

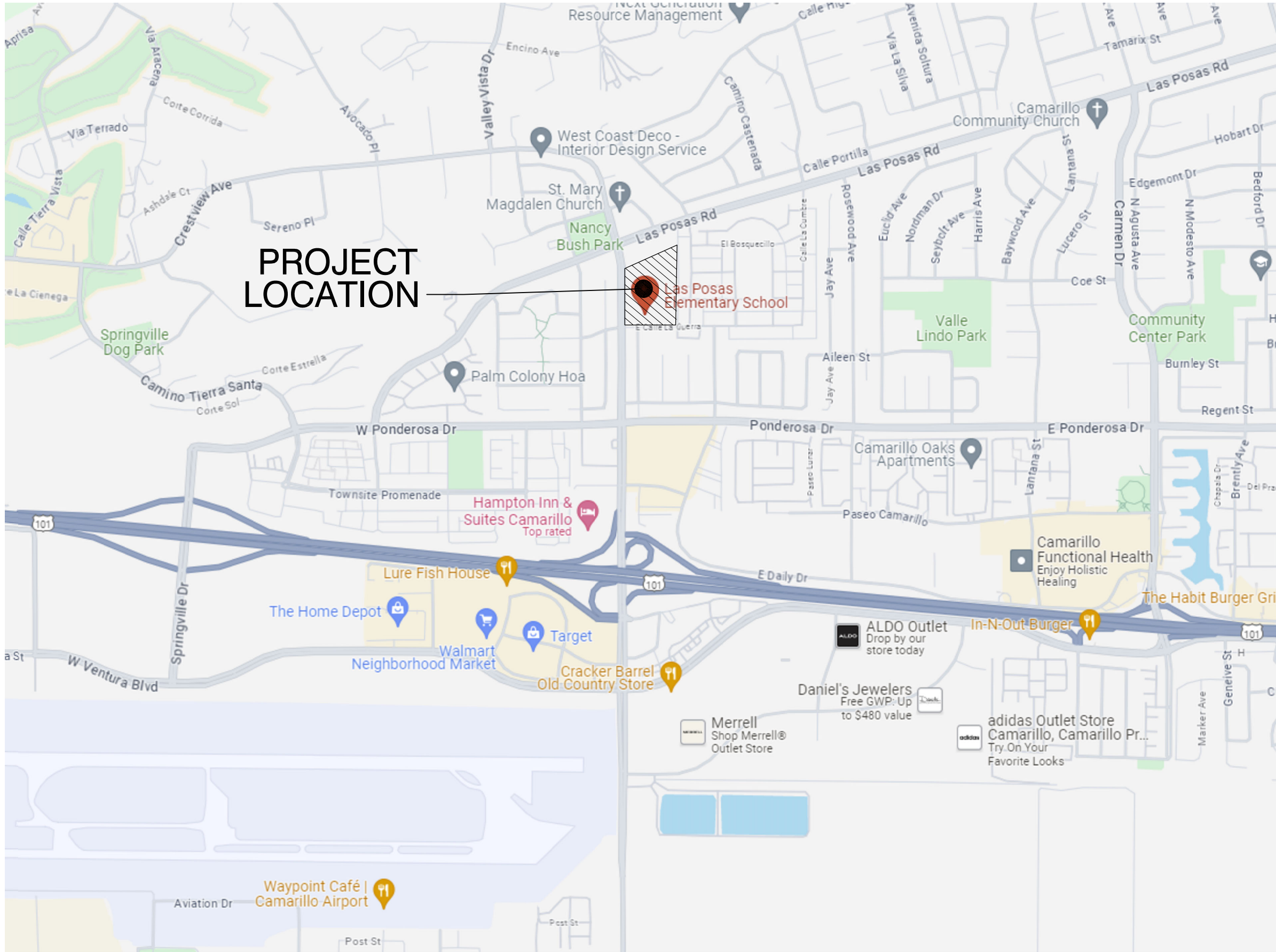
GENERAL REQUIREMENTS:

1. ALL WORK SHALL CONFORM TO 2022 EDITION TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
2. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY ADDENDA OR CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
3. A 'DSA CERTIFIED' PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24, CCR).
4. A 'DSA CERTIFIED' INSPECTOR WITH CLASS 3 CERTIFICATION IS REQUIRED FOR THIS PROJECT.
5. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE SCHOOL BOARD SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THIS PROJECT.
6. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRUCTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHERE-IN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OR REGULATIONS, A CONSTRUCTION CHANGE DOCUMENT, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

GENERAL NOTES

1. ANY DIFFERENCE BETWEEN THE EXISTING CONSTRUCTION AS OBSERVED IN THE FIELD AND AS SHOWN ON THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING WORK. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND COORDINATING ALL DIMENSIONS. REVIEW BUILDING LAYOUT WITH ARCHITECT BEFORE STARTING ANY FOOTING EXCAVATION OR FOUNDATION WORK.
3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL SITE CONDITIONS REGARDLESS OF INFORMATION SHOWN ON THE DRAWINGS. DISCREPANCIES BETWEEN CONDITIONS SHOWN OR NOT SHOWN ON DRAWINGS AND ACTUAL EXISTING VISIBLE, DISCERNABLE CONDITIONS AT THE JOB SITE, DO NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE WORK OF THIS CONTRACT IN FULL CONFORMANCE WITH THE CONTRACT DOCUMENTS.
4. IT SHALL BE THE RESPONSIBLTY OF THE GENERAL CONTRACTOR TO INSURE THAT ALL APPLICABLE SAFETY LAWS ARE STRICTLY ENFORCED AND TO MAINTAIN A SAFE CONSTRUCTION PROJECT.
5. BIDDERS MUST VISIT THE BUILDING SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A PROJECT COMPLETE IN EVERY DETAIL AND READY FOR OCCUPANCY. DISCREPANCIES OR DELETIONS MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE THE BID DATE FOR CORRECTION.
6. ANY DAMAGE DONE TO THE EXISTING SITE OR FACILITIES DURING THE COURSE OF THE WORK SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE WITH NO ADDITIONAL COST TO THE DISTRICT.
7. BIDDERS SHALL ASSUME THAT ALL ITEMS INDICATED ON THE DRAWINGS ARE NEW CONSTRUCTION IF NOT INDICATED WITH AN (N) OR "NEW", UNLESS INDICATED AS "(E)" OR "EXISTING".
8. ALL NEW WORK SHALL MATCH EXISTING IN KEEPING WITH GOOD CONSTRUCTION PRACTICE. IT IS THE INTENT OF THESE DOCUMENTS THAT THE PORTION OF THE SURFACE WHICH HAS BEEN INSTALLED, REPAIRED OR REPLACED, SHALL MATCH THE EXISTING ADJACENT SURFACES, AND THAT THE NEW WORK WILL NOT BE DISCERNABLE FROM THE EXISTING.
9. WHERE MINIMUM DIMENSIONS ARE INDICATED, EXISTING DIMENSIONS IN EXCESS OF THAT SHOWN MAY BE RETAINED UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ALL OMISSIONS AND CONFLICTS BETWEEN THE ELEMENTS OF THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THE WORK INVOLVED.
11. CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, LANDSCAPE SITE FEATURES TO REMAIN. ALL DAMAGED WORK SHALL BE REPLACED WITH THE SAME MATERIALS, INCLUDING MATCHING THE EXISTING COLORS AND TEXTURES BY THE CONTRACTOR AT HIS OWN EXPENSE WITH NO ADDITIONAL COST TO THE DISTRICT.
12. FIRE SAFETY DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THIS CODE AND THE APPLICABLE PROVISIONS OF CHAPTER 33 OF CFC.
13. THE CALIFORNIA ENERGY CODE SECTION 10-103 REQUIRES ACCEPTANCE TESTING ON ALL NEWLY INSTALLED LIGHTING CONTROLS, MECHANICAL SYSTEMS, ENVELOPES, AND PROCESS EQUIPMENT AFTER INSTALLATION AND BEFORE PROJECT COMPLETION. AN ACCEPTANCE TEST IS A FUNCTIONAL PERFORMANCE TEST TO HELP ENSURE THAT NEWLY INSTALLED EQUIPMENT IS OPERATING AND IN COMPLIANCE WITH THE ENERGY CODE.
14. LIGHTING CONTROLS ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (ATT).
15. MECHANICAL SYSTEM ACCEPTANCE TESTS MUST BE PERFORMED BY A CERTIFIED MECHANICAL ATT FOR PROJECTS SUBMITTED ON OR AFTER OCTOBER 1, 2021.
16. ENVELOPE AND PROCESS EQUIPMENT ACCEPTANCE TESTS SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR, ENGINEER/ARCHITECT OF RECORD OR THE OWNER'S AGENT.
17. A LISTING OF CERTIFIED ATT CAN BE FOUND AT:
HTTPS://WWW.ENERGY.CA.GOV/PROGRAMS-AND-TOPICS/PROGRAMS/ACCEPTANCE-TEST-TECHNICIAN-CERTIFICATION-PROVIDER-PROGRAM/ACCEPTANCE.
18. THE ACCEPTANCE TESTING PROCEDURES MUST BE REPEATED, AND DEFICIENCIES MUST BE CORRECTED BY THE BUILDER OR INSTALLING CONTRACTOR UNTIL THE CONSTRUCTION/INSTALLATION OF THE SPECIFIED SYSTEMS CONFORM AND PASS THE REQUIRED ACCEPTANCE CRITERIA.
19. PROJECT INSPECTORS WILL COLLECT THE FORMS TO CONFIRM THAT THE REQUIRED ACCEPTANCE TESTS HAVE BEEN COMPLETED.

PLEASANT VALLEY SCHOOL DISTRICT
LAS POSAS ELEMENTARY SCHOOL
CAMPUS FIRE ALARM UPGRADES
75 E CALLE LA GUERRA, CAMARILLO, CA 93010



VICINITY MAP

SCALE: N.T.S.



APPLICABLE CODES

CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING:

- PART 1 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), TITLE 24 C.C.R.
- PART 2 2022 CALIFORNIA BUILDING CODE (CBC), TITLE 24 C.C.R.
- PART 3 2022 CALIFORNIA ELECTRICAL CODE (CEC), TITLE 24 C.C.R.
- PART 4 2022 CALIFORNIA MECHANICAL CODE (CMC), TITLE 24 C.C.R.
- PART 5 2022 CALIFORNIA PLUMBING CODE (CPC), TITLE 24 C.C.R.
- PART 6 2022 CALIFORNIA ENERGY CODE, TITLE 24 C.C.R.
- PART 8 2022 CALIFORNIA HISTORICAL BUILDING CODE, TITLE 24 C.C.R.
- PART 9 2022 CALIFORNIA FIRE CODE (CFC), TITLE 24, C.C.R.
- PART 10 2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), TITLE 24, C.C.R.
- PART 11 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), TITLE 24, C.C.R.
- PART 12 2022 CALIFORNIA REFERENCED STANDARDS CODE, TITLE 24, C.C.R.

STATE BUILDING CODE

(Part 1, Title 24, C.C.R.)

"The intent of these drawings and specification is that the work of the alteration, rehabilitation or reconstruction is to be in accordance with Title 24, California Code of Regulations. Should any existing conditions such as deterioration or noncomplying construction be discovered which is not covered by the contract documents wherein the finished work will not comply with Title 24, California Code of Regulations, a change order, or a separate set of plans and specifications, detailing and specifying the required work shall be submitted to and approved by the Division of the State Architect before proceeding with the work"

Changes to the approved drawings and specifications shall be made by an addenda or a construction change document (CCD) approved by the Division of the State Architect, as required by Section 4-338, Part 1, Title 24, CCR.

PROJECT TEAM

ARCHITECT
KRUGER BENSEN ZIEMER ARCHITECTS, INC.
199 FIGUEROA STREET, SUITE 100A
VENTURA, CA 93001
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PRINCIPAL-IN-CHARGE: TODD A. JESPERSEN, AIA
EMAIL ADDRESS: toddj@kbzarch.com
PROJECT TEAM:
JONATHAN D. LEE, AIA
EMAIL ADDRESS: jonathanl@kbzarch.com

ELECTRICAL ENGINEER
LUCCI & ASSOCIATES INC.
3251 CORTE MALPASO #511
CAMARILLO, CA 93010
OFFICE: (805) 389-6520
ENGINEER: KEN LUCCI
EMAIL ADDRESS: ken@luccland.com

OWNER

PLEASANT VALLEY SCHOOL DISTRICT
600 TEMPLE AVE, CAMARILLO, CA 93010
OFFICE: (805) 389-2100

PROJECT SCOPE

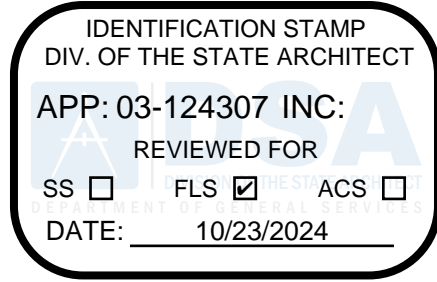
REPLACE (E) FIRE ALARM SYSTEM WITH NEW FULLY AUTOMATIC
FIRE ALARM SYSTEM WITH VOICE EVACUATION

SHEET INDEX

- GENERAL
1. G-001 TITLE SHEET
- ARCHITECTURAL
2. A-101 SITE PLAN

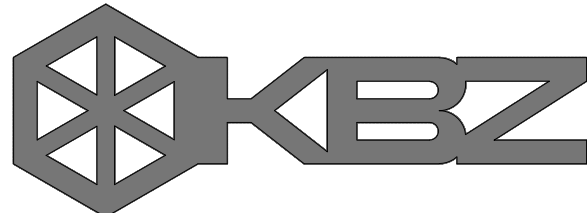
- ELECTRICAL
3. E100 GENERAL NOTES, ABBREVIATIONS, SYMBOLS & DRAWING LIST
4. E150 FIRE ALARM SITE PLAN - EXISTING CONDITIONS
5. E200 ELECTRICAL DETAILS
6. E600 SITE FIRE ALARM CONDUIT PLAN
7. E601 NEW FIRE ALARM MASTER LEGEND
8. E604 HONEYWELL CUT SHEETS MULTI-CRITERIA CO & SMOKE SENSOR & MONITOR MODULE
9. E605 HONEYWELL CUT SHEETS SPEAKER STROBES & PHOTOELECTRIC SMOKE SENSOR
10. E606 HONEYWELL CUT SHEETS TEMPERATURE SENSORS & RELAY
11. E610 ADMIN BUILDING 100 FIRE ALARM PLAN - NEW
12. E620 CLASSROOM BUILDING 200 FIRE ALARM PLAN - NEW
13. E630 CLASSROOM BUILDING 300 FIRE ALARM PLAN - NEW
14. E650 LIBRARY BUILDING 500 FIRE ALARM PLAN - NEW
15. E660 KINDERGARTEN BUILDING 600 FIRE ALARM PLAN - NEW
16. E670 MULTIPURPOSE BUILDING 700 FIRE ALARM PLAN - NEW
17. E680 RELOCATABLE BUILDING 1A AND 1B FIRE ALARM PLAN - NEW
18. E690 RELOCATABLE BUILDING FIRE ALARM PLAN - NEW
19. E691 RELOCATABLE BUILDING FIRE ALARM PLAN - NEW
20. E700 FIRE RISER DIAGRAM #1
21. E701 FIRE RISER DIAGRAM #2
22. E702 FIRE RISER DIAGRAM #3
23. E703 EMERGENCY VOICE/ALARM/DETECTION FIRE SYSTEM RISER DIAGRAM
24. E704 EMERGENCY VOICE/ALARM COMM SYSTEM - FIRE ALARM DETAILS
25. E705 VBUS/SBUS RISER DIAGRAM
26. E710 ADMINISTRATION BUILDING 100 FIRE ALARM EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
27. E720 CLASSROOM BUILDING 200 FIRE ALARM EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
28. E730 CLASSROOM BUILDING 300 FIRE ALARM EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
29. E750 LIBRARY BUILDINGS 500 FIRE ALARM EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
30. E760 KINDERGARTEN BUILDING 600 FIRE ALARM EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
31. E770 MULTIPURPOSE BUILDING 700 FIRE ALARM EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
32. E780 RELOCATABLE 1A & 1B EMERGENCY VOICE/ALARM PLAN FIRE SYSTEM CALCS
33. E790 RELOCATABLE BUILDING 2, 3, 4, & 5 EMERGENCY VOICE/ALARM COMM SYSTEM - CALCS
34. E791 RELOCATABLE BUILDING 6 & 7 EMERGENCY VOICE/ALARM COMM SYSTEM - CALCS
35. E793 RELOCATABLE BUILDING 8 EMERGENCY VOICE/ALARM COMM SYSTEM - CALCS

TOTAL: 35 SHEETS



DSA STAMP & SIGNATURE

PLEASANT VALLEY SCHOOL DISTRICT
LAS POSAS ELEMENTARY SCHOOL
75 E CALLE LA GUERRA, CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

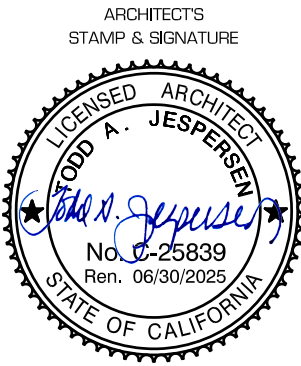


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PRINCIPAL-IN-CHARGE

JONATHAN LEE
PROJECT ARCHITECT

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CONSULTANT INFORMATION

REVISION	DESCRIPTION	DATE	BY
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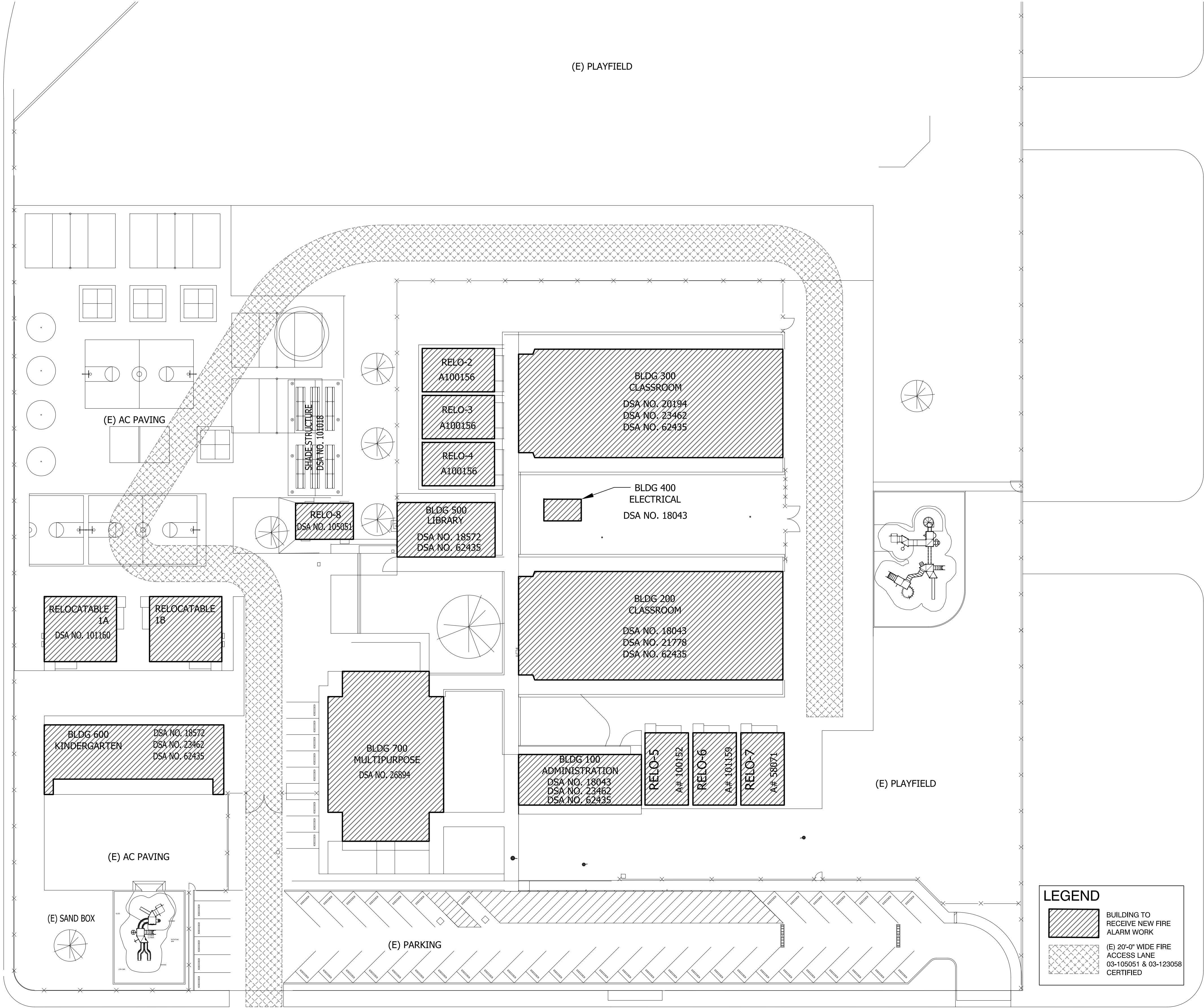
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DATE 05/10/2024
JOB. NO. 24009
A#03-124307, FILE 56-24, PTN 72553-61
SHEET TITLE SHEET
TITLE

SHEET

G-001

CODE ANALYSIS

BLDG. NAME	OCC. TYPE	CONSTRUCTION TYPE	FIRE SPRINKLER	ALLOWABLE AREA	ACTUAL AREA
BUILDING 100 ADMIN.	B	V-B	NONE	9,000 S.Q.	1,900 S.Q.
BUILDING 200 CLASSROOM	E	V-B	NONE	9,500 S.Q.	8,750 S.Q.
BUILDING 300 CLASSROOM	E	V-B	NONE	9,500 S.Q.	8,750 S.Q.
BUILDING 400 ELECTRICAL	U	V-B	NONE	5,500 S.Q.	250 S.Q.
BUILDING 500 LIBRARY	A-3	V-B	NONE	6,000 S.Q.	1,650 S.Q.
BUILDING 600 KINDERGARTEN	E	V-B	NONE	9,500 S.Q.	3,100 S.Q.
BUILDING 700 MULTH-PURP.	A-2	V-B	NONE	6,000 S.Q.	5,500 S.Q.
RELO 1A CLASSROOM	E	V-B	NONE	9,500 S.Q.	1,450 S.Q.
RELO 1B CLASSROOM	E	V-B	NONE	9,500 S.Q.	1,450 S.Q.
RELO 2 CLASSROOM	E	V-B	NONE	9,500 S.Q.	950 S.Q.
RELO 3 CLASSROOM	E	V-B	NONE	9,500 S.Q.	950 S.Q.
RELO 4 CLASSROOM	E	V-B	NONE	9,500 S.Q.	950 S.Q.
RELO 5 CLASSROOM	E	V-B	NONE	9,500 S.Q.	950 S.Q.
RELO 6 CLASSROOM	E	V-B	NONE	9,500 S.Q.	950 S.Q.
RELO 7 CLASSROOM	E	V-B	NONE	9,500 S.Q.	950 S.Q.
RELO 8 KITCHEN	F-1	V-B	NONE	8,500 S.Q.	650 S.Q.

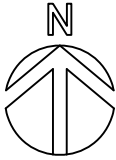


LEGEND

BUILDING TO RECEIVE NEW FIRE ALARM WORK

(E) 20'-0" WIDE FIRE ACCESS LANE
03-105051 & 03-123058
CERTIFIED

1 Site Plan
Scale: 1" = 30'-0"

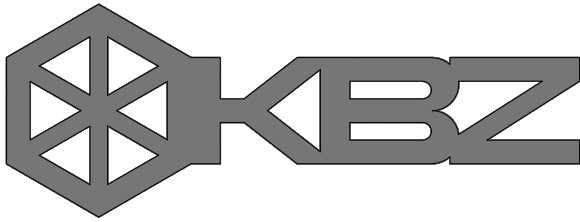


IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

PLEASANT VALLEY SCHOOL DISTRICT
LAS POSAS ELEMENTARY SCHOOL

75 E CALLE LA GUERRA, CAMARILLO, CA 93010

CAMPUS FIRE ALARM UPGRADE



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PROJECT ARCHITECT

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ARCHITECT'S
STAMP & SIGNATURE

ENGINEERS
STAMP & SIGNATURE



CONSULTANT INFORMATION

REVISION	DESCRIPTION	DATE	BY
1		-/-/-	XX
2		-/-/-	XX
3		-/-/-	XX
4		-/-/-	XX
5		-/-/-	XX

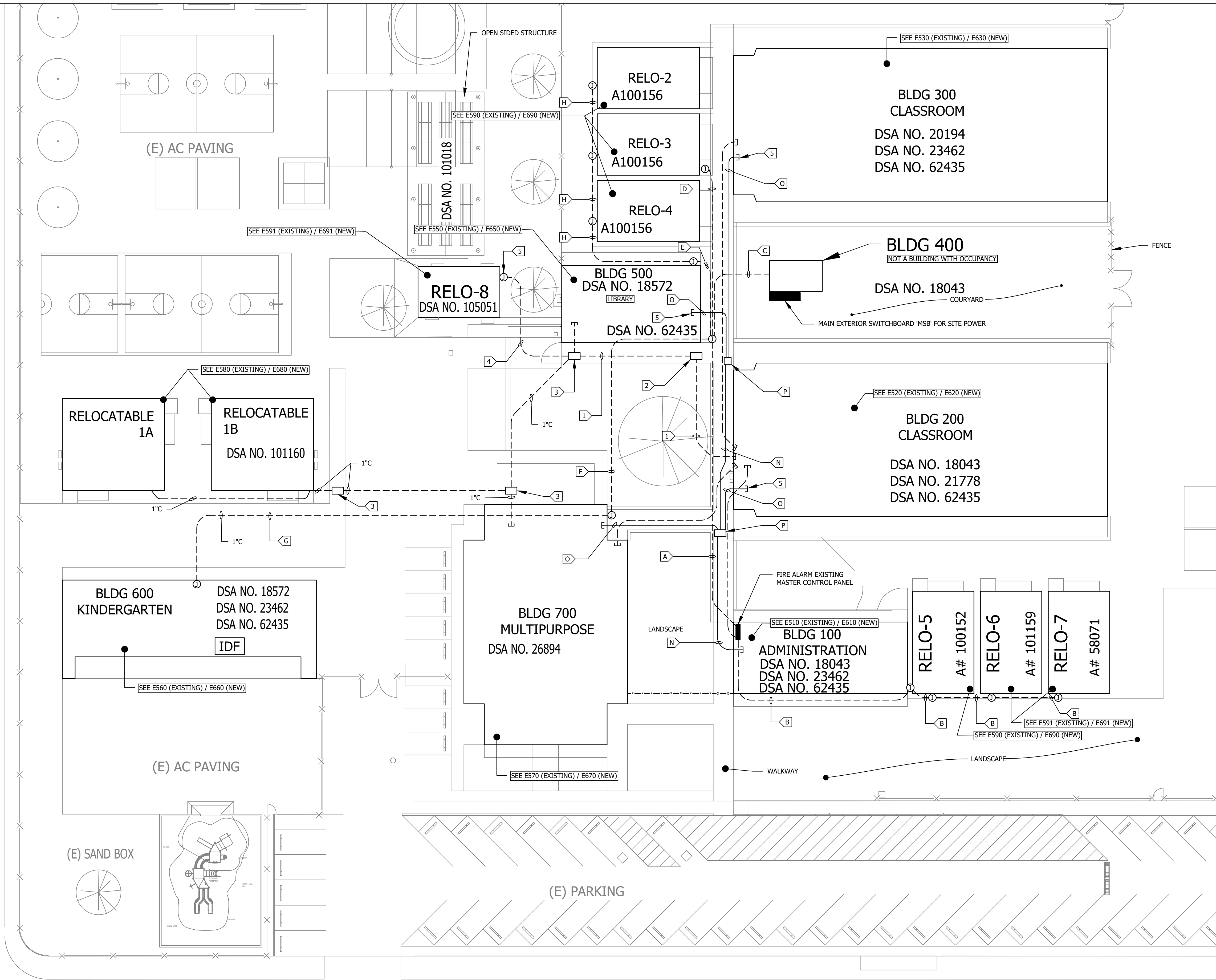
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DATE 05/10/2024
JOB. NO. 24009
A#03-124307, FILE 56-24, PTN 72553-61
SHEET SITE PLAN
TITLE

SHEET

A-101

DATE: 4 October 2024
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DATE: JAN 19, 2024
TIME: 10:10 AM

LAS POSAS ROAD



E. CALLE LA GUERRA

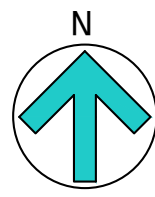
CONDUIT LEGEND	
---	UNDERGROUND
---	ABOVE GROUND



SITE FIRE ALARM PLAN - EXISTING CONDITIONS

SCALE: 1"=20'-0"

1
- E150



KEY NOTES:

- EXISTING 1.5" FIRE ALARM CONDUIT WITH FIRE ALARM CONDUCTORS, 2 #12 CU THWN (ANNUNCIATION) AND FIRE ALARM CONDUCTORS.
- EXISTING SIGNAL SYSTEMS UNDERGROUND PULL BOX WITH EXISTING FIRE ALARM CONDUCTORS.
- EXISTING FIRE ALARM INITIATION LOOP CABLE WATER TIGHT INSIDE THIS SIGNAL SYSTEMS PULL BOX. EXISTING CONDUIT OUT PULL BOX WITH FIRE ALARM CONDUCTORS TO RELOCATABLE BUILDING AS SHOWN.
- 1.25" - 2 #12 CU THWN (ANNUNCIATION); ONE 1" CABLE (INITIATION) PLUS ONE 1.25" (SPARE) UNDERGROUND FROM EXISTING SIGNAL SYSTEMS PULL BOX, WITH RISER UP BUILDING EXTERIOR WALL TO W.P. GUTTER.
- EXISTING W.P. 6" X 6" X 4" SIGNAL SYSTEMS GUTTER HIGH ON EXTERIOR WALL OF RELOCATABLE BUILDING FOR USE IN EXTENDING SIGNAL SYSTEMS CIRCUITS.

KEY NOTES: (UNDERGROUND)

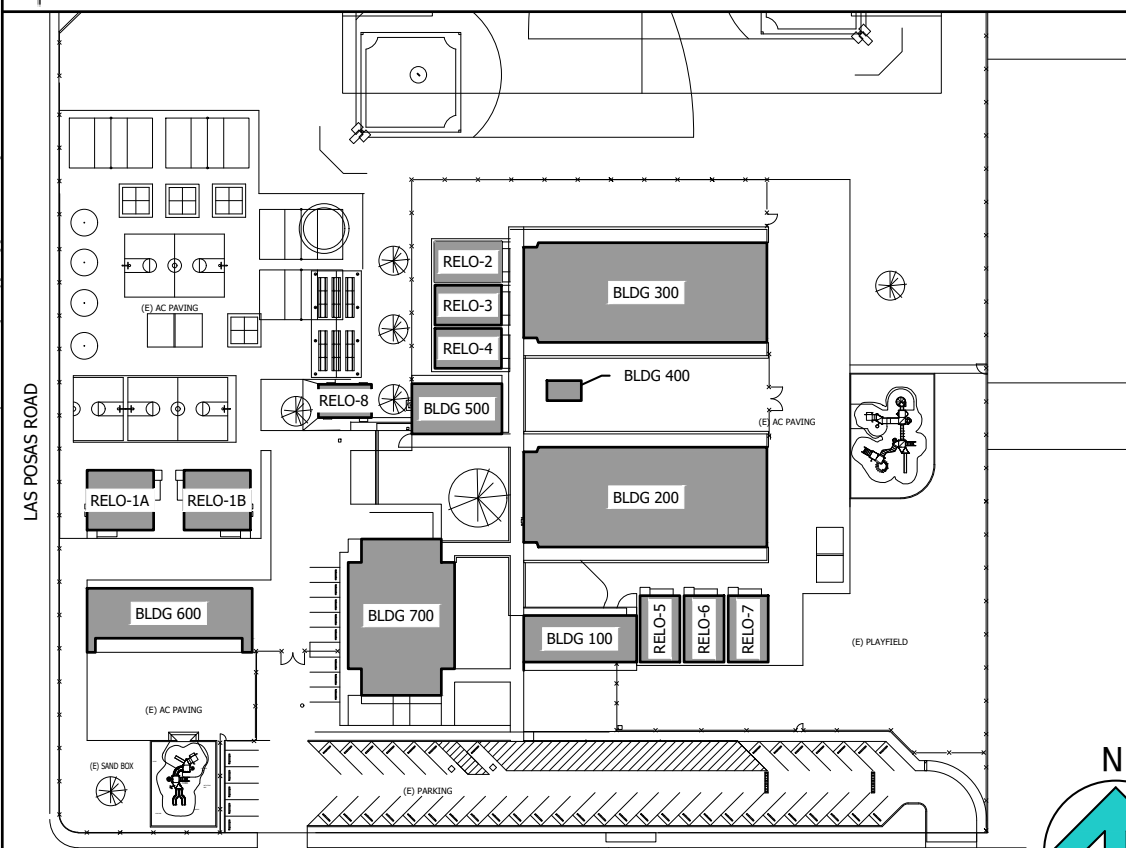
- 2 - LOOP #1 (TWISTED PAIR)
- 2 - LOOP #2 (TWISTED PAIR)
- 2 - SIGNAL CIRCUIT #2 1" C
- 2 - 24 VDC
- 6 - SPARE WIRE
- 2 - LOOP #1 (TWISTED PAIR)
- 4 - SIGNAL CIRCUIT #2 1" C
- 2 - LOOP #1 (TWISTED PAIR)
- 4 - SPARE 1" C
- 2 - LOOP #1 (TWISTED PAIR)
- 2 - SIGNAL CIRCUIT #3 1" C
- 2 - SIGNAL CIRCUIT #5
- 2 - SPARE WIRE
- 2 - LOOP #2 (TWISTED PAIR)
- 4 - SIGNAL CIRCUIT #3 1" C
- 4 - SIGNAL CIRCUIT #5
- 2 - SPARE WIRE
- 2 - LOOP #2 (TWISTED PAIR)
- 2 - SIGNAL CIRCUIT #4 1" C
- 2 - SIGNAL CIRCUIT #6
- 2 - SPARE WIRE
- 2 - LOOP #2 (TWISTED PAIR)
- 4 - SIGNAL CIRCUIT #5 1" C

KEY NOTES: (FOR NEW FA SYSTEM) - EXISTING CONDUITS

- (4) 1-1/2" C.O. FROM LOCATION FOR NEW FACP WITH INSTALLATION ABOVE WALKWAY CANOPY TO PULL BOX 'P'.
- (2) 1-1/4" C.O. FROM CONDUIT ABOVE WALKWAY WHICH IS ROUTED INTO BUILDING CEILING CAVITY FOR FA.
- PULL BOX FOR FA CONDUITS ON WALKWAY CANOPY STRUCTURE FOR NEW FA SYSTEM.
- CONDUIT STUBBED INTO BUILDING.

LIST OF BUILDINGS

ID	BUILDING USE	A# ORIG	A# MOD	CERTIFICATION
BLDG. 100	ADMIN	18043	23460 - 62435	#2
BLDG 200	CLASSROOM	18043	21778 - 62435	#2
BLDG 300	CLASSROOM	20194	23462 - 62435	#2
BLDG 400	ELECTRICAL	18043	-	#1
BLDG 500	LIBRARY	18572	62435	#2
BLDG 600	CLASSROOM	18572	23462 - 62435	#2
BLDG 700	CLASSROOM	26894	-	#1
BLDG	KITCHEN	03-105051	-	#1
BLDG 1	PORT. CR.	03-100152	-	#3
(REMAINING WORK IN PROGRESS)				
BLDG 2	PORT. CR.	03-100156	-	#2
BLDG 3	PORT. CR.	03-100156	-	#2
BLDG 4	PORT. CR.	03-100156	-	#2
BLDG 5	PORT. CR.	XXXX	-	#X
SHEL. 1	LUNCH SHELTER	03-101018	-	#1
RELO 2	PORT. CR.	03-101159	-	#3
(REMAINING WORK IN PROGRESS)				
RELO 3	PORT. CR.	03-101160	-	#1
PORT. 3	PORT. CR.	58071	-	#1



KEY MAP

REV

DATE

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DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
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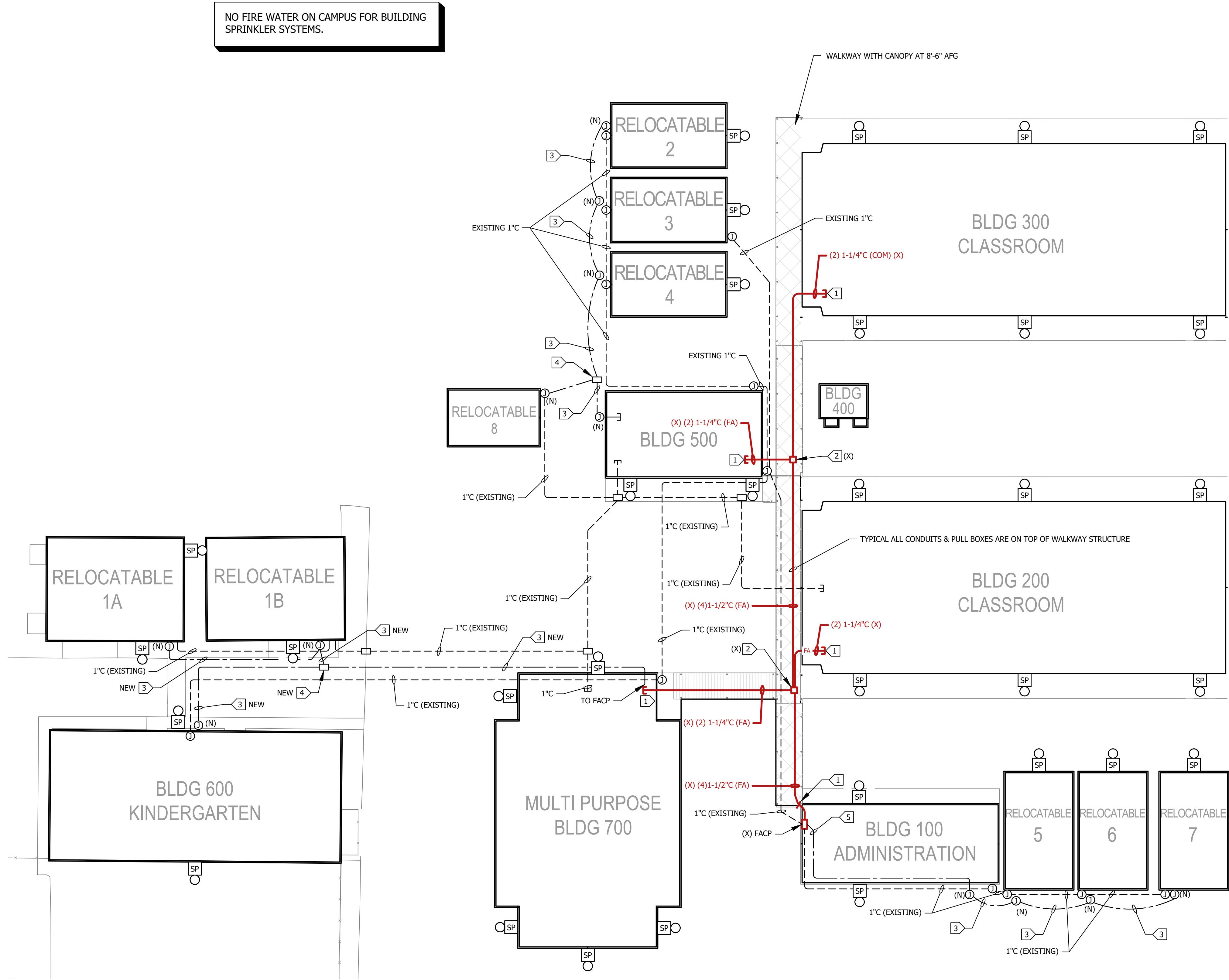
STAMP

SHEET TITLE:
SITE FIRE ALARM PLAN -
EXISTING CONDITIONS

PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:
LK/MW
CHECKED:
K. LUCCI
DATE:
10-04-2024
SCALE:
AS NOTED
JOB NO.
19753-07
SHEET:
FOR REFERENCE ONLY
E150
OF: SHEETS:

DATE: 4 October 2024
TIME: 8:15 am
PLOT DATE: 10/1/2024 8:15:00 AM
PLOT BY: CM03
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SAVE DATE: 10/1/2024 10:15:18 AM
DRAWING FILENAME: 19753-07-E600
DRAFTER: CM03
DRAFTING: G:\19\753\EL\Sheets\07 Las Posas ES\19753-07-E600.dwg
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NO FIRE WATER ON CAMPUS FOR BUILDING SPRINKLER SYSTEMS.

- SHEET NOTES:**
- FIELD VERIFY LOCATIONS OF ALL DEVICES AND EQUIPMENT.
 - CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL COMMUNICATION CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
 - MAXIMUM 180 DEGREE OF BEND BETWEEN PULL POINTS.
 - UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

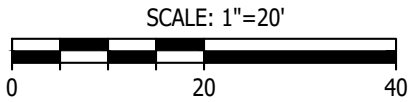
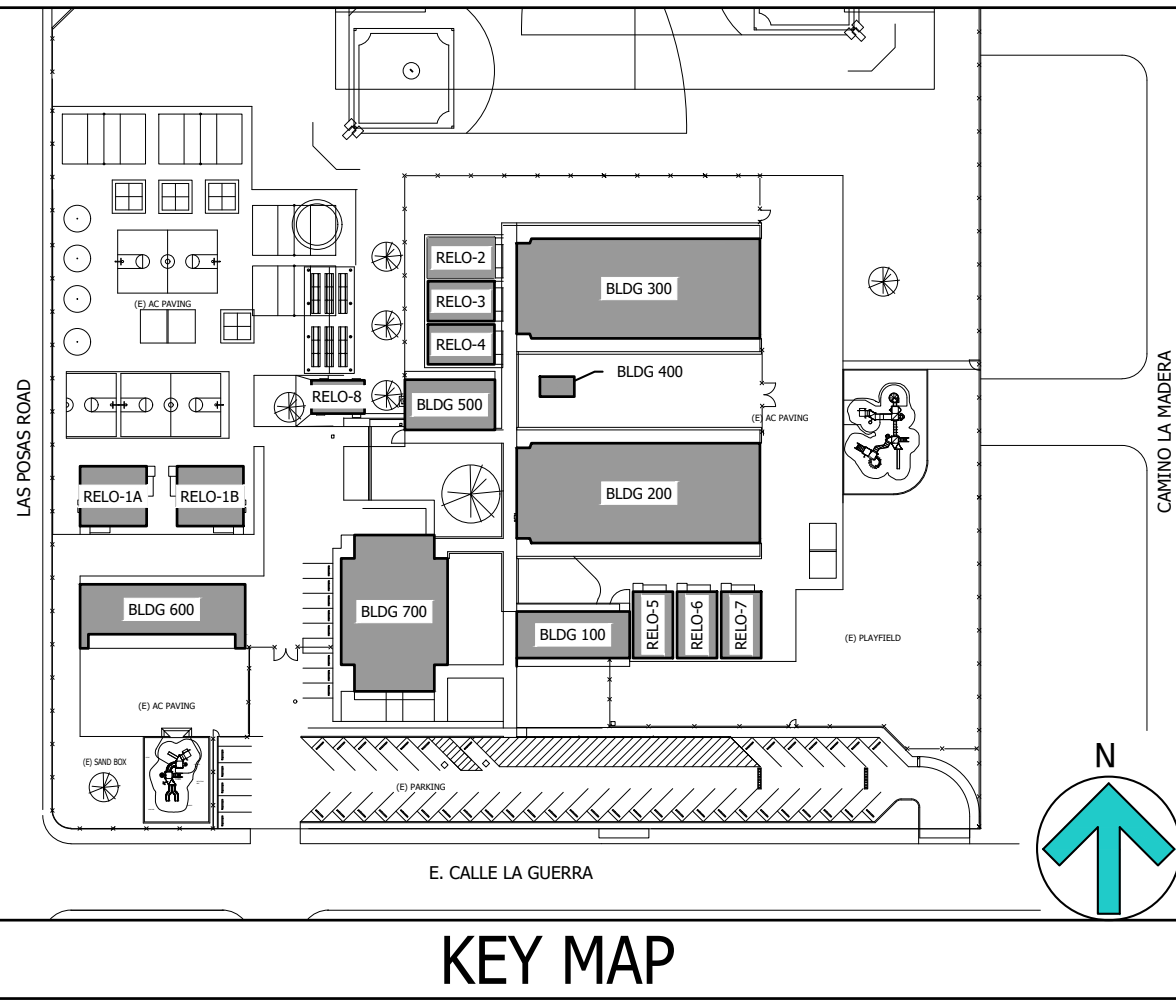
- KEY NOTES: (EXISTING WORK)**
- EXISTING CONDUIT EXTENDED INTO BUILDING.
 - EXISTING PULL BOX 18" x 18" x 6" NEMA 3R.
 - NEW 1-1/2" - UNDERGROUND WITH FA CABLES.
 - NEW 12" x 18" CONCRETE PER RISER PULLBOX (FLUSH TO GRADE) WITH TRAFFIC RATED COVER.
 - NEW 1-1/4" - WITH FA CABLES PER RISER DIAGRAM

NO BUILDINGS ON CAMPUS ARE SPRINKLERED.

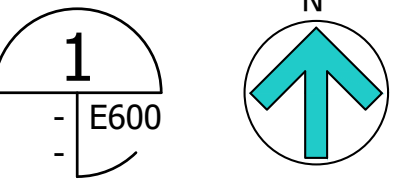
PROVIDE INTERFACE CABLING PER FA RISER DIAGRAM

LEGEND:

- UNDERGROUND (X)
- ABOVE GROUND (X)
- UNDERGROUND NEW
- SP OUTDOOR SPEAKER (FA)



SITE FIRE ALARM CONDUIT PLAN
SCALE: 1"=20'-0"



REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
1		APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519 <small>LUCCI & ASSOCIATES, INC. reserve their commonlaw copyright and other property rights in these plans. These plans and drawings are not to be reproduced, changed, or copied in any form or manner whatsoever without first obtaining the expressed written permission and consent of LUCCI & ASSOC. INC nor are they to be assigned to any third party without obtaining said written permission and consent.</small>		
STAMP 		
SHEET TITLE: SITE FIRE ALARM CONDUIT PLAN		
PROJECT: LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE		
DRAWN: LK/MW		
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET:		
E600		
OF:		SHEETS:

DATE: 4 October 2024
TIME: 8:15 am
PLOT DATE: 10/19/2024 8:15:04 AM
PLOT BY: CM03
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES
DRAWING FILENAME: 19753-07-E601
DRAFTER: CM03
DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E601.dwg
DATE: SEP 19, 2024
TIME: 10:31 AM

EMERGENCY VOICE/ALARM COMMUNICATIONS SYSTEM LEGEND				
SYMBOL	DESCRIPTION	MODEL #	C.S.F.M. #	BACK BOX REQUIREMENTS
	FIRE ALARM CONTROL PANEL	SILENT KNIGHT IFP-2100 ECS	7165-0559-0505	SURFACE OR FLUSH MOUNT
	FIRE ALARM TERMINAL CABINET	-		FURNISHED BY OTHERS
	NEW REMOTE POWER SUPPLY, 4ckt.	SILENT KNIGHT RPS-5495	7300-0559-0123	SURFACE MOUNT
	NETWORK INTERFACE CARD	SILENT KNIGHT NIC	7165-0559-0505	INSTALL IN IFP-2100ECS
	SINGLE MODE FIBER MODULE	SILENT KNIGHT FSL	7165-0559-0505	INSTALL IN IFP-2100ECS
	ANNUNCIATOR & HANDSET	SILENT KNIGHT IFP-2100 ECS	7165-0559-0505	INSTALL IN IFP-2100ECS
	SPEAKER ONLY, WALL MOUNT	SYSTEM SENSOR SP SRL	7320-1653-0505	4" SQ. DEEP BOX
	PULL STATION	SILENT KNIGHT IDP-PULL	7150-0559-0157	SINGLE GANG BOX
	50 WATT AMPLIFIER	SILENT KNIGHT ECS-50W	7300-0559-0173	SURFACE OR FLUSH MOUNT
	HEAT DETECTOR	SILENT KNIGHT IDP-HEAT	7270-0559-0147	4" SQ. BOX W/ 3" ROUND RING
	ATTIC SPACE HI-TEMP HEAT DETECTOR W/ BASE	SILENT KNIGHT IDP-HEAT-HT	7270-0559-0147	4" SQ. BOX W/ 3" ROUND RING
	MULTI CRITERIA DETECTOR W/ BASE (SMOKE, HEAT, CO)	SILENT KNIGHT IDP-FIRE-CO-W	7275-0559-0520	4" SQ. BOX W/ 3" ROUND RING
	INPUT MODULE	SILENT KNIGHT IDP-MINIMON	7300-0559-0155	4" SQ. BOX
	SPEAKER/STROBE COMBO, WALL MOUNT	SYSTEM SENSOR SP SRL	7320-1653-0505	4" SQ. DEEP BOX
	SPEAKER/STROBE COMBO, CEILING MOUNT	SYSTEM SENSOR SP SCRL	7320-1653-0505	4" SQ. DEEP BOX
	SPEAKER ONLY, CEILING MOUNT	SYSTEM SENSOR SP CRL	7320-1653-0505	4" SQ. DEEP BOX
	OUTDOOR SPEAKER	GENTEX WSSPKR	7320-0569-0141	4" SQ. DEEP BOX WP
	HVAC DUCT DETECTOR	3242-0559-0162	4" SQ. DEEP BOX	
	ADDRESSABLE MONITOR MODULE FOR 2 DEVICES	SILENT KNIGHT SK-MONITOR 2	7300-0559-0155	4" SQ. DEEP BOX
	RELAY MODULE	FCI AOM-2RF	7300-1703-0102	4" SQ. DEEP BOX
	END OF LINE RESISTOR (EOL)			

CALIFORNIA FIRE CODE NOTES:	
<p>907.2.3 A MANUAL AND AUTOMATIC FIRE ALARM SYSTEM THAT INITIATES THE OCCUPANT NOTIFICATION SIGNAL UTILIZING AN EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM MEETING THE REQUIREMENTS OF 907.5.2.2 AND INSTALLED IN ACCORDANCE WITH SECTION 907.6 SHALL BE INSTALLED IN GROUP E OCCUPANCIES WITH AN OCCUPANT LOAD OF 50 OR MORE PERSONS OR CONTAINING MORE THAN ONE CLASSROOM OR ONE OR MORE ROOMS USED FOR GROUP E OR -4 DAY CARE PURPOSES IN ACCORDANCE WITH THIS SECTION. WHEN AUTOMATIC SPRINKLER SYSTEMS OR SMOKE DETECTORS ARE INSTALLED, SUCH SYSTEMS OR DETECTORS SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM.</p> <p>EXCEPTIONS:</p> <ol style="list-style-type: none">MANUAL FIRE ALARM BOXES ARE NOT REQUIRED IN GROUP E OCCUPANCIES WHERE ALL OF THE FOLLOWING APPLY:<ol style="list-style-type: none">INTERIOR CORRIDORS ARE PROTECTED BY SMOKE DETECTORS.AUDITORIUMS, CAFETERIAS, GYMNASIUMS AND SIMILAR AREAS ARE PROTECTED BY HEAT DETECTORS OR OTHER APPROVED DETECTION DEVICES.SHOPS AND LABORATORIES INVOLVING DUSTS OR VAPORS ARE PROTECTED BY HEAT DETECTORS OR OTHER APPROVED DETECTION DEVICES.THE CAPABILITY TO ACTIVATE THE EVACUATION SIGNAL FROM A CENTRAL POINT IS PROVIDED.MANUAL FIRE ALARM BOXES ARE NOT REQUIRED IN GROUP E OCCUPANCIES WHERE ALL OF THE FOLLOWING APPLY:<ol style="list-style-type: none">THE BUILDING IS EQUIPPED THROUGHOUT WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 907.3.1.1THE EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM WILL ACTIVATE ON A SPRINKLER WATER FLOW.MANUAL ACTIVATION IS PROVIDED FROM A NORMALLY OCCUPIED LOCATIONS.THE CAPABILITY TO ACTIVATE THE EVACUATION SIGNAL FROM A CENTRAL POINT IS PROVIDED.FOR PUBLIC SCHOOL STATE FUNDED CONSTRUCTION PROJECTS SEE SECTION 907.2.29 <p>907.2.3.1 SYSTEM CONNECTION. WHERE MORE THAN ONE FIRE ALARM CONTROL UNIT IS USED AT THE SCHOOL CAMPUS , THEY SHALL BE INTERCONNECTED AND SHALL OPERATE ALL NOTIFICATION APPLIANCES.</p> <p>EXCEPTION: INTERCONNECTION OF FIRE ALARM CONTROL UNITS IS NOT REQUIRED WHEN ALL OF THE FOLLOWING ARE PROVIDED:</p> <ol style="list-style-type: none">BUILDINGS THAT ARE SEPARATED A MINIMUM OF 20 FEET AND IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE; ANDTHERE IS A METHOD OF TWO WAY COMMUNICATION BETWEEN EACH CLASSROOM AND THE SCHOOL ADMINISTRATIVE OFFICE APPROVED BY THE FIRE ENFORCING AGENCY; ANDA METHOD OF MANUAL ACTIVATION OF EACH FIRE ALARM SYSTEM IS PROVIDED. <p>907.2.3.2 ASSEMBLIES LOCATED WITHIN A GROUP E OCCUPANCY. ASSEMBLY OCCUPANCIES WITH AN OCCUPANT LOAD OF LESS THAN 1,000 AND LOCATED WITHIN A GROUP E OCCUPANCY CAMPUS OR BUILDING SHALL BE PROVIDED WITH A FIRE ALARM SYSTEM AS REQUIRED FOR THE GROUP E OCCUPANCY.</p> <p>907.2.3.3 NOTIFICATION. THE FIRE ALARM SYSTEM NOTIFICATION SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 907.5.</p> <p>907.2.3.4 ANNUNCIATION. ANNUNCIATION OF THE FIRE ALARM SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 907.6.4.1.</p> <p>907.2.3.5. MONITORING. SCHOOL FIRE ALARM SYSTEMS SHALL BE MONITORED IN ACCORDANCE WITH SECTION 907.6.6.3.</p> <p>907.2.3.6 AUTOMATIC FIRE ALARM SYSTEM. AUTOMATIC DETECTION SHALL BE PROVIDED IN ACCORDANCE WITH THIS SECTION.</p> <p>907.2.3.6.1 SMOKE DETECTORS. SMOKE DETECTORS SHALL BE INSTALLED AT THE CEILING OF EVERY ROOM AND IN 'CEILING-PLENUMS' UTILIZED FOR ENVIRONMENTAL AIR. WHERE THE CEILING IS ATTACHED DIRECTLY TO THE UNDER SIDE OF THE ROOF STRUCTURE, SMOKE DETECTORS SHALL BE INSTALLED ON THE CEILING ONLY.</p> <p>EXCEPTION: WHERE THE ENVIRONMENTAL OR AMBIENT CONDITIONS EXCEED SMOKE DETECTOR INSTALLATION GUIDELINES, HEAT DETECTORS OR FIRE SPRINKLERS SHALL BE USED.</p> <p>907.2.3.6.2 HEAT DETECTORS. MULTI-CRITERIA HEAT DETECTORS SHALL BE INSTALLED IN COMBUSTIBLE SPACES WHERE THE SPRINKLERS OR SMOKE DETECTORS ARE NOT INSTALLED.</p> <p>907.5.2.2 EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS. EMERGENCY VOICE/ALARM COMMUNICATION SYSTEMS REQUIRED BY THIS CODE SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72. THE OPERATION OF ANY AUTOMATIC FIRE DETECTORS, SPRINKLER WATER FLOW DEVICE OR MANUAL FIRE ALARM BOX SHALL AUTOMATICALLY SOUND AN ALERT TONE FOLLOWED BY VOICE INSTRUCTIONS GIVING APPROVED INFORMATION AND DIRECTIONS FOR A GENERAL OR STAGED EVACUATION IN ACCORDANCE WITH THE BUILDING'S FIRE SAFETY AND EVACUATION PLANS REQUIRED BY SECTION 404.</p> <p>907.5.2.2.1 MANUAL OVERRIDE. A MANUAL OVERRIDE FOR EMERGENCY VOICE COMMUNICATION SHALL BE PROVIDED ON A SELECTIVE AND ALL-CALL BASIS FOR ALL PAGING ZONES.</p> <p>907.5.2.2.2 LIVE VOICE MESSAGES. THE EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM SHALL BE ALSO HAVE THE CAPABILITY TO BROADCAST LIVE VOICE MESSAGES BY PAGING ZONES ON A SELECTIVE ALL-CALL BASIS.</p> <p>907.5.2.2.3 ALTERNATE USES. THE EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM SHALL BE ALLOWED TO BE USED FOR OTHER ANNOUNCEMENTS, PROVIDED THE MANUAL FIRE ALARM USE TAKES PRECEDENCE OVER ANY OTHER USE.</p> <p>907.5.2.4. GROUP E SCHOOLS. ONE AUDIBLE ALARM NOTIFICATION APPLIANCE SHALL BE MOUNTED ON THE EXTERIOR OF A BUILDING TO ALERT OCCUPANTS AT EACH PLAYGROUND AREA.</p> <p>907.6.6.3 GROUP E SCHOOLS. FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72. THE SUPERVISING STATION SHALL BE LISTED AS EITHER (UL) (ULX) (CENTRAL STATION) OR (UL) (REMOTE & PROPRIETARY) BY THE UNDERWRITERS LABORATORY INC. (UL) OR OTHER APPROVED LISTING AND TESTING LABORATORY OR SHALL COMPLY WITH THE REQUIREMENTS OF FM 3011.</p>	

WIRE CHART				
SYMBOL	CIRCUIT DESCRIPTION	WIRE IN CONDUIT	UNDERGROUND/ WET SYMBOL	WIRE IN CONDUIT UNDERGROUND/WET
SBUS 4-WIRE TOTAL	COMM CIRCUIT - POWER	2 CONDUCTOR 2/14 FPL SOLID TWISTED/UNSHIELDED	SBUSU	2 CONDUCTOR 2/14 FPL TWISTED WEST PENN #AQ225
	COMM CIRCUIT - DATA	2 CONDUCTOR 2/14 FPL SOLID TWISTED/SHIELDED		2 CONDUCTOR 2/14 FPL TWISTED/SHIELDED WEST PENN #AQ295
VBUS	AMPLIFIER COMM CIRCUIT	2 CONDUCTOR 2/16 FPL SOLID TWISTED/SHIELDED	VBUSU	2 CONDUCTOR 2/16 FPL STRANDED TWISTED/SHIELDED WEST PENN #AQ294
D	SIGNAL LINE CIRCUIT (SLC)	2 CONDUCTOR 2/16 FPL SOLID TWISTED/UNSHIELDED	DD	2 CONDUCTOR 2/16 FPL TWISTED/ UNSHIELDED WEST PENN #AQ225
N	NOTIFICATION APPLIANCE CIRCUIT (NAC)	2 CONDUCTOR 2/12 FPL SOLID TWISTED/UNSHIELDED OR THHN	NN	2 CONDUCTOR 2/12 FPL TWISTED/ UNSHIELDED WEST PENN #AQ227
S	SPEAKER APPLIANCE CIRCUIT (SAC)	2 CONDUCTOR 2/16 FPL SOLID TWISTED/SHIELDED	SS	2 CONDUCTOR 2/16 FPL STRANDED TWISTED/SHIELDED WEST PENN #AQ294
P	SOUNDER BASE POWER CIRCUIT	2 CONDUCTOR 2/16 FPL SOLID TWISTED/UNSHIELDED	PP	2 CONDUCTOR 2/16 FPL TWISTED/ UNSHIELDED WEST PENN #AQ225

SEQUENCE OF OPERATION									
ACTION DEVICE	THROUGHOUT BUILDING SOUND GENERAL ALARM	SOUND TROUBLE BUZZER	ACTIVATE ADDRESSABLE MODULE FOR MONITORING	ANNUNCIATE AT PANEL	TRANSMIT TROUBLE SIGNAL FOR ALL APPLICABLE COMPONENTS TO SUPERVISING STATION	TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	ACTIVE REMOTE POWER SUPPLY PANEL (FPS)	DROP HORN BELL, TONES, SPEAKERS & VISUAL ALARMS FROM F.A. SYSTEM	SHUT DOWN HVAC UNIT
INDICATING CIRCUIT FAILURE		●		●					
INITIATING CIRCUIT FAILURE				●					
AC / BATTERY FAILURE		●		●		●			
F.A. SYSTEM LOW BATTERY		●		●					
SMOKE DETECTORS	●			●		●	●	●	
HEAT DETECTORS	●			●		●	●	●	
CARBON MONOXIDE DETECTOR	●			●		●	●	●	
DUCT DETECTORS	●		●	●	●	●		●	●
ISOLATOR LINE TROUBLE		●		●					
EARTH GROUND FAULT		●			●				
ELECTRICAL ROOM SMOKE	●		●	●		●	●	●	

SCOPE OF WORK:	
PROVIDE A NEW EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM FOR THE PLEASANT VALLEY SCHOOL DISTRICT REMODEL.	
NEW E.V.A.C.S SYSTEM WILL PROVIDE FULL AUTOMATIC COVERAGE (INCLUDING CARBON MONOXIDE DETECTION) AND INTELLIGENT VOICE EVACUATION.	
EXISTING CAMPUS FIRE ALARM CONTROL PANEL WILL BE REPLACED WITH A <u>SILENT KNIGHT IFP-2100ECS</u> FOR THE EXISTING CAMPUS FIRE ALARM SYSTEM.	
PROVIDE A FIRE WATCH IF ANY BUILDING IS WITHOUT A FUNCTIONAL FIRE ALARM SYSTEM. NEW FA SYSTEM SHALL BE ACTIVE & APPROVED PRIOR TO DECOMMISSIONING THE EXISTING FA SYSTEM.	
GENERAL NOTES:	
1. APPLICABLE STANDARD 2022 NFPA 72	
2. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.	
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 THE ARCHITECT/ENGINEER OF THE PROJECT.	
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 LAB TESTING CRITERIA. APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.	
8. WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.	
9. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THAN 6" TO A HORIZONTAL STRUCTURE.	
10. AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIMUM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECTIONS 5 DBA MUST BE MAINTAINED.	
11. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.	
12. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.	
13. 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 CANDELA. VISUAL DEVICES WITHIN 55' FROM EACH OTHER SHALL BE SYNCHRONIZED.	
14. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.	
15. ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.	
16. 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 IN UNDERGROUND LOCATIONS. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.	
17. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' 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.	
18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANNER AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.	
19. 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.	
20. 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 ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.	
21. THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.	
22. CONTROL PANELS, REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48".	
23. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.	
24. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.	
25. ALL CEILINGS BASED ON 10' SMOOTH CEILINGS UNLESS OTHERWISE NOTED.	

PROJECT DATA:		
LIST OF APPLICABLE CODES		
2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR	2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR	
2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR	2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR	
2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR	TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS	
2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR	APPLICABLE STANDARDS	
2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR	FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.	
2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR		
2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR		
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR		
BUILDING CLASSIFICATION:	ALL CLASSROOMS/MODULARS A. OCCUPANCY TYPE: E-1 B. CONSTRUCTION TYPE: V-N C. SPRINKLERED: NOT	MULTIPURPOSE A. OCCUPANCY TYPE: A-3 B. CONSTRUCTION TYPE: V-B-MS ONE STORY C. SPRINKLERED: NOT
AGENCIES:	A. DIVISION OF THE STATE ARCHITECT	A. DIVISION OF THE STATE ARCHITECTA.

ALL BUILDINGS ARE NON
SPRINKLER BUILDINGS

REV

DAY

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 03-124307 INC:

REVIEWED FOR

SS ☐ FLS ☒ ACS ☐

DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
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STAMP

SHEET TITLE:

NEW FIRE ALARM MASTER
LEGEND

PROJECT:

LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:
LK/MW

CHECKED:
K. LUCCI

DATE:
10-04-2024

SCALE:
AS NOTED

JOB NO.
19753-07

SHEET:

E601

OF: SHEETS:

DRAWING FILENAME: 19753-07-E606
DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES19753-07-E606.dwg
DATE: 4 October 2024
TIME: 8:15 am
PLOT DATE: 10/21/2024 8:15:32 AM
PLOT BY: CW03
SAVE DATE: 9/21/2024 11:49:17 AM
DRAFTER: CW03

INSTALLATION AND MAINTENANCE INSTRUCTIONS
Farenhyt™ Series

Honeywell

12 Clintonville Road, Northford, CT 06472-1610
Phone: 203-464-7161 Fax: 203-464-7118
www.Farenhyt.com

IDP-Relay

SPECIFICATIONS	
Normal Operating Voltage:	15 to 32 VDC
Maximum Current Draw:	6.5 mA (LED on)
Average Operating Current:	250µA direct poll; 255µA group poll
EOI Resistance:	Not used
Temperature Range:	32°F to 120°F (0°C to 49°C)
Humidity:	10% to 93% Non-condensing
Dimensions:	4.675" H x 4.275" W x 1.4" D (Mounts to a 4" square by 2 1/4" deep box.)
Accessories:	SMBS500 Electrical Box

RELAY CONTACT RATINGS:

CURRENT RATING	MAXIMUM VOLTAGE	LOAD DESCRIPTION	APPLICATION
2 A	26 VAC	PF = 0.35	NON-CODED
3 A	30 VDC	RESISTIVE	NON-CODED
2 A	30 VDC	RESISTIVE	CODED
0.46 A	30 VDC	(L/R = 20MS)	NON-CODED
0.7 A	70.7 VAC	PF = 0.35	NON-CODED
0.9 A	125 VDC	RESISTIVE	NON-CODED
0.5 A	125 VAC	PF = 0.75	NON-CODED
0.3 A	125 VAC	PF = 0.35	NON-CODED

BEFORE INSTALLING

This information is included as a quick reference installation guide. Refer to the appropriate Honeywell Farenhyt series control panel installation manual for detailed system information. If the modules will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the modules.

NOTICE: This manual should be left with the owner/user of this equipment.

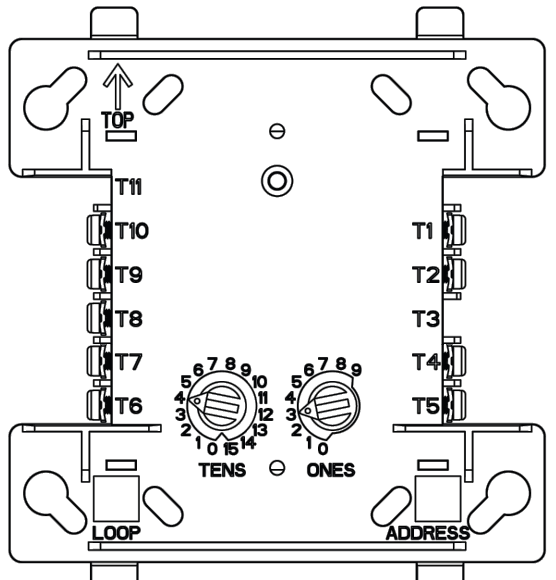
GENERAL DESCRIPTION

The IDP-Relay is intended for use in intelligent, two-wire systems where the individual address of each module is selected using the built-in rotary switches. It allows a compatible control panel to switch discrete contacts by code command. The relay contains two isolated sets of Form-C contacts, which operate as a DPDT switch and are rated in accordance with the table in the manual. Circuit connections to the relay contacts are not supervised by the module. The module also has a panel controlled LED indicator.

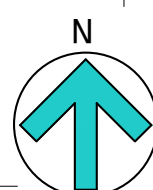
COMPATIBILITY REQUIREMENTS

To ensure proper operation, this module shall be connected to a compatible Honeywell Farenhyt series system control panel (list available from Honeywell).

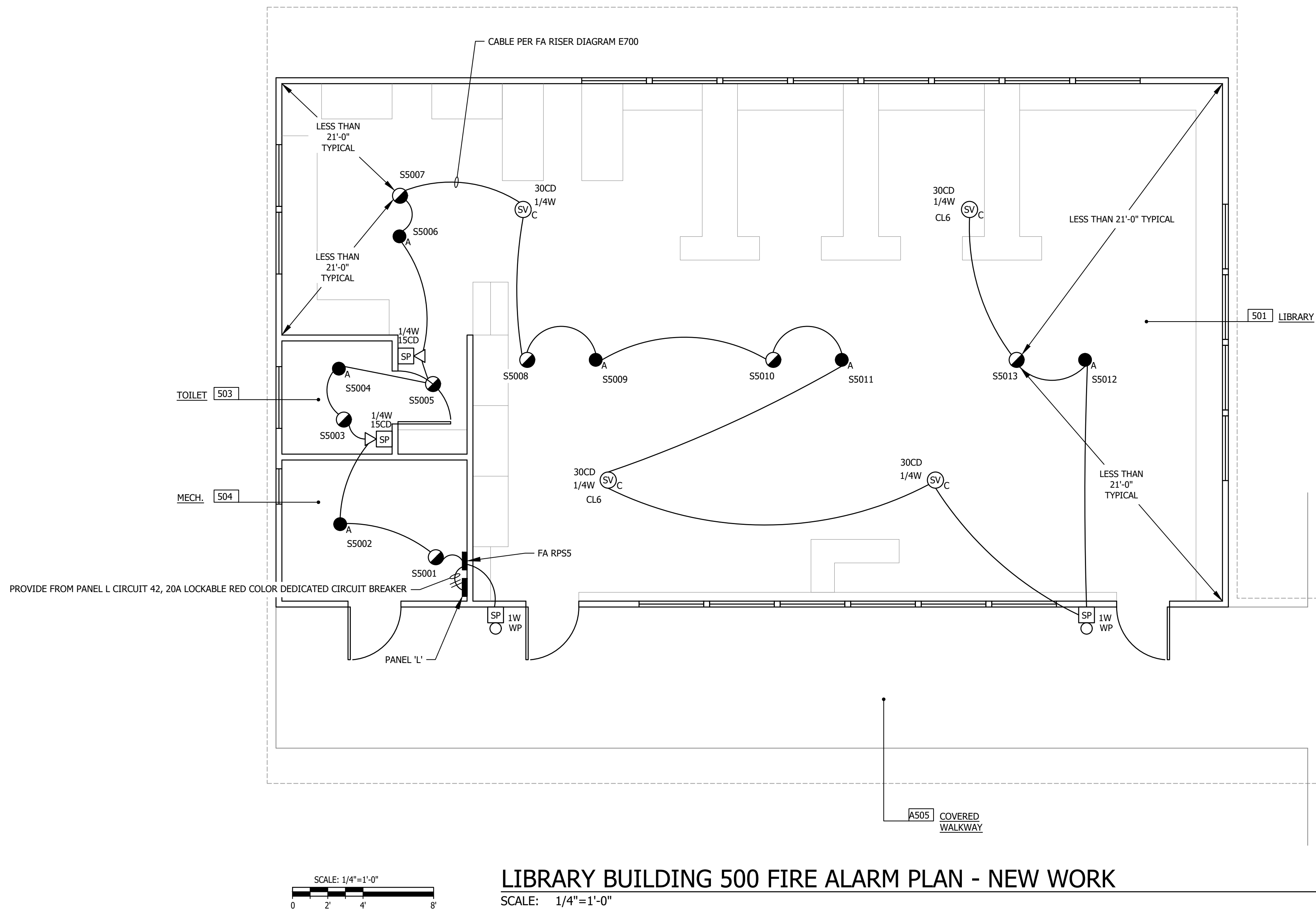
FIGURE 1. CONTROLS AND INDICATORS:



PANEL NUMBER				B		VOLTAGE				120/208		PHASE		3		WIRE		4		■ NEMA 1		■ COPPER BUSS	
SOURCE				DB		A.I.C.				10,000		■ MAIN CIRCUIT BREAKER				100		■ SURFACE MOUNTING					
PANEL LOCATION				BLDG 200		BUS AMPERE RATING				225													
IOF	M-PW	TRF	LINE	CIRCUIT DESCRIPTION			LOAD(VA)			BRKR			LOAD(VA)			CIRCUIT DESCRIPTION			M-PW	TRF	LINE	LCL	
				A	B	C	POLE	AMP	CKT	PHASE	CKT	AMP	POLE	A	B	C							
			9				1	20	1	+	2	20	1	-			WIREMOLD						
			9				1	20	3	+	4	20	1				WIREMOLD						
			9				1	20	5	+	6	20	1			-	WIREMOLD						
			9	-			1	20	7	+	8	20	1	-			WIREMOLD						
			9			-	1	20	9	+	10	20	1			-	WIREMOLD						
			9				1	20	11	+	12	20	1			-	WIREMOLD						
			9	-			1	20	13	+	14	20	1	-			WIREMOLD						
			9			-	1	20	15	+	16	20	1			-	WIREMOLD						
		10	STORAGE RESTROOM				1	20	17	+	18	20	1			-	WIREMOLD						
			EXISTING LOAD	-			1	20	19	+	20	20	1	-			WIREMOLD						
			EXISTING LOAD			-	1	20	21	+	22	20	1			-	WIREMOLD						
			EXISTING LOAD				1	20	23	+	24	20	1			-	WIREMOLD						
			EXISTING LOAD	-			1	20	25	+	26	20	1	-			WIREMOLD						
			EXISTING LOAD			-	1	20	27	+	28	20	1			-	WIREMOLD						
			EXISTING LOAD				1	20	29	+	30	20	1			-	WIREMOLD						
			EXISTING LOAD	-			1	20	31	+	32	20	1	-			WIREMOLD						
			EXISTING LOAD			-	1	20	33	+	34	20	1			-	FIRE ALARM						
			EXISTING LOAD				1	20	35	+	36						SPACE						
			SPACE						37	+	38						SPACE						
			SPACE						39	+	40						SPACE						
			SPACE						41	+	42						SPACE						
TOTALS				-	-	-								-	-	-	TOTALS						
L.C.L. VOLT AMPS:				PHASE A				PHASE B				PHASE C											
TOTAL VOLT AMPS:				PHASE A				PHASE B				PHASE C											
TOTAL AMPS:				PHASE A				PHASE B				PHASE C											



REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
		<div>APP: 03-124307 INC: REVIEWED FOR <input type="checkbox"/> SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024</div>
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTÉ MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519		
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STAMP		
		
SHEET TITLE: CLASSROOM BUILDING 200 FIRE ALARM PLAN - NEW WORK		
PROJECT: LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE		
DRAWN: LK/MW		OF: SHEETS:
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET:		E620

[illegible]

LIBRARY BUILDING 500 FIRE ALARM PLAN - NEW WORK
SCALE: 1/4"=1'-0"

SHEET NOTES:

1. FIELD VERIFY LOCATIONS OF ALL DEVICES AND EQUIPMENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL COMMUNICATION CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
3. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

KEY NOTES:

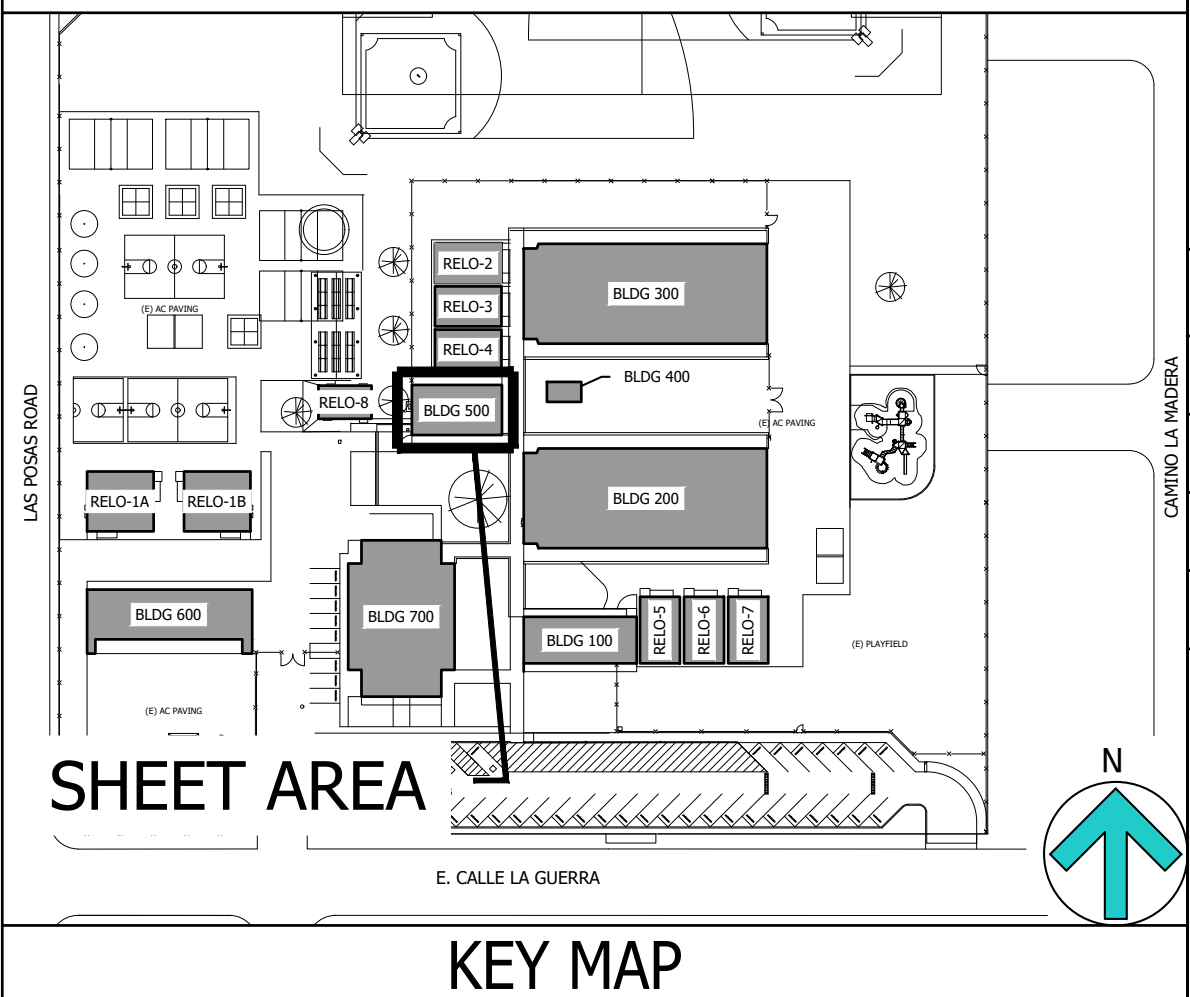
- 1 PROVIDE DEDICATED RED BREAKER (20A) WITH LOCK ON FOR FIRE ALARM.



EXTEND SITE CONDUITS TO FACP AS
REQUIRED TO SATISFY FA RISER

NO FIRE WATER ON CAMPUS FOR
BUILDING SPRINKLER SYSTEMS.

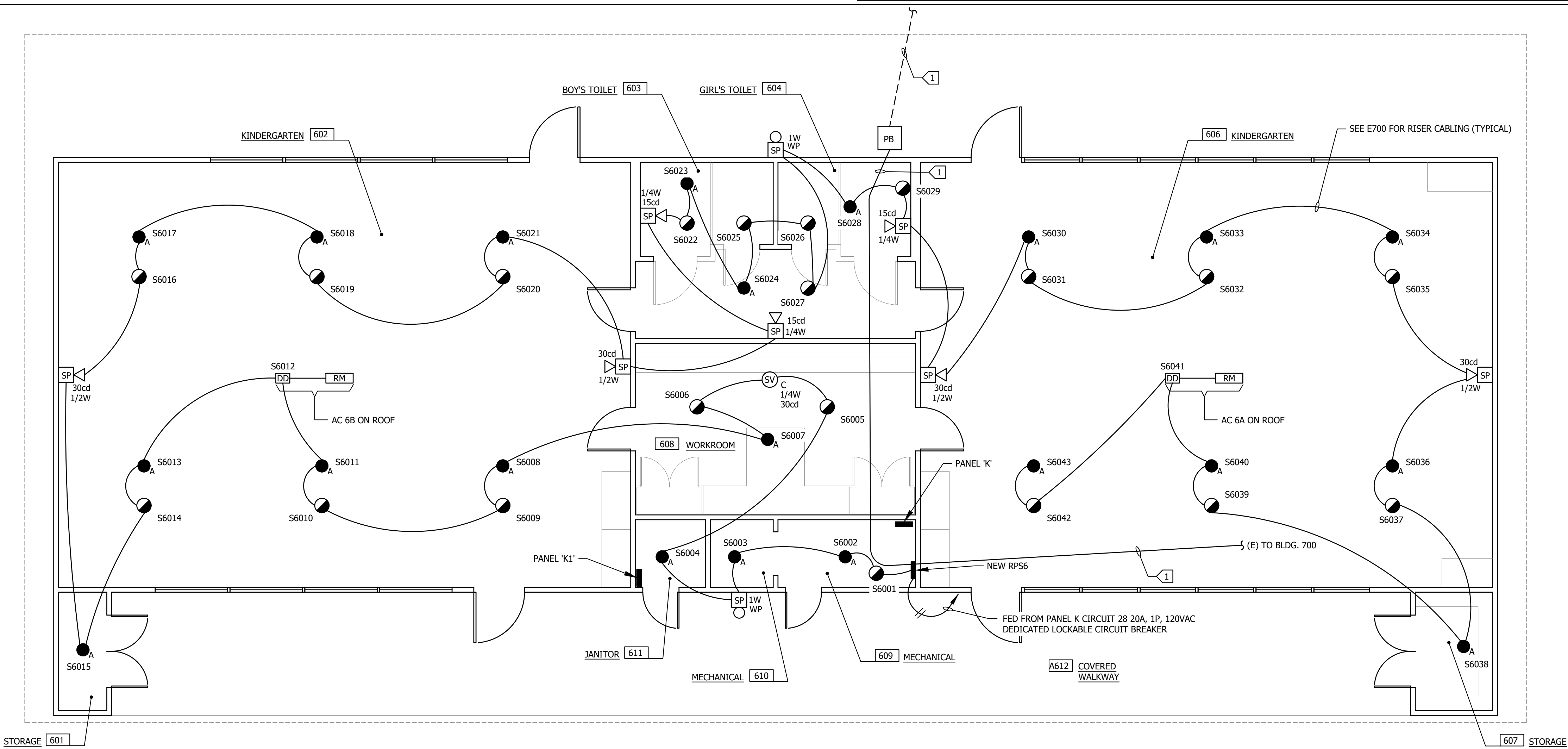
PROVIDE ACCESS PANELS
IN HARD HD CEILING

PROJECT DATA:	
BUILDING <u>CLASSIFICATION:</u>	A. OCCUPANCY TYPE: E B. CONSTRUCTION TYPE: V-N C. SPRINKLERED: NOT
<u>AGENCIES:</u>	A. DIVISION OF THE STATE ARCHITECT




REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
1		APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519 LUCCI & ASSOCIATES, INC. reserve their commonlaw copyright and other property rights in these plans. These plans and drawings are not to be reproduced, changed, or copied in any form or manner whatsoever without first obtaining the expressed written permission and consent of LUCCI & ASSOC. INC nor are they to be assigned to any third party without obtaining said written permission and consent.		
STAMP		
		
SHEET TITLE:		
LIBRARY BUILDING 500 FIRE ALARM PLAN - NEW WORK		
		
PROJECT:	LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE	
DRAWN: LK/MW		
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET:		
E650		
OF: SHEETS:		

PANEL NUMBER <u>K</u> VOLTAGE <u>120/208V</u> PHASE <u>3</u> WIRE <u>4</u>										<input checked="" type="checkbox"/> NEMA 1 <input checked="" type="checkbox"/> COPPER BUSS															
SOURCE <u>DB</u> A.I.C. <u>10,000</u>										<input checked="" type="checkbox"/> MAIN CIRCUIT BREAKER <u>100</u>															
PANEL LOCATION <u>BDLG 600 KINDERGARTEN</u> BUS AMPERE RATING <u>100</u>										<input checked="" type="checkbox"/> SURFACE MOUNTING															
C	N	B	L	P	C	CIRCUIT DESCRIPTION	LOAD(VA)			BRKR		PHASE A B C	C	BRKR		LOAD(VA)			CIRCUIT DESCRIPTION	N	B	L	P	C	
							A	B	C	POLE	AMP			AMP	POLE	A	B	C							
						AC-2	-				40	1		2	20	1	-			WIREMOLD					
						AC-2		-			3	3		4	20	1				WIREMOLD					
						AC-2			-		3	5		6	20	1				WIREMOLD					
						AC-2	-				40	7		8	20	1	-			WIREMOLD					
						AC-2		-				9		10	20	1		-		SPARE					
						AC-2			-		3	11		12	20	1		-		LIGHTING					
						EF-2	-				1	15	13	14	20	1	-			LIGHTING					
						EXISTING LOAD			-		1	20	15	16	20	1		-		LIGHTING					
						EXISTING LOAD			-		1	20	17	18	20	1		-		EXISTING LOAD					
						EXISTING LOAD	-				1	20	19	20	20	1	-			EXISTING LOAD					
						EXISTING LOAD		-			1	20	21	22	20	1		-		EXISTING LOAD					
						EXISTING LOAD			-		1	20	23	24	20	1		-		EXISTING LOAD					
						SPARE	-				1	20	25	26	20	1	-			EXISTING LOAD					
						SPARE			-		1	20	27	28	20	1				FIRE ALARM					
						SPARE			-		1	20	29	30						SPARE					
						SPARE	-				1	20	31	32						SPARE					
						SPARE		-			1	20	33	34						SPARE					
						SPARE			-		1	20	35	36						SPARE					
						SPARE	-				1	20	37	38						SPARE					
						SPARE			-		1	20	39	40						SPARE					
						SPARE			-		1	20	41	42						SPARE					
						TOTALS	-	-	-	-							-	-	-	TOTALS					
L.C.L. VOLT AMPS: PHASE A PHASE B PHASE C																									
TOTAL VOLT AMPS: PHASE A PHASE B PHASE C																									
TOTAL AMPS: PHASE A PHASE B PHASE C																									



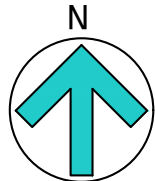
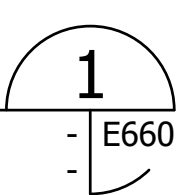
SCALE: $\frac{1}{4}" = 1'-0"$



A horizontal scale bar with alternating black and white segments. It is marked with '0', '2'', '4'', and '8'' at regular intervals.

KINDERGARTEN BUILDING 600 FIRE ALARM PLAN - NEW WORK

SCALE: 1/4"=1'-0"



SHEET NOTES:

1. FIELD VERIFY LOCATIONS OF ALL DEVICES AND EQUIPMENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL COMMUNICATION CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
3. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

KEY NOTES:

- 1 PER E700/701 FA RISER DIAGRAM.
- 2 PROVIDE DEDICATED RED COLOR 20A BREAKER WITH LOCK ON FOR FIRE ALARM.

EXTEND SITE CONDUITS TO FACP AS
REQUIRED TO SATISFY FA RISER

NO FIRE WATER ON CAMPUS FOR
BUILDING SPRINKLER SYSTEMS.

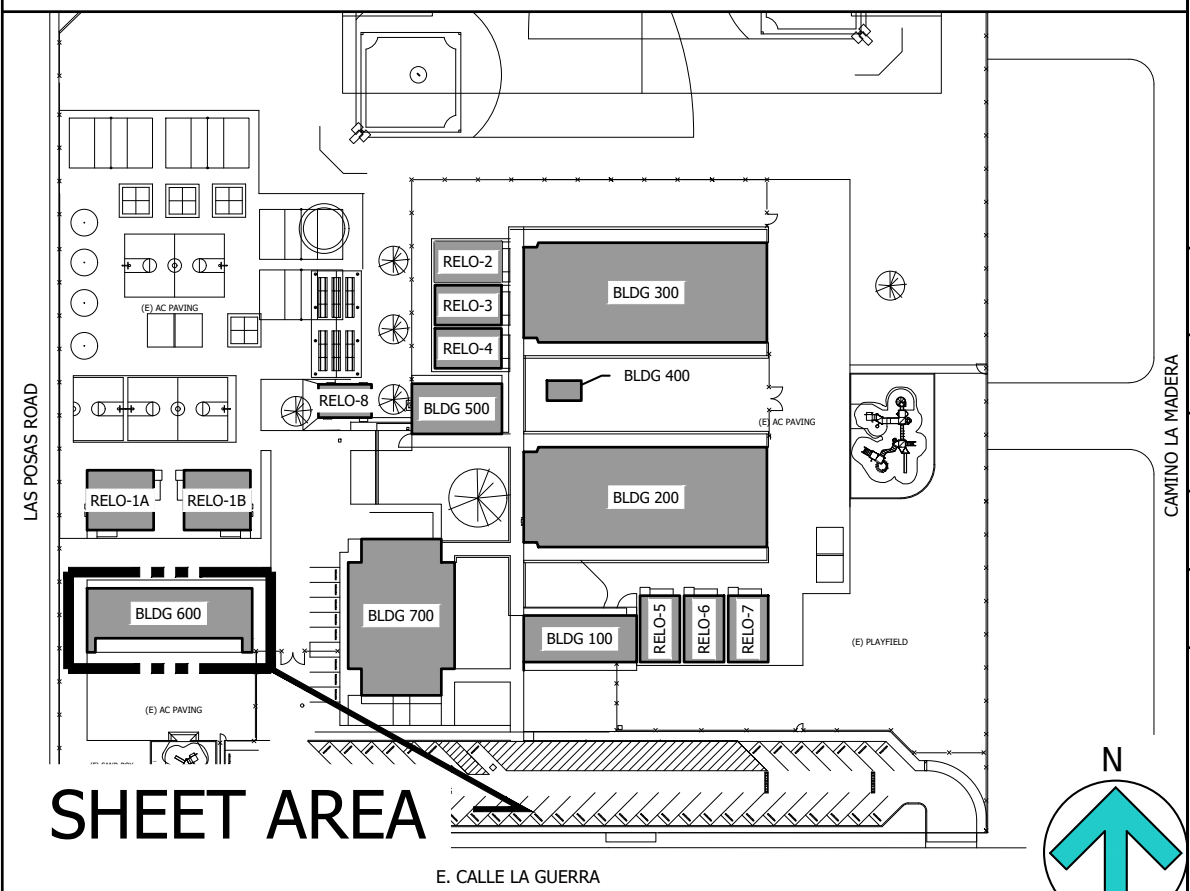
PROVIDE ACCESS PANELS
IN HARD HD CEILING

PROJECT DATA:

BUILDING
CLASSIFICATION:

A. OCCUPANCY TYPE: E
B. CONSTRUCTION TYPE: V-N
C. SPRINKLERED: NOT

A. DIVISION OF THE STATE ARCHITECT

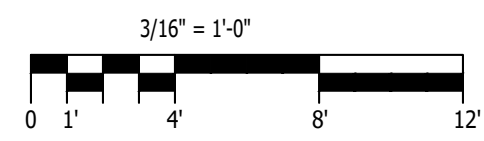
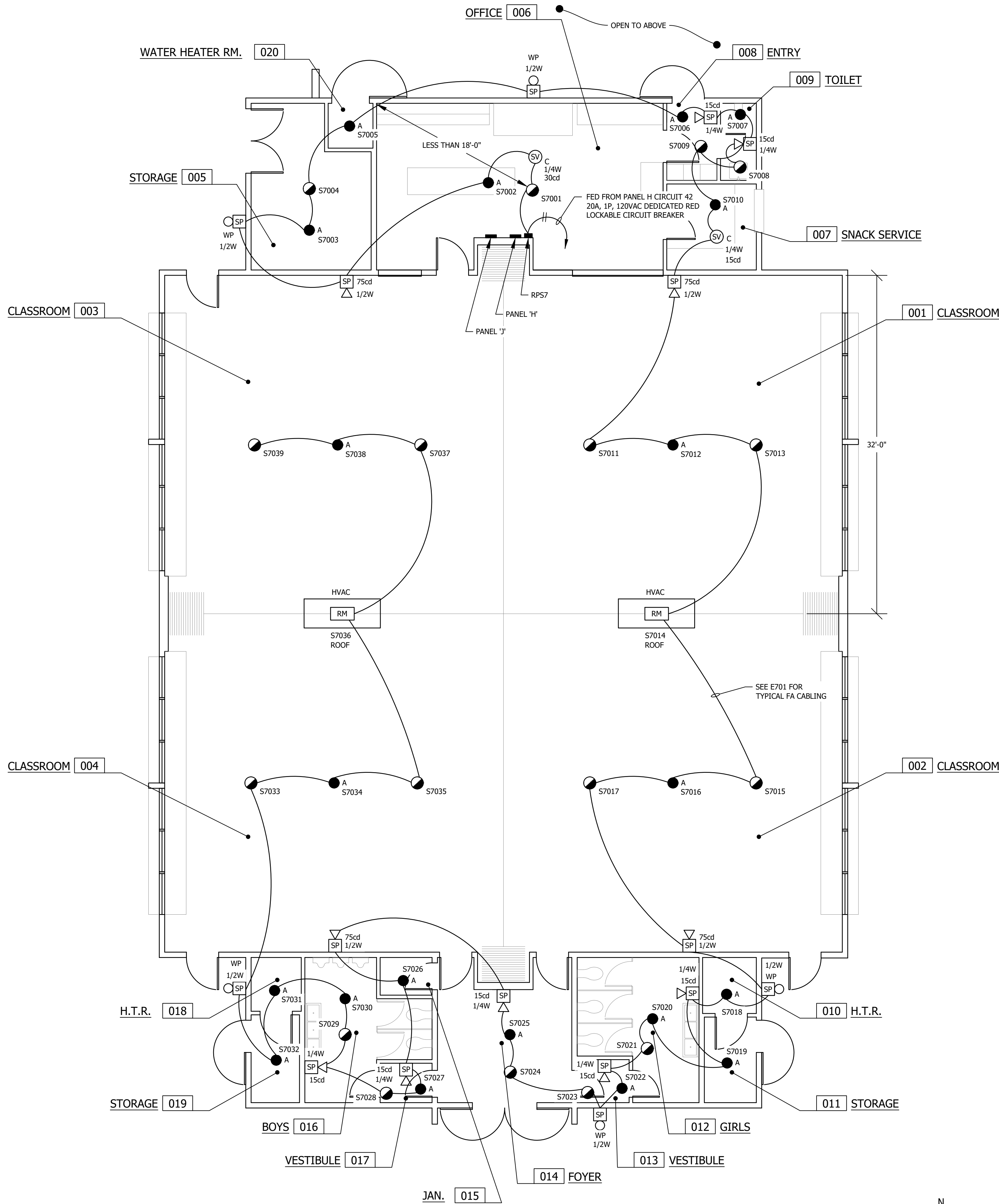


SHEET AREA

KEY MAP

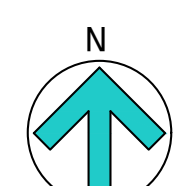
	REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT		
			APP: 03-124307 INC: REVIEWED FOR: <input type="checkbox"/> SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024		
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519					
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STAMP					
KINDERGARTEN BUILDING 600 FIRE ALARM PLAN - NEW WORK					
SHEET TITLE:					
PROJECT: LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE					
DRAWN: LK/MW					
CHECKED: K. LUCCI					
DATE: 10-04-2024					
SCALE: AS NOTED					
JOB NO. 19753-07					
SHEET:					
E660					
OF:			SHEETS:		

DATE: 4 October 2024
TIME: 8:15 am
PLOT DATE: 10/19/2024 8:15:51 AM
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES
PLOT BY: CM03
SAVE DATE: 10/19/2024 10:39:02 AM
DRAWING FILENAME: 19753-07-E670
DRAFTER: CM03
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DATE: OCT 01, 2024
TIME: 1:25 PM



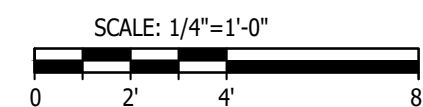
MULTIPURPOSE BUILDING 700 FIRE ALARM PLAN - NEW WORK
SCALE: 3/16"=1'-0"

1
- E670



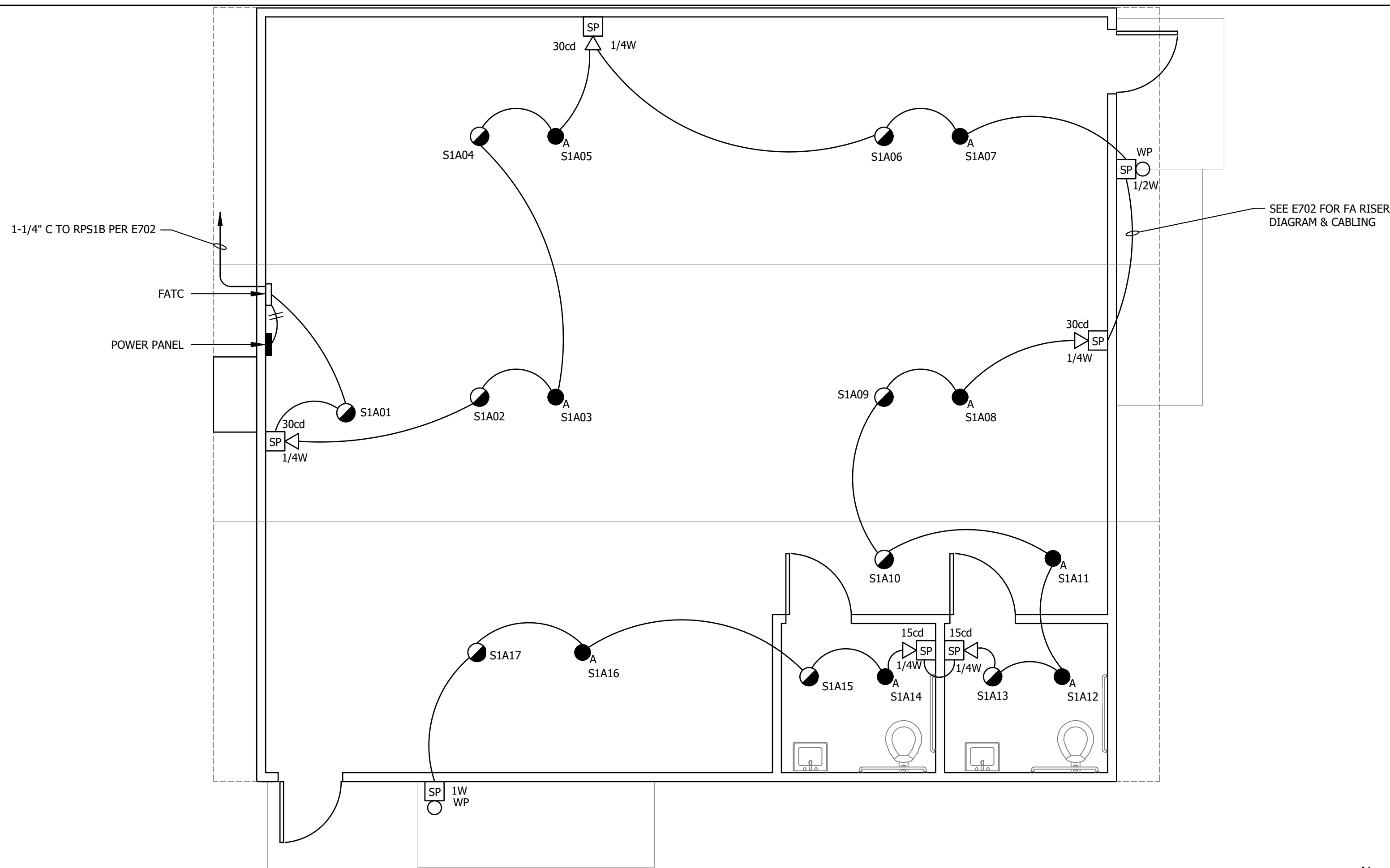
PANEL NUMBER <u>H</u>										VOLTAGE <u>120/240</u>										PHASE <u>1</u> WIRE <u>3</u>										■ NEMA 1										■ COPPER BUSS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
SOURCE <u>DB</u>										A.I.C. <u>10,000</u>																				■ MAIN CIRCUIT BREAKER <u>200</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
PANEL LOCATION <u>BLDG 700</u>										BUS AMPERE RATING <u>200</u>																				■ SURFACE MOUNTING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
L	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C

PANEL NUMBER				R1				VOLTAGE				120/208				PHASE				3				WIRE				3				NEMA 1				COPPER BUSS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SOURCE				DB				A.I.C.				10000				BUS AMPERE RATING				100				MAIN CIRCUIT BREAKER				100				SURFACE MOUNTING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
PANEL LOCATION				B1				BUS AMPERE RATING				100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
L	C	M	P	W	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R



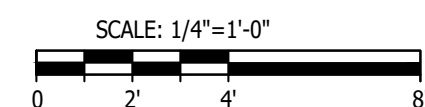
RELOCATABLE 1B FIRE ALARM PLAN - NEW WORK

SCALE: 1/4"=1'-0'

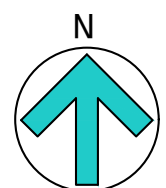


RELOCATABLE 1A FIRE ALARM PLAN - NEW WORK

SCALE: 1/4"=1'-0'



2
- E680



SHEET NOTES:

1. FIELD VERIFY LOCATIONS OF ALL DEVICES AND EQUIPMENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL COMMUNICATION CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
3. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

KEY NOTES:

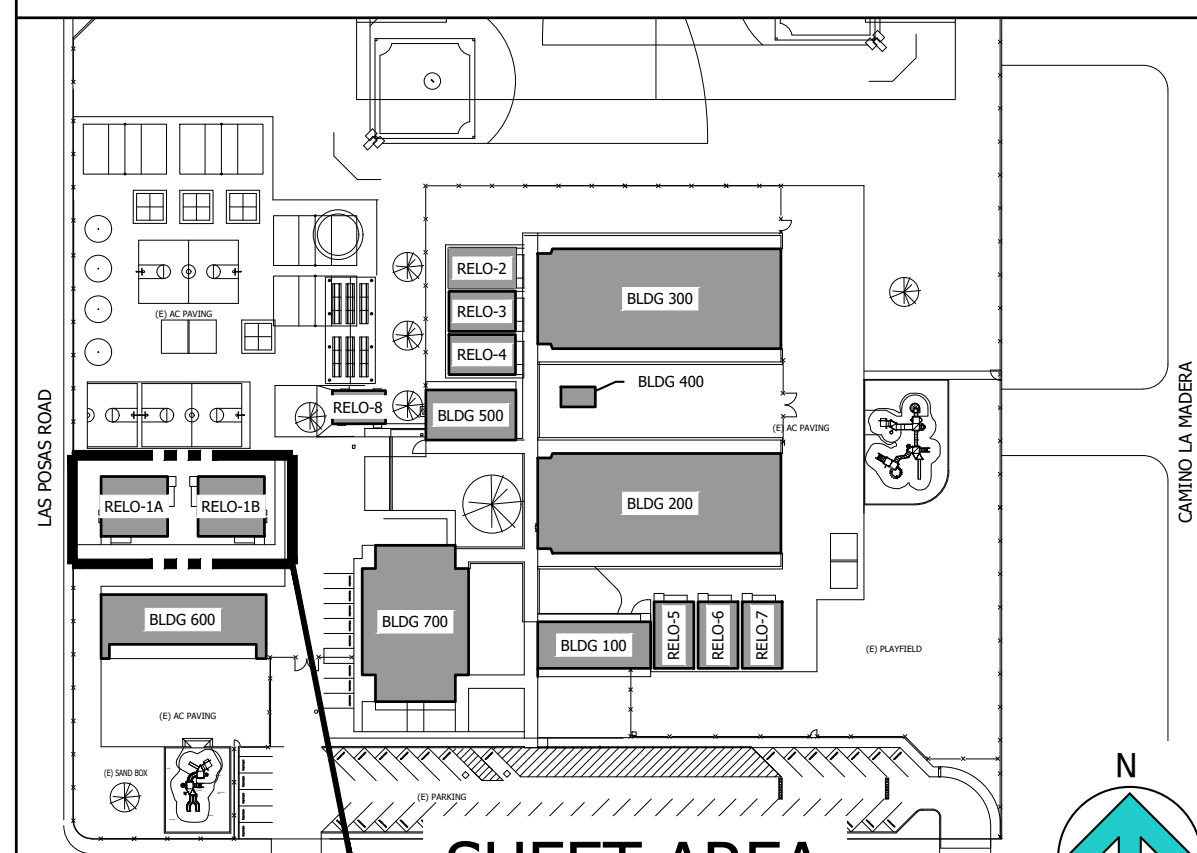
- 1 FEEDERS PER FA RISER DIAGRAM E700/701/702.
- 2 RED LOCK ON 20A DEDICATED CIRCUIT BREAKER.

EXTEND SITE CONDUITS TO FACP AS
REQUIRED TO SATISFY FA RISER

NO FIRE WATER ON CAMPUS FOR BUILDING SPRINKLER SYSTEMS.


PROVIDE ACCESS PANELS
IN HARD HD CEILING

PROJECT DATA:	
BUILDING CLASSIFICATION:	A. OCCUPANCY TYPE: E B. CONSTRUCTION TYPE: V-N C. SPRINKLERED: NOT
AGENCIES:	A. DIVISION OF THE STATE ARCHITECT



SHEET AREA

KEY MAP

REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
		APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519

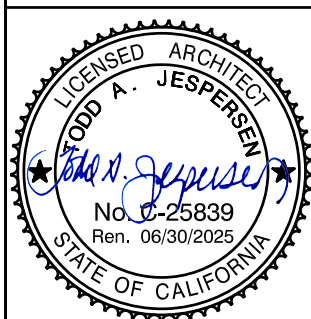
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STAMP



SHEET TITLE:

RELOCATABLE
BUILDING 1A AND 1B
FIRE ALARM PLANS -
NEW WORK



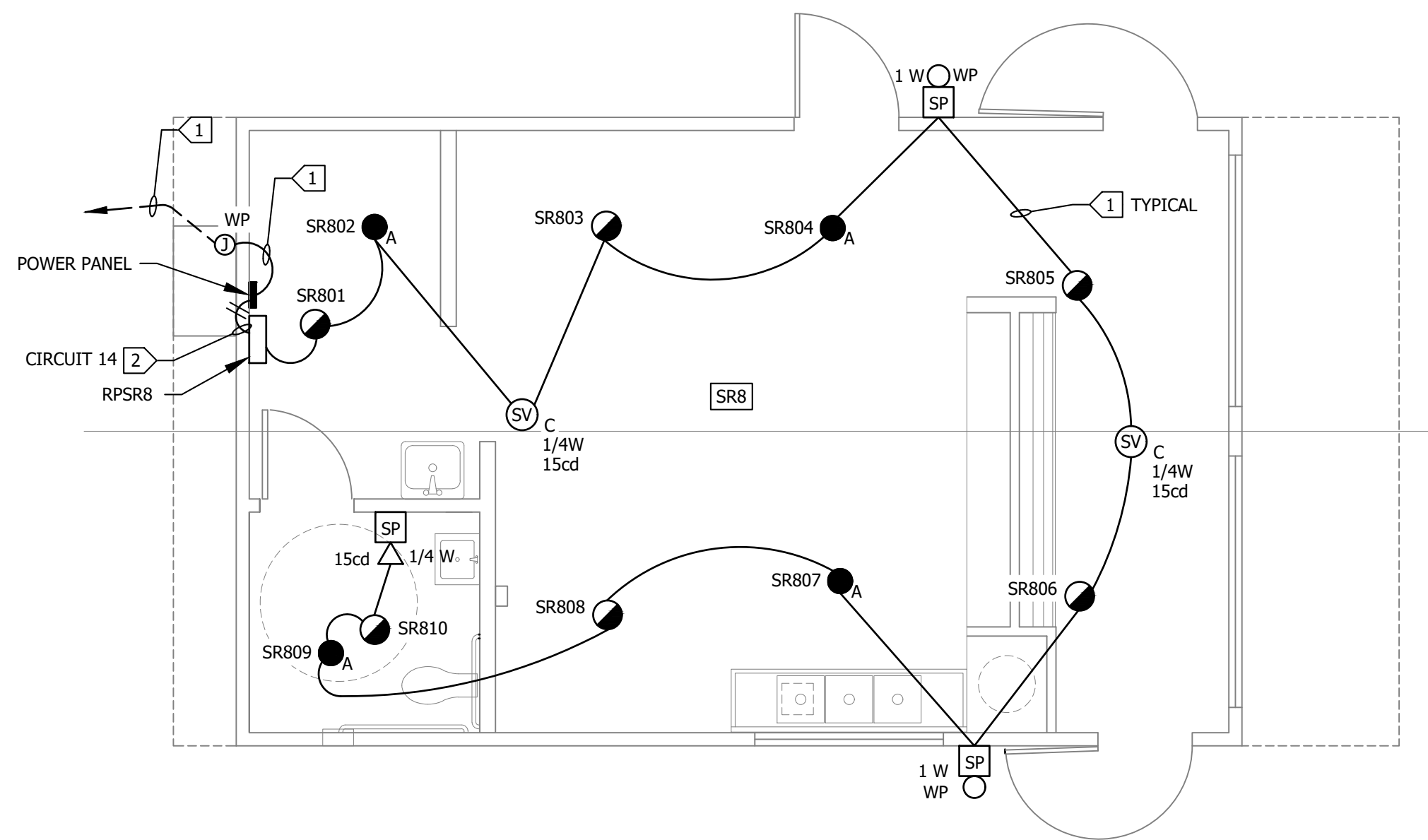
PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN: LK/MW	
CHECKED: K. LUCCI	
DATE: 10-04-2024	
SCALE: AS NOTED	
JOB NO. 19753-07	
SHEET:	

E680

OF: SHEETS:

PANEL NUMBER <u>R8</u>										VOLTAGE <u>120/240</u>										PHASE <u>1</u> <u>WIRE</u> <u>3</u>										<input checked="" type="checkbox"/> NEMA 1 <input checked="" type="checkbox"/> COPPER BUSS																	
SOURCE <u>DB</u>										A.I.C. <u>10000</u>																				<input checked="" type="checkbox"/> MAIN CIRCUIT BREAKER <u>100</u>																	
PANEL LOCATION <u>RELOCATABLE 8</u>										BUS AMPERE RATING <u>100</u>																				<input checked="" type="checkbox"/> SURFACE MOUNTING																	
L.C.L.		N.C.W.		N.C.W.		N.C.W.		N.C.W.		N.C.W.		CIRCUIT DESCRIPTION		LOAD(VA)		BRKR		PHASE		BRKR		LOAD(VA)		CIRCUIT DESCRIPTION		N.C.W.		L.C.L.																			
														A	B	POLE	AMP	CT	A	B	AMP	POLE	A			B																					
													HVAC	-	-			1	2	20	1	-	-																								
													HVAC	-	-	2		3	4																												
													SPACE	-	-	5		6																													
														-	-	7		8																													
														-	-	9		10																													
														-	-	11		12																													
														-	-	13		14																													
														-	-	15		16																													
														-	-	17		18																													
														-	-	19		20																													
														-	-	21		22																													
														-	-	23		24																													
TOTALS												-	-																																		
L.C.L. VOLT AMPS: .												PHASE A .												PHASE B .												.											
TOTAL VOLT AMPS: .												PHASE A .												PHASE B .												.											
TOTAL AMPS: .												PHASE A .												PHASE B .												.											



RELOCATABLE BUILDING #8 FIRE
ALARM PLAN - NEW WORK

3/16" = 1'-0"

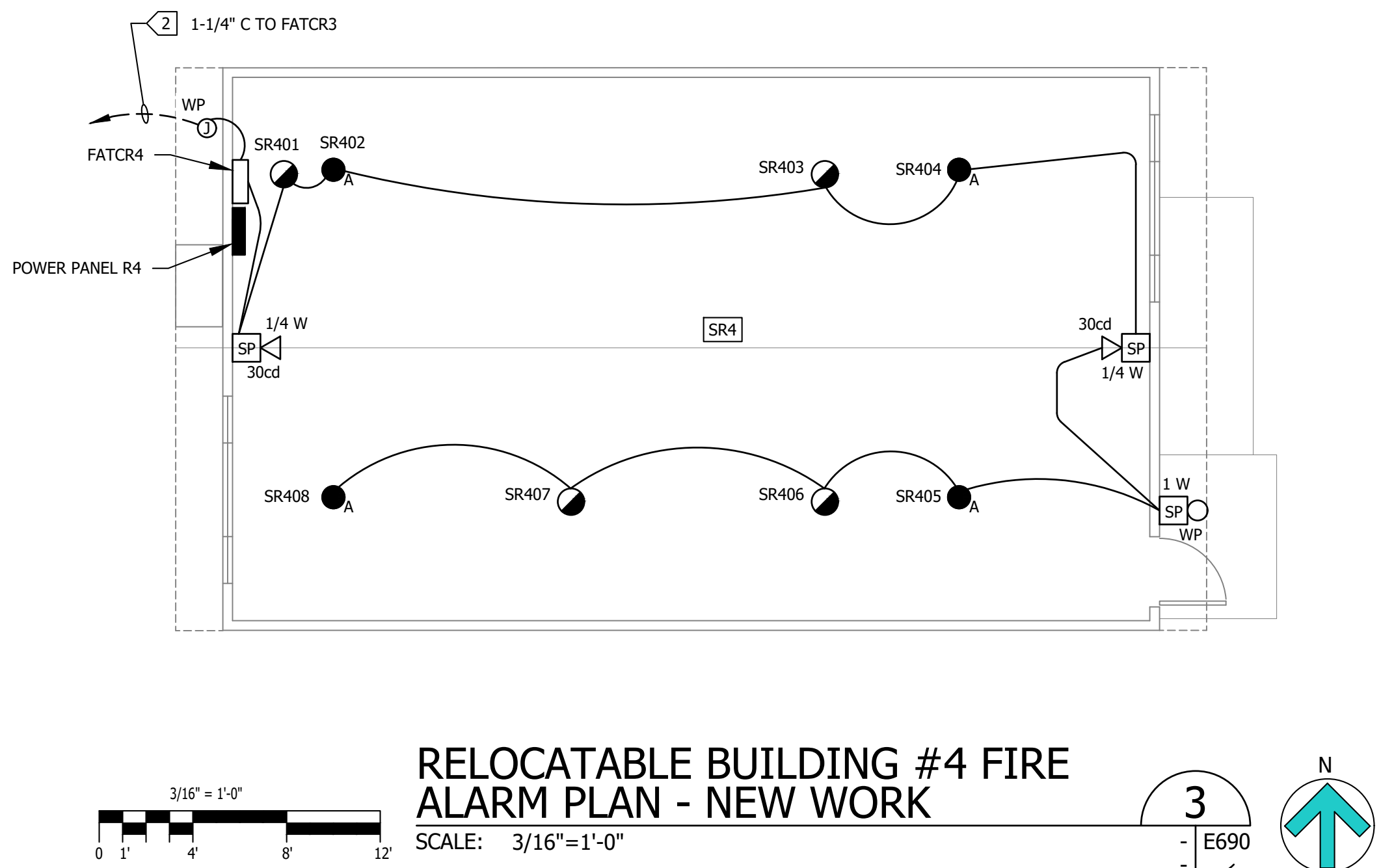
0 1' 4' 8' 12'

SCALE: 3/16"=1'-0"

4

E690

N



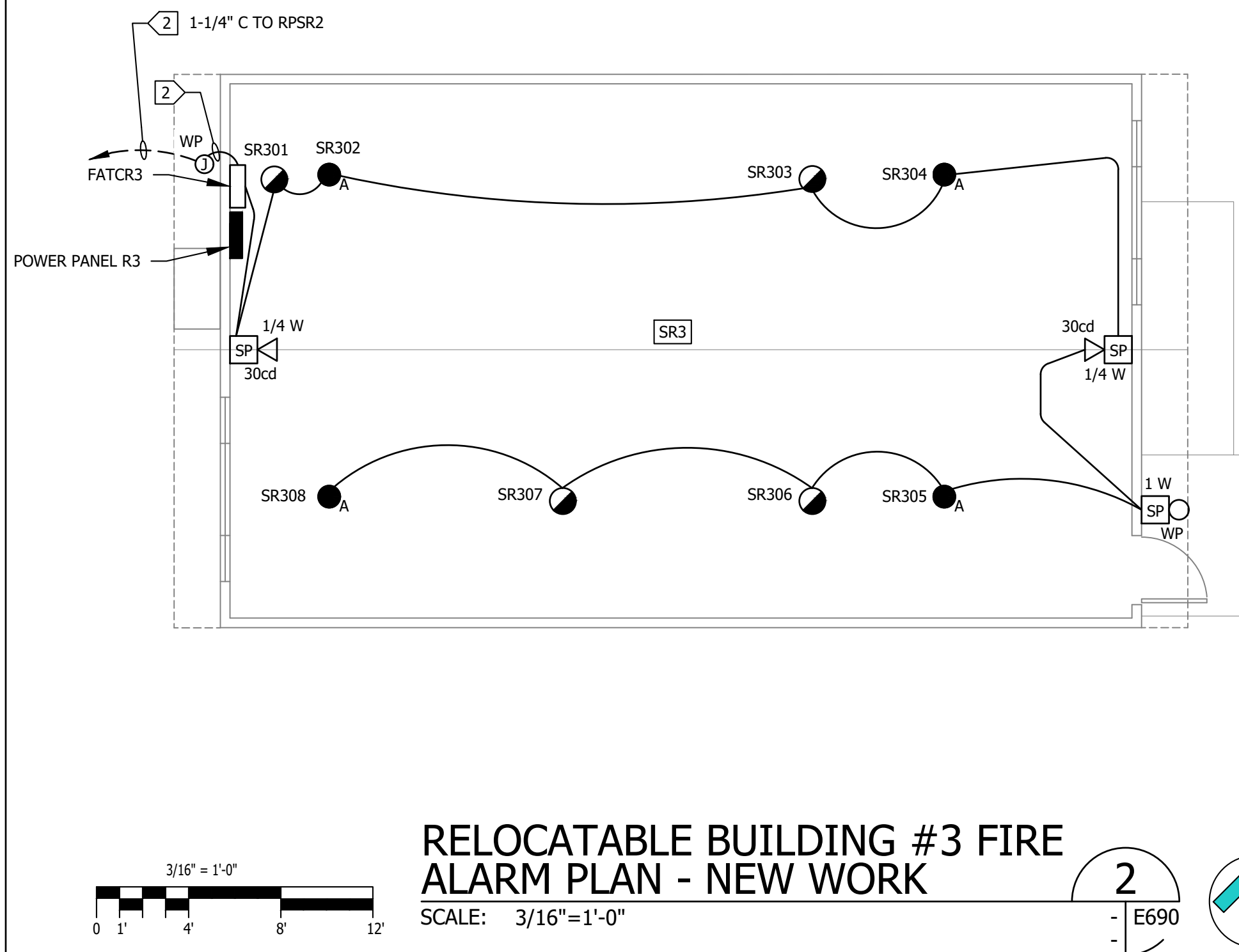
RELOCATABLE BUILDING #4 FIRE
ALARM PLAN - NEW WORK

SCALE: 3/16"=1'-0"

3

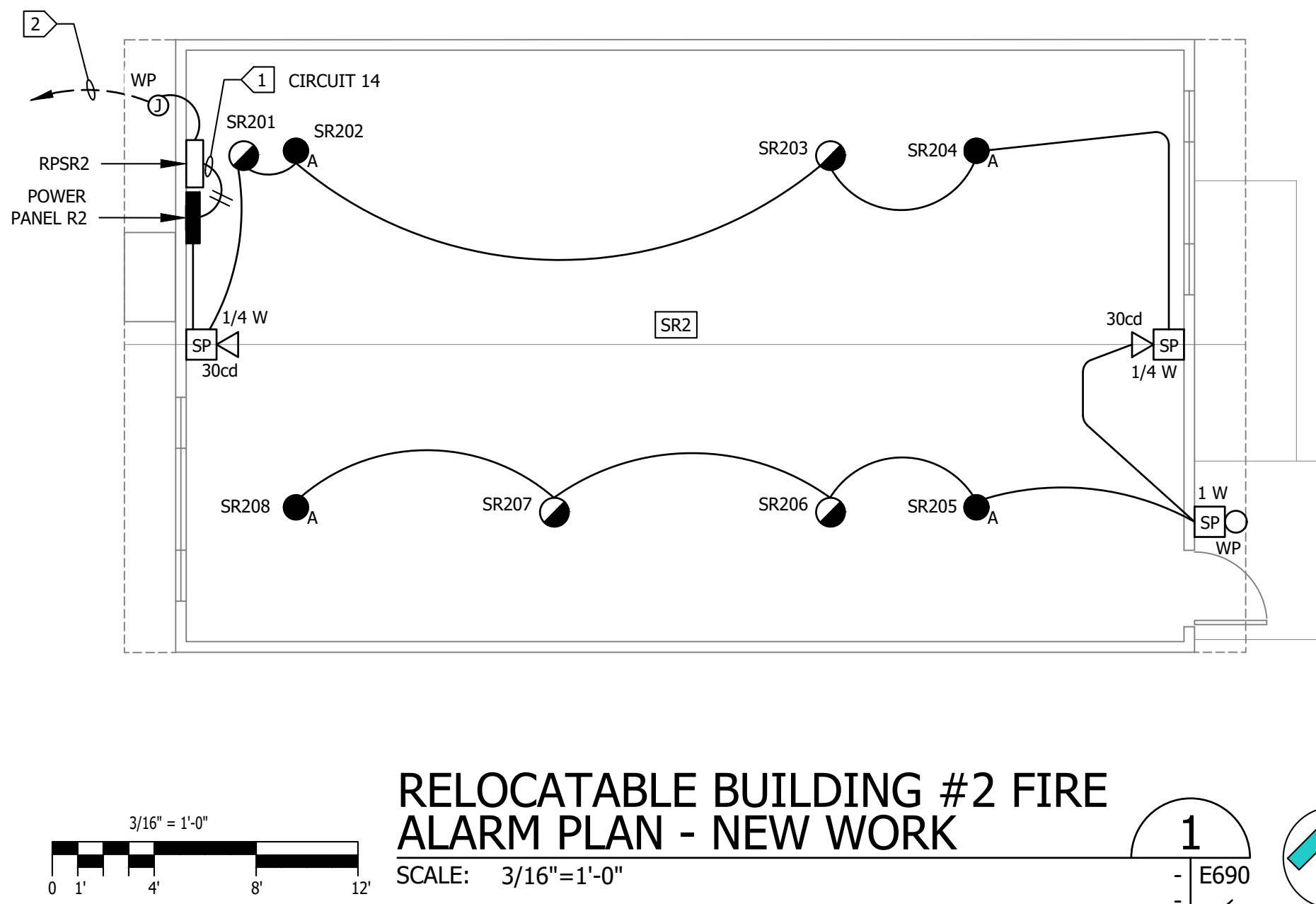
E690

N



RELOCATABLE BUILDING #3 FIRE ALARM PLAN - NEW WORK

SCALE: 3/16"=1'-0"

[illegible]

RELOCATABLE BUILDING #2 FIRE ALARM PLAN - NEW WORK

SCALE: 3/16"=1'-0"

SHEET NOTES:

1. FIELD VERIFY LOCATIONS OF ALL DEVICES AND EQUIPMENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL COMMUNICATION CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
3. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

KEY NOTES:

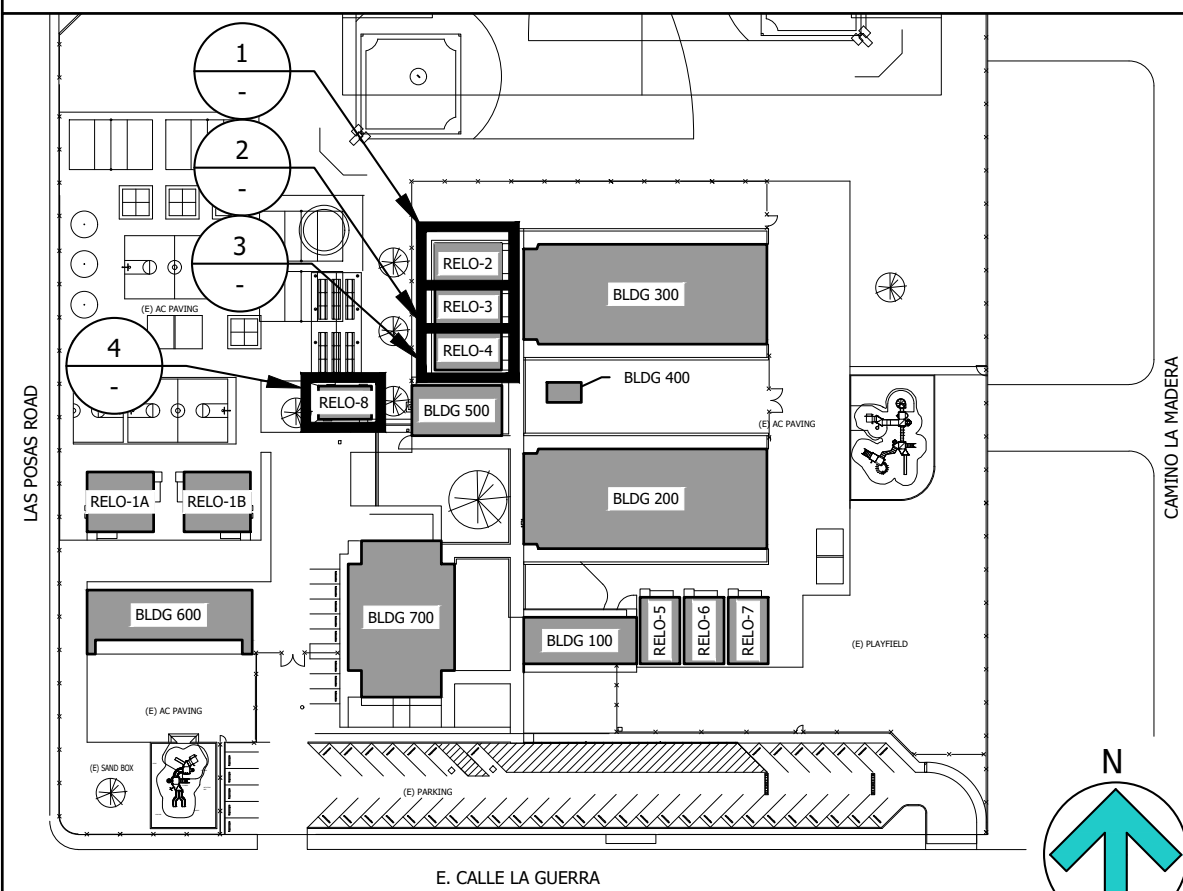
- 1 CONNECT TO LOCKABLE 20A, 120VAC, 1 POLE DEDICATED RED COLORED CIRCUIT BREAKER.
- 2 CABLING PER FA RISER E700/701/E702.

EXTEND SITE CONDUITS TO FACP AS
REQUIRED TO SATISFY FA RISER

NO FIRE WATER ON CAMPUS FOR
BUILDING SPRINKLER SYSTEMS.

PROVIDE ACCESS PANELS
IN HARD HD CEILING

PROJECT DATA:	
BUILDING <u>CLASSIFICATION:</u>	A. OCCUPANCY TYPE: E B. CONSTRUCTION TYPE: V-N C. SPRINKLERED: NOT
<u>AGENCIES:</u>	A. DIVISION OF THE STATE ARCHITECT



KEY MAP

REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
1		APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CARMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519

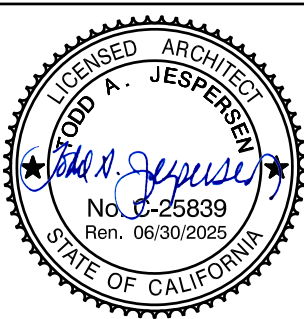
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SHEET TITLE:

RELOCATABLE BUILDING FIRE ALARM PLANS - NEW WORK



PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:
LK/MW

CHECKED:
K. LUCCI

DATE:
10-04-2024

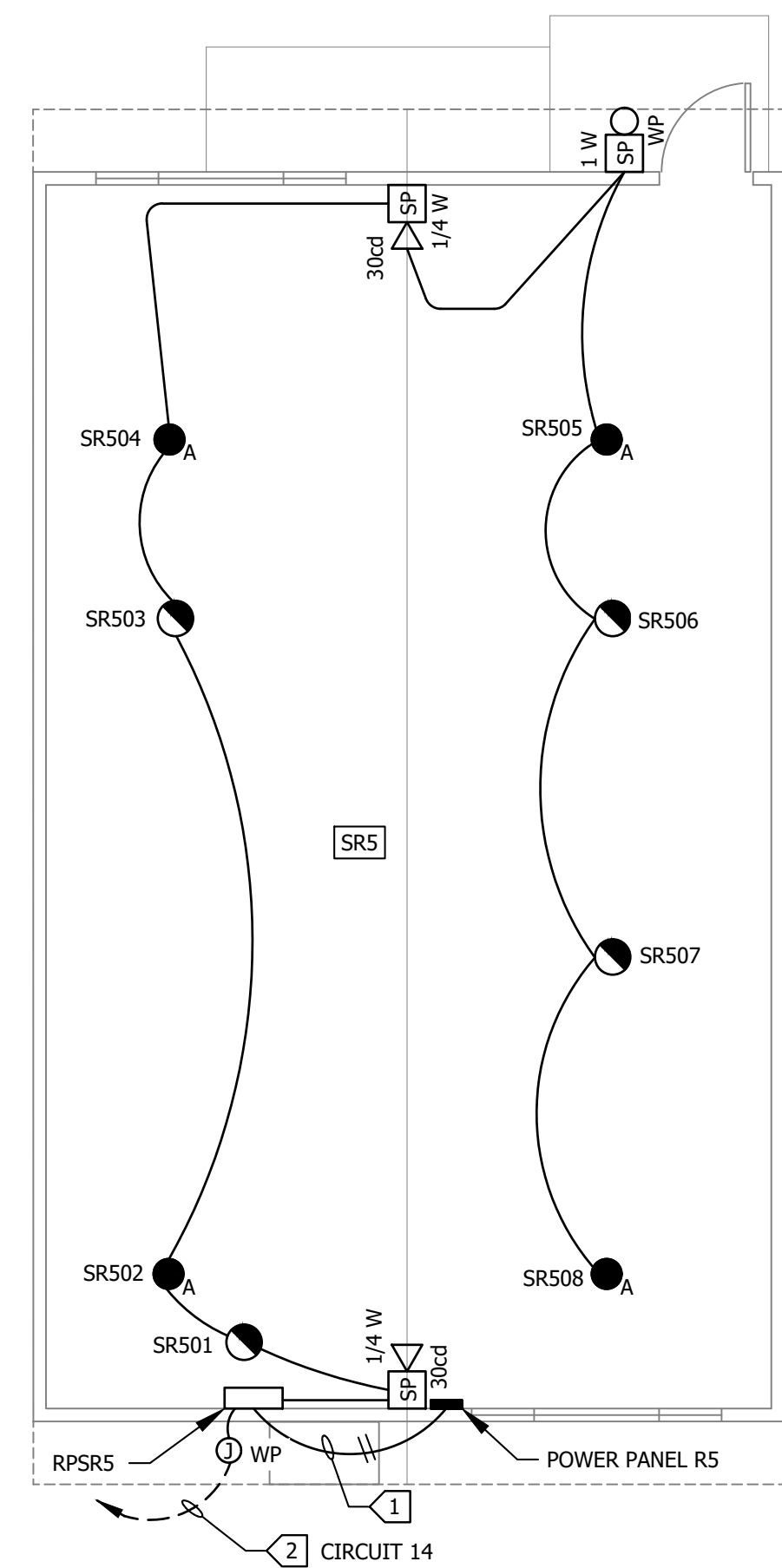
SCALE:
AS NOTED

JOB NO.
19753-07

SHEET:

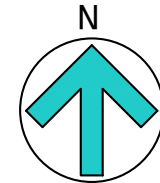
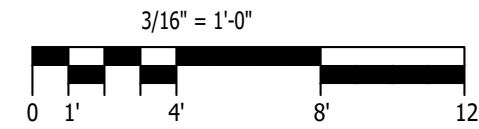
E690

OF: SHEETS:

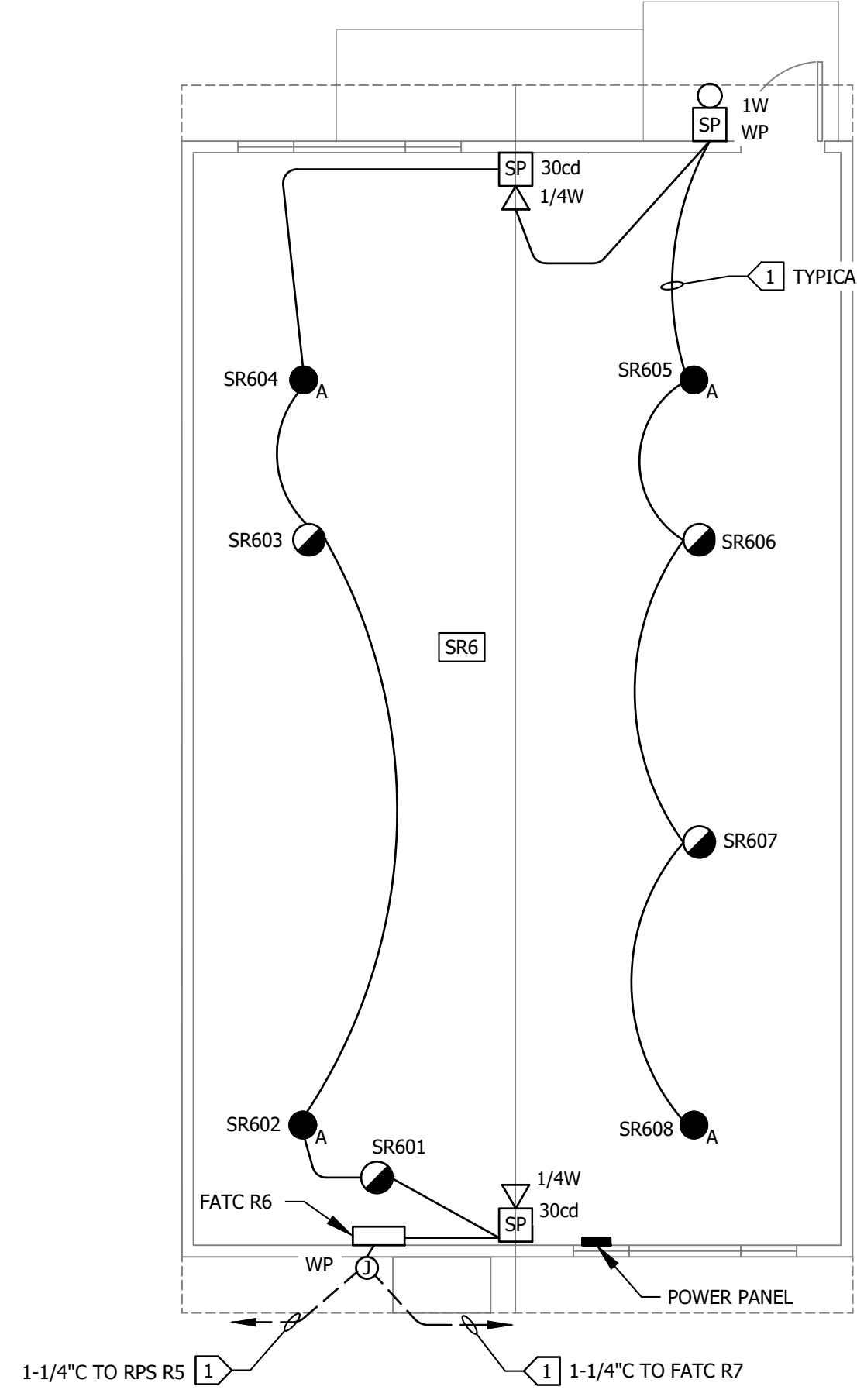


RELOCATABLE BUILDING #5 FIRE ALARM PLAN - NEW WORK

SCALE: 3/16"=1'-0"

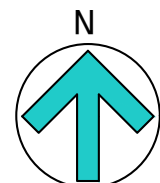
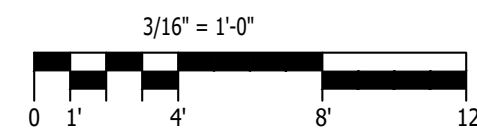


3
- E691

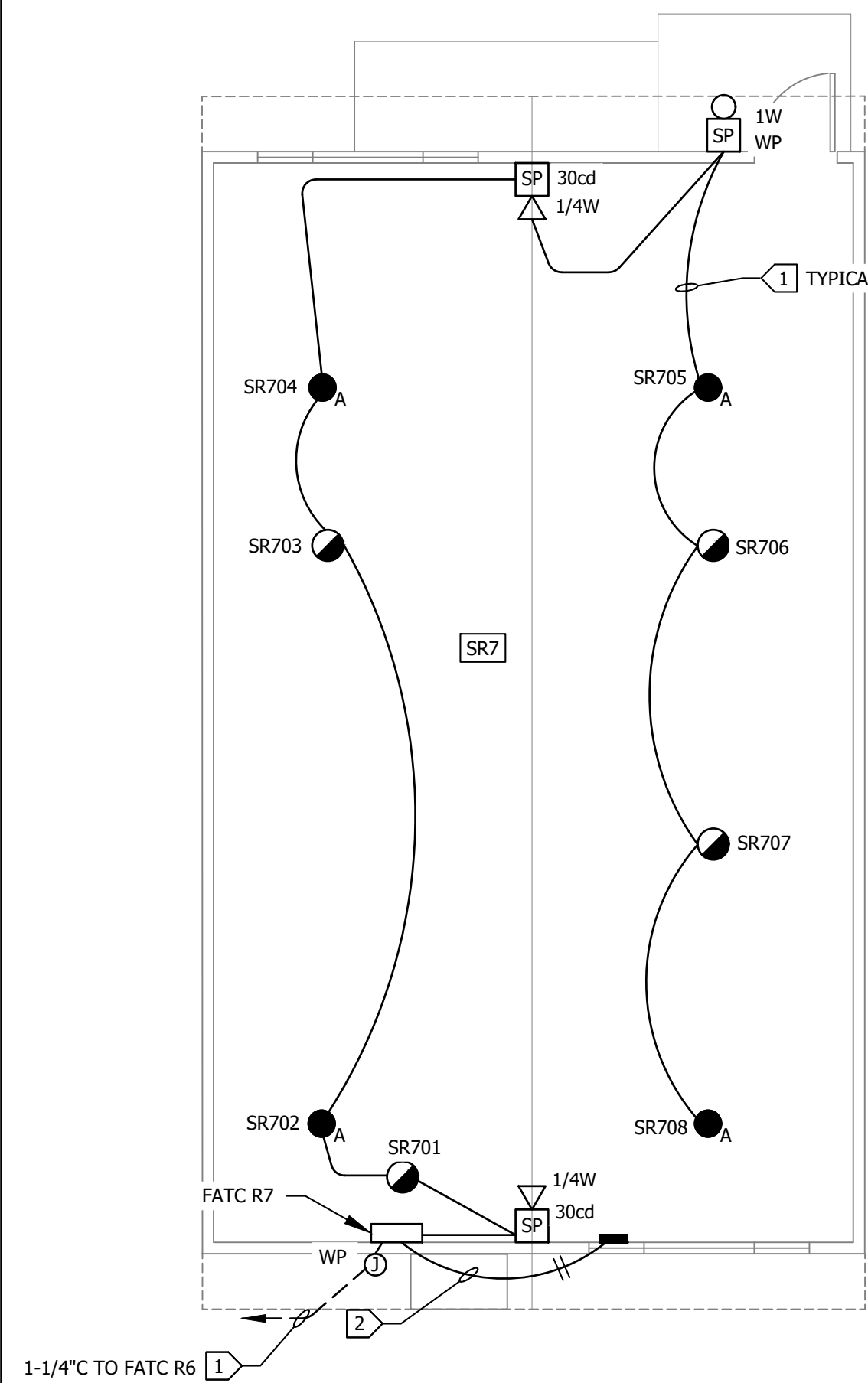


RELOCATABLE BUILDING #6 FIRE ALARM PLAN - NEW WORK

SCALE: 3/16"=1'-0"

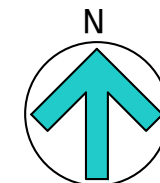
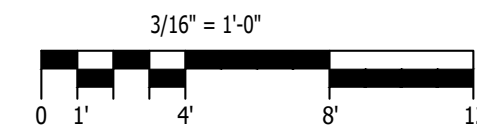


2
- E691



RELOCATABLE BUILDING #7 FIRE ALARM PLAN - NEW WORK

SCALE: 3/16"=1'-0"



1	
-	E691

SHEET NOTES:

1. FIELD VERIFY LOCATIONS OF ALL DEVICES AND EQUIPMENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL COMMUNICATION CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
3. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

KEY NOTES:

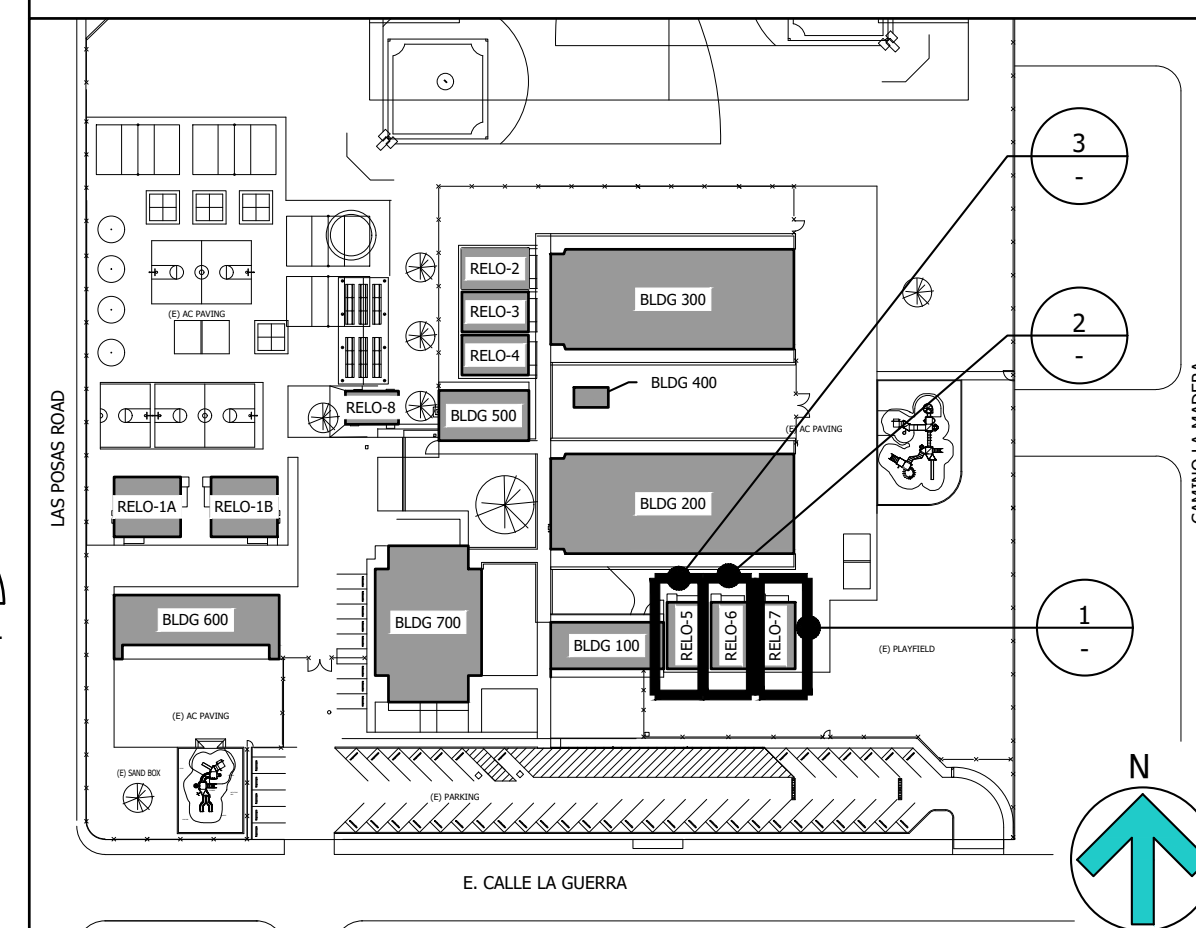
- 1 SEE E701 FOR FA CABLING PER RISER DIAGRAM FEEDERS/REQUIREMENTS.
- 2 CONNECT TO DEDICATED 20A, 1P, 120 VAC RED COLOR CIRCUIT BREAKER.

EXTEND SITE CONDUITS TO FACP AS
REQUIRED TO SATISFY FA RISER

NO FIRE WATER ON CAMPUS FOR
BUILDING SPRINKLER SYSTEMS.

PROVIDE ACCESS PANELS
IN HARD HD CEILING

PROJECT DATA:	
BUILDING CLASSIFICATION:	A. OCCUPANCY TYPE: E B. CONSTRUCTION TYPE: V-N C. SPRINKLERED: NOT
AGENCIES:	A. DIVISION OF THE STATE ARCHITECT



KEY MAP

SHEETS:

REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
1		APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519

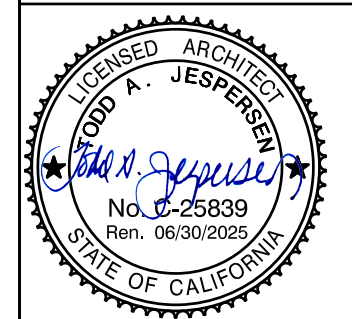
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STAMP



SHEET TITLE:

RELOCATABLE BUILDING FIRE ALARM PLANS - NEW WORK



PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

CONTINIO LA POLIZIA	DRAWN: LK/MW
	CHECKED: K. LUCCI
	DATE: 10-04-2024
	SCALE: AS NOTED
	JOB NO. 19753-07
	SHEET:

E691

DATE: 4 October 2024
PLOT DATE: 10/2/2024 8:16:08 AM
DATE: 10/2/2024 3:21:24 PM
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES
DRAWING FILENAME: 19753-07-E700
DRAFTER: CM03
DRAFTING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E700.dwg
D:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E700.dwg
DATE: 10/2/2024 3:21:24 PM
PLOT BY: CM03
SAVE DATE: 10/2/2024 3:21:24 PM
PLOT DATE: 10/2/2024 8:16:08 AM
TIME: 8:16 am

MONITORING COMPANY

LOW VOLTAGE SOLUTIONS

Certificate of Central Station Monitoring

Location:

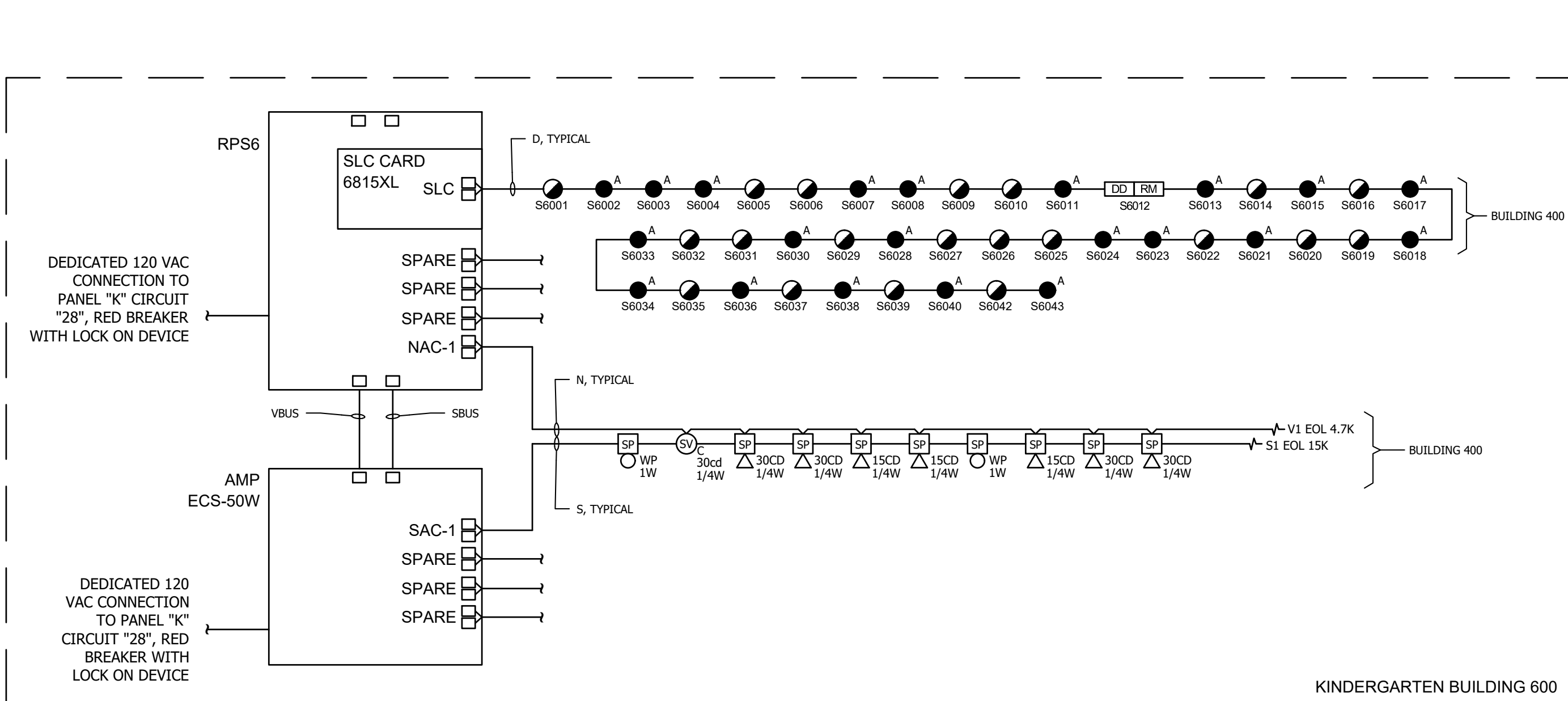
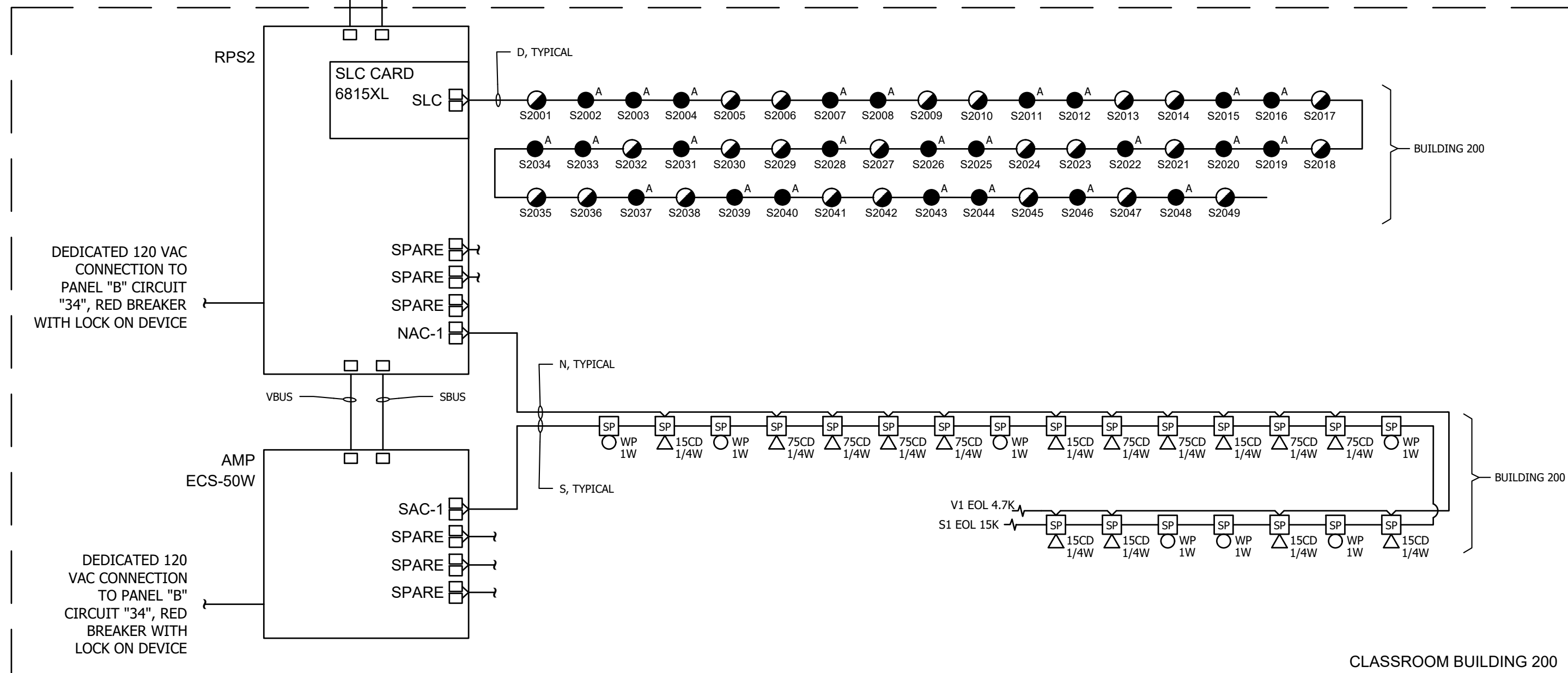
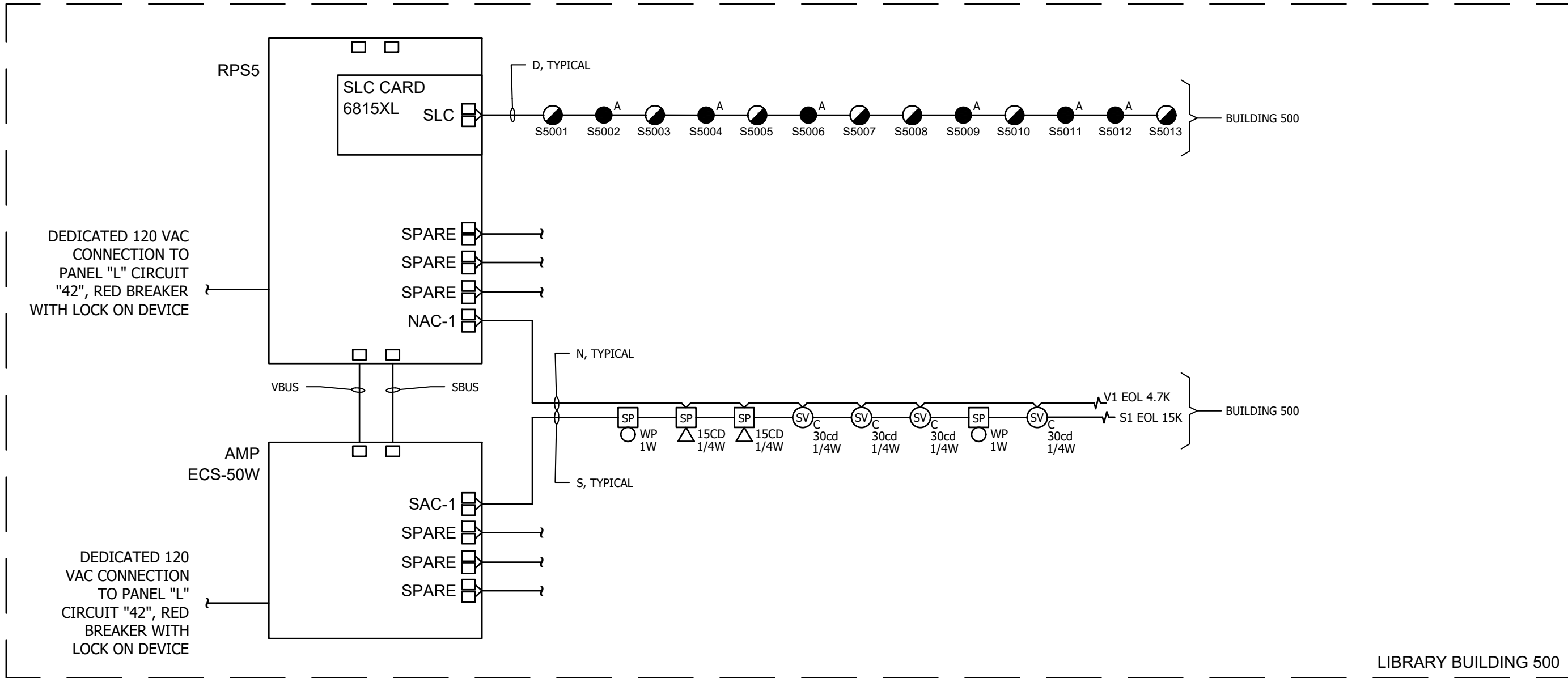
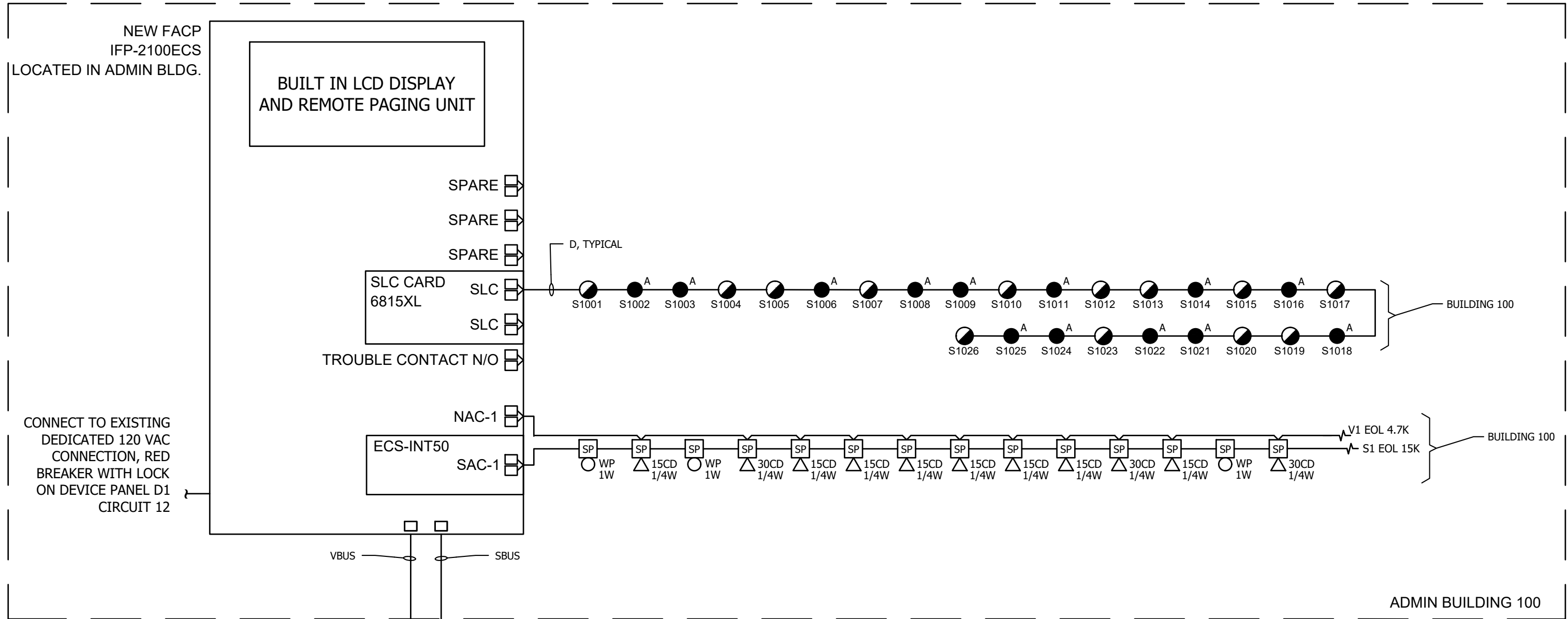
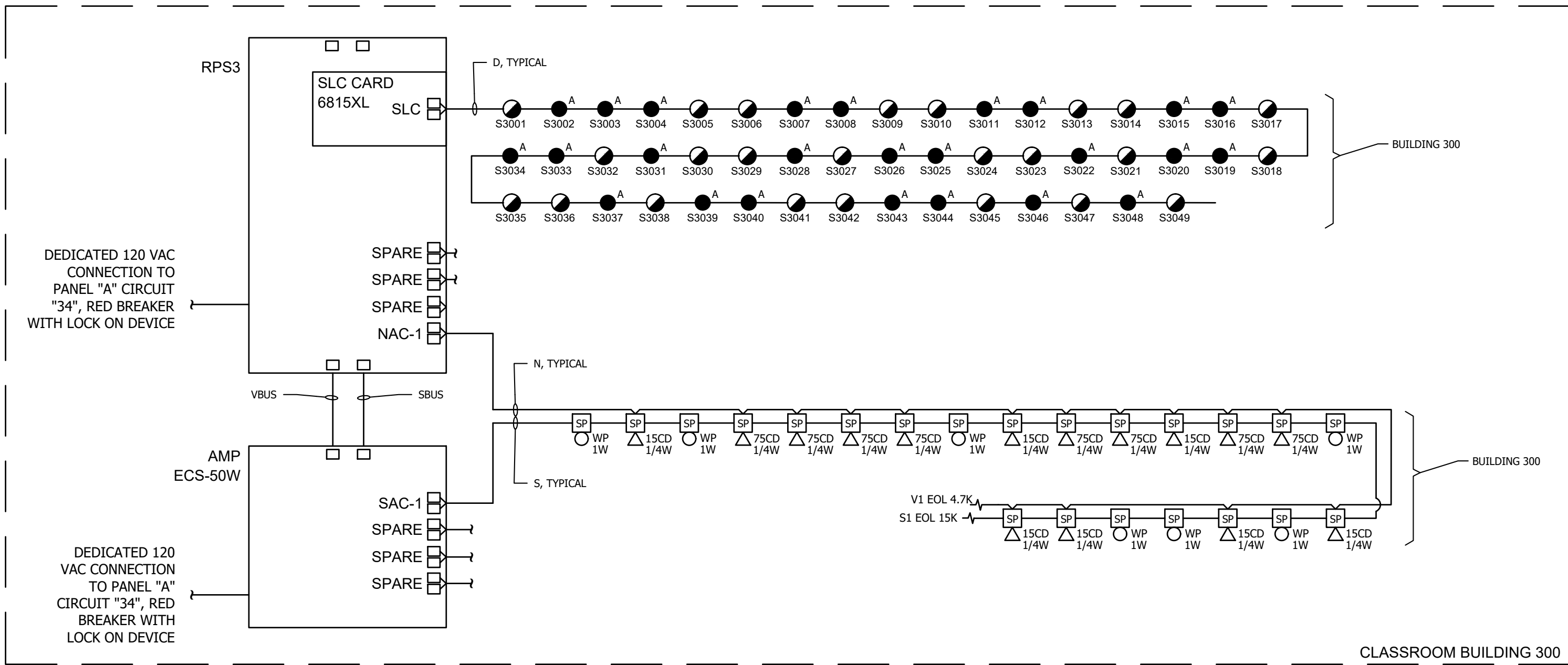
Las Posas Elementary School
75 E Calle La Guerra,
Camarillo, CA 93010

This certifies that a CENTRAL STATION
MONITORED FIRE ALARM SYSTEM has been
installed at the above location. This install
may entitle you to a discount on your
insurance.

Central Station:
American Two-Way
7345 Varna Ave.
N. Hollywood, CA 91605-4009
Tel: 800-766-8098
UUFX# S6037-1

Account # M100-2216
Authorized by: James Borrelli
Date: 10/01/2024

LOW VOLTAGE SOLUTIONS



REV

DATE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.

CONSULTING ELECTRICAL ENGINEERS

3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519

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STAMP

REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL
STATE OF CALIFORNIA
No. 25839
Exp. 09/30/2026
Ren. 06/30/2025

SHEET TITLE:

FIRE RISER DIAGRAM

PROJECT:

LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:

LK/MW

CHECKED:

K. LUCCI

DATE:

10-04-2024

SCALE:

AS NOTED

JOB NO.

19753-07

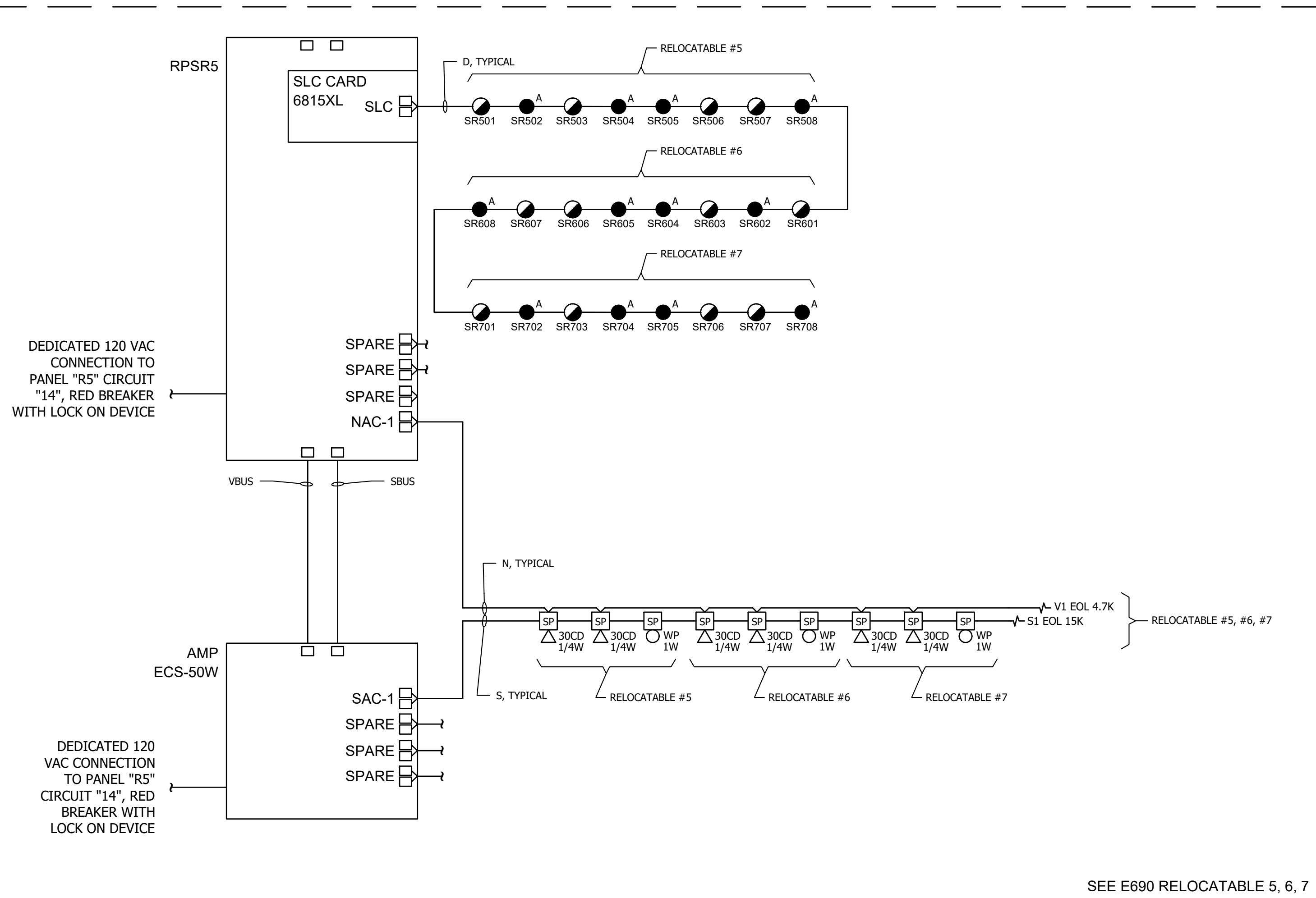
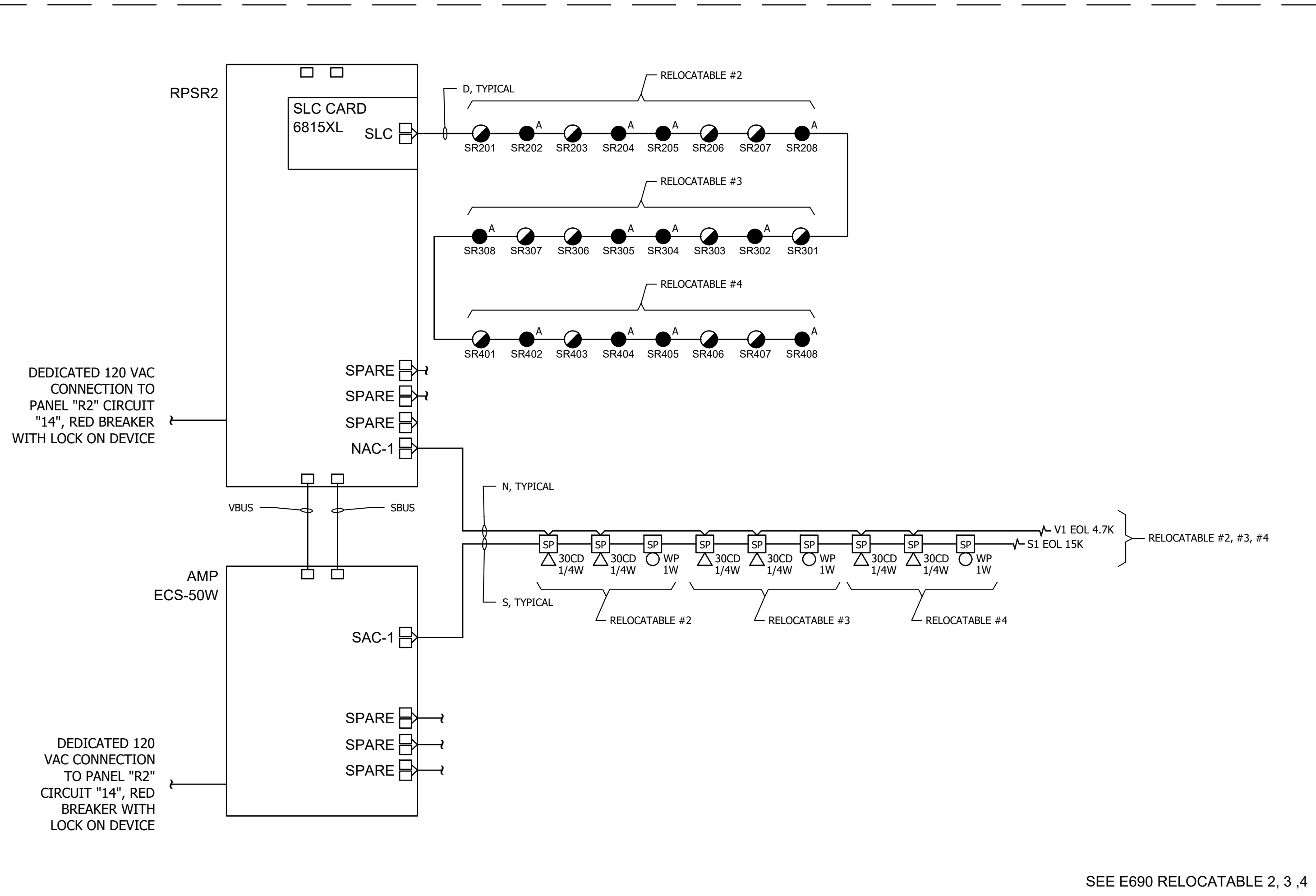
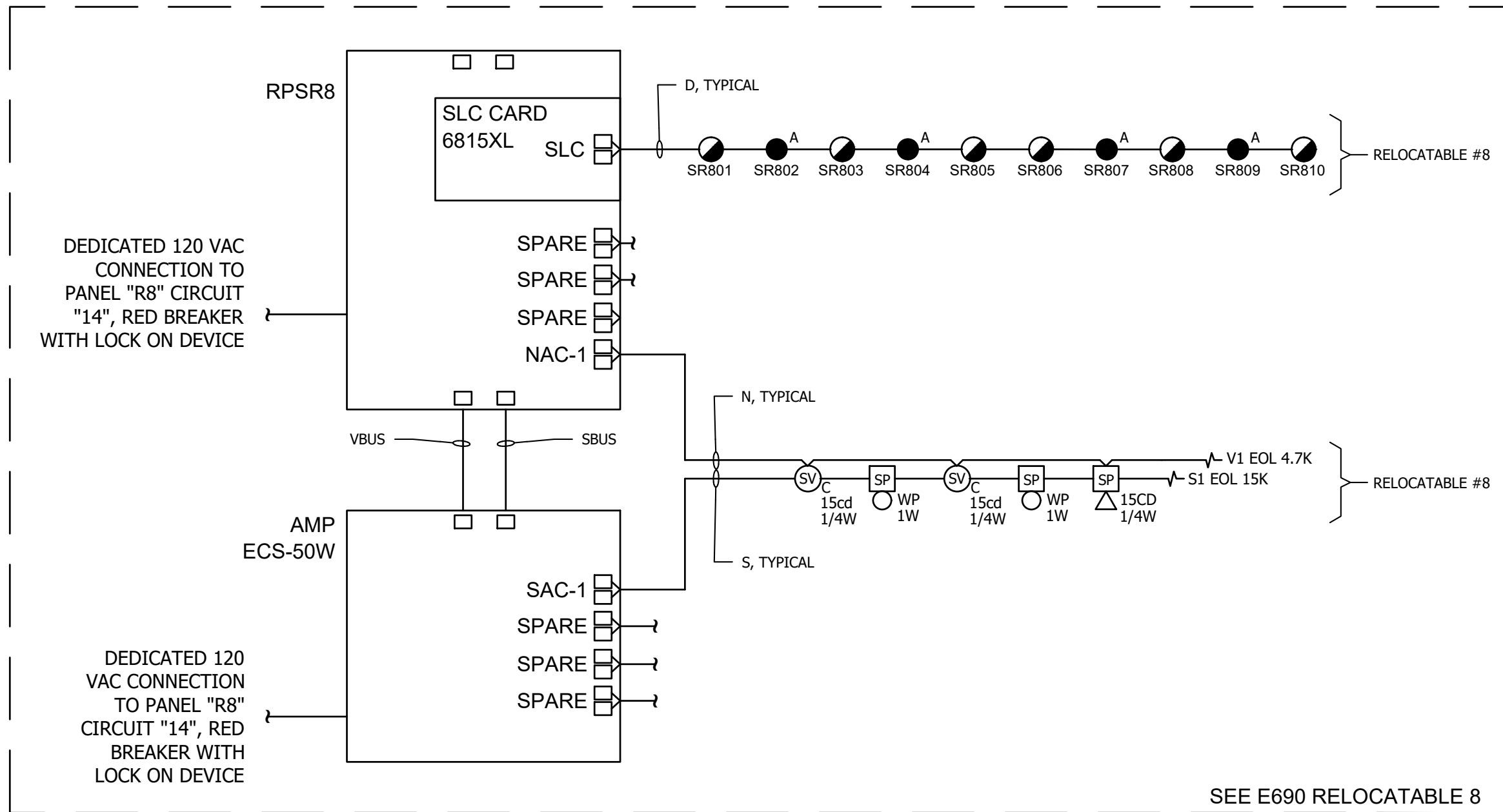
SHEET:

E700

OF:

SHEETS:

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/19/2024 8:16:11 AM
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES
PLOT BY: CM03
DRAWING FILENAME: 19753-07-E701
DRAFTER: CM03
DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E701.dwg
SAVE DATE: 10/22/2024 9:58:00 AM



REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519 <small>LUCCI & ASSOCIATES, INC. reserve their commonlaw copyright and other property rights in these plans. These plans and drawings are not to be reproduced, changed, or copied in any form or manner whatsoever without first obtaining the expressed written permission and consent of LUCCI & ASSOC. INC nor are they to be assigned to any third party without obtaining said written permission and consent.</small>		
STAMP 		
SHEET TITLE: FIRE RISER DIAGRAM #2		
PROJECT: LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE		
DRAWN: LK/MW		
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET: E701		
OF: SHEETS:		



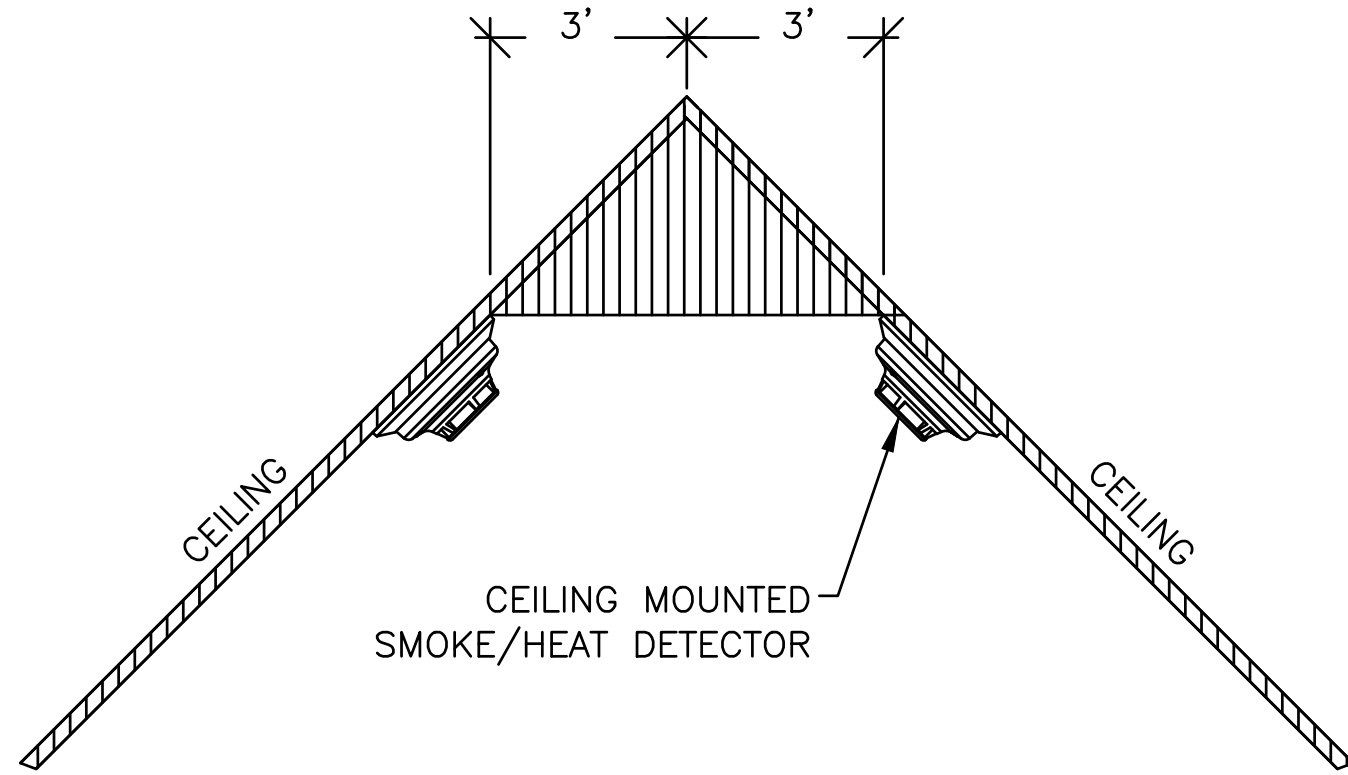
REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
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APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024		
<div></div> LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519		
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STAMP		
<div></div>		
SHEET TITLE: EMERGENCY VOICE/ ALARM/DETECTION COMM SYSTEM RISER DIAGRAM		
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PROJECT: LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE		
DRAWN: LK/MW		
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET:		

E703

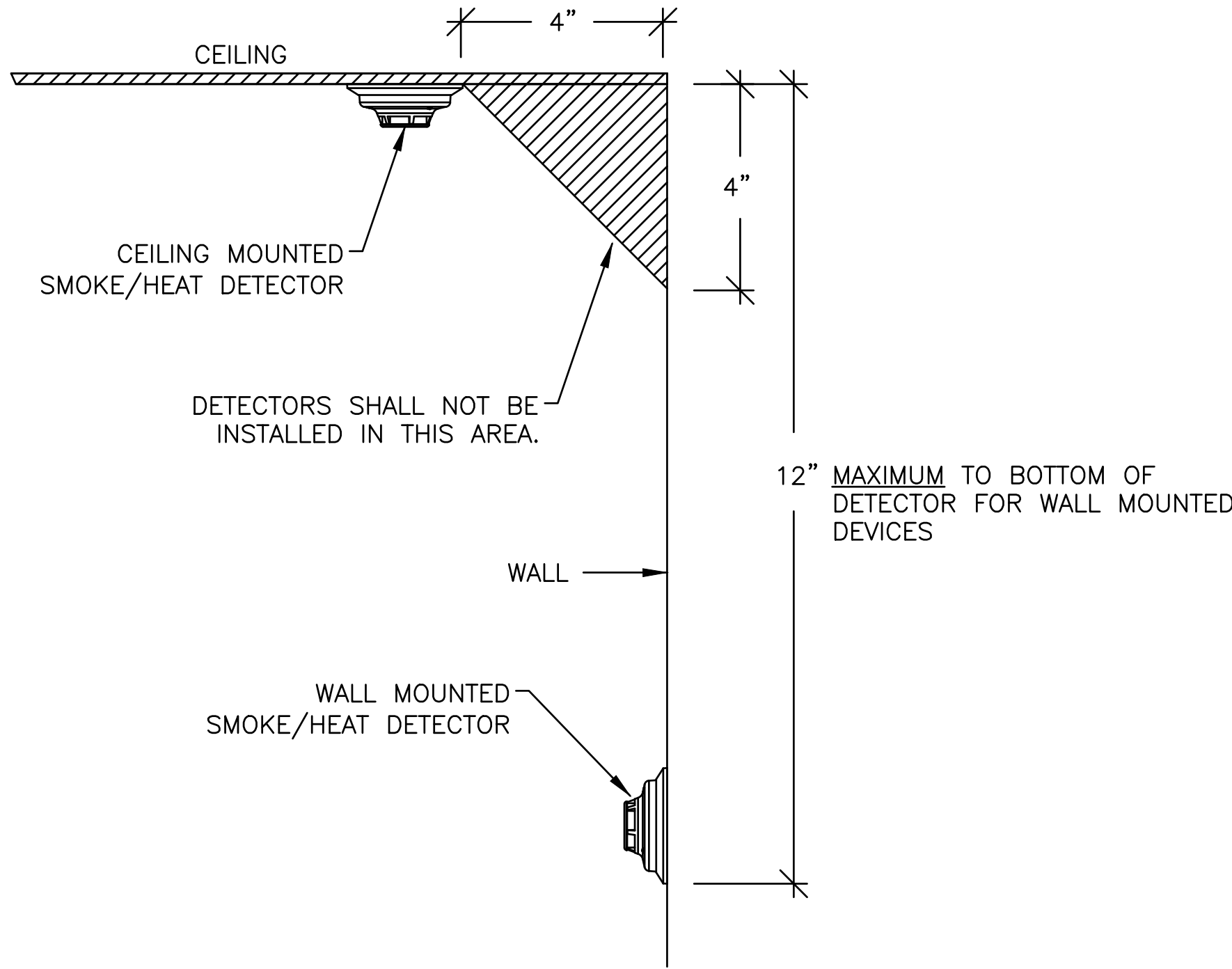
OF: SHEETS:

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/19/2024 8:16:21 AM
PLOT BY: CM03
SAVE DATE: 1/19/2024 1:24:08 PM
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES
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DRAFTER: CM03
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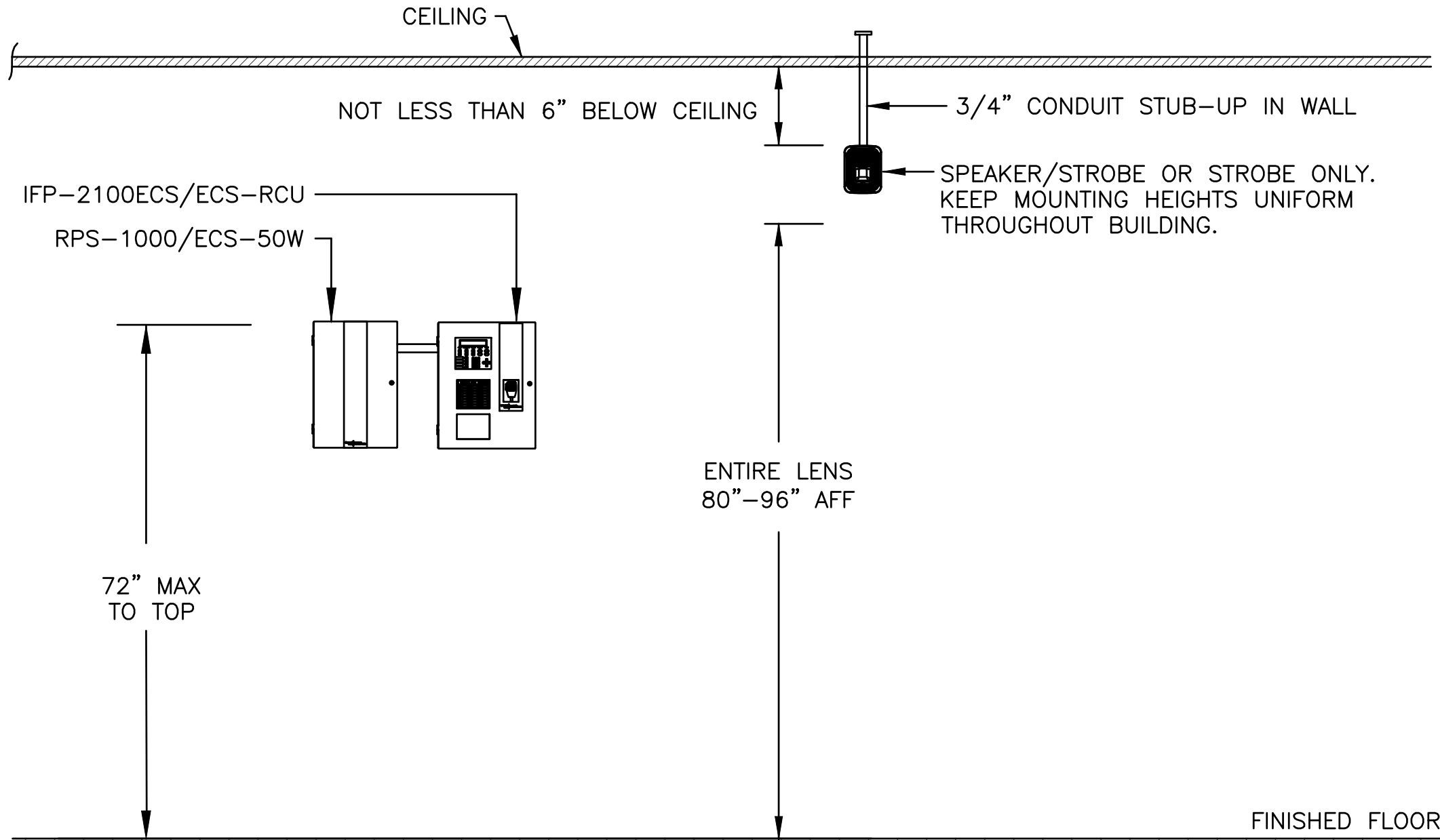
SLOPED CEILING MOUNTING DETAIL



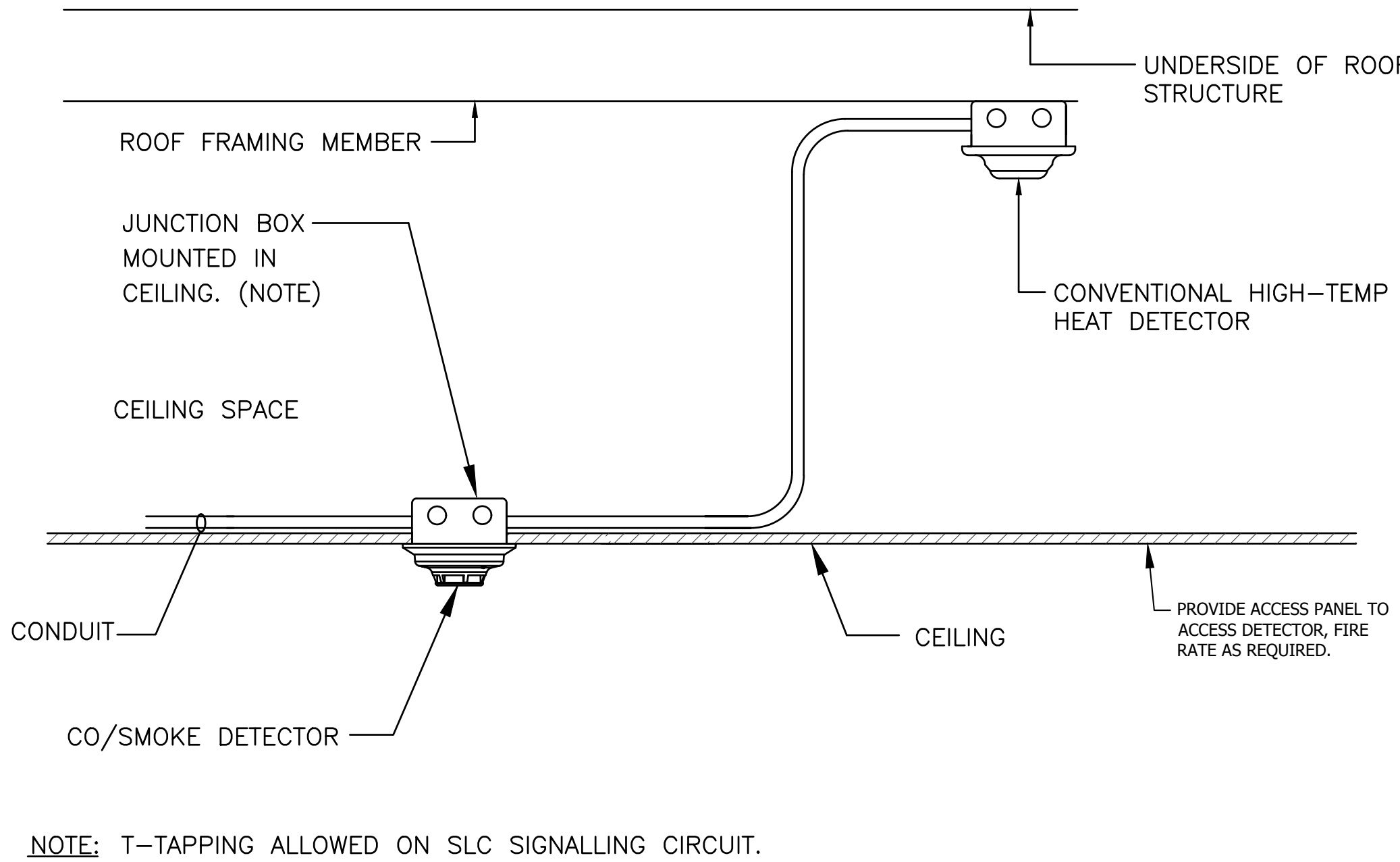
SMOKE/HEAT/CO DETECTOR MOUNTING DETAIL



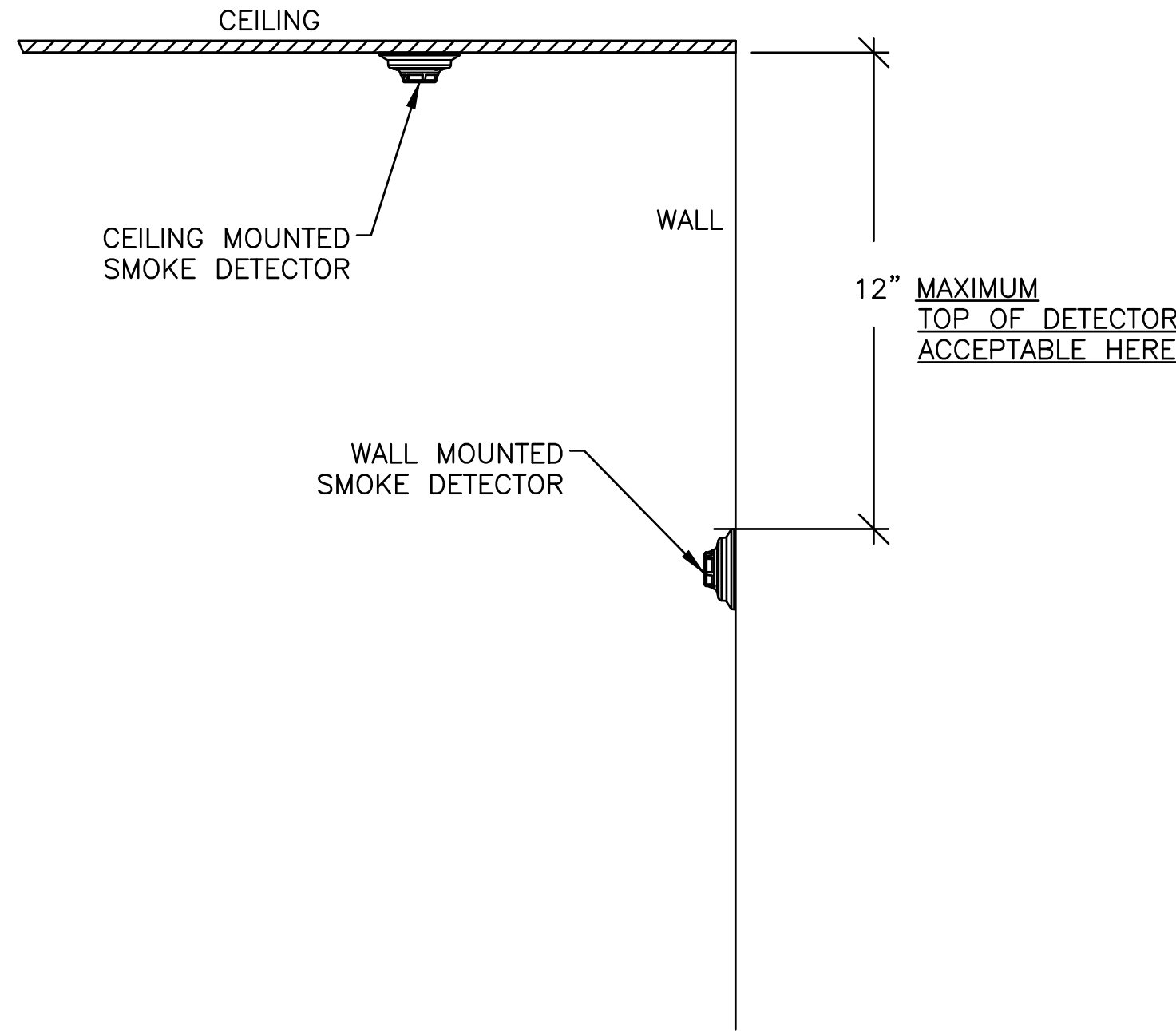
COMMON MOUNTING HEIGHT DETAIL



ATTIC SPACE HI-TEMP HEAT DETECTOR DETAIL

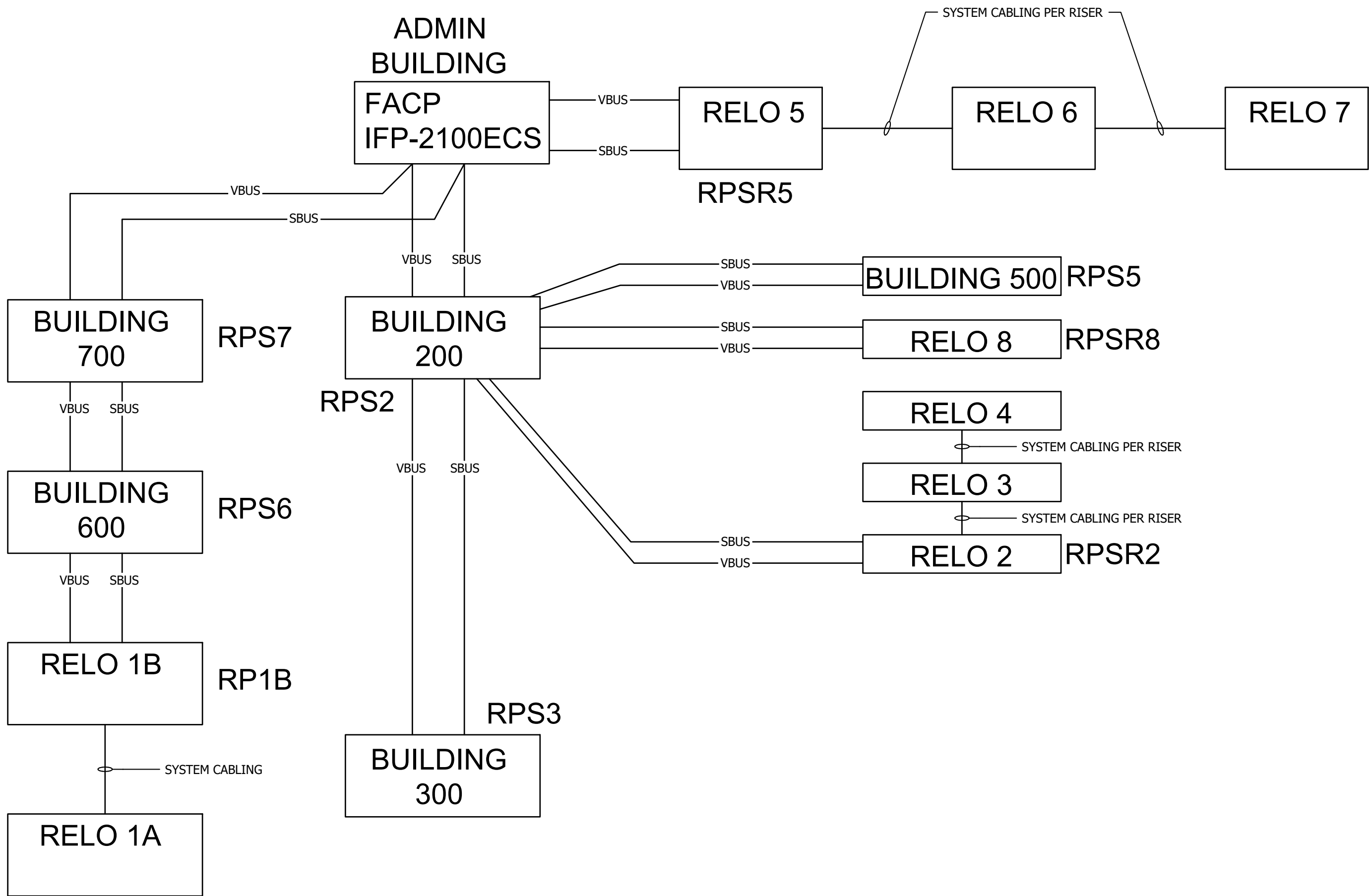


SMOKE DETECTOR MOUNTING DETAIL

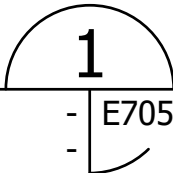


REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519 LUCCHI & ASSOCIATES, INC. reserve their commonlaw copyright and other property rights in these plans. These plans and drawings are not to be reproduced, changed, or copied in any form or manner whatsoever without first obtaining the expressed written permission and consent of LUCCHI & ASSOC. INC nor are they to be assigned to any third party without obtaining said written permission and consent.		
STAMP 		
SHEET TITLE: EMERGENCY VOICE/ALARM COMM SYSTEM - FIRE ALARM DETAILS		
PROJECT: LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE		
DRAWN: LK/MW		
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET: E704 OF: SHEETS:		

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/2/2024 8:16:23 AM
PLOT BY: CM03
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES
DRAWING FILENAME: 19753-07-E705
DRAFTER: CM03
SCALE: 1/8"=1'-0"
DATE: 10/2/2024 10:53:28 AM
SAVE DATE: 10/2/2024 10:53:28 AM
DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E705.dwg
XREF: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E705.dwg



VBUS/SBUS RISER DIAGRAM
SCALE: NONE



REV	DAY	IDENTIFICATION STAMP
		DIV. OF THE STATE ARCHITECT
		APP: 03-124307 INC:
		REVIEWED FOR
		SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/>
		DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519

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STAMP

REGISTERED PROFESSIONAL ENGINEER
W. L. LUCI
No. 25839
Exp. 09/30/2026
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE:
VBUS/SBUS RISER DIAGRAM

PROJECT:
**LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE**

DRAWN: LK/MW	
CHECKED: K. LUCCI	
DATE: 10-04-2024	
SCALE: AS NOTED	
JOB NO. 19753-07	


SHEET:

E705

OF: SHEETS:

DRAWING FILENAME: 19753-07-E710
DRAFTER: CM03
DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/22/2024 10:53:16 AM
PLOT BY: CM03
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E710.dwg
DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E710.dwg
DATE: JAN 19, 2024
TIME: 12:33 PM

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



ECS-50W Calculations
Version 06.11.12

Global Project Values:
Project Name: LAS POSAS ES
Project ID:
Prepared By: LAI
Date: 1/4/2024
Standby Hours: 24
Alarm Mins: 120
Derating: 1.2


Panel ID: ECS-50
Location: BUILDING 100 ADMINISTRATION

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	5.76	N/A	0.391
Watts	Enter Number of Watts @ 70.7Vrms**	N/A	0.000	0.000
Total Standby Current (AMPS)			0.085	0.916
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.832
Total Combined AH Required			3.87	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.65	

11 SPEAKER AT 25W
& 3 SPEAKERS @ 1 WATT = 5.75 WATTS

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IPD
Version 04.16.18

Global Project Values:
Project Name: LAS POSAS ES
Project ID:
Prepared By: LAI
Date: 1/4/2024
Standby Hours: 24
Alarm Mins: 120
Derating Factor: 1.2
Voltage Drop Warning Threshold %: 10

Panel ID: IPF2100
Location: BUILDING 100 ADMINISTRATION

Model: RA-2000 Add. Fire Alarm Panel
Volts: 24 VDC
Max NAC Current: 3.0 Amps
Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	12	0.0036	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	14	0.0028	0.0630						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc	1	0.020	0.025						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module	3	0.000	0.660						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBU	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	0.533	#12 Solid	1.59	160	0.51	23.70	1.20%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.378	2.105	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			9.082	4.210	Total Alarm AH Required					
Total Combined AH Required			13.29							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			15.95							

BATTERY SIZE = 21AH

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP						
		0.017		0.034		0.068		0.132		0.000		0.000		0.000		0.000														
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP													
AMP	S1	11	0.187	0	0.000	3	0.204		0.000		0.000		0.000		0.000		0.000	0.391	x	120	x	21.6 ÷	2580	=	0.393	÷	24	x	100	1.6

1x FEET x 21.6 = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE										(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP							
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000																			
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP															
RP51	N1	8	0.344	3	0.189		0.000		0.000		0.000		0.000		0.000		0.000	0.533	x	160	x	21.6 ÷	6530	=	0.282	÷	24	x	100	1.2

1x FEET x 21.6 = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

REV

DATE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
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PHONE (805) 389-6520 FAX (805) 389-6519
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STAMP


SHEET TITLE:
ADMINISTRATION
BUILDING 100
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS

PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:
LK/MW
CHECKED:
K. LUCCI
DATE:
10-04-2024
SCALE:
AS NOTED
JOB NO.
19753-07
SHEET:
E710
OF: SHEETS:


DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/19/2024 8:16:31 AM
PLOT BY: CM03
DRAWING FILENAME: 19753-07-E720
DRAFTER: CM03

DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E720.dwg

Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"

Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"
Drawing: CM03, Sheet: E720, Size: 36" x 24"

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating: 1.2

Panel ID: ECS-50


Location: CLASSROOM BUILDING 200

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	10	N/A	0.680
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	1.205
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	2.410
Total Combined AH Required			4.45	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			5.34	

12 SPEAKER AT 25W
& 7 SPEAKERS @ 1 WATT = 10 WATTS

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPS2

Location: CLASSROOM BUILDING 200

Model: RA-2000 Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector	2	0.0006	0.0006						
IDP-Fire-CO	Fire-CO detector	23	0.0069	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	25	0.0050	0.1125						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon	0	0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module	2	0.000	0.440						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBW	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	1.157	#12 Solid	1.59	210	0.67	23.50	2.14%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.365	2.534	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			8.748	5.069	Total Alarm AH Required					
Total Combined AH Required			13.82							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			16.58							
BATTERY SIZE = 28AH										

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT								(I) TOTAL CURRENT	LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP							
AMP	S1	12	0.204	0	0.000	7	0.476		0.000		0.000		0.000		0.000	0.680	x	210	x	21.6 ÷	2580	= 1.196 ÷ 24 x 100 = 5.0

1x FEET x 21.6
C.M.

I = TOTAL CIRCUIT CURRENT

FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE

21.6 = FORMULA CONSTANT

C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE WIRE RESISTANCE CIR. MILS

AWG 12 1.59 PER 1000' 6530

AWG 14 2.52 PER 1000' 4110

AWG 16 4.02 PER 1000' 2580

AWG 18 6.39 PER 1000' 1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE								(I) TOTAL CURRENT	LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP							
RPS2	N1	7	0.301	0	0.000	8	0.856		0.000		0.000		0.000		0.000	1.157	x	210	x	21.6 ÷	6530	= 0.804 ÷ 24 x 100 = 3.3

1x FEET x 21.6
C.M.

I = TOTAL CIRCUIT CURRENT

FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE

21.6 = FORMULA CONSTANT

C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE WIRE RESISTANCE CIR. MILS

AWG 12 1.59 PER 1000' 6530

AWG 14 2.52 PER 1000' 4110

AWG 16 4.02 PER 1000' 2580

AWG 18 6.39 PER 1000' 1620

REV

DATE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519
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STAMP



REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL
No. 25839
Exp. 09/30/2026
STATE OF CALIFORNIA

SHEET TITLE:

CLASSROOM BUILDING 200
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS



LICENCED ARCHITECT
J. J. JEBBER
No. 25839
Ren. 06/30/2026
STATE OF CALIFORNIA

PROJECT:

LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN: LK/MW

CHECKED: K. LUCCI

DATE: 10-04-2024

SCALE: AS NOTED

JOB NO. 19753-07

SHEET:


E720

OF: SHEETS:

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/19/2024 8:16:35 AM
PLOT BY: CM03
DRAWING FILENAME: 19753-07-E730
DRAFTER: CM03

Drawing: C:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E730.dwg
DATE: JAN 19, 2024
TIME: 12:32 PM

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating: 1.2

Panel ID: ECS-50


Location: CLASSROOM BUILDING 300

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Current Draw Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	10.75	N/A	0.731
Watts	Enter Number of Watts @ 70.7Vrms**	N/A	0.000	0.000
Total Standby Current (AMPS)			0.085	1.256
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	2.512
Total Combined AH Required			4.55	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			5.46	

15 SPEAKER AT .25W
& 7 SPEAKERS @ 1 WATT = 6.25 WATTS

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IFP

Version 04.16.18

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPS3

Location: CLASSROOM BUILDING 300

Model: RA-2000 Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Current Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector	2	0.0006	0.0006						
IDP-Fire-CO	Fire-CO detector		0.0000	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	25	0.0050	0.1125						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander	1	0.078	0.078						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module	2	0.000	0.440						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WB	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	1.157	#12 Solid	1.59	130	0.41	23.50	2.14%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.436	2.612	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			10.454	5.225	Total Alarm AH Required					
Total Combined AH Required			15.68							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			18.81		BATTERY SIZE = 28AH					

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP						
		0.017	0.034	0.068	0.132	0.000	0.000	0.000	0.000	0.000	0.000																			
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP															
AMP	S1	15	0.255	0	0.000	7	0.476		0.000		0.000		0.000		0.000		0.000	0.731	x	210	x	21.6 ÷	2580	=	1.285	÷	24	x	100	5.4

1x FEET x 21.6 = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE										(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP		
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000														
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP										
RPS3	N1	7	0.301	0	0.000	8	0.856		0.000		0.000		0.000		0.000		0.000	1.157	x	130	x	21.6 ÷	6530	= 0.498 ÷ 24 x 100	2.1

1x FEET x 21.6 = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

REV: DAY:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
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SHEET TITLE:
**CLASSROOM BUILDING 300
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS**



PROJECT:
**LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE**

DRAWN: LK/MW

CHECKED: K. LUCCI

DATE: 10-04-2024

SCALE: AS NOTED

JOB NO. 19753-07

SHEET:


E730

OF: SHEETS:

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/19/2024 8:16:39 AM
PLOT BY: CM03
SAVE DATE: 10/19/2024 10:05:06 AM
DRAWING FILENAME: 19753-07-E750
DRAFTER: CM03

Drawing: C:\19\19753\EL\Sheets\07-Las Posas ES\19753-07-E750.dwg
Date: 10/19/2024 8:16:39 AM
User: CM03
Printer: HP DesignJet T110
Plotter: HP DesignJet T110
Scale: 1/8"=1'-0"

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5

**SILENT KNIGHT**

Global Project Values:
Project Name: LAS POSAS ES
Project ID:
Prepared By: LAI
Date: 1/14/2024
Standby Hours: 24
Alarm Mins: 120
Derating: 1.2


ECS-50W Calculations
Version 06.11.12

Panel ID: ECS-50
Location: LIBRARY BUILDING 500
Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alam
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	4.5	N/A	0.306
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.831
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.662
Total Combined AH Required			3.70	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.44	

6 SPEAKER AT .25W
& 3 SPEAKERS AT 3 WATT = 4.5 WATTS

BATTERY SIZE = 7AH

**Farenhyt™ Series**

Global Project Values:
Project Name: LAS POSAS ES
Project ID:
Prepared By: LAI
Date: 1/14/2024
Standby Hours: 24
Alarm Mins: 120
Derating Factor: 1.2
Voltage Drop Warning Threshold %: 10

IFP-2100/ECS Calculations-IDP
Version 04.16.18

Panel ID: RPS5
Location: LIBRARY BUILDING 500
Model: RA-2000 Add. Fire Alarm Panel
Volts: 24 VDC
Max NAC Current: 3.0 Amps
Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Alam	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T, PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	6	0.0018	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Dust housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	6	0.0012	0.0270						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SRL-F	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS1S1	Magnetic Remote Test		0.000	0.0000						
RTS1S1KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBU	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	0.338	#12 Solid	1.59	220	0.70	23.70	1.02%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.355	1.189	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			8.520	2.378	Total Alarm AH Required					
Total Combined AH Required			10.90							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			13.08							

BATTERY SIZE = 21AH

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT										(I) TOTAL CURRENT	x	LENGTH FT.	x	21.6 ÷	CIR MILS 14awg	=	VOLTS DROPPED	÷ 24(V) x	100	% VOLTAGE DROP	
		0.017		0.034		0.068		0.132		0.000		0.000		0.000		0.000													
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP												
AMP	S1	6	0.102		0.000	3	0.204		0.000		0.000		0.000		0.000		0.000	0.306	x	220	x	21.6 ÷	2580	=	0.564	÷ 24	x	100	2.3

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.

I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE										(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED ÷ 24(V) x 100	% VOLTAGE DROP
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000											
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP									
RP55	N1	2	0.086	4	0.252		0.000		0.000		0.000		0.000		0.000		0.000	0.338	x 220	x 21.6 ÷ 6530	= 0.246 ÷ 24 x 100	1.0

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.

I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

REV:

DATE:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519

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STAMP


SHEET TITLE:
LIBRARY BUILDING 500
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS

PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:
LK/MW
CHECKED:
K. LUCCI
DATE:
10-04-2024
SCALE:
AS NOTED
JOB NO.
19753-07
SHEET:
E750

OF: SHEETS:


Copyright Lucci and Associates Consulting Electrical Engineers. Deviations from this drawing will not be made without their expressed written permission. L.A.I.# 19753-07 PAPER SIZE 36"x24"

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/2/2024 8:16:43 AM
PLOT BY: CM03
SAVE DATE: 10/2/2024 10:36:12 AM
DRAWING FILENAME: 19753-07-E760
DRAFTER: CM03

DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E760.dwg

Drawing: CM03, Date: 10/2/2024, Time: 8:16:43 AM, Plot Date: 10/2/2024 8:16:43 AM, Plot By: CM03, Save Date: 10/2/2024 10:36:12 AM, Drawing File Name: 19753-07-E760.dwg, Drafter: CM03

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.5



ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating: 1.2

Panel ID: ECS-50


Location: KINDERGARTEN BUILDING 600

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	4.75	N/A	0.323
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.848
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.696
Total Combined AH Required			3.74	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.48	

4 SPEAKERS TAPPED AT 5 WATT & 3 SPEAKER AT 25W
& 2 SPEAKERS AT 1 WATT = 4.75 WATTS

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPS6

Location: KINDERGARTEN BUILDING 600

Model: RA-2000 Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	24	0.0072	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	21	0.0042	0.0945						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module	2	0.000	0.440						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBU	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	0.444	#12 Solid	1.59	230	0.73	23.60	1.40%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.363	1.803	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			8.722	3.605	Total Alarm AH Required					
Total Combined AH Required			12.33							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			14.79							
BATTERY SIZE = 21AH										

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP	
		0.017		0.034		0.068		0.132		0.000		0.000		0.000		0.000									
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP								
AMP	S1	3	0.051	4	0.136	2	0.136		0.000		0.000		0.000		0.000		0.000	0.323	x	120	x	21.6 ÷	2580	= 0.325 ÷ 24 x 100	1.4

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE										(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP							
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000																			
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP															
RP56	N1	3	0.129	5	0.315		0.000		0.000		0.000		0.000		0.000		0.000	0.444	x	230	x	21.6 ÷	6530	=	0.338	÷	24	x	100	1.4

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

REV

DATE

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
PHONE (805) 389-6520 FAX (805) 389-6519
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STAMP


SHEET TITLE:
KINDERGARTEN BUILDING 600
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS

PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE


DRAWN:
LK/MW
CHECKED:
K. LUCCI
DATE:
10-04-2024
SCALE:
AS NOTED
JOB NO.
19753-07
SHEET:
E760
OF: SHEETS:

Copyright Lucci and Associates Consulting Electrical Engineers. Deviations from this drawing will not be made without their expressed written permission. L.A.I.# 19753-07 PAPER SIZE 36"x24"

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/2/2024 8:16:46 AM
PLOT BY: CM03
SAVE DATE: 10/2/2024 10:25:34 AM
DRAWING FILENAME: 19753-07-E770
DRAFTER: CM03

DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E770.dwg
DATE: 10/2/2024 10:25:34 AM
PLOT DATE: 10/2/2024 10:25:34 AM
PLOT BY: CM03
SAVE DATE: 10/2/2024 10:25:34 AM
DRAWING FILENAME: 19753-07-E770.dwg
DRAFTER: CM03

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



ECS-50W Calculations
Version 06.11.12

Global Project Values:
Project Name: LAS POSAS ES
Project ID:
Prepared By: LAI
Date: 1/4/2024
Standby Hours: 24
Alarm Mins: 120
Derating: 1.2


Panel ID: ECS-50
Location: MULTIPURPOSE BUILDING 700

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	6	N/A	0.408
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.933
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.866
Total Combined AH Required			3.91	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.69	

8 SPEAKERS TAPPED AT 5 WATT
& 8 SPEAKERS AT .25W = 6 WATTS

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IFP
Version 04.16.18

Global Project Values:
Project Name: LAS POSAS ES
Project ID:
Prepared By: LAI
Date: 1/4/2024
Standby Hours: 24
Alarm Mins: 120
Derating Factor: 1.2
Voltage Drop Warning Threshold %: 10

Panel ID: RPS7
Location: MULTIPURPOSE BUILDING 700

Model: RA-2000 Add. Fire Alarm Panel
Volts: 24 VDC
Max NAC Current: 3.0 Amps
Max Panel Current: 9.0 Amps

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP						
		0.017	0.034	0.068	0.132	0.000	0.000	0.000	0.000	0.000	0.000																			
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP															
AMP	S1	8	0.136	8	0.272		0.000		0.000		0.000		0.000		0.000		0.000	0.408	x	230	x	21.6 ÷	2580	=	0.786	÷	24	x	100	3.3

1x FEET x 21.6
C.M.

I = TOTAL CIRCUIT CURRENT

FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE

21.6 = FORMULA CONSTANT

C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE WIRE RESISTANCE CIR. MILS

AWG 12 1.59 PER 1000' 6530

AWG 14 2.52 PER 1000' 4110

AWG 16 4.02 PER 1000' 2580

AWG 18 6.39 PER 1000' 1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE										(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP							
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000																			
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP															
RP57	N1	8	0.344	1	0.063	4	0.428		0.000		0.000		0.000		0.000		0.000	0.835	x	220	x	21.6 ÷	6530	=	0.608	÷	24	x	100	2.5

1x FEET x 21.6
C.M.

I = TOTAL CIRCUIT CURRENT

FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE

21.6 = FORMULA CONSTANT

C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE WIRE RESISTANCE CIR. MILS

AWG 12 1.59 PER 1000' 6530

AWG 14 2.52 PER 1000' 4110

AWG 16 4.02 PER 1000' 2580

AWG 18 6.39 PER 1000' 1620

REV:
DATE:
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR:
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
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STAMP



SHEET TITLE:



PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN: LK/MW

CHECKED: K. LUCCI

DATE: 10-04-2024

SCALE: AS NOTED

JOB NO. 19753-07

SHEET:


E770

OF: SHEETS:

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/19/2024 8:16:50 AM
PLOT BY: CM03
SAVE DATE: 10/19/2024 10:39:19 AM
DRAWING FILENAME: 19753-07-E780
DRAFTER: CM03

PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E780.dwg
DRAWING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E780.dwg
DATE: JAN 19, 2024
TIME: 2:33 PM

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.5



ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating: 1.2

Panel ID: ECS-50


Location: RELOCATABLE BUILDING 1A OR 1B

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alam
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	4.5	N/A	0.306
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.831
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.662
Total Combined AH Required			3.70	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.44	

4 SPEAKERS TAPPED AT 5 WATT & 10 SPEAKER AT 25W = 4.5W

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPS-1A OR RPS-1B

Location: RELOCATABLE BUILDING 1A & 1B

Model: RA-2000 Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Alam	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	14	0.0042	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	16	0.0032	0.0720						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBU	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	0.550	#12 Solid	1.59	180	0.57	20.09	0.50%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.359	1.448	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			8.626	2.892	Total Alarm AH Required					
Total Combined AH Required			11.52							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			13.82							

BATTERY SIZE = 21AH

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP	
		0.017		0.034		0.068		0.132		0.000		0.000		0.000		0.000								
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP							
AMP	S1	10	0.170	4	0.136		0.000		0.000		0.000		0.000		0.000		0.000	0.306	x 180	x 21.6 ÷	2580	= 0.461 ÷	24 x 100	1.9

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE												(I) TOTAL CURRENT	x	LENGTH FT.	x	21.6 ÷	CIR MILS 14awg	=	VOLTS DROPPED	÷	24(V) x	100	% VOLTAGE DROP
		QTY.	AMP.	QTY.	AMP.	QTY.	AMP.	QTY.	AMP.	QTY.	AMP.	QTY.	AMP.	QTY.	AMP.	QTY.	AMP.	QTY.	AMP.												
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
RPS-1B	N1	4	0.172	6	0.378		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.550	x	150	x	21.6 ÷	6530	=	0.273	÷	24 x	100	1.1

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

REV

DATE

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DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024


LUCCI & ASSOCIATES INC.

CONSULTING ELECTRICAL ENGINEERS

3251 CORTE MALPASO, #511
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SHEET TITLE:

RELOCATABLE BUILDING
1A & 1B
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS

PROJECT:

LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:
LK/MW

CHECKED:
K. LUCCI

DATE:
10-04-2024

SCALE:
AS NOTED

JOB NO.
19753-07

SHEET:


E780

OF: SHEETS:

DATE: 4 October 2024
TIME: 8:16 am
PLOT DATE: 10/14/2024 8:16:54 AM
PLOT BY: CM03
SAVE DATE: 10/14/2024 7:48:33 AM
DRAWING FILENAME: 19753-07-E790
DRAFTER: CM03

PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E790.dwg
DRAFTING: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E790.dwg
DATE: 10/19/2024 2:36 PM
TIME: 2:36 PM

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/14/2024

Standby Hours: 24

Alarm Mins: 120

Derating: 1.2

Panel ID: ECS-50


Location: RELOCATABLE BUILDING 2, 3, 4, & 5

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw	
			Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	2	N/A	0.136
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.661
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.322
Total Combined AH Required			3.36	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.03	

8 SPEAKER AT .25W = 2W

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/14/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPSR2, RPSR3, RPSR4, RPSR5

Location: RELOCATABLE BUILDING

Model: RA-2000 Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw		Wire AWG & Type	Ohms Per 1000 Ft	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
			Standby	Alarm						
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	8	0.0024	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	8	0.0016	0.0360						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon	8	0.0030	0.0030						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBU	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	0.928	#12 Solid	1.59	250	0.80	23.90	0.40%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.359	1.791	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			8.616	3.582	Total Alarm AH Required					
Total Combined AH Required			12.20							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			14.64		BATTERY SIZE = 21AH					

CALCULATIONS FOR
RELOCATABLES 2, 3, 4, & 5

REV

DATE

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DIV. OF THE STATE ARCHITECT

APP: 03-124307 INC:

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SS ☐ FLS ☒ ACS ☐

DATE: 10/23/2024

LUCCI & ASSOCIATES INC.

CONSULTING ELECTRICAL ENGINEERS

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STAMP



SHEET TITLE:

RELOCATABLE BUILDING
2, 3, 4, & 5
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS

PROJECT:

LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN:

LK/MW

CHECKED:

K. LUCCI

DATE:

10-04-2024

SCALE:

AS NOTED

JOB NO.

19753-07

SHEET:

E790

OF:

SHEETS:

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS																			
T #	1/4 WATT		1/2 WATT		1 WATT		2 WATT										(I) TOTAL CURRENT	LENGTH FT.	x 21.6 ÷ CIR MILS 14awg = VOLTS DROPPED ÷ 24(V) x 100 % VOLTAGE DROP
	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP			
1	8	0.136		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.136	x 250	x 21.6 ÷ 2580 = 0.285 ÷ 24 x 100 1.2

FEET x 21.6 = VOLTAGE DROPPED
C.M.
TOTAL CIRCUIT CURRENT
T = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
5 = FORMULA CONSTANT
I = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW


WIRE SIZE	WIRE RESISTANCE	CIR. MILS
G 12	1.59 PER 1000'	6530
G 14	2.52 PER 1000'	4110
G 16	4.02 PER 1000'	2580
G 18	6.39 PER 1000'	1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS																								
PANEL ID	CKT #	15cd STROBE 0.043		30cd STROBE 0.063		75cd STROBE 0.107		110cd STROBE 0.148		-		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg =	VOLTS DROPPED ÷ 24(V) x 100	% VOLTAGE DROP
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP					
RPSR2, RPSR3, RPSR4, RPSR5	N1	4	0.172	12	0.756		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.928	x 250	x 21.6 ÷ 6530	= 0.767 ÷ 24 x 100	3.2

I x FEET x 21.6 = VOLTAGE DROPPED
C.M.
I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



SILENT KNIGHT

ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Standby Hours: 24

Project ID:

Alarm Mins: 120

Prepared By: LAI

Derating: 1.2

Date: 1/4/2024

Panel ID: ECS-50

Location: RELOCATABLE BUILDING 6 & 7

Model: ECS-50W Audio Amplifier

Ckt.#	Circuit Name	Qty	Current Draw	
			Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*	1	0.000	0.000
ECS-C64	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	4	N/A	0.272
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.797
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.594
Total Combined AH Required			3.63	
Multiply By The Derating Factor			1.20	
Minimum Battery Amphours Required			4.36	


BATTERY SIZE = 7AH

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS																																	
PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		-		(I) TOTAL CURRENT	LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED ÷ 24(V)	x 100	% VOLTAGE DROP							
		0.017		0.034		0.068		0.132		0.000		0.000		0.000		0.000		0.000															
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP														
AMP	S1		0.000	4	0.136	2	0.136		0.000		0.000		0.000		0.000		0.000		0.000	0.272	x	120	x	21.6	÷	2580	=	0.273	÷	24	x	100	1.1

$$\frac{I \times \text{FEET} \times 21.6}{\text{C.M.}} = \text{VOLTAGE DROPPED}$$

I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

<u>WIRE SIZE</u>	<u>WIRE RESISTANCE</u>	<u>CIR. MILS</u>
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620



THE POWER OF

CONNECTED

Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPSR6

Location: RELOCATABLE BUILDING 6/7

Model: RA-2000

Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part.#	Description	Qty	Current Standby	Draw Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415	N/A					
IDP-Photo, Photo-T, PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	8	0.0024	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	8	0.0016	0.0360						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000	N/A					
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.00	0.0000						
RTS151KEY	Key Activated Test		0.00	0.0000						
RA100Z	Remote LED		0.00	0.00						
6815	SLC Expander		0.00	0.00						
RA-2000	LCD Remote Annunc		0.00	0.00						
RA-1000	LCD Remote Annunc		0.00	0.00						
RA-100	LCD Remote Annunc		0.00	0.00						
5824	Serial/Parallel Module		0.00	0.00	N/A					
5486	Power Expander		0.00	0.00						
RFS-1000	Power Expander		0.00	0.00						
5865-4	LED Annunciator (4G)		0.00	0.00						
5865-3	LED Annunciator (3G)		0.00	0.00						
5880	LED Driver Module		0.00	0.00						
5883	Relay Module		0.00	0.00						
CELL-MOD	Communicator									


SAME CALCULATIONS FOR RELOCATABLE 6 & 7

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS																																
PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE		-		-		-		-		-		(I) TOTAL		x LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP					
		0.043	0.063	0.107	0.148	0.000		0.000		0.000		0.000		0.000		CURRENT																
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP		QTY.	AMP														
RPSR6	N1	0.000	4	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.252	x	110	x	21.6 ÷	6530	=	0.092	÷	24	x	100	0.4

$$\frac{I \times \text{FEET} \times 21.6}{\text{C.M.}} = \text{VOLTAGE DROPPED}$$


I = TOTAL CIRCUIT CURRENT
FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE
21.6 = FORMULA CONSTANT
C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

<u>WIRE SIZE</u>	<u>WIRE RESISTANCE</u>	<u>CIR. MILS</u>
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

REV	DATE	IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
		APP: 03-124307 INC: REVIEWED FOR SS <input type="checkbox"/> FLS <input checked="" type="checkbox"/> ACS <input type="checkbox"/> DATE: 10/23/2024
LUCCI & ASSOCIATES INC. CONSULTING ELECTRICAL ENGINEERS 3251 CORTE MALPASO, #511 CAMARILLO, CA 93012-8094 PHONE (805) 389-6520 FAX (805) 389-6519		
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STAMP		
		
SHEET TITLE:		
RELOCATABLE BUILDING 6 & 7 EMERGENCY VOICE/ALARM FIRE SYSTEM - CALCULATIONS		
		
PROJECT:	LAS POSAS ELEMENTARY SCHOOL 75 CALLE LA GUERRA, CAMARILLO, CA 93010 FIRE ALARM UPGRADE	
DRAWN: LK/MW		
CHECKED: K. LUCCI		
DATE: 10-04-2024		
SCALE: AS NOTED		
JOB NO. 19753-07		
SHEET:		
E791		
OF: SHEETS:		

DRAWING FILENAME: 19753-07-E793
DRAFTER: CM03
PATHNAME: G:\19\753\EL\Sheets\07-Las Posas ES\19753-07-E793.dwg
DATE: 4 October 2024
TIME: 8:17 am
PLOT DATE: 10/22/2024 8:17:02 AM
PLOT BY: CM03
SAVE DATE: 10/22/2024 10:38:31 AM

NOTE:
EMERGENCY VOICE/ALARM COMMUNICATION
SYSTEM POWER SOURCE IS CALCULATED FOR
24-HOUR STANDBY AND 2-HOUR LOAD
DURATION PER CFC SECTIONS:
604.1.4; 604.2.4; 907.5.2.2.5



ECS-50W Calculations

Version 06.11.12

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating: 1.2

Panel ID: ECS-50


Location: RELOCATABLE BUILDING 8

Model: ECS-50W Audio Amplifier

Ckt #	Circuit Name	Qty	Current Draw Standby	Alarm
ECS-50W-25	ECS-50W Amplifier 25 Volts*	1	0.085	0.525
ECS-50W-70.7	ECS-50W Amplifier 70.7 Volts*		0.000	0.000
ECS-CE4	4 Zone Expander		0.000	0.000
Watts	Enter Number of Watts @ 25Vrms**	1.76	N/A	0.119
Watts	Enter Number of Watts @ 70.7Vrms**	N/A	0.000	0.000
Total Standby Current (AMPS)			0.085	0.644
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.288
Total Combined AH Required			3.33	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			3.99	

3 SPEAKER AT .25W
& 1 SPEAKERS @ 1 WATT = 1.75 WATTS

BATTERY SIZE = 7AH



Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: LAS POSAS ES

Project ID:

Prepared By: LAI

Date: 1/4/2024

Standby Hours: 24

Alarm Mins: 120

Derating Factor: 1.2

Voltage Drop Warning Threshold %: 10

Panel ID: RPSR8

Location: RELOCATABLE BUILDING 8

Model: RA-2000 Add. Fire Alarm Panel

Volts: 24 VDC

Max NAC Current: 3.0 Amps

Max Panel Current: 9.0 Amps

Part #	Description	Qty	Current Draw Standby	Alarm	Wire AWG & Type	Ohms Per 1000 Ft.	Length(ft) One-Way	Actual Ohms	Volts @ EOL	%Drop
IFP-2100	IFP-2100		0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	6	0.0018	0.0072						
IDP-Heat, Heat-HT, ROR	Heat detector		0.0000	0.0000						
IDP-Beam, Beam-T	Beam detector		0.0000	0.0000						
DNR	Duct housing		0.0000	0.0000						
IDP-IDP Acclimate	IDP Acclimate		0.0000	0.0000						
IDP-Photo W	Photo W		0.0000	0.0000						
IDP-Photo-R-W	Photo-R-W		0.0000	0.0000						
IDP-Photo-T-W	Photo-T-W		0.0000	0.0000						
IDP-Heat-W	Heat-W		0.0000	0.0000						
IDP-Heat-ROR-W	Heat-ROR-W		0.0000	0.0000						
IDP-Heat-HT-W	Heat-HT-W	4	0.0008	0.0180						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon		0.0000	0.0000						
IDP-Monitor-2	Monitor-2		0.0000	0.0000						
IDP-Monitor-10	Monitor-10		0.0000	0.0000						
IDP-Pull-SA, Pull-DA	Pull-SA, Pull-DA		0.0000	0.0000						
IDP-Relay	Relay		0.0000	0.0000						
IDP-Relay-6	Relay-6		0.0000	0.0000						
IDP-RelayMon-2	RelayMon-2		0.0000	0.0000						
IDP-Zone	Zone		0.0000	0.0000						
IDP-Zone-6	Zone-6		0.0000	0.0000						
IDP-Iso (Isolator Module)	Iso (Isolator Module)		0.0000	0.0000						
IDP-ISO-6	ISO-6		0.0000	0.0000						
B224BI	Isolator Base		0.0000	0.0000						
B200S	Sounder Base		0.0000	0.0000						
B200SR	Sounder Base		0.0000	0.0000						
B200S-LF	Sounder Base LF		0.0000	0.0000						
B200SR-LF	Sounder Base LF		0.0000	0.0000						
B224RB	Relay Base		0.0000	0.0000						
RTS151	Magnetic Remote Test		0.000	0.0000						
RTS151KEY	Key Activated Test		0.000	0.0000						
RA100Z	Remote LED		0.000	0.000						
6815	SLC Expander		0.000	0.000						
RA-2000	LCD Remote Annunc		0.000	0.000						
RA-1000	LCD Remote Annunc		0.000	0.000						
RA-100	LCD Remote Annunc		0.000	0.000						
5824	Serial/Parallel Module		0.000	0.000						
5496	Power Expander		0.000	0.000						
RPS-1000	Power Expander		0.000	0.000						
5865-4	LED Annunciator (4G)		0.000	0.000						
5865-3	LED Annunciator (3G)		0.000	0.000						
5880	LED Driver Module		0.000	0.000						
5883	Relay Module		0.000	0.000						
CELL-MOD	Communicator		0.000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.000	0.000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.000	0.000						
ECS-NVCM	Voice control		0.000	0.000						
ECS-SW24	Zone Expander		0.000	0.000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.000	0.000						
ECS-LOC2100	Local Operating Console		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.000	0.000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.000	0.000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.000	0.000						
ECS-DUAL50W	50/100 Watt Amp		0.000	0.000						
ECS-50WBU	50 Watt Backup Amplifier		0.000	0.000						
NAC-1	Notification Appl Circuit	cfg	0.000	0.149	#12 Solid	1.59	130	0.41	23.94	0.30%
NAC-2	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
NAC-3	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
SPARE	Notification Appl Circuit	cfg	0.000	0.000	#12 Solid	1.59		0.00		100.00%
Total Standby Current (Amps)			0.355	0.991	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			8.510	1.982	Total Alarm AH Required					
Total Combined AH Required			10.49							
Multiply By The Derating Factor			1.20							
Minimum Battery AmpHours Required			12.59		BATTERY SIZE = 21AH					

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT		1/2 WATT		1 WATT		2 WATT		-		-		-		-		(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷	CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP					
		0.017		0.034		0.068		0.132		0.000		0.000		0.000		0.000													
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP												
AMP	S1	3	0.051		0.000	1	0.068		0.000		0.000		0.000		0.000		0.000	0.119	x	120	x	21.6 ÷	2580	=	0.120 ÷	24	x	100	0.5

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.

I = TOTAL CIRCUIT CURRENT

FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE

21.6 = FORMULA CONSTANT

C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE WIRE RESISTANCE CIR. MILS

AWG 12 1.59 PER 1000' 6530

AWG 14 2.52 PER 1000' 4110

AWG 16 4.02 PER 1000' 2580

AWG 18 6.39 PER 1000' 1620

VOLTAGE DROP CALCULATIONS - NOTIFICATION APPLIANCE CIRCUITS

PANEL ID	CKT #	15cd STROBE		30cd STROBE		75cd STROBE		110cd STROBE										(I) TOTAL CURRENT	x LENGTH FT.	x 21.6 ÷ CIR MILS 14awg	= VOLTS DROPPED	÷ 24(V) x 100	% VOLTAGE DROP							
		0.043	0.063	0.107	0.148	0.000	0.000	0.000	0.000	0.000	0.000																			
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP																	
RPSR8	N1	2	0.086	1	0.063		0.000		0.000		0.000		0.000		0.000		0.000	0.149	x	130	x	21.6 ÷	6530	=	0.064	÷	24	x	100	0.3

$I \times \text{FEET} \times 21.6$ = VOLTAGE DROPPED
C.M.

I = TOTAL CIRCUIT CURRENT

FEET = ONE WAY DISTANCE IN FEET MEASURED FROM SOURCE TO THE LAST DEVICE

21.6 = FORMULA CONSTANT

C.M. = CROSS SECTIONAL AREA OF CONDUCTOR IN CIRCULAR MILS. SEE CHART BELOW

WIRE SIZE WIRE RESISTANCE CIR. MILS

AWG 12 1.59 PER 1000' 6530

AWG 14 2.52 PER 1000' 4110

AWG 16 4.02 PER 1000' 2580

AWG 18 6.39 PER 1000' 1620

REV: DAY:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124307 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
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STAMP



SHEET TITLE:

RELOCATABLE BUILDING 8
EMERGENCY VOICE/ALARM
FIRE SYSTEM - CALCULATIONS



PROJECT:
LAS POSAS
ELEMENTARY SCHOOL
75 CALLE LA GUERRA,
CAMARILLO, CA 93010
FIRE ALARM UPGRADE

DRAWN: LK/MW

CHECKED: K. LUCCI

DATE: 10-04-2024

SCALE: AS NOTED

JOB NO. 19753-07

SHEET:

E793

OF: SHEETS: