition and there were no reported problems.

Surface Mounted Telecommunication Outlets

Kitchen Countertop Receptacles (GFCI Protected)

Master Clock/Bell System

MODULAR (MOBILE) CLASSROOMS & STICK BUILDING ELECTRICAL SYSTEMS

The modular classrooms and stick building are each fed with a 225A, 1-phase, 3-wire electrical service from overhead with exterior utility meter. Each modular unit has a 225A main circuit breaker, 1-phase, 20-pole panelboard. The panelboards are in excellent shape with sufficient space. The lighting consisted ceiling surface mounted 1x4 or 1x8 acrylic lensed fixtures with T8 lamps. The lighting was controlled by ceiling mounted occupancy sensors with manual override toggle switches at the entries. There were proper illuminated exit signs at all exits with self-contained emergency lights which provided adequate egress lighting coverage. There was an exterior emergency battery unit (EBU) located outside the main entry to each modular classroom. Each modular unit was properly equipped with system fire alarm notification and initiation devices including system heat detectors and pull stations at the exit doors, strobes in the bathrooms and proper horn/strobe coverage in the classrooms. The classrooms were equipped sprinkler heads throughout; therefore, the heat detection was sufficient. The modular fire alarm system devices were connected to the main school building zoned fire alarm control panel on a separate zone.

Items of High Priority

Provide additional notification devices including horn/strobes in the corridors and strobes in the restrooms and locker rooms.

Provide emergency battery units in all main paths of egress per NFPA 101 including 1st floor corridors. Provide GFCI protected receptacles as required by code.

Replace existing corroded 800Amp MDP (service 2 of 2) with weatherproof rated equipment. At a minimum, an infrared scanning and conductor insulation resistance test should be completed. Replace existing 200Amp electrical service (1 of 2) equipment with new switchgear.

Typical Modular Unit Lighting

Modular Unit Typical 225Amp Panelboard

PROJECT NO. 13040 ~ AUBURN VILLAGE SCHOOL ASSESSMENT

ELECTRICAL			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
Fire Alarm Notification	Corridors have inadequate coverage. Restrooms missing strobe devices. Locker rooms missing strobe devices.	Provide additional horn/strobe coverage in corridors. Provide strobe devices in restrooms and locker rooms.	N/A (code issue)	Fire alarm notification devices $5,500		
Emergency Lighting	1st floor classrooms have emergency battery units (EBU's). Corridors have inadequate coverage. Restrooms and locker rooms missing emergency battery units.	Provide additional EBU's in corridors. Provide EBU's in restrooms and locker rooms.	N/A (code issue)	Wall mounted EBU's $7,600		
Receptacles	Janitor closet outlets not ground-fault protected.	Provide GFCI-type protected outlets for all outlets within 6-feet of sink, located in bathrooms etc.	N/A (code issue)	GFCI outlets $500		

PROJECT NO. 13040 ~ AUBURN VILLAGE SCHOOL ASSESSMENT

ELECTRICAL			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Life Expectancy***	**Short-Term**	**Mid-Term**	**Long-Term**
Existing 800 Amp, 120/208V, 3-Phase, 4-Wire Electrical Service (Service 2 of 2)	Corroded enclosure. Switchgear exposed to damp environment.	Replace existing main distribution board with new weatherproof rated switchgear. Infrared and insulation resistance testing.	2 years		800A main distribution board $15,000 or Testing $5,000	
Existing 200 Amp, 120/240V, 1-Phase, 3-Wire Electrical Service (Service 1 of 2)	Original electrical disconnects for various mechanical equipment 12-fuse panelboard.	Provide new electrical service switchgear and disconnects. Infrared and insulation resistance testing.	End of useful life.		200A main distribution board $7,500 or Testing $5,000	
Existing Conventional Fire Alarm Control Panel Pyrotrol	In good condition. Old, installed in 1988. Not a lot of spare capacity.	None	5 years		Replace FACP $15,000	
			SUBTOTAL	**$13,600**	**$47,500**	**$0**

CIVIL AND SITE ISSUES

Auburn Village School
Auburn, New Hampshire

Site Assessment

On February 22nd and April 1, 2013, Mark McLeod, a Civil Engineer with The H.L. Turner Group Inc. (TTG), visited the Auburn Village School to evaluate the existing site conditions and identify specific items and issues that the District should look to address.

Parking and Circulation

There are 112 delineated spaces at the Auburn Village School, 52 of which are located in the lot on the front (west side) of the school, and 60 in the rear (east side) parking lot. Five of these spaces are designated as accessible, two in the front lot and three in the rear. Per Americans with Disabilities Act (ADA) regulations, there should be three accessible spaces in each lot, and although accessible spaces are provided, they aren't necessarily compliant with ADA requirements. The three spaces on the east side and the space closest to the main entrance (west side) are steeper than what is permitted by ADA regulations, and the three spaces on the east side are also non-compliant based on their layout. On the west side, the two accessible spaces are improperly signed because the mounted height of the signs is too low and the one adjacent to the main entrance is faded so as to be unreadable. Thirteen of the spaces in the west lot are entirely or partially located on Manchester Water Works land.

The parking lot on the front (west side) of the school is undersized. Vehicles park in non-delineated areas and there is little room for maneuvering. Stockpiled snow further reduces the space available, not only for parking but also for pedestrians, because much of the sidewalk is impassable when the snow stockpiles cover them. As this lot is for visitors to use, it is important there be spaces available to them. At least three of the spaces are shorter than the majority, due to the physical constraints. During the period of after-school pick-up, the lot is particularly difficult to access, because Eaton Hill Road is closed to traffic turning in directly off of Hooksett Road. There is a long crosswalk (+/-110-feet) running along much of the entrance to this parking lot, creating a hazardous condition for pedestrians. Parked vehicles can intrude into the designated crosswalk as well. There is no physical or visual separation between Eaton Hill Road and this lot. Thirteen of the spaces in this lot are entirely or partially located on Manchester Water Works land. Even when the snow has melted and the lot is fully available, space continues to be at a premium, and there are vehicles double-parked in non-designated spaces.

The rear (east side) parking lot functions as the staff and faculty parking lot, and shares space with the busses during drop-off and pick-up activities. The bus queue blocks some vehicles, prohibiting them from exiting until the busses load up and depart. At least five spaces are shortened because of the placement of the fence and bollards surrounding the buried propane tank. Most vehicles that use these spaces will protrude into the travel-way. When the busses leave, they must cross through the line of parent vehicles waiting to pick up their children. The school has developed an effective solution that meets their arrival and dismissal needs, working within the existing site constraints.

The rear lot is also smaller than what the school needs, a problem which is exacerbated during the winter months when the snow piles reduce the overall number of spaces, and forces pedestrians to walk through the parking lot because the sidewalks along Eaton Hill Road are inaccessible.

The east side lot abuts the paved portion of the school playground, and there is no physical separation beyond a painted yellow line. Vehicles can readily drive through the student play areas, and circle almost completely around the building.

Parents that arrive to pick-up their children queue up along Eaton Hill Road because there is not enough space on-site to accommodate them all. To help maintain order during this time, Eaton Hill Road is closed to traffic turning off of Hooksett Road, which helps limit traffic and congestion, but also limits drivers' access to Eaton Hill Road. As previously noted, the dismissal procedure developed by the school functions well given the limitations of this site, but it requires a lot of effort and attention by school staff, students, parents, and bus drivers to ensure order is maintained. There is a potential hazard when busses exit the rear parking lot and cross through the line of parents. During school dismissal, as we observed during the February site visit, those students that walk across Eaton Hill Road at the crosswalk near Hooksett Road did so without a crossing guard. As previously noted, many of the sidewalks along Eaton Hill Road are impassable during the winter, forcing walkers to move to the street or through a parking lot.

Conclusions and Recommendations

- Provide accessible spaces compliant with ADA regulations.
- Install new signage at accessible spaces.
- Establish separation between the front parking lot and Eaton Hill Road by installing curbing, landscaping, or similar physical means.
- Establish separation between the playground and the parking lot by installing a physical barrier such as curbing, fencing, or landscape areas.
- Reduce the length of pedestrian crosswalk at the entrance to the west parking lot, by installing an island or similar refuge near the midpoint of the striping.
- Develop a snow removal plan to dispose of stockpiled snow off-site.
- Provide traffic control for students crossing Eaton Hill Road and for busses exiting onto Eaton Hill Road.
- Consider developing a new site plan that provides for redeveloped parking and circulation, including separate bus and parent pick-up/drop-off areas, and provides for snow storage.
- Research existence of an easement to use Manchester Water Works land for parking. If none exists, coordinate with MWW to develop one that is mutually agreeable to both parties.

Drainage

In many locations around the building perimeter there are pervious areas (landscape beds and grassed surfaces) that cover the lowest courses of masonry and the at-grade aluminums sills. This condition not only permits water to penetrate the building through the masonry joints and sill openings, but it prevents water inside the cavity wall from draining out through the masonry weep holes.

The existing detention pond located adjacent to the west side parking lot has a lot of excessive growth, limiting its capacity and functionality. It was reported to TTG that although the pond is located on the abutter's property, the school is responsible for mowing and general upkeep of the basin.

The east side and north side of the site are serviced by a closed drainage system. Catch basins collect runoff and snowmelt from the east side lot and the playground, and channel it toward Little Massabesic Brook, where the culvert daylights directly to the water course, with no apparent means of stormwater treatment. The outlet is on Manchester Water Works land. The catch basins within paved areas on the site are shallow and provide minimal sump depth for collecting sediments and debris. Freezing of the pipe may also be a concern. Where the east side parking lot abuts the cemetery there is a lot of runoff that accumulates at the edge of pavement. Much of it flows across the parking lot toward the catch basin at the south side of the basketball court, along a channel of severely cracking pavement.

The catch basins located in pervious areas, adjacent to the playground, receive a lot of sediments washing into them, because a lot of the playground area is a sand/gravel surface, with no vegetation to retain the soil. The sumps appear full of sediments.

At the east side building entrance there is an area on the concrete plaza that allows runoff to accumulate against the exterior masonry wall because there is no drainage structure in place to allow it to drain away.

On the remainder of the site, any runoff that doesn't infiltrate into the ground flows overland to abutting properties.

During heavy rain events water backs up through the floor drains in the maintenance office and surcharges through what appears to be an open roof leader clean-out, located adjacent to the students' garden shed. The open pipe and the hole surrounding it are covered by wooden pallets.
In those areas where the building has sloping roofs, there is no stone drip edge or other means of managing the runoff that flows from the roof to the ground. The exception is in those areas where rain gutters collect the runoff and direct it into leaders that appear to tie into the closed drainage system that discharges to Little Massabesic Brook.

Conclusions and Recommendations

- Install stone-lined drip edges and surface drains around the perimeter of the building in those areas where roof runoff falls directly to the ground. Ensure impervious surfaces that abut the structure are sloped to drain away from the building.
- Regrade the landscaping beds and vegetated surfaces in those locations that extend above the masonry and window sills.
- Remove the excessive growth from the vegetated detention basin. Establish a mowing schedule for the growing season to ensure the basin continues to function properly.
- Research the existing drainage easement between Auburn Village School and Manchester Water Works for the detention basin and for the culvert that discharges into Little Massabesic Brook. If none exists, coordinate with MWW to develop one that is mutually agreeable to both parties.
- Replace existing catch basins with deep sump catch basins, installed with debris hoods over the outlet pipes.
- Construct a means of collecting and distributing the runoff and snowmelt that ponds along the edge of pavement between the parking lot and the cemetery.
- Regrade and reconstruct the concrete plaza at the east side entrance, or at a minimum, install a drainage structure that ties into the existing closed system.
- Vacuum out the sumps of the existing catch basins. Inspect the basins for signs of cracking or groundwater infiltration. Establish a maintenance schedule to perform this service at least once a year, or with greater frequency if needed.
- Install a check valve to prevent water from backing up into the building through floor drains. Install a cleanout cover at the exposed end of the pipe and backfill around it to eliminate the open hole.

Water Supply and Sewage Disposal

The school maintenance staff reported the existing septic system has been functioning adequately and no problems were reported. The school has a gravity system that collects and pumps effluent through two 3" diameter force mains approximately 700' to a stone and pipe effluent disposal area at the northern end of the property. According to the plans provided, the system is sized for 450 students and faculty and an overall volume of 9,900 gallons per day. TTG reviewed the limited information Auburn Village School has on file and determined that although current NHDES regulations would require the system to manage 11,250 gallons per day, the existing leach field appears to be sized appropriately to manage the daily flows per current NHDES regulations. A visual inspection revealed no obvious concerns. One of the four vent pipes is out of plumb and it appears that some woody vegetation (1.5" to 2.5" sapling stumps) was removed in the recent past (within the preceding 12 months). Following the site visit TTG was able to review the documents on file with NHDES to gain further understanding of this system. Constructed in 1982, it consists of the two force mains that feed four separate 55'x65' stone and pipe leach fields.

According to NHDES records, the school's well was drilled to a depth of 340' in 1987 and supplies 43,200 gallons per day (gpd). DES files state the well was designed for a

school population of 692 people, which requires 17,300 gpd, indicating the well is adequate for the school. The school reported to TTG the pump was replaced in 2008 and provides 21,600 gpd, which is more than what the school requires, and there are no reported concerns with available water supplies. It is located approximately 300' from the effluent disposal area and approximately 220' from the sewer force mains. The school does not use a water treatment system for the potable water supply.

Conclusions and Recommendations

- Given the age of this system (+/-30 years) the school should have the complete on-site septic disposal system assessed. The review should include inspection of the pump station and controls, inspection of the tanks, pumps, and distribution box, and subsurface investigation of the condition of the effluent disposal area (leach field).
- Reset vent pipe that is askew. Ensure it is properly connected to leach field pipes. Inspect all pipes and ensure screening is installed over the openings, per the details on plan SP3.
- Mow the vegetation over the effluent disposal area regularly (at least twice per month during the growing season) to prevent woody vegetation and deep-rooted shrubs from establishing themselves.
- Continue to maintain and regularly inspect the well pump and septic system components in an attempt to recognize potential problems before they become an emergency.

Accessibility

The school should ensure the entrances and egress routes are fully accessible (refer also to the section discussing parking). There are several doorways exiting classrooms that step down to the exterior grade, and others exit to a grassed surface with no hard surfaced walkway.

Exterior spaces should be accessible per ADA regulations. There is no accessible route to the playground or the athletic fields. There do not appear to be any accommodations that would allow a handicapped person to use the playground equipment.

The wooden ramps to the portable classrooms do not meet ADA accessibility standards. They have excessive slope and the handrails are non-compliant. In two instances, the entrance to the ramp can only be reached by travelling across grassy surfaces.

Conclusions and Recommendations

- Provide accessible means of egress to the exterior of the building from classrooms, corridors, and all spaces open to the general public.
- Reconstruct accessible ramps in compliance with ADA standards or modify the existing ramps. ADA states that for ramps that slope between 1:12 and 1:10, the maximum rise between landings is 6-inches. Where space is a concern, a ramp may have a maximum slope of 1:8, but it may only rise for 3-inches. Ramps

steeper than 1:8 are not permitted. For a ramp that is steeper than 1:20 (5%) but less than 1:12, a 30-inch rise is permitted between landings.

- Hand rails are required on both sides any ramp that rises more than 6-inches and should be continuous along the full length of each run. The permitted mounting height is between 34 and 38 inches, and in those locations where children are the principal users of the ramp, a second set of handrails may be mounted 28-inches above the walking surface, ensuring there is at least 9-inches between the upper and lower railings.
- Provide accessible routes to the athletic fields and the playground.

Miscellaneous Issues

The following additional items were observed during TTG's site visits:

The dumpsters sited on the east side of the building are not surrounded by fencing or other means of visual screening. They are set directly on asphalt pavement, which slopes toward a catch basin inlet, with no means of diverting runoff or trash that may flow from the dumpsters.

Propane feed line runs are unprotected by bollards or other means in several locations.

The above ground propane tank located between the primary school building and the portable classrooms is protected by nothing more than a chain link fence and is directly adjacent to the paved playground, which is potentially accessible to vehicular traffic.

Trees and shrubs directly against the building are overgrown and grow directly against the building. Sections of bare earth and sand surrounding the playground are contributing to erosion of the area and permit sediments to flow into the catch basins, ultimately out to Little Massabesic Brook.

The pavement across the site is in fair to poor condition. Numerous areas of cracking and settlement are evident in the areas subject to vehicular loads, and there are multiple pavement trench patches in both the east and west parking lots.

In many locations the pavement is edged by sections of precast curbing. Most of it is in fair condition, although some sections are deteriorating and should be replaced.

The chain link fence protecting the sawdust collection system is in poor condition and provides minimal impact protection to the metal frame that supports this unit. The metal barrels once used to contain the collected sawdust are no longer in use and can be disposed of, as they are corroding extensively.

Conclusions and Recommendations

- Install concrete pad upon which the dumpsters can set, and provide an opaque screen around them. Relocate dumpster location away from catch basin inlets.
- Install bollards at exposed propane and electrical feeds, as well as at the above ground propane tank.
- Repair chain link fence and install concrete filled, steel bollards to protect the steel frame and sawdust collection system.
- Trim vegetation back from the face of the building, and particularly where it is obscuring the fire department sprinkler connection.
- Place 4" to 6" of loam on areas of bare earth, particularly around the playground. Seed with a dense-growing grass seed, and use clean hay or straw mulch to protect the seeded areas from erosion until the vegetation is well established. Maintain a well-vegetated grass cover to prevent erosion.
- Reclaim and reconstruct all paved areas, including base gravels. Ensure site is sloped to drain properly and address ADA compliance issues.
- Replace deteriorated precast curbing segments at the edges of pavement.

Expansion Potential

The State of New Hampshire Department of Education administrative rules establish minimum and maximum requirements for acreage of school sites, based on type of school and student population. The regulations state the following:

Elementary School

Minimum – Five contiguous acres of buildable land plus one acre for every 100 pupils in the educational capacity of the facility or fraction thereof.

Maximum – Ten contiguous acres of buildable land plus one acre for every 100 pupils in the educational capacity of the facility or fraction thereof.

Middle School

Minimum – Ten contiguous acres of buildable land plus one acre for every 100 pupils in the educational capacity of the facility or fraction thereof.
Maximum – Twenty contiguous acres of buildable land plus one acre for every 100 pupils in the educational capacity of the facility or fraction thereof.

In the case of a school with multiple levels (elementary and middle) like Auburn Village School, the guidelines for the higher level govern. With a student population of 600, the State recommends a parcel containing between 16 and 26 acres of buildable land. AVS sits on a lot that is 14 acres, which is below the recommended minimum for an elementary/middle school, meaning the District will need to request a waiver from the Department of Education when seeking their approval. Waivers may be granted, assuming a site plan can be developed that meets all State requirements, which includes adequate parking, outdoor play areas, other municipal playing fields, and any other spaces available for student use.

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL ~ FACILITY ASSESSMENT

CIVIL/SITE			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
ADA Compliant Parking	All spaces not in conformance with ADA regulations. Additional space required in west lot.	Develop a new parking layout with the required number of properly sized accessible spaces and restripe the lots accordingly.	N/A		$12,000	
ADA Compliant Signage	All accessible spaces not properly signed.	Ensure all accessible spaces are properly signed.		$600		
Snow Storage	Snow stockpiles reduce available area for parking and block passages for pedestrians to travel safely.	Remove snow stockpiles and dispose of off-site as soon as possible following storm events.	<1 year	$6,000/ year		
Site Parking	Inadequate for the school's needs	Look to develop additional parking on-site; include revised circulation and pick-up/drop-off areas.	N/A			$80,000
West Side Parking Lot	Little to no separation from Eaton Hill Road. Dangerously long cross-walk.	Install curbed sidewalk, curbed island, or similar structure to provide visual and physical separation between parking and street.	N/A		$7,000	
Eaton Hill Road Crosswalk	No traffic control to assist pedestrians crossing the street.	Provide crossing guard during hours when students arrive and are dismissed.	N/A	$10,000/ year		

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL ~ FACILITY ASSESSMENT

CIVIL/SITE			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
West Side Parking Lot	Portion of the lot on abutting property.	Negotiate an agreement with abutter for continued use of their property.	N/A			
East Side Parking Lot	Proximity to playground.	Provide physical barrier to separate playground from parking lot.	N/A	$2,500		
East Side Parking Lot- Bus Traffic	No separation of lot from bus loop.	Develop a dedicated bus loop, separate from parking lot.	N/A			$20,000
Detention Basin	Unmaintained growth.	Develop and follow a maintenance schedule. Recommend monthly mowings during growing season.	N/A	$2,000/ year		
Catch Basins	Shallow sumps.	Replace basins with deep sump catch basins and outlet hoods.	N/A		$12,000	
Catch Basins	Excessive sediments draining into basins.	Vacuum sediments and debris from sumps. Establish a maintenance schedule to undertake this task regularly.	<1 year	$2,000/ year		
Drainage outfall	Located off school property.	Negotiate easement with abutting property owner if none exists.	N/A			
Finish Grade at Building Perimeter	Grade is covering masonry weeps and window sills in multiple locations.	Regrade to prevent water from infiltrating through openings and to expose weep holes.	3 to 5 years		$3,000	

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL ~ FACILITY ASSESSMENT

CIVIL/SITE			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Building Perimeter Drainage	No means to drain ponded surface water away from building.	Install stone drip edge and surface drains to collect runoff/snow melt and channel away from building, where roof runoff falls adjacent to foundation.	3 to 5 years		$12,500	
Drainage at East Side Parking Lot	Water ponds at lot perimeter and flows across pavement to catch basin.	Construct swale or extend closed drainage system to remove ponded water from lot perimeter.	3 to 5 years		$6,500	
Concrete Entrance Plaza on East Side	Water ponds as it falls off entry roof.	Regrade plaza to drain or install drainage structure.	3 to 5 years		$3,500	
Roof Drain Clean-out	Open to atmosphere. Surrounded by an eroded hole.	Install a removable cap. Place backfill around the exposed pipe and loam and seed.	< 1 year	$500		
Roof Drains and Interior Floor Drains	Floor drains at maintenance office surcharge when roof drain clean-out surcharges.	Install a backflow preventer to prohibit runoff from backing-up through interior floor drains.	<1 year	$2,000		
Water Supply	Supply and quality appear adequate.	Continue to perform regular maintenance/testing on system. Budget for replacement pump in future.	10+ years			$5,000

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL ~ FACILITY ASSESSMENT

CIVIL/SITE			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Septic Disposal System	Appears to be functioning adequately for school.	Continue to perform regular maintenance. Consider having a certified evaluation of the system components to gain an understanding of system age/health.	10+ years	$1,250		
Leach Field Vent Pipes	One is askew. None appear to have screening across their openings as per detail.	Reset angled vent pipe and ensure it is connected to underground piping. Install screening at all vent pipes.	N/A	$600		
Leach Field	Evidence of woody vegetated growth establishing itself in the past.	Follow a regular mowing schedule during growing season to keep deep-rooted growth from coming in over leach field.	N/A	$5,000/ year		
Accessibility	Some doors leading from classrooms/building to the exterior are not ADA compliant.	Install accessible means of egress from classroom/building doors leading outside.	<1 year	$5,000		
Exterior Wood Ramps to Classroom	Slopes and hand rails are out of compliance with ADA regulations. No hard surface leading to two ramps.	Construct compliant ramp/ means of access to the building (or modify existing). Provide a hard (paved, crushed gravel) walkway leading to the ramp.	<1 year	$18,000		

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL ~ FACILITY ASSESSMENT

CIVIL/SITE			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Playground and Athletic Fields	No accessible routes.	Provide ADA accessible routes to athletic fields and playground.	<1 year	$10,000		
Playground	No accessible equipment.	Provide ADA accessible equipment/structures.	3 to 5 years		$8,000	
Dumpsters	No fencing for screening and containment. Set directly on asphalt. In close proximity to and upslope from a catch basin grate.	Enclose dumpsters with opaque fencing. Install concrete dumpster pads for them to rest on. Establish new location, away from catch basins.	3 to 5 years		$12,500	
Propane Feed Pipes	No impact protection where it rises through the ground.	Install bollards or other means of protection from damage.	<1 year	$1,000		
Above Ground Propane Tank	Protected only by a chain link fence.	Install bollards or other means of protection from damage.	<1 year	$1,000		
Sawdust Collection Unit	Chain link fence provides little protection to device. Collection barrels severely corroded.	Remove and dispose of barrels. Replace fence. Install bollards to protect support framework.	1 to 2 years	$1,500		

PROJECT NO. 3933 ~ AUBURN VILLAGE SCHOOL ~ FACILITY ASSESSMENT

CIVIL/SITE			$ Opinion of Cost			
COMPONENT	**OBSERVATION**	**RECOMMENDATION**	***Remaining Useful Life***	**Short-Term**	**Mid-Term**	**Long-Term**
Vegetation at Building Perimeter	Trees and shrubs overgrown, up against building.	Trim trees and shrubs.	<1 year	$750		
Vegetative Cover	Some areas with poor cover experiencing erosion and contributing sediments to drainage system.	Place minimum 4" of loam in areas to be re-vegetated. Seed with a hearty grass seed mix and protect with hay or straw mulch until it is fully established.	<1 year	$3,500		
Bike Racks	Inconveniently located. Set over pervious surface.	Relocate to more easily accessible location. Provide concrete pad beneath racks.	3 to 5 years		$3,000	
Precast Curbing	Some segments showing signs of deterioration and displacement.	Reset displaced segments. Replace deteriorated sections.	3 to 5 years		$4,500	
Pavement	Fair to poor condition.	Fill cracks. Seal coat. Establish budget for eventual replacement (including base gravels).	2 to 3 years	$7,500 (crack filling and sealing)		$35,000 (pavement replacement)
		SUBTOTALS		**$80,700**	**$84,500**	**$140,000**

Auburn Village School
Auburn, New Hampshire

Site Assessment Photos

1. West Side Parking Lot: Note vehicle intruding into lengthy crosswalk, snow piled on sidewalk, and minimal separation from street.

2. Spaces on the left half of this photo are completely or partially on Manchester Water Works property.

3. Accessible sign mounted too low and is unreadable.

4. Pedestrian crosswalk at Eaton Hill Road.

5. Non-compliant spaces on the East Side and dumpsters set on pavement.

6. Obstructed sidewalk and parking space reduction due to snow stockpile.

7. Snow stockpile eliminating usable parking spaces.

8. No separation between playground and parking lot.

9. Water splashing against building and matted vegetation indicates need for a drip edge and surface drain system.

10. Landscaping bed covering brick courses and window sill.

11. Landscaping bed covering brick courses.

12. Overgrowth at detention pond (located off-site).

13. Shallow, snow-filled catch basin in east side parking lot.

14. Dumpsters with no debris containment upslope of catch basin grate. Note absence of opaque screening and concrete equipment pad beneath the containers.

15. Ponding at edge of pavement running across lot.

16. Ponding at east entrance.

17. Open roof drain clean-out.

18. Leaning septic system vent pipe.

19. Classroom egress door stepping down to grade.

20. Non-compliant stairs and railing. Note absence of paved landing or sidewalk.

21. Ramp is non-compliant with ADA due to slope, handrail configuration, and absence of paved access route (typical conditions). Note unprotected propane feed.

22. Non-compliant ramp to athletic fields.

23. Lightly protected above ground propane tank.

24. Rusted barrels, fence is in poor condition.

25. Tree growing up against building exterior.

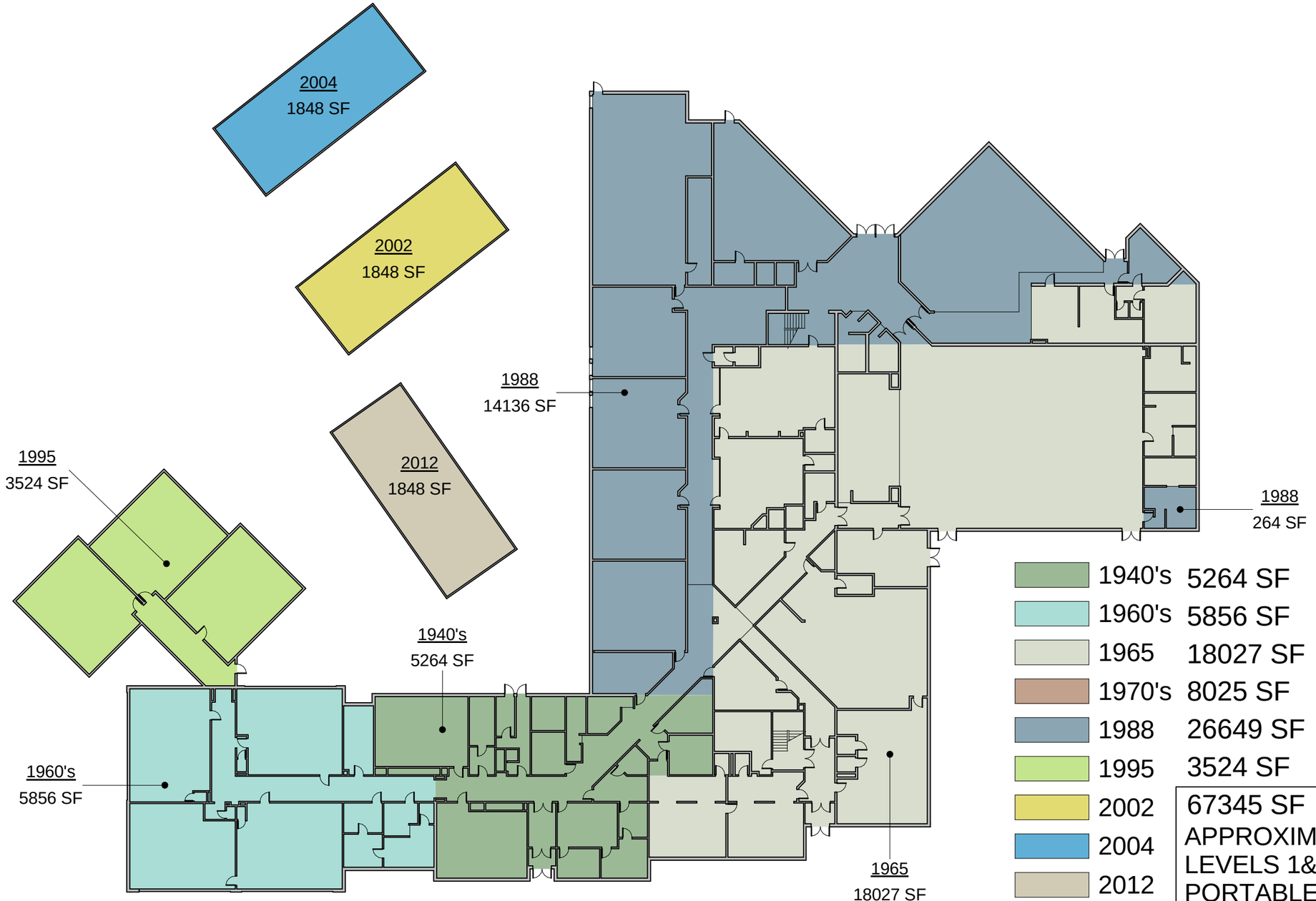
26. Erosion and poor vegetative cover in fields surrounding playground.

27. Sediments flushing into catch basin.

28. Pavement and base gravel deterioration.

29. Deteriorated precast curb segment.

SITE PLAN & OVERALL BUILDING PLANS



AUBURN VILLAGE SCHOOL

SCALE: 1/32" = 1'-0"

BUILDING ASSESSMENT

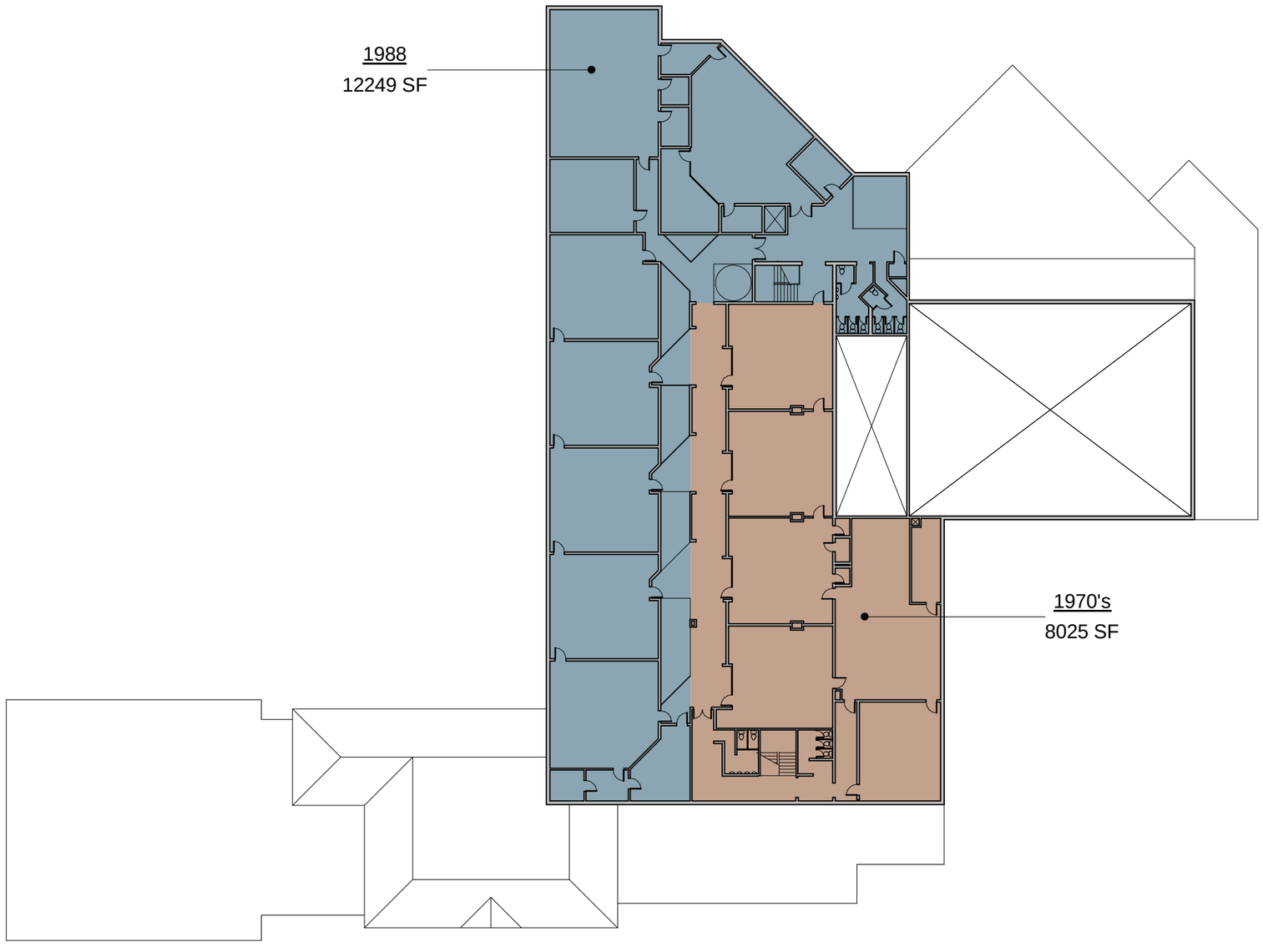
AREAS AND CONSTRUCTION DATE - LEVEL 1

DATE: 04.11.13

SHEET: A0.1 PROJECT: 3933

TURNER GROUP

PREPARED BY: THE H.L. TURNER GROUP INC. ■ ARCHITECTS ■ ENGINEERS ■ BUILDING SCIENTISTS ■ 27 LOCKE ROAD CONCORD, NH 03301, USA ■ 603.228.1122 ■ 603.228.1126 ■ www.hlturner.com



NORTH

AUBURN VILLAGE SCHOOL

SCALE: 1/32" = 1'-0"

BUILDING ASSESSMENT

AREAS AND CONSTRUCTION DATE - LEVEL 2

DATE: 04.11.13

SHEET: A0.2 PROJECT: 3933

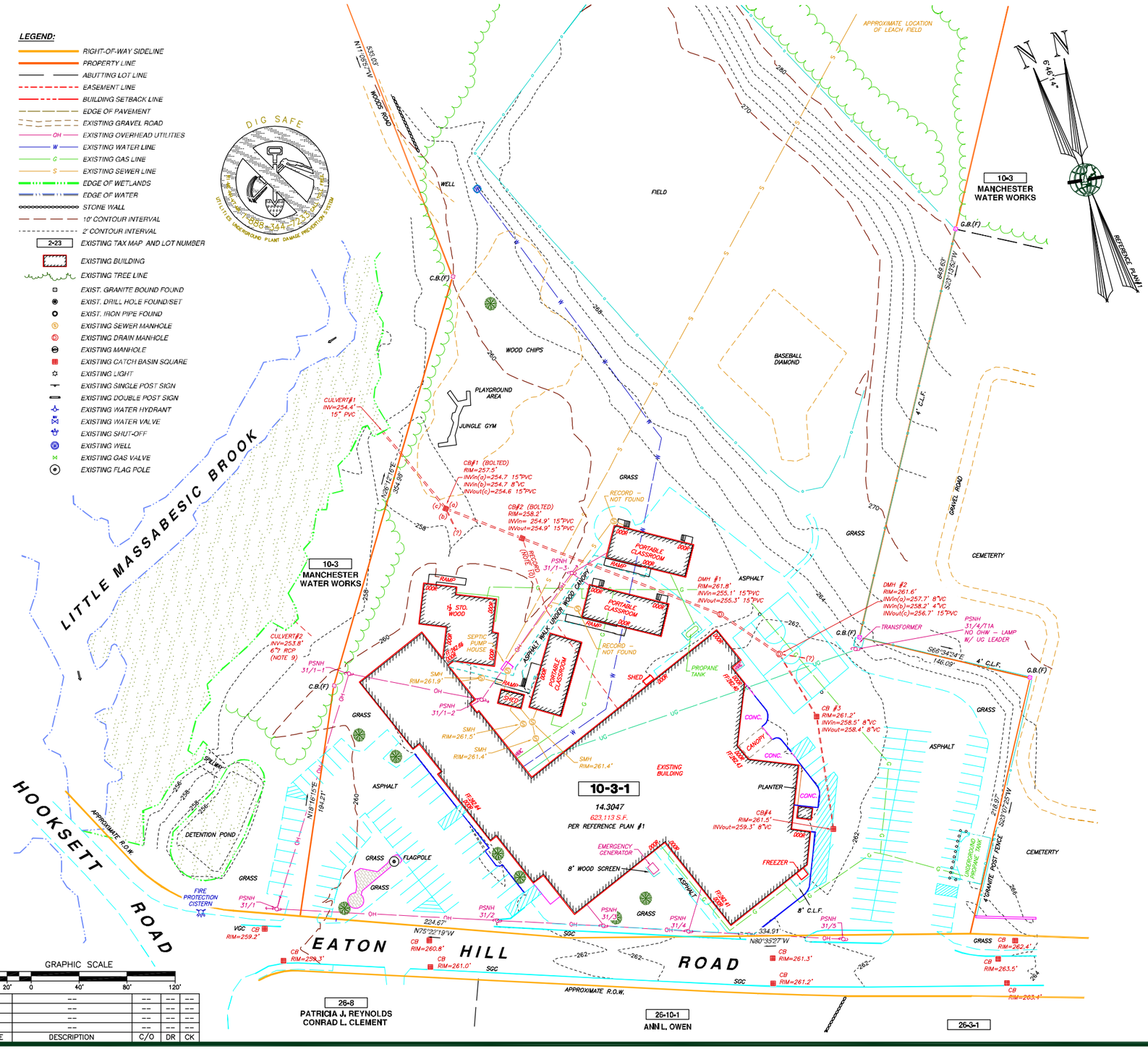
TURNER GROUP

PREPARED BY: THE H.L. TURNER GROUP INC. ■ ARCHITECTS ■ ENGINEERS ■ BUILDING SCIENTISTS ■ 27 LOCKE ROAD CONCORD, NH 03301, USA ■ 603.228.1122 ■ 603.228.1126 ■ www.hlturner.com

LEGEND:

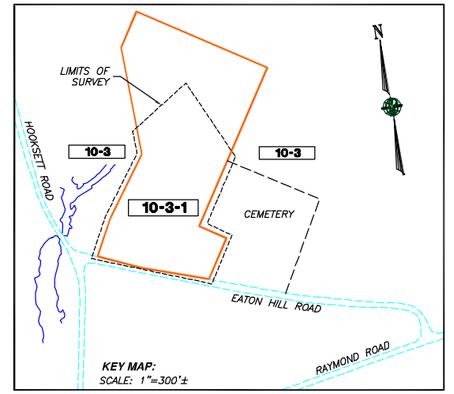
- RIGHT-OF-WAY SIDELINE
- PROPERTY LINE
- ABUTTING LOT LINE
- EASEMENT LINE
- BUILDING SETBACK LINE
- EDGE OF PAVEMENT
- EXISTING GRAVEL ROAD
- OH — EXISTING OVERHEAD UTILITIES
- W — EXISTING WATER LINE
- G — EXISTING GAS LINE
- S — EXISTING SEWER LINE
- EDGE OF WETLANDS
- EDGE OF WATER
- STONE WALL
- 10' CONTOUR INTERVAL
- 2' CONTOUR INTERVAL
- 2-23 — EXISTING TAX MAP AND LOT NUMBER
- EXISTING BUILDING
- EXISTING TREE LINE
- EXIST. GRANITE BOUND FOUND
- EXIST. DRILL HOLE FOUND/SET
- EXIST. IRON PIPE FOUND
- EXISTING SEWER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING MANHOLE
- EXISTING CATCH BASIN SQUARE
- EXISTING LIGHT
- EXISTING SINGLE POST SIGN
- EXISTING DOUBLE POST SIGN
- EXISTING WATER HYDRANT
- EXISTING WATER VALVE
- EXISTING SHUT-OFF
- EXISTING WELL
- EXISTING GAS VALVE
- EXISTING FLAG POLE

DIG SAFE — CALL BEFORE YOU DIG — 1-888-344-7233 — UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM



GRAPHIC SCALE
40' 20' 0 40' 80' 120'

REV.	DATE	DESCRIPTION	C/O	DR	CK
D	---	---	---	---	---
C	---	---	---	---	---
B	---	---	---	---	---
A	---	---	---	---	---



REFERENCE PLANS:

1. "A SURVEY AND A PLAT OF A - SITE PLAN - PREPARED FOR - AUBURN SCHOOL DISTRICT - AND SITUATED IN THE TOWN OF - AUBURN, N.H." SCALE: 1"=50', DATED 6.21.2004, PREPARED BY RLS AND RECORDED AT R.C.R.D. AS PLAN NO. 31743.
2. "LAND SOLD TO - AUBURN SCHOOL DISTRICT - BY MANCHESTER WATER WORKS" SCALE: 1"=100', DATED 3/20/1985, PREPARED BY R.W.C. AND RECORDED AT R.C.R.C. AS PLAN NO. 13421.

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXISTING SITE CONDITIONS OF TAX LOT 10-3-1 AS OBSERVED IN JANUARY 2013.
2. THE OWNER OF RECORD:
   LOT 10-3-1
   TOWN OF AUBURN
   P.O. BOX 309
   AUBURN, NEW HAMPSHIRE 03032
   RCRD VOL. 2316 PG. 1586
3. THIS PLAN IS PREPARED FROM A TOPOGRAPHIC SURVEY MADE BY THIS OFFICE JANUARY 16, 22, 23 AND 28, 2013 SUPPLEMENTED WITH PLANIMETRIC AND TOPOGRAPHIC DATA TAKEN FROM REFERENCE PLAN #1. THERE WAS CONSIDERABLE SNOW COVER AT THE TIME OF THE SURVEY, OBSCURING SITE FEATURES AND DETAIL.
4. THE BOUNDARY IS DEPICTED PER REFERENCE PLAN #1; NO BOUNDARY DETERMINATION HAS BEEN MADE BY THIS OFFICE.
5. WETLAND BOUNDARIES WERE DELINEATED BY SPENCER C. TATE, WETLAND APPRENTICE UNDER THE SUPERVISION OF TIMOTHY J. FERWERDA, C.W.S. IN JANUARY 2013, IN ACCORDANCE TO THE ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT, Y-87-1 1.
6. TAX MAP LOT 10-3-1 IS NOT GRAPHICALLY LOCATED WITHIN THE 100 YEAR FLOOD ZONE, AS DEPICTED ON F.I.R.M. COMMUNITY PANEL NUMBER 33015C0165E, DATED MAY 17, 2005.
7. PROJECT DATUM IS NGVD 1929.
8. SITE IMPROVEMENTS, A PORTION OF THE PARKING LOT AND DRAINAGE IMPROVEMENTS, EXTEND OVER THE WESTERLY LOT LINE INTO LAND OF MANCHESTER WATER WORKS.
9. DRAIN CULVERT DRAINS FROM THE DIRECTION OF LOT 10-3-1 INTO LITTLE MASSABESIC BROOK, SOURCE IS UNKNOWN.
10. RECORD ROOF DRAIN CONNECTION - NO PIPE OBSERVED AT CB#2 HOWEVER COVER IS BOLTED DOWN LIMITING ACCESS TO THE STRUCTURE.
11. ALL UNDERGROUND SEWER, GAS, ELECTRIC AND WATER LINES DEPICTED ARE FROM RECORD DRAWINGS AND ARE APPROXIMATE.

EXISTING CONDITIONS TOPOGRAPHIC PLAN
PREPARED FOR:

THE H.L. TURNER GROUP INC.

AUBURN VILLAGE SCHOOL

TAX MAP 10 LOT 3-1

AUBURN, NEW HAMPSHIRE

SCALE: 1" = 40' FEBRUARY 5, 2013

ENGINEERS
LAND SURVEYORS
SCIENTISTS
LAND PLANNERS

MERIDIAN Land Services, Inc.

OFFICE: 31 OLD NASHUA ROAD, SUITE 2, AMHERST, NEW HAMPSHIRE 03031 — TEL. 603-673-1441 FAX 603-673-1584
MAILING ADDRESS: P.O. BOX 118, MILFORD, NEW HAMPSHIRE 03055 — MERIDIAN@MERIDIANLANDSERVICES.COM

FILE:9170T00.dwg	PROJECT NO. 9107.00	SHEET NO. 1 OF 1

Plotted: 2/6/2013 7:08 AM By: MJH ########
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