

# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

Town of Stoughton, Massachusetts

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*Contains all study documents in electronic format*

# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

## Town of Stoughton, Massachusetts

### Introduction

Buildings included in this study are as follows:

- Town Hall
- Lucius Clapp Building
- DPW Headquarters / Garage
- Council on Aging
- Cedar Hill Golf Course
- Fire Station #1
- Fire Station #2
- Police Station
- Cape-Reynolds Farmhouse
- Water Treatment Plant
- O'Donnell Middle School
- E.A. Jones School
- Helen Hansen Elementary School
- West Elementary School
- Joseph R. Dawe Elementary School
- Joseph H. Gibbons Elementary School

In 2017 DRA Architects with its team of engineers performed visits to each of the buildings and evaluated them to determine the types of improvements that will be necessary. Conversations were held with department heads and those in charge of maintenance. These improvements included such topics as:

- General
- Life Safety
- Health
- Hazardous Materials
- American's with Disabilities Compliance
- Site Issues
- Exteriors
- Interiors
- Energy and Water Conservation
- Mechanical, Electrical, Plumbing And Fire Protection

With any renovation project it is necessary that International Existing Building Code be reviewed in light of the items of renovation work that are selected. In doing so it may be determined that other items of work will be necessary to achieve compliance.

Each of the improvements was then prioritized into the following categories:

- Current Critical
- Potentially Critical
- Necessary – Not yet Critical
- Recommended

A detailed description of criteria used for each of the categories is included in the report.

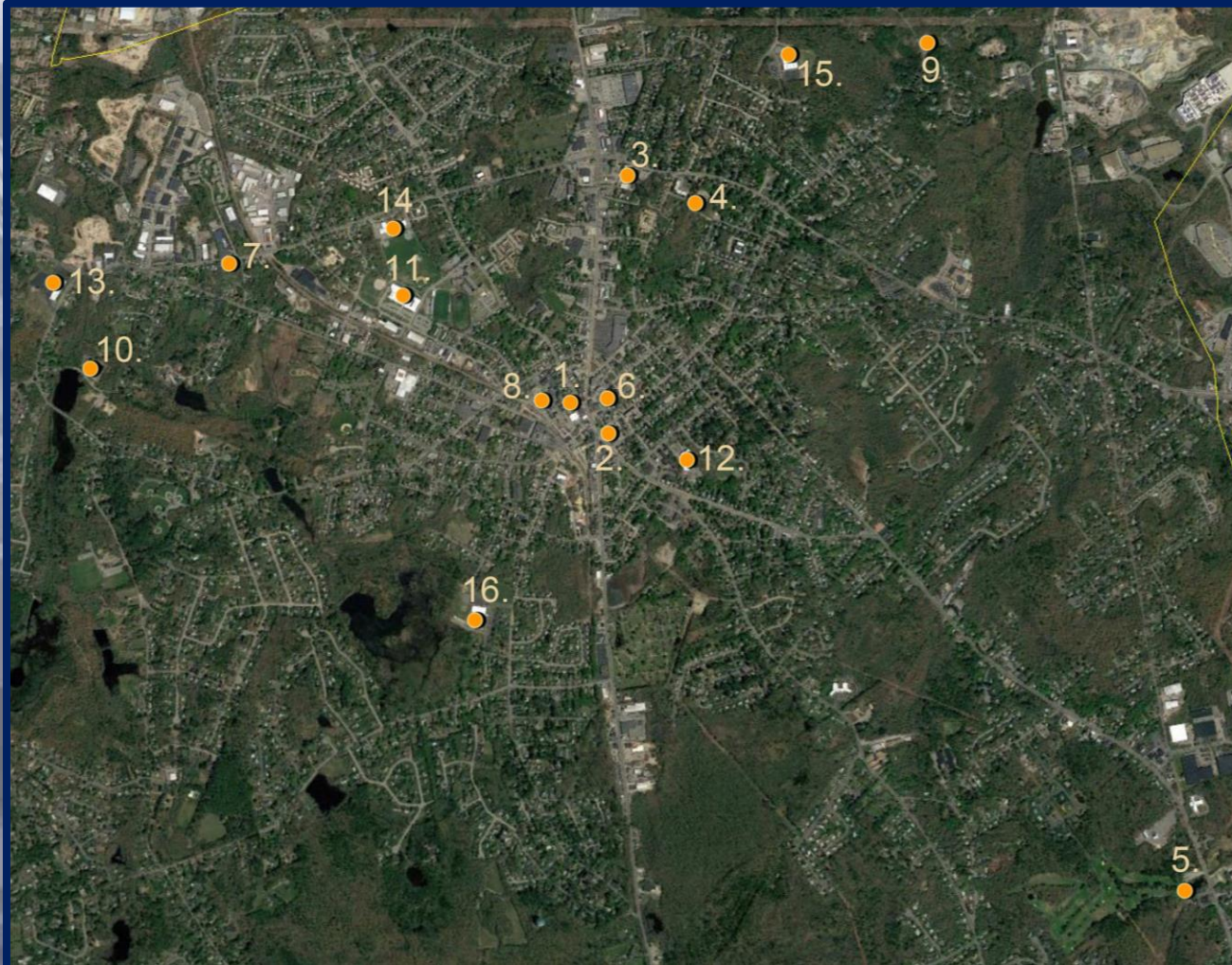
For each of the improvements an independent cost estimate was obtained. The estimates are a projection of the costs and include soft costs associated with each item. (Soft costs are the miscellaneous costs associated with professional fees, contingency, bonding costs, bidding expense, testing etc.). The estimator does not have the advantage of detailed drawings for each of the items so the intent is to provide an order of magnitude that, should the improvement move ahead, will be refined up to the bid date. For many of the like items it will be possible to group them together and save on the soft costs. Similarly, there may be items that can be bid without professional drawings and specifications and, again, the soft costs can be reduced. The cost should be used as an overall budget for each item. A more detailed explanation of the use of the estimates is included later in this report.

This report is organized with the recommendations presented in a series of binders. These include detailed condition reports with supporting materials from the engineers and plans of each building.

\* \* \*

# Building Locations

## *Facility Master Plan*



1. TOWN HALL
2. LUCIUS CLAPP BUILDING
3. DPW HQ / GARAGE
4. COUNCIL on AGING
5. CEDAR HILL GOLF COURSE
6. FIRE STATION #1
7. FIRE STATION #2
8. POLICE STATION
9. CAPE-REYNOLDS FARMHOUSE
10. WATER TREATMENT PLANT
11. O'DONNELL MIDDLE SCHOOL
12. E.A. JONES SCHOOL
13. HELEN HANSEN ELEMENTARY
14. WEST ELEMENTARY
15. JOSEPH R. DAWE ELEMENTARY
16. JOSEPH H. GIBBONS ELEMENTARY

# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

## Town of Stoughton, Massachusetts

### **Report Categories**

The summary reports for each of the buildings are broken into a series of categories. The following is a description of how each of these is used to record building conditions.

#### LIFE SAFETY

These tend to be high priority items as missing items such as exit signs could have a significant detrimental effect should a fire occur in the building. Similarly, if life safety elements are not fully functional or are not created safely a hazard is created. There may be other recommendations under MEP work that can be considered Life Safety

#### HEALTH

Items that are unsanitary or cannot be cleaned fall within this category. Any work to septic systems will also appear in this category. These tend to be high priority. Plumbing work also applies to this category with such items as backflow preventers.

#### HAZARDOUS MATERIALS

The report reflects only visual review of buildings and no testing was performed. An independent testing agency would need to be employed to examine, sample, test and prepare a detailed report on the existence of any hazardous materials in the buildings with a recommended cause of action.

The School buildings have AHERA reports that describe hazardous materials within the facilities. This is not the case for the town building where assumptions were made. Even with the schools there is much testing of materials that is necessary to determine if certain items contain hazardous materials and then a plan of abatement established. There were a number of instances where AHERA reports recommend that no action is required when potential hazardous material exist. We have followed those recommendations except where, from previous experience, a hazardous situation to building occupants is highly possible in which case we have recommended abatement.

#### ADA

All existing buildings completed prior to 2012 need comply with 1991 ADA Standards. Any new construction required under this study will require compliance with the 2010 ADA Standards and the standards of the Massachusetts Architectural Access Board.

In basic terms, the review of buildings in this study for ADA compliance the primary issue is for clear access into and around the buildings floors, referred to as the "path of travel" so that occupants have access to the available resources. Resources include office and other work areas, classrooms, activity spaces, restrooms and other non-hazardous areas. The next issue is for use of those resources including access through doors, and use of furnishing and equipment and then, lastly, access to support spaces.

Most buildings have a duplication of resources, and within one building some may be accessible and others not. In evaluating priorities/scheduling of the work we have looked at whether or not the building provides reasonable accommodation for persons with disabilities. As an example, if we have a failing roof, and a non ADA compliant sink (with a compliant sink nearby) we have recommended the roof be repaired, but if the building is not ADA accessible then access would be given a higher priority.

## EXTERIORS

Items exposed to the weather need to be durable to prevent water ingress and to prevent damage from the elements. Once a defect occurs on the exterior its increase in severity can grow rapidly due to the weather and ice exposure. Exterior defects will tend to have a higher priority than say an interior defect.

Items noted include roofs, walls and adjacent ground areas.

## INTERIORS

Items will include floors, walls and ceilings and items mounted on those surfaces. Items located at exterior walls will have the potential for accelerated deterioration from sunlight passing through windows and water ingress around doors.

## ENERGY AND WATER CONSERVATION

Listed in this section will be items that could be modified or replaced to reduce energy consumption. The reader should also refer to the following section as there is some overlap in the items.

## MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.

Fire protection is listed first and highlights either deficiencies in the current sprinkler system or advocate for a system to be added to a building. Some smaller buildings are not required by code to have a fire sprinkler system but one has been recommended to protect the building occupants but also to preserve the Town's investment in the building. This is especially true for historic, wood framed structures.

A lot of items in Plumbing will occur under the Health section such as adding backflow preventers to improve the protection of the water supply and eliminating any cross-connections. Condition of the plumbing systems include supply and waste piping and plumbing equipment are listed in this section. The ADA section should also be reviewed for other plumbing items.

HVAC explores the condition and operation of the mechanical systems of the building. Items in this section may also apply to energy conservation. Safety issues with the systems such as the lack of combustion air for appliances are also listed.

Electrical focuses on the condition of the electrical equipment and wiring, and code compliance issues some of which fall under Life Safety. Emergency systems including Fire Alarms, Emergency Lighting and Exit Signage are reviewed.

# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

## Town of Stoughton, Massachusetts

### Priority Rating System

Priorities are listed to the left of each item:

- Priority** 1 – Current Critical: Conditions in this category require immediate action to:
- Correct a cited safety hazard
  - Stop accelerated deterioration
  - Return a facility to operation
- Priority** 2 – Potentially Critical: Conditions in this category if not corrected soon may result in:
- Intermittent Operations
  - Rapid Deterioration
  - Potential Safety Hazards
- Priority** 3 – Necessary, not yet critical.  
Conditions in this category require appropriate attention to preclude a predictable deterioration or potential downtime and possible damage and higher costs.
- Priority** 4 – Recommended.  
Conditions in this category include items that represent a sensible improvement to existing conditions. They are not required for the most basic function of the facility, but will improve overall usability and/or reduce long-term maintenance costs.
- G - Grandfathered (Typically Code requirements or other work).



STOUGHTON TOWN BUILDINGS SCHOOLS - 5 YEAR CAPITAL IMPROVEMENT PLAN AND FACILITIES CONDITION REPORT  
STOUGHTON, MA

BUILDING	Fiscal Year 19	Fiscal Year 20	Fiscal Year 21	Fiscal Year 22	Fiscal Year 23	BLDG TOTALS
1 - Town Hall	\$ 26,933	\$ 996,494	\$ 1,584,083	\$ 890,477	\$ 42,180	\$ 3,540,167
2 - Lucius Clapp Building	\$ 76,891	\$ 25,163	\$ 162,185	\$ 212,129	\$ 1,021,670	\$ 1,498,039
3 - DPW Headquarters - Garage	\$ 37,306	\$ 15,543		\$ 3,324,592	\$ 75,302	\$ 3,452,744
4 - Council on Aging	\$ 10,996	\$ 9,504	\$ 200,325	\$ -	\$ 69,197	\$ 290,021
5 - Cedar Hill Golf Course	\$ 9,108	\$ 636,816	\$ -	\$ 161,013	\$ 489,669	\$ 1,296,605
6 - Fire Station #1	\$ 1,068,161	\$ 152,919	\$ 310,892	\$ 485,293	\$ 845,117	\$ 2,862,383
7 - Fire Station #2	\$ 119,886	\$ 67,783	\$ 283,666	\$ 102,609	\$ 13,025	\$ 586,969
8 - Police Station	\$ 66,240	\$ 162,533	\$ 785,241	\$ -	\$ 353,011	\$ 1,367,025
9 - Capen-Reynolds Farmhouse	\$ -	\$ -	\$ -	\$ -	\$ 1,098,725	\$ 1,098,725
10 - Water Treatment Plant	\$ -	\$ 166,560	\$ 68,154	\$ 918,613	\$ 101,760	\$ 1,255,087
11 - O'Donnell Middle School	\$ 12,751	\$ 1,475,021	\$ 3,379,704	\$ 4,712,506	\$ 284,724	\$ 9,864,706
12 - E.A. Jones School	\$ 8,280	\$ 1,512,067	\$ 904,748	\$ 1,423,012	\$ 77,338	\$ 3,925,445
13 - Helen Hansen Elementary School	\$ 31,464	\$ 691,470	\$ 1,063,929	\$ 1,199,010	\$ 272,920	\$ 3,258,793
14 West Elementary School	\$ 7,452	\$ 998,351	\$ 1,782,465	\$ 1,592,731	\$ 221,430	\$ 4,602,429
15 - Joseph R. Dawe Elementary School	\$ 37,260	\$ 1,500,872	\$ 2,038,090	\$ 2,202,290	\$ 229,469	\$ 6,007,980
16 - Joseph H. Gibbons Elementary School	\$ 37,260	\$ 1,218,888	\$ 2,287,148	\$ 2,201,272	\$ 207,590	\$ 5,952,158
						\$ -
<b>ANNUAL TOTALS</b>	<b>\$ 1,549,989</b>	<b>\$ 9,629,985</b>	<b>\$ 14,850,629</b>	<b>\$ 19,425,547</b>	<b>\$ 5,403,128</b>	<b>\$ 50,859,278</b>

NOTE: Costs included in this spreadsheet include escalation factors.

### Five Year Capital Plan by PRIORITY

Stoughton MA - Facility Master Plan Update

YEARS	TOWN BUILDINGS	SCHOOLS	TOTALS ALL BUILDING
1 YEAR	\$ 1,415,522	\$ 134,467	\$ 1,549,989
2-3- YEARS	\$ 2,233,315	\$ 7,396,670	\$ 9,629,985
Combined Totals 3-5 Years and 5 Years *	\$ 13,598,929	\$ 26,080,375	\$ 39,679,304
Totals: 1 Year, 2 Years, 3-5 Years and 5 Years	\$ 17,247,766	\$ 33,611,512	\$ 50,859,278

\* Combines Categories, Necessary-Not yet Critical (3-5 years), Recommended Upgrades (Optional) and Grandfathered.

NOTE: Costs included in this spreadsheet include escalation factors.

STOUGHTON BUILDINGS SEPARATED BY PRIORITIES

	BUILDING	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4	GRANDFATHERED	TOTALS PER BUILDING
1	Town Hall	\$ 26,022	\$ 838,800	\$ 1,245,348	\$ 700,061	\$ 33,160	\$ 2,843,391
2	Lucius Clapp Building	\$ 74,291	\$ 21,181	\$ 127,504	\$ 166,768	\$ 803,200	\$ 1,192,944
3	DPW Headquarters - Garage	\$ 36,044	\$ 13,084	\$ 1,406,205	\$ 1,207,468	\$ 59,200	\$ 2,722,001
4	Council on Aging	\$ 10,624	\$ 8,000	\$ 46,320	\$ 111,168	\$ 54,400	\$ 230,512
5	Cedar Hill Golf Course	\$ 8,800	\$ 536,040	\$ 66,382	\$ 60,200	\$ 384,960	\$ 1,056,382
6	Fire Station #1	\$ 1,032,040	\$ 128,720	\$ 244,412	\$ 381,520	\$ 664,400	\$ 2,451,092
7	Fire Station #2	\$ 115,832	\$ 57,056	\$ 80,667	\$ 223,008	\$ 10,240	\$ 486,804
8	Police Station	\$ 64,000	\$ 136,812	\$ 149,014	\$ 468,314	\$ 159,600	\$ 977,740
9	Capen-Reynolds Farmhouse	\$ -	\$ -	\$ 863,778	\$ -	\$ -	\$ 863,778
10	Water Treatment Plant	\$ -	\$ 140,202	\$ 53,580	\$ 722,180	\$ 80,000	\$ 995,962
11	O'Donnell Middle School	\$ 12,320	\$ 1,241,600	\$ 2,657,000	\$ 3,704,800	\$ 223,840	\$ 7,839,560
12	E.A. Jones School	\$ 8,000	\$ 1,272,784	\$ 711,280	\$ 1,118,720	\$ 60,800	\$ 3,171,584
13	Helen Hansen Elementary School	\$ 30,400	\$ 582,046	\$ 836,422	\$ 942,618	\$ 214,560	\$ 2,606,046
14	West Elementary School	\$ 7,200	\$ 840,363	\$ 1,401,309	\$ 1,252,147	\$ 174,080	\$ 3,675,099
15	Joseph R. Dawe Elementary School	\$ 36,000	\$ 1,263,360	\$ 1,602,272	\$ 1,731,360	\$ 180,400	\$ 4,813,392
16	Joseph H. Gibbons Elementary School	\$ 36,000	\$ 1,026,000	\$ 1,798,072	\$ 1,730,560	\$ 163,200	\$ 4,753,832
<b>TOTALS PER PRIORITY</b>		<b>\$ 1,497,574</b>	<b>\$ 8,106,048</b>	<b>\$ 13,289,566</b>	<b>\$ 14,520,891</b>	<b>\$ 3,266,040</b>	<b>\$ 40,680,119</b>

	BUILDINGS	LIFE SAFETY	HEALTH	ADA	SITE	EXTERIORS	INTERIORS	ENERGY & WATER CONSERVATION	FIRE PROTECTION	PLUMBING	ELECTRICAL	MECHANICAL	HAZARDOUS	TOTALS PER BUILDING
A	Town Hall	\$ 7,680	\$ -	\$ 42,520	\$ 830,240	\$ 100,800	\$ 897,762	\$ 579,389	\$ -	\$ -	\$ 134,054	\$ 250,946	\$ -	\$ 2,843,391
B	Lucius Clapp Building	\$ 3,120	\$ -	\$ 809,920	\$ -	\$ 73,120	\$ 41,744	\$ 128,432	\$ -	\$ 17,120	\$ 30,307	\$ 89,181	\$ -	\$ 1,192,944
C1	DPW Adminisrtation	\$ 1,600	\$ -	\$ 12,000	\$ 688,400	\$ 134,669	\$ 111,656	\$ 339,560	\$ -	\$ -	\$ 83,880	\$ 431,434	\$ -	\$ 1,803,199
C2	DPW Garage	\$ 800	\$ -	\$ 47,200	\$ -	\$ 77,280	\$ 437,600	\$ 282,488	\$ -	\$ 8,000	\$ 62,366	\$ 3,067	\$ -	\$ 918,802
D	Council on Aging	\$ -	\$ -	\$ 9,600	\$ 47,200	\$ 800	\$ 43,120	\$ 106,368	\$ 10,624	\$ -	\$ 8,000	\$ 4,800	\$ -	\$ 230,512
E	Cedar Hill Golf Course	\$ -	\$ -	\$ 9,920	\$ 913,440	\$ 13,840	\$ 52,542	\$ 46,200	\$ 5,600	\$ -	\$ 14,000	\$ 840	\$ -	\$ 1,056,382
F	Fire Station 1	\$ 6,960	\$ -	\$ 687,200	\$ 249,360	\$ 153,920	\$ 74,620	\$ 263,920	\$ 148,752	\$ 117,600	\$ 94,251	\$ 654,509	\$ -	\$ 2,451,092
G	Fire Station 2	\$ 2,640	\$ -	\$ 10,240	\$ 41,280	\$ 24,000	\$ 66,715	\$ 213,280	\$ 1,600	\$ -	\$ 48,136	\$ 78,912	\$ -	\$ 486,804
H	Police Station	\$ 2,480	\$ -	\$ 17,360	\$ 174,352	\$ 109,600	\$ 106,274	\$ 249,834	\$ -	\$ 261,840	\$ -	\$ 56,000	\$ -	\$ 977,740
I	Capen-Reynolds Farmhouse	\$ -	\$ -	\$ -	\$ -	\$ 265,600	\$ 400,000	\$ 68,400	\$ 31,440	\$ 54,496	\$ 14,882	\$ 28,960	\$ -	\$ 863,778
J	Water Treatment Plant	\$ 2,640	\$ -	\$ 80,560	\$ 593,600	\$ 71,200	\$ 52,863	\$ 78,980	\$ -	\$ 73,600	\$ 2,519	\$ 40,000	\$ -	\$ 995,962
K	O'Donnell Middle School	\$ 34,720	\$ -	\$ 231,680	\$ 3,600	\$ 851,200	\$ 461,080	\$ 3,110,400	\$ -	\$ -	\$ 1,891,200	\$ 1,255,680	\$ -	\$ 7,839,560
L	E.A. Jones School	\$ 16,000	\$ -	\$ 66,960	\$ -	\$ 132,000	\$ 530,000	\$ 933,120	\$ 552,960	\$ -	\$ 531,840	\$ 408,704	\$ -	\$ 3,171,584
M	Helen Hansen Elementary	\$ -	\$ -	\$ 230,560	\$ 17,280	\$ 30,400	\$ 178,200	\$ 795,334	\$ 471,309	\$ -	\$ 519,309	\$ 363,654	\$ -	\$ 2,606,046
N	West Elementary	\$ 12,560	\$ -	\$ 185,280	\$ -	\$ 87,600	\$ 644,400	\$ 1,029,499	\$ 610,074	\$ -	\$ 658,074	\$ 447,613	\$ -	\$ 3,675,099
O	Joseph R. Dawe Elementary	\$ 24,000	\$ -	\$ 206,800	\$ -	\$ 48,800	\$ 705,600	\$ 1,460,160	\$ 865,280	\$ -	\$ 913,280	\$ 589,472	\$ -	\$ 4,813,392
P	Joseph H. Gibbons Elementary	\$ 560	\$ -	\$ 190,080	\$ -	\$ 48,000	\$ 687,000	\$ 1,460,160	\$ 865,280	\$ -	\$ 913,280	\$ 589,472	\$ -	\$ 4,753,832
<b>TOTALS PER CATEGORY</b>		\$ 115,760	\$ -	\$ 2,837,880	\$ 3,558,752	\$ 2,222,829	\$ 5,491,178	\$ 11,145,523	\$ 3,562,918	\$ 532,656	\$ 5,919,379	\$ 5,293,243	\$ -	\$ 40,680,119

FACILITIES MASTER PLAN 2017 Stoughton, MA

PRIORITIES & KEY		TOWN-WIDE FACILITY CONDITION ASSESSMENT, STOUGHTON, MA, SPRING-SUMMER 2017															PRIORITIES & KEY				
1	Current Critical (w/in 1 Year)	A - TOWN HALL			B - LUCIUS CLAPP			C1 - DPW ADMIN.			C2 - DPW GARAGE			D - COUN. ON AGING			E - CEDAR HILL GOLF			1 or 1A	Current Critical
2	Potentially Critical (w/in 2-3 Years - potential issues if not fixed)	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	2	Potentially Critical
3	Necessary Not yet Critical (3-5 years)	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	3	Necessary Not yet Critical
4	Recommended Upgrades (Optional)	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	4	Recommended
5	Grandfathered (Typically Code Requirements with Other Work)	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	Cost	QTY	Cost	5	Grandfathered
Grouping: Items that can be bid as a package.																					
Sub-Priority: Importance within the Priority Category																					
Cost: Cost of the work																					
TOTALS:																					
LIFE SAFETY																					
HEALTH																					
ADA																					
SITE																					
EXTERIOR																					
INTERIORS																					
ENERGY & WATER CONSERVATION																					
FIRE PROTECTION																					
PLUMBING																					
ELECTRICAL																					
MECHANICAL																					
HAZARDOUS																					
ADDITION/ NEW CONSTRUCTION																					

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,021,670	15,254	60,038	69,197	489,669	3,698,018	1,334,290	2,891,760	55,866,198	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	354,960	354,960	354,960	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	26,022	74,291	17,820	18,224	10,624	8,800	155,782	155,782	155,782	155,782	\$1,497,574
	838,800	21,181	8,194	4,890	8,000	536,040	1,417,104	1,417,104	1,417,104	1,417,104	\$5,866,198
	1,245,848	127,504	936,325	469,880	46,320	66,882	2,891,760	2,891,760	2,891,760	2,891,760	\$13,013,086
	700,061	166,768	828,860	378,608	111,168	60,200	2,245,665	2,245,665	2,245,665	2,245,665	\$13,869,878
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	1,334,290	1,334,290	1,334,290	\$3,266,040

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,021,670	15,254	60,038	69,197	489,669	3,698,018	1,334,290	2,891,760	55,866,198	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	354,960	354,960	354,960	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,021,670	15,254	60,038	69,197	489,669	3,698,018	1,334,290	2,891,760	55,866,198	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	354,960	354,960	354,960	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,021,670	15,254	60,038	69,197	489,669	3,698,018	1,334,290	2,891,760	55,866,198	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	354,960	354,960	354,960	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,021,670	15,254	60,038	69,197	489,669	3,698,018	1,334,290	2,891,760	55,866,198	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	354,960	354,960	354,960	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,021,670	15,254	60,038	69,197	489,669	3,698,018	1,334,290	2,891,760	55,866,198	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776
	33,160	803,200	12,000	47,200	54,400	354,960	1,334,290	354,960	354,960	354,960	\$3,266,040
	2,843,391	1,192,944	1,803,199	918,802	230,512	1,056,382	8,045,230	8,045,230	8,045,230	8,045,230	\$37,512,776

ESCALATION FACTOR	NUMBERS INCLUDING ESCALATION										GRAND TOTALS
	1 or 1A	2	3	4	5	1 or 1A	2	3	4	5	
1.035	26,933	76,891	18,444	18,862	10,996	9,108	161,234	155,782	1,417,104	55,866,198	\$1,497,574
1.188	996,494	25,163	9,734	5,809	9,504	636,816	1,683,520	1,417,104	2,891,760	55,866,198	\$5,866,198
1.272	1,854,081	174,115	11,710,000	1,171,000	1,171,000	1,171,000	1,171,000	1,171,000	2,891,760	55,866,198	\$13,013,086
1.272	890,477	212,129	1,094,310	481,583	141,405	75,574	2,854,485	2,245,665	2,891,760	55,866,198	\$13,869,878
1.272	42,180	1,02									

FACILITIES MASTER PLAN 2017 Stoughton, MA

PRIORITIES & KEY		TOWN-WIDE FACILITY CONDITION ASSESSMENT, STOUGHTON, MA, 2017										PRIORITIES & KEY		
1	Current Critical (w/in 1 Year)	F - FIRE STATION #1		G - FIRE STATION #2		H - POLICE STATION		I - CAPEN-REYNOLDS		J - WATER TREAT. PLANT		1 or 1A	Current Critical	
2	Potentially Critical (w/in 2-3 Years - potential issues if not fixed)	COST	F-QTY	COST	G-QTY	COST	H-QTY	COST	I-QTY	J-QTY	COST	2	Potentially Critical	
3	Necessary-Not yet Critical (3-5 years)	w/o Markup										3	Necessary-Not yet Critical	
4	Recommended Upgrade (Optional)											4	Recommended	
5	Grandfathered (Typical Code Requirements with Other Work)											5	Grandfathered	
Growth: Items that can be bid as a package														
Sub-Priority: Importance within the Priority Category														
Cost: Cost of the work														
LIFE SAFETY	1	Install panic hardware at Exterior door	1,350	2,160	3	0	0	0	0	0	0	0	0	0
	2	Remove Items for Clearance Requirements (maintenance)	200	320	1	0	0	0	0	0	0	0	0	
	3	Remove Gas Grills from Roof Deck and Relocate	100	160	1	0	0	0	0	0	0	0	0	
	4	Reverse Door Swing and Install Panic Hardware	1,650	2,640	1	0	0	0	0	0	0	0	0	
HEALTH	5	Modify sink casework to provide ADA clearance	2,500	4,000	1	0	0	0	0	0	0	0	0	
ADA	6	insulate piping below Sink	225	360	1	0	0	0	0	0	0	0	0	
	7	Modify Door for Pull Clearance	3,500	5,600	1	0	0	0	0	0	0	0	0	
	8	Provide cane detection below gun storage lockers	2,200	3,520	1	0	0	0	0	0	0	0	0	
	9	Install ADA compliant Ramp at Main Entrance	175,000	280,000	1	0	0	0	0	0	0	0	0	
	10	Install Accessible Counter or Window	2,500	4,000	1	0	0	0	0	0	0	0	0	
	11	Modify or Install Code Compliant Handrails	1,500	2,400	1	0	0	0	0	0	0	0	0	
	12	Install Elevator or Lift	350,000	560,000	1	0	0	0	0	0	0	0	0	
	13	Replace Door Knobs with Lever Types	350	560	15	0	0	0	0	0	0	0	0	
	14	Modify Sinks and Showers to Provide ADA Access	4,500	7,200	2	0	0	0	0	0	0	0	0	
	15	Modify Restrooms to Comply with ADA Requirements	20,000	32,000	1	0	0	0	0	0	0	0	0	
	16	Install 12" Extensions to Handrails	1,200	1,920	1	0	0	0	0	0	0	0	0	
	17	Modify Exterior Stairs and Handrails, Install ADA Compliant Ramp	15,000	24,000	1	0	0	0	0	0	0	0	0	
SITE	51	Repair water leak at foundation - ongoing/completed work for Police	0	0	0	0	0	0	0	0	0	0	0	
	52	Crack Seal (LF)	0	0	0	0	0	0	0	0	0	0	0	
	53	Repair cracks at curbing and concrete walk	5,000	8,000	1	0	0	0	0	0	0	0	0	
	54	Repair curbing & pavement	5,000	8,000	1	0	0	0	0	0	0	0	0	
	55	New Sitemwork (excluded for Capen-Reynolds)	0	0	0	0	0	0	0	0	0	0	0	
	56	Replace apron at bays with concrete	22,000	35,200	1	0	0	0	0	0	0	0	0	
	57	Replace Pavement around building	26,000	41,600	1	0	0	0	0	0	0	0	0	
	58	Upgrade sewer system connection to municipal sewer	20,000.00	32,000	1	0	0	0	0	0	0	0	0	
	59	Upgrade stormwater-drainage system	70,000.00	112,000	1	0	0	0	0	0	0	0	0	
	60	New paved entrance apron to site	10,000.00	16,000	1	0	0	0	0	0	0	0	0	
	61	Reset wheel stops	35.00	56	1	0	0	0	0	0	0	0	0	
	62	Oil/Water Separator	1,000	1,600	1	0	0	0	0	0	0	0	0	
EXTERIOR	18	Repair concrete stains at main entry	12,000	19,200	1	0	0	0	0	0	0	0	0	
	19	Repair roof leak/water infiltration into wall	20,000	32,000	1	0	0	0	0	0	0	0	0	
	20	Clean exterior of building	30,000	48,000	1	0	0	0	0	0	0	0	0	
	21	Replace missing downspout	1,500	2,400	1	0	0	0	0	0	0	0	0	
	22	Remove and redirect existing downspout	2,500	4,000	1	0	0	0	0	0	0	0	0	
	23	Repair / replace gutter transition	2,500	4,000	1	0	0	0	0	0	0	0	0	
	24	Re-point Brick	25,000	40,000	1	0	0	0	0	0	0	0	0	
	25	Replace Fire Escape Stairs	5,000	8,000	1	0	0	0	0	0	0	0	0	
	26	Replace Roof Ladders	3,800	6,080	1	0	0	0	0	0	0	0	0	
	27	Replace Exterior Doors and Frames	4,500	7,200	4	0	0	0	0	0	0	0	0	
	28	Replace Windows	2,600	4,160	1	0	0	0	0	0	0	0	0	
	29	Remove Plywood and Install Windows System	2,600	4,160	1	0	0	0	0	0	0	0	0	
	30	Clean Concrete	3,000	4,800	1	0	0	0	0	0	0	0	0	
	31	Replace Brick, Re-point and insert Expansion Joints	4,500	7,200	4	0	0	0	0	0	0	0	0	
	32	Repair Concrete Ramp	15,000	24,000	1	0	0	0	0	0	0	0	0	
	33	Repair Spalling Concrete and Chemically Clean	5,000	8,000	1	0	0	0	0	0	0	0	0	
	34	Repair Damaged EPS and Chemically Clean	10,000	16,000	1	0	0	0	0	0	0	0	0	
	35	Repair Concrete at Loading Dock, Install New Bumpers	7,500	12,000	1	0	0	0	0	0	0	0	0	
	36	New Exterior Envelope Superstructure (roof, siding, windows, doors)	50	80	1	0	0	0	0	0	0	0	0	
	37	Foundation Structural Repair	35,000	56,000	1	0	0	0	0	0	0	0	0	
	38	Replace Steel Linets	3,200	5,120	1	0	0	0	0	0	0	0	0	
	39	Enlarge Bay Opening(s)/ New Structural Steel Framing at Opening	15,000	24,000	1	0	0	0	0	0	0	0	0	
INTERIORS	40	Replace Acoustical Ceiling Tiles (unit = sf)	1	350	20	0	0	0	0	0	0	0	0	
	41	Replace Tile Flooring	1,000	1,600	2	0	0	0	0	0	0	0	0	
	42	Replace Doors and Hardware	1,500	2,400	5	0	0	0	0	0	0	0	0	
	43	Repair Wall, Re-paint and Install Door Stop	500	800	1	0	0	0	0	0	0	0	0	
	44	Replace HM Frame with Aluminum	3,500	5,600	1	0	0	0	0	0	0	0	0	
	45	Scrape, Repair and Repaint	500	800	30	0	0	0	0	0	0	0	0	
	46	Relocate Items Blocking Area (maintenance)	200	320	1	0	0	0	0	0	0	0	0	
	47	Clean and Repaint	500	800	20	0	0	0	0	0	0	0	0	
	48	Repair Broken Brick and Install Expansion Joint	7,500	12,000	1	0	0	0	0	0	0	0	0	
	49	Repair Cracks in Concrete Floor	5,000	8,000	1	0	0	0	0	0	0	0	0	
	50	Install Rubber Flooring in Weight Room	16	26	1	0	0	0	0	0	0	0	0	
	51	Repair and Paint	3	5	9864	0	0	0	0	0	0	0	0	
	52	Repair CMU and Repaint	500	800	1	0	0	0	0	0	0	0	0	
	53	Reorganize Space to Allow Door to Open and Close	250	400	1	0	0	0	0	0	0	0	0	
	54	Remove and Replace Wood Sills	800	1,280	2	0	0	0	0	0	0	0	0	
	55	Clean and Degrease Floor/ Install Epoxy Flooring	18	29	1	0	0	0	0	0	0	0	0	
	56	Install New Pipe Insulation	2,500	4,000	1	0	0	0	0	0	0	0	0	
	57	New finishes for gyp walls, gyp ceilings, floors, casework, doors	250	400	1000	0	0	0	0	0	0	0	0	
	58	NOT USED	0	0	0	0	0	0	0	0	0	0	0	
	59	NOT USED	0	0	0	0	0	0	0	0	0	0	0	
ENERGY & WATER CONSERVATION	60	Upgrade exterior lighting with new LED fixtures	10,000	16,000	1	0	0	0	0	0	0	0	0	
	61	Upgrade interior lighting with new LED fixtures	7	11,2396	138,835	9864	110,477	208,78	29,334	3149	16,200	1	16,200	
	62	Upgrade Lighting Controls	2	2,12396	29,750	9864	23,674	208,78	6,248	3149	7,558	1	7,558	
	63	HVAC controls upgrade with energy management	4	6,12396	79,334	9864	63,130	208,78	16,748	3149	20,154	1	20,154	
FIRE PROTECTION	64	Provide NFPA 13 Sprinkler System (depends on use for Capen-Reynolds)	8	12,396	148,722	0	0	0	0	0	0	0	0	
	65	Repair corroded flanges/piping	1,000	1,600	1	0	0	0	0	0	0	0	0	
PLUMBING	66	Repair leaks at hot water circulation pumps	1,500	2,400	1	0	0	0	0	0	0	0	0	
	67	Replace non-ADA sinks with new low flow fixtures	3,000	4,800	10	0	0	0	0	0	0	0	0	
	68	Exterior gas piping replacement	5,000	8,000	1	0	0	0	0	0	0	0	0	
	69	Repair Floor Drains	5,000	8,000	1	0	0	0	0	0	0	0	0	
	70	Provide Overflow Roof Drains	30,000	48,000	1	0	0	0	0	0	0	0	0	
	71	Replace urinals and/or water closets with low flow fixtures	3,000	4,800	1	0	0	0	0	0	0	0	0	
	72	Install sensor faucets and flush valves where not installed	550	880	10	0	0	0	0	0	0	0	0	
	73	Replace water heater	30,000	48,000	1	0	0	0	0	0	0	0	0	
	74	New Plumbing System (include service/piping/fixtures)	13	21	1	0	0	0	0	0	0	0	0	
	75	Relocate domestic water services piping	10,000	16,000	1	0	0	0	0	0	0	0	0	
	76	Replace Lavatories	3,000	4,800	1	0	0	0	0	0	0	0	0	
ELECTRICAL	77	Add fire alarm system devices	1	1,12396	9,917	9864	7,891	0	0	0	0	0	0	
	78	New/upgrade security systems	3	4,12396	39,456	9864	39,456	0	0	0	0	0	0	
	79	Emergency light fixtures & wiring	0	0	0	0	0	0	0	0	0	0	0	
	80	Provide additional electrical outlets	1	1	0	0	0	0	0	0	0	0	0	
	81	Replace existing electrical outlets/cover plates	0	0	0	0	0	0	0	0	0	0	0	
	82	Repair damaged site lighting	5,000	8,000	0	0	0	0	0	0	0	0	0	
	83	Provide Exit Signs	625	1,000	5	0	0	0	0	0	0	0	0	
	84	Repair/Replace Occupancy Sensors	1	1,12396	9,917	0	0	0	0	0	0	0	0	
	85	Replace electrical service/panelboards	4	6,12396	69,438	0	0	0	0	0	0	0	0	
	86	New wiring for all devices	11	17,412,396	174,123,960	0	0	0	0	0</				



FACILITIES MASTER PLAN 2017 Stoughton, MA

PRIORITIES & KEY			TOWN-WIDE FACILITY CONDITION ASSESSMENT UPDATE, STOUGHTON, MA SPRING-SUMMER 2017												PRIORITIES & KEY																											
1	Current Critical (w/in 1 Year)		K - O'Donnell Middle School			L - E.A. Jones School			M - Helen Hansen Elementary			N - West Elementary			O - Joseph R. Dawe Elem.			P - Joseph H. Gibbons Elem.																								
2	Potentially Critical (w/in 2-3 Years - potential issues if not fixed)		Cost	QTY	QTY	Cost	QTY	QTY	Cost	QTY	QTY	Cost	QTY	QTY	Cost	QTY	QTY	Cost	QTY	QTY																						
3	Necessary Not yet Critical (3-5 Years)																																									
4	Recommended Upgrades (5-10 Years)																																									
5	Grandfathered (Typical Code Requirements with Older Work)																																									
6	Grandfathered (Typical Code Requirements with Older Work)																																									
Grouping - Items that can be bid as a package			Sub-Grouping - Items that can be bid as a package			Sub-Grouping - Items that can be bid as a package			Sub-Grouping - Items that can be bid as a package			Sub-Grouping - Items that can be bid as a package			Sub-Grouping - Items that can be bid as a package			Sub-Grouping - Items that can be bid as a package																								
Sub-Priority - Importance within the Priority Category			Sub-Priority - Importance within the Priority Category			Sub-Priority - Importance within the Priority Category			Sub-Priority - Importance within the Priority Category			Sub-Priority - Importance within the Priority Category			Sub-Priority - Importance within the Priority Category			Sub-Priority - Importance within the Priority Category																								
Cost: Cost of the work			Cost: Cost of the work			Cost: Cost of the work			Cost: Cost of the work			Cost: Cost of the work			Cost: Cost of the work			Cost: Cost of the work																								
LIFE SAFETY																						1	Remove Steps for Clearance Requirements (oversees)	2	20	20																
HEALTH																						8	Non-ADA compliant Restrooms	2	2	80,000																
ADA																						8	Non-ADA compliant Restrooms	2	2	80,000																
SITE																						51	Replace Damaged Asphalt Curbs	2	10	3,000																
EXTERIOR																						28	Patch and Repair Spalling Concrete	2	15	6,000																
INTERIORS																						43	Install Aluminum Nosing on Stair	2	1	1,800																
ENERGY & WATER CONSERVATION																						62	Upgrade exterior lighting with new LED fixtures	2	13	48,000																
FIRE PROTECTION																						66	Provide NFPA 13 Sprinkler System	2	13	48,000																
ELECTRICAL																						68	Add Fire Alarm System Devices	2	1	144,000																
MECHANICAL																						73	Replace Cast Iron Boilers w/ High Efficiency Condensing Units	2	1	144,000																
HAZARDOUS																						80	Pipe Insulation	2	0	0																
ADDITION/NEW CONSTRUCTION																						Reconfigure / Expansion New Construction																				

	7,839,560	3,171,584	2,606,048	3,675,099	4,813,192	4,753,832	26,859,513
DONE							
NUMBERS INCLUDING ESCALATION							
1 yr	12,751	8,280	31,464	7,432	37,240	134,467	
2 yr	1,475,021	691,470	2,063,928	503,351	2,508,096	8,256,676	
3 yr	3,376,764	1,664,024	4,721,012	1,193,010	5,934,806	19,529,628	
4 yr	4,712,506	2,312,012	6,534,024	1,621,711	8,154,237	26,859,513	
5 yr	5,847,324	2,824,016	8,046,032	1,982,464	10,029,832	33,611,512	
SUBTOTAL	15,374,371	6,373,544	22,740,528	5,608,618	34,048,912	119,289,143	

ESCALATION FACTOR	1.035	1.08	1.127	1.172	1.217
1 yr	12,751	8,280	31,464	7,432	37,240
2 yr	1,475,021	691,470	2,063,928	503,351	2,508,096
3 yr	3,376,764	1,664,024	4,721,012	1,193,010	5,934,806
4 yr	4,712,506	2,312,012	6,534,024	1,621,711	8,154,237
5 yr	5,847,324	2,824,016	8,046,032	1,982,464	10,029,832

TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Town Hall (A)				
Item Number	Description	Value	Fiscal Year	Notes
1	Install Panic Bar	2,160		
3	Reverse Door Swing/ Install New Hardware	1,520		
58	Add Fire Alarm System Devices	22,342		
16	Replace Windows and Doors	0		
17	Replace Wood Trim Around Windows and Doors	0		\$ 26,022
2	Install Ventilation Hood	4,000		
7	Install High Visibility Tape	400		
18	Repair Conc. Stair/ Paint Rails	4,800		
19	Re-point/ Repair Masonry	40,000		
20	Repair Concrete	16,000		
21	Replace Broken Brick/ Reset Granite Cap	40,000		
45	Construct AHU Access in Attic	11,200		
47	Install Acoustical Plaster Treatment	179,200		
48	Install Stretch Fabric to ceiling	243,200		
49	Ceilings and Associated Lighting	300,000		\$ 838,800
S1	Recommend Install Crack Sealant	240		
S2	Mill and Overlay Parking Lot	100,000		
S3	Provide Stormwater Upgrades	90,000		
S10	Upgrade Drainage Structure	640,000		
32	Pressure Clean to Remove Efflorescence	12,000		
33	Install New Door, Frame and Threshold	2,880		
34	Replace Acoustical Ceiling Tiles	5,928		
35	Repair and Paint	134,054		
36	Remove Ceiling replace with New ACT	5,400		
37	Install New Carpet	3,900		
67	Repair and Replace Pipe Insulation	8,000		
68	Replace Fan Coil Units	6,400		
69	Replace AHU	40,000		
70	Replace Pnuematic System	196,546		\$ 1,245,348
6	Replace Door Knobs with Lever Type	8,960		
50	Upgrade Exterior Lighting with LED	32,000		
51	Upgrade Interior Lighting with LED	312,794		
52	Upgrade Lighting Controls	55,856		
53	Upgrade HVAC Controls	178,739		
59	New/ Upgrade Security System	111,712		\$ 700,061
5	Install Pipe Insulation Below Sink	360		
8	Modify Service Counters	16,000		
9	Modify Sinks and Fixtures	9,600		
10	Widen Open and Install New Door	7,200		\$ 33,160

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Total	\$ 2,843,391
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Lucius Clapp (B)				
Item Number	Description	Value	Fiscal Year	Notes
3	Reverse Door Swing and Install New Hardware	1,520		
19	Re-point and Repair Masonry	40,000		
31	Replace Steel Lintels and Associated Masonry	8,960		
55	Repair Leaks at Hot Water Pumps	1,920		
56	Replace Non ADA Sinks	7,200		
57	Replace Exterior Gas Piping	8,000		
58	Add Fire Alarm System Devices	\$ 3,936		
60	Replace Emergency Light Fixtures and Wiring	\$ 2,755		
16	Replace Windows and Doors	\$ -		\$ 74,291
4	Remove Items for Clearance Requirements	\$ 1,600		
20	Repair Concrete	\$ 16,000		
22	Re-set Granite Stair Treads	\$ 2,400		
65	Re-calibrate/ Replace CO Sensors	\$ 1,181		\$ 21,181
26	Scrape and Repaint	\$ 3,840		
27	Wirebrush, Prime and Repaint	\$ 1,920		
35	Repair and Paint	\$ 23,616		
37	Install New Carpet	\$ 1,664		
38	Repair Marble Stair	\$ 4,800		
39	Install Epoxy Flooring	\$ 11,664		
71	Replace Existing Boiler	\$ 80,000		\$ 127,504
6	Replace Door Knob with Lever Type	\$ 6,720		
50	Upgrade Exterior Lighting with LED	\$ 32,000		
51	Upgrade Interior Lighting with LED	\$ 55,104		
52	Upgrade Lighting Controls	\$ 9,840		
53	Upgrade HVAC Controls	\$ 31,488		
59	New/ Upgrade Security System	\$ 19,680		
61	Provide Additional Electrical Outlets	\$ 3,936		
72	Replace/ Clean Existing Cast Iron Radiators	\$ 8,000		\$ 166,768
11	Install ADA Compliant Ramp	\$ 160,000		
12	Modify Handrails	\$ 43,200		
13	Modify Restrooms	\$ 80,000		
14	Install Elevator or Lift	520,000		\$ 803,200

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Total	\$ 1,192,944
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

DPW - Administration (C1)				
Item Number	Description	Value	Fiscal Year	Notes
58	Add Fire Alarm System Devices	13,980		
73	Replace Unit Heater Vent Pipe	3,840		\$ 17,820
4	Remove Items for Clearance Requirements	1,600		
S1	Recommend Install Crack Sealant	2,400		
65	Re-calibrate/ Replace CO Sensors	4,194		\$ 8,194
S2	Mill and Overlay Parking Lot	216,000		
S3	Provide Stormwater Upgrades	150,000		
S10	Upgrade Drainage Structure	320,000		
23	Repair and Paint CMU	39,014		
24	Remove and Replace Doors	8,640		
25	Repair Bay Openings	48,000		
26	Scrape and Repaint	39,014		
34	Replace Acoustical Ceiling Tiles	1,104		
35	Repair and Paint	83,880		
37	Install New Carpet	4,742		
40	General Cleaning	20,970		
41	Install New VCT	960		
66	CUH along Perimeter Wall	4,000		\$ 936,325
50	Upgrade Exterior Lighting with LED	32,000		
51	Upgrade Interior Lighting with LED	195,720		
53	Upgrade HVAC Controls	111,840		
59	New Upgraded Security System	69,900		
64	Replace Roof Top Units	419,400		\$ 828,860
9	Modify Sinks and Fixtures	4,800		
12	Modify Handrails	7,200		\$ 12,000

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Total	\$ 1,803,199
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

DPW - Garage (C2)				
Item Number	Description	Value	Fiscal Year	Notes
57	Replace Exterior Gas Piping	8,000		
58	Install Fire Alarm System Devices	10,224		\$ 18,224
4	Remove Items for Clearance Requirements	800		
62	Replace Electrical Outlets/ Plates	1,022		
65	Re-calibrate/ Replace CO Sensors	3,067		\$ 4,890
24	Remove and Replace Doors	14,400		
27	Wirebrush, Prime and Repaint	60,480		
28	Install Weather Stripping	2,400		
34	Replace Acoustical Ceiling Tiles	6,000		
39	Install Epoxy Flooring	368,064		
40	General Cleaning	15,336		
42	Install New VCT	3,200		\$ 469,880
49	New 26,000 LBS. Vehicle Lift	45,000		
50	Upgrade Exterior Lighting with LED	32,000		
51	Upgrade Interior Lighting with LED	143,136		
52	Upgrade Lighting Controls	25,560		
53	Upgrade HVAC Controls	81,792		
59	New/ Upgrade Security System	51,120		\$ 378,608
9	Modify Sinks and Fixtures	7,200		
13	Modify Restrooms	40,000		\$ 47,200

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Total	\$ 918,802
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Council on Aging (D)				
Item Number	Description	Value	Fiscal Year	Notes
54	Install Sprinkler Escutcheons	\$ 10,624		\$ 10,624
63	Repair Damaged Site Lighting	\$ 8,000		\$ 8,000
S1	Recommend Install Crack Sealant	\$ 2,400		
29	Remove and Re-install Shingles	\$ 800		
34	Replace Acoustical Ceiling Tiles	\$ 480		
35	Repair and Paint	\$ 31,872		
40	General Cleaning	\$ 7,968		
43	Painting (General Maintenance)	\$ 2,800		\$ 46,320
50	Upgrade Exterior Lighting with LED	\$ 32,000		
51	Upgrade Interior Lighting with LED	\$ 74,368		
74	Repair Damaged Piping and Wiring	\$ 4,800		\$ 111,168
9	Modify Sinks and Fixtures	\$ 9,600		
S4	Replace Conc. Curb and Repair Cape Cod Berm	\$ 44,800		\$ 54,400

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Total	\$ 230,512
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Cedar Hill Golf Club (E)				
Item Number	Description	Value	Fiscal Year	Notes
S6	Fill Holes in Asphalt Parking Area	3,200		
54	Install Sprinkler Escutcheons	5,600		\$ 8,800
S1	Recommend Installing Crack Sealant	1,200		
S3	Provide Stormwater Upgrades	150,000		
S5	Full Parking Lot Reconstruction	384,000		
65	Re-calibrate/ Replace CO Sensors	840		\$ 536,040
26	Scrape and Repaint	4,080		
27	Wirebrush, Prime and Repaint	5,760		
30	Install Drain Extension	4,000		
34	Replace Acoustical Ceiling Tile	24,576		
37	Install New Carpet	16,786		
41	Install New VCT	6,448		
44	Strip and Refinish Wood Floors	4,733		\$ 66,382
51	Upgrade Interior Lighting with LED	39,200		
52	Upgrade Lighting Controls	7,000		
59	New/ Upgrade Security System	14,000		\$ 60,200
6	Replace Door Knobs with Lever Types	1,120		
9	Modify Sinks and Fixtures	4,800		
15	Modify Shower	4,000		
S7	Install Guardrail Along Edge of Park	23,040		
S8	Repair Pond Erosion	8,000		
S9	Upgrade Curbing and Repaving	320,000		
S11	Septic Inspection/ New Grease Trap	24,000		\$ 384,960

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Total	\$ 1,056,382
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Fire Station #1 (F)				
Item Number	Description	Value	Fiscal Year	Notes
1	Install Panic Hardware	6,480		
2	Remove Items for Clearance Requirements	320		
3	Remove Gas Grill from Roof Deck	160		
56	Replace Apron at Bays	35,200		
58	Upgrade Sewer System Connections	32,000		
59	Upgrade Stormwater Drainage System	112,000		
24	Re-point Brick	40,000		
26	Replace Roof Ladder	6,080		
38	Replace Steel Lintels	5,120		
41	Replace Tile Flooring	3,200		
42	Replace Doors and Hardware	12,000		
43	Repair Wall, Repaint and Install Door Stop	800		
44	Replace HM Frame with Aluminum	5,600		
46	Relocate Item Blocking Area	320		
48	Repair Broken Brick and Install Expansion Joints	12,000		
77	Install Fire Alarm System Devices	9,917		
83	Provide Exit Signs	5,000		
84	Repair/ Replace Occupancy Sensors	9,917		
85	Replace Electrical Service / Panelboards	69,418		
90	Replace Roof Top Units	555,341		
93	Repair and Replace Mech. Piping	99,168		\$ 1,020,040
54	Repair Curbing and Pavement	8,000		
13	Replace Door Knobs with Lever Types	8,400		
14	Modify Sinks and Showers	14,400		
25	Replace Fire Escape Stair	8,000		
27	Replace Exterior Doors and Frames	28,800		
28	Replace Windows	4,160		
29	Remove Plywood and Install Window System	4,160		
31	Replace Brick, Re-point and Insert Expansion Joint	28,800		
39	Enlarge Bay Openings	24,000		\$ 128,720
52	Crack Seal	240		
57	Replace Pavement Around Building	49,920		
S12	Oil/ Water Separator	12,000		
30	Clean Concrete	4,800		
40	Replace Acoustical Ceiling Tiles	700		
45	Scrape, Repair and Repaint	24,000		
47	Clean and Repaint	16,000		
64	Provide NFPA 13 Sprinkler Sys.	148,752		\$ 256,412
60	Upgrade Exterior Lighting with LED	16,000		
61	Upgrade Interior Lighting with LED	138,835		
62	Upgrade Lighting Controls	29,750		
63	Upgrade HVAC Controls	79,334		
67	Replace Non-ADA Sinks	48,000		
69	Repair Floor Drains	8,000		
70	Provide Overflow Roof Drains	48,000		
71	Replace urinals and Water Closets	4,800		
72	Install Sensor Faucets and Flush Valves	8,800		\$ 381,520
9	Install ADA Compliant Ramp	30,000		
10	Install Accessible Counter or Window	4,000		
11	Modify or Install Compliant Handrails	14,400		
12	Install Elevator or Lift	560,000		
15	Modify Restrooms	32,000		
17	Modify Exterior Stairs and Handrails	24,000		\$ 664,400

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Total	\$ 2,451,092
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Fire Station #2 (G)				
Item Number	Description	Value	Fiscal Year	Notes
4	Reverse Door Swing and Install New Hardware	2,640		
32	Repair Concrete Ramp	24,000		
65	Repair Corroded Flanges	1,600		
77	Install Fire Alarm System Devices	7,891		
81	Replace Existing Electrical Outlets	789		
93	Repair and Replace Mech. Piping, Insul and Val.	78,912		115,832
52	Repair Cracks and Curbing at Concrete Walk	8,000		
43	Repair Wall, Repaint and Install Door Stop	800		
49	Repair Cracks in Concrete Floor	8,000		
52	Repair CMU and Repaint	800		
78	Upgrade Security System	39,456		57,056
S6	Replace Pavement Around Building	33,280		
40	Replace Acoustical Ceiling Tiles	40		
51	Repair and Paint	47,347		80,667
50	Install Rubber Flooring	9,728		
60	Upgrade Exterior Lighting with LED	16,000		
61	Upgrade Interior Lighting with LED	110,477		
62	Upgrade Lighting Controls	23,674		
63	Upgrade HVAC Controls	63,130		223,008
5	Modify Sink Casework	4,000		
11	Modify or Install Handrails	2,400		
16	Install 12" Extensions to Handrails	3,840		10,240

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Total	486,804
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Police Station (H)				
Item Number	Description	Value	Fiscal Year	Notes
18	Repair Concrete Stairs	19,200		
19	Repair Roof Leak	32,000		
21	Replace Missing Downspouts	2,400		
22	Remove and Redirect Existing Downspout	4,000		
23	Repair/ Replace Gutter Transition	4,000		
66	Repair Leak at Hot Water Pump	2,400		64,000
1	Install Panic Hardware	2,160		
2	Remove Items for Clearance Requirements	320		
6	Insulate Piping Below Sink	720		
S2	Repair Cracks in Curbing and Walk	8,000		
S3	Repair Curbing and Pavement	16,000		
S10	Reset Wheel Stops	352		
20	Clean Exterior of Building	48,000		
40	Replace Acoustical Ceiling Tile	1,500		
52	Repair CMU and Repaint	800		
53	Reorganize Space to Allow Access	400		
54	Remove and Replace Wood Sills	2,560		
87	Replace Wet Ductwork	16,000		
95	Replace AHU	40,000		136,812
45	Scrape, Repair and Repaint	800		
51	Repair an Repaint	100,214		
73	Peplace Water Heater	48,000		149,014
8	Provide Cane Detection	7,040		
60	Upgrade Exterior Lighting with LED	16,000		
61	Upgrade Interior Lighting with LED	233,834		
67	Replace Sink Fixtures	134,400		
70	Provide Overflow Roof Drain	48,000		
72	Install Sensor Faucets and Flush Valves	29,040		
S10	Repair Water Leak	0		468,314
5	Modify Sink Casework	4,000		
7	Modify Door for Pull Clearance	5,600		
S8	Upgrade Stormwater Drainage System	150,000		159,600

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Total	977,740
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Capen-Reynolds (I)				
Item Number	Description	Value	Fiscal Year	Notes
36	New Exterior Envelope Superstructure	\$ 209,600		
37	Foundation Structural Repair	\$ 56,000		
57	All New Interior Finishes	\$ 400,000		
60	Upgrade Exterior Lighting with LED	\$ 16,000		
61	Upgrade Interior Lighting with LED	\$ 29,344		
62	Upgrade Lighting Controls	\$ 6,288		
63	Upgrade HVAC Controls	\$ 16,768		
64	Provide NFPA 13 Sprinkler Sys.	\$ 31,440		
74	New Plumbing System	\$ 54,496		
81	Replace Existing Electrical Outlet	\$ 210		
85	Replace Electrical Service/ Panelboard	\$ 14,672		
89	Replace Domestic Water Heater	\$ 8,000		
93	Repair and Replace Mech. Piping, Insul and Val.	\$ 20,960		
				\$ 863,778
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Total	\$ 863,778
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Pratts Court - Water Treatment Plant (J)				
Item Number	Description	Value	Fiscal Year	Notes
4	Reverse Door Swing and Install Panic Hardware	\$ 2,640		
13	Replace Door Knobs with Lever Types	\$ 560		
18	Repair Concrete Stair	\$ 19,200		
33	Repair Spalling Concrete	\$ 24,000		
34	Repair Damaged EIFS	\$ 16,000		
35	Repair Concrete at Loading Dock	\$ 12,000		
49	Repair Cracks in Concrete Floor	\$ 8,000		
55	Clean and Degrease Floors	\$ 39,283		
75	Relocate Domestic Water Service Piping	\$ 16,000		
77	Add Fire Alarm System Devices	\$ 2,519		\$ 140,202
52	Repair Cracks in Curbing And Walk	\$ 8,000		
40	Replace Acoustical Ceiling Tiles	\$ 780		
45	Scrape, Repair and Repaint	\$ 800		
56	Install New Pipe Insulation	\$ 4,000		
88	Replace Indoor AHU	\$ 40,000		\$ 53,580
56	Replace Pavement Around Building	\$ 457,600		
58	Upgrade Stormwater Drainage System	\$ 112,000		
59	New Paved Entrance Apron	\$ 16,000		
60	Upgrade Exterior Lighting with LED	\$ 16,000		
61	Upgrade Interior Lighting with LED	\$ 35,269		
62	Upgrade Lighting Controls	\$ 7,558		
63	Upgrade HVAC Controls	\$ 20,154		
70	Provide Overflow Roof Drains	\$ 48,000		
71	Replace Urinals and Waterclosets	\$ 4,800		
76	Replace Lavatories	\$ 4,800		\$ 722,180
15	Modify Restroom to Comply	\$ 32,000		
17	Modify Exterior Stairs and Handrails	\$ 48,000		\$ 80,000

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Total	\$ 995,962
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

O'Donnel Middle School (K)				
Item Number	Description	Value	Fiscal Year	Notes
1	Remove Items for Clearance Requirements	320		
3	Remove or Modify Terrazzo Treads	2,400		
28	Patch and Repair Spalling Concrete	9,600		12,320
2	Install Handrails/ Guardrails	20,000		
4	Modify Handrails and Guardrails	12,000		
15	Modify to Meet Push/ Pull Clearances	5,600		
17	Insulate Exposed Pipe Below Sinks	2,240		
29	Remove Vents and Replace with New	96,000		
30	Replace Windows	616,000		
31	Replace Window Walls and Doors	96,000		
33	Replace Doors and Frames	22,400		
42	Install Aluminum Nosing	1,600		
43	Install New Carpet	14,400		
44	Repair Stucco and Paint	4,000		
47	Replace Damaged VCT	179,200		
53	Patch Concrete and Install Threshold	5,760		
54	Install Missing Pipe Insulation	3,200		
68	Install Fire Alarm System Devices	115,200		
72	Voice Evacuation Systems in Assembly Areas	48,000		1,241,600
45	Replace Acoustical Ceilings	32,200		
46	Replace Wood Doors and Frames	70,720		
48	Replace Casework	112,000		
50	Install Missing Base and Clean Floors	800		
51	Repair Terrazzo Floor	32,000		
52	Scape, Prime and Paint	1,600		
70	Replace Electrical Infrastructure	1,152,000		
73	Replace Cast Iron Boilers	334,080		
74	Replace Indoor AHU	230,400		
75	Remove and Replace Unit Vents	691,200		2,657,000
51	Replace Damaged Asphalt Curbs	3,600		
32	Clean Brick and Masonry	8,000		
38	Re-point Brick	3,200		
49	Replace White Boards	3,600		
63	Upgrade Interior Lighting with LED	1,612,800		
64	Upgrade Lighting Controls	345,600		
65	Upgrade HVAC Controls and New CO Sensors	1,152,000		
71	Provide Additional Security System Components	576,000		3,704,800
8	Modify Restrooms to Comply	80,000		
9	Replace Door Knobs with Lever Types	1,120		
10	Modify Sinks to Comply	52,800		
12	Modify Handrails and Guardrails	11,520		
13	Install ADA Compliant Pulls	22,400		
14	Remove Lockers to Allow Pull Clearance	48,000		
23	Modify Circulation Desk	8,000		223,840

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Total	7,839,560
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

E.A. Jones School (L)				
Item Number	Description	Value	Fiscal Year	Notes
5	Repair Concrete at Ramp	\$ 8,000		\$ 8,000
2	Install Handrails and Guardrails	\$ 8,000		
15	Modify to Allow Push/ Pull Clearances	\$ 5,600		
17	Insulate Exposed Pipe Below Sink	\$ 560		
29	Remove Vents and Replace with New	\$ 60,000		
33	Replace Doors and Frames	\$ 50,400		
34	Repair Concrete and Install Bumpers	\$ 8,000		
35	Scrape, Prime and Paint	\$ 800		
43	Install New Carpet	\$ 21,600		
53	Patch Concrete and Install Threshold	\$ 9,600		
55	Repair Cracks in CMU, Cut Expansion Joints, Paint	\$ 32,000		
56	Repai wood Gym Floor	\$ 32,000		
66	Provide NFPA 13 Sprinkler System	\$ 552,960		
68	Install Fire Alarm System Devices	\$ 34,560		
72	Install Voice Evacuation System	\$ 48,000		
73	Replace Cast Iron Boiler	\$ 100,224		
74	Replace Indoor AHU	\$ 69,120		
75	Remove and Replace Unit Vent	\$ 207,360		
76	Replace Existing Steam Heating	\$ 32,000		\$ 1,272,784
45	Replace Acoustical Ceiling Tiles	\$ 18,000		
47	Replace Damaged VCT	\$ 112,000		
48	Replace Casework	\$ 208,000		
52	Scrape, Prime and Paint	\$ 27,200		
57	Replace Auditorium Seating	\$ 69,600		
70	Replace Electrical Infrastructure	\$ 276,480		\$ 711,280
32	Clean Brick and Masonry	\$ 6,400		
36	Clean Stucco and Pre-cast Concrete	\$ 6,400		
63	Upgrade Interior Lighting with LED	\$ 483,840		
64	Upgrade Lighting Controls	\$ 103,680		
65	Upgrade HVAC Controls and New CO Sensors	\$ 345,600		
71	Provide Additional Security System Components	\$ 172,800		\$ 1,118,720
10	Modify Sinks to Comply	\$ 52,800		
21	Install ADA Handrails	\$ 8,000		
80	Abate Pipe Insulation	\$ -		
82	Abate 12x12 Vinyl Tile	\$ -		
83	Abate 9x9 Vinyl Tile	\$ -		
84	Abate Sink Under Coating	\$ -		\$ 60,800

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Total	\$ 3,171,584
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Helen Hansen Elementary School (M)				
Item Number	Description	Value	Fiscal Year	Notes
28	Patch and Repair Spalling Concrete	19,200		
37	Replace Panel Above Window	8,000		
38	Re-point Brick	3,200		30,400
15	Modify to Allow Push/ Pull Clearances	16,000		
51	Replace Damaged Asphalt Curbs	17,280		
66	Provide NFPA 13 Sprinkler System	471,309		
68	Install Fire Alarm System Devices	29,457		
72	Voice Evacuation Systems in Assembly Areas	48,000		582,046
45	Replace Acoustical Ceiling Tile	12,600		
47	Replace Damaged VCT	165,600		
70	Replace Electrical Infrastructure	294,568		
74	Replace Indoor AHU	58,914		
75	Remove and Replace Unit Vents	176,741		
77	Insulate Piping in Boiler Room	8,000		836,422
78	Remove and Replace Boiler	120,000		
63	Upgrade Interior Lighting with LED	412,395		
64	Upgrade Lighting Controls	88,370		
65	Upgrade HVAC Controls and New CO Sensors	294,568		942,618
71	Provide Additional Security System Components	147,284		
10	Modify Sink to Comply	148,800		
12	Modify Handrail/ Install 12" Extensions	5,760		
21	Install ADA Handrails	20,000		
23	Verify Slope of Ramp and Modify	40,000		
79	Abate Cementitious Fitting Insulation	0		
80	Abate Pipe Insulation	0		
82	Abate 12x12 Vinyl Tile	0		
83	Abate 9x9 Vinyl Tile	0		
84	Abate Sink Under Coating	0		214,560
85	Abate Freezer Ceiling Material	0		

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Total	2,606,046
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

West Elementary School (N)				
Item Number	Description	Value	Fiscal Year	Notes
28	Patch and Repair Spalling Concrete	\$ 7,200		
4	Modify Guardrails and Handrails	\$ 12,000		
7	Install High Visibility Tape	\$ 560		
15	Modify to Allow Push/ Pull Clearances	\$ 11,200		
29	Remove Vents and Replace	\$ 40,000		
35	Scrape, Prime and Paint	\$ 2,000		
39	Repair Brick and Re-point	\$ 6,400		
58	Remove and Replace Damaged Vents	\$ 16,000		
59	Install New Door, Frame and Threshold	\$ 19,200		
60	Replace Damaged Glazed Block	\$ 4,800		
66	Provide NFPA 13 Sprinkler System	\$ 610,074		
68	Install Fire Alarm System Devices	\$ 38,130		
72	Install Voice Evacuation System	\$ 48,000		
76	Replace Existing Steam Heating	\$ 32,000		
43	Install New Carpet	\$ 28,800		
45	Replace Acoustical Ceiling Tiles	\$ 13,200		
46	Replace Wood Doors, Frames and Hardware	\$ 13,600		
47	Replace Damaged VCT	\$ 228,800		
48	Replace Casework	\$ 320,000		
70	Replace Electrical Infrastructure	\$ 381,296		
73	Replace Cast Iron Boilers	\$ 110,576		
74	Replace Indoor AHU	\$ 76,259		
75	Remove and Replace Unit Vents	\$ 228,778		
32	Clean Brick and Masonry	\$ 2,400		
33	Replace Doors and Frames	\$ 22,400		
36	Clean Stucco and Pre-cast Concrete	\$ 7,200		
63	Upgrade Interior Lighting with LED	\$ 533,814		
64	Upgrade Lighting Controls	\$ 114,389		
65	Upgrade HVAC Controls and New CO Sensors	\$ 381,296		
71	Provide Additional Security System Components	\$ 190,648		
9	Replace Door Knobs with Lever Types	\$ 7,840		
10	Modify Sinks to Comply	\$ 124,800		
18	Modify Service Window to Be ADA Compliant	\$ 10,400		
21	Install ADA Handrails	\$ 24,000		
22	Provide Cane Detection	\$ 7,040		
80	Abate Pipe Insulation	\$ -		
81	Abate Flue Breaching Insulation	\$ -		
83	Abate 9x9 Vinyl Tile	\$ -		
84	Abate Sink Under Coating	\$ -		
85	Abate Freezer Ceiling Material	\$ -		

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Total	\$ 3,675,099
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Joseph R. Dawe Elementary School (O)				
Item Number	Description	Value	Fiscal Year	Notes
40	Repair and Paint Damaged EIFS	\$ 36,000		
4	Modify Guardrail and Handrails	\$ 24,000		
15	Modify to Allow Push/ Pull Clearances	\$ 26,400		
41	Replace Loading Dock Bumpers and Repair Conc.	\$ 12,000		
47	Replace Damaged VCT	\$ 201,600		
55	Repair Cracks in CMU, Cut Expansion Joints	\$ 12,800		
60	Replace Damaged Glazed Block	\$ 4,800		
61	Remove Carpet and Install New	\$ 14,400		
66	Provide NFPA 13 Sprinkler System	\$ 865,280		
68	Add Fire Alarm System Devices	\$ 54,080		
72	Install Voice Evacuation System	\$ 48,000		
45	Replace Acoustical Ceiling Tiles	\$ 72,000		
48	Replace Casework	\$ 400,000		
70	Replace Electrical Infrastructure	\$ 540,800		
73	Replace Cast Iron Boilers	\$ 156,832		
74	Replace Indoor AHU	\$ 108,160		
75	Remove and Replace Unit Vents	\$ 324,480		
32	Clean Brick and Masonry	\$ 800		
63	Upgrade Interior Lighting with LED	\$ 757,120		
64	Upgrade Lighting Controls	\$ 162,240		
65	Upgrade HVAC Controls and New CO Sensors	\$ 540,800		
71	Provide Additional Security System Components	\$ 270,400		
10	Modify Sinks to Comply	\$ 153,600		
21	Install ADA Handrails	\$ 12,000		
26	Install Grab Bars and Pipe Insulation	\$ 2,800		
27	Modify Loading Dock, Stairs and Handrails	\$ 12,000		
79	Abate Cementitious Fitting Insulation	\$ -		
80	Abate Pipe Insulation	\$ -		
81	Abate Flue Breaching Insulation	\$ -		
82	Abate 12x12 Vinyl Tile	\$ -		
84	Abate Sink Under Coating	\$ -		
85	Abate Freezer Ceiling Material	\$ -		

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Total	\$ 4,813,392
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TOWN WIDE FACILITIES MASTER PLAN REPORT  
STOUGHTON, MA

Joseph H. Gibbons Elementary School (P)				
Item Number	Description	Value	Fiscal Year	Notes
40	Repair and Paint Damaged EIFS	\$ 36,000		
7	Install High Visibility Tape	\$ 560		
15	Modify to Allow Push/ Pull Clearances	\$ 22,400		
17	Insulate Exposed Pipe Below Sink	\$ 4,480		
41	Replace Loading Dock Bumpers and Repair Conc.	\$ 12,000		
55	Repair Cracks in CMU, Cut Expansion Joints	\$ 19,200		
66	Provide NFPA 13 Sprinkler System	\$ 865,280		
68	Add Fire Alarm System Devices	\$ 54,080		
72	Install Voice Evacuation System	48,000		\$ 1,026,000
45	Replace Acoustical Ceiling Tiles	\$ 63,000		
47	Replace Damaged VCT	\$ 172,800		
48	Replace Casework	\$ 432,000		
70	Replace Electrical Infrastructure	\$ 540,800		
73	Replace Cast Iron Boilers	\$ 156,832		
74	Replace Indoor AHU	\$ 108,160		
75	Remove and Replace Unit Vents	\$ 324,480		\$ 1,798,072
63	Upgrade Interior Lighting with LED	\$ 757,120		
64	Upgrade Lighting Controls	\$ 162,240		
65	Upgrade HVAC Controls and New CO Sensors	\$ 540,800		
71	Provide Additional Security System Components	\$ 270,400		\$ 1,730,560
10	Modify Sinks to Comply	\$ 139,200		
21	Install ADA Handrails	\$ 12,000		
27	Modify Loading Dock, Stairs and Handrails	\$ 12,000		
79	Abate Cementitious Fitting Insulation	\$ -		
80	Abate Pipe Insulation	\$ -		
82	Abate 12x12 Vinyl Tile	\$ -		
85	Abate Freezer Ceiling Material	\$ -		
86	Abate Fire Doors	\$ -		\$ 163,200

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Total	\$ 4,753,832
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# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

## Town of Stoughton, Massachusetts

### **The Need For Swing Space**

The sequence of the renovations and additions to the Town's building must consider how continuous operations of the Town functions can be maintained during the work. For most buildings the work can be accomplished without relocation.

DRA has reviewed the Town Buildings and has not identified opportunity for swing space while work is being completed. Projects should be phased appropriately to allow work to occur during unoccupied hours.

When allowable, projects should be phased to allow work to occur during summer and school vacation weeks.

Phasing of work and consideration of timing the work at vacation periods(for schools) will also help in managing swing space needs in the buildings.

\* \* \*

# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

## Town of Stoughton, Massachusetts

### **Use of Cost Estimate Information**

At this study phase we do not know how the Town might package contracts or combine items. Accordingly we price each item in the study as work performed by a General Contractor, requiring professionally designed bid documents and construction oversight & contract administration by a professional design team. These and other factors affect the study direct cost estimates as follows;

An item is added for General Conditions. This is a General Contractor item to cover the cost of all of the items stipulated in a typical construction contract and bid specification including such items as insurance, temporary utilities, site offices, OSHA requirements, and other non-direct costs of performing work that are required of a General Contractor. The percentage used is based on the size of the contract. The smaller the contract, the higher the percentages because fixed costs are spread over a smaller base figure.

An item is added for Overhead and Profit. Again, this is a General Contractor item. It covers the cost of the GC home office, estimating staff, admin staff, and other standard overhead items. It also includes a fair and reasonable profit margin in normal market conditions. Again, the smaller the contract, the higher the percentage is to meet the necessary expenses of doing business.

An item is added for Design & Price Reserve. It is important to note that actual designs put out to bid often vary from design solutions envisaged in studies. A study is conceptual in nature whereas bids are based on fully developed design documents. The full amount of money required will not be known until the contract is complete along with the cost of any extras. It is not uncommon for additional unforeseen work to be uncovered during further design investigation or during construction. Rotted roof deck, rock excavation, code changes requiring a different design solution are all examples of possible additional costs that may be incurred on the design side. On the price side this contingency guards against changing economic conditions and inflationary pressures beyond the norm as the economy improves.

Escalation covers the normal annual increases in union wages and normal annual material price increases. All prices indicated will need to be increased by 4% per annum to their projected bid date over the years covered in this report.

The cost of bonding the General Contractor and his subcontractors is added. The rate of this insurance varies with the size of the contract and the annual construction volume of the winning bidder.

Owner soft costs typically run 30% on public work projects. Soft costs include architectural, engineering, financing, and legal fees, and any other Town-paid pre- and post-construction expenses. Costs are included in each item for a professional design team to fully explore and develop a complete design solution through bid documents, manage the bid process and supervise & administer the construction contract.

The cumulative effect of all of these compounded percentages uplift the total Direct Cost estimates significantly to the total Project Cost estimate.

Whether items are bid to a GC or to a sub-contractor, whether an architectural team is involved, whether wage rates are applicable are examples of how these estimates may vary. It is very important to understand that the procurement method and contract packaging do have a considerable impact on budgeting for the construction, and that the soft cost portion of the estimates should not be allocated to the hard construction budget. Also that the construction bid price is not normally the final construction cost or the total cost of the project when all expenditures are tallied.

\* \* \*

# STOUGHTON FACILITIES MASTER PLAN AND FACILITIES CONDITION REPORT

## Town of Stoughton, Massachusetts

### Mark-Up List

The following are the mark-ups that have been included in the costs associated with each item of work.

Markups - To Be Calculated Cumulatively

#### General Conditions:

Project Value Less Than 200k	20.00%
Project Value 200k - 500k	16.00%
Project Value 500k - 1mil	14.00%
Project Value 1mil - 2mil	12.00%
Project Value 2mil - 5mil	10.00%

#### Overhead & Profit:

Project Value Less Than 200k	23.00%
Project Value 200k - 500k	18.00%
Project Value 500k - 1mil	16.00%
Project Value 1mil - 2mil	14.00%
Project Value 2mil - 5mil	12.00%

Design & Price Reserve 15.00%

#### Bond:

Project Value Less Than 100k	3.00%
Project Value 100k - 1mil	2.40%
Project Value 1mil - 2mil	2.00%
Project Value 2mil - 5mil	1.60%
Project Value 5mil - 10mil	1.34%

Soft Costs/Design Fees 30.00%

Escalation has been added to each item on Charts based upon the year the work is projected to be done with the exception of Items 3c and 3d in the Table of Content:

Year 1	2019	3.50%
Year 2-3	2020 - 2021	18.80%
Year 3-5	2021 - 2023	27.20%
Year 5	2023	27.20%

\* \* \*

## TOWN HALL

110 Pearl Street

Year Constructed: 1881  
Year of Renovation/Addition:  
Building Type: B  
Construction Type: VB  
Fire sprinklers: Yes  
Total Floor Area: 27,928 SF  
Floors: Basement, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>.  
Land Area (Acres): .764  
Roof Type: Slate



GENERAL: The Town Hall has had upgrades for the roof and some interior items, but no renovations would be considered a Level 2 Alteration.

### LIFE SAFETY:

- 1** Exterior door B23 requires a panic bar. **Remove lever type and install Panic bar.**



- 2** Kiln located in room B13 in the basement. There is no vent hood present. **Verify if hood is required while kiln is operating.**



- 1** Exterior door B24 (in the kiln room) swings in and should swing out. **Reverse door swing and install panic bar if required.**

HEALTH: None known at this time.

HAZARDOUS MATERIALS: None known at this time.

ADA COMPLIANCE:

- G Pipe insulation missing below ADA sink in the men's and women's restroom on the lower level. **Install required pipe insulation on ADA compliant sinks.**



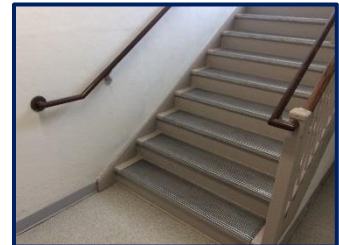
- 4 Knobs on doors are not ADA compliant. **Replace door knobs with lever type hardware on approximately 20 doors throughout the building.**



- G Stair treads nose project and are considered a trip hazard. **Modify treads to reduce the projection.**



- 2 High visibility tape required at top, bottom and landings of stairs. **Install high visibility tape at top, bottom and landing.**



- G Counters to Building and Zoning, Engineering Department and Towns Clerks Office does not have a ADA accessible counter. **Modify to create an ADA accessible and compliant area.**



G

Economic Development room, Break room sink is not ADA accessible. Knee space and fixtures do not comply. **Modify counter to meet ADA requirements.**



G

Door to Town Clerks area is narrow and not ADA accessible. Door need to be a minimum of 32 inches. **Remove door, widen opening and install new frame and door. If opening cannot widened, modify service counter and install an accessible area to allow ADA access.**



SITE:

3

**Recommend Crack sealing 1n 3+ years.**

3

**Recommend to mill and overlay parking lot in 5+ years.**

3

**Recommend provide stormwater upgrades to meet current requirements**

EXTERIORS:

1

Windows and Doors are showing signs of age and wear. Multiple windows have broken latches, some broken panes and complaints about windows being drafty. **Recommend replacing all windows and doors with energy efficient and historically appropriate.**



1

Painted wood trim and panels around doors and windows is cracking and peeling. Possibly starting to rot and decay. **If windows are to be replaced, remove all wood trim and panels and replace with new. If windows are to remain, Replace rotted or damaged, scrape, prime and paint.**



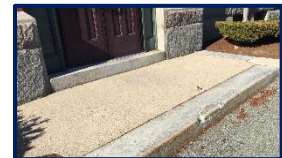
- 2 Southside entrance concrete landing is starting to spall and is chipped, railing appears to be rusting at the base. **Repair concrete and wire brush, prime and paint the hand rail base.**



- 2 Brick façade appears to be in fair to good condition. **Multiple areas need re-pointing.**



- 2 Concrete landing on North side of building is cracking. **Repair as required.**



- 2 Brick at corner of new ramp at Main Entrance is cracked and broken. **Remove and replace all affected brick and re-grout.**



- 2 Granite wall cap at ramp is loose and grout below is cracked and loose. **Remove top and re-grout and reset granite cap.**

#### INTERIORS:

- 3 Efflorescence is present on the brick walls in the Main Entry Vestibule. **Investigate cause of issue and resolve, pressure clean to remove.**



- 3 Basement exterior door threshold, flooring and hollow metal frame in need of repairs. **Remove door, frame and threshold, repair concrete at threshold and install new aluminum threshold, hollow metal frame and door. Install appropriate exit hardware.**





3

Stained and damaged tile throughout building. **Replace Damaged, stained or missing acoustical ceiling. Amount to be determined.**



3

Walls damaged at exterior door B24 (Kiln Room) on both sides and in multiple areas throughout room. **Repair affected areas and repaint entire room.**



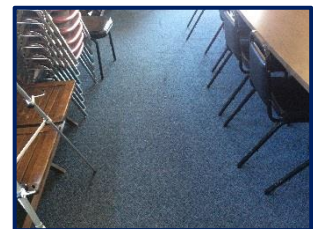
3

12x12 ceiling tile in 3<sup>rd</sup> floor Conference room appear to be in poor condition and old and attic access needs repairs. **Replace 12 x 12 acoustical tiles with 2x4 acoustical panels and grid system. Repair attic access ladder.**



3

Carpeting in the Great room and Conference Room on the 3<sup>rd</sup> level is old, worn and pulling apart at seams. **Remove and replace with new Carpet.**



3

Cracks in painted gypsum wall board in multiple rooms throughout the Town Hall. **Recommend to repair and Paint. Quantities to be determined and locations to be identified.**



PROGRAM:

- 2 3<sup>rd</sup> floor Great Room has very poor acoustics. DRA to have acoustical engineer test space.



ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

- 4 Replace centralized pneumatic system with an energy management system.
- 4 Upgrade exterior lighting with new fixtures using LED technology.
- 4 Upgrade the interior lighting with new fixtures using LED technology.
- 4 Upgrade lighting controls throughout the building to meet the latest energy code requirements.

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:

*Refer to CES Report in Appendix for complete assessment.*

- 1 Add fire alarm system devices to comply with latest code requirements.
- 4 New/ upgrade security system.
- 3 Repair and replace pipe insulation where accessible.
- 2 Construct easy access for air handling unit serving the Great Room on the third floor.

3 Replace fan coil units with ECM fan coil units.

3 Replace air handling units.

3 Replace pneumatic system with electronic EMS.

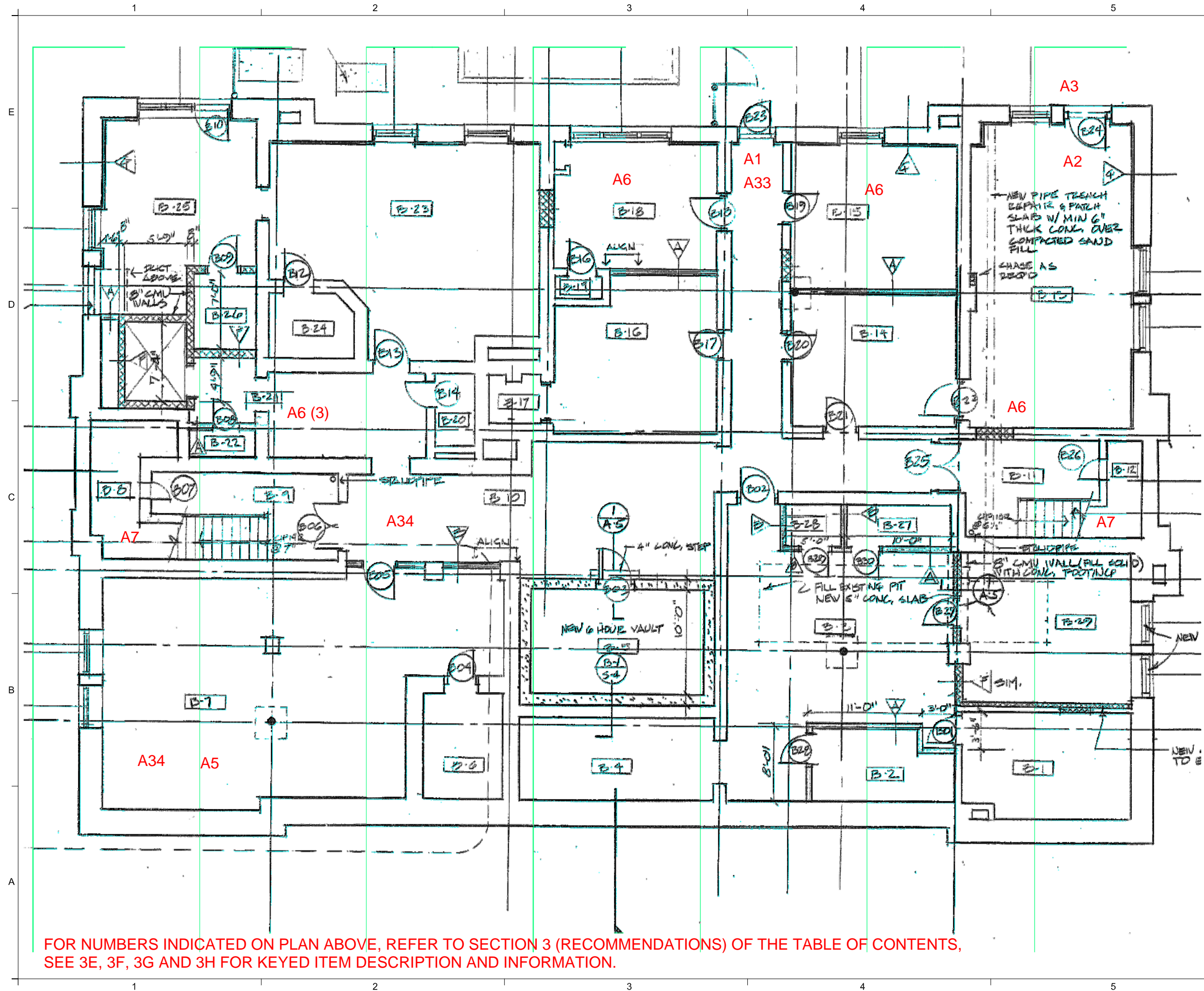
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STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

BASEMENT PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017

A1.1



FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

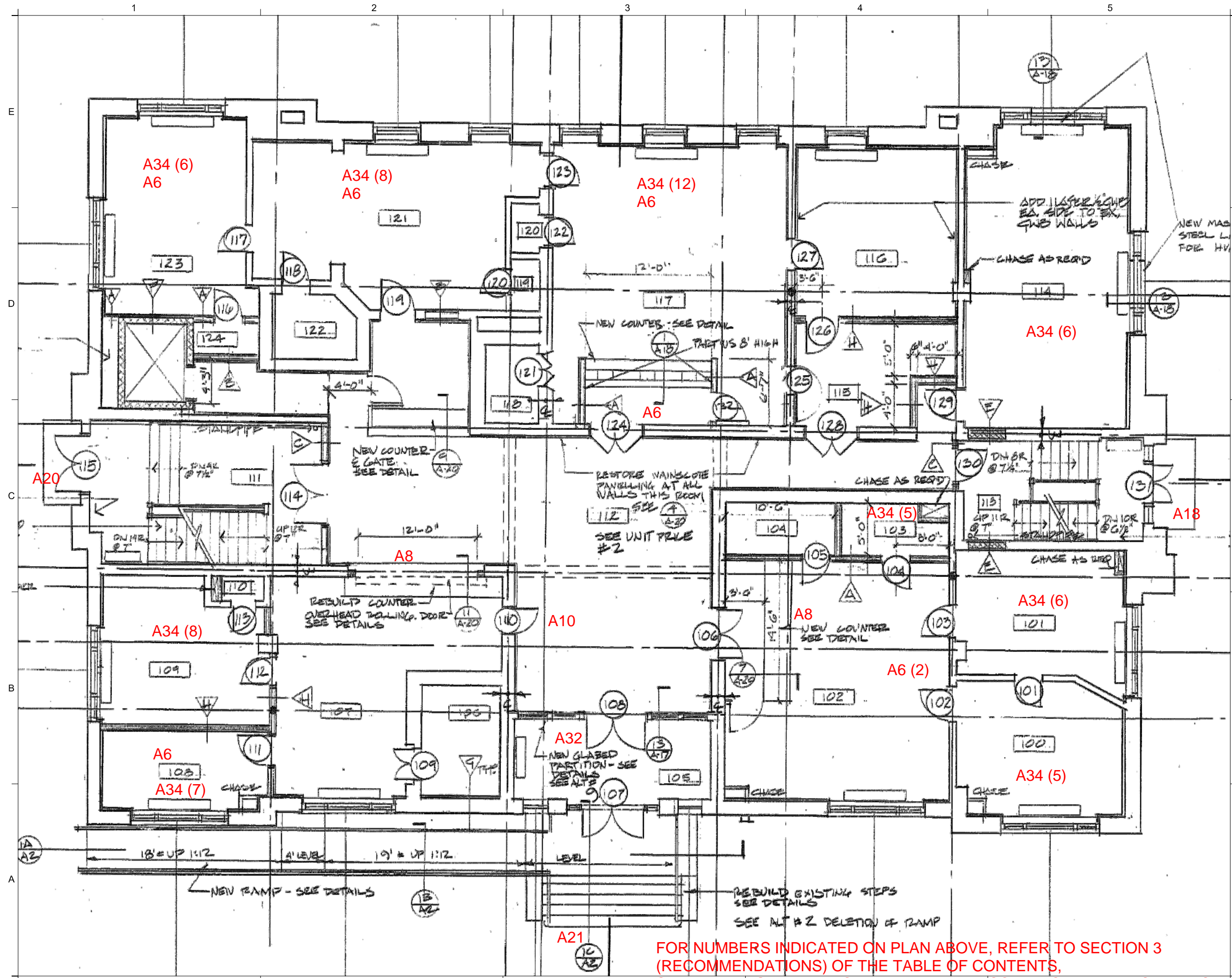


STOUGHTON MASTER PLAN UPDATE  
5 Year Capital Improvements Plan and  
Facilities Condition Report

FIRST FLOOR PLAN

Scale: N.T.S.  
Drawn by: ASJ  
Job#: 16022.00  
Date: 4/4/2017

A1.2

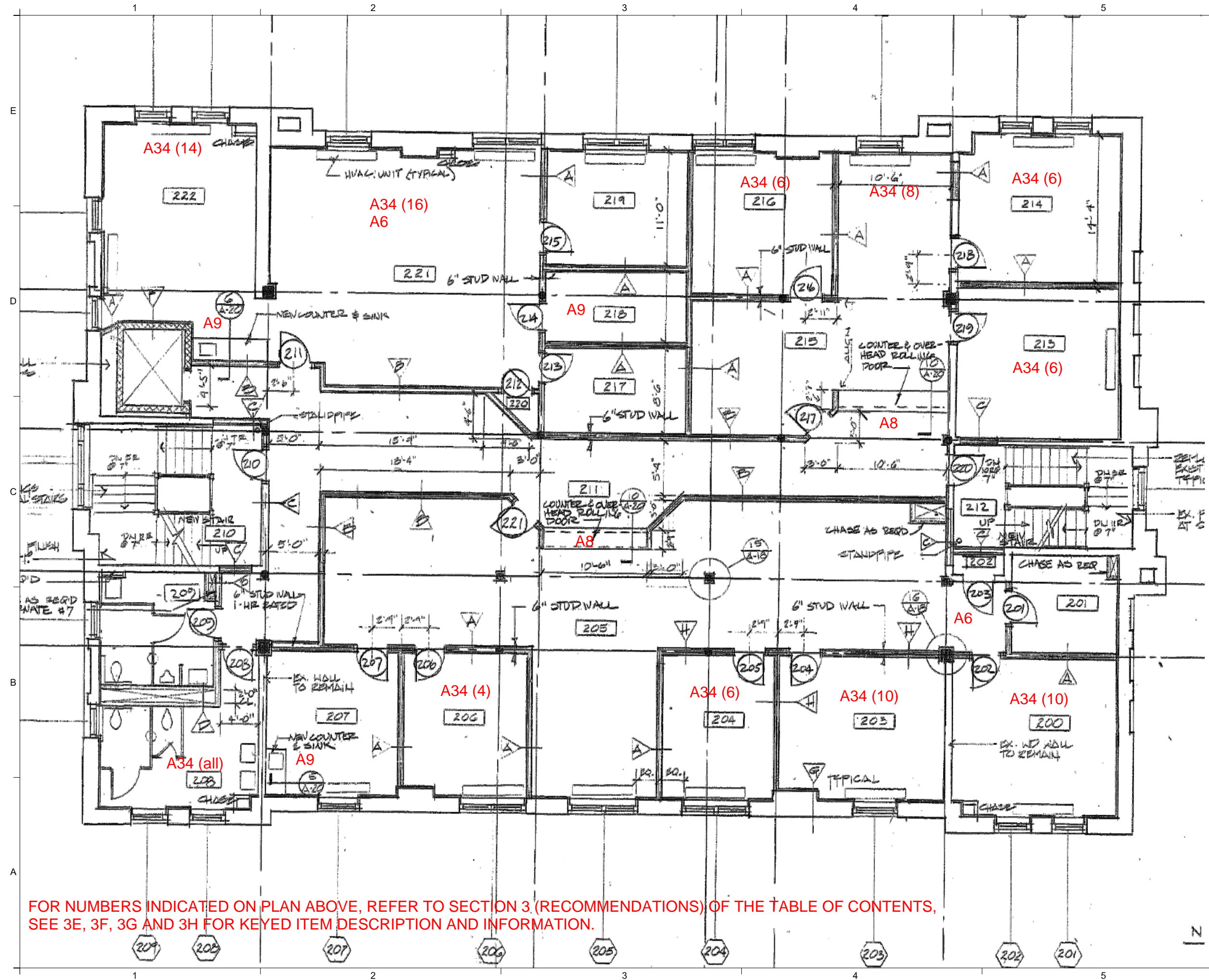


FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3  
(RECOMMENDATIONS) OF THE TABLE OF CONTENTS,  
SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

SECOND FLOOR PLAN



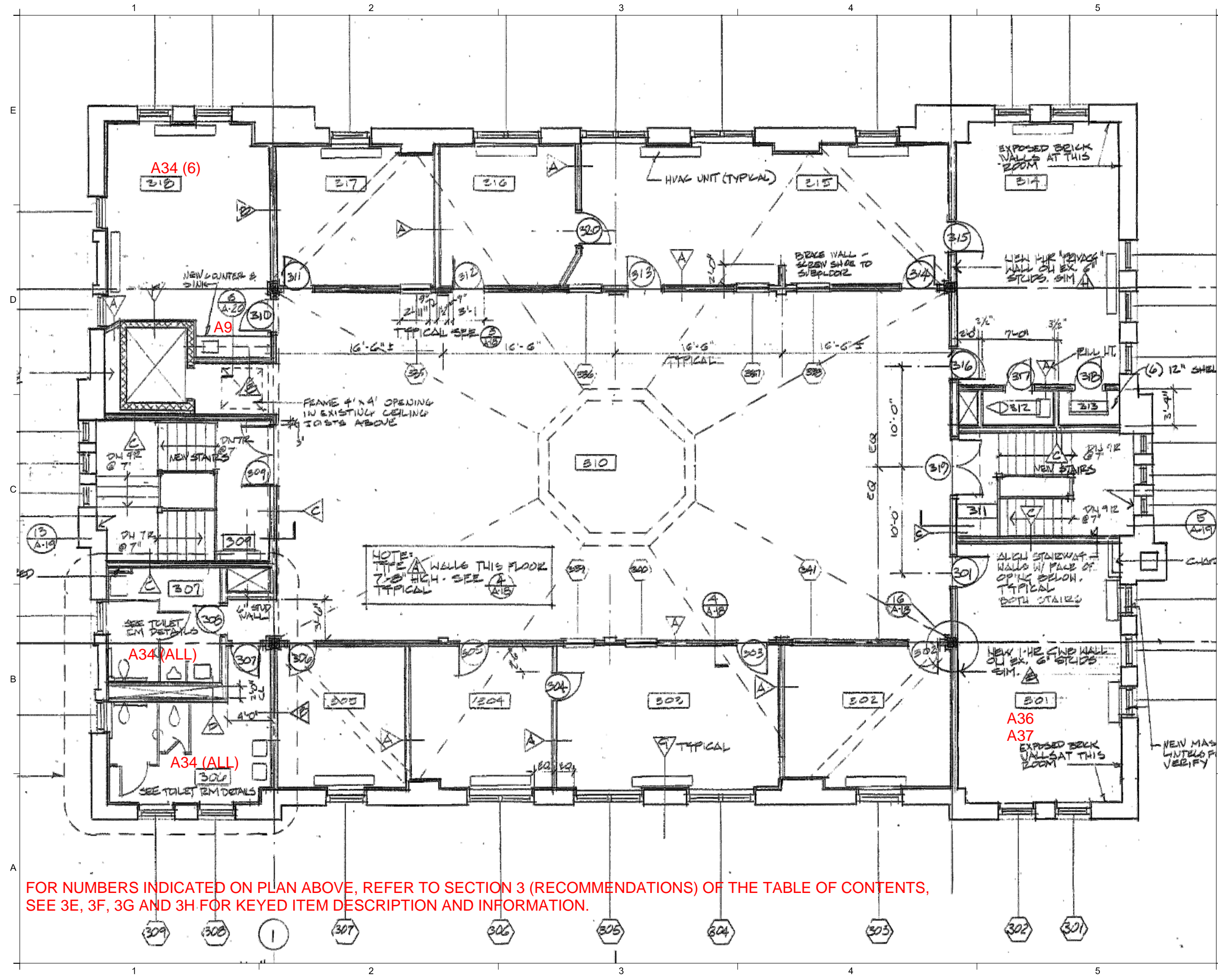
FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3. (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

THIRD FLOOR PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017  
**A1.4**



FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

# Mechanical and Electrical Systems Existing Conditions Narrative

Town Hall Building  
10 Pearl Street  
Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00



## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. Fire Protection Service: The building is currently served by a 4-inch fire protection service installed approximately 30 years ago. In general the fire protection system appears to be in good condition.

Fire Protection Service  
Equipment



### **PLUMBING SYSTEMS:**

#### **Plumbing Utilities**

1. Water Service: The building is currently served by a 2" domestic water service fed from the local water company installed in 1987. Cold water piping is copper with rigid molded glass fiber insulation. The water service equipment is in good condition.

Existing Water Service  
Equipment



2. Natural Gas Service: The building is currently served by a single natural gas service. Natural gas piping within the building is schedule 40 black steel pipe and installed in 1987. The gas service feeds one (1) domestic water heater and Three (3) condensing boilers. The natural gas pipe distribution appears to be in good condition.

Natural Gas Service  
Equipment



3. Sanitary Service: The existing building is currently provided with several sanitary waste water lateral.
4. Storm Service: There are no internal drains in the building.

### **Plumbing Fixtures and Specialties**

1. Water closets and urinals are wall mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Water Closet



Typical Urinal



2. Lavatories are counter mounted vitreous china. Some faucets are dual lever type. ADA lavatories are provided with insulation wrap for exposed piping below fixture. The fixtures and faucets are in good condition and ADA compliant fixtures are provided.

Typical Lavatory



3. Drinking fountains are wall mounted stainless steel water coolers. Fountains are in good condition and ADA compliant fixtures are provided.

Typical Drinking  
Fountain



### **Domestic Hot Water Systems**

1. Domestic Hot Water System: Domestic hot water is generated by a 100 gallon AO Smith gas fired water heater. The water heater was recently installed and is in very good condition. Hot water piping distribution is copper.

Domestic Hot Water  
Heater



**MECHANICAL SYSTEMS:**

1. The heating and cooling system consists of a dual temperature hot water and chilled water system with perimeter fan coil units and air handling units serving interior spaces and the upper Great Room. Some of the fan coil units have been replaced on an as-needed basis. However, the majority of the fan coil units were installed 30 years ago and should be replaced with fan coil units with ECM motors for reduced noise and energy efficiency consideration.

Typical Fan Coil  
Unit



Typical Air Handling  
Unit



2. The upper Great Room utilizes two air handling units. One of the units can only be access by climbing over the Great Room Ceiling and is therefore rendered virtually inaccessible. Provisions for service access should be constructed.

- The hot water source is three condensing boilers and the chilled water source is an air cooled chiller. The boilers and chiller were recently replaced and are in great condition. VFD's and new motors were provided for the system pumps.

Hot Water Boiler



Air Cooled Chiller



- The dual temperature piping distribution in the basement is in poor condition and pipe insulation is missing in several sections. Pipe insulation should be replaced where accessible in the basement.
- The temperature control system is pneumatic with a centralized compressor interlocked with electronic thermostats connected to an energy management system. All controls valves utilized pneumatic driven actuators which operate poorly regarding controllability for comfort control.

### **Electrical Systems:**

- The existing electrical service is an 800amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch, C.T. Cabinet and Distribution Panelboard. The service equipment is in good to excellent fair condition.

Main service switch



- The building has a 50kW natural gas fired emergency generator (Generac). The generator provides back-up power to the building. This equipment is located outside the building in a weatherproof enclosure. The distribution consists of an Automatic Transfer Switch (Russelectric) and a circuit breaker panelboard. This equipment is in good condition.

3. The electrical power is distributed through the building by circuit breaker type panelboards and grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment is in good condition.

#### Electrical Panelboards



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x2 lensed fluorescent troffers
  - b. Recessed 2x4 lensed fluorescent troffers
  - c. Recessed 2x2 parabolic fluorescent troffers
  - d. Recessed 2x4 parabolic fluorescent troffers
  - e. Surface/ Pendant 1x4 open fluorescent industrial
  - f. Surface mounted wraparound fluorescent luminaires
  - g. Recessed open compact fluorescent downlights
  - h. Lamps
    - i. T8 fluorescent lamps
    - ii. U bent tube T8 lamps
    - iii. Compact fluorescent (PL-S)

Recessed Lighting Fixture



Surface Mounted Wraparound Fixture



Decorative Pendant Fixture



Pendant Fluorescent Fixtures



Lighting control for the building consists of the following:

- i. Toggle type switches in most areas
  - j. Combination occupancy sensor/switch in small office and other small rooms
  - k. This equipment is in good working condition.
5. The fire alarm system consists of a Fire Lite zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, duct smoke detectors, sprinkler system flow and tamper switch monitoring. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units appear to be ADA compliant. Additional fire alarm horn strobes maybe required to meet current code requirements.



Fire Alarm Control Panel and Dialer



6. The exit signs throughout the building are a mixture of plastic fluorescent and brushed aluminum type. The exit signs are fed from the emergency power distribution system (generator). These units are in fair to poor condition.
7. The emergency lighting in the building is from selected fixtures. The selected fixtures are in fair to good condition.
8. The site lighting consists of pole mounted decorative fixtures. The fixtures are in fair condition.

Pole Mounted Decorative Fixture



9. Security features in the building consist of interior cameras, intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
10. Data/technology consists of wired computer stations throughout the building. There are also projectors in a number of classrooms. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.



11. The building has local sound systems in designated areas (Training Classroom). The equipment is in good condition.

**Recommendations:**

- Add fire alarm system devices to comply with latest code requirements.
- Repair and replace pipe insulation where accessible.
- Provisions for service access to air handling unit serving Great Room should be constructed.
- Replace fan coil units with ECM fan coil units.
- Replace air handling units.
- Replace pneumatic actuators with electronic actuators.
- Replace centralized pneumatic system with an energy management system
- Upgrade the exterior lighting with new fixtures using LED technology. Recommended for energy savings and lower maintenance costs.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Upgrade existing security system to provide more building coverage.

# LUCIUS CLAPP BUILDING

6 Park Street

Year Constructed: 1903  
Year of Renovation/Addition:  
Building Type: A-3  
Construction Type: VB  
Fire sprinklers: No  
Total Floor Area: 4,920 SF  
Floors: Basement, First  
Land Area (Acres): .399  
Roof Type: Single-ply Membrane



GENERAL: The Lucius Clapp Building (Stoughton Historic Society) has been not been recently renovated and is in generally good condition. Roof has been recently replaced.

## LIFE SAFETY:

2 Materials stored in front of electrical panel and fire control panel. **Remove items to create required clear space for access.**



2 Boiler Room stairs leading to exit door is blocked by items stored in front of stairs. **Remove items to clear a path for exit.**

Boiler Room Stairs have unequal risers and some treads and landings are sloping. Handrails are not adequate. **Replace stair, landing and railing leading to exit door and replace stair into Boiler Room and add railings.**



1 Exterior door from Boiler Room swings in. **Reverse door swing and install new door if required with panic hardware.**

There is no second exit out of the basement level without passing through small Office that is used for storage. **Exit route should be more clearly defined and signed door between front and back storage rooms removed so that existing is through only one adjacent space.**



G

Aisle spaces through the basement storage areas are not of sufficient width. **Realign shelving to provide a minimum of 36 inches between storage racks and provide emergency lighting to suit new layout.**



2

Boiler Room should not be used for general storage. **Combustible material should be removed from this space.**



HEALTH: None known at this time.

HAZARDOUS MATERIALS:

4

12x12 floor tile on main level and linoleum in basement may have asbestos in the adhesive. **Building should be inspected and tested by a Hazardous Material Consultant.**

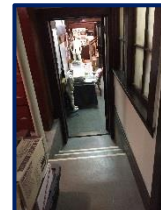


ADA COMPLIANCE:

Entire building is not ADA accessible: Examples of areas that are not accessible or to code are listed but not limited to the items below.

G

1. No ramp or wheel chair access at front entry.



G

2. Handrails and stairs at the Main Entrance and throughout building are not ADA compliant. No handrails are provided at single steps.

G

3. Restroom are not accessible and they are located on the lower level.

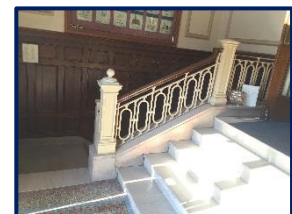


G

4. No Elevator to access either level.

4

5. Knobs exist on doors and should be replaced by lever type hardware.



6. Basement egress stairs are not compliant. High Priority

SITE: None known at this time.

EXTERIORS:

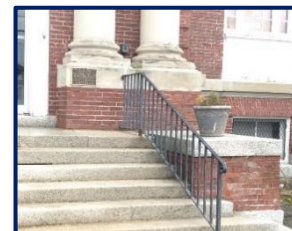
- 1 Single pane wood windows and doors are original to building and most are in need of repairs. Windows are drafty, paint chipping and peeling, water damaged, wood rot and some broken panes. **Recommend replacement with energy efficient and historically appropriate windows and doors.** *Window Restoration and Replacement Project currently scheduled for installation Summer 2017.*



- 2 Mortar joints are missing and one tread has lifted at exterior granite stairs. **Lifted tread to be re-set granite and stair re-pointed.**



- 1 Brick façade appears to be in fair condition except for the following:  
Cracks in brick around windows closest to back wall of building. One cracked brick lintel is now out of alignment.  
Mortar missing at ogee brick water-table and at walls below columns and other stone work. Stone column bases are also missing mortar.  
Sealant joints on faces of stone banding has deteriorated.  
**Re-construct damaged lintel and re-point all cracks and open joints in brick and stone. Replace sealant joints between stone banding.**



- 2 Capital and Base of Entry columns and Balcony are badly stained and spalling in areas. **Repair the spalled areas.**

- 3 Paint appears to be peeling on face of gutters. **Remove loose paint, prime surface and re-paint.**



3 Metal grilles over windows are rusted. **Remove rust, prime and re-paint.**

1 Replace steel lintels and associated masonry around basement windows.



INTERIORS:

3 Carpet in Basement File Storage and Stairwell is old and worn. **Replace with new carpet or remove and install epoxy flooring over exposed concrete.**



3 Painted plaster walls and ceilings are damaged and cracking in multiple locations including:

Under main entrance stairs and on sides of stair.

Ceiling in Electrical Room off Boiler Room.

Minor cracks in storage room ceilings

Crack in outside corner of vault

1<sup>st</sup> Floor rear wall, cracks at windows.



In addition, some plaster has been damage by water leaks (probably inactive):

Exterior wall cornices in Office and adjacent Display Room on 1<sup>st</sup> Floor.



**Remove damaged areas, re-plaster and paint.**

3 Marble stairs in the Main Entry are severely damaged. Stone stringers have vertical cracks and risers are cracked in a few locations.

Marble stringer caps are loose, with one piece missing. Stringers have shifted leaving large gaps to treads and risers. These stairs



appear to be hollow and structure could not be determined. **Further investigation is needed but stairs will require reconstruction using existing stone but with an improved and stable support system. Some broken stone can be repaired but stringers with multiple cracks will probably need to be replaced. Dismantle portions of stair to determine structure, rectify shift at stringers and reconstruct stairs.**

- 3** Linoleum flooring old and worn. **Recommend removing and installing epoxy flooring.**



**ENERGY & WATER CONSERVATION:**

*Refer to CES Report in Appendix for complete assessment.*

- 4** Remove and have the existing cast iron radiators cleaned. If not feasible, have radiators replaced.
- 4** Provide a new electronic HVAC control system with energy management capability.
- 4** Upgrade the interior lighting with new fixtures using LED technology.
- 4** Upgrade the exterior lighting with new fixtures using LED technology.
- 4** Upgrade lighting controls throughout the building to meet the latest energy code requirements.

**MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:**

*Refer to CES Report in Appendix for complete assessment.*

- 1** Repair the leaking flanges at hot water circulation pumps.
- 1** Add fire alarm system devices to comply with the latest ADA code requirements.
- 1** Provide wall-mounted, two-headed, self-contained emergency lighting fixtures and wiring.
- 2** Provide CO sensors and connect them to the security system for monitoring and notification of alarms.

4

**Provide additional electrical outlets throughout the building.**

1

**Replace non-ADA sinks with ADA sinks.**

3

**Replace existing boilers with new high efficiency, condensing boilers and controls.**

1

**Replace existing gas piping.**

4

**Provide additional security system components, such as cameras, to provide full building coverage.**

\* \* \*





# Mechanical and Electrical Systems Existing Conditions Narrative

Lucius Clapp Memorial  
6 Park Street  
Stoughton, MA 02072



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 1 ½” domestic water service fed from the local water company. This service enters the building in the basement. The service equipment includes a shut off valve and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in fair condition.
2. Natural Gas Service: The building is currently served by a 2” natural gas service. The gas service has an external regulator and shut off. The gas service serves the boilers and domestic hot water heaters. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service Equipment



Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.

3. Storm Service: The existing building has sloped roofs so there is no internal storm piping.

### **Plumbing Fixtures and Specialties**

1. Water closets are floor mounted tank type vitreous china fixtures. The fixtures are in fair condition and ADA compliant fixtures are provided.

Typical Floor Mounted Water Closet



2. There are no urinals in the building
3. There are no lavatories in the building. Vanity sinks are provided in the toilet rooms. These sinks are vitreous china type with two twist handle faucets. These sinks are not provided with insulation wrap

for exposed piping below the fixtures and are not ADA compliant. The sinks and faucets are in good condition.

Typical Vanity Sink



4. There are no drinking fountains in the building.
5. The Janitor/Utility sink is a fiberglass unit mounted on legs. This sink has a two twist handle type faucet. The sink does not have a vacuum breaker and is in poor condition.

Janitor's Sink



### **Domestic Hot Water Systems**

1. An electric 30 gallon water heater provides domestic hot water to the plumbing fixtures. The water heater looks to have been installed in the past 10 years and is in good condition.

Existing Domestic Water Heater



**MECHANICAL SYSTEMS:**

1. The heating of the building consists of (2) natural gas fired Hydro Therm hot water boilers. Hot water is distributed throughout the building to terminal units such as cast iron radiators and baseboard radiation. The boilers are approximately 30 years old and in fair condition. The hot water circulation pumps are in good condition, but there are water leaks at the flanges. The piping, cast iron radiators and baseboard radiation over 30 years old and in fair to poor condition.

Existing Hot Water Boilers



Existing Flanges that are Leaking



2. The original building used a series of hot water or steam coils mounted in plenum boxes throughout the basement that would allow for natural convection to send the heat from these coils up through grilles in the first floor for heat. We believe these coils are no longer connected.

Existing Plenum Box



3. The basement space has had a separate fan coil unit installed including ductwork and grilles for conditioning of this space. This equipment is new and in very good condition.

New Fan Coil Unit



4. The remainder of the building is heated by cast iron radiators or hot water baseboard radiation. The cast iron radiators are original to the building and in fair condition. The hot water baseboard radiation has been installed in locations where the floor grilles are covered by display cases. This hot water baseboard radiation is in good condition.

Typical Cast Iron Radiator



Hot Water Baseboard Radiation





5. There are local exhaust fans serving the toilet rooms. This equipment is in fair condition.

Toilet Exhaust Fan with Light



6. The temperature control system in the building consists of local thermostats controlling one of three heating zones. This equipment is functional and in good condition.
7. There did not appear to be CO detectors in the boiler room.

### **ELECTRICAL SYSTEMS:**

1. The existing electrical service is a 200amp, 240/120volt, 1-phase, 3-wire service that consists of a main disconnect switch, panelboard, and utility meter. The panelboard is manufactured by General Electric and is in good condition.

Electrical Service Equipment



2. There is no emergency generator at the building
3. The electrical power is distributed through the building by circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, etc. This equipment is in fair to good condition.
4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:

- a. Surface mounted wraparound fluorescent fixtures
- b. Wall mounted fluorescent fixtures in toilet rooms
- c. Pendant mounted wraparound fluorescent fixtures
- d. Pendant mounted decorative fixtures
- e. Incandescent lampholders
- f. Lamps
  - i. Incandescent
  - ii. T8 fluorescent lamps

Pendant Industrial Fluorescent Fixtures



Surface Mounted Wraparound  
Fluorescent fixtures



Pendant Mounted Wraparound  
Fluorescent Fixtures



Decorative Pendant Light Fixture



5. Lighting control for the building consists of the following:

- a. Toggle type switches in most areas
- b. Combination occupancy sensor/switches in offices and classrooms
- c. This equipment is in good working condition.

- The fire alarm system consists of a Notifier SFP-400B zoned fire alarm control panel, manual fire alarm pull stations, horn strobes devices, and smoke detectors. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are not ADA compliant. Additional fire alarm horn strobes may be required to meet current code requirements.

Fire Alarm Control Panel and Wireless Transmitter



Typical Manual Pullstation and Security Keypad



- The exit signs throughout the building are very minimal with paper exit signs in the basement. Additional exit signage may be required to meet current code requirements.
- The building does not have emergency lighting. Emergency lighting should be added to meet current code requirements.
- The site lighting consists of wall mounted flood light fixtures. The fixtures are in fair condition.

Wall Mounted Site Lighting Fixture



10. Security features in the building consist of an intrusion detection system. This equipment is in good condition.
11. Data/technology consists of wired computer stations and wireless access points throughout the building. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.

**Recommendations:**

- Repair the leaking flanges at hot water circulation pumps.
- Add fire alarm system devices to comply with latest ADA and code requirements. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming.
- Provide wall mounted, two-headed, self-contained emergency lighting fixtures and wiring.
- Provide CO sensors and connect them to the security system for monitoring and notification of alarms.
- Replace non-ADA sinks with ADA sinks.
- Replace the existing boilers with new high efficiency, condensing boilers and controls. The existing boilers are beyond their expected service life and should be replaced.
- Remove and replace the existing cast iron radiators and have them cleaned, checked for structural integrity and reinstalled or replaced.
- Provide a new electronic HVAC control system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the existing local controls and replace with new electronic valves, wiring, and control panels.
- Provide additional electrical outlets throughout the building. This would eliminate the hazard of using power strips for additional receptacles as is done now.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade the exterior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# DPW ADMINISTRATION BUILDING, VEHICLE STORAGE & GARAGE

950 Central Street

Year Constructed: 1973  
Year of Renovation/Addition: 2002  
Building Type: B, S and S-1  
Construction Type: IIB  
Fire sprinklers: Yes  
Total Floor Area: 17,475 SF  
Floors: 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): 2.53  
Roof Type: EPDM



GENERAL: The DPW Administration Building, Vehicle Storage and Garage has been recently renovated in 2002 and is in generally fair condition.

## Administration Building

### LIFE SAFETY:

2

Cabinet in restroom interfering with required clear space in front of grab bars. **Remove or relocate cabinet out of clearance area.**



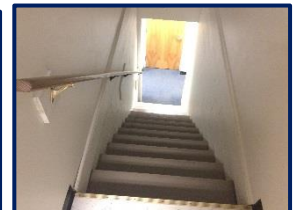
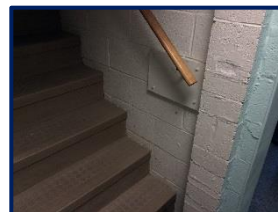
HEALTH: None known at this time.

HAZARDOUS MATERIALS: None known at this time.

### ADA COMPLIANCE:

G

Handrail on stairs from Main Office to upstairs offices is not ADA compliant. **Remove and replace with compliant handrail.**



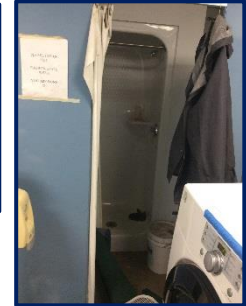
G

Breakroom sink is not ADA compliant. No knee clearance and non-compliant fixtures. **Modify sink and install compliant fixtures.**





- G Sinks and Showers in Locker Room are not ADA accessible. Washing machine located where it interferes with access to showers and shower stall is not accessible. **One sink and shower should be modified to be ADA accessible and relocate washing machine.**

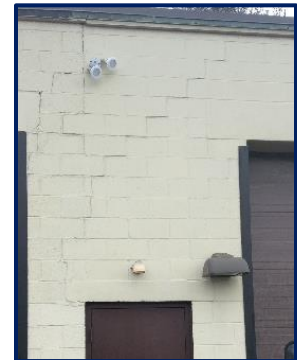


SITE:

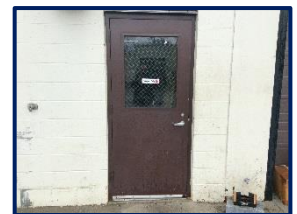
- 2 Recommend Crack sealing 1n 2+ years in areas near fuel tank.
- 3 Recommend to mill and overlay parking lot in 5+ years where water line for hydrant is located..
- 3 Recommend provide storm water upgrades to meet current requirements

EXTERIORS:

- 3 CMU cracked in multiple locations . **Repair cracked CMU and re-grout, cut vertical control joint and repaint.**



- 3 Exterior metal doors and hollow metal frames are showing signs of age, wear fading and rusting at bottom of door and jamb. Weather stripping missing on multiple doors. **Recommend replacing affected HM doors and frames and replacing with new weather stripping and bug sweeps.**



- 3 Garage Bay doors are in need of repairs around jams. Concrete chipped and cracked, painted wood trim damaged and paint peeling, weather stripping missing and painted steel corner guards chipping and rusting. **Repair concrete, remove and replace painted wood trim, scrape/ prime and paint steel corner guards and install weather stripping.**





- 3 CMU where windows were replaced at the rear of the building were never painted. Paint is blistering and peeling also in this same area. **Scrape off peeling paint and repaint.**

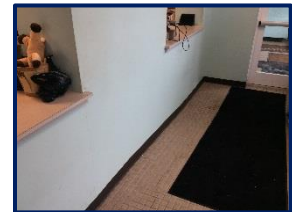


INTERIORS:

- 3 Damage, stained or missing acoustical tiles throughout building. **Remove and replace with new as general maintenance.**



- 3 Floor tiles in the Entry Vestibule and Waiting Area are stained and /or dirty. **General cleaning required.**



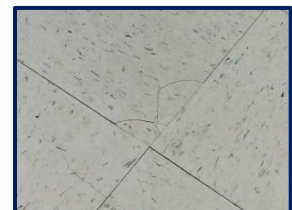
- 3 Cracks in painted gypsum wall board above and below Service window and an area where wall was repaired in office area that needs finished. **Repair and paint both areas.**



- 3 Carpet is old, worn and stained in Main Office, Offices upstairs and Work Area. **Remove and replace with new carpet or linoleum.**



- 3 VCT cracked and coming up at seams in multiple areas in the second floor corridor. **Remove and replace with new to match existing or replace all.**



- 3 Interior walls and gyp ceiling could use a fresh coat of paint.

**ENERGY & WATER CONSERVATION:**

*Refer to CES Report in Appendix for complete assessment.*

- 4 Upgrade the HVAC control system to a new electronic system with energy management capability.**
- 4 Upgrade the exterior lighting with new fixtures using LED technology.**
- 4 Upgrade the interior lighting with new fixtures using LED technology.**

**MECHANICAL, ELECTRICAL/TECHNOLOGY, PLUMBING AND FIRE PROTECTION:**

*Refer to CES Report in Appendix for complete assessment.*

- 1 Replace unit heater vent pipe.**
- 1 Add fire alarm system devices to comply with latest code requirements.**
- 3 Provide a cabinet unit heater along the perimeter wall in the Main Office to address the cold issue.**
- 4 Replace the roof top units with a ductless VRF system.**
- 2 The CO sensors should be re-calibrated. Interconnect CO to an energy management system for monitoring and alarming.**
- 4 Provide new security system to provide full building coverage.**

Vehicle Storage Building

LIFE SAFETY:

- 2 Items stored in front of and blocking access to electrical panels. **Remove or relocate item to create clear access to panels.**



HEALTH: None identified at time of site visit.

HAZARDOUS MATERIALS: None known at this time. Further study would be required if removal and replacement of finishes is to proceed.

ADA COMPLIANCE:

- G Sink and water fountain in Break Room are not ADA accessible. No knee clearance at sink and chair placed in front of water fountain. **Modify casework at sink and remove and relocate chair.**



- G Restroom is not ADA accessible, Non-compliant sink, fixtures and no grab bars. **Renovate restroom to comply with ADA codes and requirements.**



EXTERIORS:

- 3 Painted steel corner guards at bay doors are chipping and rusting. **Wire brush, prime and repaint.**



- 3 Painted exterior metal doors and hollow metal frames are fading and rusting. **Remove HM frame and door and replace with new.**



- 3 Weather stripping is either worn, damaged or missing. **Replace weather stripping around all bay doors**

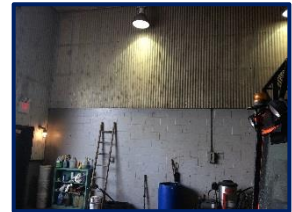


INTERIORS:

- 3 Maintenance Bay and Vehicle Storage Bays concrete floors are dirty, stained, cracking and spalling. **Repair cracks, remove dirt and stains and finish with epoxy flooring or concrete sealer finish.**



- 3 Upper corrugated fiberglass panel in Vehicle Wash Bay are either stained or has mildew present from the moisture in the space. **Clean or replace panels.**



- 3 VCT in Corridors, Restroom and Break Room are worn and dirty. **Strip, clean and wax as general maintenance.**

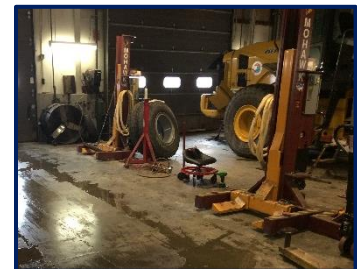


- 3 Acoustical ceiling tiles in corridor and breakroom are stained, sagging or damaged. **Replace all ceiling tiles.**



PROGRAM:

Vehicle lift in first bay of Maintenance garage is not re-certifiable because of its age. **Town of Stoughton would like an estimate for a new lift system to accommodate service vehicles.**



ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

- 4 Upgrade the HVAC control system to a new electronic system with energy management capability.**
  
- 4 Upgrade the exterior lighting with new fixtures using LED technology.**
  
- 4 Upgrade the interior lighting with new fixtures using LED technology.**
  
- 4 Upgrade lighting controls throughout the building to meet the latest energy code requirements.**

MECHANICAL, ELECTRICAL/TECHNOLOGY, PLUMBING AND FIRE PROTECTION:

*Refer to CES Report in Appendix for complete assessment.*

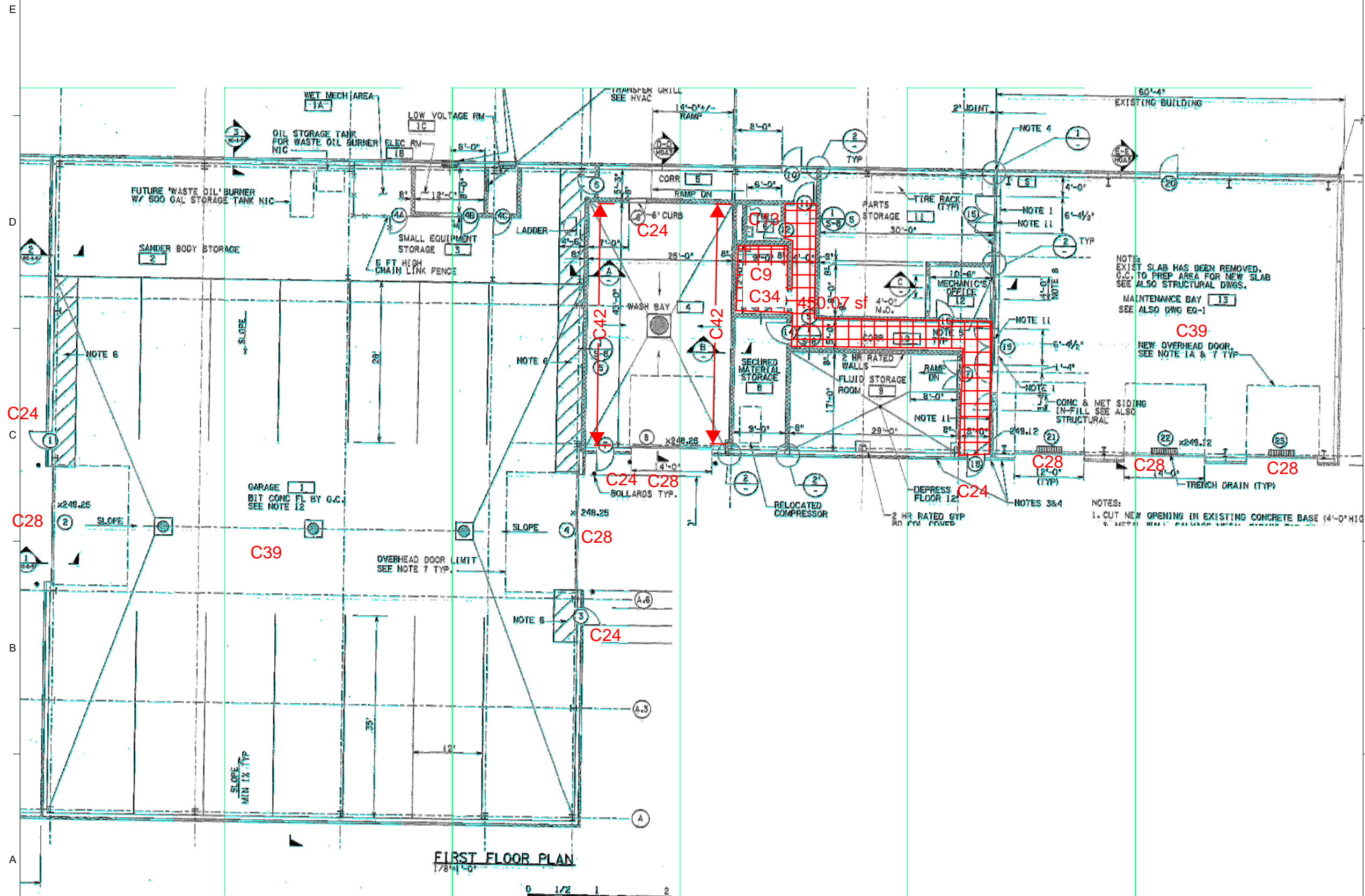
- 1 Add fire alarm system devices to comply with latest code requirements.**
  
- 2 Replace broken receptacles/cover plates.**
  
- 1 Portions of the exterior gas piping are rusting and corroding.**
  
- 2 The CO sensors should be re-calibrated. Interconnect CO to an energy management system for monitoring and alarming.**
  
- 4 Provide new security system to provide full building coverage.**

\* \* \*





STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report



FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

FIRST FLOOR PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017

A1.2



**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

DPW – Administrative Building  
950 Central Street  
Stoughton, MA

Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

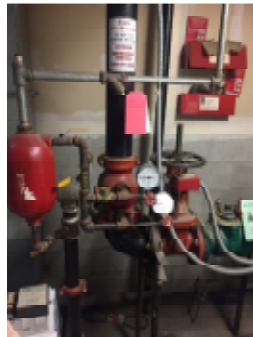
The mechanical, electrical, plumbing, and fire protection systems will be reviewed in conformance with the requirements of the following codes and regulations and all applicable local authority requirements.

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2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. Fire Protection Service: The building is currently served by a 6-inch fire protection service installed approximately 15 years ago. The fire protection system is a dry system. The fire protection system appears to be in good condition.

Fire Protection Service



## **PLUMBING SYSTEMS:**

### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 2” domestic water service fed from the local water company. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation.

Domestic Water  
Service Equipment



2. Natural Gas Service: The building is currently served by a 4” low pressure natural gas service. The gas service serves the gas fired unit heaters, heating and ventilation units and domestic hot water heaters. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service  
Equipment



3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The power vehicle storage Garage sanitary terminates into an exterior oil separator. The existing piping material is cast iron.
4. Storm Service: There is no internal storm piping.

### **Plumbing Fixtures and Specialties**

1. Water closets are a combination of wall mounted or floor mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Water Closet



2. Urinals are wall mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Urinal



3. Lavatories are wall mounted vitreous china with dual twist handle faucet or metering faucets. Lavatories are provided with insulation wrap for exposed piping below fixture. Though, several insulation insulated jackets are damaged. The fixtures and faucets are in good condition.

Lavatory with Twist  
Type Faucet



Lavatory with  
Metered Faucet



4. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

1. Domestic Hot Water System: A gas fired 125 gallon water heater provides domestic hot water to plumbing fixtures. The water heater was installed within the past year and is in very good condition.

Domestic Water Heater



**MECHANICAL SYSTEMS:**

Office

1. The heating source is a Viessmann Model Vitdens 200W hot water boiler installed within the past year. Hot water is distributed throughout the office area to terminal units such as perimeter fin tube radiation and cabinet unit heaters. The hot water distribution system and terminal units were installed in 2002 and are in good condition. The boiler and associated pumps are in very good condition. During the site visit, it was reported that the Main Office area is cold.

Hot Water Boiler



Typical Hot Water Radiator



2. The cooling and ventilation consist of three package roof top units which were installed in 2002. Ductless split AC units provide supplemental cooling for the Main office area. The roof top units and ductless split units are nearing the end of their useful life.

Packaged Roof Top Unit



Split System Cooling Unit



### Various Department Vehicle Storage Garages

1. The heating sources are two gas fired unit heaters and two gas fired heating and ventilation units. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition. The venting for the unit heaters is showing significant rust and should be replaced.

Typical Unit Heater



2. Two exhaust fans provide ventilation for the space. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
3. The exhaust fans are interlocked with a Vulcan CO monitoring system. The CO sensors should be re-calibrated on an annual basis.

### Packer Vehicle Storage

4. The heating sources are two gas fired unit heaters and two gas fired heating and ventilation units. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition. Though the venting is showing significant rust and should be replaced.
5. Two exhaust fans provide ventilation for the space. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
6. The exhaust fans are interlocked with a Vulcan CO monitoring system. The CO sensors should be re-calibrated on an annual basis.

### Temperature Controls

1. The existing controls are locally controlled. We recommend upgrading the HVAC control system to a new electronic system with energy management capability for energy efficiency and savings. The CO sensor should also be monitored and alarmed from the energy management system.

### Electrical Systems:



1. The existing electrical service is a 800amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch, C.T. Cabinet and Distribution Panelboard. The service equipment is in good to excellent fair condition.

Main service switch



2. The building has a 96kW natural gas fired emergency generator (Gillette). The generator provides back-up power to selected loads in building. This generator is located outside the building in a weatherproof enclosure. The distribution consists of an Automatic Transfer Switch (G.E. Zenith) and a circuit breaker panelboard. This equipment is in good condition.

Emergency Natural Gas Generator



3. The electrical power is distributed through the building by circuit breaker type panelboards and grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, Shops, etc. This equipment is in good condition.

Electrical Panelboards



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
- a. Recessed 2x2 lensed fluorescent troffers
  - b. Recessed 2x2 parabolic fluorescent troffers
  - c. Recessed 2x4 parabolic fluorescent troffers
  - d. Surface/ Pendant 1x4 open fluorescent industrial
  - e. Surface mounted wraparound fluorescent luminaires
  - f. Recessed open compact fluorescent downlights
  - g. Lamps
    - i. T8 fluorescent lamps
    - ii. U bent tube T8 lamps
    - iii. Compact fluorescent lamps

Recessed Parabolic Lighting Fixture



Surface Industrial Fixture



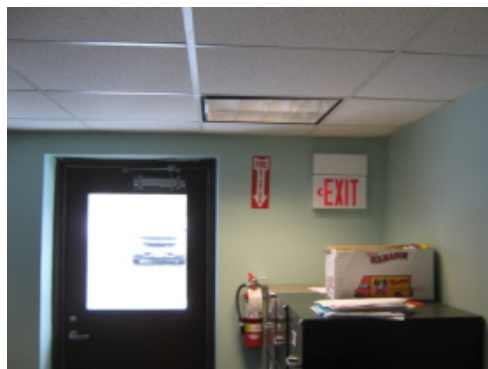
5. Lighting control for the building consists of the following:
  - a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switch in small office and other small rooms
  - c. This equipment is in good working condition.
6. The fire alarm system consists of a Honeywell/Gamewell zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, duct smoke detectors, sprinkler system flow and tamper switch monitoring. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units appear not to be ADA compliant. Additional fire alarm horn strobes maybe required to meet current code requirements.

Fire Alarm Control Panel



7. The exit signs throughout the building are plastic type with integral batteries. The exit signs are also fed from the emergency power distribution system (generator). These units are in good to fair condition.

Exit Signs



8. The emergency lighting in the building is from selected fixtures fed from the emergency generator. The selected fixtures are in fair to good condition.

9. The site lighting consists of wall mounted full cut-off fixtures and wall mounted flood light fixtures. The fixtures are in good to fair condition.

Wall mounted Full Cut-off Fixture



Wall mounted Flood Light Fixtures



10. Security features in the building consist of interior cameras, intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
11. Data/technology consists of wired computer stations throughout the building. There are also projectors in a number of classrooms. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Replace unit heater vent pipe.
- Add fire alarm system devices to comply with latest code requirements.
- Provide a cabinet unit heater along the perimeter wall in the Main Office to address the cold issue. Unit size should be based on heating load calculations.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings.
- Replace the roof top units with a ductless variable refrigerant flow system
- The CO sensors should be re-calibrated. Interconnect CO to an energy management system for monitoring and alarming.
- Upgrade the exterior lighting with new fixtures using LED technology. Recommended for energy savings and lower maintenance costs.
- Upgrade the interior lighting with new fixtures using LED technology.
- Provide new security system to provide full building coverage.

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

DPW – Garage Building  
950 Central Street  
Stoughton, MA

Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code

NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. Fire Protection Service: The building is currently served by a 6-inch fire protection service installed approximately 15 years ago. The fire protection system is a dry system. The fire protection system appears to be in good condition.

Fire Protection Service Equipment





## **PLUMBING SYSTEMS:**

### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 2” domestic water service fed from the local water company. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation.

Domestic Water  
Service Equipment



2. Natural Gas Service: The building is currently served by a 2” low pressure natural gas service. Portions of the exterior gas piping are rusting and corroding. This should be inspected by the gas company. The gas service serves the gas fired unit heaters, heating and ventilation units and domestic hot water heaters. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

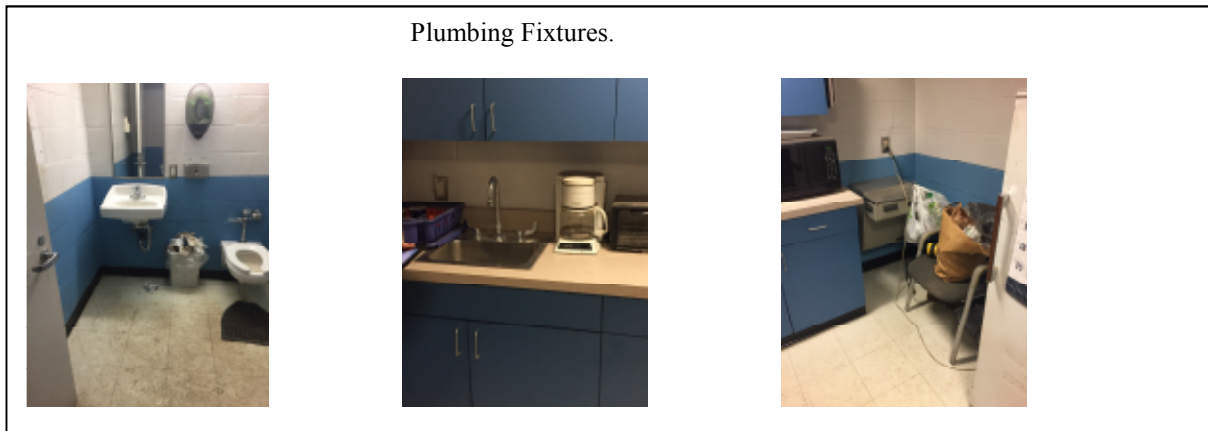
Natural Gas Service  
Equipment



3. Sanitary Service: The existing building is currently provided with a central sanitary waste water laterals that exit into an exterior oil separator. The existing piping material is cast iron.
4. Storm Service: There is no internal storm piping.

### **Plumbing Fixtures and Specialties**

1. Water closets and urinals are wall mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.
2. Lavatories are wall mounted vitreous china with single lever faucets. Lavatories are not provided with insulation wrap for exposed piping below fixture. The fixtures and faucets are in good condition and ADA compliant fixtures are provided.
3. The kitchen sink is a stainless steel sink with a dual level faucet. The sink and faucet are in good condition. The faucet is ADA compliant. However, access to the sink is not ADA compliant which will be address in the architectural scope.
4. The Drinking fountain is wall mounted stainless steel. It is in good condition and ADA compliant fixtures. However, access to the drinking fountain is not ADA compliant which will be address in the architectural scope.
5. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.



### **Domestic Hot Water Systems**

1. Domestic Hot Water System: Two six gallon electric hot water heaters provide domestic hot water to plumbing fixtures. The electric water heaters were installed in 2002 and are operating at the end of their useful life.

### **MECHANICAL SYSTEMS:**

#### **Truck Storage Section**

1. The heating sources are four gas fired unit heaters and four gas fired heating and ventilation units. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.

2. Four exhaust fans provide ventilation for the space. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
3. The exhaust fans are interlocked with a Vulcan CO monitoring system. The CO sensors should be re-calibrated on an annual basis.

#### Maintenance Bay Section

1. The heating sources are two gas fired unit heaters and one gas fired heating and ventilation unit. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
2. An exhaust fan provides ventilation for the space. The units were installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
3. The exhaust fan is interlocked with a Vulcan CO monitoring system. The CO sensors should be re-calibrated on an annual basis.
4. A Plymovent vehicle exhaust extraction system is utilized to capture and release vehicle exhaust outdoors. The exhaust extraction system consists of two hose- reel assemblies and a central exhaust fan.

#### Wash Bay Section

1. The heating sources are is one gas fired heating and ventilation unit. The unit was installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
2. An exhaust fan provides ventilation for the space. The unit was installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.

#### Central Office and Storage Area

1. The heating sources are is one gas fired heating and ventilation unit. The unit was installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.
2. An exhaust fan provides ventilation for the space. The unit was installed in 2002. The useful operating span for this type of equipment is approximately 20 years. The equipment is in good condition.

#### Temperature Controls

1. The existing controls are locally controlled. We recommend upgrading the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. The CO sensor should also be monitored and alarmed from the energy management system.

**ELECTRICAL SYSTEMS:**

1. The existing electrical service is an 800amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch, C.T. Cabinet and Distribution Panelboard. The service equipment is in good to excellent fair condition.

Main service switch



2. The building has a hook-up for connecting a portable generator. The generator provides back-up power to selected loads in building. Distribution consists of an Automatic Transfer Switch manufactured by G.E./Zenith and a circuit breaker panelboard. This equipment is in good condition.
3. The electrical power is distributed through the building by circuit breaker type panelboards and grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, shops, etc. This equipment is in good condition.

Panelboards



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:

- a. Recessed 2x2 lensed fluorescent troffers
- b. Surface/ Pendant 1x4 open fluorescent industrial
- c. Surface mounted wraparound fluorescent luminaires
- d. Combination fluorescent and LED high bay fixtures
- e. Lamps
  - i. T8 fluorescent lamps
  - ii. U bent tube T8 lamps
  - iii. LED Lamps

Pendant High-bay Lighting Fixture



Surface Industrial Fixture



5. Lighting control for the building consists of the following:
- a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switch in small office and other small rooms
  - c. This equipment is in good working condition.
6. The fire alarm system consists of a Honeywell/Gamewell addressable fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, duct smoke detectors, sprinkler system flow and tamper switch monitoring. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units appear not to be ADA compliant. Additional fire alarm horn strobes maybe required to meet current code requirements.

#### Fire Alarm Control Panel



7. The exit signs throughout the building are plastic LED type with integral batteries. These units are in good to fair condition.

#### Exit Signs



8. The emergency lighting in the building is from selected fixtures with integral battery packs and dual head battery units. The selected fixtures are in good condition.
9. The site lighting consists of wall mounted flood light fixtures. The fixtures are in good condition.

Wall Mounted HID Flood Light Fixtures



10. Data/technology consists of wired computer stations throughout the building. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Add fire alarm system devices to comply with latest code requirements.
- Replace broken receptacles/cover plates.
- Portions of the exterior gas piping are rusting and corroding. This should be inspected by the gas company.
- The CO sensors should be re-calibrated. Interconnect CO to an energy management system for monitoring and alarming.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings.
- Upgrade the exterior lighting with new fixtures using LED technology. Recommended for energy savings and lower maintenance costs.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide new security system to provide full building coverage.



# COUNCIL on AGING

110 Rockland Street

Year Constructed: 2000  
Year of Renovation/Addition:  
Building Type: A-3  
Construction Type: VB  
Fire sprinklers: Yes  
Total Floor Area: 6,648 SF  
Floors: 1st  
Land Area (Acres): 11.380  
Roof Type/Age: Asphalt Shingles/ 2000



GENERAL: The Council on Aging has not been renovated and is in generally good condition.

LIFE SAFETY: None Observed

HEALTH: None Observed

HAZARDOUS MATERIALS: None Observed

ADA COMPLIANCE:

G

Sink does not have the required knee clearances in the Health Office, Kitchen and the Kitchenette in small multipurpose space.

**Modify sinks in 3 locations to comply.**



SITE:

3

**Recommend Crack sealing in 3+ years.**

G

**Recommend to replace concrete curb and repair cape cod berm in 5+ years.**

EXTERIORS:

- 3 Several of the Painted cedar Shake siding shingles have or are separated from the substrate and could present an issue of air driven rain penetrating into the wall cavity.  
**Remove affected shakes, repair and re-install.**



INTERIORS:

- 3 Multiple areas stained and/or dirty dry wall ceilings and soffits in the multipurpose space. **Clean and repaint as general maintenance.**



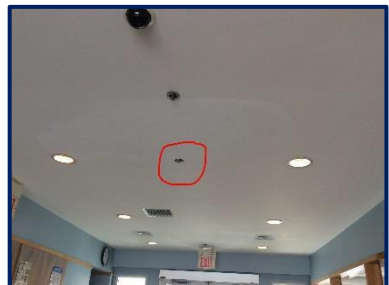
- 3 Carpet in the Library and Main Office is stained. **Recommend cleaning.**



- 3 Stains around recessed lights in painted gypsum ceiling in restroom. **Re-paint ceiling.**



- 1 Escutcheon for sprinkler missing in Lobby area. **Install new sprinkler escutcheon.**



- 3 Holes in wall around thermostat remain from the removal of protective plastic cover in the Library. **Repair holes in wall and repaint area.**



- 3 2x2 acoustical ceilings near registers are dirty in a couple of locations. **Recommend cleaning ducts and replacing dirty acoustical ceiling tiles.**



ENERGY & WATER CONSERVATION:  
*Refer to CES Report in Appendix for complete assessment.*

- 4 **Upgrade the exterior lighting with new fixtures using LED or induction type lamps.**

- 4 **Upgrade interior lighting with new fixtures using LED type lamps.**

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:  
*Refer to CES Report in Appendix for complete assessment.*

- 2 **Repair damaged site lighting fixtures.**

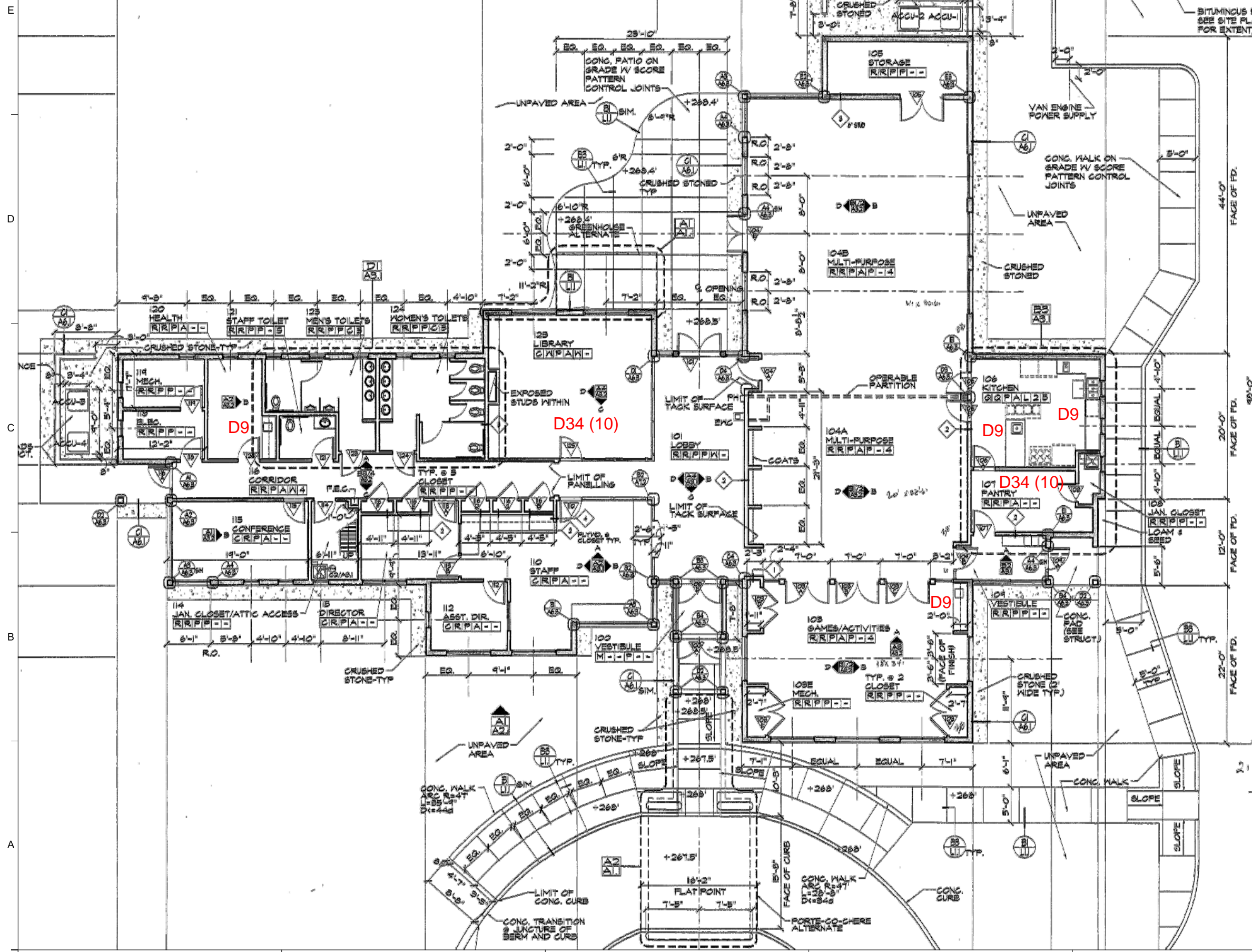
- 4 **Repair damaged pipe insulation and electrical wiring at the outside condensing units.**

- 3 **Provide ADA compliant fixtures in the kitchen.**

\* \* \*



FOR NUMBERS INDICATED ON PLAN BELOW, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Senior Center and Youth Commission  
110 Rockland Street  
Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. Fire Protection Service: The building is currently served by a 4-inch fire protection service installed approximately 16 years ago. The building is protected with a dry system which was installed in 2000. The fire protection system appears to be in good condition.

Fire Protection Service



## **PLUMBING SYSTEMS:**

### **Plumbing Utilities**

1. Water Service: The building is currently served by a 1 1/2" domestic water service fed from the local water company installed in 2000. This services consists of shut off valves and water meter. This equipment is in good condition, however, the piping at the water service should be insulated.

Domestic Water Service



2. Natural Gas Service: The building is currently served by a single natural gas service. Natural gas piping within the building is schedule 40 black steel pipe and installed in 2000. The gas service feeds one (1) domestic water heater, six (6) indirect fired furnaces and one (1) kitchen food service loads. The natural gas pipe distribution appears to be in good condition.
3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The Kitchen terminates into a grease separator
4. Storm Service: There are no internal drains in the building.

### **Plumbing Fixtures and Specialties**



1. Water closets are floor mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Floor Mounted Water Closet



2. Lavatories are counter mounted vitreous china with single lever faucets. ADA lavatories are provided with insulation wrap for exposed piping below fixture. The fixtures and faucets are in good condition and ADA compliant fixtures are provided.
3. The kitchen sinks are stainless steel counter mounted sinks with two handle faucets. The sinks and faucets are in good condition. One of the faucets has blade type ADA compliant handles, however the sinks are not ADA compliant due to the lack of knee clearance.

Kitchen Sinks



4. There is a grease interceptor recessed within the floor of the kitchen. This unit appears to be in good condition.

Grease Interceptor



### **Domestic Hot Water Systems**

1. Domestic Hot Water System: Domestic hot water is generated by an AO Smith high efficiency, floor mounted, natural gas fired 100gallon water heater. The water heater is approximately 10 years old and in very good condition. Hot water piping distribution is copper. The domestic hot water piping is in good condition.

Domestic Water Heater



### **MECHANICAL SYSTEMS:**

1. The heating and cooling system consists of natural gas fired furnaces with ducted refrigerant cooling coils connected to condensing units. These furnaces are located in the attic. This equipment is in good condition.

2. The exterior condensing units are manufactured by Lennox and are approximately 10 years old and in good condition. The insulation on the refrigerant piping is exposed to the elements and is deteriorating. In addition, one of the electrical connections has been damaged where the conductors are showing. Both of these conditions should be repaired.

Damaged Refrigeration Piping Insulation



Damaged Electrical Wiring



3. The existing controls consist of local thermostats. This equipment is in good condition.
4. There are local exhaust fans serving the toilet rooms, kitchen, etc. This equipment is in good condition.

### **ELECTRICAL SYSTEMS:**

1. The existing electrical service is a 400amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution. The service equipment is in very good condition.
2. An 80kW natural gas fired emergency generator was installed in 2016. This serves as back-up power to the entire building. This equipment is located outside the building in a weatherproof enclosure. This equipment is in very good condition.

Emergency Generator



3. A 200amp, 3-phase ASCO automatic transfer switch is installed in the main electrical room. A remote annunciator panel and generator emergency shut-off station is also provided. All of this equipment was installed in 2016 and is in very good condition.

Automatic Transfer Switch, Annunciator,  
Emergency Shut-Down Switch



4. The electrical panelboards in the building are original to the building with the exception for the panels installed with the emergency generator. All of this equipment is in good condition.

Electrical Panels



Electrical Panels



5. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x4 parabolic fluorescent fixtures
  - b. Recessed fluorescent downlights
  - c. Surface mounted industrial fluorescent fixtures
  - d. Pendant mounted decorative fixtures in the Lounge and large meeting room
  - e. Lamps
    - i. T8 fluorescent lamps
    - ii. Compact fluorescent lamps
6. Lighting control for the building consists of the following:
  - a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switches
  - c. This equipment is in good working condition.

Recessed Downlights



Pendant Fluorescent Fixtures



Decorative Pendant Fixture



Recessed Parabolic Fixture



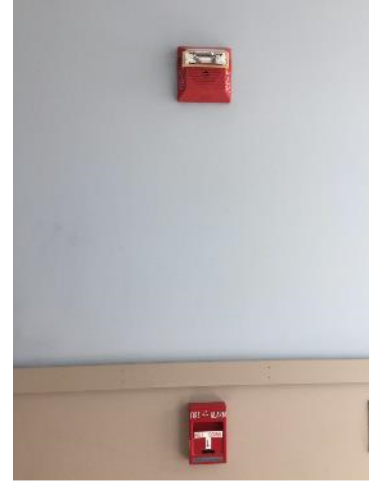
7. The fire alarm system consists of a Fire-Lite MS-10UD fire alarm control panel, remote annunciator, manual fire alarm pull stations and horn strobes, smoke detectors, and heat detectors. The fire alarm system also monitors the fire sprinkler system with flow and tamper switched. The fire alarm system communicates alarms via a wireless transmitter. All of this equipment is in good condition.



Fire Alarm Control Panel and Wireless Transmitter



Fire Alarm Manual Pullstation and Horn Strobe



8. The exit signs throughout the building are plastic fluorescent type with integral batteries or edge lit type with integral batteries. This equipment is in good condition.

Edge Lit Exit Sign



Exit Sign with Plastic Housing and Emergency Lighting



9. The emergency lighting in the building consists of 2-head type fixtures with integral batteries. This equipment is in good condition.



Typical 2-Head Emergency Light Fixture



10. The site lighting consists of pole mounted shoe-box fixtures, wall mounted flood lights on the exterior of the building or recessed fixtures in vestibules or covered entrances. One of the pole mounted fixtures is damaged. The rest of the fixtures are in good condition.

Typical Pole Mounted Site Lighting  
Fixture



11. Security features in the building consist of exterior cameras, motion detectors, and intercom stations at various access points around the building. All of this equipment is in good condition.
12. Data/technology consists of wired computer stations throughout the building. There are also projectors in a couple of locations. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Repair damaged site lighting fixtures.
- Repair damaged pipe insulation and electrical wiring at the outside condensing units.
- Provide ADA compliant fixtures in the Kitchen.
- Upgrade the exterior lighting with new fixtures using LED or induction type lamps. Recommended for energy savings and lower maintenance costs.
- Upgrade the interior lighting with new fixtures using LED type lamps. Recommended for energy savings and lower maintenance costs.

# CEDAR HILL GOLF COURSE

1137 Park Street

Year Constructed: 1971  
Year of Renovation/Addition: 1997  
Building Type: Mixed Use: A-3, M, S & S-1  
Construction Type: 3B  
Fire sprinklers: No  
Total Floor Area: 3,500 SF  
Floors: Basement and First  
Land Area (Acres): 38.87  
Roof Type: Asphalt Shingles



GENERAL: The Cedar Hill Golf Club has not had any major renovation and appears to be in fair condition.

LIFE SAFETY: None identified at this time.

HEALTH: None identified at this time.

HAZARDOUS MATERIALS: None identified at this time.

ADA COMPLIANCE:

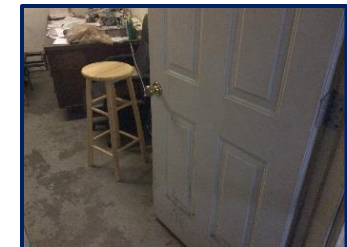
**G** Emergency eye wash and shower is not accessible. Items stored in front of and in the shower and there is a lip or border around the shower that is too high and therefore can't be considered accessible. **Recommend removing existing curb and replacing with ADA compliant compressible curb.**



**G** Fixtures on sinks in the Men's Restroom are not ADA compliant. **Remove and replace with compliant fixtures.**



**G** Knobs on doors in the Basement Maintenance area required to be ADA compliant. **Remove knobs and replace with lever type hardware.**

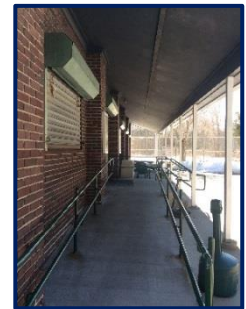


SITE:

- G** Repair pond erosion.
- G** Install guardrail along pond edge that abut parking / drive aisle.
- 2** Recommend full parking lot reconstruction in 2+ years with storm water controls that meet current standards.
- 2** Recommend Crack sealing in 2+ years.
- 1** Recommend filling holes in asphalt parking area.

EXTERIORS:

- 3** Paint chipping and peeling on ramp railing at Main Entrance. **Recommend wire brushing, prime and repaint.**



- 3** Paint is peeling and chipping on the Painted Galvanized Roll-up Windows and the bolts and steel angle used to attach roll-up to brick façade are rusting. Strip, prime and repaint with an approved material for galvanized items. **Recommend wire brushing, prime and paint bolts and steel angles.**



- 3** Wall stained on rear wall where drains from condensing units that do not extend to the ground. **Recommend attaching extensions to reach ground level and avoid wall.**



- 3** Paint chipping on CMU walls near maintenance door at rear of building. **Scrape and repaint.**



- 3 Paint chipping, exposing steel and starting to rust on Painted steel fire escape at rear of building. **Recommend wire brushing, prime and repaint with approved paint.**



INTERIORS:

- 3 Acoustical Ceiling Tiles are old, stained and damaged in the Pro-shop Office, Main Area, Kitchen Area and Restroom Vestibule. **Remove all tiles and replace with new. In the Kitchen area, remove existing tile and replace with moisture resistant vinyl faced panels which is durable and easy to clean.**



- 3 Carpet is worn, old and stained in the Main Area, Pro-shop, Office and Kitchen Office. **Remove all and replace with new.**



- 3 Finish on the wood floors is scuffed and scratched on the floor in Main Area and in Kitchen Storage. **Strip and refinish wood floors.**



- 3 Tile Flooring in Entry Vestibule, Kitchen Area and small area in Main room is dirty, stained and scuffed. **Strip clean and re-wax. Remove and replace with new if stripping does not work.**



ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

- 4 **Upgrade the interior lighting with new fixtures using LED technology.**

- 4 **Upgrade lighting controls throughout the building to meet the latest energy code requirements.**

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:  
*Refer to CES Report in Appendix for complete assessment.*

- 2** Provide new CO sensors and connect them to the building management system monitoring and notification of alarms.
  
- 3** Replace lavatories with ADA lavatories.
  
- 1** Install missing sprinkler escutcheons.
  
- 4** Provide additional security system components, such as cameras to provide full building coverage.

\* \* \*

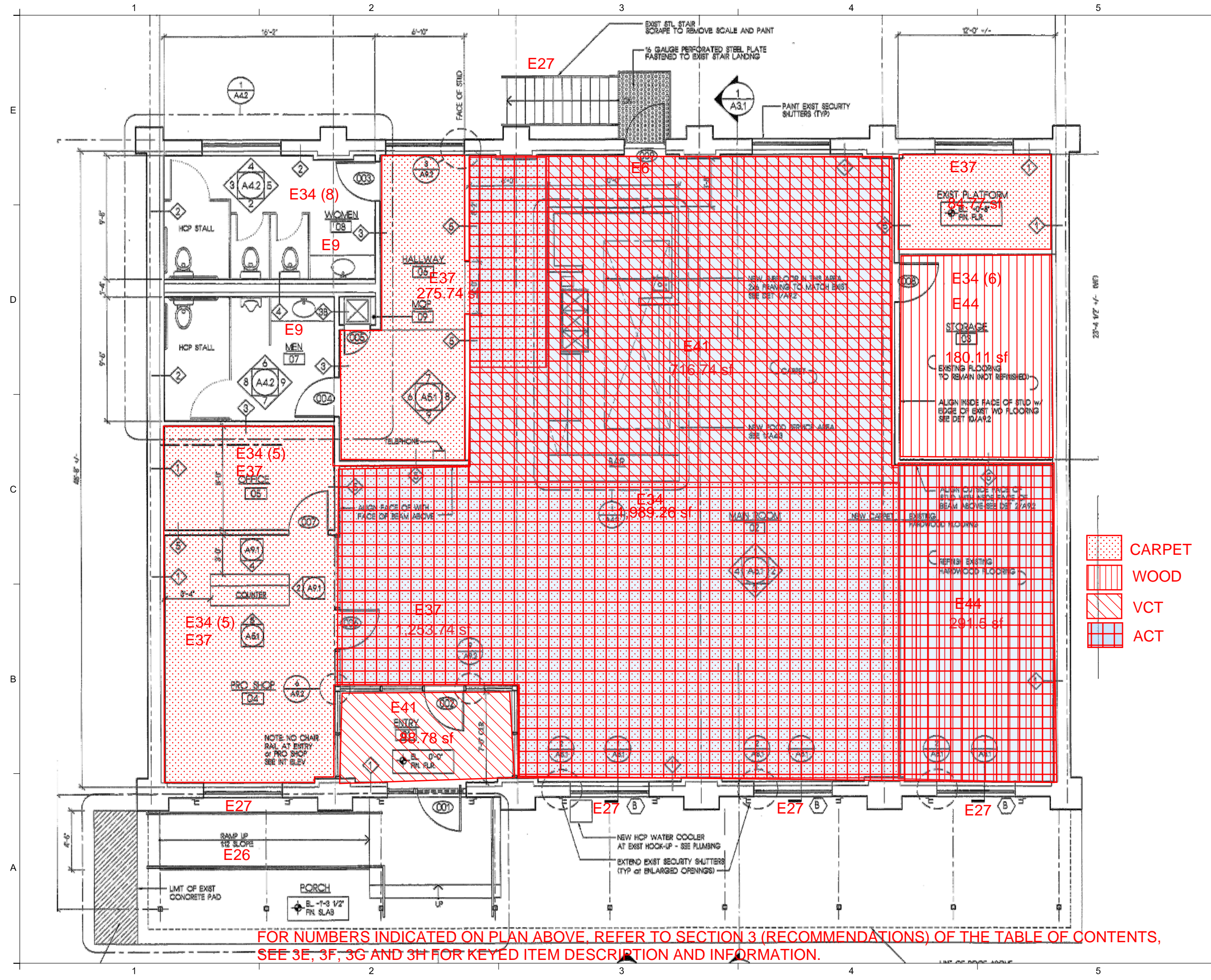


STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

FIRST FLOOR PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017

A1.1

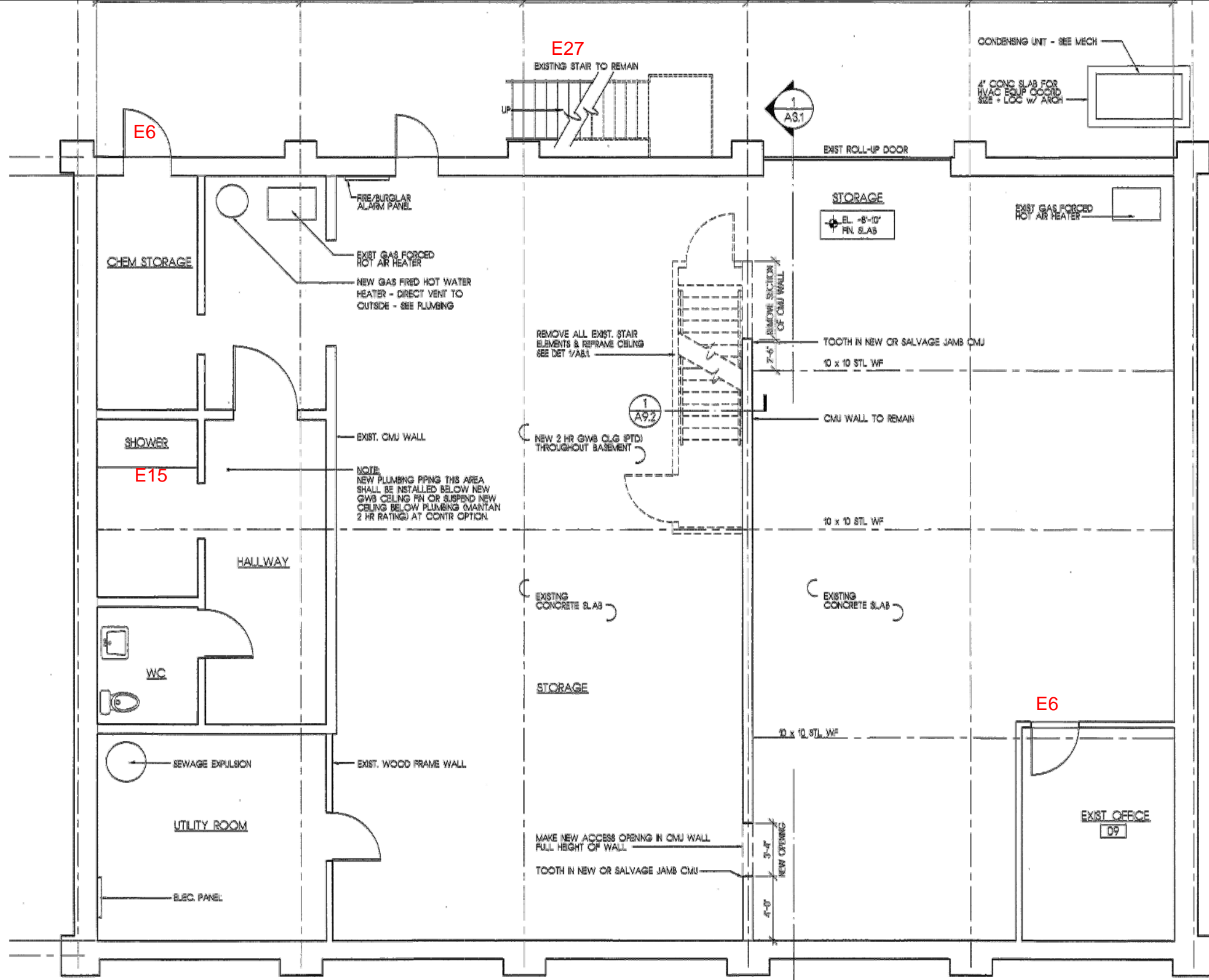


FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



1 2 3 4 5

E  
D  
C  
B  
A



**1 BASEMENT PLAN**  
SCALE: 1/4" = 1'-0"

FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

**D·R·A**  
Drumsey 235 Bear Hill Road  
Rosane 4th Floor  
Anderson, Waltham, MA  
Inc. 02451  
Architecture 617-964-1700  
Planning fax 617-964-1701  
Interior Design info@drains.com

CEDAR HILL GOLF COURSE  
STOUGHTON, MA

STOUGHTON MASTER PLAN UPDATE  
5 Year Capital Improvements Plan and  
Facilities Condition Report

BASEMENT PLAN

Scale: N.T.S.  
Drawn by: ASJ  
Job# 16022.00  
Date: 4/4/2017

**A1.2**

1 2 3 4 5

# Mechanical and Electrical Systems

## Existing Conditions Narrative

Cedar Hill Golf Course Club House  
1137 Park Street  
Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 1” domestic water service fed from the local water company. This service enters the building in the basement. The service equipment includes isolation valves and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in good condition.

Water Service Equipment



2. Natural Gas Service: The building is currently served by a single 1" natural gas service which is then broken down to (2) separate lines that are separately metered that enter the building to serve the heating and kitchen equipment. Natural gas piping within the building is schedule 40 black steel pipe.

Gas Service Equipment



3. Sanitary Service: The existing building is currently provided with a single sanitary waste water lateral. The sanitary waste is collected in a sewage ejector pump system and then pumped to the city sewer system. The existing piping material is PVC or cast iron. The piping is in fair to good condition.

### **Plumbing Fixtures and Specialties**

1. Water closets are floor mounted tank type vitreous china fixtures. The fixtures are in fair to poor condition. ADA compliant fixtures are provided.

Typical Water Closet



2. Urinals are wall mounted vitreous china fixtures with manual flush valves. These fixtures are in fair condition.

Typical Urinal



3. Lavatories are wall mounted vitreous china with two handle twist faucets. These fixtures are not ADA compliant and in poor condition.

Lavatory in Garage



4. Bathroom sinks are vanity mounted vitreous china type with two handle faucets. Pipe insulation wrap for exposed piping below the fixtures has been provided for ADA compliance. These fixtures are in good condition.
5. There are no drinking fountains in the building

Typical Vanity Sink



6. The kitchen has hand sinks, prep sinks, three bay sink, and above grade grease interceptor. The hand wash sink appear to be ADA compliant, but the location of the grease interceptor limits the accessibility of this sink. All of this equipment is in fair condition.

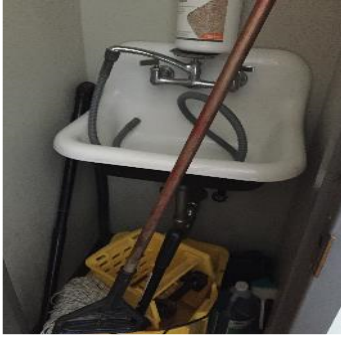
Kitchen Sink



Kitchen Hand Wash Sink and  
Grease Interceptor Below



Janitor Sink



7. The Janitor/Utility sink is enameled cast iron with two lever faucets. There is no vacuum breaker on this sink. This sink is in good condition.
  
8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

A natural gas fired 50 gallon water heater provides domestic hot water to the plumbing fixtures. The water heater looks to have been installed in the past 10 years and is in good condition. **MECHANICAL**

Domestic Water Heater



### **SYSTEMS:**



1. The heating hot water for the building consists of a high efficiency, natural gas fired, Burnham Alpine condensing boiler. Hot water is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, and unit heaters. The boiler has recently been replaced and is in very good condition. The hot water circulation pumps have also recently been replaced and are also in good condition. The piping, radiation, cabinet unit heaters, unit heaters and unit ventilators are approximately 10 years old and in fair condition.

Hot Water Boiler



2. A separate natural gas fired, high efficiency, hot air furnace with DX cooling is also installed that serves a portion of the building. The condensing unit that provides the cooling for this unit is located at the exterior of the building near the electrical service. This equipment is less than 10 years old and in good condition.

Hot Air Furnace



Condensing Unit Serving  
Hot Air Furnace



3. The ventilation for the building consists of exhaust fans and operable windows. The exhaust fans vary in age and condition. The original fans are in poor condition, others are in good condition.

### Temperature Controls

1. The existing temperature control system in the building is electronic, manufactured by Honeywell including valves and temperature sensors.



### Electrical Systems:

1. The existing electrical service is a 200amp, 240/120volt, 1-phase, 3-wire service that consists of a main disconnect switch and electrical panelboard with electric meter on the exterior of the building. The service equipment is in fair condition.

Electrical Service Entrance  
Equipment



2. The building does not have an emergency generator.
3. The electrical power is distributed through the building by circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment is in fair to good condition.
4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x4 lensed fluorescent fixtures

- b. Surface mounted wraparound fluorescent fixtures
- c. Lamps
  - i. T8 and T12 fluorescent lamps

Typical Recessed Fluorescent  
Fixture



Typical Recessed Fluorescent  
Fixture



Typical Industrial Fluorescent  
Fixture



5. Lighting control for the building consists of the following:

- a. Toggle type switches in most areas
- b. Combination occupancy sensor/switches
- c. This equipment is in good working condition.

6. The fire alarm system is a combination fire alarm/security system that includes a control panel/annunciator panel, manual fire alarm pull stations, horn strobes devices, and smoke and heat detectors. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box.

Fire Alarm/Security System  
Control Panel



Typical Fire Alarm  
Horn/Strobe



Typical Heat Detector



7. The exit signs throughout the building are white plastic fluorescent type with integral batteries. These units are in good condition.
  
8. The emergency lighting throughout the building is two head units with integral batteries or single head units fed from another battery unit. These fixtures range from fair to good condition.

Typical 2-Head  
Emergency Lighting Unit



Typical Single Head  
Emergency Lighting Unit



9. Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
  
10. Data/technology consists of wired computer stations and wireless access points throughout the building. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.

**Recommendations:**

- Provide new CO sensors and connect them to the building management system monitoring and notification of alarms.
- Replace non-ADA lavatories with ADA lavatories.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# FIRE STATION #1

30 Freeman Street

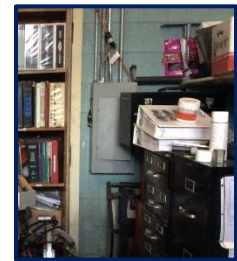
Year Constructed: 1927  
Year of Renovation/Addition: 1969  
Building Type: B, S-2, R-2  
Construction Type: VB  
Fire sprinklers: No  
Total Floor Area: 12,396 SF  
Floors: Basement, 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): .366  
Roof Type: EPDM



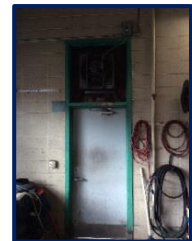
GENERAL: Fire Station #1 was renovated in 1969 and in 1971 minor upgrades have been made on interior spaces by the town. Building appears to be in fair to poor condition.

## LIFE SAFETY:

**1** Electrical panel in Maintenance Storage room Bay #6 is blocked by file cabinets. **Remove file cabinets to gain access and clearances.**



**1** Exterior doors do not have panic hardware at egress door. **Recommend replacing doors and installing compliant hardware. (Number to be determined.)**



**1** Gas grills being used on roof deck. **Remove gas grills from roof deck and relocate to an approved location.**



HEALTH: None known at this time, Additional study is required to determine air quality and recommended testing materials.

HAZARDOUS MATERIALS: None identified by visual observation. Subject to more complete sampling and testing by Hazmat Consultant.



ADA COMPLIANCE:

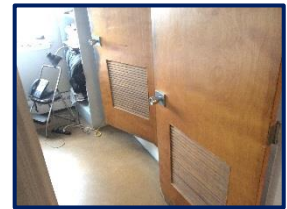
Entire building is not ADA accessible: Examples of areas that are not accessible or to code are listed but not limited to the items below.



- G 1. No ramp or wheel chair access at front entry.
- G 2. No accessible counter or Window at public entrance.
- G 3. Handrails and stairs throughout building are not ADA compliant.



- G 4. No Elevator to access upper or lower level.
- 2 5. Knobs on doors that should be replaced by lever type hardware.



- 2 6. Sink and shower areas are not ADA accessible: Step up to get into restroom area, step to get into showers, no handicap toilet stall and no knee clearance.



- G 7. Officers restroom and shower not accessible (same issues as item 6)

SITE:

- 1 The apron from the building station bays should be replaced with concrete.
- 3 Pavement around the building should be removed and replaced with full depth paving for the entire site.



1 Recommend upgrading the stormwater-drainage system – trench drain with water quality structure and an infiltration system of underground chambers to recharge stormwater prior to discharge to municipal system.

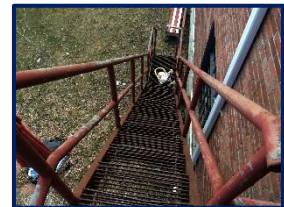
1 Recommend upgrading the sewer system connection to municipal sewer system.

EXTERIORS:

1 Exterior brick is in fair condition but showing signs of age and requires re-pointing in multiple locations.



2 Painted steel fire escape stairs are chipping, peeling and rusting and likely not code compliant. **Recommend replacement of stairs.**



1 Painted roof ladder is chipping, peeling and rusting. There is no extension or handrails at the top of the ladder. **Recommend to install new aluminum ladder with approved extension at top. If re-pointing and masonry work required, replace ladder at same time.**



2 Exterior metal doors in hollow metal frames are showing signs of wear, rust and not well insulated. **Recommend replacement of all exterior doors with appropriate hardware.**



2 Single glazed windows in steel frames appear to be original to building are in poor condition. Paint chipping and frames rusting and deteriorating. Multiple panes are broken or cracked. **Recommend replacement and further investigation by Structural Engineer to verify if steel lintels are deteriorating and need replacement.**



- 2 Exposed and painted plywood where window A/C units and exhaust fans are located. **Recommend to remove entire panel and replace with new envelope system at window locations.**



- 3 Concrete window sills, lintels and cornices are deteriorating and/or stained. **Recommend replacing if deteriorating or pressure cleaned if stained.**



- 3 Painted concrete or EIFS located around Main Entrance and Bay garage doors is flaking, deteriorating, stained or damaged. **Recommend chemically cleaning all surfaces.**



- 2 Brick at head of exterior door to fire escape is cracked through brick and grout joints. **Replace broken brick, repoint and insert control joints and sealer.**



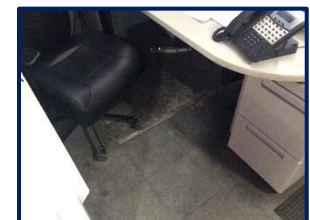
- 1 Steel lintels rusting, **Replace steel lintel**

INTERIORS:

- 3 Acoustical ceiling tiles and grid throughout station are stained or damaged and require replacement. **Replace all acoustical tiles.**



- 1 Tile flooring in Vestibule, Dispatch area and stair vestibule are in poor condition and should be replaced. **Replace vinyl tile.**





1

Multiple steel doors in hollow metal frames are in fair to poor condition, broken glass panes, chipping and rusting. **Recommend replacement with new with code compliant doors and hardware.**



1

Repair wall behind door from Bay 5 to stair behind dispatch area. Door opens and damaged metal corner bead on hinge side of door. **Recommend repairing wall, repainting and installing door stop.**



1

Hollow metal frame and side lights at door from Bay 4 to Dispatch is rusting at base. **Recommend replacement of hollow metal frame with aluminum.**



3

Paint is peeling, chipping and blistering in multiple locations on the Painted CMU and brick throughout all of the bays. **Recommend removal of affected areas and repaint.**



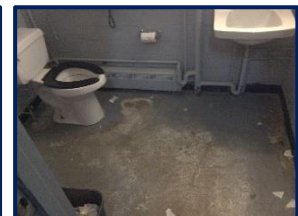
1

Janitors sink is not accessible. Multiple items stored in front of sink. **Recommend items be removed.**



3

Restroom located in Bay #4 is in need of heavy cleaning, inside and out. **Recommend cleaning and repainting.**



3

Painted gypsum wall board ceiling are bubbling, blistering and peeling in multiple locations from past water leaks. **Repair and paint affected areas.**



1

Painted brick walls in Bay #1 are cracked through brick and grout joints in multiple areas. **Replace broken brick, re-point and install control joints and sealer. Issue to be reviewed by EDG.**

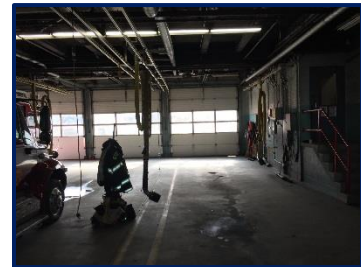


PROGRAM:

A Locker Room, shower and sleeping areas are required for female only fire fighters but appears not to be an area designated for females. Verify

2

It has been brought to DRA's attention that the Bay doors and bays are undersized for trucks and maintenance on trucks. DRA to further investigate. **Recommend EDG to review feasibility of bay modifications.**



ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

4

Replace all fixtures with Energy Efficient and ADA Compliant fixtures:

**Replace existing water closets with high efficiency, low flow, 1.28 GPF water closets.**

**Replace existing urinals with high efficiency, low flow, 0.125 GPF urinals.**

**Replace the existing lavatories with high efficiency sinks and sensor faucets.**

4

**Upgrade the HVAC control system to a new electronic system with energy management capability.**

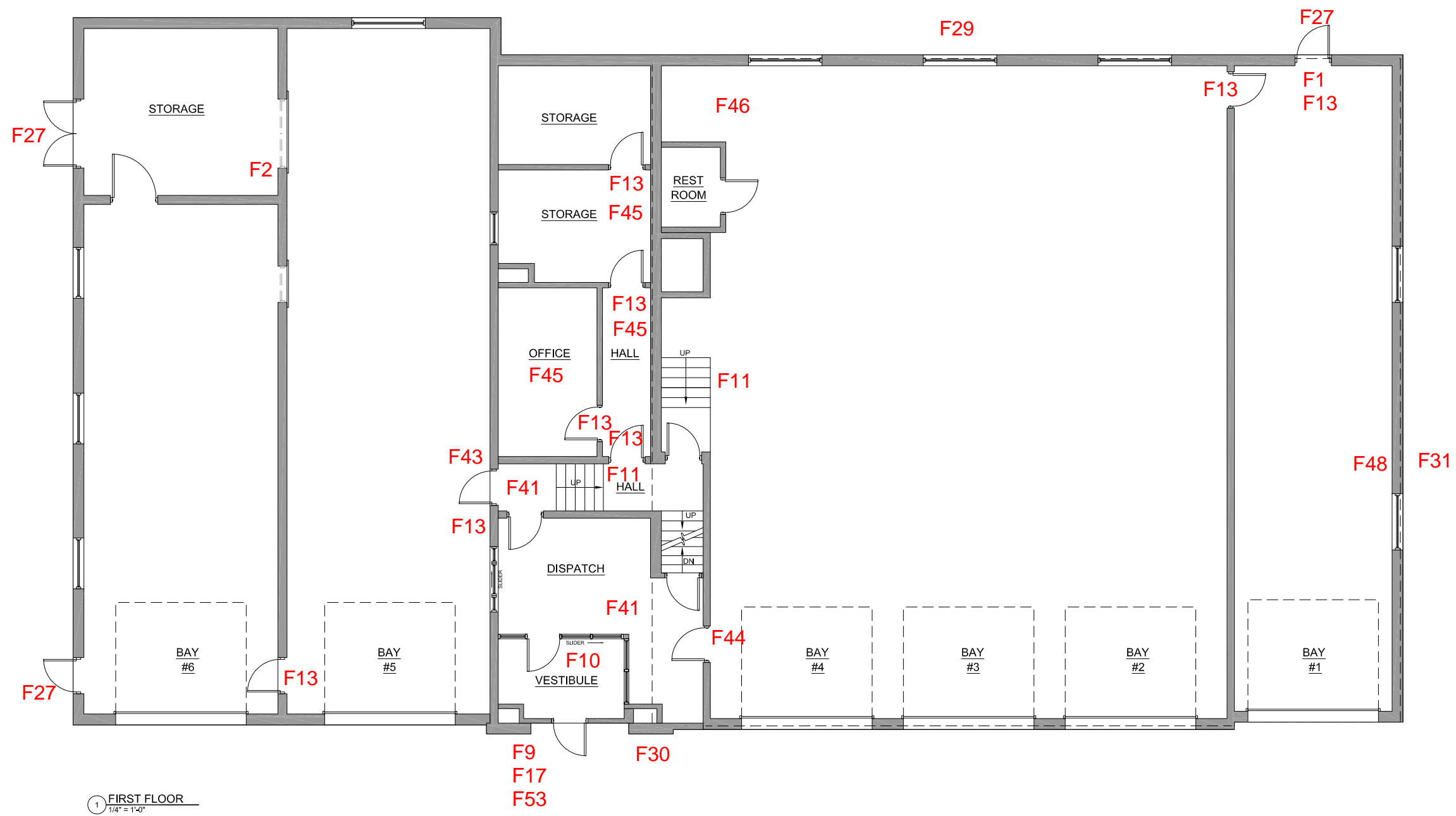
- 4 Upgrade the exterior lighting with new fixtures using LED or induction type lamps.
- 4 Upgrade the interior lighting with new fixtures using LED technology
- 4 Upgrade lighting controls throughout the building to meet the latest energy code requirements.

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:  
*Refer to CES Report in Appendix for complete assessment.*

- 1 *Replace existing paper exit signs with electrified signs (include wiring from local panelboard).*
- 1 *Replace existing fire alarm system with one that can support ADA compliant devices.*
- 3 *Provide NFPA 13 sprinkler system.*
- 4 *Repair the floor drains in the Apparatus Bay.*
- 1 *Repair damaged wiring devices, including occupancy sensors.*
- 1 *Replace the electrical service and older panelboards.*
- 1 *Insulate piping and repair the leaky valve in the boiler room.*
- 1 *Provide mechanical ventilation or air conditioning (VRF system) throughout the building.*
- 4 *Provide secondary overflow roof drains.*

\* \* \*





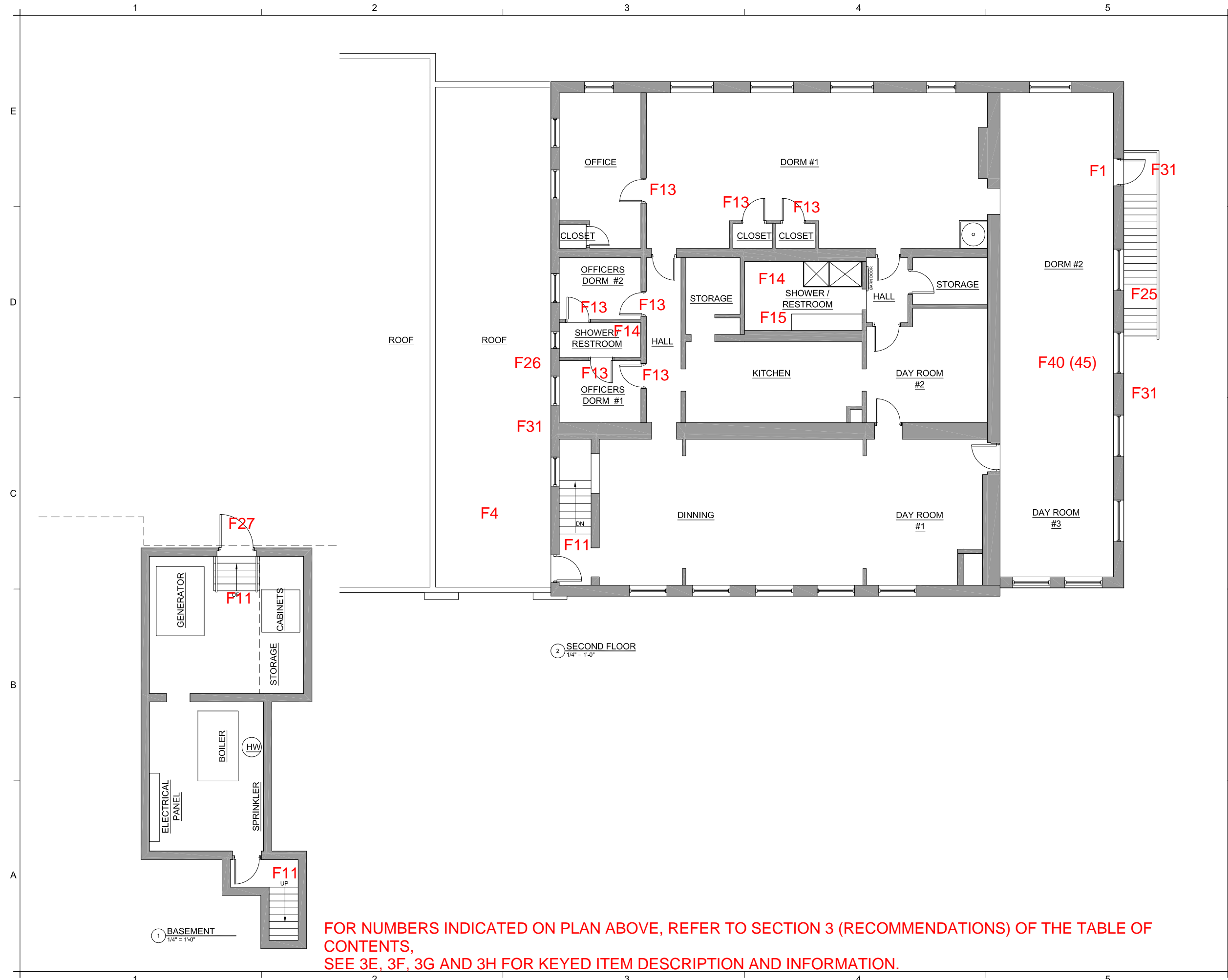
1 FIRST FLOOR  
1/4" = 1'-0"

**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

FIRST FLOOR PLAN

Scale: N.T.S.  
Drawn by: ASJ  
Job# 16022.00  
Date: 4/4/2017

**A1.1**



2 SECOND FLOOR  
1/4" = 1'-0"

1 BASEMENT  
1/4" = 1'-0"

**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**



SECOND FLOOR AND  
BASEMENT PLAN

Scale: N.T.S.  
Drawn by: ASJ  
Job# 16022.00  
Date: 4/4/2017

**A1.2**

# Mechanical and Electrical Systems Existing Conditions Narrative

Fire Station #1  
30 Freeman Street  
Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

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

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2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – The Life Safety Code

### **FIRE PROTECTION SYSTEMS:**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The existing building is currently served by a 2” domestic water service fed from the local water company. The service equipment includes a water meters and isolation valves.

Existing Water Meter



2. Natural Gas Service: The existing building is currently served by a single natural gas service which enters the building at the boiler room. The gas service serves the boilers and kitchen equipment. Natural gas piping within the building is schedule 40 black steel pipe. Shut-off valves and regulators are provided where required. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service Equipment



3. Sanitary Service: The existing building is currently provided with multiple sanitary waste water laterals that exit the building. The existing piping material is cast iron.
4. Storm Service: The existing building is currently provided with multiple storm laterals that exit the building and are routed to an existing storm system on site. The existing piping material is cast iron.

**Existing Plumbing Fixtures and Specialties**

1. Water closets are floor mounted tank type vitreous china fixtures. The fixtures are in good condition. ADA compliant fixtures are not provided.

Typical Water Closet

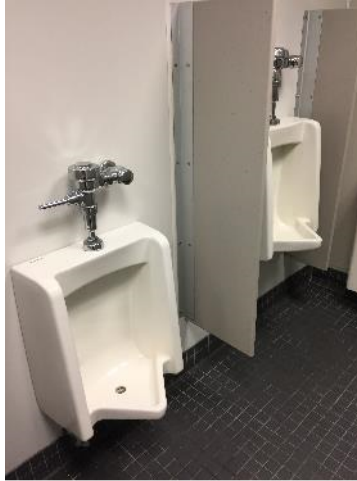


Typical Water Closet



2. Urinals are wall mounted vitreous china fixtures with manual flush valves. An ADA compliant fixture is provided. The urinals are in good condition.

Typical Urinals

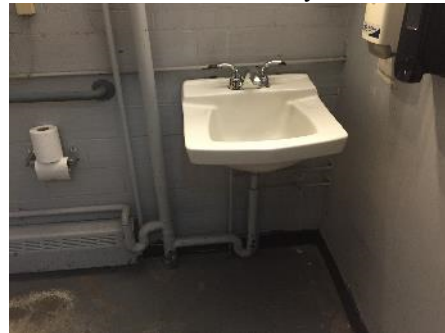


3. Lavatories are wall hung vitreous china with two twist or two lever handle faucets. ADA lavatories are not provided. The fixtures are in fair condition having signs of recent repairs to piping.

Older Lavatory



Newer Lavatory



4. The single drinking fountain in the Apparatus Bays is a wall mounted stainless steel unit that is not operational. This piece of equipment is in very poor condition.



Drinking Fountain in Apparatus Bay

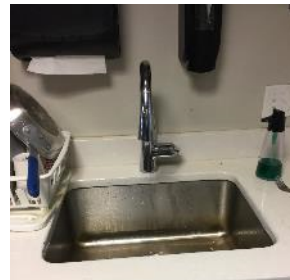


- Sinks vary throughout the building. Some are stainless steel sinks with single gooseneck faucet and one is a counter top unit with a single lever faucet. These sinks are in good condition but are not ADA compliant.

Vanity Sink



Kitchen Sink



- Janitor sinks are floor mounted mop basins with two lever faucets. Faucets do have integral vacuum breakers. These mop basins are in fair condition.

Fiberglass Mop Basin



Terrazzo Mop Basin



7. Showers throughout the building are fiberglass units with integral thermostatic mixing valves. These units range in age and are in fair to good condition. None of these units are ADA compliant.



8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.
9. Floor drains are provided in the apparatus bays. Due to the replacement of some floor slab sections, the floors no longer pitch to the drain locations. Small channels have been cut into the floor slab to get the standing water to the drains, however the drains are not functioning correctly. The underslab piping should be cleaned and investigated as to why these floor drains are not functioning properly.



### **Domestic Hot Water Systems**

1. The domestic hot water is generated by the central heating plant. A small circulating pump circulates hot water from the boiler throughout the building.

**MECHANICAL SYSTEMS:**

**Existing Boiler Plant**

1. Heating is provided for the building with a single Viessman Model Vitocell 300 high efficiency natural gas fired boiler. This boiler is recently installed and various pieces of the boiler piping system was replaced. The boiler and associated equipment is in very good condition, however, there is a valve that is showing signs of leaking and the piping should be insulated.

New Hot Water Boiler



Leaking Flange at Pump



2. Heating hot water is circulated to radiators throughout the occupied area of the building and to unit heaters in the Apparatus Bays. The radiators and unit heaters are in poor condition.

Typical Hot Water Radiator



Typical Hot Water Baseboard Radiation



Apparatus Bay Unit Heater



3. The existing fuel oil storage tank is exterior of the building and abandoned. This tank and associated piping should be removed.

Existing Fuel Tank Location



Existing Fuel Tank Top



### **Existing Heating, Ventilating and Air Conditioning Systems**

1. Ventilation is provided to the building via roof mounted exhaust fans and operable windows. The exhaust fans are in poor condition. Window air conditioners have been installed in some of the operable windows, rendering them unusable for ventilation.

Existing Roof Mounted Exhaust Fans





2. A Plymovent vehicle exhaust extraction system is utilized to capture and release vehicle exhaust outdoors. The exhaust extraction system consists of four hose- reel assemblies and a central exhaust fan. This equipment is in good condition. The old system of a propeller fan at the back of the main Apparatus Bay is still in place. This fan should be removed or the opening in the wall capped to reduce energy consumption.

Plymovent Vehicle Exhaust System



Exhaust Fan in Rear of Apparatus Bay



3. The kitchen was recently renovated and a new kitchen exhaust hood was installed. The hood does not have an automatic fire suppression system installed. The hood does not have any filters and the ductwork is not NFPA 96 compliant.

Kitchen Hood with no Filters  
or Fire Suppression System



### **Building Management System**

1. The building systems are controlled by individual local thermostats. These replaced the original temperature control system. This equipment is in fair condition.

Typical Local Thermostat



### **Electrical Systems:**

1. The existing electrical service is a 200amp, 240/120volt, 1-phase, 3-wire service that consists of a main disconnect switch and distribution. There is evidence of water getting into the main electrical disconnect switch. This should be investigated and repaired. The service equipment is in poor condition.

Electrical Service Equipment



Evidence of Water in Main Service Disconnect Switch



2. A 60kW natural gas fired emergency generator is manufactured by Generac and was installed in 1999. This provides back-up power to the entire building. This equipment is located inside the building in a separate room adjacent to the boiler room. This equipment includes the generator, 200amp automatic transfer switch, exercise timer, battery charger and silencer. This equipment is in good condition.



Emergency Generator



Automatic Transfer Switch



3. There is a mixture of original panelboards and newer panelboards in the building. The original panelboards are in poor condition and have no spare capacity. The newer panelboards are in good condition.

Older Electrical Panels



New Electrical Panels



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Pendant mounted industrial fluorescent fixtures
  - b. Pendant mounted fluorescent wraparound fixtures
  - c. Surface mounted fixtures
  - d. Recessed fluorescent fixtures

- e. Recessed compact fluorescent downlights
- f. Lamps
  - i. T8 fluorescent lamps
  - ii. Compact fluorescent

Pendant Industrial Fixture



Surface Mounted Fixture



Surface Mounted Fluorescent Fixture



Recessed Fluorescent  
Fixture



Surface Mounted Fixture



Pendant Mounted Fluorescent  
Wraparound Fixture

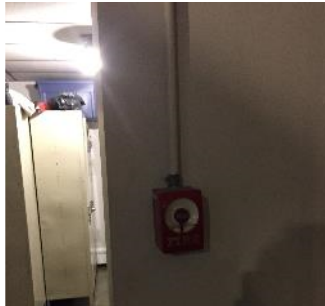


5. Lighting control for the building consists of the following:
- a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switch in small office and other small rooms
  - c. This equipment is in good working condition, however, some of the occupancy sensors are damaged and should be replaced.
6. The fire alarm system consists of a Gamewell analog fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, and smoke detectors. The fire alarm control panel is in poor condition. The existing devices are not ADA compliant. Additional fire alarm horn strobes maybe required to meet current code requirements. The system also has a master box mounted on the exterior of the building.

Existing Fire Alarm Control  
Panel



Existing Fire Alarm  
Pullstation



Existing Fire Alarm  
Horn/Strobe



7. The exit signs throughout the building are plastic fluorescent type or paper signs. These units are in fair condition.
8. The emergency lighting in the building consists of lighting fed off the generator. There is a trip-light system of relays that turns on lights in the event of a fire alarm. The existing equipment is in fair condition.
9. The site lighting consists of wall mounted fixtures around the exterior of the building. Some of these fixtures are damaged. The remainder are in fair condition.

Damaged Exterior Light Fixture



Damaged Exterior Light  
Fixture



10. Data/technology consists of wired computer stations throughout the building. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Replace existing paper exit signs with electrified signs. This would include the new sign and electrical wiring from a local panelboard.
- Replace the existing fire alarm system with one that can support ADA compliant devices. The existing system will not support ADA compliant devices and additional devices are required for proper coverage. This will require the pullstations, ADA compliant horn strobe units, smoke and CO detectors, power supplies and electrical wiring from a local power source.
- Provide a NFPA 13 sprinkler system.
- Repair the floor drains in the Apparatus Bay so that they function properly.
- Repair damaged wiring devices, including occupancy sensors.
- Insulate the piping in the boiler room.
- Replace the leaking valve in the boiler room.
- Provide mechanical ventilation or air conditioning throughout the building. A new VRF style air conditioning system would allow for the removal of the window air conditioners and allow the operable windows to be used for ventilation. This would greatly improve the air quality within the building.
- Provide secondary overflow roof drains. This will be required if the roof is replaced or the building is renovated unless scuppers are provided.
- Replace existing water closets with high efficiency, low flow, 1.28 Gallons Per Flush (GPF) water closets. This will be required if the building is renovated.
- Replace existing urinals with high efficiency, low flow, 0.125 GPF urinals. This will be required if the building is renovated.
- Replace the existing lavatories with high efficiency sinks and sensor faucets. This will be required if the building is renovated.
- Provide ADA compliant plumbing fixtures throughout.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings.
- Upgrade the exterior lighting with new fixtures using LED or induction type lamps. Recommended for energy savings and lower maintenance costs.
- Replace the electrical service and older panelboards.

# FIRE STATION #2

1550 Central Street

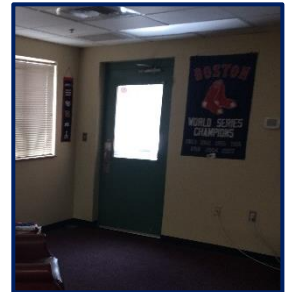
Year Constructed: 2001  
Year of Renovation/Addition:  
Building Type: B, S-2 and R-2  
Construction Type: VB  
Fire sprinklers: Yes  
Total Floor Area: 9,864 SF  
Floors: 1<sup>st</sup> and 2<sup>nd</sup> Floors  
Land Area (Acres): .87  
Roof Type/ Age: Asphalt Shingle/2001



GENERAL: Fire Station #2 (Head Quarters) is relatively new and has not been renovated. The Station is in generally good condition.

### LIFE SAFETY:

- 1 Exit door from Day Room has no panic bar and swings in. **Recommend reversing door swing and install appropriate door hardware and panic bar.**



HEALTH: None

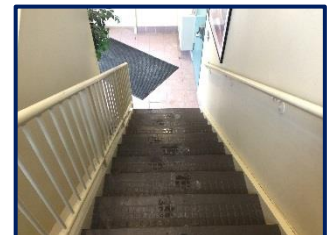
HAZARDOUS MATERIALS: None identified by visual observation.

### ADA COMPLIANCE:

- G Sink in kitchen does not meet ADA accessibility. No required knee space or clearance. **Modify sink to comply.**



- G Stairs require 12 inch hand rail extensions at the bottom of the stairs on both sides. **Recommend modifying handrails with 12 inch extensions.**



- G Wood deck at rear of building requires code compliant hand and guard rails. **Recommend installing code compliant handrails.**





SITE:

2 Repair cracks at curbing and concrete walk in 2 + years.

3 Recommend to mill and overlay parking in 3+ years.

EXTERIORS:

1 Concrete walk and ramped area at front entry is cracking. Consider replacement of walk if concrete begins to spall and creates safety concerns.

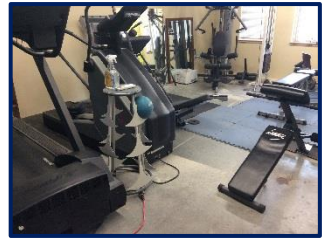


INTERIORS:

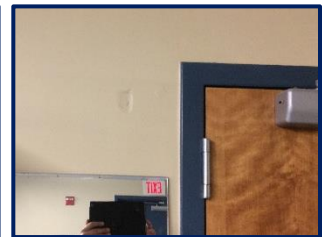
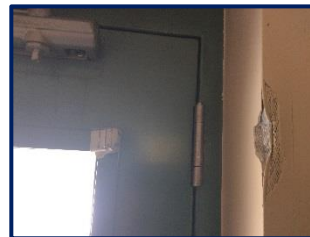
2 Exposed concrete floor in weight room area has 2 large cracks. Cracks require further investigation from structural engineer to determine cause.



4 Rubber padding is placed in multiple areas around the weight room. Recommend installing rubber flooring to cover entire weight room area.



2 Walls being damaged by doors with no door stops in a few locations. Recommend installing door stops where required.



3 Acoustical ceiling tiles damaged or stained in multiple locations. Replace stained or damaged tiles. Recommend replacing as general maintenance.





- 3 Shelving was removed from exterior wall in Day Room and walls need to be repaired. **Repair and repaint affected area.**



- 2 Crack in CMU above and to the left of the double doors to the oxygen tank filling room. **Review existing condition with Structural Engineer.**



#### PROGRAM

Locker Room and shower have been designated for female only fire fighters but appears not to be a sleeping area designated for females.

#### ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

- 4 Upgrade HVAC control system to electronic system with energy management capability for energy efficiency and savings.
- 4 Upgrade exterior lighting fixtures using LED technology.
- 4 Upgrade interior lighting with new fixtures using LED technology.
- 4 Upgrade lighting controls throughout the building to meet the latest energy code requirements.

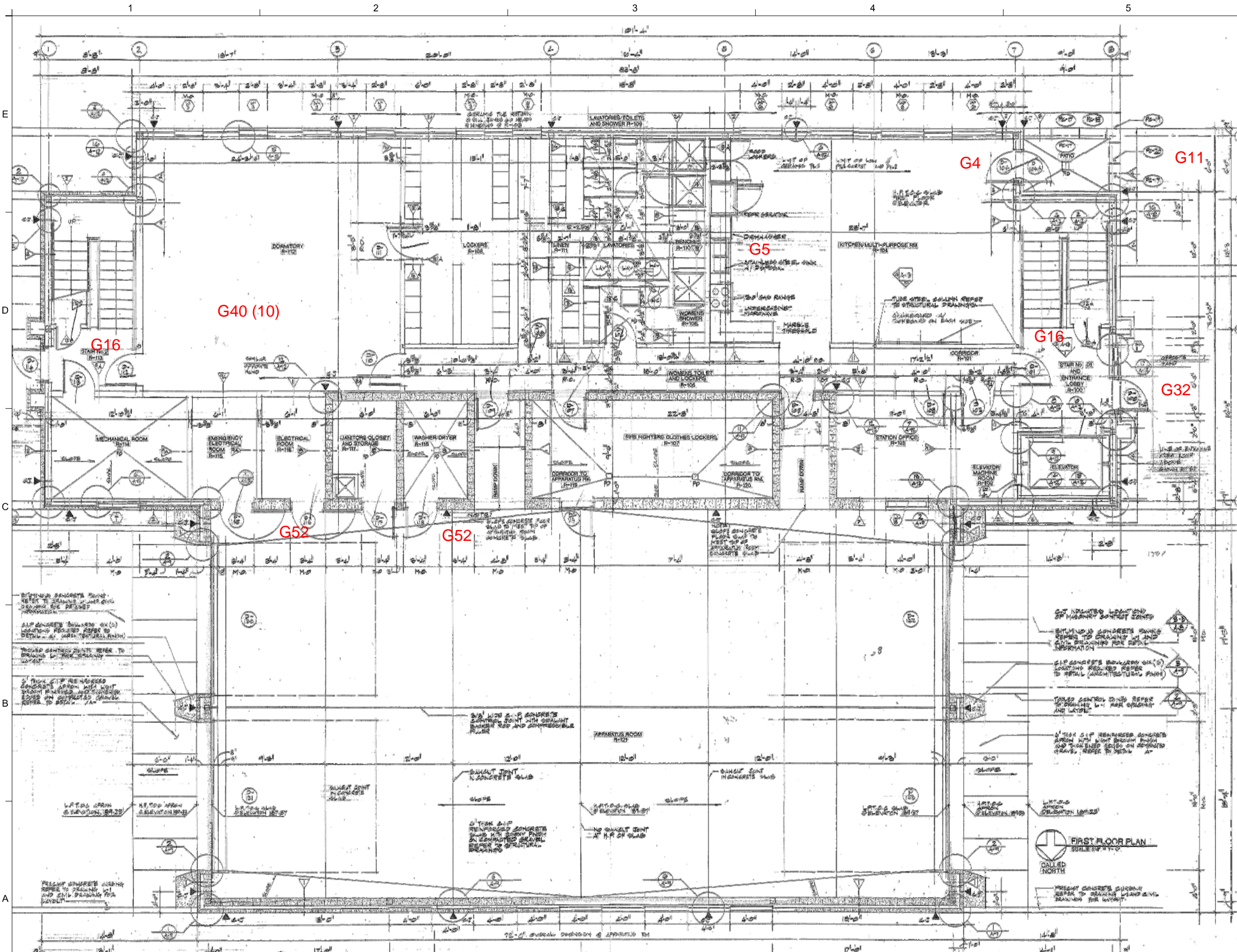
#### MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:

- 1 Add fire alarm system devices to comply with the latest code requirements.

- 1 Repair corroded FP flange due to grounding.
  
- 1 Provide continuous insulation for the potable and non-potable piping in the Mechanical Room. Insulate domestic hot water distribution in the Mechanical Room.
  
- 1 Replace broken receptacles/cover plates.
  
- 2 Upgrade the existing security system to provide more building coverage.

\* \* \*

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FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

FIRST FLOOR PLAN

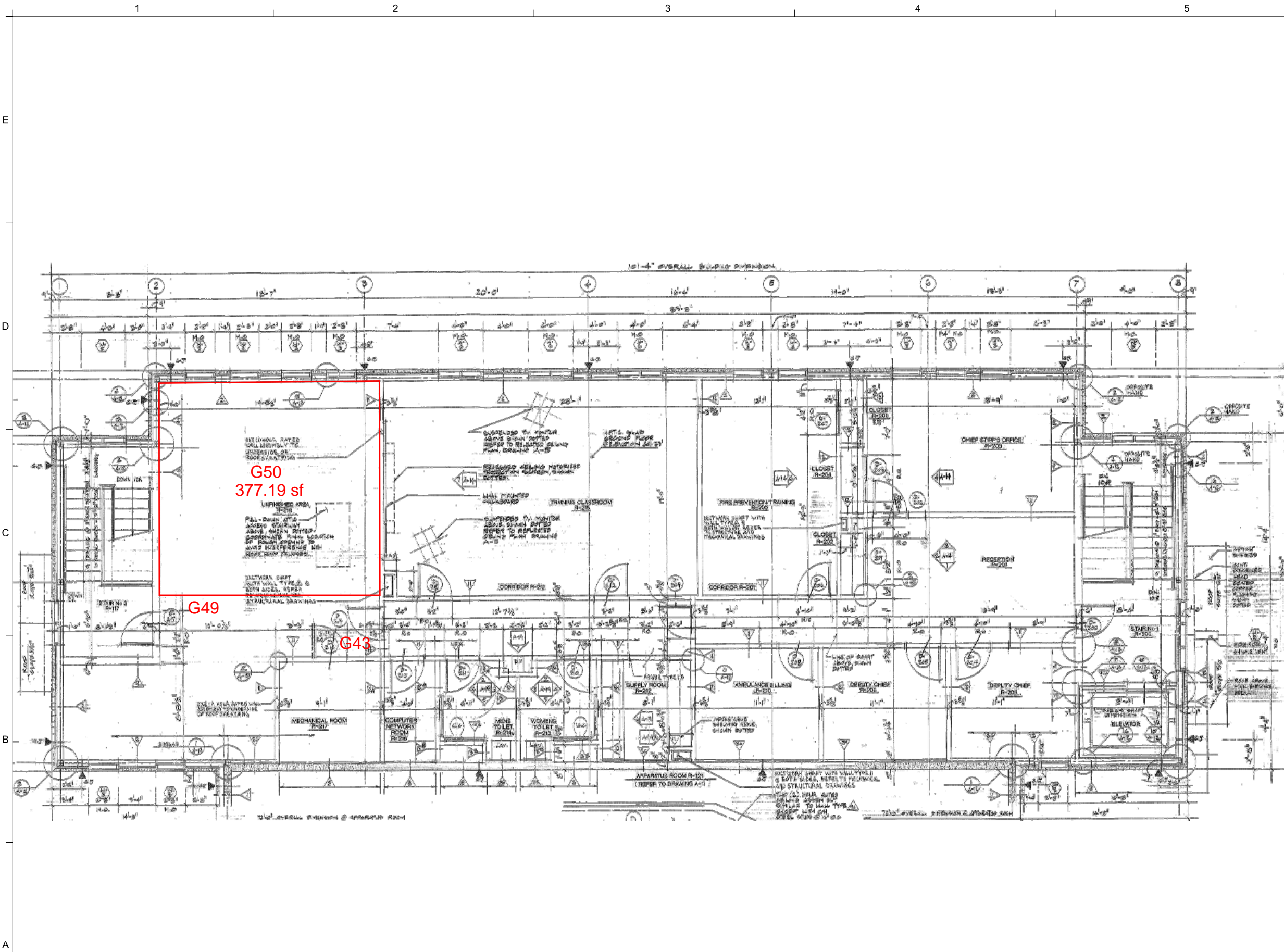
Scale: N.T.S.  
Drawn by: ASJ  
Job#: 16022.00  
Date: 4/4/2017

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**FIRE STATION #2  
 STOUGHTON, MA**

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**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Fire Station #2  
1550 Central Street  
Stoughton, MA

Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 – National Electrical Code
9. NFPA 101 – The Life Safety Code

### **FIRE PROTECTION SERVICE**

1. **Fire Protection Service:** The building is currently served by a 6-inch fire protection service installed approximately 16 years ago. The attic area is protected with a Freeze Protection system which was installed in 2009. In general the fire protection system appears to be in good condition. However, the incoming service flange has a significant amount of corrosion at the point where the flange meets the concrete floor. The flange should be replaced

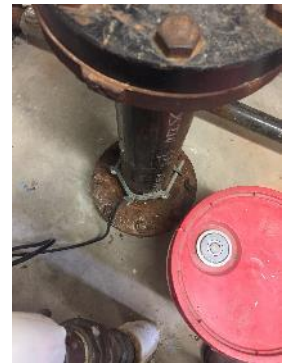
Fire Protection Service



Freeze Protection



Corrosion on the Flange





## PLUMBING SYSTEMS:

### Plumbing Utilities

1. Water Service: The building is currently served by a 2" domestic water service fed from the local water company installed in 2000. The service feeds a potable and non-potable water distribution system. The non-potable water feeds fire department hose connection and is isolated from the potable water distribution via a check valve assembly. Cold water piping is copper with rigid molded glass fiber insulation. Segments of the pipes are not insulated. The water service appears to be in good condition. However, pipe insulation should be installed where it is missing.

Domestic Water Service



Potable Cold Water



Non potable Cold Water



2. Natural Gas Service: The building is currently served by a single natural gas service which enters the building at the boiler room. Natural gas piping within the building is schedule 40 black steel pipe and installed in 2000. The gas service feeds one (1) domestic water heater, four (4) indirect fired furnaces and one (1) kitchen stove. The natural gas pipe distribution appears to be in good condition.

Natural Gas Service  
Equipment



3. Sanitary Service: The existing building is currently provided with one sanitary waste water lateral and one oil separator waste lateral that exits the building on the north side. The oil separator is located on the north side.
4. Storm Service: There are no internal drains in the building.

### Plumbing Fixtures and Specialties

1. Water closets and urinals are wall mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Water Closet



Typical Urinal



2. Sinks are counter mounted vitreous china or stainless steel. Faucets are dual lever or single lever type. ADA lavatories are only provided in the toilet rooms with insulation wrap for exposed piping below fixture. The fixtures and faucets are in good condition.

Typical Toilet Room Sink



Typical Stainless Steel Sink



3. The shower is an acrylic unit with grab bars, hand-held shower head, and integral thermostatic mixing valve. This unit is ADA compliant and in good condition

Shower Unit



### **Domestic Hot Water Systems**

1. **Domestic Hot Water System:** Domestic hot water is generated by an AO Smith wall mounted gas fired water heater with a recirculation pump. The water heater was recently installed and is in very good condition. Hot water piping distribution is copper. The piping is not insulated. The domestic hot water service appears to be in good condition. However, pipe insulation should be installed.

Domestic Hot Water Heater



### **MECHANICAL SYSTEMS:**

1. The majority of the heating and cooling system consists of four (4) indirect natural gas fired furnaces with ducted refrigerant cooling coils connected to condensing units. Duct mounted electric coils provide supplement heating for the Locker Rooms and offices west of the Training Room. This equipment was installed in 2009 and is in good condition. The estimate time span for this equipment is approximately 10 yrs. to 15 yrs. When the time comes to replace the units, the equipment should be replaced with commercial grade equipment. This application is considered a light commercial application. Commercial grade equipment typically last 5 years to 10 years long as compared residential equipment when residential equipment is utilized in a light commercial application.
2. Plate type heat recovery units are utilized to provide tempered outside air into the return air side of the furnaces. This equipment was installed within the past 5 years and appears to be in good condition.
3. Dedicated ductless split units provide heating and cooling for the Exercise Room and Dispatch Room. This equipment was installed 2000 and appears to be in good condition. The estimate operating span for this equipment is approximately 15 years to 20 years.
4. An indirect gas fired unit heater delivers supplement heat to the Exercise Room. The unit heater was installed in 2000. The useful operating span for unit heaters is approximately 20 years. The equipment is in good condition.
5. The heating source for the Apparatus Bays is an inferred indirect gas fired heating system and (4) unit heaters. It is estimated that the inferred indirect gas heaters were installed within the past 5 years. The unit heaters were installed in 2000. The equipment is in good condition. The useful operating span for unit heaters and inferred heaters are approximately 20 years.
6. A Plymovent vehicle exhaust extraction system is utilized to capture and release vehicle exhaust outdoors. The exhaust extraction system consists of four hose- reel assemblies and a central exhaust fan.

7. The existing controls are locally controlled. We recommend upgrading the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings.

Gas Fire Furnace



Infrared Heaters



Unit Heater



### Electrical Systems:

1. The existing electrical service is an 800amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch, C.T. Cabinet, utility meter and Distribution Panelboard. The service equipment is in good condition.

#### Main Service Entrance



2. The building has an 180KW diesel fired emergency generator, Generac 2000 series. The generator provides back-up power to the building. This equipment is located outside the building in a weatherproof enclosure. The distribution consists of an Automatic Transfer Switch and a circuit breaker type panelboard. This equipment is in good condition.

Emergency Diesel Generator



3. The electrical power is distributed through the building by circuit breaker type panelboards and grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment is in good condition.

Electrical Panelboards



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x2 lensed fluorescent troffers
  - b. Recessed 2x4 lensed fluorescent troffers



- c. Surface/ Pendant 1x4 open fluorescent industrial
- d. Pendant architectural direct/indirect fluorescent luminaires
- e. Recessed open compact fluorescent downlights
- f. Decorative chandeliers
- g. Decorative wall sconces
- h. Lamps
  - i. T8 fluorescent lamps
  - ii. U bent tube T8 lamps
  - iii. Compact fluorescent (PL-S)

Recessed Lensed Fluorescent Fixture



Recessed Parabolic Fluorescent Fixture



Surface Mounted Fluorescent Fixture



5. Lighting control for the building consists of the following:

- a. Toggle type switches in most areas
- b. Combination occupancy sensor/switch in small office and other small rooms

- c. This equipment is in good working condition.
6. The fire alarm system consists of a Fire Lite zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, duct smoke detectors, sprinkler system flow and tamper switch monitoring. The fire alarm control panel is in good condition. The majority of the manual fire alarm pull stations and horn strobe units appear not to be ADA compliant. Additional fire alarm horn strobes maybe required to meet current code requirements. The fire alarm system reports via a wireless master box.

Fire Alarm Control Panel and Dialer



7. The exit signs throughout the building are a mixture of plastic fluorescent and brushed aluminum type. The exit signs are fed from the emergency power distribution system (generator). These units are in fair to poor condition.
8. The emergency lighting in the building is from selected fixtures. The selected fixtures are in fair to good condition.
9. The site lighting consists of pole mounted cut-off fixtures and matching wall mounted decorative fixtures. The fixtures are in fair condition.

Pole Mounted Site Lighting Fixture



10. Security features in the building consist of interior cameras, intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
11. Data/technology consists of wired computer stations throughout the building. There are also projectors in a number of classrooms. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Add fire alarm system devices to comply with latest code requirements.
- Repair corroded FP flange due to grounding.
- Provide continuous insulation for the potable and non-potable piping in the Mechanical Room.
- Insulate domestic hot water distribution in the Mechanical Room
- Replace broken receptacles/ coverplates.
- Upgrade HVAC control system to electronic system with energy management capability for energy efficiency and savings.
- Upgrade the exterior lighting with new fixtures using LED technology. Recommended for energy savings and lower maintenance costs.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Upgrade existing security system to provide more building coverage.

# POLICE STATION

26 Rose Street

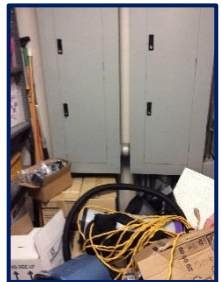
Year Constructed: 1997  
Year of Renovation/Addition:  
Building Type: B, I-3 and S-2  
Construction Type: VB  
Fire sprinklers: Yes  
Total Floor Area: 20,878 SF  
Floors: Basement, 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): 1.64  
Roof Type/Age: Standing Seam/Single Ply Membrane- 1997



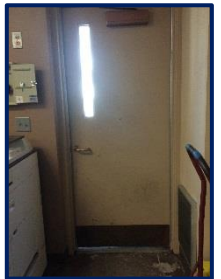
GENERAL: The Police Station has not had any recent renovations and is in generally good condition. The station is currently undergoing a renovation of the Dispatch area to consolidate the police and fire dispatch systems to one central location.

## LIFE SAFETY:

**2** Items stored in front of electrical panel. **Remove items for approved clearances.**



**2** Exterior door from detectives office does not have panic bar installed. **Install Panic devise.**



HEALTH: None known at this time.

HAZARDOUS MATERIALS: None identified by visual observation.

## ADA COMPLIANCE:

**G** Knee space under Breakroom sink not in compliance. **Modify Sink.**



- 2 ADA accessible sinks in Locker Rooms require insulation on piping and showers are not accessible. **Install pipe insulation on pipe below 2 sinks and modify 2 showers to comply. (1 in Men's and Women's, sinks and showers)**



- G Pull clearance at door to booking area does not have the required clearance. **Modify door**

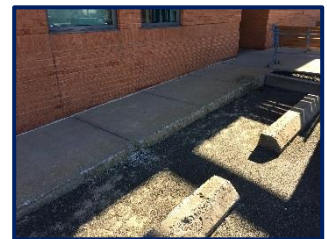


- 4 Gun Storage lockers project more than 4" from wall. **Provide cane detection on floor.**



**SITE:**

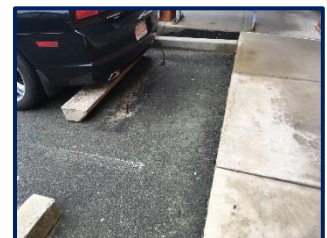
- 2 Concrete walk and curb on Northwest side of building is cracking and deteriorating in a couple of locations.



- 2 Mill and overlay pavement in 5+ years



- 2 Crack seal in 2+ years



- 2 Reset wheel stops

- G Upgrade stormwater to current standards in 5+ years (Estimated cost \$125,000 to \$150,000)



EXTERIORS:

- 1 Front entry concrete stairs are in need of repairs. Concrete cracking. Spalling, rebar rusting thru and metal nosing loose and coming up in a couple of areas. **Repair concrete stairs and install new metal nosing.**



- 1 Water leak at covered entry at Main Entrance. **Investigate where water is coming from and resolve issue. Pressure clean to remove all water stains.**



- 2 Efflorescence on brick at the south corner of building. **Pressure to remove efflorescence.**



clean

- 1 Down spout missing at the south corner of building. **Install new down spout.**



- 1 Down spout on southeast side of building gets redirected to avoid the generator exhaust area way. Water is being redirected to the area where water has been penetrating the building in the Sprinkler Room. **Recommend directing the water into the area way because this area has a floor drain. (Investigate drains and PVC in Areaway; see CES report in appendix)**



- 1 Water stains on brick wall on the southeast side of building near exterior door from detectives office. Gutter either leaking or overflowing. **Investigate issue and resolve. Pressure clean to remove water stains.**



INTERIORS:

- 3 Painted gypsum wall board ceiling in Crime Labs room has stains around the air vent, sprinkler cover and light. Investigate issue and resolve. **Repaint ceiling.**



- 2 Door to DARE Supply room gets stuck shut because of a lock on a locker that is too close to the door. **Reorganize room to allow for easy opening.**



- 2 Repair CMU and repaint

- 2 Wood window sills in Chiefs Office and Lieutenants Office are water damaged from past ice dams. **Remove and replace with new wood sill.**



- 2 Acoustical ceiling tile in basement has been damaged or has been removed many years ago because of flooding. Grid appears to be in good condition. **Remove remaining acoustical tiles and install new.**



- 3 Painted concrete foundation wall in the Basement Sprinkler Room is peeling, cracking and blistering and pipes are showing signs of corrosion from water penetrating the building around the fuel pipes for the generator.



**Resolving the water issue and replacement of the corroded pipes is in progress. After work is complete, scrape, repair and repaint entire wall.**

PROGRAM:

- G** ADA accessible detention cell not provided.
- G** Accessible shower/toilet facilities are not in compliance with current standards.
- G** Juvenile detention facilities should be separate from those for adults.

ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

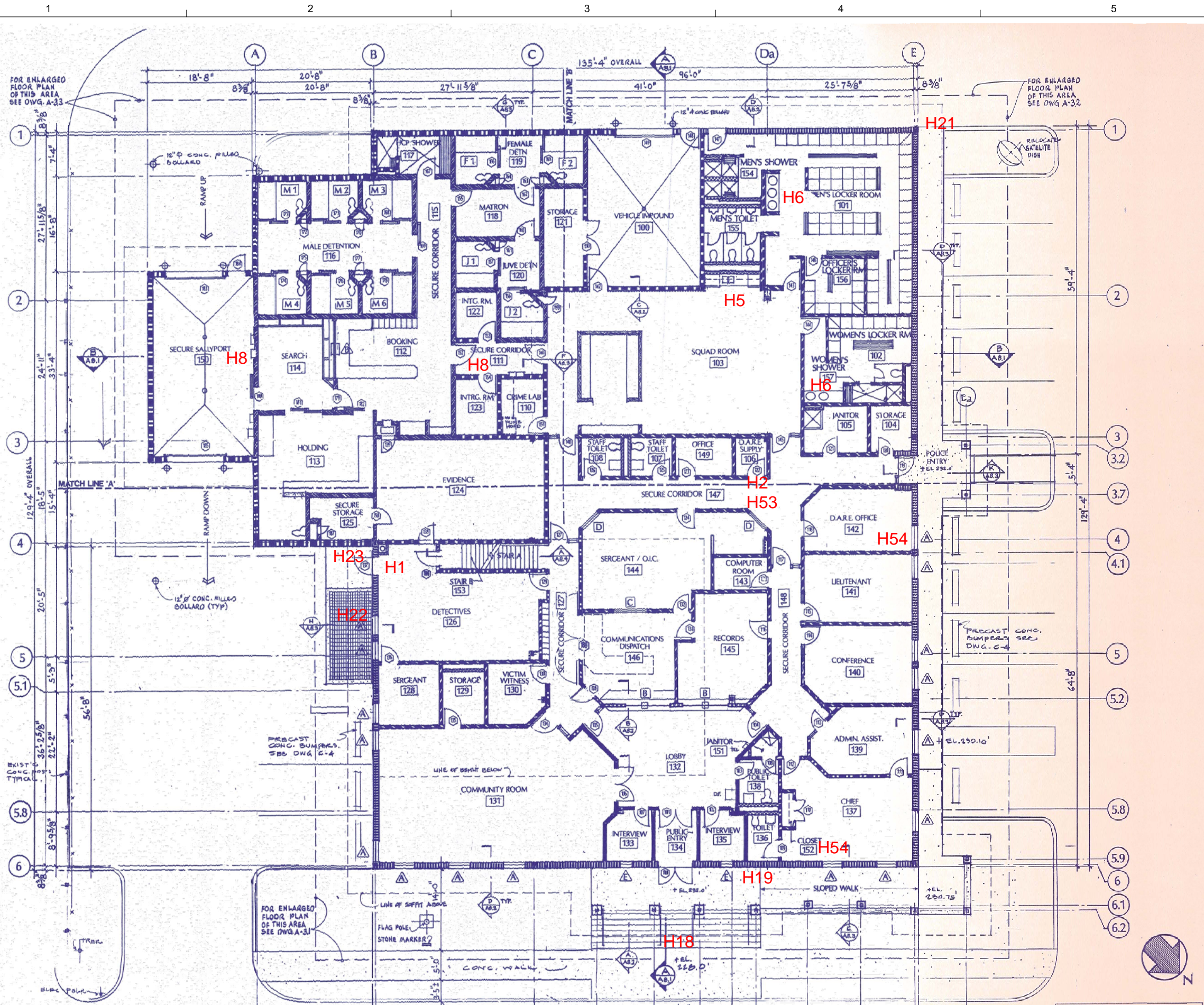
- 2** **Replace older indoor air handling units with new high efficiency equipment.**
- 3** **Replace the domestic water heater with new high efficiency equipment.**
- 4** **Upgrade the interior and exterior lighting with new fixtures using LED or induction type lamps.**

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:  
*Refer to CES Report in Appendix for complete assessment.*


- 2** Replace wet ductwork and openings in ductwork in the attic mechanical room.  
**Repair the water leak at the foundation** *(Not for pricing – repair currently in progress by Town)*
- 4** Provide ADA compliant showers and sinks
- 4** Install sensor faucets and flush valves where not currently installed.
- 4** Provide secondary overflow drains.
- 1** Repair leak at hot water circulation pump.

\* \* \*





FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



**D·R·A**  
 Drummy  
 Rosane  
 Anderson,  
 Inc.

235 Bear Hill Road  
 4th Floor  
 Waltham, MA  
 02451

617-964-1700  
 fax 617-964-1701  
 Info@drains.com

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**POLICE STATION  
 STOUGHTON, MA**

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**FIRST FLOOR PLAN**

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Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017

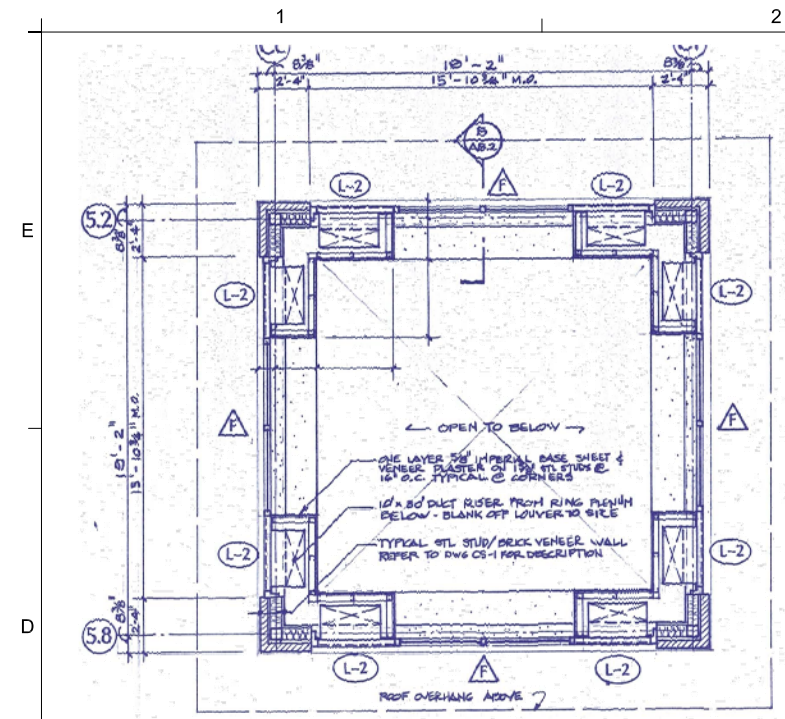
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NOTE:  
 1. The Contractor is responsible for verifying all dimensions, and notifying the Architect of any and all discrepancies of same prior to the commencement of construction.  
 2. All drawings are diagrammatic, and are not to be scaled for measurements.

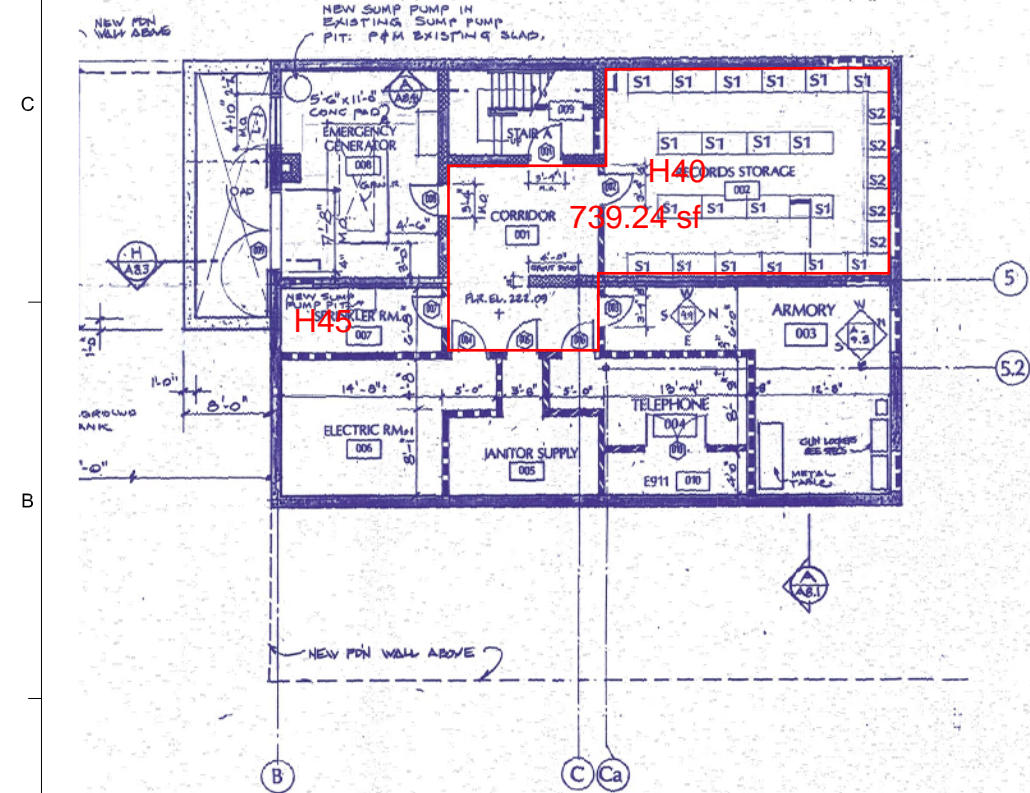


**POLICE STATION  
 STOUGHTON, MA**

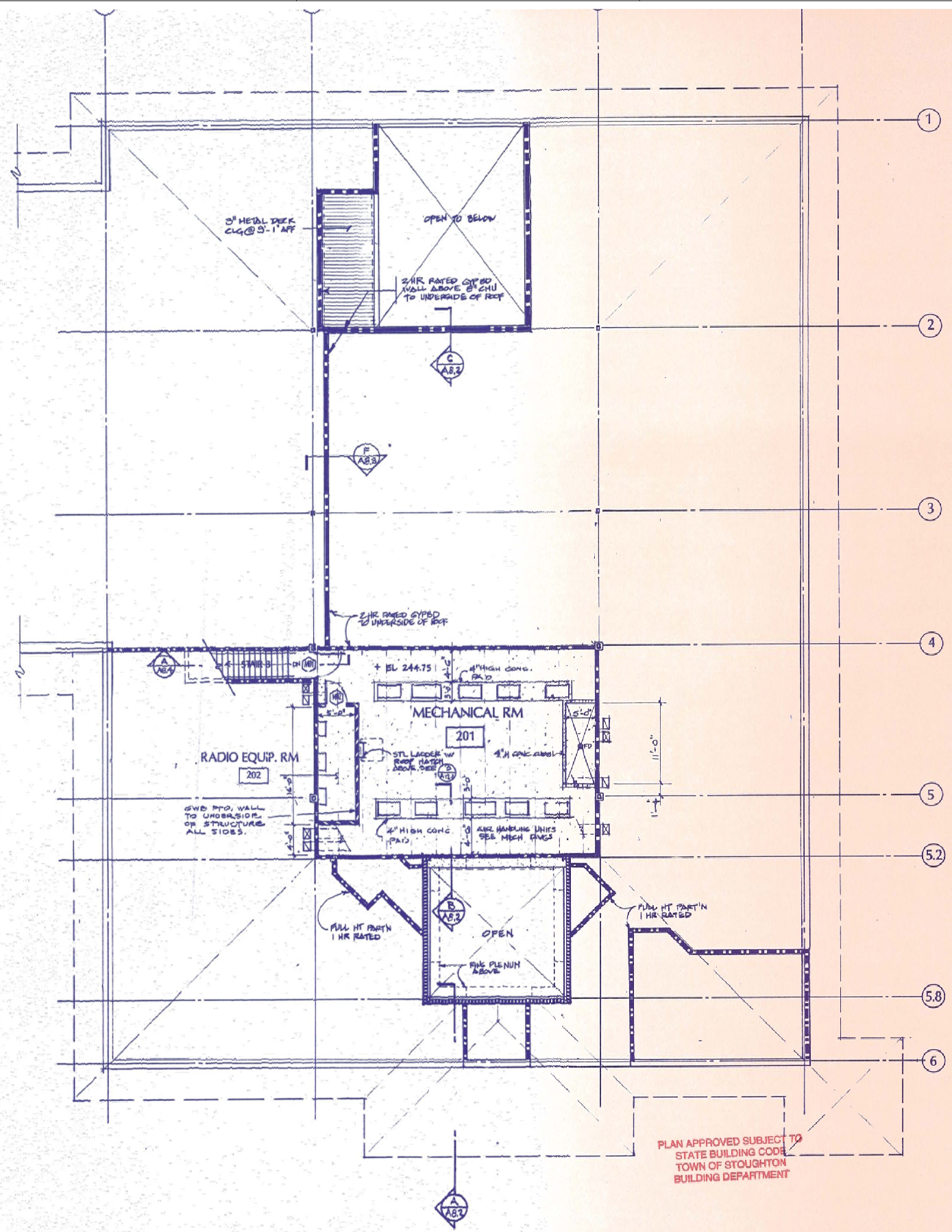
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**(C) PLAN @ TOWER**  
 SCALE 1/4" = 1'-0"



**(A) RENOVATED BASEMENT PLAN**  
 SCALE 1/8" = 1'-0"



**(B) MEZZANINE FLOOR PLAN**  
 SCALE 1/8" = 1'-0"

PLAN APPROVED SUBJECT TO  
 STATE BUILDING CODE  
 TOWN OF STOUGHTON  
 BUILDING DEPARTMENT

**NOTE:**  
 1. The Contractor is responsible for verifying all dimensions, and notifying the Architect of any and all discrepancies of same prior to the commencement of construction.  
 2. All drawings are diagrammatic, and are not to be scaled for measurements.

Scale: N.T.S.  
 Drawn by: ASJ  
 Job# 16022.00  
 Date: 4/4/2017

**A1.2**

FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G, AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



# Mechanical and Electrical Systems Existing Conditions Narrative

Police Headquarters Building  
26 Rose Street  
Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

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

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4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – The Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building is served by a 4” fire protection service fed from the local water company. The service enters the building in the basement and includes a main shut off valve, double check valve, alarm valve with trim, and flow and tamper switches. This equipment is in good condition.

Fire Service Equipment



### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

2. Domestic Water: The existing building is currently served by a 2" domestic water service fed from the local water company. The service equipment includes isolation valves and a water meter. The pipe insulation on this water line in the basement has been damaged by ground water coming thru the foundation wall and should be replaced.

Domestic Water Service and  
Damaged Insulation



3. Natural Gas Service: The existing building is currently served by a single natural gas service which enters the building and is routed to the attic mechanical room. The gas service serves the air handling units and domestic water heater.
4. Sanitary Service: The existing building is currently provided with multiple sanitary waste water laterals that exit the building and are routed to the local municipal sewer system. The existing piping material is cast iron.
5. Storm Service: The existing building is currently provided with multiple storm laterals that exit the building and are routed to an existing storm system on site. The existing piping material is cast iron.

### **Existing Plumbing Fixtures and Specialties**

1. Water closets in non-secured areas are wall mounted vitreous china fixtures with sensor type flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Water Closet



2. Water closets in the cell area are floor mounted combination sink/water closet units with push button flush valves. These fixtures are in good condition.

Typical Cell Area Fixture



3. There are no urinals in the building.
4. Lavatories are wall hung vitreous china. Faucets are two lever type or sensor. ADA lavatories are provided with insulation wrap for exposed piping below fixture. The fixtures are in good condition and ADA compliant fixtures are provided.

Lavatory with Lever Faucets



Lavatory with Sensor Faucet



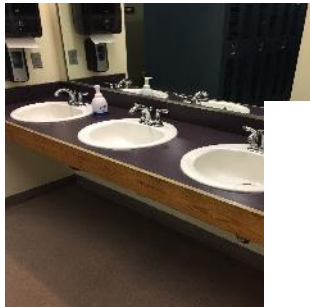
5. Drinking fountains are wall hung stainless steel single units that are ADA compliant. These units are in good condition.

Drinking Fountain



6. Sinks in the building are vitreous china counter mounted type with two-lever faucets or stainless steel counter mounted sinks with single lever faucets. These sinks are in good condition but are not ADA compliant due to not having the required clearance or pipe protection provided under the sinks.

Vitreous China Counter Mounted Sinks



Stainless Steel Counter Mounted Sink



Typical Shower Stall



7. Showers are provided in the Locker Rooms. These are fiberglass gel type with integral mixing valves, single lever faucets. These showers are not ADA compliant due their size and step needed to enter the shower.

### **Existing Plumbing and Piping Systems**

1. Sanitary waste and vent piping:
  - A. Sanitary waste and vent piping is plain end cast iron with stainless steel clamp and shield assemblies. Waste services exit the building below slab at multiple locations. All sanitary waste is piped to the new on-site septic system. Vent piping exits the building through the roof with a 4" diameter pipe and extends a minimum of 12" above the finished roofline.

- B. Floor cleanouts are provided to serve the buried waste system.
2. Storm piping:
- A. Storm piping is plain end cast iron with stainless steel clamp and shield assemblies. Storm services exit the building below slab at multiple locations. All storm water is piped to the on-site storm system.
  - B. No secondary storm piping with overflow drains are provided.
  - C. Floor cleanouts are provided to serve the buried storm system.
3. Domestic hot water, cold water and re-circulating hot water piping is copper with rigid molded noncombustible glass fiber insulation.
4. Natural gas piping within the building is schedule 40 black steel pipe. Shut-off valves and regulators are provided where required. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

### **Domestic Hot Water Systems**

1. The domestic hot water is generated by a single Weben/Jarco natural gas fired water heater located in attic mechanical room. This water heater is original to the building and is in fair condition.

Domestic Water Heater



### **MECHANICAL SYSTEMS:**

1. Fuel oil is stored in an underground fuel oil storage tank. The fuel oil piping is then extended to the emergency generator. There is a problem where this piping enters the building as the penetration



thru the foundation wall has been allowing ground water to enter the building causing the corrosion identified at the domestic water service. This penetration is under repair by the Town at this time.

**Existing Heating, Ventilating and Air Conditioning Systems**

1. Heating and ventilation is provided to the building by multiple natural gas fired air handling units with DX cooling coils located in the attic mechanical room. One of the units has recently been replaced. Heating or cooling air is distributed to zones covered by each individual air handling unit. Each air handling unit has a dedicated DX condensing unit located on the roof. This equipment is of the light commercial or residential type and in fair to poor condition.

Typical Air Handling Unit



Typical Air Handling Units



Typical Roof Mounted Condensing Unit



2. A Variable Refrigerant Flow (VRF) system has recently been installed to serve the dispatch area and large meeting room. This equipment consists of wall mounted air handlers and roof mounted condensing unit. This equipment was added due to the existing HVAC equipment not being able to support the cooling and humidity requirements of these spaces. The entire building suffers from high humidity and small portable air conditioning units have been placed throughout the building to provide the additional cooling and dehumidification required. The ceiling tiles throughout the building are sagging which substantiates the high humidity problem identified by the Town.

Portable Air Conditioning Unit



VRF System Condensing Unit on Roof



VRF System Wall Mounted Air Handling Unit



3. Exhaust is provided for the building by several roof mounted exhaust fans which are approximately ten to twenty years old. The condition ranges from fair to poor.

Typical Roof Mounted  
Exhaust Fan

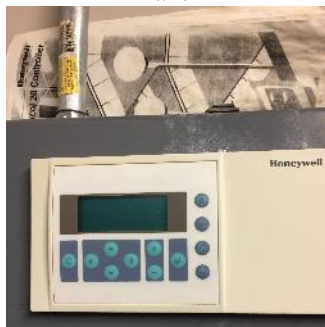


4. There is ductwork in the attic mechanical room that have patches that have failed or where there is evidence of water collecting in the ductwork. The ductwork is internally lined which presents a problem for air quality if the ductwork gets wet. It was also noticed that a section of flexible ductwork was disconnected from the main supply ductwork when looking thru an access panel in the attic mechanical room. Repairs are required to seal the patches and connect the ductwork. Further investigation is required to evaluate the extent of the potential wet duct lining.

### **Building Management System**

1. The building systems are controlled by a Honeywell control system that is approximately 20 years old. This system includes control panels and thermostats. This equipment is in fair condition.

Honeywell System Control  
Panel



### **Electrical Systems:**

1. The existing electrical service is a 600amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch, C/T compartment, and distribution panelboard. The service equipment is in good condition.

Electric Service Main  
Disconnect Switch

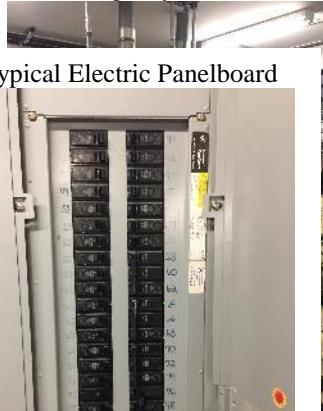


2. A 200W diesel fired emergency generator manufactured by Kohler, Model 200ROZD is installed in a generator room. This serves as back-up power to the entire building. This equipment includes the generator, automatic transfer switch, silencer, and fuel day tank. This equipment is in good condition.

Automatic Transfer Switch



Emergency Generator



Typical Electric Panelboard

Generator Day Tank



3. The electrical panelboards are original to the building and in good condition.

4. Lighting throughout the facility consists of a number of type of light fixtures including recessed acrylic lensed fixtures, surface mounted fluorescent strips, wall-mounted acrylic lensed fixtures and vandal resistant fluorescent fixtures. All of these fixtures are in good condition.

Typical Surface Mounted  
Fluorescent Fixture



Typical Recessed  
Fluorescent Fixture



Wall Mounted Fluorescent  
Fixture in Bathrooms



Wall Mounted Fluorescent  
Fixture in Cells



5. Motion detectors have been installed in most of the areas in the building. This equipment is in good working condition.
6. The fire alarm system consists of a Simplex Model 4005 fire alarm control panel, remote annunciator, and manual fire alarm pull stations and horn strobes, and some smoke detectors. There is a wireless master box that has recently been installed. The fire alarm control panel and associated equipment is in good condition.

Fire Alarm Control Panel



Typical Fire Alarm  
Pullstation



Typical Fire Alarm  
Horn/Strobe



7. The exit signs throughout the building are plastic fluorescent type with integral batteries. These units are in good condition.

Typical Exit Sign



8. The emergency lighting in the building is by using the normal light fixtures fed from the emergency generator.
9. The site lighting consists of pole mounted shoe-box fixtures, wall mounted flood lights on the exterior of the building or surface mounted fixtures in vestibules or covered entrances. These fixtures are in good condition.
10. Security features in the building consist of interior and exterior cameras, motion detectors, and intercom stations at various access points around the building. All of this equipment is in good condition.
11. Data/technology consists of wired computer stations throughout the building. There are also projectors in the meeting rooms. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Investigate the possible wet ductwork in the attic mechanical room. Replace wet ductwork as necessary.
- Repair openings in ductwork in attic mechanical room.
- Repair the water leak at the foundation. (This is currently under repair by the Town.)
- Provide ADA compliant showers and sinks.
- Install sensor faucets and flush valves where not currently installed.
- Provide secondary overflow drains. This will be required if the roof is replaced or the building is renovated unless scuppers are provided.
- Replace older indoor air handling units with new high efficiency equipment. The equipment is at the end of its expected service life. An alternate would be to install VRF equipment throughout.
- Replace the domestic water heater with new high efficiency equipment. This equipment is at the end of its expected service life.
- Upgrade the interior and exterior lighting with new fixtures using LED or induction type lamps. Recommended for energy savings and lower maintenance costs.



# CAPEN-REYNOLDS FARMHOUSE

760 Pleasant Street

Year Constructed: 1757  
Year of Renovation/Addition:  
Building Type: R-  
Construction Type: VB  
Fire sprinklers: No  
Total Floor Area: 2,620 SF  
Floors: Basement, 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): 7  
Roof Type/Age: Asphalt Shingles



GENERAL: The Capen-Reynold's Farmhouse, the oldest part was built in 1757 and was deeded to the Town of Stoughton. Since that time the building has been deteriorating and disrepair. There are multiple issues with the building both interior and exterior. Structurally the building is standing but would require a structural engineer to further investigate the structural integrity of this building.

## LIFE SAFETY:

All railings at stairs and stairwells are deteriorating and flimsy.



## HEALTH:

Insulation is exposed in walls and ceilings throughout the building. The building has not been heated or conditioned for many years and windows are broken. Moisture, birds and rodents and droppings have been spotted in the building.



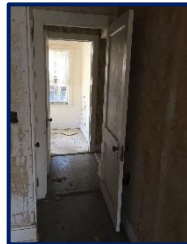
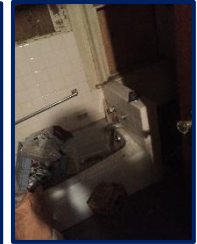
HAZARDOUS MATERIALS:

If work is to proceed, because of the age of the building it should be tested for hazardous materials, lead paint, Polychlorinated Biphenyl (PCB) and Asbestos Containing Building Material (ACBM).

ADA COMPLIANCE:

The entire house is not accessible, Examples of areas that are not accessible or to code are listed but not limited to the items below.

1. No ramp or wheel chair access at front entry.
2. Handrails and stairs throughout building are not ADA compliant and not safe.
3. No Elevator to access upper or lower level. No elevator is required if program space on 2<sup>nd</sup> floor is also on 1<sup>st</sup> floor.
4. Knobs on door that should be replaced by lever type hardware.
5. Restrooms, sinks and shower areas are not ADA accessible:
6. Kitchens, cabinets, appliances and sinks are not ADA accessible.



SITE:

- 3 There is not much room for parking in the front of the building or parking area. Repair roadway shoulder, walkway to the house and the barn and repair historical landscape as part of the proposed use.



EXTERIORS:

3 Multiple areas and items on the exterior are in poor condition. Examples of these areas are listed but not limited to the items below.

1. Bulkhead access to basement is rotted plywood and not safe or secure.
2. Rotted wood siding and cedar shake sliding. Painting peeling on siding and all wood exterior trim.
3. All windows are in very poor condition. Multiple windows are either missing with plywood nailed to cover opening, broken and missing panes of glass or single pane non-insulated wood framed windows that need to be replaced.
4. All exterior wood doors are in very poor condition. Wood rot, deteriorating, not securable (most have not hardware or locks), broken panes of glass, plywood shut, wood thresholds and jambs are not painted and rotting and door are falling of hinges.
5. Foundation walls are cracked, broken and deteriorating.
6. Roof shingles appear to be in fair condition but evidence of roof leaks on the interior. Unable to inspect shingles due to unsafe conditions and snow.

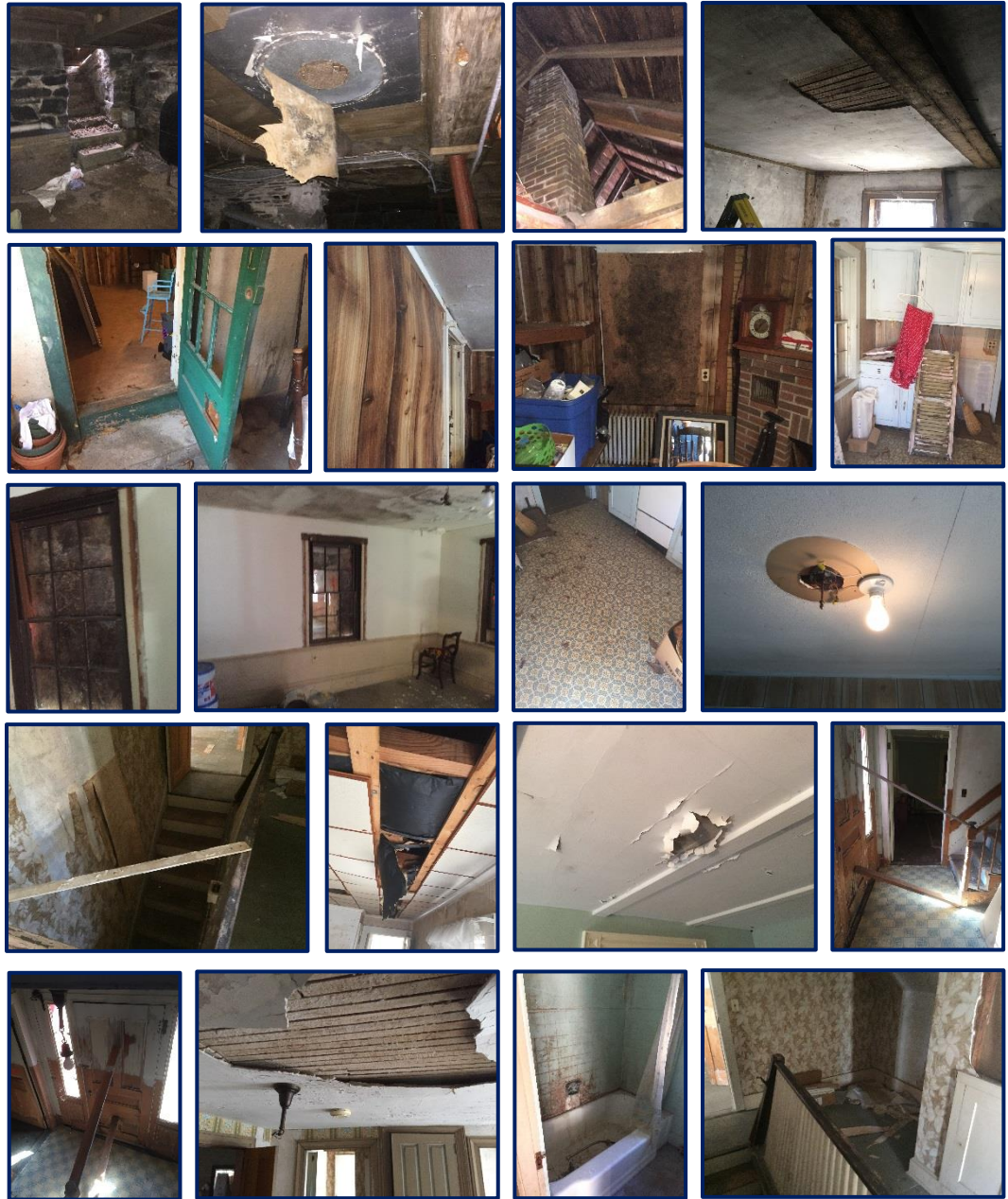




INTERIORS:

3 Multiple areas and items on the interior are in poor condition. Examples of these areas are listed but not limited to the items below.

Floors, walls, ceilings, stairs, doors, windows, cabinets, basement, electrical, mechanical and plumbing and etc. are in poor condition.



GENERAL RECOMMENDATIONS:

3

The existing farmhouse building is in poor condition and general disrepair. The building could be restored if it is the intent of the town, although the list of repairs may or may not be appropriate depending on the building program and use. Therefore all items indicated in this report have been assigned Priority Level #3.

ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

*Energy efficient measures can be applied during MEP systems replacement.*

*Insulation would be required in exterior wall cavities as well as new windows and doors.*

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:

*Refer to CES Report in Appendix for complete assessment.*

**Replace the following existing systems with new:**

- **Electrical** (electric service, electrical panel, new wiring, receptacles, light switches and fixtures)
- **Plumbing** (hot & cold water distribution, waste, vent domestic water heater, fixtures, baseboard radiation)
- **Boiler-Oil tank needs new piping**
- **Ventilation for bathrooms**
  
- **Security system installation** (dependent on building use).
  
- **Fire Alarm installation** (dependent on building use).

\* \* \*

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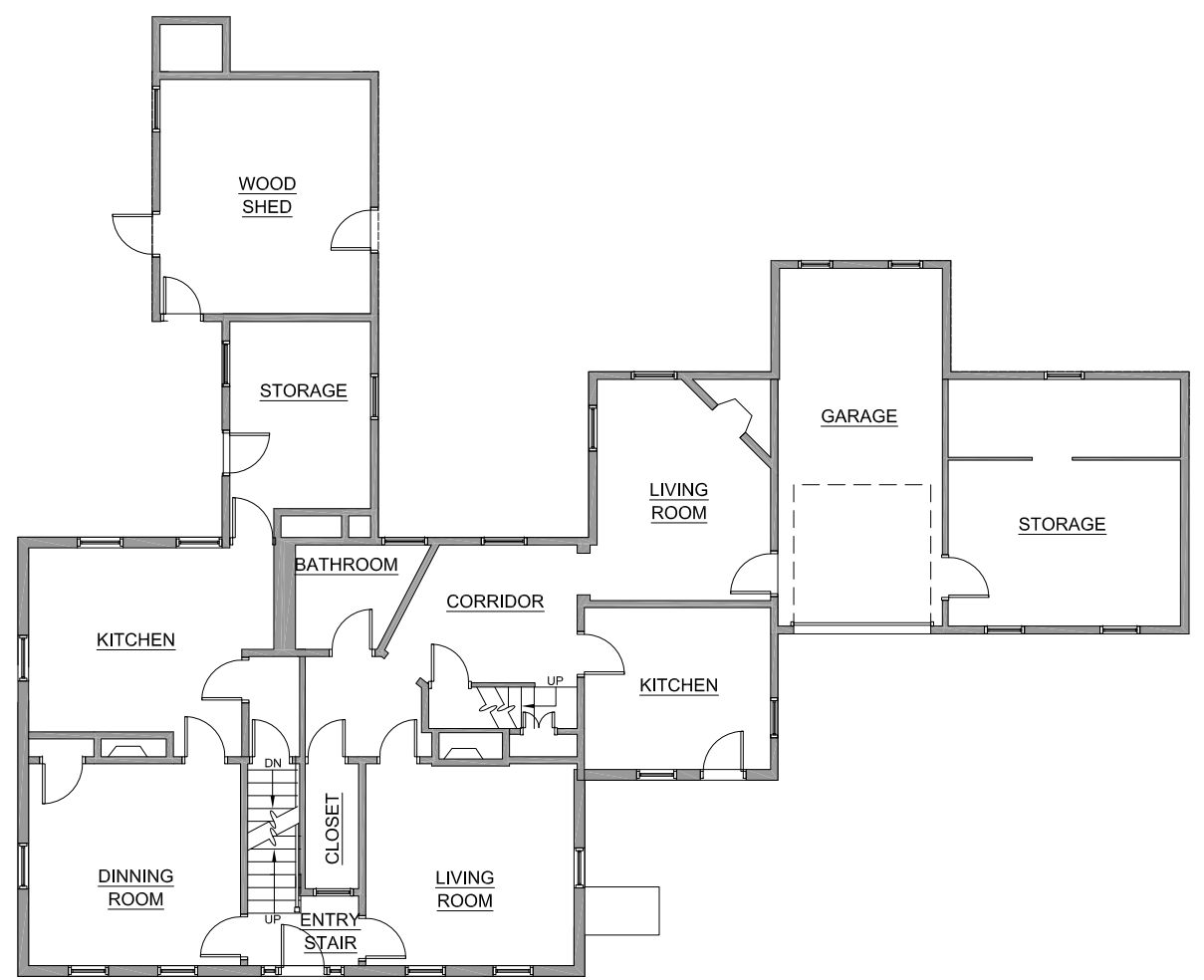
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A

**D·R·A**  
 Drumme  
 Rosane  
 Anderson,  
 Inc.  
 235 Bear Hill Road  
 4th Floor  
 Waltham, MA  
 02451  
 Architecture 617-964-1700  
 Planning fax 617-964-1701  
 Interior Design info@drcra.com

CAPE-REYNOLDS  
 FARMHOUSE  
 STOUGHTON, MA

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1 1ST FLOOR PLAN  
 1/4" = 1'-0"

STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report



FIRST FLOOR PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job# 16022.00  
 Date: 4/4/2017

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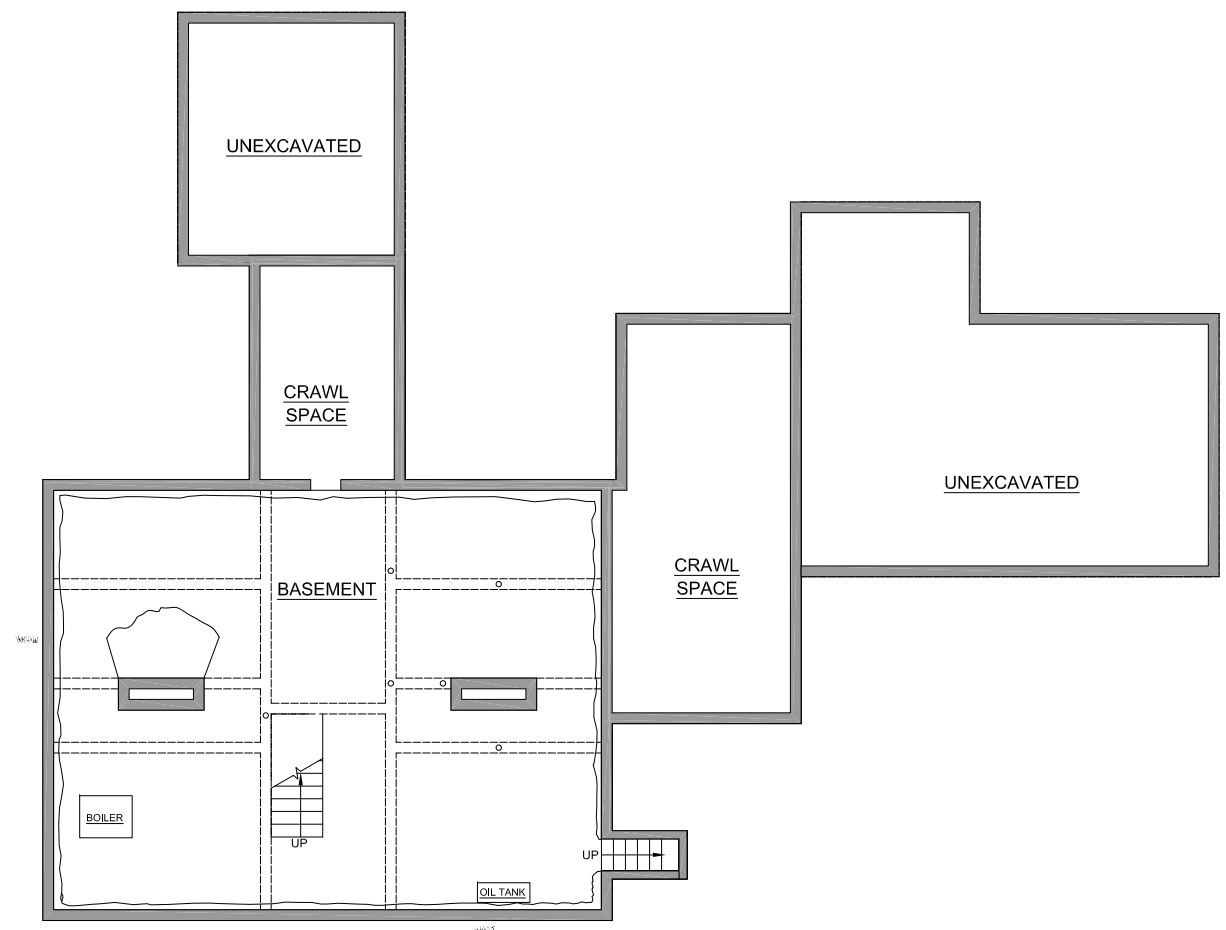
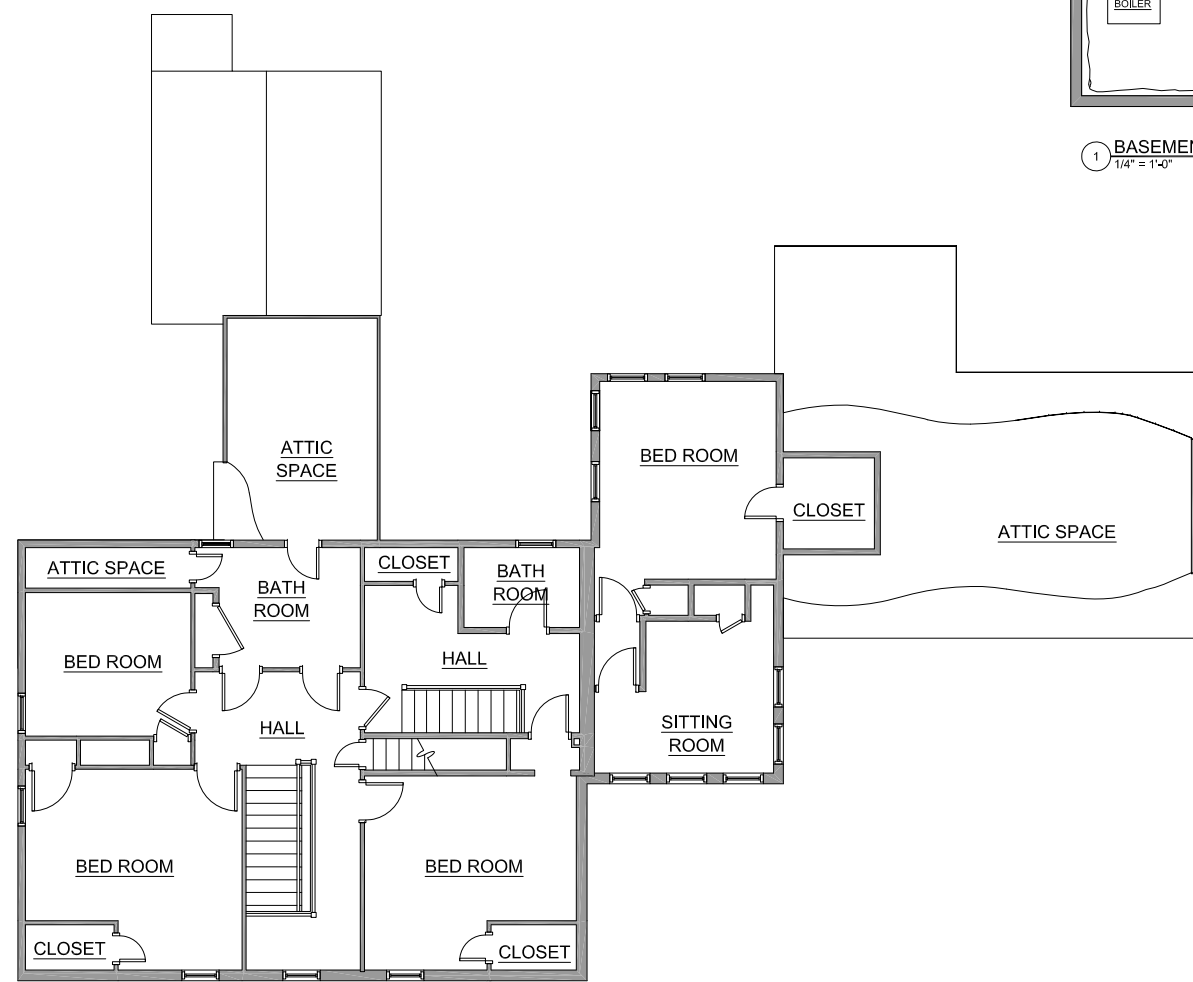
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**D·R·A**

Drumney 235 Bear Hill Road  
Rosane 4th Floor  
Anderson, Waltham, MA  
Inc. 02451

Architecture 617-964-1700  
Planning fax 617-964-1701  
Interior Design info@drcra.com

**CAPE-REYNOLDS FARMHOUSE  
STOUGHTON, MA**

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**STOUGHTON MASTER PLAN UPDATE**  
5 Year Capital Improvements Plan and  
Facilities Condition Report

---

**SECOND FLOOR AND  
BASEMENT PLAN**

---

Scale: N.T.S.  
Drawn by: ASJ  
Job# 16022.00  
Date: 4/4/2017

A1.2

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**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Capen – Reynolds Farmhouse  
760 Pleasant Street  
Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. Fire Protection Service: The building is not currently protected by a fire protection service or sprinklers.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The existing building is currently served by a 3/4” domestic water service fed from the local water company. The service equipment includes one (1) meter with no bypass and a single isolation valve. The water to this building is currently shut off. The existing equipment is in poor condition.

Water Service Equipment



2. Natural Gas Service: The existing building is currently served by a single natural gas service which enters the building in the basement. The gas service serves the boiler equipment. This equipment includes a gas regulator, but the gas meter has been removed. The existing gas service is currently shut off. This equipment is in poor condition.

Remains of Gas Service



3. Sanitary Service: The existing building is currently provided a single sanitary waste water lateral that exits the building and is routed to the exterior of the building. The existing piping material is a combination of cast iron and schedule 40 PVC piping. One of the sanitary lines serving the second floor bathrooms has frozen and split the piping. The cast iron piping is in poor condition. The schedule 40 PCV piping is in fair condition.

Sanitary Service Piping



4. Storm Service: The existing building does not have any internal storm piping. All of the roof surfaces are pitches and the storm water drains to grade.

### Existing Plumbing Fixtures and Specialties

1. Water closets are floor mounted tank type vitreous china fixtures. The fixtures are in very poor condition and ADA compliant fixtures are not provided.

Typical Water Closet



- Lavatories are wall hung vitreous china. Faucets are two twist handle type. ADA lavatories are not provided. The fixtures are in poor condition and ADA fixtures are not provided.

Typical Lavatory



- There are no drinking fountains in the building.
- There are a couple of kitchen sinks in the building. One is very old and in very poor condition. The other is newer, stainless steel, double bowl with two twist handle faucet. This is also in poor condition.

Older Kitchen Sink



Kitchen Sink



### **Existing Plumbing and Piping Systems**

- Sanitary waste and vent piping is hub and spigot cast iron, galvanized steel, or schedule 40 PVC. Waste service exits the building below slab to the municipal sewer system. The piping is in poor condition and has been damaged or disconnected in some locations.
- Storm piping:
  - The existing building does not have any internal storm piping. All of the roof surfaces are pitches and the storm water drains to grade.
- Domestic hot water and cold water piping is copper with no pipe insulation. Vandals have removed some of the copper piping where exposed. What remains is in poor condition.
- Natural gas piping has been removed within the building and replaced with oil piping to the new boiler.

### Domestic Hot Water Systems

1. Existing Domestic Hot Water System: There is the shell of an electric water heater in the basement. This unit is disconnected and is not operational.

### MECHANICAL SYSTEMS:

#### Existing Boiler Plant

1. Heating is provided for the building with a single Energy Kinetics System 2000 oil fired hot water boiler. This equipment is approximately 5 years old and in good condition.

Hot Water Boiler



Boiler Controls



2. Heating hot water is circulated to cast iron radiators and baseboard radiation. The cast iron radiators are in poor condition. The baseboard radiation has been vandalized where the copper tubing has been removed. Some of the baseboard radiation will need to be replaced.

Typical Cast Iron Radiator



Hot Water Baseboard Radiation



Damaged Hot Water Baseboard Radiation



3. The original building used individual fireplaces and natural radiation of heat to the upper floors using floor grates to allow the hot air to rise thru the floor to the second floor. This equipment is still in place although the operation of the fire places is unknown.



- Fuel oil is stored in a 175 gallon oil storage tank located in the basement. The fuel oil piping to the boilers has recently been replaced. The fuel oil system is approximately 5 years old and is in good condition.

Existing Fuel Oil Tank



**Electrical Systems:**

- The existing electrical service is a 100amp, 240/120volt, 1-phase, 3-wire service that consists of a utility company meter on the exterior of the building and electrical panel in the basement. There is no power currently in the building. The meter socket and electrical panel are in fair condition.

Electric Meter



Electric Service Panelboard



- Lighting throughout the facility consists of a number of type of light fixtures including pendant type, wall mounted fixtures at the toilet rooms, and surface mounted fixtures of various types. There are also floor lamps throughout the spaces. The fixtures range from over 50 years old to 20 years old and in poor condition.

Typical Wall Mounted Light Fixtures



Typical Surface Mounted Light  
Fixture



Typical Decorative  
Pendant Light Fixture



Damaged Decorative  
Pendant Light Fixture



Typical Bare Bulb Light Fixture



3. The electrical wiring, receptacles, and light switches are old and in poor condition. Some of the receptacles are non-grounding type and should be replaced.
4. There is no fire alarm system in the building. There are stand-alone smoke detectors in the building. These detectors are over 10 years old and are not functional. They are in poor condition.
5. There are no exit signs in the building.
6. There is no emergency lighting in the building.
7. There are no site lighting fixtures on the property.
8. There is no security system in the building.
9. The data/technology consists of wired telephone and cable TV outlets. This wiring is outdated and in poor condition.

**Recommendations:**

Due to the age and condition of the mechanical, electrical, and plumbing systems in this building, with the exception of the boiler and oil tank, all of the infrastructure is in very poor condition and should be removed and replaced with new. This would include new waste, vent, hot and cold water distribution, domestic water heater, toilet fixtures, baseboard radiation, heating water circulation and controls, ventilation for bathrooms, electric service, electrical panel, all new wiring, receptacles, light switches, and light fixtures.

Any other systems, such as fire alarm and security would depend on the occupancy of the building.

# PRATTS COURT WATER TREATMENT PLANT

0 Pratts Court

Year Constructed: 1984  
Year of Renovation/Addition:  
Building Type: B  
Construction Type: VB  
Fire sprinklers: No  
Total Floor Area: 3,149 SF  
Floors: First  
Land Area (Acres): 20  
Roof Type: EPDM



GENERAL: Pratts Court Water Treatment Plant appears to be in fair condition. Finishes in the interior and the exterior need to be repaired and refinished. The building is not ADA accessible.

## LIFE SAFETY:

- 2 Exterior doors swing in and do not have panic hardware. **Recommend removing doors and installing new doors with correct swing and approved hardware. Re-paint interior and exterior of existing frame.**



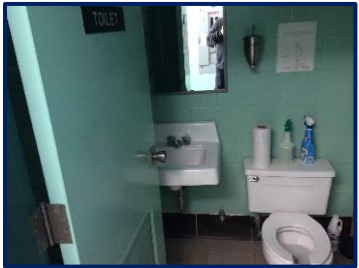
HEALTH: None identified at time of site visit.

## HAZARDOUS MATERIALS:

None identified by visual observation. Subject to a more complete sampling and testing by Hazmat Consultants.

## ADA COMPLIANCE:

- 2 Doors have knobs and need to be replaced with lever type. **Remove all door knobs and replace with lever type.**
- G Restroom is not ADA accessible. Size and fixtures are non-compliant. **Modify restroom to be ADA accessible and compliant.**



G

Building is not ADA accessible. No ramp and stair handrails are not ADA compliant. Loading Dock handrail closest to the dock is damaged from truck backing into it. **Recommend install a ADA compliant ramp and replacing all stair hand and guard rails.**



SITE:

3

**Repair cracks at curbing and concrete walks in 3years.**

4

**Recommend repaving (mill and overpay) in +5 years.**

4

No storm water controls for pavement, **recommend upgrading storm water drainage system + 5 years.**

4

**Recommend providing a new paved entrance apron into site.**

EXTERIORS:

2

Concrete stairs are spalling and cracking. Base of handrails rusting. **Recommend repairing concrete treads and handrails to be addressed in ADA compliance section above.**



2

Multiple areas of the concrete foundation around perimeter of building is spalling. A couple of areas have rust stains from something leaking from the interior. **Repair the spalling concrete chemically clean the rust stains. Further investigation is required to determine the cause of the rust stains.**





- 2 EIFS around building and entry soffit is dirty and/ or stained. Area on fascia at rear of building is damaged. **Repair damaged EIFS area and chemically clean.**



- 2 Loading Dock bumpers are showing signs of age. Rubber is worn, paint chipping on the steel angle bumper supports and bolts and are rusting. **Remove bumpers and repair concrete, install new bumpers and supports.**



#### INTERIORS:

- 3 Stained and damaged acoustical ceiling tiles in Main Office, Corridor and Restroom. **Remove all affected tiles and replace with new.**



- 2 Exposed concrete floor is stained and cracked in multiple areas. **Clean and degrease floor, Install epoxy flooring.**



- 3 Paint on wall in Filter Room near filter #1 and electrical panel is peeling and blistering and pipes appear to be corroding and rusting. **Resolve issue of pipes corroding and rusting. Scrape and remove flaking paint and repaint.**



- 2 Floor near Pump and floor hatch in the Filter Room is rust stained and covered with oil or grease. **Remove rust stains and oil/grease. Install new epoxy coated flooring.**



- 3 Pipe insulation on the piping in the Filter Room is torn or damaged. **Remove damaged insulation and install new.**



- 2 Epoxy coated concrete flooring is chipping or blistering in multiple areas. **Remove existing epoxy coating, clean and prep all floors to have new epoxy flooring installed.**



#### ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

- 4 Upgrade exterior lighting with new fixtures using LED technology.
- 4 Upgrade the interior lighting with new fixtures using LED technology.
- 4 Upgrade lighting controls throughout the building to meet the latest energy code requirements.
- 4 Replace existing water closet with a high efficiency, low flow, 1.28 gallons per flush (GPF), ADA compliant water closet.
- 4 Replace the existing lavatory with a new ADA compliant unit with high efficiency, sensor type faucet.
- 3 Replace the indoor air handling unit and roof top exhaust fans with new high efficiency equipment.
- 4 Upgrade the HVAC control system to a new electronic system with energy management capability.

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:

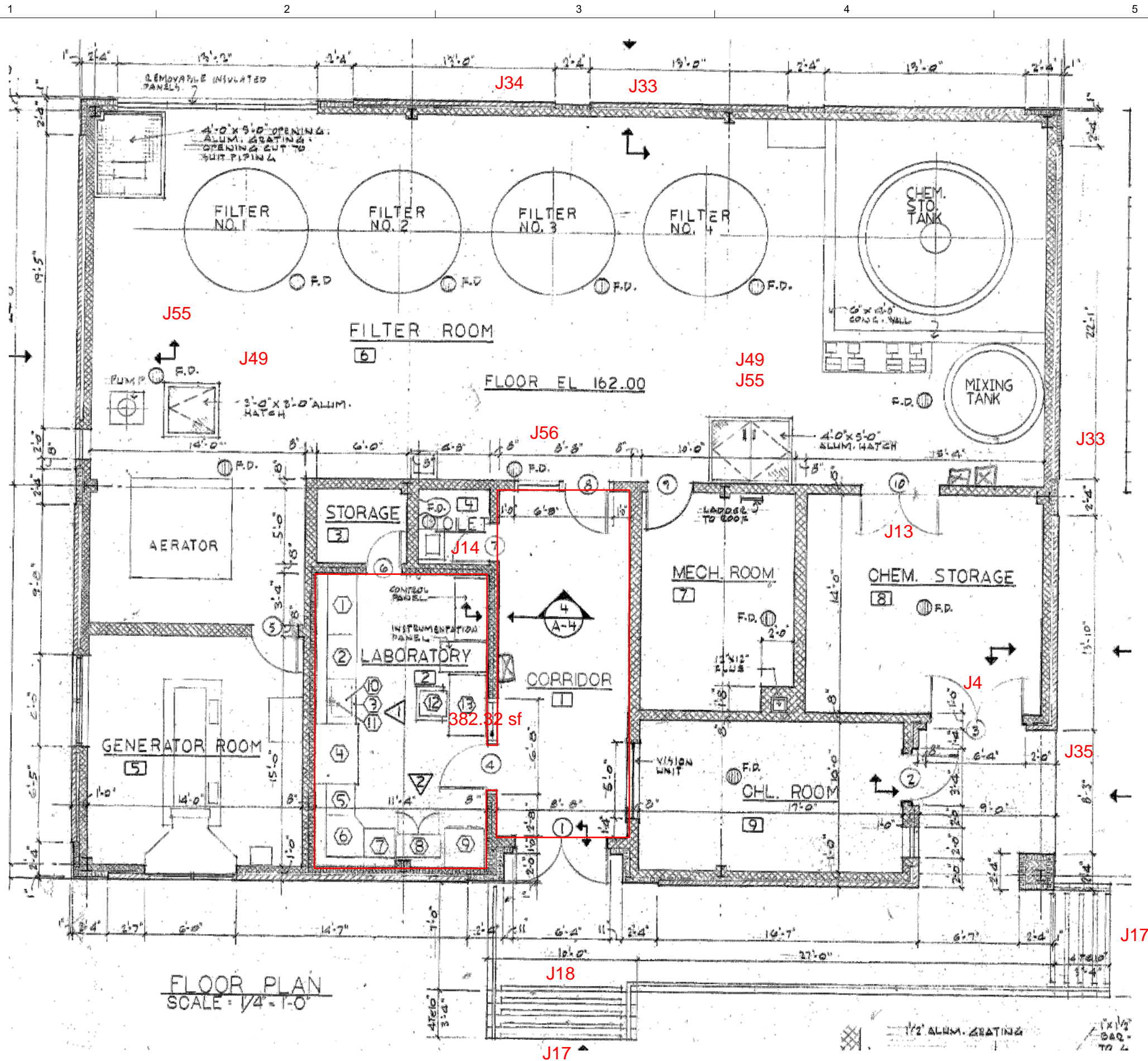
*Refer to CES Report in Appendix for complete assessment.*

**2** Relocate the domestic water services so the piping is above the level of the containment system.

**2** Replace the existing fire alarm devices with ADA compliant equipment.

**4** Provide secondary overflow drains for roof.

\* \* \*



FLOOR PLAN  
SCALE = 1/4" = 1'-0"

STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



# **Mechanical and Electrical Systems**

## **Existing Conditions Narrative**

### Pratts Court Water Treatment Plant Stoughton, MA



Date: March 20, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The existing building is currently served two domestic water services fed by the local water company. One service is 1 ½” and includes isolation valves, water meter, and pressure reducing valve. The other is ¾” and includes isolation valves and a water meter. Both water meters have remote reading capability. These services rise up in the corner of the building within the retention area for the chemical tanks. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in fair condition.

Water Services and Equipment





1. Natural Gas Service: The existing building is currently served by a single natural gas service which enters the building at the same side of the building as the water services. The gas service serves the boilers. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service  
Equipment



2. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
3. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains and the roof drains should be cleaned to minimize the standing water on the roof. This equipment is in good condition. The roof drains are collected via cast iron storm piping and then exit the building above grade.

Roof Drain with Ponding  
Water



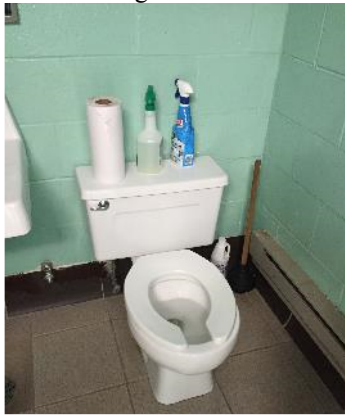
Storm Piping Exiting above  
Grade



### **Existing Plumbing Fixtures and Specialties**

1. The single water closet is a floor mounted vitreous china tank type fixture. The fixture is in fair condition but not ADA compliant.

Existing Water Closet



2. There are no urinals in the building
3. The single lavatory are wall hung vitreous china type with a single faucet with twist handles. The fixture is in fair condition but not ADA compliant.

Existing Lavatory



4. There are no drinking fountains in the building.

5. The janitor sink is a wall mounted enameled steel unit a two twist handle faucet and vacuum breaker. This sink is in fair condition.

Janitor Sink and Emergency  
Eyewash/Shower Unit



6. There is an emergency eyewash/shower located next to the janitors sink. It does not appear to have tepid water piped to it as required by code.

### **MECHANICAL SYSTEMS:**

#### **Existing Boiler Plant**

1. Heating is provided for the building with two (2) Lochinvar high efficiency natural gas fired boilers. The boilers have been recently installed and are in very good condition.

New Boiler Plant



2. Heating hot water is circulated to the air handling unit and cabinet unit heaters by (2) variable speed hot water pumps. These pumps were installed with the boilers and are in very good condition.

Hot Water Pumps



Fuel Oil Alarm System

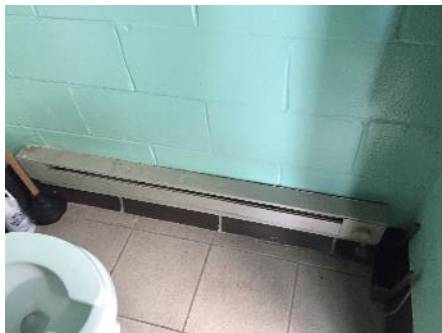


3. Fuel oil is stored in an underground fuel oil storage tank. The fuel oil serves as fuel for the emergency generator. The age of the tank and piping is unknown. A new alarm system has recently been installed.

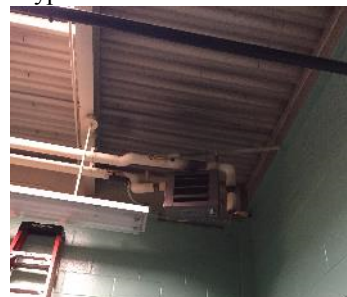
### **Existing Heating, Ventilating and Air Conditioning Systems**

1. There is an air handling unit above the ceiling in the corridor that provides heating to the office and process areas. There are also hot water and electric unit heaters to provide heat for specific areas. There is a section of electric baseboard radiation in the bathroom. The air handling unit and hot water unit heaters are original to the building and in fair condition. The electric heaters are in poor to fair condition.

Electric Baseboard Radiation



Typical Hot Water Unit Heater



2. Exhaust is provided for the building by several roof mounted exhaust fans which are approximately ten to twenty years old. The condition ranges from fair to poor.

Roof Mounted Exhaust Fans, Condensing Unit, Intake Hoods



### **Building Management System**

1. The building systems are controlled by local thermostats. There is no central building management system at the building.

### **Electrical Systems:**

1. The existing electrical service is an 800amp, 480/277volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution. The service equipment is in fair condition.

Electrical Switchboard



2. A 200kW diesel fired emergency generator is installed at the building. This serves as back-up power to the entire building. This equipment is located in a separate room adjacent to the electrical room. The generator includes a transfer switch built into the electrical switchgear, battery charger, fuel oil day tank and silencer. This equipment is in fair condition.

Emergency Generator



Generator Day Tank



3. There is a combination of original panelboards and newer panelboards in the building. The original panelboards are in fair condition and have no spare capacity. The newer panelboards are in good condition.
4. An electrical motor control center is installed that contains electrical starters and disconnects for the process equipment. This motor control center is approximately 30 years old and in good condition.
5. Lighting throughout the facility consists of a number of type of light fixtures including surface

Motor Control Center



mounted acrylic lensed fluorescent fixtures and industrial fluorescent fixtures. All of these fixtures have been upgraded with T8 lamps. The fixtures are in good to fair condition.



Typical Recessed Fluorescent  
Fixture



Typical 2-Lamp Industrial  
Fluorescent Fixture

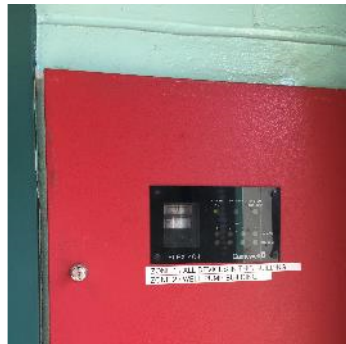


Typical Industrial Fluorescent  
Fixture



- The fire alarm system consists of a Gamewell Flex 404 zoned fire alarm control panel, manual fire alarm pull stations and horn strobes, and smoke and heat detectors. The fire alarm control panel is in good condition. The majority of the manual fire alarm pull stations and horn strobe units are not ADA compliant. Fire alarm system reports via a wireless master box that has recently been installed.

Gamewell Fire Alarm Control  
Panel



Wireless Communicator



Non-ADA Fire Alarm  
Pullstation and Horn Strobe



Typical Heat Detector



- The exit signs are metal housings with fluorescent lamps. These units are in fair condition.

Typical Exit Sign



8. The emergency lighting in the building uses the regular light fixtures that come on when the generator starts.
9. The site lighting consists of pole mounted post-top LED and wall mounted LED fixtures on the exterior of the building. These fixtures have recently been installed and are in good condition.

Typical Post-Top LED Site  
Lighting Fixture



Typical Wall Mounted LED Site  
Lighting Fixture



10. Security features in the building consist of motion detectors and door contacts. This equipment is in good condition.

Typical Security System  
Motion Detector



Security System Keypad



11. Data/technology consists of wired computer stations throughout the building. Most of this has been added over the years as needed or technology changes. This equipment is in good condition.

**Recommendations:**

- Relocate the domestic water services so that they piping is above the level of the containment system. Provide back-flow preventers on both services.
- Replace the existing fire alarm devices with ADA compliant equipment. This will require power supplies to support the new horn/strobes and electrical wiring to support this equipment.
- Provide secondary overflow drains. This would include additional roof drains with storm piping piped to grade.
- Replace the existing water closet with a high efficiency, low flow, 1.28 gallons per flush (GPF), ADA compliant water closet.
- Replace the existing lavatory with a new ADA compliant unit with high efficiency sensor type faucet.
- Replace the indoor air handling unit and roof top exhaust fans with new high efficiency equipment. The equipment is at the end of its expected service life.
- Upgrade the HVAC control system to a new electronic system with energy management capability. This will provide remote monitoring of the equipment in the building as well as energy savings.

# O'DONNELL MIDDLE SCHOOL

211 Cushing Street

Year Constructed: 1960  
Year of Renovation/Addition: 1967, 1995  
Building Type: E  
Construction Type: II B  
Fire sprinklers: Yes  
Total Floor Area: 144,000 SF  
Floors: 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): 15  
Roof Type: EPDM

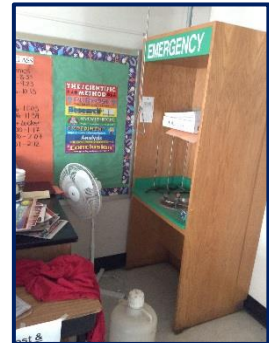


## GENERAL:

According to school officials, the O'Donnell Middle School was completely renovated in the mid 1990's. All exposed and accessible ACBMs were completely removed prior to the renovation project. All abatement records are maintained in the Superintendent's office. The interior demolition took place down to the exterior structural foundation.

## LIFE SAFETY:

**1** Emergency Shower and Eyewash Station in Science room is not accessible due to placement of furniture and storage of miscellaneous items. **All items and material in required clear space should be relocated.**



**2** Guardrails at Stairs have gaps larger than 4". **Recommend modifying to meet code requirements.**



**1** Terazzo stair treads over hang and do not meet the current ADA requirements for for stair tread standards. The current design is a potential trip hazard. **Recommend that terrazzo treads be removed and replaced.**



HEALTH: None identified at time of site visit.

HAZARDOUS MATERIALS: None indicated as per the 2016 AHERA Report.



ADA COMPLIANCE:

- G Multiple sinks in classrooms and work room do not have the required knee clearance and fixtures to meet ADA requirements. **Modify to meet code.**



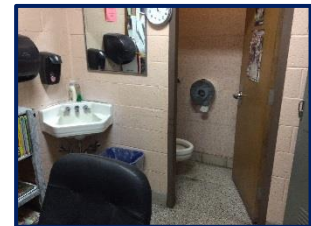
- G Interior handrail at bottom of stair does not meet ADA requirements. **Recommend modifying handrail and installing 12" extensions.**



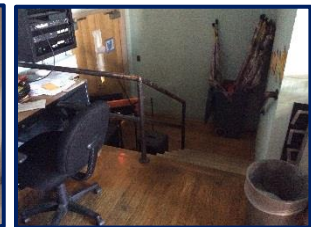
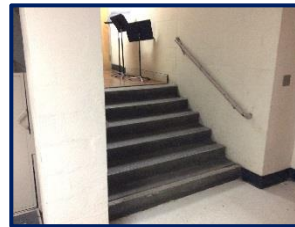
- G Circulation Desk at Library and Counter at Main Office do not have a ADA accessible counter. **Recommend circulation desk be modified to allow ADA access.**



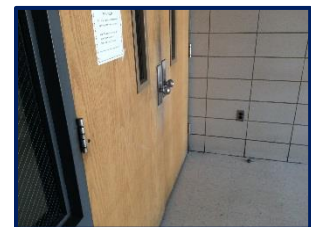
- G PE Offices in both boys and girls locker rooms are not ADA accessible. No compliant fixtures, grab bars or clearances. **Modify restrooms to be ADA compliant.**



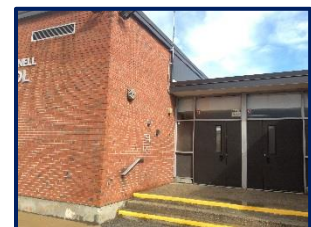
- 2 Stairs from Cafeteria to back stage (Music Room) and stairs from corridor to Music Room do not have ADA accessible handrails. **Recommend to remove and reinstall new, ADA compliant handrails with proper extensions in 2 locations.**



- G Multiple Dbl. doors in stairwells have door knobs and do not meet ADA requirements. **Recommend that knobs are removed and replaced with ADA compliant pulls. Total to be determined**



- G Multiple exterior doors do not have ADA compliant pulls on doors. **Install ADA compliant pulls on both sets of doors.**





G

Multiple interior doors do not meet the minimum push and pull required clearances as per ADA. Lockers are installed to close to the doors in many locations. **Recommend removing 2 lockers at all affected locations and construct a wing wall to terminate lockers.**



2

ADA accessible sinks in restrooms require pipe insulation on piping below sink. **Install pipe insulation on all ADA accessible sinks where missing.**



SITE:

4

Asphalt curbs and Landscape has been damaged from snow plows. **Recommend replacing affected asphalt curbs.**



EXTERIORS:

1

Concrete foundation at Main Entrance and multiple areas around the perimeter of the building is either spalling, cracking or staining. **Recommend patching the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the wall structure.**



2

Vents below windows are rusting or stained. **Remove and replace with new.**



2

Windows appear to be original to building and in fair condition. **Recommend replacing in near future.**



2

Stairwell window and door wall systems are aged and worn. **Recommend replacement.**



- 4 Brick is stained or dirty in multiple areas around perimeter of building. **Recommend pressure cleaning.**



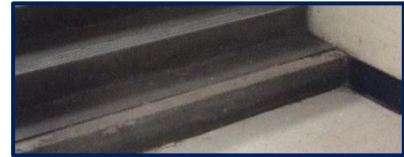
- 2 Gymnasium doors are old and faded. **Recommend to sand, prime and repaint or remove and install new.**



- 4 **Re-point masonry where required.**

INTERIORS:

- 2 Bottom stair tread missing aluminum nosing at Corridor to Music Room stair. **Recommend installing new aluminum nosing to match existing.**



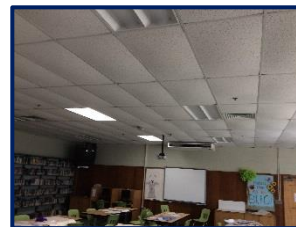
- 2 Carpet in Main Office and Library is worn, old and showing signs of wear and travel. **Remove and replace with new.**



- 2 Crack in stucco finished foundation wall below brick expansion joint in the Main entry vestibule. **Recommend repairing crack in stucco and repainting to match existing finish.**



- 3 2x4 acoustical ceiling tiles throughout the school are sagging due to moisture in the building. **Recommend replacing with moisture resistant tiles.**



- 3 Interior wood doors are old, worn and showing signs of age. **Recommend removal of existing wood doors and frames and replacing with new.**



2 VCT is damaged, cracked or pulling up in multiple locations throughout the school. **Remove and replace all affected areas.**



3 Most casework and bookcases are original and in fair to poor condition. **Recommend replacing existing casework.**



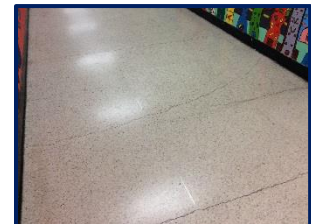
4 Whiteboards are old, stained and hard to clean. **Recommend replacing with new.**



3 Boys and girl's restroom floors and base are scuffed from buffer and stained in multiple areas. Base also missing in several locations. **Recommend cleaning floor and base, install missing base.**



3 Terrazzo flooring cracked in multiple areas. **Recommend repairing all cracks in terrazzo flooring.**



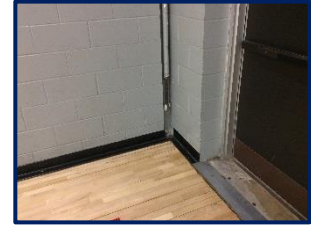
3 Paint peeling and chipping and bubbling on exposed ceilings. **Scrape, prime and paint.**



2 Threshold is cracking, spalling and chipping at exterior Gymnasium door. **Recommend patching the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the wall structure and install new aluminum threshold.**



- 2** Pipe missing insulation in corner cmu wall in Gymnasium.  
**Recommend removing remaining insulation and installing new.**



**ENERGY & WATER CONSERVATION:**

*Refer to CES Report in Appendix for complete assessment.*

- 4** Upgrade the HVAC control system to a new electronic system with energy management capability.
- 4** Upgrade the interior lighting with new fixtures using LED technology.
- 4** Upgrade lighting controls throughout the building to meet the latest energy code requirements.

**MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:**

*Refer to CES Report in Appendix for complete assessment.*

- 2** Add fire alarm system devices to comply with the latest code requirements.
- 2** Provide new CO sensors and connect them to the building management system monitoring and notification of alarms.
- 2** Replace non-ADA sinks in the classrooms.
- 3** Replace cast-iron boilers with new high efficiency condensing units.
- 3** Replace the indoor air handling units.

**3** Remove and replace the existing unit ventilators, cabinet heaters, and finned tube radiation.

**3** Replace the existing electrical infrastructure including an evaluation of electrical needs of the school (*potentially including air conditioning system requirements*).

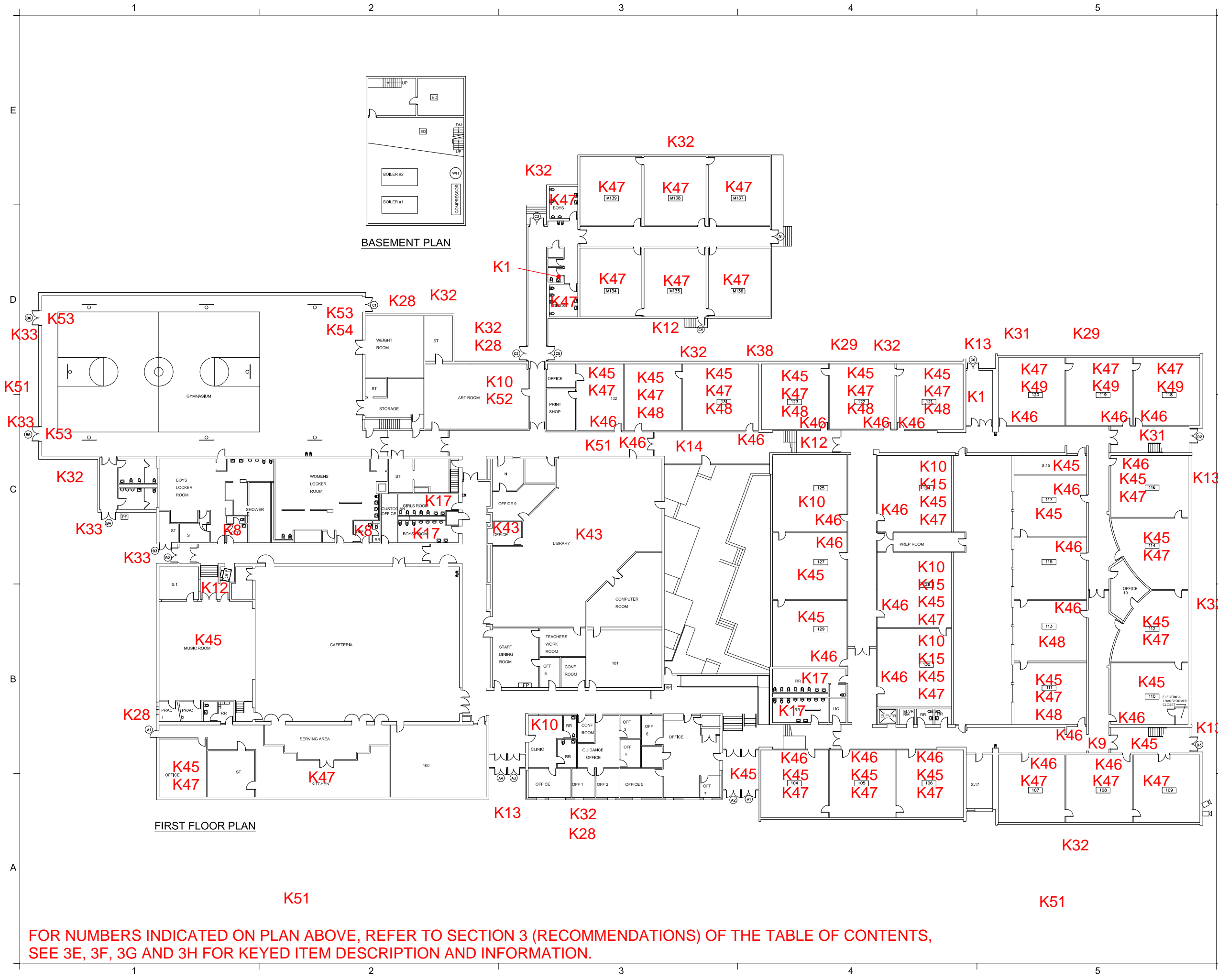
**4** Provide additional security system components, such as cameras for full building coverage.

\* \* \*



**STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report**

**FIRST FLOOR &  
 BASEMENT PLAN**



**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**





Drumney 235 Bear Hill Road  
 Rosane 4th Floor  
 Anderson, Waltham, MA  
 Inc. 02451

Architecture 617-964-1700  
 Planning fax 617-964-1701  
 Interior Design info@drains.com

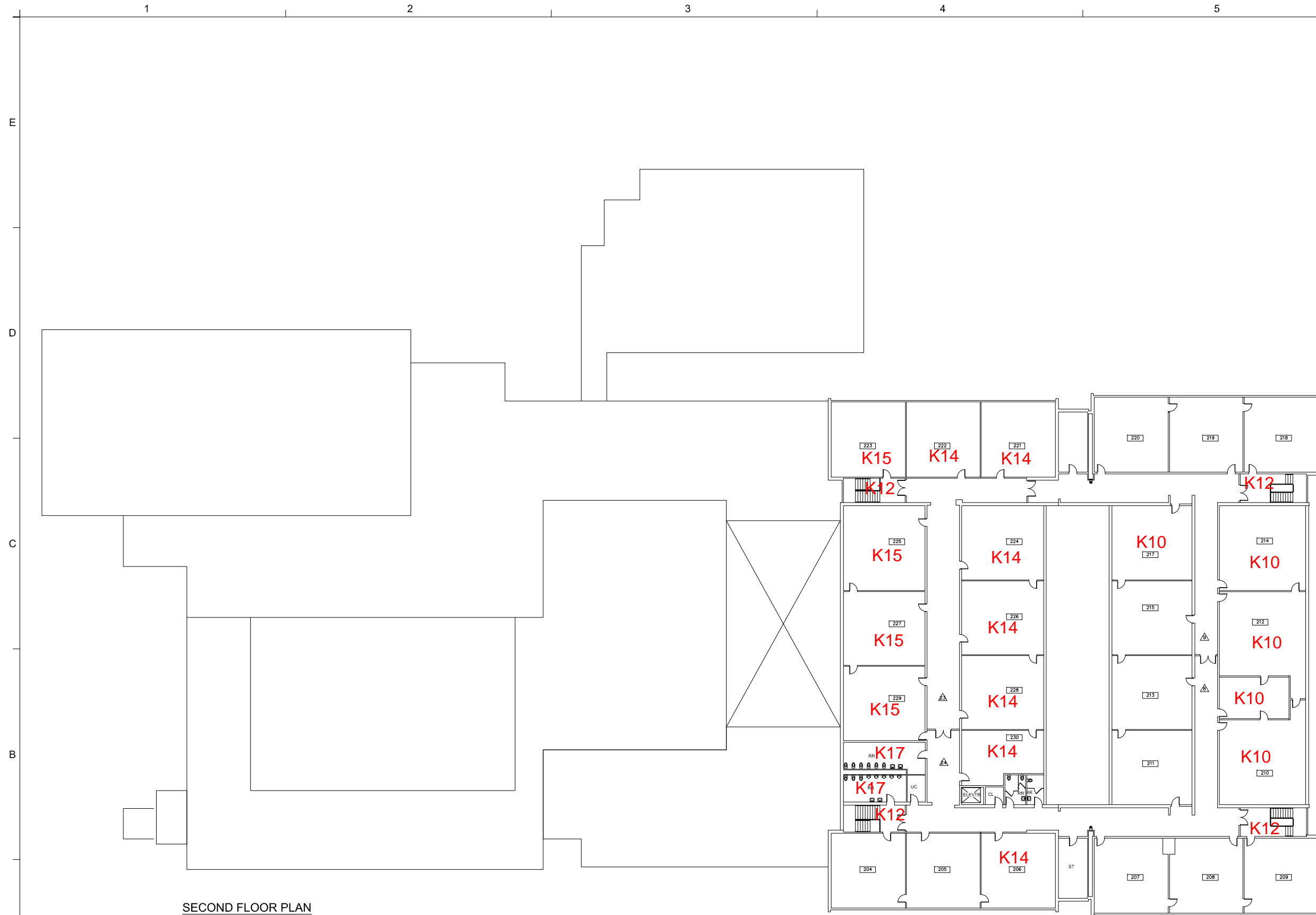
O'DONNELL MIDDLE SCHOOL  
 STOUGHTON, MA

STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

SECOND FLOOR PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job# 16022.00  
 Date: 4/4/2017

A1.2



SECOND FLOOR PLAN

FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Dr. Robert G. O'Donnell Middle School  
211 Cushing Street  
Stoughton, MA 02072

Date: October 26, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

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7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building is served by a 4” fire service fed from the local water company. The fire service equipment includes a main shut off valve, multiple sprinkler risers to serve various area of the building, a double check valve, and flow and tamper switches. The fire service double check valve and main shut off valve have been recently installed. The sprinkler service equipment is in good condition.

Fire Service Equipment



Fire Service Equipment



2. The sprinklers throughout the building consist of semi-recessed and pendant type sprinkler heads. The sprinkler coverage appears to be code compliant.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 2" domestic water service fed from the local water company. This service enters the building in the boiler room. The service equipment includes a shut off valve, pressure reducing valve, and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in fair condition.

Domestic Water Service  
Equipment



2. Natural Gas Service: The building is currently served by a 2" high pressure natural gas service. The gas service has (2) external regulators, meters, and shut off valves. A 4" gas line enters the boiler room. The gas service serves the boilers, domestic hot water heater, and kitchen equipment. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service Equipment



3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
4. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains. This equipment is in good condition.

### **Plumbing Fixtures and Specialties**

1. Water closets are floor mounted vitreous china fixtures with sensor operated flush valves. The flush valves are new and the fixtures are in good condition and ADA compliant fixtures are provided.

Typical Water Closet



2. Urinals are wall mounted vitreous china fixtures with sensor operated flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Urinals



3. Lavatories are wall mounted vitreous china with sensor faucets. Lavatories are provided with insulation wrap for exposed piping below some of the fixtures for ADA compliance. The sensor faucets and fixtures are in good condition.

Typical Lavatories



- 4. Drinking fountains are stainless steel wall mounted single level type that appear to be ADA compliant. There are recessed stainless steel units in the Gymnasium that are not ADA compliant. This equipment is in good condition.

Wall Mounted Drinking Fountain in Corridor



Recessed Drinking Fountains in Gym



- 5. There are classroom sinks in some rooms. These sinks are stainless steel with two lever handles. These sinks are not ADA compliant and are in fair condition.

Typical Classroom Sink



- 6. The kitchen has hand sinks, prep sinks, three bay sink, and above grade grease interceptors. The sinks do not appear to be ADA compliant, and are in fair condition. The grease interceptors are older and in poor condition.

Above Grade Grease Interceptor





7. Janitor/Utility sinks are enameled cast iron with two lever faucets and vacuum breakers. These sinks are original to the building and in fair condition.

Typical Janitors Sink



8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### Domestic Hot Water Systems

1. Domestic water is provided via a water line from the heating boilers into a large storage tank and heat exchanger. In addition, a local high efficiency gas fired water heater is provided for the kitchen. The water tank/heat exchanger is in fair condition, however the efficiency of this type of system is poor. The newer high efficiency hot water heater in the kitchen is in good condition.

Domestic Hot Water Storage  
Tank



High Efficiency Water Heater  
Serving Kitchen



**MECHANICAL SYSTEMS:**

1. A portion of the heating of the building consists of (2) HB Smith 450 Series cast iron hot water boilers. These boilers have Industrial Combustion Model DFG-54S dual fuel burners installed. Hot water is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, unit heaters and unit ventilators. The boilers are original to the building and in fair condition. The piping, radiation, cabinet unit heaters, unit heaters and unit ventilators are in fair to poor condition.

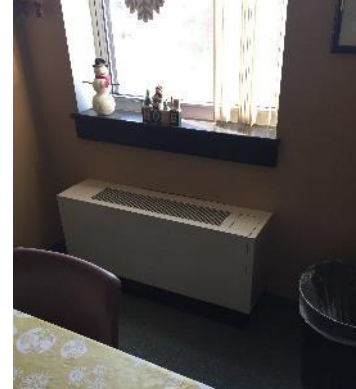
Hot Water Boilers



Typical Ceiling Mounted Radiation



Typical Unit Ventilator



Typical Ceiling Mounted Unit Ventilator



Typical Recessed Wall Mounted Heater



Typical Classroom Unit Ventilator



- The portable classrooms are served by packaged gas fired heating and cooling units. This equipment is approximately 15 years old and in fair condition.

Packaged Roof-Top Units on Portable Classrooms



- The ventilation for the building consists of exhaust fans, unit ventilators, and operable windows. The exhaust fans are in poor condition and need replacement. The unit ventilators range in age from being original to the building or ones that were installed in the last renovation. This equipment is in poor to fair condition.

Typical Roof Mounted Exhaust Fan



- There are specific spaces with air conditioning that was recently added. These areas include data closets and the media center. This equipment includes wall or ceiling fan coil units and a roof mounted condensing unit. The system is a variable refrigerant flow (VRF) system and it is in very good condition.

VRF Condensing Unit on Roof



VRF Air Handling Unit



5. There are dedicated indoor air handling equipment with hot water coils to serve the Cafeteria and Gymnasium. This equipment is original to the building and in poor condition.

Gymnasium Air Handling Unit



6. The existing temperature control system in the building is pneumatic, including valves and thermostats. There are (2) central air compressors and air dryers that are located in the boiler room. One of the air compressors is approximately 20 years old and in fair condition. The other air compressor and air dryer are approximately 5 years old and in good condition. The remainder of the system components are original to the building, functional, and in fair condition.

Temperature Control System  
Compressor



Temperature Control System  
Compressor



Typical Thermostat



7. Portable CO detectors are located in the boiler room. These detectors would sound locally and alert the occupants or facilities if there was a problem in the boiler room without the building being occupied.

### **Electrical Systems:**

1. The existing electrical service is a 1000amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution panelboard. The CT cabinet and utility company meter are remote from the switchboard. The switchboard is manufactured by General Electric and was installed during the last renovation. The service equipment is in good condition.



Main Electrical Service Equipment



C/T Cabinet and Electric Meter



2. The utility company transformer is located in a room inside the building. Access to this space is restricted.
3. The building does not have an emergency generator or provisions to connect a portable one.
4. The electrical power is distributed through the building by circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment ranges from fair condition (those panels original to the building) to good condition for those panels added during the last renovation.

Typical Original Electrical Panel



Newer Electrical Panel



5. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x4 indirect/direct fluorescent fixtures

- b. Surface mounted wraparound fluorescent fixtures
- c. Surface or pendant mounted industrial fluorescent fixtures
- d. Surface mounted LED wraparound fixtures in the Cafeteria and Gymnasium

Recessed Direct/Indirect Fluorescent  
Fixtures



LED Fixtures In Gymnasium



Industrial Fluorescent Fixture



Surface Mounted Fluorescent  
Wraparound Fixture



- e. Lamps
  - i. T8 fluorescent lamps
  - ii. U bent tube T8 lamps
  - iii. LED

6. Lighting control for the building consists of the following:

- a. Toggle type switches in most areas
- b. Combination occupancy sensor/switches in offices and classrooms
- c. This equipment is in good working condition.



- The fire alarm system consists of a Simplex zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, and duct smoke detectors. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are ADA compliant. Additional fire alarm horn strobes may be required to meet current code requirements.

Fire Alarm Control Panel



Typical Fire Alarm Manual Pullstation



Typical Fire Alarm  
Horn/Strobe



- The exit signs throughout the building are white plastic with integral batteries. These units are in good condition.

Typical Exit Sign



- The emergency lighting throughout the building is two-head fixtures with remote batteries. This equipment is in fair condition. A test of this equipment should be done to assure proper emergency lighting is provided.

Typical Emergency  
Lighting Fixture



10. The site lighting consists of wall mounted full cut-off fixtures, wall mounted flood light fixtures. The fixtures are in fair condition.
11. Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
12. Data/technology consists of wired computer stations and wireless access points throughout the building. There are also projectors and interactive white boards in a number of classrooms. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.

Typical Interactive Whiteboard



Typical Ceiling Mounted Projector



Data Rack



Typical Clock



Typical Wireless Access Point



Computer Classroom



**Recommendations:**

- Add fire alarm system devices to comply with latest code requirements. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.
- Replace non-ADA sinks in the classrooms with ADA sinks.
- Replace the cast iron boilers with new high efficiency, condensing units.
- Replace the indoor air handling units. This may require the new equipment be installed in different locations for accessibility as the accessibility of the existing equipment is limited. The quantity of ventilation air should be evaluated and increased to accommodate current code requirements.
- Remove and replace the existing unit ventilators, cabinet heaters, and finned tube radiation. This equipment is beyond its expected service life and should be replaced.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the pneumatic equipment and piping and replace with new electronic valves, wiring, and control panels. This would also require removing and replacing the existing CO detectors with new and connect them to the new control system.
- Replace the existing electrical infrastructure. The existing equipment is beyond its expected service life and should be replaced. Parts for the existing electrical panels are no longer readily available. This would include an evaluation of the electrical needs of the school, including the addition of air conditioning and a new electrical service be provided with branch circuit panelboards and feeders to replace the existing.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# E.A. JONES SCHOOL

137 Walnut Street

Year Constructed: 1930  
Year of Renovation/Addition: 1954  
Building Type: E  
Construction Type: II B  
Fire sprinklers: No  
Total Floor Area: 43,200 SF  
Floors: Basement, 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): 2  
Roof Type: EPDM



GENERAL: The E.A. Jones School has had addition/ renovation in 1954 and re-roofed within the past 5 years. The Building in generally is in fair condition.

## LIFE SAFETY:

**2** Stairs to Office and closet in Room #8 on the second floor has no hand or guard rails. **Recommend installing ADA compliant handrail to both the office and closet.**



**1** Crack in concrete at bottom of ramp at exterior door A6 causing a trip hazard. **Recommend repairing and patch the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the concrete.**



HEALTH: None identified at the time of site visit.

## HAZARDOUS MATERIALS:

Pipe insulation: All Listed are assumed to be ACBM.

- Room 1 – Former Art Room - 100 linear feet
- Instructional Resource Room (2 Rooms- above ceiling tile) - 75 linear feet
- Hallway - 60 linear feet
- Stairwell Landing -80 linear feet
- Attic Loft Area (above restroom) – 25 linear feet
- Crawl Space (off Library) – 180 linear feet
- Cafeteria Hallway (riser at Radiator) 10 linear feet
- Kitchen Ice Melt Room – 20 linear feet
- Kitchen (above ceilings and freezer unit) – 125 linear feet

We recommend that all asbestos containing pipe insulation in occupied areas be removed and replaced. In areas where the pipe insulation has been damaged should be replaced and wrapped with plastic sheathing.

12" x 12" Old Style Floor Tile and Mastic: All Listed are assumed to be ACBM.

- Room #1 – Art Room - 580 square feet
- Hallway outside Room #4 - 110 square feet
- Teacher’s Room Restroom – 125 square feet

No Action Required as recommended by 2016 AHERA Report.

Vinyl Linoleum flooring: All Listed are assumed to be ACBM.

- 1<sup>st</sup> and 2<sup>nd</sup> Floor Hallways - 400 square feet
- Stage Areas - 250 square feet assumed to be Asbestos.

No Action Required as recommended by 2016 AHERA Report.

9" x 9" Vinyl floor tile & Mastic: All Listed are assumed to be ACBM.

- Computer Room - 840 square feet
- Library (under carpet) – 865 square feet
- 2 Custodial Closets (basement)– 40 square feet
- Music Room – 845 square feet
- Extended Day Office – 250 square feet
- Stairwell Landings – 125 square feet
- Office Administration Area – 600 square feet
- 2 Custodial Closets (1<sup>st</sup> floor) – 50 square feet
- Health Clinic – 480 square feet
- Rooms 11 thru 18 (834 sf each) – 6,675 square feet
- IT Storage Closet – 190 square feet
- Break Room – 140 square feet
- Copy Room Closet – 15 square feet
- Reading Room – 150 square feet
- Elevator Hallway Entrance – 125 square feet

No Action Required as recommended by 2016 AHERA Report.

Asbestos 9x9 tile in the Lower Level Classroom is damage and starting to pull up from water leak.



ADA COMPLIANCE:

G

Sinks in most Classrooms are not ADA compliant for knee clearances and fixtures. **Modify Sinks to comply.**





G

Handrails and guardrail at Loading Dock is not ADA compliant on platform and stairs. **Recommend removal of existing hand and guard rails and replace with ADA compliant rails.**



2

Pull and Push side of multiple doors do not meet ADA clearances. Knobs on doors are not code compliant. **Recommend Modifying openings to allow required clearances and remove door knobs and replace with lever type hardware.**



2

**Insulate exposed pipe at below sinks in ADA accessible restrooms.**

EXTERIORS:

2

Loading Dock in need of repairs, bumpers are damaged, railing gate secured with a rope and concrete chipping and spalling on platform and stairs. **Recommend to patch and repair concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the concrete. Install new loading dock bumpers and code compliant railing system as noted in ADA section.**



4

Brick is stained primarily around doors and below window sills on all levels. Concrete trim above 2<sup>nd</sup> level windows is stained around the entire perimeter of building. **Recommend pressure cleaning all masonry and concrete trim around entire structure.**



4

At door A6, painted wood door frame and trim is chipping and concrete piers on both sides of door are damaged and stained. **Scrape, prime and paint frame and sand, prime and paint door. Pressure clean concrete piers.**



- 4 Stucco soffit and fascia above door A6 is stained. **Recommend chemically cleaning to remove stains.**



- 4 Concrete cap around ramp at door A6 is stained, concrete below cap is stained, spalling and has large scrape marks. **Pressure clean to remove stains and scrapes repair spalling concrete.**



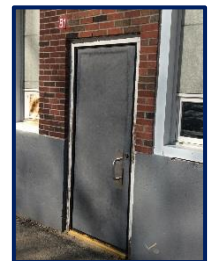
- 2 Painted wood door frame chipping and door fading at Door A4. **Scrape, prime and paint frame and sand, prime and paint door.**



- 2 Vents below windows are either tarnished or rusted. **Remove and install new or refinish and reuse existing.**



- 2 Multiple Exterior HM door frames are rusting. **Either scrape, prime and paint or remove and install new frames.**



#### INTERIORS:

- 2 Cracks in painted cmu in multiple areas throughout building. **Recommend having EDG review cracks in cmu.**



3

Restroom tile floors either stained or damaged. **Clean stained tiles, if can't be cleaned, remove and replace stained tiles. Replace damaged tiles.**



2

Gymnasium wood flooring damaged for past roof leaks. **Remove affected wood slates and replace with new. Refinish entire surface.**



3

Auditorium seating is old and seat and backs are delaminating and peeling apart and not ADA accessible. **Recommend removing and replacing with new and ADA accessible seating.**



3

2x4 acoustical ceiling tile are sagging from moisture. Remove and install new moisture resistant tiles.



3

Window trim has damage at sill, head and jamb in multiple rooms. Paint cracking, blistering and peeling on ceilings from past water leaks in multiple spaces. Paint chipping and peeling on pipes in multiple rooms and classrooms. **Recommend to scrape, prime and paint all areas where paint is blistering and peeling on walls, ceiling and pipes. Repair or replace damaged wood trim.**



3

Casework and bookshelves original and old, showing signs of age. **Replace with new.**



2

Threshold and bottom of door jamb has water damage at exterior door in Lower Level classroom. **Recommend resolving issue of water penetration and repairing threshold. If exterior door is to be replaced, all repairs to threshold should be performed at that time.**



#### ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

4

**Upgrade the HVAC control system to a new electronic system with energy management capability.**

4

**Upgrade the interior lighting with new fixtures using LED technology.**

4

**Upgrade lighting controls throughout the facility to meet the latest energy code requirements.**

#### MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:

*Refer to CES Report in Appendix for complete assessment.*

2

**Add fire alarm system devices to comply with latest code requirement. Voice evacuation systems should be provided in the Gymnasium.**

2

**Replace non-ADA sinks in classrooms.**

2

**Provide NFPA 13 sprinkler system in entire building.**

2

**Replace the cast iron boilers with new high efficiency, condensing boilers and controls.**

2

**Replace the existing steam heating system with a hot water system.**

**2** Replace the indoor air handling units.

**2** Remove and replace the existing cast iron radiators, cabinet heaters and finned tube radiation.

**4** Provide additional security system components, such as cameras to provide full building coverage.

\* \* \*





Drumsey 235 Bear Hill Road  
 Rosane 4th Floor  
 Anderson, Waltham, MA  
 Inc. 02451

Architecture 617-964-1700  
 Planning fax 617-964-1701  
 Interior Design info@dras.com

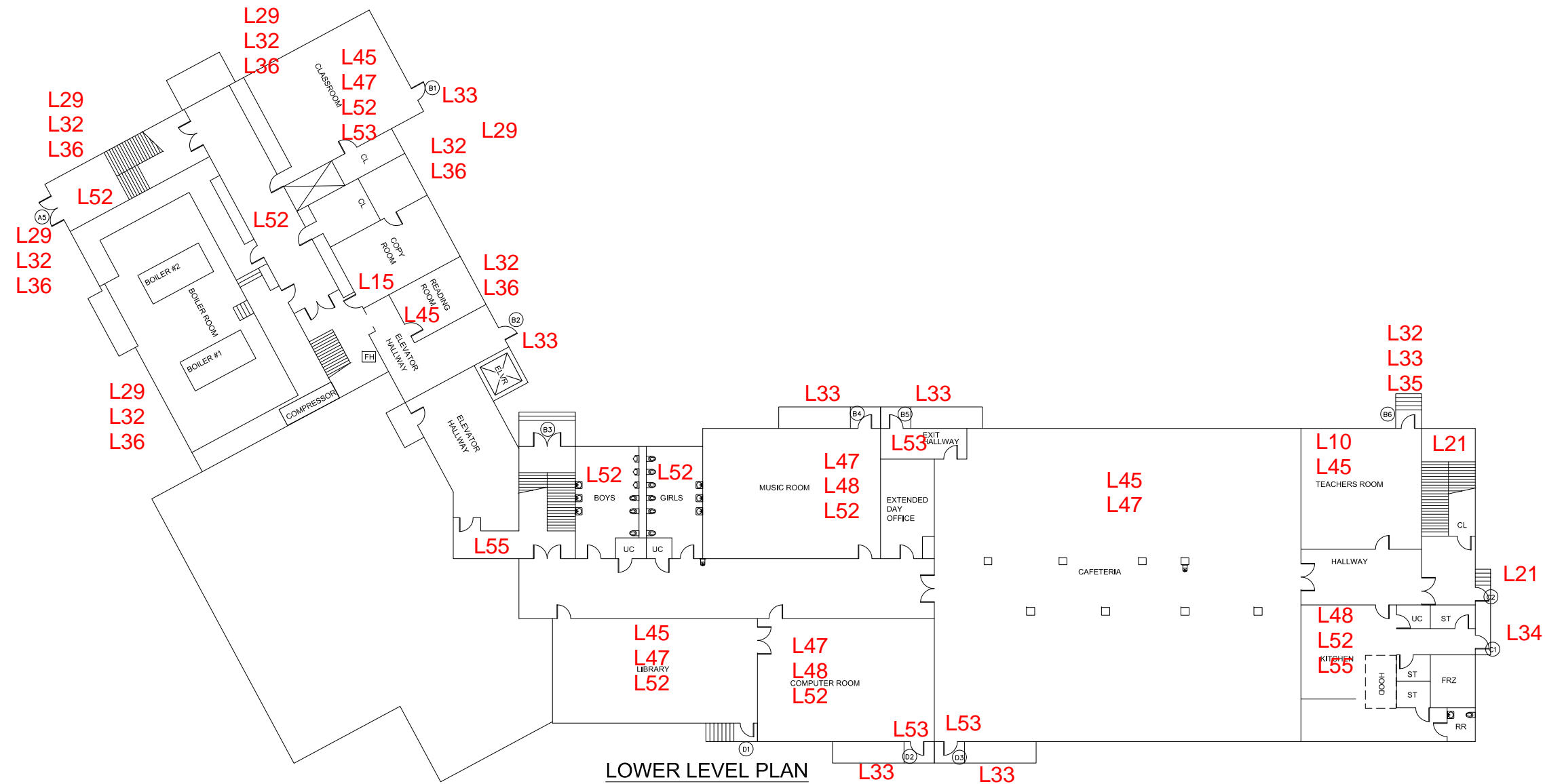
E.A. JONES  
 SCHOOL  
 STOUGHTON, MA

STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

LOWER LEVEL PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job# 16022.00  
 Date: 4/4/2017

A1.1



FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.

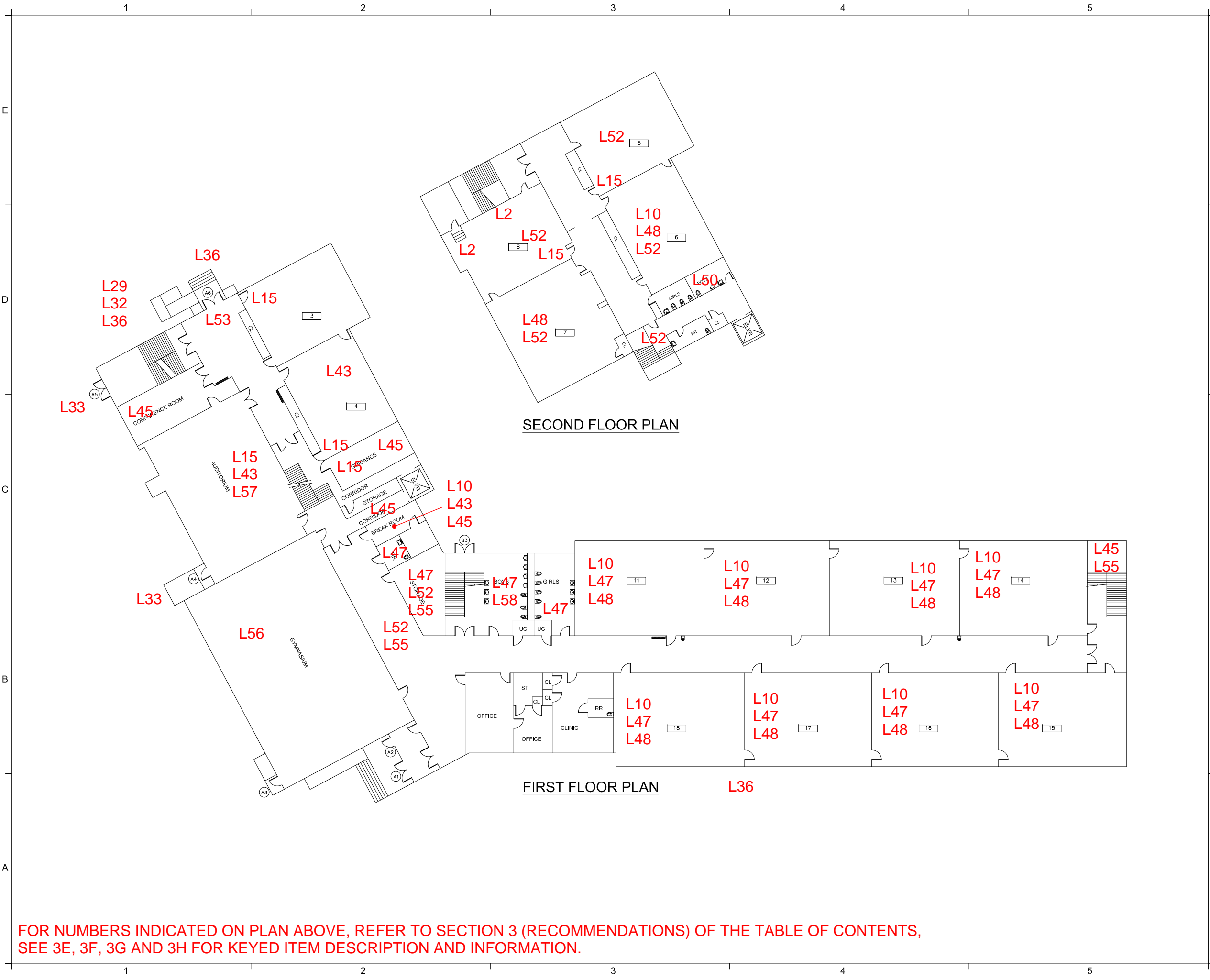


**STOUGHTON MASTER PLAN UPDATE**  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

**FIRST AND SECOND  
 FLOOR PLANS**

Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017

**A1.2**



**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Edwin A. Jones Early Childhood Center  
137 Walnut Street  
Stoughton, MA 02072

Date: October 26, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 4” domestic water service fed from the local water company. This service enters the building in the boiler room. The 4” pipe is reduced to 2 1/2” before the water meter. The service equipment includes a shut off valve and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in poor condition.

Domestic Water Service Equipment



Natural Gas Service: The building is currently served by a 2” high pressure natural gas service. The gas service has an external regulator and shut off. The pressure is reduced and a 4” gas line enters the boiler room. The gas service serves the boilers, domestic hot water heaters, and the emergency generator. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service Equipment



2. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
3. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains. This equipment is in good condition.

### **Plumbing Fixtures and Specialties**

1. Water closets are floor mounted vitreous china fixtures with sensor operated flush valves. The flush valves are new and the fixtures are in good condition. ADA compliant fixtures are not provided.

Typical Floor Mounted Water  
Closet



2. Urinals are wall and floor mounted vitreous china fixtures with sensor operated flush valves. The fixtures are in fair condition and ADA compliant fixtures are provided.

Floor Mounted Urinals



Wall Mounted Urinal



3. Lavatories are wall mounted vitreous china with sensor faucets. Some of the Lavatories are provided with insulation wrap for exposed piping below some of the fixtures for ADA compliance. Other ADA Lavatories are not provided with this pipe insulation. The sensor faucets and fixtures are in good condition.

Wall Mounted Lavatory



Wall Mounted Lavatory  
with Pipe Protection



4. Drinking fountains are stainless steel wall mounted single level type that appear to be ADA compliant. This equipment is in good condition.

Wall Mounted Drinking  
Fountain



5. There are classroom sinks in some rooms. These sinks are stainless steel with single lever faucets and some have bubblers. Others have been added in individual vanities/casework. These sinks are not ADA compliant and are in fair condition.

Classroom Sink



Classroom Sink



6. Janitor/Utility sinks are enameled cast iron with two lever faucets and vacuum breakers. These sinks are original to the building and in fair condition.
7. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

1. Domestic hot water is generated using a 91 gallon natural gas fired water heater installed in 2003. This water heater serves all of the domestic hot water needs for the entire building. This equipment is in good condition.

Domestic Water Heater





**MECHANICAL SYSTEMS:**

1. The heating of the building consists of (2) HB Smith 28 Series cast iron steam boilers. These boilers have Gordon Piatt Model R10.1-C-30 natural gas burners installed. Steam is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, cast iron radiators and unit ventilators. The boilers are approximately 20 years old and in and in fair condition. The piping, radiation, cabinet unit heaters, unit heaters and unit ventilators are over 30 years old and in fair to poor condition.

Steam Boiler



Radiation with Enclosure



Cabinet Unit Heater



Cast Iron Radiator



Radiation and Enclosure



Radiation at Classroom



Recessed Radiation



Typical Unit Ventilator



2. There is currently one area of the building where the steam piping has failed under the concrete floor. This is not the first time this has occurred which may indicate that the steam piping is in very poor condition.

Floor Tiles Lifting Due to  
Steam Leak under Floor



3. The ventilation for the building consists of exhaust fans, heating/ventilating units in the Gymnasium, and operable windows. The exhaust fans are in fair. The Gymnasium units are over 30 years old and in fair condition. There are specific spaces with window air conditioning. This equipment is in fair condition.

Classroom Exhaust Fan



Typical Grille in Classroom for  
Exhaust System



Bathroom Exhaust Grille



Gymnasium Air Handling Unit



- The existing temperature control system in the building is pneumatic, including valves and thermostats. A central air compressor and air dryer are located in the boiler room. The air compressor is approximately 5 years old and in good condition. The air dryer is approximately 5 years old and in good condition. The remainder of the system components are original to the building, are functional and in fair to poor condition. Manual thermostatic valves are installed on some of the cast iron radiators. This equipment is in fair condition.

Temperature Control System  
Compressor



Temperature Control System  
Air Dryer and other  
Equipment



Typical Manual Valve on  
Radiator



Wall Mounted Thermostat



Wall Mounted Temperature  
Sensor



- Portable CO detectors are located in the boiler room. These detectors will sound locally and also alert the occupants or facilities if there was a problem in the boiler room without the building being occupied.

### **Electrical Systems:**

- The existing electrical service is an 800amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch located on the exterior of the building and distribution panelboard in the Boiler Room. The utility company meter is mounted on the utility company transformer outside the



building. The switchboard is manufactured by Easton and is new to the building. The electrical service has been upgraded in the past 10 years. The service equipment is in good condition.

Utility Co. Transformer with Revenue Meter



Electric Service Main Disconnect Switch



Main Distribution Panelboard



2. The building does not have an emergency generator.
3. The electrical power is distributed through the building by fusible switch and circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, etc. This equipment is in fair to good condition.

Electrical Panels



New Electrical Panel Installed in Old Backbox



Old Electrical Panel



Boiler Room Electrical Panels



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
- a. Recessed 2x4 lensed fluorescent fixtures
  - b. Surface mounted wraparound fluorescent fixtures
  - c. Surface mounted LED wraparound fixtures in the Cafeteria and Gymnasium
  - d. Lamps
    - i. T8 fluorescent lamps
    - ii. LED

Typical Classroom Pendant Fluorescent Fixture



Typical Classroom Pendant Fluorescent Fixture



Typical Surface Mounted Fluorescent Fixture



Gymnasium Fixture



Recessed Fluorescent Fixture



5. Lighting control for the building consists of the following:
- a. Toggle type switches in most areas

- b. Combination occupancy sensor/switches in offices and classrooms
  - c. This equipment is in good working condition.
6. The fire alarm system consists of a Simplex zoned fire alarm control panel, manual fire alarm pull stations, horn strobes devices, and some smoke detectors. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are ADA compliant. The fire alarm equipment is in good condition.

Fire Alarm Control Panel



Fire Alarm Master Box



Typical Fire Alarm Manual Pullstation and Horn Strobe



7. The exit signs throughout the building are white plastic fluorescent type with integral batteries. These units are in good condition.

Typical Exit Sign



8. The emergency lighting throughout the building consists of individual 2-headed self-contained units with integral batteries. The fixtures are in good condition.



Typical Emergency Lighting  
Fixture



9. The site lighting consists of wall mounted full cut-off fixtures and surface mounted fixtures. The fixtures are in fair condition.

Surface Mounted Fixtures at Entrance  
Canopy



10. Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.

Security Keypad



11. Data/technology consists of wired computer stations and wireless access points throughout the building. There are also projectors and interactive white boards in a number of classrooms. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.

PA System Head End Equipment



Interactive Whiteboard



Typical Classroom Clock and  
Speaker



Typical TV/VCR in  
Classroom



Projector in Auditorium



### **Recommendations:**

- Provide an NFPA 13 sprinkler system throughout the building. This would include a new fire water service, backflow prevention device, alarm check valves, sprinkler piping, and sprinkler heads. New flow and tamper switches would be provided and connected to the building fire alarm system.
- Add fire alarm system devices to comply with latest code requirements. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming. Voice evacuation system should be provided in the Gymnasium.
- Replace non-ADA sinks in the classrooms with ADA sinks.
- Replace the cast iron boilers with new high efficiency, condensing boilers and controls.
- Replace the indoor air handling units. This may require the new equipment be installed in different locations for accessibility. The quantity of ventilation air should be evaluated and increased to accommodate current code requirements.
- Remove and replace the existing cast iron radiators, cabinet heaters, unit ventilators, and radiation. This equipment is beyond its expected service life and should be replaced.
- Replace the existing steam heating system with a hot water system. This would include removal of the existing steam and condensate piping and equipment and replacing it with new hot water supply and return piping, hot water pumps with variable frequency drives, finned tube radiation or radiant ceiling panels at the perimeter, unit heaters, cabinet unit heaters, etc.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the pneumatic equipment and piping and replace with new electronic valves, wiring, and control panels. This would also require removing and replacing the existing CO detectors with new and connect them to the new control system.
- Remove and replace all original fusible electrical panels, older circuit breaker type electrical panels, and all branch circuit wiring and devices.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# HELEN HANSEN ELEMENTARY

1800 Central Street

Year Constructed: 1962  
Year of Renovation/Addition: 1966  
Building Type: E  
Construction Type: IIB  
Fire sprinklers: No  
Total Floor Area: 36,821 SF  
Floors: Sub-Basement and 1<sup>st</sup>  
Land Area (Acres): 18  
Roof Type: EPDM



**GENERAL:** The Helen Hansen Elementary School had renovations / additions in 1966 and re-roofed within the past 5 years. The building appears to be in generally fair condition.

**LIFE SAFETY:** None identified at time of site visit.

**HEALTH:** None identified at time of site visit.

## HAZARDOUS MATERIALS:

Pipe insulation (Hard Block): All Listed are assumed to be ACBM.

- Outside chair storage room – 70 linear feet
- Book Storage Room #9 and Room 13 – 90 linear feet
- Gym Storage room – 75 linear feet
- South Book\ Art Storage Room – 150 linear feet
- Kitchen and Kitchen Storage Room – 200 linear feet
- Health Clinic Office Closet – 30 linear feet
- Custodial Closet (“A” Wing) – 25 linear feet
- Custodial Office – 25 linear feet
- Hallway outside Boiler Room – 50 linear feet
- Gym (roof leader at ceiling) – 10 linear feet
- Classrooms above Splined Ceilings – 1,200 linear feet
- Under Stage – 60 linear feet

Cementitious Fitting Insulation: All Listed are assumed to be ACBM..

- Boiler Room under Mezzanine (Sub-basement Water Main) – 12 each
- Boiler Room Office – 12 each
- Book Storage Room (at AHU) – 12 each
- Janitor’s Closet #9 across from Room #14 – 4 each
- Assumed above ceilings and in chases – 150 each



Pipe Insulation (Pressed Paper): All Listed are assumed to be ACBM..

- Janitor's Closet (South Wing) – 30 linear feet
- Pipe Chase (South Wing) – 400 linear feet
- Art Storage Room ("A" Wing) – 50 linear feet
- 2 Janitor's Closets ("A" Wing) – 60 linear feet
- Kindergarten Storage Room – 50 linear feet
- Boy's and Girl's Restrooms ("A" Wing) - 100 linear feet
- Above Hallway and Kitchen Ceilings – 250 linear feet

We recommend that all asbestos containing pipe insulation and fittings in occupied areas be removed and replaced. In areas where the insulation of fitting has been damaged should be replaced and wrapped with plastic sheathing.

12" x 12" Floor Tile and Mastic: All Listed are assumed to be ACBM.

- Storage Room – 500 square feet

No Action Required as recommended by 2016 AHERA Report.

9" x 9" Vinyl floor tile & Mastic: All Listed are assumed to be ACBM.

- Hallways (South Wing) - 1,650 square feet
- Classrooms 1 thru 12 (830 sqft each) – 9,960 square feet
- Library (under carpet) – 830 square feet
- Storage Room (South Wing) – 380 square feet
- Health Clinic – 470 square feet
- Offices and rooms A & B – 475 square feet
- Classrooms 13 thru 30 – (830 sqft each) – 6,640 square feet
- Hallways ("A" Wing) – 2,300 square feet
- Teacher's Copy Room – 680 square feet
- Conference Room #21 – 240 square feet
- Gym Storage Room – 180 square feet
- Room #22 – 175 square feet
- Music Storage Rooms (2 at stage) – 240 square feet
- Stage Entrance Hall – 25 square feet
- Storage Room at Restrooms ("A" Wing) – 125 square feet

No Action Required as recommended by 2016 AHERA Report.

Sink Undercoating: All Listed are assumed to be ACBM.

- Classrooms - 12 each

No Action Required as recommended by 2016 AHERA Report

The AHERA 3 Year Re-Inspection report was used for all the information listed above and was provided by the Stoughton Public Schools.

ADA COMPLIANCE:

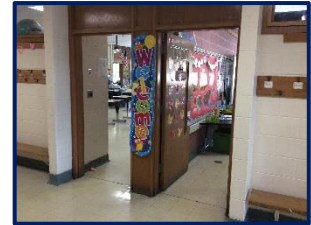
G

Sinks in most classrooms, Teachers Workroom and Nurses Office are not ADA compliant for knee clearances, pipe insulation, pipe locations and fixture types. **Modify sinks to comply.**



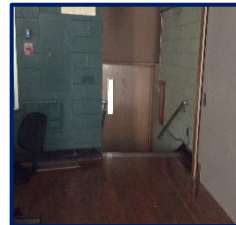
2

Push and pull side on multiple doors do not meet ADA clearances because on narrow entries in to classrooms.



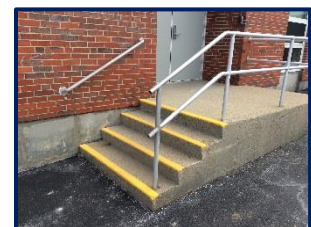
G

Stage stairs from cafeteria and Backstage stairs do not have ADA compliant hand or guard rails. **Recommend removing and installing code compliant hand and guard rails in both locations.**



G

Hand rails are not ADA compliant at exterior stairs at doors A6 and A7 and do not have the required 12" extensions. **Modify hand rails at top and bottom to comply.**



G

Temporary plywood ramp at door A4 appears to be steeper than 1:12 slope. **Remove plywood ramp and install new code compliant ramp.**



SITE:

2

Parking lot asphalt curbs have been damaged and torn up from snow plows during snow removal. **Remove and replace all damaged curbs.**



EXTERIORS:

1

Paint is chipping, peeling and rusting on panels above windows. **Recommend removing affected panels and installing new aluminum panels to match existing window systems.**



1

Main Entry concrete steps are chipping, spalling and rebar rusting through. **Recommend cleaning any exposed and corroding reinforcing bars with a wire brush and patch the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the concrete steps.**



1

Concrete foundation wall is cracking and/or spalling in multiple locations around building. **Recommend repairing and patching the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration.**



1

Brick façade appears to be in fair condition but there are multiple locations around building that require re-pointing. **Re-point all affected areas.**



#### INTERIORS:

3

Sagging acoustical ceiling tile in multiple classrooms and throughout school due to excess moisture. **Remove and replace with moisture resistant tiles.**



3

VCT warping and coming apart and exposing the seams in multiple locations. **The VCT has been identified in the 2016 AHERA report and if any work or repairs are to be done will require abatement.**



#### ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

4

**Upgrade the HVAC control system to a new electronic system with energy management capability.**

4

**Upgrade the interior lighting with new fixtures using LED technology.**

4

**Upgrade lighting controls throughout the facility to meet the latest energy code requirements.**

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:  
*Refer to CES Report in Appendix for complete assessment.*

- 2** Add fire alarm system devices to comply with latest code requirement. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.
  
- 2** Provide new CO sensors and connect them to the building management system monitoring and notification of alarms.
  
- 3** Insulate piping in the boiler room not currently insulated.
  
- 2** Provide a NFPA 13 sprinkler system throughout the building.
  
- 3** Replace the existing boiler with a new high efficiency unit to match the one recently installed.
  
- 3** Replace the indoor air handling units.
  
- 3** Remove and replace the existing unit ventilators, cabinet heaters and finned tube radiation.
  
- 3** Replace the existing electrical infrastructure.
  
- 4** Provide additional security system components, such as cameras to provide full building coverage.

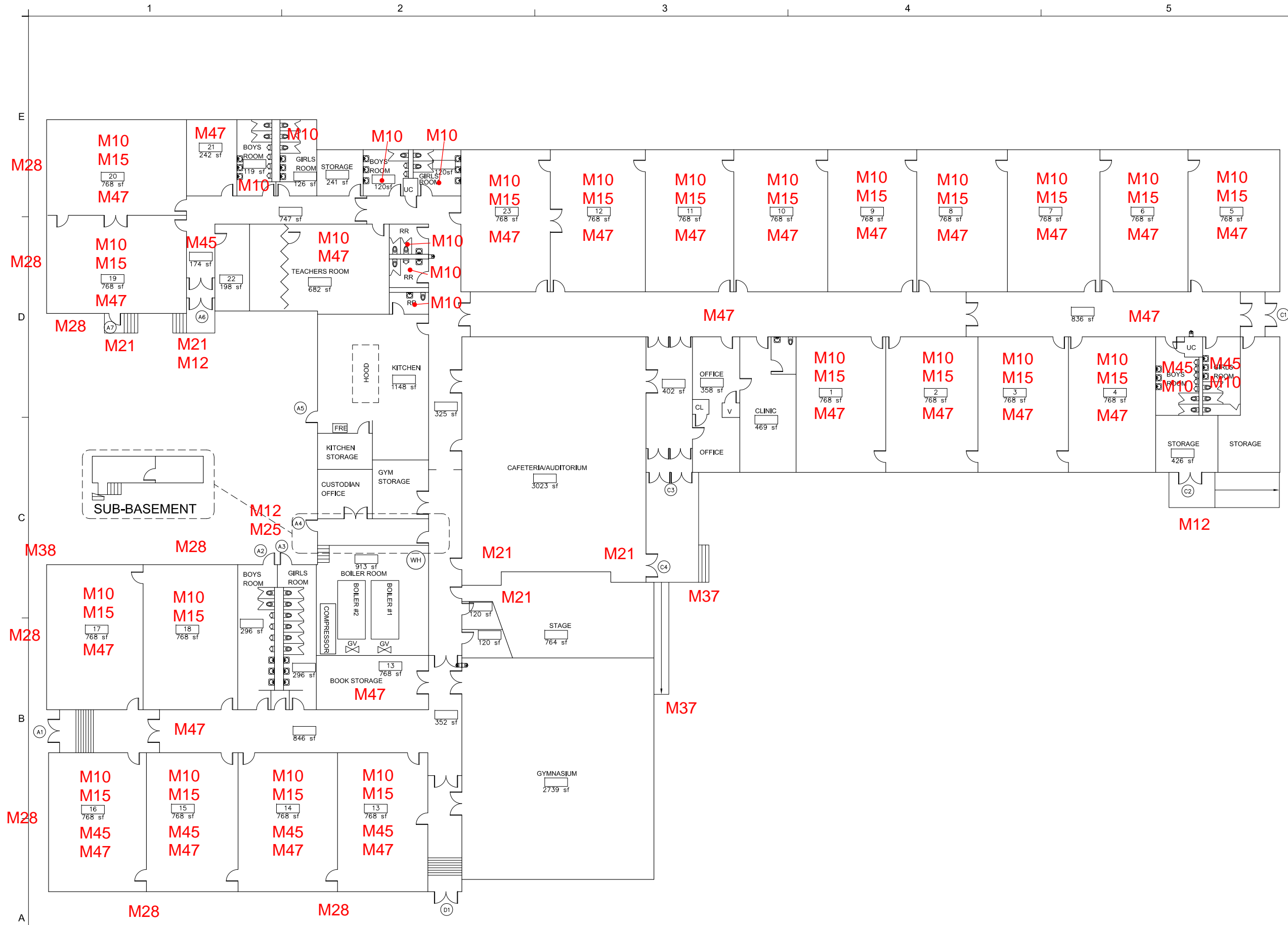
\* \* \*

**STOUGHTON MASTER PLAN UPDATE  
5 Year Capital Improvements Plan and  
Facilities Condition Report**

FIRST FLOOR PLAN

Scale: N.T.S.  
Drawn by: ASJ  
Job#: 16022.00  
Date: 4/4/2017

**A1.1**



**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Helen Hansen Elementary School  
1800 Central Street  
Stoughton, MA 02072



Date: October 26, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00



## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

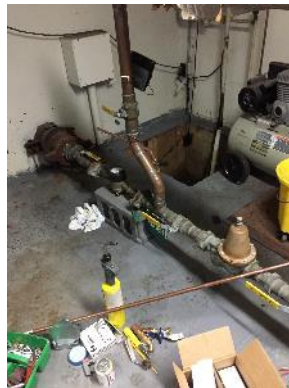
1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 4” domestic water service fed from the local water company. This service enters the building in the boiler room. The 4” pipe is reduced to 2” before the water meter. The service equipment includes a shut off valve, water meter, and pressure reducing valve. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment was undergoing minor repairs at the time of the site visit. This equipment is in good condition.

Domestic Water Service



2. Natural Gas Service: The building is currently served by a low pressure natural gas service. The gas service serves the gas fired boilers and domestic hot water heaters. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.
3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
4. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains. This equipment is in good condition.

Roof Drains



### **Plumbing Fixtures and Specialties**

1. Water closets are a combination of wall and floor mounted vitreous china fixtures with sensor operated flush valves. The flush valves are new and the fixtures are in good condition and ADA compliant fixtures are provided.

Wall Mounted Water Closet



Floor Mounted Water Closet



2. Urinals are wall mounted vitreous china fixtures with manual flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Wall Mounted Urinals



3. Lavatories are wall mounted vitreous china with sensor faucets. Lavatories are provided with insulation wrap for exposed piping below some of the fixtures for ADA compliance. The sensor faucets and fixtures are in good condition.

Wall Mounted Lavatory



4. Drinking fountains are stainless steel wall mounted two level type that appear to be ADA compliant. This equipment is in good condition.

Wall Mounted Drinking  
Fountain



5. There are classroom sinks in some rooms. Some of these sinks have bubblers installed. These sinks are stainless steel with two handle faucets or single lever faucets in rooms that have bubblers. These sinks do not appear to be ADA compliant and are in fair condition.

Classroom Sink w/o Bubbler



Classroom Sink with Bubbler



6. The kitchen has hand sinks, prep sinks, three bay sink, and above grade grease interceptors. The facility appears to have had a dishwasher that has been removed. The sinks do not appear to be ADA compliant, in fair condition. The grease interceptors are older and in poor condition.

Kitchen Sink



Kitchen Sink

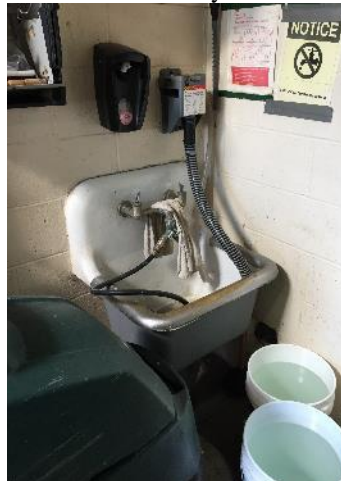


Grease Interceptor



7. Janitor/Utility sinks are enameled cast iron with two lever faucets. These sinks are original to the building and in fair condition.

Janitor/Utility Sink



8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

1. A natural gas fired 75 gallon water heater provides domestic hot water to the plumbing fixtures. The water heater was installed in 2011 and is in good condition.



Domestic Water Heater



2. A new tempering valve with recirculation pump has been installed. This piping is copper with Pro-Press fittings. This equipment is in good condition, although, the piping should be insulated.

Tempering Valve



Tempering Valve and Piping



**MECHANICAL SYSTEMS:**

1. The heating of the building consists of (1) fire tube hot water boiler that is original to the building. A new Viessmann Vitocrosseal 200 high efficiency natural gas fired hot water boiler has recently been installed. Hot water is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, unit heaters and unit ventilators. The fire tube boiler has been properly maintained and is in fair condition. The Viessmann boiler is in very good condition. The pumps, piping, radiation, cabinet unit heaters, unit heaters and unit ventilators are over 30 years old and in fair to poor condition.



Fire Tube Boiler



Viessman Boiler



Heating Water System Valves



Typical Hot Water Radiation



Typical Cabinet Heater



Typical Classroom Unit Ventilator



- The ventilation for the building consists of exhaust fans and operable windows. The exhaust fans were replaced with the roof approximately 5-years ago and are in good condition. There are specific spaces with window air conditioning. This equipment is in fair condition.

Typical Roof Exhaust Fans



Room with Window A/C Unit



- There are dedicated indoor air handling equipment with hot water coils to serve the Cafeteria and Gymnasium. This equipment is original to the building and in poor condition.

Cafeteria Indoor Air Handling Unit



Gymnasium Indoor Air Handling Unit



### Temperature Controls

- The existing temperature control system in the building is pneumatic, including valves and thermostats. A central air compressor and air dryer are located in the boiler room. The air compressor and air dryer are approximately 5 years old and in good condition. The remainder of the system components are original to the building and are functional and in fair condition.

Temperature Control System Air  
Compressor and Dryer



Wall Mounted Thermostat



Wall Mounted Thermostats



2. Portable CO detectors are located in the boiler room. These detectors would sound locally and alert the occupants or facilities if there was a problem in the boiler room without the building being occupied.

**Electrical Systems:**

1. The existing electrical service is a 600amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution panelboard. The CT cabinet and utility company meter are remote from the switchboard. The service equipment is in poor condition.

Main Switch and Distribution



C/T Cabinet and Utility Meter

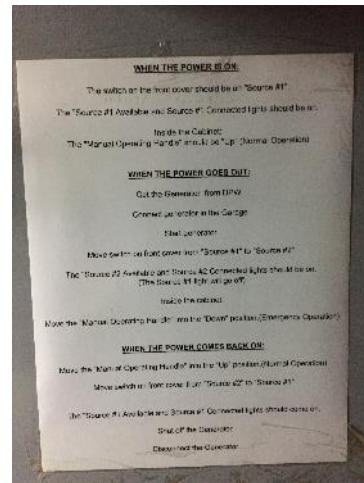


- The building has a 400amp manual transfer switch manufactured by Eaton/Cutler Hammer mounted adjacent to the main electric switchboard. In the event of a power outage, a portable generator is brought to the site and connected. The building is then connected to the generator via manually transferring the load to the generator via a series of manual switches. This manual transfer switch is very difficult to access and does not meet the required code clearances where it is currently located. This switch is in fair condition.

Manual Transfer Switch



Directions for Connecting  
Portable Generator



- The electrical power is distributed through the building by circuit breaker type panelboards and grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, Shops, etc. This equipment is in fair to good condition.



Electrical Load Center



Typical Electrical Panel Interior



Typical Electrical Panel Cover



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x4 lensed fluorescent fixtures
  - b. Recessed 1x4 lensed fluorescent fixtures
  - c. Surface mounted 2x4 lensed fluorescent fixtures
  - d. Surface mounted wraparound fluorescent fixtures
  - e. Surface mounted LED wraparound fixtures in the Cafeteria and Gymnasium
  - f. Lamps
    - i. T8 fluorescent lamps
    - ii. U bent tube T8 lamps
    - iii. LED



Recessed 1x4 Fixture in  
Classroom



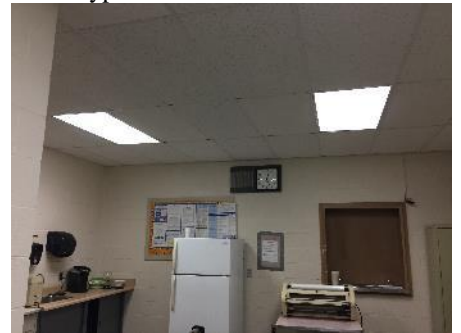
Surface Fluorescent



Surface Fluorescent in Kitchen



Typical 2x4 Recessed Fixture



Surface LED Fixtures in Gym



5. Lighting control for the building consists of the following:
  - a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switches in offices and classrooms
  - c. This equipment is in good working condition.
6. The fire alarm system consists of a Silent Knight Model 5207 zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, duct smoke detectors, sprinkler system flow and tamper switch monitoring. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are ADA compliant. Additional fire alarm horn strobes may be required to meet current code requirements.

Fire Alarm Control Panel



Fire Alarm Wireless Master Box



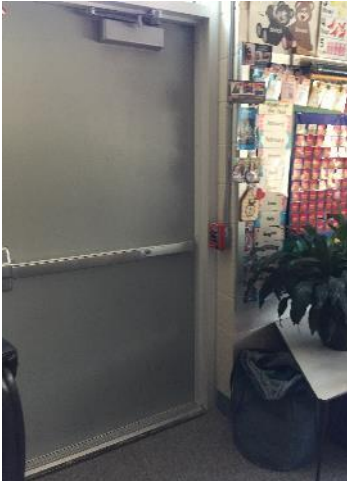
Fire Alarm Strobe, Door Holder



Fire Alarm Pullstation, Horn Strobe



Fire Alarm Pullstation



7. The exit signs throughout the building are white plastic with integral batteries. These units are in good condition.

Typical Exit Sign



8. The emergency lighting throughout the building are two head, self-contained units with integral batteries. The fixtures are in good condition.

Typical Emergency Light



9. The site lighting consists of wall mounted full cut-off fixtures, wall mounted flood light fixtures. The fixtures are in fair condition.
10. Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
11. Data/technology consists of wired computer stations and wireless access points throughout the building. There are also projectors and interactive white boards in a number of classrooms. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.

**Recommendations:**

- Provide an NFPA 13 sprinkler system throughout the building. This would include a new fire water service, backflow prevention device, alarm check valves, sprinkler piping, and sprinkler heads. New flow and tamper switches would be provided and connected to the building fire alarm system.
- Add fire alarm system devices to comply with latest code requirements. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.
- Replace non-ADA sinks in the classrooms with ADA sinks with bubblers.
- Insulate piping in the boiler room not insulated now.
- Replace the fire tube boiler with new high efficiency unit to match the one recently installed.
- Replace the indoor air handling units. This may require the new equipment be installed in different locations for accessibility as the accessibility of the existing equipment is limited. The quantity of ventilation air should be evaluated and increased to accommodate current code requirements.
- Remove and replace the existing unit ventilators, cabinet heaters, and finned tube radiation. This equipment is beyond its expected service life and should be replaced.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the pneumatic equipment and piping and replace with new electronic valves, wiring, and control panels. This would also require removing and replacing the existing CO detectors with new and connect them to the new control system.
- Replace the existing electrical infrastructure. The existing equipment is beyond its expected service life and should be replaced. Parts for the existing electrical panels are no longer readily available. This would include an evaluation of the electrical needs of the school, including the addition of air conditioning and a new electrical service be provided with branch circuit panelboards and feeders to replace the existing.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# WEST ELEMENTARY SCHOOL

1322 Central Street

Year Constructed: 1951  
Year of Renovation/Addition: 1954,1962  
Building Type: E  
Construction Type: IIB  
Fire sprinklers: No  
Total Floor Area: 47,662 SF  
Floors: Basement and 1<sup>st</sup>  
Land Area (Acres): 4  
Roof Type: EPDM



GENERAL: The West Elementary School has had an addition and renovations in 1954 and 1962 and is in generally good condition.

## LIFE SAFETY:

- 2 Guard rails and railings at all interior stairs has gaps larger than 4". **Recommend modifying guardrails by adding plexiglass similar to the Jones School.**
- 2 High visibility tape is required at the top , bottom and landings of stairs. **Install high visibility tape in all required locations.**



HEALTH: None identified at time of site visit.

## HAZARDOUS MATERIALS:

Flue Breaching Insulation: All Listed are assumed to be ACBM.

- Boiler Room - 350 linear feet

Pipe insulation: All Listed are assumed to be ACBM.

- Boiler Room - 250 linear feet
- Pipe Tunnel off Boiler Room – 200 linear feet
- Kitchen (above ceiling) – 100 linear feet
- Cafeteria – 400 linear feet
- Transformer Room – 20 linear feet
- Switchboard/ Electrical Room – 20 linear feet
- Emergency Generator Room – 20 linear feet
- Custodian's Office – 110 linear feet



- Rooms 1A, 1B, 1C and 1D – 275 linear feet
- Stage Area – 175 linear feet
- Janitor’s Closet – 15 linear feet
- Crawl Space (unexcavated across Room #3) – 600 linear feet
- Crawl Space (from Music Room) – 300 linear feet
- Music Room – 250 linear feet
- Work Room/ Office (adjacent to Room #8) – 10 linear feet
- Basement Restroom pipe chase – 75 linear feet
- Classrooms 1-8 (above ceilings) – 360 linear feet (80 LF each)
- 1<sup>st</sup> floor Restroom pipe chase – 75 linear feet

We recommend that all asbestos containing pipe insulation in occupied areas be removed and replaced. In areas where the pipe insulation has been damaged should be replaced and wrapped with plastic sheathing.

9" x 9" Vinyl floor tile & Mastic: All Listed are assumed to be ACBM.

- Cafeteria - 2,320 square feet
- Rooms 1A, 1B, 1C and 1D – 660 square feet
- Gym Hallway – 530 square feet
- Stage Entrance – 15 square feet
- Main Hallway – 6,000 square feet
- Rooms 1, 2 and 7 (under carpet) – 2,630 square feet
- Rooms 6, 8 and Music Room – 4,800 square feet
- Rooms 9, 11 thru 24 and Conference Room (1<sup>st</sup> floor) – 15,140 square feet
- Reading Rooms, Supply Room Clinic and Teachers Room – 1,295 square feet
- Library and Front Admin. Offices (under carpet) – 1,750 square feet
- Hallways, Stairwell Landings and Storage Room – 5,000 square feet

Sink Undercoating Sealant: All Listed are assumed to be ACBM.

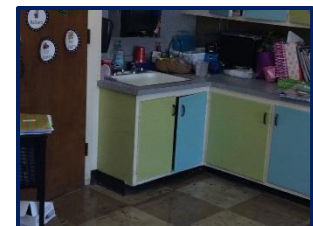
- Classrooms 7, 8, 9 and 16 – 4 each

No Action Required as recommended by 2016 AHERA Report.

ADA COMPLIANCE:

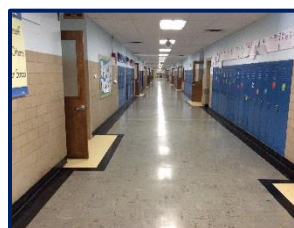
G

Sinks are not accessible In Classrooms with sinks. No knee clearance, non-compliant fixtures and /or no pipe insulation on piping below sink. **Modify sinks to be ADA compliant.**



2

Entry to multiple Classrooms do not have the required push or pull clearances due to locker locations or too narrow of entry.



-G

Multiple doors throughout building have knobs installed and are not compliant to existing ADA requirements and should be replaced. **Replace Door knobs with lever type hardware. Totals and location to be defined.**



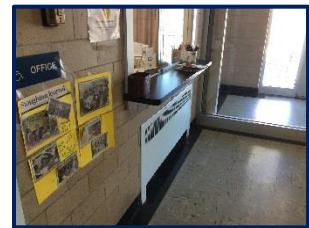
-G

Coat hooks and shelving in corridor outside of rooms 7 and 8 project more than 4" off wall. **Install bench or provide cane detection on floor.**



-G

Service window at main office projects more than 4" off wall and is not ADA accessible.



-G

Stairs to stage on both sides do not have required handrails installed. **Recommend installing ADA compliant handrails.**

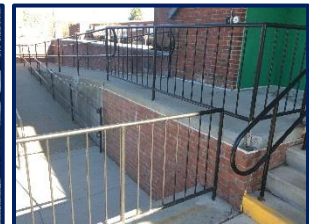
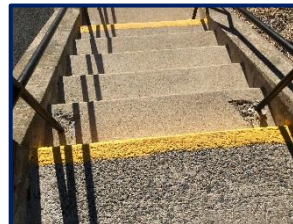


SITE: None identified at time of site visit.

EXTERIORS:

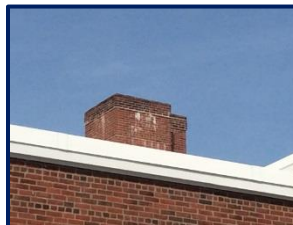
1

Concrete at Main Entrance stairs, ramp and stairs down to parking lot area are chipping, spalling, deteriorating and guard rails rusting at base. **Recommend cleaning any exposed and corroding reinforcing bars with a wire brush and patch the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the concrete stairs or ramp.**



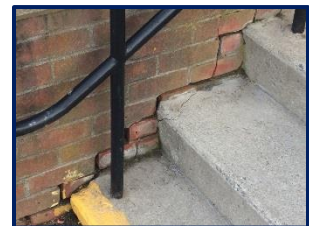
2

Brick façade requires cleaning and re-pointing in multiple areas around building and chimney. **Re-point and pressure clean all affected areas.**



2

Brick on both side of main entry stairs are cracked and grout is failing. **Remove damaged and affected brick and replace with new. Repoint area to match.**



- 4 Exterior doors are old and showing signs of age and wear. **Remove doors and frames and replace with new aluminum systems.**



- 2 Multiple vents below windows are bent, damaged, paint chipping and rusting. **Remove and replace with new aluminum vents.**



- 2 Paint on soffits and facias are chipping and peeling. **Scrape off all flaking and peeling paint, prime and repaint.**



- 4 Multiple pre-cast concrete sills are stained, scuffed, dirty and/or paint peeling (if painted). **Clean area and repaint.**



- 4 All EIFS panels around entire building, above and below windows are dirty or stained and require cleaning. **Pressure clean with low pressure system or chemically clean so not to damage EIFS system.**



#### INTERIORS:

- 2 Multiple Restrooms have vents that are dented or rusting. **Remove and replace with new.**



3

Classroom doors are old and worn with large vision panels. **Recommend removing doors and frames and replacing with new. Modification should be done at this time if door clearance is an issue as stated above in the ADA section.**



3

Classroom casework and bookshelves appear to be original and are showing signs of age. **Recommend replacing with new.**



3

Carpeting in Library and Main Office are old, worn, stained and coming apart at seams. **Recommend removing and replacing with new carpet.**



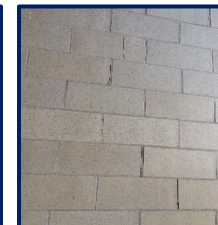
2

Missing threshold and hollow metal frame and panel rusting at bottom at door C1. **Recommend removing HM frame, door and panels and repairing concrete at threshold. Install new door and aluminum window system.**



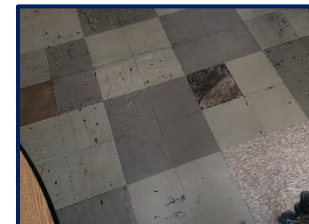
2

Glazed CMU in Stairwell cracked in block and grout joints and multiple cracks in painted CMU in Gymnasium, mostly below the windows. **Recommend having EDG review all affected areas.**



3

VCT warping and coming apart and exposing the seams in multiple locations. **The VCT has been identified in the 2016 AHERA report and if any work or repairs are to be done will require abatement.**



3

Sagging acoustical ceiling tile in multiple classrooms and throughout school due to excess moisture. **Remove and replace with moisture resistant tiles.**





**ENERGY & WATER CONSERVATION:**

*Refer to CES Report in Appendix for complete assessment.*

- 4 Upgrade the HVAC control system to a new electronic system with energy management capability.**
  
- 4 Upgrade the interior lighting with new fixtures using LED technology.**
  
- 4 Upgrade lighting controls throughout the facility to meet the latest energy code requirements.**

**MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:**

*Refer to CES Report in Appendix for complete assessment.*

- 2 Add fire alarm evacuation system in the Gymnasium.**
  
- 3 Replace the cast iron boilers with new high efficiency, condensing boilers and controls.**
  
- 3 Replace the indoor air handling units.**
  
- 3 Remove and replace the existing unit ventilators, cabinet heaters and finned tube radiation.**
  
- 3 Replace the existing electrical infrastructure.**
  
- 4 Provide additional security system components, such as cameras to provide full building coverage.**

\* \* \*



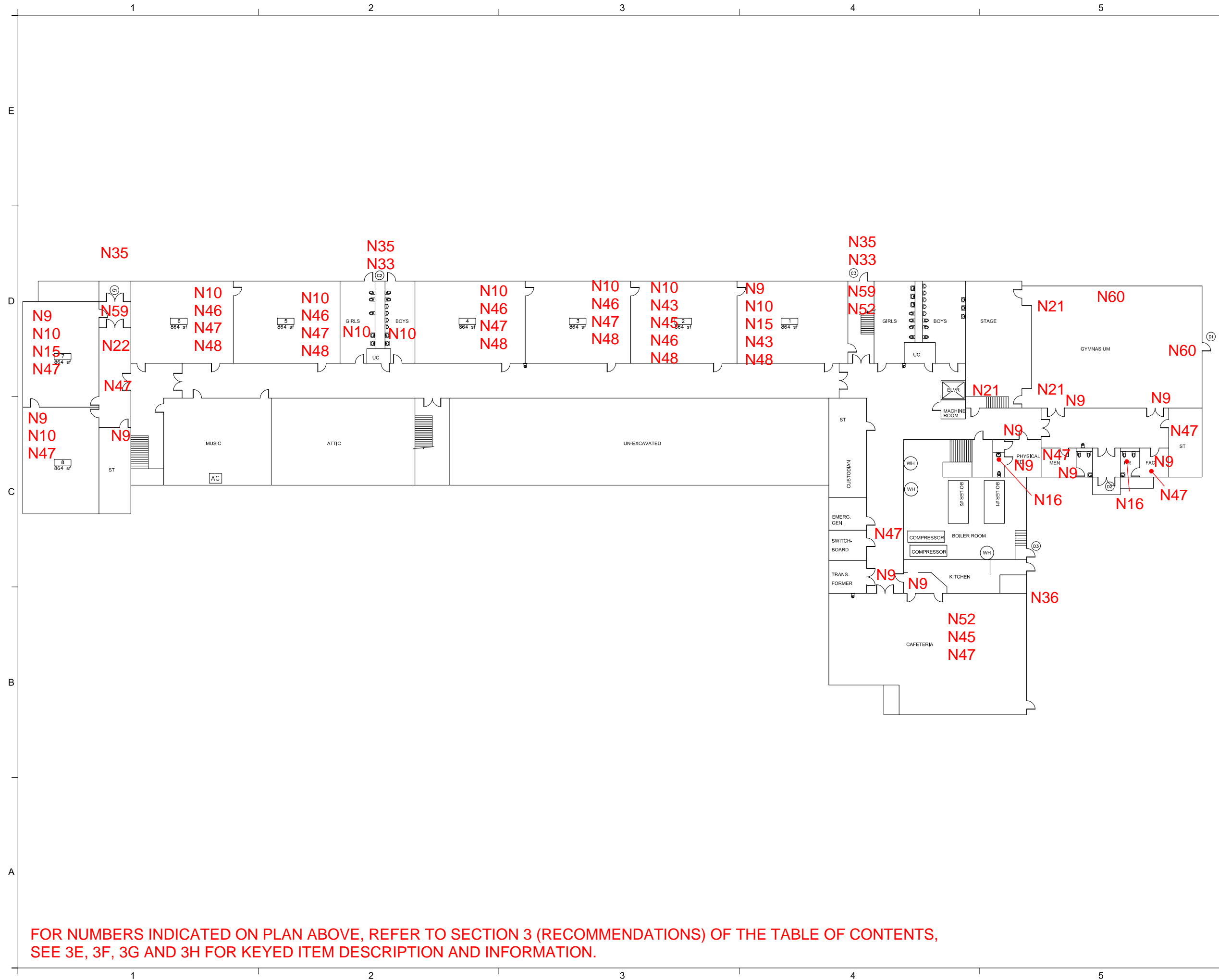
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**STOUGHTON MASTER PLAN UPDATE**  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report

FIRST FLOOR PLAN

Scale: N.T.S.  
 Drawn by: ASJ  
 Job# 16022.00  
 Date: 4/4/2017

**A1.1**



FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.



Drumsey  
Rosane  
Anderson,  
Inc.

235 Bear Hill Road  
4th Floor  
Waltham, MA  
02451

617-964-1700  
617-964-1701  
Info@drains.com

WEST ELEMENTARY  
SCHOOL  
STOUGHTON, MA

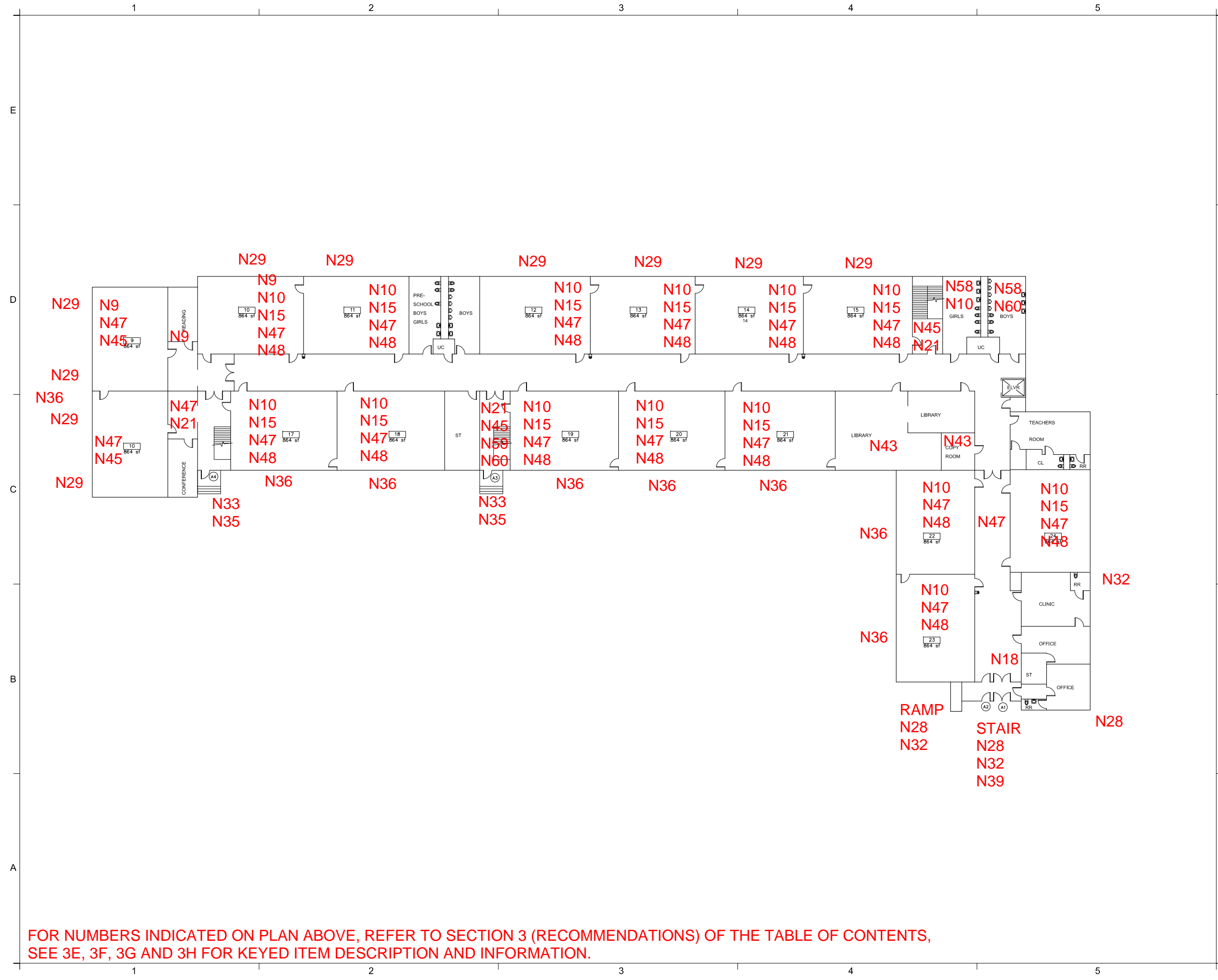
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**STOUGHTON MASTER PLAN UPDATE**  
5 Year Capital Improvements Plan and  
Facilities Condition Report

SECOND FLOOR PLAN

Scale: N.T.S.  
Drawn by: ASJ  
Job# 16022.00  
Date: 4/4/2017

**A1.2**



**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

# Mechanical and Electrical Systems

## Existing Conditions Narrative

West Elementary School  
1322 Central Street  
Stoughton, MA 02072



Date: October 26, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 2” domestic water service fed from the local water company. This service enters the building in the boiler room. The service equipment includes a shut off valve and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in fair condition.

Domestic Water Service Equipment



2. Natural Gas Service: The building is currently served by a 2” high pressure natural gas service. The gas service has an external regulator and shut off. The gas service serves the boilers, domestic hot water heater, and generator. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas piping as it  
enters the Boiler Room



3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
4. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains. This equipment is in good condition.

### **Plumbing Fixtures and Specialties**

1. Water closets are floor mounted vitreous china fixtures with manual or sensor operated flush valves. The flush valves are new and the fixtures are in fair condition and ADA compliant fixtures are provided.

Typical Water Closet, Different Ages



2. Urinals are floor mounted vitreous china fixtures with manual flush valves. The fixtures are in fair condition.



Typical Floor Mounted Urinal



3. Lavatories are wall mounted vitreous china with two twist handle faucets. Some lavatories are provided with sensor faucets and insulation wrap for exposed piping below the fixtures for ADA compliance. The fixtures with the two twist handle faucets are in fair to poor condition. The fixtures with the sensor faucets are in good condition.

Wall Mounted Lavatories



4. Drinking fountains are stainless steel wall mounted single level type that appear to be ADA compliant. This equipment is in good condition.

Typical Drinking Fountain



5. There are classroom sinks in some rooms. These sinks are stainless steel or enameled steel with two twist handle faucets. These sinks do not appear to be ADA compliant and are in poor condition.

Classroom Sink



6. The kitchen has hand sinks, prep sinks, three bay sink, and above grade grease interceptors. The sinks do not appear to be ADA compliant, and are in good condition. The grease interceptors are in good condition.

Handwash Sink in Kitchen



2-Bay Sink in Kitchen



Above Grade Grease Interceptor



7. Janitor/Utility sinks are enameled cast iron with two lever faucets. These sinks do not have vacuum breakers, are original to the building and in fair condition.

Typical Janitors Sink



8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

1. An electric 50 gallon water heater provides domestic hot water to the plumbing fixtures. This water heater looks to have been installed in the past 5 years and is in good condition. In addition, a high efficiency natural gas fired water heater has been installed to serve the Kitchen. This water heater is also approximately 5 years old and in good condition.

Domestic Water Heater



Water Heater Serving Kitchen



**MECHANICAL SYSTEMS:**

1. The heating of the building consists of (2) HB Smith 450 Series cast iron steam boilers. These boilers have Industrial Combustion dual fuel burners installed. Steam is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, unit heaters and unit ventilators. The boilers are original to the building and in fair condition. The piping, radiation, cabinet unit heaters, unit heaters and a lot of the unit ventilators are over 30 years old and in fair to poor condition.

Steam Boiler



Radiation in Enclosure



Newer Unit Ventilator



Original Unit Ventilator



Cast Iron Radiator



Typical Exposed Steam Piping



2. The steam condensate system has recently been replaced. It includes (2) condensate storage tanks and boiler make-up system. The piping is not insulated. This equipment is in very good condition.

Condensate Receiver



3. The ventilation for the building consists of exhaust fans, unit ventilators, and operable windows. The exhaust fans were replaced when the roof was replaced, within the past 5-years. The exhaust fans are in good condition. There are specific spaces with window air conditioning units. This equipment is in fair condition.

Typical Exhaust Shaft in  
Classrooms



Window Mounted Air  
Conditioner



4. There are dedicated indoor air handling equipment with steam coils to serve the Cafeteria and Gymnasium. This equipment is original to the building and in poor condition.



Cafeteria Air Handling  
Equipment



5. The existing steam traps throughout the building are in fair to good condition. Older traps should be replaced with new.

Typical Steam Traps



6. The existing temperature control system in the building is pneumatic, including valves and thermostats. A central air compressor and air dryer are located in the boiler room. The air compressor and air dryer are approximately 5 years old and in good condition. The remainder of the system components are original to the building and are functional and in fair condition.

Temperature Control System  
Compressor



Typical Pneumatic  
Thermostats



1. Portable CO detectors are located in the boiler room. These detectors would sound locally and also alert the occupants or facilities if there was a problem in the boiler room without the building being occupied.

**Electrical Systems:**

1. The existing electrical service is a 1000amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution panelboard. The CT cabinet is built into the switchboard. The switchboard is manufactured by Federal Pacific and is original to the building. The utility company meter is remote from the switchboard. There is a disconnect switch installed on the side of the main switchboard that is not installed with the proper code clearance. This should be relocated. This service equipment is in poor condition.

Main Electrical Switchboard



Disconnect Switch with not the  
required clearance



2. The building has a 30kW natural gas fired emergency generator manufactured by MTU On-Site Energy. The generator is located in a separate room above the garage. This generator system consists of the generator, silencer, 100amp automatic transfer switch manufactured by Westinghouse and emergency power distribution, including lighting relays for switching individual lighting circuits in

the event of a power outage. The generator and its support equipment is new and in very good condition. The emergency distribution is in fair condition.

Emergency Generator



Automatic Transfer Switch



3. The electrical power is distributed through the building by circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment is in fair to good condition.

Original Electrical Panel



Newer Electrical Panel



New Electrical Panel



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x4 lensed fluorescent fixtures
  - b. Surface mounted wraparound fluorescent fixtures
  - c. Surface mounted LED wraparound fixtures in the Cafeteria and Gymnasium
  - d. Pendant Fluorescent fixtures in Classrooms

- e. Lamps
  - i. T8 fluorescent lamps
  - ii. LED

Recessed Fluorescent Fixture



Surface Mounted Wraparound Fixture



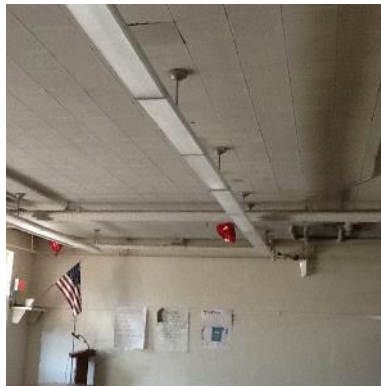
Pendant Industrial Fluorescent Fixture



LED Fixtures in Gymnasium



Pendant Fluorescent Fixtures in Classrooms



5. Lighting control for the building consists of the following:
  - a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switches in offices and classrooms
  - c. This equipment is in good working condition.
6. The fire alarm system consists of a Simplex zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, and some smoke detectors. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are ADA compliant. Additional fire alarm horn strobes may be required to meet current code requirements.

Fire Alarm Control Panel and  
Wireless Master Box



Typical Fire Alarm Manual  
Pullstation and Horn/Strobe



7. The exit signs throughout the building are white plastic fluorescent type with integral batteries. These units are in fair condition.

Typical Exit Sign



8. The emergency lighting throughout the building is fed from the emergency generator via lighting relays operating specific circuits throughout the building. The fixtures are in good condition.
9. The site lighting consists of wall mounted full cut-off fixtures, wall mounted flood light fixtures. The fixtures are in fair condition.
10. Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
11. Data/technology consists of wired computer stations and wireless access points throughout the building. There are also projectors and interactive white boards in a number of classrooms. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.



Typical Clock and PA Speaker



Data Rack



Typical Interactive Whiteboard



Typical Laptop Cart



Typical Overhead Projector



**Recommendations:**

- Provide an NFPA 13 sprinkler system throughout the building. This would include a new fire water service, backflow prevention device, alarm check valves, sprinkler piping, and sprinkler heads. New flow and tamper switches would be provided and connected to the building fire alarm system.
- Add fire alarm voice evacuation system in the Gymnasium. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming.
- Replace non-ADA sinks in the classrooms with ADA sinks.
- Replace the cast iron boilers with new high efficiency, condensing boilers and controls.
- Replace the indoor air handling units. This may require the new equipment be installed in different locations for accessibility as the accessibility of the existing equipment is limited. The quantity of ventilation air should be evaluated and increased to accommodate current code requirements.
- Remove and replace the existing unit ventilators, cabinet heaters, unit ventilators, and finned tube radiation. This equipment is beyond its expected service life and should be replaced.
- Replace the existing steam heating system with a hot water system. This would include removal of the existing steam and condensate piping and equipment and replacing it with new hot water supply and return piping, hot water pumps with variable frequency drives, finned tube radiation or radiant ceiling panels at the perimeter, unit heaters, cabinet unit heaters, etc.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the pneumatic equipment and piping and replace with new electronic valves, wiring, and control panels. This would also require removing and replacing the existing CO detectors with new and connect them to the new control system.
- Replace the existing electrical infrastructure. The existing equipment is beyond its expected service life and should be replaced. Parts for the existing electrical panels are no longer readily available. This would include an evaluation of the electrical needs of the school, including the addition of air conditioning and a new electrical service be provided with branch circuit panelboards and feeders to replace the existing.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# JOSEPH R. DAWE ELEMENTARY

131 Pine Street

Year Constructed: 1969  
Year of Renovation/Addition:  
Building Type: E  
Construction Type: IIB  
Fire sprinklers: No  
Total Floor Area: 67,600 SF  
Floors: Basement, 1<sup>st</sup> & 2<sup>nd</sup>  
Land Area (Acres): 36  
Roof Type: PVC



GENERAL: The Joseph Dawe Elementary school has recently had been re-roofed and new windows and doors installed within the past 5 years. Building appears to be in generally good condition.

## LIFE SAFETY:

2

Railing at rear of building above concrete retaining wall has large openings and could be a potential fall hazard. **Recommend installing guard rail with less than 4" gaps or install fence to match the fence at the Gibbons Elementary School.**



HEALTH: None identified at time of site visit.

## HAZARDOUS MATERIALS:

Pipe insulation (Hard Block): All Listed are assumed to be ACBM.

- Boiler Room – 340 linear feet
- Receiving Maintenance Room – 100 linear feet

Cementitious Fitting Insulation: All Listed are assumed to be ACBM..

- Boiler Room – 60 each
- Generator Room – 15 each
- Basement (large storage/ maintenance area– 39 each
- Kitchen Office – 3 each
- Stage at AHU – 12 each
- Play Room at Front AHU – 12 each
- Above Hallway and Classroom Ceilings – 200 each
- Assumed inside Perimeter Unit Ventilators – 150 each
- Above Restroom Ceilings and in Chases – 100 each

Thermal Block Flue Breaching Insulation: All Listed are assumed to be ACBM..

- Boiler Room (off 2 boilers) – 400 square feet

We recommend that all asbestos containing pipe insulation and fittings in occupied areas be removed and replaced. In areas where the insulation of fitting has been damaged should be replaced and wrapped with plastic sheathing.

12" x 12" Floor Tile and Mastic: All Listed are assumed to be ACBM.

- All Areas on 1<sup>st</sup> and 2<sup>nd</sup> Floor as indicted in the AHERA report – 37,347 square feet  
No Action Required as recommended by 2016 AHERA Report.

Sink Undercoating: All Listed are assumed to be ACBM.

- Classrooms and Library Work Room - 35 each  
No Action Required as recommended by 2016 AHERA Report

The AHERA 3 Year Re-Inspection report was used for all the information listed above and was provided by the Stoughton Public Schools.

Areas where ACBM tiles have either been removed or are damage need to abated and replaced.

#### ADA COMPLIANCE:

G

Sinks in most Classrooms are not ADA compliant for knee clearances, Piping insulation, piping location and fixture types.  
**Modify sinks to comply.**



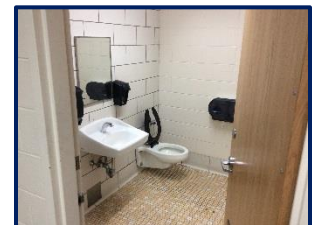
2

Push and pull clearances on multiple doors do not meet ADA clearances.



G

Grab bars not installed and no pipe insulation below sink in 2 restroom designated as ADA accessible. **Install ADA compliant grab bars and install insulation below ADA accessible sink in both locations.**



G

Stage stairs and Backstage stairs do not have ADA compliant hand or guard rails. **Install ADA compliant railing systems.**



G

Metal grating stairs, platform and handrails at loading dock are not ADA compliant. **Remove metal stairs and install new concrete stairs, platform and new ADA compliant handrails.**



SITE: None identified at time of site visit.

EXTERIORS:

1

EIFS facia and soffit damage and stained below roof metal fascia. **Repair and repaint all affected locations.**



4

Bricks in multiple areas are stained below vents. **Pressure clean all affected areas.**



2

Loading dock is in need of repairs and upgrades. Concrete is spalling and cracking, dock bumpers are old and worn and brackets rusting. **Recommend removing existing bumpers, cleaning any exposed and corroding reinforcing bars with a wire brush and patch the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the loading dock. Install new dock bumpers. Any ADA work being done on loading dock should be performed during the repairs to dock.**





INTERIORS:

- 3 Sagging tiles due to moisture and yellowed grid systems throughout school in multiple locations because of age. **Recommend removing and replacing with a more durable and moisture resistant tile and grid system. Totals to be determined.**



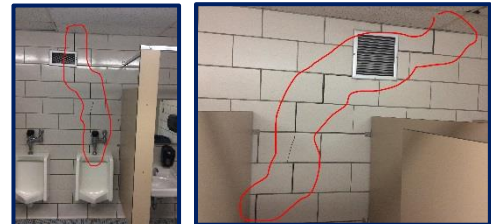
- 2 Cracks in painted CMU walls of Gymnasium near steel columns and corners in multiple locations. **Recommend repairing cracks in CMU, cut expansion joints and repaint.**



- 2 Carpet in Library and Workroom are old and showing signs of wear. **Remove and replace carpet with new.**



- 2 Glazed CMU is crack in CMU and grout joints in the Boy's and Girl's gang restroom. **Recommend EDG to review issues.**



- 2 VCT warping and coming apart and exposing the seams in multiple locations. **The VCT has been identified in the 2016 AHERA report and if any work or repairs are to be done will require abatement.**



- 3 Classroom casework and bookshelves appear to be original and are showing signs of age. **Recommend replacing with new.**



**ENERGY & WATER CONSERVATION:**

*Refer to CES Report in Appendix for complete assessment.*

- 4 Upgrade the HVAC control system to a new electronic system with energy management capability.**
- 4 Upgrade the interior lighting with new fixtures using LED technology.**
- 4 Upgrade lighting controls throughout the facility to meet the latest energy code requirements.**

**MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:**

*Refer to CES Report in Appendix for complete assessment.*

- 2 Add fire alarm system devices to comply with latest code requirement. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.**
- 2 Provide new CO sensors and connect them to the building management system monitoring and notification of alarms.**
- 3 Replace the cast iron boilers with new high efficiency, condensing boilers and controls.**
- 3 Replace the indoor air handling units.**
- 3 Remove and replace the existing unit ventilators, cabinet heaters and finned tube radiation.**
- 3 Replace the existing electrical infrastructure.**
- 4 Provide additional security system components, such as cameras to provide full building coverage.**

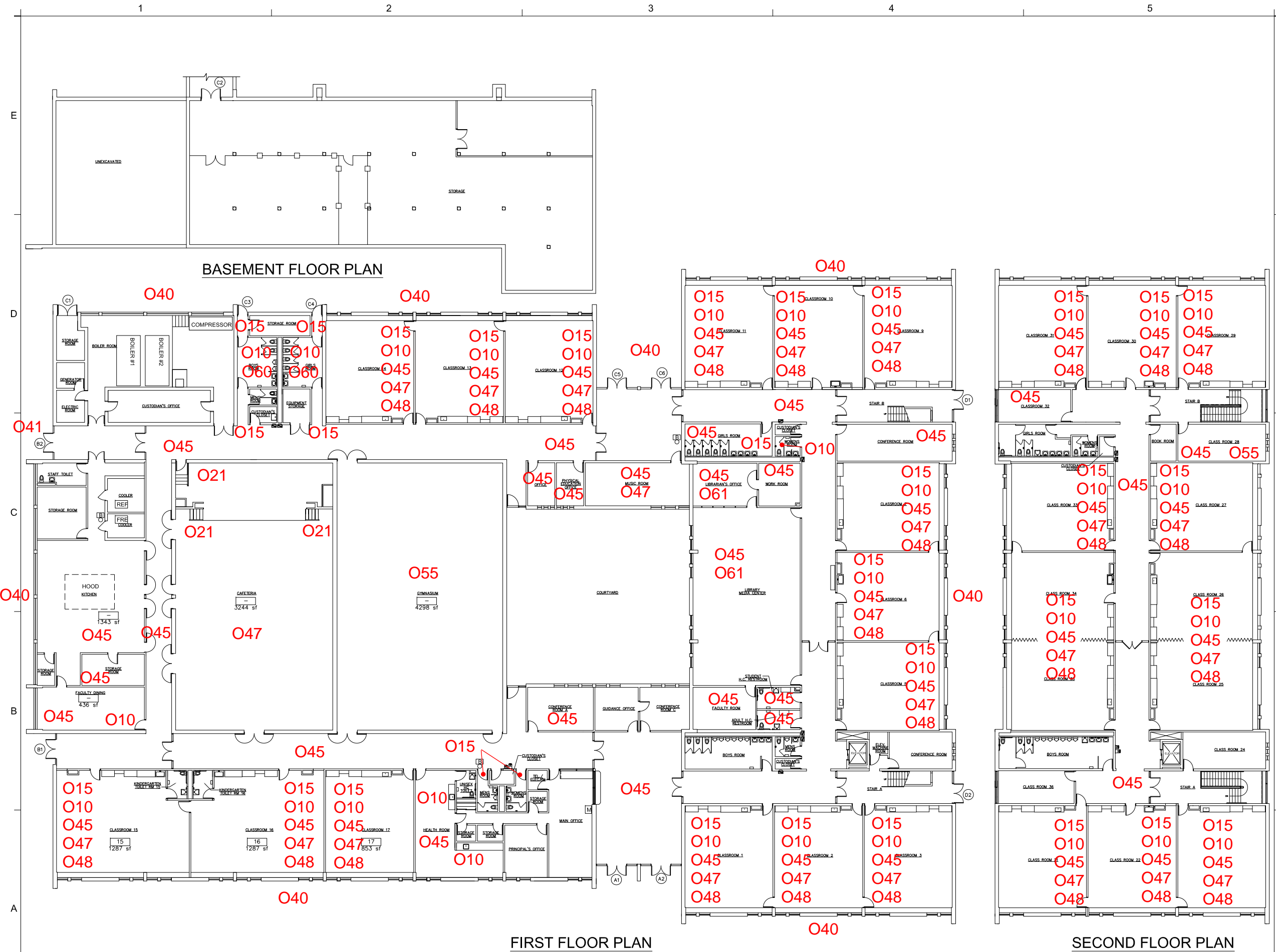
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**STOUGHTON MASTER PLAN UPDATE  
 5 Year Capital Improvements Plan and  
 Facilities Condition Report**

**BASEMENT, FIRST &  
 SECOND FLOOR  
 PLANS**

Scale: N.T.S.  
 Drawn by: ASJ  
 Job#: 16022.00  
 Date: 4/4/2017

**A1.1**



**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

# Mechanical and Electrical Systems Existing Conditions Narrative

Joseph R. Dawe Jr. Elementary School  
131 Pine Street  
Stoughton, MA 02072



Date: October 26, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

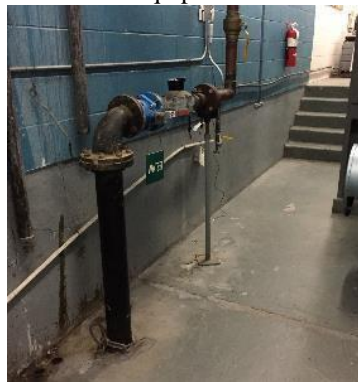
1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 4” domestic water service fed from the local water company. This service enters the building in the boiler room. The 4” pipe is reduced to 2” before the water meter. The service equipment includes a shut off valve and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in good condition.

Domestic Water Service  
Equipment





2. Natural Gas Service: The building is currently served by a 2" high pressure natural gas service. The gas service has an external regulator and shut off. The pressure is reduced and a 4" gas line enters the boiler room. The gas service serves the boilers and domestic hot water heaters. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service Equipment



3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
4. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains. This equipment is in good condition.

### **Plumbing Fixtures and Specialties**

1. Water closets are wall mounted vitreous china fixtures with sensor operated flush valves. The flush valves are new and the fixtures are in good condition and ADA compliant fixtures are provided.

Typical Water Closet



2. Urinals are wall mounted vitreous china fixtures with sensor operated flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Wall Mounted Urinals



3. Lavatories are wall mounted vitreous china with sensor faucets. Lavatories are provided with insulation wrap for exposed piping below some of the fixtures for ADA compliance. The sensor faucets and fixtures are in good condition.

Typical Lavatory



4. Drinking fountains are stainless steel wall mounted single level type that appear to be ADA compliant. This equipment is in good condition.

Typical Drinking Fountain



5. There are classroom sinks in some rooms. These sinks are stainless steel with single lever faucets. These sinks do not appear to be ADA compliant and are in fair condition.

Typical Classroom Sink

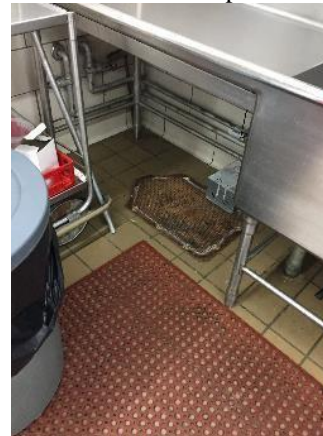


6. The kitchen has hand sinks, prep sinks, three bay sink, and below grade grease interceptors. The facility appears to have had a dishwasher that has been removed. The sinks do not appear to be ADA compliant, and are in fair condition. The grease interceptors are older and in poor condition.

Three Bay Sink in Kitchen



Grease Interceptor



7. Janitor/Utility sinks are enameled cast iron with two lever faucets. These sinks are original to the building and in fair condition.
8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

1. Domestic hot water is generated off the main heating system boilers and is stored in a large storage tank in the Boiler Room. The tank utilizes an internal heat exchanger that transfers the heat from the heating water into the water stored in the storage tank. The heated water is then distributed throughout the building for use in sinks, kitchen, etc. The tank has recently been reinsulated and is in good condition. An additional 100 gallon natural gas fired water heater is used during the times of the year that the heating water boilers are not operational.

Domestic Hot Water Storage  
Tank



Natural Gas Fired Water  
Heater



### **MECHANICAL SYSTEMS:**

1. The heating of the building consists of (2) HB Smith 450 Series cast iron hot water boilers. These boilers have Industrial Combustion Model MMG-42S dual fuel burners installed. Hot water is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, unit heaters and unit ventilators. The boilers are original to the building and in fair condition. The hot water circulation pumps have recently been upgraded to use variable frequency drives and are in fair condition. The piping, radiation, cabinet unit heaters, unit heaters and unit ventilators are over 30 years old and in fair to poor condition.

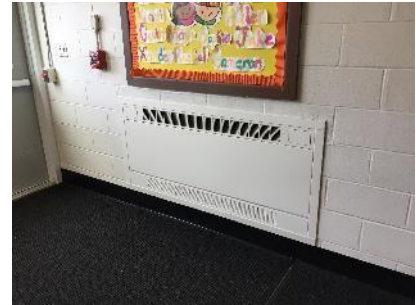
Cast Iron Boiler



Typical Hot Water Radiation



Typical Recessed Hot Water Radiation



2. The ventilation for the building consists of exhaust fans and operable windows. The exhaust fans vary in age and condition. The original fans are in poor condition, others are in good condition. The exhaust fans on the Gymnasium are new having been replaced with the new windows. There are specific spaces with window air conditioning. This equipment is in fair condition.

Typical Roof Exhaust Fan



3. There are dedicated indoor air handling equipment with hot water coils to serve the Cafeteria and Gymnasium. This equipment is original to the building and in poor condition.



Indoor Air Handling Unit



4. The existing temperature control system in the building is pneumatic, including valves and thermostats. A central air compressor and air dryer are located in the boiler room. The air compressor and air dryer are approximately 5 years old and in good condition. The remainder of the system components are original to the building and are functional and in fair condition.

Temperature Control System  
Compressor



5. Portable CO detectors are located in the boiler room. These detectors would sound locally and also alert the occupants or facilities if there was a problem in the boiler room without the building being occupied.

### **Electrical Systems:**

1. The existing electrical service is a 1000amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution panelboard. The CT cabinet is built into the switchboard. The switchboard is manufactured by Federal Pacific and is original to the building. The utility company meter is remote from the switchboard. The service equipment is in poor condition.

Electrical Switchboard



2. The building has a 30kW natural gas fired emergency generator manufactured by MTU On-Site Energy. The generator is located in a separate room above the garage. This generator system consists of the generator, silencer, 100amp automatic transfer switch manufactured by Westinghouse and emergency power distribution, including lighting relays for switching individual lighting circuits in the event of a power outage. The generator and its support equipment is new and in very good condition. The emergency distribution is in fair condition.

Emergency Generator



Automatic Transfer Switch



3. The electrical power is distributed through the building by fusible switch and circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment is in fair to good condition.

Typical Electrical Panel



Typical Electrical Panel



4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
- a. Recessed 2x4 lensed fluorescent fixtures
  - b. Surface mounted wraparound fluorescent fixtures
  - c. Surface mounted LED wraparound fixtures in the Cafeteria and Gymnasium
  - d. Lamps
    - i. T8 fluorescent lamps
    - ii. LED

Surface Mounted  
Fluorescent Wraparound  
Fixtures



Typical Recessed  
Fluorescent Fixtures



LED Fixtures in Cafeteria



5. Lighting control for the building consists of the following:
  - a. Toggle type switches in most areas
  - b. Combination occupancy sensor/switches in offices and classrooms
  - c. This equipment is in good working condition.
  
6. The fire alarm system consists of a Silent Knight Model 5207 zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, smoke detectors, and duct smoke detectors. The fire alarm control panel is in good condition. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are ADA compliant. Additional fire alarm horn strobes may be required to meet current code requirements.

Fire Alarm Control Panel



Fire Alarm Wireless Master



Typical Fire Alarm Horn/Strobe



Typical Fire Alarm Pullstation



- The exit signs throughout the building are white plastic fluorescent type. These units are in good condition.

Typical Exit Sign



- The emergency lighting throughout the building is fed from the emergency generator via lighting Relays operating specific circuits throughout the building. The fixtures are in good condition.

Emergency Lighting Relays



- The site lighting consists of wall mounted full cut-off fixtures, wall mounted flood light fixtures. The fixtures are in fair condition.
- Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
- Data/technology consists of wired computer stations and wireless access points throughout the building. There are also projectors and interactive white boards in a number of classrooms. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.



**Recommendations:**

- Provide an NFPA 13 sprinkler system throughout the building. This would include a new fire water service, backflow prevention device, alarm check valves, sprinkler piping, and sprinkler heads. New flow and tamper switches would be provided and connected to the building fire alarm system.
- Add fire alarm system devices to comply with latest code requirements. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.
- Replace non-ADA sinks in the classrooms with ADA sinks.
- Replace the cast iron boilers with new high efficiency, condensing boilers and controls.
- Replace the indoor air handling units. This may require the new equipment be installed in different locations for accessibility as the accessibility of the existing equipment is limited. The quantity of ventilation air should be evaluated and increased to accommodate current code requirements.
- Remove and replace the existing unit ventilators, cabinet heaters, unit ventilators, and finned tube radiation. This equipment is beyond its expected service life and should be replaced.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the pneumatic equipment and piping and replace with new electronic valves, wiring, and control panels. This would also require removing and replacing the existing CO detectors with new and connect them to the new control system.
- Replace the existing electrical infrastructure. The existing equipment is beyond its expected service life and should be replaced. Parts for the existing electrical panels are no longer readily available. This would include an evaluation of the electrical needs of the school, including the addition of air conditioning and a new electrical service be provided with branch circuit panelboards and feeders to replace the existing.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

# JOSEPH H. GIBBONS ELEMENTARY

235 Morton Street

Year Constructed: 1971  
Year of Renovation/Addition:  
Building Type: E  
Construction Type: IIB  
Fire sprinklers: No  
Total Floor Area: 67,600 SF  
Floors: Basement, 1<sup>st</sup> and 2<sup>nd</sup>  
Land Area (Acres): 10  
Roof Type: PVC



GENERAL: The Joseph Gibbons Elementary school has recently had been re-roofed and new windows and doors installed within the past 5 years. Building appears to be in generally good condition.

## LIFE SAFETY:

- 2 There is no high visibility paint or tape on stairs. Install high visibility tape at top, bottom and landings on stairs.



HEALTH: None identified at time of site visit.

## HAZARDOUS MATERIALS:

Pipe insulation (Hard Block): All Listed are assumed to be ACBM.

- Boiler Room – 350 linear feet
- Receiving Maintenance Room – 80 linear feet

Cementitious Fitting Insulation: All Listed are assumed to be ACBM..

- Boiler Room – 50 each
- Generator Room – 20 each
- Basement (large storage/ maintenance area– 89 each
- Kitchen Office – 10 each
- Kitchen – 40 each
- Kitchen Storage – 4 each
- Stage at AHU – 10 each
- Paper Storage Room – 6 each
- Assumed inside Perimeter Unit Ventilators – 150 each
- Above Restroom Ceilings and in Chases – 100 each

We recommend that all asbestos containing pipe insulation and fittings in occupied areas be removed and replaced. In areas where the insulation of fitting has been damaged should be replaced and wrapped with plastic sheathing.

12" x 12" Floor Tile and Mastic: All Listed are assumed to be ACBM.

- Classrooms 1 thru 14 and 17 – 14,450 square feet
- Library – 2,300 square feet
- Health Room, Admin Office – 1,400 square feet
- Conference Room A & B ,Guidance Room – 670 square feet
- Music Room, Phys. Ed Office and Storage, and Exit Halls – 950 square feet
- Kitchen Storage Room and Faculty Dining – 700 square feet
- All Hallways, Entrance Foyers, and Stairwell Landings – 9,100 square feet
- Cafeteria and Gymnasium – 7,550 square feet
- Classrooms 21 thru 36 – 11,300 square feet
- Hallways and Stairwell Landings – 2,020 square feet

No Action Required as recommended by 2016 AHERA Report.

Freezer Ceiling Material: All Listed are assumed to be ACBM.

- 2 Freezers - 120 square feet

No Action Required as recommended by 2016 AHERA Report

Fire Doors: All Listed are assumed to be ACBM.

- Hallway and Boiler Room - 24 each

No Action Required as recommended by 2016 AHERA

The AHERA 3 Year Re-Inspection report was used for all the information listed above and was provided by the Stoughton Public Schools.

#### ADA COMPLIANCE:

G

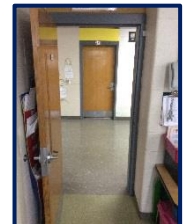
Sinks in most Classrooms are not ADA compliant for knee clearances, Piping insulation, piping location and fixture types.

**Modify sinks to comply.**



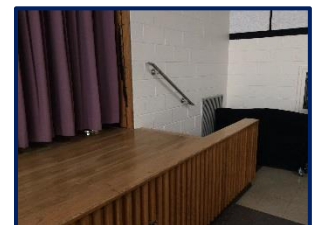
2

Push and pull clearances on multiple doors do not meet ADA clearances.



G

Stage stairs and Backstage stairs do not have ADA compliant hand or guard rails. **Install ADA compliant railing systems.**



- 2 No pipe insulation at sinks in restrooms indicated as ADA accessible. **Install pipe insulation on pipes below sinks. Totals to be determined**



- G Breakroom sink does not have required knee clearance and is not ADA accessible. **Modify sink to comply to ADA requirements.**



- G Metal grating stairs, platform and handrails at loading dock are not ADA compliant. **Remove metal stairs and install new concrete stairs, platform and new ADA compliant handrails.**



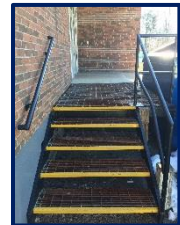
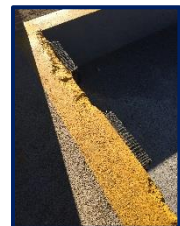
SITE: None

EXTERIORS:

- 1 EIFS facia and soffit damage and stained below roof metal fascia. **Repair and repaint all affected locations.**



- 2 Loading dock is in need of repairs and upgrades. Concrete is spalling and cracking, dock bumpers are old and worn and brackets rusting. **Recommend removing existing bumpers, cleaning any exposed and corroding reinforcing bars with a wire brush and patch the concrete with a bonding agent and cementitious material to resist further water infiltration and deterioration to the loading dock. Install new dock bumpers. Any ADA work being done on loading dock should be performed during the repairs to dock.**



INTERIORS:

- 2** Cracks in painted CMU walls and grout joints in multiple locations. **Recommend remove and replace cracked CMU and cut in expansion joints and add sealants.**
- 3** Sagging tiles due to moisture throughout school in multiple locations and Classrooms. **Recommend removing and replacing with a more durable and moisture resistant acoustical tile. Totals to be determined.**
- 2** VCT warping and coming apart and exposing the seams in multiple locations. **The VCT has been identified in the 2016 AHERA report and if any work or repairs are to be done will require abatement.**
- 3** Classroom casework and bookshelves appear to be original and are showing signs of age. **Recommend replacing with new.**



ENERGY & WATER CONSERVATION:

*Refer to CES Report in Appendix for complete assessment.*

- 4** Upgrade the HVAC control system to a new electronic system with energy management capability.
- 4** Upgrade the interior lighting with new fixtures using LED technology.
- 4** Upgrade lighting controls throughout the facility to meet the latest energy code requirements.



MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION:  
*Refer to CES Report in Appendix for complete assessment.*

- 2** Add fire alarm system devices to comply with latest code requirement. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.
  
- 3** Replace the cast iron boilers with new high efficiency, condensing boilers and controls.
  
- 3** Replace the indoor air handling units.
  
- 3** Remove and replace the existing unit ventilators, cabinet heaters and finned tube radiation.
  
- 3** Replace the existing electrical infrastructure.
  
- 4** Provide additional security system components, such as cameras to provide full building coverage.

\* \* \*

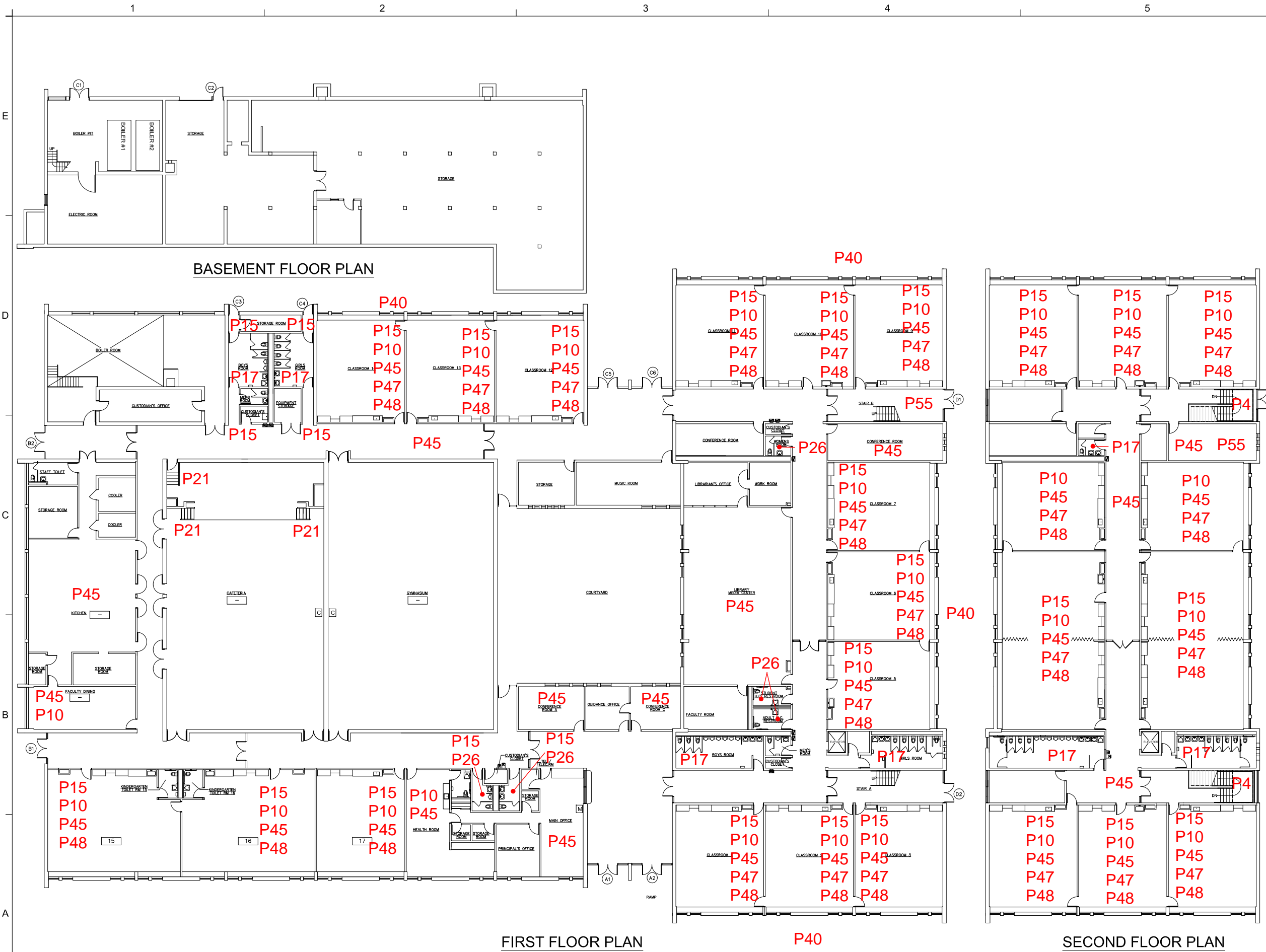
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**STOUGHTON MASTER PLAN UPDATE**  
5 Year Capital Improvements Plan and  
Facilities Condition Report

**BASEMENT, FIRST &  
SECOND FLOOR  
PLANS**

Scale: N.T.S.  
Drawn by: ASJ  
Job# 16022.00  
Date: 4/4/2017

**A1.1**



**FOR NUMBERS INDICATED ON PLAN ABOVE, REFER TO SECTION 3 (RECOMMENDATIONS) OF THE TABLE OF CONTENTS, SEE 3E, 3F, 3G AND 3H FOR KEYED ITEM DESCRIPTION AND INFORMATION.**

**Mechanical and Electrical Systems**  
**Existing Conditions Narrative**

Joseph H. Gibbons. Elementary School  
235 Morton Street  
Stoughton, MA 02072

Date: October 26, 2017

Prepared by:  
Consulting Engineering Services, Inc.  
811 Middle Street, Middletown, Connecticut 06457  
CES PN 2017002.00

## **MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION NARRATIVE**

### **APPLICABLE CODES AND STANDARDS**

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

1. Massachusetts Building Code – 9<sup>th</sup> Edition
2. 2015 International Building Code (IBC)
3. 2015 International Existing Building Code (IEBC)
4. 2015 International Plumbing Code (IPC)
5. 2015 International Mechanical Code (IMC)
6. 2015 International Energy Conservation Code (IECC)
7. Illuminating Engineering Society Lighting Handbook (IESNA), 9th Edition.
8. NFPA 70 - National Electrical Code
9. NFPA 101 – Life Safety Code

### **FIRE PROTECTION SERVICE**

1. The building does not have a fire protection service or sprinkler system.

### **PLUMBING SYSTEMS:**

#### **Existing Plumbing Utilities**

1. Domestic Water: The building is currently served by a 4” domestic water service fed from the local water company. This service enters the building in the boiler room. The 4” pipe is reduced to 2” before the water meter. The service equipment includes a shut off valve and water meter. Domestic hot water and cold water piping is copper with rigid molded noncombustible glass fiber insulation. This equipment is in good condition.

Domestic Water Service Equipment



2. Natural Gas Service: The building is currently served by a 2” high pressure natural gas service. The gas service has an external regulator and shut off. The pressure is reduced and a 4” gas line enters the boiler room. The gas service serves the boilers, domestic hot water heaters, and the emergency

generator. Natural gas piping within the building is schedule 40 black steel pipe. Natural gas supply is regulated at the building exterior prior to the gas piping entering the building.

Natural Gas Service Equipment on the Exterior of the Building



Natural Gas Piping as it enters the Building



3. Sanitary Service: The existing building is currently provided with several sanitary waste water laterals. The existing piping material is cast iron. The piping is in fair to good condition.
4. Storm Service: The existing building is provided with roof drains connected to cast iron storm piping. There are no overflow drains. This equipment is in good condition.

Typical Roof Drain

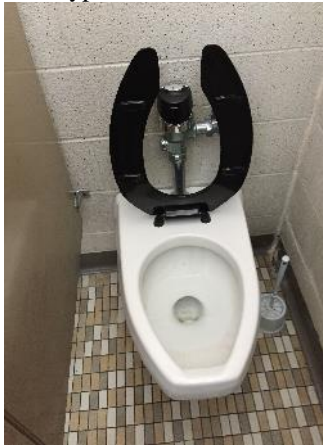


### **Plumbing Fixtures and Specialties**

1. Water closets are wall mounted vitreous china fixtures with sensor operated flush valves. The flush valves are new and the fixtures are in good condition and ADA compliant fixtures are provided.



Typical Water Closet



2. Urinals are wall mounted vitreous china fixtures with sensor operated flush valves. The fixtures are in good condition and ADA compliant fixtures are provided.

Typical Urinals



3. Lavatories are wall mounted vitreous china with sensor faucets. Some of the Lavatories are provided with insulation wrap for exposed piping below some of the fixtures for ADA compliance. Other

ADA Lavatory



Typical Lavatories



ADA Lavatories are not provided with this pipe insulation. The sensor faucets and fixtures are in good condition.

4. Drinking fountains are stainless steel wall mounted single and two-level type that appear to be ADA compliant. This equipment is in good condition.

Single Level Drinking Fountain



Two Level Drinking Fountain

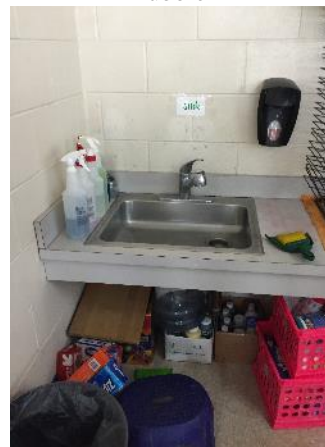


5. There are classroom sinks in some rooms. These sinks are stainless steel with single lever faucets. Some of the sinks include bubblers. These sinks do not appear to be ADA compliant and are in fair condition.

Typical Classroom Sink with Bubbler



Typical Classroom Sink w/o Bubbler



6. The kitchen has hand sinks, prep sinks, three bay sink, and below grade grease interceptors. The facility appears to have had a dishwasher that has been removed. The sinks do not appear to be ADA compliant, and are in fair condition. The grease interceptors are older and in poor condition.

Kitchen 3-Bay Sink



Recessed Grease Interceptor



7. Janitor/Utility sinks are enameled cast iron with two lever faucets and vacuum breakers. These sinks are original to the building and in fair condition.

Typical Janitors Sink



8. Floor cleanouts are provided to serve the buried waste system. Floor drains do not appear to have water based trap primers.

### **Domestic Hot Water Systems**

Domestic hot water is generated off the main heating system boilers and is stored in a large storage tank in the Boiler Room. The tank utilizes an internal heat exchanger that transfers the heat from the heating water into the water stored in the storage tank. The heated water is then distributed throughout the building for use in sinks, kitchen, etc. The tank has recently been reinsulated and is in good condition. An additional 100 gallon natural gas fired water heater is used during the times of the year that the heating water boilers are not operational.

Domestic Hot Water Storage Tank



Natural Gas Fired Water Heater



### **MECHANICAL SYSTEMS:**

1. The heating of the building consists of (2) HB Smith 450 Series cast iron hot water boilers. These boilers have Industrial Combustion Model MMG-42S dual fuel burners installed. Hot water is distributed throughout the building to terminal units such as perimeter radiation, cabinet unit heaters, unit heaters and unit ventilators. The boilers are original to the building and in fair condition. The hot water circulation pumps have recently been upgraded to use variable frequency drives and are in



fair condition. The piping, radiation, cabinet unit heaters, unit heaters and unit ventilators are over 30 years old and in fair to poor condition.

Cast Iron Boiler (1 of 2)



Typical Recessed Radiation



Base Board Radiation



Wall Mounted Radiation



Typical Unit Ventilator



- The ventilation for the building consists of exhaust fans and operable windows. The exhaust fans were replaced when the roof was replaced about 5 years ago. The exhaust fans are in good condition. There are specific spaces with window air conditioning. This equipment is in fair condition.

Typical Roof Mounted Exhaust Fans



Roof Mounted Kitchen Exhaust Fan



- There are dedicated indoor air handling equipment with hot water coils to serve the Cafeteria and Gymnasium. This equipment is original to the building and in poor condition.



Typical Indoor Air Handling Unit



4. The existing temperature control system in the building is pneumatic, including valves and thermostats. A central air compressor and air dryer are located in the boiler room. The air compressor is approximately 20 years old and in fair condition. The air dryer is approximately 10 years old and in good condition. The remainder of the system components are original to the building and are functional and in fair condition.

Temperature Control System Air  
Compressor



Air Dryer



Typical Thermostat



5. Portable CO detectors are located in the boiler room. These detectors will sound locally and also alert the occupants or facilities if there was a problem in the boiler room without the building being occupied.

### **Electrical Systems:**

1. The existing electrical service is a 1000amp, 208/120volt, 3-phase, 4-wire service that consists of a main disconnect switch and distribution panelboard. The CT cabinet is built into the switchboard. The switchboard is manufactured by Federal Pacific and is original to the building. The utility company meter is remote from the switchboard. The service equipment is in poor condition.

Electrical Switchgear



2. The building has a 30kW natural gas fired emergency generator manufactured by Kohler. The generator is located in a separate room that is also used as a storage room. This generator system consists of the generator, silencer, 100amp automatic transfer switch manufactured by Cutler Hammer and emergency power distribution, including lighting relays for switching individual lighting circuits in the event of a power outage. The generator and its support equipment is original to the building and in poor condition. The emergency distribution is in fair condition.

Emergency Generator



Automatic Transfer Switch



Typical Electrical Panels



3. The electrical power is distributed through the building by fusible switch and circuit breaker type panelboards, grounded type duplex receptacles with GFCI type receptacles located in toilet rooms, kitchens, etc. This equipment is in fair to good condition.
4. Lighting throughout the facility consists of a number of type of light fixtures including but not limited to the following:
  - a. Recessed 2x4 lensed fluorescent fixtures

- b. Surface mounted wraparound fluorescent fixtures
- c. Surface mounted LED wraparound fixtures in the Cafeteria and Gymnasium
- d. Lamps
  - i. T8 fluorescent lamps
  - ii. LED

Recessed Fluorescent Fixtures  
in Corridors



LED Fixtures in Cafeteria



Pendant Fluorescent Fixtures in  
Classrooms



5. Lighting control for the building consists of the following:

- a. Toggle type switches in most areas
- b. Combination occupancy sensor/switches in offices and classrooms
- c. This equipment is in good working condition.

- The fire alarm system consists of a Silent Knight Model 5207 zoned fire alarm control panel, remote annunciator, manual fire alarm pull stations, horn strobes devices, and some smoke detectors. The fire alarm control panel is in good condition, however, the wiring in the adjacent pull box is not installed as would be expected. This wiring should be orderly, bundled, and properly labeled. Fire alarm system reports via a wireless master box. The majority of the manual fire alarm pull stations and horn strobe units are ADA compliant. Additional fire alarm horn strobes may be required to meet current code requirements.

Fire Alarm Control Panel



Wiring in Adjacent Pull Box



Typical Fire Alarm Pullstation and Horn/Strobe



- The exit signs throughout the building are white plastic fluorescent type. These units are in good condition.

Typical Exit Sign



- The emergency lighting throughout the building is fed from the emergency generator via lighting relays operating specific circuits throughout the building. The fixtures are in good condition.



Emergency Lighting Relays



9. The site lighting consists of wall mounted full cut-off fixtures, wall mounted flood light fixtures. The fixtures are in fair condition.
10. Security features in the building consist of intrusion detection, and access control at various doors around the building. All of this equipment is in good condition.
11. Data/technology consists of wired computer stations and wireless access points throughout the building. There are also projectors and interactive white boards in a number of classrooms. Most of this equipment has been added as needed or as technology changes. This equipment is in good condition.



**Recommendations:**

- Provide an NFPA 13 sprinkler system throughout the building. This would include a new fire water service, backflow prevention device, alarm check valves, sprinkler piping, and sprinkler heads. New flow and tamper switches would be provided and connected to the building fire alarm system.
- Add fire alarm system devices to comply with latest code requirements. This would require the addition of additional power supplies, electrical branch circuit wiring, fire alarm devices and programming. Voice evacuation systems should be provided in the Gymnasium and Cafeteria/Auditorium.
- Replace non-ADA sinks in the classrooms with ADA sinks.
- Replace the cast iron boilers with new high efficiency, condensing boilers and controls.
- Replace the indoor air handling units. This may require the new equipment be installed in different locations for accessibility as the accessibility of the existing equipment is limited. The quantity of ventilation air should be evaluated and increased to accommodate current code requirements.
- Remove and replace the existing unit ventilators, cabinet heaters, unit ventilators, and finned tube radiation. This equipment is beyond its expected service life and should be replaced.
- Upgrade the HVAC control system to a new electronic system with energy management capability. Recommended for energy efficiency and savings. This would require removal of all of the pneumatic equipment and piping and replace with new electronic valves, wiring, and control panels. This would also require removing and replacing the existing CO detectors with new and connect them to the new control system.
- Replace the existing electrical infrastructure. The existing equipment is beyond its expected service life and should be replaced. Parts for the existing electrical panels are no longer readily available. This would include an evaluation of the electrical needs of the school, including the addition of air conditioning and a new electrical service be provided with branch circuit panelboards and feeders to replace the existing.
- Upgrade the interior lighting with new fixtures using LED technology.
- Upgrade lighting controls throughout the building to meet the latest energy code requirements. Also recommended for energy savings and lower maintenance cost.
- Provide additional security system components, such as cameras to provide full building coverage.

**Fire Station 1**

There is no parking on the site.

The apron from the building station bays should be replaced with concrete.

Pavement around the building should be removed and replaced with full depth paving for the entire site.

Drainage system should be provided to meet current requirements – Trench drain with water quality structure(s) and an infiltration system of underground chambers to recharge stormwater prior to discharge to the municipal system. (Estimated cost \$60,000 to \$80,000)

Upgrade sewer connection from building to municipal sewer system. (Estimated \$8,000)





**Water Treatment Plant**

Pavement is in good condition – repaving recommended in 5+ years (mill and overlay).

No stormwater controls for pavement – recommend upgrade to current requirements in 5+ years. (Estimated cost \$75,000 to \$100,000)

Recommend crack sealing pavement in 3+ years.

Recommend providing a new paved entrance apron into site.

Fence is in generally good condition.





**Fire Station 2**

Recommend mill and overlay parking in 3+ years.

Recommend crack sealing in 2+ years.

Curb is generally OK.

Clean CB's as part of regular maintenance. (Estimated \$750 for site per cleaning)





**DPW Admin Building and Garage**

Pavement in generally good shape.

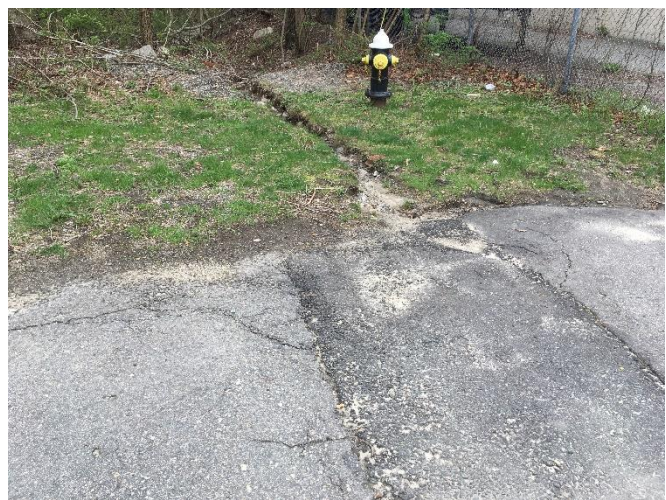
Provide crack sealing within 2-years in areas near fuel tank.

Repair erosion along pavement edges.

Staff parking mill and overlay in 5+years where water line for hydrant installed.

Upgrade stormwater controls in 5+ years. (Estimated cost \$125,000 to \$150,000)

Clean all CB's as part of regular maintenance. (Estimated \$750 for site per cleaning)





**Capen-Reynolds Farm House**

No space for parking at front. Potential parking in the back but will require grass removal / maybe tree removal. Recommend informal parking on the grass during dry periods.

Repair roadway shoulder.

Repair walkway to house, barn

Repair historical landscape as part of the any proposed use



**Town Hall**

Pavement in good condition.

Recommend crack sealing in 3+years.

Mill and overlay parking lot in 5+ years

Provide stormwater upgrades to meet current requirements in 5+ years. (Estimated cost \$70,000 to \$90,000)

**Luis Clapp Building**

No parking associated with building. Parking on street and municipal lot

Maintain landscape – good condition.



**Cedar Hill Golf Course**

Recommend full parking lot reconstruction in 2+ years with stormwater controls that meet current standards

No current stormwater controls. (Estimated cost \$125,000 to \$150,000)

Current asphalt parking lot repair needed to fill holes.

Remainder of parking area is gravel

Recommend crack seal if full depth repair not proposed in 2+ years

Recommend guardrail along pond edge that abut parking / drive aisle

Repair erosion into pond





**Council on Aging**

Provide crack sealing within 3+ years

Mill and overlay in 5+years

Replace concrete curb at entrance and repair cape cod berm in 5+ years

New concrete sidewalks recently installed

Stormwater maintenance are required. (Estimated \$750 for site per cleaning-includes basin)





**Police Station**

Paving in good condition

Mill and overlay pavement in 5+ years

Crack seal in 2+ years

Reset wheel stops

Upgrade stormwater to current standards in 5+ years (Estimated cost \$125,000 to \$150,000)



## **STRUCTURAL – LUCIUS CLAPP MEMORIAL**

The purpose of this report is to assess the structure of the existing building, comment on the existing structure and comment on the structural integrity of the building.

### **Basis of the Report**

This report is based on visual observations during our site visit on March 11, 2017. During the visit we did not remove any finishes or take measurements; so, our understanding of the structure is limited. Original structural design drawings were not available and not reviewed as part of this study.

### **Existing Conditions**

The original structure was constructed in 1903 and no major structural renovations or additions to the structure have been constructed since that time. The building is a two story wood and masonry structure with a basement under the entire footprint. The first floor above the basement is a concrete slab supported on masonry foundation walls.

We observed some shrinkage cracks in the exterior masonry façade. We observed displaced masonry at a couple of locations in the masonry arches above the windows. We observed some cracks in the plaster ceiling at the interior walls at some locations. We also observed signs of water leaks at various locations. We observed displaced stones that form the treads for the stairs at the main entrance.

The existing structure is in sound condition and performing well, for the most part, except for a few maintenance related items.

### **Recommendations:**

The structure is in sound condition and performing well. We would recommend that the cracks in the exterior masonry façade be repaired by repointing the masonry, as required; and, that the displaced masonry in the three arches above the windows be repaired.

## **STRUCTURAL – FIRE STATION #1**

The purpose of this report is to assess the structure of the existing building, comment on the existing structure and comment on the structural integrity of the building.

### **Basis of the Report**

This report is based on visual observations during our site visit on March 11, 2017. During the visit we did not remove any finishes or take measurements; so, our understanding of the structure is limited. Original structural design drawings were not available and not reviewed as part of this study.

### **Existing Conditions**

The original structure was constructed in the 1930s as a single story wood framed structure. The structure was modified from its original use to be used as a single bay fire station. In the 1960s two more bays were added adjacent to the original station and a second floor was constructed above the roof of the original station.

The original structure is wood framed and supported on top of masonry walls. The 1960s' addition of the fire bays was single story and framed with bar joists supporting wood fiber panels. The bar joists are supported on load bearing masonry walls.

We observed shrinkage cracks in the masonry walls in the interior and exterior. We observed lintels above the windows and doors. The lintels have rusted and are in need of replacement. We observed several masonry infills in the exterior walls. We observed signs of water leaks at several locations.

The existing structure is performing satisfactorily; but, is in need of repairs to the exterior masonry façade, the fire escape stair structure and the lintels.

### **Recommendations:**

The structure is in satisfactory condition. We would recommend that the cracks in the masonry walls be repaired by repointing the mortar and replacement of bricks, where appropriate. We would recommend that the exterior steel lintels be replaced with galvanized steel lintels.

## **STRUCTURAL – FIRE STATION #2**

The purpose of this report is to assess the structure of the existing building, comment on the existing structure and comment on the structural integrity of the building.

### **Basis of the Report**

This report is based on visual observations during our site visit on March 11, 2017. During the visit we did not remove any finishes or take measurements; so, our understanding of the structure is limited. We reviewed structural design drawings prepared by Richard E. Salvaggi Architects, Inc., dated October 25, 1999.

### **Existing Conditions**

The fire station was constructed in 2001. The fire station is a two-story, steel, concrete and wood structure. The second floor is a 3 in. concrete slab on metal deck supported on steel bar joists and steel beams. The roof is framed with wood trusses with plywood sheathing supported on structural steel beams and columns.

The structure is performing well. We did not observe any major structural issues. We observed cracks in the second floor slab in the space being used as a workout/weight room. The cracks appear to be shrinkage cracks that appear to be old and were probably present from the time of the original construction.

### **Recommendations:**

The structure is performing well for the most part. We would recommend that the cracks in the second floor slab be repaired with repair mortar; but, they are not a structural concern at this time.

## **STRUCTURAL – CAPEN-REYNOLDS FARMHOUSE**

The purpose of this report is to assess the structure of the existing building, comment on the existing structure and comment on the structural integrity of the building.

### **Basis of the Report**

This report is based on visual observations during our site visit on March 11, 2017. During the visit we did not remove any finishes or take measurements; so, our understanding of the structure is limited. Original structural design drawings were not available and not reviewed as part of this study.

### **Existing Conditions**

The farmhouse is a one and two-story wood structure with a partial basement under the two-story portion of the farmhouse. The farmhouse was constructed in 1920 and was relocated from its original location sometime in the past. The wood structure is supported on stone rubble foundations. The basement is an unfinished space and has a dirt floor.

The structure is in very poor condition, is deteriorating and is in a state of disrepair. We observed several shoring posts in the basement supporting the floor framing. The foundation walls do not appear to be stable everywhere; and, we observed displaced stones that are part of the foundation wall.

### **Recommendations:**

The structure is in very poor condition, is deteriorating and is in a state of disrepair. To make the structure habitable, we would recommend that the building be stripped to its bare structure and then reinforced, as required, to bring it up to code for new construction. The foundation walls will require extensive repairs or replacement with new reinforced concrete foundation walls and footings.





April 17, 2017

Courtney M. Southwick  
Drumme Rosane Anderson  
235 Bear Hill Road, 4<sup>th</sup> Floor  
Waltham, MA 02451  
[csouthwick@draws.com](mailto:csouthwick@draws.com)

Subject: **Acoustics Report**  
Stoughton Town Hall Meeting Room  
Stoughton, MA  
Acentech Project No. 628918

Dear Courtney:

We visited the 3<sup>rd</sup> floor of Stoughton Town Hall on April 7, 2017. This is a large, open space with a tall vaulted ceiling that is divided into a main assembly area between two rows of offices along the exterior walls. The assembly area is used for town hall meetings. There is a presenter location in the center of the room facing a row of tables for the council members, and an audience area in the back which holds approximately 80 people. We understand that meeting participants are having difficulty hearing. Speech is amplified and meetings are broadcast.

During business hours, the 3<sup>rd</sup> floor is used as office space for various town departments. The offices are divided with partial height gypsum walls and do not have ceilings. We understand that staff are dissatisfied with the acoustical privacy between offices and the overall level of noise due to excessive reverberation.

### Reverberation of 3<sup>rd</sup> Floor

The unwanted reverberation of the 3<sup>rd</sup> floor leads to both the noise buildup during working hours and the difficulty to understand speech during town hall meetings. This is due to the large volume of the space and the hard-surfaced walls and ceiling.



*Panoramic photo of the space from council location. Staff offices at left and right.*

While on site, we measured an unoccupied reverberation time of approximately two seconds. For reference, for speech intelligibility, we recommend a reverberation time of approximately one second. We recommend installing an acoustically absorptive ceiling treatment to the underside of the vaulted ceiling.

Suitable surface mounted treatment includes acoustical plaster systems such as [BASWAphon](#) by BASWA acoustic, or [Even Better](#) by Fellert; troweled spray cellulose [SonaKrete](#) by ICC; or stretch fabric systems with 1" glass fiber backing including [Clipso Acoustic](#) by Clipso, [Eurospan](#) by Conwed Designscape, and [Descor](#) by

MBI products. The product selected should have a minimum Noise Reduction Coefficient (NRC) 0.75 rating.

Not only will acoustical absorption reduce the overall din within the space, it will reduce echoes across the 3<sup>rd</sup> floor due to the ceiling geometry (including between offices), and will help make the space more suitable for speech amplification and television recording.

### Speech Intelligibility during Meetings

In addition to installing acoustically absorptive treatment to the ceiling as described above, you can help improve speech intelligibility during meetings with the following:

- Reorient the furniture layout if possible so that presenters do not have their backs turned to the audience area. In addition, the audience area, presenter location, and council members are widely spaced within the room. You can help improve speech intelligibility by moving these areas closer together.
- Improve the sound reproduction. Ensure that microphones are properly set up so that talkers are speaking as directly into the microphones as possible. A new loudspeaker system should be designed to evenly cover the audience area and direct as much sound energy as possible to the audience and not toward the ceiling or upper walls, as the current loudspeakers do. We would be glad to provide more detailed design advice on location and selection of loudspeakers.
- Provide assistive listening devices for hard-of-hearing individuals if you do not already.

### Speech Privacy during Working Hours

From staff, we understand that there is very limited speech privacy between offices, that users on opposite rows are able to hear each other, and that the overall din within the space is distracting. Our field measurements (in the form of the Articulation Index metric) confirm this observation, please let us know if you would like the detailed measurement results.

Although demising office partitions are gypsum construction, because they are partial height and do not have ceilings, acoustically the space acts as an open-office. The lack of separate office ceilings also exposes sound generated within offices to the highly reverberant open area of the 3<sup>rd</sup> floor, and the geometry of the vaulted ceiling directs acoustic reflections across the 3<sup>rd</sup> floor.

The best way to improve speech privacy would be to fully enclose the offices with a separate ceiling. You can consider a gypsum ceiling with a single layer of gypsum board and glass fiber insulation above or a mineral fiber acoustic ceiling panel with a minimum Ceiling Attenuation Class (CAC) 35 rating (such as Ultima by Armstrong). The ceiling should be installed 6" below the top of the demising office partitions. We note that an enclosed ceiling is necessary if any of the office occupants require confidential speech privacy, rather than typical open-office expectations where adjacent workstations can hear each other, and the acoustical goal is to reduce distraction. In addition, if confidential speech privacy is required, you will also have to consider other acoustical "leaks" such as communicating doors between offices and door undercuts (both of which were observed on site).

We understand that enclosed ceilings may be difficult to coordinate with the existing lighting and sprinklers. Installing acoustically absorptive treatment to the vaulted ceiling (as described above) will help reduce overall noise buildup and would help reduce acoustic reflections across the vaulted ceiling. However, decreasing the reverberation time on the 3<sup>rd</sup> floor could also make direct sound between adjacent offices clearer. Therefore, if offices are to remain open, we additionally recommend installing acoustically absorptive ceiling clouds located directly over the workstations. This will help absorb some of the direct sound and provide slight sound blocking. We recommend mineral-fiber acoustical ceiling panel in the clouds (minimum ratings: NRC 0.70, CAC 35).

In addition to the ceiling treatments discussed above, you may also want to consider adding an electronic sound masking system, such as available by available from [Cambridge Sound Management](#), [LogiSon](#), and [Lencore](#), to help make speech between offices less intelligible. These systems are controllable to match the degree of background noise that is most effective and comfortable. However, this system would have to be

turned off during town hall meetings (where speech intelligibility is important). If you choose to install a sound masking system, we recommend experimenting with operating levels between 42 and 47 dBA. Electronic masking should be considered only in addition to the ceiling treatments discussed above; electronic sound masking alone is not likely to provide the desired improvement.

\* \* \* \* \*

I trust this letter provides the information that you need at this time. If you have questions, please call me on my direct line at 617.499.8081.

Sincerely,



Kristen Murphy, LEED AP BD+C  
Consultant in Acoustics

cc: Jonah Sacks, Acentech

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**PROGRAMMING Questions**

Fire Station #1

Stoughton, MA

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**PROGRAMMING CHECKLIST:**

*Date: Revision:*

**1. Is there a strong feeling at the Fire Dept. or in town that the original 1927 building must be saved?**

Within the fire department the opinion is split about 50/50 that the building should be saved. On April 12, 2017 I met with the following individuals to answer the survey questions: Deputy Breen; Acting Captain Michael Carroll; Lt. Carroll; Lt. Macomber; and Union President (Department Senior Man) Leon Silva.

**2. What are some of the features of the existing building that you do like?**

- Location
- Structurally sound
- Historic
- Heavy timber construction

**3. What are some of the features of the existing building that you do not like?**

No handicap access; Lack of keep up/maintenance; HVAC; open dorm atmosphere; gear stored on apparatus floor exposed to sunlight and exhaust; lack of storage; no EMS supply room; no Self Contained Breathing Apparatus storage room; no SCBA compressor and filling station; no hose storage; apparatus bay space is limited in that it was not designed for modern fire apparatus; mechanics bay is not functionally-need to pull apparatus out of bay to raise cab for servicing; no gear washer/dryer room; traffic is a concern leaving the station and turning left on Washington Street; limited office space; no fitness room; parking is a major concern; and not equipped for female firefighters.

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**PROGRAMMING CHECKLIST:**

*Date:    Revision:*

**4. What features or spaces would you like to see in a new building that might not be feasible in a renovation/addition project?**

Increased parking; EMS supply room; separate gear room off of apparatus floor; training room; fitness room; hose storage; increased office space; drive through bays; increased bay sizes; mechanics bay; storage rooms; single/double dorm rooms; etc.

**5. List any other thoughts or ideas that will make this exercise meet your expectations.**

As a group we agreed that knowing that this study is proposed to have real end results and that it will start a real conversation in the fire department's needs.



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SPACES	EXISTING	REQUIRED	REMARKS
<b>Apparatus Bay:</b>			
Bay No. 1 Non-Drive Through	Y	Y	<ul style="list-style-type: none"> <li>• Shift Commander Car 5</li> <li>• Reserve Engine 3</li> </ul>
Bay No. 2 Non-Drive Through	Y	Y	<ul style="list-style-type: none"> <li>• Ladder 2</li> <li>• Boat</li> </ul>
Bay No. 3 Non-Drive Through	Y	Y	<ul style="list-style-type: none"> <li>• Ambulance</li> <li>• Ambulance</li> </ul>
Bay No. 4 Non-Drive Through	Y	Y	<ul style="list-style-type: none"> <li>• Ambulance</li> <li>• Brush Truck</li> </ul>
Bay No. 5 Non-Drive Through	Y	Y	<ul style="list-style-type: none"> <li>• Engine 1</li> <li>• Current Exercise Space</li> </ul>
Bay No. 6 Non-Drive Through	Y	Y	<ul style="list-style-type: none"> <li>• Mechanics Bay</li> </ul>
Compressor outlets	N	Y	SCBA compressor located at Station 2. If referencing air compressor, yes
Water Fill	<i>Limited</i>	<i>At each Bay</i>	We would be looking to have a water fill above each piece of fire apparatus
Hose Dryer/Washer	N		Would need an established area to hang out hose.

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SPACES	EXISTING	REQUIRED	REMARKS
Hose Storage Racks	Y	Y	Currently very limited located in rear of Bay 1 and Bay 3
Service Sink	N	Y	Mostly found in new SCBA and Decontamination rooms
O.H. Reel Light	N	Y/N	Depending on Bay
Paddle Fans			
Preferred Space Heating			
Vehicle Exhaust System	Y	Y	Current Plymo-Vent exhaust system
Bell(s) for Incoming Signals	Y	Y	
Trip Lights	Y	Y	
Additional comments, if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

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<b><i>Gear Storage</i></b>			
In Apparatus Bay Along Wall	Y	N	Need to remove from apparatus bays and establish separate area to prevent exposure to sunlight and vehicle exhaust.
In Separate Room	N	Y	See above
Number of Gear Lockers	40 Existing	60 Required	Just purchased new open front gear lockers
Type	Y	Y	[ x ] Open Front [ ] With Door
Gear Washer	Y	Y	Very old washer, located in apparatus bay
Gear Dryer	N	Y	Gear was previously dried by hanging in boiler room. No longer can do this because of new boiler.
Additional comments, if any			
			A new washer/dryer room would be required
<b><i>SCBA Charging</i></b>			
Size	N	Y	Currently located at Station 2
Proximity to Other Spaces			Not sure of what size. Would have to have wash basin; storage for spare bottles; work table; and room for compressor/filling station.
			Adjacent to apparatus bays.

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Work Counter	N	Y	SCBA work station would be required
Additional comments, if any			

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<b><i>Maintenance Room</i></b>			
Size	10 x 10		
Proximity to Other Spaces			Adjacent to apparatus floor
Workbench			Work bench and tool storage would be required.
Additional comments, if any			_____
			_____
			_____
			_____
			_____
			_____
<b><i>Hose Storage</i></b>			
Location	Y	Y	<input type="checkbox"/> Separate Room <input type="checkbox"/> Along the wall in Apparatus Bay
Size if Separate Room			Currently our hose is stored in rear of Bay 1 and 3. Limited storage. Not sure of actual size of room needed. Minimum of 10x10'
Proximity to Other Spaces			Area of apparatus bays
Hose Storage Type			<input type="checkbox"/> Wall mounted Racks <input checked="" type="checkbox"/> Floor Mounted Racks. Currently floor mounted
Hose Washer	N	N/A	
Hose Dryer	N	N/A	
Additional comments, if any			_____
			_____



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<b><i>Bulk Material Storage</i></b>			
Size			Currently our storage is throughout the building and in an outside storage container. With a new or renovated building we would be looking for a storage room.
Proximity to Other Spaces			Adjacent to apparatus floor or mechanics bay
Built-in Shelves			
Additional comments, if any			
<b><i>Decontamination Shower</i></b>			
Size	N	Y	
Proximity to Other Spaces			Adjacent to apparatus floor. Currently do not have.

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Floor Drain			Not sure on environmental regulations
Water			<input type="checkbox"/> Hot <input type="checkbox"/> Cold
Shower			<input type="checkbox"/> Overhead Type <input type="checkbox"/> Regular Wall Type
Hand Spray Hose	N	Y	
Contaminants Holding Tank	N		Not sure on regulations
Additional Comments if any			_____
			_____
			_____
			_____
			_____
			_____
<b><i>Apparatus Bay Toilet</i></b>			
Standard Fixtures	Y	Y	<input type="checkbox"/> W.C. <input type="checkbox"/> Lavatories
Stainless Steel Fixtures	N	Y	<input type="checkbox"/> W.C. <input type="checkbox"/> Lavatories
Additional comments, if any			_____
			_____
			_____
			_____
			_____
			_____

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<b>Watch Room</b>			
Observation Window to Apparatus Bay	Y	Y	Currently our dispatch center
Door to Apparatus Bay	Y	Y	
Door to Outside	Y	Y	
Visibility of Front Yard	Y	Y	
Number of Work Stations	2		Currently this space is our dispatch center and we are going central dispatch soon and relocating to the Police Department. This are will become strictly a watch room.
Additional comments, if any			
<b>EMS Storage</b>			
Size	Y	Y	Not sufficient or efficient. Limited space, non-clean room.
Proximity to Other Spaces			Currently not easily accessible, located behind Captains Office.
Type of Items Stored			
Refrigeration Required	N	N	
Air Conditioning Required	Y	Y	Will require climate control to meet manufacture standards and State Regs.

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Additional comments, if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<b>Private Offices</b>			
How many? Office Names?	1	4 minimum	Currently a Captains Office. Lieutenants Office required; EMS office; etc.
Sizes			To be determined.
Proximity to Other Spaces			Accessible to public
Furniture Required			To be determined, at a minimum desk, chair, storage cabinets, etc.
Computer Drop		Y	
Additional comments, if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

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<b>Male Bunk Room</b>			
Number of Beds	13-14	Same	<u>Currently open dorm concept. Would Require Single/double rooms. Captains, Lieutenants; and 14 single/7double rooms.</u>
Half Height Enclosure			
Additional comments, if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<b>Female Bunk Room</b>	N	Y	
Number of Beds	0	2	
Private Room	None	Double	<u>Single room with room for (2) beds.</u>
Additional comments, if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<b>Meeting Room</b>	N	Y	
Size and/or Capacity			To be determined



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Proximity to Other Spaces			Office areas.
Access to Kitchen	N	N	
Access to Outside	N	N	Looking for meeting room for members, not public
Chair/Table Storage			
Additional comments, if any			
<b>Physical Training</b>	N	Y	
Size			Currently we do not have a designated physical training room. Located to rear of apparatus Bay 5
Proximity to Other Spaces			
Equipment			
Additional comments, if any			

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<b>Day Room</b>	Y	Y	
Size			
Proximity to Other Spaces			Dorms, Kitchen, Offices, 2 <sup>nd</sup> floor
Furniture Needed			
Computer Station			
Additional comments, if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<b>Kitchen</b>	Y	Y	
Size			
Residential Appliances	N	N	
Commercial Appliances	Y	Y	
Plastic Laminate Cabinets			
Stainless Steel Cabinets			
Eating Area in Kitchen	N	Y	
Number of Food Lockers	4	4	
Additional comments, if any			<hr/> <hr/> <hr/> <hr/>

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<b>Male Toilet/Shower/Locker</b>	Y/N	Y	No lockers within Shower areas. Located within dorm room.
Is the number of W.C. adequate for your needs?			Determined by Plumbing code and occupancy.
Is the number of lavatories adequate for your needs?			Determined by Plumbing code and occupancy.
Is the number of showers adequate for your needs?			
Number of Lockers	55	70 minimum	
Additional comments, if any			
<b>Female Toilet/Shower/Locker</b>	N	Y	
Number of Water Closets			Plumbing Code
Number of Lavatories			
Number of Showers			

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Hand Dryers			
Touch-less Soap Dispensers			
Number of Lockers	0	4	
Additional comments, if any			
<b><i>Outdoor Equipment Storage</i></b>			Currently we have an outside storage container that we would like to eliminate.
Size			
Type of Equipment Stored			
Additional comments, if any			
<b>GENERAL</b>			

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Number of Staff Parking	9		We currently have 3 dedicated parking spots. Employees park their vehicles 3 deep and 3 side by side. Parking a major issue at this location.
Number of Visitor Parking	3	3	
Outside Beanery			
Outdoor Training Area			If yes, indicate size, paved or grassy area.
Refueling Station	N	N	
Security Fence			
Red Emergency (911) Phone Outside Near Front Door			
Door Bell			
Flagpole			
City Water	Y	Y	
City Sewer	Y	Y	
City Storm			
Natural Gas	Y	Y	
Drive-Through Desired			
Air Conditioning			
Additional Comments if any			<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>



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## Police Station

*Based upon interview & visit with Chief Donna McNamara, April 6, 2017*

Number one programmatic deficiency is lack of **space** in certain areas due to growth in staffing, storage needs and upgrades to functions.

### Staffing related space issues:

Overall there has been an increase in staffing since the building was designed, resulting in space deficiencies. Additionally, there have been other changes that impact space needs, including:

- Former D.A.R.E Office is now office space for Deputy Chief;
- Lieutenant's office now accommodates two workstations; also acts as file storage area
- Original conference room converted to 3 workstations; no conference room available
- Storage room has been converted to a Sergeant Office
- Sergeant's office area is being reduced by Dispatch expansion: space will be tight for five workstations
- Additional lockers needed for female patrolwomen, no separation for female officers (unlike male locker room).
- Record storage in the basement is overcrowded, despite the use of a high-density file storage system.

### Upgrade related space issues:

New consolidated dispatch for town (underway) will introduce additional personnel into existing tight space.

Existing vehicle impound garage bay now houses motor cycles and ATV's in addition to tires and other related storage; makes it very tight to bring in a vehicle

Storage for bicycle fleet has taken over a portion of the holding area adjacent to the sallyport.

Upgrade to evidence handling has eliminated one (of two) interrogation rooms.

### Security:

Safely separating and securing detainees during booking is compromised by layout, lack of cameras, and space reduction.

Additional cameras are needed to provide full coverage in the secure areas; there are a few existing blind spots.

Interior door access control system needs to be repaired or replaced.

#### Exterior Programmatic issues

Due to the limited size of the existing site and the proximity of surrounding fences, circulation around the building is sometimes compromised during the winter by snow banks.

There is not enough parking in close proximity to the existing station.

Poor drainage often causes dangerous, icy conditions.

There are at least three exterior entrances in the building without vestibules or areas for walk-off mats; this is both a maintenance and energy issue.