LEGEND:

RISER DIAG SYM	CONTRACT DWG SYM	NFPA SYMBOL*	DESCRIPTION	CATALOG #
FACP	FACP	FACP	Fire Alarm Control Panel	iO500R
F	F	P	Manual Pull Station	SIGA–278
			Smoke Detector w/Base	SIGA2–PS SIGA–SB
F			Heat Detector w/Base (F Denotes Fixed Temperature)	SIGA2–HFS SIGA–SB
CT× MCT2	MM	AIM	Addressable Input Module (× Denotes 1 or 2 Inputs; M Denotes Motherboard Required)	SIGA–CT1, –CT2 SIGA–MCT2, UIO Board
CR MCR	CM	AOM	Addressable Relay Module (M Denotes Motherboard Required)	SIGA–CR Siga–MCR, UIO Board
BS	RTS		Beam Detector Transceiver	EC–50R
REF	RTS		Beam Detector Reflector	SD–TRK
LLT	RTS		Beam Detector Ground Level Test/Indicating Station	SD–TRK
xxx	H		Horn/Strobe Unit – Wall Mount (xxx Denotes Candela Setting)	G1RF–HDVM
xxx			Strobe Unit – Wall Mount (xxx Denotes Candela Setting; C Denotes Ceiling Mount)	G1RF–VM
MB	MB	MB	Radio Master Box w/ Accessories	AES
B	B	SL	Exterior Beacon (SL Indicates Signal Lamp)	4955–1280

GENERAL NOTES:

1. ALL WIRING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, STATE OF MAINE BUILDING CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.

WIRING NOTES:

1. ALL ADRESSABLE DEVICES MUST BE INSTALLED IN A HEATED LOCATION.
2. Addressable Loop consists of: (1) 2c #16 Twisted Non–shielded from FACP to 1st device; (1) 2c #16 Twisted Non–shielded through remaning devices on circuit and return to FACP. Maintain proper separation between feeds and returns.
3. Strobe circuits consist of a minimum: 2c #14 from FACP to 1st device; 2c #14 through remaining devices on circuit and terminate w/ an End of Line resistor (EOL). Location of End of Line device shall be clearly marked on outside of device.
4. Speaker circuits consist of a minimum: 2c #16 from FACP to 1st device; 2c #16 through remaining devices on circuit and terminate w/ an End of Line resistor (EOL). Location of End of Line device shall be clearly marked on outside of device.

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Portland, Maine

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System Narrative

In the event of an alarm from an actuated device, the following shall occur: (Devices reporting an alarm: Manual STation, Smoke Detector, Heat Detector, or Beam Detector)

1) Notify the Fire Department via the Radio Master Box;
Notify Campus Security via Digital Communicator (DACT) and Central Station

2) Annunciate audibly,visually, and in plain english the active initiating device at the Fire Alarm Control Panel

3) Activate the exerior Strobe/Beacon

4) Flash all strobe appliance circuits in a synchronized manner until the FACP has been reset.

5) Sound a Temporal Code 3 on all horn units until silenced. If Silenced, the evacuation tone shall resound.

In the event of a supervisory condition from an actuated device, the following shall occur:

1) Notify Campus Security via Digital Communicator (DACT) and Central Station

2) Annunciate audibly,visually, and in plain english the active initiating device at the Fire Alarm Control Panel

In the event of a system trouble report, the following shall occur:

1) Notify Campus Security via Digital Communicator (DACT) and Central Station

2) Annunciate audibly,visually, and in plain english the active initiating device at the Fire Alarm Control Panel

CITY OF PORTLAND, MAINE — RESURGAM

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 7/30/2013

EST Addressable Fire Alarm System
UNE - Ludcke Auditorium
Portland, Maine

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BATTERY STANDBY CALCULATIONS - Fire Alarm Control Panel

QTY	Model #	Description	Quiescent Current	Alarm Current	Total Quiescent	Total Alarm	
1	iO64R	Base Panel	0.155000	0.204000	0.155000	0.204000	Amp
1	SA-232	RS-232 Communications Card	0.013000	0.013000	0.013000	0.013000	Amp
8	SIGA-278	Addressable Manual Pull Station	0.000250	0.000400	0.002000	0.003200	Amp
16	SIGA2-PS	Addressable Smoke Detector	0.000045	0.018000	0.000720	0.288000	Amp
5	SIGA2-HFS	Addressable Heat Detector	0.000045	0.018000	0.000225	0.090000	Amp
2	SIGA-CR/MCR	Addressable Control Module	0.000100	0.000100	0.000200	0.000200	Amp
1	EC-50CR	Beam Detector	0.004000	0.014000	0.004000	0.014000	Amp
5	G4RF-S7VM	Speaker/Strobe Unit (15 Candela)	0.000000	0.088000	0.000000	0.440000	Amp
5	G4RF-S7VM	Speaker/Strobe Unit (30 Candela)	0.000000	0.193000	0.000000	0.965000	Amp
2	G4RF-S7VM	Speaker/Strobe Unit (110 Candela)	0.000000	0.248000	0.000000	0.496000	Amp
5	G1RF-VM	Strobe Unit (15 Candela)	0.000000	0.071000	0.000000	0.355000	Amp
1	49GS1280R	Exterior Beacon	0.000000	0.350000	0.000000	0.350000	Amp
				Total	**0.175145**	**3.2184**	Amp

Total Quiesoent x Time Required (60 Hours):	**10.5087**	Ah
Total Alarm x Time Required (15 Minutes):		**0.8046 Ah**
Total Battery Required:		**11.3133 Ah**
Total Battery Required (+) 20% Spare Capacity:		**13.57596 Ah**
Battery Supplied:		**26 Ah**

UNE - Ludcke Auditorium
Portland, Maine
NAC Circuit Voltage Drop/Maximum Length Calculations

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Formulas Used:
Rt = (D) x (Rw) / 1000'
Vd = (Rt) x (It)
Substitute for (Rt) and solve for D

D = ((4.0) x (1000)) / ((Rw) x (It))

Rt = Total Circuit Resistance
D = Total Circuit Length (Feet)
Rw = Wire Resistance (Ω) per 1000' Pair (Ohms)
Vd = Circuit Voltage Drop (Max allowed is 4.0Vdc)
It = Total Circuit Current

Notes:
1 NAC Circuit terminal voltage 24Vdc.
2 A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
3 Current values listed per device are based on 20Vdc.
4 Calculations assume 75 candela rating for all Speaker/Strobes & 15 candela for Strobe Units.

HORN/STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

	G1RF-HDVM Horn/Strobe (2bv)				G1RF-VM (2bv)		4955	757-6A	Total Circuit Current	Ω per 1000' Pair		
Current (mA)	88	106	193	248	71	188	350	260		12AWG (3.5)	14AWG (5.2)	
Ckt/Cd	15cd	30cd	75cd	110cd	15	75cd		110cd	Amp.	Max Length (Ft)	Max Length (Ft)	Volt Drop
iO64 Ckt1	5	2	5		5				1.9780	577.78	388.89	4.0
iO64 Ckt2							1		0.3500	3265.31	2197.80	4.0
n/a									0.0000	#DIV/0!	#DIV/0!	4.0
n/a									0.0000	#DIV/0!	#DIV/0!	4.0

EST Addressable Fire Alarm System
UNE - Ludcke Auditorium
Portland, ME

SEQUENCE OF OPERATION MATRIX

System Inputs	A: Alarm Signal to Fire Department via Radio Master Box	B: Alarm Signal to Campus Security via Digital Communicator (DACT)	C: Annunciate at Fire Alarm Control Panel	D: Activate Horn/Strobe Circuit	E: Activate Exterior Strobe Beacon	F: Supervisory Signal to Campus Security via Digital Dialer (DACT)	G: Trouble Signal to Campus Security via Digital Communicator (DACT)	System Inputs
System Waterflow								System Waterflow
System Tamper Switch								System Tamper Switch
Manual Pull Stations	x		x	x	x			Manual Pull Stations
Area Smoke Detector	x		x	x	x			Area Smoke Detector
Area Heat Detector	x		x	x	x			Area Heat Detector
Beam Detector	x		x	x	x			Beam Detector
Beam Detector Power Fail							x	Beam Detector Power Fail
Fire Alarm - AC Failure			x		x		x	Fire Alarm - AC Failure
Fire Alarm - Low Battery			x				x	Fire Alarm - Low Battery
Signal Line Open Circuit			x				x	Signal Line Open Circuit
Signal Line Ground Fault			x				x	Signal Line Ground Fault
Horn/Strobe Circuit Open			x				x	Horn/Strobe Circuit Open
Horn/Strobe Circuit Ground			x				x	Horn/Strobe Circuit Ground
System Ground Fault			x				x	System Ground Fault
	A	B	C	D	E	F	G	

iO64 Panel Layout/Wiring

RISER DIAGRAM

DWG NAME: University of New England
Ludcke Auditorium
Portland , Maine
FIRE ALARM RISER DIAGRAM
DWG No: FA-001

R.B. Allen Co., Inc.
P.O. BOX 770
131 LAFAYETTE RD
NO. HAMPTON, NH 03862
1-800-258-7254

EDWARDS SYSTEM TECHNOLOGY

JOB NAME: University of New England
Ludcke Auditorium
Portland, Maine
FIRE ALARM RISER DIAGRAM

Contractor:

SCALE: NTS

REV.	DESCRIPTION	DATE	DRWN:	RVW'D:
1	Horn/Strobe Addition and Smokes Deleted	7/13	DHH	TRD
0	Original Issue	06/13	DHH	TRD

PO No. 80529

University of New England - Ludcke Aud
Portland, Maine
FIRE ALARM RISER
DWG NO. FA-001