

BUILDER'S CAPITAL - GATEWAY TI

1019 39TH AVE SE
PUYALLUP, WA 98374

ADT
Commercial
21312 30TH DRIVE
SOUTHEAST, SUITE 103
BOTHELL, WA 98021
ADTCCOCL801UQ

PROFESSIONAL SEAL
Project Equipment Application and
System Layout Reviewed.

Dated: 2/15/22

Signed: *Danielle R. Berg*

DANIELLE R. BERG, ET
NICET #: 127025
NICET LEVEL III
FIRE ALARM SYSTEMS

INSTALLATION & GENERAL WIRING NOTES:

GENERAL NOTES:

- INSTALLATION SHALL BE ACCOMPLISHED IN STRICT COMPLIANCE WITH NFPA, LOCAL AND STATE AHJ's, NEC AND CONTRACT DRAWINGS
- WIRE ROUTING IS DIAGRAMMATIC IN NATURE ONLY AND NOT INTENDED FOR ACTUAL CONDUIT ROUTING.
- ALL CONDUIT SIZING AND ROUTING BY ELECTRICAL CONTRACTOR PER NEC AND AHJ.
- VERIFY ALL LOCATIONS OF DEVICES WITH ELECTRICAL/ARCHITECTURAL PLANS. SCALE AND PLACE ALL DEVICE PER ELECTRICAL/ARCHITECTURAL PLANS.
- ALL CIRCUITS WILL BE PROPERLY TAGGED AND TESTED FOR OPENS, SHORTS, GROUNDS AND PROPER "END-OF-LINE" RESISTANCE. EACH CIRCUITS METER READING MUST BE DOCUMENTED AND PRESENTED TO ADT COMMERCIAL FIELD TECHNICIAN UPON ARRIVAL ONSITE FOR STARTUP & CHECKOUT.
- AS-BUILTS:
- 6.1. A SET OF INSTALLATION AS-BUILT DRAWINGS SHOWING ACTUAL CONDUIT AND CONDUCTOR ROUTES SHALL BE KEPT BY PROJECT FOREMAN FOR USE BY ADT COMMERCIAL TECHNICIAN.
- 6.2. AS-BUILTS SHALL BE KEPT ORDERLY AND BE CLEARLY MARKED WITH DIFFERENT COLOR PENS FOR EACH CIRCUIT AND/OR CIRCUIT TYPE. AS-BUILTS MUST INDICATE CHANGES TO THE FINAL DEVICE INSTALLED LOCATIONS IF NOT INSTALLED AT LOCATION SHOWN ON DESIGN DOCUMENTS.
- 6.3. AS-BUILT REDLINES NOT PROVIDING THIS INFORMATION WILL BE RETURNED TO THE INSTALLATION CONTRACTOR FOR CORRECTION. ADT COMMERCIAL IS NOT RESPONSIBLE FOR THESE DELAYS.
- AGREEMENT AND CONFIRMATION OF ALL MILESTONE EVENTS WILL BE MADE WITH ADT COMMERCIAL PROJECT MANAGER.
- ALL ADT COMMERCIAL FIELD SERVICES MUST BE SCHEDULED WITH ADT COMMERCIAL PROJECT MANAGER WITH A MINIMUM OF 14 WORKING DAYS ADVANCE NOTICE.
- DO NOT INSTALL LINE VOLTAGE IN SAME CONDUIT AS POWER LIMITED CABLES.

FIRE ALARM SPECIFIC NOTES:

- SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN 36" OF ANY AIR DIFFUSER.
- 2013 NFPA 72-17.7.1.11 REQUIRES THAT SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER FINAL CONSTRUCTION CLEAN-UP.
- ANY SMOKE DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO CLEAN-UP MUST BE CLEANED OR REPLACED AND WILL BE INVOICED ON A T&M BASIS.
- WALL MOUNTED NOTIFICATION DEVICES BACKBOX BETWEEN A MINIMUM OF 80" AFF TO A MAXIMUM OF 96" AFF.
- DEVICES THAT ARE UNABLE TO BE MOUNTED WITHIN THAT RANGE MUST BE VERIFIED BY REDHAWK FIRE & SECURITY PRIOR TO INSTALLATION.
- SEE FLOOR PLANS FOR CANDELA RATING OF EACH DEVICE INSTALLED.
- ALL MANUAL PULL STATIONS ARE TO BE MOUNTED AT A HEIGHT NO GREATER THAN 48" TO TOP AND NO LOWER THAN 36" TO BOTTOM (PER ADA REQUIREMENTS).
- FIELD VERIFY ALL SPRINKLER MONITORING DEVICES WITH FIRE PROTECTION CONTRACTOR
- FIELD VERIFY ALL HVAC, FAN CONTROL, FIRE/SMOKE DAMPERS AND DUCT DETECTORS LOCATIONS WITH MECHANICAL CONTRACTOR
- FACT SHALL NOT BE ENERGIZED WITHOUT THE PRESENCE OF ADT COMMERCIAL TECHNICIANS.
- NO TAPPING OF SIGNALING OR INITIATING ZONE CIRCUITS ARE ALLOWED. T-TAPPING OF STYLE 4 ADDRESSABLE CIRCUITS IS ALLOWED PROVIDING A SPlice IS PROFESSIONALLY INSTALLED. POLARITY IS OBSERVED AND SHIELDS ARE CONTINUOUS AND FREE OF GROUNDS. SHIELDS MUST BE TERMINATED AT FACT ONLY.
1. CABLE SHIELDS SHALL BE SPLICED TOGETHER AT EVERY JUNCTION BETWEEN THE FACT AND THE LAST DEVICE ON EACH CABLE RUN. SHIELDS AND OTHER FIRE ALARM CONDUCTORS (EXCEPT POWER GROUNDS) SHALL BE INSULATED AND COMPLETELY FREE FROM CONDUIT OR EARTH GROUNDS. SHIELDS WILL BE TIES TO GROUND ONLY AT THE FACT BY THE ADT COMMERCIAL FIELD TECHNICIAN.
- THE SYSTEM SHALL BE MONITORED BY A U.L. LISTED MONITORING STATION BEFORE AHJ TEST.
- AS-BUILTS ARE REQUIRED AT TIME OF AHJ ACCEPTANCE. ADT COMMERCIAL REQUIRED ELECTRICAL RED LINES WITHIN 2 WEEKS PRIOR TO AHJ TESTS.
- 10.1. EACH CIRCUIT (SLC, NAC OR POWER) MUST BE CLEARLY IDENTIFIED WITH A DISTINCT COLOR
- 10.2. EACH NAC CIRCUIT MUST BE CLEARLY MARKED AS TO WHICH DEVICES ARE ON EACH CIRCUIT AND IN THE ORDER THE DEVICES ARE WIRED TO COMPLETE THE CIRCUIT.

CABLE AND WIRE LEGEND					
LABEL	PART NO	AW G	RESISTANCE (Ω/KFT)	DESCRIPTION	ESTIMATED TOTAL LENGTH
A	16/2 FPL/IR (SLC)	16	4.89	2 COND. SOLID COPPER FPL/IR ADDRESSABLE UNSHIELDED	1147'
C	14/2 FPL/IR (NAC)	14	3.07	2 COND. SOLID COPPER FPL/IR ANALOG UNSHIELDED	1189'

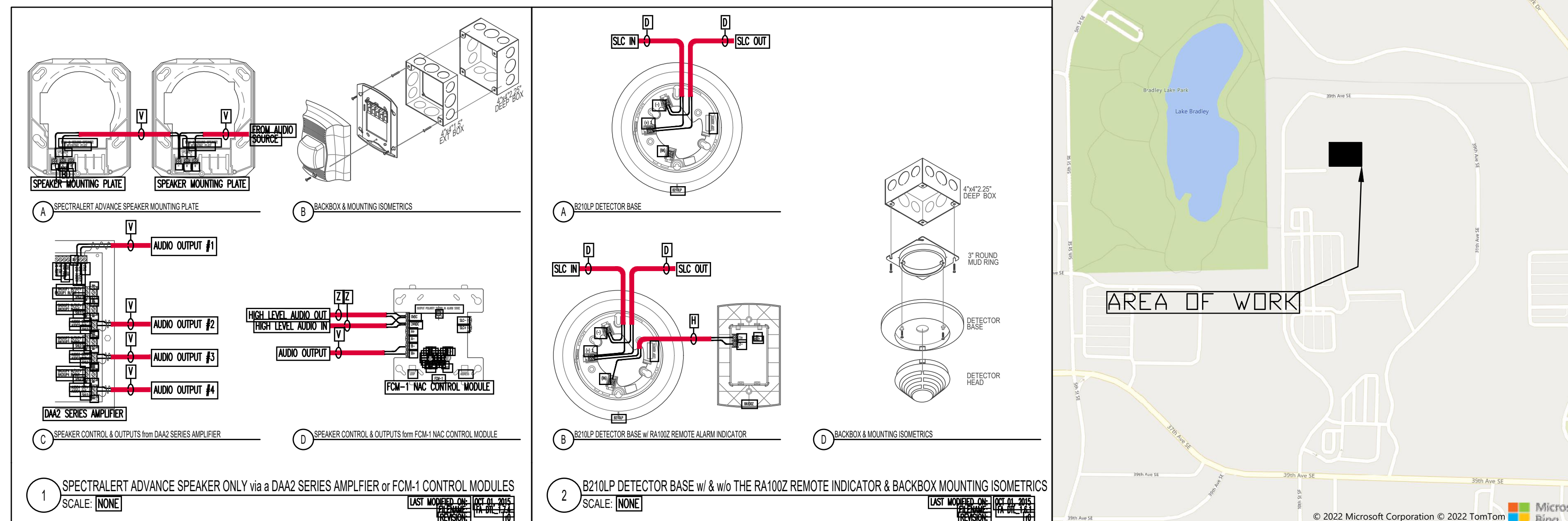
DEVICE LEGEND					
SYMBOL	QTY	MANUFACTURER	PART NO	DESCRIPTION	
(D)	1	NOTIFIER	FST-951-IV WB300-6-IV	LOW-PROFILE 135°F FIXED THERMAL SENSOR. IVORY. FLASHS-CAN AND CLIP MODE.	
(S)	53	NOTIFIER	FSP-951-IV WB300-6-IV	ADDRESSABLE LOW-PROFILE PHOTOELECTRIC SMOKE DETECTOR. IVORY. FLASHSCAN AND CLIP MODE. W/STANDARD BASE.	
(X) C	10	SYSTEM SENSOR	PC2WL	2-WIRE, HORN STROBE, WHITE	
(X) C	14	SYSTEM SENSOR	SCWL	STROBE, WHITE	

Sheet List Summary

Sheet Number	Sheet Title
FA0.00	TITLE SHEET
FD1.00	FIRE ALARM DEMO PLAN
FA1.00	FIRE ALARM LAYOUT
FA2.00	FIRE ALARM DETAILS AND CALCS

SCOPE OF WORK

MODIFICATION OF AN EXISTING FIRE ALARM SYSTEM



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REVISIONS

NO.	DATE	REVISION
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APPLICABLE CODES

BASIC CONSTRUCTION, DESIGN REQUIREMENTS AND CODE COMPLIANCE
2018 INTERNATIONAL BUILDING CODE WITH STATE AMENDMENTS
2018 NATIONAL ELECTRIC CODE WITH STATE AMENDMENTS
2018 INTERNATIONAL FIRE CODE WITH STATE AMENDMENTS
2018 NFPA 101 LIFE SAFETY CODE

BUILDING INFORMATION

CONSTRUCTION TYPE: I-A
OCCUPANCY TYPE: B
STORIES: 1 IN SCOPE: 1
TOTAL SQ FT IN SCOPE: 17,100 SqFt.
EXISTING FIRE ALARM SYSTEM: YES
BUILDING FULLY SPRINKLERED: YES

SCALE: 1/8" = 1'-0"

PREPARED BY: ROBYN B.

CHECKED BY: CHRISTOPHER C.

PROJECT MANAGER: MICHELLE B.

DATE: 2/7/2022

PROJECT NO: ADT-500854313

TITLE:

TITLE SHEET

SHEET:

FA0.00



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CHECKED BY: CHRISTOPHER C.

PROJECT MANAGER: MICHELLE B.

DATE: 1/31/2022

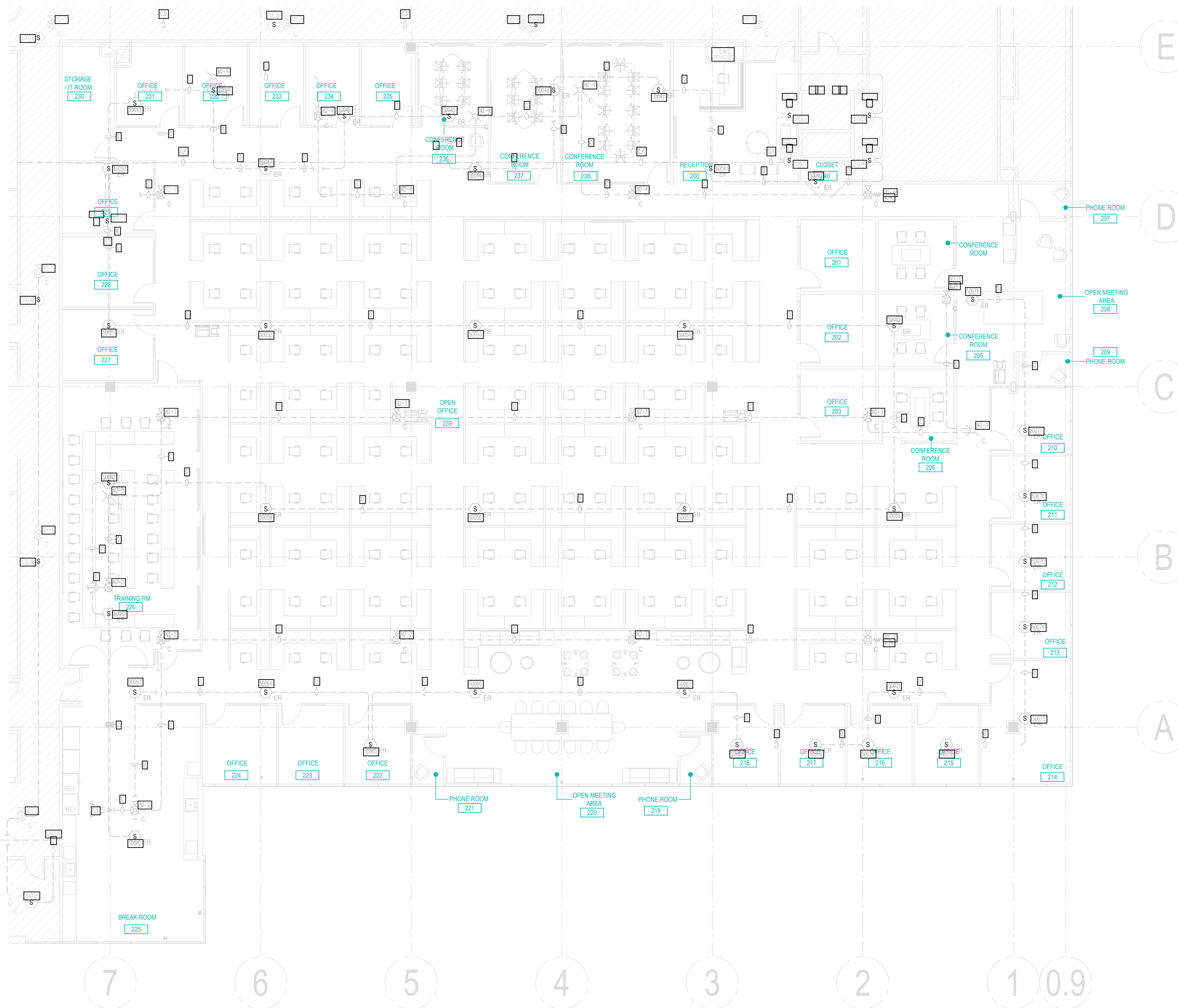
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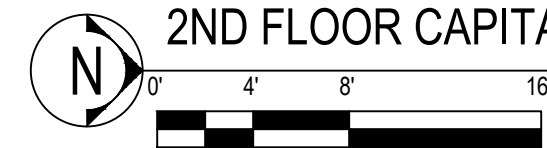
FIRE ALARM DEMO PLAN

SHEET:

FD1.00



2ND FLOOR CAPITAL BUILDERS - GATEWAY TI - DEMO PLAN



SCALE: 1/8" = 1'-0"

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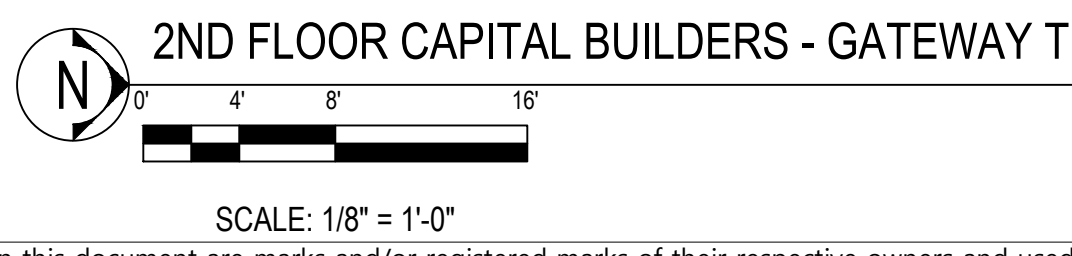
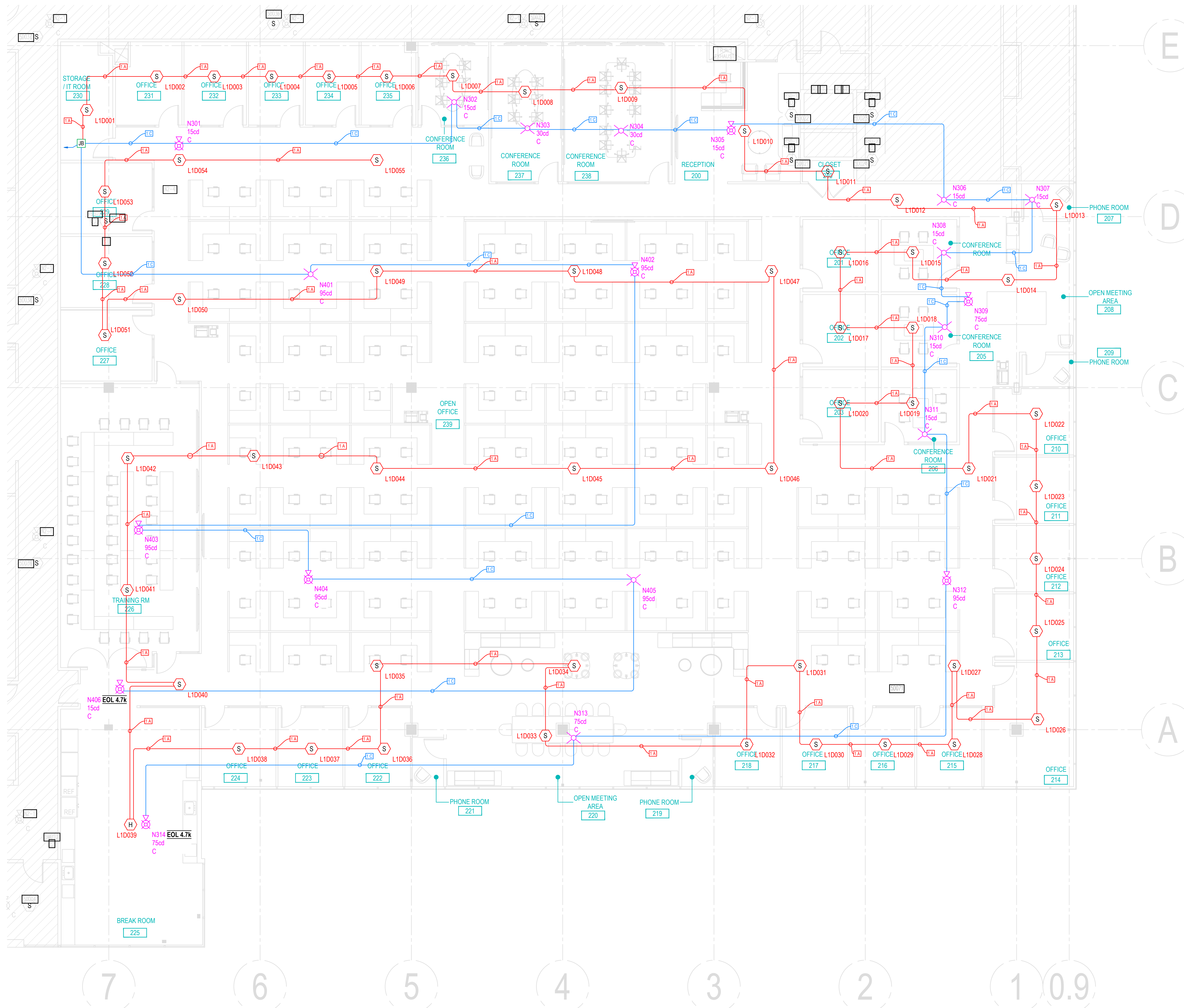
PROJECT NO: ADT-500854313

TITLE:

FIRE ALARM LAYOUT

SHEET:

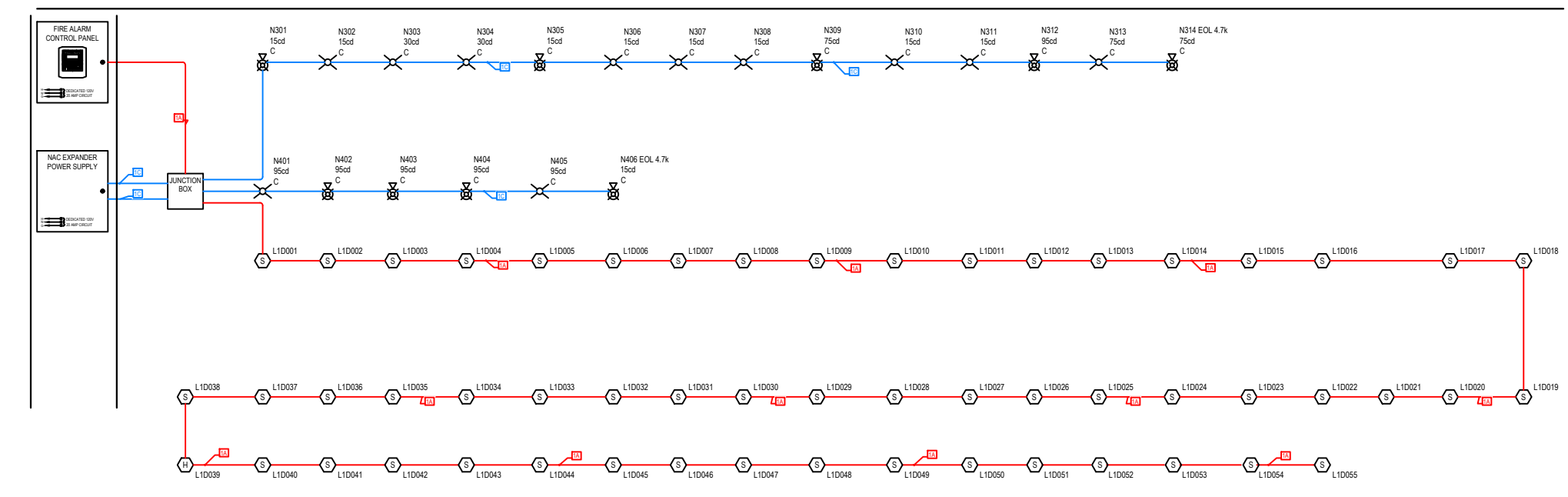
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2ND FLOOR CAPITAL BUILDERS - GATEWAY TI

N3 POINT-TO-POINT REPORT							CIRCUIT SETTINGS		TOTALS		
Circuit Wiring Properties: 'C' 14/2 FPLP/R (NAC) 14 AWG, 2 Cond. Solid Copper FPLP/R Analog Unshielded							Starting Calculation Voltage:	20.4	Max. Voltage Drop:	2.54	
Distance measured using drawn segment lengths with 10.00 % additional length calculated							Min. Operational Voltage:	16	End Of Line Voltage:	17.86	
							Max. Circuit Current (A):	3	Voltage Drop Percent:	12.44 %	
							Wire Resistance (Ω/KFt):	3.07	Total Circuit Current (A):	1.076	
							Total Circuit Length (Ft):	597	Spare Current (A):	1.924	
							Total Circuit Resistance (Ω):	3.663358	Spare Current (A) Percent:	64.13 %	
Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (Ft)	Resistance From Previous (Ω)	Voltage Drop From Previous	Voltage At Device	Total Voltage Drop	Voltage Drop Percent	
N301	PC2WL	2-Wire, Horn Strobe, White 15cd	0.071	1.076	178	0.092807	0.1	19.22	1.18	5.78 %	
N302	SCWL	Strobe, White 15cd	0.041	1.005	51	0.315773	0.32	18.9	1.5	7.33 %	
N303	SCWL	Strobe, White 30cd	0.063	0.964	15	0.093799	0.09	18.81	1.59	7.78 %	
N304	SCWL	Strobe, White 30cd	0.063	0.901	15	0.091703	0.08	18.73	1.67	8.18 %	
N305	PC2WL	2-Wire, Horn Strobe, White 15cd	0.071	0.838	17	0.106494	0.09	18.64	1.76	8.62 %	
N306	SCWL	Strobe, White 15cd	0.041	0.767	47	0.291381	0.22	18.42	1.98	9.71 %	
N307	SCWL	Strobe, White 15cd	0.041	0.726	14	0.085477	0.06	18.36	2.04	10.02 %	
N308	SCWL	Strobe, White 15cd	0.041	0.685	23	0.138848	0.1	18.26	2.14	10.48 %	
N309	PC2WL	2-Wire, Horn Strobe, White 15cd	0.143	0.644	11	0.06923	0.04	18.22	2.18	10.70 %	
N310	SCWL	Strobe, White 15cd	0.041	0.501	7	0.040828	0.02	18.2	2.2	10.80 %	
N311	SCWL	Strobe, White 15cd	0.041	0.46	20	0.124429	0.06	18.14	2.26	11.08 %	
N312	PC2WL	2-Wire, Horn Strobe, White 95cd	0.165	0.419	26	0.169155	0.07	18.07	2.33	11.41 %	
N313	SCWL	Strobe, White 75cd	0.111	0.254	87	0.534864	0.14	17.94	2.46	12.08 %	
N314 EOL 4.7k	PC2WL	2-Wire, Horn Strobe, White 75cd	0.143	0.143	84	0.514991	0.07	17.86	2.54	12.44 %	

Calculation Methods:
 Resistance From Previous (Ω) = Wire Resistance (Ω/Ft) x 2 x Dist. From Previous (Ft)
 Voltage Drop From Previous = Resistance From Previous (Ω) x Remaining Current (A)



1 FIRE ALARM RISER
 SCALE: NOT TO SCALE

N4 POINT-TO-POINT REPORT							CIRCUIT SETTINGS		TOTALS		
Circuit Wiring Properties: 'C' 14/2 FPLP/R (NAC) 14 AWG, 2 Cond. Solid Copper FPLP/R Analog Unshielded							Starting Calculation Voltage:	20.4	Max. Voltage Drop:	1.97	
Distance measured using drawn segment lengths with 10.00 % additional length calculated							Min. Operational Voltage:	16	End Of Line Voltage:	18.43	
							Max. Circuit Current (A):	3	Voltage Drop Percent:	9.67 %	
							Wire Resistance (Ω/KFt):	3.07	Total Circuit Current (A):	0.834	
							Total Circuit Length (Ft):	593	Spare Current (A):	2.166	
							Total Circuit Resistance (Ω):	3.638204	Spare Current (A) Percent:	72.20 %	
Device Label	Part No.	Description	Device Current (A)	Remaining Current (A)	Dist. From Previous (Ft)	Resistance From Previous (Ω)	Voltage Drop From Previous	Voltage At Device	Total Voltage Drop	Voltage Drop Percent	
N401	SCWL	Strobe, White 95cd	0.134	0.834	222	0.36229	0.3	19.26	1.14	5.58 %	
N402	PC2WL	2-Wire, Horn Strobe, White 95cd	0.165	0.7	55	0.337234	0.24	19.03	1.37	6.74 %	
N403	PC2WL	2-Wire, Horn Strobe, White 95cd	0.165	0.535	124	0.76392	0.41	18.62	1.78	8.74 %	
N404	PC2WL	2-Wire, Horn Strobe, White 95cd	0.165	0.37	34	0.210542	0.08	18.54	1.86	9.12 %	
N405	SCWL	Strobe, White 95cd	0.134	0.205	53	0.327399	0.07	18.47	1.93	9.45 %	
N406 EOL 4.7k	PC2WL	2-Wire, Horn Strobe, White 15cd	0.071	0.071	103	0.63424	0.05	18.43	1.97	9.67 %	

Calculation Methods:
 Resistance From Previous (Ω) = Wire Resistance (Ω/Ft) x 2 x Dist. From Previous (Ft)
 Voltage Drop From Previous = Resistance From Previous (Ω) x Remaining Current (A)

BATTERY CALCULATION							
PANEL POWER SUPPLY MAX CURRENT = 8A				TOTAL USED CAPACITY (IN ALARM) = 2.055A (25.69 %)			
(SECONDARY POWER SOURCE REQUIREMENTS)				STANDBY CURRENT (AMPS)		SECONDARY ALARM CURRENT (AMPS)	
PANEL COMPONENTS	QTY	PART NO.	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
	1	FCPS-24SB MAIN BOARD	Fire Alarm Power Supply Main Board	0.091	0.091	0.145	0.145
CIRCUIT	SYMBOL	PART NO	DESCRIPTION	CURRENT DRAW (A)	TOTAL (A)	CURRENT DRAW (A)	TOTAL (A)
N3		PC2WL	2-Wire, Horn Strobe, White 15cd	0	0	0.071	0.142
		PC2WL	2-Wire, Horn Strobe, White 75cd	0	0	0.143	0.286
		PC2WL	2-Wire, Horn Strobe, White 95cd	0	0	0.165	0.165
		SCWL	Strobe, White 15cd	0	0	0.041	0.246
		SCWL	Strobe, White 30cd	0	0	0.063	0.126
		SCWL	Strobe, White 75cd	0	0	0.111	0.111
N4		PC2WL	2-Wire, Horn Strobe, White 15cd	0	0	0.071	0.071
		PC2WL	2-Wire, Horn Strobe, White 95cd	0	0	0.165	0.495
		SCWL	Strobe, White 95cd	0	0	0.134	0.268
				TOTAL STANDBY (A)	0.091	TOTAL ALARM (A)	2.055
				REQUIRED STANDBY TIME = 24 HOURS			
				REQUIRED ALARM TIME = 5 MINUTES			
SECONDARY STANDBY LOAD (A)				0.091	24	2.18	
SECONDARY ALARM LOAD (A)				2.055	0.08	0.17	
STANDBY AND ALARM SUBTOTAL (AMP HOURS)				2.36			
DERATING FACTOR				1.2			
SECONDARY LOAD REQUIREMENTS (AMP HOURS)				2.83			
PROVIDE (2) 12V 7AH BATTERIES @ 24VDC							

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SCALE: NONE

PREPARED BY: ROBYN B.

CHECKED BY: CHRISTOPHER C.

PROJECT MANAGER: MICHELLE B.

DATE: 1/31/2022

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TITLE:

FIRE ALARM DETAILS AND CALCS

SHEET:

FA2.00