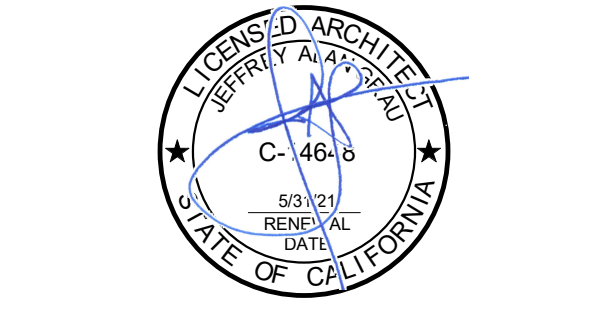
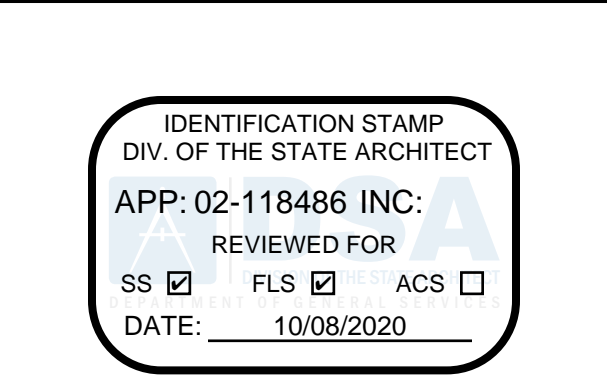


Abbreviations:		
A	And	F.R.P.
@	Angle	Fiberglass Reinforced
Centerline	Finish	Field Verity
Degree	Finish Floor Elevation	FIN
Perpendicular	Finish Grade	F.F.E.
Property Line	Fire Alarm	PEN
F	F.E.C.	Perforated
A.F.F.	Fire Extinguisher	P.L.A.M.
ACOUS.	FLASH	Plate
ADJ.	Acoustical	P.V.
AGGR.	Adjustable	PLYWD.
A.B.	Aggregate	PLYWD.
ALUM./AL.	Aggregate Base	PLYWD.
AD	Asphalt	PLYWD.
A.V.	Audio Visual	PLYWD.
AUTO.	Automatic	PLYWD.
BM	Beam	PLYWD.
BLK	Block	PLYWD.
BLKG.	Blocking	PLYWD.
BO.	Boat	PLYWD.
BOT	Bottom	PLYWD.
BULD.G.	Building	PLYWD.
CAB.	Cabinet	PLYWD.
CATV	Cable T.V.	PLYWD.
C.I.	Cast Iron	PLYWD.
CLK.G.	Clock Basin	PLYWD.
CLG.	Caulking	PLYWD.
CNTR./CTR.	Center	PLYWD.
CER.	Ceramic	PLYWD.
C.L.	Chain Link	PLYWD.
OB	Chalkboard	PLYWD.
CLR	Clear	PLYWD.
C.W.	Cold Water	PLYWD.
COL.	Column	PLYWD.
CONC.	Concrete	PLYWD.
C.M.U.	Concrete Masonry Unit	PLYWD.
CONN.	Connection	PLYWD.
CONST.	Construction	PLYWD.
C.J.	Construction Joint	PLYWD.
CONT.	Control Joint	PLYWD.
CNTR.	Continuous	PLYWD.
CONTR.	Contractor	PLYWD.
CORR.	Corridor	PLYWD.
C.M.P.	Corrugated Metal Pipe	PLYWD.
C.Y.	Cubic Yard	PLYWD.
CUST.	Custodian	PLYWD.
D.	Deep/Depth	PLYWD.
DET./DTL.	Detail	PLYWD.
DMG.	Diagonal	PLYWD.
DIA / Ø	Diameter	PLYWD.
DIM.	Dimension	PLYWD.
DIM.PT.	Dimension Point	PLYWD.
DW.	Dishwasher	PLYWD.
DR.	Door	PLYWD.
DBL.	Double	PLYWD.
DN	Down	PLYWD.
DS	Downspout	PLYWD.
D.I.	Drain Inlet	PLYWD.
DWG.	Drawing	PLYWD.
D.F.	Drinking Fountain	PLYWD.
EA	Each	PLYWD.
E	East	PLYWD.
ELEC.	Electric	PLYWD.
E.W.C.	Electric Water Cooler	PLYWD.
E.W.H.	Electric Water Heater	PLYWD.
EL./ELEV.	Elevation	PLYWD.
EMER.	Emergency	PLYWD.
ENCL.	Enclosure	PLYWD.
EQ.	Equal	PLYWD.
E.F.	Exhaust Fan	PLYWD.
(E)EXIST.	Existing	PLYWD.
EXP.	Expansion	PLYWD.
E.J.	Expansion Joint	PLYWD.
EXT.	Exterior	PLYWD.
F.O.C.	Face of Concrete/Curb	PLYWD.
F.O.F.	Face of Finish	PLYWD.
F.O.S.	Face of Studs	PLYWD.
FB	Fiberglass	PLYWD.
F.R.L.	Fiberglass Reinforced Laminates	PLYWD.

Symbol Legend:	
SHEET NUMBERING SYSTEM	STRUCTURAL GRID IDENTIFIER
ROOM NAME AND NUMBERING REFERENCE	STRUCTURAL GRID IDENTIFIER
KEYNOTE REFERENCE	CENTERLINE
SHEET NOTE REFERENCE	WORK POINT CONTROL
DEMOLITION NOTE REFERENCE	REVISION
DETAIL REFERENCE	RADIUS
BUILDING SECTION REFERENCE	EXTERIOR ELEVATION REFERENCE
WALL SECTION REFERENCE	SPECIAL ELEVATION REFERENCE

NEEDHAM ELEMENTARY SCHOOL - FIRE ALARM UPGRADES	
LODI UNIFIED SCHOOL DISTRICT LODI, CA	
Architect: Rainforth Grau Architects 2101 Capitol Ave, Suite 100 Sacramento, CA 95816 916.368.7990	Owner: LODI UNIFIED SCHOOL DISTRICT 1305 E VINE STREET LODI, CA 95240 209.953.8000
Contact: KEVIN ARWOOD	Contact: VICKIE BRUM
Consultants: ELECTRICAL ENGINEER: THE ENGINEERING ENTERPRISE 1305 MARINA VILLAGE PARKWAY ALAMEDA, CA 94501 530.886-8556 ATTN: DERYLE ROWE	Project Information: <u>SITE LOCATION</u> 420 S. Pleasant Ave Lodi, CA 95240 209.331.7375
Sheet Index	
GENERAL A0.1 COVER SHEET	
ARCHITECTURAL A1.1.1 OVERALL SITE PLAN - REFERENCE	
ELECTRICAL E0.00 SYMBOLS E0.01 FIRE ALARM MATRIX, SCHEDULE & NOTES E1.0 EXISTING SITE PLAN E2.0 FIRE ALARM PLAN E2.1 FIRE ALARM Riser E3.0 FIRE ALARM RISER DIAGRAM & CALCULATIONS ED2.0 DEMOLITION FIRE ALARM PLAN ED2.1 DEMOLITION FIRE ALARM PLAN TOTAL SHEET COUNT: 10	

Applicable Codes:	
CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS: TITLE 19, CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS TITLE 24, CCR, PART 1, 2019 CALIFORNIA ADMINISTRATIVE CODE TITLE 24, CCR, PART 2, 2019 CALIFORNIA BUILDING CODE, VOL. 1 & 2 TITLE 24, CCR, PART 3, 2019 CALIFORNIA ELECTRICAL CODE TITLE 24, CCR, PART 4, 2019 CALIFORNIA MECHANICAL CODE TITLE 24, CCR, PART 5, 2019 CALIFORNIA PLUMBING CODE TITLE 24, CCR, PART 6, 2019 CALIFORNIA ENERGY CODE TITLE 24, CCR, PART 7, 2019 CALIFORNIA FIRE CODE TITLE 24, CCR, PART 8, 2019 CALIFORNIA EXISTING BUILDING CODE TITLE 24, CCR, PART 9, 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE TITLE 24, CCR, PART 10, 2019 CALIFORNIA REFERENCED STANDARDS CODE TITLE 24, CCR, PART 11, 2019 CALIFORNIA REFERENCED STANDARDS CODE TITLE 24, CCR, PART 12, 2019 CALIFORNIA REFERENCED STANDARDS CODE NFPA 13, 2016 EDITION, INSTALLATION OF SPRINKLER SYSTEMS (CA AMENDMENTS) NFPA 72, 2016 EDITION, NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDMENTS) UL 464, 2003 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES UL 521, 7TH EDITION, 1999 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS THE CONTRACTOR SHALL KEEP TITLE 24, CCR, PARTS 1-5 ON THE BUILDING SITE AT ALL TIMES. THE CONTRACTOR SHALL COMPLY WITH CFC CHAPTER 33 - FIRE SAFETY DURING CONSTRUCTION & DEMOLITION	
DSA Procedures:	
1. ADDENDUM MUST BE STAMPED AND SIGNED BY THE ARCHITECT OF RECORD AND APPROVED BY DSA IN ACCORDANCE WITH CCR TITLE 24, PART 1. 2. THE CONTRACTOR SHALL BE FAMILIAR WITH, AND PERFORM THE DUTIES IN ACCORDANCE WITH DSA PROCEDURE 13-01, CONSTRUCTION OVERSIGHT PROCESS. 3. CHANGES TO THE STRUCTURAL, ACCESSIBILITY, OR FIRE AND LIFE-SAFETY PORTIONS OF THE APPROVED PLANS AND SPECIFICATIONS AFTER THE WORK HAS BEEN LET SHALL BE MADE BY A CONSTRUCTION CHANGE DOCUMENT AS REQUIRED IN TITLE 24, PART 1, 4-338 AND CONSTRUCTION CHANGE DOCUMENTS SHALL BE PREPARED AND SUBMITTED TO DSA IN ACCORDANCE WITH DSA IR A-6. 4. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS WILL BE CONSIDERED AS CHANGES TO THE APPROVED PLANS AND / OR SPECIFICATIONS. THEY ARE TO BE TREATED AS CONSTRUCTION CHANGE DOCUMENTS AND WILL REQUIRE DSA'S APPROVAL PRIOR TO FABRICATION AND INSTALLATION IN ACCORDANCE WITH TITLE 24, PART 1, 4-338 AND DSA IR A-6. 5. THE PROJECT INSPECTOR MUST BE EMPLOYED BY THE OWNER AND APPROVED BY THE ARCHITECT, STRUCTURAL ENGINEER, AND DSA IN ACCORDANCE WITH TITLE 24, PART 1, 4-341. 6. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NONCOMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE DSA APPROVED DOCUMENTS WOULD MAKE THE BUILDING NON-COMPLIANT WITH THE REQUIREMENTS OF THE EDITION OF THE CSD IN FORCE AT THE TIME OF ORIGINAL CONSTRUCTION, A CHANGE CONSTRUCTION DOCUMENT OR SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK.	
Scope of Work	
FIRE ALARM UPGRADES TO EXISTING BUILDINGS ON CAMPUS.	
Statement of General Conformance	
THE FOLLOWING DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR: 1) DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND 2) COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT. THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341, AND 4-344" OF TITLE 24, PART 1, (TITLE 24, PART 1, SECTION 4-317 (D))	
SIGNATURE: DATE: 9-30-2020	
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE Jeffrey Grau	
PRINT NAME: C-14648 5-31-21	
LICENSE NUMBER: EXPIRATION DATE:	
LIST COMPLETELY, ITEMS REVIEWED AND ACCEPTED:	
ELECTRICAL	
Vicinity Map:	
COVER SHEET	
PROJECT NO. 18-1366.01 DATE: 7/24/20 SHEET A0.1	



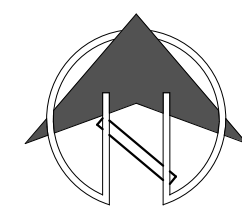
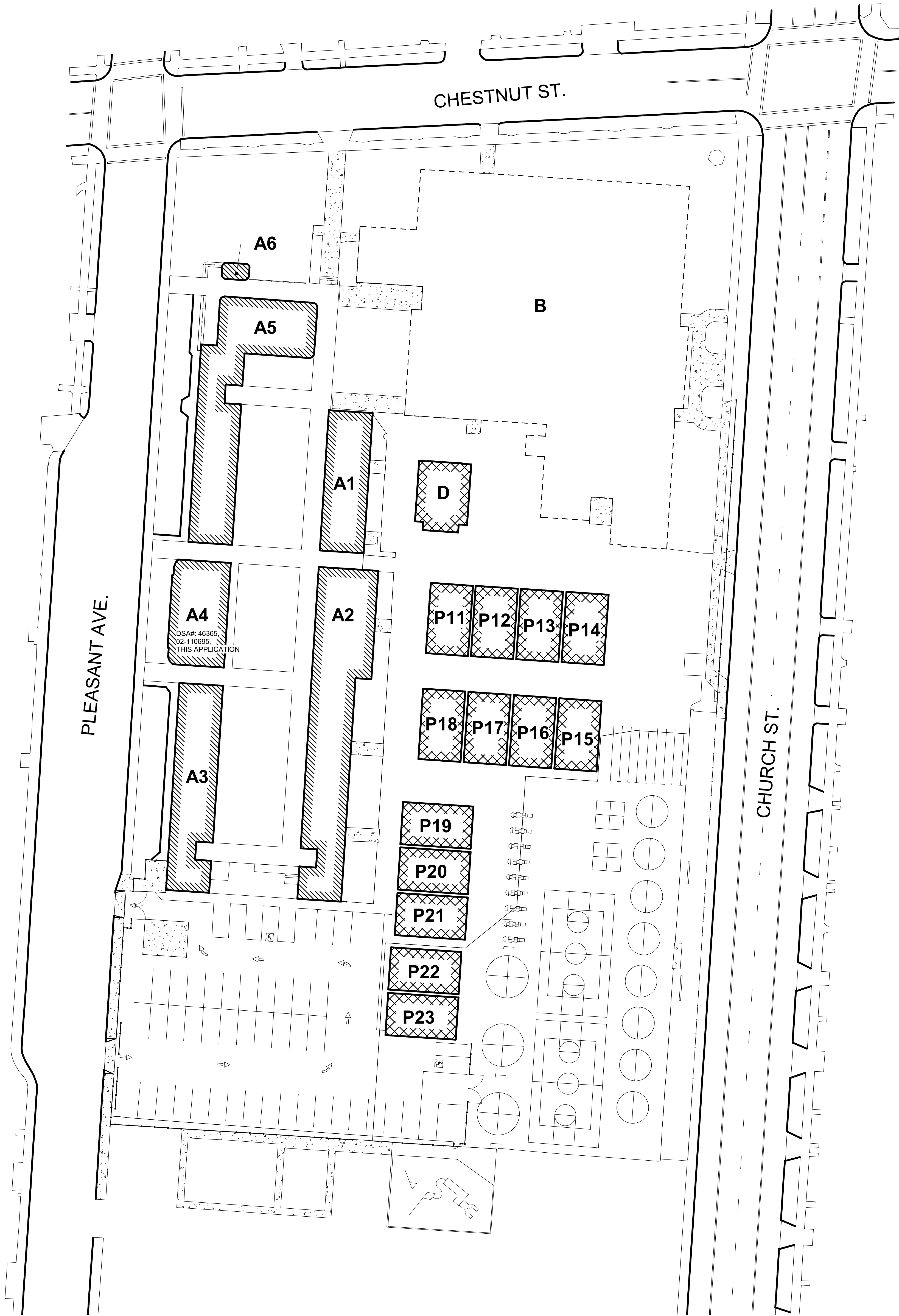
NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

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D:\1366\01 Needham ES Fire Alarm CAD.dwg(2/24/20)

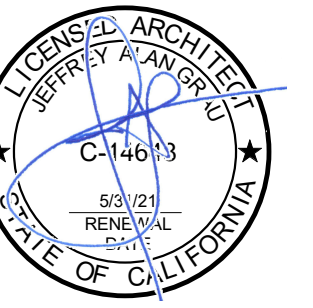
1 SITE PLAN - EXISTING
1" = 30'-0"



LEGEND

- UNIT DESIGNATION
EXISTING BUILDING
- UNIT DESIGNATION
EXISTING BUILDING TO BE DEMOLISHED PER PROJECT #02-118063
- UNIT DESIGNATION
BUILDING PREVIOUSLY DEMOLISHED
- EXISTING CHAIN LINK FENCE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118486 INC:
REVIEWED FOR
SS ☒ FLS ☒ ACS ☐
DATE: 10/08/2020



NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

Revision

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OVERALL SITE PLAN




































PROJECT NO. 18-1366.01
DATE: 7/24/20
SHEET

A1.1.1

SYMBOLS LIST

SOME OF THESE SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT

FIRE ALARM

	SMOKE DETECTOR INITIATING DEVICE, CEILING MOUNTED IN FLUSH OR SURFACE JUNCTION BOX.
	SMOKE DETECTOR INITIATING DEVICE, WALL MOUNTED IN FLUSH JUNCTION BOX, MAXIMUM 6" BELOW CEILING.
	SMOKE DETECTOR INITIATING DEVICE, MOUNTED TO STRUCTURE ABOVE SUSPENDED CEILING IN SURFACE JUNCTION BOX OR SUSPENDED IN JUNCTION BOX IN FRONT OF RETURN AIR FIRE/SMOKE DAMPERS.
	SMOKE DETECTOR INITIATING DEVICE, DUCT-MOUNTED TYPE WITH SAMPLING TUBE, LOCATED AT SUPPLY AIR FANS 2000cfm AND LARGER.
	SMOKE DETECTOR INITIATING DEVICE, IN-DUCT MOUNTED TYPE AT DUCTED SUPPLY AIR FIRE/SMOKE DAMPERS.
	PROJECTED BEAM SMOKE DETECTOR INITIATING DEVICES TO INCLUDE TRANSMITTER, RECEIVER AND REMOTE INDICATOR STATION, WALL MOUNTED IN FLUSH JUNCTION BOX BELOW BEAM DETECTOR AT +42" AFF. BEAM DETECTORS ARE EITHER CEILING OR WALL MOUNTED 6" BELOW CEILING.
	HEAT DETECTOR INITIATING DEVICE, CEILING MOUNTED IN FLUSH OR SURFACE JUNCTION BOX.
	HEAT DETECTOR INITIATING DEVICE, WALL MOUNTED IN FLUSH JUNCTION BOX, MAXIMUM 6" BELOW CEILING.
	HEAT DETECTOR INITIATING DEVICE, MOUNTED TO STRUCTURE ABOVE SUSPENDED CEILING IN SURFACE JUNCTION BOX.
	MANUAL PULL STATION INITIATING DEVICE, WALL MOUNTED AT +48" UON.
	SPRINKLER SYSTEM WATER FLOW SWITCH, NEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM.
	SPRINKLER SYSTEM TAMPER SWITCH, NEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM.
	SPRINKLER SYSTEM MOST INDICATING VALVE PIV, NEC. SYMBOL DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM, INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT PIV.
	REMOTE MOUNTED SINGLE INPUT, ADDRESSABLE, MONITORING MODULE FOR INITIATING CIRCUIT CONNECTION.
	REMOTE MOUNTED DUAL INPUT, ADDRESSABLE, MONITORING MODULE FOR INITIATING CIRCUIT CONNECTION.
	REMOTE MOUNTED PROGRAMMABLE CONTROL, RELAY MODULE FOR ADDRESSABLE CONTROL.
	DIFFERENTIAL PRESSURE SWITCH, NEC. SYMBOLS DENOTES INTERFACE FOR MONITORING CONNECTION FROM FIRE ALARM SYSTEM TO ANNUNCIATE FAN OPERATION, INCLUDE A REMOTE MOUNTED ADDRESSABLE MONITORING MODULE AT EACH LOCATION.
	END-OF-LINE RESISTOR.
	CURRENT TRANSFORMER FOR MONITORING AVAILABLE POWER.
	LOCAL OPERATION CONSOLE W/ GRAPHIC ANNUNCIATOR PANEL, FLUSH WALL MOUNTED, +42" UON.
	MAGNETIC TYPE DOOR HOLD OPEN/RELEASE DEVICE, WALL MOUNTED, NEC. SYMBOL DENOTES INTERFACE FOR POWER AND CONTROL CONNECTIONS FROM FIRE ALARM SYSTEM.
	DOOR HOLD OPEN/RELEASE DEVICE INTEGRATED IN DOOR HARDWARE CLOSURE EQUIPMENT, NEC. SYMBOL DENOTES INTERFACE FOR POWER AND CONTROL CONNECTIONS FROM FIRE ALARM SYSTEM.
	AUDIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LOWER.
	AUDIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LOWER, NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
	AUDIBLE/VISIBLE NOTIFICATION APPLIANCE, WALL MOUNTED, 6" BELOW CEILING OR +80" AFF, WHICHEVER IS LOWER, NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
	AUDIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX.
	VISIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX, NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
	AUDIBLE/VISIBLE NOTIFICATION APPLIANCE, CEILING MOUNTED IN FLUSH BACK BOX, NUMBER ASSOCIATED WITH 'cd' REPRESENTS CANDELA RATING OF STROBE.
	FIRE ALARM BELL FOR SPRINKLER FLOW ANNUNCIATOR, NEC. POWERED AND INSTALLED BY ELECTRICAL, WALL MOUNTED ON EXTERIOR OF BUILDING.
	THERMISTOR SENSOR DEVICE IN FSAE LOBBIES FOR TEMPERATURE MONITORING, WALL MOUNTED 6" BELOW CEILING.
	SMOKE ALARM FOR RESIDENTIAL DWELLING UNITS, NON-ADDRESSABLE, 120V DEVICE WITH BATTERY BACK-UP, CEILING MOUNTED IN FLUSH OR SURFACE JUNCTION BOX.
	SMOKE ALARM FOR RESIDENTIAL DWELLING UNITS, NON-ADDRESSABLE, 120V DEVICE WITH BATTERY BACK-UP, WALL MOUNTED MAXIMUM 6" BELOW CEILING IN FLUSH JUNCTION BOX.
	COMBINATION SMOKE AND CARBON MONOXIDE ALARM FOR RESIDENTIAL DWELLING UNITS, NON-ADDRESSABLE, 120V DEVICE WITH BATTERY BACK-UP, CEILING MOUNTED IN FLUSH OR SURFACE JUNCTION BOX.
	COMBINATION SMOKE AND CARBON MONOXIDE ALARM FOR RESIDENTIAL DWELLING UNITS, NON-ADDRESSABLE, 120V DEVICE WITH BATTERY BACK-UP, WALL MOUNTED MAXIMUM 6" BELOW CEILING IN FLUSH JUNCTION BOX.
	REMOTE 2-WAY COMMUNICATION STATION, WALL MOUNTED, +42" AFF.

ABBREVIATIONS

AF	AMPERES	LCP	LIGHTING CONTROL PANEL
AFI	ARC FAULT CIRCUIT INTERRUPTER	MBGB	MAIN BUILDING GROUND BUS
AFI	AMPERE OVERCURRENT FRAME SIZE (WHEN APPLIED TO CIRCUIT BREAKERS) OR AMPERE FUSE SIZE (WHEN APPLIED TO FUSES)	MCB	MAIN CIRCUIT BREAKER
		MCC	MOTOR CONTROL CENTER
AFB	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY
AIC	ASYMMETRIC INTERRUPTING CURRENT	MT	EMPTY
AL	ALUMINUM	MTS	MANUAL TRANSFER SWITCH
AT	AMPERE OVERCURRENT TRIP (WHEN APPLIED TO CIRCUIT BREAKERS)	(N)	NEW
AS	AUTOMATIC TRANSFER SWITCH	NC	NORMALLY CLOSED
BAS	BUILDING AUTOMATION SYSTEM	NF	NON-FUSED
BPS	BOLTED PRESSURE CONTACT SWITCH	NIEC	NOT IN ELECTRICAL CONTRACT
C	CONDUIT	NO	NORMALLY OPEN
CCV	CLOSED CIRCUIT TELEVISION	NTS	NOT TO SCALE
CEC	CALIFORNIA ELECTRICAL CODE	OC	ON CENTER
CL	CURRENT LIMITING CIRCUIT BREAKER OR FUSE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CP	CIRCULATION PUMP	POZ	PRIMARY DAYLIGHT ZONE
CT	CURRENT TRANSFORMER	PNL	PANEL
CU	COPPER	PQM	POWER QUALITY METER
DE	DRINKING FOUNTAIN	PT	POTENTIAL TRANSFORMER
(E)	EXISTING TO REMAIN	PVC	POLYVINYL CHLORIDE
EC	ELECTRICAL CONTRACTOR	(R)	EXISTING TO BE REMOVED
EF	EXHAUST FAN	(RR)	REMOVE AND RELOCATE
EP	EXPLOSION PROOF	SAD	SEE ARCHITECTURAL DRAWINGS
EPO	EMERGENCY POWER OFF	TC	TIME CLOCK
EMT	ELECTRICAL METALLIC TUBING	TP	TWISTED-PAIR
EWB	ELECTRIC WATER HEATER	SDZ	SECONDARY DAYLIGHT ZONE
F	FUSED	SPD	SURGE PROTECTION DEVICE
(F)	FUTURE	TX	TRANSFORMER
FACP	FIRE ALARM CONTROL PANEL	TYP	TYPICAL
FCCP	FIREMAN'S FAN CONTROL PANEL	UON	UNLESS OTHERWISE NOTED
FLA	FULL LOAD AMPERES	UPS	UNINTERRUPTIBLE POWER SUPPLY
FMC	FLEXIBLE METAL CONDUIT	V	VOLTS
FSD	FIRE/SMOKE DAMPER	VA	VOLTS-AMPS
FRAP	FIREMAN'S REMOTE ANNUNCIATOR PANEL	VFD	VARIABLE FREQUENCY DRIVE
G	GROUND	VM	VENDING MACHINE
GB	GROUND BUS	WAP	WIRELESS ACCESS POINT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	WP	WEATHERPROOF
GND	GROUND	2SP	TWO SPEED
GRAP	GENERATOR REMOTE ANNUNCIATOR PANEL	1Ø	1-PHASE
GRC	GALVANIZED RIGID CONDUIT	3Ø	3-PHASE
HNC	HOME NETWORK CABINET	1P	1-POLE
HPC	HIGH PRESSURE CONTACT SWITCH	2P	2-POLE
IG	ISOLATED GROUND	3P	3-POLE
IMC	INTERMEDIATE METAL CONDUIT	3W	3-WIRE
		4W	4-WIRE

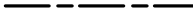











APPLIANCES

DO	DOUBLE OVEN	MW	MICROWAVE
DW	DISHWASHER	RF	REFRIGERATOR
ED	ELECTRIC DRYER	RH	RANGE HOOD
EO	ELECTRIC OVEN/RANGE	UR	UNDERCOUNTER REFRIGERATOR
GD	GARBAGE DISPOSER	WC	WINE COOLER
GR	GAS RANGE	WM	WASHING MACHINE

ELECTRICAL SHEET INDEX

SHEET NO.	SYMBOLS	SHEET NAME	2020.01.01 SCHEMATIC DESIGN			
			2020.02.01 DESIGN DEVELOPMENT			
			2020.03.01 CONSTRUCTION DOCUMENTS			
E0.00						
E0.01	FIRE ALARM MATRIX, SCHEDULE & NOTES					
E1.0	EXISTING SITE PLAN					
E2.0	FIRE ALARM PLAN					
E2.1	FIRE ALARM PLAN					
E3.0	FIRE ALARM RISER DIAGRAM & CALCULATIONS					
ED2.0	DEMOLITION FIRE ALARM PLAN					
ED2.1	DEMOLITION FIRE ALARM PLAN					

RACEWAYS

	CONDUIT RUN EXPOSED ON WALL OR CEILING.
	CONDUIT RUN CONCEALED IN SLAB, UNDER SLAB OR UNDERGROUND.
	CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING.
	CONDUIT HOMERUN, CONTINUOUS RUN TO PANEL OR EQUIPMENT CABINET. HOMERUN CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
	CONDUIT TURNED UP, CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
	CONDUIT TURNED DOWN, CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
	CONDUIT CAPPED OR STUBBED WITH INSULATED BUSHINGS, CAN OCCUR ON ANY OF THE ABOVE ROUTING CONDITIONS.
	CONDUIT SLEEVE, WITH INSULATING BUSHINGS.
	FLEXIBLE METALLIC CONDUIT, EQUIPMENT CONNECTION.
	CROSSMARKS ON BRANCH CIRCUIT CONDUIT RUNS INDICATE THE QUANTITY OF CONDUCTORS AS FOLLOWS (GROUND CONDUCTORS ARE NOT NOTED, BUT SHOULD BE INCLUDED IN EVERY CONDUIT WITH POWER CONDUCTORS):
	1. NO CROSSMARKS INDICATES TWO #12 AWG CONDUCTORS, UON.
	2. THREE TO SIX CROSSMARKS INDICATES THE QUANTITY OF #12 AWG CONDUCTORS, UON.
	3. SEVEN OR MORE CROSSMARKS INDICATES THE QUANTITY OF #12 AWG CONDUCTORS, UON.
	TWO PIECE SPACING RACEWAY: TYPE, DEVICE SPACING AND MOUNTING AS NOTED ON PLANS.
	CABLE TRAY, CABLE RUNWAY OR LADDER RACK SUSPENDED FROM STRUCTURE ABOVE. REFER TO PLANS FOR SIZE AND MOUNTING.

Revised: 02/14/2020

MEP Component Anchorage Note

All mechanical, plumbing, and electrical components shall be anchored and installed per the details on the DSA approved construction documents. The following components shall be anchored or braced to meet the force and displacement requirements prescribed in the 2019 CBC Sections 1616A.1.18 through 1616A.1.26 and ASCE 7-10 Chapters 13, 26, and 30:

1. All permanent equipment and components.
2. Temporary, movable or mobile equipment that is permanently attached (e.g. hard wired) to the building utility services such as electricity, gas or water. "Permanently attached" shall include all electrical connections except plugs for duplex receptacles.
3. Movable equipment which is stationed in one place for more than 8 hours and heavier than 400 pounds or has a center of mass located 4 feet or more above the adjacent floor or roof level that directly support the component is required to be anchored with temporary attachments.

The following mechanical and electrical components shall be positively attached to the structure but need not demonstrate design compliance with the references noted above. These components shall have flexible connections provided between the component and associated ductwork, piping, and conduit:

- A. Components weighing less than 400 pounds and having a center of mass located 4 feet or less above the adjacent floor or roof level that directly support the component.
- B. Components weighing less than 20 pounds, or in the case of distributed systems, less than 5 pounds per foot, which are suspended from a roof or floor or hung from a wall.

The anchorage of all mechanical, electrical and plumbing components shall be subject to the approval of the design professional in general responsible charge or structural engineer delegated responsibility and acceptance by DSA. The project inspector will verify that all components and equipment have been anchored in accordance with the above requirements.

Piping, Ductwork, and Electrical Distribution System Bracing Note

Piping, ductwork, and electrical distribution systems shall be braced to comply with the forces and displacements prescribed in ASCE 7-10 Section 13.3 as defined in ASCE 7-10 Sections 13.6.5.6, 13.6.7, and 13.6.8; and 2019 CBC, Sections 1616A.1.24, 1616A.1.25 and 1616A.1.26.

The method of showing bracing and attachments to the structure for the identified distribution system are as noted below. When bracing and attachments are based on a preapproved installation guide (e.g., OSHDP OPM for 2013 CBC or later), copies of the bracing system installation guide or manual shall be available on the jobsite prior to the start of and during the hanging and bracing of the distribution systems. The Structural Engineer of Record shall verify the adequacy of the structure to support the hanger and brace loads.

Mechanical Piping (MP), Mechanical Ducts (MD), Plumbing Piping (PP), Electrical Distribution Systems (E):

MP ☐ MD ☐ PP ☐ E ☒ Option 1: Detailed on the approved drawings with project specific notes and details.

MP ☐ MD ☐ PP ☐ E ☐ Option 2: Shall comply with the applicable OSHPD Pre-Approval (OPM # _____)

Revision

#	DESCRIPTION	DATE

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SYMBOLS

FIRE ALARM SYSTEM MATRIX

RESULT OF OPERATION										
	SMOKE DETECTOR	CO SMOKE DETECTOR	HEAT DETECTOR	PULL STATION	SYSTEM RESET	SIGNAL SILENCE	OPEN/SHORT	POWER LOSS		
FACP ALARM	X	X	X							
ANNUNCIATE ALARM	X		X	X						
OFF SITE REPORTING ALARM	X		X	X						
FACP TROUBLE										
ANNUNCIATE TROUBLE							X	X		
OFF SITE REPORTING TROUBLE							X	X		
AUDIBLE ALARM	X		X	X						
VISUAL ALARM	X		X	X						
FACP SUPERVISORY		X								
ANNUNCIATE SUPERVISORY		X								
OFF SITE REPORTING SUPERVISORY		X								
DEACTIVATE VISUALS						X				
DEACTIVATE AUDIBLES						X				
SYSTEM NORMAL				X			X			
LOUDER BASE		X								

FIRE ALARM SYSTEM COMPONENT SCHEDULE

REQUIRED COMPONENTS	SYMBOL	EQUIPMENT/DEVICE	MANUFACTURER	MODEL / PART #	CSFM LISTING YEAR	CSFM LISTING NO.
X	FACP	FIRE ALARM CONTROL PANEL	GAMEWELL	E-3	6/30/2020	7165-1703.0125
X	AMP	AMPLIFIER	GAMEWELL	AM-50-70Vrm	6/30/2020	7165-1703.0125
X	BPS	REMOTE POWER BOOSTER	GAMEWELL	HPF24-S8	6/30/2020	7315-1637.0102
N/A		INTELLIGENT DUCT DETECTOR	GAMEWELL	XP95	6/30/2020	7272-1703.0155
X		INTELLIGENT HEAT DETECTOR	GAMEWELL	ATD-L2F	6/30/2020	7270-1703.0115
N/A	AH	ATTIC HEAT DETECTOR	GAMEWELL	5622	6/30/2020	7270-1653.0167
X	AH	INTELLIGENT ATTIC HEAT DETECTOR 194 FIXED TEMP	GAMEWELL	ATD-L3H	6/30/2020	7270-1703.0502
X		PHOTO SMOKE DETECTOR	GAMEWELL	ASD-PL3	6/30/2020	7272-1703.0501
X	CO	FIRE/CO DETECTOR WITH SOUNDER BASE	GAMEWELL SYSTEM SENSOR	MCS-COF B200S	6/30/2020 6/30/2020	7275-1703.0175 7300-1653.0213
X	LOC	LOCAL OPERATING CONSOLE W/ GRAPHIC ANNUNCIATOR PANEL	GAMEWELL	E-3 SERIES	6/30/2020	7165-1703.0125
N/A	DM	DUAL MONITOR MODULE	GAMEWELL	AMM-2IF	6/30/2020	7300-1703.0107
X	SM	MONITOR MODULE	GAMEWELL	AMM-4F	6/30/2020	7300-1703.0102
X	IM	ISOLATION MODULE	GAMEWELL	M500X	6/30/2020	7300-1653.0103
N/A	CR	CONTROL RELAY	GAMEWELL	AOM-2RF	6/30/2020	7300-1703.0102
X	F	PULL STATION	GAMEWELL	MS-7	6/30/2020	7150-1703.0119
X		OUTDOOR SPEAKER	SYSTEM SENSOR	SPWK	6/30/2020	7320-1653.0201
X		SPEAKER STROBE (WALL)	SYSTEM SENSOR	SPSW	6/30/2020	7320-1653.0201
X		STROBE (WALL)	SYSTEM SENSOR	SW	6/30/2020	7125-1653.0156
X	EOL	END-OF-LINE RELAY	SYSTEM SENSOR	EOLR-1	6/30/2020	7300-1653.0103
X	DOC	DOCUMENT BOX	SPACE AGE TECH	SRD-ACE-11	6/30/2020	7300-0553.0110

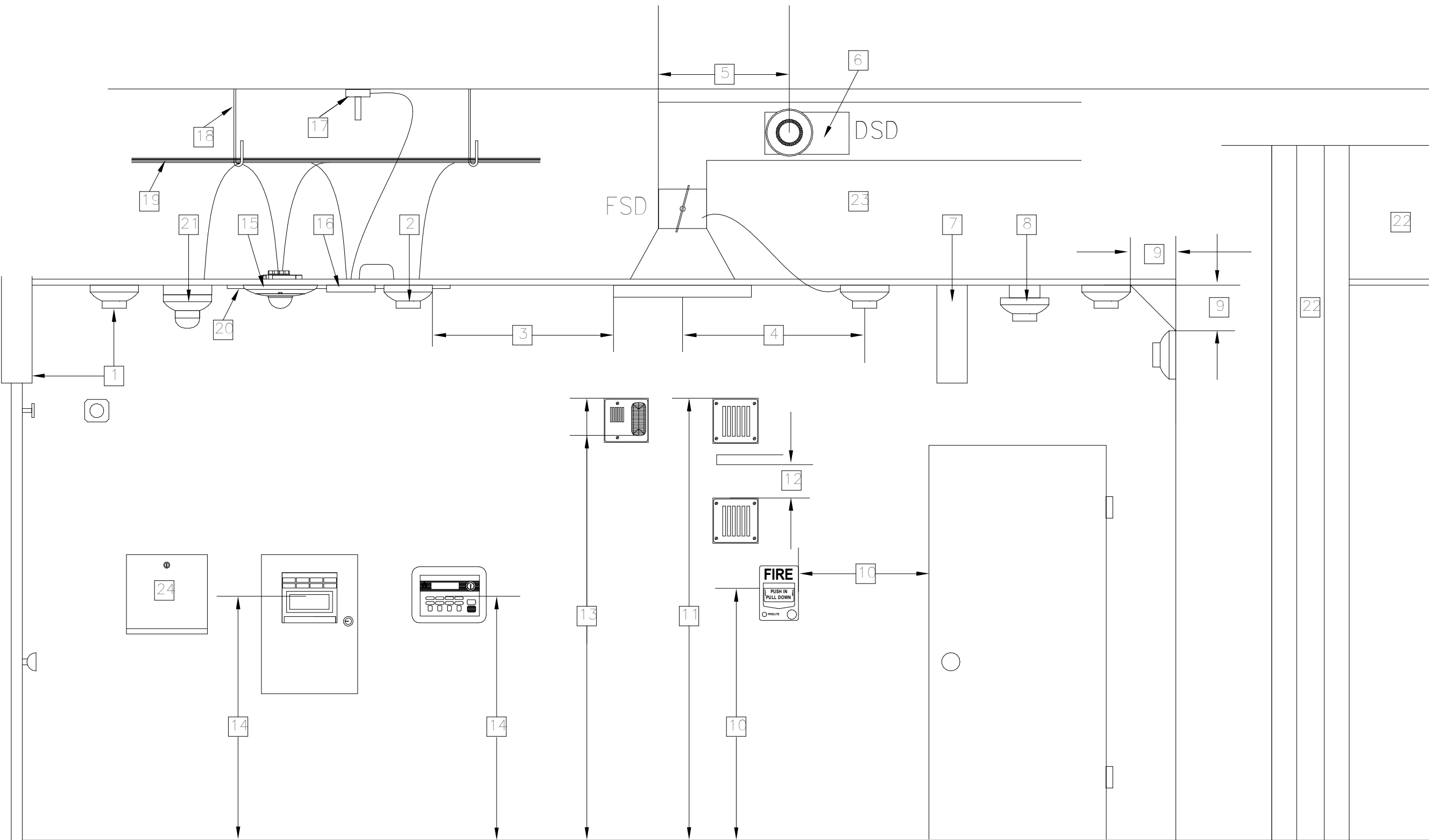
X= COMPONENT USED IN CURRENT PROJECT
N/A= COMPONENT NOT USED IN CURRENT PROJECT

FIRE ALARM SYSTEM CABLE SCHEDULE

REQUIRED CABLES	CABLE TAG	CABLE	NO. OF CONDUCTORS	COLOR	AWG	CABLE USE
X	A	GENESIS	2(1PR)	RED/BLACK	#18	BUILDING INITIATION (SLC)
X	B	GENESIS	2(1PR)	RED/BLACK	#12	NOTIFICATION (NAC)
X	S	GENESIS	2(1PR)	RED/BLACK	#16	VOICE NOTIFICATION
X	D	AQUA SEAL	2(1PR)	GRAY	N/A	MULTI-MODE FIBER
X	F	GENESIS	2(1PR)	RED/BLACK	#12	24 VDC POWER
N/A	H	AQUA SEAL	2(1PR)	RED/BLACK	#12	UG NOTIFICATION (NAC)
N/A	E	AQUA SEAL	2(1PR)	RED/BLACK	#16	UG VOICE NOTIFICATION
N/A	G	AQUA SEAL	2(1PR)	RED/BLACK	#12	UG 24 VDC POWER
N/A	C	AQUA SEAL	2(1PR)	RED/BLACK	#18	UG BUILDING INITIATION (SLC)

NUMBERED SHEET NOTES

1. MOUNT DOOR HOLDER SMOKE DETECTOR MAXIMUM 3' FROM DOOR AND A MINIMUM OF 1'.
2. MAXIMUM DISTANCE BETWEEN SMOKE DETECTORS IS 30' AND 15' FROM WALLS, MAXIMUM DISTANCE FROM A CORNER IS 21' WITH CEILING LESS 10' OR LESS.
3. MOUNT SMOKE DETECTOR MINIMUM OF 3' AWAY FROM DIFFUSER VENT.
4. MOUNT SMOKE DETECTOR FOR FIRE SMOKE DAMPER (FSD) MIN. 3' AWAY OF SUPPLY VENT.
5. DUCT SMOKE DETECTOR SHALL BE MOUNTED 6 TO 10 TIMES THE DIAMETER OF DUCT FROM BEND OR OBSTRUCTION.
6. WHERE DUCT SMOKE DETECTORS ARE INSTALLED IN CONCEALED LOCATIONS OR GREATER THAN 10' AFF, DETECTORS SHALL BE PROVIDED WITH A REMOTE INDICATOR OR SUPERVISORY INDICATION ACCEPTABLE WITH AUTHORITY HAVING JURISDICTION (AHJ). ALL HVAC GREATER THAN 2000cfm SHALL HAVE A DUCT DETECTOR IN THE SUPPLY AIR DUCT. GREATER THAN 15,000cfm SHALL HAVE ONE IN BOTH SUPPLY AND RETURN AIR DUCTS. HOWEVER SHALL NOT BE REQUIRED WHERE THE ENTIRE SPACE SERVED BY THE AIR DISTRIBUTION SYSTEM IS PROTECTED BY SMOKE DETECTORS THAT TRIGGER HVAC SHUT-DOWN.
7. BEAM POCKET SPOT DETECTOR ARE REQUIRED FOR BEAMS GREATER THAN 18" BELOW CEILING AND SPACED MORE THAN 8' ON CENTER. EACH BAY FORMED BY BEAM SHALL BE TREATED AS A SEPARATE AREA. BEAMS LESS THAN 12" IN DEPTH AND SPACED LESS THAN 8' ON CENTER SHALL HAVE DETECTORS INSTALLED ON THE BOTTOM OF THE BEAM.
 - 7.1. OR, CEILINGS WITH BEAM DEPTHS LESS THAN 10 PERCENT OF THE CEILING HEIGHT, SMOOTH CEILING SPACING IS PERMITTED AND DETECTORS PLACED ON THE BOTTOM OF THE BEAM.
 - 7.2. BEAMS EQUAL TO OR GREATER THAN 10 PERCENT OF CEILING HEIGHT WITH BEAM SPACING GREATER THAN 40 PERCENT OF CEILING HEIGHT, SPOT DETECTORS SHALL BE LOCATED IN EACH CELL. NFPA 72 17.7.3.2.4.2.
8. BEAMS PROJECTING LESS THAN 4" SHALL BE TREATED AS A SMOOTH CEILING.
9. SMOKE DETECTORS SHALL BE MOUNTED ON THE CEILING MINIMUM 4" FROM WALL, AND 4" MINIMUM TO 12" MAXIMUM FROM CEILING MOUNTED ON WALL.
10. MOUNT MANUAL PULL STATIONS AT 48" TO TOP OF BOX AFF, AND NO GREATER THAN 5' FROM DOOR.
11. MOUNT EXTERNAL HORN AT 60" MINIMUM AND 100" MAXIMUM TO THE TOP OF THE DEVICE.
12. FOR APPLICATIONS WHERE THE STRUCTURE IS BELOW 90°, MOUNT HORN AS HIGH AS WITH A MINIMUM OF 6" CLEARANCE TO THE TOP OF THE DEVICE.
13. MOUNT HORN / SPEAKER STROBE AND STROBE ONLY SO THE ENTIRE LENS IS WITHIN 80° AND 96° AFF.
14. INSTALL FIRE ALARM CONTROL PANELS AND ANNUNCIATORS SO THAT BOTTOM OF PANEL IS 48" AFF LOC ASSOCIATED WITH EMERGENCY (EVAC) SHALL BE ACCESSIBLE & INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11A-308.
15. CEILING MOUNTED HORN / SPEAKER STROBE
16. MONITOR MODULE
17. RATE ANTICIPATOR HEAT DETECTOR, MOUNTED IN ABOVE CEILING / ATTIC SPACE.
18. APPROVED WIRE MANAGEMENT, w/ J-HOOK OR D-RING.
19. ABOVE CEILING CIRCUITS ROUTING IN AN ACCESSIBLE ATTIC SPACE.
20. NON-ACCESSIBLE CEILINGS MUST USE EITHER EMT OR APPROVED WIREMOLD RACEWAY, AS SHOWN ON PLANS.
21. MULTI-CRITERIA PHOTOELECTRIC SMOKE / CO DETECTOR WITH SOUNDER BASE. MOUNT IN AREAS WHERE FOSSIL FUEL IS USED.
22. SMOKE / HEAT DETECTION COVERAGE IS REQUIRED IN ALL COMBUSTIBLE AREAS, UNLESS:
 - 22.1. CEILING IS ATTACHED DIRECTLY TO THE UNDERSIDE OF THE SUPPORTING BEAM OR ROOF DECK.
 - 22.2. CONCEALED SPACE IS ENTIRELY FILLED WITH NON-COMBUSTIBLE INSULATION.
 - 22.3. THE SMALL CONCEALED SPACE OVER ROOMS THAT DO NOT EXCEED 50 SQ. FT. IN AREA.
 - 22.4. SPACES FORMED BY FACING STUDS OR SOLID JOISTS IN WALLS, FLOORS, OR CEILINGS WHERE THE FACING STUD OR SOLID JOIST IS LESS THAN 6".
- INACCESSIBLE SPACES THAT DO NOT MEET THIS CRITERIA MUST BE MADE ACCESSIBLE AND DETECTION MUST BE INSTALLED. NFPA72 17.5.3.1.1.
23. DETECTION FOR CONCEALED ACCESSIBLE SPACES ABOVE SUSPENDED CEILING USED AS A RETURN PLENUM SHALL BE PROVIDED AT EACH CONNECTION FROM RETURN AIR PLENUM AT CENTRAL AIR HANDLING UNIT. NFPA 72 17.5.3.1.4.
24. WITH EVERY NEW FIRE ALARM SYSTEM A DOCUMENTATION CABINET SHALL BE INSTALLED AT THE FIRE ALARM CONTROL PANEL OR AT ANOTHER LOCATION APPROVED BY AHJ. THE CABINET SHALL BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS".



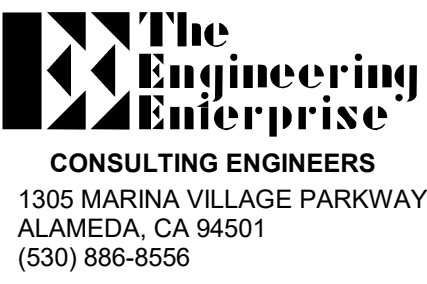
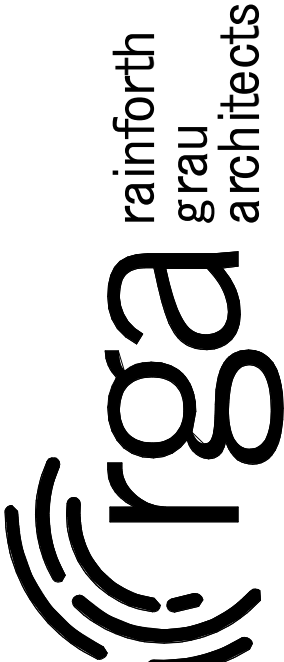
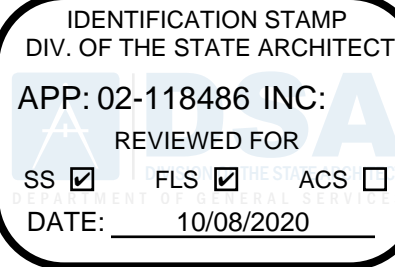
FIRE ALARM NOTES

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
STATE CALIFORNIA CODE OF REGULATIONS (CCR) 2019 TITLE 24 CALIFORNIA BUILDING CODE
PART 2, 2019 CALIFORNIA BUILDING CODE (CBC), 2019 IBC,
PART 3, 2019 CALIFORNIA ELECTRICAL CODE (CEC), 2019 NEC,
PART 4, 2019 CALIFORNIA MECHANICAL CODE (CMC), 2019 UMC,
PART 5, 2019 CALIFORNIA PLUMBING CODE (CPC), 2019 UPC,
PART 9, 2019 CALIFORNIA FIRE CODE (CFC) BASED ON 2019 IFC
2016 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13, 72, 80, 90A, 99, AND 101.
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTATION AND SPECIFICATIONS, INCLUDING STATE FIRE MARSHAL LISTING SHEETS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.
3. UPON COMPLETION OF INSTALLATION OF THE SYSTEMS, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.
4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF RECORD.
6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER APPROVED LAB TESTING CRITERIA APPROVED TYPES OF MATERIALS SHALL BE IDENTIFIED WITHIN THE PROJECT SPECIFICATIONS WITHIN THE FIRE ALARM SECTION.
8. AUDIBLE DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DECIBELS (Dba) ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 Dba ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY OCCUPIED SPACE WITHIN THE BUILDING.
9. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN CARBON MONOXIDE SHALL PRODUCE TEMPORAL CODE 4 PATTERN.
10. THE CONTRACTOR SHALL ADJUST/INSTALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
11. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND SHOULD NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELLA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.
12. UNDERGROUND AND EXTERIOR CONDUIT TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVED FOR WET LOCATIONS.
13. ALL FIRE ALARM WIRING SHALL BE FLP OR FLP/P (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
14. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPlice THE WIRE. ALL BOXES TO BE SIZED PER CEC.
15. SMOKE DETECTORS SHALL BE NOT CLOSER THAN 1' FROM SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION OF NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL AREA IS READY TO BE TURNED OVER TO THE OWNER.
16. ALL FIRE ALARM CIRCUITS ARE TO BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE THE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANNER AS INDICATED ON THE DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
17. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
18. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM A COMMON USE AREA PANEL AND SHALL HAVE OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXPANDERS.
19. THE INSTALLER CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.
20. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
21. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
22. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.2. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUXF OR UUIS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 3011.
23. BEFORE REQUESTING THE FINAL APPROVAL OF THE INSTALLATION THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE DSA PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE (2016) NFPA 72 SECTION 14.4.1.
24. TEST, INSPECTION AND MAINTENANCE SHALL COMPLY WITH NFPA 72 CHAPTER 14 REQUIREMENTS.
25. MICROPHONES ASSOCIATED WITH EMERGENCY VOICE ALARM COMMUNICATION SYSTEMS (EVAC) SHALL BE ACCESSIBLE FOR USE, INSTALLED IN COMPLIANCE WITH CBC SECTIONS 11B-305 AND 11B-306.

FIRE ALARM SYSTEM DESCRIPTION

SCOPE OF THIS PROJECT IS TO REPLACE EXISTING FA SYSTEM WITH A NEW FIRE ALARM PANEL WITH NEW VOICE EVACUATION PANEL, INCLUDING FACP, VOICE AMPLIFIERS, POWER SUPPLIES, MICROPHONE, INITIATION, NOTIFICATION AND CONTROL DEVICES AS SHOWN ON PLANS AND SPECIFICATIONS. PROVIDE ALL NEW CABLING. CABLING SHALL BE INSTALLED IN CONDUIT OR SURFACE RACEWAY, OR EXPOSED IN ACCESSIBLE CEILING SPACE.

FIRE ALARM SYSTEM: CLASS B
IDC: CLASS B
SLC CIRCUIT: CLASS B
NOTIFICATION CIRCUIT: CLASS B



NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

Revision

DESCRIPTION	DATE

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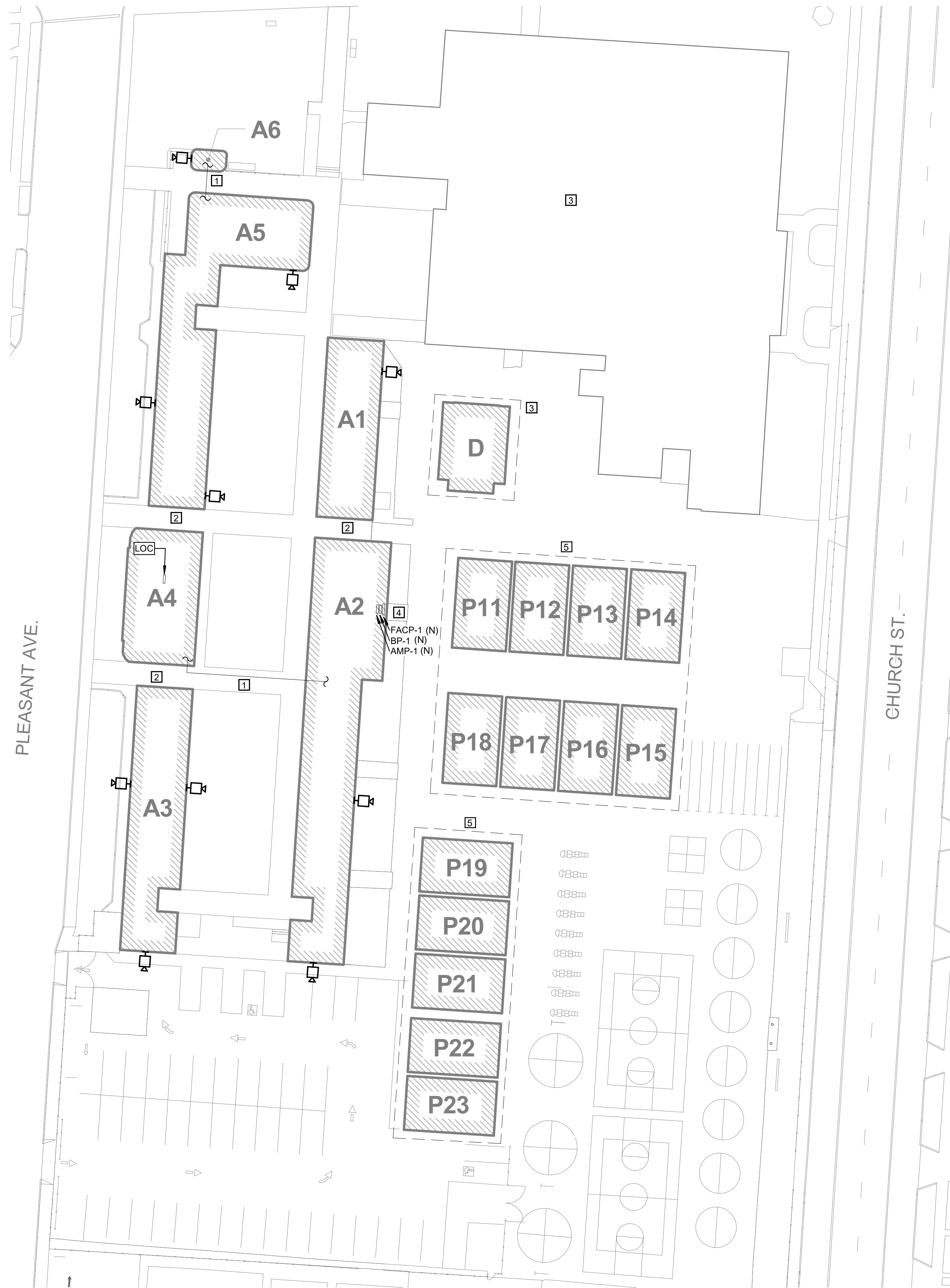
FIRE ALARM
MATRIX,
SCHEDULE &
NOTES

PROJECT NO. 18-1366.01
DATE: 07/27/20
SHEET

E0.01

FIRE ALARM MATRIX, SCHEDULE & NOTES

SCALE: 12" = 1'-0"

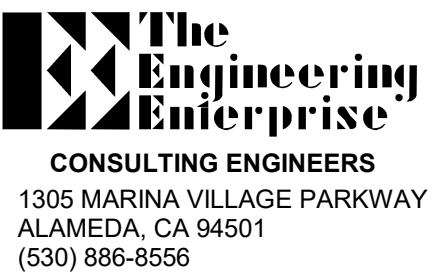
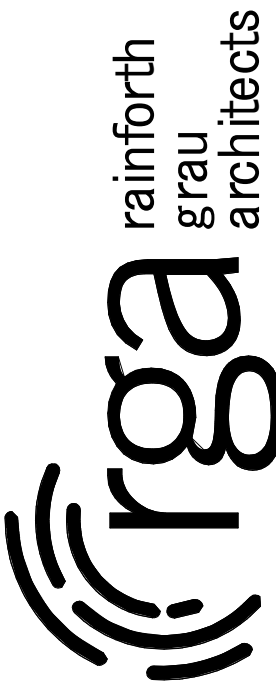


1 EXISTING SITE PLAN
SCALE: 1" = 30'-0"

NUMBERED SHEET NOTES

- COVERED PATHWAY WITH ABOVE GROUND EXPOSED CONDUIT RUNNING FROM BUILDING TO BUILDING. CONTRACTOR SHALL RE-USE CONDUIT IF .75" OR PROVIDE NEW.
- COVERED WALKWAY.
- BUILDINGS NOT IN SCOPE, BUILDING HAS BEEN DEMOLISHED PRIOR TO START OF THIS PROJECT. SEE DSA #02-118063 FOR NEW BUILDINGS ON SITE.
- REFER TO DETAIL 3 / E3.0 FOR MOUNTING DETAIL AND INSTRUCTIONS
- BUILDINGS OUTSIDE SCOPE OF PROJECT, TO BE DEMO'D PER DSA #02-118063.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118486 INC:
REVIEWED FOR
SS ☒ FLS ☒ ACS ☐
DATE: 10/08/2020



NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

Revision

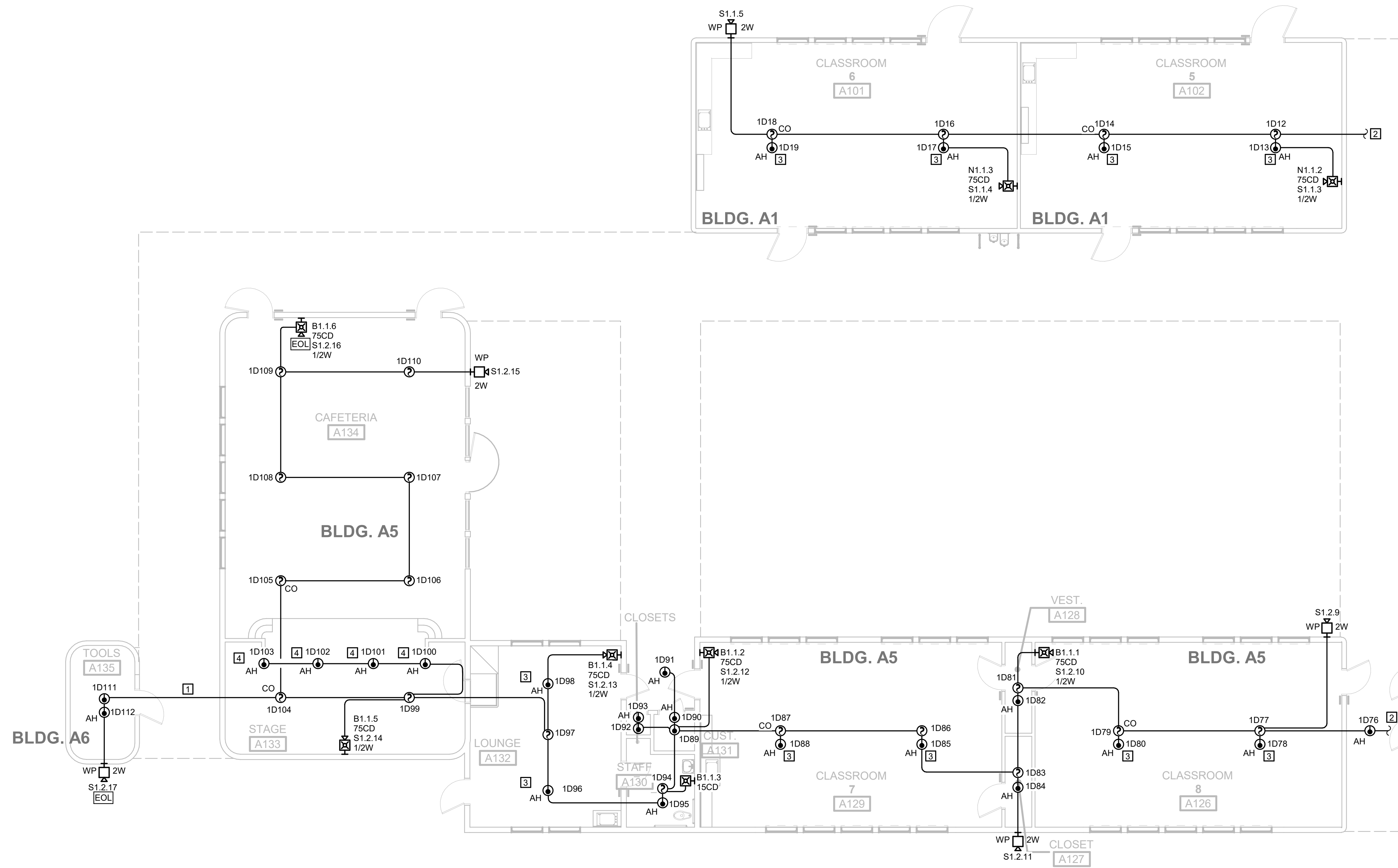
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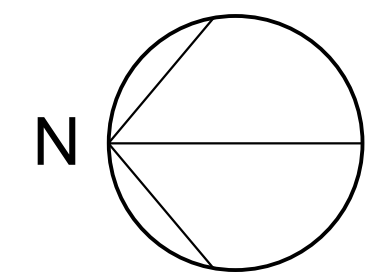
EXISTING SITE PLAN

PROJECT NO. 18-1366.01
DATE: 07/27/20
SHEET

E1.0



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



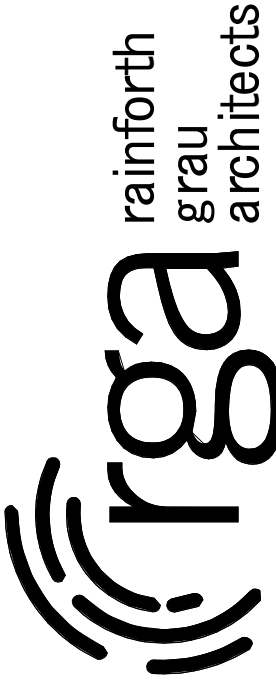
GENERAL SHEET NOTES

- A. FIRE ALARM SYSTEM INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF APPLICABLE CODES, STANDARDS AND STATE REGULATIONS.
- B. FIRE ALARM CIRCUITS AND CIRCUIT ROUTING ARE SHOWN SCHEMATICALLY FOR CLARITY ILLUSTRATING THE WIRING CONFIGURATION NECESSARY FOR PROPER CIRCUIT SUPERVISION.
- C. NO KNOWN FIRE SMOKE DAMPERS NOR DUCT SMOKE DETECTORS FROM LIMITED EXISTING DOCUMENTS. CONTRACTOR TO VERIFY EXISTING CONDITIONS IN BID AND CONTRACT PACKAGE.
- D. CONTRACTOR SHALL PROVIDE CEILING ACCESS PANEL AS NEEDED AT ALL NON-LAYIN TYPE CEILINGS, WHERE HEAT DETECTOR ABOVE CEILING IS INDICATED.
- E. PROVIDE 24V POWER TO EACH MULTI-CRITERIA C/O DEVICE WITH SOUNDER BASE.
- F. DO NOT INSTALL FIRE ALARM DEVICES BACK TO BACK IN STUD WALLS.
- G. INSTALL FIRE ALARM CONDUCTORS IN CONDUIT OR SURFACE RACEWAY WHEN IN EXPOSED SPACES. MINIMUM SIZE OF CONDUIT SHALL BE 0.75". UTILIZE WIREMOLD 700 SERIES SURFACE RACEWAY (IN LIEU OF CONDUIT) FOR AREA WHERE CONDUIT CANNOT BE INSTALLED CONCEALED. CABLE ABOVE ACCESSIBLE CEILING CAN BE INSTALLED FREE AIR WHEN USING APPLICABLE CABLE. SUPPORT ALL FREE AIR CABLE EVERY 48" WITH RED J-HOOKS. USE EXISTING SURFACE RACEWAY WHEN POSSIBLE.
- H. ENSURE THAT SPEAKER/STROBES ARE MOUNTED IN 5" SQ. X 2 7/8" DEEP BOX, FOR SURFACE MOUNTED DEVICES. FLUSH MOUNTED DEVICES SHALL BE MOUNTED IN THE MANUFACTURES DESIGNATED BACK BOXES. COLOR TO MATCH DEVICE.
- I. CONTRACTOR SHALL PROVIDE 120V DEDICATED RED LOCKING CIRCUIT BREAKER PER FIRE ALARM SYSTEM PANELS PER LOCATION.
- J. PROVIDE ISOLATION MODULES FOR EACH SLC RUN TO SEPRATE BUILDINGS.

NUMBERED SHEET NOTES

- 1 COVERED PATHWAY WITH ABOVE GROUND EXPOSED CONDUIT RUNNING FROM BUILDING TO BUILDING. CONTRACTOR SHALL RE-USE CONDUIT IF .75" OR PROVIDE NEW. SEE DETAIL 2 SHEET E3.0.
- 2 SEE SHEET E2.1
- 3 EXISTING CEILING ACCESS PANELS. CONTRACTOR TO RE-USE.
- 4 DEVICES ARE UNDER THE FLOOR/STAGE. ACCESS PANEL REQUIRED.

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REVIEWED FOR
SS ☒ FLS ☒ ACS ☐
DATE: 10/08/2020



The Engineering Enterprise
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NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

Revision

DESCRIPTION	DATE

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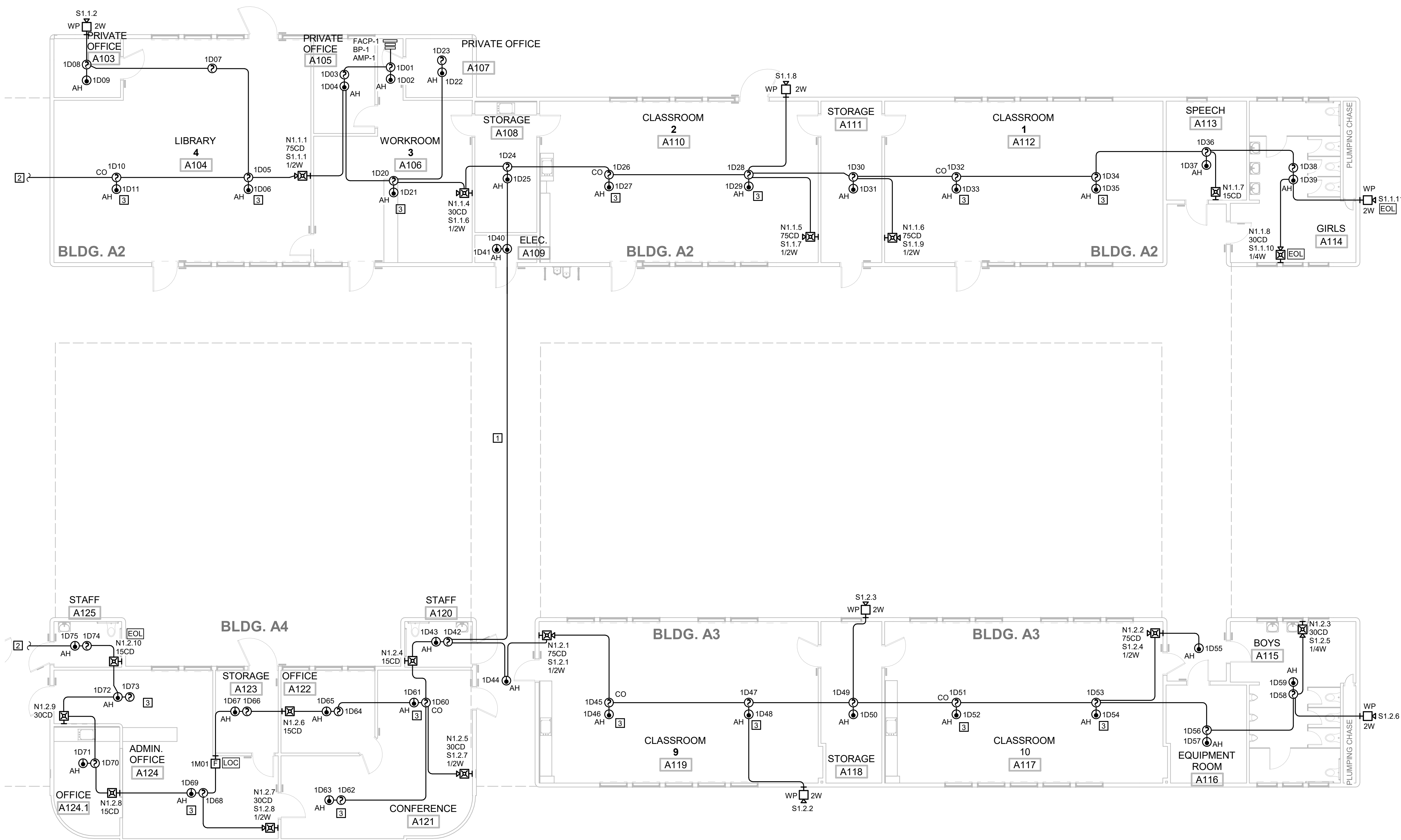
FIRE ALARM PLAN

GENERAL SHEET NOTES

- FIRE ALARM SYSTEM INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF APPLICABLE CODES, STANDARDS AND STATE REGULATIONS.
- FIRE ALARM CIRCUITS AND CIRCUIT ROUTING ARE SHOWN SCHEMATICALLY FOR CLARITY ILLUSTRATING THE WIRING CONFIGURATION NECESSARY FOR PROPER CIRCUIT SUPERVISION.
- NO KNOWN FIRE SMOKE DAMPERS NOR DUCT SMOKE DETECTORS FROM LIMITED EXISTING DOCUMENTS, CONTRACTOR TO VERIFY EXISTING CONDITIONS IN BID AND CONTRACT PACKAGE.
- CONTRACTOR SHALL PROVIDE CEILING ACCESS PANEL AS NEEDED AT ALL NON-LAYIN TYPE CEILINGS, WHERE HEAT DETECTOR ABOVE CEILING IS INDICATED.
- PROVIDE 24V POWER TO EACH MULTI-CRITERIA C/O DEVICE WITH SOUNDER BASE.
- DO NOT INSTALL FIRE ALARM DEVICES BACK TO BACK IN STUD WALLS.
- INSTALL FIRE ALARM CONDUCTORS IN CONDUIT OR SURFACE RACEWAY WHEN IN EXPOSED SPACES. MINIMUM SIZE OF CONDUIT SHALL BE 0.75" UTILIZE WIREMOLD 700 SERIES SURFACE RACEWAY (IN LIEU OF CONDUIT) FOR AREA WHERE CONDUIT CANNOT BE INSTALLED CONCEALED. CABLE ABOVE ACCESSIBLE CEILING CAN BE INSTALLED FREE AIR WHEN USING APPLICABLE CABLE. SUPPORT ALL FREE AIR CABLE EVERY 48" WITH RED J-HOOKS. USE EXISTING SURFACE RACEWAY WHEN POSSIBLE.
- ENSURE THAT SPEAKER/STROBES ARE MOUNTED IN 5" SQ. X 2 7/8" DEEP BOX, FOR SURFACE MOUNTED DEVICES. FLUSH MOUNTED DEVICES SHALL BE MOUNTED IN THE MANUFACTURES DESIGNATED BACK BOXES. COLOR TO MATCH DEVICE.
- CONTRACTOR SHALL PROVIDE 120V DEDICATED RED LOCKING CIRCUIT BREAKER PER FIRE ALARM SYSTEM PANELS PER LOCATION.
- PROVIDE ISOLATION MODULES FOR EACH SLC RUN TO SEPRATE BUILDINGS.

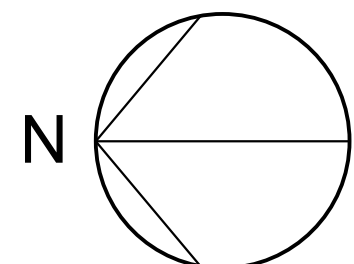
NUMBERED SHEET NOTES

- COVERED PATHWAY WITH ABOVE GROUND EXPOSED CONDUIT RUNNING FROM BUILDING TO BUILDING. CONTRACTOR SHALL RE-USE CONDUIT IF .75" OR PROVIDE NEW. SEE DETAIL 2 SHEET E3.0.
- SEE SHEET E2.0
- EXISTING CEILING ACCESS PANELS. CONTRACTOR TO RE-USE.



1 FIRE ALARM PLAN

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



Revision

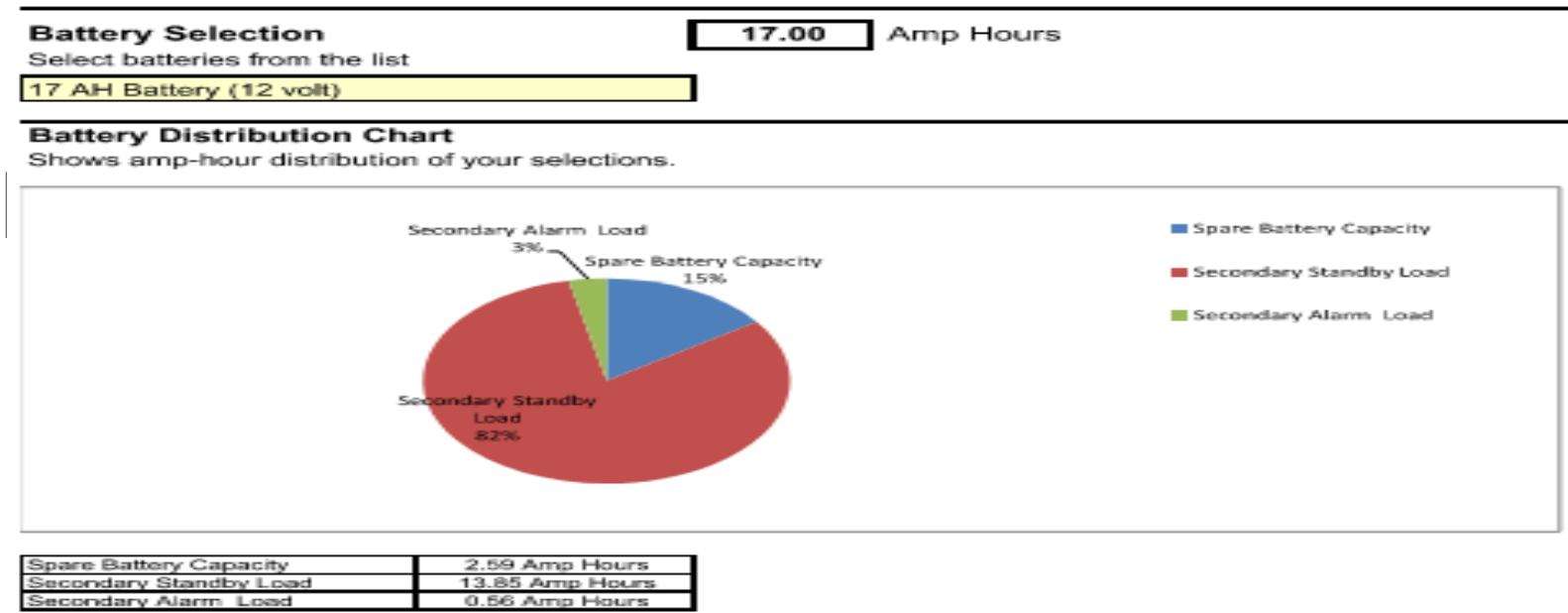
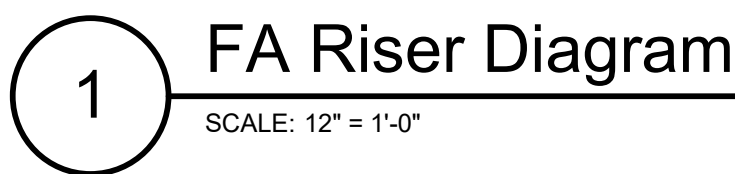
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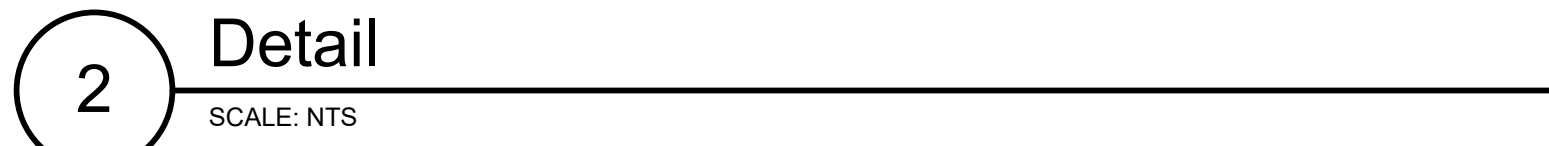
FIRE ALARM PLAN

PROJECT NO. 18-1366.01
DATE: 07/27/20
SHEET

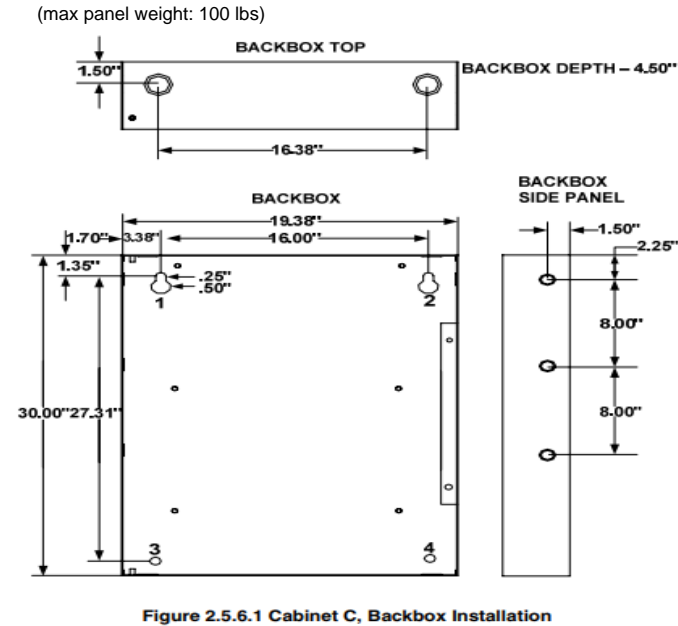
E2.1




NEEDHAM AMP-1												
		Standby Current (amps)					Alarm Current (amps)					
Device Type	QTY	Watts	Current Draw			Total	Qty	Current Draw			Total	
1. System												
GAMEWELL AM-50	1	50	X	0.0490	=	0.0490	0	X	2.2060	=	2.2060	
			X		=		0	X		=	0.0000	
			X		=		0	X		=	0.0000	
2. Speakers												
Total Speaker Watts @ 25Vrms								0.0000	=	0.0000		
Total Speaker Watts @ 70.7Vrms		30						0.4243	=	0.4243		
Total Standby Load					0.0490	Total Alarm Load				2.6303		
0												
Standby Load Current (Amps)						Required Standby Time in Hours						
0.0490 Amps						X	24	=	1.176 AH			
Alarm Load Current (Amps)						Required Alarm Time in Hours						
2.6303 Amps						X	15	=	0.658 AH			
Total Current Load								1.83 AH				
*Multiply by the Derating Factor										=	x 1.20	
Total Ampere Hours Required										2.20 AH		
Recommended Batteries:										7AH BATTERIES		



- ### ATTACH PANEL BACKBOX TO EXISTING WOOD STUDS PER THE BELOW, MIN. 1/2" PENETRATION INTO STUDS/BLOCKING:
- 2.5.6.1 Cabinet C. Backbox Installation**
- Prepare the mounting area by pre-drilling four (4), #10 screws, using the dimensions shown in the figure below. Use four (4), #10 screws.
 - Secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of figure 2.5.6.1.
 - Set the backbox over the two-hole mounting pattern, and hang the backbox over the two hole pattern.
 - Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 in the figure below.
- Note:** Add knobs/rods to the left and right side of the rear panel of the backbox. Do not add knobs/rods in the center or top of the backbox, above the UL-MB-83, behind or below the fasteners. To add large knobs, increase the size of the existing knobs.
- (min panel weight: 100 lbs)
-
- NOTE:** IF PANEL PROTRUDES OVER MAXIMUM FROM WALL, PROVIDE METAL SKIRT FOR PANEL TO FLOOR
- Figure 2.5.6.1 Cabinet C. Backbox Installation**

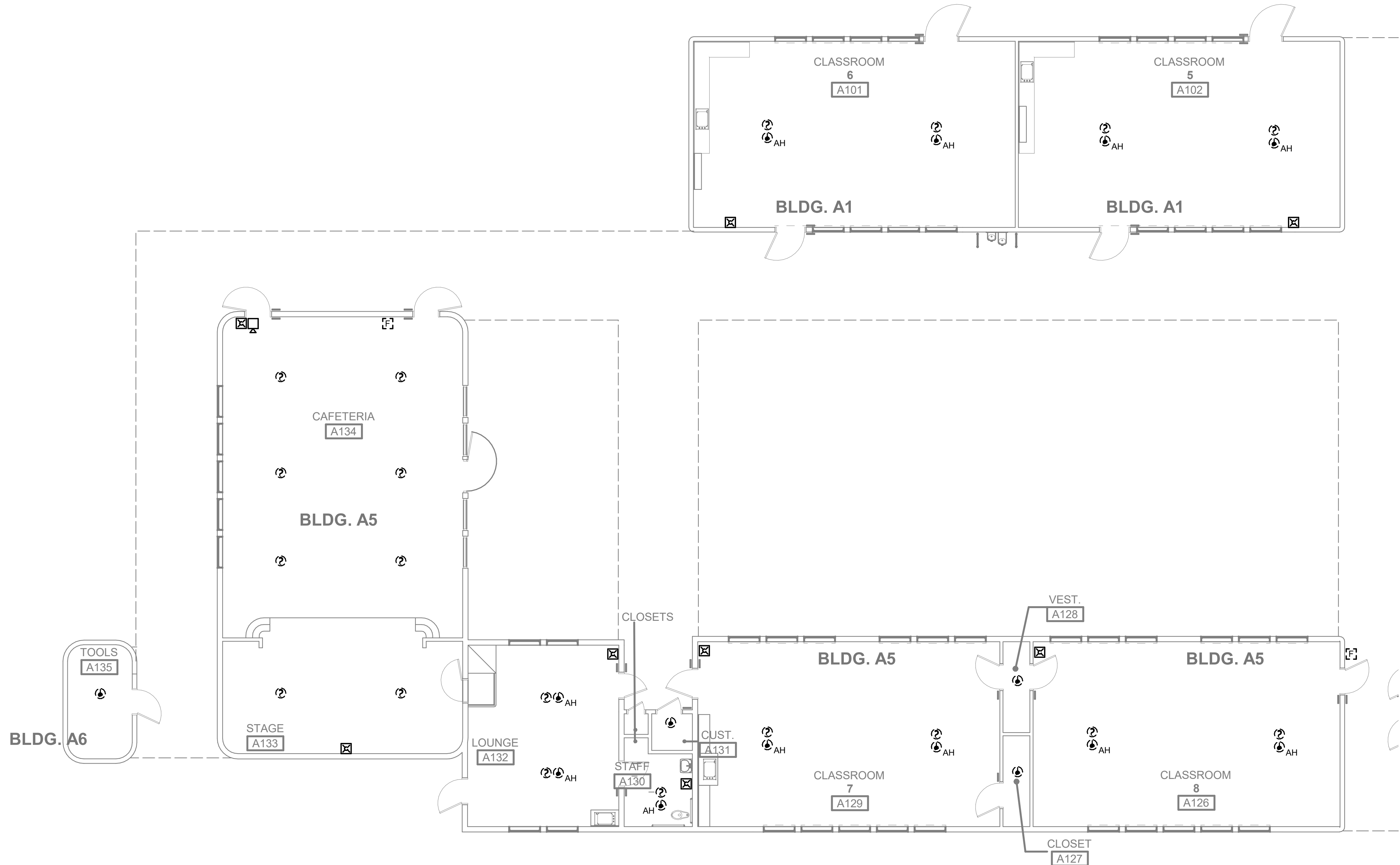


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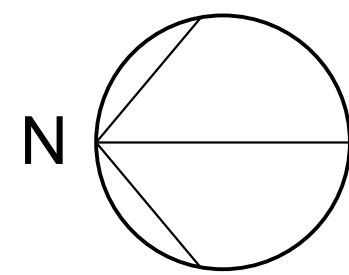
	DESCRIPTION	DATE

FIRE ALARM RISER DIAGRAM & CALCULATIONS

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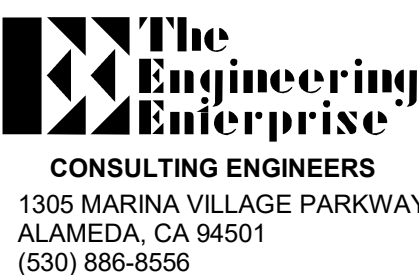
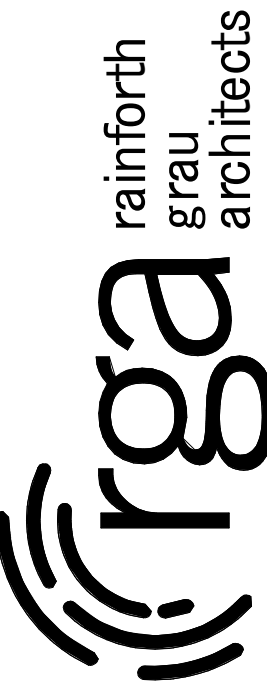
1 FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"



GENERAL SHEET NOTES

- A. TO REMOVE ALL UNUSED DEVICES, CIRCUITRY AND CONDUIT BACK TO SOURCE.
- B. WHEN A DEVICE IS REMOVED FROM AN EXISTING WALL/CEILING, PATCH WALL TO MATCH EXISTING OR NEW FINISH.
- C. WHERE EXISTING FIRE ALARM DEVICES ARE TO BE REMOVED, THE CONTRACTOR SHALL ALSO REMOVE ALL CONDUCTORS SERVING THE DEVICE. ABANDONED CONDUITS AND BOXES CAN BE RE-USED TO PULL NEW CONDUCTORS THROUGH FOR SERVICE DEVICES DOWN STREAM. DO NOT SPLICE IN ABANDONED DEVICE BOXES.
- D. REMOVE ALL UNUSED FIRE ALARM CONTROL PANELS, BOOSTER PANELS AND REMOTE ANNUNCIATORS, RETURN TO DISTRICT.

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DIV. OF THE STATE ARCHITECT
APP: 02-118486 INC:
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NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

Revision

DESCRIPTION	DATE

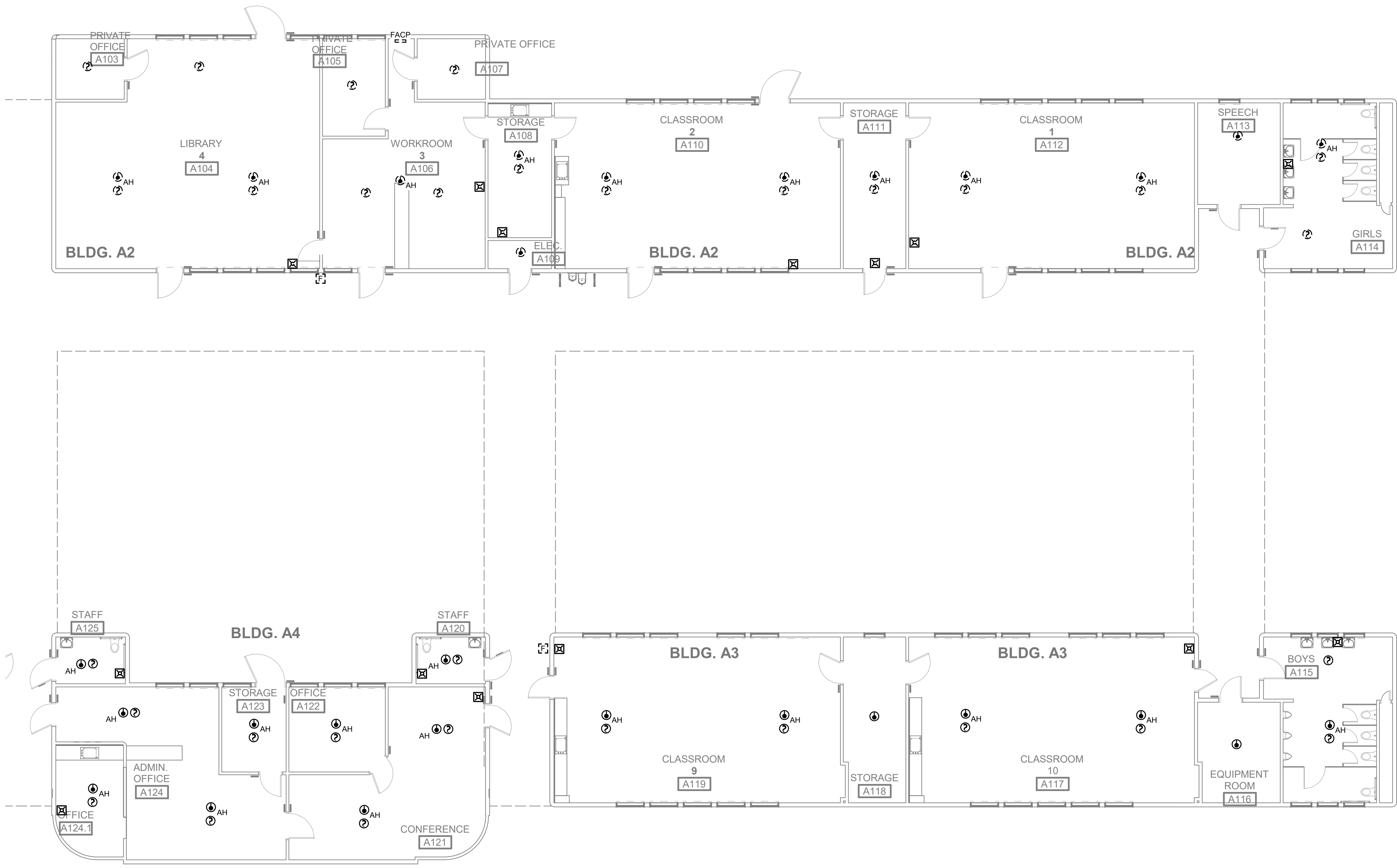
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DEMOLITION FIRE ALARM PLAN

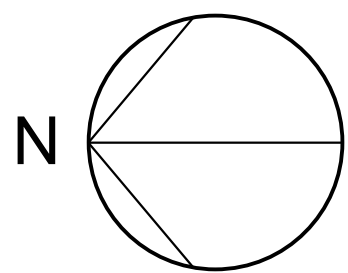
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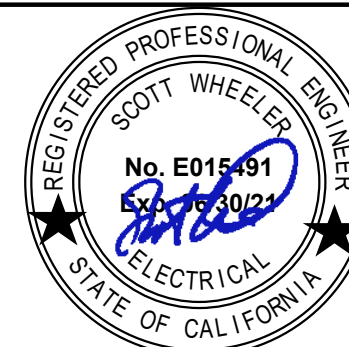
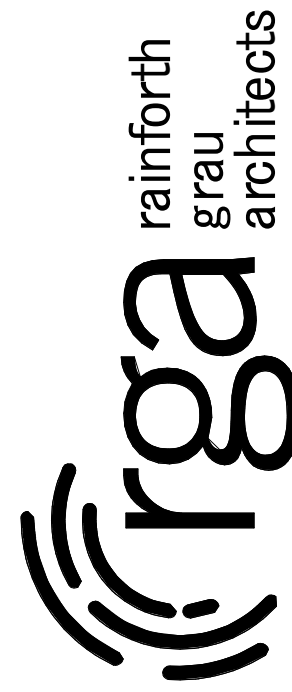
1 FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"



GENERAL SHEET NOTES

- TO REMOVE ALL UNUSED DEVICES, CIRCUITRY AND CONDUIT BACK TO SOURCE.
- WHEN A DEVICE IS REMOVED FROM AN EXISTING WALL/CEILING, PATCH WALL TO MATCH EXISTING OR NEW FINISH.
- WHERE EXISTING FIRE ALARM DEVICES ARE TO BE REMOVED, THE CONTRACTOR SHALL ALSO REMOVE ALL CONDUCTORS SERVING THE DEVICE. ABANDONED CONDUITS AND BOXES CAN BE RE-USED TO PULL NEW CONDUCTORS THROUGH FOR SERVICE DEVICES DOWN STREAM. DO NOT SPLICE IN ABANDONED DEVICE BOXES.
- REMOVE ALL UNUSED FIRE ALARM CONTROL PANELS, BOOSTER PANELS AND REMOTE ANNUNCIATORS, RETURN TO DISTRICT.

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NEEDHAM ELEMENTARY SCHOOL -
FIRE ALARM UPGRADES

LODI UNIFIED SCHOOL DISTRICT
LODI, CA

Revision

DESCRIPTION	DATE

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DEMOLITION FIRE ALARM PLAN

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ED2.1