

Title	Plum Grove Park Facility 4001 Park Drive, Palatine IL 60067	02/16/2023
	by tim k in Member District ADA Project Request	id. 35517729
	3000 Central Road Rolling Meadows, Illinois 60008 United States 8478183223 TKlier@rmparks.org	

Original Submission 02/16/2023

Name	Dominic Calderisi
Job Title	Plum Grove Park Fire Alarm Renovation Project
E-mail Address	dcalderisi@rmparks.org
Phone Number	18473444877
Park District	Rolling Meadows
Project Location	Plum Grove Park Facility 4001 Park Drive, Palatine IL 60067
Project Status	New Alteration
Project Type	Communications
Communications- select a Project Category below:	Fire Alarm Systems

Benefits of the Project	The Plum Grove Park facility of Rolling Meadows Park District did a complete replacement to upgrade the fire alarm system. This entailed a new “engineer approved” Notifier alarm service panel; the replacement of all smoke and heat detectors while utilizing existing wires for each new device, and the installation of new detector devices in certain areas to comply with fire codes. All devices are both audible and include a visual strobe per ADA Compliance. Finally, all Pull Stations were replaced with ADA Compliant Notifier devices. Additional pull station devices were added to comply with today’s fire codes. The placement of all pull station devices are at the appropriate level of 42” to comply with ADA regulations.
----------------------------	---

Items that will become ADA Compliant

The entire fire alarm system is designed for all people including those with disabilities and the people that work with them to see and or hear the fire warnings through the horn/strobe light devices. In addition, the system's easy to operate designed for people with compromised coordination skills pull stations were installed at a height in which individuals needing the assistance of a wheelchair can reach

The project is designed or constructed, or applies human resources, to comply with:

**Agency's ADA Transition Plan
The Illinois Accessibility Code
The 2010 Standards for Accessible Design**

Upload Project Related Files, Photos, Videos or Audio

[IMG_3831.JPG](#)

[IMG_3832.JPG](#)

[IMG_3833.JPG](#)

[IMG_3834.JPG](#)

[IMG_3836.JPG](#)

[IMG_3838.JPG](#)

[Plum_Grove_PD_FA_FCSI_Plan_Review_Revision_6-19-21.pdf](#)

[Final_Inspection_Sign_off_PG_Fire_Alarm.pdf](#)

[I_Wire_Signed_Proposal_DC.pdf](#)

[PG_Fire_Change_order_1.pdf](#)

[PG_Fire_Alarm_Change_Order2.pdf](#)

[Final_Waiver_of_Lien.pdf](#)

Budget Table for ADA Related Expenses

[Budget Table.xlsx](#)

ADA Dollars Requested

20160.0

Notes related to requested amount

Facility used extensively for NWSRA programs.

Approval Stamp:

Fire System Symbols	
FCP	Fire Alarm Control Panel
FAA	Fire Alarm Annunciator Panel
NAC	Fire Alarm Power Supply Panel
TBL	Terminal Block
WTR	Fire Alarm Wireless Transmitter
S	Manual Pull Station 45° A.F.F.
AV	Audio/visual 80° A.F.F.
V	Visual 80° A.F.F.
V _{WP}	Outdoor Visual
SV	Speaker/visual 80° A.F.F.
S	Speaker 80° A.F.F.
DD	Duct Smoke Detector w/ Remote Test / Reset Switch
SD	Smoke Detector
D	Heat Detector
B	Bell
WF	Flow Switch
VSS	Tamper Switch
PS	Pressure Switch
A	Door Holder
J	Junction Box
FPC	Fire Pump - Pump Run, Pump Power, Pump Phase Reversal
MM	Addressable Monitor Module
CM	Addressable Control/Relay Module
R	Addressable Relay Module
A	Ansul System - Point-of-connection
RTS	Remote Test Switch
EOL	End of Line

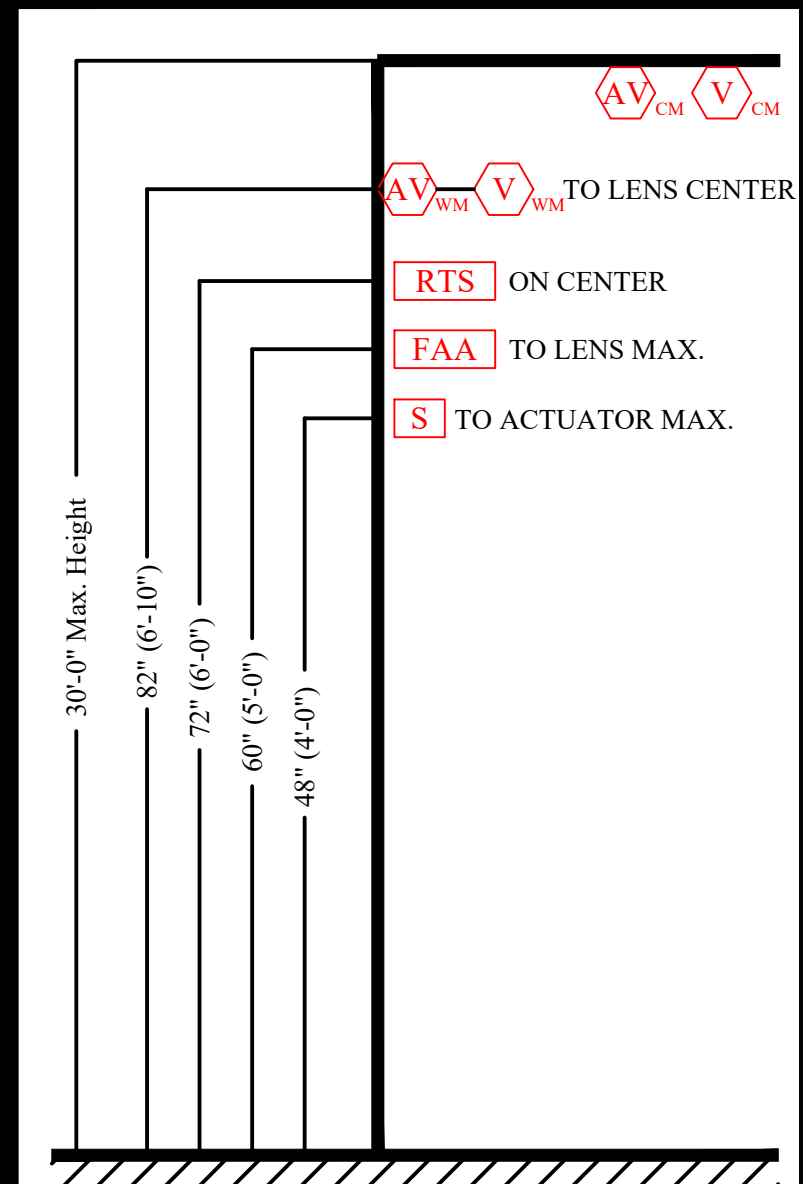
FIRE ALARM SYSTEM PLUM GROVE PARK

4001 PARK DRIVE
PALATINE, IL 60067

DRAWING INDEX

FA-1 TITLE SHEET
FA-2 FLOOR PLAN
FA-3 WIRING DIAGRAMS & PANEL CALCULATIONS

MOUNTING HEIGHT



FIRE ALARM MATRIX

	ANNUNCIATES ALARM SIGNAL AT CONTROL PANEL AND REMOTE ANNUNCIATOR	ANNUNCIATES SUPERVISORY SIGNAL AT CONTROL PANEL AND REMOTE ANNUNCIATOR	ANNUNCIATES TROUBLE SIGNAL AT CONTROL PANEL AND REMOTE ANNUNCIATOR	TRANSMITS ALARM SIGNAL TO AN APPROVED UL LISTED MONITORING STATION	TRANSMITS SUPERVISORY SIGNAL TO AN APPROVED UL LISTED MONITORING STATION	TRANSMITS TROUBLE SIGNAL TO AN APPROVED UL LISTED MONITORING STATION	SHUT DOWN POWER TO AFFECTED RTU THROUGH DUCT DETECTOR	ACTIVATES INTERIOR NOTIFICATION DEVICES	ACTIVATES EXTERIOR NOTIFICATION DEVICES
MANUAL PULL STATION	●			●				●	●
SMOKE DETECTOR	●			●				●	●
HEAT DETECTOR	●			●				●	●
WATERFLOW	●			●				●	●
TAMPER SWITCH		●			●				
DUCT SMOKE DETECTOR	●			●			●		
LOSS OF POWER TO FACP OR FCPS			●			●			
ABNORMAL CIRCUIT OR DEVICE			●			●			

SCOPE OF WORK: REPLACEMENT OF AN EXISTING FIRE ALARM SYSTEM TO A NEW FIRELITE ES200X FIRE ALARM SYSTEM. EXISTING KELTRON WIRELESS TRANSMITTER TO REMAIN AND RECONNECTED TO THE NEW FIRE ALARM PANEL.

LOCATION OF FACP: BASEMENT MECHANICAL ROOM
LOCATION OF FAAP: FIRST FLOOR ENTRANCE LOBBY
SIGNAL TRANSMISSION: WIRELESS KELTRON TRANSMITTER VIA NORTHWEST CENTRAL DISPATCH

STANDBY BATTERY HOURS: 24 HOURS
SPRINKLER COVERAGE: NON-SPRINKLERED

APPLICABLE CODES: 2015 IBC, 2017 NEC, IAC LATEST EDITION, 2015 IFC, 2000 NFPA 101

BUILDING SQ. FT.: 3,780 SQ. FT.
AREA OF WORK SQ. FT.: 3,780 SQ. FT.
BUILDING FLOORS: BASEMENT THROUGH 1ST FLOOR
USE GROUP: GROUP A-3 (ASSEMBLY) GROUP B (BUSINESS)



- General Notes**
- Final on-site field inspection and full alarm test will be witnessed by the Fire Dept. and IWIRE Technologies.
 - Catalog cut sheets and drawings are being submitted to local Fire Dept. and/or Building Dept. approval.
 - An NFPA certification sheet will be completed upon the final inspection if required.
 - A written sequence of operation will be submitted, as well as system manuals.
 - All wiring within 5 ft. of AFF will be in conduit.
 - Manual pull stations will be located within 5' of an exit.
 - All flow switches will be on their own zone.
 - Actuation of a Duct Smoke Detector will shut down the unit, the remote test switch/LED location will be approved by AHJ.
 - Location of Duct Smoke Detectors will be field verified by IWIRE Technologies personnel.
 - Location of Remote Power Supply will be field verified by IWIRE Technologies.
 - E - Denotes existing devices.
 - N - Denotes new devices.
 - CM - Denotes ceiling mounted devices.
 - WM - Denotes wall mounted devices.
 - WP - Denotes weatherproof devices.

Wire Schedule

Name	Gauge	Circuit Type	Wire Type	No.
A	14	Notification Circuit	FPLR/THHN	1 Pair
C	16	SLC/IDC Circuit	FPLR/THHN	1 Pair
F	14	FAAP/RTS Circuit	FPLR/THHN	2 Pair

NOTIFICATION DEVICE LEGEND		ADDRESSABLE DEVICE LEGEND	
LFAI-1	SEQUENCE ON CIRCUIT	NLSM1	DEVICE ADDRESS
---	CIRCUIT NUMBER (PER FLOOR)	S	SENSOR MODULE
---	FIRE ALARM OR NAC PANEL	L	LOOP NUMBER
---	FLOOR SERVED	---	NODE NUMBER

No.	Revision/Issue	Date
1	Fire Alarm System Plan	03-15-21
2	FCSI Plan Review Revision	06-18-21

iWIRE
TECHNOLOGIES

IWIRE TECHNOLOGIES

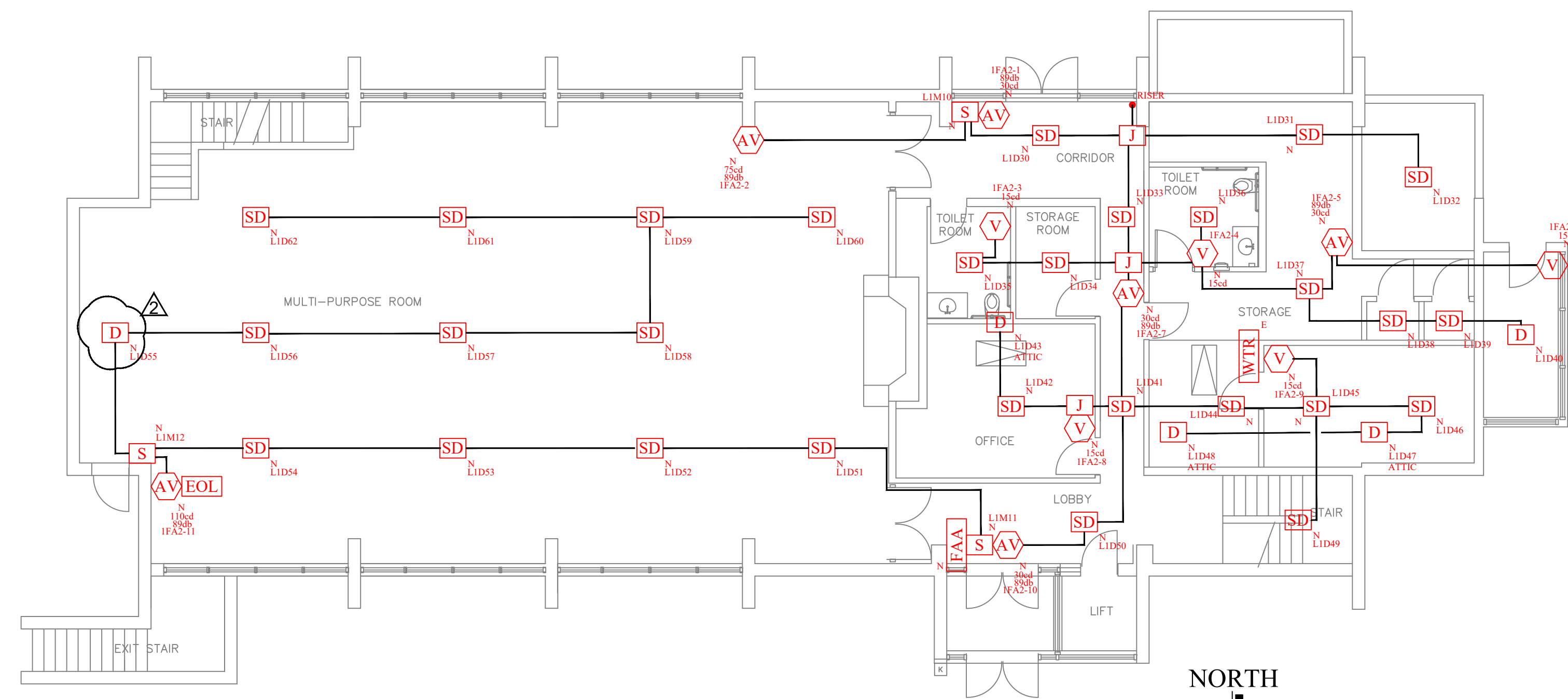
2416 Millenium Drive
Elgin, IL 60124
(224) 856-5256 tel

www.iwiretech.com

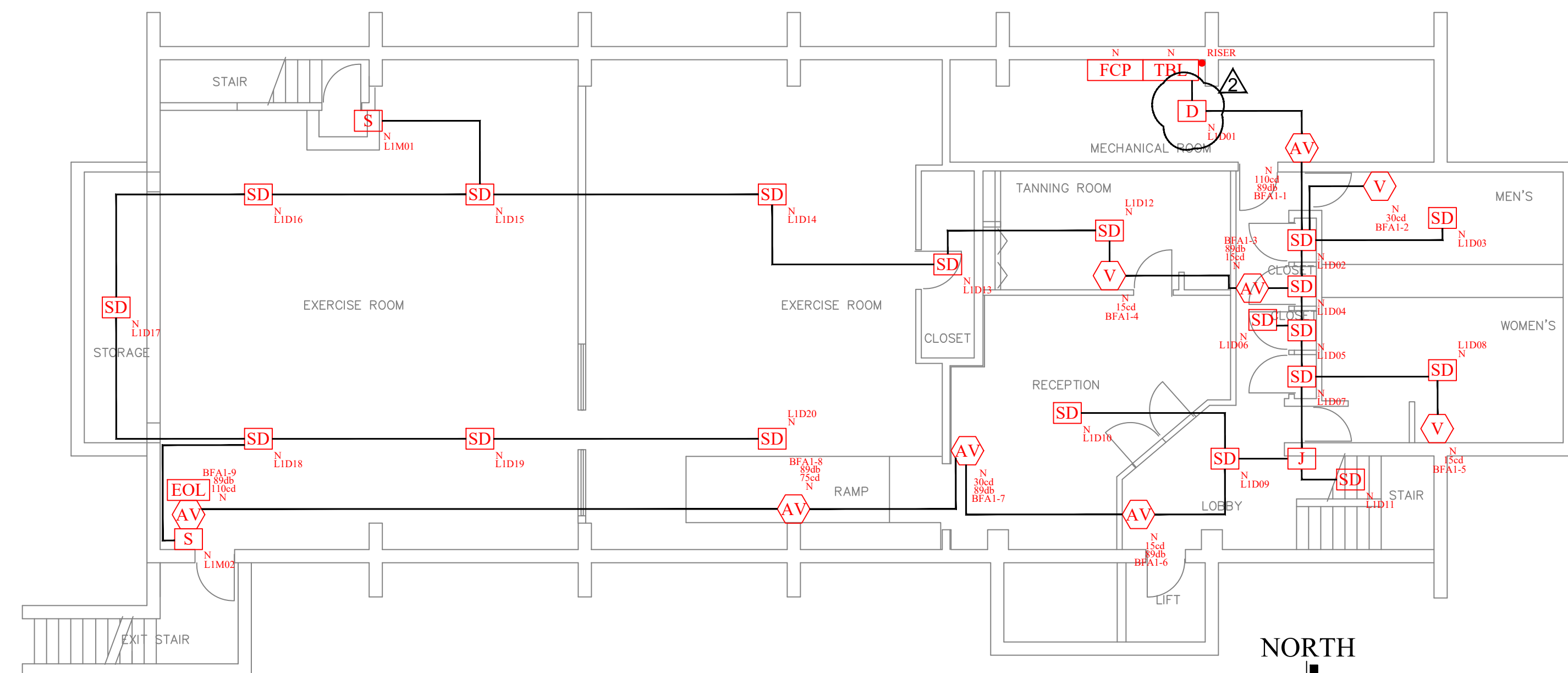
Project Name and Address

PLUM GROVE PARK
4001 Park Drive
Palatine, IL 60067

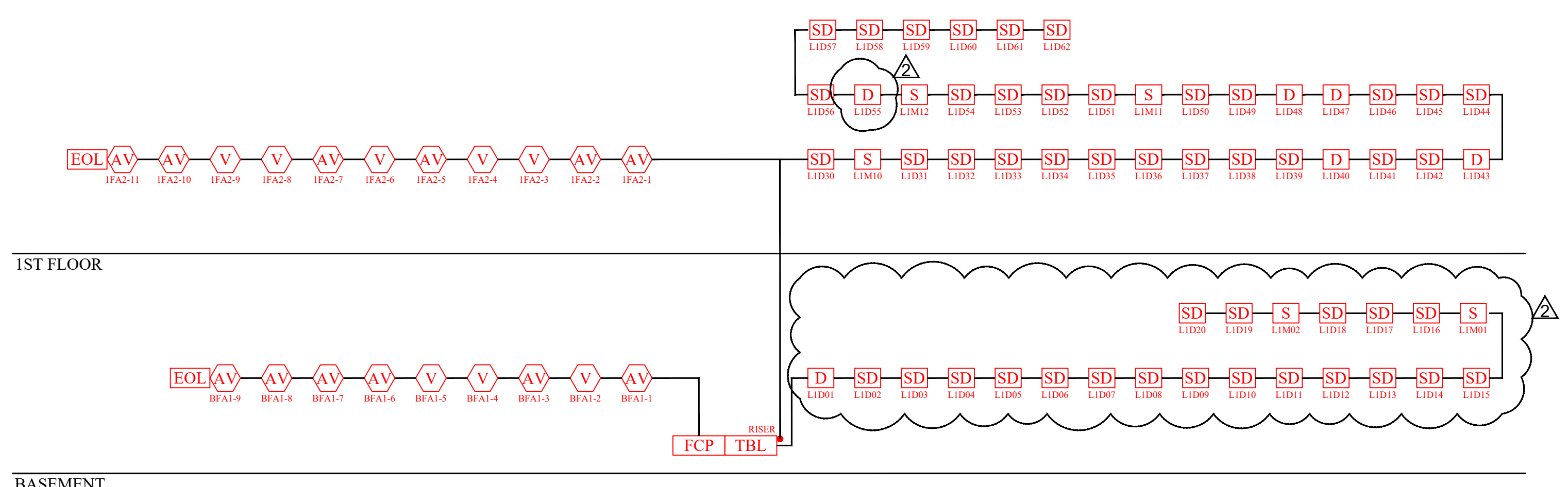
Project: 201602	Sheet: FA-1
Date: 03-15-21	
Scale: 1/8" = 1'-0"	



2 1ST FLOOR FIRE ALARM LAYOUT PLAN
 FA-2 SCALE: 1/8" = 1'-0"



1 BASEMENT FIRE ALARM LAYOUT PLAN
 FA-2 SCALE: 1/8" = 1'-0"



RISER DIAGRAM

General Notes

- Final on-site field inspection and full alarm test will be witnessed by the Fire Dept. and IWIRE Technologies.
- Catalog cut sheets and drawings are being submitted to local Fire Dept. and/or Building Dept. approval.
- An NFPA certification sheet will be completed upon the final inspection if required.
- A written sequence of operation will be submitted, as well as system manuals.
- All wiring within 5 ft. of AFF will be in conduit.
- Manual pull stations will be located within 5' of an exit.
- All flow switches will be on their own zone.
- Actuation of a Duct Smoke Detector will shut down the unit, the remote test switcd/LED location will be approved by AHJ.
- Location of Duct Smoke Detectors will be field verified by IWIRE Technologies personnel.
- Location of Remote Power Supply will be field verified by IWIRE Technologies.
- E - Denotes existing devices.
- N - Denotes new devices.
- CM - Denotes ceiling mounted devices.
- WM - Denotes wall mounted devices
- WP - Denotes weatherproof devices

Wire Schedule

Name	Gauge	Circuit Type	Wire Type	No.
A	14	Notification Circuit	FPLR/THHN	1 Pair
C	16	SLC/IDC Circuit	FPLR/THHN	1 Pair
F	14	FAAP/RTS Circuit	FPLR/THHN	2 Pair

NOTIFICATION DEVICE LEGEND		ADDRESSABLE DEVICE LEGEND	
LFAI-1	SEQUENCE ON CIRCUIT	NL1501	DEVICE ADDRESS
LFAI-2	CIRCUIT NUMBER (PER FLOOR)	S-SENSOR M-MODULE	S-SENSOR M-MODULE
LFAI-3	FIRE ALARM OR NAC PANEL	L-LOOP NUMBER	L-LOOP NUMBER
LFAI-4	FLOOR SERVED	N-NODE NUMBER	N-NODE NUMBER

No.	Revision/Issue	Date
1	Fire Alarm System Plan	03-15-21
2	FCSI Plan Review Revision	06-18-21

iWIRE TECHNOLOGIES

IWIRE TECHNOLOGIES

2416 Millenium Drive
 Elgin, IL 60124
 (224) 856-5256 tel

www.iwiretech.com

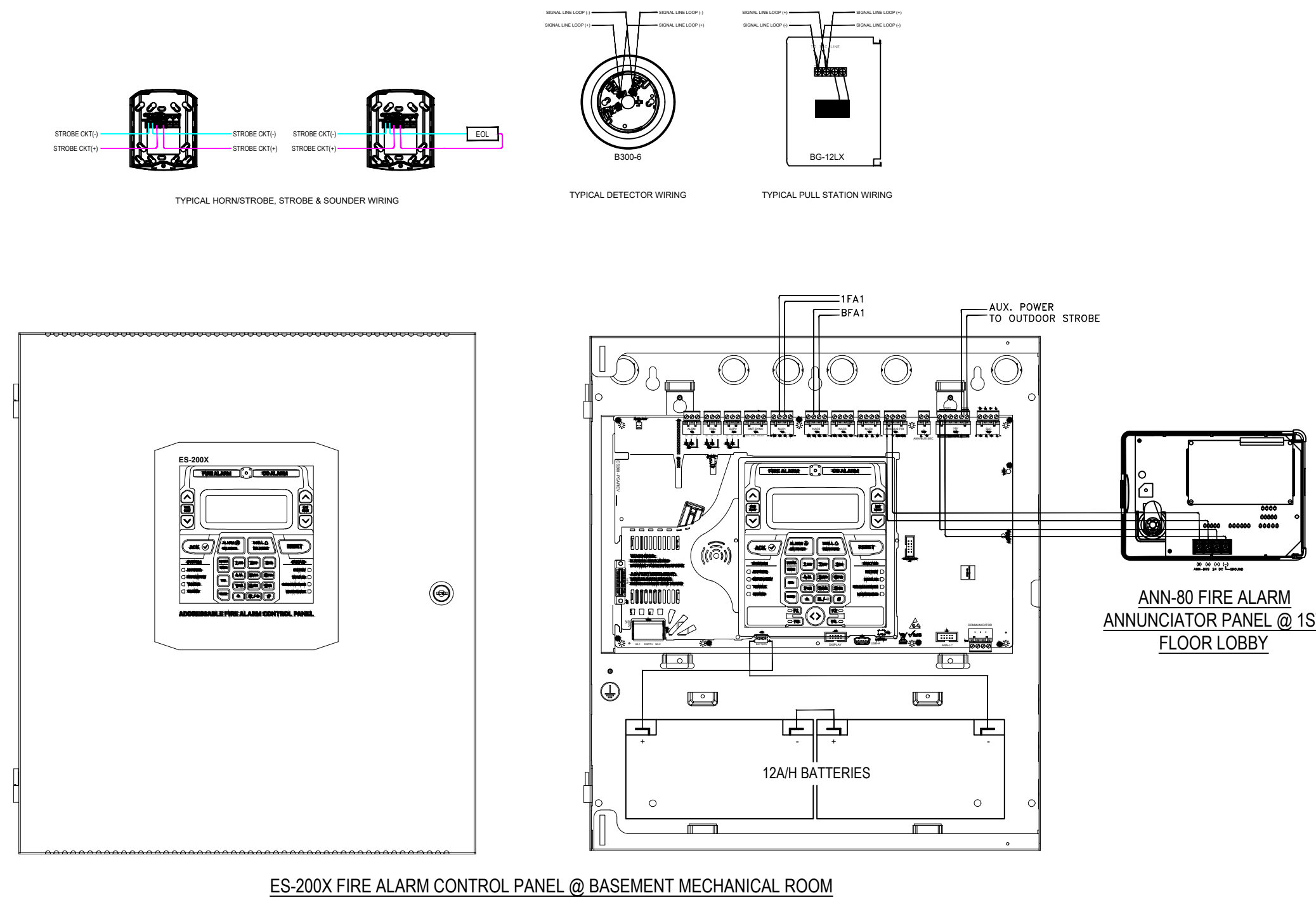
Project Name and Address

PLUM GROVE PARK
 4001 Park Drive
 Palatine, IL 60067

Project: 201602	Sheet: FA-2
Date: 03-15-21	
Scale: 1/8" = 1'-0"	

FIRE-UTE Alarms by Honeywell									
ES-200X Battery Calculation									
Secondary Power Source Requirements					Secondary Alarm Current (amps)				
Device Type	Qty	Standby Current (amps)	Total	Qty	Current Draw	Total	Qty	Current Draw	Total
Main Circuit Board	1	x 0.141000	= 0.141000	1	x 0.257000	= 0.257000			
IPOTS-COM Communicator	1	x 0.040000	= 0.040000	1	x 0.041000	= 0.041000			
PWRMOD24	1	x 0.007000	= 0.007000	1	x 0.008000	= 0.008000			
4XTMF	1	x 0.005000	= 0.005000	1	x 0.011000	= 0.011000			
ECG-FFT	0	x 0.120000	= 0.000000	0	x 0.230000	= 0.000000			
CELL-MOD-FL / CELL-CAB	1	x 0.055000	= 0.055000	1	x 0.100000	= 0.100000			
ANN-BUS Devices									
ANN-80(W)	1	x 0.015000	= 0.015000	1	x 0.040000	= 0.040000			
ANN-100	0	x 0.020000	= 0.000000	0	x 0.025000	= 0.000000			
ANN-LED	0	x 0.028000	= 0.000000	0	x 0.068000	= 0.000000			
ANN-RLED	0	x 0.028000	= 0.000000	0	x 0.068000	= 0.000000			
ANN-RLY	0	x 0.015000	= 0.000000	0	x 0.075000	= 0.000000			
ANN-I/O	0	x 0.035000	= 0.000000	0	x 0.200000	= 0.000000			
ANN-S/PG	0	x 0.045000	= 0.000000	0	x 0.045000	= 0.000000			
Addressable Devices									
BEAM355	0	x 0.002000	= 0.000000						
BEAM355S	0	x 0.002000	= 0.000000						
SD355CO	0	x 0.000300	= 0.000000						
SD355	0	x 0.000300	= 0.000000						
SD365	46	x 0.000300	= 0.013800						
SD355T	0	x 0.000300	= 0.000000						
SD365T	0	x 0.000300	= 0.000000						
H355	0	x 0.000300	= 0.000000						
H355R	0	x 0.000300	= 0.000000						
H355HT	0	x 0.000300	= 0.000000						
H365HT	5	x 0.000300	= 0.001500						
H350R	0	x 0.000300	= 0.000000						
H355R	0	x 0.000300	= 0.000000						
H365R	0	x 0.000300	= 0.000000						
D350RPL	0	x 0.000300	= 0.000000						
D355PL	0	x 0.000300	= 0.000000						
MMF-300	10	x 0.000400	= 0.004000						
MMF-300-10	0	x 0.003500	= 0.000000						
MDF-300	0	x 0.000750	= 0.000000						
MMF-301	0	x 0.000375	= 0.000000						
MMF-302	0	x 0.000270	= 0.000000						
MMF-302-6	0	x 0.002000	= 0.000000						
BG-12LX	5	x 0.000230	= 0.001150						
CMF-300	0	x 0.000390	= 0.000000						
CMF-300-6	0	x 0.002250	= 0.000000						
CRF-300	0	x 0.000270	= 0.000000						
CRF-300-6	0	x 0.001450	= 0.000000						
CDRM-300	0	x 0.001300	= 0.000000						
I300	0	x 0.000400	= 0.000000						
ISO-6	0	x 0.002700	= 0.000000						
B501BH-2	0	x 0.001000	= 0.000000						
B501BHT-2	0	x 0.001000	= 0.000000						
B224RB	0	x 0.000500	= 0.000000						
B224BI	0	x 0.000450	= 0.000000						
W-GATE	0	x 0.024000	= 0.000000						
EOLR-1	0	x 0.020000	= 0.000000	0	x 0.020000	= 0.000000			0.400000
FCPS (Remote Sync)	0	x 0.020000	= 0.000000	0	x 0.021700	= 0.000000			
Resettable Power									
4-Wire Smoke Detectors	0	x 0.000000	= 0.000000	0	x 0.000000	= 0.000000			
Auxiliary Power									
CMF-300 (Aux. Power)	0	x 0.001700	= 0.000000	0	x 0.007000	= 0.000000			
CMF-300-6 (Aux. Power)	0	x 0.008000	= 0.000000	0	x 0.020000	= 0.000000			
MMF-302 (Aux. Power)	0	x 0.012000	= 0.000000	0	x 0.090000	= 0.000000			
MMF-302-6 (Aux. Power)	0	x 0.050000	= 0.000000	0	x 0.270000	= 0.000000			
B200SR (Aux. Power)	0	x 0.000500	= 0.000000	0	x 0.035000	= 0.000000			
B200SR-LF (Aux. Power)	0	x 0.001000	= 0.000000	0	x 0.125000	= 0.000000			
SWIFT Wireless									
W-GATE	0	x 0.040000	= 0.000000	0	x 0.040000	= 0.000000			
Miscellaneous Devices									
	0	x 0.000000	= 0.000000	0	x 0.000000	= 0.000000			
	0	x 0.000000	= 0.000000	0	x 0.000000	= 0.000000			
	0	x 0.000000	= 0.000000	0	x 0.000000	= 0.000000			
	0	x 0.000000	= 0.000000	0	x 0.000000	= 0.000000			
	0	x 0.000000	= 0.000000	0	x 0.000000	= 0.000000			
Output Circuits									
NAC/Output #1		0.000000	= 0.776000			= 0.776000			
NAC/Output #2		0.000000	= 0.794000			= 0.794000			
NAC/Output #3		0.000000	= 0.824000			= 0.824000			
NAC/Output #4		0.000000	= 0.267000			= 0.267000			
FCPS (remote Sync)	0	x 0.000000	= 0.000000	0	x 0.021700	= 0.000000			
Current Draw from TB3		0.000000	= 0.000000			= 0.000000			
Total Standby Load		0.283450		Total Alarm Load		3.518000			

FIRE-UTE Alarms by Honeywell									
ES-200X Battery Calculation									
Calculation in Total Sheet									
		Required Standby Time in Hours							
Standby Load Current	0.28345 Amps	x	24	=	6.803 AH				
		Required Alarm Time in Minutes							
Alarm Load Current (Amps)	3.51800 Amps	x	0.25	=	0.880 AH				
		Total Current Load							
					7.682 AH				
		Multiply by the Derating Factor		1.2	=	x 1.20			
					Total Ampere Hours Required	9.22 AH			
Recommended Batteries:		BAT-12120 - 12AH Batteries							
Battery Check									
The batteries can be charged by the ES-200X Charger.									
The batteries can be housed in the ES-200X Cabinet.									
Current Draw Check									
NAC#1 current is within the limitations of the circuit.									
NAC#2 current is within the limitations of the circuit.									
NAC#3 current is within the limitations of the circuit.									
NAC#4 current is within the limitations of the circuit.									
ES-200X Control Panel:									
The output current is within the panel's limitations.									



HONEYWELL Online Tools for Fire											
2.0.14											
PROJECT DETAILS											
Plum Grove Park											
4001 Park drive, Palatine, Illinois, 60067											
PREPARED BY											
Tim Kellenberger											
Illinois											
Voltage Drop Calculations											
CIRCUIT NAME: NAC Circuit 1											
POWER SOURCE: FA											
MODEL NUMBER: ES-200X w/PWRMOD24											
BRAND: Firelite											
VOLTS: 20.4					CLASS: CLASS B						
AWG: 14					TOTAL DEVICES: 9						
POWER: DC					31.04% (0.776) AMPS USED						
AMPS: 2.5					4.62% (0.943) VOLTAGE DROP						
#	MODEL	CANDELA	PATTERN	VOLUME	ZONE	CURRENT (amps)	DISTANCE FROM PREVIOUS DEVICE (Ft)	12 AWG	14 AWG	16 AWG	18 AWG
1	P2RL	110	Temporal	High	Electromechanical	0.162	40	20.275	20.202	20.085	19.898
2	SRL	30				0.063	30	20.201	20.084	19.898	19.600
3	P2RL	15	Temporal	High	Electromechanical	0.054	30	20.135	19.979	19.730	19.333
4	SRL	15				0.043	20	20.095	19.916	19.629	19.172
5	SRL	15				0.043	50	20.004	19.771	19.398	18.805
6	P2RL	15	Temporal	High	Electromechanical	0.054	55	19.913	19.627	19.168	18.440
7	P2RL	30	Temporal	High	Electromechanical	0.074	30	19.870	19.559	19.059	18.267
8	P2RL	75	Temporal	High	Electromechanical	0.121	25	19.842	19.514	18.987	18.153
9	P2RL	110	Temporal	High	Electromechanical	0.162	55	19.806	19.457	18.896	18.009
VOLTAGE DROP								0.594	0.943	1.504	2.391

CIRCUIT NAME: NAC Circuit 2											
POWER SOURCE: FA											
MODEL NUMBER: ES-200X w/PWRMOD24											
BRAND: Firelite											
VOLTS: 20.4					CLASS: CLASS B						
AWG: 14					TOTAL DEVICES: 11						
POWER: DC					31.76% (0.794) AMPS USED						
AMPS: 2.5					7.21% (1.470) VOLTAGE DROP						
#	MODEL	CANDELA	PATTERN	VOLUME	ZONE	CURRENT (amps)	DISTANCE FROM PREVIOUS DEVICE (Ft)	12 AWG	14 AWG	16 AWG	18 AWG
1	P2RL	30	Temporal	High	Electromechanical	0.074	50	20.240	20.147	19.997	19.758
2	P2RL	75	Temporal	High	Electromechanical	0.121	30	20.153	20.009	19.778	19.409
3	SRL	15				0.043	75	19.972	19.722	19.322	18.683
4	SRL	15				0.043	40	19.883	19.580	19.096	18.324
5	P2RL	30	Temporal	High	Electromechanical	0.074	30	19.821	19.482	18.940	18.075
6	SRL	15				0.043	30	19.768	19.398	18.806	17.862
7	P2RL	30	Temporal	High	Electromechanical	0.074	60	19.672	19.246	18.565	17.478
8	SRL	15				0.043	30	19.633	19.184	18.467	17.322
9	SRL	15				0.043	40	19.588	19.113	18.354	17.142
10	P2RL	30	Temporal	High	Electromechanical	0.074	60	19.531	19.023	18.210	16.913
11	P2RL	110	Temporal	High	Electromechanical	0.162	90	19.472	18.930	18.062	16.677
VOLTAGE DROP								0.928	1.470	2.338	3.723

- General Notes
- Final on-site field inspection and full alarm test will be witnessed by the Fire Dept. and IWIRE Technologies.
 - Catalog cut sheets and drawings are being submitted to local Fire Dept. and/or Building Dept. approval.
 - An NFPA certification sheet will be completed upon the final inspection if required.
 - A written sequence of operation will be submitted, as well as system manuals.
 - All wiring within 5 ft. of AFF will be in conduit.
 - Manual pull stations will be located within 5' of an exit.
 - All flow switches will be on their own zone.
 - Actuation of a Duct Smoke Detector will shut down the unit, the remote test switch/LED location will be approved by AHJ.
 - Location of Duct Smoke Detectors will be field verified by IWIRE Technologies personnel.
 - Location of Remote Power Supply will be field verified by IWIRE Technologies personnel.
 - E - Denotes existing devices.
 - N - Denotes new devices.
 - CM - Denotes ceiling mounted devices.
 - WM - Denotes wall mounted devices.
 - WP - Denotes weatherproof devices.

Wire Schedule				
Name	Gauge	Circuit Type	Wire Type	No.
A	14	Notification Circuit	FPLR/THHN	1 Pair
C	16	SLC/IDC Circuit	FPLR/THHN	1 Pair
F	14	FAAP/RTS Circuit	FPLR/THHN	2 Pair

NOTIFICATION DEVICE LEGEND		ADDRESSABLE DEVICE LEGEND	
LFA1-1	SEQUENCE ON CIRCUIT	NL1501	DEVICE ADDRESS
---	CIRCUIT NUMBER (PER FLOOR)	S-	SENSOR MODULE
---	FIRE ALARM OR NAC PANEL	L	LOOP NUMBER





