CENTRIS - SOUTH HILL DATACENTER
SCALE MATRIX UPS

1023 39TH AVE SE, PUYALLUP, WA 98374

SYMBOL LEGEND

SYM	DESCRIPTION	MODEL#	MANUFACTURER	BACK BOX
NAC-xx	BOOSTER POWER SUPPLY 6AMP	BPS6A	EXISTING	EXISTING
BATT	EXTERNAL BATTERY CABINET	BC-1	EST	18.25" × 14.0" × 7.25"
CRH	CONTROL RELAY MODULE HIGH VOLTAGE	SIGA-CRH	EST	4" SQUARE BOX, 1-1/2" DEEP, DOUBLE GANG COVER
CT2	DUAL INPUT MODULE	SIGA-CT2	EST	4" SQUARE BOX, 1-1/2" DEEP, SINGLE GANG COVER
S	FIRE SMOKE DAMPER	BY OTHERS	BY OTHERS	-
ASD EAS-F	XTRALIS AIR SAMPLING DETECTOR (VESDA) 1 PIPE, FIXED SPEED	VEP-A00-1P	XTRALIS	INCLUDED - 8.9"H X 13.8"W X 5.3"D
ASD EAS-4	XTRALIS AIR SAMPLING DETECTOR (VESDA) 4 PIPES	VEP-A10-P	XTRALIS	INCLUDED - 8.9"H X 13.8"W X 5.3"D
ASD EAS-L	XTRALIS AIR SAMPLING DETECTOR (VESDA) 4 PIPES, LCD DISPLAY	VEU-A10	XTRALIS	INCLUDED - 8.9"H X 13.8"W X 5.3"D

SCOPE OF WORK

THIS SCOPE OF WORK INCLUDES:
NEW VESDA ASPIRATING SMOKE DETECTOR HEAD FOR ADDED BATTERY ROOM AS PART OF THE SCALE MATRIX UPS UPDATES. NEW MONITOR MODULES CONNECTED TO EXISTING SLC TO MONITOR VESDA HEAD AS WELL AS TIE IN TO EXISTING VESDANET CIRCUIT. EXISTING POWER SUPPLY TO SUPPORT NEW VESDA HEAD. NEW BATTERY ROOM FIRE SMOKE DAMPERS TO BE CONTROLED VIA NEW RELAY AND WILL CLOSE UPON VESDA SMOKE DETECTION.

DESIGN CRITERIA APPLICABLE STANDARDS AND GUIDANCE:
NFPA 72, 2019 EDITION
2021 INTERNATIONAL BUILDING CODES
2023 NATIONAL ELECTRICAL CODE

OCCUPANCY/USE CLASSIFICATIONS:
S-2 - DATACENTER

DOCUMENTATION AVAILABLE TO CONVERGINT TECHNOLOGIES
MECHANICAL DRAWINGS BY STANTEC DATED 8/14/2024

CONTACT INFORMATION

FIRE ALARM DESIGNER
JACOB USHER
425-521-3495
JACOB.USHER@CONVERGINT.COM

SALES REPRESENTATIVE
KEVIN CURREY
206-941-4692
KEVIN.CURREY@CONVERGINT.COM

PROJECT MANAGER
CHARITY POWERS
206-258-0521
CHARITY.POWERS@CONVERGINT.COM

GENERAL NOTES

THE FOLLOWING NOTES ARE INTENDED TO BE GENERAL IN NATURE AND ARE NOT SPECIFIC TO EACH PROJECT. THESE NOTES ARE TO BE FOLLOWED WHERE APPLICABLE TO INDIVIDUAL PROJECTS AND SHOULD NOT BE TAKEN AS SCOPE OR DIRECTION WHERE THEY CONFLICT WITH INFORMATION FOUND ELSEWHERE IN THIS DRAWING SET.

1. ALL WIRE AND CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND SHALL MEET ALL APPLICABLE CODES.
2. ALL WIRE AND CABLE SHALL BE RATED FOR FIRE ALARM USE PER THE LATEST REVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC) SECTION 760. THIS IS A POWER LIMITED FIRE ALARM SYSTEM. ALL CABLE MUST BE MARKED FPL, FPLP, FPLR OR CI. FURTHER NEC, REQUIRES ALL WIRE BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED. ANY REFERENCES TO WIRE DESIGNATIONS ASSUME ELECTRICAL CONTRACTOR WILL SUBSTITUTE APPROPRIATE WIRE TO MEET CODE.
3. ALL CONDUCTORS SHALL TEST FREE OF GROUNDS AND SHORTS BEFORE MAKING ANY CONNECTION TO THE FIRE ALARM CONTROL PANEL.
4. TO RETAIN WARRANTY, THE FIRE ALARM EQUIPMENT MUST BE POWERED UP UNDER THE SUPERVISION OF A QUALIFIED MANUFACTURERS TECHNICIAN.
5. THE INSTALLING ELECTRICAL CONTRACTOR SHALL COORDINATE ALL FIELD CHANGES WITH THE FIRE ALARM CONTRACTOR. THIS INCLUDES CHANGES IN DEVICES, WIRE, CONDUIT RUNS AND OPERATION OF THE SYSTEM. FIRE ALARM CONTRACTOR SHALL NOT BE HELD RESPONSIBLE FOR UNDOCUMENTED CHANGES OR THE RESULTS OF THOSE CHANGES.
6. FIRE ALARM NOTIFICATION DEVICES SHALL BE AUDIBLE THROUGHOUT THE SPACE AND SHALL HAVE A SOUND PRESSURE LEVEL NOT LESS THAN 15db ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5db ABOVE THE MAXIMUM SOUND LEVEL, MEASURED AT 5'0" ABOVE THE FINISHED FLOOR.
7. MAIN BUILDING FIRE ALARM & SUPPRESSION SYSTEMS SHALL BE CLASS "B" WIRING. PRE-ACTION & DELUGE ALARM SYSTEMS SHALL BE CLASS "A" WIRING. CLASS "A" APPLICATIONS SHALL MAINTAIN A MINIMUM SEPARATION OF 48 INCHES HORIZONTALLY & 12 INCHES VERTICALLY BETWEEN OUTGOING AND RETURN CIRCUITS.
8. ALL PULL STATIONS AND NOTIFICATION DEVICES SHALL BE MOUNTED AT HEIGHTS SPECIFIED PER NFPA 72 AND ADA REQUIREMENTS.
9. ALL DETECTOR SPACING SHALL BE PER NFPA 72 & LOCAL CODES.
10. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ROUGH-IN LOCATIONS WITH OTHER TRADES.
11. ALL FIRE ALARM DEVICES SHALL BE SECURELY FASTENED TO WALLS OR CEILINGS.
12. SMOKE DETECTORS SHALL NOT BE LOCATED CLOSER THAN 36" TO ANY AIR REGISTER OR DIFFUSER.
13. HEAT DETECTORS SHALL NOT BE LOCATED CLOSER THAN 36" TO ANY AIR REGISTER OR DIFFUSER.
14. PER NFPA 72, CHAPTER 17; SMOKE DETECTORS INSTALLED PRIOR TO FINAL CLEAN MUST BE CLEANED AND VERIFIED TO BE OPERATING IN ACCORDANCE WITH THE LISTED SENSITIVITY, OR THEY SHALL BE REPLACED PRIOR TO THE FINAL COMMISSIONING OF THE SYSTEM. CONVERGINT BEARS NO RESPONSIBILITY FOR LABOR OR MATERIAL ASSOCIATED WITH CLEANING, SENSITIVITY TESTING OR REPLACEMENT OF SMOKE DETECTORS INSTALLED PRIOR TO FINAL CLEANING.
15. HEAT DETECTORS SHALL NOT BE LOCATED CLOSER THAN 36" TO ANY HEAT GENERATING DEVICE (FUSES, BOILERS, WATER HEATERS, ETC.) IN MECHANICAL ROOMS.
16. HEAT DETECTORS SHALL NOT BE LOCATED CLOSER THAN 18" TO ANY PART OF ANY LIGHT FIXTURE.
17. HEAT DETECTORS SHALL BE MOUNTED WITHIN 24" OF A SPRINKLER HEAD WHEN USED FOR ELEVATOR SHUNT TRIP IN ELEVATOR MACHINE ROOMS & SHAFTS.
18. INITIATING AND SIGNALING CIRCUITS MAY BE RUN IN SAME CONDUIT.
19. ALL CONDUCTORS SHALL BE LABELED BY ZONE OR SLC LOOP NUMBER.
20. THESE DRAWINGS ARE INTENDED TO SHOW PROJECT SPECIFIC PANELS, DEVICES AND WIRING DEPICTED DIAGRAMMATICALLY. WIRING SHOWN IS NOT INTENDED TO DEPICT RACEWAY OR PATHWAY LOCATIONS. DEVICE AND PANEL LOCATIONS SHALL BE COORDINATED BY INSTALLING CONTRACTOR AS PART OF THE CONSTRUCTION PROCESS.
21. AS THE FIRE ALARM VENDOR UTILIZED FOR THIS BUILDING, NFPA 72 REQUIRES WE KEEP ACCURATE RECORD DRAWING INFORMATION. AS SUCH, IT IS NECESSARY THAT WE DEPICT EXISTING DEVICES AND WIRING IN ADDITION TO THOSE COMPONENTS ASSOCIATED WITH YOUR SCOPE WHERE APPLICABLE. UNLESS OTHERWISE NOTED, IT IS ASSUMED EXISTING COMPONENTS WILL REMAIN UN-DISTURBED BY YOUR SCOPE OF WORK. TO AID IN IDENTIFYING NEW VS. EXISTING, WE WILL TURN EXISTING COMPONENTS TO A LIGHTER SHADE. REMOVAL OF THE EXISTING DEVICES AND WIRING MAY OTHERWISE IMPACT THE CONTEXT OF THE COMPLETE, CODE REQUIRED FIRE ALARM SYSTEM, THEREFORE THEY CANNOT BE OMITTED FROM OUR DRAWING PACKAGE.

WIRE LEGEND

ALL WIRING AND INSTALLATION METHODS SHALL BE IN COMPLIANCE WITH CURRENT RELEVANT NATIONAL AND LOCAL ELECTRICAL CODE ARTICLES AND RELATED SECTION CODE REQUIREMENTS.

WIRING INSTALLATION NOTES:
* LABEL ALL ZONE WIRES WITH ZONE NUMBER TAG AND DESCRIPTION.
* LABEL ALL SIGNAL CIRCUIT WIRES WITH SIGNAL CIRCUIT NUMBER TAG AND DESCRIPTION.
* LABEL ALL NETWORK, ANNUNCIATOR AND I/O CONTROL CIRCUIT WIRING WITH CIRCUIT NUMBER TAG AND DESCRIPTION.
* VERIFY WITH OWNER AND GENERAL CONTRACTOR THAT OPEN CABLE IS ALLOWED ON SPECIFIC SITE. (FPL, FPLP, RISER, OR 2 HOUR RATED)
* WHERE REQUIRED, OUR DRAWINGS WILL NOTE WIRE OR PATHWAY REQUIRING SURVIVABILITY. SUBSTITUTE THE RELEVANT CABLE WITH AN EQUIVALENT CABLE COMPATIBLE WITH THE MEANS OF SURVIVABILITY. THIS OFTEN INCLUDES; CI-C OR CI CABLE (CIRCUIT INTEGRITY), CONCRETE ENCASEMENT OR OTHER MEANS AS APPROVED BY THE AHJ. REFER TO NFPA 72 FOR FURTHER INFORMATION.

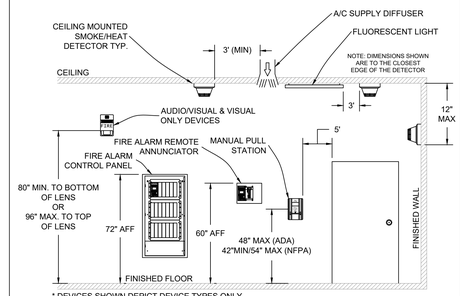
	CIRCUIT DESCRIPTION	NON PLENUM: (FPLR, FPL)	SINGLE COND.: (THHN, TFFN)	PLENUM RATED: (FPLP)
A	ZONE/INPUT CIRCUIT 2 COND. 16 AWG	BELDEN 5220UL [3.85Ω] [24pF/FT]	(2) #16 AWG	BELDEN 6220UL [3.85Ω] [37pF/FT]
C	NAC CIRCUIT 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
D	MASS. NOTIFICATION NAC CIRCUIT 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
E	DOOR HOLDER/CONTROL CIRCUIT 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
F	FAN/HVAC SHUTDOWN 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
G	FUTURE ADA NAC CIRCUIT 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
H	PHONE CIRCUIT 2 COND. 16 AWG SHIELDED	BELDEN 5220FL [3.9Ω] [65.5pF/FT]	N/A	BELDEN 6220FL [3.85Ω] [77pF/FT]
J	SPEAKER CIRCUIT 2 COND. 16 AWG	BELDEN 5220UL [3.85Ω] [24pF/FT]	(2) #16 AWG	BELDEN 6220UL [3.85Ω] [37pF/FT]
L	ELEVATOR CONTROL 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
M	AUDIO RISER 2 COND. 16 AWG SHIELDED	BELDEN 5220FL [3.9Ω] [65.5pF/FT]	N/A	BELDEN 6220FL [3.85Ω] [77pF/FT]
N	NETWORK COMMUNICATIONS 2 COND. 16 AWG	BELDEN 5220UL [3.85Ω] [24pF/FT]	(2) #16 AWG	BELDEN 6220UL [3.85Ω] [37pF/FT]
P	24VDC AUX. POWER 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
Q	VESDA NET 2 COND. 22 AWG	BELDEN 9841 [24Ω] [12.8pF/FT]	N/A	BELDEN 89841 [24Ω] [12pF/FT]
R	REMOTE LED CIRCUIT 2 COND. 16 AWG	BELDEN 5220UL [3.85Ω] [24pF/FT]	(2) #16 AWG	BELDEN 6220UL [3.85Ω] [37pF/FT]
S	ADDRESSABLE DATA SLC LOOP 2 COND. 18 AWG	BELDEN 5320UL [6.4Ω] [29pF/FT]	(2) #18 AWG	BELDEN 6320UL [6.4Ω] [31pF/FT]
T1	ANALOG TWO-WAY COMM. CABLE 2 COND. 18 AWG	N/A	N/A	RATH RP66010001 [2-HOUR CIC]
T2	ANALOG TWO-WAY COMM. CABLE 2 COND. 18 AWG	RATH 66120 [2-HOUR]	N/A	N/A
TP	ANALOG TWO-WAY POWER CABLE 2 COND. 18 AWG	N/A	N/A	RATH R66010001 [2-HOUR CIC]
U	SUPPRESSION RELEASING CIRCUIT 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]
W	SINGLE MODE FIBER NETWORK 8.3µ SM	BUDGET SMXLO2/SMXHI2: 15/25 dBm CONNECTOR: DUPLEX SC		
X	MULTIMODE FIBER NETWORK 50/125µ,62.5/125µ OR 100/140µ MM	BUDGET MMXVR: 10 dBm CONNECTOR: ST		
Y	TWO-WAY COMMUNICATIONS CAT5E - (4) PAIR 22 AWG	BELDEN 1583A	N/A	BELDEN 1585A
Z	FIRE/SMOKE DAMPER INTERFACE 2 COND. 14 AWG	BELDEN 5120UL [2.43Ω] [23pF/FT]	(2) #14 AWG	BELDEN 6120UL [2.43Ω] [37pF/FT]

NOTE: ALL LISTED RESISTANCE AND CAPACITANCE ARE CONDUCTOR TO CONDUCTOR. ALL RESISTANCE VALUES ARE PER 1000 FEET.

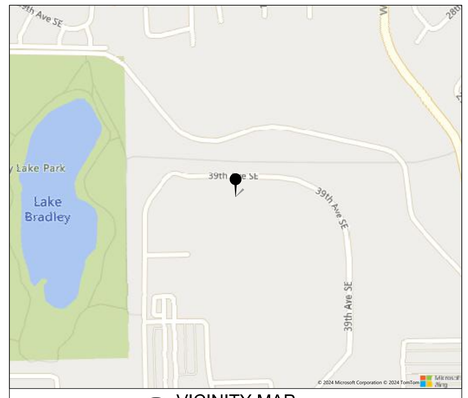
SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
FA-0-1	COVER SHEET
FA-0-2	NOTES
FA-1-1.1	FIRE ALARM AND VESDA PLAN
FA-1-1	OVERALL PLAN
FA-2-1	RISER DIAGRAM
FA-4-1	DEVICE DETAILS & CALCULATIONS

MOUNTING HEIGHTS



* DEVICES SHOWN DEPICT DEVICE TYPES ONLY.



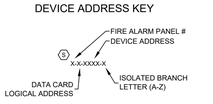
VICINITY MAP

ABBREVIATIONS

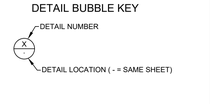
AC - ABOVE CEILING
AFF - ABOVE FINISHED FLOOR
ADA - AMERICAN DISABILITIES ACT
AHJ - AUTHORITY HAVING JURISDICTION
AHU - AIR HANDLING UNIT (THIRD PARTY)
ASD - ASPIRATION SMOKE DETECTION
CD - CANDELA (EX. 15CD)
CIS - COMMON INTELLIGIBILITY SCALE
DH - DOOR HOLDER (THIRD PARTY UNO)
EF - EXHAUST FAN (THIRD PARTY)
ELEV - ELEVATOR (THIRD PARTY)
EOL - END OF LINE
EPF - ELEVATOR PRESSURIZATION FAN (THIRD PARTY)
FA - FIRE ALARM
FAA- FIRE ALARM ANNUNCIATOR
FACP - FIRE ALARM CONTROL PANEL
FACU - FIRE ALARM CONTROL UNIT
FATC - FIRE ALARM TERMINAL CABINET
FBO - FURNISHED BY OTHERS
FCU - FAN COIL UNIT (THIRD PARTY)
FFT - FIREFIGHTER'S TELEPHONE
FM - FACTORY MUTUAL
FSD - FIRE SMOKE DAMPER (THIRD PARTY)
HVAC - HEATING, VENTILATION, AND AIR CONDITIONING (THIRD PARTY)
LA - LOW AIR (THIRD PARTY)
N/A - NOT APPLICABLE
NAC - NOTIFICATION APPLIANCE CIRCUIT
NFPA - NATIONAL FIRE PROTECTION ASSOCIATION
NIC - NOT IN CONTRACT
NTS - NOT TO SCALE
PS - POWER SUPPLY
RTU - ROOF TOP UNIT (THIRD PARTY)
SLC - SIGNALING LINE CIRCUIT
SPF - STAIR PRESSURIZATION FAN (THIRD PARTY)
STI - SPEECH TRANSMISSION INDEX
TYP - TYPICAL
UNO - UNLESS NOTED OTHERWISE
VAV - VARIABLE AIR VOLUME (THIRD PARTY)
VFD - VARIABLE FREQUENCY DRIVE (THIRD PARTY)
W/ - WITH
W - WATT (EX. 1/2W)
WP - WEATHERPROOF
XP - EXPLOSION PROOF

FLOOR PLAN KEY

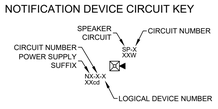
DEVICE ADDRESS KEY



DETAIL BUBBLE KEY



NOTIFICATION DEVICE CIRCUIT KEY



DRAWING SHEET INDEX KEY

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

City of Puyallup Fire REVIEWED FOR COMPLIANCE
DDrake
10/03/2024
1:45:37 PM

THE APPROVED CONSTRUCTION PLANS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

Approval of submitted plans is not an approval of omissions or oversight by this office or noncompliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable building codes and regulations of the local government.

IF DRAWING IS NOT 30" x 42" IT IS A SCALED COPY

convergint
450 Shattuck Avenue South, Renton, Washington 98057
Phone: 425-272-2250 Fax: 425-251-0949

DESIGNER OF RECORD
JACOB USHER
NICET III
FIRE ALARM SYSTEMS
CERTIFICATION #146102
EXPIRE DATE: 11-01-2026
FOR VERIFICATION,
PLEASE VISIT: WWW.NICET.ORG

REV	JOB# - DESCRIPTION	DATE	BY
-	ISSUED FOR PERMIT	9/13/2024	JU

DRAWN BY:	JACOB U.
PROJECT DESIGNER:	JACOB U.
PROJECT MANAGER:	CHARITY P.
JOB NUMBER:	USO1-J0041807
SCALE: AS SHOWN	DATE: 9/5/2024

CENTRIS - SOUTH HILL DATACENTER
SCALE MATRIX UPS
1023 39TH AVE SE
PUYALLUP, WA 98374

COVER SHEET
FIRE ALARM SYSTEM

DRAWING:
FA-0-1

INITIATING WIRING

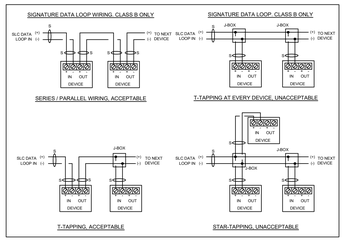
SIGNATURE LOOP WIRING LIMITATIONS:

SIGNATURE DUAL DRIVER CONTROLLER MODULES SUPPORTS UP TO 250 INTELLIGENT SIGNATURE DETECTORS AND 250 INTELLIGENT SIGNATURE MODULES
WIRE LENGTH LIMITATIONS:

NON-TWISTED, NON-SHIELDED WIRE
16AWG - 20pf/FT & 4.02 OHMS/1000 FEET
18AWG - 20pf/FT & 6.38 OHMS/1000 FEET
DETECTORS ONLY 16AWG - 125 DETECTORS - 9,275'
MODULES ONLY 16AWG - 125 MODULES - 7,921'
DETECTORS AND MODULES 16AWG - 125 OF EACH - 3,608'
DETECTORS ONLY 18AWG - 125 DETECTORS - 5,839'
MODULES ONLY 18AWG - 125 MODULES - 4,986'
DETECTORS AND MODULES 18AWG - 125 OF EACH - 2,271'

TWISTED PAIR, NON-SHIELDED WIRE
16AWG - 36pf/FT & 4.02 OHMS/1000 FEET
18AWG - 25pf/FT & 6.38 OHMS/1000 FEET
DETECTORS ONLY 16AWG - 125 DETECTORS - 9,275'
MODULES ONLY 16AWG - 125 MODULES - 7,921'
DETECTORS AND MODULES 16AWG - 125 OF EACH - 3,608'
DETECTORS ONLY 18AWG - 125 DETECTORS - 5,839'
MODULES ONLY 18AWG - 125 MODULES - 4,986'
DETECTORS AND MODULES 18AWG - 125 OF EACH - 2,271'

TWISTED PAIR, SHIELDED WIRE
16AWG - 82pf/FT & 4.02 OHMS/1000 FEET
18AWG - 58pf/FT & 6.38 OHMS/1000 FEET
DETECTORS ONLY 16AWG - 125 DETECTORS - 6,098'
MODULES ONLY 16AWG - 125 MODULES - 6,098'
DETECTORS AND MODULES 16AWG - 125 OF EACH - 3,608'
DETECTORS ONLY 18AWG - 125 DETECTORS - 5,839'
MODULES ONLY 18AWG - 125 MODULES - 4,986'
DETECTORS AND MODULES 18AWG - 125 OF EACH - 2,271'



NOTIFICATION WIRING

SPEAKER CIRCUIT WIRING LIMITATIONS:

WIRE LENGTH LIMITATIONS:

THE MAXIMUM ALLOWABLE WIRE LENGTH IS THE FARTHEST DISTANCE THAT A SPEAKER CIRCUIT CAN EXTEND FROM THE AMPLIFIER TO THE LAST SPEAKER WITHOUT LOSING 0.5 dB OF SIGNAL. THE FOLLOWING ARE MAXIMUM DISTANCE BASED ON APPROXIMATE WATTAGE OF THE SPEAKER CIRCUIT. CIRCUIT LENGTHS ARE FURTHER BASED ON ORIGINATION OF A CIRCUIT FROM EITHER THE AMPLIFIER OR FROM THE CC1 MODULE.

ALLOWABLE LENGTH AT 25 Vrms, WITH 0.5 dB LOSS
16AWG - 20 WATTS - 231'
16AWG - 30 WATTS - 154'
16AWG - 40 WATTS - 116'

ALLOWABLE LENGTH AT 70 Vrms, WITH 0.5 dB LOSS
16AWG - 20 WATTS - 1815'
16AWG - 30 WATTS - 1210'
16AWG - 40 WATTS - 907'

ALLOWABLE LENGTH AT 70 Vrms, WITH 0.5 dB LOSS
16AWG - 20 WATTS - 1815'
16AWG - 30 WATTS - 1210'
16AWG - 40 WATTS - 907'

NAC CIRCUIT (HORN, STROBE) WIRING LIMITATIONS:

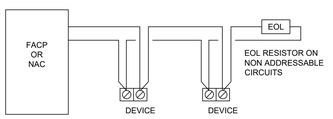
FOR 24VDC SYSTEMS, MINIMUM DEVICE OPERATING VOLTAGE IS 16VDC. VOLTAGE DROP CALCULATIONS ARE BASED ON 16VDC AND POWER SUPPLY DE-RATED AND ON DEPLETED BATTERY BACKUP PER THE PRESCRIBED PERIOD OF STANDBY AND ALARM RING TIME. THE VOLTAGE DROP WILL LIMIT THE CIRCUITS CAPACITY IN ALMOST ALL CASES AND CURRENT CANNOT BE USED AS THE ONLY CIRCUIT WIRING LIMITATION. ALTERATIONS TO CIRCUIT LENGTH FROM THOSE CALCULATED MAY CAUSE CIRCUITS TO BE OUT OF THE TOLERANCES GRANTED BY THE FIRE ALARM CODE. CHANGES TO DEVICE LOCATION OR CIRCUIT LENGTH SHALL BE COMMUNICATED TO THE CONVERGINT TEAM.

NAC CIRCUIT WIRING AND ROUTING MUST NOT EXCEED WHAT IS SHOWN ON THE DESIGN DRAWINGS AND CALCULATIONS. A VOLTAGE DROP TEST IS PART OF MOST FIRE FINALS AND IS REQUIRED BY NFPA. A FAILED FIRE FINAL MAY REQUIRE REWIRING OF THE FAILED CIRCUITS.

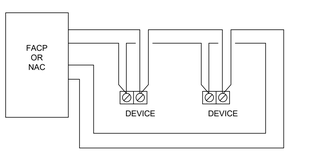
WIRE RESISTANCE RATINGS USED FOR CALCULATIONS:
18AWG - 13 OHMS PER 1000'
16AWG - 8 OHMS PER 1000'
14AWG - 5.2 OHMS PER 1000'

EXAMPLE: 1.0 AMP CIRCUIT LOAD USING #14 WIRE = 409 FEET MAXIMUM.

CLASS A OR B NOTIFICATION WIRING



CLASS B, STYLE 4 WIRING



CLASS A, STYLE 6 WIRING

SEPARATION OF CLASS A CIRCUITS - INSTALLATION EXCEPTIONS:

CLASS A OUTGOING AND RETURN CONDUCTORS, EXITING AND RETURNING TO THE CONTROL PANEL, ARE TO BE ROUTED SEPARATELY. THE MINIMUM RECOMMENDED SEPARATION IS 1 FT. VERTICALLY AND 4 FT. HORIZONTALLY. THE FOLLOWING EXCEPTIONS STILL DO NOT ELIMINATE THE 2ND PAIR OF WIRES. THEY ALLOW YOU TO USE A SINGLE RACEWAY AND ELIMINATE THE SEPARATION FOR THESE CONDITIONS.

1. WHEN MAXIMUM CABLE, ENCLOSURE, OR RACEWAY IS LESS THAN 10 FEET. NO LIMIT TO NUMBER OF DEVICES.
2. UNLIMITED CONDUIT OR RACEWAY DROP TO AN INDIVIDUAL DEVICE.
3. UNLIMITED CONDUIT OR RACEWAY DROP TO A ROOM NOT EXCEEDING 1000 SQ. FT. NO LIMIT TO THE NUMBER OF DEVICES.

RECORD DRAWINGS

AS-BUILT / RECORD DRAWING REQUIREMENTS:

THE FOLLOWING INFORMATION SHOULD BE RECORDED ON A SEPARATE SET OF DRAWINGS FOR EACH PROJECT:

1. ANY CHANGES IN THE LOCATION OF ANY ASSOCIATED FIRE ALARM OR INTERFACE EQUIPMENT, CONTROL PANELS, ANNUNCIATORS, DETECTORS, CONTROL RELAYS, INPUT AND OUTPUT MODULES, TERMINAL CABINETS, ETC.
2. ANY CHANGES TO CIRCUIT WIRING. THIS INCLUDES DELETION OR ADDITIONAL WIRING RUNS. ANY RE-ROUTING OF CIRCUIT WIRING. ANY ADDITIONS OR DELETIONS TO THE NUMBER, LOCATION, AND ORDER OF DEVICE WIRING ON A CIRCUIT.
3. ADDRESSES AND/ OR LABELS FOR ALL ADDRESSABLE DEVICES.
4. CANDELA SETTINGS OF ALL VISUAL NOTIFICATION DEVICES.
5. WATTAGE TAP SETTINGS OF ALL SPEAKER NOTIFICATION DEVICES.

ANY CHANGES SHALL BE DISCUSSED WITH CONVERGINT PROJECT MANAGER TO ENSURE SYSTEM AND CODE PARAMETERS ARE MET. CONVERGINT SHALL NOT BE HELD ACCOUNTABLE FOR CHANGES MADE WITHOUT APPROVAL.

THIS INFORMATION SHALL BE NEAT AND LEGIBLE WHEN PRESENTED TO THE TECHNICIAN AT THE CONCLUSION OF THE PROJECT. PLEASE NOTE CONTACT INFORMATION ON DRAWINGS FOR INDIVIDUALS WITH FAMILIARITY OF INSTALLATION IN THE EVENT QUESTIONS ARISE DURING THE CLOSEOUT PROCESS.

NETWORK WIRING

DATA NETWORK SPECIFICATIONS:

MAXIMUM ALLOWED VALUES BETWEEN ANY THREE NODES OF A NETWORK.
- RESISTANCE: 90 OHMS
- CAPACITANCE: 0.3 MICROFARADS
- DISTANCE: 5,000 FEET

THE FOLLOWING TABLE LISTS THE MAXIMUM CUMULATIVE CAPACITANCE FOR THE ENTIRE DATA NETWORK GIVEN VARIOUS WIRE SIZES AND TRANSMISSION RATES. MAXIMUM CUMULATIVE CAPACITANCE IS THE TOTAL CAPACITANCE OF ALL INSTALLED COPPER WIRE USED IN THE DATA NETWORK.

MAXIMUM CUMULATIVE CAPACITANCE IN MICROFARADS

18AWG - 1.4 @ 38.4K BAUD/2.8 @ 19.2K BAUD
16AWG - 1.8 @ 38.4K BAUD/2.1 @ 19.2K BAUD
14AWG - 2.1 @ 38.4K BAUD/4.2 @ 19.2K BAUD

CABLE PROPERTIES

DATA AND AUDIO NETWORKS IN AN EST3 SYSTEM DO NOT REQUIRE THE USE OF SHIELDED CABLE, AND NETWORKS DESIGNED WITH TWISTED-PAIR CAN BE ABOUT TWICE AS LONG AS THOSE DESIGNED WITH SHIELDED CABLE. THE MAXIMUM LENGTH OF A DATA NETWORK VARIES WITH THE PROPERTIES OF THE WIRE USED. WIRE MANUFACTURERS TYPICALLY PROVIDE SPECIFICATIONS FOR WIRE RESISTANCE AND CAPACITANCE.

SURVIVABILITY WIRING

PATHWAY SURVIVABILITY LEVELS

PATHWAY SURVIVABILITY MUST MEET THE REQUIREMENTS OF NFPA 72; SECTION 12.4 FOR THE CORRESPONDING LEVEL OF SURVIVABILITY REQUIRED BY NFPA 72, CHAPTER 24. THE FOLLOWING IS A CONDENSED DESCRIPTION OF THE SURVIVABILITY LEVELS.

PATHWAY SURVIVABILITY LEVEL 0. LEVEL 0 PATHWAY SHALL NOT BE REQUIRED TO HAVE ANY PROVISIONS FOR PATHWAY SURVIVABILITY.

PATHWAY SURVIVABILITY LEVEL 1. PATHWAY INSTALLED IN FULLY SPRINKLED BUILDING MEETING THE REQUIREMENTS OF NFPA 13 WITH ANY INTERCONNECTING CONDUCTORS, CABLES OR OTHER PHYSICAL PATHWAYS INSTALLED IN METAL RACEWAYS.

PATHWAY SURVIVABILITY LEVEL 2. PATHWAY SURVIVABILITY LEVEL 2 SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING:
(1) 2-HOUR FIRE-RATED CIRCUIT INTEGRITY (CI) CABLE
(2) 2-HOUR FIRE-RATED CABLE SYSTEM [ELECTRICAL CIRCUIT PROTECTIVE SYSTEM(S)]
(3) 2-HOUR FIRE RATED ENCLOSURE OR PROTECTED AREA
(4) 2-HOUR PERFORMANCE ALTERNATIVES APPROVED BY THE AUTHORITY HAVING JURISDICTION

PATHWAY SURVIVABILITY LEVEL 3. SAME AS LEVEL 2 WITH ADDITION OF BEING IN A FULLY SPRINKLED BUILDING MEETING THE REQUIREMENTS OF NFPA 13.

CIRCUITS REQUIRING SURVIVABILITY BY NFPA 72

THE FOLLOWING CIRCUIT TYPES, WHEN USED ARE REQUIRED TO BE SURVIVABLE AS DESCRIBED BELOW. REFER TO NFPA 72, CHAPTER 24 FOR ADDITIONAL INFORMATION REGARDING CIRCUIT TYPES. THIS IS NOT A COMPLETE LIST AND IS MEANT TO SUPPLEMENT ANY NOTES PROVIDED ELSEWHERE IN OUR DRAWING PACKAGE. PLEASE CONTACT CONVERGINT ENGINEERING DEPARTMENT WITH ANY QUESTIONS ON THE APPLICATION OF SURVIVABILITY.

- IN-BUILDING FIRE EMERGENCY VOICE/ALARM COMMUNICATIONS SHALL BE SURVIVABLE BASED ON ONE OF TWO CATEGORIES (24.3.6.4)
  - •• FOR SYSTEMS EMPLOYING RELOCATION OR PARTIAL EVACUATION, A LEVEL 2 OR 3 PATHWAY SURVIVABILITY SHALL BE REQUIRED (24.3.6.4.1).
  - •• FOR SYSTEMS THAT DO NOT EMPLOY RELOCATION OR PARTIAL EVACUATION, A LEVEL 0, LEVEL 1, LEVEL 2 OR LEVEL 3 PATHWAY SURVIVABILITY SHALL BE REQUIRED (24.3.6.4.2).
- TWO-WAY IN-BUILDING WIRED EMERGENCY COMMUNICATIONS SYSTEMS SHALL HAVE A PATHWAY SURVIVABILITY OF LEVEL 2 OR LEVEL 3 (24.3.6.7). THIS APPLIES TO FIREMAN'S PHONE SYSTEMS, STAIRWELL RE-ENTRY INTERCOM AND ELEVATOR LOBBY TWO-WAY AS REQUIRED BY INTERNATIONAL BUILDING CODE (IBC), SECTIONS, 403 AND 1009.8.
- TWO-WAY RADIO COMMUNICATIONS ENHANCEMENT SYSTEMS (DAS) SHALL COMPLY WITH 24.3.6.8.1 THROUGH 24.3.6.8.4. **DAS IS NOT A COMPONENT OF THE FIRE ALARM DESIGN AND IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.**
- AREA OF REFUGE EMERGENCY COMMUNICATIONS SYSTEMS SHALL HAVE A PATHWAY SURVIVABILITY OF LEVEL 2 OR LEVEL 3 (24.3.6.9.1).
- CIRCUITS INTENDED TO TRANSMIT OFF-PREMISES SHALL HAVE A PATHWAY SURVIVABILITY OF LEVEL 0, LEVEL 1, LEVEL 2 OR LEVEL 3 (24.3.6.9.2).

FOR SMOKE CONTROL SPECIFIC SURVIVABILITY REQUIREMENTS, REFER TO THE SMOKE CONTROL SECTION OF OUR NOTES. UPON REQUEST, CONVERGINT WILL PROVIDE EQUIVALENT SUBSTITUTIONS FOR ANY SPECIFIED CABLE. ANY CABLE SUBSTITUTED MUST HAVE EQUAL TO OR BETTER PROPERTIES TO THE CABLE SPECIFIED IN OUR WIRE LEGEND.

SMOKE CONTROL

AS A FIRE ALARM VENDOR, CONVERGINT TECHNOLOGIES HAS REVIEWED AND PROVIDED A DRAWING PACKAGE THAT REFLECTS THE REQUIRED INTERFACES TO THIRD PARTY EQUIPMENT AND SYSTEMS. CONVERGINT IS NOT THE DESIGNER OF RECORD FOR THE SMOKE CONTROL SYSTEM AND DEFERS TO THE REGISTERED FIRE PROTECTION ENGINEER FOR THIS SPECIFIC PROJECT AS IT RELATES TO THE FIRE ALARM/SMOKE CONTROL INITIATION AND CONTROL DESIGN PARAMETERS. ANY PROVIDED SMOKE CONTROL NARRATIVE(S) OR REPORTS HAVE BEEN INCORPORATED INTO OUR DESIGN APPROACH UNLESS INFORMED OTHERWISE. ADDITIONALLY, WE HAVE REVIEWED THE REQUIREMENTS OF 909.12 IN IT'S ENTIRETY AS IT RELATES TO THE FIRE ALARM DESIGN AND INCORPORATED THE NECESSARY ELEMENTS. THE INSTALLER OF THIS SYSTEM IS ALSO REQUIRED TO MEET THE APPLICABLE REQUIREMENTS.

WIRING ASSOCIATED WITH SMOKE CONTROL MUST MEET THE REQUIREMENTS OF THE AMENDED CODE FOR THIS PROJECT. THIS VARIES FROM JURISDICTION TO JURISDICTION. AS SUCH, THESE NOTES ARE INTENDED TO COVER THE GENERAL NATURE OF THIS WIRING. IN ADDITION TO THE SURVIVABILITY REQUIREMENTS LISTED BELOW, ALL WIRE REGARDLESS OF VOLTAGE SHALL BE FULLY ENCLOSED IN CONTINUOUS RACEWAY AS INDICATED IN, IBC, 909.12.2.

- ANY WIRE ASSOCIATED WITH THE CONTROL OF ANY ASPECT OF SMOKE CONTROL SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN TWO HOURS. THIS INCLUDES THE ADDRESSABLE DATA (SLC) CIRCUIT(S) USED TO CONNECT ADDRESSABLE RELAYS AND MONITOR MODULES.
- THE CONTROL PORTION OF ANY SMOKE CONTROL COMPONENT THAT FAILS TO THE SMOKE CONTROL STATE, GENERALLY ISN'T REQUIRED TO BE TWO HOUR RATED. ANY REQUIRED PROOFING PORTION OF THESE INTERFACES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN TWO HOURS.
- THE INITIATION PORTION OF SMOKE CONTROL GENERALLY ISN'T REQUIRED TO BE TWO HOUR RATED UNLESS SUPERCEDED BY PROJECT OR LOCAL REQUIREMENTS; HOWEVER CERTAIN JURISDICTIONS DO REQUIRE THESE ELEMENTS TO BE ENCLOSED IN METAL RACEWAY. REFER TO LOCAL AMENDMENTS FOR SPECIFIC REQUIREMENTS.

FOR WIRING METHODS, PLEASE REFER TO THE SURVIVABILITY WIRING SECTION OF OUR NOTES. LEVEL 2 AND LEVEL 3 WIRING GENERALLY MEETS THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, CHAPTER 909.

SEQUENCE OF OPERATIONS

	ACTIVATION OF LOCAL ALARM SIGNAL AT FACP (LCD DISPLAY & AUDIBLE INDICATION)	ACTIVATION OF LOCAL SUPERVISORY SIGNAL AT FACP (LCD DISPLAY & AUDIBLE INDICATION)	ACTIVATION OF LOCAL TROUBLE SIGNAL AT FACP (LCD DISPLAY & AUDIBLE INDICATION)	ACTIVATION OF LOCAL ALARM SIGNAL AT ANNUNCIATOR (LCD DISPLAY & AUDIBLE INDICATION)	ACTIVATION OF LOCAL SUPERVISORY SIGNAL AT ANNUCIATOR (LCD DISPLAY & AUDIBLE INDICATION)	ACTIVATION OF LOCAL TROUBLE SIGNAL AT ANNUNCIATOR (LCD DISPLAY & AUDIBLE INDICATION)	ACTIVATE ALARM OUTPUT TO BUILDING FACP	ACTIVATE SUPERVISORY OUTPUT TO BUILDING FACP	ACTIVATE TROUBLE OUTPUT TO BUILDING FACP	ACTIVATE AUDIBLE & VISIBLE DEVICES **VIA INTERFACE WITH BUILDING FACP**	GENERAL ALARM SIGNAL TO ACCESS/SECURITY SYSTEM	PRE-ACTION SOLENOID ACTIVATION	CLOSE ALL FIRE/SMOKE DAMPERS
SMOKE DETECTOR	X			X			X			X	X		X
VESDA DETECTOR - URGENT FAULT			X			X			X				
VESDA DETECTOR - ACTION		X			X			X					
VESDA DETECTOR - ALERT		X			X			X					
VESDA DETECTOR - FIRE 1	X			X			X			X	X	X	X
VESDA DETECTOR - FIRE 2	X			X			X			X	X	X	X
MANUAL PULL STATION	X			X			X			X	X		X
GENERAL TROUBLE CONDITION			X			X			X				
GENERAL SUPERVISORY CONDITION		X			X			X					
PRE-ACTION WATERFLOW/ALARM SWITCH	X			X			X			X	X		X
PRE-ACTION TAMPER SWITCH		X			X			X					
PRE-ACTION LOW AIR SWITCH		X			X			X					
PRE-ACTION RELEASE CIRCUIT DISCONNECT SWITCH		X			X			X				A	
FACP - LOSS OF PRIMARY POWER			X			X			X				

ABBREVIATIONS FOR PREACTION AND SUPPRESSION SYMBOLS USED IN SEQUENCE OF OPERATION:

A = DISCONNECT SWITCH PREVENTS PRE-ACTION SOLENOID ACTIVATION

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POWER REQUIREMENTS

EACH MAIN FIRE ALARM PANEL REQUIRES (1) 120VAC, 20AMP DEDICATED CIRCUIT.

EACH NAC BOOSTER PANEL REQUIRES (1) 120VAC, 15AMP DEDICATED CIRCUIT.

IN BUILDINGS EMPLOYING EMERGENCY STANDBY POWER SYSTEMS, THE FIRE ALARM SHALL BE SUPPLIED WITH EMERGENCY POWER. THIS IS REQUIRED IN HIGH-RISE AND SMOKE CONTROL APPLICATIONS. ALL OTHER APPLICATIONS ARE SUBJECT TO LOCAL BUILDING AND ELECTRICAL CODES.

WHERE THE FIRE ALARM SYSTEM IS CONNECTED TO EMERGENCY POWER, THE FIRE ALARM SYSTEM MONITORS THE GENERATOR FOR RUNNING, FUEL LOW AND TROUBLE STATES.

FOR ADDITIONAL DETAILS, REFER TO NFPA 72, CHAPTER 10.

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REV	JOB# - DESCRIPTION	DATE	BY
-	ISSUED FOR PERMIT	9/13/2024	JU

DRAWN BY:	JACOB U.
PROJECT DESIGNER:	JACOB U.
PROJECT MANAGER:	CHARITY P.
JOB NUMBER:	US01-J0243607
SCALE: AS SHOWN	DATE: 9/5/2024

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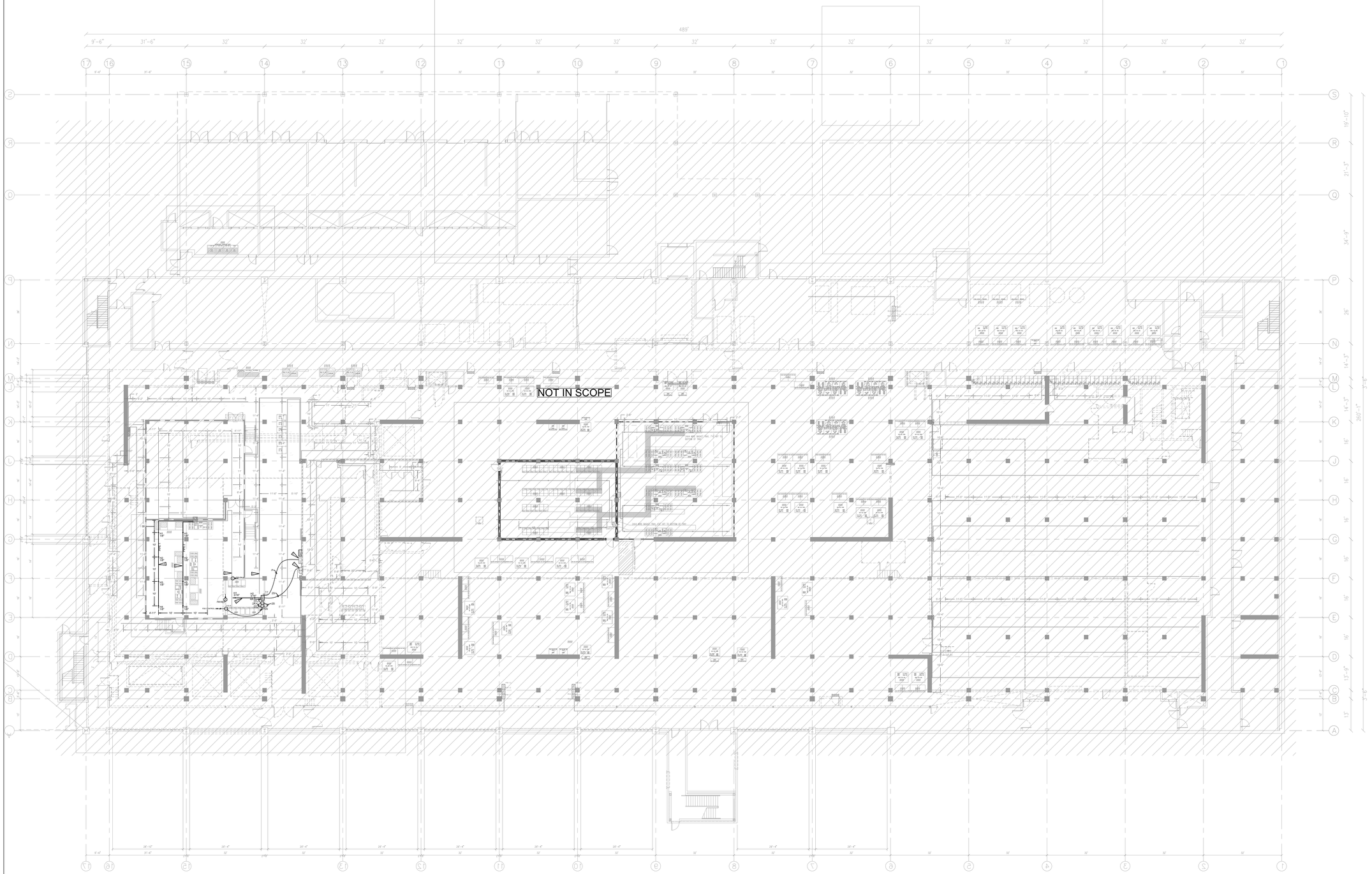
NOTES

FIRE ALARM SYSTEM

DRAWING:

FA-0-2



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LEVEL 1 - OVERALL PLAN

0 4' 8' 16'

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

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LEVEL 1 - OVERALL PLAN

FIRE ALARM SYSTEM

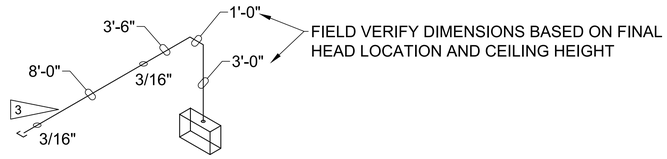
DRAWING:
FA-1-1

VESDA INSTALLATION NOTES:

1. DIMENSIONS PROVIDED ON PLANS ARE PRECISE TO +/- 3"
2. DEVIATIONS FROM PLANS DUE TO FIELD CONDITIONS MUST BE REDLINED AND RETURNED TO CONVERGINT PRIOR TO COMMISSIONING. VARIATIONS GREATER THAN 3' OR THE ADDITION OF ELBOWS SHOULD BE REPORTED BACK TO CONVERGINT PRIOR TO COMPLETION OF INSTALLATION FOR RE-CALCULATION.
3. SUPPORT PIPE ON NO GREATER THAN 5 FOOT CENTERS FOR CEILING INSTALLATION.
4. GLUE PIPE WITH THE APPROPRIATE ADHESIVE ON THE OUTSIDE OF THE PIPE. DO NOT ALLOW ANY ADHESIVE INSIDE PIPE.
5. DO NOT GLUE PIPE INTO THE VESDA DETECTOR MANIFOLD.
6. REMOVE ALL DUST AND SHAVINGS FROM INSIDE PIPE AND SAMPLING HOLES PRIOR TO INSTALLATION.
7. VERIFY HOLE LOCATION AND SIZE ACCORDING TO VESDA CALCULATIONS BEFORE DRILLING.
8. ORIENT DRILL PERPENDICULAR TO PIPE TO ENSURE HOLES ARE DRILLED STRAIGHT AND NOT AT AN ANGLE.
9. INSTALL LABELS AT EACH SAMPLING HOLE.
10. INSTALL PIPE LABELS EVERY 20', AND AT EVERY CHANGE OF DIRECTION PER NFPA 72.
11. NOTIFY CONVERGINT OF ANY FIELD RELATED OBSTRUCTIONS WHICH COULD EFFECT PIPE PLACEMENT OR ABILITY FOR SOMEONE TO THE REACH SAMPLING HOLES.
12. NOTIFY CONVERGINT PRIOR TO MAKING ANY FIELD CHANGES TO THE PIPE NETWORK. **CHANGES IN PIPING MAY RESULT IN CHANGES TO THE SAMPLING HOLE SIZES. DO NOT DRILL HOLES, OR ONLY DRILL 5/64" PILOT HOLES ONLY, IF PIPING CHANGES ARE REQUIRED PRIOR TO RECALCULATING.**
13. MAINTAIN RED-LINE SET OF INSTALLATIONS DRAWINGS SHOWING ANY MODIFICATIONS TO THE PIPE NETWORK AND DELIVER TO CONVERGINT PRIOR TO FINAL TESTING.
14. ALL VESDA PIPING SHALL BE 3/4" CPVC. UNLESS OTHERWISE NOTED
15. REFERENCE VESDA PIPING CALCULATIONS FOR PROGRAM SETTINGS REQUIRED TO CONFIGURE THE DETECTOR.

LEGEND

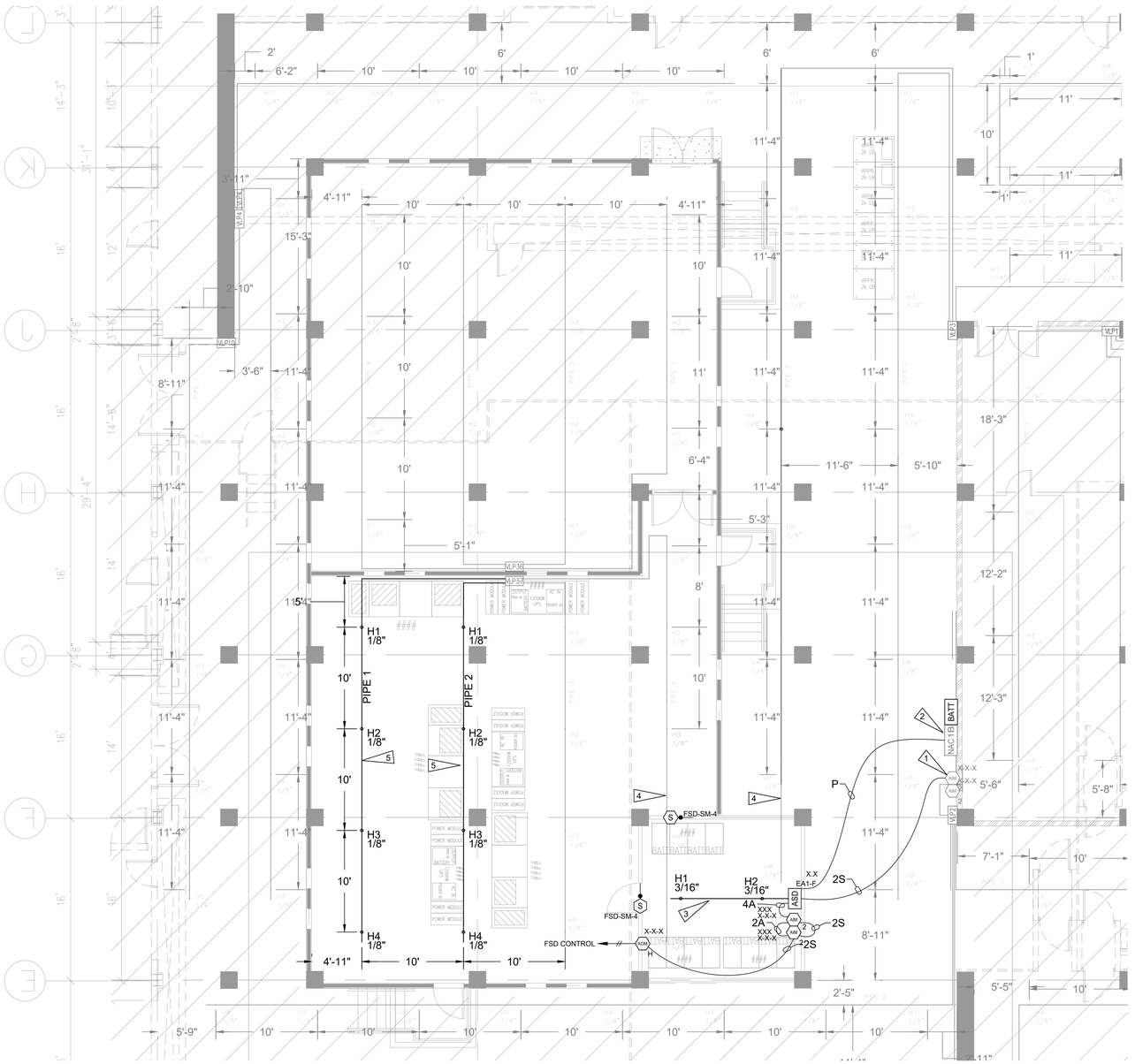
- =VESDA SAMPLING HOLE
- =VESDA CAPILLARY & CAPILLARY TUBE
- =VESDA DETECTOR HEAD
- =TEST POINT BALL VALVE
- =END CAP
- =VESDA PIPE
- = SOCKET UNION
- ASD =VEP 4-PIPE DETECTOR
- ASD =VEU 4-PIPE HIGH-VOLUME DETECTOR
- ASD =VEP 1-PIPE DETECTOR



FIELD VERIFY DIMENSIONS BASED ON FINAL HEAD LOCATION AND CEILING HEIGHT

VEP - ISOMETRIC DIAGRAM

SCALE: NTS



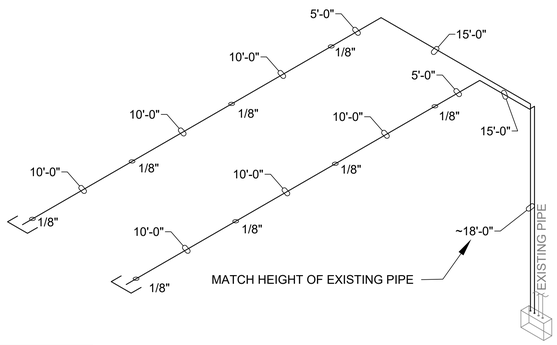
ENLARGED VESDA PIPE PLAN

0 2' 4' 8'

SCALE: 1/4"=1'-0"

FLAGNOTES:

1. EXTEND EXISTING SLC TO NEW DEVICES AS SHOWN.
2. CONNECT NEW 24VDC POWER CIRCUIT TO SPARE CIRCUIT AT NAC PANEL. PROVIDE EXTERNAL BATTERY BOX FOR NEW 24AH BATTERIES.
3. MOUNT VESDA PIPE WITHIN 12" OF CEILING, CENTERED IN ROOM
4. EXISTING VESDA PIPE EXTENDS ABOVE CEILING OF NEW BATTERY ROOM, NO MODIFICATIONS REQUIRED.
5. INSTALL PIPES AT ELEVATION MATCHING EXISTING PIPES CONNECTED TO VLP 37.



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VLP 37 - ISOMETRIC DIAGRAM

SCALE: NTS

LEVEL 1 FIRE ALARM AND VESDA PLAN

0 4' 8' 16'

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

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PROJECT MANAGER:	CHARITY P.
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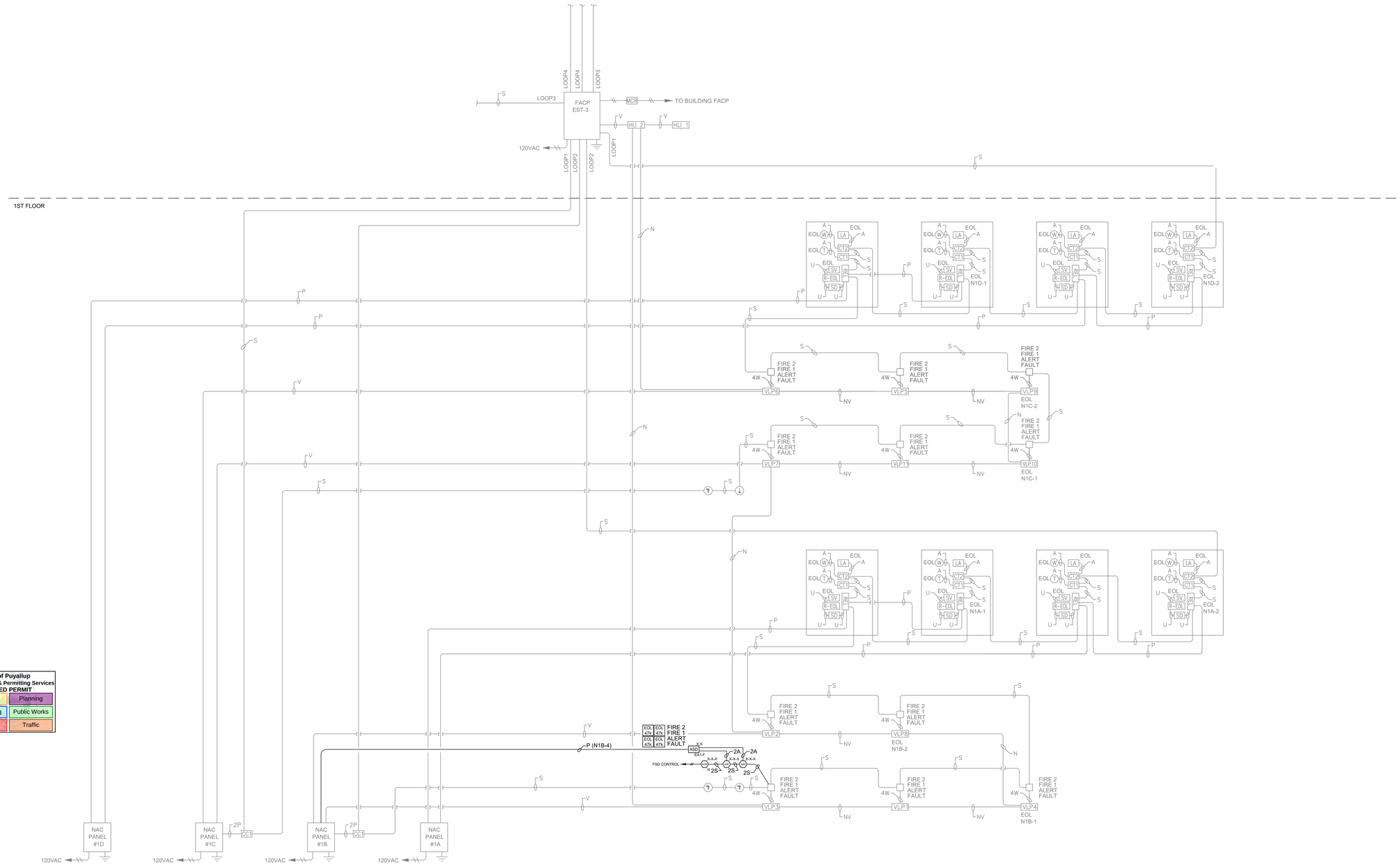
LEVEL 1 FIRE ALARM AND VESDA PLAN

FIRE ALARM SYSTEM

DRAWING:

FA-1-1.1



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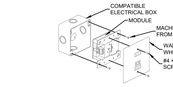
JOB NAME 1
JOB NAME 2
JOB ADDRESS
CITY, STATE, ZIP

TYPICAL RISER

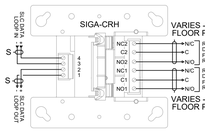
FIRE ALARM SYSTEM

DRAWING:

FA-2-1



EXPLODED VIEW



WIRING DIAGRAM

EST SIGA-CRH

HIGH POWER CONTROL RELAY MODULE

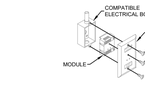
OPERATING VOLTAGE	15.20 TO 19.95 VDC
CONTACT RATINGS	
240 V 50/60 HZ.	7 A (PF 0.75), 1.5 A (PF 0.35)
120 V 50/60 HZ	7 A (PF 0.75), 3.0 A (PF 0.35)
24 VDC	6 A RESISTIVE
CURRENT	8.4 A MAX. (AC OR DC)
AUDIO SWITCHING	0 TO 20 KHZ
RELAY TYPE	2 FORM C, PROGRAMMABLE
CIRCUIT DESIGNATION	
SIGNALING LINE CIRCUIT	CLASS A, STYLE 6 OR CLASS B, STYLE 4
RELAY CIRCUITS	CLASS E
COMPATIBLE ELECTRICAL BOXES	
	2-1/8 IN. DEEP DOUBLE-GANG
	4 IN. SQUARE BOX 2-1/8 IN. DEEP WITH DOUBLE-GANG COVER
OPERATING ENVIRONMENT	
TEMPERATURE	32 TO 120° F
RELATIVE HUMIDITY	0 TO 93% NON-CONDENSING

INSTALLATION NOTES

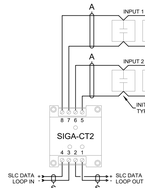
1. WIRE THE MODULE AS SHOWN.
2. ATTACH THE MODULE TO THE ELECTRICAL BOX, USING THE SCREWS PROVIDED WITH THE BOX.
3. USE SEPARATE KNOCKOUTS FOR THE SLC WIRING AND THE HIGH VOLTAGE WIRING.
4. USING THE SELF-TAPPING SCREW PROVIDED, ATTACH THE WALL PLATE TO THE MODULE.
5. DO NOT USE IN MIXED APPLICATION. IF ONE SET OF CONTACTS HAS HIGH-POWER REQUIREMENTS, THE OTHER SET MAY NOT BE USED FOR LOW-POWER.

SEE INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION

HIGH POWER CONTROL RELAY MODULE - WIRING DIAGRAM
EST SIGA-CRH



EXPLODED VIEW



WIRING DIAGRAM

EST SIGA-CT2

DUAL INPUT MODULE

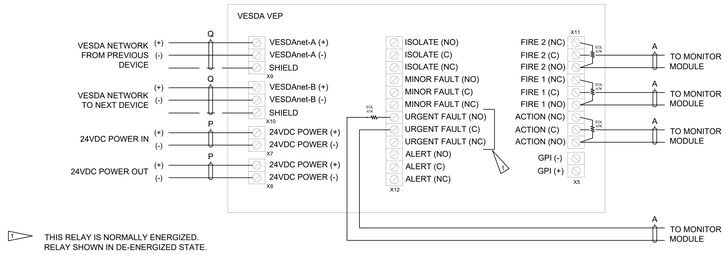
OPERATING VOLTAGE	15.20 TO 19.95 VDC
GROUND FAULT IMPEDANCE	10 kΩ
INITIATING DEVICE CIRCUIT (IDC)	
EOL RESISTOR VALUE	47 kΩ, UL LISTED
CIRCUIT RESISTANCE	50 Ω (25 Ω PER WIRE), MAX
CIRCUIT CAPACITANCE	0.1 µF MAX
CIRCUIT DESIGNATION	
SIGNALING LINE CIRCUIT	CLASS A, STYLE 6 OR CLASS B, STYLE 4
NOTIFICATION LINE CIRCUIT	CLASS B, STYLE B
COMPATIBLE ELECTRICAL BOXES	
	2-1/2 IN. DEEP SINGLE-GANG
	4 IN. SQUARE BOX 1-1/2 IN. DEEP WITH SINGLE-GANG COVER
LPCB/CPR ELECTRICAL BOX REQUIREMENTS	
	PLASTIC BOX WITH COVER PLATE, NO GAPS OR UNUSED HOLES
MINIMUM (W × H × D)	2.4 × 3.5 × 1.5 IN.
OPERATING ENVIRONMENT	
TEMPERATURE	32 TO 120° F
RELATIVE HUMIDITY	0 TO 93% NON-CONDENSING

INSTALLATION NOTES

1. WIRE THE MODULE AS SHOWN.
2. USING THE SELF-TAPPING SCREW PROVIDED, ATTACH THE WALL PLATE TO THE MODULE.
3. USING THE TWO MACHINE SCREWS PROVIDED, ATTACH THE WALL PLATE AND MODULE TO THE ELECTRICAL BOX.

SEE INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION

DUAL INPUT MODULE - WIRING DIAGRAM
EST SIGA-CT2

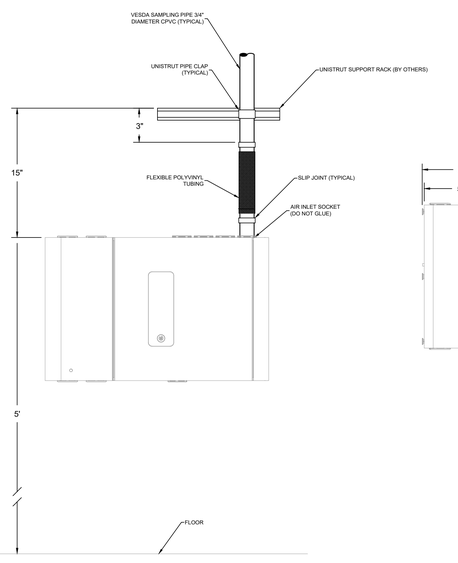


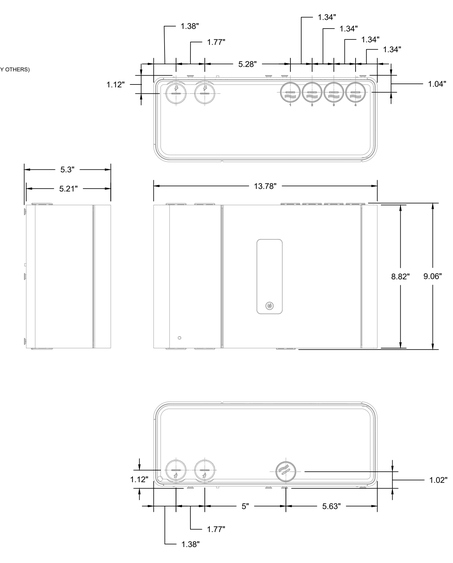
VESDA VEP WIRING DETAIL

VESDA SYSTEM

VEP WIRING DETAIL

SEE INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION



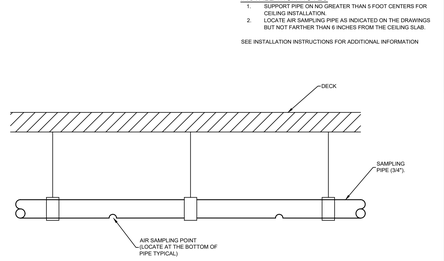


VESDA-E VEP - MOUNTING DETAIL

VESDA SYSTEM

VEP - MOUNTING DETAIL

SEE INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION



VESDA - SAMPLING PIPE DETAIL

VESDA SYSTEM

SAMPLING PIPE DETAIL

INSTALLATION NOTES

1. SUPPORT PIPE ON NO GREATER THAN 5 FOOT CENTERS FOR CEILING INSTALLATION.
2. LOCATE AIR SAMPLING PIPE AS INDICATED ON THE DRAWINGS BUT NOT FARTHER THAN 6 INCHES FROM THE CEILING SLAB.

SEE INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION

BPS6A NAC 1 - Battery Calculation

POWER SUPPLY DESIGNATOR	NAC	POWER SUPPLY PREFIX	1	STANDBY DURATION REQUIRED (HRS)	4
PANEL LOCATION	MECHANICAL ROOM			ALARM RING TIME REQUIRED (MIN)	5
AREA SERVED	VESDA POWER			SPARE CAPACITY (%)	25%

POWER SUPPLY BASE LOAD/AUXILIARY POWER OUTPUT

PART #	DESCRIPTION	QTY.	SUPV. CURRENT (mA)		ALARM CURRENT (mA)	
			EACH	TOTAL	EACH	TOTAL
BPS6A	REMOTE BOOSTER POWER SUPPLY	1	70	70	270	270
BPS AUX	BPS CIRCUITS SET TO AUX OUTPUT	4	35	140	35	140
SIGA-CC1S	SIGNAL MODULE WITH STROBE SYNC	1	0	0	6	6

NAC/AUX OUTPUTS

NAC/AUX OUTPUTS		DESCRIPTION	SUPV. CURRENT (mA)	ALARM CURRENT (mA)
CKT. #	TYPE		TOTAL	TOTAL
1	AUX. POWER	VESDA POWER (EXISTING)	1440	1620
2	AUX. POWER	VESDA POWER (EXISTING)	1440	1620
3	AUX. POWER	VESDA POWER (EXISTING)	960	1080
4	AUX. POWER	VESDA POWER (NEW)	367	400

SUBTOTAL SUPERVISORY CURRENT (AMPS):	4.417
TOTAL SUPERVISORY CURRENT WITH STANDBY (AMPS):	17.668
SUBTOTAL ALARM CURRENT (AMPS):	5.136
TOTAL ALARM CURRENT WITH ALARM RING TIME (AMPS):	0.428
SPARE CAPACITY:	25%
TOTAL AMP HOUR REQUIRED (AMPS):	22.620
BATTERY SIZE REQUIRED (AH):	24
BATTERY CABINET PROVIDED:	YES

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CIRCUIT N1-4 - AUX. POWER SUMMARY

CIRCUIT TYPE	AUX. POWER
DESCRIPTION	VESDA POWER (NEW)

POWER SUPPLY INFORMATION				CABLE PROPERTIES	
NOMINAL STARTING VOLTAGE (Vdc)	19.7	LOAD FACTOR (LF)	0.59	WIRE GAUGE (AWG)	14
MINIMUM DEVICE VOLTAGE (Vdc)	16	VOLTAGE W/LOAD FACTOR (VDC)	19.464	Ω PER 1K FEET (OHMS)	3.07
TOTAL SUPERVISORY CURRENT (AMPS)	0.367	TOTAL ALARM CURRENT (AMPS)	0.400		

PART #	DEVICE	QTY	STANDBY CURRENT (mA)		ALARM CURRENT (mA)	
			EACH	TOTAL	EACH	TOTAL
VEP-A00-1P	VESDA-E, ASPIRATOR @ FIXED RPM	1	367	367	400	400

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

IF DRAWING IS NOT 30" x 42" IT IS A SCALED COPY

convergint
450 Shattuck Avenue South, Renton, Washington 98057
Phone: 425-272-2250 Fax: 425-251-0949

REV	JOB# - DESCRIPTION	DATE	BY
-	ISSUED FOR PERMIT	9/13/2024	JU

DRAWN BY:	JACOB U.
PROJECT DESIGNER:	JACOB U.
PROJECT MANAGER:	CHARITY P.
JOB NUMBER:	US01-J0243607
SCALE: AS SHOWN	DATE: 9/5/2024

JOB NAME 1
JOB NAME 2
JOB ADDRESS
CITY, STATE, ZIP

DEVICE DETAILS

FIRE ALARM SYSTEM

DRAWING: FA-4-1