FIRE ALARM LEGEND

FACP	INTELLIGENT ADDRESSABLE FIRE ALARM CONTROL PANEL (NOTIFIER #NFS2-640)
BAT	BATTERY CABINET (NOTIFIER #NFS-LBBR)
RMCP	REMOTE MICRPHONE CONTROL PANEL WITH SWITCHES (NOTIFIER #RM-1 W/ #LCD2-80)
FCPS	FIRE CONTROL POWER SUPPLY WITH BATTERY BACKUP (NOTIFIER #HPFF8)
EX RT	EXISTING RADIO TRANSMITTER BOX (AES #7788F)
EX NION	NETWORK COMMUNICATION MODULE (NOTIFIER #NION)
EX DOC	EXISTING DOCUMENT BOX
K EX	EXISTING KNOX BOX
F	ADDRESSABLE DUAL ACTION MANUAL PULL STATION (NOTIFIER #NBG-12LX)
SD	ADDRESSABLE SMOKE DETECTOR (NOTIFIER #FSP-851 WITH #B210LP BASE)
SD D	ADDRESSABLE DUCT SMOKE DETECTOR (NOTIFIER #DNR WITH FST-851R AND #ST-3 SAMPLING TUBE)
FT	ADDRESSABLE 135° F.T. HEAT DETECTOR (NOTIFIER #FST-851 WITH #B210LP BASE)
MM	ADDRESSABLE MONITOR MODULE (NOTIFIER #FMM-1)
MM	ADDRESSABLE MINI MONITOR MODULE (NOTIFIER #FMM-101)
RM	ADDRESSABLE RELAY MODULE (NOTIFIER #FRM-1)
RT	REMOTE TEST STATION (NOTIFIER #RTS151)
S	24VDC SYNC. MULT-CANDELA SPEAKER/ STROBE (NOTIFIER #SPSW)
S	CEILING 24VDC SYNC. MULT-CANDELA SPEAKER/STROBE (NOTIFIER #SPSCW)
	24VDC SYNCHRONIZED MULTI-CANDELA STROBE (NOTIFIER #SW)
	NOTE: SET CANDELA RATING OF ALL SPEAKER/STROBES AND STROBES AS SHOWN ON SYSTEM DESIGN DRAWINGS.
	24VDC WALL MOUNT MAGNETIC DOOR HOLDERS (NOTIFIER #FM-998)
* FS	SPRINKLER SYSTEM WATER FLOW SWITCH
* TS	SPRINKLER SYSTEM TAMPER SWITCH
* PS	SPRINKLER SYSTEM PRESSURE SWITCH
EOLR	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

FIRE ALARM NOTES:

1. SPEAKER CIRCUITS ARE INDICATED ON RISER DIAGRAM AND SYSTEM DESIGN DRAWINGS BY SUBSCRIPT S-1,2,3, ETC.; PLEASE REFER TO RISER AND SYSTEM LAYOUT DRAWINGS FOR LOCATION OF DEVICES.
2. 24VDC STROBE CIRCUITS ARE INDICATED ON RISER DIAGRAM AND SYSTEM DESIGN DRAWINGS BY SUB-SCRIPT V-1, 2, 3, ETC.; PLEASE REFER TO RISER AND SYSTEM LAYOUT DRAWINGS FOR LOCATION OF DEVICES.
3. ALL SPEAKERS ARE TO BE SET FOR 25 VOLT OPERATION AND SPEAKER WATTAGES ARE AS SHOWN ON THE SYSTEM DESIGN DRAWINGS.
4. ALL SPEAKERS ARE TO BE MOUNTED IN A FOUR (4) INCH SQUARE x 2-1/8 INCH DEEP BACKBOX WITH NO EXTENSION RING REQUIRED. THE SHIELD SHOULD BE TWISTED TOGETHER AND TAPED SECURELY IN EACH BACK BOX IN ORDER TO AVOID SHORTS AND GROUNDS WITHIN THE SYSTEM SPEAKER CIRCUITS.
5. 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.
6. 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.
7. THE END-OF-LINE DEVICES MUST BE LOCATED IN A COMMON AREA ONLY.
8. NO "T" TAPPING ALLOWED ON ANY CIRCUITS.
9. 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.
10. ALL SMOKE AND HEAT DETECTORS SHALL BE LOCATED A MINIMUM OF 3'-0" AWAY FROM ALL SUPPLY AIR DIFFUSERS.

X	1 - Reviewed, No Exception Taken
	2 - Reviewed, Revise as Noted
	3 - Revise and Resubmit
	4 - Rejected
	5 - Other, Held for Record, Not Reviewed

WBRC ARCHITECTS • ENGINEERS

This review is only for general conformance with the design concept and the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the Contract Documents and applicable laws, codes and regulations. Review of a specific item shall not include review of an assembly of which the item is a component. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication, processes, means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all trades; and performing all work in a safe and satisfactory manner.

REVIEWER: Stephanie J. Laplant, P.E. DATE: 07.03.13

FIRE ALARM SEQUENCE OF OPERATION MATRIX

SYSTEM OUTPUTS: ACTUATE CARBON MONOXIDE ALARM; ANNUNCIATE TECHNOLOGY FEATURE CONTROL PANELS; ACTUATE CARBON MONOXIDE SYSTEM; ACTUATE ELEVATOR RECALL; ACTUATE ELEVATOR SHUNT TRIP; ACTUATE ELEVATOR PRIMARY RECALL; ACTUATE ELEVATOR ALT. RECALL; ACTUATE ELEVATOR HAT; ACTUATE MAGNETIC DOOR HOLDERS; ACTUATE ALL FLOOR AUDIO AMPLIFIERS; ACTUATE ALL FLOOR VOICE COMMAND; ACTUATE ALL FLOOR STROBES; ACTUATE ALL FLOOR SPEAKERS; ACTUATE ALL FLOOR SPEAKER/STROBES; ACTUATE ALL FLOOR SYNC. STROBES; ACTUATE ALL FLOOR SYNC. SPEAKER/STROBES; TRANSMIT ALARM TO REMOTE MICROPHONE CONTROL PANEL; TRANSMIT TROUBLE TO REMOTE MICROPHONE CONTROL PANEL; TRANSMIT ALARM TO NETWORK COMMUNICATION MODULE; TRANSMIT TROUBLE TO NETWORK COMMUNICATION MODULE; TRANSMIT ALARM TO SUPERVISING STATION; TRANSMIT TROUBLE TO SUPERVISING STATION; RELEASE FOR HVAC SHUTDOWN; RELEASE FOR HVAC SMOKE HATCH RELEASE; RELEASE FOR HVAC SMOKE HATCH CONTACT MONITOR; ACTUATE ELEVATOR RECALL TO ALTERNATE FLOOR; ACTUATE ELEVATOR RECALL TO PRIMARY FLOOR; ACTUATE ELEVATOR SHUNT TRIP; ACTUATE ELEVATOR POWER SUPPLY TO RECALL; ACTUATE ELEVATOR POWER SUPPLY TO SHUNT TRIP; SECOND EXITS SINGLE DOORS OUT TO ANOTHER SUPPLIES

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	
1 MANUAL FIRE ALARM PULL STATIONS – GROUND	●	●					●						●	●			●	●				●	●	●			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 MANUAL FIRE ALARM PULL STATIONS – 4TH FLOOR	●	●									●	●	●	●			●	●				●	●	●			5
6 SMOKE DETECTORS – GROUND	●	●					●						●	●			●	●				●	●	●			6
7 SMOKE DETECTORS – GROUND–ELEVATOR RECALL	●	●					●						●	●			●	●				●	●	●			7
8 SMOKE DETECTORS – 1ST FLOOR	●	●						●					●	●			●	●				●	●	●			8
9 SMOKE DETECTORS – 1ST FLOOR–ELEVATOR RECALL	●	●						●					●	●			●	●		●		●	●	●			9
10 SMOKE DETECTOR – 2ND FLOOR	●	●							●				●	●			●	●				●	●	●			10
11 SMOKE DETECTORS – 2ND FLOOR–ELEVATOR RECALL	●	●							●				●	●			●	●				●	●	●			11
12 SMOKE DETECTOR – 3RD FLOOR	●	●								●			●	●			●	●				●	●	●			12
13 SMOKE DETECTORS – 3RD FLOOR–ELEVATOR RECALL	●	●								●			●	●			●	●				●	●	●			13
14 SMOKE DETECTOR – 4TH FLOOR	●	●									●	●	●	●			●	●				●	●	●			14
15 SMOKE DETECTORS – 4TH FLOOR–ELEVATOR RECALL	●	●									●	●	●	●			●	●				●	●	●			15
16 DUCT SMOKE DETECTORS – FOURTH FLOOR			●	●							●				●	●	●			●	●	●	●	●			16
17 HEAT DETECTORS – GROUND FLOOR	●	●					●						●	●			●	●				●	●	●			17
18 HEAT DETECTORS – 1ST FLOOR	●	●						●					●	●			●	●				●	●	●			18
19 HEAT DETECTORS – 2ND FLOOR	●	●							●				●	●			●	●				●	●	●			19
20 HEAT DETECTORS – 3RD FLOOR	●	●								●			●	●			●	●				●	●	●			20
21 HEAT DETECTORS – 4TH FLOOR	●	●									●	●	●	●			●	●				●	●	●			21
22 WATERFLOW – GROUND FLOOR	●	●					●						●	●			●	●				●	●	●			22
23 WATERFLOW – 1ST FLOOR	●	●						●					●	●			●	●				●	●	●			23
24 WATERFLOW – 2ND FLOOR	●	●							●				●	●			●	●				●	●	●			24
25 WATERFLOW – 3RD FLOOR	●	●								●			●	●			●	●				●	●	●			25
26 WATERFLOW – 4TH FLOOR	●	●									●	●	●	●			●	●				●	●	●			26
27 SPRINKLER CONTROL VALVE – BASEMENT FLOOR			●	●											●												27
28 SPRINKLER CONTROL VALVE – 1ST FLOOR			●	●											●												28
29 SPRINKLER CONTROL VALVE – 2ND FLOOR			●	●											●												29
30 SPRINKLER CONTROL VALVE – 3RD FLOOR			●	●											●												30
31 SPRINKLER CONTROL VALVE – 4TH FLOOR			●	●											●												31
32 ROOF HATCH DOOR CONTACT SUPERVISION			●	●											●												32
33 ELEV. SHUNT TRIP SUPERVISION			●	●											●												33
34 DISABLING OF ZONES OF INDIVIDUAL DEVICES			●	●											●												34
35 LOSS OF NETWORK COMMUNICATION			●	●											●												35
36 FIRE ALARM AC POWER FAILURE					●	●								●													36
37 FIRE ALARM ABNORMAL AC VOLTAGE					●	●								●													37
38 FIRE ALARM SYSTEM LOW BATTERY					●	●								●													38
39 BREAK IN BATTERY CIRCUIT					●	●								●													39
40 OPEN CIRCUIT					●	●								●													40
41 GROUND FAULT					●	●								●													41
42 NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●								●													42
43 SUPERVISORY			●	●											●												43
44 TROUBLE					●	●								●													44
45 ABNORMAL SWITCH POSITION AT FACP OR ANNUNCIATOR					●	●								●													45
46 VOICE AMPLIFIER FAILURE					●	●								●													46
47 LOSS OF COMMUNICATION WITH FACP CONNECTED DEVICES					●	●								●													47
48 OPENING/REMOVING/TAMPERING WITH DEVICES					●	●								●													48
	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	

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^2 (1000 FT2) 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.

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

OLD RESURGAM PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 7/29/2013

FIRE ALARM SYSTEM RISER DIAGRAM

This drawing and the information and design application herein contained is the property of BK Systems, Inc.; all information herein contained shall be treated as proprietary and confidential; no reproduction of this drawing or part thereof shall be made without the written consent of BK Systems, Inc.

BK SYSTEMS
"BUILDING SYSTEMS SPECIALISTS"
BK SYSTEMS, INC.
4 COTE AVENUE - GOFFSTOWN, NH 03045
TEL: (603) 647-8775 / FAX: (603) 647-4806
www.bksystemsinc.com

REVISIONS	DATE
REV#1	07-01-13

Project No.: 13-062	
Date: 06/26/13	
Scale: AS NOTED	
Drawn By: N.WEBSTER	
Checked By: R.HOUDE	
Approved By: K.KLARDIE	

USM - MASTERTON HALL
PORTLAND, MAINE
FIRE ALARM RISER DIAGRAM, NOTES, LEGEND

PREPARED FOR:
TRT ELECTRIC
65 WASHINGTON STREET
AUGUSTA, ME 04330

SHEET:
FA-502