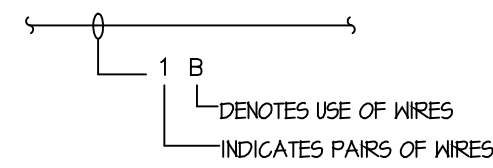


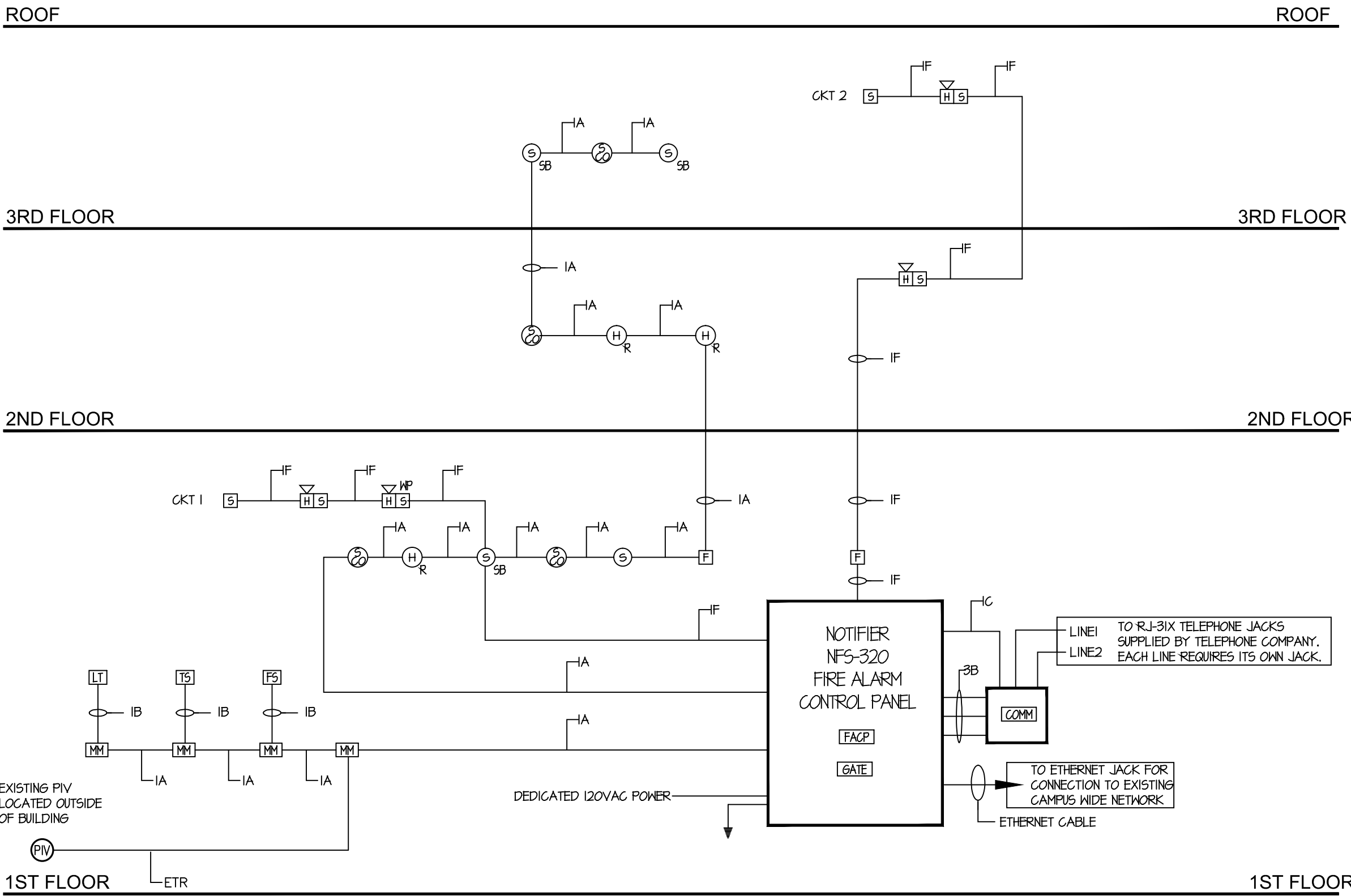
WIRE GUIDE		
LTR	DESCRIPTION	TYPE
A	SLC LOOP	16AWG UTP
B	CONVENTIONAL ZONE	16AWG UTP
C	24V DC POWER	16AWG UTP
D	EIA-485 COMMUNICATION (ACS MODE)	16AWG STP
F	AVV CIRCUIT	16AWG STP

- NOTES:
1. RISER DIAGRAM SHOWS NUMBER OF CIRCUITS AND WIRE SIZES. ACTUAL QUANTITY OF DEVICES IS SHOWN ON THE FLOOR PLANS. DEVICES TO BE ADDRESSED IN FIELD.
  2. LABEL EXAMPLE:



ABBREVIATIONS:

- STP= SHIELDED TWISTED PAIR  
UTP= UNSHIELDED TWISTED PAIR  
FR= UNSHIELDED TWISTED PAIR  
SLC= SIGNALING LINE CIRCUIT  
NAC= NOTIFICATION APPLIANCE CIRCUIT  
CKT= CIRCUIT  
AWG= AMERICAN WIRE GAUGE  
ETR= EXISTING WIRING TO REMAIN  
IF= MOUNTED UNDER RAISED FLOOR  
ROR= RATE OF RISE  
RM= ROOM



NOTIFIER NFS-320 FIRE ALARM RISER DIAGRAM

ELECTRICAL WIRING SPECIFICATIONS:

ALL WIRING SHALL BE IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (ESPECIALLY ARTICLE 760) AND THE MANUFACTURERS WRITTEN GUIDELINES. ALL WIRING TO BE IL LISTED, WIRING GAUGES, SHIELDING AND CHARACTERISTICS AS DESCRIBED ON RISER AND WIRING DIAGRAMS.

1. NON-POWER LIMITED FIRE ALARM (NFPA) CIRCUITS  
NFPA CIRCUIT POWER SOURCE REQUIREMENTS:
  - (A) POWER SOURCE: THE POWER SOURCE OF NON-POWER LIMITED FIRE ALARM CIRCUITS SHALL COMPLY WITH CHAPTERS 1 THROUGH 4 OF THE NATIONAL ELECTRICAL CODE AND THE OUTPUT VOLTAGE SHALL BE NOT MORE THAN 600 VOLTS, NOMINAL.
  - (B) BRANCH CIRCUIT: AN INDIVIDUAL BRANCH CIRCUIT SHALL BE REQUIRED FOR THE SUPPLY OF THE POWER SOURCE. THIS BRANCH CIRCUIT SHALL NOT BE SUPPLIED THROUGH BRANCH-FULLY CIRCUIT INTERRUPTERS OR ARC-FULLY CIRCUIT INTERRUPTERS. CIRCUIT BREAKER SHALL BE MARKED IN RED AND LOCKED. LOCATION AND NUMBER OF CIRCUIT BREAKER TO BE MARKED ON THE FIRE ALARM CONTROL PANEL.
  - (C) ONLY COPPER CONDUCTORS SHALL BE PERMITTED TO BE USED FOR FIRE ALARM SYSTEMS.
  - (D) INSULATION INSULATION ON CONDUCTORS SHALL BE SUITABLE FOR 600 VOLTS. CONDUCTORS LARGER THAN 6 AWG SHALL COMPLY WITH ARTICLE 310.
  - (E) ALL NON-POWER LIMITED WIRING SHALL BE RUN IN METALLIC RACEWAY. WIRING SHALL BE #4 GAUGE MINIMUM TYPE THHN. NOTE: NON-POWER LIMITED WIRING FOR THIS PROJECT LIMITED TO PRIMARY 120VAC FIRE ALARM CONTROL PANEL, DEDICATED BRANCH CIRCUIT.
2. POWER LIMITED FIRE ALARM (PLFA) CIRCUITS
  - (A) PLFA WIRING METHODS AND MATERIALS: POWER LIMITED FIRE ALARM CONDUCTORS AND CABLES SHALL BE INSTALLED AS FOLLOWS:
  - (B) WIRING SHALL BE INSTALLED IN RACEWAY OR FIXED IN CONCEALED SPACES. NO EXPOSED WIRING SHALL BE INSTALLED. CABLE SPLICES OR TERMINATIONS SHALL BE MADE IN LISTED FITTINGS, BOXES, ENCLOSURES, FIRE ALARM DEVICES, OR UTILIZATION EQUIPMENT.
  - (C) PASSING THROUGH A FLOOR OR WALL IN METAL RACEWAYS OR RIGID NON-METALLIC CONDUIT WHERE PASSING THROUGH A FLOOR OR WALL TO A HEIGHT OF 2.1 M (7 FT) ABOVE THE FLOOR, UNLESS ADEQUATE PROTECTION CAN BE AFFORDED BY BUILDING CONSTRUCTION.
  - (D) PLFA WIRING SHALL BE KEPT SEPARATED FROM NFPA WIRING AS DESCRIBED BY ARTICLE 760 OF NATIONAL ELECTRICAL CODE.
  - (E) POWER LIMITED FIRE ALARM CIRCUIT CONDUCTORS SHALL NOT BE STRAPPED, TAPPED OR ATTACHED BY ANY MEANS TO THE EXTERIOR OF ANY CONDUIT OR OTHER RACEWAY AS A MEANS OF SUPPORT.
  - (F) APPLICATIONS OF LISTED PLFA CABLES:  
(NOTE - THE BUILDING COVERED BY THIS PROJECT CONTAINS NO FLETHM AREAS)
    - (i) FLETHM CABLES INSTALLED IN DUCTS, PLUMBING, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP.
    - (ii) RISER CABLES INSTALLED IN RISERS, VERTICAL RISES AND PENETRATING MORE THAN ONE FLOOR, OR CABLES INSTALLED IN VERTICAL RISES IN A SHUTT, SHALL BE TYPE FPLR. FLOOR PENETRATIONS REQUIRING TYPE FPLR SHALL CONTAIN ONLY CABLES SUITABLE FOR RISER OR FLETHM USE.
    - (iii) OTHER WIRING WITHIN BUILDINGS: CABLES INSTALLED IN BUILDING LOCATIONS OTHER THAN THE ABOVE SHALL BE TYPE FPL.
3. GENERAL
  - (A) ALL CONDUCTORS ARE TO BE PROPERLY TAGGED OR NUMBERED IN THE CONTROL PANEL AND CORRESPOND WITH THE CONTROL PANEL TERMINAL NUMBERS. FOR IDENTIFICATION PURPOSES, WIRING NOT GO TO AND FROM EQUIPMENT, BRANCH CIRCUITS (T-TAPS) ARE NOT PERMITTED, POLARITY TO BE OBSERVED THROUGHOUT.
  - (B) ALL CIRCUITS SHALL RUN CONTINUOUS BETWEEN DEVICES, WITHOUT SPLICES WHERE EVER PRACTICAL, WHERE A CONTINUOUS WIRE RUN IS NOT POSSIBLE, CONNECTIONS SHALL BE MADE IN AN IDENTIFIED IL LISTED ELECTRICAL BOX UTILIZING TERMINAL STRIPS. THE USE OF WIRE NUTS IS NOT PERMITTED.
4. ALL WORK TO BE IN ACCORDANCE WITH THE NFPA 10 2014 4 NFPA 12 2013 STANDARDS.

SCOPE OF WORK:

1. INSTALL NEW NOTIFIER NFS-320 ADDRESSABLE FIRE ALARM CONTROL PANEL.
2. PROVIDE AND INSTALL NEW DETECTION AND NOTIFICATION APPLIANCES IN EACH RESIDENTIAL UNIT AND COMMON AREAS.
3. MONITOR EXISTING WATER FLOW SWITCHES, TAMPER SWITCHES, & POST INDICATING VALVE.
4. PROVIDE AND INSTALL MONITORED LOW TEMPERATURE SWITCH IN MECHANICAL ROOM.
5. RESIDENCE APARTMENTS ARE EQUIPPED WITH ELECTRIC KITCHENS ONLY. HVAC UNITS ARE PROVIDED WITH GAS FIRED HEATING. CO PRODUCING EQUIPMENT IS LOCATED WITHIN THE BUILDING.
6. CONTRACTOR IS REQUIRED TO SUBMIT THREE (3) SETS OF SHOWN AND SEALED FIRE ALARM DRAWINGS AND CALCULATIONS. THESE DOCUMENTS SHALL INCLUDE BATTERY AND VOLTAGE DROP CALCULATIONS AND MANUFACTURERS DEVICES AND COMPONENTS WHICH WILL BE INSTALLED ON THIS PROJECT. SUBMITTAL IS TO BE REVIEWED AND APPROVED BY DESIGNER OF RECORD, AS PER N.J.A.C. 5:25-2.6(b)(4)(i), N.J.A.C. 5:25-2.6(b)(4) & N.J.A.C. 5:25-2.6(b)(4)(ii).

USE THIS MATRIX TO DETERMINE THE CONTROL PANEL'S ACTION WHEN AN ALARM CONDITION EXISTS (LISTED BELOW)		CONTROL PANEL ACTION					
SYSTEM CONDITION	AREA SMOKE DETECTOR	X	X	X	X		
	BEDROOM SMOKE DETECTOR	X	X	X	X		
	MANUAL PULL STATION	X	X	X	X		
	HEAT DETECTOR	X	X	X	X		
	COMBINATION FIRE/CO DETECTOR	X	X	X	X		
	WATERFLOW SWITCH	X	X	X	X		
	PRESSURE SWITCH	X	X	X	X		
	LOW TEMPERATURE SWITCH	X	X	X	X		
	TAMPER SWITCH	X	X	X	X		
	POST INDICATOR VALVE, TAMPER	X	X	X	X		
	FIELD WIRING OR SYSTEM COMPONENT FAULT	X	X	X	X		
	LOSS OF PRIMARY AC POWER	X	X	X	X		

FIRE ALARM SYSTEM FUNCTION MATRIX

FIRE ALARM SYSTEM COMPONENTS			
SYMBOL	DEVICE	MANUFACTURER	MODEL NO.
[FACP]	FIRE ALARM CONTROL PANEL	NOTIFIER	NFS-320
[GATE]	GATEWAY	NOTIFIER	NN-6H-EM-3
[COMM]	DIGITAL COMMUNICATOR	NOTIFIER	4H-ND
[E]	MANUAL PULL STATION	NOTIFIER	NBS-12LX
[S]	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	NOTIFIER	FSP-851
[S] <sub>SB</sub>	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR WITH SOUNDER BASE	NOTIFIER	FSP-851
[H] <sub>R</sub>	ADDRESSABLE RATE OF RISE HEAT DETECTOR	NOTIFIER	FSP-85HR
[H] <sub>H</sub>	ADDRESSABLE HIGH TEMP. HOFF. HEAT DETECTOR	NOTIFIER	FSP-85HH
[Z]	ADDRESSABLE COMBINATION FIRE/CARBON MONOXIDE DETECTOR	NOTIFIER	FCO-851
[E]	ADJUSTABLE CANDELA STROBE LIGHT	SYSTEM SENSOR	SR
[H] <sub>1</sub> [S]	COMBINATION ADJUSTABLE CANDELA, HORN AND STROBE	SYSTEM SENSOR	P2R
[H] <sub>2</sub> [S]	COMBINATION ADJUSTABLE CANDELA, HORN AND STROBE WEATHERPROOF	SYSTEM SENSOR	P2RX
[MM]	ADDRESSABLE MONITOR MODULE	NOTIFIER	FMM-1
[LT]	LOW TEMPERATURE SWITCH	POTTER	RTS-0
[TS]	TAMPER SWITCH	BY FIRE PROTECTION CONTRACTOR	
[FS]	FLOW SWITCH	BY FIRE PROTECTION CONTRACTOR	
[PS]	PRESSURE SWITCH	BY FIRE PROTECTION CONTRACTOR	
[PIV]	POST INDICATOR VALVE	EXISTING	

Revisions

Date	Issue	Description
06-03-15	1	ISSUED FOR CONSTRUCTION

Key Plan

Consultants

**LINWOOD ENGINEERING ASSOCIATES, P.A.**  
*CONSULTING MECHANICAL & ELECTRICAL ENGINEERS*  
**LEA**  
955 Lincoln Ave. Glen Rock, New Jersey 07452  
t: 201.857.3998 f: 201.857.3994  
www.linwoodengineering.com  
2301 Dupont Drive-Suite 150 Irvine, California 92612  
t: 714.424.0001 f: 714.424.0004

<b>Michael T. Davina, P.E.</b> NJ #48654 CT #0025779	<b>Robert J. Hatch, P.E.</b> AR #13868 CA #E16118 CT #13318 FL #69560 MA #48516 NJ #30419 NV #019975 NY #56608 PA #036014-E
--	--

Project

INTERIOR RENOVATIONS  
AT THE  
BUTTERNUT - M RESIDENCE

**RAMAPO COLLEGE**  
OF NEW JERSEY  
505 Ramapo Valley Road  
Mahwah, New Jersey 07430-1680

Client

**RAMAPO COLLEGE**  
OF NEW JERSEY  
505 Ramapo Valley Road  
Mahwah, New Jersey 07430-1680

**SNS** Architects & Engineers, PC  
1 PARAGON DRIVE . MONTVALE . NEW JERSEY . 07645  
tel: 201.573.1767 fax: 201.573.0808 www.sns-arch-eng.com

Fay W. Logan, AIA  
John M. Lignos, AIA  
Lorin J. Sonenshine, AIA  
Steven Napolitano, PE

Cert./Lic. No.  
Date 04-23-15 Scale AS NOTED  
Drawn By KEB/Cadd Checked By MD  
Dwg. Title  
FIRE ALARM NOTES, RISER DIAGRAM,  
SCHEDULE & SYSTEM SEQUENCE OF  
OPERATION MATRIX  
Work Order No. 4698M Dwg. No. E402