00 03 00 STAMPS

Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/31/2018
Signature Mamés E. Biyan, Fresident



ADDENDUM, CONSTRUCTION CHANGE DOCUMENTS, DRAWING, DEFERRED APPROVAL WORKSHEET AND TRANSMITTAL MEMO

Project Name/School: Lodi Middle Scho	ool (Lodi Unified So	chool District)	DSA F	ile #: 39	- 50
☐ Change Order #:	Addendum #:		DSA A	pp.02	- 116554
Deferred Approval:	☑ Revision	n 1 (Sub 1)			
1. MATERIALS RECEIVED:					
A. Master: DNE					
B. Copies: —					
C. Print(s) each: —			of sheet(s	s) #(s): 23	
D. Transmittal Letter: ONE			☐ Check	Set Discarded	
Approved Materials:					
2. DIRECTIONS FOR DSA STAFF:					
Send To: Quality Sound Systems		Fax/Scan:			
☐ File:		Copy for File N	eeded:	-	
Please send file to individual listed bei	low:				- 1/1/
Name: David Pattee		Architect S	tructural En	gineer	
Address: 2010 East Fremont Street	С	ity: Stockton	CA	Zip Code: 952)5
Items Sent:				<u>.</u>	
Fax Sent To:		ax #:			
Company:	S	enders Name:			
Phone #:	#	of Pages Faxed:			
Date Sent: 6/21/18 Sender's Ini	itials:	U.S	. Mail 🂢 F	edEx Hand	Deliver
3. REMAINING REQUIREMENTS: Plea	se check boxes be	low that apply.			
⊠ None		Remarks:	11	16	
Additional Information		Scar	1/tec	XX	
Construction Change Documents					
Corrections - Please return the follow this transmittal memo:	ing items with				
The complete, intact, marked-up review One copy and one original of the correct	set.				
Calculations, drawings, and any other re	quested information.				
4) Drawings bearing approval stamps (to a	void re-review).				
NOTES FOR DSA STA	AFF 6/15/	18	DSA AP	PROVAL STAMP	
			A	WEIGHT)	1000
	pproved/Disapproved Not Requ	ulred	, A, , AL		PPICE
FLS J Okimoto Date 6-21-18	pproved/Disapproved/Not Requ	uired	S / 1	90	
ACSDate A	pproved/Disapproved Not Requ	uired	00-11/	554	-18
		-	CIA 116	A LINE OF L	I I V
SCOPE INCREASE - DSA Staff to Issue New I	First Approval Letter				



QS Job No.: 17153E



Date: June 12, 2018

To: Jared Okimoto

Fire Life Safety Officer 1

Division of the State Architect – Sacramento

1102 Q Street, Suite 5200 Sacramento, CA 95811

Subject: Lodi Middle School, Lodi Unified School District

Revision 1, Carbon Monoxide Detection Addition

·

Mr. Okimoto.

DSA File No.: 39-50

Please find the following items included for revision review and approval. The revision consists of change 5 smoke detectors to combination carbon monoxide / smoke detectors in four science classrooms and one library, due to the presence of fuel burning appliances and/or fuel burning HVAC.

DSA Appl. No.: 02-116554

- (1) Signed 23 sheet drawing package. [sheets 1,9,10,16 & 17 are the only sheets affected by the revision]
- (1) Signed product submittal book. [Photoelectric Smoke/CO Detector added to the end of the material list and product information added to the end of the book, item 27.]
- (1) Signed technical specification. [section 2.4.1.1.7. Photoelectric-CO Detector added to page 22]

Please give me a call to discuss any questions you may have regarding the information provided in this revision.

Sincerely,

DAVID J. PATTEE | ENGINEERING

Systems Engineer | NICET #99082, Fire Alarm Systems, Level IV

Bi-Jamar, Inc. dba | QUALITY SOUND 2010 East Fremont Street | Stockton, Ca 95205 Office: 209-948-2104 ext. 1054 | Cell: 209-993-1471

dpattee@qualitysound.net or visit us at www.qualitysound.net

DSA - SAC JUN 1 5 2018

SCOPE OF WORK

This project will replace the existing manual fire alarm system and connection to the unified intercom system throughout the campus. Additionally, all detection and notification installed during the Cafeteria Remodel (DSA# 02-111649) will be replaced according to current code requirements.

The existing EST3 fire alarm control panel (DSA# 02-111649) will be expanded to include voice evacuation and needed addressable data loop capacity. The new fire alarm system will be a complete, fully automatic, addressable

system with voice evacuation throughout the entire campus.

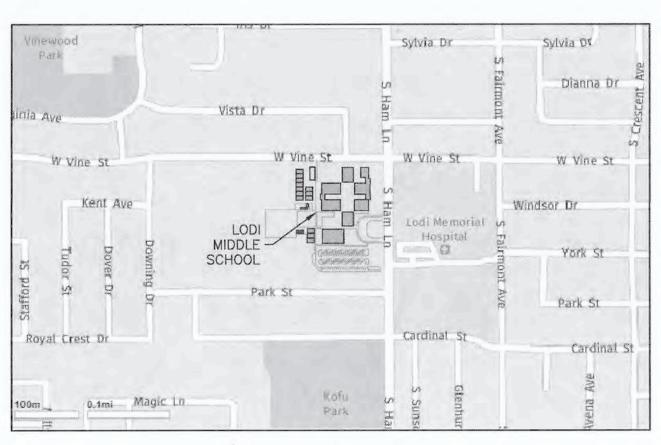
Carbon Monoxide alarms in most classrooms per 2016-CFC, section 915 are not required. Classroom mechanical units are not fuel-burning. Mechanical units for classroom buildings utilize hot water, while portable classrooms utilize electric resistive heating. Combination smoke/carbon monoxide detectors in the science classrooms are provided due to presence of (2) natural gas spigots, per teacher's station in the science classrooms and their possible use with portable Bunsen burners. A combination smoke/carbon monoxide detector is provided in the Library due to a fuel burning HVAC unit serving the library. /2\ The library may be used for instruction, similar to a classroom.

Per DSA IR A-21, QUALITY SOUND, a C-10 licensed contractor, is authorized to design the system within the parameters of their license. Additionally, the installing contractor shall be QUALITY SOUND, IR A-21, 2.2.

BUILDING DATA SCHEDULE

DUILL	TING DATE	CHEDO			
UNIT / BULDING	DESCRIPTION	OCCUPANCY	CONSTRUCTION TYPE	SPRINKLERS 1	PAST DSA APP#
Α	MULI-PURPOSE BUILDING	GROUPS E & A	TYPE V-B	PARTIAL (STAGE ONLY)	24025, 51591, 02-109532, 02-111649
В	ADMINISTRATION, LIBRARY	GROUP E	TYPE V-B	NONE	24025, 02-109532, 02-111649
С	CLASSROOMS	GROUP E	TYPE V-B	NONE	24025, 02-109532, 02-111649
D	CLASSROOMS, RESTROOMS	GROUP E	TYPE V-B	NONE	24025, 02-109532, 02-111649
E	CLASSROOMS	GROUP E	TYPE V-B	NONE	24025, 02-111649
F	CLASSROOMS, RESTROOMS	GROUP E	TYPE V-B	PARTIAL (SEE NOTE BELOW)	29702, 02-102227, 02-103249, 02-109532, 02-111649
PORTABLE 27-29	CLASSROOMS	GROUP E	TYPE V-B	NONE	02-102968, 02-109112, 02-111649
PORTABLE 35-37	CLASSROOMS	GROUP E	TYPE V-B	NONE	69156, 02-111649
PORTABLE 38-40	CLASSROOMS	GROUP E	TYPE V-B	NONE	02-102227, 02-111649
PORTABLE 41-44	CLASSROOMS	GROUP E	TYPE V-B	NONE	02-102968, 02-111649

NOTE: UNIT F HAS EXISTING DOMESTIC WATER SUPPLIED SPRINKLERS IN PROJECT STORAGE ROOMS F3,F4,F5,F6 AND JANITOR ROOM F19 ONLY. THESE SPRINKLERS ARE FED FROM THE DOMESTIC WATER SYSTEM AND HAVE GATE VALVES WITH NO WATER FLOW DEVICES. THIS SYSTEM IS EXISTING FROM THE APPROVED 1967 DESIGN.



N VICINITY MAP SCALE: N/A

> LIDC DEVICE NUMBER - SUPERVISING MODULE LABEL

- APPLIANCE NUMBER

- APPLIANCE NUMBER

CLASSROOM - ROOM NAME A15 — ROOM NUMBER (10'0") — CEILING HEIGHT

L DEVICE NUMBER D=DETECTOR, M=MODULE SLC CIRCUIT NUMBER

ROOM LABEL LEGEND

DEVICE LABEL LEGEND

SHEET 1 NOTES

- 1. The fire alarm system shall conform to the following codes: - 2016 California Building Code (Part 2, Title 24) - 2016 California Electrical Code (Part 3, Title 24)
 - 2016 California Fire Code (Part 9, Title 24) - 2016 NFPA 72 National Fire Alarm Code
- documents and specification, including state fire marshal listing numbers for each component of the system has been approved by DSA.

2. Installation of the systems shall not be started until detailed design

- 3. Upon completion of the 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 Quality Sound. 6. DSA and the Owner shall be notified a minimum of 48 hours prior to the
- 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 lab testing criteria. Approved type of materials shall be identified within the specification within the fire alarm section.

final inspection and /or testing.

than 96" above finished floor.

- Pull Station: 48" to center line of device from finished floor. - Audible: 90" minimum and 100" maximum to top of device above finished
- floor, not less than 6" from ceiling. - Visual and Audible/Visual: 80" to bottom of device and not greater
- 9. 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 of at lease 60 seconds, whichever is greater, in every
- occupiable space within the building. 10. Audible devices shall be speakers which produce a voice evacuation message
- 11. The contractor shall adjust/install all devices to maximize performance and to minimize false alarms.
- 12. 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 feet from each other shall be synchronized.
- 13. Underground and exterior conduits to have watertight fittings and wire to be approval for wet locations.
- 14. All fire alarm wiring shall be FPL or CMR as required for application and in accordance with CEC, 760.154.
- 15. 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, other than to create manufacturer approved T-Tap on SLC circuits, where shown on drawings. All boxes to be sized per CEC.
- 16. Smoke detectors shall not be any closer than 1 foot from fire sprinklers or 3 feet from any supply diffuser. In area of construction or possible damage/contamination on newly installed fire alarm devices shall be covered until that area is ready to be turned over to the owner.
- 17. All fire alarm circuits shall be in conduit above ceilings, under floors and in walls in a neat and protected manor. Exposed conduit must be painted to mach room finish, coordinate final colors with school district prior to installation.
- 18. Fire alarm panel, remotes, and components shall be secured to mounting surfaces per manufacturers specifications. No single device shall exceed the weight of 20 lbs. without special mounting details.
- 19. A dedicated branch circuit shall be provided for fire alarm equipment. This circuit shall be energized from the common use area panel and shall have no 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
- 20. The installing contractor shall provide a record of completion per NFPA 72, Figure 10. 18. 2. 1. 1.

Alarm Circuit Control". Circuit ID to be labeled at fire panel/extenders.

- 21. The installing contractor shall provide system programming for supervisory monitoring per CBC Section 901.6.2.
- 22. Supervisory monitoring shall be tested and verified as sending correct signals in conjunction with final acceptance test.
- 23. Owner shall be responsible for establishing a fire system monitoring contract or provisions.
- 24. "Cut-in" and "gangable" type electrical boxes are not acceptable. Provide as shown in Symbol Legend.
- 25. Fire alarm circuit classes: - IDC = Class-B
 - SLC = Class-B - NAC = Class-B
- 26. Leave the following cable tails: a. 10' at terminal cabinets and control panels
 - b. 25' at terminal boards c. 2' at all devices.

	C	ontro	Alarm I Pan	el			pervis Statio				En Fi	nergei Inctio	ncy ns	
	Actuate Visible and Audible Common Alarm Signal	Actuate Visible and Audible Common Supervisory Alarm Signal	Actuate Visible and Audible Common Trouble Signal	Actuate Visible and Audible CO Alarm Signal	Transmit General Alarm Signal	Transmit Water Flow Alarm Signal	Transmit Supervisory Alarm Signal	Transmit Trouble Signal	Transmit CO Alarm Signal	Actuate Alarm Visual Notification Appliances	Actuate Alarm Audible Notification Appliances	Shutdown Associated Fan (Detection per Building)	Shutdown Multi—Use 'Unit A' Audio Rack	Actuate Carbon Monoxide Alarm Throughout Per NFPA 170, 4—Pulse Temporal Pattern
Carbon Monoxide (CO) Detector 2		~~	~~		~~~	~~~		~~~		~~~	~~~	~~		•
Manual Pull Station	•			}	•				}	•	0		•	
Smoke Detector				{ }	•				}	•	•	•	•	
Heat Detector				{ }	•				}	•	•		•	
Duct Smoke Detector Associated with Fan				}					}			•	0	
Kitchen Hood Suppression System Alarm Signal	•			{ }	•				}	•	0			
Sprinkler System Waterflow Switch Alarm Signal	•			{ }		•			}		0			
Sprinkler System Valve Tamper Switch Supervisory Signal		٠		{ }			•		}					
AC Power Loss			•	}				•	}					
Single Open			•	}				•	}					
Single Ground			•	}				0	}					
Wire-to-Wire Short (SLC)			•	}				•	}					
Wire-to-Wire Short (NAC)				{}				•	3					3

NOTE: ONLY OPERATIONS IN SCOPE OF THIS PROJECT SHOWN. FIRE ALARM SEQUENCE OF OPERATION

SYMBOL	0.	CAL	DIE	IFC	CND
TIMBUI	N	1.41	31 1	1 1 1	7 1 1 1 1 1

SYMBOL/ CABLE	MANUFACTURER	MODEL	BACKBOX	HEIGHT/NOTES	DESCRIPTION	UNIT A QTY	UNIT B	UNIT C	UNIT D QTY	UNIT E	UNIT F QTY	35-37 QTY	PORTABLE 38-44 QTY	27-29 QTY	TO
FACP	Edwards (EST)	EST-3	3-CAB21B	Lowest of 72" A.F.F. © Top of Box	Fire Alarm Control Panel 7165—1657:0186	0	1	0	0	0	0	0	0	0	
	Edwards (EST)	SIGA-UIO6R		Inside FACP	Universal I/O Module Board		1	0		0	0	0		0	+
	Edwards (EST)	SIGA-MCC1 SIGA-IM		On SIGA-UIO6R On SIGA-MP1	Signal Module Isolator Module	0	5 3	0	0	0	0	0	0	0	
		SIGA-CT2		On SIGA-MP1	Dual IDC Module 7300-1657:0121	0	2	0	0	0	0	0	0	0	
	Edwards (EST)	BC-1		Below FACP	Battery Cabinet	0	1	0	0	0	0	0	0	0	+
BPS	Edwards (EST)	BPS10A	surface	-	NAC Booster Power Supply	0	0	0	1	0	2	0	0	1	1
	Edwards (EST)	SIGA-CC1S		Replace Existing CC1	7300-1657:0229	1(E) 	0	0	1(E) 	0	2	1(E) 1		1	+
	Edwards (EST)	CICA 279	4" og dogs %	Module w/ New CC1S	7300-1657:0121	0	1	0	0	0	0	0	0	0	+
F	Edwards (EST)	SIGA-278	4" sq. deep & 1—gang ring	See Height Detail on Sheet 22	Manual Fire Alarm Box 7150-1657:0129	0		0	0	0	0	0	U		1
(3)	Edwards (EST)	SIGA-PS		_	Duct Smoke Detector 7272-1657:0126	1(E)	0	0	0	0	0	0	0	0	
		SIGA-SB		_	Base 7300-1657:0120									4	
	-100	SIGA-DH		-	Duct Detector Housing 3240-1657:0108										
4	Edwards (EST)	SIGA-SD		_	Duct Smoke Detector	1	0	0	0	0	0	0	0	0	T
	Edwards (EST)	SIGA—HRD		See Mounting Details	3242-1657:0223 Heat Detector	3	0	0	3	0	1	0	0	0	+
1	Edwards (EST)	SIGA-SB	4" sq. deep &	on Sheet 22	7270-1657:0333 Base										
	Edwards (ESI)	SIGA-3B	3" O-ring	_	7300-1657:0120										
0	Edwards (EST)	SIGA-PD		See Mounting Details on Sheet 22	Smoke Detector 7272-1657:0331	36	32	12	42	(15)	44	6	14	6	
	Edwards (EST) (F = Sidewall Mou	SIGA-SB	4" sq. deep & 3" O-ring	-	Base 7300-1657:0120		}			1					
o Sear Sear Sear Sear Sear	Edwards (EST)	SIGA-PCD	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	See Mounting Details		0	1	0	0	4	0	0	0	~~~~	*
©00	Edwards (EST)	SIGA-SB	4" sq. deep &	on Sheet 22	7275-1657:0334 Base										
2			3" 0-ring		7300-1657:0120			~~~~~				~~~~		Profession Constitution	1
<u>[M1]</u>	Edwards (EST)	SIGA-CT1	4" sq. deep & 1—gang ring	_	Single IDC Module 7300-1657:0121	4(E)	0	0	0	0	0	0	0	0	
M2	Edwards (EST)	SIGA-CT2	4" sq. deep & 1—gang ring	_	Dual IDC Module 7300—1657:0121	1	0	0	0	0	0	0	0	0	
HT	Edwards (EST)	SIGA-CT1HT	4" sq. deep & 1-gang ring	_	Single IDC Module, High Temp. 7300-1657:0121	4	1	1	3	1	15	3	7	3	
RM	Edwards (EST)	SIGA-CR	4" sq. deep & 1—gang ring	_	Relay Module 7300-1657:0121	1 1(E)	2	1	2	1	2	0	0	0	T
RH	Edwards (EST)	SIGA-CRH	4" sq. deep & 1-gang ring	-	Relay Module, High Power 7300-1657:0121	1	0	0	0	0	0	0	0	0	T
ĪM	Edwards (EST)	SIGA-IM	4" sq. deep &	_	Isolator Module 7300-1657:0121	0	0	0	0	0	0	3	7	3	1
	System Sensor	5602	4" sq. deep &	See Mounting Details	194°F ROR/Fixed Temp. Heat Detector	23	23	4	14	4	24	6	14	6	\dagger
(xx)		(AC = Above Ceiling) (UF = Under Floor) (194 = Ceiling Mnt.)	3" O—ring	on Sheet 22	7270-1653:0167										
(x)	Edwards (EST)	G1RF-VM G1RT-FIRE (x = candela)	4"sq. deep & 1—gang ring 27193—11 (Surface)	See Height Detail on Sheet 22	Strobe, Multi-Candela Trim Plate 7125-1657:0218	7	0	0	1	0	0	0	0	0	
(x)×C	Edwards (EST)	GCF-VM (x = candela)	4"sq. deep	_	Ceiling Strobe, Multi-Candela 7125-1657:0219	0	0	0	1	0	1	0	0	0	
(x) (xW)	Edwards (EST)	G4HFRF-S7VMC		See Height Detail	70V Speaker/Strobe, Multi-Candela	9	0	0	2	0	0	0	0	0	1
	(xW = wattage) Chase Security	(x = candela)	w/ extension ring CSBB 652R (Surface)	on Sheet 22	7320-1657:0211										
(x) C (xW)	Edwards (EST) (xW = wattage)	GCHFWF-S7VMC (x = candela)	4"sq. 2-1/8" deep w/ extension ring	_	Ceiling 70V Speaker/Strobe, Multi-Candela 7320-1657:0211	7	11	6	20	6	15	3	7	3	
WP S (xW)	Edwards (EST) (xW = wattage)	WG4RF-S WG4RTS (Surface Skirt)	74347U	See Height Detail on Sheet 22	25V/70V Speaker, Outdoor Rated 7320-1657:0289	1	2	0	4	2	1	2	2	2	
2	Existing	-	_	_	Sprinkler Waterflow Bell, Existing	1(E)	0	0	0	0	0	0	0	0	
WF	Existing	_		_	Sprinkler Waterflow Switch, Existing	1(E)	0	0	0	0	0	0	0	0	
TS	Owner Furnished	****	_		Sprinkler Tamper Switch	1	0	0	0	0	3	0	0	0	
OSY	Owner Furnished	****		and the second s	Sprinkler OS&Y Valve Tamper Switch	0	1	0	0	0	0	0	0	0	1
EOL	-	_	-	-	End Of Line Resistor	_	-		-	-	-	-	-	-	+
[xx]	Existing	-ton	-	-	Electrical Distribution Panel, Existing	-	. –	-	-	-	-		-	-	+
0	- /## 5 ··· ··	- Number	_	_	Conduit Going Up	_	-	-	-	_	-	-	-	_	+
• ##	(## = Destination		_	16 AWC DED	Conduit Going Down		_	_			-	_		_	+
A B	West Penn West Penn	990S 226		16 AWG, RED	Signaling Line Circuit (SLC) Cable Visual (NAC) Cable	_	_	_	-	-					+
С	West Penn West Penn	225	_	16 AWG, WHITE	Audible (NAC) Cable	_		_	-	_	_	_	_	_	+
F	West Penn West Penn	225	_	16 AWG, BLACK	Initiating Device Circuit (IDC) Cable	_	_		-	-	_	_	_	_	+
X	West Penn West Penn	AQ225		16 AWG, BLACK	(SLC) & (IDC) Cable, Site			_							+
Y	West Penn West Penn	AQ225		14 AWG, BLACK	Visual (NAC) Cable, Site		*****								+
					()					-			-		+

COMPLUT CITE COLLEDINE

CABLE QUANTITIES / WIRE FILL	MINIMUM CONDUIT SIZE
1A,2B,1C,1X,1Z 1A,2B,1X,2Z 1A,2X,1Z 1X,1Z 2A,1B,1C,1Y,1Z 2A,4B,2Y	1" CONDUIT, MINIMUM
1X,2Y,1Z 2A,4B,2C,2Y 2B,2X,2Z 2X,1Y,1Z 2X,1Y,2Z 2X,1Z 2X,2Z 2X,3Z 3X,3Z	1-1/4" CONDUIT, MINIMUM
5X,6Z	2" CONDUIT, MINIMUM

NOTE: ALL CONDUIT SHALL BE 3/4" MINIMUM. THE SCHEDULE ABOVE IS A GUIDE FOR MINIMUM SIZING ACCORDING TO COMMON CABLE QUANTITIES FOUND ON THIS PROJECT. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL CONDUIT DOES NOT EXCEED FILL RATIO OF: SINGLE CABLE (53%), TWO CABLES (31%), THREE OR MORE (40%).

SHEET INDEX

SITE PLAN UNIT-A, DEMOLITION FLOOR PLAN UNITS-B & D. DEMOLITION FLOOR PLANS UNITS-C, E & F, DEMOLITION FLOOR PLANS PORTABLE CLASSROOMS, DEMOLITION FLOOR PLANS UNIT-A, FLOOR PLAN UNIT-A, SECTIONS

9 UNITS-B & D, FLOOR PLANS 10 UNITS-C, E & F, FLOOR PLANS 11 PORTABLE CLASSROOMS, FLOOR PLANS

12 UNITS-A THRU F, ROOF/MECH. PENT. FLOOR PLAN - NORTH 13 UNITS-A THRU F. ROOF/MECH. PENT. FLOOR PLAN - CENTRAL 14 UNITS-A THRU F, ROOF/MECH. PENT. FLOOR PLAN - SOUTH 15 ONE-LINE RISER DIAGRAM, PART 1 of 3 16 ONE-LINE RISER DIAGRAM, PART 2 of 3 17 ONE-LINE RISER DIAGRAM, PART 3 of 3

18 FACP MOUNTING & CABINET DETAILS 19 FACP WIRING DETAILS 20 BOOSTER POWER SUPPLY WIRING DETAILS 21 DEVICE WIRING DETAILS 22 INSTALLATION DETAILS

23 VOLTAGE DROP & BATTERY CALCULATIONS

FILE NO. 39-50 IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES APPL. 02 -116554 AC___ FLS___SS__ DATE 6-21-18

Licensed California Contractor License # 496881 C-7, C-10 Bi-JaMar Inc. dba Quality Sound 2010 E. Fremont St. Stockton, CA 95205 Expiration Date: 8/3/12018

Sheet 1 Of 23 Sheets

Date 01/30/18 Scale SHOWN Drawn LAD Checked DJP Job 17153E

REVISIONS BY

A INITIAL SUBMITTAL DJP 0\01/30/18

CO DETECTION DJP

∧ DSA BACKCHK /1\04/16/18 DJP

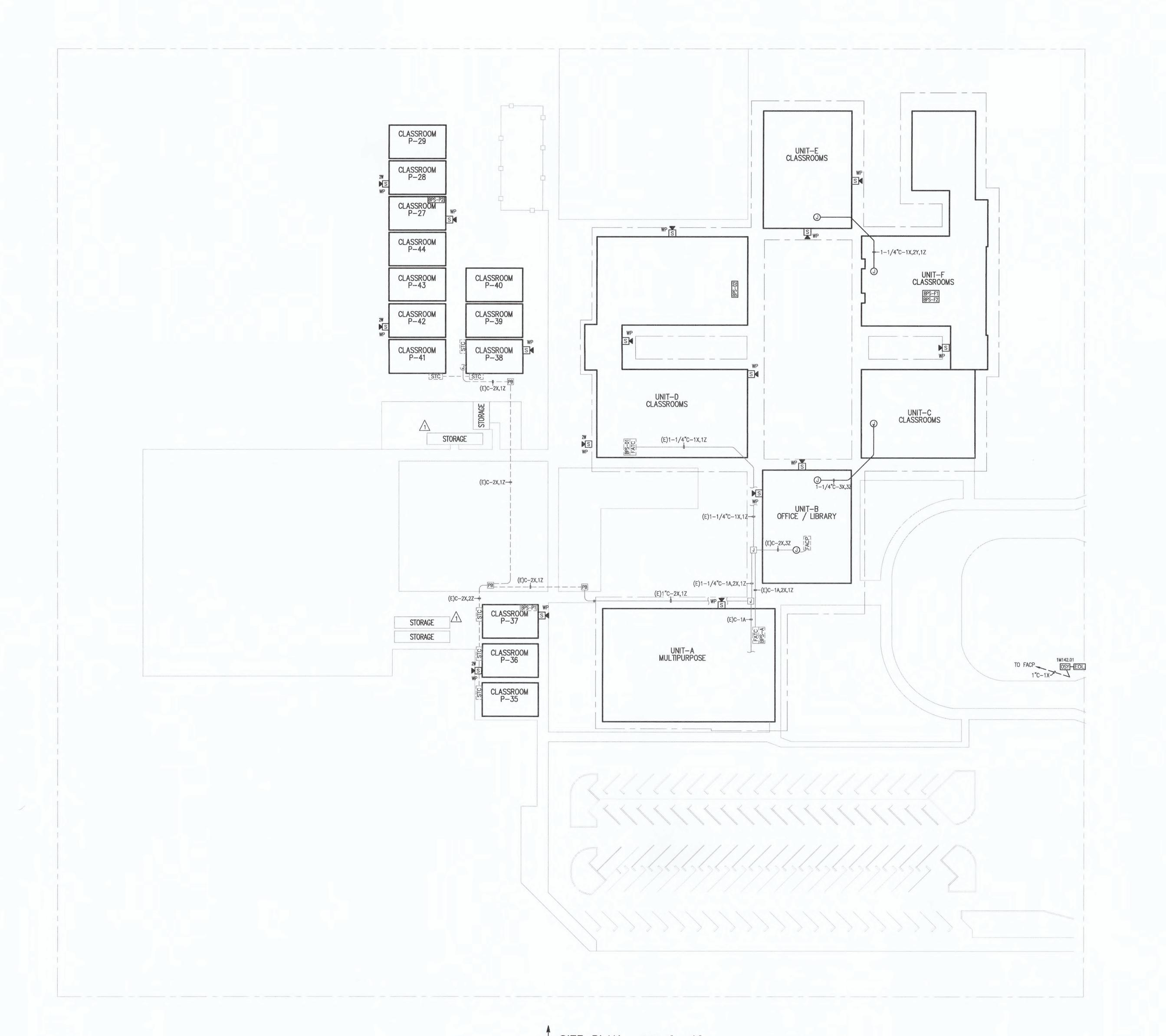
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FILE NO. 39-50
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES APPL. 02 -116554

Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/3/2018
Signature: 8/3/2018

REVISIONS BY

INITIAL SUBMITTAL DJP

O1/30/18

DSA BACKCHK
O4/16/18

CO DETECTION
DJP

CO DETECTION
DJP

Date 01/30/18 Scale SHOWN Drawn LAD Checked DJP

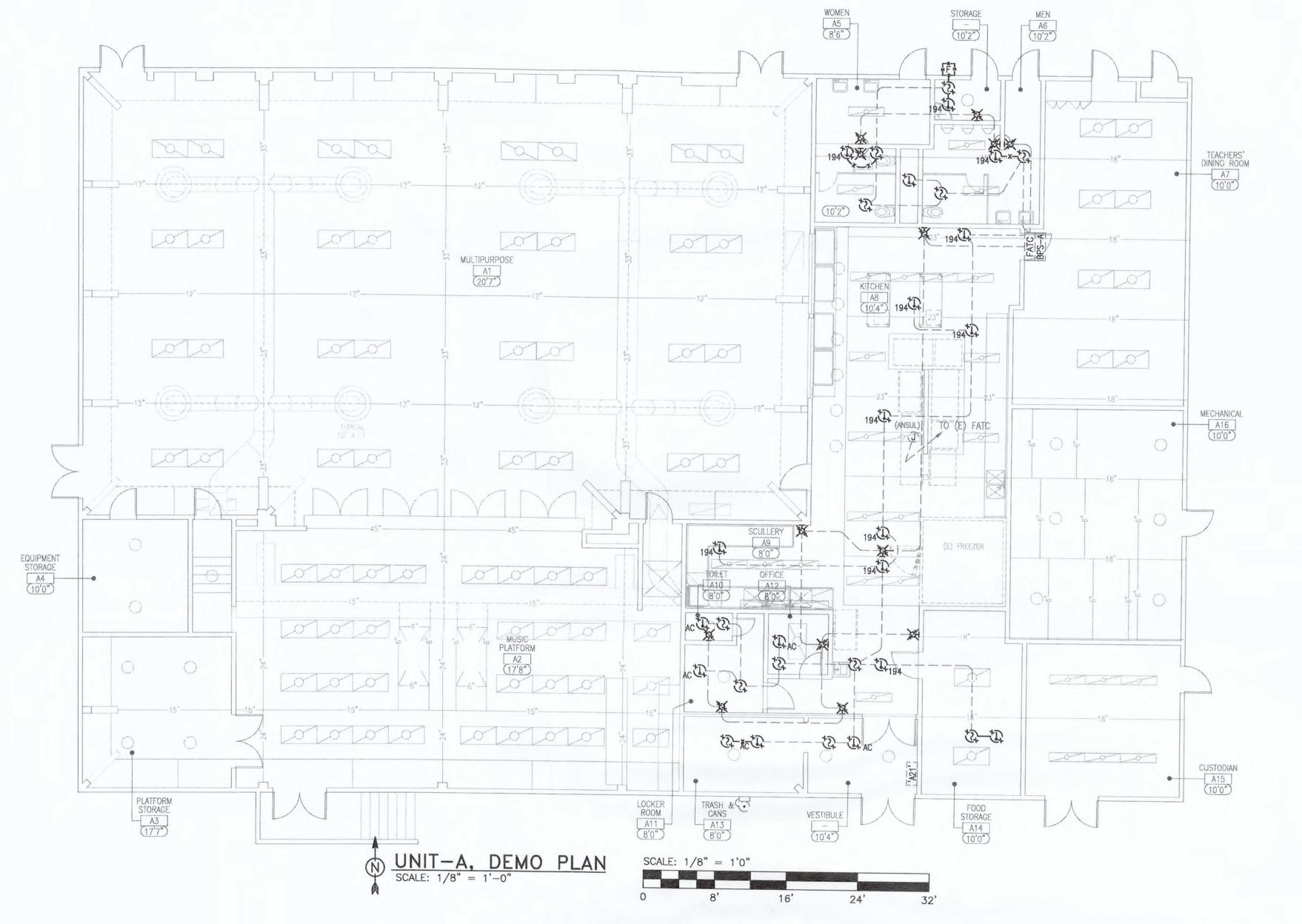
Sheet 2

REFER TO SHEET 1 NOTES FOR GENERAL REQUIREMENTS

1. SYMBOLS ON THE FLOOR PLANS THAT ARE LIGHT IN COLOR AND DASHED ARE EXISTING. SYMBOLS THAT ARE BOLD WITH x's ARE TO BE REMOVED.

2. CONDUIT THAT IS LIGHT IN COLOR & DASHED IS EXISTING AND CAN BE REUSED IN PLACE.

3. EXTERIOR MANUAL PULL STATIONS ARE TO BE REMOVED AND PROVIDED WITH AN APPROPRIATE COVER BY THE ELECTRICAL



EXISTING ARCH. KEY

WOOD STUD WALL

CEALING BEAM & DEPTH

GYPSUM CEILING

EXPOSED DUCT/SUPPLY

RETURN GRILL

FILE NO. 39-50 IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES APPL. 02 -116554 AC___ FLS_S__ SS__ DATE 6-21-18

Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/3/12018
Signature James E. Bryan, Freedent

Sheet 3

[00]

Date 01/30/18

Scale SHOWN

Drawn LAD

Checked DJP

Job 17153E

INITIAL SUBMITTAL DJP

O1/30/18

DJP

O4/16/18

DJP

CO DETECTION DJP

SHEET 4 NOTES

REFER TO SHEET 1 NOTES FOR GENERAL REQUIREMENTS

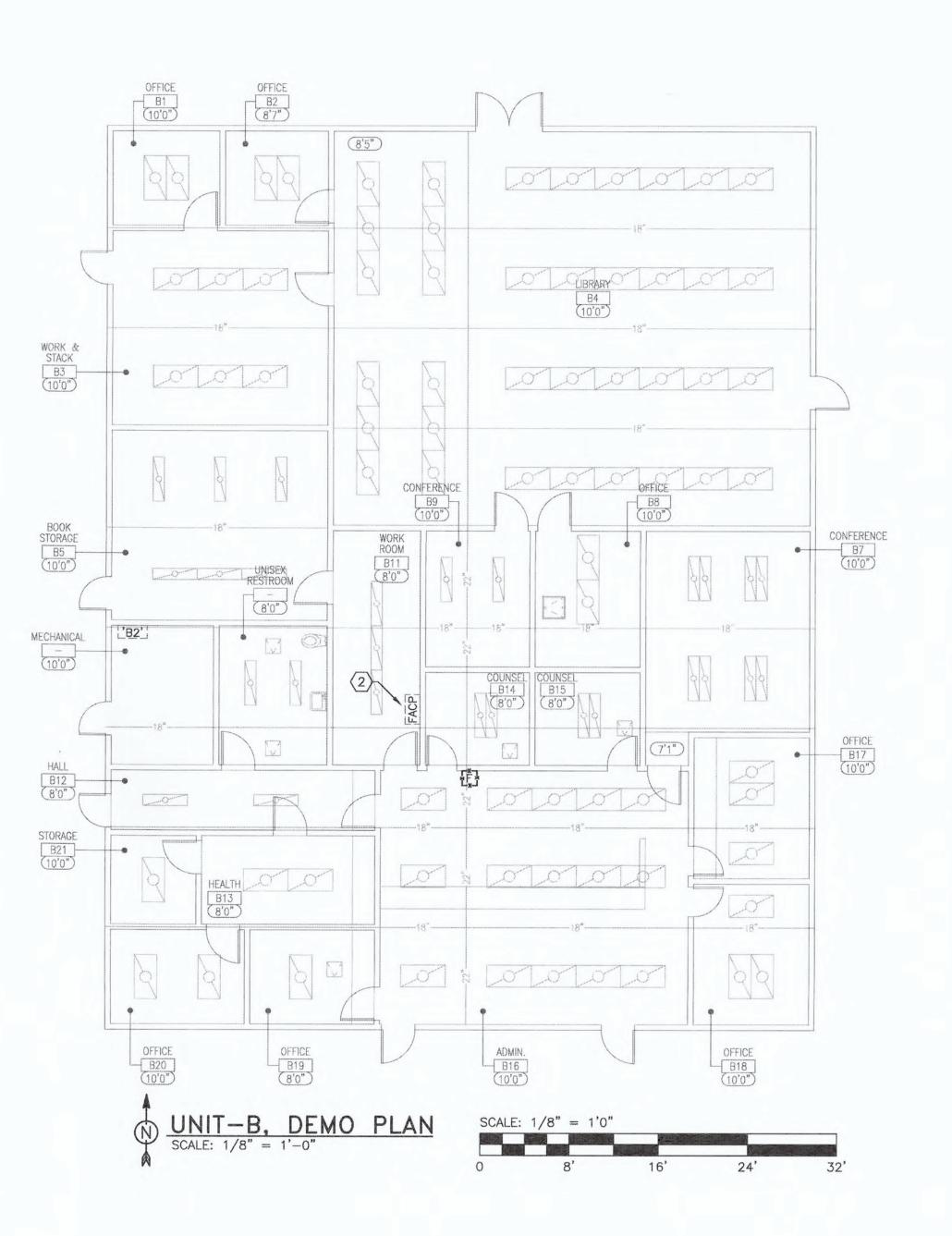
- 1. SYMBOLS ON THE FLOOR PLANS THAT ARE LIGHT IN COLOR AND DASHED ARE EXISTING. SYMBOLS THAT ARE BOLD WITH x's
- ARE TO BE REMOVED.

 CONDUIT THAT IS LIGHT IN COLOR & DASHED IS EXISTING AND CAN BE REUSED IN PLACE.

 EXTERIOR MANUAL PULL STATIONS ARE TO BE REMOVED AND PROVIDED WITH AN APPROPRIATE COVER BY THE ELECTRICAL CONTRACTOR.

SHEET 4 KEYED NOTES

- 1 REMOVE EXISTING OBSOLETE POWER SUPPLY AND REPLACE WITH NEW AS INDICATED ON INSTALLATION FLOOR PLANS.
- REMOVE EXISTING EST3 3-CAB7B BACKBOX AND REPLACE WITH 3-CAB21B BACKBOX. MOUNT THE ENCLOSURE WITH THE TOP OF THE CABINET 72" ABOVE THE FINISHED FLOOR OR CENTER THE CABINET AT 63", WHICHEVER IS LOWER.



FILE NO. 39-50

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES APPL. 02 -116554 AC____ FLS_____ SS___ DATE 6-21-18

Licensed California Contractor
License # 496861 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/31/2018
Signature American President Sheet 4 Of 23 Sheets

REVISIONS BY

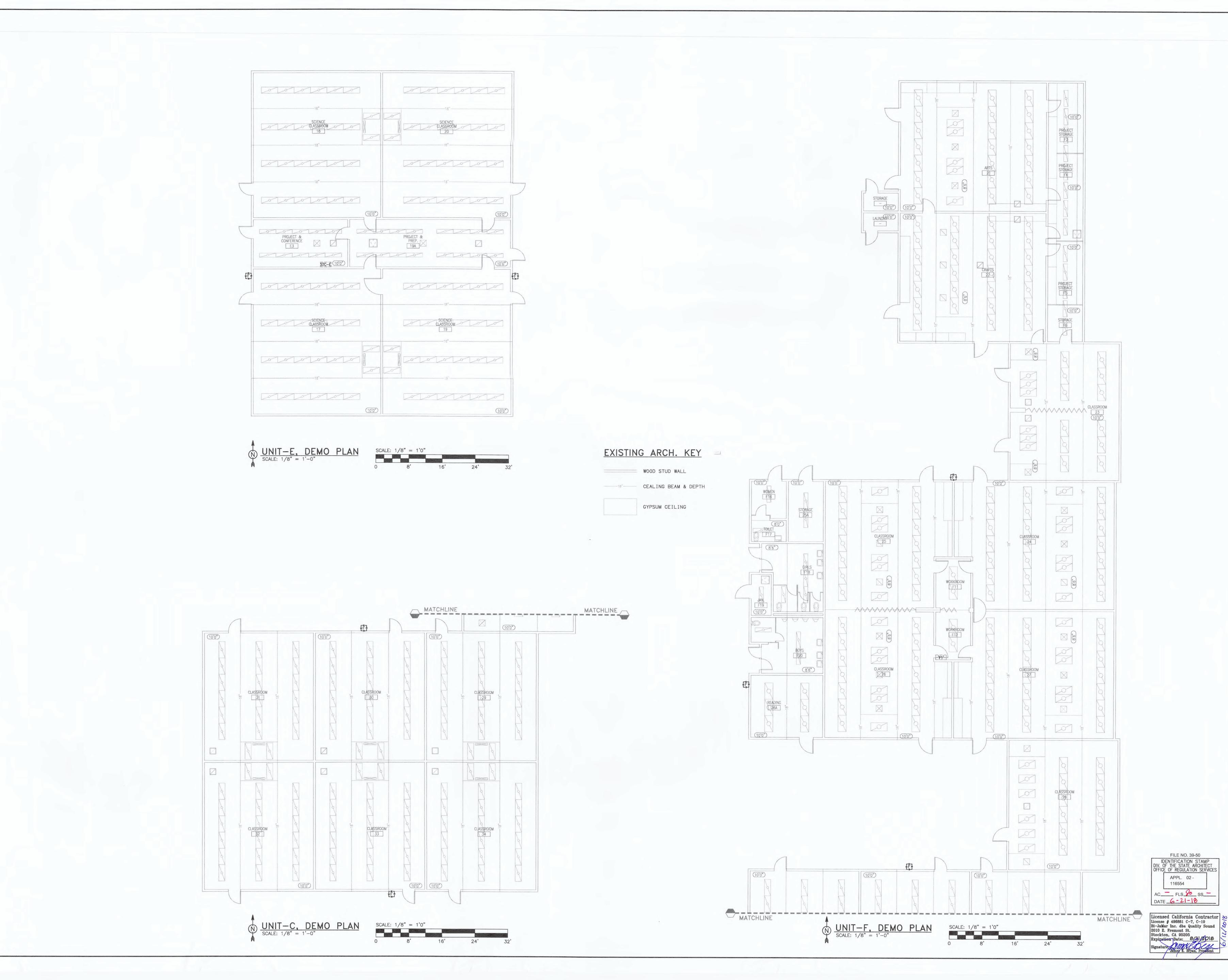
NITIAL SUBMITTAL DJP

CO DETECTION DJP

UNITS-B & D DEMOLITION FLOOR PLANS

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP



NITIAL SUBMITTAL DJP

DSA BACKCHK
04/16/18

CO DETECTION
06/12/18

DJP

REVISIONS BY

SYSTEMS INTEGRATION
DIVISION OF BI-JAMAR, INC.
2010 East Fremont St., Stockton, CA 95205
Stockton: 209-948-2104

SYSTEMS INT SYSTEMS INT DIVISION OF BI-2010 East Fremont St Stockton: 20

UNITS-C, E & F DEMOLITION FLOOR PLANS

ALARM SYSTEM UPGRADE

FIRE

LODI MIDDLE SCHOOL
LODI UNIFIED SCHOOL DISTRICT
945 SOUTH HAM LANE,
LODI, CA 95242

Date 01/30/18

Scale SHOWN

Drawn LAD

Checked D.IP

Drawn LAD
Checked DJP
Job 17153E
Sheet 5

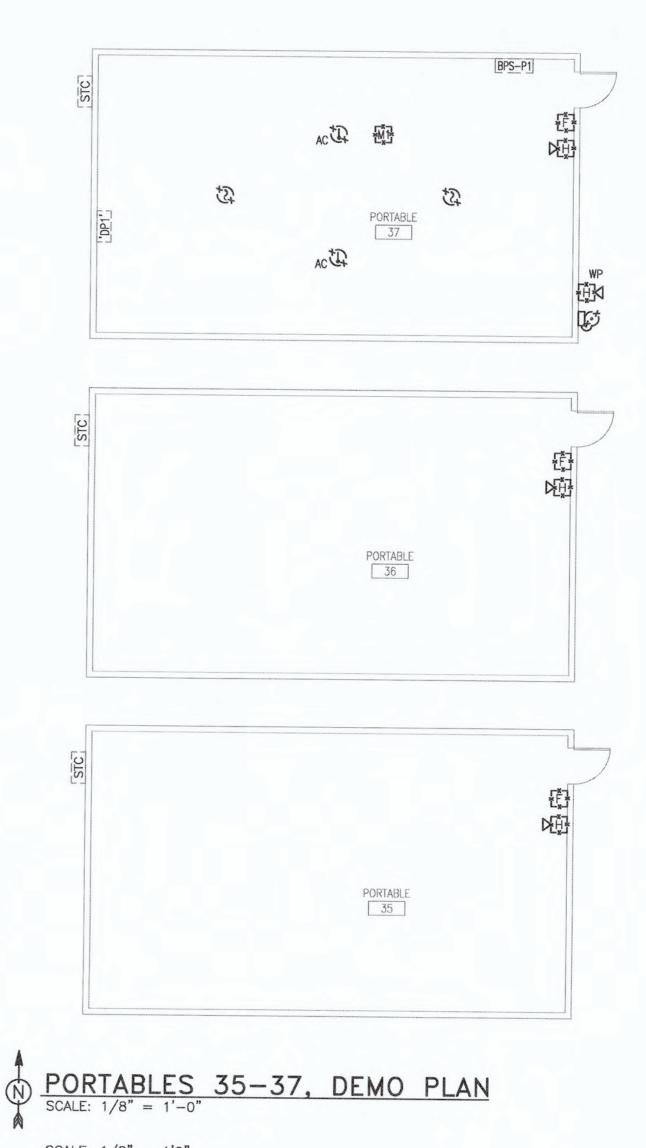
of 23 sh

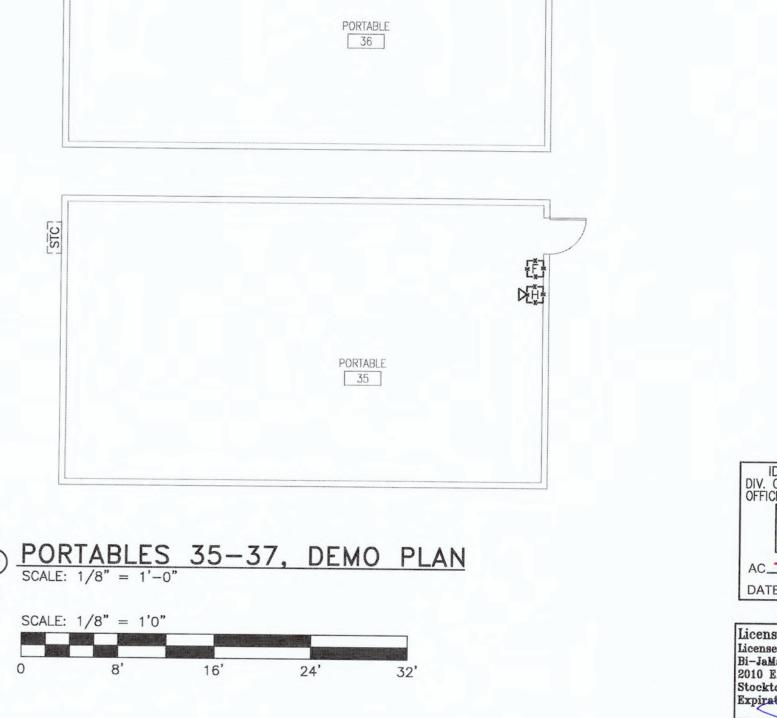
SHEET 6 NOTES

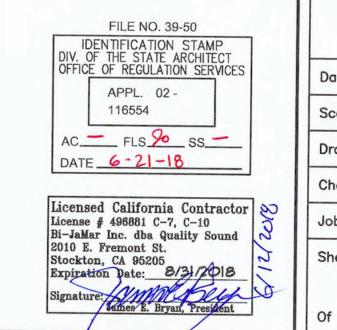
- **REFER TO SHEET 1 NOTES FOR GENERAL REQUIREMENTS**
- SYMBOLS ON THE FLOOR PLANS THAT ARE LIGHT IN COLOR AND DASHED ARE EXISTING. SYMBOLS THAT ARE BOLD WITH x's ARE TO BE REMOVED.
 CONDUIT THAT IS LIGHT IN COLOR & DASHED IS EXISTING AND CAN BE REUSED IN PLACE.
 EXTERIOR MANUAL PULL STATIONS ARE TO BE REMOVED AND PROVIDED WITH AN APPROPRIATE COVER BY THE ELECTRICAL CONTRACTOR.

SHEET 6 KEYED NOTES

1 REMOVE EXISTING OBSOLETE POWER SUPPLY AND REPLACE WITH NEW AS INDICATED ON INSTALLATION FLOOR PLANS.







DJP

DSA BACKCHK
04/16/18

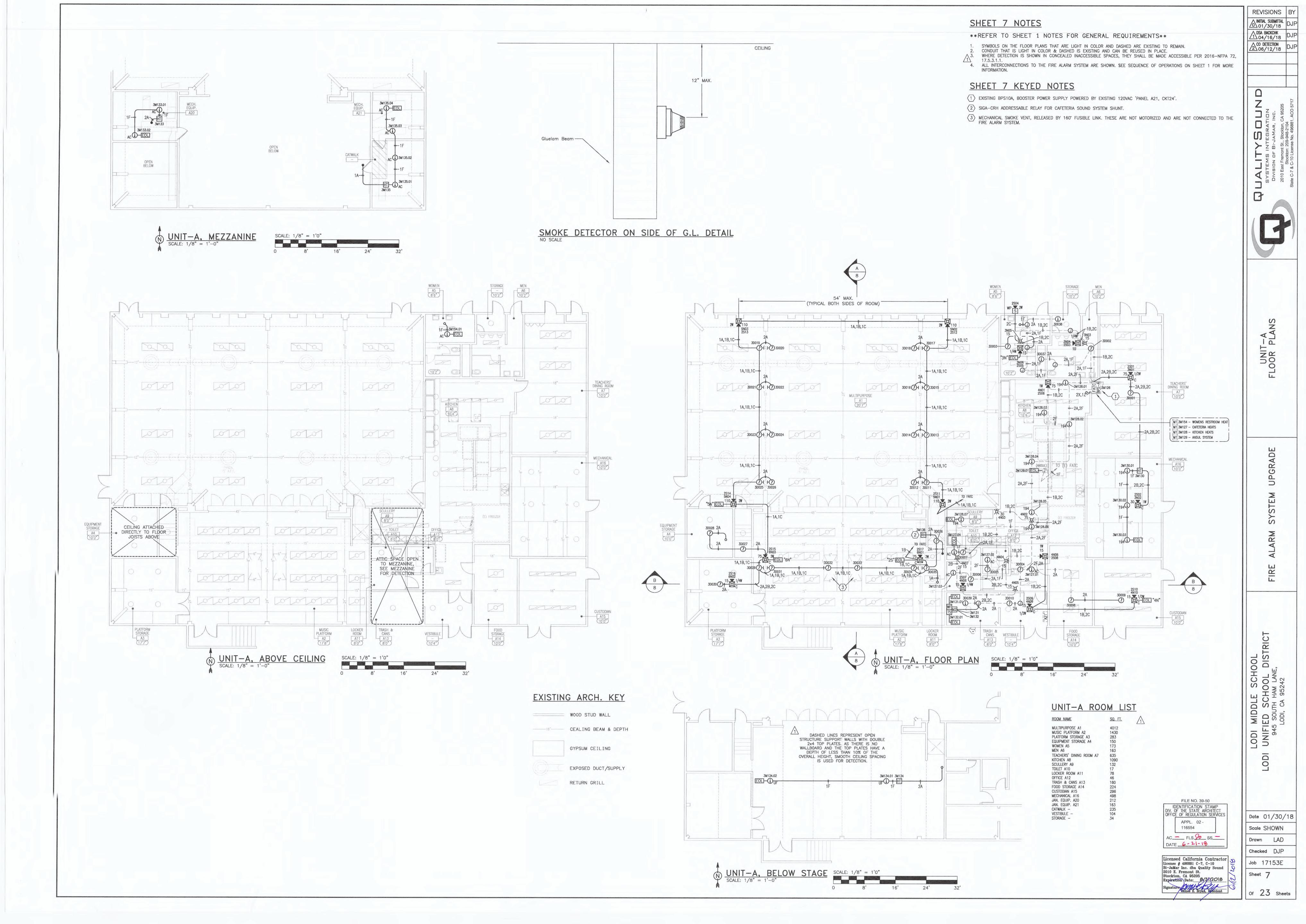
CO DETECTION
06/12/18

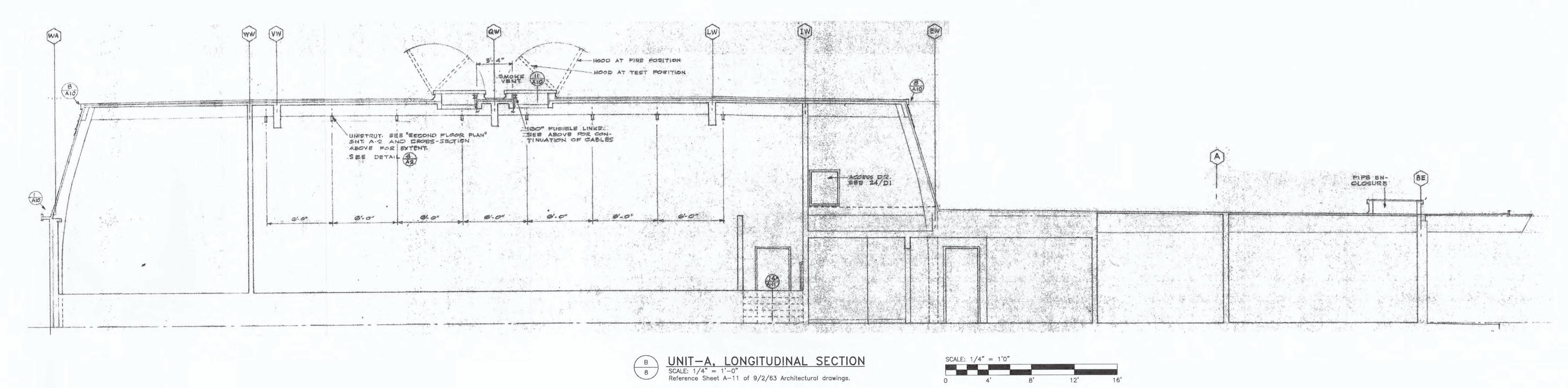
DJP

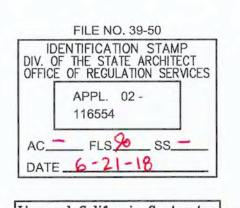
Date 01/30/18 Scale SHOWN Drawn LAD

9

Checked DJP Job 17153E Sheet 6







Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/3/2018
Signature: 48688 E. Bryan, President

ONITIAL SUBMITTAL DJP

O1/30/18

DJP

O4/16/18

C0 DETECTION
O6/12/18

DJP

Z

DIVISION OF BI-JAMAR, INC.

UNIT-A SECTIONS

SYSTEM UPGRADE

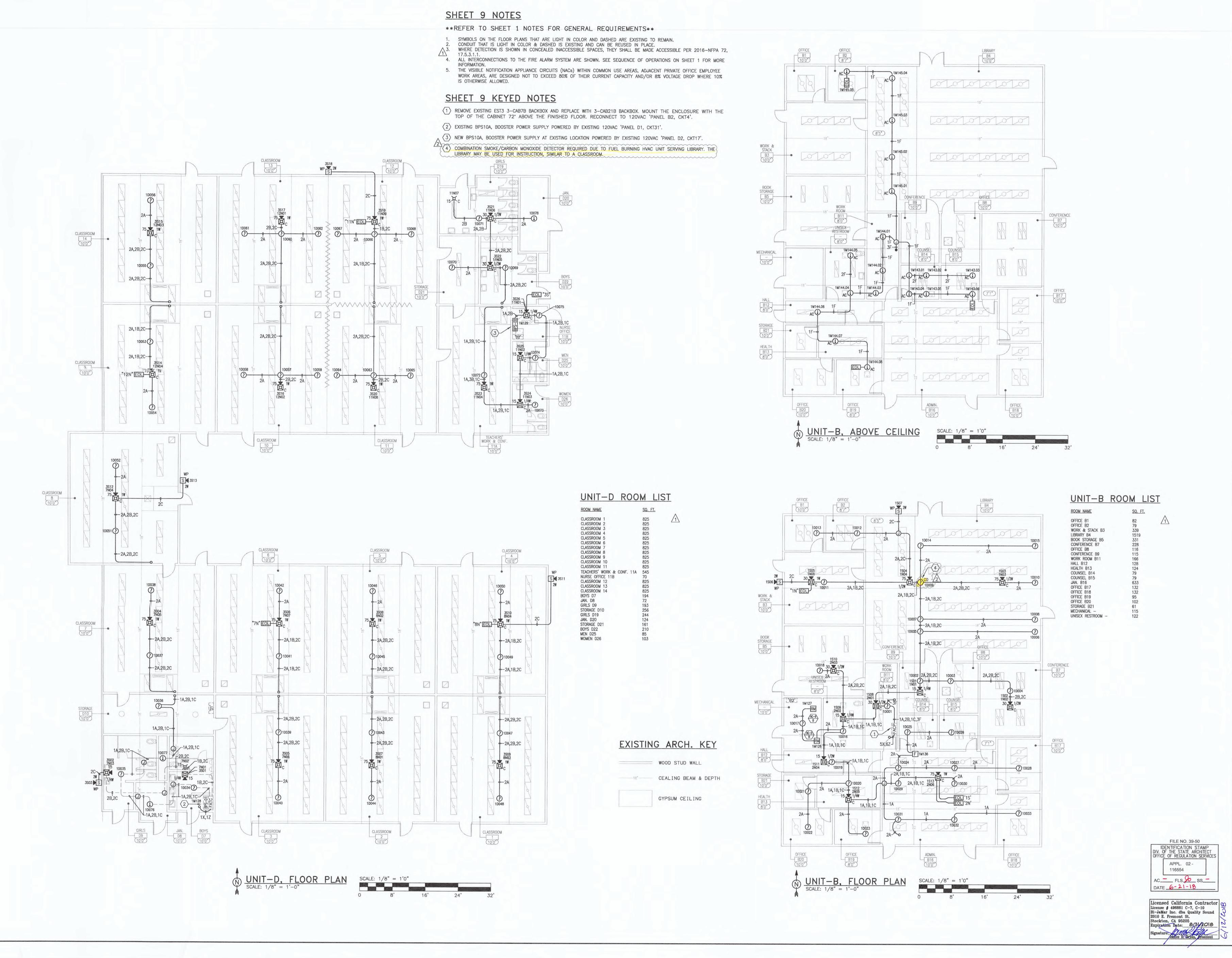
LODI MIDDLE SCHOOL
LODI UNIFIED SCHOOL DISTRICT
945 SOUTH HAM LANE,
LODI, CA 95242

Date 01/30/18
Scale SHOWN
Drawn LAD
Checked DJP

Job 17153E

Sheet 8

Of 23 Sheets



REVISIONS BY NITTAL SUBMITTAL DJP ______DSA_BACKCHK 04/16/18 CO DETECTION DJP

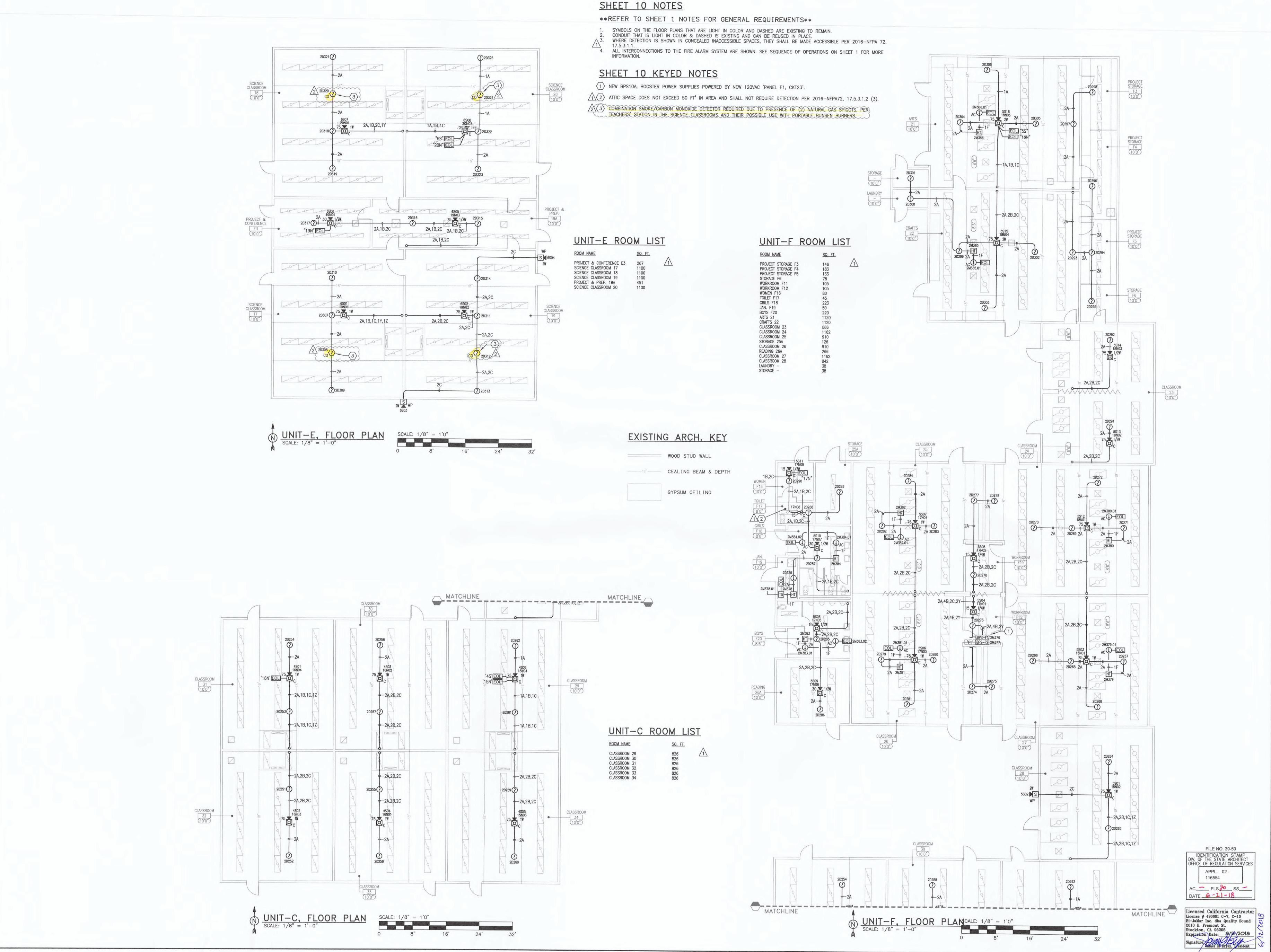
UNITS-FLOOR

IQO.

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP

Sheet Q Of 23 Sheets



DSA BACKCHK 04/16/18 CO DETECTION 06/12/18

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP Sheet 10

SHEET 11 NOTES

REFER TO SHEET 1 NOTES FOR GENERAL REQUIREMENTS

SYMBOLS ON THE FLOOR PLANS THAT ARE LIGHT IN COLOR AND DASHED ARE EXISTING TO REMAIN.

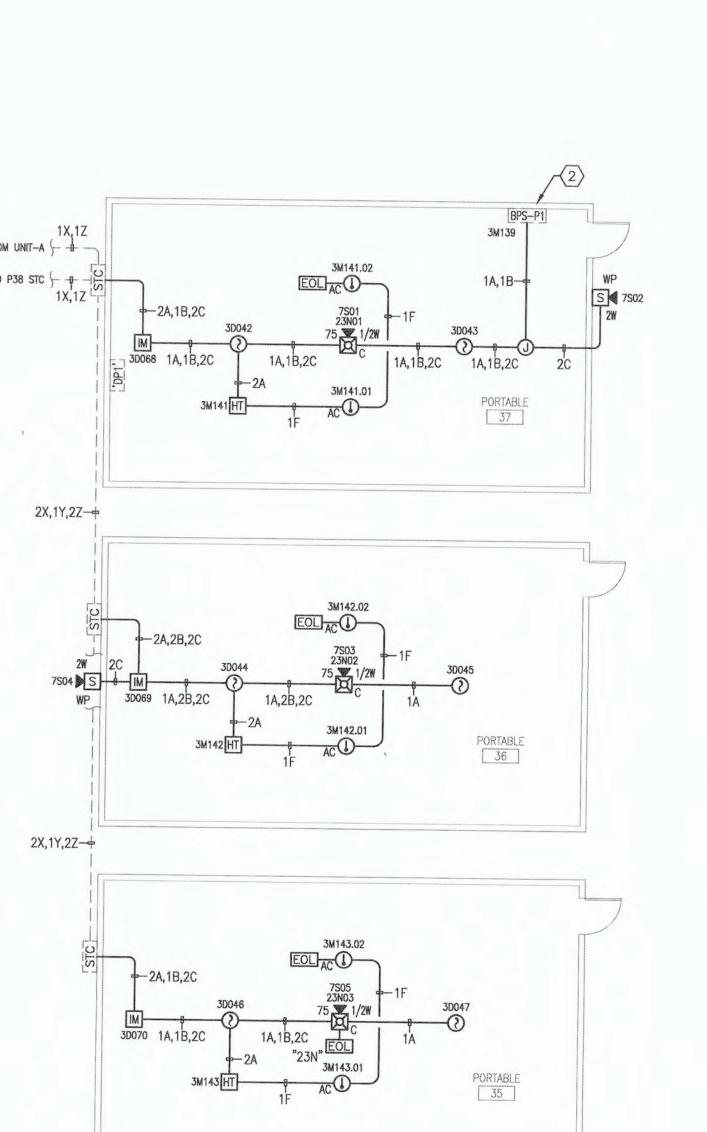
CONDUIT THAT IS LIGHT IN COLOR & DASHED IS EXISTING AND CAN BE REUSED IN PLACE.

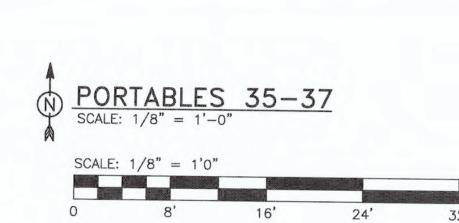
WHERE DETECTION IS SHOWN IN CONCEALED INACCESSIBLE SPACES, THEY SHALL BE MADE ACCESSIBLE PER 2016-NFPA 72, 17.5.3.1.1. ALL INTERCONNECTIONS TO THE FIRE ALARM SYSTEM ARE SHOWN. SEE SEQUENCE OF OPERATIONS ON SHEET 1 FOR MORE

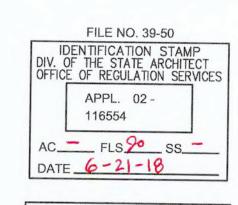
SHEET 11 KEYED NOTES

1 NEW BPS10A, BOOSTER POWER SUPPLY AT EXISTING LOCATION POWERED BY EXISTING 120VAC 'PANEL P27, CKT2'.

2 EXISTING BPS10A, BOOSTER POWER SUPPLY POWERED BY EXISTING 120VAC 'PANEL DP1, CKT11'.







Checked DJP Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/31/2018
Signature: ***
Signature: **
Signature: ***
Signature: **
Signature: ***
Signature: **
Signature: ***
Signature: ***
Signature: ***
Signature: ***
Sig Sheet 11

DSA BACKCHK 04/16/18 DJF 200 DETECTION DJF

Date 01/30/18 Scale SHOWN Drawn LAD

Job 17153E

001/30/18 D.

DSA BACKCHK D.

104/16/18 D.

CO DETECTION D.

206/12/18 D.

Date 01/30/18

Scale SHOWN Drawn LAD Checked DJP Job 17153E

Sheet 12 Of 23 Sheets

NITIAL SUBMITTAL DJP

O1/30/18

DSA BACKCHK
O4/16/18

CO DETECTION
O6/12/18

DJP

ALITYBOLDO BYSTEMS INTEGRATION DIVISION OF BI-JAMAR, INC. 2010 East Fremont St., Stockton, CA 95205

DIVISION STEN DIVISION STEP STEP

NTHOUSE CENTRAL

PARTIAL FLOOR PLAN -

FIRE ALARM SYSTEM UPGRADE

LODI UNIFIED SCHOOL DISTRICT 945 SOUTH HAM LANE, LODI, CA 95242

Date 01/30/18
Scale SHOWN
Drawn LAD

Checked DJP

Job 17153E

Sheet 13

INITIAL SUBMITTAL DJP

O1/30/18

DJP

O4/16/18

C0 DETECTION
O6/12/18

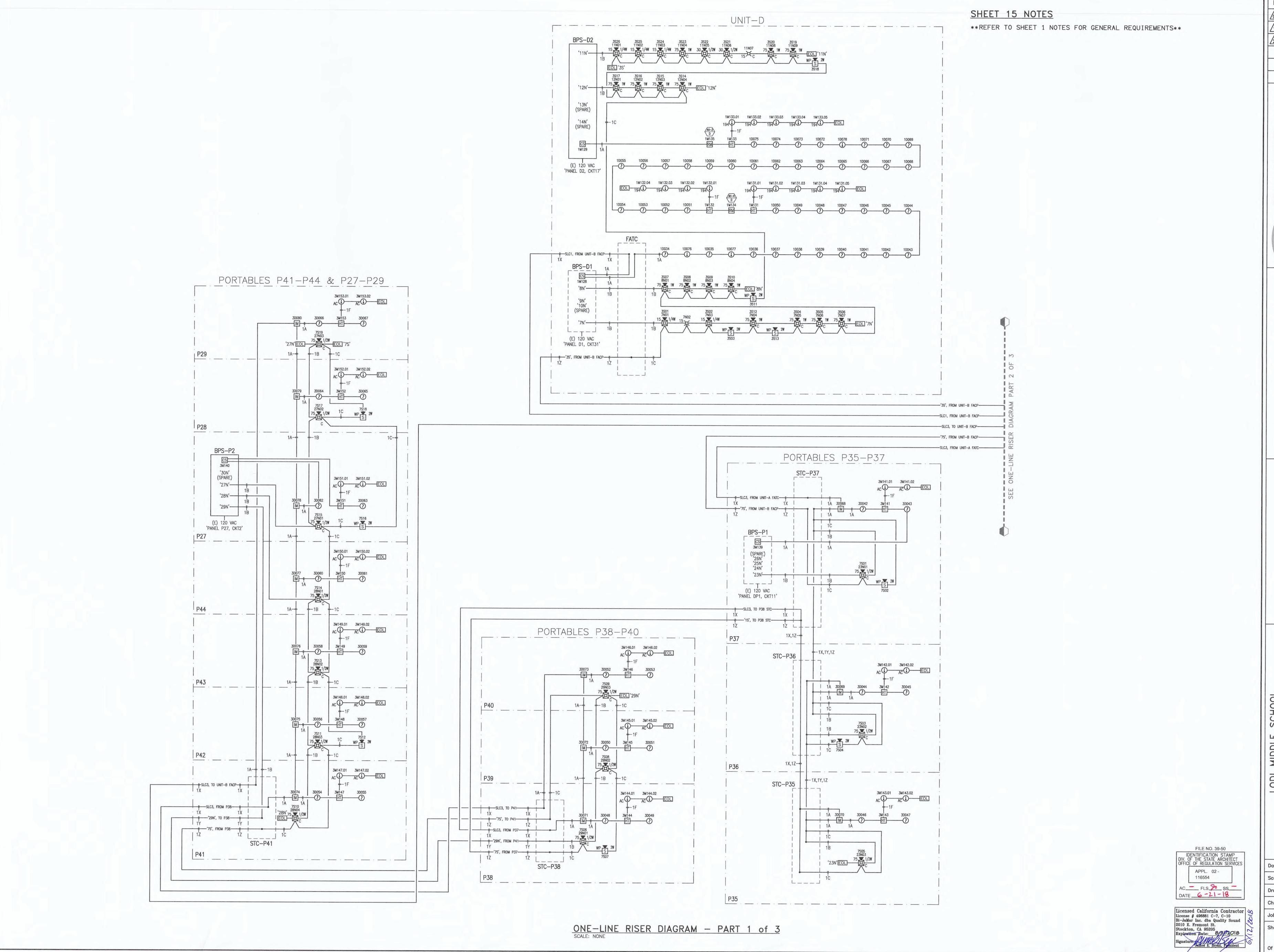
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ROOF PAR

Lobi

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP Sheet 14



REVISIONS BY

INITIAL SUBMITTAL
01/30/18

DJP

DSA BACKCHK
04/16/18

CO DETECTION
06/12/18

DJP

DIAGRAM RISER

LODI

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP Sheet 15

LODI MIDDLE SCHOOL

I UNIFIED SCHOOL DISTRICT
945 SOUTH HAM LANE,
LODI, CA 95242 LODI

REVISIONS BY

O1/30/18

DSA BACKCHK
04/16/18

CO DETECTION 06/12/18

Date 01/30/18 Scale SHOWN Drawn LAD Checked DJP

DATE 6-21-18 Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/3/12018
Signature: Signature Bryan, Fresident Job 17153E Sheet 16

FILE NO. 39-50

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

APPL. 02 -116554

AC____ FLS____ SS___

ONE-LINE RISER DIAGRAM - PART 2 of 3
SCALE: NONE

REVISIONS BY

INITIAL SUBMITTAL DJP

O1/30/18

DJP

O4/16/18

C0 DETECTION
O6/12/18

DJP

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP Sheet 17

REVISIONS BY

INITIAL SUBMITTAL DJP

DSA BACKCHK
04/16/18

CO DETECTION
206/12/18

DJP

SYSTEMS INTEGRATION
DIVISION OF BI-JAMAR, INC.
2010 East Fremont St., Stockton, CA 95205
Stockton: 209-948-2104

FACP MOUNTING & CABINET DETAILS

RE ALARM SYSTEM UPGRAD

LODI MIDDLE SCHOOL

LODI UNIFIED SCHOOL DISTRICT
945 SOUTH HAM LANE,
LODI, CA 95242

Date 01/30/18
Scale SHOWN

Drawn LAD

Checked DJP

Job 17153E

Sheet 18

FILE NO. 39-50

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES

APPL. 02116554

AC_____ FLS_90__ SS____
DATE__6-21-18

Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/3/2018
Signature: American E. Bryen, President

"FACP" WIRING DETAIL
SCALE: NONE

REVISIONS BY

| NITTAL SUBMITTAL DJP |
| O1/30/18 DJP |
| DSA BACKCHK DJP |
| C0 DETECTION DJP |
| O6/12/18 DJP |

EALITYSOLD D

SYSTEMS INTEGRATION
DIVISION OF BI-JAMAR, INC.
2010 East Fremont St., Stockton, CA 95205
Stockton: 209-948-2104
State C-7 & C-10 License No. 496881, ACO 5717

DIVISION
State C-7 & C-1

FACP RING DETAILS

IRE ALARM SYSTEM UPGRADE

ODI UNIFIED SCHOOL DISTRICT
945 SOUTH HAM LANE,
LODI, CA 95242

Date 01/30/18
Scale SHOWN
Drawn LAD

Checked DJP
Job 17153E
Sheet 19

REFER TO SHEET 1 NOTES FOR GENERAL REQUIREMENTS

INITIAL SUBMITTAL DJP

O1/30/18

DJP

O4/16/18

C0 DETECTION
O6/12/18

DJF

REVISIONS BY

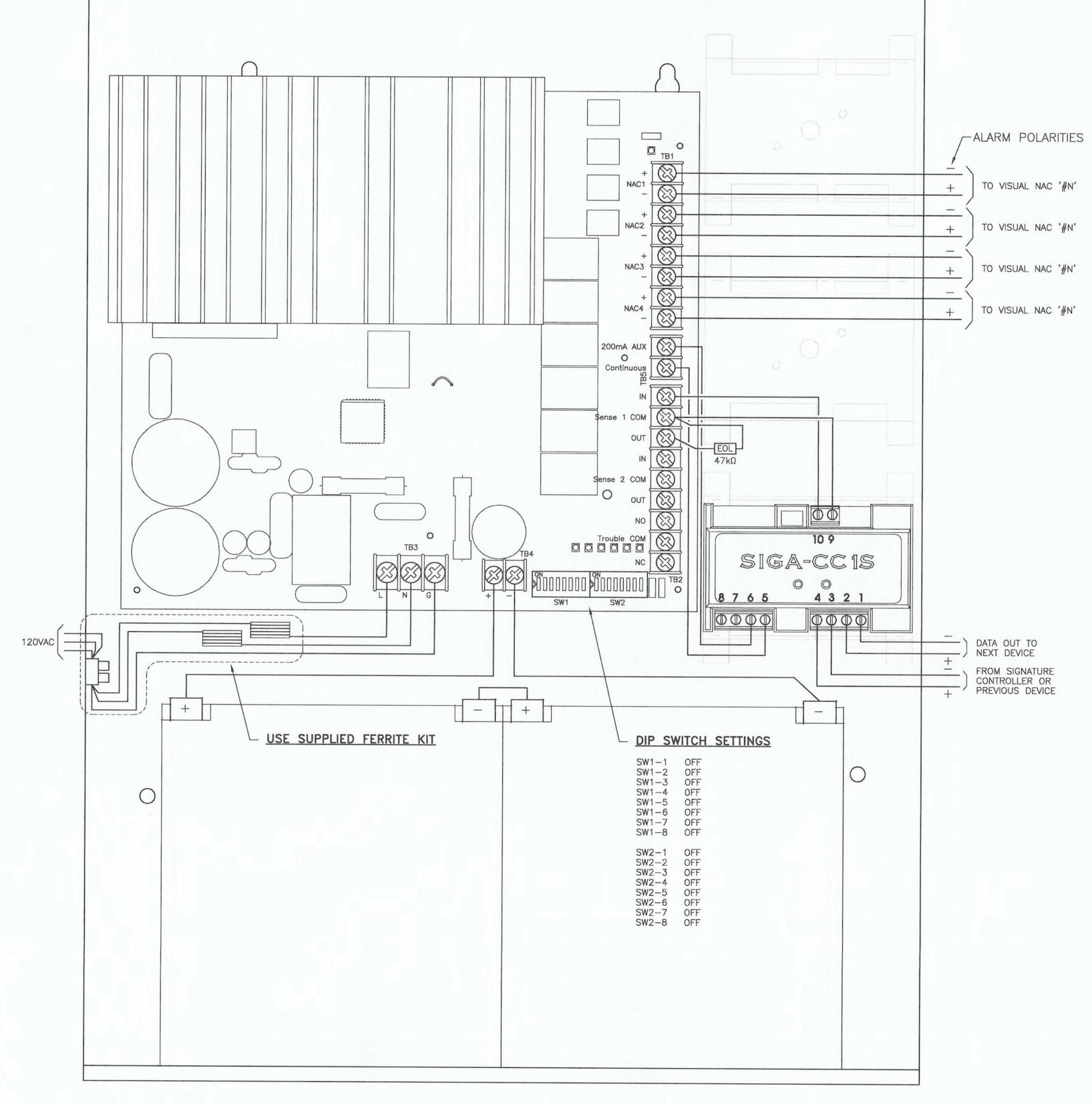
ER POWER SUPPLY IRING DETAILS BOOSTE WII

Date 01/30/18 Scale SHOWN Drawn LAD

LODI

Checked DJP Sheet 20

Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/2/2018
Signature: James E. Bryan, Frendent



BPS10A & SIGA-CC1S MODULE DETAIL
NO SCALE



REVISIONS BY

Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound
2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/31/2018
Signature: James El Bryan, Fresident

"SIGA-SD" ADDRESSABLE DUCT SMOKE DETECTOR

NOTE: ENSURE THAT SIGNATURE WIRING IN AND OUT OF THE ISOLATION MODULE MAINTAINS SEPARATION OF DESIGNED

SIGA-IM

SIGA-IM ISOLATION MODULE DETAIL
NO SCALE

NOTE: CONTACTS RATED

240 V 50/60 Hz 7 A (PF 0.75), 1.5 A (PF 0.35)
120 V 50/60 Hz 7 A (PF 0.75), 3.0 A (PF 0.35)
24 VDC 6 A resistive
Current 8.4 A max. (AC or DC)
Audio switching 0 to 20 kHz

TYPICAL HIGH POWER FORM—C OUTPUT DETAIL
NO SCALE

4321

DATA OUT TO NEXT
 ISOLATION CIRCUIT OR
 RETURN TO SIGNATURE
 CONTROLLER

CONTACT 2 TO CONTROLLED DEVICE

CONTACT 1 TO CONTROLLED DEVICE

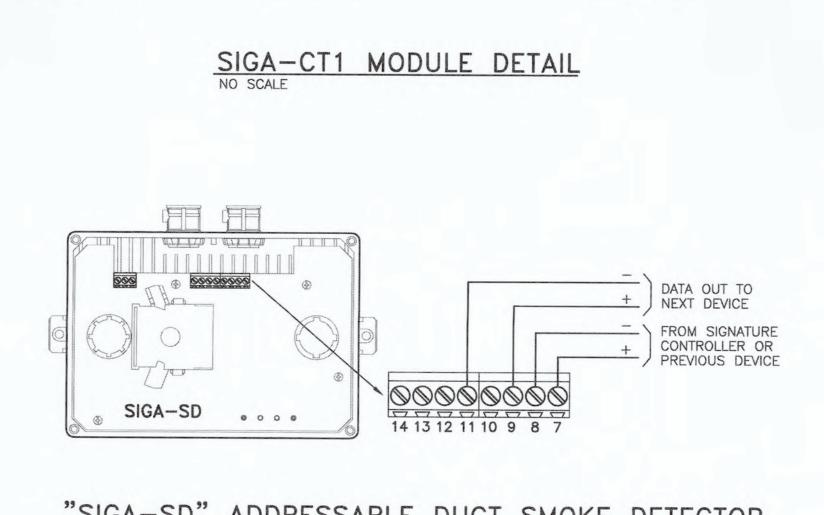
DATA OUT TO NEXT DEVICE

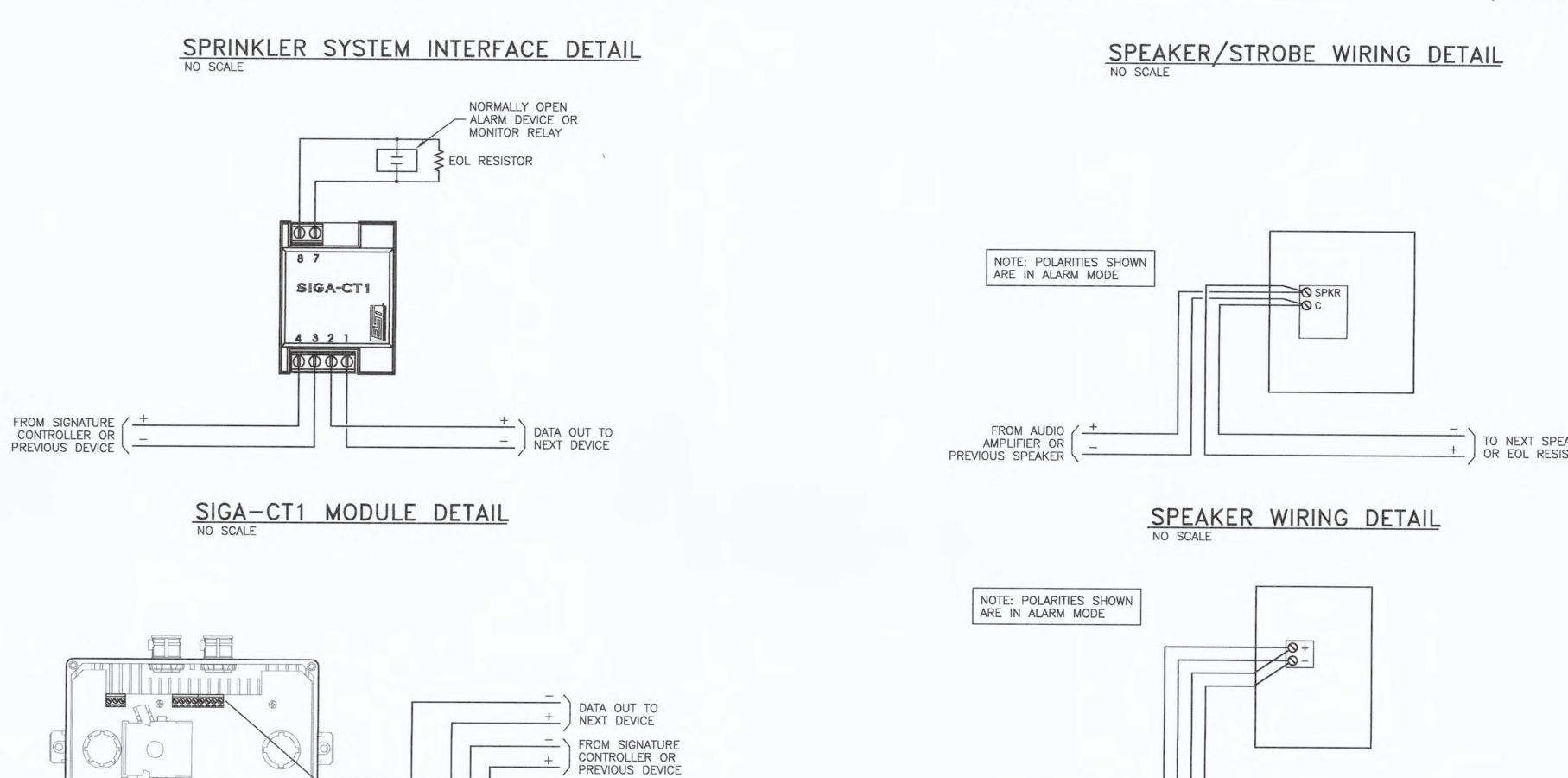
ISOLATION CIRCUIT SEGMENTS.

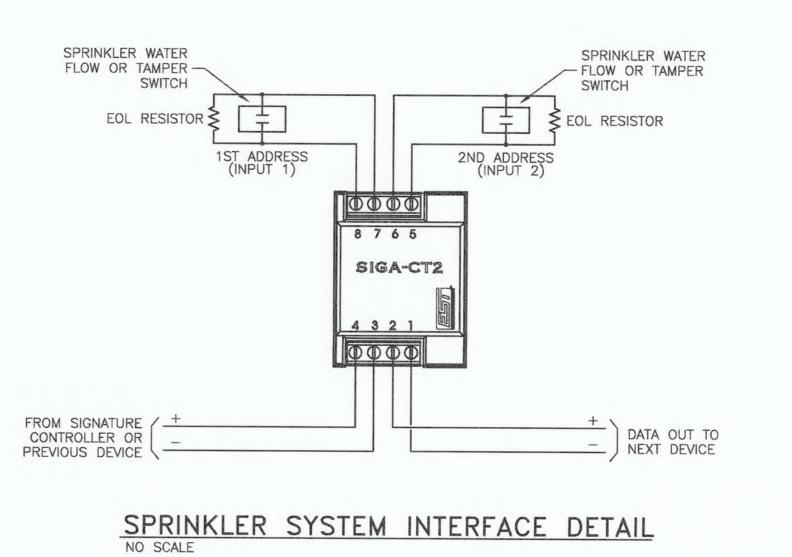
FROM SIGNATURE (... CONTROLLER OR

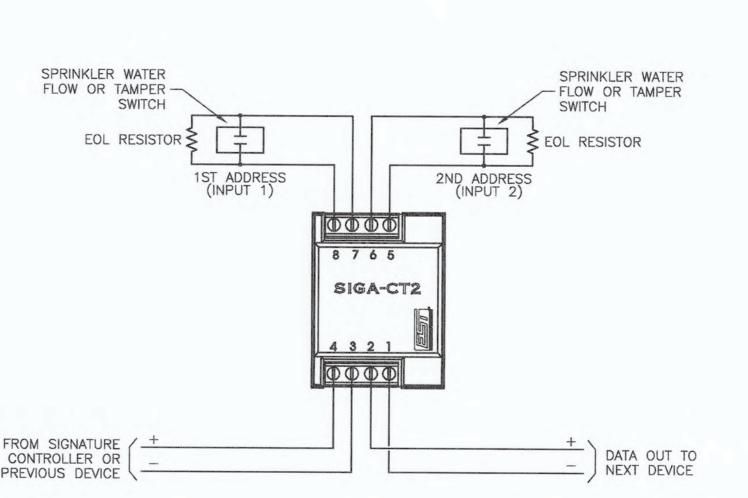
PREVIOUS ISOLATION CIRCUIT \

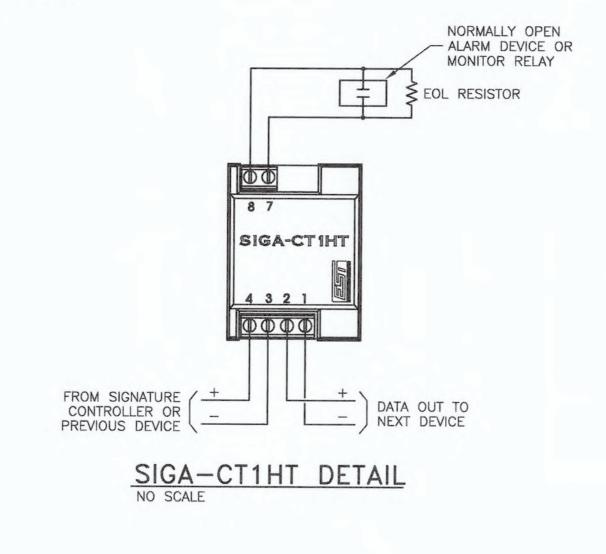
FROM SIGNATURE CONTROLLER OR PREVIOUS DEVICE

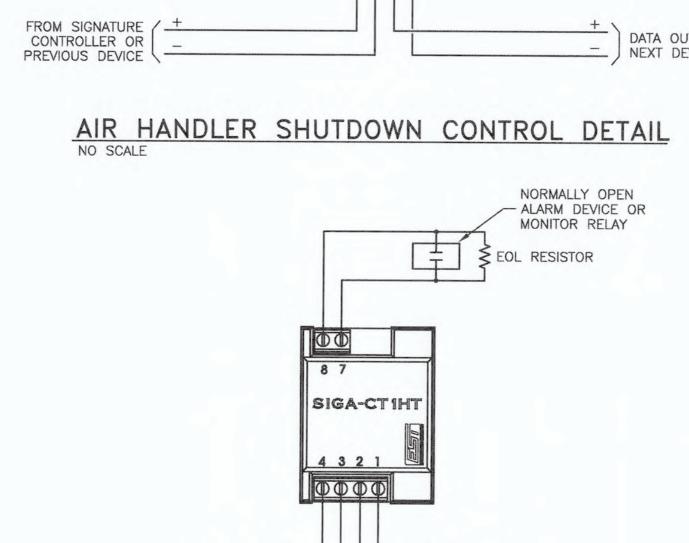


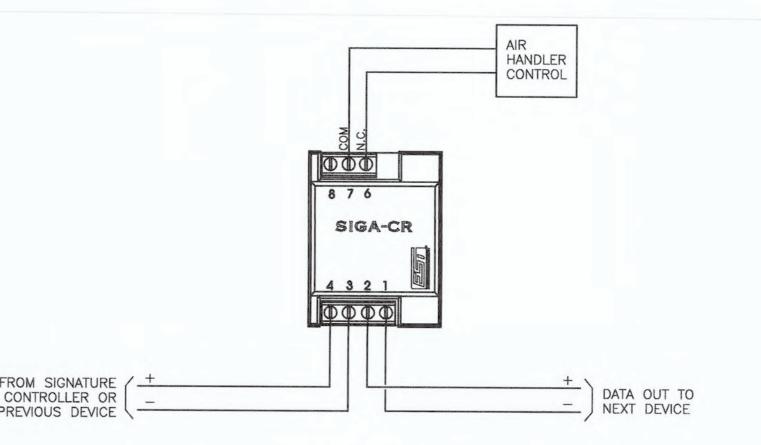


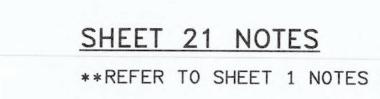




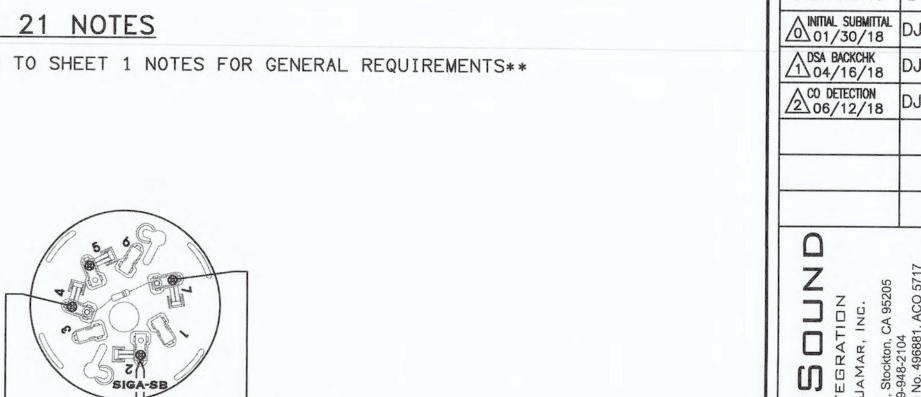


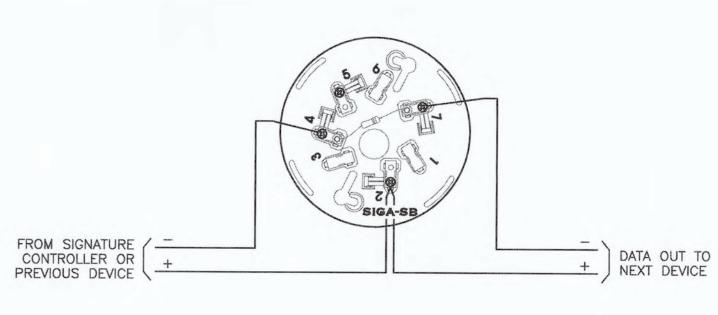




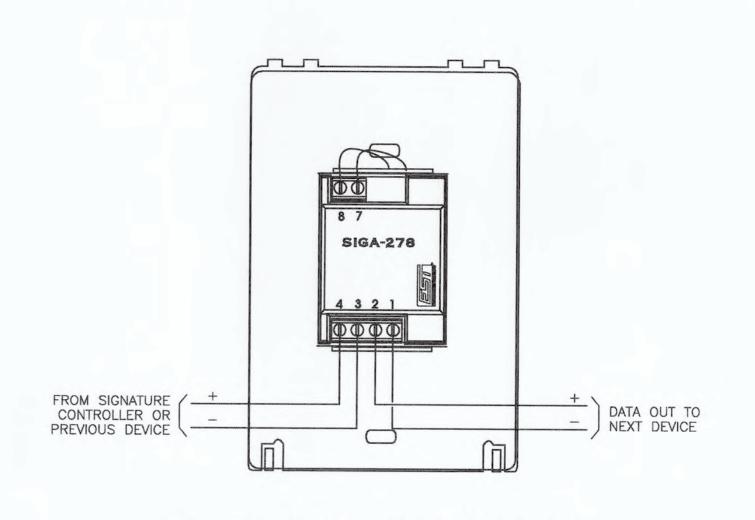


REFER TO SHEET 1 NOTES FOR GENERAL REQUIREMENTS

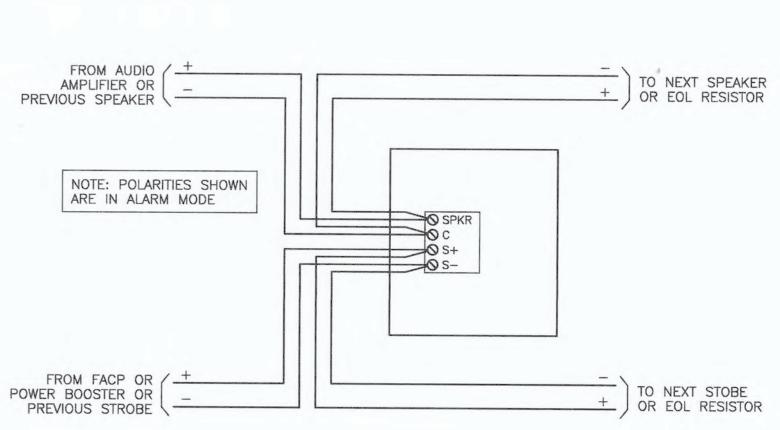


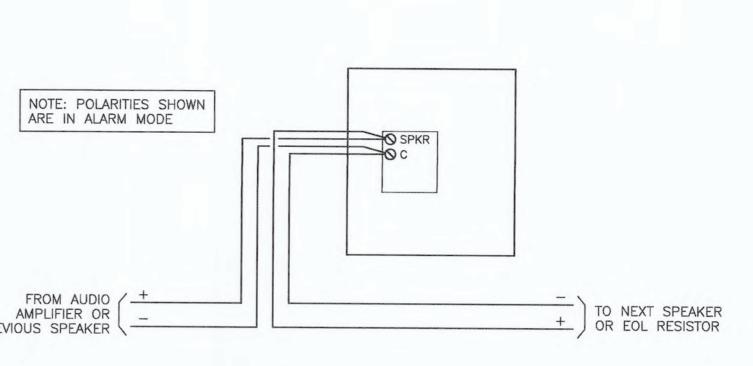


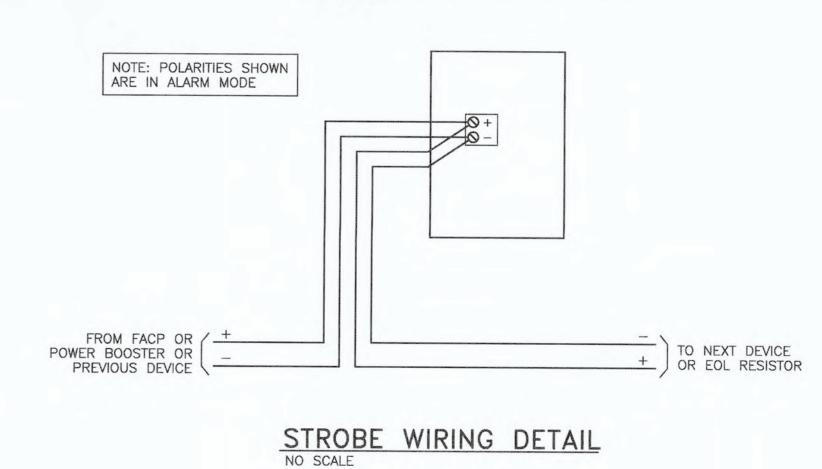




MANUAL PULL STATION DETAIL NO SCALE







FILE NO. 39-50

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES APPL. 02 -116554

Scale SHOWN Drawn LAD Checked DJP Job 17153E Sheet 21

REVISIONS BY

Date 01/30/18 Scale SHOWN Drawn LAD

Checked DJP Licensed California Contractor
License # 496881 C-7, C-10
Bi-JaMar Inc. dba Quality Sound Job 17153E 2010 E. Fremont St.
Stockton, CA 95205
Expiration Date: 8/31/2018
Signature: MANAGEMENT President Sheet 22

of 23 Sheets

ACCEPTABLE HERE -(910 MM) (910 MM) - ACCEPTABLE HERE MINIMUM MINIMUM DIFFUSER/REGISTER-

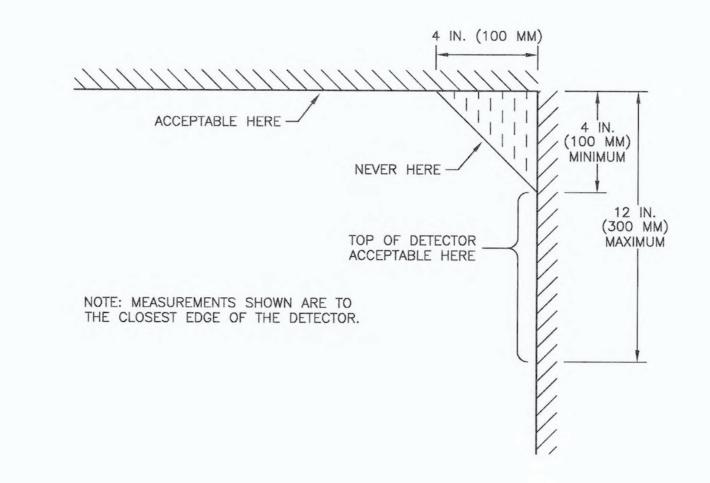
NOTE: MEASUREMENTS SHOWN ARE TO THE CLOSEST EDGE OF THE DETECTOR.

NFPA 72, 2016:

17.7.4.1* IN SPACES SERVED BY AIR-HANDLING SYSTEMS, DETECTORS SHALL NOT BE LOCATED WHERE AIRFLOW PREVENTS OPERATION OF THE DETECTORS.

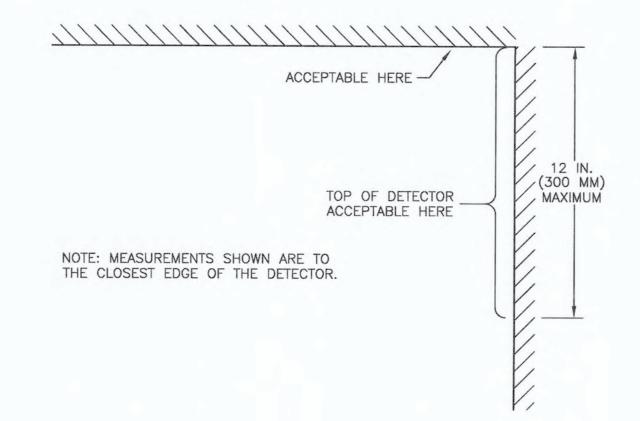
A.17.7.4.1 DETECTORS SHOULD NOT BE LOCATED IN A DIRECT AIRFLOW OR CLOSER THAN 36 IN. (910 MM) FROM AN AIR SUPPLY DIFFUSER OR RETURN AIR OPENING. SUPPLY OR RETURN SOURCES LARGER THAN THOSE COMMONLY FOUND IN RESIDENTIAL AND SMALL COMMERCIAL ESTABLISHMENTS CAN REQUIRE GREATER CLEARANCE TO SMOKE DETECTORS. SIMILARLY, SMOKE DETECTORS SHOULD BE LOCATED FARTHER AWAY FROM HIGH VELOCITY AIR SUPPLIES.

SMOKE OR HEAT DETECTOR AT HVAC OPENING MOUNTING DETAIL
NO SCALE



NFPA 72, 2016 - 17.6.3.1.3.1 ...SPOT-TYPE HEAT-SENSING FIRE DETECTORS SHALL BE LOCATED ON THE CEILING NOT LESS THAN 4 IN. FROM THE SIDEWALL OR ON THE SIDEWALLS BETWEEN 4 IN. AND 12 IN. FROM THE CEILING.

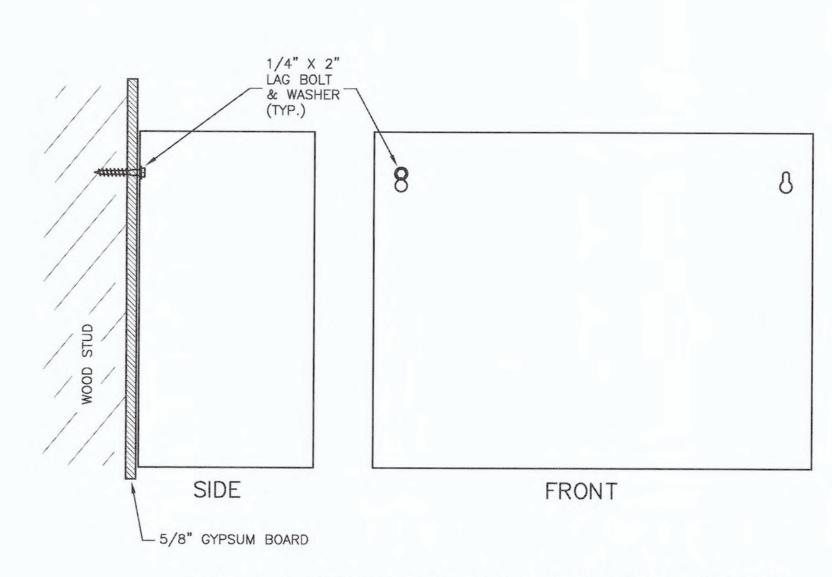
HEAT DETECTOR MOUNTING DETAIL
NO SCALE



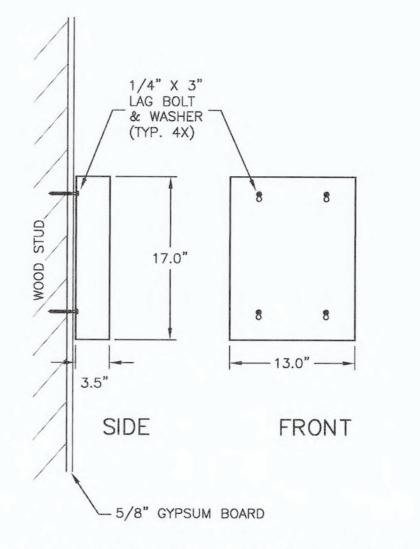
NFPA 72, 2016 - 17.7.3.2.1 ...SPOT-TYPE SMOKE DETECTORS SHALL BE LOCATED ON THE CEILING OR, IF ON A SIDEWALL, BETWEEN THE CEILING AND 12 IN. DOWN FROM THE CEILING TO THE TOP OF

SMOKE DETECTOR MOUNTING DETAIL

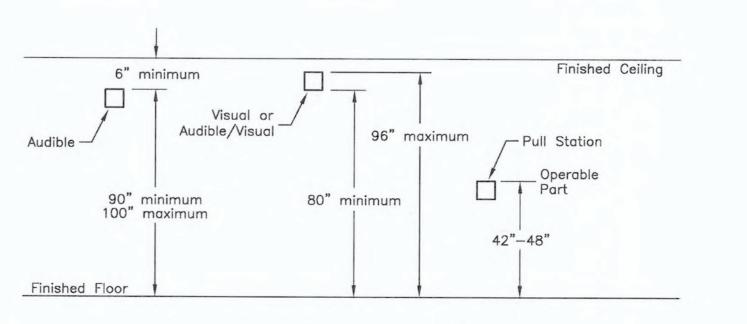
NO SCALE



BC-1 BATTERY CABINET MOUNTING DETAIL
NO SCALE



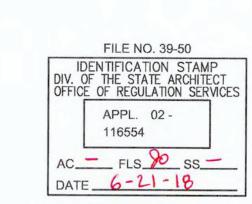
BPS10A BACKBOX ANCHORAGE DETAIL
NO SCALE



AUDIBLE APPLIANCES: Where ceiling heights allow, top of appliance shall not be less than 90" above finished floor and not less than 6" below finished ceilings (NFPA 72, 2016, 18.4.8.1). Where audible appliances are combined with visual, the requirements for visual appliances shall take precedence.

VISUAL & AUDIBLE/VISUAL APPLIANCES: The entire lens shall not be less than 80" and not greater than 96" above finished floor (NFPA 72, 2016, 18.5.5.1). FIRE ALARM BOXES: The operable part of each manual fire alarm box shall be not less than 42" and not more than 48" above floor level (NFPA 72, 2016,

FIRE ALARM HEIGHT DETAIL
NO SCALE



REVISIONS BY

NITIAL SUBMITTAL DO

104/16/18 D

200 DETECTION D. 206/12/18

BA DROP-CULA

0

0

Drawn LAD Checked DJP Job 17153E Sheet 23

Description	Qty.	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
(E) 3-PPS/M Power Supply	1	N/A	N/A	N/A	N/A
(E) 3-CPU3 Central Processor	1	155	155	165	165
(E) 3-LCD LCD Module	1	38	38	38	38
(E) 3-SSDC1 SIGA Controller *	1	144	144	204	204
(E) 3-MODCOM DACT Module	1	60	60	95	95
(E) 3-12/S1GY Annunciation Module	1	2	2	36	36
(N) 3-BPS/M Booster Power Supply	1	50	50	50	50
(N) 3-SDDC1 Dual SIGA Controller *	1	264	264	336	336
(N) 3-ASU/4 Audio Source Unit	1	80	80	80	80
(N) 3-ZA40x 40W Zone Amplifier	4	62	248	2480	9920
(N) 3-12/S1GY Annunciation Module	1	2	2	36	36
(N) NAC-1N	1	***	maxime).	579	579
(N) NAC-2N	1	prome.	MARKS	537	537
TOTALS		w.w.	1043	# Ab	12076

* NOTE: The SIGA Device Controller is calculated with the maximum Signature addressable device load

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm:

EST3 BATTERY CALCULATIONS

Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor Ampere Hours = [(1.043A x 24 hrs)+(12.076A x 0.25 hrs)] x 1.25 Ampere Hours = 35.1

(2) 12 Volts, 40 Ampere Hours (24 Volts, 40 Ampere Hours) BATTERIES SUPPLIED:

PS	-F2	BA	TTE	RY	CA	AL	CL	ILA	TI	ONS	

NAC VOLTAGE DROP CALCULATIONS

V = previous device voltage (Source Voltage = 24 VDC)

SS(x) = Speaker/Strobe (where 'x' is candela)

WPS = Weatherproof Speaker

3.38

5.48

5.86

DROP

5.16

6.30

6.02

6.94

7.30

DROP

4.03

5.85

2.85

4.68

5.98

7.30

7.62

DROP

4.23

4.97

5.17

DROP

2.24

2.60

DROP

0.62

1.53

1.99

DROP

0.62

1.30

1.64

DROP

1.55

2.58

3.26

3.63

2.94

3.63

3.97

VDC DROP

DEVICE PERCENT

DEVICE PERCENT

CEIL = Ceiling Mounted

DEVICE PERCENT

23.19

22.69

22.59

LENGTH DEVICE PERCENT

23.32

22.76

22.49

22.41

LENGTH DEVICE PERCENT

22.55

22.34

22.25

VDC

23.86

23.66

23.30

23.03

22.83

22.75

22.64

22.61

22.60

VDC

22.88

22.57

22.25

22.17

VDC

23.21

22.98

22.81

22.76

LENGTH DEVICE PERCENT

VDC

23.46

23.38

VDC

23.63

23.52

VDC

23.85

23.69

23.61

LENGTH DEVICE PERCENT

VDC

23.63

23.38

23.22

23.13

LENGTH DEVICE PERCENT

23.29

23.13

23.05

DEVICE PERCENT

DEVICE PERCENT

DEVICE PERCENT

110

155

170

125

100

LENGTH

125

100

145

LENGTH

205

105

245

100

100

LENGTH

45

215

 $K = wire AWG constant (\Omega/k') at 167°F: #14 = 3.26 (stranded/worst case)$

CIRCUIT: 1N

CIRCUIT: 2N

CIRCUIT: 3N

ID NO.

3N01

3N02

3N03

3N04

3N05

3N06

4N01

4N02

4N03

4N04

4N05

4N06

4N07

4N08

4N09

CIRCUIT: 5N

ID NO.

5N01

5N02

5N03

5N04

ID NO.

6N01

6N02

6N03

DEVICE

ID NO.

7N01

7N02

7N03

7N04

7N05

7N06

7N07

CIRCUIT: 8N

ID NO.

8N01

8N02

8N04

ID NO.

11N03

CIRCUIT: 11N

DEVICE DEVICE

11N01 SS15-CEIL

11N02 SS15-CEIL

11N04 SS75-CEIL

11N05 SS30-CEIL

11N06 SS30-CEIL

11N07 S15-CEIL

11N08 SS75-CEIL

11N09 SS75-CEIL

DEVICE DEVICE

CIRCUIT: 7N

CIRCUIT: 6N

DEVICE DEVICE

CIRCUIT: 4N

DEVICE DEVICE

ID NO.

DEVICE DEVICE

ID NO.

DEVICE DEVICE

TYPE

SS15-CEIL

SS30-CEIL

SS75-CEIL

SS75-CEIL

SS30-CEIL

TYPE

SS30-CEIL

SS15-CEIL

SS30-CEIL

SS15-CEIL

SS15-CEIL

TYPE

SS75-CEIL

SS30-CEIL

TYPE

S75

S15

SS15-CEIL

TYPE

SS110

TYPE

SS75-CEIL

SS15-CEIL

SS75-CEIL

DEVICE

TYPE

SS15

S15

SS75-CEIL

SS75-CEIL

SS75-CEIL

TYPE

SS75-CEIL

SS75-CEIL

SS75-CEIL

SS75-CEIL

TYPE

SS15-CEIL

4N10 SS15-CEIL

DEVICE DEVICE

2N06 SS75-CEIL

DEVICE DEVICE

DEVICE

168

DEVICE

DEVICE

DEVICE

152

DEVICE

DEVICE

63

DEVICE

CURRENT (mA)

168

168

DEVICE

168

DEVICE

63

63

90

63

168

168

CURRENT (mA) CURRENT (mA)

SECTION

579

SECTION

SECTION

374

SECTION

609

406

SECTION

SECTION

CURRENT (mA)

796

SECTION

336

168

SECTION

873

810

747

579

489

336

168

CURRENT (mA) CURRENT (mA)

CURRENT (mA) CURRENT (mA)

AWG

WIRE

AWG

WIRE

AWG

WIRE

AWG

WIRE

WIRE

AWG

14

14

AWG

LENGTH

115

LENGTH

LENGTH

120

105

175

105

120

80

CURRENT (mA) CURRENT (mA) AWG

DEVICE PERCENT

23.42

23.35

23.33

LENGTH DEVICE PERCENT

23.62

23.57

VDC

23.63

23.59

LENGTH DEVICE PERCENT

VDC

23.43

DROP

0.63

1.33

2.43

2.71

2.81

DROP

0.36

0.73

1.04

1.40

1.59

1.80

0.92

1.42

1.53

1.70

DROP

1.67

2.02

2.37

2.63

2.88

3.05

3.36

3.48

3.57

DROP

2.10

3.67

4.94

5.54

DROP

1.88

2.04

DROP

1.13

7.79

8.75

9.12

5.18

5.52

0.64

1.58

2.24

2.85

4.11

4.51

4.84

5.93

6.30

DEVICE PERCENT

DEVICE PERCENT

DEVICE PERCENT

VDC

23.12

22.82

22.67

VDC

23.66

23.55

23.51

VDC

22.13

21.90

21.81

LENGTH DEVICE PERCENT

VDC

23.23

75 22.99 4.22

22.76

22.67

LENGTH DEVICE PERCENT

23.85

23.62

23.46

23.32

23.01

22.92

22.84

22.58

22.49

VDC DROP

CALCULATION: $dV = V - (2L \times K \times dI)$ Where: dV = device Voltage

> L = wire length dl = current

CIRCUIT: 12N

12N03

ID NO.

CIRCUIT: 15N

CIRCUIT: 16N

16N03

CIRCUIT: 17N

ID NO.

17N05

17N08

ID NO.

18N03

ID NO.

CIRCUIT: 19N

CIRCUIT: 20N

CIRCUIT: 23N

CIRCUIT: 27N

DEVICE

ID NO.

ID NO.

23N02

ID NO.

27N03

CIRCUIT: 28N

CIRCUIT: 29N

ID NO.

CIRCUIT: 18N

DEVICE DEVICE

12N01 SS75-CEIL

12N02 SS75-CEIL

12N04 SS75-CEIL

DEVICE DEVICE

15N01 SS75-CEIL

15N02 SS75-CEIL

15N03 SS75-CEIL

15N04 SS75-CEIL

DEVICE DEVICE

16N04 SS75-CEIL

DEVICE DEVICE

17N01 SS15-CEIL

17N02 SS15-CEIL

17N03 SS75-CEIL

17N04 SS75-CEIL

17N06 SS30-CEIL

17N07 SS30-CEIL

17N09 SS15-CEIL

DEVICE DEVICE

18N01 SS75-CEIL

18N02 SS75-CEIL

18N04 SS75-CEIL

18N05 SS75-CEIL

DEVICE DEVICE

19N01 SS75-CEIL

19N02 SS75-CEIL

19N03 SS75-CEIL

19N04 SS30-CEIL

20N01 SS75-CEIL

20N02 SS75-CEIL

DEVICE DEVICE

23N01 SS75-CEIL

23N03 SS75-CEIL

DEVICE DEVICE

27N01 SS75-CEIL

27N02 SS75-CEIL

DEVICE DEVICE

ID NO. TYPE

28N01 SS75-CEIL

28N02 SS75-CEIL

28N04 SS75-CEIL

DEVICE DEVICE

29N01 SS75-CEIL

29N02 SS75-CEIL

29N03 SS75-CEIL

TYPE

SS75-CEIL

TYPE

SS75-CEIL

TYPE

SS15-CEIL

S15-CEIL

TYPE

SS75-CEIL

TYPE

DEVICE

TYPE

TYPE

SS75-CEIL

TYPE

SS75-CEIL

SS75-CEIL

DEVICE

168

168

DEVICE

168

168

168

DEVICE

168

DEVICE

168

DEVICE

168

DEVICE

168

DEVICE

168

DEVICE

168

168

DEVICE

168

DEVICE

168

168

168

DEVICE

168

168

TYPE CURRENT (mA) CURRENT (mA)

CURRENT (mA) CURRENT (mA)

CURRENT (mA) CURRENT (mA)

SECTION

504

336

168

SECTION

504

SECTION WIRE

ID NO. TYPE CURRENT (mA) CURRENT (mA) AWG (ft) VDC DROP

SECTION

705

306

126

672

504

336

426

258

SECTION

168

SECTION

336

336

168

SECTION

504

336

168

SECTION

CURRENT (mA) CURRENT (mA) AWG

CURRENT (mA) CURRENT (mA)

16N01 SS75-CEIL 168 672 14 270 22.82 4.93

AWG

WIRE

AWG

WIRE

AWG

AWG

WIRE

AWG

14

AWG

14

AWG

WIRE

AWG

AWG

DEVICE LEGEND: S(x) = Strobe (where 'x' is candela)

S = Speaker

Description	Qty.	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
Control Board	1	70	70	270	270
NAC - 19N	1			594	594
NAC - 20N	1	***		336	336
NAC - 21N (SPARE)	1	394-008	-index (spec	0	0
NAC - 22N (SPARE)	1	50-00	side out	0	0
TOTALS	- Marine	Same Service	70	794 700	1200

Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor Ampere Hours = $[(0.07A \times 24 \text{ hrs})+(1.2A \times 0.25 \text{ hrs})] \times 1.25$ Ampere Hours = 2.5

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

BPS-P1 BATTERY CALCULATIONS

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm: Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

		Standby	Total	Alarm	Total
Description	Qty.	Current (mA)	Standby (mA)	Current (mA)	Alarm (mA)
Control Board	1	70	70	270	270
NAC - 27N	1			504	504
NAC - 28N	1	THE RESERVE		672	672
NAC - 29N	1	META		504	504
NAC - 30N (SPARE)	1	40.00	89-09	0	0
TOTALS	901.884		70		1950

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm: Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor Ampere Hours = $[(0.07A \times 24 \text{ hrs})+(1.95A \times 0.25 \text{ hrs})] \times 1.25$ Ampere Hours = 2.7

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm:

Description	Qty.	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
Control Board	1	70	70	270	270
NAC - 23N	1		MA CON	504	504
NAC - 24N (SPARE)	1	Maria Ayan	incise.	0	0
NAC - 25N (SPARE)	1	14.04	deres	0	0
NAC - 26N (SPARE)	1		165 556	0	0
TOTALS	Te St	#000ml	70		774

Ampere Hours = $[(0.07A \times 24 \text{ hrs})+(0.774A \times 0.25 \text{ hrs})] \times 1.25$ Ampere Hours = 2.3

BPS-P2 BATTERY CALCULATIONS

Description	Qty.	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
Control Board	1	70	70	270	270
NAC - 27N	1			504	504
NAC - 28N	1	THE STATE OF THE S		672	672
NAC - 29N	1	661106		504	504
NAC - 30N (SPARE)	1	40-00	89-09	0	0
TOTALS	App. State.	With Will	70		1950

BPS-A BATTERY CALCULATIONS

Qty.	Current (mA)	Standby (mA)	Current (mA)	Alarm (mA)	
· ·	70	70	270	270	
1	**	ANIAN	506	506	
1	***	60 001	826	826	
1		notice.	812	812	
1		660 MW	399	399	
were	- Quarter	70	**	2813	
	1 1 1 1	1 70 1 1 1 1	1 70 70 1 1 1	1 70 70 270 1 - - 506 1 - - 826 1 - - 812 1 - - 399	

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm: Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor

Ampere Hours = [(0.07A x 24 hrs)+(2.813A x 0.25 hrs)] x 1.25 Ampere Hours = 3.0

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

BPS10-D1 BATTERY CALCULATIONS

		Standby	Total	Alarm	Total
Description	Qty.	Current (mA)	Standby (mA)	Current (mA)	Alarm (mA)
Control Board	1	70	70	270	270
NAC - 7N	1	**	00'00	861	861
NAC - 8N	1	No. 400		672	672
NAC - 9N (SPARE)	1		SAM MAN	0	0
NAC - 10N (SPARE)	1			0	0
TOTALS	*****		70		1803

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm: Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor Ampere Hours = $[(0.07A \times 24 \text{ hrs})+(1.803A \times 0.25 \text{ hrs})] \times 1.25$ Ampere Hours = 2.7

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

BPS-D2 BATTERY CALCULATIONS

Description	Qty.	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
Control Board	1	70	70	270	270
NAC - 11N	1	Man.	344.444	936	936
NAG - 12N	1		20.06	672	672
NAC - 13N (SPARE)	1		lan new	0	0
NAC - 14N (SPARE)	1	10.00	790 00	0	0
TOTALS	***	Service .	70	444	1878

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm: Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor Ampere Hours = $[(0.07A \times 24 \text{ hrs})+(1.878A \times 0.25 \text{ hrs})] \times 1.25$

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

BPS-F1 BATTERY CALCULATIONS

Ampere Hours = 2.7

Description	Qty.	Standby Current (mA)	Total Standby (mA)	Alarm Current (mA)	Total Alarm (mA)
Control Board	1	70	70	270	270
NAC - 15N	1	and these	AM-SM	672	672
NAC - 16N	1	and an		672	672
NAC - 17N	1	20°04	-inn-size	831	831
NAC - 18N	1	-	00.00	840	840
TOTALS	Mis dec	- Mar Andr	70	(M) cm	3285

Battery Requirement Calculation for 24 Hours Standby and 15 Minutes Alarm: Ampere Hours = [(Standby Current x Time)+(Alarm Current x Time)] x Derating Factor Ampere Hours = $[(0.07A \times 24 \text{ hrs})+(3.285A \times 0.25 \text{ hrs})] \times 1.25$ Ampere Hours = 3.1

BATTERIES SUPPLIED: (2) 12 Volts, 7 Ampere Hours (24 Volts, 7 Ampere Hours)

CALCULATION (LUMP SUM METHOD): VD = (2L x K x I)

K = wire AWG constant (Ω/k') at 167°F: #16 = 4.99 (stranded/worst case) I = total current (Note: Total current is derived by Ohm's Law, dividing the total power by the source voltage: I = P/E)

Where: dB = audio loss

	V5	source volta	ge					
CIRCUIT NUMBER	TOTAL PWR (W)	SOURCE VOLTAGE	CURRENT (A)	WIRE	LENGTH (ft)	VOLTAGE DROP	PERCENT DROP	AUDIO LOSS (dB)
18	9.75	70	0.14	16	645	0.45	0.64	-0.06
2S	19.5	70	0.28	16	1305	1.81	2.59	-0.23
3S	25.25	70	0.36	16	2325	4.18	5.98	-0.54
48	6	70	0.09	16	690	0.30	0.42	-0.04
5S	14.5	70	0.21	16	1790	1.85	2.64	-0.23
68	9	70	0.13	16	1320	0.85	1.21	-0.11
79	195	70	0.00	40	2025	0.05	1.01	0.07

SPEAKER NAC VOLTAGE DROP CALCULATIONS

Where: VD = voltage drop L = wire length

AUDIO LOSS: dB = 20 x log (Vc/Vs)

Vc = calculated voltage (source voltage minus voltage drop)

Vs = source voltage

			3-						
CUIT /IBER	TOTAL PWR (W)	SOURCE VOLTAGE	CURRENT (A)	WIRE	LENGTH (ft)	VOLTAGE DROP	PERCENT DROP	AUDIO LOSS (dB)	
IS	9.75	70	0.14	16	645	0.45	0.64	-0.06	
2S	19.5	70	0.28	16	1305	1.81	2.59	-0.23	
3S	25.25	70	0.36	16	2325	4.18	5.98	-0.54	
IS	6	70	0.09	16	690	0.30	0.42	-0.04	
S	14.5	70	0.21	16	1790	1.85	2.64	-0.23	
SS	9	70	0.13	16	1320	0.85	1.21	-0.11	
'S	18.5	70	0.26	16	2235	2.95	4.21	-0.37	

FILE NO. 39-50 IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES APPL. 02 -116554 AC____ FLS___SS__ DATE 6-21-18

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Expiration Date: 8/31/2018
Signature: 1 Maries E. Bryan, Freddent

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LODI, CA 95 LODI UNIFII

> Date 01/30/18 Scale SHOWN