Existing Conditions Report

November 01, 2018

The Evergreen State College
Olympia Campus Seminar 1 Building
Fire Alarm Conversion

Fire Alarm System:

The existing fire alarm system is an Autocall MP-400.
This is an antiquated addressable fire alarm that is not supported anymore.

The existing fire alarm panel is being monitored by EST3 fire alarm system by zone alarm, trouble, and supervisory.

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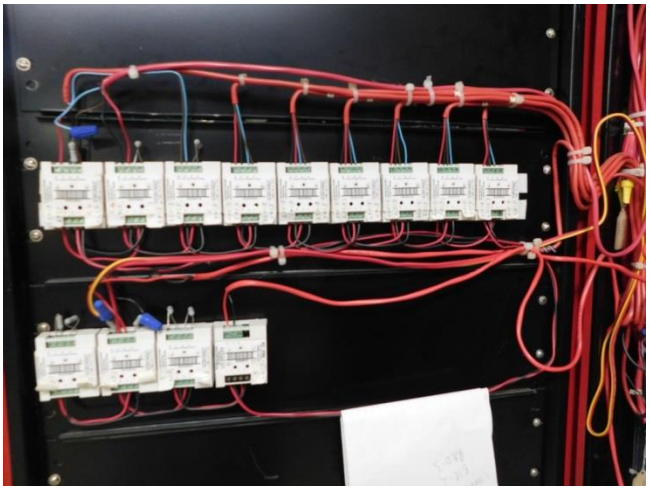
We found the existing Autocall Fire Alarm Zone List. See the following table below:

Existing Autocall MP-400 Fire Alarm Zone List for Seminar 1 Building		
Zone #	Description	Zone Alarm Type
1	Sprinkler PIV	Supervisory Alarm
2	Duct Detector Fan H4	Fire Alarm
3	Duct Detector Fan H2	Fire Alarm
4	Sprinkler Waterflow Switch and OSY tamper Switch	Fire Alarm and Trouble
5	Room 1114 Smoke Detector	Fire Alarm
6	Mech. Room 1105 Smoke Detector – Fire Alarm	Fire Alarm
7	Mech. Room 1103 Smoke Detector	Fire Alarm
8	Room 1116 Smoke Detector	Fire Alarm
9	Room 1112 Smoke Detector	Fire Alarm
10	Basement Floor hall	Fire Alarm
11	Loading Dock Heat Detector	Fire Alarm
12	Area 1151 Floor 1	Fire Alarm
13	Room 2125 Smoke Detector	Fire Alarm
14	Elevator Lobby Floor 2 – Smoke Detector and Pull station	Fire Alarm
15	Room 2105A Smoke Detector	Fire Alarm
16	Sec. Lobby Floor 2 – Smoke Detector and Pull station	Fire Alarm
17	Room 2154 Smoke Detector	Fire Alarm
18	Sec. Area Floor 2 – Smoke Detector and Pull station	Fire Alarm
19	South Area Floor 3 Smoke Detector	Fire Alarm
20	Room 3118 Heat Detector	Fire Alarm
21	Room 3116 Heat Detector	Fire Alarm
22	North Area Floor 3 Smoke Detector	Fire Alarm
23	Spare Zone	
24	South Area Floor 4 Smoke Detector	Fire Alarm
25	Room 4126 Smoke Detector	Fire Alarm
26	Room 4122 Smoke Detector	Fire Alarm
27	Room 4118 Heat Detector	Fire Alarm
28	Room 4116 Heat Detector	Fire Alarm
29	Elevator Shaft Smoke Detector	Fire Alarm
30	Elevator Mech. Penthouse Heat Detector	Fire Alarm
31	Center Stair Smoke Detector	Fire Alarm
32	Mech. Penthouse Heat Detector	Fire Alarm
33	North Area Floor 4 Smoke Detector	Fire Alarm
34	North Stair Smoke Detector	Fire Alarm
35	Spare Zone	
36	Room 2152 Smoke Detector	Fire Alarm
37	Spare Zone	

38	Spare Zone	
39	Spare Zone	
40	24V Smoke Power Basement & Floor 1 – Device location room 1114	Supervisory Alarm
41	Spare Zone	
42	Ackn and Reset	
43	Spare Zone	
44	24V Smoke Power Floor 2 – Device location room 2101A	Supervisory Alarm
45	24V Smoke Power Floor 3 – Device location room 3100B	Supervisory Alarm
46	24V Smoke Power Floor 4 – Device location room 4100B	Supervisory Alarm
47	Spare Zone	
48	Spare Zone	
49	System Trouble	Trouble

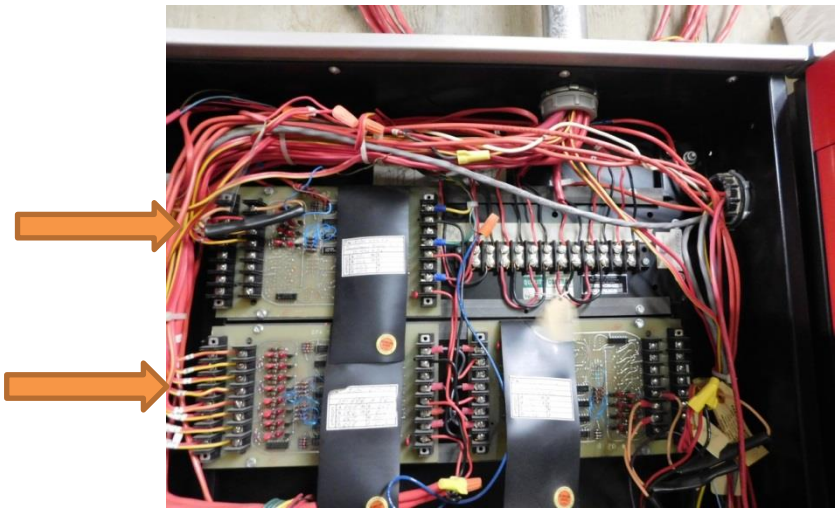
The existing Autocall fire alarm panel has relay outputs that interface with existing EST3 fire alarm panel by twelve (12) dual point modules and one (1) relay module mounted inside the existing Autocall panel door. Refer to the photograph below:



Existing EST3 fire alarm panel is adjacent to the existing Autocall fire alarm panels.

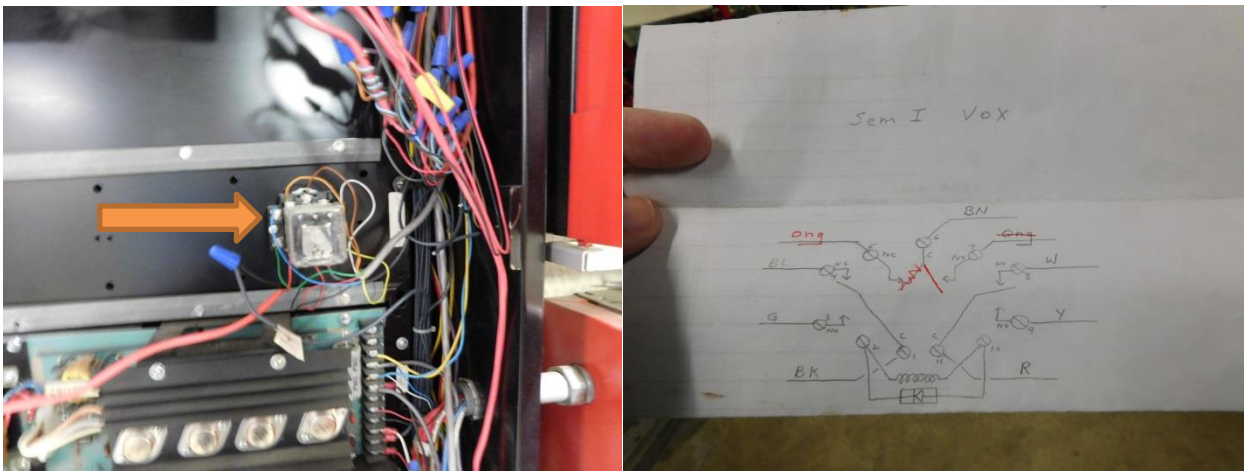
Convergint provided the existing EST3 Fire Alarm Zone List for Seminar 1 Building. See the following table below:

Existing EST3 Fire Alarm Zone List for Seminar 1 Building:		
Zone #	Description	Zone Alarm Type
5153	SEM Basement Lower Mech.	Fire Alarm
5154	SEM Basement Duct Detector	Fire Alarm
5155	SEM Sprinkler Waterflow Switch and OSY tamper Switch (Riser in Mech. 0150)	Fire Alarm
5156	SEM Mech. Rm Floor 1	Fire Alarm
5157	SEM Elec. Rm 1114 – 1112 Floor 1	Fire Alarm
5158	SEM East Wing Offices Floor 2	Fire Alarm
5159	SEM North Wing Sec Area Floor 2	Fire Alarm
5160	SEM East Wing Offices Floor 3	Fire Alarm
5161	SEM North Wing Offices Floor 3	Fire Alarm
5162	SEM Area 5100 Roof Penthouse Mech.	Fire Alarm
5163	SEM Center Stairway Floor 4	Fire Alarm
5164	SEM South Wing Offices Floor 4	Fire Alarm
5165	SEM North Wing Offices Floor 4	Fire Alarm
5166	SEM Spare	
5167	SEM Annex	Fire Alarm
5168	SEM Spare	
5169	SEM panel Trouble Bldg. 2731	Trouble
5170	SEM Annex Panel	Trouble
5171	SEM Spare	
5172	SEM Spare	
5173	SEM Security Key Box	
5174	SEM Counseling Center panic alarm room - 4126	Trouble
5175	SEM Spare	
5176	SEM Spare	
5177	SEM Relay to VOX Interface – (Non-supervise output)	



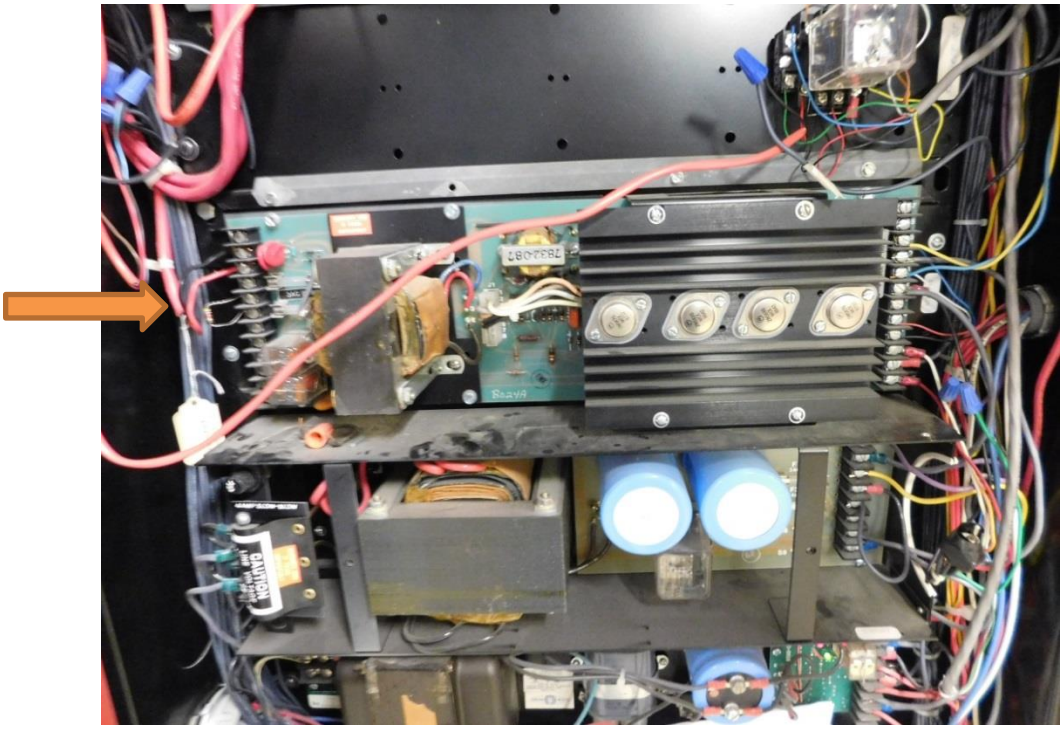
Utilize existing zone wiring for new EST3 SLC loops. Label each wire and pull back wiring to the cable tray. Install a minimum 12” by 12” j-box under cable tray with terminal blocks and connect all negative wires together and all positive wires together. Connect EST3 SLC loop to these wiring. Replace all existing fire alarm devices with new devices. Refer to photograph to the left:

The EST3 Seminar 1 building microphone is programmed to addressable relay 5177. The microphone triggers the Autocall VOX relay that activates the Autocall Fire Alarm amplifier to engage and open the path to the Seminar 1 building speakers. Refer to photographs below:



The existing Autocall Fire Alarm Amplifier 5290-018 is 25VRMS and rated for 150-watts. It would requires four (4) EST3 40-watt amplifiers to replace with an existing amplifier. Refer to photograph below:

We recommend placing new EST3 40-watt amplifiers on each floor adjacent to existing EST3 NAC booster panel with 2#14 AWG shielded cabling and intercept existing 2#14 AWG shielded speaker cabling. Utilize existing 120VAC power from existing NAC panel.



Left arrow points to the existing Autocall amplifier-speaker circuit for the entire building.

All the existing fire alarm strobes in the Seminar 1 building are powered and controlled from the existing EST3 NAC Booster panel in the basement main electrical room and electrical closet on each floor.

This building has existing POTS (telephone) lines monitoring the fire alarm campus system.
Refer to the photograph below:

The current NFPA-72 does not allow zonal monitoring anymore. All addressable devices to be transmitted to central station monitoring.
The current NFPA-72 does not allow POTS (telephone) line for fire alarm auto-dialers out anymore.

All addressable fire alarm panels shall be monitor by Ethernet, Cellular, or AES Radio Dialer. All events of the fire alarm system shall be monitored.

We recommend replacing POTS lines with fire alarm AES Radio Dialer.
Testing is required prior to installing a high gain antenna with lightning protector and mounting brackets to the top of the Clock Tower and installing the AES radio in the basement adjacent the existing radio equipment would get signal to downtown Olympia.
This AES radio will be a repeater to the other AES Radios on campus. We recommend replacing all the POTS line fire alarm monitoring with AES radios campus wide.

Found existing Annual Inspection Form with a few issues. Refer to the table below:

Existing Form Number	Existing Annual Inspection Form Information		Existing total number of units in building per form.		Total number of units in building found during our sitewalk of this building.
8	No. of Initiating Circuits		2		**1 SCL Loop - Zone Circuit 5**
9	No. of Signal Circuits.		2		**8**
14	Key to panel available		no		**yes**
23	Bells, Horns, Chimes				**1 sprinkler bell**
24	Speaker		50		**31**
25	smoke detector		54		**56**
26	heat detector		14		**19**
27	duct detector		2		**2**
28	Sprinkler Waterflow				**2**
29	Sprinkler Tamper Switch				**2 Tamper and 1 PIV**
30	Visual Alarm Devices		52		**76**
31	Pull station		12		**12**
32	Automatic Door Unlock				
33	Automatic Door Release		0		**2**
34	Other Devices				**NAC Booster Panel per Floor**
35	Phone Sets		n/a		**Yes**
36	Phone Jacks		n/a		**Yes**
37	call-in Signal		n/a		**Yes**

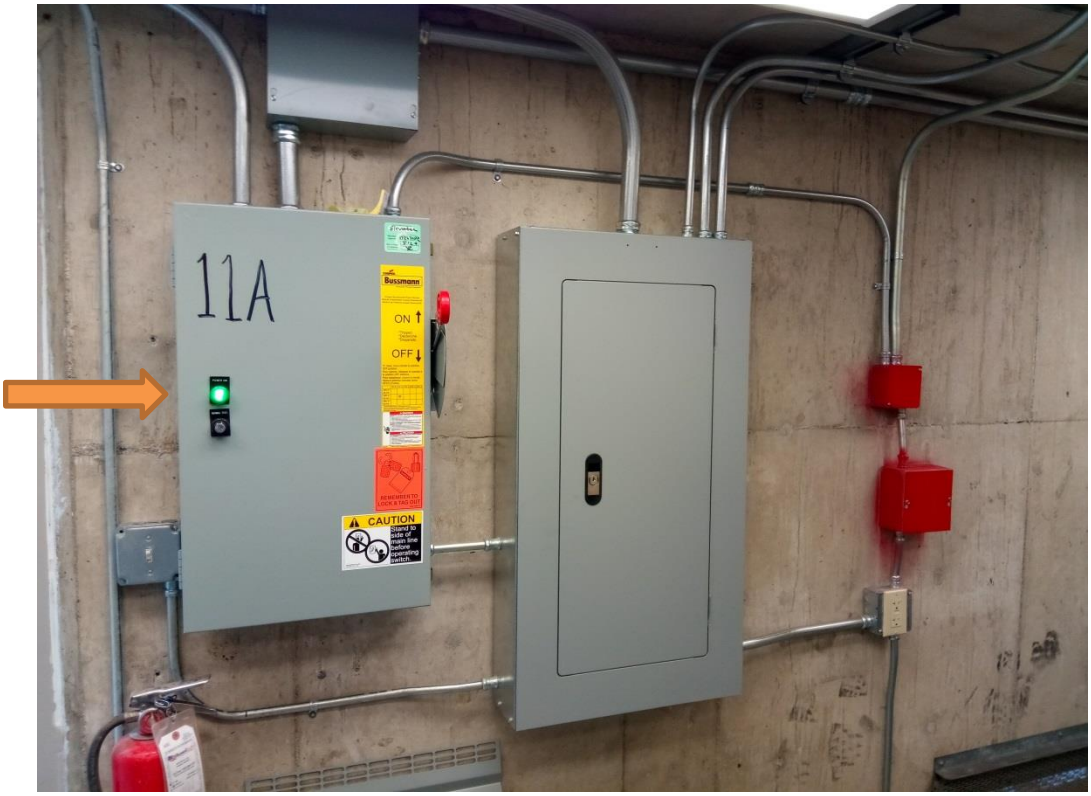
During an as-built building walk around the existing building we found the following fire alarm devices. Refer to the table below:

Seminar 1 - Building Fire Alarm Count List							
Fire Alarm Device	Basement	1st	2nd	3rd	4th	Penthouse	Total
Smoke Detector		16	17	8	13	2	56
Heat Detector		1	12	2	2	2	19
Duct Detector	2						2
Waterflow	1	1					2
Tamper	1	1					2
Pull Station		2	4	3	3		12
Speaker				1	2		3
Speaker/strobe	2	8	7	7	4		28
Strobe	1		30	5	10	2	48
Bell		1					1

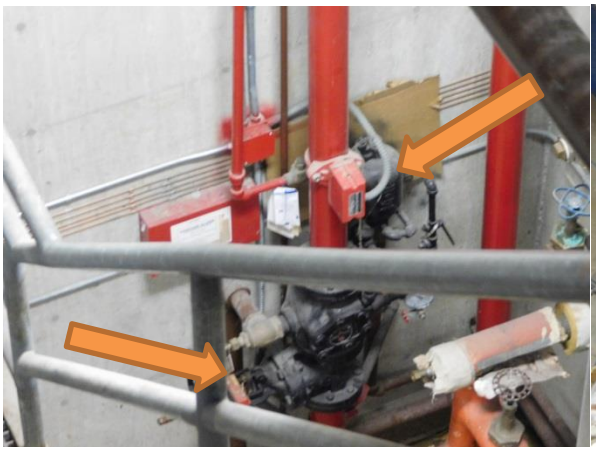
Seminar 1 Building existing Fire Alarm System controls the following:

- Elevator Primary Recall
- Elevator Secondary Recall
- Elevator Hat Recall
- Shutdown HVAC units in the basement
- Second Floor Door Holder

Seminar 1 Building Penthouse Level Fire Alarm has existing elevator shunt trip power monitoring. Refer to photograph below:



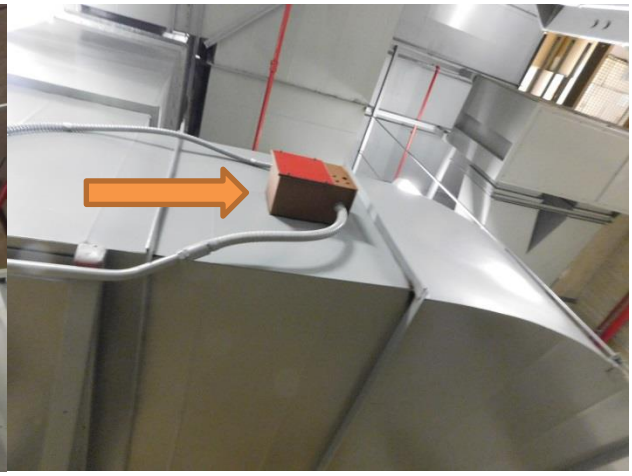
Seminar 1 Building has two existing sprinkler risers in the basement and 1st floor. Refer to the photographs below:



Basement

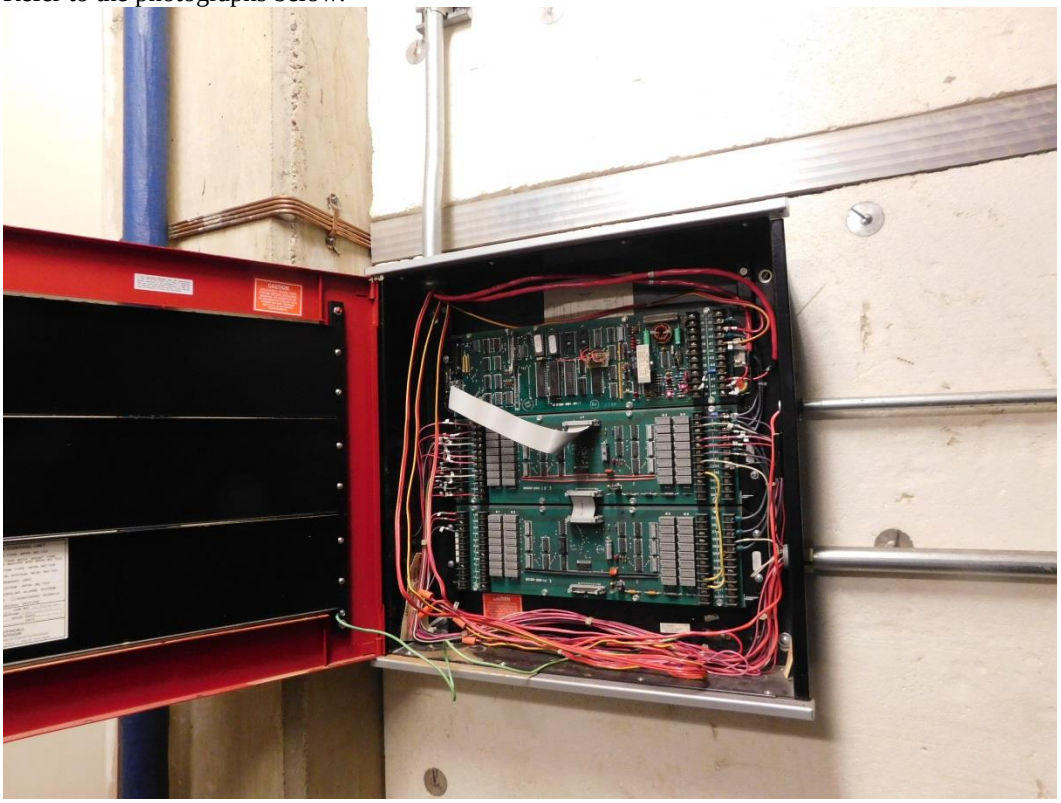
1st floor

Seminar 1 Building has two existing duct detectors in the basement.
Refer to the photographs below:



Both of these duct detectors will need to be replaced with new addressable smoke duct detectors. The new smoke detector head should be rated for the High CFM of the fan unit in these HVAC units.

Seminar 1 Building has existing remote graphic annunciator control 64-relay cabinet on the 1st floor. These relays control the remote graphic annunciator LED lights.
Refer to the photographs below:



An EST3 would have to replace these relays or replace the remote graphic annunciator with new remote annunciator LCD keypad with microphone and control switches.

The existing EST3 fire alarm panel and system with UDACT (Universal Digital Alarm Communicator Transmitter) shall remain.
The existing EST3 NAC Booster Panels to remain.
Replace all existing antiquated fire alarm field devices with new EST3 addressable devices.

Replace all the following existing equipment:

- Autocall Amplifier.
- Pull stations.
- Point modules.
- Smoke detectors.
- Duct detectors.
- Addressable relay modules.
- Speakers
- Strobes
- Speaker/strobes
- Exterior weatherproof speaker/strobe.
- Remote LCD annunciator.

We recommend adding the following new equipment:

- 1 - Smoke detector above fire alarm panel.
- 1 – Replace elevator heat detector with dual contacted heat detector with point module.
- 1 – 120VAC relay to monitor elevator shunt trip power with point module.
- 1 - Ethernet module to allow email status of the fire alarm panel.
- 1 - Data drop with internet access for the fire alarm panel.
- Replace all existing wall speakers with speaker/strobe.
- Speaker/strobe to rooms called "Classroom".
- Strobes to the "Wellness" patient rooms.

Fire Alarm equipment and device labeling:

A. We recommend that the main fire alarm panels shall have the following labeling below:

Description:	Example:
Panel Name:	**MAIN FIRE ALARM**
Node #:	**Node 2**
AC PANEL:	**AC Panel 2X2**
BREAKER #:	**Breaker #1**

B. We recommend the Duct Detector Locations shall have the following labeling on the grid next to the ceiling tile to gain access to the duct detector. Mount in clear sight of the floor.
Refer to example below:

Description:	Example:
Device Name:	**DUCT SLC1-S26**

C. We recommend the fire alarm device labels: Use for identification of all fire alarm input and output control devices. In clear sight of the floor. Otherwise, provide a duct detector type label. These address labels shall match fire alarm readout and as-built drawings. All module devices shall have a description of what it is monitoring and controlling.
Refer to example below:

Description:	Example:
Device Name:	**N10SLC1-S26**

A fire alarm documents storage cabinet adjacent to the main fire alarm panel per NFPA-72 current code as required. Coordinate location with Owner's Representative prior to installation. Download program data and point list onto the 4GB flash drive built-in to cabinet per NFPA-72 current code. Provide closeout documents in a binder as required per this specification.

A. Manufacturers:
   1. Space Age Electronic Part Number SSU00685 or equal.

NFPA current code requires that all fire alarm circuit breaker install lockout device.

A. Manufacturers:
   1. Space Age Electronic Part Number ELOCK_FA or equal.

End of Report