TM FIELDHOUSE
FIRE ALARM DRAWINGS

PROJECT

TM FIELDHOUSE
1550 SE HAMBLEN ROAD
LEE'S SUMMIT, MO 64063

ELECTRICAL/GENERAL CONTRACTOR

TAILOR MADE EXTERIORS
1610 SE HAMBLEN ROAD
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PH: (816) 347-8328
WEBSITE: www.TailorMadeExteriors.com

FIRE ALARM CONTRACTOR

FIRE & SECURITY SOLUTIONS GROUP, INC.
11240 STRANG LINE ROAD
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FIRE & SECURITY SOLUTIONS Group, Inc.

11240 STRANG LINE ROAD
LENEXA, KS 66215

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DRAWING INDEX

SHEET #	SHEET TITLE
FA-COVER	FIRE ALARM COVER SHEET
FA-100	1st FLOOR (WEST) AND MEZZANINE FIRE ALARM PLANS
FA-101	1st FLOOR (EAST) FIRE ALARM PLAN
FA-102	RISER DIAGRAM, VOLTAGE DROPS, BATTERY CALCS., SEQ. OF OPER., MOUNTING HTS. DETAIL

CUSTOMER:

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DRAWING APPROVALS

STATE OF MISSOURI
KAMBIZ ZORAGHCHI
NUMBER PE-2014000105
PROFESSIONAL ENGINEER
08/01/2024

MEP Engineering Group
Certificate of Authority #2016015108
mepengineeringgroup@gmail.com
(816)778-1195

PROJECT NO.
REVISIONS
NOTE:

SCALE: AS NOTED

DRAWN BY:	AP	6/20/24
ENGINEER:	CF	6/20/24
CHECK BY:		
DATE: 6/20/24		
CAD FILE:		

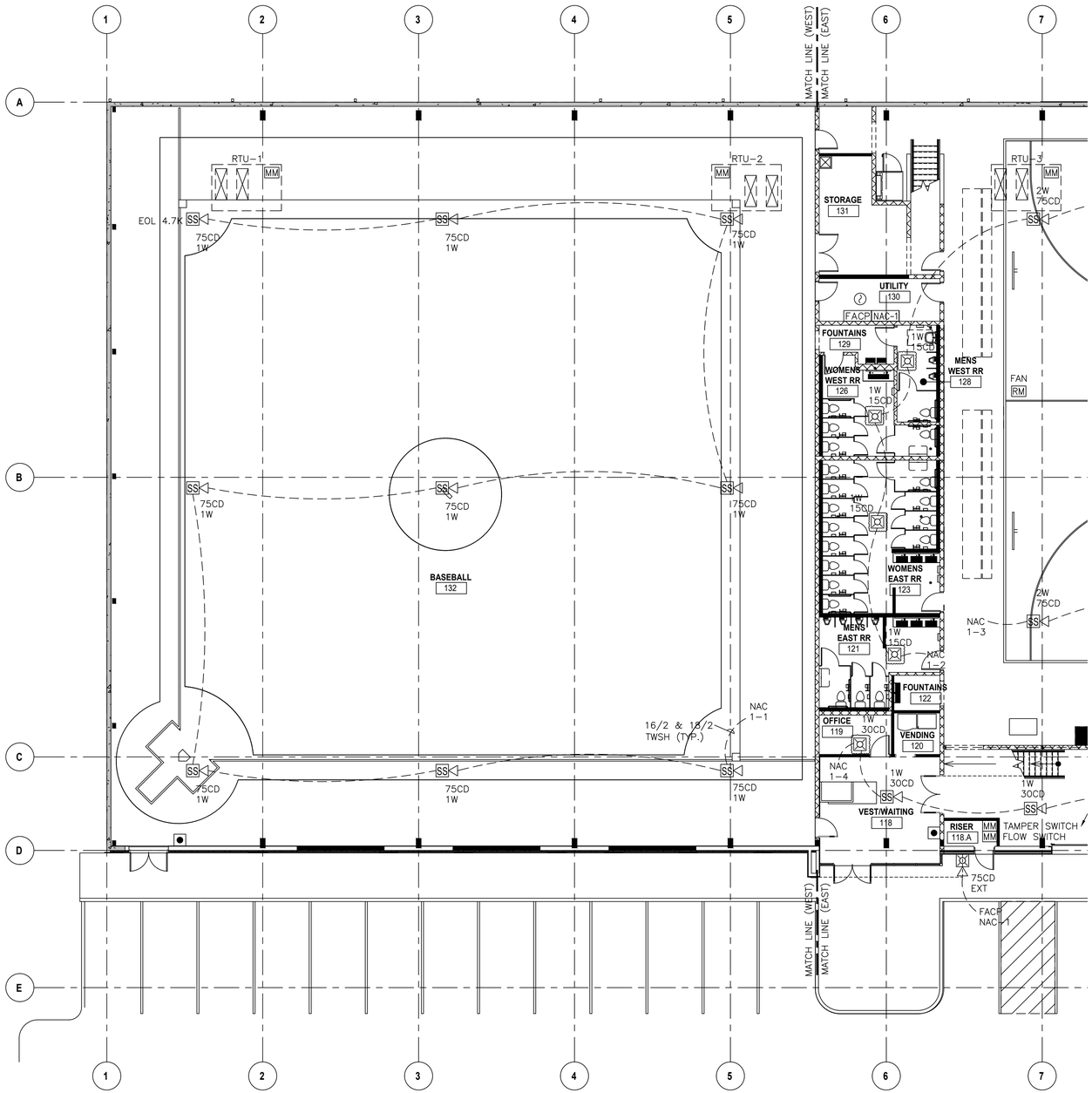
DRAWING TITLE:
FIRE ALARM
COVER PAGE

DRAWING SHEET NO.
FA-COVER

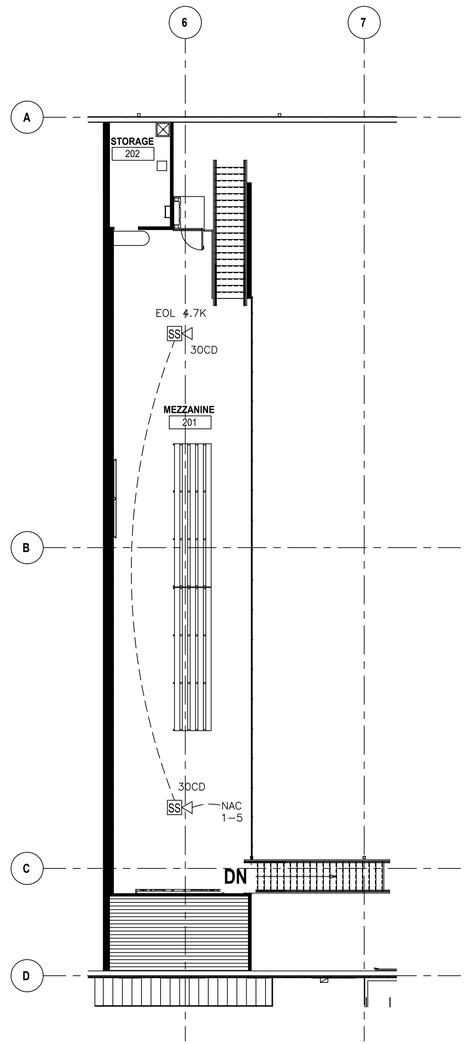
SYMBOL LEGEND

SYMB.	DESCRIPTION
●	FIRE ALARM MANUAL PULL STATION
⊠	STROBE LIGHT
SS	CEILING MOUNT SPEAKER/STROBE LIGHT
WP ⊠	WEATHERPROOF COMBINATION HORN/STROBE LIGHT
ⓢ	SMOKE DETECTOR
MM	MONITOR MODULE (AMM)
RM	RELAY MODULE (AOM)
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
NAC-X	FIRE ALARM NOTIFICATION POWER SUPPLY

XXCD – CANDELA RATING
XXW – SPEAKER WATTAGE



1ST FLOOR PLAN (WEST)
1/8" = 1'-0"
NORTH



MEZZANINE FLOOR PLAN
1/8" = 1'-0"
NORTH

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DRAWING TITLE:

FIRE ALARM
1st FLOOR PLAN (WEST) AND
MEZZANINE FLOOR PLAN

DRAWING SHEET NO.
FA-100

SYMBOL LEGEND

SYMB.	DESCRIPTION
	FIRE ALARM MANUAL PULL STATION
	STROBE LIGHT
SS	CEILING MOUNT SPEAKER/STROBE LIGHT
WP	WEATHERPROOF COMBINATION HORN/STROBE LIGHT
	SMOKE DETECTOR
MM	MONITOR MODULE (AMM)
RM	RELAY MODULE (AOM)
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
NAC-X	FIRE ALARM NOTIFICATION POWER SUPPLY

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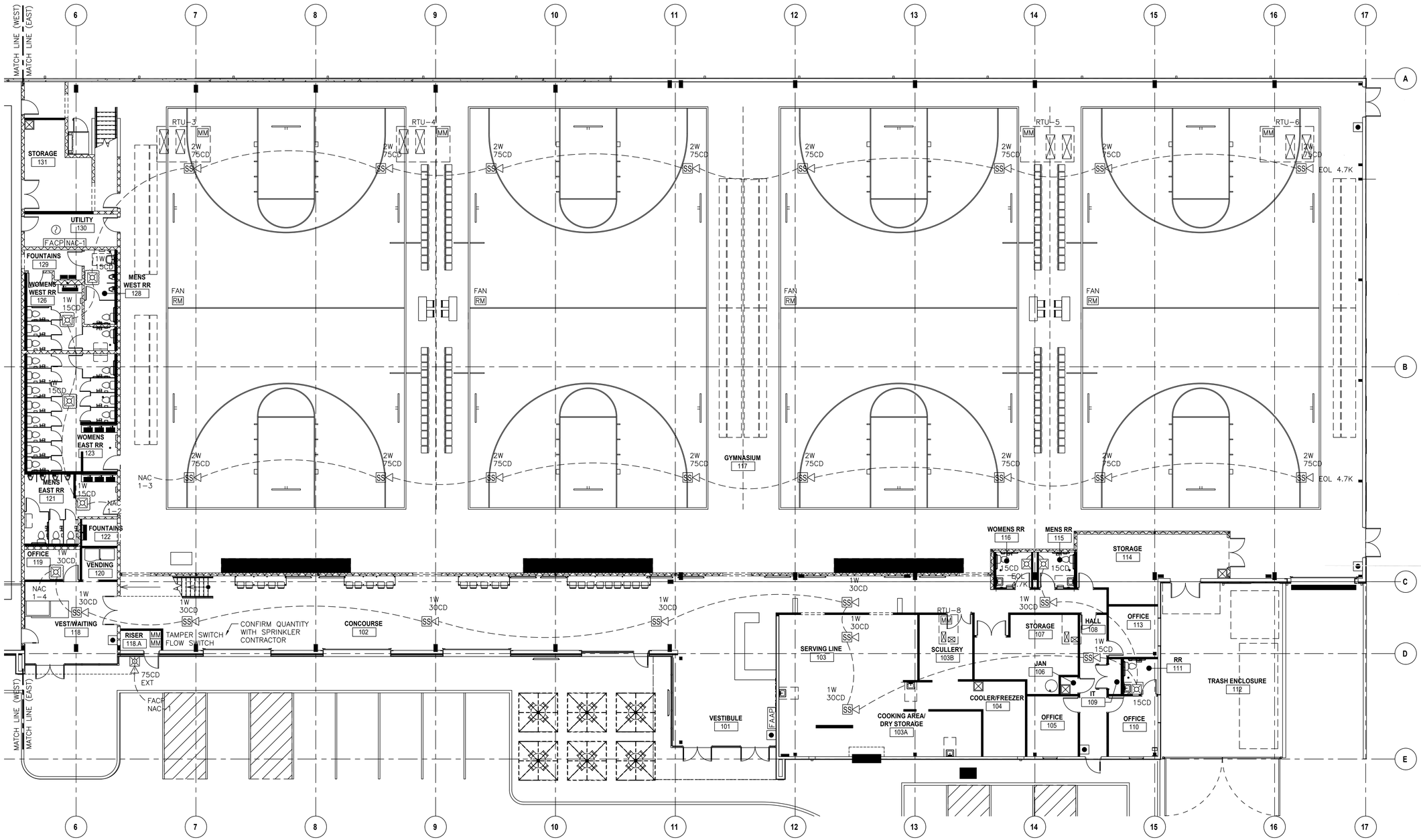
XXW – SPEAKER WATTAGE



1ST FLOOR PLAN (EAST)
1/8" = 1'-0"

NORTH

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DRAWING TITLE:
FIRE ALARM
1st FLOOR PAN (EAST)

DRAWING SHEET NO.
FA-101

TM Fieldhouse - Voltage Drop Calculation Report

POWER SOURCE

Power Source	NAC 1	Brand	Gamewell-FCI	Model Number	HPF-PS10 CLASS B	Nominal System Voltage	20.4 VOLTS

CIRCUIT 1

NAC Circuit1	0.999 AMPS	CLASS B	AWG	9 Devices	0.999 AMPS USED	2.74 VOLTAGE DROP

#	Device Model	Candela	Pattern	Volume	Tone	CURRENT (AMPS)	Dist from prev device	Volts
1	SPSCWL	75				0.111	90	19.49
2	SPSCWL	75				0.111	45	19.08
3	SPSCWL	75				0.111	45	18.73
4	SPSCWL	75				0.111	45	18.42
5	SPSCWL	75				0.111	45	18.17
6	SPSCWL	75				0.111	45	17.96
7	SPSCWL	75				0.111	45	17.81
8	SPSCWL	75				0.111	45	17.71
9	SPSCWL	75				0.111	45	17.66

CIRCUIT 2

NAC Circuit2	0.533 AMPS	CLASS B	AWG	13 Devices	0.533 AMPS USED	0.96 VOLTAGE DROP

#	Device Model	Candela	Pattern	Volume	Tone	CURRENT (AMPS)	Dist from prev device	Volts
1	SCWL	15				0.041	20	20.29
2	SPSCWL	15				0.041	30	20.14
3	SCWL	15				0.041	20	20.05
4	SCWL	15				0.041	15	19.99
5	SCWL	15				0.041	15	19.93
6	SPSCWL	15				0.041	30	19.83
7	SPSCWL	15				0.041	40	19.71
8	SPSCWL	15				0.041	25	19.65
9	SPSCWL	15				0.041	40	19.57
10	SPSCWL	15				0.041	25	19.53
11	SPSCWL	15				0.041	40	19.48
12	SPSCWL	15				0.041	25	19.46
13	SPSCWL	15				0.041	40	19.44

CIRCUIT 3

NAC Circuit3	0.888 AMPS	CLASS B	AWG	8 Devices	0.888 AMPS USED	1.51 VOLTAGE DROP

#	Device Model	Candela	Pattern	Volume	Tone	CURRENT (AMPS)	Dist from prev device	Volts
1	SPSCWL	75				0.111	30	20.13
2	SPSCWL	75				0.111	50	19.73
3	SPSCWL	75				0.111	25	19.57
4	SPSCWL	75				0.111	50	19.28
5	SPSCWL	75				0.111	25	19.17
6	SPSCWL	75				0.111	50	19
7	SPSCWL	75				0.111	25	18.95
8	SPSCWL	75				0.111	50	18.89

CIRCUIT 4

NAC Circuit4	0.731 AMPS	CLASS B	AWG	13 Devices	0.731 AMPS USED	1.58 VOLTAGE DROP

#	Device Model	Candela	Pattern	Volume	Tone	CURRENT (AMPS)	Dist from prev device	Volts
1	SPSCWL	30				0.063	25	20.21
2	SPSCWL	30				0.063	20	20.08
3	SPSCWL	30				0.063	30	19.89
4	SPSCWL	30				0.063	55	19.59
5	SPSCWL	30				0.063	55	19.32
6	SPSCWL	30				0.063	45	19.13
7	SPSCWL	30				0.063	15	19.08
8	SPSCWL	30				0.063	15	19.04
9	SPSCWL	15				0.041	60	18.9
10	SCWL	15				0.041	10	18.88
11	SPSCWL	30				0.063	30	18.83
12	SCWL	15				0.041	10	18.83
13	SCWL	15				0.041	10	18.82

CIRCUIT 5

NAC Circuit5	0.126 AMPS	CLASS B	AWG	2 Devices	0.126 AMPS USED	0.13 VOLTAGE DROP

#	Device Model	Candela	Pattern	Volume	Tone	CURRENT (AMPS)	Dist from prev device	Volts
1	SPSCWL	30				0.063	60	20.32
2	SPSCWL	30				0.063	85	20.27

TM Fieldhouse - Battery Calculation Report

PANEL INFORMATION

Panel Type	E3ControlPanel
No. of Loops	1
No. of Devices	35
Status	PASS

BATTERY & CHARGER REQUIREMENT

Normal Operation	24 Hours	BAT-12180	18Ah	13.327Ah	Suggested Batt. Box
In Alarm	5 Mins	Suggested Battery	Suggested Capacity	Required Capacity	

Required Standby time(In Hours): Standby Load Current 0.456 x Panel in Normal Operation (in hours) 24 = 10.944 Ah

Required In Alarm time(In Mins): In Alarm Load Current(in Amps) 1.946 x Panel In Alarm(In Mins) 0.083(5mins) = 0.162Ah

Total Current Load	= 11.106Ah
Multiply with derating factor	= x1.2
Adding with spare capacity	= N/A
Total AH required	= 13.327 Ah

LOOP1 DETAILS

Loops 1

Number of devices 0

0% Consumed (0% — 100%)

PANEL MODULES

No. of Modules 35

2401.92 mA Consumed 2% (0% — 100%)

Module Name	Quantity	Quiescent/Stand By (mA)	Alarms (mA)
Intel. Loop Interface, Main Board (ILI-MB-E3)	1	81	150
Intel. Loop Interface Supplement Board (ILI-S-E3)	1	81	150
120V Power Supply Sub-Assembly (PM-9)	1	50	50
LCD Display & Switch Control (LCD-E3)	1	24	28
ARCNET Repeater (RPT-E3)	1	13	13
Voice Paging Microphone (Microphone)	1	1	1
AOM-2SF (AUX POWER)	1	1.7	7
AMM-4F (Aux. Power)	17	204	1530
ASDPL3	1	0	2
MS7AF	6	0.02	15
AOM2RF	4	0	0.03

NAC CIRCUITS

NAC Name	Alarms (mA)	Quiescent/Stand By (mA)
NAC Circuit 1	0.176	0
NAC Circuit 2	0	0
NAC Circuit 3	0	0
NAC Circuit 4	0	0
NAC Circuit 5	0	0
NAC Circuit 6	0	0
NAC Circuit 7	0	0
NAC Circuit 8	0	0
NAC Circuit 9	0	0
NAC Circuit 10	0	0
NAC Circuit 11	0	0
NAC Circuit 12	0	0

Sequence of Operation Matrix

System Operation - TM Fieldhouse

	Alarm at FACP/Annunciator	Deactivate Alarm at FACP	Supervisory at FACP	Deactivate Supervisory at FACP/annunciator	Trouble at FACP/Annunciator	Activate Audible Visual Devices	De-Activate Audible Visual Devices	De-Activate Hi/Lo Fans	Activate Alarm to Central Station	Activate Trouble to Central Station	Activate Supervisory to Central Station	Activate Smoke Curtain	Recall Elevator to Alternate Floor
Manual Pull	■					■	■		■				
Smoke Detector	■					■	■		■				
Smoke Detector Elevator Landing	■					■	■		■			■	■
Heat Detector	■					■	■		■				
Flow Switch	■					■	■		■				
Tamper Switch			■								■		
Duct Detector			■								■		
FACP Silence		■						■					
FACP Reset				■									
Fire Alarm Trouble Condition (Opens, Grounds, Shorts)				■	■					■			

Function of the FACP must be confirmed with the AHJ prior to programing FACP

SYMBOL LEGEND

SYMB.	DESCRIPTION
●	FIRE ALARM MANUAL PULL STATION
⊠	STROBE LIGHT
SS◁	CEILING MOUNT SPEAKER/STROBE LIGHT
WP ⊠◁	WEATHERPROOF COMBINATION HORN/STROBE LIGHT
(?)	SMOKE DETECTOR
MM	MONITOR MODULE (AMM)
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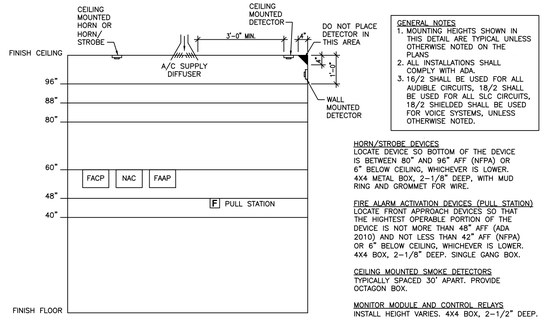


GENERAL NOTES
1. MOUNTING HEIGHTS SHOWN IN THIS DETAIL ARE TYPICAL UNLESS OTHERWISE NOTED ON THE PLANS.
2. ALL INSTALLATIONS SHALL COMPLY WITH ADA.
3. 16/2 SHALL BE USED FOR ALL AUDIBLE CIRCUITS, 18/2 SHALL BE USED FOR ALL SLC CIRCUITS, 18/2 SHIELDED SHALL BE USED FOR VOICE SYSTEMS, UNLESS OTHERWISE NOTED.

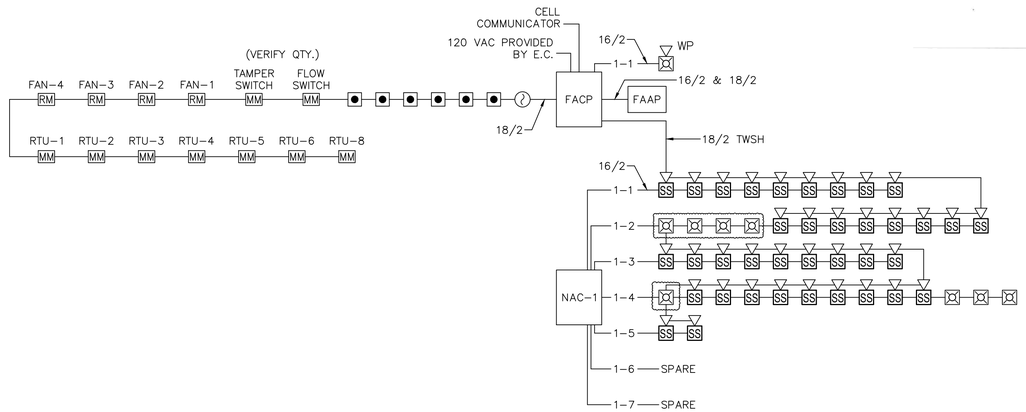
HORN/STROBE DEVICES
LOCATE DEVICE SO BOTTOM OF THE DEVICE IS BETWEEN 80" AND 96" AFF (NFPA) OR 6" BELOW CEILING, WHICHEVER IS LOWER. 4X4 METAL BOX, 2-1/8" DEEP, WITH MUD RING AND GROMMET FOR WIRE.

FIRE ALARM ACTIVATION DEVICES (PULL STATION)
LOCATE FRONT APPROACH DEVICES SO THAT THE HIGHTEST OPERABLE PORTION OF THE DEVICE IS NOT MORE THAN 48" AFF (ADA 2010) AND NOT LESS THAN 42" AFF (NFPA) OR 6" BELOW CEILING, WHICHEVER IS LOWER. 4X4 BOX, 2-1/8" DEEP. SINGLE GANG BOX.

CEILING MOUNTED SMOKE DETECTORS
TYPICALLY SPACED 30' APART. PROVIDE OCTAGON BOX.

MONITOR MODULE AND CONTROL RELAYS
INSTALL HEIGHT VARIES. 4X4 BOX, 2-1/2" DEEP.

TYP. MTG. HEIGHTS DETAIL



FIRE ALARM RISER DIAGRAM

CUSTOMER:

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1550 SE HAMBLEN ROAD
LEE'S SUMMIT, MO 64063

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11240 Strang Line Road Lenexa, Kansas 66215
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FIRE ALARM RISER DIAGRAM, VOLTAGE DROPS, BATT. CALCS., SEQ. OF OPER. MATRIX, MTG. HTS. DETAIL

DRAWING SHEET NO.
FA-102