City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 | 503-823-7300 | www.portland.gov/bds

FPP Permit Plan Intake Form

STAFF USE ONLY

Date Received _____ Building Registration # _____

BLD/MECH _____ ELE _____ PW _____ FIRE _____ Other _____

APPLICANT: Complete all sections below that apply to the project. Please print legibly.

Print Name John Mieras Signature _____

Street Address 2225 NW 20th Ave

City Portland State OR Zip Code 97209

Phone 503-849-6996 FAX _____ Email jmieras@dyna-oregon.com

Contact Name for plan/permit pick up John Mieras

Phone 503-849-6996 Email jmieras@dyna-oregon.com

Building Name HRC **Project Address** 3250 SW Sam Jackson Park Road **Flr** 10 **Ste/Space #** _____

☑ **Existing Tenant** ☐ **NEW Tenant** ☐ **1st Tenant in a VACANT space** ☑ **Tenant Name** OHSU

Description of Work Proposed

Addition to Fire Alarm system at new 10th fl Penthouse.

Mechanical Work Proposed _____

Project Valuation $12,000 **Mechanical Valuation** _____

Project Reference # (PR#) /Billing ID # (This is not YOUR Company Job Number) F18-HRC-218

Associated Permit # 19-167746-000-00-FPP (If there is no Associated Permit/Project, RP must sign below)

Responsible Party (RP) Signature for Authorization that project was vetted through them and the PR# is accurate:

RP Name _____ **RP Signature** _____

Building Contractor Hoffman Construction CCB # 28417

Mechanical Contractor _____ CCB # _____

Electrical Contractor Dynalectric CCB # 66793 License # 26-59C

Plumbing Contractor _____ CCB # _____ License # _____

☐ **Building Permit**

No. of Stories _____

Const. Type _____

☑ [N] **Alarms** Required

☑ [N] Smoke Det. Req'd

[Y] [N] Sprinklers Req'd

[Y] [N] Struct. Eng / Calcs Submitted

☐ **Electrical Permit**

Please provide a completed standard electrical permit application form. FAX to 503-823-7425.

☐ **Plumbing Permit**

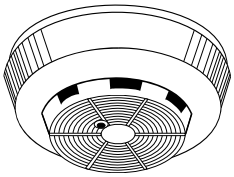
Number of Fixtures _____

Back Flow Devices _____

Water Service (# of Feet) _____

Medical Gas _____

Other _____



FACILITIES PERMIT
APPLICATION FOR PERMIT TO INSTALL
FIRE ALARM SYSTEM
1900 SW 4th Ave. Portland, OR 97201
(503) 823-3718

VALUATION OF WORK: $ $12,000 DATE: 9-27-22

PLANS MUST BE SUBMITTED TO THE FIRE PREVENTION DIVISION AND APPROVED BEFORE INSTALLATION

Location:

Building Name: OHSU HRC Occupied as: Notification Upgrade

IBC Occupancy Classification: _____

Address: HRC 3250 SW Sam Jackson Park Road Portland, OR Zip 97239

Suite #_____ Levels (#) _____

Building/Facilities Permit No.: F18-HRC-218 Appeal No.:_____

Construction Building permit No. 19-167746-000-00-FPP

Installation		Coverage	Alarm type
☐ New	☐ Remove	☐ Total	☒ Central Station
☐ Addition	☐ Repair	☒ Partial	☐ Sprinkler Monitoring
☒ Alteration		☐ Exit way	☐ Other _____

No. Smoke Detectors: 4	No. Strobes:	No. Horns/Strobes: 6	No. Spkrs/Strobes:
No. Heat Detectors:	No. Pull Stations:	No. Auxiliary Panels:	

Description of Work: Addition to Fire Alarm system at new 10th floor mechanical penthouse. Additional scope to existing permit no. 22-137119-000-00-FA previously issued for the 7th floor scope.

Installing Company Information:

Applicant Name: John Mieras

Company Name: Dynalectric

Address: 2225 NW 20th Ave

City, State, Zip: Portland, OR, 97209

Phone/Fax: 503-226-6771

Owner Information:

Name: _____

Phone/Fax: _____

Mail permit to: _____

Address: _____

City, State, Zip: _____

_____ _____ ____/____/____
NAME OF APPLICANT SIGNATURE DATE

_____ _____ ____/____/____
NAME OF INSPECTOR SIGNATURE DATE

APPROVED PERMIT INCLUDES ONLY WORK DESCRIBED ABOVE AND/OR ON PLANS AND SPECIFICATIONS BEARING THE SAME PERMIT NUMBER AND WILL COMPLY WITH ALL APPLICABLE CODES AND ORDINANCES OF THE CITY OF PORTLAND, OREGON.

OHSU HATFIELD RESEARCH CENTER
7TH, 2ND & 10TH FLOOR
FIRE ALARM SYSTEM

Johnson Controls

DRAWING INDEX

Sheet Number	Sheet Title
FA-001	COVER SHEET
FA-101	DEVICE PLACEMENT PLAN PARTIAL 7TH FLOOR UHS
FA-102	DEVICE PLACEMENT PLAN - 2ND FLOOR
FA-103	DEVICE PLACEMENT PLAN - 10TH FLOOR
FA-601	7TH FLOOR CALCULATIONS AND SCHEDULES
FA-602	7TH FLOOR CALCULATIONS AND SCHEDULES
FA-603	2ND FLOOR CALCULATIONS AND SCHEDULES
FA-604	10TH FLOOR CALCULATIONS AND SCHEDULES
FA-701	WIRING TYPICALS
FA-702	WIRING TYPICALS

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-FA

GENERAL NOTES

1. THESE DRAWINGS DEPICT GENERAL LOCATIONS OF LIFE SAFETY EQUIPMENT & FIELD DEVICES. EXACT ROUTING OF CONDUITS IS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
2. SHOULD ANY CONDITIONS EXIST THAT DIFFER FROM WHAT IS INDICATED ON THESE DRAWINGS WHICH CAUSE MAJOR DEVIATIONS IN THE WORK SHOWN, THE CONTRACTOR SHALL CONTACT JOHNSON CONTROLS IN A TIMELY MANNER SO AS NOT TO IMPAIR THE CONSTRUCTION SCHEDULE.
3. CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITING AS REQUIRED TO ACCOMMODATE THE RELOCATION OF EQUIPMENT AND/OR DEVICES WHICH ARE AFFECTED BY ANY AUTHORIZED CHANGE. ALL CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
4. A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
5. THE POWER CIRCUIT TO THE FACP AND TO THE FIRE ALARM POWER SUPPLIES SHALL BE ON A DEDICATED 120V, 20A BRANCH CIRCUIT BREAKER, AND SHALL HAVE A RED MARKING, LOCK-ON PROVISION AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL." THE LOCATION OF THE CIRCUIT DISCONNECT MEANS (CIRCUIT BREAKER) SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
6. UPDATE THE AS-BUILT DRAWING SET DAILY WITH JOB PROGRESS. RETURN THE AS-BUILT DRAWING SET TO JOHNSON CONTROLS NO LATER THAN 7 DAYS AFTER FINAL TEST.
7. THE CONTRACTOR WILL MAINTAIN ALL AREAS OF THE BUILDING IN A NEAT AND WORKMANLIKE MANNER.
8. DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED JOHNSON CONTROLS TECHNICAL REPRESENTATIVE.
9. ANY SMOKE DETECTOR HEAD INSTALLED BEFORE THE BUILDING IS CLEANED AND ACCEPTED SHALL BE COVERED TO PROTECT FROM DUST. ANY FALSE ALARMS DUE TO DIRT CONTAMINATED HEADS SHALL BE THE RESPONSIBILITY OF THE FIRE ALARM INSTALLER.
10. THE FIRE ALARM INSTALLER WILL MAINTAIN THE FIRE RESISTANCE INTEGRITY OF ALL WALL, CEILING, AND ROOF ASSEMBLIES ANY TIME THAT WORK IS NOT ACTIVELY BEING PERFORMED.
11. INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. POWER LIMITED AND NON-POWER LIMITED FIELD WIRING MUST BE INSTALLED WITHIN THE FACP ENCLOSURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPLICABLE ELECTRICAL CODES. REFER TO APPLICABLE CODES & STANDARDS FOR SPECIFIC CODE REFERENCES.
12. ALL WIRING SHALL BE INSTALLED ACCORDING TO APPLICABLE ELECTRICAL CODES.
13. FIRE ALARM CIRCUITS SHALL BE IDENTIFIED IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES. MARK ALL FIRE ALARM WIRES IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODE SECTIONS FOR POWER LIMITED AND NON-POWER LIMITED WIRE.
14 FIRE ALARM CABLE INSTALLED IN DUCTS, PLENUM, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP.
15. FIRE ALARM CABLE INSTALLED IN THE VERTICAL RUNS AND PENETRATING MORE THAN ONE FLOOR OR CABLES INSTALLED IN VERTICAL RUNS IN SHAFTS SHALL BE TYPE FPLR.
16. FIRE ALARM CABLE INSTALLED IN UNDERGROUND CONDUIT OR OTHER WET LOCATIONS SHALL BE UL LISTED FOR WET LOCATIONS.
17. FIRE ALARM CIRCUITS EXTENDING BEYOND ONE BUILDING AND RUN OUTDOORS SHALL BE INSTALLED IN ACCORDANCE APPLICABLE ELECTRICAL CODES, WHERE APPLICABLE.
18. ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
19. ALL SHIELDED WIRE MUST HAVE SHIELD CONTINUITY AT FULL LENGTH OF THE WIRE.
20. ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
21. 120VAC IS NOT PERMITTED IN THE SAME CONDUIT WITH LOW VOLTAGE WIRING.
22. MAINTAIN MAXIMUM CONDUIT FILL RATIO AS PER APPLICABLE ELECTRICAL CODES REQUIREMENTS.
23. EXISTING CONDUITS MAY BE USED BY THE INSTALLATION CONTRACTOR AS DEEMED NECESSARY; HOWEVER, ANY EXISTING CONDUIT WILL BE USED ONLY IF CONDUITS MEET CURRENT STANDARDS AND CODES. JOHNSON CONTROLS MAKES NO STATEMENTS WRITTEN OR VERBAL AS TO THE CONDITION OF EXISTING CONDUITS.

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LEGENDS

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
PANELS					
TPR#	*4100ES TRANSPONDER FIRE ALARM TRANSPONDER PANEL, 120 VAC*	*SIMPLEX*	*4100-9600*	*SIMPLEX CABINET*	*N/A*
FACP	*CONTROL PANEL*	*SIMPLEX*	*4120-8001*		*N/A*
INITIATING DEVICES					
S	ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR W/ STANDARD BASE	SIMPLEX	4098-9714 HEAD	4" OCT, 1-1/2" D	M
			4098-9792 BASE		
	ADDRESSABLE STANDARD HEAT SENSOR W/ STANDARD BASE	SIMPLEX	4098-9733 HEAD	4" OCT, 1-1/2" D	M
			4098-9792 BASE		
SR	ADDRESSABLE DUCT SMOKE DETECTOR W/ RELAY OUTPUT	SIMPLEX	4098-9756	MOUNTS TO DUCTWORK	M
	SAMPLING TUBE, 73"	SIMPLEX	4098-9857		P
MODULES AND RELAYS					
SA	8 AMP RELAY IAM	SIMPLEX	4090-9010	4" SQ. 2-1/8" D W/ DBL. GANG COVER	M
	TRIM PLATE FOR SURFACE MOUNTING	SIMPLEX	4090-9802		R
	ENCAPSULATED RELAY	SIMPLEX	4098-9843	SINGLE GANG 2-1/8" D W/ COVER	R
NOTIFICATION APPLIANCES					
#	ADDRESSABLE MULTI-CANDELA STROBE ,WALL MOUNT, APPLIANCE ONLY, CLEAR LENS	SIMPLEX	49VO-APPLW	SINGLE GANG 1-1/2" D	A
	APPLIANCE COVER, WHITE, FIRE LETTERING	SIMPLEX	49VOC-WWFIRE		
	MOUNTING PLATE, WHITE	SIMPLEX	49MP-AVVOWW		
#W #	ADDRESSABLE MULTI-CANDELA SPEAKER/STROBE ,WALL MOUNT, APPLIANCE ONLY, CLEAR LENS	SIMPLEX	49SV-APPLW	4" SQ. 2-1/8" D	A
	APPLIANCE COVER, WHITE, FIRE LETTERING	SIMPLEX	49SVC-WWFIRE		S
	MOUNTING PLATE, WHITE	SIMPLEX	49MP-SVWW		
#	CONVENTIONAL MULTI-CANDELA HORN/STROBE ,WALL MOUNT, RED, CLEAR LENS, FIRE	WHEELOCK	HSR	SINGLE GANG 2" D	V
MISCELLANEOUS DEVICES					
	FIRE/SMOKE DAMPER	BY OTHERS	BY OTHERS		
	REMOTE TEST STATION	SIMPLEX	2098-9806	SINGLE GANG 2"D	K
10K	END-OF-LINE RESISTOR 10kΩ, 1/2W (EOL)	SIMPLEX	4081-9008		

*** EXISTING EQUIPMENT HAS BEEN SHADED FOR REFERENCE ONLY.

FIRE ALARM WIRE LEGEND

	CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	ACCEPTABLE CABLE TYPES: FPLR	FPLP	THRN	TFRN	OUTDOOR **	C.I.
A	ADDRESSABLE NOTIFICATION	UTP SOLID	14 AWG	60pf/ft. MAX CAPACITANCE; 3 twists/ft. MINIMUM	X	X				
K	REMOTE TEST SWITCH/LED	(2) 2 COND. SOLID	14 AWG		X	X				
M	MAPNET/IDNET	STP SOLID	18 AWG	60µF MAX TOTAL LINE CAPACITANCE	X	X				
Mu	IDNET	UTP SOLID	18 AWG	60µF MAX TOTAL LINE CAPACITANCE	X	X				
P	POWER	2 COND. SOLID	14 AWG		X	X	X	X		
R	RELAY	2 COND. SOLID	14 AWG		X	X	X	X		
S	AUDIO - SPEAKER	UTP SOLID	18 AWG	30pf/ft. MAX CAPACITANCE RECOMMENDED	X	X				
V	VISUAL	2 COND. SOLID	14 AWG		X	X				

CONDUIT SIZE	MAX CONDUCTOR AREA	CONDUIT SIZE	MAX CONDUCTOR AREA
1/2"	0.122 SQ. INCH*	1-1/4"	0.598 SQ.INCH*
3/4"	0.213 SQ.INCH*	1-1/2"	0.814 SQ.INCH*
1"	0.346 SQ.INCH*	2"	1.342 SQ.INCH*

* 40% CONDUIT FILL PER N.E.C. STP = SHIELDED TWISTED PAIR

ITEMS SUCH AS CAPACITANCE BETWEEN CONDUCTORS AND WIRE GAUGE CAN BE CRUCIAL TO THE CIRCUIT DESIGN OF THIS SYSTEM INSTALLATION. THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR SELECTING AND INSTALLING CABLE MANUFACTURER AND MODEL THAT MEETS OR EXCEEDS THE ABOVE REQUIREMENTS. RECOMMENDED CABLE MANUFACTURERS AND MODEL NUMBERS ARE AVAILABLE UPON REQUEST.

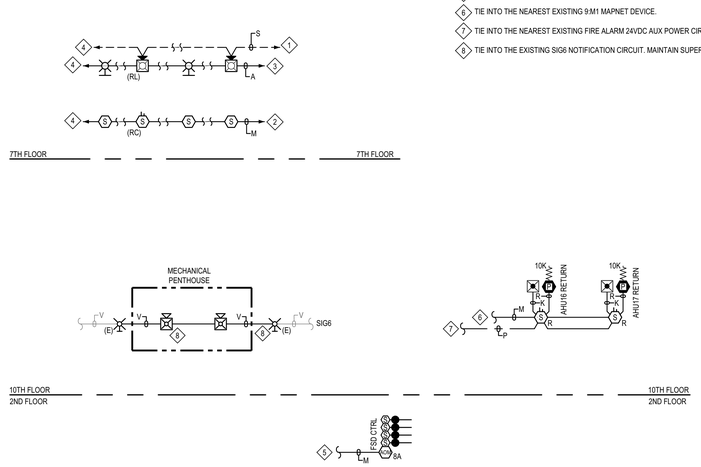
7TH FLOOR RISER DIAGRAM

RISER NOTES:

1. RISER IS A DIAGRAMMATICAL REPRESENTATION OF THE SYSTEM ARCHITECTURE IN BUILDING CROSS SECTION. IT IS NOT INTENDED TO REPRESENT ACTUAL WIRE RUNS, PANEL CONFIGURATIONS OR PENETRATIONS. REFER TO FLOOR PLANS AND PANEL DETAILS FOR CIRCUIT ROUTING AND CONFIGURATION INFORMATION.
2. ALL WIRING SHALL COMPLY WITH APPLICABLE ELECTRICAL CODES. REFER TO 'APPLICABLE CODES & STANDARDS' ON SHEET FA-001 FOR SPECIFIC CODE REFERENCES.
3. DEVICES ARE TYPICAL. SEE FLOOR PLAN FOR QUANTITY, CANDELAS & LOCATIONS.
4. EXISTING DEVICES ARE SHOWN SHADED FOR REFERENCE.

KEY NOTES:

1. EXTEND EXISTING SPEAKER CIRCUIT 90:T2:S2 TO NEW DEVICES. MAINTAIN SUPERVISION.
2. TIE INTO NEAREST EXISTING 90:M3 MAPNET DEVICE.
3. EXTEND EXISTING STROBE CIRCUIT 90:T2:A1:2 TO NEW DEVICES. MAINTAIN SUPERVISION.
4. CLASS 'A' RETURN.
5. TIE INTO THE NEAREST EXISTING 5:M4 MAPNET DEVICE.
6. TIE INTO THE NEAREST EXISTING 9:M1 MAPNET DEVICE.
7. TIE INTO THE NEAREST EXISTING FIRE ALARM 24VDC AUX POWER CIRCUIT.
8. TIE INTO THE EXISTING SIG6 NOTIFICATION CIRCUIT. MAINTAIN SUPERVISION.



APPLICABLE CODES & STANDARDS

JURISDICTIONS WITHIN THE STATE MAY HAVE AMENDMENTS TO THE STATE ADOPTED CODE. CHECK WITH THE LOCAL JURISDICTION AUTHORITY FOR MORE DETAILS.

Oregon Structural Specialty Code, 2019 Edition

Oregon Fire Code, 2019 Edition

Oregon Mechanical Specialty Code, 2019 Edition

Oregon Electrical Specialty Code, 2021 Edition

National Fire Alarm Code (NFPA 72), 2016 Edition

PER THE REQUIREMENTS SET FORTH BY THE CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS) FOR LICENSED HEALTHCARE FACILITIES, THIS PROJECT SHALL BE CONSTRUCTED USING THE SPECIFIC EDITIONS OF CODES AND/OR STANDARDS REFERENCED WITHIN CHAPTER 2 OF THE 2012 EDITION OF NFPA 101. IF CONFLICTS ARISE BETWEEN THE REFERENCED CODES AND/OR STANDARDS AND THE EDITIONS LISTED HEREIN, THE MORE STRINGENT CODE AND/OR STANDARD SHALL PREVAIL.

THE SYSTEM NOTIFICATION FOR THIS PROJECT IS DESIGNED AS A PRIVATE MODE OPERATING SYSTEM FOR STAFF NOTIFICATION PURPOSE PER NFPA 72/ NFPA 101.

OCCUPANCY TYPE(S):
I-2 INSTITUTIONAL GROUP

SPRINKLER PROTECTION:
BUILDING IS FULLY SPRINKLERED

SCOPE OF WORK

MODIFY EXISTING FIRE ALARM SYSTEM: PROVIDING NEW DEVICES, RELOCATE AND DEMO EXISTING DEVICES AS SHOWN ON DRAWINGS.

ALL NEW WIRING TO BE CLASS A.

THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DISCONNECTED OR TAKEN OUT OF SERVICE WITHOUT WRITTEN PERMISSION FROM THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER THE TIMING OF ANY EXISTING FIRE ALARM SYSTEM DEMOLITION WORK.

THIS IS FOR THE WORK SHOWN IN THE AREA OF WORK ON THE 2ND, 7TH AND 10TH FLOOR.

ABBREVIATIONS LEGEND

AC = ABOVE CEILING
AFF = ABOVE FINISHED FLOOR
AHJ = AUTHORITY HAVING JURISDICTION
ALM = ALARM
ANN = ANNUNCIATOR
BMS = BUILDING MANAGEMENT SYSTEM
C = CEILING MOUNTED
CD = CANDELA RATING
DET = DETECTOR
DGP = DATA GATHERING PANEL
E = EXISTING TO REMAIN
EOL = END OF LINE
EPO = EMERGENCY POWER OFF
ER = ELEVATOR RECALL
FAA = FIRE ALARM ANNUNCIATOR
FACP = FIRE ALARM CONTROL PANEL
FATC = FIRE ALARM TERMINAL CABINET
FBO = FURNISHED BY OTHERS
FCC = FIRE COMMAND CENTER
FSD = FIRE SMOKE DAMPER
FTR = FIRE ALARM TRANSPONDER
H = HIGH HUMIDITY
HT = HEIGHT
HVAC = HEATING VENTILATION & AIR CONDITIONING
IMS = INFORMATION MANAGEMENT SYSTEM
MAX = MAXIMUM
MIN = MINIMUM
N/A = NOT APPLICABLE
NAC = NOTIFICATION APPLIANCE CIRCUIT
NDU = NETWORK DISPLAY UNIT
NEC = NATIONAL ELECTRIC CODE
NFPA = NATIONAL FIRE PROTECTION ASSOCIATION
NIC = NOT IN CONTRACT
NPU = NETWORK PROCESSING UNIT
NTS = NOT TO SCALE
PAP = PRE-ACTION PANEL
RC = EXISTING TO REMOVE AND COVER
RD = EXISTING DEVICE TO BE RELOCATED
RL = RELOCATED DEVICE
RR = REMOVE EXISTING & REPLACE WITH NEW
SCC = STATUS COMMAND CENTER
SLC = SIGNALING LINE CIRCUIT
SMK = SMOKE
SUPV = SUPERVISORY
TAC = TRUEALERT ADDRESSABLE CONTROLLER
TOS = TOP OF SHAFT
TRBL = TROUBLE
TS = TAMPER SWITCH
TYP = TYPICAL
UON = UNLESS OTHERWISE NOTED
VCC = VOICE COMMAND CENTER
VT = VALVE TAMPER
W = WATTAGE
W/ = WITH
W/O = WITHOUT
WF = WATERFLOW
WG = WIRE GUARD
WP = WEATHERPROOF
XP = EXPLOSION PROOF

SYSTEM SEQUENCE OF OPERATIONS

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
1 SMOKE SENSOR/DETECTOR	X	X					X	X	X		X	X									X	X	X	X
2 MANUAL PULL STATION	X	X					X	X	X		X	X										X		X
3 DUCT SENSOR/DETECTOR - SUPERVISORY				X	X		X				X		X								X		X	
4 MAIN FLR. ELEV. LOBBY SMOKE DETECTOR	X	X					X	X	X		X	X				X		X			X	X	X	X
5 ELEVATOR LOBBY SMOKE DETECTORS (EXC. MAIN FLR)	X	X					X	X	X		X	X				X	X				X	X	X	X
6 ELEVATOR MECH. ROOM HEAT DETECTOR	X	X					X	X	X		X	X								X		X		X
7 ELEVATOR MECH. ROOM SMOKE DETECTOR	X	X					X	X	X		X	X					X		X		X	X	X	X
8 ELEVATOR SHAFT HEAT DETECTOR	X	X					X	X	X		X	X								X		X		X
9 ELEVATOR SHAFT SMOKE DETECTOR	X	X					X	X	X		X	X					X		X		X	X	X	X
10 ELEVATOR POWER MONITOR				X	X		X				X		X									X		
11 WATERFLOW SWITCH	X	X					X	X	X		X	X										X		X
12 TAMPER SWITCH				X	X		X				X		X									X		
13 FIRE ALARM AC POWER FAILURE						X	X				X			X								X		
14 FIRE ALARM SYSTEM LOW BATTERY						X	X				X			X								X		
15 OPEN CIRCUIT OR GROUND FAULT						X	X				X			X								X		
16 CLASS B NOTIFICATION CIRCUIT (NAC) - SHORT						X	X				X			X								X		

SYSTEM OUTPUTS	CTRL UNIT ANNUNCIATION						NOTIFICATION									FIRE SAFETY CONTROL							CUSTOM CONTROL	
	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE APPROPRIATE LOCATION INDICATOR	ACTUATE ALL AUDIBLE EVACUATION SIGNALS	ACTUATE ALL VISIBLE EVACUATION SIGNALS	UNUSED	DISPLAY CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	UNUSED	RELEASE ELEVATOR FIRE DOORS	MAIN FLOOR ELEVATOR RECALL	ALTERNATE FLOOR ELEVATOR RECALL	ELEVATOR HAT FLASH	ELEVATOR SHUNT TRIP	DAMPER SHUTDOWN	REMOTELY DISPLAY ACTIVE STATUS	SIGNAL TO SMOKE CONTROL	EGRESS CONTROL
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								

JOHNSON CONTROLS CONTACTS

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CURT.HINCK@JCI.COM
PHONE:503-683-9000

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NICET LEVEL IV #126987

Scheduling
MIRANDA CASTLE
MIRANDA.CASTLE@JCI.COM
PHONE:503-683-9000

PROJECT DIRECTORY

Site
OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
PORTLAND, OR 97239

Johnson Controls District - 448
6305 SW ROSEWOOD ST, SUITE A
LAKE OSWEGO, OR 97035
PHONE: 503-683-9000
FAX: 503-675-6521
SERVICE: 503-683-9001

Owner
OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
PORTLAND, OR 97239

Installer
DYNALECTRIC
2225 NW 20TH AVE
PORTLAND, OR 97209

DEVICE TAG LEGEND

1:T2:A2-1(E1:1)

PANEL DESIGNATOR
- FA: = FACP (NON-NETWORK)
- #: = NODE NUMBER
- T#: = TRANSPONDER NUMBER
- #:T# = NODE:TRANSPONDER NUMBER
- N#: = NAC EXTENDER NUMBER

CIRCUIT DESIGNATOR
- A# = IDNAC[1] CIRCUIT NUMBER
- D# = DOOR HOLDER CIRCUIT NUMBER
- F# = FIRE PHONE CIRCUIT
- H# = AUDIBLE (HORN) CIRCUIT NUMBER
- M# = IDNET LOOP NUMBER
- P# = POWER CIRCUIT NUMBER
- S# = SPEAKER CIRCUIT NUMBER
- V# = VISUAL CIRCUIT NUMBER
- Z# = ZONE NUMBER

DEVICE NUMBER

BRANCH / ISOLATED LOOP DESIGNATOR:
- (L#) = IDNET ISOLATED LOOP NUMBER
- (#) = IDNAC BRANCH NUMBER
- (E#:#) = EPR[2] NUMBER:BRANCH NUMBER

1. IDNAC = ADDRESSABLE NOTIFICATION CIRCUIT
2. EPR = ENHANCED POWER REPEATER

Johnson Controls
DISTRICT - 448
6305 SW ROSEWOOD ST, SUITE A
LAKE OSWEGO, OR 97035
SERVICE: 503-683-9001
PHONE: 503-683-9000
FAX: 503-675-6521

BRIAN BOWLSBY
LICENSE #4771LEA
EXPIRES 10/1/2023

OHSU HATFIELD RESEARCH CENTER
7TH, 2ND & 10TH FLOOR
OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
PORTLAND, OR 97239

Revisions shown with alpha symbol

ISSUE LOG: MARK	DATE	CAD	CHK	DESCRIPTION

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448.650212573

JOHNSON CONTROLS © 2022

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
COVER SHEET

FA-001

FILE PATH: C:\Users\magnett\OneDrive - Johnson Controls\OHSU HRC & HRB\FA-001.dwg
LAST SAVED BY: AMAGNEA
LAST PRINTED: 5/31/2022 9:31:10 AM
30" X 42" - Arch E1 Size

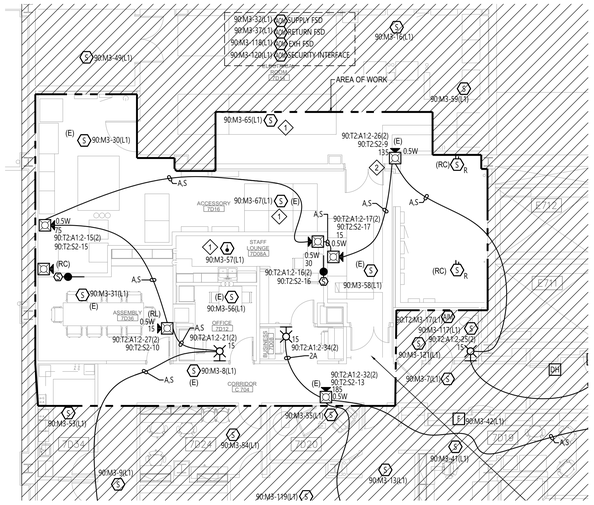
CLASS "A" REQUIREMENTS (NFPA 72 – 2016, 12.3.8*)
12.3.8* CLASS A AND CLASS X CIRCUITS USING PHYSICAL CONDUCTORS (E.G., METALLIC, OPTICAL FIBER) SHALL BE INSTALLED SUCH THAT THE PRIMARY AND REDUNDANT, OR OUTGOING AND RETURN CONDUCTORS, EXITING FROM AND RETURNING TO THE CONTROL UNIT, RESPECTIVELY, ARE ROUTED SEPARATELY. 12.3.8.1 THE OUTGOING AND RETURN (REDUNDANT) CIRCUIT CONDUCTORS SHALL BE PERMITTED 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 10 FT (3.0 M) WHERE THE OUTGOING AND RETURN CONDUCTORS ENTER OR EXIT THE INITIATING DEVICE, NOTIFICATION APPLIANCE, OR CONTROL UNIT ENCLOSURES. (2) SINGLE DROPS INSTALLED IN THE RACEWAY TO INDIVIDUAL DEVICES OR APPLICANCES. (3) IN A SINGLE ROOM NOT EXCEEDING 1000 FT^2 (93 M^2) IN AREA, A DROP INSTALLED IN THE RACEWAY TO MULTIPLE DEVICES OR APPLIANCES THAT DOES NOT INCLUDE ANY EMERGENCY CONTROL FUNCTION DEVICES.

GENERAL NOTES:

1. ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
2. TAP ALL SPEAKERS AT 0.5W UNLESS NOTED OTHERWISE.
3. SET ALL SPEAKER VOLTAGE JUMPERS TO THE 70.7V SETTING.
4. ALL NOTIFICATION APPLIANCE CANDELA INTENSITY PLUGS SHALL RETAIN THEIR FACTORY SETTING OF "FACP" UNLESS OTHERWISE DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
5. DO NOT CHANGE DEFAULT APPLIANCE CONFIGURATION SWITCH SETTINGS ON ADDRESSABLE A/V DEVICES (CFIG1). REFER TO DEVICE DETAILS AND INSTALLATION INSTRUCTIONS FOR MORE INFORMATION.
6. THE DEVICE ADDRESSES INDICATED ON THESE DRAWINGS ARE AN ALPHANUMERIC DESCRIPTION OF WHICH CIRCUIT THE DEVICE IS LOCATED ON. DEVICES MAY BE ASSIGNED A DIFFERENT NUMBER WITHIN THE PANEL PROGRAM. CONSULT WITH A JOHNSON CONTROLS TECHNICIAN BEFORE APPLYING A PHYSICAL LABEL TO ANY DEVICES.
7. EXISTING AREA NOT IN SCOPE OF WORK IS SHADED FOR REFERENCE ONLY.

KEYNOTES:

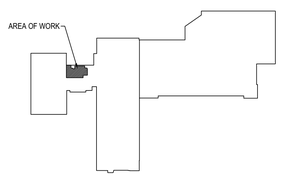
1. TECHNICIAN TO VERIFY ADDRESS ON SITE.
2. EXTEND EXISTING CIRCUITS 90:T2:A1:2 AND 90:T2:S2 AS SHOWN ON DRAWINGS.



SCOPE ON THIS SHEET PERMITTED UNDER 22□ 137119□ 000□ 00

DEVICE PLACEMENT PLAN PARTIAL 7TH FLOOR UHS

SCALE:1/8" = 1'-0"



KEYPLAN

SCALE:N.T.S

SCALE: 1/8" = 1'-0" IN FEET
0 4' 8' 16'

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188531-000-00-FA

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30" X 42" - Arch E1 Size

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BRIAN BOWLSBY
LICENSE #4771LEA
EXPIRES 10/1/2023

OHSU HATFIELD RESEARCH CENTER 7TH, 2ND & 10TH FLOOR

OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
PORTLAND, OR 97239

ISSUE LOG				
MARK	DATE	CAD	CHK	DESCRIPTION

Revisions shown with ⚠ symbol

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448:650212573

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SYSTEM:
FIRE ALARM SYSTEM

SHEET:
DEVICE PLACEMENT PLAN PARTIAL 7TH FLOOR UHS

FA-101

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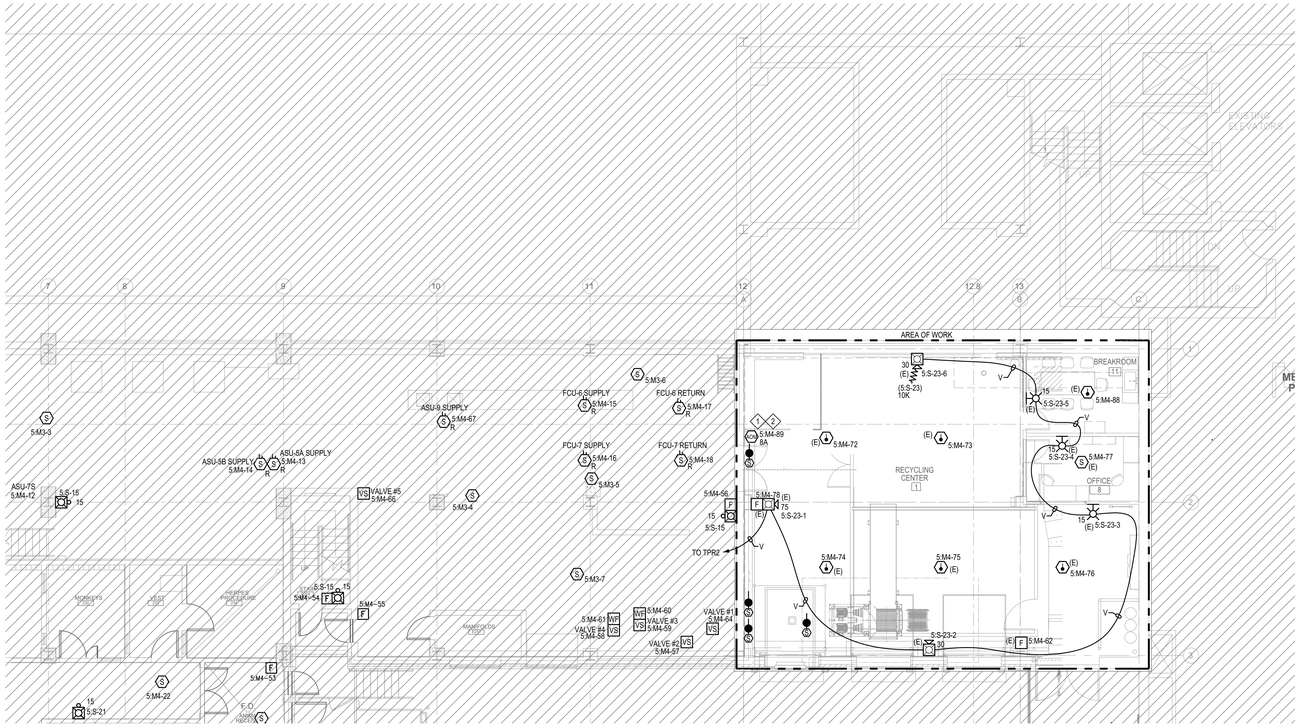
GENERAL NOTES:

1. ALL CEILINGS ARE ASSUMED TO BE 10' A.F.F., SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
2. EXISTING AREA NOT IN SCOPE OF WORK IS SHADED FOR REFERENCE ONLY.

KEYNOTES:

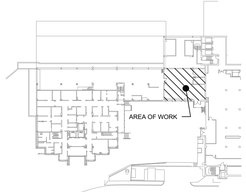
1. CONTROL RELAY FOR FSD CONTROL.
2. TIE INTO THE NEAREST EXISTING 5:M4 MAPNET DEVICE.



DEVICE PLACEMENT PLAN - 2ND FLOOR

SCALE:1/8" = 1'-0"

SCALE: 1/8" = 1'-0" IN FEET
0 4' 8' 16'



KEYPLAN

SCALE:N.T.S.

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-FA

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36" x 42" Arch E1 Scan

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CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448-650212573

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SYSTEM:
FIRE ALARM SYSTEM

SHEET:
DEVICE PLACEMENT PLAN - 2ND FLOOR

FA-102

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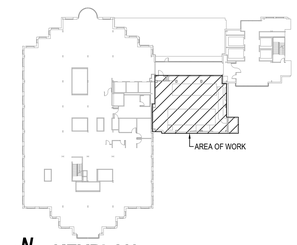
KEYNOTES:

1. REMOTE TEST SWITCH SHALL BE MOUNTED IN A VISIBLE, ACCESSIBLE LOCATION. WIRE LENGTH NOT TO EXCEED 250' FROM CONTROLLED DETECTOR. SEE WIREDETAIL FOR ADDITIONAL WIRING INFORMATION.
2. LOCATE DUCT DETECTOR RELAY WITHIN 3 ft OF CONTROLLED DEVICE. SEE WIRING DETAIL FOR ADDITIONAL INFORMATION.
3. TIE INTO THE EXISTING SIG6 NOTIFICATION CIRCUIT. MAINTAIN SUPERVISION.
4. TIE INTO THE NEAREST EXISTING 9.M1 MAPNET DEVICE.

DEVICE PLACEMENT PLAN - 10TH FLOOR

SCALE:1/8" = 1'-0"

SCALE:1/8" = 1'-0" IN FEET 0 4' 8' 16'



KEYPLAN

SCALE:N.T.S.

City Of Portland
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Date: 10/03/22
Permit #: 22-188521-000-00-FA

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PORTLAND, OR 97239

ISSUE LOC:				
MARK	DATE	CAD	CHK	DESCRIPTION

Revisions shown with ⚠ symbol

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448:650212573

JOHNSON CONTROLS © 2022

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
DEVICE PLACEMENT PLAN - 10TH FLOOR

FA-103

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4100es XPDR Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4100-9600	1	**BASIC TRANSPONDER** *	0.0870	0.0870	0.0870	0.0870
4100-5325	1	ENHANCED POWER SUPPLY, 3 CHANNELS, 120V	0.1250	0.1250	0.2200	0.2200
4100-0622	1	DIGITAL AUDIO RISER MODULE	0.0700	0.0700	0.0700	0.0700
4100-3110	2	IDNet/2+2 MODULE - UP TO 250 DEVICES 4 ISOLATED LOOPS *	0.0500	0.1000	0.1000	0.2000
4100-6103	3	DUAL CLASS A ADDRESSABLE INTERFACE, DCAI	0.0083	0.0249	0.0185	0.0555
4100-1329	1	DIGITAL 100W AMP,SNAC,120VAC,70V	0.0850	0.0850	3.8000	3.8000
4100-1249	1	100 WATT CLASS A ADAPTER	0.0010	0.0010	0.0600	0.0600
		Panel Totals		**0.4929**		**4.4925**
IDNet Addressable Devices (SLC)						
4099-9004	12	ADDRESSABLE SINGLE ACTION MANUAL STATION *	Constant current draw of .8mA standby and 1mA alarm per address used. Devices requiring additional current are accounted for in the section labeled "Miscellaneous Peripheral Devices Requiring Additional System Power".			
4090-9001	16	IDNET SUPERVISED IAM *				
4090-9002	52	IDNET RELAY IAM *				
4098-9714	171	TRUEALARM PHOTO SMOKE SENSOR				
4098-9734	6	HIGH TEMP HEAT SENSOR *				
4098-9756	2	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT *				
4098-9792	155	TRUEALARM SENSOR BASE *				
4098-9794	6	TRUEALARM SENSOR SOUNDER BASE *				
4098-9780	16	TRUEALARM 2 WIRE RELAY SENSOR BASE *				
Miscellaneous Peripheral Devices That Require (Additional) System Power						
4098-9843	2	ENCAPSULATED RELAY PAM SD	0.0000	0.0000	0.0150	0.0300
4098-9756	2	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT	0.0030	0.0060	0.0150	0.0300
4098-9794	6	TRUEALARM SENSOR SOUNDER BASE	0.0000	0.0000	0.0200	0.1200
4098-9860	16	2-WIRE RELAY FOR USE WITH 4098-9780 SENSOR BASE	0.0000	0.0000	0.0000	0.0000
4603-9101	4	SERIAL LCD ANNUNCIATOR	0.0850	0.2600	0.1400	0.5600
Notification Appliances		**Setting**				
49SV-APPLW	2	S/V APPLIANCE ONLY, WALL MT 110	0.0008	0.0016	0.1320	0.2640
49SV-APPLW	1	S/V APPLIANCE ONLY, WALL MT 135	0.0008	0.0008	0.1600	0.1600
49SV-APPLW	14	S/V APPLIANCE ONLY, WALL MT 15	0.0008	0.0112	0.0470	0.6580
49SV-APPLW	2	S/V APPLIANCE ONLY, WALL MT 185	0.0008	0.0016	0.2080	0.4160
49SV-APPLW	7	S/V APPLIANCE ONLY, WALL MT 30	0.0008	0.0056	0.0570	0.3990
49SV-APPLW	10	S/V APPLIANCE ONLY, WALL MT 75	0.0008	0.0080	0.1000	1.0000
49VO-APPLW	35	VO APPLIANCE ONLY WALL MT 15	0.0008	0.0280	0.0470	1.6450
49VO-APPLW	6	VO APPLIANCE ONLY WALL MT 30	0.0008	0.0048	0.0570	0.3420
49VO-APPLW	1	VO APPLIANCE ONLY WALL MT 75	0.0008	0.0008	0.1000	0.1000
		Peripheral Totals		**0.3264**		**5.7240**
		Added Current for EPS Conversion of 24 to 29 Volt IDNac Devices		**0.0000**		**2.8415**
		RUI Totals 4		**0.0140**		**0.0140**
		Address Totals 259 Addresses		**0.2072**		**0.2590**
		System Totals*:	**Standby**	**1.0425**	**Alarm**	**13.3310**

*** Device Address current draw included below (See Additional Current Draws):**

2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1)		Standby Current	Standby Total	Alarm Current	Alarm Total
Select ALL Power Supplies on this battery set:					
EPS-1			0.7363		6.4165
Amp-1			0.0850		3.8000
	Sub Total		**0.8213**		**10.2165**
Additional Current Draws:					
IDNac Current Boost for 29vdc Regulated Output			0.0000		2.8415
RUI Connector Peripheral Devices	4	x 0.0035	= 0.0140	x 0.0035	= 0.0140
MAPNET/IDNet Device Address Communication Current	259	x 0.000800	= 0.2072	x 0.001000	= 0.2590
	Sub Total		**1.0425**		**13.3310**
Spare addressable point capacity 0%	0	x 0.0008	= 0.0000	x 0.001	= 0.0000
	Total		**1.0425**		**13.3310**
Standby Time = 4 Hrs		x 1.0425	= 4.1700 Standby Ah		
Alarm Time = 15 Min		0.25 x 13.331	= 3.3327 Alarm Ah		
			7.5027		
Additional Spare Battery Capacity = 0%		+	0.0000		
			7.5027		
Battery Discharge Factor = 20%		+	1.5005		
Minimum Battery Required 2081-9274 10AH (2x)			9.0033		
Battery Supplied 2081-9278 33AH (2x)					

*** System Totals represent total system current requirements. Those currents may be distributed between multiple battery sets or power supplies as shown above.**

**** IDNac Current Boost formula: ((29.5 * IDNac Alarm Current) / .92) / 20.4 = Adjusted Current**
DC-DC Converter Output = 29.5vdc: Terminal Output is 29vdc due to 0.5vdc internal loss.
Converter Worst Case efficiency is 92%. 20.4vdc represents battery output in 93% depleted state

City of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-FA

IDNET CHANNEL 90:M3 Address	Device Type	Point Type	Location Description		1	2	3	4	5	6	7	8	9
			ADDRESSES IN USE: 132 (52.8%) | SPARE ADDRESSES: 118 (47.2%)		**SWITCH SETTINGS**								
90:M3-1(L1)	PHOTO	SMOKE	OSH 7D CORR BY 7D01	90:3-1	X							ON	
90:M3-2(L1)	ADRPUL	PULL	OSH 7D WING ELEV LOBBY	90:3-2		X						ON	
90:M3-3(L1)	PHOTO	SMOKE	OSH 7D WING ELEV LOBBY	90:3-3	X	X						ON	
90:M3-4(L1)	PHOTO	SMOKE	OSH 7D CORR BY RECEPTION 7D03	90:3-4			X					ON	
90:M3-5(L1)	PHOTO	SMOKE	OSH 7D CLEAN STORAGE RM 7D28	90:3-5	X		X					ON	
90:M3-6(L1)	IAM	SUPERV	OSH 7D06 HRC CRITICAL BRANCH ATS	90:3-6		X	X					ON	
90:M3-7(L1)	PHOTO	SMOKE	OSH 7D CORR BY 7D04	90:3-7	X	X	X					ON	
90:M3-8(L1)	PHOTO	SMOKE	OSH 7D CORR BY 7D16	90:3-8				X				ON	
90:M3-9(L1)	PHOTO	SMOKE	OSH 7D CORR BY 7D36	90:3-9	X			X				ON	
90:M3-10(L1)	ADRPUL	PULL	OSH 7D SW STAIRWELL/FIRE EXIT	90:3-10		X		X				ON	
90:M3-11(L1)	PHOTO	SMOKE	OSH 7D SW STAIRWELL/FIRE EXIT	90:3-11	X	X		X				ON	
90:M3-12(L1)	PHOTO	SMOKE	OSH 7D CORR BY 7D35	90:3-12		X	X					ON	
90:M3-13(L1)	PHOTO	SMOKE	OSH 7D CORR BY 7D20	90:3-13	X		X	X				ON	
90:M3-14(L1)						X	X	X				ON	
90:M3-15(L1)					X	X	X	X				ON	
90:M3-16(L1)	PHOTO	SMOKE	OSH 7D ELECTRICAL RM 7D14 WEST	90:3-16				X				ON	
90:M3-17(L1)	IAM	SUPERV	OSH 7D08 HRC LIFE SAFETY BRANCH	90:3-17	X			X				ON	
90:M3-18						X		X				ON	
90:M3-19					X	X		X				ON	
90:M3-20							X	X				ON	
90:M3-21					X		X	X				ON	
90:M3-22						X	X	X				ON	
90:M3-23					X	X	X	X				ON	
90:M3-24							X	X				ON	
90:M3-25						X		X				ON	
90:M3-26							X	X				ON	
90:M3-27(L1)	IAM	SUPERV	OSH 7D08 HRC EQUIP BRANCH ATS	90:3-27	X	X		X				ON	
90:M3-28							X	X				ON	
90:M3-29(L2)	RIAM	RELAY	OSH 7A ELEV A SMOKE CURTAIN	90:3-29	X		X	X				ON	
90:M3-30(L1)	PHOTO	SMOKE	OSH 7D ACCESSORY 7D16 WEST	90:3-30		X	X	X				ON	
90:M3-31(L1)	PHOTO	SMOKE	OSH 7D ASSEMBLY 7D36	90:3-31	X	X	X	X				ON	
90:M3-32(L1)	RIAM	RELAY	OSH 7D FSD SUPPLY CONTROL 7D14	90:3-32					X			ON	
90:M3-33(L1)	PHOTO	SMOKE	OSH 7D BY STAIRWELL/FIRE EXI	90:3-33	X				X			ON	
90:M3-34(L1)	ADRPUL	PULL	OSH 7D AT STAIRWELL/FIRE EXIT	90:3-34		X			X			ON	
90:M3-35					X	X			X			ON	
90:M3-36						X			X			ON	
90:M3-37(L1)	RIAM	RELAY	OSH 7D FSD RETURN CONTROL 7D14	90:3-37	X		X		X			ON	
90:M3-38(L1)	IAM	SUPERV	HRC ATC-CB2 7D16 POWER MONITOR	90:3-38		X	X		X			ON	
90:M3-39(L1)	IAM	SUPERV	HRC ATC-CB3 7D16 GROUND FAULT	90:3-39	X	X	X		X			ON	
90:M3-40(L1)	HEAT	HEAT	OSH 7D HOUSEKEEPING 7D01	90:3-40			X	X	X			ON	
90:M3-41(L1)	PHOTO	SMOKE	OSH 7D RECEPTION RM 7D19	90:3-41	X			X	X			ON	
90:M3-42(L1)	ADRPUL	PULL	OSH 7D RECEPTION RM 7D19	90:3-42		X		X	X			ON	
90:M3-43(L1)	PHOTO	SMOKE	OSH 7D OPERATORY RM 7D23	90:3-43	X	X		X	X			ON	
90:M3-44(L1)	PHOTO	SMOKE	OSH 7D OPERATORY RM 7D25	90:3-44			X	X	X			ON	
90:M3-45(L1)	PHOTO	SMOKE	OSH 7D MINOR PROCEDURE RM 7D27	90:3-45	X		X	X	X			ON	
90:M3-46(L1)	PHOTO	SMOKE	OSH 7D OPERATORY RM 7D29	90:3-46		X	X	X	X			ON	
90:M3-47(L1)	PHOTO	SMOKE	OSH 7D OPERATORY RM 7D31	90:3-47	X	X	X	X	X			ON	
90:M3-48(L1)	PHOTO	SMOKE	OSH 7D OPERATORY RM 7D33	90:3-48				X	X			ON	
90:M3-49(L1)	PHOTO	SMOKE	OSH 7D PGE ELECT RM 7D14A	90:3-49	X			X	X			ON	
90:M3-50(L1)	PHOTO	SMOKE	OSH 7D RESTROOM 7D30	90:3-50		X		X	X			ON	
90:M3-51(L1)	PHOTO	SMOKE	OSH 7D MINOR PROCEDURE RM 7D32	90:3-51	X	X		X	X			ON	
90:M3-52(L1)	PHOTO	SMOKE	OSH 7D DENTAL EQUIPMENT RM 7D36	90:3-52		X		X	X			ON	
90:M3-53(L1)	PHOTO	SMOKE	OSH 7D DENTAL EQUIPMENT RM 7D34	90:3-53	X		X	X	X			ON	
90:M3-54(L1)	PHOTO	SMOKE	OSH 7D ATTENDING WORK AREA 7D24	90:3-54		X	X	X	X			ON	
90:M3-55(L1)	PHOTO	SMOKE	OSH 7D IMAGING RM 7D20	90:3-55	X	X	X	X	X			ON	
90:M3-56(L1)	PHOTO	SMOKE	OSH 7D OFFICE 7D12	90:3-56			X	X	X			ON	
90:M3-57(L1)	HEAT	HEAT	OSH 7D STAFF LOUNGE 7D08	90:3-57	X		X	X	X			ON	
90:M3-58(L1)	PHOTO	SMOKE	OSH 7D ACCESSORY 7D16 E	90:3-58		X	X	X	X			ON	
90:M3-59(L1)	PHOTO	SMOKE	OSH 7D ELECTRICAL RM 7D14 EAST	90:3-59	X	X	X	X	X			ON	
90:M3-60(L2)	PHOTO	SMOKE	OSH 7A ELEV A LOBBY	90:3-60		X	X	X	X			ON	
90:M3-61(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A62	90:3-61	X		X	X	X			ON	
90:M3-62(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A58	90:3-62		X	X	X	X			ON	
90:M3-63(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A50	90:3-63	X	X	X	X	X			ON	
90:M3-64(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A46	90:3-64						X		ON	
90:M3-65(L2)	PHOTO	SMOKE	OSH 7D ELECTRICAL RM 7D14	90:3-65	X					X		ON	
90:M3-66(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A32	90:3-66		X				X		ON	
90:M3-67(L2)	PHOTO	SMOKE	OSH 7D ACCESSORY 7D16	90:3-67	X	X				X		ON	
90:M3-68(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A20	90:3-68			X			X		ON	
90:M3-69(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A14	90:3-69	X		X			X		ON	
90:M3-70(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A08	90:3-70		X	X			X		ON	
90:M3-71(L2)	PHOTO	SMOKE	OSH 7A CORR BY RM 7A02	90:3-71	X	X	X			X		ON	
90:M3-72								X		X		ON	
90:M3-73(L2)	PHOTO	SMOKE	OSH 7A64 EQUIPMENT ROOM	90:3-73	X			X		X		ON	
90:M3-74(L2)	RPHOTO	SMOKE	OSH 7A62 PATIENT ROOM	90:3-74		X		X		X		ON	
90:M3-75(L2)	RPHOTO	SMOKE	OSH 7A58 PATIENT ROOM	90:3-75	X	X		X		X		ON	
90:M3-76(L2)	RPHOTO	SMOKE	OSH 7A54 PATIENT ROOM	90:3-76			X	X		X		ON	
90:M3-77(L2)	RPHOTO	SMOKE	OSH 7A50 PATIENT ROOM	90:3-77	X		X	X		X		ON	
90:M3-78(L2)	RPHOTO	SMOKE	OSH 7A46 PATIENT ROOM	90:3-78		X	X	X		X		ON	
90:M3-79(L2)	RPHOTO	SMOKE	OSH 7A40 PATIENT ROOM	90:3-79	X	X	X	X		X		ON	
90:M3-80(L2)	RPHOTO	SMOKE	OSH 7A36 PATIENT ROOM	90:3-80				X		X		ON	
90:M3-81(L2)	RPHOTO	SMOKE	OSH 7A32 PATIENT ROOM	90:3-81	X			X		X		ON	
90:M3-82(L2)	RPHOTO	SMOKE	OSH 7A24 PATIENT ROOM	90:3-82		X		X		X		ON	
90:M3-83(L2)	RPHOTO	SMOKE	OSH 7A20 PATIENT ROOM	90:3-83	X	X		X		X		ON	
90:M3-84(L2)	RPHOTO	SMOKE	OSH 7A18 PATIENT ROOM	90:3-84			X	X		X		ON	
90:M3-85(L2)	RPHOTO	SMOKE	OSH 7A14 PATIENT ROOM	90:3-85	X		X	X		X		ON	
90:M3-86(L2)	RPHOTO	SMOKE	OSH 7A12 PATIENT ROOM	90:3-86		X	X			X		ON	
90:M3-87(L2)	RPHOTO	SMOKE	OSH 7A08 PATIENT ROOM	90:3-87	X	X	X			X		ON	
90:M3-88(L2)	RPHOTO	SMOKE	OSH 7A06 PATIENT ROOM	90:3-88			X	X		X		ON	
90:M3-89(L2)	RPHOTO	SMOKE	OSH 7A02 PATIENT ROOM	90:3-89	X		X	X		X		ON	
90:M3-90(L2)	PHOTO	SMOKE	OSH 7A03 LOW VOLTAGE ROOM	90:3-90		X	X	X		X		ON	
90:M3-91(L2)	PHOTO	SMOKE	OSH 7A09 SOILED HOLDING ROOM	90:3-91	X	X		X		X		ON	
90:M3-92(L2)	PHOTO	SMOKE	OSH 7A19 NOURISH/CLEAN UTIL RM	90:3-92			X	X		X		ON	
90:M3-93(L2)	PHOTO	SMOKE	OSH 7A31 MEDS/SUPPLY RM	90:3-93	X		X	X		X		ON	
90:M3-94(L2)	ADRPUL	PULL	OSH 7A STAIR S702	90:3-94		X	X	X		X		ON	
90:M3-95					X	X	X	X		X		ON	
90:M3-96									X	X		ON	
90:M3-97					X				X	X		ON	
90:M3-98(L2)	RPHOTO	DUCT	OSH 7A64 EQUIPMENT ROOM	90:3-98		X			X	X		ON	
90:M3-99					X	X			X	X		ON	
90:M3-100							X		X	X		ON	
90:M3-101(L2)	RIAM	RELAY	OSH 7B SUP FSD CNTRL IN 7B50	90:3-101	X		X		X	X		ON	
90:M3-102						X	X		X	X		ON	
90:M3-103					X	X	X		X	X		ON	
90:M3-104(L2)	HEAT	HEAT	OSH 7A09A HOUSEKEEPING	90:3-104			X	X	X	X		ON	
90:M3-105(L2)	PHOTO	SMOKE	OSH 7A17 WORK AREA	90:3-105	X		X	X	X	X		ON	
90:M3-106(L2)	PHOTO	SMOKE	OSH 7A13 NURSE STATION	90:3-106		X		X	X	X		ON	
90:M3-107(L2)	ADRPUL	PULL	OSH 7A13 NURSE STATION	90:3-107	X	X		X		X	X	ON	
90:M3-108(L2)	PHOTO	SMOKE	OSH 7A59 RESTROOM	90:3-108			X	X		X	X	ON	
90:M3-109(L2)	PHOTO	SMOKE	OSH 7A11 RESTROOM	90:3-109	X		X	X		X	X	ON	
90:M3-110(L1)	RIAM	RELAY	OSH 7A SUPPLY FSD(7B4)	90:3-110		X	X	X		X	X	ON	
90:M3-111(L1)	RIAM	RELAY	OSH 7A RETURN FSD(7B4)	90:3-111	X	X	X	X		X	X	ON	
90:M3-112(L1)	RIAM	RELAY	OSH 7A EXHAUST FSD(7B4)	90:3-112				X	X	X	X	ON	
90:M3-113(L1)	RIAM	RELAY	OSH 7A ISOLATION FSD(7B4)	90:3-113	X			X	X	X	X	ON	
90:M3-114(L1)	PHOTO	SMOKE	OSH 7B4 ELECTRIC RM	90:3-114		X		X	X	X	X	ON	
90:M3-115(L2)	PHOTO	SMOKE	OSH 7A05 MANAGERS OFFICE	90:3-115	X	X		X	X	X	X	ON	
90:M3-116(L2)	PHOTO	SMOKE	OSH 7A65 SHARED OFFICE	90:3-116			X	X	X	X	X	ON	
90:M3-117(L2)	PHOTO	SMOKE	OSH 7D RESTROOM 7D04	90:3-117	X		X	X	X	X	X	ON	
90:M3-118(L2)	RIAM	RELAY	OSH 7D EXH FSD ELECT RM 7D14	90:3-118		X	X	X	X	X	X	ON	
90:M3-119(L1)	PHOTO	SMOKE	OSH 7D RESIDENT WORK AREA 7D26	90:3-119	X	X	X		X	X	X	ON	
90:M3-120(L1)	RIAM	RELAY	OSH 7D SECURITY INTERFACE 7D14	90:3-120				X	X	X	X	ON	
90:M3-121(L1)	PHOTO	SMOKE	OSH 7D TELECOM ROOM 7D06	90:3-121	X			X	X	X	X	ON	
90:M3-122						X		X	X	X	X	ON	
90:M3-123					X	X		X	X	X	X	ON	
90:M3-124						X	X	X	X	X	X	ON	
90:M3-125					X		X	X	X	X	X	ON	

NOTE: THE LABELS SHOWN ABOVE WILL BE USED FOR PROGRAMMING PURPOSES.
THE LABELS ARE BASED UPON INFORMATION SHOWN ON THE ARCHITECTURAL DRAWINGS.
ANY CHANGES TO THESE LABELS MUST BE NOTED ON THE SUBMITTAL REVIEW, PRIOR TO PROGRAMMING.
POINTS SHOWN IN ITALIC TEXT REFER TO EXISTING DEVICES.

IDNET CHANNEL 90:M3 Address	Device Type	Point Type	Location Description		1	2	3	4	5	6	7	8	9
			ADDRESSES IN USE: 132 (52.8%) | SPARE ADDRESSES: 118 (47.2%)		**SWITCH SETTINGS**								
90:M3-126						X	X	X	X	X	X	ON	
90:M3-127					X	X	X	X	X	X	X	ON	
90:M3-128											X	ON	
90:M3-129(L1)	PHOTO	SMOKE	OSH 7D WING ELEV LOBBY(PLENUM)	90:3-129	X						X	ON	
90:M3-130(L1)	IAM	SO	OSH 7D AT STAIRWELL/TAMPER	90:3-130		X					X	ON	
90:M3-131(L1)	IAM	WATER	OSH 7D AT STAIRWELL/WATER	90:3-131	X	X					X	ON	
90:M3-132(L1)	RIAM	RELAY	OSH 7B ELEV B SMOKE CURTAINS	90:3-132			X				X	ON	
90:M3-133(L1)	ADRPUL	PULL	OSH 7B WING LOBBY BY 7B50	90:3-133	X		X				X	ON	
90:M3-134(L1)	PHOTO	SMOKE	OSH 7B HALL BY 7B50	90:3-134		X	X				X	ON	
90:M3-135(L1)	PHOTO	SMOKE	OSH 7B CHILDRENS WAITING RM	90:3-135	X	X	X				X	ON	
90:M3-136(L1)	PHOTO	SMOKE	OSH 7B WAITING RM EAST 7B30	90:3-136				X			X	ON	
90:M3-137(L1)	PHOTO	SMOKE	OSH 7B30A CONFERENCE RM	90:3-137	X			X			X	ON	
90:M3-138(L1)	PHOTO	SMOKE	OSH 7B01 STAFF LOUNGE	90:3-138		X		X			X	ON	
90:M3-139(L1)	PHOTO	SMOKE	OSH 7B FAMILY RM 7B30D	90:3-139	X	X		X			X	ON	
90:M3-140(L1)	PHOTO	SMOKE	OSH 7B WAITING RM WEST 7B30	90:3-140			X	X			X	ON	
90:M3-141(L1)	PHOTO	SMOKE	OSH 7B FAMILY RM 7B30C	90:3-141	X		X	X			X	ON	
90:M3-142(L1)	PHOTO	SMOKE	OSH 7B FAMILY RM 7B30B	90:3-142		X	X	X			X	ON	
90:M3-143(L1)	SPHOTO	SMOKE	OSH 7B IN RM 7B16A	90:3-143	X	X	X	X			X	ON	ON
90:M3-144(L1)	PHOTO	SMOKE	OSH 7B HALL BY 7B17	90:3-144				X			X	ON	
90:M3-145(L1)	PHOTO	SMOKE	OSH 7B HALL BY 7B13	90:3-145	X			X			X	ON	
90:M3-146(L1)	PHOTO	SMOKE	OSH 7B HALL BY 7B12 BY DOORS	90:3-146		X		X			X	ON	
90:M3-147(L1)	PHOTO	SMOKE	OSH 7B05 IDF RM	90:3-147	X	X		X			X	ON	
90:M3-148(L1)	PHOTO	SMOKE	OSH 7B BY RM 7B04	90:3-148			X	X			X	ON	
90:M3-149(L1)	PHOTO	SMOKE	OSH 7B HALL BY 7B59	90:3-149	X		X	X			X	ON	
90:M3-150(L1)	IAM	SO	OSH 7B WING TAMPER	90:3-150		X	X	X			X	ON	
90:M3-151(L1)	IAM	WATER	OSH 7B WING WATERFLOW	90:3-151	X	X	X	X			X	ON	
90:M3-152(L1)	IAM	SO	OSH 7A WING TAMPER 7B50	90:3-152			X	X			X	ON	
90:M3-153(L1)	IAM	WATER	OSH 7A WING WATERFLOW 7B50	90:3-153	X		X	X			X	ON	
90:M3-154(L1)	PHOTO	SMOKE	OSH 7B59 SHAFT	90:3-154		X	X	X			X	ON	
90:M3-155(L1)	RPHOTO	DUCT	OSH 7B IN 7B50 SHAFT ROOM	90:3-155	X	X		X			X	ON	
90:M3-156						X	X	X			X	ON	
90:M3-157(L1)	RIAM	RELAY	OSH 7FL SECURITY DR REL(7B05)	90:3-157	X		X	X			X	ON	
90:M3-158						X	X	X			X	ON	
90:M3-159(L1)	IAM	TROUBLE	OSH 7FL RM 7B05 PS TROUBLE MON	90:3-159	X	X	X	X			X	ON	
90:M3-160(L1)	RIAM	DHOLDER	OSH 7FL RM 7B05 DH CTRL	90:3-160				X			X	ON	
90:M3-161(L1)	RIAM	RELAY	OSH 7B RET FSD CNTRL IN 7B50	90:3-161	X				X		X	ON	
90:M3-162(L1)	RIAM	RELAY	OSH 7B EXH FSD CNTRL IN 7B50	90:3-162		X			X		X	ON	
90:M3-163(L1)	RIAM	RELAY	OSH 7B DAMPERS (N/C)	90:3-163	X	X			X		X	ON	
90:M3-164							X		X		X	ON	
90:M3-165						X	X		X		X	ON	
90:M3-166						X	X		X		X	ON	
90:M3-167					X	X	X		X		X	ON	
90:M3-168							X		X		X	ON	
90:M3-169					X		X		X		X	ON	
90:M3-170						X	X		X		X	ON	
90:M3-171					X	X	X		X		X	ON	
90:M3-172							X	X	X		X	ON	
90:M3-173					X		X	X	X		X	ON	
90:M3-174						X	X	X	X		X	ON	
90:M3-175					X	X	X	X	X		X	ON	
90:M3-176								X	X		X	ON	
90:M3-177					X			X	X		X	ON	
90:M3-178						X		X	X		X	ON	
90:M3-179					X	X		X	X		X	ON	
90:M3-180							X	X	X		X	ON	
90:M3-181					X		X	X	X		X	ON	
90:M3-182						X	X	X	X		X	ON	
90:M3-183					X	X	X		X		X	ON	
90:M3-184							X	X	X		X	ON	
90:M3-185					X		X	X	X		X	ON	
90:M3-186						X	X	X	X		X	ON	
90:M3-187					X	X		X	X		X	ON	
90:M3-188							X	X	X		X	ON	
90:M3-189					X		X	X	X		X	ON	
90:M3-190						X	X	X	X		X	ON	
90:M3-191					X	X	X	X	X		X	ON	
90:M3-192									X	X	X	ON	
90:M3-193					X					X	X	ON	
90:M3-194						X				X	X	ON	
90:M3-195					X	X				X	X	ON	
90:M3-196							X			X	X	ON	
90:M3-197					X		X			X	X	ON	
90:M3-198						X	X			X	X	ON	
90:M3-199					X	X	X			X	X	ON	
90:M3-200							X			X	X	ON	
90:M3-201					X		X			X	X	ON	
90:M3-202						X	X			X	X	ON	
90:M3-203					X	X				X	X	ON	
90:M3-204							X	X		X	X	ON	
90:M3-205					X		X	X		X	X	ON	
90:M3-206						X	X	X		X	X	ON	
90:M3-207					X	X	X	X		X	X	ON	
90:M3-208								X		X	X	ON	
90:M3-209					X			X		X	X	ON	
90:M3-210						X		X		X	X	ON	
90:M3-211					X	X		X		X	X	ON	
90:M3-212							X	X		X	X	ON	
90:M3-213					X		X	X		X	X	ON	
90:M3-214						X	X	X		X	X	ON	
90:M3-215					X	X	X	X		X	X	ON	
90:M3-216							X	X		X	X	ON	
90:M3-217					X		X	X		X	X	ON	
90:M3-218						X	X	X		X	X	ON	
90:M3-219					X	X		X		X	X	ON	
90:M3-220							X	X		X	X	ON	
90:M3-221					X		X	X		X	X	ON	
90:M3-222						X	X	X		X	X	ON	
90:M3-223					X	X	X	X		X	X	ON	
90:M3-224								X	X	X	X	ON	
90:M3-225					X				X	X	X	ON	
90:M3-226						X			X	X	X	ON	
90:M3-227					X	X			X	X	X	ON	
90:M3-228							X		X	X	X	ON	
90:M3-229					X		X		X	X	X	ON	
90:M3-230						X	X		X	X	X	ON	
90:M3-231					X	X	X		X	X	X	ON	
90:M3-232							X		X	X	X	ON	
90:M3-233					X			X	X	X	X	ON	
90:M3-234						X		X	X	X	X	ON	
90:M3-235					X	X		X	X	X	X	ON	
90:M3-236							X	X	X	X	X	ON	
90:M3-237					X		X	X	X	X	X	ON	
90:M3-238						X	X	X	X	X	X	ON

GENERAL NOTES:

1. EXISTING EQUIPMENT HAS BEEN HATCHED FOR REFERENCE ONLY.

- EPS-1 CIRCUIT SUMMARY & VOLTAGE DROP

Channel	Description	Alarm Current	% Drop	Unit Load*	Wire Length	Spare Current	Spare VoltageDrop
90:T2:A1:1	SECOND FLOOR IDNAC APPLIANCES SOUTH	1.037A	6.49%	18	535	65%	69%
90:T2:A1:2	SECOND FLOOR IDNAC APPLIANCES WEST	2.096A	11.14%	28	1,157	30%	46%
90:T2:A1:3	SECOND FLOOR IDNAC APPLIANCES EAST	1.851A	9.80%	32	1,576	38%	53%

POINTS SHOWN IN ITALIC TEXT REFER TO EXISTING DEVICES.

90:T2:A1: ENHANCED POWER SUPPLY - CHANNEL 2

IDNac Address	Device Type	PID	Setting	Custom Label (Max 40 Characters)		SWITCH SETTINGS 1				
90:T2:A1:2-1	SV	49SV-APPLW	75cd	7FL C702	0-T2:A1:2-1	X				ON
90:T2:A1:2-2	VO	49VO-APPLW	15cd	7FL VTB09	0-T2:A1:2-2		X			ON
90:T2:A1:2-3	VO	49VO-APPLW	15cd	7FL VTB09	0-T2:A1:2-3	X	X			ON
90:T2:A1:2-4	VO	49VO-APPLW	30cd	7FL 7B30A	0-T2:A1:2-4			X		ON
90:T2:A1:2-5	SV	49SV-APPLW	15cd	7FL C702	0-T2:A1:2-5	X		X		ON
90:T2:A1:2-6	SV	49SV-APPLW	15cd	7FL BY C7B14	0-T2:A1:2-6		X	X		ON
90:T2:A1:2-7	VO	49VO-APPLW	15cd	7FL 7B30B	0-T2:A1:2-7	X	X	X		ON
90:T2:A1:2-8	VO	49VO-APPLW	15cd	7FL 7B30C	0-T2:A1:2-8			X		ON
90:T2:A1:2-9	SV	49SV-APPLW	75cd	7FL 7B30	0-T2:A1:2-9	X		X		ON
90:T2:A1:2-10	VO	49VO-APPLW	15cd	7FL 7B30D	0-T2:A1:2-10		X	X		ON
90:T2:A1:2-11	SV	49SV-APPLW	75cd	7FL 7B30	0-T2:A1:2-11	X	X	X		ON
90:T2:A1:2-12	SV	49SV-APPLW	30cd	7FL 7B91	0-T2:A1:2-12		X	X		ON
90:T2:A1:2-13						X	X	X		ON
90:T2:A1:2-14							X	X		ON
90:T2:A1:2-15	SV	49SV-APPLW	75cd	7FL C702	0-T2:A1:2-15	X	X	X	X	ON
90:T2:A1:2-16	SV	49SV-APPLW	30cd	7FL 7D08A	0-T2:A1:2-16				X	ON
90:T2:A1:2-17	SV	49SV-APPLW	15cd	7FL 7D16	0-T2:A1:2-17	X			X	ON
90:T2:A1:2-18							X		X	ON
90:T2:A1:2-19						X	X		X	ON
90:T2:A1:2-20							X		X	ON
90:T2:A1:2-21	VO	49VO-APPLW	15cd	7FL 7D12	0-T2:A1:2-21	X	X		X	ON
90:T2:A1:2-22							X	X	X	ON
90:T2:A1:2-23	SV	49SV-APPLW	15cd	7FL BY S700	0-T2:A1:2-23	X	X	X	X	ON
90:T2:A1:2-24	VO	49SV-APPLW	75cd	7FL L702	0-T2:A1:2-24			X	X	ON
90:T2:A1:2-25	VO	49VO-APPLW	15cd	7FL 7D04	0-T2:A1:2-25	X		X	X	ON
90:T2:A1:2-26	SV	49SV-APPLW	135cd	7FL 7D14	0-T2:A1:2-26		X	X	X	ON
90:T2:A1:2-27	SV	49SV-APPLW	110cd	7FL 7D36	0-T2:A1:2-27	X	X	X	X	ON
90:T2:A1:2-28	SV	49SV-APPLW	75cd	7FL BY S704	0-T2:A1:2-28		X	X	X	ON
90:T2:A1:2-29	VO	49VO-APPLW	30cd	7FL 7D33	0-T2:A1:2-29	X	X	X	X	ON
90:T2:A1:2-30	VO	49VO-APPLW	15cd	7FL 7D30	0-T2:A1:2-30		X	X	X	ON
90:T2:A1:2-31	SV	49SV-APPLW	75cd	7FL 7D25	0-T2:A1:2-31	X	X	X	X	ON
90:T2:A1:2-32	SV	49SV-APPLW	185cd	7FL C704	0-T2:A1:2-32				X	ON
90:T2:A1:2-33	SV	49SV-APPLW	30cd	7FL C702	0-T2:A1:2-33	X			X	ON
90:T2:A1:2-34	VO	49VO-APPLW	15cd	7FL 7D08	0-T2:A1:2-34	X			X	ON

90:T2:A1:2 — Distributed Load Voltage Drop

Starting Voltage:	29vdc	Primary Wire Gauge:	14ga
Min. Device Voltage:	23.vdc	Home Run Wire Gauge:	14ga
Allowable % Drop:	20.7%		

Wire Res. Per. Ft. 0.003070 @75° Celsius
Wire Res. Per. Ft. 0.003070 @75° Celsius

Branch	Device #	From	Distance (Feet)	PID	Setting	Device Draw	Class B Calculations: Current at Device	Class B: Voltage Drop	Class B: Voltage at Device	Class A Return Calculations: Current at Device	Class A: Voltage Drop	Class A: Voltage at Device	% Vdrop Wire Length
1	90:T2:A1:2-1	PANEL	37	49SV-APPLW	75cd	0.1000	0.743	0.169	28.831	0.100	0.009	28.255	Branch 1: 2.66%
1	90:T2:A1:2-2	90:T2:A1:2-1	15	49VO-APPLW	15cd	0.0470	0.643	0.059	28.772	0.147	0.022	28.264	Length: 374
1	90:T2:A1:2-3	90:T2:A1:2-2	24	49VO-APPLW	15cd	0.0470	0.596	0.088	28.684	0.194	0.025	28.286	
1	90:T2:A1:2-4	90:T2:A1:2-3	21	49VO-APPLW	30cd	0.0570	0.549	0.071	28.613	0.251	0.039	28.311	
1	90:T2:A1:2-5	90:T2:A1:2-4	25	49SV-APPLW	15cd	0.0470	0.492	0.076	28.538	0.298	0.051	28.349	
1	90:T2:A1:2-6	90:T2:A1:2-5	26	49SV-APPLW	15cd	0.0470	0.445	0.077	28.461	0.345	0.061	28.401	
1	90:T2:A1:2-7	90:T2:A1:2-6	29	49VO-APPLW	15cd	0.0470	0.398	0.071	28.390	0.392	0.036	28.462	
1	90:T2:A1:2-8	90:T2:A1:2-7	15	49VO-APPLW	15cd	0.0470	0.351	0.032	28.358	0.439	0.113	28.498	
1	90:T2:A1:2-9	90:T2:A1:2-8	42	49SV-APPLW	75cd	0.1000	0.304	0.078	28.280	0.539	0.132	28.611	
1	90:T2:A1:2-10	90:T2:A1:2-9	40	49VO-APPLW	15cd	0.0470	0.047	0.012	28.268	0.586	0.000	28.744	
1	90:T2:A1:2-11	90:T2:A1:2-9	34	49SV-APPLW	75cd	0.1000	0.157	0.033	28.247	0.639	0.192	28.744	
1	90:T2:A1:2-12	90:T2:A1:2-11	49	49SV-APPLW	30cd	0.0570	0.057	0.017	28.230	0.696	0.064	28.936	
1	PANEL	90:T2:A1:2-12	15	RETURN		0.0000	0.000	0.000	28.230	0.000	0.000	29.000	
						0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
2	90:T2:A1:2-23	PANEL	72	49SV-APPLW	15cd	0.0470	1.353	0.598	28.402	0.047	0.010	26.737	Branch 2: 11.14%
2	90:T2:A1:2-24	90:T2:A1:2-23	33	49SV-APPLW	75cd	0.1000	1.306	0.265	28.137	0.147	0.038	26.746	Length: 783
2	90:T2:A1:2-25	90:T2:A1:2-24	42	49VO-APPLW	15cd	0.0470	1.206	0.311	27.826	0.194	0.082	26.784	
2	90:T2:A1:2-26	90:T2:A1:2-25	69	49SV-APPLW	135cd	0.1600	1.159	0.491	27.335	0.354	0.109	26.866	
2	90:T2:A1:2-17	90:T2:A1:2-26	50	49SV-APPLW	15cd	0.0470	0.999	0.307	27.029	0.401	0.025	26.975	
2	90:T2:A1:2-16	90:T2:A1:2-17	10	49SV-APPLW	30cd	0.0570	0.952	0.058	26.970	0.458	0.183	27.000	
2	90:T2:A1:2-15	90:T2:A1:2-16	65	49SV-APPLW	75cd	0.1000	0.895	0.357	26.613	0.558	0.171	27.182	
2	90:T2:A1:2-27	90:T2:A1:2-15	50	49SV-APPLW	110cd	0.1320	0.795	0.244	26.369	0.630	0.085	27.354	
2	90:T2:A1:2-21	90:T2:A1:2-27	20	49VO-APPLW	15cd	0.0470	0.047	0.006	26.363	0.737	0.000	27.438	
2	90:T2:A1:2-28	90:T2:A1:2-27	65	49SV-APPLW	75cd	0.1000	0.616	0.246	26.123	0.790	0.087	27.438	
2	90:T2:A1:2-29	90:T2:A1:2-28	18	49VO-APPLW	30cd	0.0570	0.516	0.057	26.066	0.847	0.172	27.526	
2	90:T2:A1:2-30	90:T2:A1:2-29	33	49VO-APPLW	15cd	0.0470	0.459	0.093	25.973	0.894	0.170	27.697	
2	90:T2:A1:2-31	90:T2:A1:2-30	31	49SV-APPLW	75cd	0.1000	0.412	0.078	25.895	0.994	0.330	27.888	
2	90:T2:A1:2-32	90:T2:A1:2-31	54	49SV-APPLW	185cd	0.2080	0.312	0.103	25.791	1.202	0.185	28.197	
2	90:T2:A1:2-34	90:T2:A1:2-32	25	49VO-APPLW	15cd	0.0470	0.047	0.007	25.784	1.249	0.000	28.382	
2	90:T2:A1:2-33	90:T2:A1:2-32	66	49SV-APPLW	30cd	0.0570	0.057	0.023	25.768	1.259	0.618	28.382	
2	PANEL	90:T2:A1:2-33	80	RETURN		0.0000	0.000	0.000	25.768	0.000	0.000	29.000	
						0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
						0.0000	0.000	0.000	0.000	0.000	0.000	0.000	
						0.0000	0.000	0.000	0.000	0.000	0.000	0.000	

	Amplifier Wattage	Watts Used	Alarm	Expansion Card?	Avail. Ckts.	Used Ckts.	% Used
Amp-1	100	18.W	3.800A	No	6	6	18.00%

4100es XPDR Speaker Db Loss Calculations

*Circuit Voltage = 70vrms [Et]

SPEAKER CIRCUIT DESCRIPTION	Amp #	Plan Circuit Number	Speaker Tap .5 Watt	Total Spkrs per Circuit	Total Watts [P]	Wire Gauge	Est. Ckt. Length [D] in Feet	Wire Res. Per Foot [Rw]	Circuit Resistance [Rt]=2D*Rw]	Speaker Current [I=P/Et]	Speaker Resistance [Rs=Et/I]	Voltage At End [Es=(Et*Rs)/(Rs+Rt)]	Watts At End [Pe=(Es)^2/Rs]	MAXIMUM -3 dB DROP: Actual dB Loss [dB=Log10(Pe/P)*10]	Max Allowable Ckt. Length [ML=(0.414*Rs)/(2*Rw)]
SECOND FLOOR SPEAKER CKT AREA SOUTH	Amp-1	90:T2:S1	8	8	4. Watts	18ga	600	0.0078	9.324	0.057	1225.000	69.471	3.940	-.07 db	32635. Ft.
SECOND FLOOR SPEAKER CKT AREAS WEST	Amp-1	90:T2:S2	17	17	8.5 Watts	18ga	1175	0.0078	18.260	0.121	576.471	67.851	7.986	-.27 db	15358 Ft.
SECOND FLOOR SPEAKER CKT AREA EAST	Amp-1	90:T2:S3	11	11	5.5 Watts	18ga	1600	0.0078	24.864	0.079	890.909	68.099	5.205	-.24 db	23735 Ft.
SPARE	Amp-1	90:T2:S4			. Watts	18ga		0.0078	0.000	0.000	0.000	0.000	0.000	. db	0 Ft.
SPARE	Amp-1	90:T2:S5			. Watts	18ga		0.0078	0.000	0.000	0.000	0.000	0.000	. db	0 Ft.
SPARE	Amp-1	90:T2:S6			. Watts	18ga		0.0078	0.000	0.000	0.000	0.000	0.000	. db	0 Ft.

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-FA

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BRIAN BOWLSBY
LICENSE #4771LEA
EXPIRES 10/1/2023

OHSU HATFIELD RESEARCH CENTER 7TH, 2ND & 10TH FLOOR

OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
PORTLAND, OR 97239

Revisions shown with △ symbol

ISSUE LOG

MARK	DATE	CAD	CHK	DESCRIPTION

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448-650212573

JOHNSON CONTROLS © 2022

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
7TH FLOOR CALCULATIONS AND SCHEDULES

FA-602

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GENERAL NOTES:

1. EXISTING EQUIPMENT HAS BEEN HATCHED FOR REFERENCE ONLY.

FACP NODE 5 BATTERY CALCULATIONS

Module	Description	Qty	Standby Current	Total Standby	Alarm Current	Total Alarm	Power Source
Panel Equipment							
4120-6001	CONTROL PANEL	1	0.000	0.000	0.000	0.000	N/A
4120-7003	1000 FT CRS	1	0.232	0.232	0.232	0.232	MAIN TAP A
4120-7160	MASTER CONTROLLER UPGRADE W/DISPLAY	1	0.163	0.163	0.210	0.210	MAIN TAP A
4120-6014	MODULAR NETWORK INTERFACE CARD	1	0.035	0.035	0.085	0.085	MAIN TAP A
4120-3401	6 CKT, STYLE Y	2	0.025	0.050	0.010	0.020	MAIN TAP A
4120-3001	4RELAY 2A W/FEEDBACK	2	0.015	0.030	0.075	0.150	MAIN TAP A
4120-0110	MAPNET II ADDRESSABLE	2	0.270	0.540	0.250	0.500	MAIN TAP A
4120-0304	STYLE 7 REMOTE UNIT INTERFACE	1	0.085	0.085	0.085	0.085	MAIN TAP A
4120-1109	120V 8 AMP POWER SUPPLY, POWER LIMITED	1	0.000	0.000	0.000	0.000	N/A
			Total Panel Stby:	1.195	Total Panel Alarm:	1.492	
Peripheral Devices							
4009-9181	SERIAL LCD ANNUNCIATOR	2	0.030	0.060	0.170	0.340	MAIN TAP B
4098-9003	IDNET DOUBLE ACTION PULL STATION	* 10	0.000	0.000	0.000	0.000	SLC
4098-9714	TRUEALARM PHOTO SMOKE SENSOR	* 63	0.000	0.000	0.000	0.000	SLC
4098-9792	TRUEALARM SENSOR BASE	* 63	0.000	0.000	0.000	0.000	SLC
4098-9758	TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT	* 16	0.002	0.032	0.015	0.235	MAIN TAP B
4098-9843	ENCAP ISOLATED RELAY PAM-SD	16	0.000	0.000	0.018	0.288	MAIN TAP B
4090-9001	IDNET SUPERVISED IAM	* 6	0.000	0.000	0.000	0.000	SLC
4100-9747	MAINGET UNSUPERVISED CONTROL FAM, SURFACE	* 3	0.012	0.036	0.040	0.120	MAIN TAP B
4090-9010	8 AMP RELAY IAM	* 1	0.000	0.000	0.000	0.000	SLC
Notification Appliance Circuits (From NAC Schedule)						5.060	
			Total Periph Stby:	0.196	Total Periph Alarm:	6.539	
* Current Draw Included With Device Addresses Used			Total Standby Amps:	1.391	Total Alarm Amps:	7.922	

Battery Set #1 for Power Supplies:			Standby Current		Alarm Current
MAIN:			1.493		5.864
PS-01:			0.000		2.060
			1.493	<-- Totals -->	7.924
Additional Battery Capacity Required:			0.000		0.000
Standby Time =	4	Hrs	7.411	Standby Ah	
Alarm Time =	.5	Mins	0.820	Alarm Ah	
Additional Capacity per Manufacturer's Safety Factors:			3.309		
Battery Supplied:	2061-9268 12.7AH		11.539	Total Ah	

Note: Battery Standby Time is Based on the Provision of Primary Power from an Emergency or Standby System per NFPA 72 (1999) 1-5.2.3 Exception 1 or 2, and 1-5.2.10.

NODE 5 MAPNET 4 POINT LIST

ADDRESS	DEV TYPE	POINT TYPE	LABEL	
5:M4-1	GENIAM	SO	HRC LEVEL F STAIR # 1	5:M4-1
5:M4-2				5:M4-2
5:M4-3	RPHOTO	DUCT	HRC 1FL STAIR PLENUM F30 CNTRL	5:M4-3
5:M4-4	RPHOTO	DUCT	HRC 1FL STAIR PLENUM F30 CNTRL	5:M4-4
5:M4-5	ADRPUL	PULL	HRC 1FL BY STAIRS	5:M4-5
5:M4-6	ADRPUL	PULL	HRC 1FL LOBBY EXIT	5:M4-6
5:M4-7	PHOTO	SMOKE	HRC 1FL IN ELEVATOR LOBBY	5:M4-7
5:M4-8	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-1 SUPPLY	5:M4-8
5:M4-9	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-2 SUPPLY	5:M4-9
5:M4-10	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-3 SUPPLY	5:M4-10
5:M4-11	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-3 RETURN	5:M4-11
5:M4-12	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-7 SUPPLY	5:M4-12
5:M4-13	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-5 SUPPLY	5:M4-13
5:M4-14	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-5 RETURN	5:M4-14
5:M4-15	RPHOTO	DUCT	HRC 2FL RM E249 FCU-58 MIX SUP	5:M4-15
5:M4-16	RPHOTO	DUCT	HRC 2FL RM E249 FCU-73 MIX SUP	5:M4-16
5:M4-17	RPHOTO	DUCT	HRC 2FL RM E249 FCU-58 MIX RET	5:M4-17
5:M4-18	RPHOTO	DUCT	HRC 2FL RM E249 FCU-73 MIX RET	5:M4-18
5:M4-19	RPHOTO	DUCT	HRC 2FL IN C202 UNKNWN LOCATION	5:M4-19
5:M4-20	PHOTO	SMOKE	HRC 2FL NW CORRIDOR BY ROOM 229	5:M4-20
5:M4-21	PHOTO	SMOKE	HRC 2FL NE CORRIDOR BY ROOM 231	5:M4-21
5:M4-22	PHOTO	SMOKE	HRC 2FL NE CORRIDOR BY ROOM 231	5:M4-22
5:M4-23	PHOTO	SMOKE	HRC 2FL NE CORR BY SERVICE ELEV	5:M4-23
5:M4-24	PHOTO	SMOKE	HRC 2FL NE CORR BY ELEC CLOSET	5:M4-24
5:M4-25	PHOTO	SMOKE	HRC 2FL MAIN ELEVATOR LOBBY	5:M4-25
5:M4-26	PHOTO	SMOKE	HRC 2FL S2 IN ROOM 205	5:M4-26
5:M4-27	PHOTO	SMOKE	HRC 2FL SW CORRIDOR BY ROOM 208	5:M4-27
5:M4-28	PHOTO	SMOKE	HRC 2FL SW CORRIDOR BY RES TRGRMS	5:M4-28
5:M4-29	PHOTO	SMOKE	HRC 2FL SW CORR BY ANIMAL CARE	5:M4-29
5:M4-30	PHOTO	SMOKE	HRC 2FL NW CORRIDOR BY ROOM 218	5:M4-30
5:M4-31	PHOTO	SMOKE	HRC 2FL SHIP REC BY ROOM 246	5:M4-31
5:M4-32	PHOTO	SMOKE	HRC 2FL SHIP REC BY ROOM 243	5:M4-32
5:M4-33	PHOTO	SMOKE	HRC 2FL INFECTIOUS WASTE 243	5:M4-33
5:M4-34	PHOTO	SMOKE	HRC 2FL ANIMAL DOCK 239	5:M4-34
5:M4-35	PHOTO	SMOKE	HRC 2FL ROOM 236	5:M4-35
5:M4-36	PHOTO	SMOKE	HRC 2FL ROOM 237	5:M4-36
5:M4-37	PHOTO	SMOKE	HRC 2FL HOT TRASH ROOM 236	5:M4-37
5:M4-38	PHOTO	SMOKE	HRC 2FL DIRTY SHIPPING ROOM 245	5:M4-38
5:M4-39	PHOTO	SMOKE	HRC 2FL RECYCLE ROOM 244	5:M4-39
5:M4-40	PHOTO	SMOKE	HRC 2FL JANITOR ROOM 204	5:M4-40
5:M4-41	PHOTO	SMOKE	HRC 2FL LOAD DOCK TRASH RM 205	5:M4-41
5:M4-42	PHOTO	SMOKE	HRC 2FL TELECOMM ROOM 517	5:M4-42
5:M4-43	PHOTO	SMOKE	HRC 2FL ROOM 220	5:M4-43
5:M4-44	PHOTO	SMOKE	HRC 2FL LAB SERVICE ELEV LOBBY	5:M4-44
5:M4-45	PHOTO	SMOKE	HRC 2FL ELECTRIC ROOM 247	5:M4-45
5:M4-46				5:M4-46
5:M4-47	PHOTO	SMOKE	HRC 2FL SE CORR BY ANIMAL CARE	5:M4-47
5:M4-48	ADRPUL	PULL	HRC 2FL CORRIDOR BY WEST STAIR	5:M4-48
5:M4-49	ADRPUL	PULL	HRC 2FL MAIN ELEVATOR LOBBY	5:M4-49
5:M4-50	ADRPUL	PULL	HRC 2FL SERVICE ELEVATOR LOBBY	5:M4-50
5:M4-51	ADRPUL	PULL	HRC 2FL LOBBY EAST EXIT	5:M4-51
5:M4-52	ADRPUL	PULL	HRC 2FL SE EXIT TO LOADING DOCK	5:M4-52
5:M4-53	ADRPUL	PULL	HRC 2FL NE EXIT TO LOADING DOCK	5:M4-53
5:M4-54	ADRPUL	PULL	HRC 2FL NE STAIR EXIT TO DOCK	5:M4-54
5:M4-55	ADRPUL	PULL	HRC 2FL W EXIT TO LOADING DOCK	5:M4-55
5:M4-56	ADRPUL	PULL	HRC 2FL EXIT TO LOAD AREA E250	5:M4-56
5:M4-57	GENIAM	SO	HRC 2FL MECHANICAL ROOM E249	5:M4-57
5:M4-58	GENIAM	SO	HRC 2FL MECHANICAL ROOM E249	5:M4-58
5:M4-59	GENIAM	SO	HRC 2FL MECHANICAL ROOM E249	5:M4-59
5:M4-60	GENIAM	WATER	HRC 2FL MECHANICAL ROOM E249	5:M4-60
5:M4-61	GENIAM	WATER	HRC 1 UL 2 MECH ESW MAIN RISER	5:M4-61
5:M4-62	**ADRPUL**	**PULL**	**HRC 2FL RECYCLNG CENTER 1**	**5:M4-62**
5:M4-63	GENIAM	SO	HRC ELEVATOR # 1 PIT TAMPER SW	5:M4-63
5:M4-64	GENIAM	SO	HRC MAIN TAMPER VALVE	5:M4-64
5:M4-65	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-4 SUPPLY	5:M4-65
5:M4-66	GENIAM	SO	HRC 2 TMPR MECH E249	5:M4-66
5:M4-67	RPHOTO	DUCT	HRC 2FL IN RM E249 ASU-9 SUPPLY	5:M4-67
5:M4-68	GENIAM	UTIL	HRC 2FL RM 223 SPARE FREEZER AL	5:M4-68
5:M4-69				5:M4-69
5:M4-70	GENIAM	UTIL	HRC 2FL *** SPARE SPT 1 O ***	5:M4-70
5:M4-71	RZAM	RELAY	HRC 4 OR MAIN DOCK SEC DOOR REL	5:M4-71
5:M4-72	**HEAT**	**HEAT**	**HRC 2FL RECYCLNG CENTER 1 NW**	**5:M4-72**
5:M4-73	**HEAT**	**HEAT**	**HRC 2FL RECYCLNG CENTER 1 NE**	**5:M4-73**
5:M4-74	**HEAT**	**HEAT**	**HRC 2FL RECYCLNG CENTER 1 SW**	**5:M4-74**
5:M4-75	**HEAT**	**HEAT**	**HRC 2FL RECYCLNG CENTER 1 S**	**5:M4-75**
5:M4-76	**HEAT**	**HEAT**	**HRC 2FL RECYCLNG CENTER 1 SE**	**5:M4-76**
5:M4-77	**PHOTO**	**SMOKE**	**HRC 2FL OFFICE 8**	**5:M4-77**
5:M4-78	**ADRPUL**	**PULL**	**HRC 2FL RECYCLNG CENTER 1**	**5:M4-78**
5:M4-79	GENIAM	WATER	HRC 1FL LOBBY & 3FL ANIMAL CARE	5:M4-79
5:M4-80	GENIAM	SO	HRC 1FL LOBBY & 3FL ANIMAL CARE	5:M4-80
5:M4-81	PHOTO	DUCT	UHS 3FL MEZZ MAU-B1	5:M4-81
5:M4-82	GENIAM	SO	UHS 3FL MEZZ EXHAUST VFD MONITOR	5:M4-82
5:M4-83	GENIAM	SO	UHS 3FL MEZZ SUPPLY VFD MONITOR	5:M4-83
5:M4-84	RZAM	RELAY	UHS 3FL MEZZ EXHAUST FSD	5:M4-84
5:M4-85	RZAM	RELAY	UHS 3FL MEZZ SUPPLY FSD	5:M4-85
5:M4-86	PHOTO	SMOKE	UHS 3FL MEZZANINE	5:M4-86
5:M4-87	PHOTO	SMOKE	UHS 3FL MEZZANINE	5:M4-87
5:M4-88	**HEAT**	**HEAT**	**HRC 2FL BREAKROOM 11**	**5:M4-88**
5:M4-89	**RZAM**	**RELAY**	**HRC 2FL RECYCLNG CNTR 1 FSD CTRL**	**5:M4-89**
5:M4-90				5:M4-90
5:M4-91				5:M4-91
5:M4-92				5:M4-92
5:M4-93				5:M4-93
5:M4-94				5:M4-94
5:M4-95				5:M4-95
5:M4-96				5:M4-96
5:M4-97				5:M4-97
5:M4-98				5:M4-98
5:M4-99				5:M4-99
5:M4-100				5:M4-100
5:M4-101				5:M4-101
5:M4-102				5:M4-102
5:M4-103				5:M4-103
5:M4-104				5:M4-104
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5:M4-106				5:M4-106
5:M4-107				5:M4-107
5:M4-108				5:M4-108
5:M4-109				5:M4-109
5:M4-110				5:M4-110
5:M4-111				5:M4-111
5:M4-112				5:M4-112
5:M4-113				5:M4-113
5:M4-114				5:M4-114
5:M4-115				5:M4-115
5:M4-116				5:M4-116
5:M4-117				5:M4-117
5:M4-118				5:M4-118
5:M4-119				5:M4-119
5:M4-120				5:M4-120
5:M4-121				5:M4-121
5:M4-122				5:M4-122
5:M4-123				5:M4-123
5:M4-124				5:M4-124
5:M4-125				5:M4-125
5:M4-126				5:M4-126
5:M4-127				5:M4-127

NOTE: THE LABELS SHOWN ABOVE WILL BE USED FOR PROGRAMMING PURPOSES.
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City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-FA

Johnson Controls
DISTRICT: L-485
6500 SW MACADAM AVENUE, SUITE A
LAKE OSWEGO, OR 97035
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BRIAN BOWLSBY
LICENSE #4771LEA
EXPIRES 10/1/2023

OHSU HATFIELD RESEARCH CENTER 7TH, 2ND & 10TH FLOOR

OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
PORTLAND, OR 97239

Revisions shown with ⚠ symbol

ISSUE LOG: MARK	DATE	CAD	CHK	DESCRIPTION

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448:650212573

JOHNSON CONTROLS © 2022

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
2ND FLOOR CALCULATIONS AND SCHEDULES

FA-603

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FILE PATH: C:\Users\magnaa\OneDrive - Johnson Controls\OHSU HRC 7 & 10 - 00257312-FA-601.dwg
LAST SAVED BY: JKA
LAST PRINTED: 5/31/2022 9:31:42 AM
30" x 42" - Arch E1 Size

GENERAL NOTES:

1. EXISTING EQUIPMENT HAS BEEN HATCHED FOR REFERENCE ONLY.

FACP NODE 9 BATTERY CALCULATIONS - 10TH FLOOR, 10D15A

Module	Description		Qty	Standby Current	Total Standby	Alarm Current	Total Alarm	Power Source
Panel Equipment								
4120-8001	CONTROL PANEL		1	0.000	0.000	0.000	0.000	N/A
4100-7002	1600 PT CPU		1	0.262	0.262	0.252	0.252	MAIN TAP A
4100-7150	MASTER CONTROLLER UPGRADE W/DISPLAY		1	0.163	0.163	0.219	0.219	MAIN TAP A
4120-4142	HARDWIRED COMMUNICATION MEDIA CARD		1	0.040	0.040	0.040	0.040	MAIN TAP A
4120-4321	8 CKT, STYLE Y		1	0.025	0.025	0.070	0.070	MAIN TAP A
4120-3003	RELAY 3A W/FEEDBACK		1	0.025	0.025	0.280	0.280	MAIN TAP A
4120-0110	MAPNET II ADDRESSABLE		1	0.270	0.270	0.230	0.230	MAIN TAP A
4100-9820	XDR INTERFACE MODULE		1	0.087	0.087	0.087	0.087	MAIN TAP A
4100-3154	IDNET MODULE - 127 POINTS	*	1	0.015	0.015	0.115	0.115	MAIN TAP A
4120-0854	STYLE 7 REMOTE UNIT INTERFACE		1	0.085	0.085	0.085	0.085	MAIN TAP A
				Total Panel Stby	1.082	Total Panel Alarm	1.459	
Peripheral Devices								
4098-9003	IDNET DOUBLE ACTION PULL STATION	*	0	0.000	0.000	0.000	0.000	SLC
4098-9714	TRUEALARM PHOTO SMOKE SENSOR	*	69	0.000	0.000	0.000	0.000	SLC
4098-9733	TRUEALARM HEAT SENSOR	*	9	0.000	0.000	0.000	0.000	SLC
4098-9792	TRUEALARM SENSOR BASE	*	78	0.000	0.000	0.000	0.000	SLC
4098-9751	TRUEALARM SENSOR BASE W/ RELAY DRIVER	*	8	0.008	0.008	0.028	0.224	MAIN TAP A
2098-9757	RELAY DRIVER AMP	*	8	0.000	0.000	0.024	0.192	MAIN TAP A
4098-9756	**TRUEALARM DUCT SMOKE SENSOR W/ RELAY OUTPUT**	*	**2**	**0.002**	**0.005**	**0.015**	**0.030**	**MAIN TAP A**
4098-9843	**ENCAPSULATED RELAY PAM-SD**		**2**	**0.000**	**0.000**	**0.015**	**0.030**	**MAIN TAP A**
2098-9806	**REMOTE TEST STATION W/ LED AND KEY SWITCH**		**2**	**0.000**	**0.000**	**0.000**	**0.000**	**N/A**
4050-9001	IDNET SUPERVISED IAM	*	3	0.000	0.000	0.000	0.000	SLC
2150-9185	MAPNET UNSUPERVISED CONTROL ZAM SURFACE		3	0.010	0.030	0.040	0.120	MAIN TAP B
4050-9002	IDNET RELAY IAM	*	1	0.000	0.000	0.000	0.000	SLC
Notification Appliance Circuits (From NAC Schedule)							4.040	
				Total Periph Stby	0.037	Total Periph Alarm	4.636	
				Total Standby Amps	1.099	Total Alarm Amps	6.105	

* Current Draw Included With Device Addresses Used

Battery Set #1 for Power Supplies:			Standby Current		Alarm Current
MAIN:			1.116		6.122
			1.116	<-- Totals -->	6.122
Additional Battery Capacity Required			0.000		0.000
Standby Time =	4	Hrs	5.538	Standby Ah	
Alarm Time =	5	Mins	0.633	Alarm Ah	
Additional Capacity per Manufacturer's Safety Factors			2.917		
Battery Supplied:	2081-9274-10AH		9.088	Total Ah	

Note: Battery Standby Time is Based on the Provision of Primary Power from an Emergency or Standby System per NFPA 72 (2013) 10.6.7.2 Exception 1 or 2, and 10.6.7.3

NODE 9 MAPNET 1 POINT LIST

ADDRESS	DEV TYPE	POINT TYPE	LABEL	
9M1-1				9:M1-1
9M1-2	PHOTO	SMOKE	HRC 10FL IN LAB RM 1D022 SOUTH	9:M1-2
9:M1-3	**RPHOTO**	**DUCT**	**HRC 10FL MECH PH 10D88 AHU17 RTN**	**9:M1-3**
9:M1-4	**RPHOTO**	**DUCT**	**HRC 10FL MECH PH 10D88 AHU16 RTN**	**9:M1-4**
9M1-5				9:M1-5
9M1-6				9:M1-6
9M1-7				9:M1-7
9M1-8				9:M1-8
9M1-9				9:M1-9
9M1-10				9:M1-10
9M1-11				9:M1-11
9M1-12				9:M1-12
9M1-13	PHOTO	SMOKE	HRC 10FL IN LAB RM 1D022 CENTER	9:M1-13
9M1-14	PHOTO	SMOKE	HRC 10FL IN LAB RM 1D022 NORTH	9:M1-14
9M1-15				9:M1-15
9M1-16				9:M1-16
9M1-17				9:M1-17
9M1-18				9:M1-18
9M1-19				9:M1-19
9M1-20				9:M1-20
9M1-21				9:M1-21
9M1-22				9:M1-22
9M1-23				9:M1-23
9M1-24				9:M1-24
9M1-25				9:M1-25
9M1-26				9:M1-26
9M1-27				9:M1-27
9M1-28				9:M1-28
9M1-29				9:M1-29
9M1-30				9:M1-30
9M1-31				9:M1-31
9M1-32				9:M1-32
9M1-33				9:M1-33
9M1-34	PHOTO	SMOKE	HRC 10FL IN ELEVATOR LOBBY	9:M1-34
9M1-35	PHOTO	SMOKE	HRC 10FL SKYBRIDGE TO OSH WEST	9:M1-35
9M1-36	PHOTO	SMOKE	HRC 10FL SKYBRIDGE TO OSH CNTR	9:M1-36
9M1-37	PHOTO	SMOKE	HRC 10FL SKYBRIDGE TO OSH EAST	9:M1-37
9M1-38	GENIAM	UTIL	HRC 10FL RM 10D494 FREEZER ALM	9:M1-38
9:M1-39				**9:M1-39**
9:M1-40				**9:M1-40**
9:M1-41				**9:M1-41**
9:M1-42				**9:M1-42**
9:M1-43				9:M1-43
9:M1-44				9:M1-44
9:M1-45				9:M1-45
9:M1-46				9:M1-46
9:M1-47				9:M1-47
9:M1-48				9:M1-48
9:M1-49	R2AM	RELAY	HRC 10FL NORTH FSD/ZAM IN 10D51A	9:M1-49
9:M1-50	R2AM	RELAY	HRC 10FL SOUTH FSD/ZAM IN 10D51A	9:M1-50
9:M1-51	GENIAM	UTIL	HRC 10D22A FREEZER ALMS (QTY 5)	9:M1-51
9:M1-52	GENIAM	UTIL	HRC 10D22C COLD RM & FREEZER	9:M1-52
9:M1-53				9:M1-53
9:M1-54				9:M1-54
9:M1-55				9:M1-55
9:M1-56				9:M1-56
9:M1-57				9:M1-57
9:M1-58	GENIAM	UTIL	HRC 10FL FREEZER IN RM 10D11	9:M1-58
9:M1-59				**9:M1-59**
9:M1-60	GENIAM	SO	HRC 10FL TAMPER	9:M1-60
9:M1-61				9:M1-61
9:M1-62				**9:M1-62**
9:M1-63				9:M1-63
9:M1-64				9:M1-64
9:M1-65	GENIAM	SO	HRC 10FL DIETARY KITCHEN TAMPER	9:M1-65
9:M1-66	GENIAM	WATER	HRC 10FL DIETARY KITCHEN XD70	9:M1-66
9:M1-67				**9:M1-67**
9:M1-68	GENIAM	UTIL	HRC 10FL ELEV LOBBY DAMPERS	9:M1-68
9:M1-69	R2AM	RELAY	HRC 10FL ELEV LOBBY DAMPERS	9:M1-69
9:M1-70				9:M1-70
9:M1-71				9:M1-71
9:M1-72				9:M1-72
9:M1-73				9:M1-73
9:M1-74				9:M1-74
9:M1-75				9:M1-75
9:M1-76				9:M1-76
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9:M1-124				9:M1-124
9:M1-125				9:M1-125
9:M1-126				9:M1-126
9:M1-127				9:M1-127

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NOTIFICATION APPLIANCE CIRCUIT SCHEDULE

PLAN CKT	PANEL CIRCUIT	DESCRIPTION	# OF DEVICES	CURRENT (A)	POWER SUPPLY
9:S-3	SIG 3	HRC SIGNAL 10TH FL STROBE	17	1.073	MAIN TAP A
9:S-4	SIG 4	HRC SIGNAL 10TH FL CHIME	22	0.484	MAIN TAP A
9:S-5	SIG 5	HRC SIGNAL 10TH FL STROBE	12	1.030	MAIN TAP B
9:S-6	SIG 6	HRC SIGNAL 10TH FL STROBE	16	1.444	MAIN TAP B
9:S-7	SIG 7	SPARE	0	0.000	MAIN TAP B
9:S-8	SIG 8	SPARE	0	0.000	MAIN TAP B

VOLTAGE DROP CALCULATIONS - 9:S-3

WIRE GAUGE						14	AWG
2X WIRE RESISTANCE PER FOOT						0.00614	OHMS
STARTING VOLTAGE (AT END OF BATTERY DISCHARGE CYCLE)						19.5	VDC
MINIMUM DEVICE VOLTAGE						16	VDC
PERCENTAGE VOLTAGE DROP					8%		
DEVICE NUMBER	MODEL NUMBER	CD	DISTANCE (FT)	DEVICE CURRENT (A)	NAC CURRENT (A)	VOLTAGE DROP (V)	VOLTAGE AT DEVICE (V)
SYNC MODULE	DSM-1224-R		5	0.038	1.037	0.02	19.47
9:S-3-1	STR	15	16	0.057	1.035	0.10	19.37
9:S-3-2	STR	15	19	0.057	0.978	0.11	19.25
9:S-3-3	STR	15	24	0.057	0.921	0.14	19.12
9:S-3-4	CH70-24MCW-FR	15	18	0.060	0.864	0.10	19.02
9:S-3-5	STR	15	35	0.057	0.804	0.17	18.85
9:S-3-6	STR	15	33	0.057	0.747	0.15	18.70
9:S-3-7	STR	15	14	0.057	0.690	0.06	18.64
9:S-3-8	CH70-24MCW-FR	15	32	0.060	0.633	0.12	18.51
9:S-3-9	STR	15	12	0.057	0.573	0.04	18.47
9:S-3-10	CH70-24MCW-FR	15	42	0.060	0.516	0.13	18.34
9:S-3-11	CH70-24MCW-FR	15	41	0.060	0.456	0.11	18.22
9:S-3-12	STR	15	37	0.057	0.396	0.09	18.13
9:S-3-13	STR	15	38	0.057	0.339	0.09	18.05
9:S-3-14	STR	15	39	0.057	0.282	0.07	17.99
9:S-3-15	CH70-24MCW-FR	15	15	0.060	0.225	0.02	17.96
9:S-3-16	CH70-24MCW-FR	75	56	0.165	0.165	0.06	17.91

VOLTAGE DROP CALCULATIONS - 9:S-4

WIRE GAUGE						14	AWG
2X WIRE RESISTANCE PER FOOT						0.00614	OHMS
STARTING VOLTAGE (AT END OF BATTERY DISCHARGE CYCLE)						19.5	VDC
MINIMUM DEVICE VOLTAGE						16	VDC
PERCENTAGE VOLTAGE DROP					7%		
DEVICE NUMBER	MODEL NUMBER	CD	DISTANCE (FT)	DEVICE CURRENT (A)	NAC CURRENT (A)	VOLTAGE DROP (V)	VOLTAGE AT DEVICE (V)
9:S-4-1	CH70-24XX		21	0.022	0.484	0.06	19.44
9:S-4-2	CH70-24XX		24	0.022	0.462	0.07	19.37
9:S-4-3	CH70-24XX		73	0.022	0.440	0.20	19.17
9:S-4-4	CH70-24XX		34	0.022	0.418	0.09	19.09
9:S-4-5	CH70-24XX		11	0.022	0.396	0.03	19.06
9:S-4-6	CH70-24XX		21	0.022	0.374	0.05	19.01
9:S-4-7	CH70-24XX		40	0.022	0.352	0.09	18.92
9:S-4-8	CH70-24XX		30	0.022	0.330	0.06	18.86
9:S-4-9	CH70-24XX		74	0.022	0.308	0.14	18.72
9:S-4-10	CH70-24XX		60	0.022	0.286	0.11	18.62
9:S-4-11	CH70-24XX		40	0.022	0.264	0.06	18.55
9:S-4-12	CH70-24XX		42	0.022	0.242	0.06	18.49
9:S-4-13	CH70-24XX		66	0.022	0.220	0.09	18.40
9:S-4-14	CH70-24XX		56	0.022	0.198	0.07	18.33
9:S-4-15	CH70-24XX		18	0.022	0.176	0.02	18.31
9:S-4-16	CH70-24XX		59	0.022	0.154	0.06	18.26
9:S-4-17	CH70-24XX		47	0.022	0.132	0.04	18.22
9:S-4-18	CH70-24XX		52	0.022	0.110	0.04	18.18
9:S-4-19	CH70-24XX		79	0.022	0.088	0.04	18.14
9:S-4-20	CH70-24XX		25	0.022	0.066	0.01	18.13
9:S-4-21	CH70-24XX		144	0.022	0.044	0.04	18.09
9:S-4-22	CH70-24XX		31	0.022	0.022	0.00	18.09

VOLTAGE DROP CALCULATIONS - 9:S-5

WIRE GAUGE						14	AWG
2X WIRE RESISTANCE PER FOOT						0.00614	OHMS
STARTING VOLTAGE (AT END OF BATTERY DISCHARGE CYCLE)						19.5	VDC
MINIMUM DEVICE VOLTAGE						16	VDC
PERCENTAGE VOLTAGE DROP					5%		
DEVICE NUMBER	MODEL NUMBER	CD	DISTANCE (FT)	DEVICE CURRENT (A)	NAC CURRENT (A)	VOLTAGE DROP (V)	VOLTAGE AT DEVICE (V)
SYNC MODULE	DSM-1224-R		5	0.038	1.039	0.02	19.47
9:S-5-1	CH70-24MCW-FR	15	21	0.060	1.001	0.13	19.34
9:S-5-2	CH70-24MCW-FR	30	25	0.092	0.941	0.14	19.19
9:S-5-3	RSS-24MCW-FR	75	43	0.165	0.849	0.22	18.97
9:S-5-4	CH70-24MCW-FR	15	41	0.060	0.684	0.17	18.80
9:S-5-5	CH70-24MCW-FR	75	34	0.165	0.624	0.13	18.67
9:S-5-6	CH70-24MCW-FR	15	11	0.060	0.459	0.03	18.64
9:S-5-7	CH70-24MCW-FR	75	21	0.165	0.399	0.05	18.59
9:S-5-8	CH70-24MCW-FR	15	20	0.060	0.234	0.03	18.56
9:S-5-9	CH70-24MCW-FR	15	28	0.060	0.174	0.03	18.53
9:S-5-10	STR	15	26	0.057	0.114	0.02	18.51
9:S-5-11	STR	15	30	0.057	0.057	0.01	18.50

VOLTAGE DROP CALCULATIONS - 9:S-6

WIRE GAUGE						14	AWG
2X WIRE RESISTANCE PER FOOT						0.00614	OHMS
STARTING VOLTAGE (AT END OF BATTERY DISCHARGE CYCLE)						19.5	VDC
MINIMUM DEVICE VOLTAGE						16	VDC
PERCENTAGE VOLTAGE DROP					21%		
DEVICE NUMBER	MODEL NUMBER	CD	DISTANCE (FT)	DEVICE CURRENT (A)	NAC CURRENT (A)	VOLTAGE DROP (V)	VOLTAGE AT DEVICE (V)
SYNC MODULE	DSM-1224-R		5	0.038	1.444	0.04	19.46
9:S-6-1	CH70-24MCW-FR	15	145	0.060	1.406	1.25	18.20
9:S-6-2	STR	15	30	0.057	1.346	0.25	17.96
9:S-6-3	CH70-24MCW-FR	15	40	0.060	1.289	0.32	17.64
9:S-6-4	CH70-24MCW-FR	15	47	0.060	1.229	0.35	17.29
9:S-6-5	CH70-24MCW-FR	15	52	0.060	1.169	0.37	16.91
9:S-6-6	STR	15	41	0.057	1.109	0.28	16.63
9:S-6-7	CH70-24MCW-FR	75	47	0.165	1.052	0.30	16.33
9:S-6-8	CH70-24MCW-FR	30	25	0.092	0.887	0.14	16.19
9:S-6-9	STR	75	22	0.135	0.795	0.16	16.04
9:S-6-10	HSR	75	65	0.148	0.660	0.26	15.77
9:S-6-11	HSR	110	75	0.197	0.512	0.24	15.54
9:S-6-12	STR	75	82	0.135	0.315	0.16	15.38
9:S-6-13	RSS-24MCW-FR	15	25	0.060	0.180	0.03	15.35
9:S-6-14	CH70-24MCW-FR	15	30	0.060	0.120	0.02	15.33
9:S-6-15	CH70-24MCW-FR	15	31	0.060	0.060	0.01	15.32

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188501-000-00-FA

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LICENSE #4771LEA
EXPIRES 10/1/2023

OHSU HATFIELD RESEARCH CENTER 7TH, 2ND & 10TH FLOOR

OHSU HATFIELD RESEARCH CENTER
3251 SW SAM JACKSON PARK RD
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Revisions shown with △ symbol

ISSUE LOG:				
MARK	DATE	CAD	CHK	DESCRIPTION

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448-6502212573

JOHNSON CONTROLS © 2022

SYSTEM:
FIRE ALARM SYSTEM

SHEET:
10TH FLOOR CALCULATIONS AND SCHEDULES

FA-604

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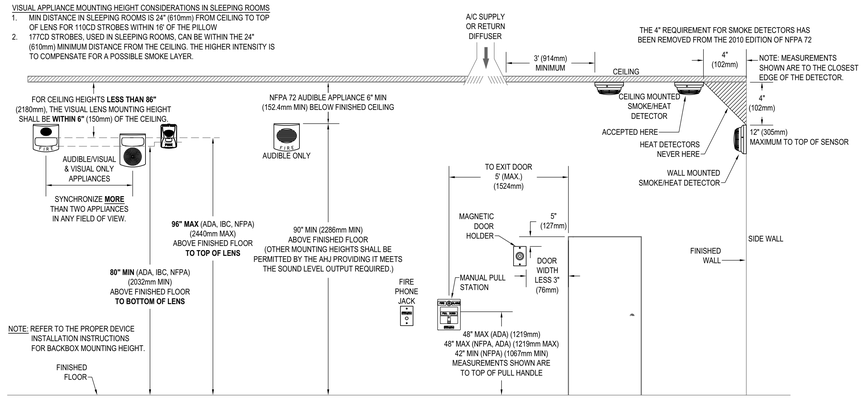
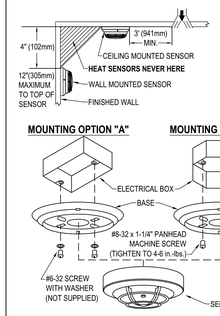
DEVICE MOUNTING HEIGHT REFERENCE

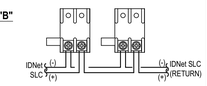
PER NFPA 72



STANDARD SENSOR BASE

SIMPLEX 4098-9792





TERMINATION VIEW: DEVICE REAR
CLASS A WIRING

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

MOUNTING OPTIONS

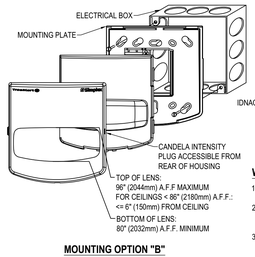
OPTION[1]	DESCRIPTION	NOTE
A	SINGLE GANG BOX, 2-1/8" (54mm) DEEP - FLUSH MOUNT	BY OTHERS
B	4" (102mm) OCTAGONAL BOX, 1-1/2" (38mm) DEEP, MINIMUM - FLUSH MOUNT	BY OTHERS
C	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN) W/ SIMPLEX 4098-9832 ADAPTER KIT	BOX BY OTHERS, 4098-9832 ORDERED SEPARATELY
D	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN) W/ SINGLE GANG COVER PLATE 3/4" (19mm) EXTENSION	BY OTHERS

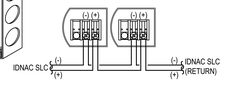
1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 4098-0019 FROM HTTP://WWW.SIMPLEX-FIRE.COM

True*Alert* ES ADDRESSABLE APPLIANCES

SIMPLEX 49VO SERIES WALL MOUNTED VISUAL ONLY

IMPORTANT
DO NOT BRING THE CONDUIT THROUGH THE REAR OF THE ELECTRICAL BOX. STRIP THE LEAD INSULATION TO 7/16" MAX.





TERMINATION VIEW: DEVICE MOUNTING PLATE
CLASS A WIRING

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

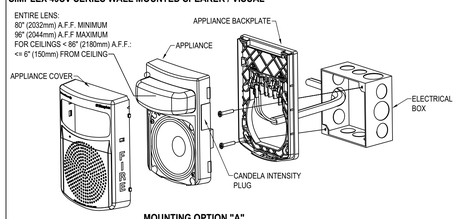
MOUNTING OPTIONS

OPTION[1]	DESCRIPTION	NOTE
A	SINGLE GANG OR DOUBLE GANG BOX, 1-1/2" (38mm) DEEP (MIN)	BY OTHERS
B	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN)	BY OTHERS
C	SIMPLEX 2975-9145, 7-7/8"H x 5-1/8"W x 2-3/4"D (127mm x 98mm x 56mm) REQUIRES 4905-9931 PLATE	ORDERED SEPARATELY

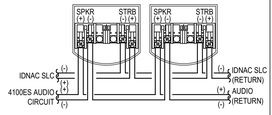
1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET S49VO-0001 FROM HTTP://WWW.SIMPLEX-FIRE.COM

True*Alert* ES ADDRESSABLE APPLIANCES

SIMPLEX 49SV SERIES WALL MOUNTED SPEAKER / VISUAL



IMPORTANT
DO NOT BRING THE CONDUIT THROUGH THE REAR OF THE ELECTRICAL BOX. STRIP THE LEAD INSULATION TO 7/16" MAX.



TERMINATION VIEW: DEVICE MOUNTING PLATE
CLASS A WIRING

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.

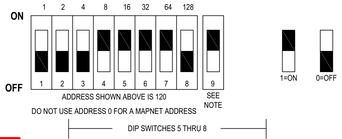
MOUNTING OPTIONS

OPTION[1]	DESCRIPTION	NOTE
A	4" (102mm) SQUARE BOX, 2-1/8" (54mm) DEEP (MIN)	BY OTHERS

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET S49SVW-0001 FROM HTTP://WWW.SIMPLEX-FIRE.COM

DIP SWITCH SETTINGS - INITIATING

SIMPLEX MAPNET



DO NOT USE ADDRESS 0 FOR A MAPNET ADDRESS

DIP SWITCHES 5 THRU 8

DIP SWITCHES 1 THRU 4

0	16	32	48	64	80	96	112
1	17	33	49	65	81	97	113
2	18	34	50	66	82	98	114
3	19	35	51	67	83	99	115
4	20	36	52	68	84	100	116
5	21	37	53	69	85	101	117
6	22	38	54	70	86	102	118
7	23	39	55	71	87	103	119
8	24	40	56	72	88	104	120
9	25	41	57	73	89	105	121
10	26	42	58	74	90	106	122
11	27	43	59	75	91	107	123
12	28	44	60	76	92	108	124
13	29	45	61	77	93	109	125
14	30	46	62	78	94	110	126
15	31	47	63	79	95	111	127

NOTE:
THE 4098-9771, -9794, -9795, -9798 SOUNDER BASES HAVE A 9-POSITION DIP SWITCH. THE FIRST EIGHT DIP SWITCHES SET THE SOUNDER BASE ADDRESS. DIP SWITCH POSITION 9 IS SET TO OFF OR ON DEPENDING UPON THE SOUNDER BASE POWER SOURCE. WHEN THE SOUNDER BASE IS CONNECTED TO A 24 VDC POWER SOURCE, DIP SWITCH POSITION 9 IS SET TO "OFF" AND THE 24 VDC POWER IS SUPERVISED BY THE SOUNDER BASE. WHEN THE SOUNDER BASE IS POWERED BY THE PANEL'S NOTIFICATION APPLIANCE CIRCUIT (NAC), DIP SWITCH POSITION 9 IS SET TO "ON" AND THE POWER IS SUPERVISED BY THE NAC AND NOT THE SOUNDER BASE. THE 4098-9770 AND -9797 BASES HAVE THE SAME LAYOUT, BUT DOESN'T OFFER SOUNDER FUNCTIONALITY. THEY USE AN 8-WAY DIP SWITCH ONLY.

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-FA

Johnson Controls
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PORTLAND, OR 97239

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ISSUE LOG

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CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448-650212573

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SYSTEM:
FIRE ALARM SYSTEM

SHEET:
WIRING TYPICALS

FA-701

FILE PATH: C:\Users\jmgrace\OneDrive - Johnson Controls\OHSU HRC 7 & 10 - 257101 (FA-701.dwg
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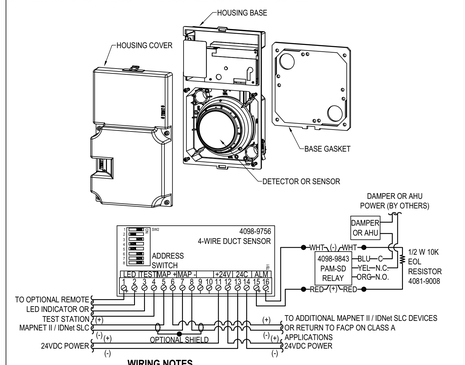
DUCT SMOKE DETECTOR

SIMPLEX 4098-9756 ANALOG 4-WIRE DUCT SENSOR WITH 24VDC RELAY

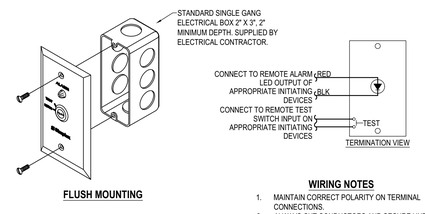


WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS. CLASS B APPLICATIONS ONLY.

REMOTE ALARM INDICATOR / KEY SWITCH

SIMPLEX 2098-9806



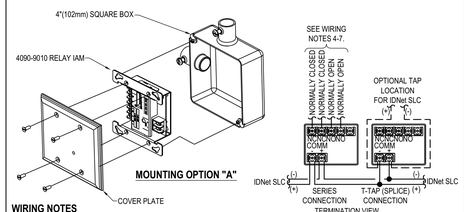
FLUSH MOUNTING

WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ONE INDICATOR MAY BE INSTALLED PER DETECTOR.

ADDRESSABLE OUTPUT MODULE (AOM)

SIMPLEX 4090-9010 8A RELAY IAM



WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON TERMINAL CONNECTIONS.
2. ALWAYS CUT CONDUCTORS AND SECURE UNDER TERMINALS. NEVER LOOP WIRES UNDER TERMINALS.
3. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS.
4. CONTRACTOR WIRING TO RELAY CONTACTS IS UNSUPERVISED. USE #14 AWG WIRE TO LOCAL CODE.
5. RELAY CONTACTS RATED 8A, 30VDC (3.5A FOR INDUCTIVE LOAD). RELAY CONTACTS RATED 8A 250VAC (NON POWER LIMITED). FOR POWER LIMITED OPERATION, POWER MUST BE PROVIDED FROM FACP OR POWER-LIMITED POWER SUPPLY LISTED FOR FIRE PROTECTIVE SIGNALING USE.
6. WHEN CONNECTED TO A NON-POWER LIMITED SOURCE, THE WIRING MUST MAINTAIN A MINIMUM 1/4 INCH SEPARATION FROM IDNet WIRING.
7. WHEN USED WITH NON POWER-LIMITED SOURCE, THE "POWER LIMITED WIRING" INDICATION ON THE DEVICE LABEL MUST BE OBLITERATED.

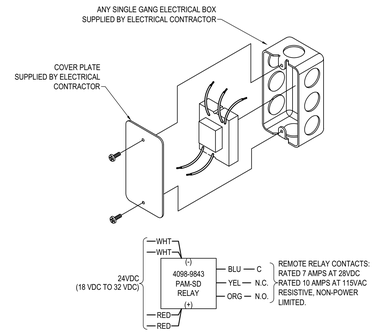
MOUNTING OPTIONS

OPTION [1]	DESCRIPTION	NOTE
A	4" (102mm) SQUARE BOX, 2-1/8" MINIMUM DEPTH WITH DOUBLE GANG COVER PLATE	BY OTHERS
B	4" (102mm) SQUARE BOX, 2-1/8" MINIMUM DEPTH WITH SIMPLEX 4090-9801 TRIM PLATE FOR SEMI-FLUSH MOUNTED BOX	BOX BY OTHERS, PLATES ORDERED SEPARATELY
C	4" (102mm) SQUARE BOX, 2-1/8" MINIMUM DEPTH WITH SIMPLEX 4090-9802 TRIM PLATE FOR SURFACE MOUNTED BOX.	BOX BY OTHERS, PLATES ORDERED SEPARATELY

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 04090-0015 FROM HTTP://WWW.SIMPLEX-FIRE.COM

24VDC POLARIZED RELAY

SIMPLEX 4098-9843 / APOLLO AMERICA PAM-SD



WIRING NOTES

1. MAINTAIN CORRECT POLARITY ON CONNECTIONS.
2. ANY WIRE SPLICES TO BE MADE BY LISTED AND AHJ APPROVED METHODS. CLASS B APPLICATIONS ONLY.

FOR ADDITIONAL DETAILS SEE DATA SHEET 2088-0010 ON HTTP://WWW.SIMPLEX-FIRE.COM

END OF LINE RESISTOR CODES

NOTE: REFER TO PANEL/MODULE AND DEVICE INSTALLATION INSTRUCTIONS FOR PROPER TERMINATIONS.

MODEL	REF. NUMBER	Ω	BAND NUMBER 3	2	3	4	5	WATTS	CIRCUIT TYPE	FIRE ALARM PANEL/MODULE
4081-9001	733-892	2.2K	RED	RED	RED	GLD	N/A	1/2	ANNUNCIATOR (4300)	4004, 4010 (TROUBLE)
4081-9002	733-893	3.3K	ORG	ORG	RED	GLD	N/A	1	N.O. INITIATING PULL, SMOKE, HEAT, WATERFLOW, TAMPER, ETC. 24 PT. I/O SWITCH SUPV.	4004*, 4004R, 4005*, 4006, 4100, 4120, 4100U, ZAMs 4605-7401, 4100 SERIES
4081-9003	733-896	4.7K	YEL	VT	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INIT., NOTIFICATION (DACT)	4090 IDNET IAM (EOLR) 2080-9024
4081-9004	733-886	6.8K	BLU	GRY	RED	GLD	N/A	1/2	N/O INITIATING PULL, SMOKE, HEAT, W.FLOW, TAMPER, ETC	4004, 4005, 4090-9001 IDNET IAM, 2190-8173 MAPNET II 2 PT. I/O
4081-9005	733-984	1.8K	BRN	GRY	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INITIATING (INLINE)	4090-9001 IDNET IAM
4081-9006	733-890	560	GRN	BLU	BRN	GLD	N/A	1	N.C. INITIATING (EOLR)	4005*, 4090-9001 IDNET IAM 4100, 4100U
4081-9007	733-891	1.2K	BRN	RED	RED	GLD	N/A	1	N.C. INITIATING (EOLR)	4005
4081-9008	733-894	10K	BRN	BLK	ORG	GLD	N/A	1/2	NOTIFICATION	4004, 4005, 4006, 4008, 4009, 4010, 4100, 4100U
4081-9009	733-912	20	RED	BLK	BLK	GLD	N/A	1	TO MR-101 RELAY COIL	4005 8 POINT I/O
									N.C. INIT. (ACROSS CONTACTS)	4005*, 4090-9001 IDNET IAM
4081-9010	733-973	1K	BRN	BLK	RED	GLD	N/A	1	24 PT. I/O (ACROSS CONTACTS	4605-7401, 4100 SERIES
									CURRENT LIMITED N.O. INIT. (IN SERIES WITH CONTACT)	4090-9001 IDNET IAM
4081-9011	733-974	100	BRN	BLK	BRN	GLD	N/A	1/2	ANNUNCIATOR (N2)	4006, 4008, 4010
4081-9012	733-985	22K	RED	RED	ORG	GLD	N/A	1/2	SPEAKER CIRCUIT	4003
4081-9013	734-086	4.99K	YEL	WHT	WHT	BRN	BRN	1/2		
4081-9014	734-092	2.4K	RED	YEL	RED	GLD	N/A	1/2	N.C. INITIATING (SECURITY MONITORING EOLR)	4090-9001 IDNET IAM
4081-9015	734-093	1.5K	BRN	GRN	RED	GLD	N/A	1/2	CURRENT LIMITED N.O. INIT. (SECURITY MONITORING EOLR)	4090-9001 IDNET IAM
4081-9016	734-149	150K	BRN	GRN	YEL	GLD	N/A	1/2		
4081-9017	734-171	3.9K	ORG	WHT	RED	GLD	N/A	1		
4081-9018	734-168	10K	BRN	BLK	ORG	GLD	N/A	1	70VRMS CONSTANT SUPV. NAC	4100-1260
	378-090	8.2K	GRY	RED	RED	GLD	N/A	1/2	SECURITY MONITORING (EOLR)	4100, 4100U
	378-048	5.6K	GRN	BLU	RED	GLD	N/A	1/2	N.O. SECURITY MON. (SERIES)	4100, 4100U
	378-069	12K	BRN	RED	ORG	GLD	N/A	1/2	N.C. SECURITY MON. (SHUNT)	4100, 4100U

* USE WITH RETROFIT OR HIGH CURRENT MODULE

DUCT SMOKE DETECTOR INSTALLATION GUIDE

PRE-INSTALLATION ROUTINES

DUCT DETECTORS/SENSORS SHOULD BE INSTALLED IN A LOCATION OF RELATIVELY NON-TURBULENT AIR FLOW AND WITHIN THE INTENDED OPERATING VELOCITY RANGE OF 300-4000 FEET-PER-MINUTE (91 TO 1220 M/MIN.)

MEASUREMENTS OF AIR FLOW AND EXAMINATION OF ENGINEERING SPECIFICATIONS THAT DEFINE EXPECTED DUCT AIR VELOCITIES UNDER ALL CONDITIONS IS RECOMMENDED. THIS IS DONE TO DETERMINE IF A LOCATION IS SUITABLE FOR DUCT DETECTOR/SENSOR OPERATION. AN ALNOR INSTRUMENT CO. (CHICAGO) MODEL 6000P VELOMETER OR EQUIVALENT (NOT SUPPLIED) MAY BE USED TO CHECK THE DUCT AIR VELOCITY.

INSTALLATION GUIDELINES

1. LOCATE DUCT HOUSINGS SO THAT DAMPERS DO NOT RESTRICT AIR FLOW AT THE DETECTOR/SENSOR LOCATION. SEE FIGURE 1.
2. LOCATE AIR DUCT DETECTORS/SENSORS ON THE RETURN OR SUPPLY DUCT OF THE EQUIPMENT'S AIR HANDLING SYSTEM. HOWEVER, DETECTORS/SENSORS SHOULD NOT BE INSTALLED IN THE RETURN AIR DAMPER BRANCH. SEE FIGURE 1.
3. LOCATE AIR DUCT DETECTORS/SENSORS ON BRANCH LINES IF CLOSE IDENTIFICATION OF THE ALARM SOURCE IS REQUIRED.
4. LOCATE AIR DUCT DETECTORS/SENSORS ON THE DOWNSTREAM SIDE OF FILTERS TO SENSE SMOKE IN FILTERS. HOWEVER, SHOULD THE FILTERS BLOCK, SUFFICIENT AIR FLOW MAY NOT BE AVAILABLE FOR PROPER AIR DUCT DETECTOR/SENSOR OPERATION. SEE FIGURE 1.
5. WHENEVER POSSIBLE LOCATE AIR DUCT DETECTORS/SENSORS WHERE THEY CAN BE CONVENIENTLY OBSERVED AND READILY SERVICED.
6. LOCATE THE AIR DUCT DETECTORS/SENSORS IN RETURN AIR DUCTS AHEAD OF MIXING AREAS.
7. DO NOT LOCATE AIR DUCT DETECTORS/SENSORS NEXT TO OUTSIDE AIR INLETS UNLESS YOU WANT TO MONITOR SMOKE ENTRY TO THE HANDLING SYSTEM FROM AN ADJACENT AREA.
8. LOCATE AIR DUCT DETECTORS/SENSORS UPSTREAM OF AIR HUMIDIFIERS AND COOLING COILS.
9. DO NOT INSTALL THE DUCT DETECTOR HOUSING OR DUCT TUBES IN LOCATIONS THAT EXCEED THE LISTED TEMPERATURE RATINGS FOR THE DEVICE.
10. DO NOT MOUNT THE DUCT HOUSING ON BOTTOM OF DUCT.

DUCT DETECTOR/SENSOR INSTALLATION

1. TAPE THE TEMPLATE (SUPPLIED) ON THE DUCT SURFACE. DO NOT POSITION THE TEMPLATE WITH EDGES ANGLED WITH RESPECT TO AIR FLOW DIRECTION. SEE FIGURE 2.
2. DRILL TWO 1 1/4 INCH (31.75 MM) HOLES (MARKED "A") AS LOCATED BY THE TEMPLATE. REMOVE TEMPLATE AFTER HOLES HAVE BEEN DRILLED.
3. IF THE DUCT IS MORE THAN 3 FEET (0.9 M) WIDE, THEN PUNCH A 1-INCH (25.4 MM) HOLE IN THE DUCT WALL DIRECTLY OPPOSITE THE UPSTREAM 1-1/4 INCH (31.75 MM) HOLE. SEE FIGURE 3. THIS HOLE IS USED TO SUPPORT THE INLET TUBE.
4. INLET TUBES SHOULD BE SELECTED AND CUT TO LENGTH AS SPECIFIED IN TABLE 1. AFTER TRIMMING THE INLET TUBE OPPOSITE THE SLOT, TAP RUBBER PLUG (SUPPLIED) INTO THE TRIMMED END. SEE FIGURE 3.

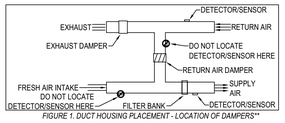


*FIGURE 1. DUCT HOUSING PLACEMENT - LOCATION OF DAMPERS***

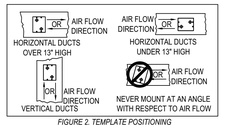


FIGURE 2. TEMPLATE POSITIONING

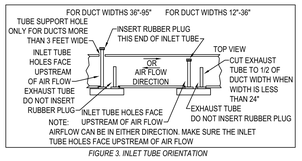
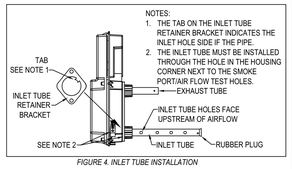


FIGURE 3. INLET TUBE ORIENTATION



NOTES:
1. THE TAB ON THE INLET TUBE RETAINER BRACKET INDICATES THE INLET HOLE SIDE IF THE PIPE.
2. THE INLET TUBE MUST BE INSTALLED THROUGH THE HOLE IN THE HOUSING CORNER NEXT TO THE SMOKE PORT/AIR FLOW TEST HOLES.

FIGURE 4. INLET TUBE INSTALLATION

INLET TUBE SELECTION

OVERALL DUCT WIDTH	TUBE REQUIRED	TUBE TYPE	SUGGESTED TOTAL LENGTH
12" (30cm)	4098-9854	13" (33.02cm)	1/2" (1.27cm) LONGER THAN DUCT WIDTH
13" (33.02cm) TO 23" (58cm)	4098-9855	24" (60.96cm)	1/2" (1.27cm) LONGER THAN DUCT WIDTH
24" (60cm) TO 46" (116cm)	4098-9856	49" (125.46cm)	2" (5.8cm) LONGER THAN DUCT WIDTH
46" (116cm) TO 71" (180cm)	4098-9857	73" (185cm)	2" (5.8cm) LONGER THAN DUCT WIDTH
71" (180cm) TO 95" (240cm)	4098-9858	97" (245cm)	2" (5.8CM) LONGER THAN DUCT WIDTH

TABLE 1. INLET TUBE SELECTION

* REFER TO INSTALLATION INSTRUCTION DOCUMENT 574-776 FOR MORE DETAILED INFORMATION.

** WHEN PROVIDING CONTROL FOR A SMOKE DAMPER INSTALLED WITHIN AN AIR TRANSFER OPENING IN A WALL, THE DUCT DETECTOR SHALL BE INSTALLED WITHIN 5 FEET HORIZONTALLY OF THE DAMPER.

WHEELOCK WALL MOUNT MULTI-CANDELA HORN/STROBE

MODEL (EXCEDER SERIES HS)

PRODUCT INFORMATION

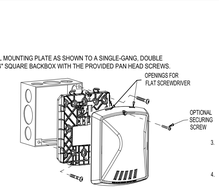
SPECIFICATIONS:

- HOUSING DIMENSIONS: 5.24" H X 4.58" W X 2.19" D (133mm X 116.33mm X 55.63mm)
- TEMPERATURE RANGE: 32°F TO 122°F (0 TO 50°C)
- HUMIDITY RANGE: 10% TO 93% NON-CONDENSING AT 100°F (38°C)
- COMPATIBLE WITH SM AND DSM SYNC MODULES

		HS DBA SOUND OUTPUT					
		REVERBERANT DBA PER UL 464			ANECHOIC PER CAN/ULC-S525-07		
DESCRIPTION	VOLUME	16.0V	24.0V	33.0V	16.0V	24.0V	33.0V
CONTINUOUS HORN	HIGH	91	93	96	95	99	101
	MEDIUM	86	89	92	91	95	97
	LOW	78	82	85	86	90	92
CODE 3 HORN	HIGH	86	89	91	95	99	101
	MEDIUM	81	85	84	91	95	97
	LOW	74	78	80	86	90	92

	CURRENT DRAW STROBE CANDELA SETTINGS (CD) 16 VOLTS							
HORN SETTING	15	15/75	30	75	95	110	135	185
HIGH	0.082	0.095	0.102	0.148	0.176	0.197	0.242	0.282
MEDIUM	0.073	0.083	0.087	0.139	0.163	0.186	0.230	0.272
LOW	0.065	0.075	0.084	0.136	0.157	0.184	0.226	0.267

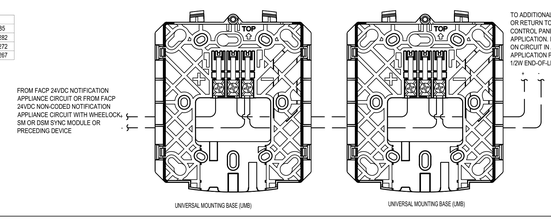
1. INSTALL MOUNTING PLATE AS SHOWN TO A SINGLE-GANG, DOUBLE GANG, 4" SQUARE BACKBOX WITH THE PROVIDED PAN HEAD SCREWS.



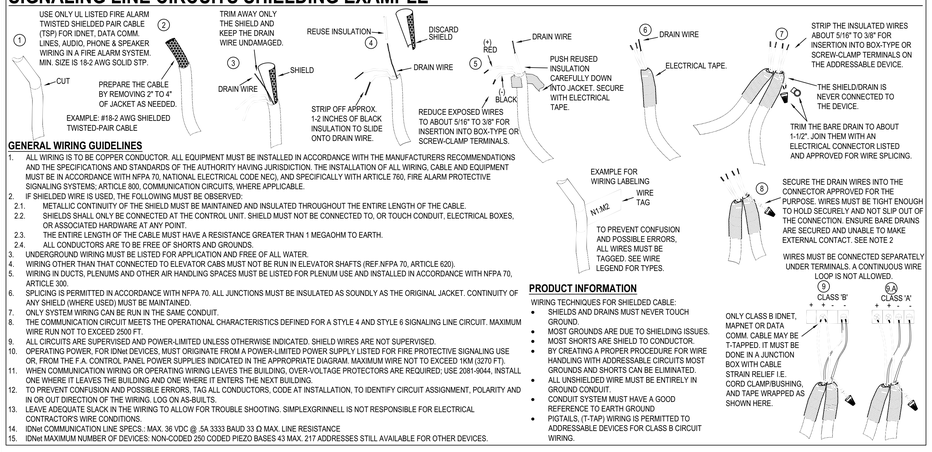
2. IMPORTANT: DEVICE ONLY HAS ONE MOUNTING ORIENTATION. MATCH THE TOP OF THE BASE TO THE TOP OF THE DEVICE.

REMOVAL (SEE STEP 4 BELOW)

3. IF IT DESIRES TO FURTHER SECURE THE DEVICE TO THE BASE, THEN ONE OPTIONAL SCREW IS PROVIDED. TO INSTALL THIS SCREW PUNCH OUT THE SCREW HOLE LOCATED AT THE TOP OF THIS DEVICE.
4. TO REMOVE THE APPLIANCE, PUSH A SMALL FLAT-BLADED SCREWDRIVER INTO THE SIDE OPENING. THE SCREWDRIVER MUST CLEAR THE SNAP RELEASE OPENING BY AT LEAST 1/4" TO DISENGAGE THE SNAP. DO NOT PRY OFF HOUSING WITH THE SCREW DRIVER. APPLY PRESSURE WITH SCREW DRIVER, INSERTED IN EITHER SIDE OPENING, AS SHOWN ABOVE TO RELEASE THE HOUSING.



SIGNALING LINE CIRCUITS SHIELDING EXAMPLE



GENERAL WIRING GUIDELINES

1. ALL WIRING IS TO BE COPPER CONDUCTOR. ALL EQUIPMENT MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND THE SPECIFICATIONS AND STANDARDS OF THE AUTHORITY HAVING JURISDICTION. THE INSTALLATION OF ALL WIRING, CABLE AND EQUIPMENT MUST BE IN ACCORDANCE WITH NFPA 70, NATIONAL ELECTRICAL CODE NEC), AND SPECIFICALLY WITH ARTICLE 760, FIRE ALARM PROTECTIVE SIGNALING SYSTEMS; ARTICLE 800, COMMUNICATION CIRCUITS, WHERE APPLICABLE.
2. IF SHIELDED WIRE IS USED, THE FOLLOWING MUST BE OBSERVED:
   - 2.1. METALLIC CONTINUITY OF THE SHIELD MUST BE MAINTAINED AND INSULATED THROUGHOUT THE ENTIRE LENGTH OF THE CABLE.
   - 2.2. SHIELDS SHALL ONLY BE CONNECTED AT THE CONTROL UNIT. SHIELD MUST NOT BE CONNECTED TO, OR TOUCH CONDUIT, ELECTRICAL BOXES, OR ASSOCIATED HARDWARE AT ANY POINT.
   - 2.3. THE ENTIRE LENGTH OF THE CABLE MUST HAVE A RESISTANCE GREATER THAN 1 MEGAOHM TO EARTH.
   - 2.4. ALL CONDUCTORS ARE TO BE FREE OF SHORTS AND GROUNDS.
3. UNDERGROUND WIRING MUST BE LISTED FOR APPLICATION AND FREE OF ALL WATER.
4. WIRING OTHER THAN THAT CONNECTED TO ELEVATOR CABS MUST NOT BE RUN IN ELEVATOR SHAFTS (REF.NFPA 70, ARTICLE 620).
5. WIRING IN DUCTS, PLENUMS AND OTHER AIR HANDLING SPACES MUST BE LISTED FOR PLENUM USE AND INSTALLED IN ACCORDANCE WITH NFPA 70, ARTICLE 300.
6. SPLICING IS PERMITTED IN ACCORDANCE WITH NFPA 70. ALL JUNCTIONS MUST BE INSULATED AS SOUNDLY AS THE ORIGINAL JACKET. CONTINUITY OF ANY SHIELD (WHERE USED) MUST BE MAINTAINED.
7. ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
8. THE COMMUNICATION CIRCUIT MEETS THE OPERATIONAL CHARACTERISTICS DEFINED FOR A STYLE 4 AND STYLE 6 SIGNALING LINE CIRCUIT. MAXIMUM WIRE RUN NOT TO EXCEED 2500 FT.
9. ALL CIRCUITS ARE SUPERVISED AND POWER-LIMITED UNLESS OTHERWISE INDICATED. SHIELD WIRES ARE NOT SUPERVISED.
10. OPERATING POWER, FOR IDNet DEVICES, MUST ORIGINATE FROM A POWER-LIMITED POWER SUPPLY LISTED FOR FIRE PROTECTIVE SIGNALING USE OR, FROM THE F.A. CONTROL PANEL POWER SUPPLIES INDICATED IN THE APPROPRIATE DIAGRAM. MAXIMUM WIRE NOT TO EXCEED 1KM (3270 FT).
11. WHEN COMMUNICATION WIRING OR OPERATING WIRING LEAVES THE BUILDING, OVER-VOLTAGE PROTECTORS ARE REQUIRED; USE 2081-9044, INSTALL ONE WHERE IT LEAVES THE BUILDING AND ONE WHERE IT ENTERS THE NEXT BUILDING.
12. TO PREVENT CONFUSION AND POSSIBLE ERRORS, TAG ALL CONDUCTORS, CODE AT INSTALLATION, TO IDENTIFY CIRCUIT ASSIGNMENT, POLARITY AND IN OR OUT DIRECTION OF THE WIRING. LOG ON AS-BUILTS.
13. LEAVE ADEQUATE SLACK IN THE WIRING TO ALLOW FOR TROUBLE SHOOTING. SIMPLEXGRINNELL IS NOT RESPONSIBLE FOR ELECTRICAL CONTRACTOR'S WIRE CONDITIONS.
14. IDNet COMMUNICATION LINE SPECS.: MAX. 36 VDC @ .5A 3333 BAUD 33 Ω MAX. LINE RESISTANCE
15. IDNet MAXIMUM NUMBER OF DEVICES: NON-CODED 250 CODED PIEZO BASES 43 MAX. 217 ADDRESSES STILL AVAILABLE FOR OTHER DEVICES.

PRODUCT INFORMATION

WIRING TECHNIQUES FOR SHIELDED CABLE:

- SHIELDS AND DRAINS MUST NEVER TOUCH GROUND.
- MOST GROUNDS ARE DUE TO SHIELDING ISSUES.
- MOST SHORTS ARE SHIELD TO CONDUCTOR.
- BY CREATING A PROPER PROCEDURE FOR WIRE HANDLING WITH ADDRESSABLE CIRCUITS MOST GROUNDS AND SHORTS CAN BE ELIMINATED.
- ALL UNSHIELDED WIRE MUST BE ENTIRELY IN GROUND CONDUIT.
- CONDUIT SYSTEM MUST HAVE A GOOD REFERENCE TO EARTH GROUND
- PIGTAILS, (T-TAP) WIRING IS PERMITTED TO ADDRESSABLE DEVICES FOR CLASS B CIRCUIT WIRING.

City Of Portland
REVIEWED FOR CODE COMPLIANCE
Date: 10/03/22
Permit #: 22-188521-000-00-00

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ISSUE LOG				
MARK	DATE	CAD	CHK	DESCRIPTION

Revisions shown with ⚠ symbol

DRAWN BY:	A.MAGNETT
CHECKED BY:	M.GERONE
ISSUE DATE:	5/31/22
JOB #:	
PROJECT #:	448-650212573

JOHNSON CONTROLS © 2022

SYSTEM: **FIRE ALARM SYSTEM**

SHEET: **WIRING TYPICALS**

FA-702

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