

**Johnson Controls Fire Protection**  
**11019 Strang Line Road**  
**Lenexa, Kansas 66215**  
**(913) 894-0010**  
**[www.JohnsonControls.com](http://www.JohnsonControls.com)**



RE: Saint Lukes East Lees Summit  
100 Northeast St. Lukes Bl  
Lees Summit, MO 64086

The following changes were made to the Fire Alarm Drawings:  
Added Battery Calculations

Carla Fratzel  
Project Manager  
Johnson Controls  
816-490-5229  
[carla.fratzel@jci.com](mailto:carla.fratzel@jci.com)

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# SLE NUCLEAR MEDICINE SPECT CT

## FIRE ALARM SYSTEM



DISTRICT 332  
11019 STRANG LINE ROAD  
LENEXA, KS 66215  
PHONE: 913-884-0010  
FAX: 913-884-0020  
SERVICE: 913-884-0010

### DRAWING INDEX

Sheet Number	Sheet Title
FA-001	COVER SHEET
FA-101	DEVICE DETAILS
FA-201	CALCULATIONS AND SCHEDULES
FA-602	CALCULATIONS AND SCHEDULES

### LEGENDS

#### FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION	BRAND	MODEL	BACKBOX	WIRE TYPE
<b>INITIATING DEVICES</b>					
	ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR W/ STANDARD BASE	SIMPLEX	4098-9714 HEAD	4" OCT, 1-1/2" D	M
			4098-9792 BASE		
	ADDRESSABLE PHOTOELECTRIC SMOKE SENSOR W/ 4-WIRE RELAY BASE	SIMPLEX	4098-9714 HEAD	4" OCT, 1-1/2" D	M
			4098-9791 BASE		
	SUPERVISED RELAY	SIMPLEX	2098-9737	MOUNTS IN BASE BOX	R
<b>NOTIFICATION APPLIANCES ** TAP ALL SPEAKERS AT 70.7 VOLTS **</b>					
	# SPEAKER/STROBE, WALL, RED, FIRE	SIMPLEX	EXISTING	EXISTING BACKBOX	S
	# STROBE, WALL, RED, FIRE	SIMPLEX	EXISTING	EXISTING BACKBOX	A

#### FIRE ALARM WIRE LEGEND

CIRCUIT DESCRIPTION	CONSTRUCTION	GAUGE	CIRCUIT PROPERTIES	FPLR	FPLD	THIN	THIN	OUTDOOR	C.L.
A ADDRESSABLE NOTIFICATION	UTP SOLID	14 AWG	60pft. MAX CAPACITANCE; 3 twists/ft. MINIMUM	X	X				
M IDNET	UTP SOLID	18 AWG	60pF 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	STP SOLID	18 AWG	30pft. MAX CAPACITANCE RECOMMENDED	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					

### APPLICABLE CODES & STANDARDS

INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION  
INTERNATIONAL FIRE CODE (IFC), 2018 EDITION  
NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72), 2016 EDITION  
NATIONAL ELECTRIC CODE (NFPA 70), 2017 EDITION  
OCCUPANCY TYPE(S):  
B BUSINESS GROUP  
SPRINKLER PROTECTION:  
BUILDING IS FULLY SPRINKLED

### JOHNSON CONTROLS CONTACTS

**Sales Representative**  
TODD WALEN  
DONALD TODD.WALEN@JCI.COM  
PHONE: 765-249-2200  
**Scheduling**  
CARLA FRATZEL  
CARLA.FRATZEL@JCI.COM  
PHONE: 915-493-3229  
**Drawings Prepared By**  
MARIANO MENDEZ ZAMORA  
MARIANO.MENDEZ.ZAMORA@JCI.COM  
**Drawings Reviewed By**  
TIM EUBANKS  
TIMOTHY.EUBANKS@JCI.COM

### SCOPE OF WORK

MODIFY EXISTING FIRE ALARM SYSTEM: PROVIDE NEW DEVICES, RELOCATE AND DEMO EXISTING DEVICES AS SHOWN ON DRAWINGS.  
ALL NEW WIRING TO BE CLASS B.  
VERIFY ALL CIRCUITS, LOADS, AND ADDRESSES INCLUDING EXISTING AND RELOCATED DEVICES TO WHICH NEW DEVICES ARE CONNECTED.  
DOCUMENT INFORMATION ON PLANS AND CALCULATIONS.  
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.

### DESIGN STATEMENT

THIS PROJECT'S DESIGN IS BASED ON THE ENGINEERED PLANS BY ACI BOLAND ARCHITECTS DATED 04/07/2023

### PROJECT DIRECTORY

**Site**  
ST. LUKES HOSPITAL  
100 NE SAINT LUKE'S BLVD  
LEE'S SUMMIT, MO 64086  
**Johnson Controls District - 332**  
11019 STRANG LINE ROAD  
LENEXA, KS 66215  
PHONE: 913-884-0010  
FAX: 913-884-0020  
SERVICE: 913-884-0010  
**Engineer Of Record**  
ACI/BOLAND, INC.  
1710 WYANDOTTIE  
KANSAS CITY, MO 64108  
**Installer**  
SHAW ELECTRIC COMPANY  
3600 FULLER AVE  
KANSAS CITY, MO 64129

### ABBREVIATIONS LEGEND

AC = ABOVE CEILING  
AFF = ABOVE FINISHED FLOOR  
AUI = 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  
FBD = FURNISHED BY OTHERS  
FCO = FIRE COMMAND CENTER  
FSD = FIRE SMOKE DAMPER  
FTR = FIRE ALARM TRANSDUCER  
H = HIGH HUMIDITY  
HT = HEIGHT  
HVAC = HEATING VENTILATION & AIR CONDITIONING  
IMS = INFORMATION MANAGEMENT SYSTEM  
MAX = MAXIMUM  
MIN = MINIMUM  
NA = NOT APPLICABLE  
NAC = NOTIFICATION APPLUANCE 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 = TRUFALEART ADDRESSABLE CONTROLLER  
TOS = TOP OF SHAFT  
TRBL = TROUBLE  
TS = TAMPER SWITCH  
TYP = TYPICAL  
UNON = 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

### DEVICE TAG LEGEND

**PANEL DESIGNATOR**  
• FA = FACP (NON-NETWORK)  
• # = NODE NUMBER  
• TR = TRANSDUCER NUMBER  
• #TR = NODE TRANSDUCER NUMBER  
• NR = NAC EXTENDER NUMBER  
**CIRCUIT DESIGNATOR**  
• A# = IDNAC CIRCUIT NUMBER  
• DP = DOOR HOLDER CIRCUIT NUMBER  
• FR = FIRE PHONE CIRCUIT  
• HF = AUDIBLE (HORN) CIRCUIT NUMBER  
• IM# = IDNET LOOP NUMBER  
• PR = POWER CIRCUIT NUMBER  
• SR = SPEAKER CIRCUIT NUMBER  
• VS = VISUAL CIRCUIT NUMBER  
• Z# = ZONE NUMBER  
**DEVICE NUMBER**  
**BRANCH / ISOLATED LOOP DESIGNATOR:**  
• (L#) = IDNET ISOLATED LOOP NUMBER  
• (B) = IDNAC BRANCH NUMBER  
• (E#B) = EPR# NUMBER BRANCH NUMBER  
• 1. IDNAC = ADDRESSABLE NOTIFICATION CIRCUIT  
• 2. EPR = ENHANCED POWER REPEATER

### EXISTING SYSTEM SEQUENCE OF OPERATIONS

SYSTEM INPUTS	SYSTEM OUTPUTS															
	CTRL UNIT ANNUNCIATION								NOTIFICATION				FIRE SAFETY CONTROL			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1 SMOKE SENSOR/DETECTOR	X	X						X	X	X	X	X				
2 SMOKE SENSOR/DETECTOR BY DOOR HOLDERS	X	X						X	X	X	X	X			X	X
3 SMOKE SENSOR/DETECTOR IN PATIENT ROOM	X	X						X	X	X	X	X				
4 FIRE ALARM AC POWER FAILURE						X	X			X		X				
5 FIRE ALARM SYSTEM LOW BATTERY						X	X			X		X				
6 OPEN CIRCUIT OR GROUND FAULT						X	X			X		X				
(FOR CRASH BANDS ONLY, MONITORING THE SEQUENCE OF OPERATIONS)																
										X		X				

### GENERAL NOTES

- 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.
- 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.
- CONTRACTOR IS RESPONSIBLE FOR MAKING AND OBTAINING APPROVAL FOR ALL NECESSARY ADJUSTMENTS IN CIRCUITS 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.
- A STAMPED SET OF APPROVED FIRE ALARM DRAWINGS SHALL BE AT THE JOB SITE AND SHALL BE USED FOR INSTALLATION.
- 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.
- 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.
- THE CONTRACTOR WILL MAINTAIN ALL AREAS OF THE BUILDING IN A NEAT AND WORKMANLIKE MANNER.
- DO NOT APPLY POWER EXCEPT IN THE PRESENCE OF A FACTORY TRAINED JOHNSON CONTROLS TECHNICAL REPRESENTATIVE.
- 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.
- 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.
- 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.
- ALL WIRING SHALL BE INSTALLED ACCORDING TO APPLICABLE ELECTRICAL CODES.
- 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.
- FIRE ALARM CABLE INSTALLED IN DUCTS, PLENUM, AND OTHER SPACES USED FOR ENVIRONMENTAL AIR SHALL BE TYPE FPLP.
- 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 FPLP.
- FIRE ALARM CABLE INSTALLED IN UNDERGROUND CONDUIT OR OTHER WET LOCATIONS SHALL BE UL LISTED FOR WET LOCATIONS.
- FIRE ALARM CIRCUITS EXTENDING BEYOND ONE BUILDING AND RUN OUTDOORS SHALL BE INSTALLED IN ACCORDANCE APPLICABLE ELECTRICAL CODES, WHERE APPLICABLE.
- ALL WIRING, INCLUDING SHIELDS MUST BE DRY AND FREE OF SHORTS AND GROUNDS.
- ALL SHIELDED WIRE MUST HAVE SHIELD CONTINUITY AT FULL LENGTH OF THE WIRE.
- ONLY SYSTEM WIRING CAN BE RUN IN THE SAME CONDUIT.
- 120VAC IS NOT PERMITTED IN THE SAME CONDUIT WITH LOW VOLTAGE WIRING.
- MAINTAIN MAXIMUM CONDUIT FILL RATIO AS PER APPLICABLE ELECTRICAL CODES REQUIREMENTS.
- 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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100 NE SAINT LUKE'S BLVD  
LEE'S SUMMIT, MO 64086

ISSUE NO.	DATE	DESCRIPTION	APPROVED BY
1	2/23/23	ADDED CALCULATIONS GENERATED FROM PANEL EXPORT	

DRAWN BY: MM
CHECKED BY: TLE
ISSUE DATE: 7/17/23
JOB #:
PROJECT #:
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SHEET:  
FIRE ALARM SYSTEM

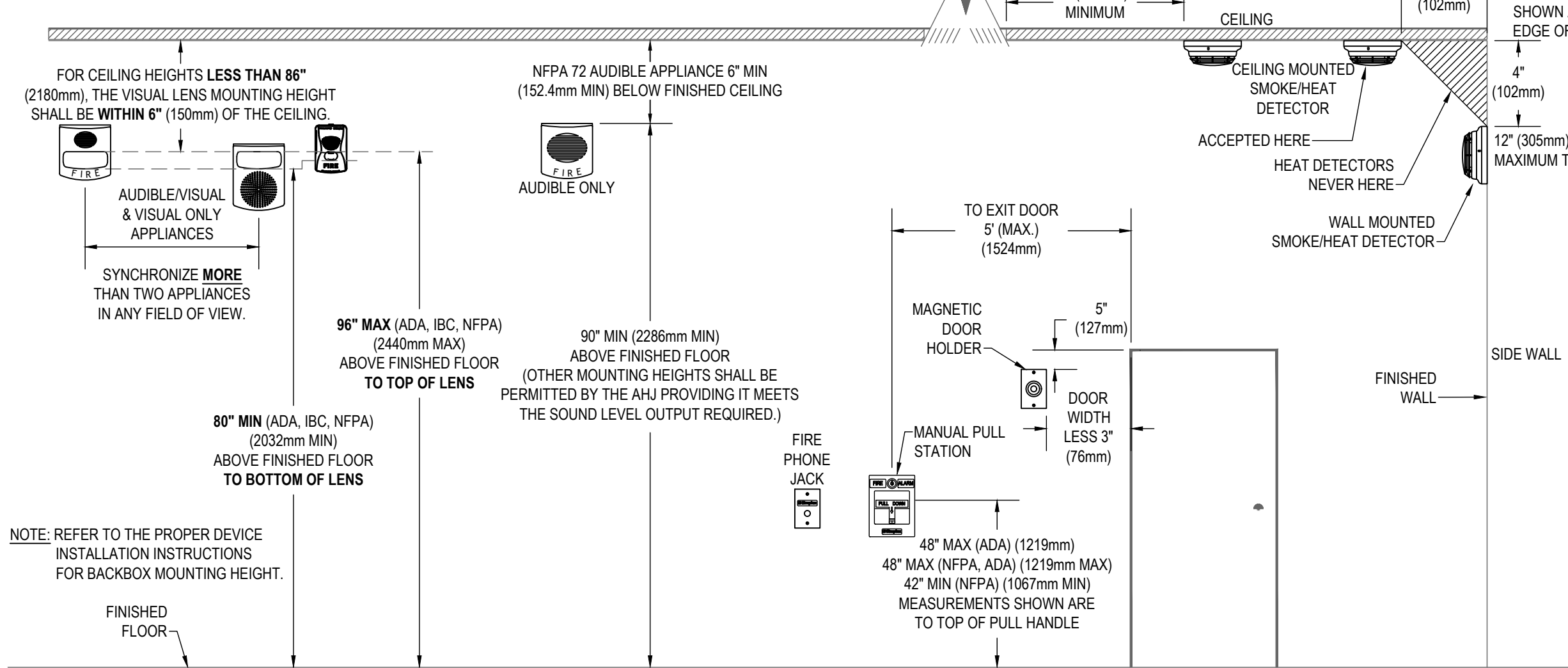
COVER SHEET

FA-001

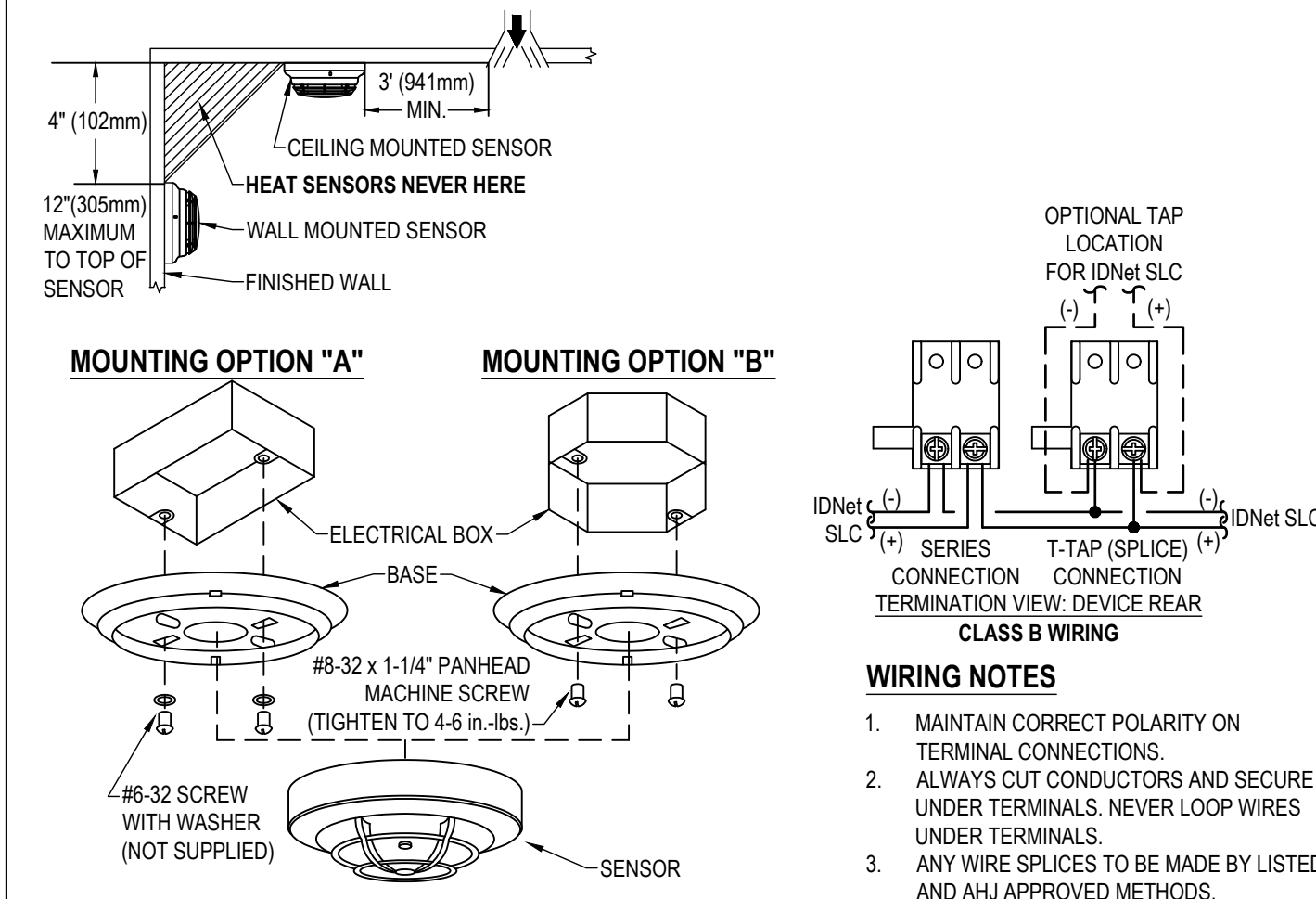


PER NFPA 72

- VISUAL APPLIANCE MOUNTING HEIGHT CONSIDERATIONS IN SLEEPING ROOMS**
1. MIN DISTANCE IN SLEEPING ROOMS IS 24" (610mm) FROM CEILING TO TOP OF LENS FOR 110CD STROBES WITHIN 16" OF THE PILLOW
  2. 177CD STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" (610mm) MINIMUM DISTANCE FROM THE CEILING. THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER.



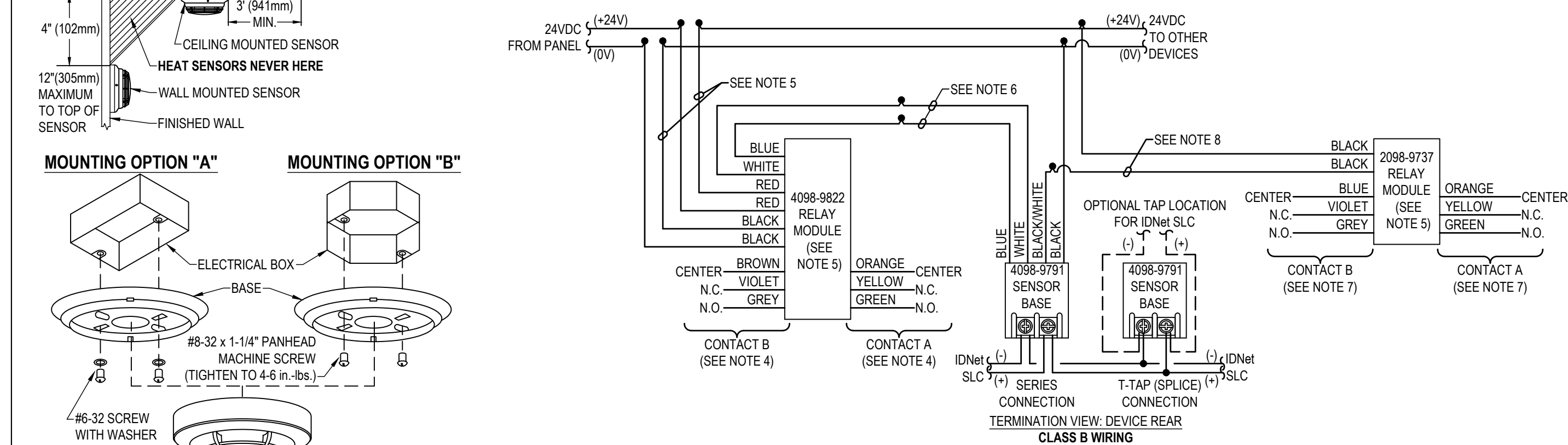
**SIMPLEX 4098-9792**



MOUNTING OPTIONS		
OPTION	DESCRIPTION	NOTE
A	SINGLE GASK 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	BOX BY OTHERS, 4098-9832 ORDERED SEPARATELY
D	4" (102mm) SQUARE BOX, 1-1/2" DEEP (MIN) W/ SINGLE GASK COVER PLATE 3/4" (19mm) EXTENSION	BY OTHERS

1. FOR ADDITIONAL MOUNTING OPTIONS, DOWNLOAD DATA SHEET 4098-0019 FROM [HTTP://WWW.SIMPLEX-FIRE.COM](http://www.simplex-fire.com)

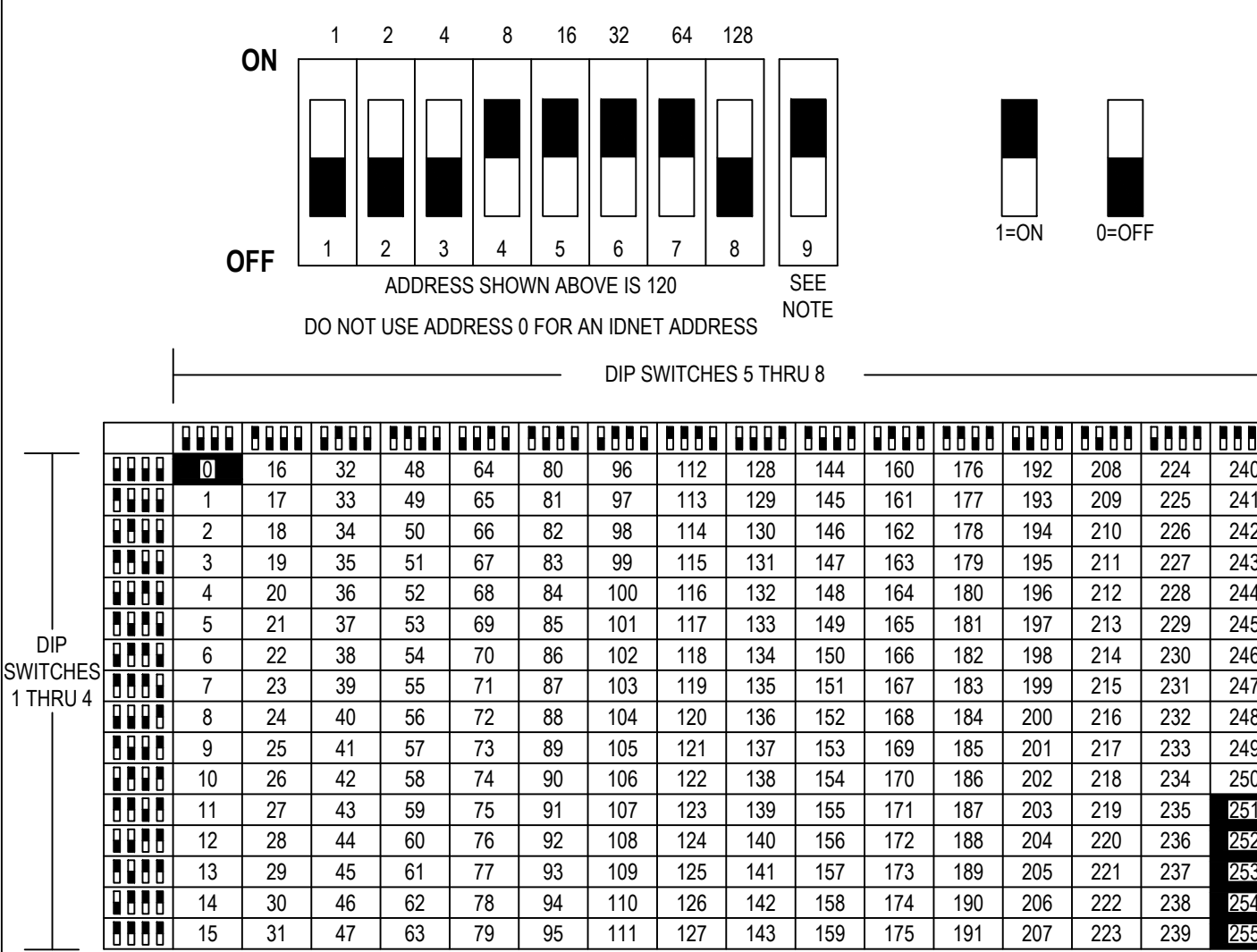
## SIMPLEX 4098-9791



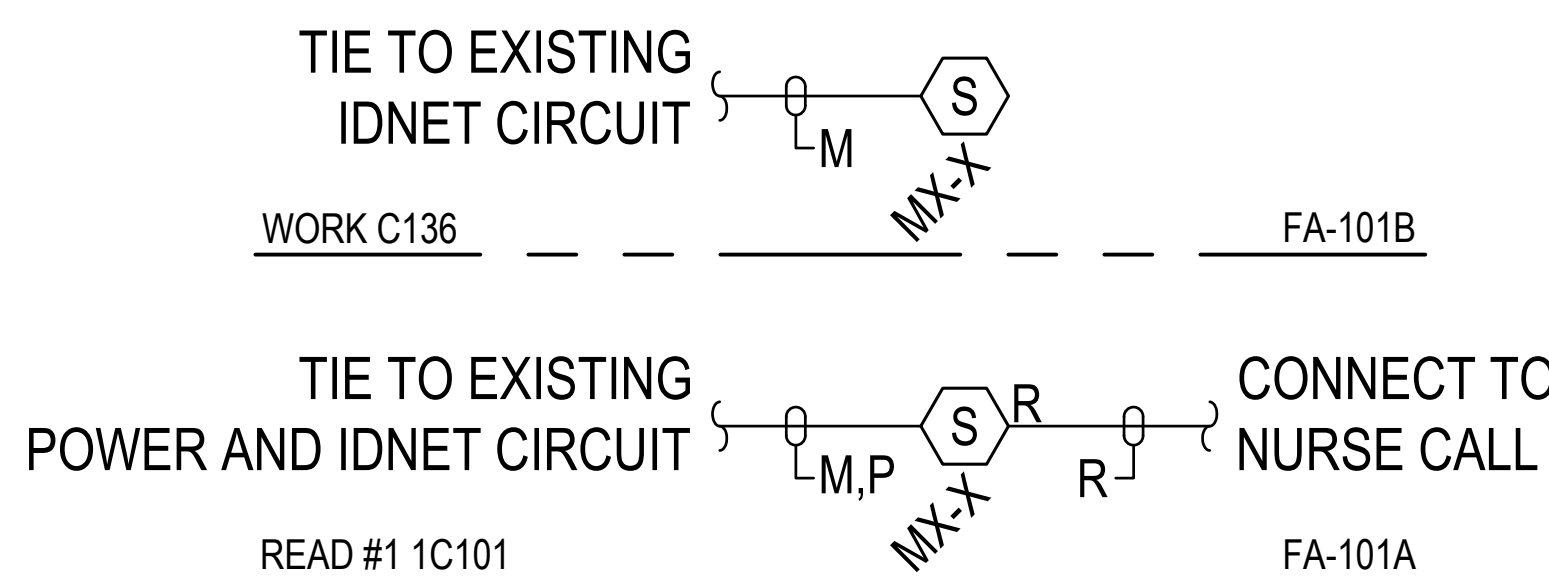
## WIRING NOTES

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. CONTACT A OR B DRY FORM C - EACH RATED 2A AT 24VDC/0.5A AT 110VAC, RESISTIVE.
5. 18 VDC TO 32 VDC, 0.008 A TYPICAL / 0.013 A MAXIMUM
6. DO NOT USE REMOTE LED IF THE 4098-9822 RELAY MODULE IS USED.
7. CONTACT A OR B DRY FORM C - EACH RATED 3A AT 24VDC/1.15VAC, RESISTIVE.
8. MAXIMUM WIRE LENGTH BETWEEN 4098-9791 SENSOR BASE AND 2098-9737 RELAY MODULE IS 100 FT.
9. THE 2098-9737 RELAY MODULE IS REQUIRED FOR SUPERVISED REMOTE CONTROL RELAY OPERATION

## SIMPLEX IDNet



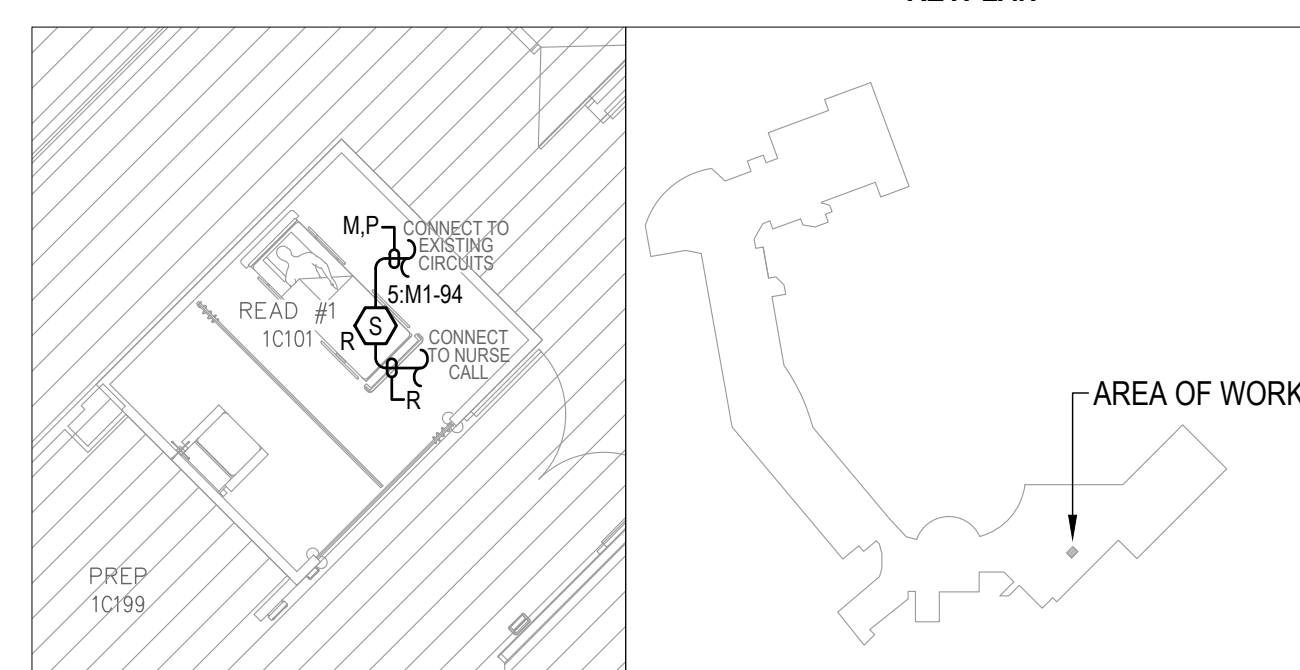
**SCALE:NTS**



## SCALE:NTS



**FA-101A: DEVICE PLACEMENT PLAN**  
SCALE: 1/8" = 1'-0"



**FA-101B: DEVICE PLACEMENT PLAN**  
SCALE: 1/8" = 1'-0"

- RISER NOTES:**

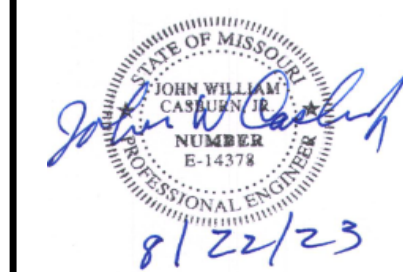

1. RISER IS A DIAGRAMMATICAL REPRESENTATION OF THE SYSTEM ARCHITECTURE IN BUILDING CROSS SECTION. IT IS NOT INTENDED TO REPRESENT ACTUAL WIRE RUNS, PANEL CONFIGURATIONS OR PENETRATIONS. REFER TO FLOOR PLANS AND PANEL DETAILS FOR CIRCUIT ROUTING AND CONFIGURATION INFORMATION.
2. ALL WIRING SHALL COMPLY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

**GENERAL NOTES:**

1. ALL CONNECTIONS ARE ASSUMED TO BE 10' IF A SMOOTH CONSTRUCTION UNLESS NOTED OTHERWISE.
2. TAP ALL SPEAKERS AT 0.5W UNLESS OTHERWISE NOTED.
3. ALL SPEAKERS MUST BE TAPPED REFERS TO 70V TO 7V SETTING.
4. ALL NOTIFICATION APPLIANCE CANNOT INSTANTLY PULSE SHALL RETAIN THEIR FACTORY SETTING OF "TAPC" UNLESS OTHERWISE DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
5. FOR ALL DETAIL INFORMATION REGARDING THE ON/OFF SWITCH SETTINGS ON ADDRESSABLE WAVE DEVICES (DRIG), REFER TO DEVICE DETAILS AND INSTALLATION INSTRUCTIONS FOR MORE INFORMATION.
6. THE ADDRESS 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 JOINT COMMANDER'S TECHNOLOGIA BEFORE APPLYING A PHYSICAL LABEL TO ANY DEVICES.
7. VERIFY ALL CIRCUITS, LOADS, AND ADDRESSES INCLUDING EXISTING AND RELOCATED DEVICES TO WHICH NEW DEVICES ARE BEING ADDED. DOCUMENT ALL CHANGES TO PLANS AND CHART FOUND ON 04.01 UNDER CALCULATIONS.

**KEYNOTES:**

- 1 TIE TO NEAREST EXISTING DEVICE ON EXISTING IDNET CIRCUIT.
- 2 EXISTING FIRE ALARM DEVICE TO BE REMOVED, TEMPORARILY STORED AND RE-INSTALLED DURING NEW CEILING WORK.



**SLE NUCLEAR MEDICINE SPECT CT**

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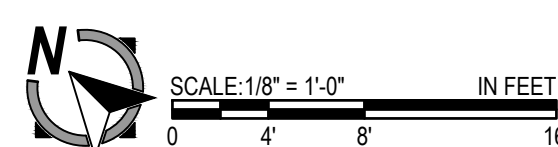
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DRAWN BY:	MM
CHECKED BY:	.TLE
ISSUE DATE:	7/17/23
JOB #:	
PROJECT #:	332-650400519
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SYSTEM:	

**FIRE ALARM SYSTEM**

## DEVICE DETAILS

FA-101





SLE Model 5 4100es FACP Speaker Db Loss Calculations																	
*Circuit Voltage = 70vrms [Eq]																	
															MAXIMUM -3 dB DROP		
SPEAKER CIRCUIT DESCRIPTION		Ampl #	Plan Circuit Number	Speaker Tap	Total Spkrs per Circuit	Total Watts [P]	Wire Gauge	Circuit Length [ft]	Est. Ckt. Length [ft]	Wire Res. Per Foot [Rw]	Circuit Resistance [Rw*2+Rr=0.04]	Speaker Impedance [Rsp=16]	Speaker Resistance [Rsp=16]	Voltage At End [Ea=(Ea-Es)/Rr]	Watts At End [Pa=(Ea-Es)^2/Rr]	Actual db Loss [dB=10Log (Pw/Pt)10]	Max Allowable db Ckt. Length [ML=(0.414*Rs) / (2*Rw)]
20 WEST TUNNEL AREA C - 51G/4		Ampl-1	S1	16	16	18	18ga	550	0.0078	8.702	0.114	612.500	68.019	77.7	-1.2	16318 FL	
20 WEST PENTHOUSE AREA C - 51G/6		Ampl-1	S2	18	18	9 Watts	18ga	630	0.0078	8.790	0.129	544.444	68.763	6.685	-1.5	14505 FL	
20 WEST FIRST FLOOR C - 51G/5		Ampl-1	S3	15	15	7.5 Watts	18ga	525	0.0078	8.159	0.107	653.333	69.137	7.316	-1.1	17405 FL	
20 WEST FIRST FLOOR C - 51G/7		Ampl-1	S4	14	14	7 Watts	18ga	490	0.0078	7.615	0.100	700.000	69.247	6.850	-0.89	18849 FL	
20 WEST 1FL ADDRESSABLE SPKRS 51G/8		Ampl-1	S2	19	19	9 Watts	18ga	685	0.0078	10.334	0.136	515.785	68.625	9.130	-1.7	13741 FL	

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.

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.



SLE NODE 5 - IDNAC-1 CIRCUIT SUMMARY & VOLTAGE DROP						
Circuit	Description	Alarm Current	% Drop	Unit Load*	Wire Length	Spare Current VoltageDrop
5-3-1	DIAG NE AREA	1.716A	14.53%	13	700	49%
5-3-2	DIAG NW AREA	0.792A	3.77%	8	350	24%
5-3-3	DIAG TUNNEL AREA	1.846A	16.63%	14	750	20%

ES POWER SUPPLY 1 - IDNAC CARD 1 - CIRCUIT 5:3-1									
IDNac Address	Device Type	PID	Setting	Custom Label (Max 40 Characters)				SWITCH SETTINGS	
5:3-1-1								X	ON
5:3-1-2								X	ON
5:3-1-3								X	ON
5:3-1-4	VO	49VO-APPLW	110cd	TOILET C183B	5:3-1-4	-3:1-4		X	ON
5:3-1-5	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-5	-3:1-5	X		ON
5:3-1-6	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-6	-3:1-6	X		ON
5:3-1-7	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-7	-3:1-7	X		ON
5:3-1-8	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-8	-3:1-8	X		ON
5:3-1-9	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-9	-3:1-9	X		ON
5:3-1-10	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-10	-3:1-10	X		ON
5:3-1-11	VO	49VO-APPLW	110cd	DIAG NORTH AREA	5:3-1-11	-3:1-11	X		ON
5:3-1-12	VO	49VO-APPLW	110cd	DIAG NORTH AREA	5:3-1-12	-3:1-12	X		ON
5:3-1-13	VO	49VO-APPLW	110cd	DIAG NORTH AREA	5:3-1-13	-3:1-13	X		ON
5:3-1-14	VO	49VO-APPLW	110cd	DIAG NORTH AREA	5:3-1-14	-3:1-14	X		ON
5:3-1-30	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-30	-3:1-30	X	X	ON
5:3-1-31	VO	49VO-APPLW	110cd	DIAG NE AREA	5:3-1-31	-3:1-31	X	X	ON

5:3-1				Notification SLC Distributed Load Voltage Drop									
Starting Voltage: 29vdc		Min. Device Voltage: 23 vdc		Allowable % Drop: 20.7%		Primary Wire Gauge: 14ga		Home Run Wire Gauge: 14ga		Wire Res. Per Ft. 0.003070 @ 75° Celsius		Wire Res. Per Ft. 0.003070 @ 75° Celsius	
Class B Calculations													
Branch	Device #	From	Distance (feet)	PID	Setting	Device Draw	Current at Device	Voltage Drop	Voltage at Device	% Vdrop			
1	5:3-1-4	PANEL	100	49VO-APPLW	110cd	0.1320	1.716	1.054	27.946	Wire Length Branch 1: 14.53% Length: 700			
1	5:3-1-5	5:3-1-4	50	49VO-APPLW	110cd	0.1320	1.584	0.486	27.460				
1	5:3-1-6	5:3-1-5	50	49VO-APPLW	110cd	0.1320	1.452	0.446	27.014				
1	5:3-1-7	5:3-1-6	50	49VO-APPLW	110cd	0.1320	1.320	0.405	26.609				
1	5:3-1-8	5:3-1-7	50	49VO-APPLW	110cd	0.1320	1.188	0.365	26.244				
1	5:3-1-9	5:3-1-8	50	49VO-APPLW	110cd	0.1320	1.056	0.324	25.920				
1	5:3-1-10	5:3-1-9	50	49VO-APPLW	110cd	0.1320	0.924	0.284	25.637				
1	5:3-1-11	5:3-1-10	50	49VO-APPLW	110cd	0.1320	0.792	0.243	25.393				
1	5:3-1-12	5:3-1-11	50	49VO-APPLW	110cd	0.1320	0.660	0.203	25.191				
1	5:3-1-13	5:3-1-12	50	49VO-APPLW	110cd	0.1320	0.528	0.162	25.029				
1	5:3-1-14	5:3-1-13	50	49VO-APPLW	110cd	0.1320	0.396	0.122	24.907				
1	5:3-1-30	5:3-1-14	50	49VO-APPLW	110cd	0.1320	0.264	0.081	24.826				
1	5:3-1-31	5:3-1-30	50	49VO-APPLW	110cd	0.1320	0.132	0.041	24.786				
						0.0000	0.000	0.000	0.000				
						0.0000	0.000	0.000	0.000				
						0.0000	0.000	0.000	0.000				

ES POWER SUPPLY 1 - IDNAC CARD 1 - CIRCUIT 5:3-2									
IDNac Address	Device Type	PID	Setting	Custom Label (Max 40 Characters)				SWITCH SETTINGS	
5:3-2-1	VO	49VO-APPLW	110cd	DIAG NW AREA	5:3-2-1			X	ON
5:3-2-2	VO	49VO-APPLW	110cd	DIAG NW AREA	5:3-2-2			X	ON
5:3-2-3	VO	49VO-APPLW	110cd	DIAG NW AREA	5:3-2-3			X	ON
5:3-2-4								X	ON
5:3-2-5	VO	49VO-APPLW	110cd	DIAG NW AREA	5:3-2-5			X	ON
5:3-2-6								X	ON
5:3-2-15	VO	49VO-APPLW	110cd	DIAG SW AREA	5:3-2-15			X	ON
5:3-2-17	VO	49VO-APPLW	110cd	BY ELEC ROOM DR 1C152	5:3-2-17			X	ON

5:3-2			Distributed Load Voltage Drop							
Starting Voltage: 29vdc			Primary Wire Gauge: 14ga Home Run Wire Gauge: 14ga		Wire Res. Per Ft. 0.003070 @ 75° Celsius Wire Res. Per Ft. 0.003070 @ 75° Celsius					
Min. Device Voltage: 23 vdc										
Allowable % Drop: 20.7%										
Class B Calculations										
Branch	Device #	From	Distance (Feet)	PID	Setting	Device Draw	Current at Device	Voltage Drop	Voltage at Device	% Vdrop
1	5:3-2-1	PANEL	100	49VO-APPLW	110cd	0.1320	0.792	0.486	28.514	Wire Length: Branch 1: 1.77%
1	5:3-2-2	5:3-2-1	50	49VO-APPLW	110cd	0.1320	0.660	0.203	28.311	Length: 350
1	5:3-2-3	5:3-2-2	50	49VO-APPLW	110cd	0.1320	0.528	0.162	28.149	
1	5:3-2-5	5:3-2-3	50	49VO-APPLW	110cd	0.1320	0.396	0.122	28.027	
1	5:3-2-15	5:3-2-5	50	49VO-APPLW	110cd	0.1320	0.264	0.081	27.946	
1	5:3-2-17	5:3-2-15	50	49VO-APPLW	110cd	0.1320	0.132	0.041	27.905	
						0.0000	0.000	0.000	0.000	
						0.0000	0.000	0.000	0.000	

ES POWER SUPPLY 1 - IDNAC CARD 1 - CIRCUIT 5:3-3									
IDNac Address	Device Type	PID	Setting	Custom Label (Max 40 Characters)				SWITCH SETTINGS	
5:3-3-1	VO	49VO-APPLW	110cd	ULTRASOUND RESTROOM 1C66	V3-5:3-3-1			X	ON
5:3-3-2								X	ON
5:3-3-3								X	ON
5:3-3-4								X	ON
5:3-3-5								X	ON
5:3-3-6								X	ON
5:3-3-7								X	ON
5:3-3-8								X	ON
5:3-3-9								X	ON
5:3-3-10								X	ON
5:3-3-11								X	ON
5:3-3-12								X	ON
5:3-3-13								X	ON
5:3-3-14								X	ON
5:3-3-21	VO	49VO-APPLW	110cd	DIAG TUNNEL AREA	V3-5:3-3-21			X	ON
5:3-3-22	VO	49VO-APPLW	110cd	DIAG TUNNEL AREA	V3-5:3-3-22			X	ON
5:3-3-23	VO	49VO-APPLW	110cd	DIAG TUNNEL AREA	V3-5:3-3-23			X	ON
5:3-3-24	VO	49VO-APPLW	110cd	DIAG TUNNEL AREA	V3-5:3-3-24			X	ON
5:3-3-25	VO	49VO-APPLW	110cd	DIAG TUNNEL AREA	V3-5:3-3-25			X	ON
5:3-3-26	VO	49VO-APPLW	110cd					X	ON
5:3-3-27	VO	49VO-APPLW	110cd	DIAG NE AREA	V3-5:3-3-27			X	ON
5:3-3-28	VO	49VO-APPLW	110cd	DIAG NE AREA	V3-5:3-3-28			X	ON
5:3-3-29	VO	49VO-APPLW	110cd	DIAG NE AREA	V3-5:3-3-29			X	ON
5:3-3-32	VO	49VO-APPLW	110cd	DIAG MID AREA	V3-5:3-3-32			X	ON
5:3-3-33	VO	49VO-APPLW	110cd	DIAG MID AREA	V3-5:3-3-33			X	ON
5:3-3-34	VO	49VO-APPLW	110cd	DIAG MID AREA	V3-5:3-3-34			X	ON
5:3-3-38	VO	49VO-APPLW	110cd	DIAG 1FL 1C46 CONTROL ROOM V3-3	3-3-38			X	ON

5:3-3 Distributed Load Voltage Drop									
<div>Starting Voltage: 29vdc</div> <div>Min. Device Voltage: 23 vdc</div> <div>Allowable % Drop: 20.7%</div>			<div>Primary Wire Gauge: 14ga</div> <div>Home Run Wire Gauge: 14ga</div>			<div>Wire Res. Per Ft. 0.003070 @ 75° Celsius</div> <div>Wire Res. Per Ft. 0.003070 @ 75° Celsius</div>			
Class B Calculations									
Branch	Device #	From	Distance (Feet)	PID	Setting	Device Draw	Current at Device	Voltage Drop	Voltage at Device
1	5:3-3-1	PANEL	100	49VO-APPLW	110cd	0.1320	1.848	1.135	27.865
1	5:3-3-21	5:3-3-1	50	49VO-APPLW	110cd	0.1320	1.716	0.527	27.339
1	5:3-3-22	5:3-3-21	50	49VO-APPLW	110cd	0.1320	1.584	0.486	26.853
1	5:3-3-23	5:3-3-22	50	49VO-APPLW	110cd	0.1320	1.452	0.446	26.406
1	5:3-3-24	5:3-3-23	50	49VO-APPLW	110cd	0.1320	1.320	0.405	26.001
1	5:3-3-25	5:3-3-24	50	49VO-APPLW	110cd	0.1320	1.188	0.365	25.637
1	5:3-3-26	5:3-3-25	50	49VO-APPLW	110cd	0.1320	1.056	0.324	25.312
1	5:3-3-27	5:3-3-26	50	49VO-APPLW	110cd	0.1320	0.924	0.284	25.028
1	5:3-3-28	5:3-3-27	50	49VO-APPLW	110cd	0.1320	0.792	0.243	24.785
1	5:3-3-29	5:3-3-28	50	49VO-APPLW	110cd	0.1320	0.660	0.203	24.583
1	5:3-3-32	5:3-3-29	50	49VO-APPLW	110cd	0.1320	0.528	0.162	24.421
1	5:3-3-33	5:3-3-32	50	49VO-APPLW	110cd	0.1320	0.396	0.122	24.299
1	5:3-3-34	5:3-3-33	50	49VO-APPLW	110cd	0.1320	0.264	0.081	24.218
1	5:3-3-36	5:3-3-34	50	49VO-APPLW	110cd	0.1320	0.132	0.041	24.178
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
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						0.0000	0.000	0.000	0.000
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						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
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						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
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						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.000	0.000	0.000
						0.0000	0.0		

SLE NODE 5 - IDNAC-2 CIRCUIT SUMMARY & VOLTAGE DROP						
Circuit	Description	Alarm Current	% Drop	Unit Load*	Wire Length	Spare Current VoltageDrop
5:10-1	DIAG PH AREA	0.396A	1.26%	3	200	87%
5:10-2	DIAG SE AREA	1.188A	6.04%	8	380	60%
5:10-3	DIAG SOUTH AREA	1.320A	6.25%	10	380	56%

ES POWER SUPPLY 2 - IDNAC CARD 2 - CIRCUIT 5:10-1									
IDNac Address	Device Type	PID	Setting	Custom Label (Max 40 Characters)				SWITCH SETTINGS	
5:10-1-1	VO	49VO-APPLW	110cd	DIAG PH AREA	5:	1-1	X	ON	
5:10-1-2	VO	49VO-APPLW	110cd	DIAG PH AREA	5:	10-1-3	X	ON	
5:10-1-3	VO	49VO-APPLW	110cd	DIAG PH AREA	5:	10-1-4	X	ON	
5:10-1				Notification SLC Distributed Load Voltage Drop					
Starting Voltage:		29vdc							
Min. Device Voltage:		23 vdc		Primary Wire Gauge:		14ga		Wire Res. Per Ft. 0.003070 @ 75° Celsius	
Allowable % Drop:		207%		Home Run Wire Gauge:		14ga		Wire Res. Per Ft. 0.003070 @ 75° Celsius	
Class B Calculations									
Branch	Device #	From	Distance (Feet)	PID	Setting	Device Draw	Current at Device	Voltage Drop at Device	% Vdrop Wire Length
1	5:10-1-1	PANEL	100	49VO-APPLW	110cd	0.1320	0.395	0.243	Branch 1: 1.38% Length: 200
1	5:10-1-2	5:10-1-1	50	49VO-APPLW	110cd	0.1320	0.284	0.081	
1	5:10-1-3	5:10-1-2	50	49VO-APPLW	110cd	0.1320	0.132	0.041	





**Johnson Controls**  
11019 Strang Line Road  
Lenexa , KS 66215

P: (913) 894-0010  
F: (913) 894-0020  
[www.jci.com](http://www.jci.com)

To: Saint Lukes East Hospital  
100 NE Saint Lukes Blvd  
Lee Summit, MO, 64086

Project: SLE NUC Med Spect CT FA  
JCI#: 650400519  
Date: 07/17/23

## Fire Alarm System Material List

Item	Part Number	Description
1	4098-9714	PHOTOELECTRONIC SMOKE SENSOR
2	4098-9792	STANDARD SENSOR BASE
3	4098-9791	SENSOR BASE WITH RELAY DRIVER
4	2098-9737	RELAY DETECTOR ACCESSORY



UL, ULC, CSFM Listed; FM Approved;  
MEA (NYC) Acceptance\*

## TrueAlarm Analog Sensing

TrueAlarm Analog Sensors – Photoelectric and Heat; Standard Bases and Accessories

### Features

#### TrueAlarm analog sensing provides:

- Digital transmission of analog sensor values via IDNet or MAPNET II two-wire communications

#### For use with the following Simplex® products:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U Series control panels; and 4008 Series control panels with reduced feature set (refer to data sheet S4008-0001 for details)
- 4020, 4100, and 4120 Series control panels, Universal Transponders, and 2120 TrueAlarm CDTs equipped for MAPNET II operation

#### Fire alarm control panel provides:

- Peak value logging allowing accurate analysis of each sensor for individual sensitivity selection
- Sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements; automatic individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation, multi-stage alarm operation, and display of sensitivity directly in percent per foot
- Ability to display and print detailed sensor information in plain English language

#### Photoelectric smoke sensors provide:

- Seven levels of sensitivity from 0.2% to 3.7% (refer to additional information on page 3)

#### Heat sensors provide:

- Three fixed temperature sensing thresholds: 135° F, 155° F and 190° F
- Rate-of-rise temperature sensing
- Utility temperature sensing
- Listed to UL 521 and ULC-S530

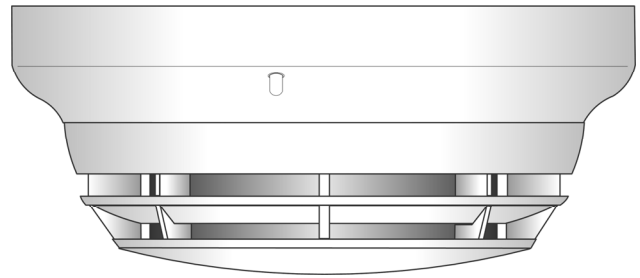
#### General features:

- Operation is for ceiling or wall mounting
- Listed to UL 268 and ULC-S529
- Louvered smoke sensor design enhances smoke capture by directing flow to chamber; entrance areas are minimally visible when ceiling mounted
- Designed for EMI compatibility
- Magnetic test feature is provided
- Different bases are available to support a supervised or unsupervised output relay, and/or a remote LED alarm indicator

#### Additional base reference:

- For isolator bases, refer to data sheet S4098-0025
- For sounder bases, refer to data sheet S4098-0028
- For photo/heat sensors, refer to data sheet S4098-0024 (single address) and S4098-0033 (dual address)

\* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7272-0026:218, 7271-0026:231, 7270-0026:216, and 7300-0026:217 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable, contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.



4098-9714 TrueAlarm Photoelectric  
Sensor Mounted in Base

### Description

**Digital Communication of Analog Sensing.** TrueAlarm analog sensors provide an analog measurement digitally communicated to the host control panel using Simplex addressable communications. At the control panel, the data is analyzed and an average value is determined and stored. An alarm or other abnormal condition is determined by comparing the sensor's present value against its average value and time.

**Intelligent Data Evaluation.** Monitoring each sensor's average value provides a continuously shifting reference point. This software filtering process compensates for environmental factors (dust, dirt, etc.) and component aging, providing an accurate reference for evaluating new activity. With this filtering, there is a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

**Control Panel Selection.** Peak activity per sensor is stored to assist in evaluating specific locations. The alarm set point for each TrueAlarm sensor is determined at the host control panel, selectable as more or less sensitive as the individual application requires.

**Timed/Multi-Stage Selection.** Sensor alarm set points can be programmed for timed automatic sensitivity selection (such as more sensitive at night, less sensitive during day). Control panel programming can also provide multi-stage operation per sensor. For example, a 0.2% level may cause a warning to prompt investigation while a 2.5% level may initiate an alarm.

**Sensor Alarm and Trouble LED Indication.** Each sensor base's LED pulses to indicate communications with the panel. If the control panel determines a sensor is in alarm, or is dirty or has some other type of trouble, the details are annunciated at the control panel and that sensor base's LED will be turned on steadily. During a system alarm, the control panel will control the LEDs such that an LED indicating a trouble will return to pulsing to help identify the alarmed sensors.

## TrueAlarm Sensor Bases and Accessories

### Sensor Base Features

#### Base mounted address selection:

- Address remains with its programmed location
- Accessible from front (DIP switch under sensor)

#### General features:

- Automatic identification provides default sensitivity when substituting sensor types
- Integral red LED for power-on (pulsing), or alarm or trouble (steady on)
- Locking anti-tamper design mounts on standard outlet box
- Magnetically operated functional test

### Sensor Bases

#### 4098-9792, Standard Sensor Base

#### 4098-9789, Sensor Base with wired connections for:

- 2098-9808 Remote LED alarm indicator **or** 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

#### Supervised Relay Bases (not compatible with 2120 CDT):

- **4098-9791, 4-Wire Sensor Base**, use with remote or locally mounted 2098-9737 relay, requires separate 24 VDC
- **4098-9780, 2-Wire Sensor Base**, use with remote or locally mounted 4098-9860 relay, no separate power required
- Supervised relay operation is programmable and can be manually operated from control panel
- Includes wired connections for remote LED alarm indicator **or** 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

### Sensor Base Options

#### 2098-9737, Remote or local mount supervised relay:

- DPDT contacts for resistive/suppressed loads, power limited rating of 3 A @ 28 VDC; non-power limited rating of 3 A @ 120 VAC (requires external 24 VDC coil power)

#### 4098-9860, Remote or local mount supervised relay:

- SPDT dry contacts, power limited rating of 2 A @ 30 VDC, resistive; non-power limited rating of 0.5 A @ 125 VAC, resistive

#### 4098-9822, LED Annunciation Relay:

- Activates when base LED is on steady, indicating local alarm or trouble
- DPDT contacts for resistive/suppressed loads, power limited rating of 2 A @ 28 VDC; non-power limited rating of 1/2 A @ 120 VAC, (requires external 24 VDC coil power)

#### 4098-9832, Adapter plate:

- Required for surface or semi-flush mounting to 4" square electrical box and for surface mounting to 4" octagonal box
- Can be used for cosmetic retrofitting to existing 6-3/8" diameter base product

#### 2098-9808, Remote red LED Alarm Indicator:

- Mounts on single gang box (shown in illustration to right)



### Description

TrueAlarm sensor bases contain integral addressable electronics that constantly monitor the status of the detachable photoelectric or heat sensors. Each sensor's output is digitized and transmitted to the system fire alarm control panel every four seconds.

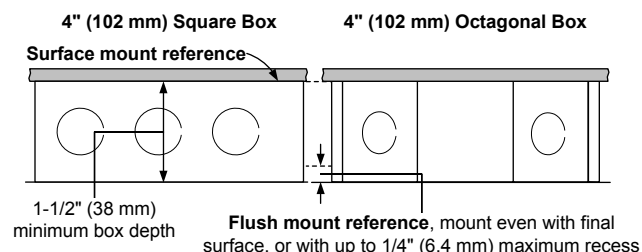
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing them to be disabled), heat sensors may be installed without reprogramming the control panel. Although the control panel will indicate an incorrect sensor type, the heat sensor will operate at a default sensitivity providing heat detection for building protection at that location.

### Mounting Reference

**Electrical Box Requirements:** (boxes are by others)

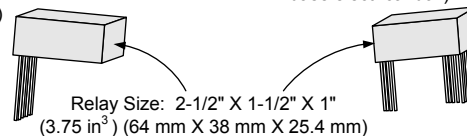
**Without relay in the box:** 4" octagonal or 4" square, 1-1/2" deep; single gang, 2" deep

**With relay in the box:** 4" octagonal or 4" square, 1-1/2" deep, with 1-1/2" extension ring

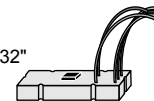


**2098-9737 Supervised Relay**  
(mounts in base electrical box or remotely)

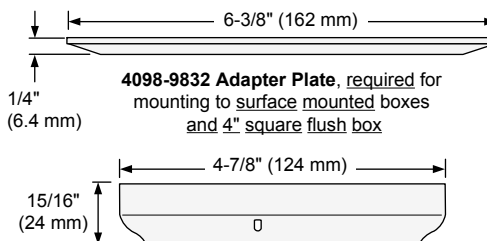
**4098-9822 Relay** (mounts in base electrical box)



**4098-9860 Supervised Relay** (mounts in base electrical box or remotely; 2-3/8" X 1-1/4" X 11/32" (1 in³) (60.4 mm X 31.8 mm X 8.6 mm))



**NOTE:** Review total wire count, wire size, and accessories being wired to determine required box volume.



**TrueAlarm Bases**

4098-9780, 4098-9789, 4098-9791, & 4098-9792



## TrueAlarm Sensors

### Features

Sealed against rear air flow entry

Interchangeable mounting

EMI/RFI shielded electronics

Heat sensors:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
- Rated spacing distance between sensors:

Fixed Temp. Setting	UL & ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135° F / 190° F* (57.2° C / 88° C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only; <b>RTI = Quick</b>
155° F (68° C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection; <b>RTI = Ultra Fast</b>

\*Note: 190° F (88° C) ratings apply only to the 4098-9734 sensor.

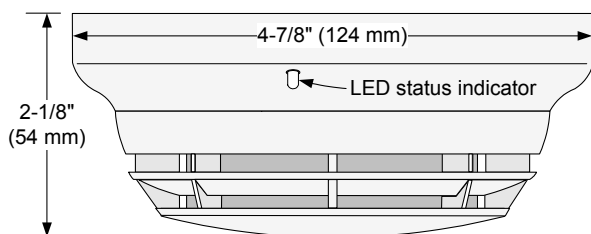
Smoke Sensors:

- Photoelectric technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

### 4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel.\*

The sensor head design provides 360° smoke entry for optimum response to smoke from any direction. Due to its photoelectric operation, air velocity is not normally a factor, except for impact on area smoke flow.



4098-9714 Photoelectric Sensor with Base

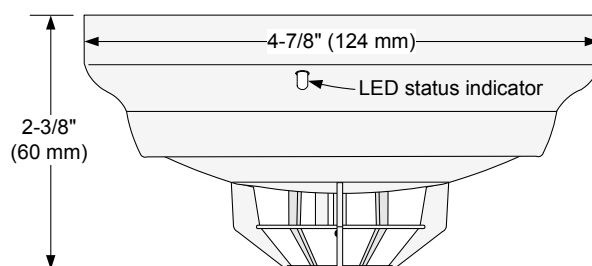
### 4098-9733 and 4098-9734 Heat Sensors

TrueAlarm heat sensors are self-restoring and provide rate compensated, fixed temperature sensing, selectable with or without rate-of-rise temperature sensing. Due to its small thermal mass, the sensor accurately and quickly measures the local temperature for analysis at the fire alarm control panel.

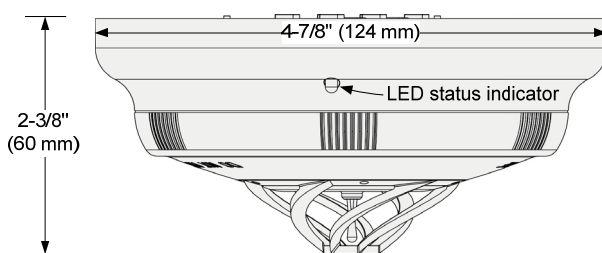
Rate-of-rise temperature detection is selectable at the control panel for either 15° F (8.3° C) or 20° F (11.1° C) per minute. Fixed temperature sensing is independent of rate-of-rise sensing and programmable to operate at 135° F (57.2° C) or 155° F (68° C). The 4098-9734 sensor provides an additional 190° F (88° C) set point.

In a slow developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature. However, an alarm will be initiated when the temperature reaches its rated fixed temperature setting.

TrueAlarm heat sensors can be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems. *Refer to specific panels for availability.*



4098-9733 Heat Sensor with Base



4098-9734 High Temperature Heat Sensor with Base

**WARNING:** In most fires, hazardous levels of smoke and toxic gas can build up before a heat detection device would initiate an alarm. In cases where Life Safety is a factor, the use of smoke detection is highly recommended.

### Application Reference

Sensor locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm and Signaling Code*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide.\*

\* For detailed application information including sensitivity selection, refer to Installation Instructions 574-709.



## TrueAlarm Analog Sensing Product Selection Chart

### TrueAlarm Sensor Bases (for use with Sensors 4098-9714 and 4098-9733)

(Refer to Application Manual 574-709 and Installation Instructions 574-707 for additional information)

Model*	Color	Description	Compatibility	Mounting Requirements
4098-9792	White	Standard Sensor Base	No options	4" octagonal or 4" square box, 1-1/2" min. depth; or single gang box, 2" min. depth
4098-9776	Black			
4098-9789	White			
4098-9789 IND	White	Sensor Base with connections for Remote LED Alarm Indicator or Unsupervised Relay	2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	4" octagonal or 4" square box <b>Note:</b> Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference. <b>** NOTE:</b> 4098-9791 and 4098-9780 are NOT compatible with the 2120 CDT
4098-9775	Black			
4098-9791**	White	4-Wire Sensor Supervised Relay Base with connections for LED Indicator or Unsupervised Relay	2098-9737 Supervised Remote Relay 2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	
4098-9780**	White	2-Wire Sensor Supervised Relay Base with connections for LED Indicator or Unsupervised Relay	4098-9860 Supervised Remote Relay	
			2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	

### TrueAlarm Sensors

Model*	Model*	Description	Compatibility	Mounting Requirements
4098-9714	White	Photoelectric Smoke Sensor	Bases 4098-9775, 4098-9776, 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
4098-9714 IND				
4098-9774	Black			
4098-9733	White	Heat Sensor		
4098-9734	White	High Temperature Heat Sensor		

### TrueAlarm Sensor/Base Accessories

Model	Description	Compatibility	Mounting Requirements
2098-9737	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9791 base	<b>Remote Mounting</b> requires 4" octagonal or 4" square box, 1-1/2" minimum depth
4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9780 base	<b>Base Mounting</b> requires 4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	Bases 4098-9789, 4098-9791, and 4098-9780	Single gang box, 1-1/2" minimum depth
4098-9822	Unsupervised Relay, tracks base LED status; Note: Mounts only in base electrical box	Bases 4098-9789, 4098-9791, and 4098-9780	4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	<b>Required</b> for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

\* Note: Model numbers ending in IND are assembled in India.

## Specifications

### General Operating Specifications

Communications and Sensor Supervisory Power	IDNet or MAPNET II communications, auto-selected, 1 address per base
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm <sup>2</sup> to 2.08 mm <sup>2</sup> )
Remote LED Alarm Indicator Current	1 mA typical, no impact to alarm current
Remote LED Alarm Indicator and Relay Connections	Color coded wire leads, 18 AWG (0.82 mm <sup>2</sup> )
UL Listed Operating Temperature Range	32° to 100° F (0° to 38° C)
Operating Temperature Range	with 4098-9733 Heat Sensor 32° to 122° F (0° to 50° C)
	with 4098-9714 Smoke Sensor 15° to 122° F (-9° to 50° C)
	With 4098-9734 Heat Sensor 32° to 150° F (0° to 66° C)
Storage Temperature Range	0° F to 140° F (-18° C to 60° C)
Humidity Range	10 to 95% RH
4098-9714 Smoke Sensor Air Velocity Rating	0-4000 ft/min (0-1220 m/min)
Housing Color	Frost White or Black

### 4098-9791 Base With Supervised Remote Relay 2098-9737 (see page 2 for contact ratings)

Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	270 µA, from 24 VDC supply
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply

### 4098-9780 Base With Supervised Remote Relay 4098-9860 (see page 2 for contact ratings)

Power	Supplied from communications
-------	------------------------------

### 4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789, 4098-9791, and 4098-9780 (see page 2 for contact ratings)

Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	Supplied from communications
Alarm Current	13 mA from separate 24 VDC supply

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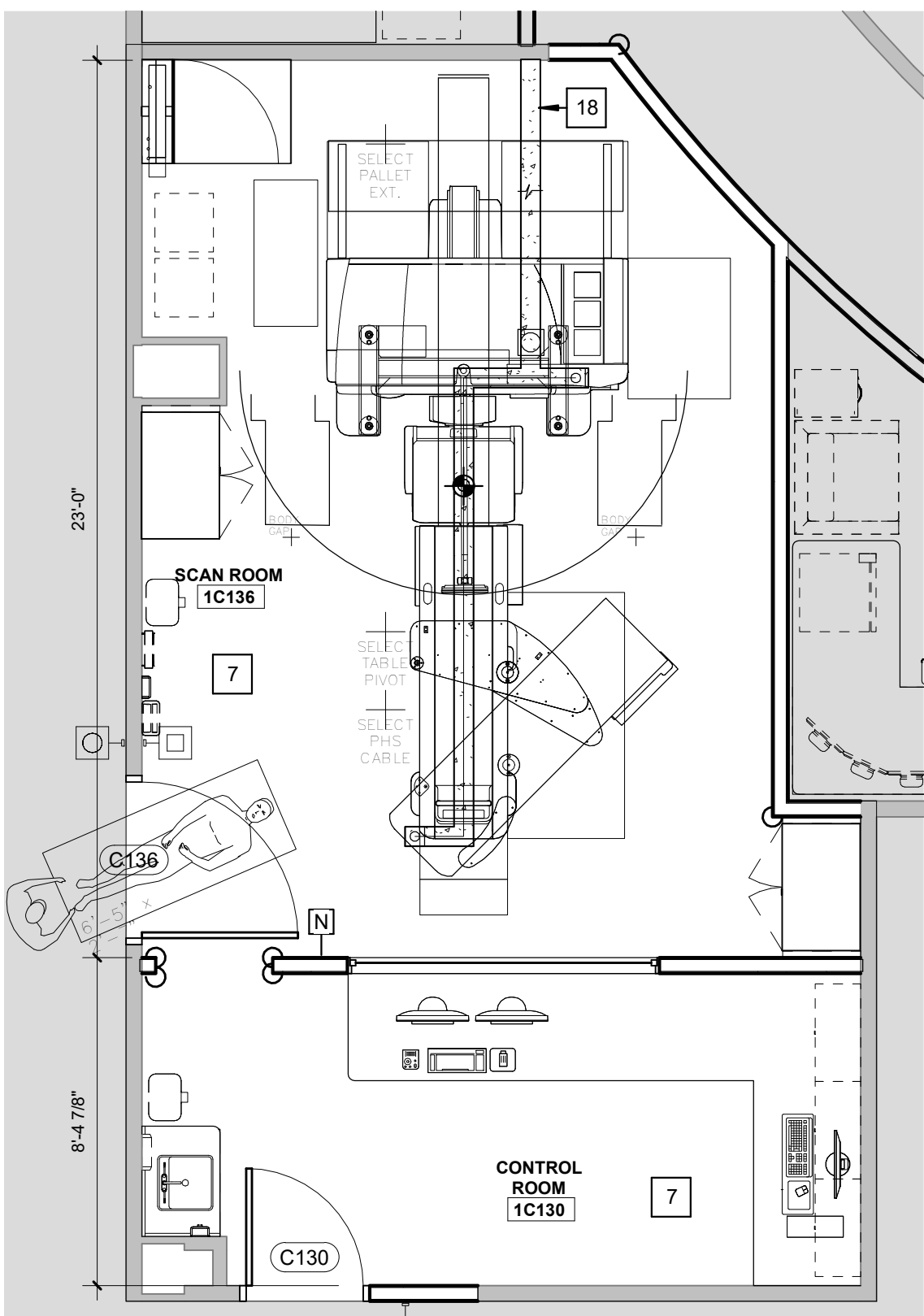
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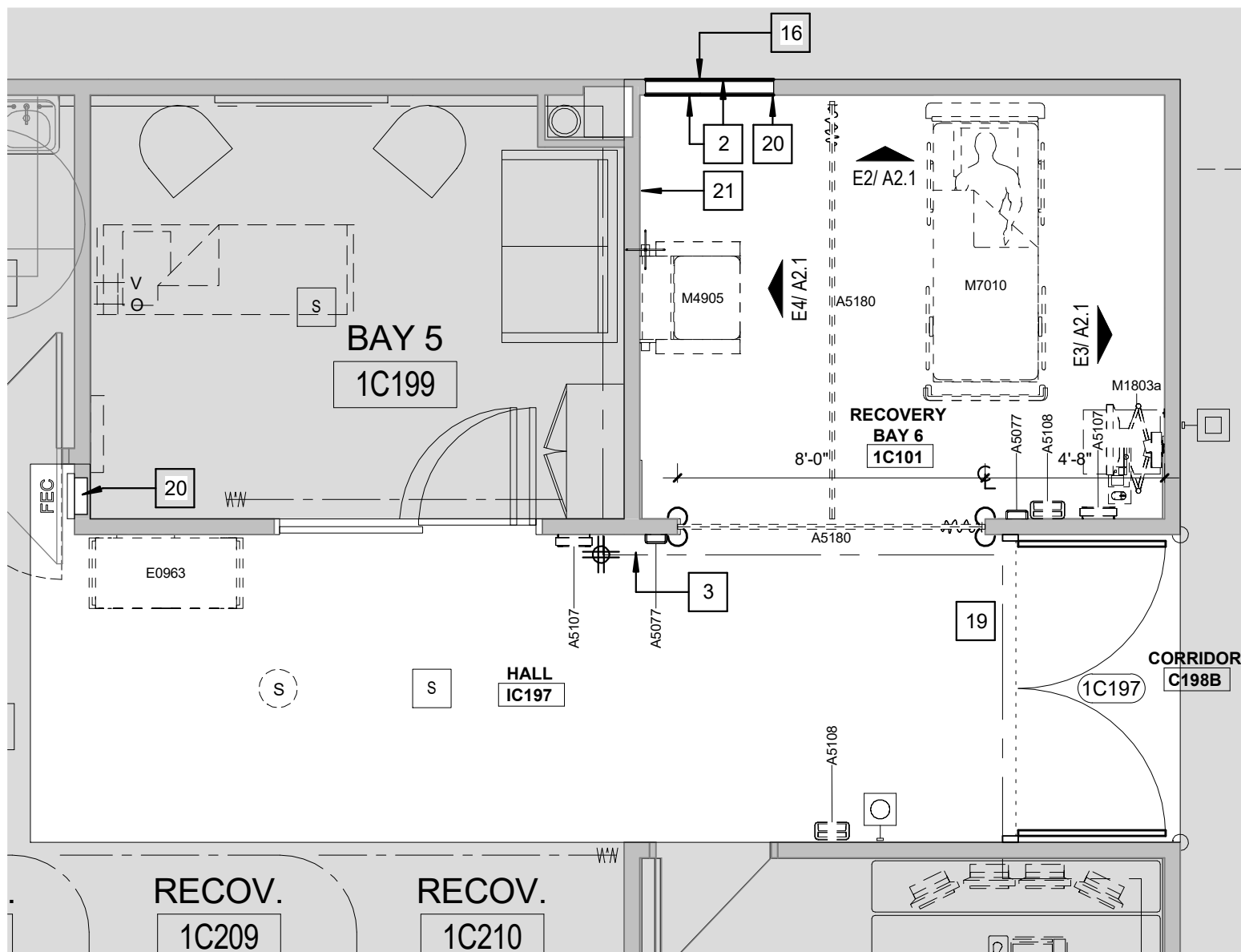
www.simplex-fire.com

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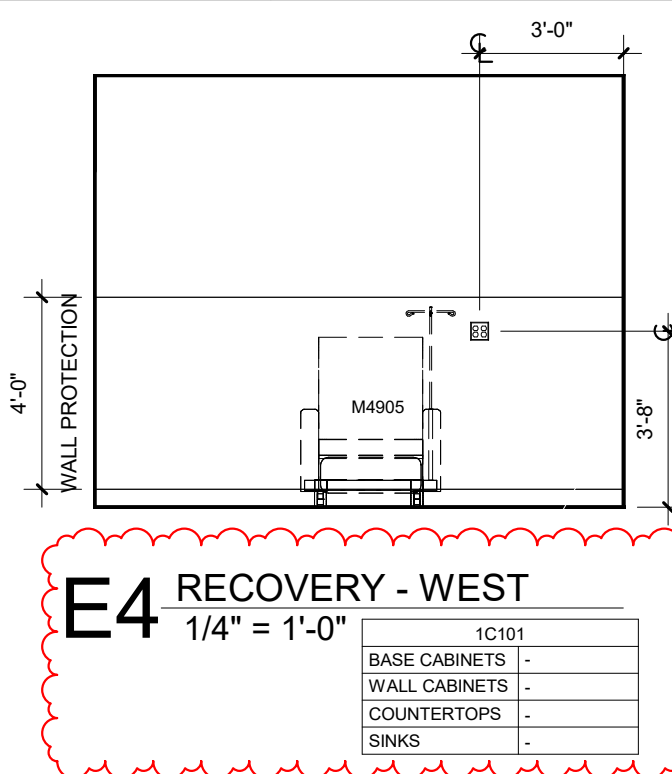




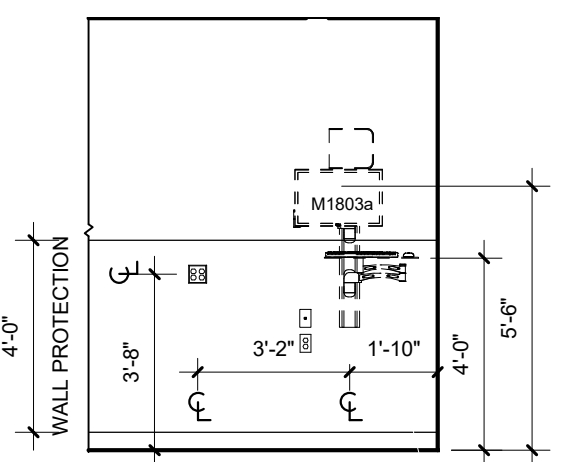
D7 EQUIPMENT LAYOUT  
1/4" = 1'-0"



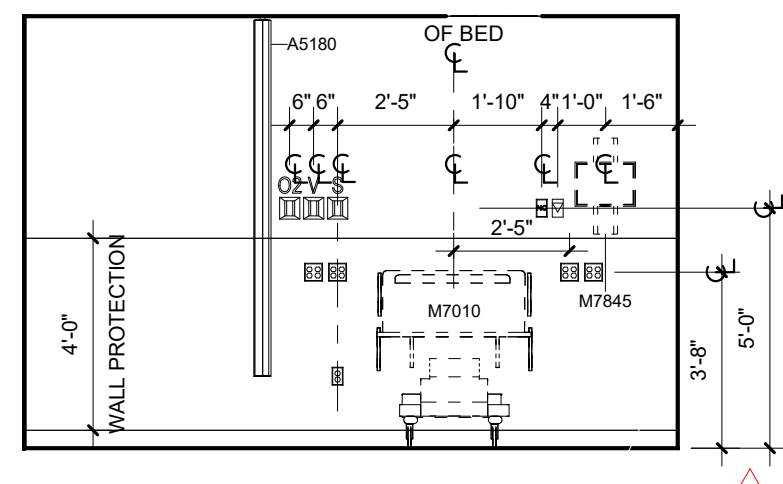
D6 ENLARGED PLAN  
1/4" = 1'-0"



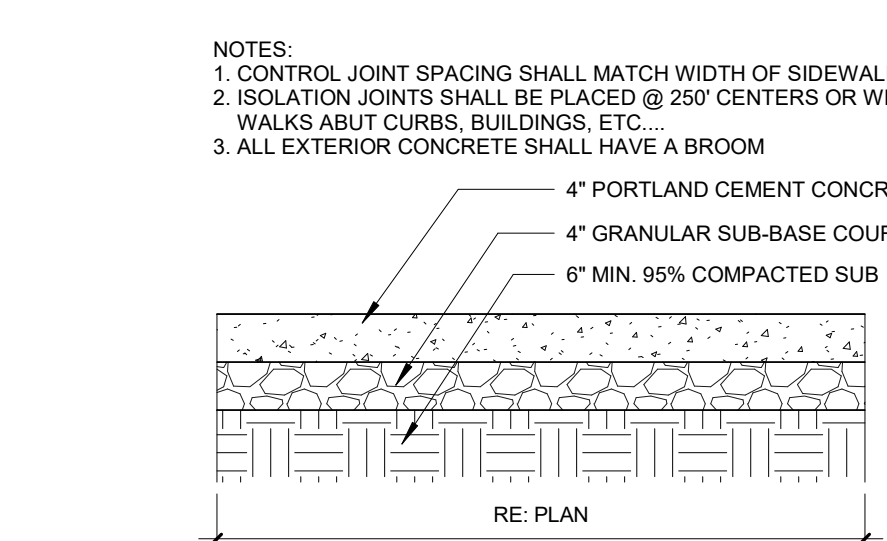
E4 RECOVERY - WEST  
1/4" = 1'-0"



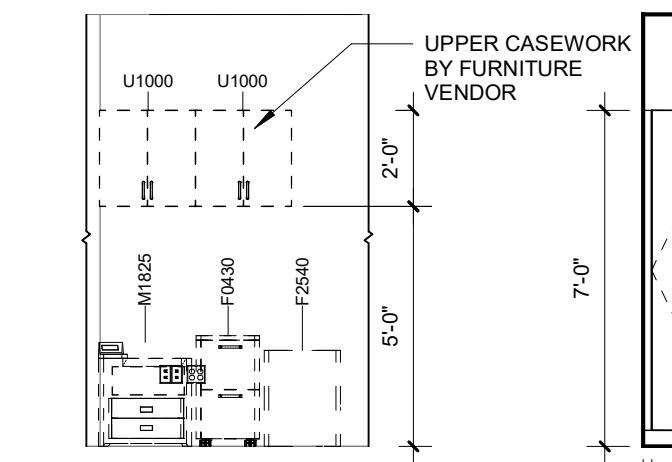
E3 RECOVERY - EAST  
1/4" = 1'-0"



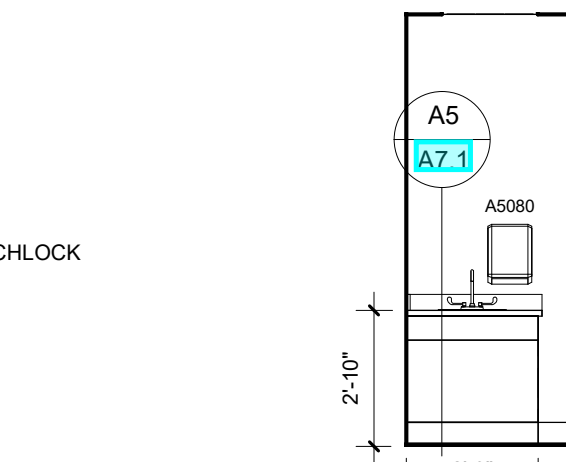
E2 RECOVERY - NORTH  
1/4" = 1'-0"



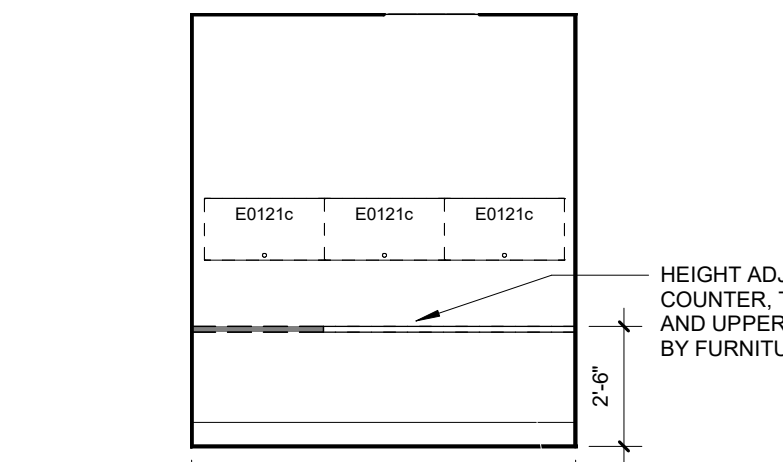
E1 DETAIL AT CONCRETE SIDEWALK  
3/4" = 1'-0"



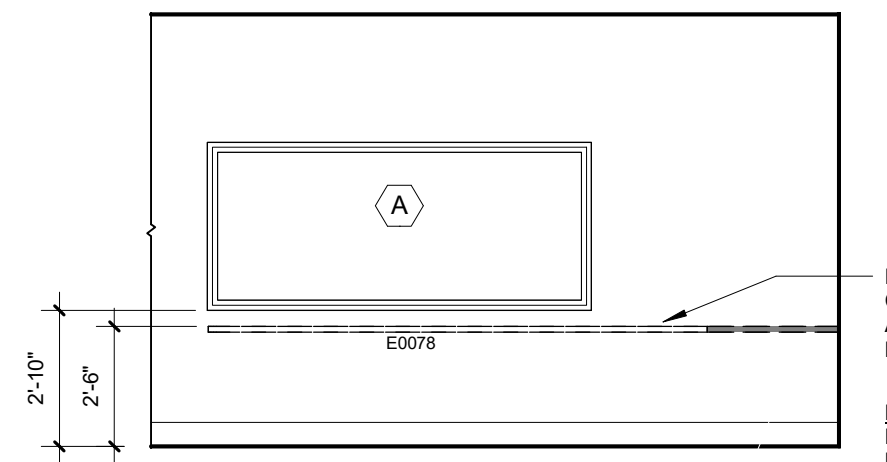
D5 CORRIDOR  
1/4" = 1'-0"



D4 SCAN ROOM  
1/4" = 1'-0"



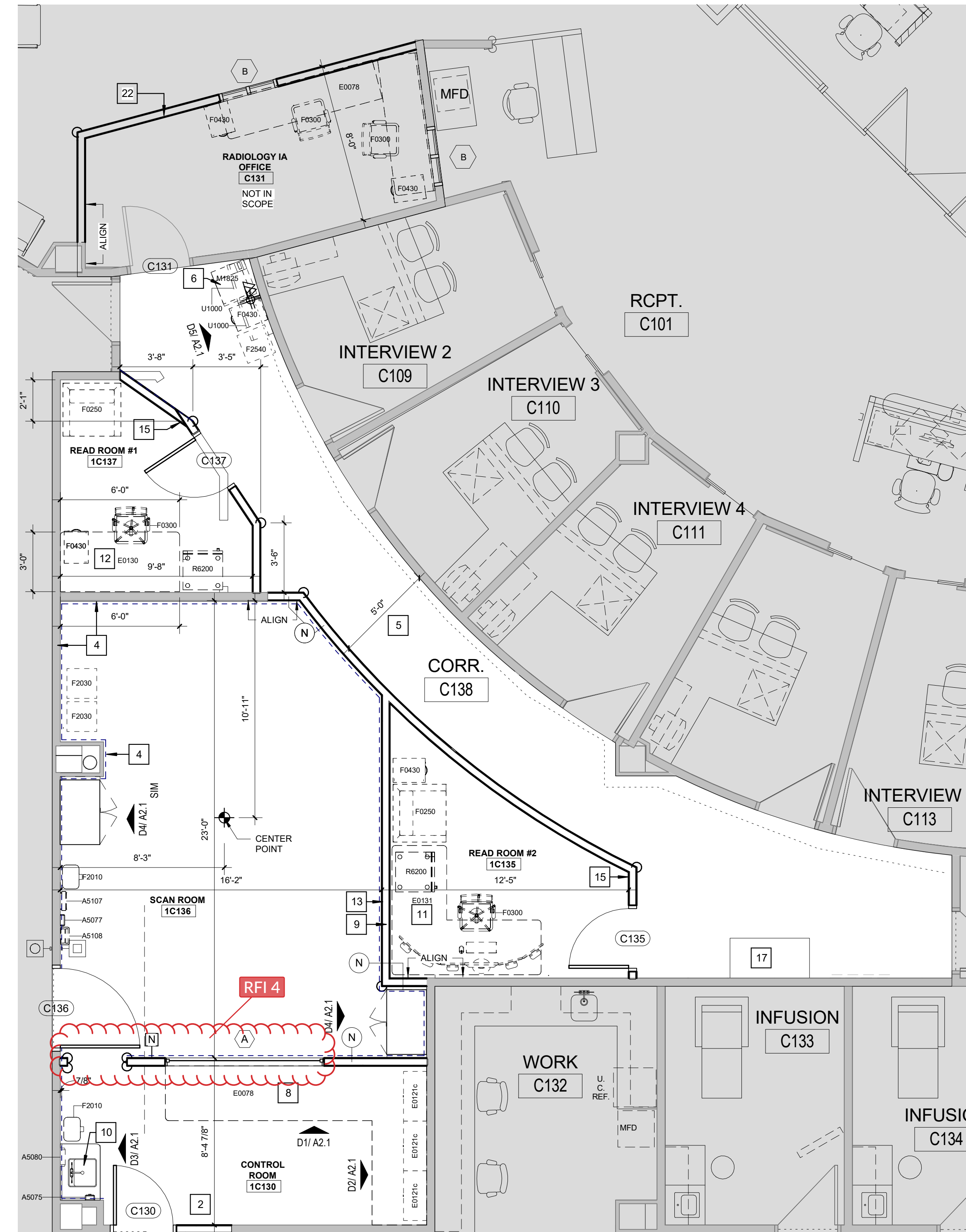
D3 CONTROL ROOM - WEST  
1/4" = 1'-0"



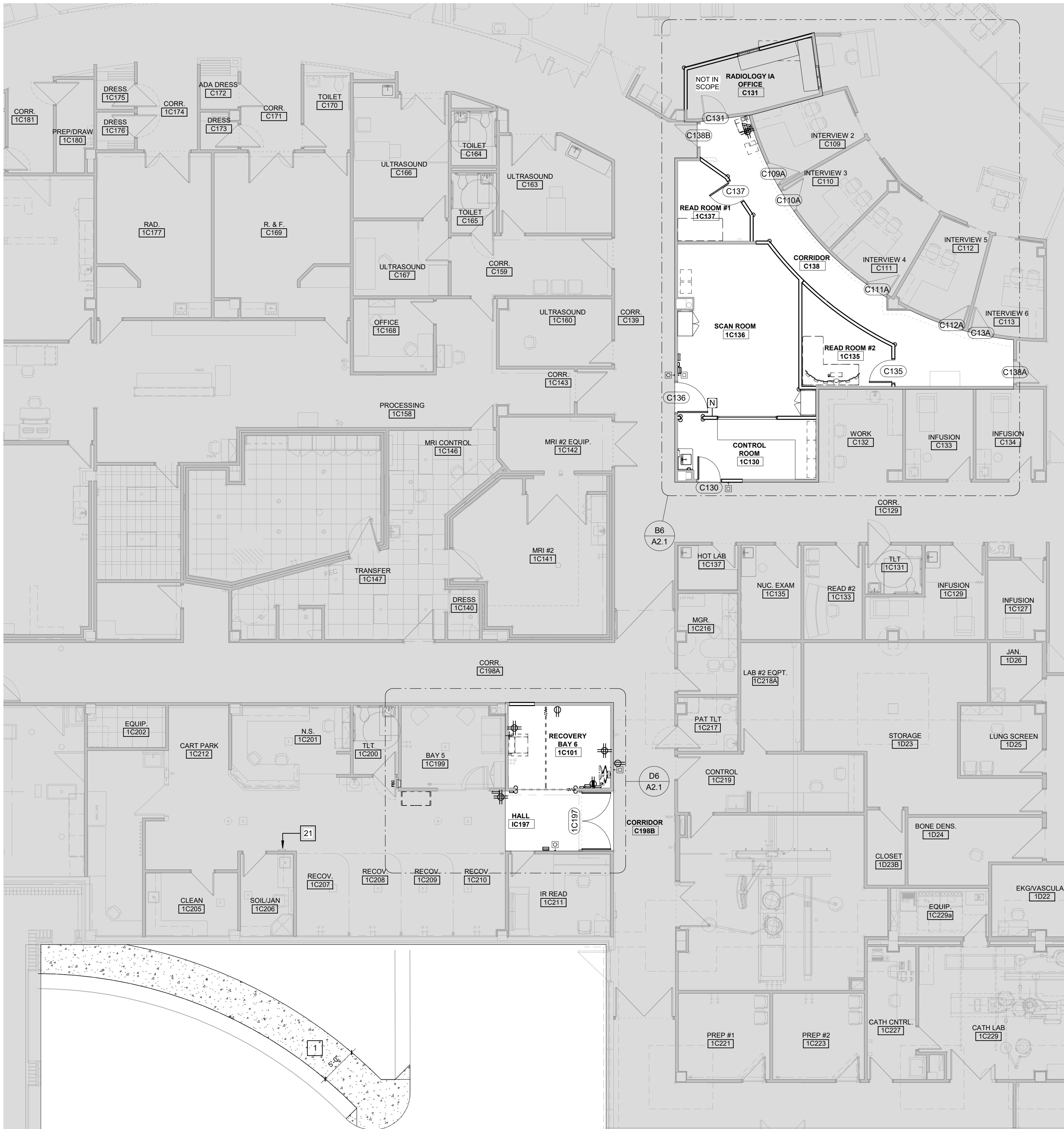
D2 CONTROL ROOM - EAST  
1/4" = 1'-0"

D1 CONTROL ROOM - NORTH  
1/4" = 1'-0"

## Architural Drawing demonstration use of rooms



B6 ENLARGED PLAN  
1/4" = 1'-0"



A4 OVERALL PLAN  
1/8" = 1'-0"

### FFE SCHEDULE

TYPE MARK	DESCRIPTION	RESPONSIBILITY	COMMENTS
A1000	SCAP DISPENSER	OFCE	EXISTING TO BE RELOCATED
A5075	HAND SANITIZER	OFCE	EXISTING TO BE RELOCATED
A5080	PAPER TOWEL DISPENSER	OFCE	BLOCKING AS REQUIRED
A5107	GLOVE DISPENSER	OFCE	EXISTING TO BE RELOCATED
A5108	SHARPS	OFCE	EXISTING TO BE RELOCATED
A5145	COAT HOOK	OFCE	BLOCKING AS REQUIRED
A5180	CUBICLE CURTAIN	OFCE	EXISTING TO BE RELOCATED
E0078	"L" WORK STATION	VFVI	BY JAM, BLOCKING AS REQUIRED
E0121c	JAM UPPER FLIPPER BIN, 30" W	VFVI	BY JAM, BLOCKING AS REQUIRED
E0130	EXISTING READ DESK	OFCE	EXISTING TO BE RELOCATED
E0131	NEW READ DESK	OFCE	84"x36"
E0963	EXISTING SHELVING UNIT	OFCE	EXISTING TO BE RELOCATED
F0250	LOUNGE CHAIR	OFCE	EXISTING TO BE RELOCATED
F0300	CHAIR, TASK, SWIVEL, W/ ARMS	OFCE	EXISTING TO BE RELOCATED
F0430	FILE CABINET	OFCE	EXISTING TO BE RELOCATED
F2010	STEP TRASHCAN	OFCE	EXISTING TO BE RELOCATED
F2030	LEAD LINED RECEPTACLE	OFCE	EXISTING TO BE RELOCATED
F2540	SHREDDER	OFCE	EXISTING TO BE RELOCATED
M1801	COMPUTER MONITOR	OFCE	EXISTING TO BE RELOCATED
M1803a	WORKSTATION, WALL MOUNTED	OFCE	EXISTING TO BE RELOCATED
M1825	PRINTER	OFCE	EXISTING TO BE RELOCATED
M4905	RECOVERY CHAIR	OFCE	EXISTING TO BE RELOCATED
M7010	BED, PATIENT, ELECTRIC	OFCE	EXISTING TO BE RELOCATED
M7845	VITALS MONITOR, WALL MOUNTED	OFCE	EXISTING TO BE RELOCATED
R0200	DORM REFRIGERATOR	OFCE	EXISTING TO BE RELOCATED
U1000	UPPER CASEWORK	VFVI	BLOCKING AS REQUIRED

### GENERAL PLAN NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH A.D.A. REQUIREMENTS AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL BUILDING CODES AND REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY BUILDING PERMITS.
- THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ARCHITECT OF ANY INCONSISTENCIES OR DISCREPANCIES WITH THE PROJECT DOCUMENTS. ACCESS TO THE SITE AND/OR SPACE UNDER CONSTRUCTION DURING BIDDING AND CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER.
- IF MATERIAL SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB. IMMEDIATELY NOTIFY ARCHITECT AND OWNER. OWNER SHALL COORDINATE WITH CONTRACTOR ON THE REMOVAL OF SUCH ITEMS. WORK MAY PROCEED AFTER HAZARDOUS MATERIAL HAS BEEN REMOVED.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING AND CONFIRMING ALL SUBSTRATE CONDITIONS WHERE NEW MATERIALS ARE APPLIED. THE SUBSTRATE SHALL BE SMOOTH AND FREE OF DEFECTS AND SHALL CONFORM TO THE REQUIREMENTS OF THE FINISHED MATERIAL MANUFACTURERS' RECOMMENDATIONS.
- CONTRACTOR SHALL FURNISH AND INSTALL CONCEALED FIRE-TREATED WOOD BLOCKING BEHIND ALL CABINETS, TOILET ACCESSORIES, PLUMBING FIXTURES, AND OTHER WALL MOUNTED ITEMS AS REQUIRED FOR ADEQUATE SUPPORT.
- CONTRACTOR TO PROVIDE ALL REQUIRED LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO MEET AND COMPLETE THE REQUIREMENTS OF THE NEW CONSTRUCTION.
- ALL EXISTING CONSTRUCTION TO REMAIN SHALL BE PATCHED, REPAIRED, AND PREP AS REQUIRED FOR NEW FINISH APPLICATION.
- DO NOT CLOSE OR OBSTRUCT WALKWAYS, EXITS, OR OTHER FACILITIES USED BY OCCUPANTS OF BUILDINGS WITHOUT WRITTEN PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
- CONDUCT ALL OPERATIONS IN A SAFE WORKING MANNER TO PREVENT DAMAGE OR INJURY TO ADJACENT SPACES, BUILDING, STRUCTURE, OTHER FACILITIES, AND PERSONS.
- REFER TO GENERAL NOTES, LEGENDS & SYMBOLS SHEET FOR ADDITIONAL GENERAL NOTES AS APPLICABLE.
- SEE FINISH SCHEDULE FOR FINISH LOCATION AND SPECIFICATIONS.
- SEE DOOR SCHEDULE FOR DOOR SPECIFICATIONS.
- UPON VERIFICATION OF THE EXISTING CONDITIONS, THE CONTRACTOR SHALL DETERMINE AND RECOMMEND THE BEST ACTION TO MINIMIZE THE EXTENT OF REMOVAL WORK FOR INSTALLATION OF NEW WORK.

### FLOOR PLAN LEGEND

NOT IN SCOPE	4" CONCRETE SIDEWALK
NEW WALL	EXISTING WALL
DOOR No.	EXISTING DOOR
NEW DOOR	EXISTING DOOR
WALL REQUIRING 1/16" LEAD SHIELDING PER PHYSICISTS' REPORT	

### KEYNOTES - FLOOR PLAN

NUMBER	REVISION	COMMENTS
1		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
2		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
3		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
4		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
5		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
6		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
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10		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
11		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
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13		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
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17		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
18		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
19		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
20		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
21		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN
22		NEW 4" CONCRETE SIDEWALK AND ADA RAMP, COORDINATE SIDEWALK TO AVOID EXISTING DECON FAN

STATE OF MISSOURI  
SAMUEL K. BECKMAN  
A-2011012130  
ARCHITECT

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Samuel K. Beckman - Architect  
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ACI/Boland, Inc.  
Kansas City | St. Louis  
1710 Wyandotte  
Kansas City, MO 64108  
T: 816.763.9600  
Licensee's Certificate of Authority Number:  
Missouri: #000958

**MEP ENGINEER**  
IMEG Corp.  
1600 Baltimore, Suite 300  
Kansas City, MO 64108  
816.842.8437  
Licensee's Certificate of Authority Number:

Nuclear Medicine / Spect. CT remodel  
100 NE Saint Luke's Blvd  
Saint Luke's East  
Lee's Summit, MO 64086

Date 4/07/2023  
Job Number 3-23005  
Drawn By Author  
Checked By Checker

Number	Date	Description
1	04.24.23	ADD 1
2	06.12.23	ASI 1 - RECOVERY BAY
3	pending	ASI 2 - RAD OFFICE

A2.1

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FIRST FLOOR DIMENSION PLAN