

Appendix A - CPA Preliminary Proposal (PP)

[CPC Use Only:	Date Received: 10/7/25	Received by: M. Moore	Assigned CPC: #202701
----------------	------------------------	-----------------------	-----------------------

Please type or print clearly and answer all questions, use "N/A" if not applicable. Use additional paper as needed.

1. a.) Applicant Information:

Last Name: Haddad	First Name: Mark
Organization (s) (as applicable): Town of Groton, Massachusetts	

1. b.) Regional Project: Yes ☐ No ☒ If YES, Town/Organization:

2. Submission Date: 10/7/2025

3. Applicant Address:

Street: 173 Main Street	City: Groton	State: MA	Zip: 01450
-------------------------	--------------	-----------	------------

4. Phone: 978-448-1111 Email: mhaddad@grotonma.gov

5. CPA Purpose. Check all that apply:

Community Housing ☐ Historic Preservation ☒ Open Space ☐ Recreation ☐

6. Project Location/Address: 145 Main Street, Groton, MA 01450

7. Project Name: Electrical Upgrade of the Prescott School

8. Community Preservation Plan Objectives - use codes per **Section 5** to indicate all that apply:

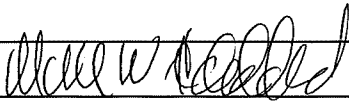
5.1 and 5.1.1

9. Project basic description:

The Town has conducted a Building Assessment Study of the Prescott School. One of the areas in need of repair/renovation/improvement is the electrical system. The CPC allowed the Town to use the remaining Funds to hire a consultant to determine the cost of the upgrade (Please see attached Report).

Initial, ballpark estimated CPA Cost \$545,000

10. Signature(s)

Applicant Signature: 	Date: 10-7-25
Co-Applicant Signature:	Date:
Co-Applicant Signature:	Date:



Prescott Community Center
145 Main St
Groton, MA

Electrical
SYSTEMS EVALUATION



Prepared For:

Mark Haddad

Groton Town Manager

October 6, 2025



SUMMARY

This report is based on a brief site visit to the above-mentioned address, not involving any extensive exploratory work. The Electrical systems were visually noted and inspected for signs of deterioration and major code compliance issues.

The following identified areas are of special focus:

- Code Compliance for all electrical systems
- Overloaded circuits. Rooms with receptacles tripping circuits for adjacent spaces.
- Older inefficient lighting technologies
- Consideration given to future all electric HVAC systems
- Consideration given to the addition of an electric elevator
- Potential tenant metering throughout

BLW has performed work at this location in the past. The below is a list of projects performed by BLW:

1. Electrical Switchboard Assessment (report only) – June 4th, 2018
 - a. BLW was not involved with the resultant construction phase and replacement of electrical distribution equipment.
2. Fire Protection Upgrades – Began in March of 2020
 - a. No Fire alarm upgrades were planned as part of this project only sprinkler system tie-in.
 - b. It does appear that the fire alarm system was upgraded fully, but per BLW records this work was not performed as part of the fire protection contract from 2020.

ELECTRICAL

The following observations/recommendations by BLW Engineers are based upon information obtained through observable field conditions.

EXISTING

Electrical Service Capacity/Distribution Equipment

These observations are visual only in nature. Prior to start of design it is recommended that an electrician be involved on an exploratory basis to confirm the assumptions below.

1. The servicing utility company is Groton Electric Light Department
 - a. Power to the building is provided via overhead pole mounted transformers located on Main St.
 - b. From the utility poles on Main St, the service conduits are routed underground beneath Main St and to the basement of the community center.
2. There is one service to the building; 400A, 120/208V, 3 phase, 4 wire in 4" conduit
3. Within the building the service conduit and conductors from outside terminate at a utility co junction box.
 - a. From the junction box the service is metered by Groton Electric Light
4. From the Groton Electric meter/CT, conduit feeds a 400A main panelboard.
 - a. There are seven subpanels within the building fed from main panelboard "A"
 - Sub panel "B" – fed from a 60A breaker in panel A, 30 poles (located in the main electric room)
 - Sub panel "D" – fed from a 100A breaker in panel A, 30 poles (located in the old kitchen area)
 - Sub panel "E" – fed from a 60A/3P breaker in panel D, 12 poles (located in the old kitchen area adjacent to panel D)

- Sub panel "ART-E" – fed from a 100A/2P breaker in panel D, 12 poles (located in the art Area)
- Sub panel "F1" – fed with 60A breaker in panel A, 20 poles mount in the front work shop space.
- Sub panel "B101" – fed with 60A breaker in panel A, 20 poles mounted high on the wall in an in accessible location.
- Sub panel "First Level Ltg" – fed with 100A breaker in panel A. Two 30 pole tubs recessed in the corridor wall.

Communications:

5. Tel/comm services appear to be provided for the tenants on an overall building basis. Each tenant does not pay for their own tel/data connections.
6. There is no dedicated conditioned space for any of the tel/comm equipment.

General Power:

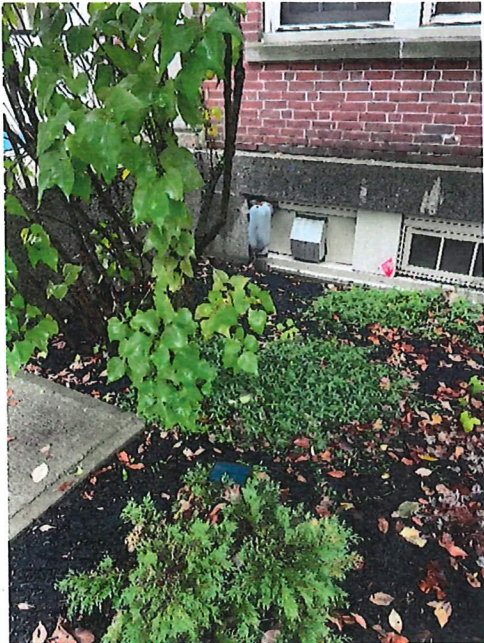
7. General purpose power receptacles are currently provided throughout the space.
8. Ungrounded receptacles were observed in select areas, including the gym.
9. Branch circuits do not have separation between spaces and appear to be overloaded. Reports of branch circuit tripping breakers and losing power to multiple locations was reported.

Interior Lighting:

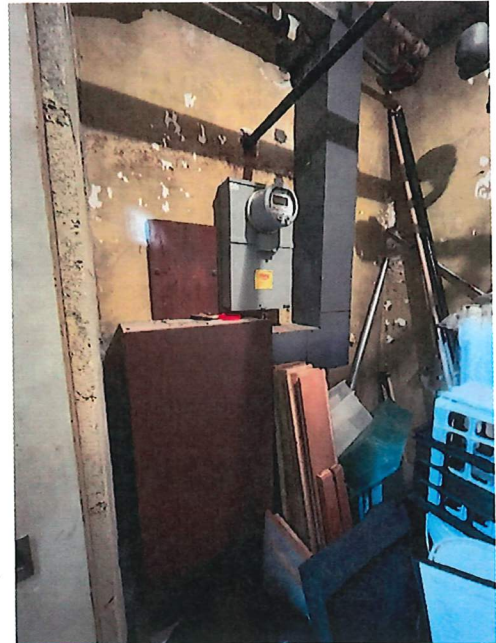
10. The majority of lighting in the space is in fair to poor condition, not energy efficient but yielding appropriate levels for the space.
11. Lighting consists of fluorescent with magnetic ballasts, HID in gym space and some retrofitted LED style fixtures.
12. Lighting is mostly controlled via individual toggle switches and does not current energy conservation code requirements. A minimal amount of occupancy sensors were observed
13. Emergency lighting has been be provided to meet MSBC 780 CMR Articles 1006 and 1011. Exit signs are LED thermos plastic types, red in color, at all exits and as required to direct all occupants out of the building. Emergency lighting has been provided by wall packs with emergency battery units and in many cases is combined with the exit signs.
14. Exterior emergency lighting for the back and side exits was observed to be deficient and or missing all together.

Fire Alarm System:

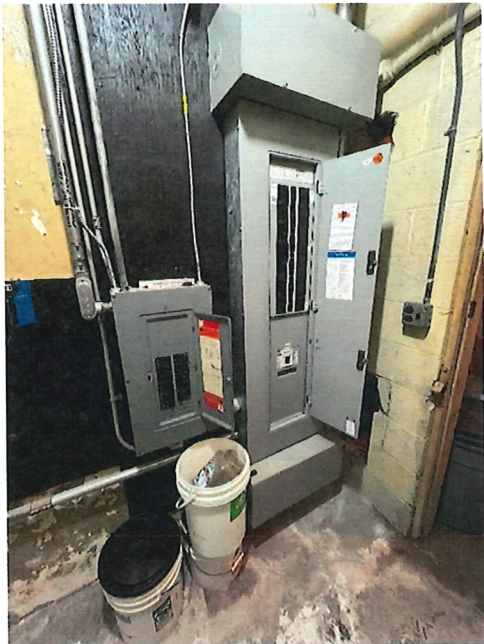
15. The space is currently connected to an existing addressable general evacuation fire alarm system. It is estimated that the system (control panel and devices) are approximately 5 years old.
 - a. The main fire alarm control panel is located in a main electric room.
16. The system consists of manual pull stations within 5' of all exit doors, smoke detectors to be located 30' on center in hallways, in all electrical/telephone rooms and at all fire alarm terminal boxes, smoke detectors with elevator recall at all elevator lobbies, heat detectors in all mechanical rooms, duct-smoke detectors for all HVAC units over 2,000 CFM, horn/strobe unit coverage throughout the space and strobe only devices in public bathrooms.



Incoming conduit from utility pole



Utility Co junction box and meter



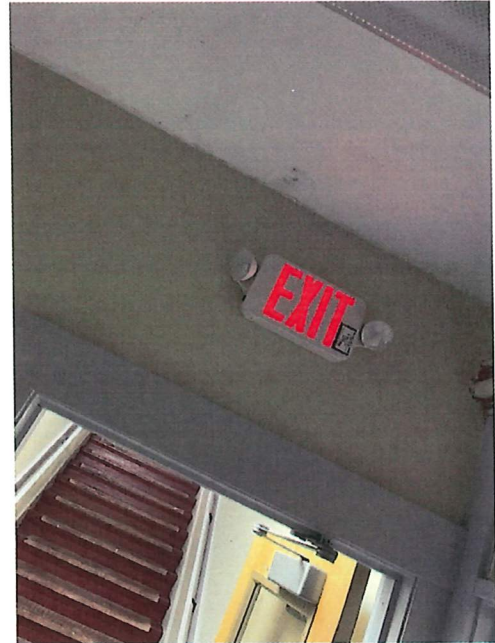
Panel A & B



Panel B101



Random circuit breakers mounted in stairwell



Typical emergency light/exit sign combo



Fire alarm control panel



Non grounded outlet



IT wall mount box



Typical pendant mount lensed lighting fixture

RECOMMENDATIONS

Electrical Service Capacity/Distribution Equipment

1. Capacity - The existing service capacity will not be able to support the addition of electrical heating and cooling in the form of heat pump technology and a potential new elevator. The service will need to be upgraded to 1200A (refer to attached building service calculation).
2. The following will be required for a new 1200A service.
 - a. A new pad mount transformer will be required on property. The exact location will have to be coordinated the owner and utility co.
 - b. The electric room size will have to be carefully reviewed for its ability to accommodate the new equipment. Consideration can be given to exterior mounted equipment, including main disconnect and current transformer cabinet.
 - c. A new 1200A distribution board will be required to distribute power to power panels throughout the building.
 - d. Where possible, existing panels that are in good condition will be reused. New power panels will be incorporated as required for HVAC equipment and where separation of power is desired.
3. Alternate Distribution Option - Individual utility tenant metering capabilities could be designed into the new service to allow for bills directly from the utility to each tenant.
 - a. This would require a more expensive option which would include individual HVAC systems for each space.
 - b. A 1200A meter center with 4 to meters would be required for this option.
 - c. Individual panels for each space would be proposed, such that each tenants power/circuits are independent.

General Power

1. Power receptacle coverage in all areas will be reviewed for appropriate coverage. Outlets will be added where there is need. Receptacles shall be provided in corridors every fifty-feet maximum for general maintenance use and within twenty-five feet of all HVAC equipment per NEC 210.63. In general, open area receptacle coverage shall spacing shall not exceed 15'-0", but will be reviewed on a case-by-case basis.
2. Ungrounded outlets will be replaced and rewired to accommodate new ground style outlets.
3. Branch circuits should be traced by an electrician to determine where circuits are overloaded and where there is need to separate receptacles from branch circuits feeding multiple areas.

Communications

1. Comm services to building should be reviewed with ownership to confirm no items need to be addressed.
2. Additional tel/data devices should be installed to accommodate new tenant spaces.

Interior Lighting

1. Lighting throughout the building should be considered for replacement. Replacement fixtures would be either surface mounted or similar pendant style. All new lighting should be LED style with dimming capabilities.
 - a. At a minimum gym lighting and controls should be replaced to meet current energy code requirements.
2. Lighting controls through out the space should also be considered for replacement. Currently the building has very few controls that meet energy code requirements.
3. During design, all egress signage will be reviewed for adequacy and replaced. It is suspected that several of the exit signs are nearing the end of their useful life expectancy. It is estimated that 3 to 4 new exit sign locations should be provided.
4. During design, all emergency lighting will be reviewed for adequacy. It has been noted that all new exterior emergency lighting will be required to meet current codes.

Fire Alarm

1. During design all spaces will be reviewed for proper notification coverage. It is estimated that approximately 4-5 new devices will be required per level for full code compliance.
2. BLW does not anticipate the need for any new initiation devices, but will review during design.

ENGINEERS PROBABLE COST OF CONSTRUCTION (REFER TO ATTACHED)

- Engineers probable cost of construction has not been developed by a certified cost estimator and is intended for high level budgeting purposes only. Once design has commenced and the scope is better defined, the estimate will be revised to reflect the scope as depicted in the submission documents.

End of Electrical Section

SERVICE LOAD CALCULATION

40 Shattuck Rd
Andover, MA 01810

<https://www.blwengineers.com/>

Job Description: Groton Community Center
Address: Main St, Groton MA
Calc By: CM
Calc Check By: FL

220.45 General Lighting

Table 220.42(a) for 2023 Load by occupancy

	1.3 VA/sqft	
Floor Area=	30000 sqft	39000 VA
Total=	30000 sqft	

T220.42 Lighting Load Feeder Demand Factors

If not Dwelling, Hospitals, Hotels Warehouse then 100% 39000 VA
Site Lighting Loads 5000 VA
Total Lighting Demand Load= 44000 VA
Continuous Load 125% (included in NEC 2020)= 44000

220.47 Receptacle Loads - Other than Dwelling Units

1W/sqft 30000 sqft 30000 VA

T220.47 Demand Factors for Non-Dwelling Receptacle Loads (Table 220.44)

First 10kVA 10000 VA
Over 10kVA at 50%
Total Receptacle Demand Load= 20000 VA

220.54 Demand Factors for Household Electric Clothes Dryers (Table 220.54)

Qty	VA(W)	Demand (%)
0	5000	100%

Total Dryer Demand Load= - VA

220.51 Largest of Fixed electric Space Heating or A/C load:

220.60 Non-Coincident Loads

Heating	A/C	
Fixed Electric Space Heat #1 0 VA	A/C #1 0 VA	- Heating Load
Fixed Electric Space Heat #2 0 VA	A/C #2 0 VA	- A/C Load
Fixed Electric Space Heat #3 0 VA	A/C #3 0 VA	- VA

or
Sqft Calc for HVAC (5w/sqft under 2000sqft, 6 for larger) 10 W/sqft
Total Non-coincident Load Higher of Heating and A/C= 300,000 VA*

220.56 Kitchen Equipment - Other than Dwelling Units

Qty	Description	VA(W)
1		

Qty	Description	VA(W)

Total Connected appliance Load= - VA

Kitchen demand factor based on number of equipment units (Table 220.56)= 65 %

Total Kitchen Equipment Demand Load= -

220.50 Motor Loads 100%

Qty	Description	VA(W)
3	Car Charger 7.5kVA	21600
	Fans	
1	Elevators (10HP)	44000

Qty	Description	VA(W)

Total Motor Load= 65,600 VA

Total Calculated Demand Load in Volt-Amperes= 429,600 VA

Total Calculated Demand Load in Amperes= 1,193.86 A

Total Calc'd (125% calc'd above for continuous)= 1,193.86 A

SERVICE REQUESTED= 1200 A

* select higher load and mult by voltage

at Service Voltage: 208

Phase: 3



COST ESTIMATE

CLIENT	Groton Community Center	MADE	CHK.	REV.	JOB NO.
PROJECT	145 Main St - Groton MA	CM	DK		25328
SUBJECT	Project Engineers Estimate				SHT NO.
	26 00 00 Electrical				1 of 1

Exterior

SubTotal Electrical	\$97,550
15% O&H	\$14,633
10% Design Contingency	\$9,755
Total Electrical	\$121,938

Interior

SubTotal Electrical	\$338,005
15% O&H	\$50,701
10% Design Contingency	\$33,801
Total Electrical	\$422,506

Combined

SubTotal Electrical	\$435,555
15% O&H	\$65,333
10% Design Contingency	\$43,556
Total Electrical	\$544,444

Alternate Option

Add the below costs for Individual Tenant Metering

SubTotal Electrical	\$109,250
15% O&H	\$16,388
10% Design Contingency	\$10,925
Total Electrical	\$136,563



CLIENT	Groton Community Center				JOB NO.
PROJECT	145 Main St - Groton MA	MADE	CHK.	REV.	25328
SUBJECT	Project Estimate	CM	DK		SHT NO.
	26 00 00 Electrical				1 of 1

	QUANTITY		MATERIAL		LABOR		TOTAL
	NO UNITS	UNIT MEAS	PER UNIT	TOTAL	PER UNIT	TOTAL	
26 00 00 Electrical							
<u>Utility - Pad Mount Transformer</u>							
Primary (2) 4"RGS C in Concrete, Excavation, Concrete	154	LF	250.00	\$38,500	75.00	\$11,550	\$50,050
Utility Backchages	1	LS	25,000.00	\$25,000	0.00	\$0	\$25,000
Transformer Pad	1	LS	7,500.00	\$7,500	7,500.00	\$7,500	\$15,000
Secondary Conduit							
1200A Secondary 3 sets 4#600kCMIL	50	LF	90.00	\$4,500	60.00	\$3,000	\$7,500
<u>SubTotal</u>							

SubTotal Electrical	\$97,550
15% O&H	\$14,633
10% Design Contingency	\$9,755
Total Electrical	\$121,938



	QUANTITY		MATERIAL		LABOR		TOTAL
	NO UNITS	UNIT MEAS	PER UNIT	TOTAL	PER UNIT	TOTAL	
26 00 00 Electrical							
<u>Demolition</u>							
Overall	1	LS	1,000.00	\$1,000	35,000.00	\$35,000	\$36,000
SubTotal							
\$36,000							
<u>Power</u>							
1200A Main Circuit Breaker/CT	1	EA	7,500.00	\$15,000	2,500.00	\$2,500	\$17,500
1200A Distribution Board	1	EA	15,000.00	\$15,000	780.00	\$780	\$15,780
400A HVAC Panel Board	1	EA	7,500.00	\$7,500	5,000.00	\$5,000	\$12,500
250A Panel Board	3	EA	2,000.00	\$6,000	1,000.00	\$3,000	\$9,000
Branch Circuits	42	EA	1,250.00	\$52,500	750.00	\$31,500	\$84,000
Miscellaneous feeders	1	LS	25,000.00	\$25,000	2,500.00	\$2,500	\$27,500
<u>Lighting/FA</u>							
Gym Lighting	9	EA	750.00	\$15,000	225.00	\$2,025	\$17,025
General Area Lighting	1	LS	50,000.00	\$50,000	4,500.00	\$4,500	\$54,500
Exit/Emerg Lighting	1	LS	5,000.00	\$5,000	1,200.00	\$1,200	\$6,200
Lighting Controls	1	LS	7,500.00	\$7,500	2,500.00	\$2,500	\$10,000
Branch Circuits	12	EA	1,250.00	\$15,000	750.00	\$9,000	\$24,000
Notification Appliance and wiring	12	EA	1,250.00	\$15,000	750.00	\$9,000	\$24,000
SubTotal							
\$302,005							

SubTotal Electrical	\$338,005
15% O&H	\$50,701
10% Design Contingency	\$33,801
Total Electrical	<u>\$422,506</u>

[illegible]

SubTotal Electrical	\$109,250
15% O&H	\$16,388
10% Design Contingency	\$10,925
Total Electrical	\$136,563