F.A.C. 61G15-32.008 DESIGN OF FIRE ALARMS & DETECTION SYSTEMS

61G15–32.008 DESIGN OF FIRE ALARM AND DETECTION SYSTEM COMPLIANCE NOTES FOR APARTMENTS AND CLUBHOUSE:

APPLICABLE CODES:
FBC FLORIDA BUILDING CODE (2017) 6TH EDITION
FFPC FLORIDA FIRE PREVENTION CODE (2017) 6TH EDITION
- NFPA 1 FIRE CODE (2015) FLORIDA EDITION
- NFPA 101 LIFE SAFETY CODE (2015) FLORIDA EDITION

NFPA 70 NATIONAL ELECTRIC CODE (2014)
NFPA 72 NATIONAL FIRE ALARM & SIGNALING CODE (2013)
AHJ – LAKE COUNTY, FLORIDA – LOCAL CODES & AMENDMENTS

A. DESIGN INTENT

1. SYSTEM TYPE: MASTER FIRE ALARM CONTROL PANEL LOCATED IN CLUBHOUSE SHALL BE AN ADDRESSABLE PANEL BY EDWARDS, HONEYWELL, NOTIFIER, SILENT KNIGHT, OR APPROVED EQUIVALENT. SUB–PANEL FACP'S IN EACH APARTMENT BUILDING SHALL BE ADDRESSABLE TYPES.
2. SEE SYMBOL LEGEND ON THIS SHEET.
3. SEE FIRE ALARM RISER DIAGRAM(S) THIS SHEET.
4. CABLING REQUIREMENTS:
   a. WIRING METHOD: THE SYSTEM WILL BE FREE WIRED USING APPROPRIATE STRAPS, TIES, FITTINGS, ETC. TO PREVENT DAMAGE TO THE WIRING.
   b. INITIATION CIRCUITS (LOOP): INITIATION LOOP CONDUCTORS SHALL BE WEST PENN #D991 FOR 3000'0" IN LENGTH AND LESS. WEST PENN #D995 SHALL BE USED FOR CIRCUITS OVER 3000'0" IN LENGTH. BELOW GRADE, WET OR DAMP LOCATION INSTALLED CABLE, INCLUDING CABLE INSTALLED ON THE TOP OF EXTERIOR WALKWAYS, SHALL BE WEST PENN AQUASEAL MULTI–CONDUCTOR (14 GAUGE), UNLESS NOTED OTHERWISE, SHALL BE INSTALLED IN CONDUIT.
   c. SIGNAL CIRCUITS: SIGNAL CIRCUITS SHALL BE #14 AWG THWN 19 STRAND COPPER (USE #12 AWG IF VOLTAGE DROP EXCEEDS MANUFACTURER'S SPECIFICATIONS).
   d. ANNUNCIATOR CIRCUITS: #14 AWG THWN 19 STRAND COPPER (USE #12 AWG IF VOLTAGE DROP EXCEEDS MANUFACTURER'S SPECIFICATIONS).
   e. EACH AND EVERY WIRE SHALL BE LABELED AT EACH END WITH SLC #, CHANNEL # OR SIGNAL #. EACH SEPARATE CIRCUIT, INITIATION, SIGNAL AND AUXILIARY SHALL HAVE A SPECIFIC NUMBER. LABEL EACH CONDUCTOR BY THIS CIRCUIT NUMBER AT THE CONTROL CONNECTIONS AND AT EACH TERMINAL CONNECTION IN THE TERMINAL CABINETS.
5. FIRE RATINGS REQUIRED FOR SURVIVABILITY: UNLESS NOTED OTHERWISE, PATHWAY SURVIVABILITY SHALL BE LEVEL 0 OR 1.

B. DEVICE LOCATIONS AND RELATED SYSTEMS

1. ALL INITIATION AND NOTIFICATION DEVICES ARE SHOWN ON ELECTRICAL POWER AND SYSTEMS PLANS WITHIN THIS ELECTRICAL DRAWING SET.
2. CONNECTIONS TO OTHER SYSTEMS: PROVIDE RELAYS FOR OTHER LOCAL CONTROL SUCH AS HVAC SHUTDOWN AND FIRE/SMOKE DAMPER RELEASE. RELAYS SHALL BE 10 AMP RATED RELAYS. UPON ACTIVATION OF THE FIRE ALARM SYSTEM, THE RELAY SHALL ACTIVATE AND SHUTDOWN THE CONTROLLED EQUIPMENT. LOCATE ALL RELAYS WITHIN 36" OF EQUIPMENT CONTROLLED. PROVIDE WEATHERPROOF UNITS WHERE INDICATED OR INSTALL IN WEATHERPROOF BOXES.

C. STROBE INTENSITY AND SPEAKER OUTPUT RATINGS

1. PER NFPA 72 SECTION 18.4.3 AUDIBLE SIGNALS SHALL BE AT LEAST 15dB ABOVE AVERAGE AMBIENT SOUND LEVEL OR 5dB ABOVE MAXIMUM SOUND LEVEL, WHICHEVER IS GREATER.
2. ALL VISUAL NOTIFICATION DEVICES SHALL HAVE A MINIMUM 75CD CANDELA RATING PER FBC.
3. AUDIBLE APPLIANCES FOR SLEEPING AREAS SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL THAT COMPLIES WITH NFPA SECTION 18.4.5.3.

D. CIRCUIT CLASSES

INITIATING DEVICE CIRCUITS – CLASS B. SIGNALING LINE CIRCUITS – CLASS B. NOTIFICATION APPLIANCE CIRCUIT – CLASS B.

E. FUNCTIONS

SEE SEQUENCE OF OPERATIONS THIS SHEET.

F. FIRE ALARM TYPE AND ZONING

1. FIRE ALARM SYSTEM IS AN ADDRESSABLE TYPE. SUB–PANELS ARE ADDRESSABLE TYPE.
2. INITIATING DEVICES SHALL BE ZONED BY BUILDING.
3. EVACUATION SIGNALS SHALL BE ZONED BY BUILDING.

G. SURGE PROTECTION

DITEK SURGE PROTECTION DEVICES DEVICES SHALL BE PROVIDED AT EACH CONNECTION TO MAIN POWER AND WHERE A CIRCUIT ENTERS/EXITS THE BUILDING. ALL SURGE/TRANSIENT SUPPRESSORS MUST BE CONNECTED TO APPROVED BUILDING GROUND.

H. ENVIRONMENTAL FACTORS

NO SPECIAL ENVIRONMENTAL FACTORS APPLY. FIRE ALARM DEVICES AND EQUIPMENT TO BE INSTALLED OUTDOORS IN EXTERIOR LOCATIONS SHALL BE SPECIFICALLY DESIGNED AND U.L. LISTED AS WEATHER AND WATERPROOF.

I. SITE PLAN

AN ELECTRICAL SITE PLAN HAS BEEN PROVIDED ON SHEET E1.01 INDICATING THE LOCATIONS OF MASTER FACP IN CLUBHOUSE AND SUB PANEL FACP'S IN APARTMENT BUILDINGS.

J. AREA SMOKE DETECTION

1. WHERE SMOKE DETECTORS ARE USED TO PROVIDE AREA COVERAGE, THEY SHALL BE LOCATED IN ACCORDANCE WITH NFPA 72 SECTION 17.7.3 "LOCATION AND SPACING" AND NFPA SECTION 29.8.3.4 "SPECIFIC LOCATION REQUIREMENTS" FOR THE APPLICABLE CONDITIONS.
2. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE LOCATED WHERE AMBIENT CONDITIONS, INCLUDING HUMIDITY AND TEMPERATURE, ARE OUTSIDE THE LIMITS SPECIFIED BY THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
3. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN UNFINISHED ATTICS OR GARAGES OR IN OTHER SPACES WHERE TEMPERATURES CAN FALL BELOW 40°F OR EXCEED 100°F.
4. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN 10 FT FROM A STATIONARY OR FIXED COOKING APPLIANCE, UNLESS LISTED FOR INSTALLATION IN CLOSE PROXIMITY TO COOKING APPLIANCES OR MEETING THE ADDITIONAL CRITERIA LIST IN SECTION 29.8.3.4(4).
5. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN 3 FT FROM THE FOLLOWING: A DOOR TO A BATHROOM CONTAINING A SHOWER OR TUB, SUPPLY AIR REGISTERS, AND/OR THE TIP OF THE BLADE OF A CEILING PADDLE FAN.

K. SMOKE STRATIFICATION

SMOKE STRATIFICATION IS NOT EXPECTED TO OCCUR IN THIS/THESE INTERIOR BUILDING(S).

L. PERFORMANCE BASED DESIGN (PBD)

THE DESIGN IS DERIVED FROM A PRESCRIPTIVE DESIGN BASIS.

M. EVACUATION SIGNAL

EVACUATION SIGNAL IS A GENERAL SIGNAL ☐ BY FLOOR ☒ BY BUILDING.

N. WIRING REQUIREMENTS

1. WIRING SHALL BE IN ACCORDANCE WITH NFPA 72 AND NFPA 70 ARTICLES 300, 760, 770, AND 800, AS APPLICABLE, UNLESS OTHERWISE NOTED.
2. PROTECTION AGAINST DAMAGE: INSTALL WIRING IN METAL RACEWAY. CONCEAL RACEWAY EXCEPT IN UNFINISHED SPACES AND AS INDICATED.
3. FIRE ALARM DEVICES AND EQUIPMENT TO BE INSTALLED OUTDOORS IN EXTERIOR LOCATIONS SHALL BE SPECIFICALLY DESIGNED AND U.L. LISTED AS WEATHER AND WATERPROOF. PROVIDE WEATHERPROOF NEOPRENE GASKETS BETWEEN WALL MOUNTING SURFACE AND FIRE ALARM DEVICE FOR ALL DEVICES MOUNTED OUTDOORS.

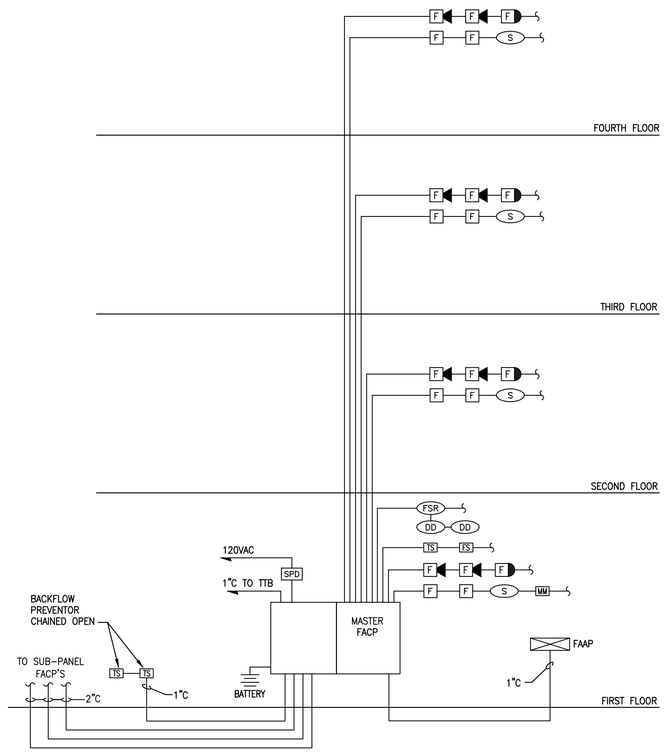
O. OPERATIONS AND MAINTENANCE PROCEDURES

1. PROVIDE THE SERVICES OF A FACTORY–AUTHORIZED SERVICE REPRESENTATIVE TO DEMONSTRATE THE SYSTEM AND TRAIN OWNER'S MAINTENANCE PERSONNEL AS SPECIFIED BELOW:
   a. TRAIN OWNER'S MAINTENANCE PERSONNEL IN THE LOCATION OF DEVICES, BOXES, PROCEDURES AND SCHEDULES INVOLVED IN OPERATING, TROUBLESHOOTING, SERVICING, AND PREVENTIVE MAINTAINING OF THE SYSTEM. PROVIDE A MINIMUM OF 4 HOURS' TRAINING. TRAINING SHALL INCLUDE A COMPLETE PROJECT WALKDOWN WITH OWNER'S AUTHORIZED REPRESENTATIVE TO IDENTIFY DEVICE LOCATIONS, JUNCTION BOX LOCATIONS AND SURGE SUPPRESSION MODULE LOCATIONS.
   b. SCHEDULE TRAINING WITH THE OWNER AT LEAST SEVEN WORKING DAYS IN ADVANCE.

(6) SYSTEM TEST AND DOCUMENTATION REQUIREMENTS

FIRE ALARM CONTRACTOR SHALL PERFORM THE TESTING LISTED BELOW AND PREPARE RECORDS PER NFPA 72 SECTION 14.6.

☒ INITIAL ACCEPTANCE TESTING IN ACCORDANCE WITH NFPA 72 SECTION 14.4.1 FOR ALL NEW APPLIANCE AND CIRCUITS.
☐ RE–ACCEPTANCE TESTING IN ACCORDANCE WITH NFPA 72 14.4.2 FOR MODIFICATIONS OF EXISTING CIRCUITS.



FIRE ALARM SYSTEM RISER DIAGRAM
NO SCALE

FIRE ALARM SYMBOL LEGEND

FACP	FIRE ALARM CONTROL PANEL	M	FIRE ALARM MINI HORN
		M	FIRE ALARM MINI HORN & STROBE COMBINATION
FAAP	FIRE ALARM ANNUNCIATOR PANEL	SPD	SURGE PROTECTOR DEVICE
F	FIRE ALARM PULL STATION	S	SMOKE DETECTOR
F	FIRE ALARM HORN	H	HEAT DETECTOR
F	FIRE ALARM HORN & STROBE COMBINATION	DD	DUCT DETECTOR
F	FIRE ALARM HORN & STROBE COMBINATION (CEILING MTD)	RTS	REMOTE TEST STATION FOR DUCT DETECTOR
F	FIRE ALARM STROBE	FSR	FIRE ALARM SHUT DOWN RELAY

FIRE ALARM SEQUENCE OF OPERATIONS

CATEGORIES	MANUAL PULL	AREA SMOKE/ HEAT DETECTORS	DUCT SMOKE DETECTORS	SPRINKLER VALVE FLOW SWITCH	SPRINKLER VALVE TAMPER SWITCH	BUILDING POWER FAILURE
ANNUNCIATION AT FIRE ALARM CONTROL PANEL (TROUBLE AND ALARM)	YES	YES	YES	YES	YES	YES
ANNUNCIATE AT REMOTE ANNUNCIATOR (TROUBLE AND ALARM)	YES	YES	YES	YES	YES	YES
ACTIVATE AUDIBLE AND VISUAL ALARM SIGNALS	YES	YES	YES	YES	NO	NO
SHUT DOWN AIR HANDLING UNIT(S) WITHIN THE ALARM ZONE	NO	NO	YES	NO	NO	NO
CLOSE ALL SMOKE/FIRE DAMPERS	NO	NO	YES	NO	NO	NO
RELEASE ALL MOTORIZED AND ELECRO–MAGNETICALLY HELD DOORS	YES	YES	YES	YES	NO	YES
RELEASE APPROVED SECURITY DOOR LOCKS	YES	YES	NO	YES	NO	YES

F.A.C. 61G15-32.008

THE CONTRACTOR'S FIRE ALARM ENGINEER, AS THE "DELEGATED ENGINEER" SHALL BE THE "ENGINEER OF RECORD" FOR THE FIRE ALARM SYSTEM AND SHALL PREPARE COMPLETE AND FINAL FIRE ALARM DESIGN DOCUMENTS WITH BATTERY CALCULATIONS, SIGNED AND SEALED, AS DEFINED BY THE F.A.C. 61G15–32.008 AND SHALL SUBMIT REQUIRED DOCUMENTATION TO THE ARCHITECT FOR REVIEW BY THEIR "PRIME PROFESSIONAL ENGINEER" CONSULTANT TO REVIEW FOR BASIC DESIGN CRITERIA. UPON APPROVAL THE CONTRACTOR SHALL SUBMIT SIGNED AND SEALED DOCUMENTS TO THE AHJ FOR REVIEW AND APPROVAL.

FIRE ALARM RISER - GENERAL NOTES:

A. FIRE ALARM SYSTEM RISER DIAGRAM IS DIAGRAMMATICAL. SEE FLOOR PLANS FOR EXACT QUANTITIES OF DEVICES. WIRING SHALL BE AS RECOMMENDED BY SYSTEMS MANUFACTURER.

B. DO NOT SCALE ELECTRICAL DRAWING FOR ANY DIMENSIONS.

C. ALL WORK SHALL COMPLY WITH THE 2014 NATIONAL ELECTRIC CODE, NATIONAL, STATE AND LOCAL CODES. PROVIDE GROUNDING AND BONDING PER NEC 250.

D. PROVIDE 120VAC SURGE SUPPRESSION AND LOW VOLTAGE FIRE ALARM CIRCUIT SURGE SUPPRESSION.

E. PROVIDE NOTIFICATION APPLIANCE CIRCUITS AND POWER SUPPLIES AS REQUIRED.

F. REFER TO POWER AND SYSTEMS FLOOR PLANS FOR FIRE ALARM EQUIPMENT COUNT.

G. PROVIDE 1" CONDUIT FROM FACP TO TTB.

H. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT WHERE REQUIRED BY CODE OR AHJ. PROVIDE ALL REQUIRED MONITORING AND CONTROL OF MECHANICAL UNITS AS REQUIRED BY AUTHORITY HAVING JURISDICTION.

I. VERIFY FIRE PROTECTION FLOW AND TAMPER SWITCH LOCATION WITH FIRE PROTECTION DRAWINGS. PROVIDE ALL REQUIRED MONITORING OF FIRE PROTECTION SYSTEM.

BLAKE L. SUDDETH LICENSE No. 69060 STATE OF FLORIDA PROFESSIONAL ENGINEER

Blake Suddeth
Jan 17 2018 2:50 PM

PERMIT REVIEW STAMP

ISSUE HISTORY

No.	Date	Description
1	1/18/2018	ISSUE FOR PERMIT

REVISION HISTORY

No.	Date	Description

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SUMMER BAY APTS. II
LAKE COUNTY, FL

Drawn:	MJR/KCM
Checked:	BLS/AJB
Approval:	BLS/AJB
Date:	11/10/2017
Project #:	5389

DETAILS - ELECTRICAL

E6.05

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