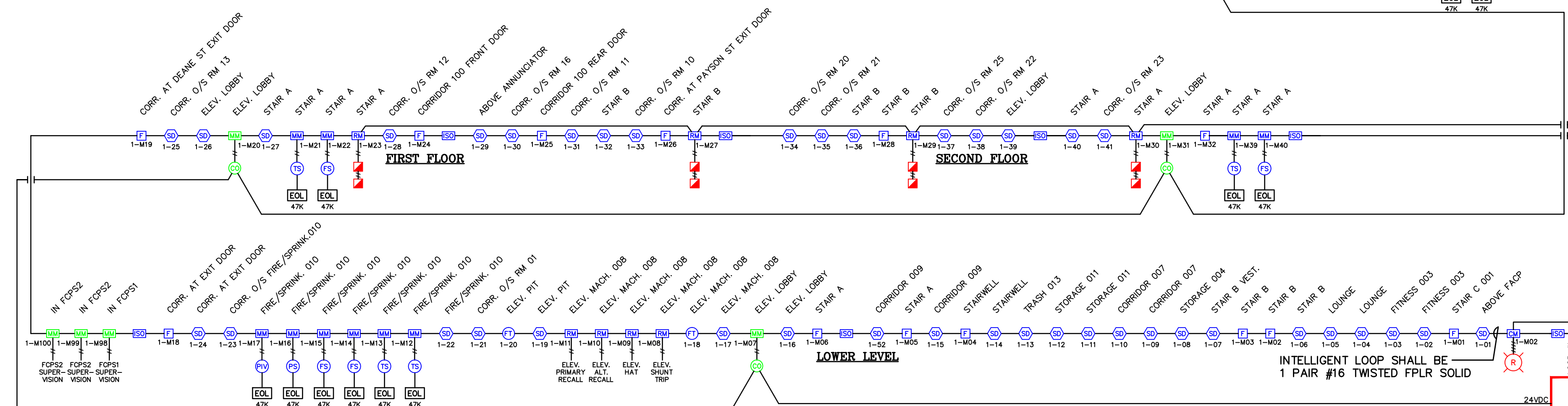


SYSTEM INPUTS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	SYSTEM OUTPUTS		
1	MANUAL FIRE ALARM PULL STATIONS - LOWER LEVEL																											1		
2	MANUAL FIRE ALARM PULL STATIONS - 1ST FLOOR																												2	
3	MANUAL FIRE ALARM PULL STATIONS - 2ND FLOOR																												3	
4	MANUAL FIRE ALARM PULL STATIONS - 3RD FLOOR																												4	
5	SMOKE DETECTORS - LOWER LEVEL																												5	
6	SMOKE DETECTORS - LOWER LEVEL-ELEVATOR RECALL																												6	
7	SMOKE DETECTORS - 1ST FLOOR																												7	
8	SMOKE DETECTORS - 1ST FLOOR-ELEVATOR RECALL																												8	
9	SMOKE DETECTOR - 2ND FLOOR																												9	
10	SMOKE DETECTORS - 2ND FLOOR-ELEVATOR RECALL																												10	
11	SMOKE DETECTOR - 3RD FLOOR																												11	
12	SMOKE DETECTORS - 3RD FLOOR-ELEVATOR RECALL																												12	
13	HEAT DETECTORS - LOWER LEVEL																												13	
14	HEAT DETECTORS - 1ST FLOOR																												14	
15	HEAT DETECTORS - 2ND FLOOR																												15	
16	HEAT DETECTORS - 3RD FLOOR																												16	
17	CO DETECTOR - LOWER LEVEL																												17	
18	CO DETECTOR - 1ST FLOOR																												18	
19	CO DETECTOR - 2ND FLOOR																												19	
20	CO DETECTOR - 3RD FLOOR																												20	
21	WATERFLOW - LOWER LEVEL																												21	
22	WATERFLOW - 1ST FLOOR																												22	
23	WATERFLOW - 2ND FLOOR																												23	
24	WATERFLOW - 3RD FLOOR																												24	
25	SPRINKLER CONTROL VALVE - LOWER LEVEL																												25	
26	SPRINKLER CONTROL VALVE - 1ST FLOOR																												26	
27	SPRINKLER CONTROL VALVE - 2ND FLOOR																												27	
28	SPRINKLER CONTROL VALVE - 3RD FLOOR																												28	
29	ELEV. SHUNT TRIP SUPERVISION																												29	
30	DISABLING OF ZONES OF INDIVIDUAL DEVICES																												30	
31	FIRE ALARM AC POWER FAILURE																												31	
32	FIRE ALARM ABNORMAL AC VOLTAGE																												32	
33	FIRE ALARM SYSTEM LOW BATTERY																												33	
34	BREAK IN BATTERY CIRCUIT																												34	
35	OPEN CIRCUIT																												35	
36	GROUND FAULT																												36	
37	NOTIFICATION APPLIANCE CIRCUIT SHORT																												37	
38	SUPERVISORY																												38	
39	TROUBLE																												39	
40	ABNORMAL SWITCH POSITION AT FACP OR ANNUNCIATOR																												40	
41	LOSS OF COMMUNICATION WITH FACP CONNECTED DEVICES																												41	
42	OPENING/REMOVING/TAMPING WITH DEVICES																												42	

## FIRE ALARM SEQUENCE OF OPERATION MATRIX

ANTICIPATED AMBIENT SOUND LEVELS	
BUSINESS OCCUPANCY	55DB
EDUCATIONAL OCCUPANCY	45DB
INSTITUTIONAL OCCUPANCY	50DB
MECHANICAL ROOMS	85DB
ASSEMBLY OCCUPANCY	55DB
RESIDENTIAL OCCUPANCY	35DB



CLASS A WIRING PER NFPA 72 2010 EDITION:

23.4.2.2\* ALL STYLES OF CLASS A AND CLASS X CIRCUITS USING PHYSICAL CONDUCTORS (E.G., METALLIC, OPTICAL FIBER) SHALL BE INSTALLED SUCH THAT THE OUTGOING AND RETURN CONDUCTORS, EXITING FROM AND RETURNING TO THE CONTROL UNIT, RESPECTIVELY, ARE ROUTED SEPARATELY. THE OUTGOING AND RETURN (REDUNDANT) CIRCUIT CONDUCTORS SHALL NOT BE RUN IN THE SAME CABLE ASSEMBLY (I.E., MULTI-CONDUCTOR CABLE), ENCLOSURE, OR RACEWAY ONLY UNDER THE FOLLOWING CONDITIONS:

(1) FOR A DISTANCE NOT TO EXCEED 3 M (10 FT) WHERE THE OUTGOING AND RETURN CONDUCTORS ENTER OR EXIT THE INITIATING DEVICE, NOTIFICATION APPLIANCE, OR CONTROL UNIT ENCLOSURES

(2) SINGLE CONDUIT/RACEWAY DROPS TO INDIVIDUAL DEVICES OR APPLIANCES

(3) SINGLE CONDUIT/RACEWAY DROPS TO MULTIPLE DEVICES OR APPLIANCES

INSTALLED WITHIN A SINGLE ROOM NOT EXCEEDING 92.9 M<sup>2</sup> (1000 FT<sup>2</sup>) IN AREA.

A.23.4.2.2 A GOAL OF 23.4.2.2 IS TO PROVIDE ADEQUATE SEPARATION BETWEEN THE OUTGOING AND RETURN CABLES. THIS SEPARATION IS REQUIRED TO HELP ENSURE PROTECTION OF THE CABLES FROM PHYSICAL DAMAGE. THE RECOMMENDED MINIMUM SEPARATION TO PREVENT PHYSICAL DAMAGE IS 12 IN. (300MM) WHERE THE CABLE IS INSTALLED VERTICALLY AND 48 IN. (1.22M) WHERE THE CABLE IS INSTALLED HORIZONTALLY.

### FIRE ALARM NOTES:

- 24VDC STROBE AND HORN/STROBE CIRCUITS ARE INDICATED ON RISER DIAGRAM AND SYSTEM DESIGN DRAWINGS BY SUB-SCRIPT C-1, 2, 3, ETC.; PLEASE ENSURE THAT CIRCUITS ARE INSTALLED PER THESE DIRECTIONS. REFER TO RISER AND SYSTEM LAYOUT DRAWINGS FOR LOCATION OF DEVICES.
- THE SIGNAL CIRCUITS ARE TO BE WIRED AND INSTALLED WITH NO DEVIATION TO THE FIRE ALARM SYSTEM RISER DIAGRAM AND LAYOUT DRAWINGS DUE TO CIRCUIT AMPERAGE RESTRICTIONS WITHOUT FIRST DISCUSSING WITH AND OBTAINING APPROVAL FROM BK SYSTEMS, INC.
- THE LOCATIONS OF INTERIOR AND EXTERIOR AUDIO/VISUAL DEVICES SHOWN ON THE DRAWINGS HAVE BEEN LOCATED IN ACCORDANCE WITH NFPA 72. UNDER NO CIRCUMSTANCES SHALL THE ELECTRICAL CONTRACTOR CHANGE THE LOCATIONS OF ANY OF THESE DEVICES WITHOUT FIRST DISCUSSING WITH AND OBTAINING APPROVAL FROM BK SYSTEMS, INC. IF THE ELECTRICAL CONTRACTOR INSTALLS ANY OF THESE DEVICES IN LOCATIONS OTHER THAN AS SHOWN ON THE CONTRACT DOCUMENTS, THE ELECTRICAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH RELOCATING, PATCHING AND PAINTING WHERE DEVICES HAD BEEN IMPROPERLY INSTALLED.
- THE END-OF-LINE DEVICES MUST BE LOCATED IN A COMMON AREA ONLY.
- NO "T" TAPPING ALLOWED ON ANY CIRCUITS.
- NO WIRING OR CONDUITS TO ENTER OR EXIT FROM TOP LEFT CORNER OF THE FIRE ALARM CONTROL PANEL DUE TO LOCATIONS OF POWER SUPPLIES. NO WIRING OR CONDUITS TO ENTER OR EXIT THROUGH THE BOTTOM OF THE FIRE ALARM CONTROL PANEL EXCEPT FOR BATTERY BOX CONNECTIONS. ALL CONDUITS THAT ENTER THE CONTROL PANEL SHALL BE NO LARGER THAN ONE (1) INCH.
- ALL SMOKE AND HEAT DETECTORS SHALL BE LOCATED A MINIMUM OF 3'-0" AWAY FROM ALL SUPPLY AIR DIFFUSERS.

FD APPROVAL STAMP

STATE OF MAINE  
LAWRENCE E. BARTLETT  
No. 7928  
LICENSED PROFESSIONAL ENGINEER  
Lawrence E. Bartlett  
ENGINEER STAMP

### FIRE ALARM LEGEND

- FACP** INTELLIGENT ADDRESSABLE FIRE ALARM CONTROL PANEL (FIRE WARDEN #NF2-100)
  - FCPS** FIRE CONTROL POWER SUPPLY WITH BATTERY BACKUP (HONEYWELL #HPFF8)
  - AS** AS BUILT CABINET (SPACE AGE #SSU00672)
  - LCD** LIQUID CRYSTAL DISPLAY ANNUNCIATOR (NOTIFIER #FDU-80)
  - RT** RADIO TRANSMITTER BOX (AES #7788F)
  - ROME** RELAY CARD CABINET (NOTIFIER #ROME-B)
  - K** KNOX BOX MODEL 3200
  - RED** RED 24 VDC EXTERIOR STROBE (EDWARDS #125STR)
  - F** ADDRESSABLE DUAL ACTION MANUAL PULL STATION (FIRE WARDEN #NOT-BG12LX)
  - SD** ADDRESSABLE SMOKE DETECTOR (FIRE WARDEN #NP-100 W/ #B710LP BASE)
  - HT** ADDRESSABLE 135' F.T. HEAT DETECTOR (FIRE WARDEN #NH-100 W/ #B710LP BASE)
  - CO** CARBON MONOXIDE DETECTOR (SYSTEM SENSOR #CO1224)
  - MM** ADDRESSABLE MONITOR MODULE (FIRE WARDEN #MM-100)
  - MM** ADDRESSABLE MINI MONITOR MODULE (FIRE WARDEN #MM-100P)
  - RM** ADDRESSABLE RELAY MODULE (FIRE WARDEN #NC-100R)
  - CM** ADDRESSABLE CONTROL MODULE (FIRE WARDEN #NC-100)
  - ISO** ISOLATION MODULE (NOTIFIER #N100-ISO)
  - P2R** 24VDC SYNCHRONIZED MULTI-CANDELA HORN/STROBE (SYSTEM SENSOR #P2R)
  - P2RH** 24VDC SYNCHRONIZED HIGH-CANDELA HORN/STROBE (SYSTEM SENSOR #P2RH)
  - SR** 24VDC SYNCHRONIZED MULTI-CANDELA STROBE (SYSTEM SENSOR #SR)
  - FM-996** SURFACE MOUNT MAGNETIC DOOR HOLDERS (NOTIFIER #FM-996)
  - TS** SPRINKLER SYSTEM WATER FLOW SWITCH
  - PS** SPRINKLER SYSTEM TAMPER SWITCH
  - RES** SPRINKLER SYSTEM PRESSURE SWITCH
  - RES** END-OF-LINE-RESISTOR
  - TICKS DENOTES NUMBER OF #14 FPLR FIRE ALARM RATED CONDUCTORS
  - DEVICE TO BE FURNISHED AND INSTALLED BY OTHERS BUT WIRED BY THE E.C.
- NOTE: THE SPECIFIED FIRE ALARM SYSTEM AND PERIPHERAL DEVICES SHALL BE NOTIFIER AS FURNISHED BY:
- BK SYSTEMS, INC.  
4 COTE AVENUE  
GOFFSTOWN, NH 03045  
TELEPHONE: 603-647-8775  
FAX: 603-647-4806  
EMAIL: NIKWEBSTER@BKSYSTEMSINC.COM

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Approved By: K. KLARDIE

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65 WASHINGTON STREET  
AUGUSTA, ME 04330

SHEET:  
**FA-3**

## FIRE ALARM SYSTEM RISER DIAGRAM