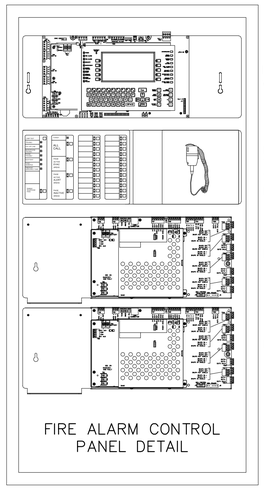
X 1 - Reviewed, No Exception Taken	
2 - Reviewed, Revise as Noted	
3 - Revise and Resubmit	
4 - Rejected	
5 - Other, Held for Record, Not Reviewed	

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. The Contractor is responsible for confirming and correlating all quantities and that 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 CONTROL PANEL DETAIL

FIRE ALARM LEGEND

- FACP — INTELLIGENT ADDRESSABLE FIRE ALARM CONTROL PANEL (NOTIFIER #NFS2-640)
- BAT — BATTERY CABINET (NOTIFIER #NFS-LBBR)
- FCPS — FIRE CONTROL POWER SUPPLY WITH BATTERY BACKUP (NOTIFIER #HPFF8)
- RT — 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

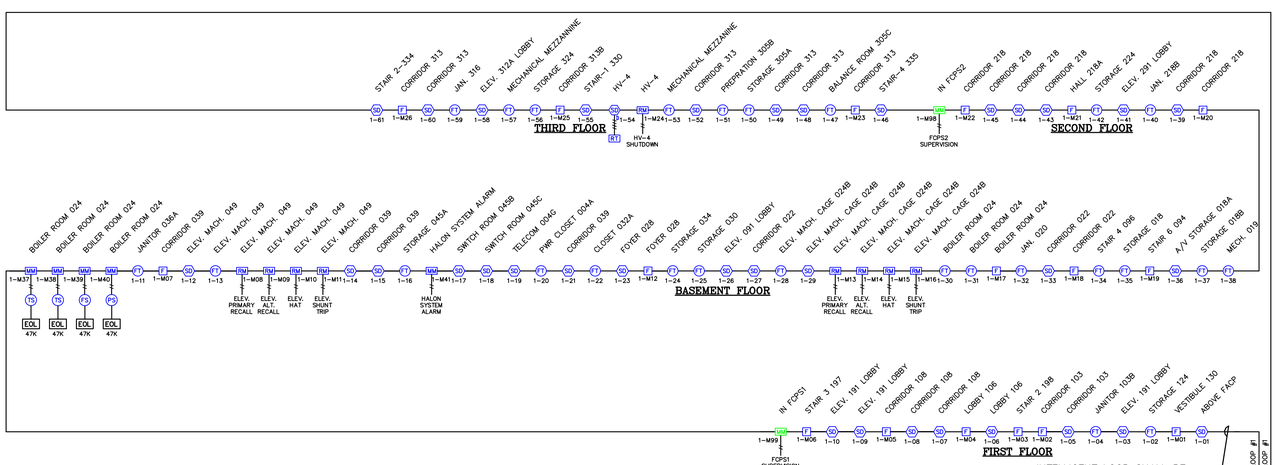
FIRE ALARM NOTES:

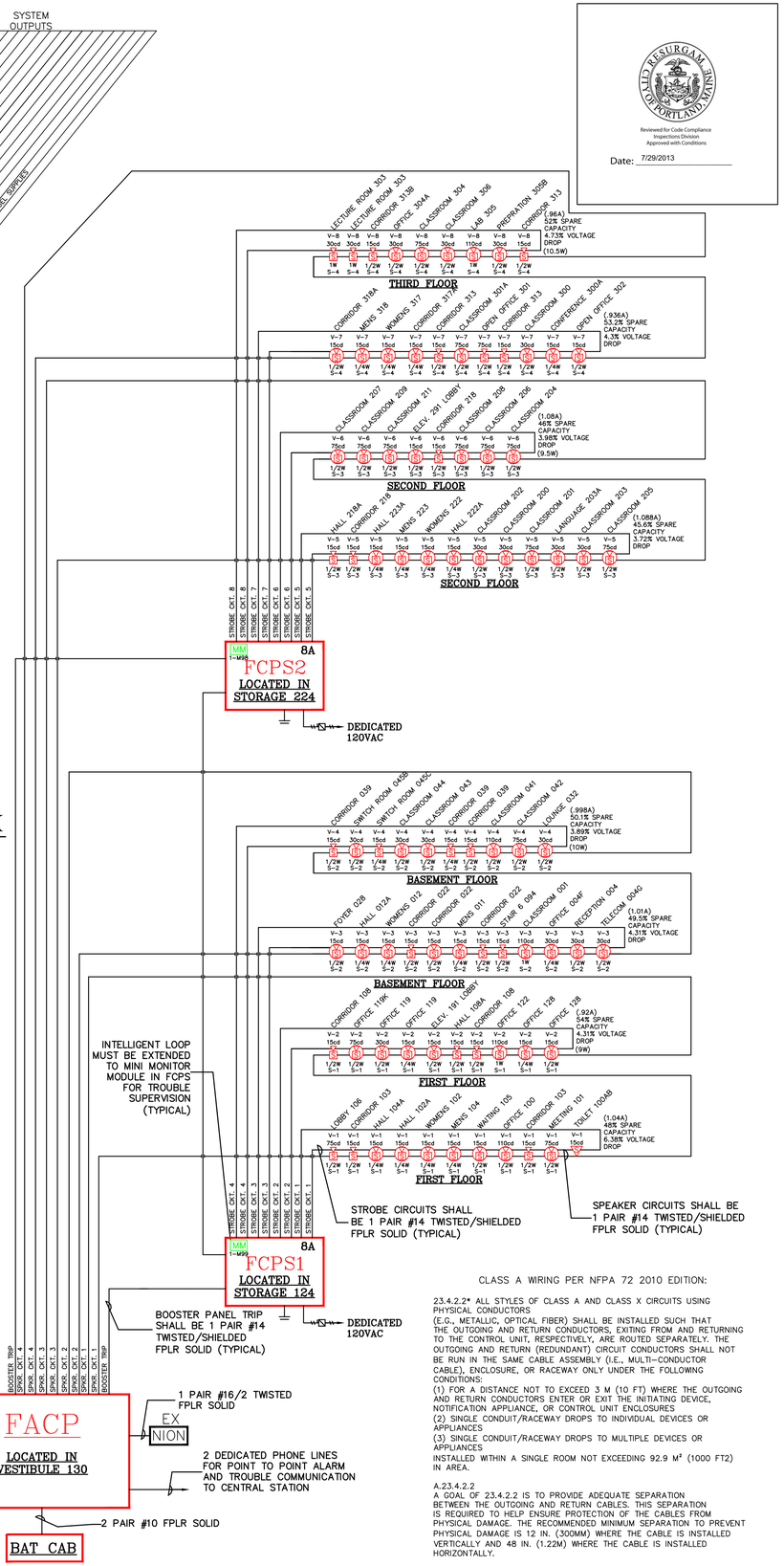
1. SPEAKER CIRCUITS ARE INDICATED ON RISER DIAGRAM AND SYSTEM DESIGN DRAWINGS BY SUBSCRIPT S-1,2,3, ETC.; PLEASE REFER TO RISER AND SYSTEM LAYOUT DRAWINGS FOR LOCATION OF DEVICES.
2. 24VDC STROBE CIRCUITS ARE INDICATED ON RISER DIAGRAM AND SYSTEM DESIGN DRAWINGS BY SUB-SCRIPT V-1, 2, 3, ETC.; PLEASE 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.

SYSTEM OUTPUTS

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

FIRE ALARM SEQUENCE OF OPERATION MATRIX





FIRE ALARM SYSTEM RISER DIAGRAM

RADIO TRANSMITTER ZONE SCHEDULE	
ZONE #	AREA
1.	ALARM CONDITION
2.	CITY DISCONNECT
3.	SPARE ALARM
4.	SPARE ALARM
5.	SPARE ALARM
6.	SPARE ALARM
7.	SPARE ALARM
8.	AES TAMPER SWITCH

ANTICIPATED AMBIENT SOUND LEVELS	
BUISINESS 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 M² (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.

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

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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 - PAYSON SMITH HALL
PORTLAND, MAINE
FIRE ALARM RISER DIAGRAM, NOTES, LEGEND

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