

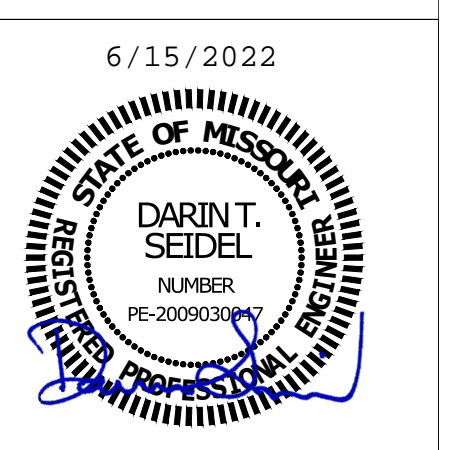
PLAN TYPE:
FIRE ALARM SYSTEM
DEVICE LOCATIONS



ARCHWAY SYSTEMS
17020 E. 40 Hwy. Ste 1
Independence, MO 64055
Office: (816) 709-3358

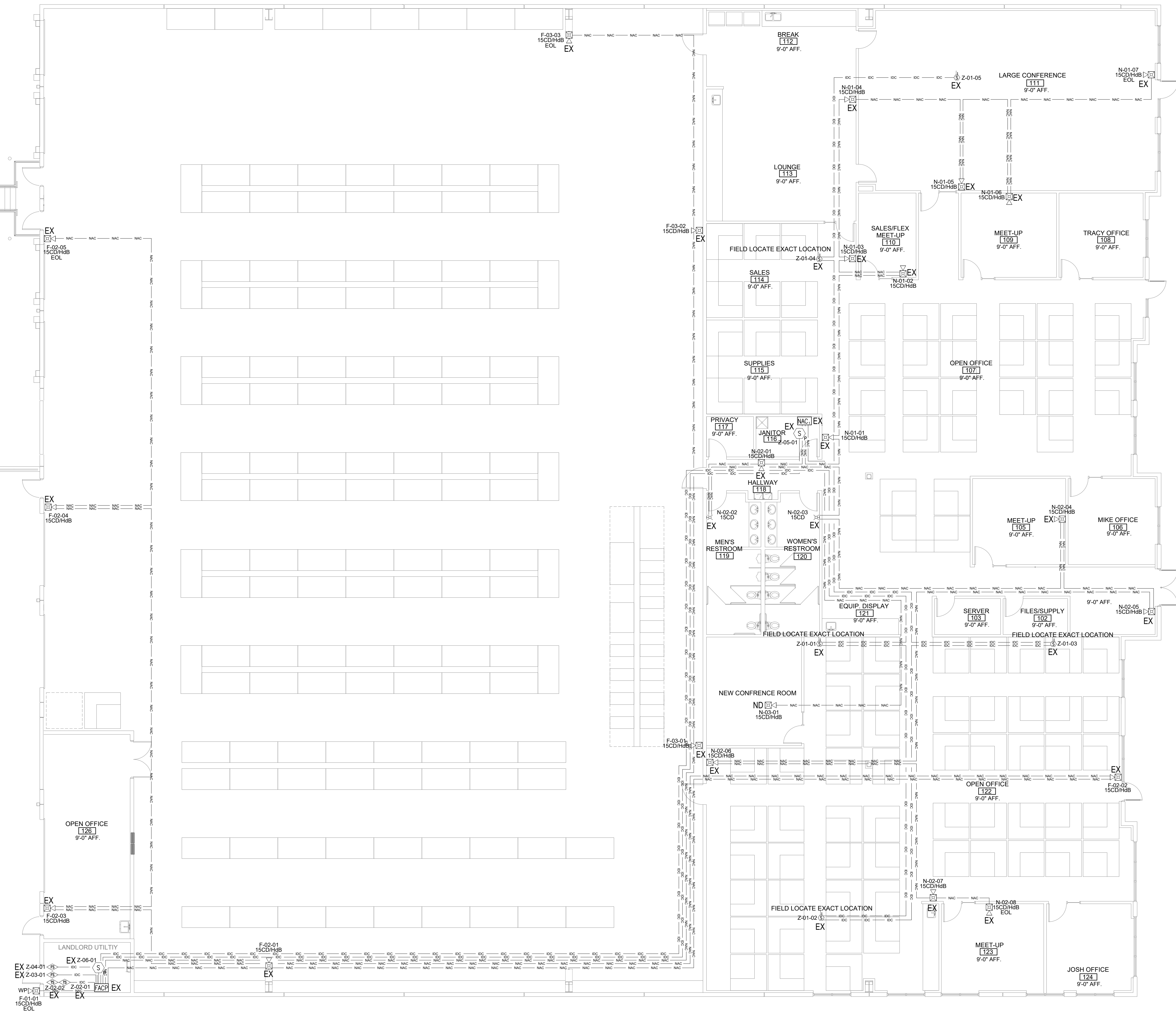
BILL IRELAND SECURITY CO.
15227 BROADMOOR ST.
OVERLAND PARK, KS 66223
913-897-7518

FREAL FOODS
2884 INDEPENDENCE AVE.
LEE'S SUMMIT, MO 64064



NO	REVISION	DATE

DATE: 05/15/2022
LAYOUT BY: DANIEL HEBBLETHWAITE, ET
NICET #107102
SCALE: 1/8" = 1'-0"



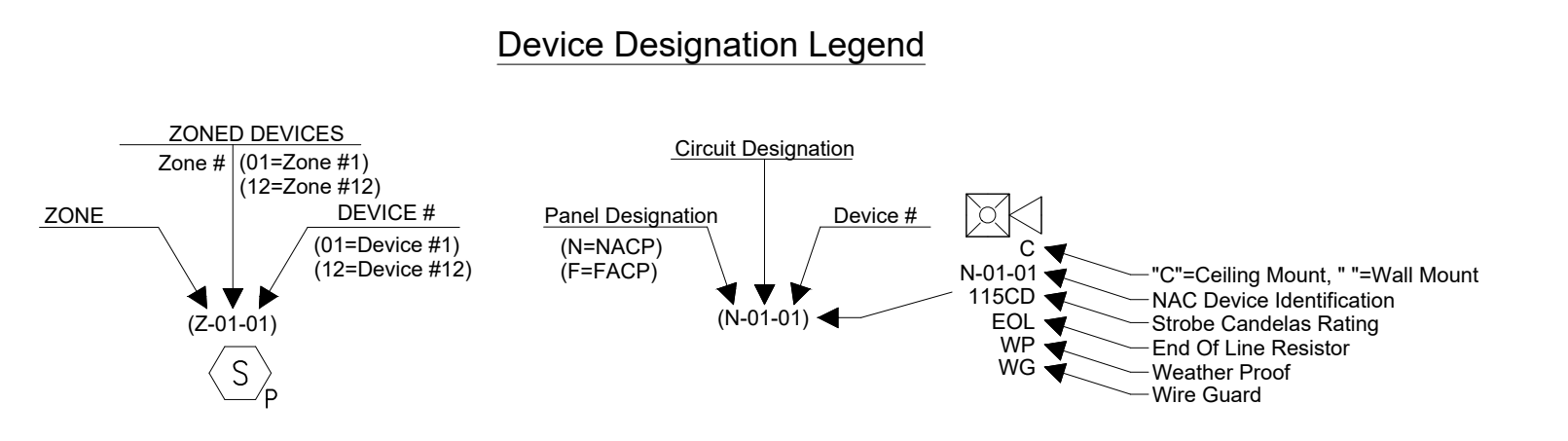
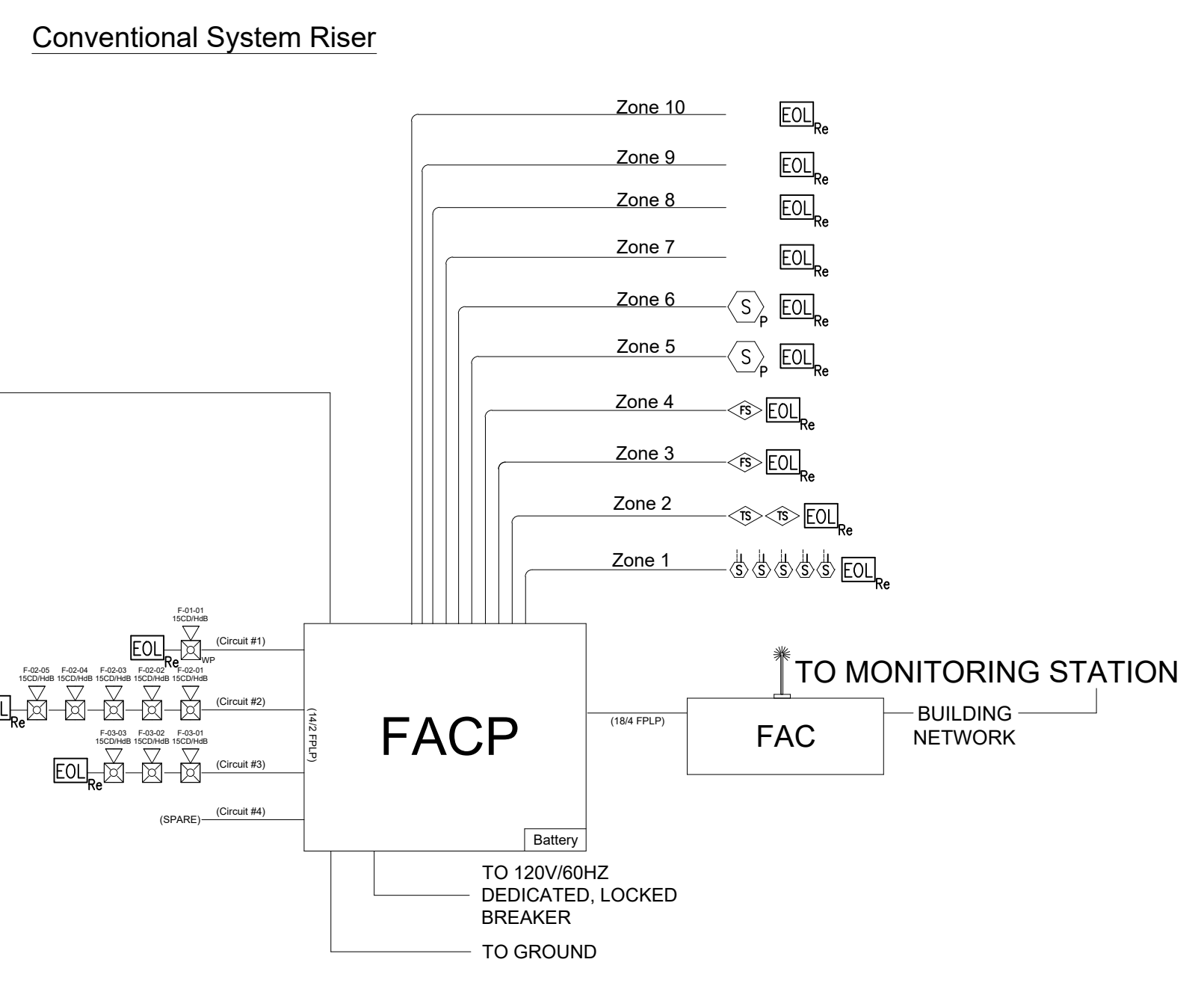
FIRE ALARM SYSTEM PLAN
Scale: 1/8" = 1'-0"

Fire Alarm Device Legend

Symbol	Qty	Description	Manufacturer/Part Number	Mounting Requirements
FACP	01	Fire Alarm Control Panel	SALENT KNIGHT SK-5208	Surface mounted enclosure provided
NAC	01	Commercial Fire Alarm Notification Appliance	NAFCO SLETEV-CFB-PS	Surface mounted enclosure provided
NAC	01	Notification Power Supply	ATRONIC AU3000-ADK	Surface mounted enclosure provided
S	02	Smoke Detector	SYSTEM SENSOR SPS5	Single Gang, 4" Octagon or Square in the ceiling
S	05	Dust Smoke Detector	Provided by Mechanical Contractor	Dust Mounted
WFF	02	Water Flow Switch	Supplied by Sprinkler Contractor	Connection Only
ST	02	Sprinkler Valve Tamper	Supplied by Sprinkler Contractor	Connection Only
H	21	Hand-Held, Wall-Ceiling Indicator	SYSTEM SENSOR SPS5	Mount Device Top 90° of the finished floor
H	02	ADA/Stroke Wall-Ceiling Indicator	SYSTEM SENSOR SPS5	Mount Device Top 90° of the finished floor

Fire Alarm Wire Legend

Wire Designation	Wire Types
EC	EC, EC, EC
EC	EC, 180 FFLP
NAC	Notification Appliance Circuit - 140 FFLP



CODE INFORMATION

OCCUPANCY CLASS: B - BUSINESS
OCCUPANCY LOAD: 4500 OCCUPANTS
CONSTRUCTION TYPE: I-B

CODE SUMMARY: IBC-2018, IPC-2018, IMC-2018, NEC-2017, IFC-2018, NFPA72-2019.

SPRINKLER: FULLY SPRINKLED
SCOPE OF WORK: AS-BUILT DRAWINGS FOR AN EXISTING BUILDING WITH AN EXISTING FIRE ALARM SYSTEM.

DEVICE INSTALLATION LEGEND

ND - NEW DEVICE
EX - EXISTING TO REMAIN
XO - EXISTING TO BE REMOVED
XN - EXISTING TO BE REPLACED WITH NEW
XR - EXISTING RELOCATED
XRR - EXISTING TO BE REMOVED AND RELOCATED

Standby Battery Calculations

Fire Alarm Control Panel (FACP) SK-5208
2-Wire Photovoltaic Detector W/ Thermal & Relay
Commercial Fire Dual Panel Mercante Model in Red Meta

Part Number	Description	Quantity	Standby Per Device	Alarm Per Device	Current	Alarm Current		
SK-5208	Fire Alarm Control Panel V1 Digital Communicator	1	0.140000	0.400000	0.400000	0.400000		
2-WB	2-Wire Photovoltaic Detector W/ Thermal & Relay	2	0.020000	0.100000	0.100000	0.200000		
SLETEV-CFB-PS	Commercial Fire Dual Panel Mercante Model in Red Meta	1	0.071000	0.070000	0.200000	0.200000		
TAC-IDC	Total Alarm Current Max DC	0.000000	0.000000	0.040000	0.000000	0.000000		
TAC-SLC	Total Alarm Current Max SLC	0.000000	0.000000	0.400000	0.000000	0.000000		
Total Aux Current			Maximum Amps	2.3000	Standby	0.212	Alarm	0.620

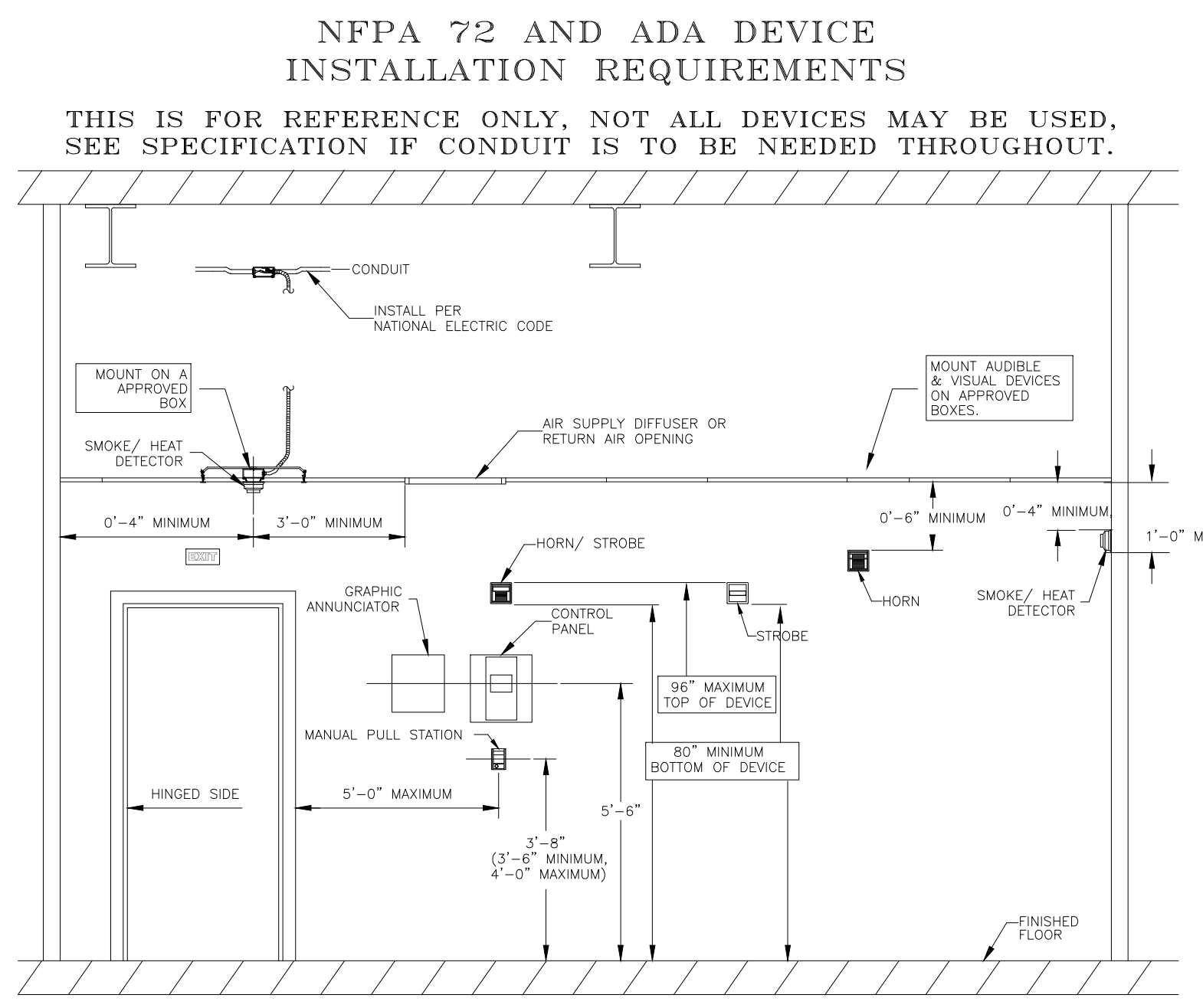
Signal Circuits

Circuit	Device	Quantity	Alarm Per Device	Current All Devices
Circuit 1	P2RL (150d)	1	0.088	0.088
Circuit 2	P2RL (150d)	5	0.083	0.415
Circuit 3	P2RL (150d)	3	0.083	0.415
Circuit 4				
Totals		6	Notification Circuits Alarm	1.912

Max Wire Run Distance for AWG 14: 7125
Actual Wire Run Distance: 650
Voltage Drop for 14 AWG wire: 0.028
Voltage Drop = 2" Wire Run Distance * 3.07 Ohms Per 1000 ft 14 AWG * Total Current for Circuit / 1000

Wire Length Ft for Circuit	Wire Length Ft for Circuit	Wire Length Ft for Circuit	Wire Length Ft for Circuit
350	415	115	
1079	1014	754	
1112	1038	0.061	
4400	4400	4.400	

Device	Device Standby Current	Device Alarm Current	Quantity	Total Standby Draw	Total Alarm Draw	Max Circuit Amps	Wire Size	Alarm Min	Max Panel Amps
AL602UL-ADA	0.09	0.175	1	0.09	0.175	3	14	5	6
				Standby Hours	24	Alarm Current	1.457	Batteries Supplied (JAH)	7
				Power Supply Min Voltage	20.400	Total Battery Calculation Standby	2.160	Battery Size Required	2.737
				Device Min Operating Voltage	16.000	Alarm Current Min	0.121	Batteries Supplied (JAH)	7



FIRE ALARM MATRIX WITH OCCUPANT NOTIFICATION

SPRINKLER SYSTEM

System Component	Occupant Notification
Waterflow Switch	Yes
Valve Tamper Switch	Yes
Smoke Detector	Yes
Duct Detector	Yes
Power Supply - Trouble	Yes
Communicator - Combination Fail	Yes
Communicator - Trouble	Yes
Abnormal Control Circuit or Device	Yes
Loss of Power	Yes

Voltage drop Calculations & Current Draws for NACP #1

AL602UL-ADA

Device	Current Draw	Quantity	Total Current
P2RL (150d)	0.083	7	0.581
SRL (150d)	0.060	2	0.12
			0.498
			0.112
			0.610
			0.061
			0.440
			0.083
			0
			0.415

MISSOURI PE COA #2000003629