

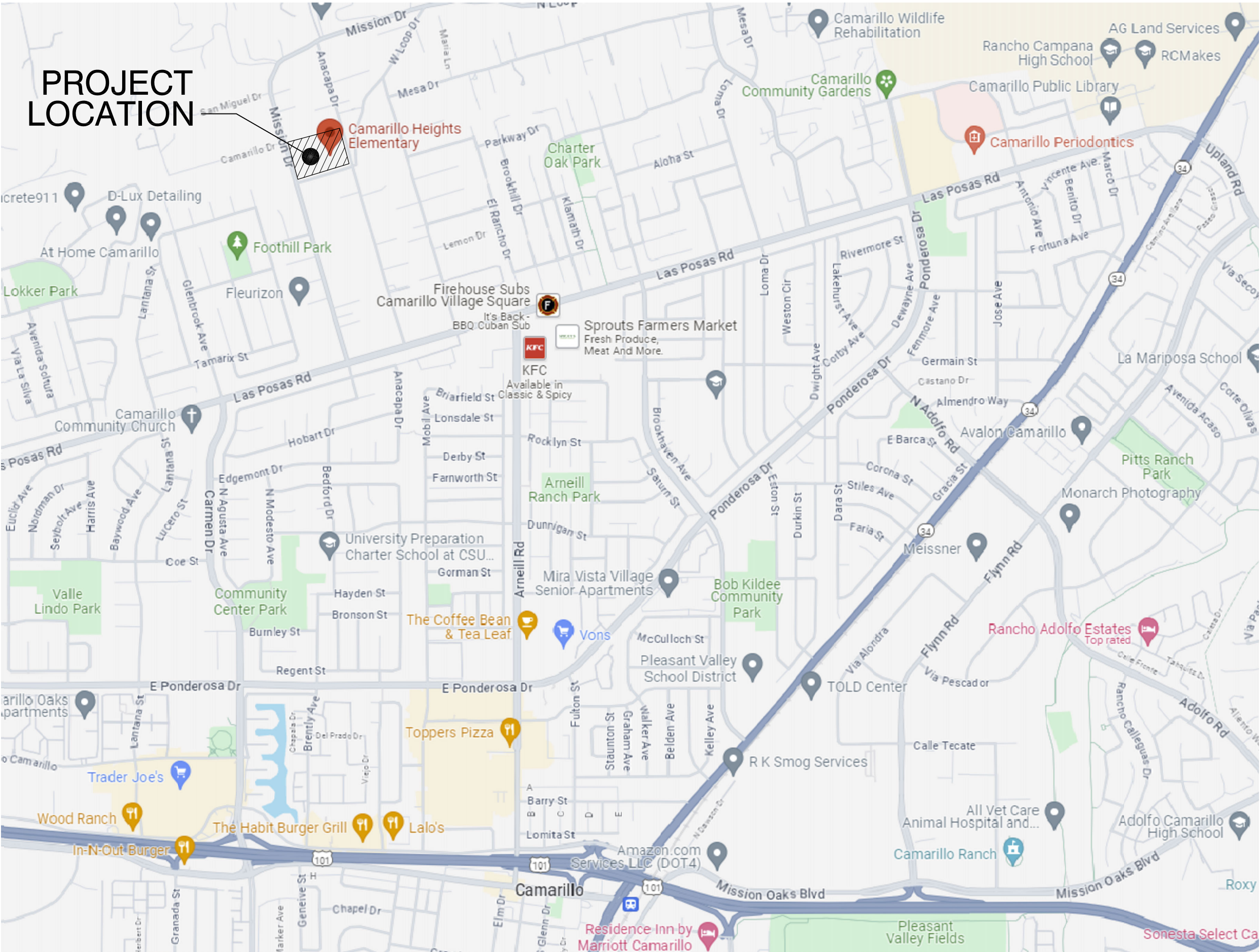
GENERAL REQUIREMENTS:

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 RESPONSIBILITY 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
CAMARILLO HEIGHTS
CAMPUS FIRE ALARM UPGRADES
35 CATALINA DR, 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
OFFICE: (805) 963-1726
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

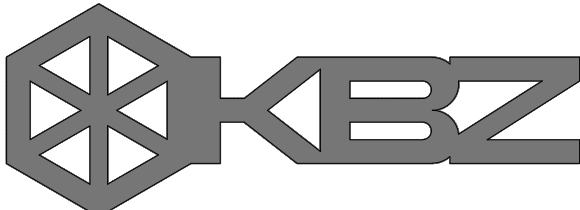
ARCHITECTURAL

2. A-100 SITE PLAN

ELECTRICAL

3. E100 GENERAL NOTES, ABBREVIATIONS, SYMBOLS & DRAWING LIST
4. E600 FIRE ALARM SITE PLAN - NEW WORK
5. E601 NEW FIRE ALARM MASTER LEGEND
6. E602 EMERGENCY VOICE/ ALARM/DETECTION COMM SYSTEM RISER DIAGRAM
7. E603 EMERGENCY VOICE/ALARM COMM SYSTEM - FIRE ALARM DETAILS
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 CLASSROOM 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. E640 CLASSROOM BUILDING 400 FIRE ALARM PLAN - NEW
15. E650 CLASSROOM BUILDING 500 FIRE ALARM PLAN - NEW
16. E660 CLASSROOM BUILDING 600 FIRE ALARM PLAN - NEW
17. E670 CLASSROOM BUILDING 700 FIRE ALARM PLAN - NEW
18. E680 CLASSROOM BUILDING 800 FIRE ALARM PLAN - NEW
19. E690 CLASSROOM BUILDING 900 FIRE ALARM PLAN - NEW
20. E691 CLASSROOM BUILDING 1000 KINDERGARTEN FIRE ALARM PLAN - NEW
21. E692 CLASSROOM BUILDING 1100 FIRE ALARM PLAN - NEW
22. E693 KITCHEN BUILDING 1200 FIRE ALARM PLAN - EXISTING (IN CONSTRUCTION)
23. E700 FIRE RISER DIAGRAM
24. E701 VBUS/SBUS RISER DIAGRAM
25. E720 BUILDING 200, 1100, 100 & 500 EMERGENCY VOICE/ALARM COMM SYSTEM - CALCULATIONS
26. E730 BUILDING 300 & 600 EMERGENCY VOICE/ALARM COMM SYSTEM - CALCULATIONS
27. E770 BUILDING 700 & 800 EMERGENCY VOICE/ALARM COMM SYSTEM - CALCULATIONS
28. E791 BUILDING 1000 KINDER EMERGENCY VOICE/ALARM COMM SYSTEM - CALCS
29. E793 BUILDING 1200 KITCHEN EMERGENCY VOICE/ALARM COMM SYSTEM - CALCS
30. E800 ELECTRICAL DETAILS

TOTAL: 30 SHEETS



KRUGER BENSEN ZIEMER
ARCHITECTS, INC. AIA
199 FIGUEROA ST, STE 100A VENTURA, CA 93001
TELEPHONE (805) 963-1726 WWW.KBZARCH.COM

TODD A. JESPERSEN, AIA

PRINCIPAL ARCHITECT

JONATHAN LEE

PROJECT ARCHITECT

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ARCHITECTS
STAMP & SIGNATURE



ENGINEERS
STAMP & SIGNATURE

CONSULTANT INFORMATION

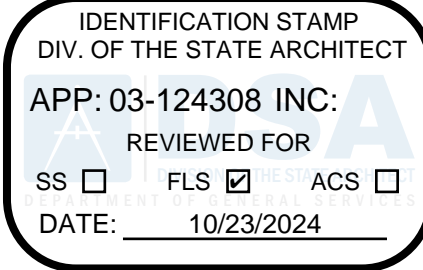
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DATE 05/04/2024
JOB NO. 24003

SHEET TITLE SHEET
TITLE

SHEET

G-001



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PLEASANT VALLEY SCHOOL DISTRICT
CAMARILLO HEIGHTS ELEMENTARY SCHOOL
35 CATALINA DR, CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

CODE ANALYSIS

BLDG. NAME	OCC. TYPE	CONSTRUCTION TYPE	FIRE SPRINKLER	ALLOWABLE AREA	ACTUAL AREA
BUILDING 100 CLASSROOM	E	V-B	NONE	9,000 S.Q.	4,650 S.Q.
BUILDING 200 CLASSROOM	E	V-B	NONE	9,500 S.Q.	4,300 S.Q.
BUILDING 300 CLASSROOM	E	V-B	NONE	9,500 S.Q.	4,350 S.Q.
BUILDING 400 CLASSROOM	E	V-B	NONE	9,500 S.Q.	4,250 S.Q.
BUILDING 500 RESTROOM	U	V-B	NONE	5,500 S.Q.	700 S.Q.
BUILDING 600 RESTROOM	U	V-B	NONE	5,500 S.Q.	550 S.Q.
BUILDING 700 ADMIN/MFR	A-2 & B	V-B	NONE	SEE BELOW	SEE BELOW
BUILDING 800 CLASSROOM	E	V-B	NONE	9,500 S.Q.	2,600 S.Q.
BUILDING 900 ELECTRICAL	U	V-B	NONE	5,500 S.Q.	500 S.Q.
BUILDING 1000 LIBRARY	A-3	V-B	NONE	6,000 S.Q.	4,800 S.Q.
BUILDING 1100 CLASSROOM	E	V-B	NONE	9,500 S.Q.	1,300 S.Q.

BUILDING 700 (MIXED-USE OCCUPANCY)

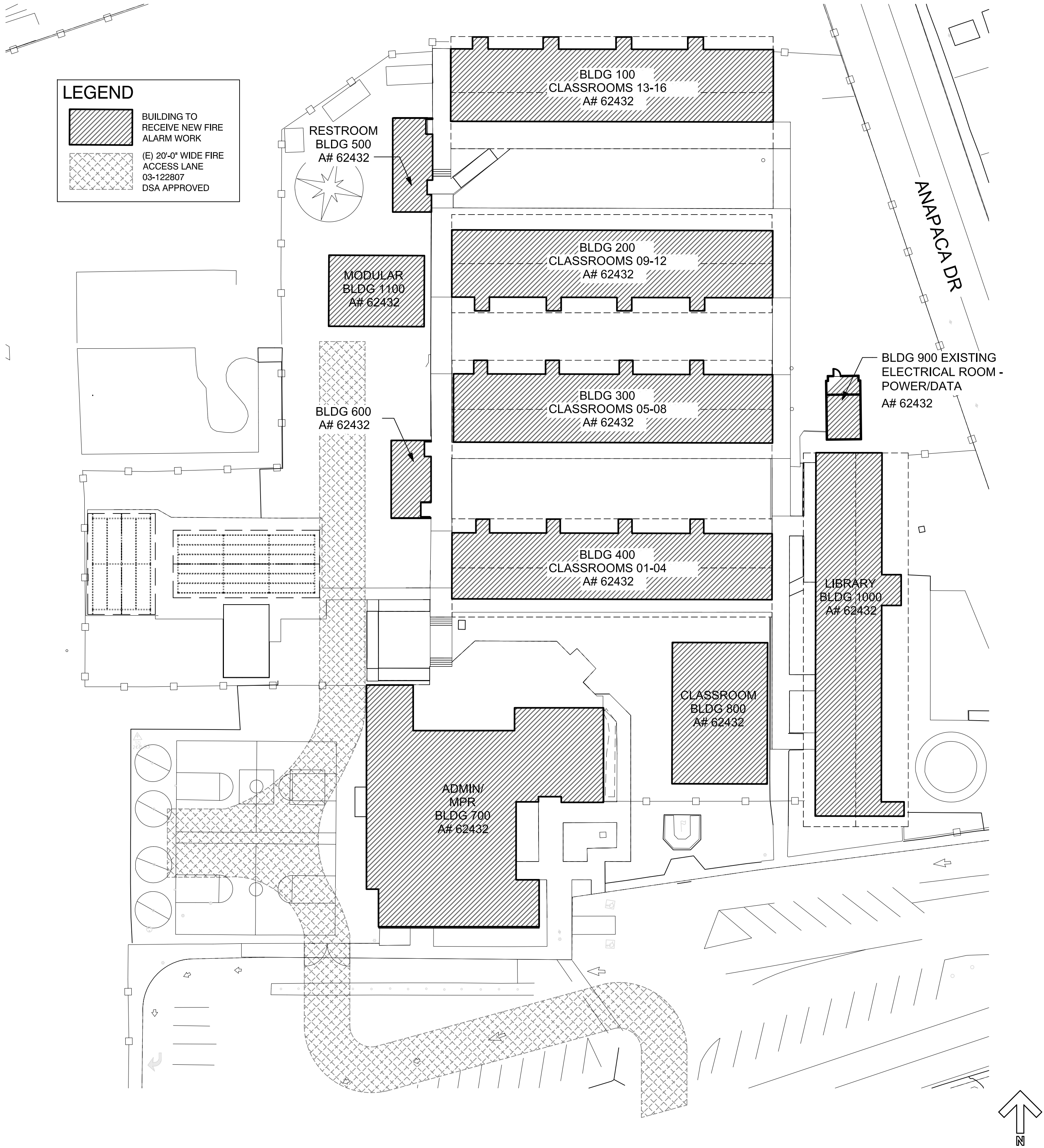
A-2 OCCUPANCY IS 3,450 S.F. OUT OF 6,000 S.F. ALLOWED = 57.50%

B OCCUPANCY IS 3,650 S.F. OUT OF 9,000 S.F. ALLOWED = 40.56%

TOTAL = 57.50 + 40.56 = 98.06 < 100 (OK)

LEGEND

-  BUILDING TO RECEIVE NEW FIRE ALARM WORK
-  (E) 20'-0" WIDE FIRE ACCESS LANE 03-122807 DSA APPROVED

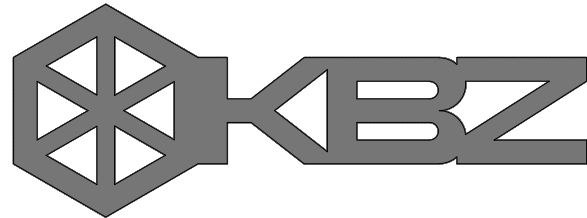


1 Site Plan
Scale: 1" = 30'-0"

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PLEASANT VALLEY SCHOOL DISTRICT
CAMARILLO HEIGHTS ELEMENTARY SCHOOL
35 CATALINA DR, CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

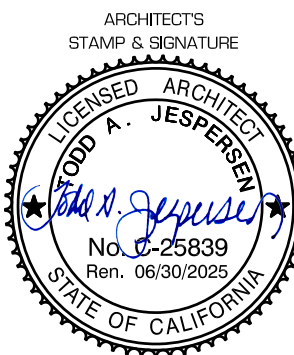


KRUGER BENSEN ZIEMER
ARCHITECTS, INC. AIA
199 FIGUEROA ST, STE 100A VENTURA CA 93001
TELEPHONE (805) 963-1726 WWW.KBZARCH.COM

TODD A JESPERSEN, AIA
PRINCIPAL ARCHITECT

JONATHAN LEE
PROJECT ARCHITECT

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ENGINEERS
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CONSULTANT INFORMATION

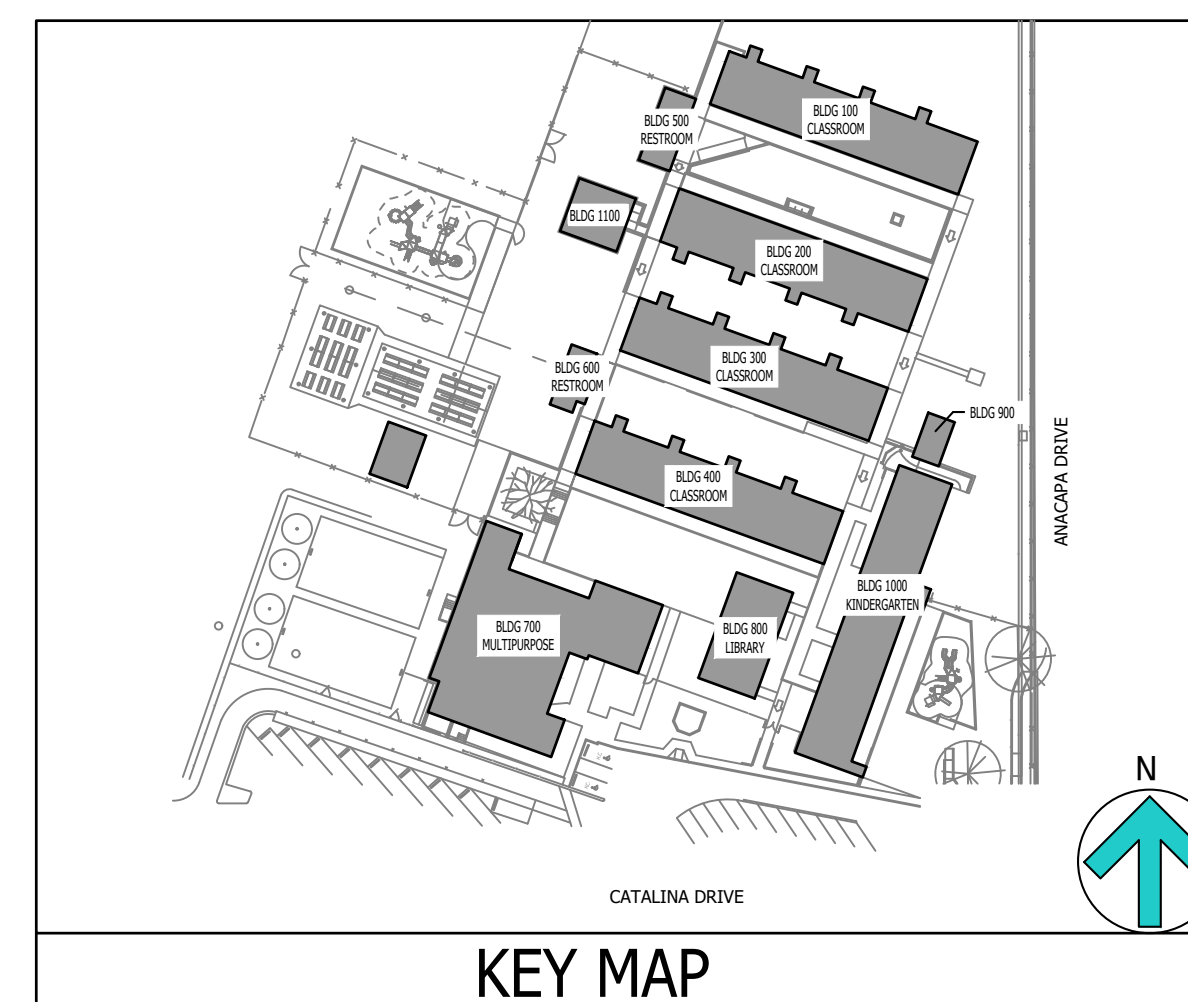
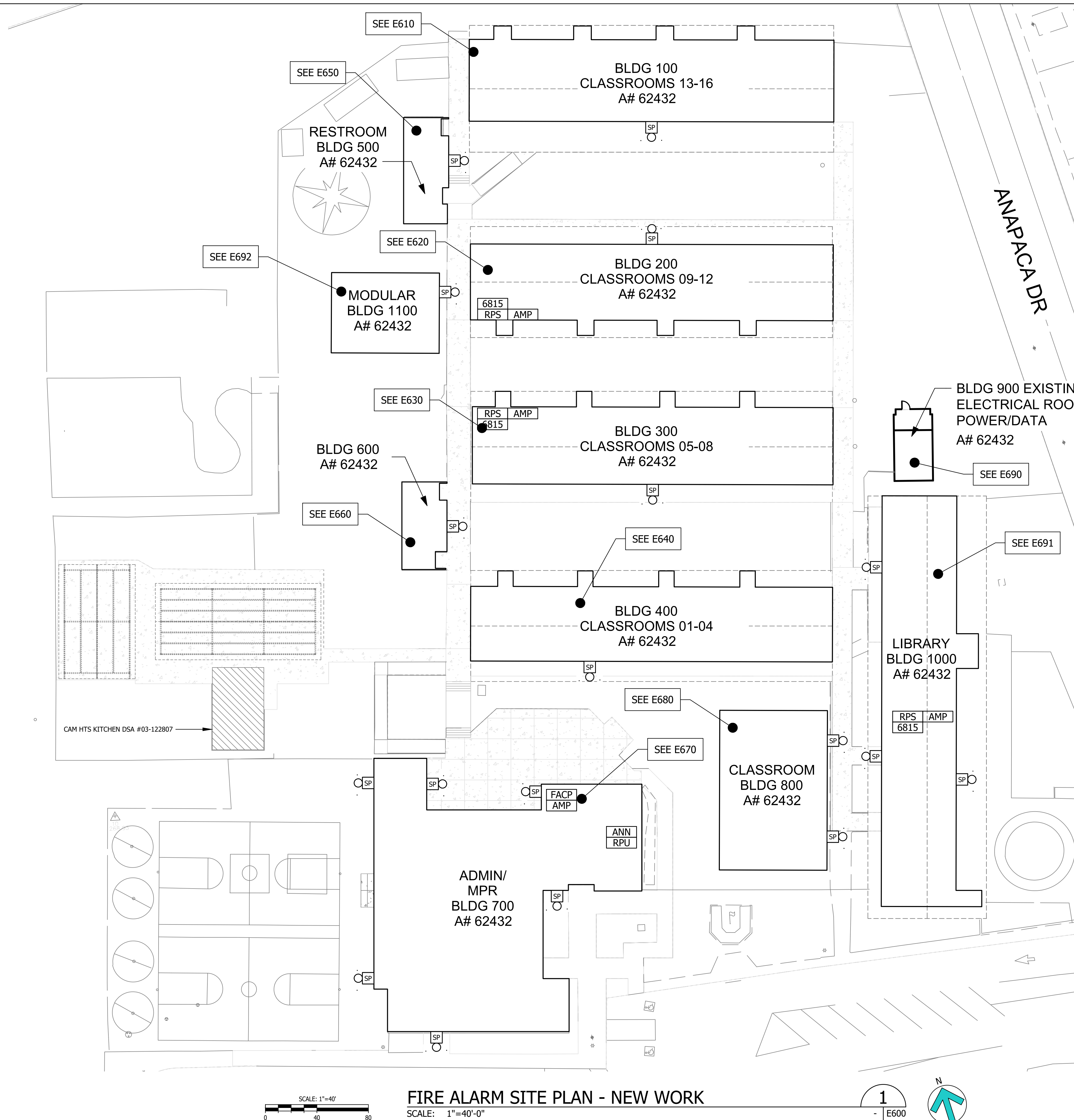
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JOB. NO. 24003

SHEET SITE PLAN
TITLE

SHEET

A-100



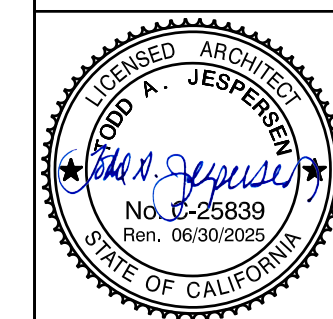
LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS

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

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FIRE ALARM SITE PLAN - NEW WORK

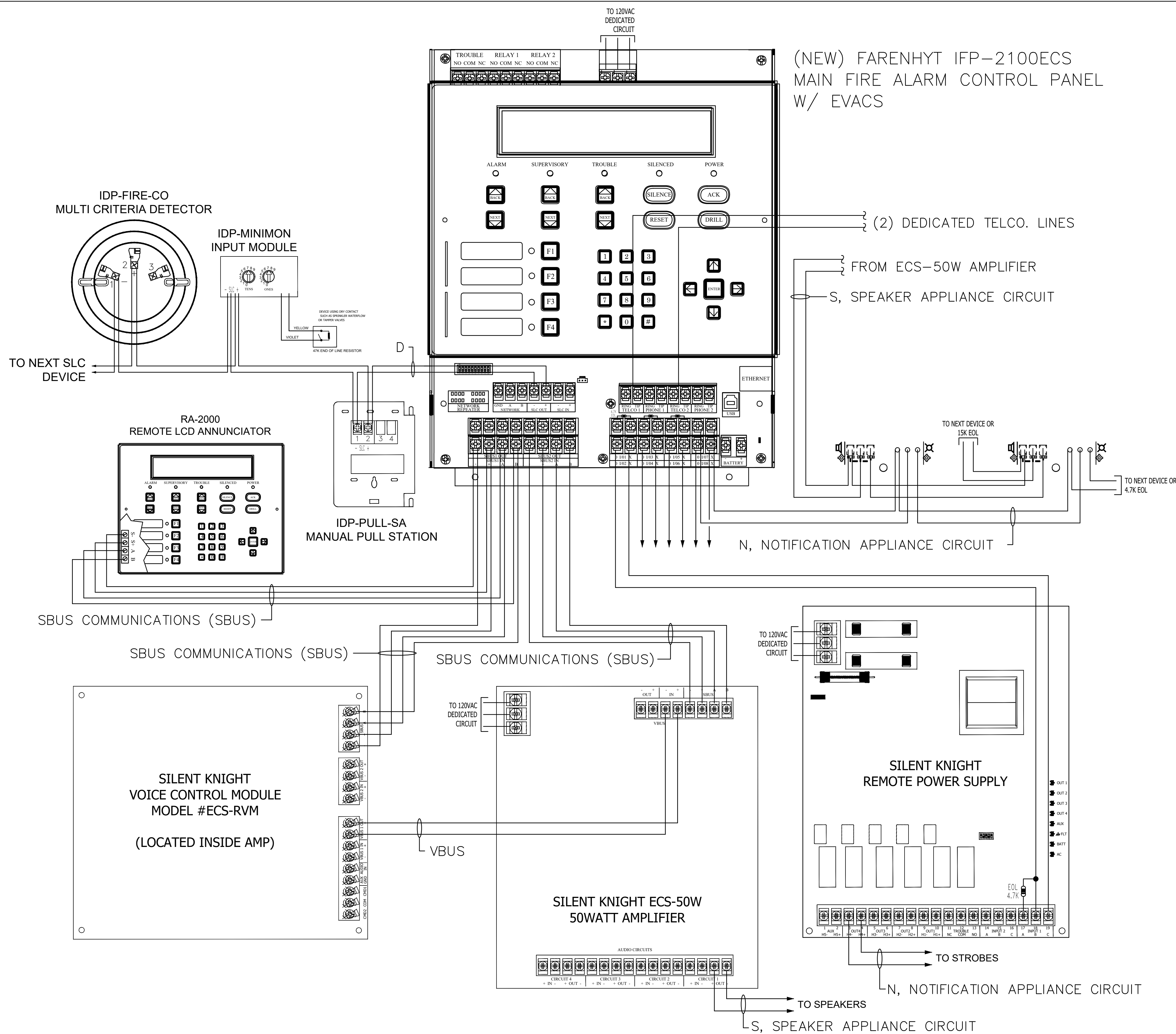


PROJECT: CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

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JOB NO. 19753-01		SCALE: AS NOTED	DATE: 01-18-2024
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OF: SHEETS:



FARENHYT IFP-2100ECS POINT TO POINT FIRE ALARM/EVACS WIRING DETAIL

1	E602
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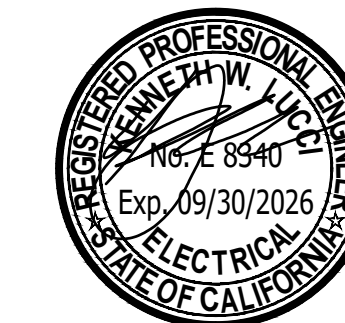
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CAMARILLO, CA 93012-8094
(805) 389-6520 FAX (805) 389-6519

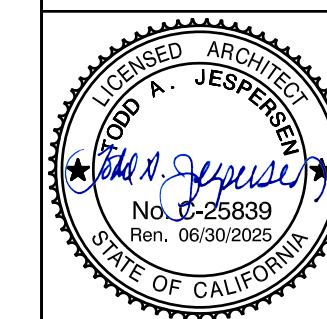
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HEET TITLE: EMERGENCY VOICE/ALARM/DETECTION COMM SYSTEM RISER DIAGRAM

SHEET TITLE:



PROJECT: CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM U

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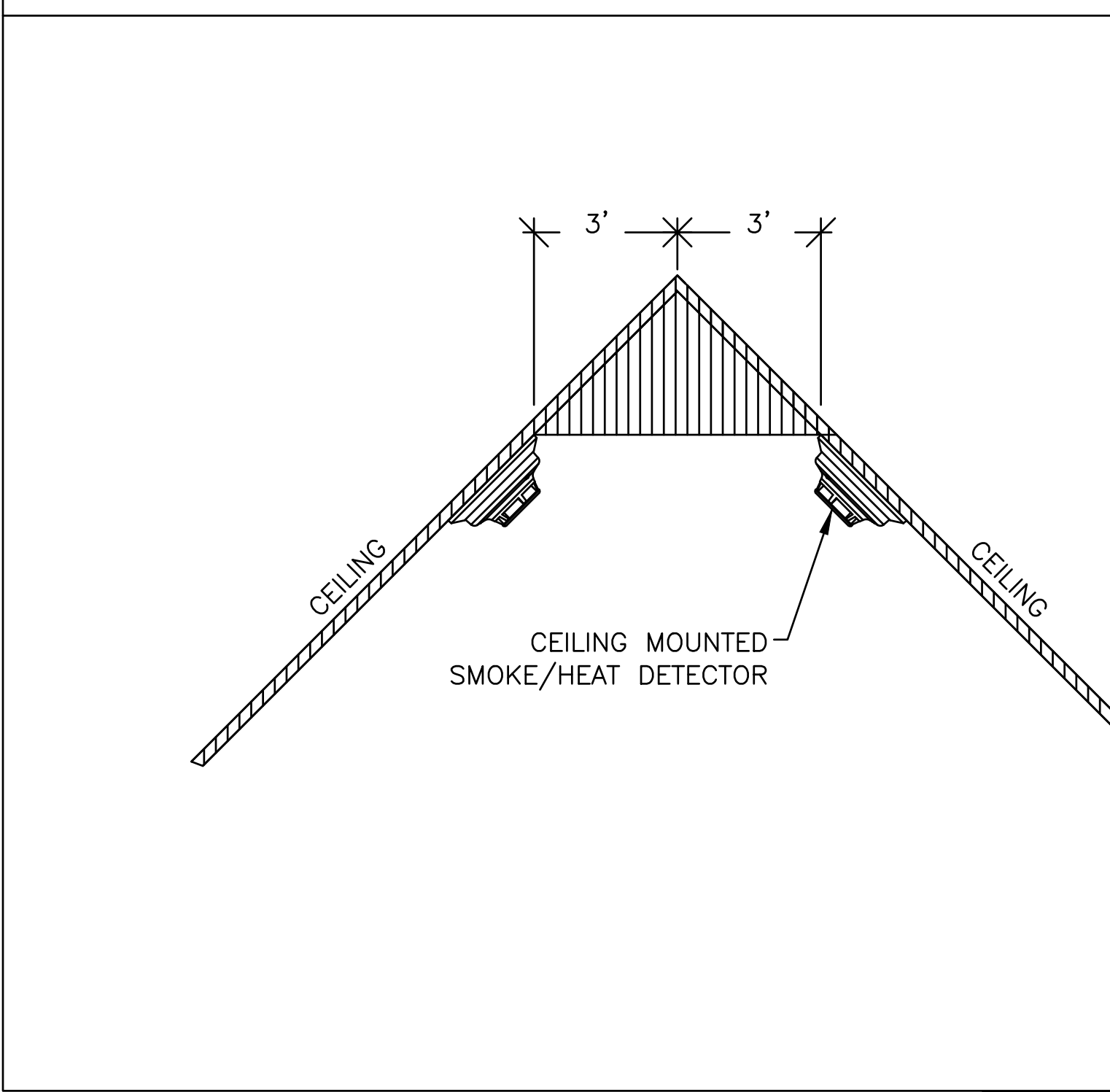
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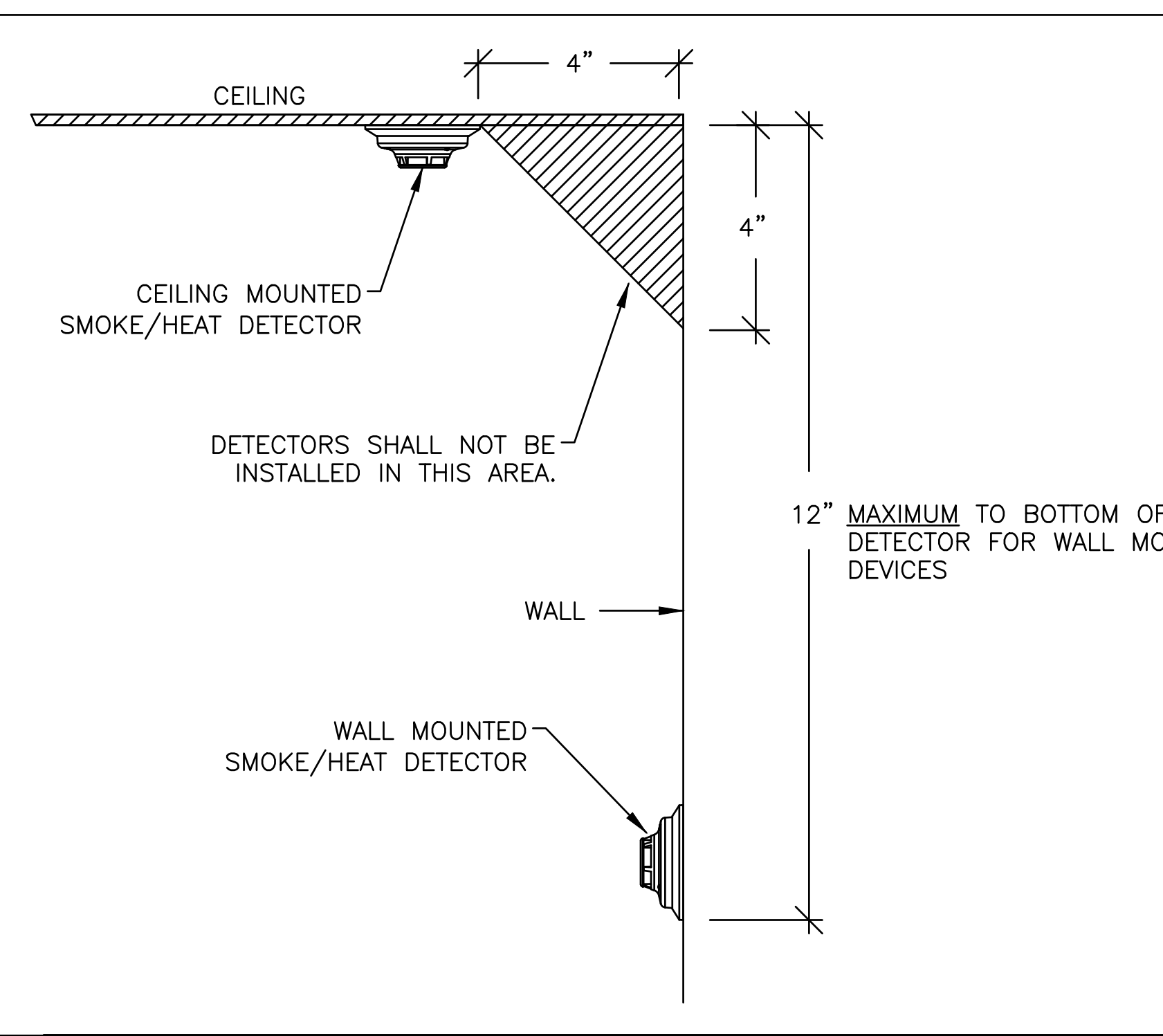
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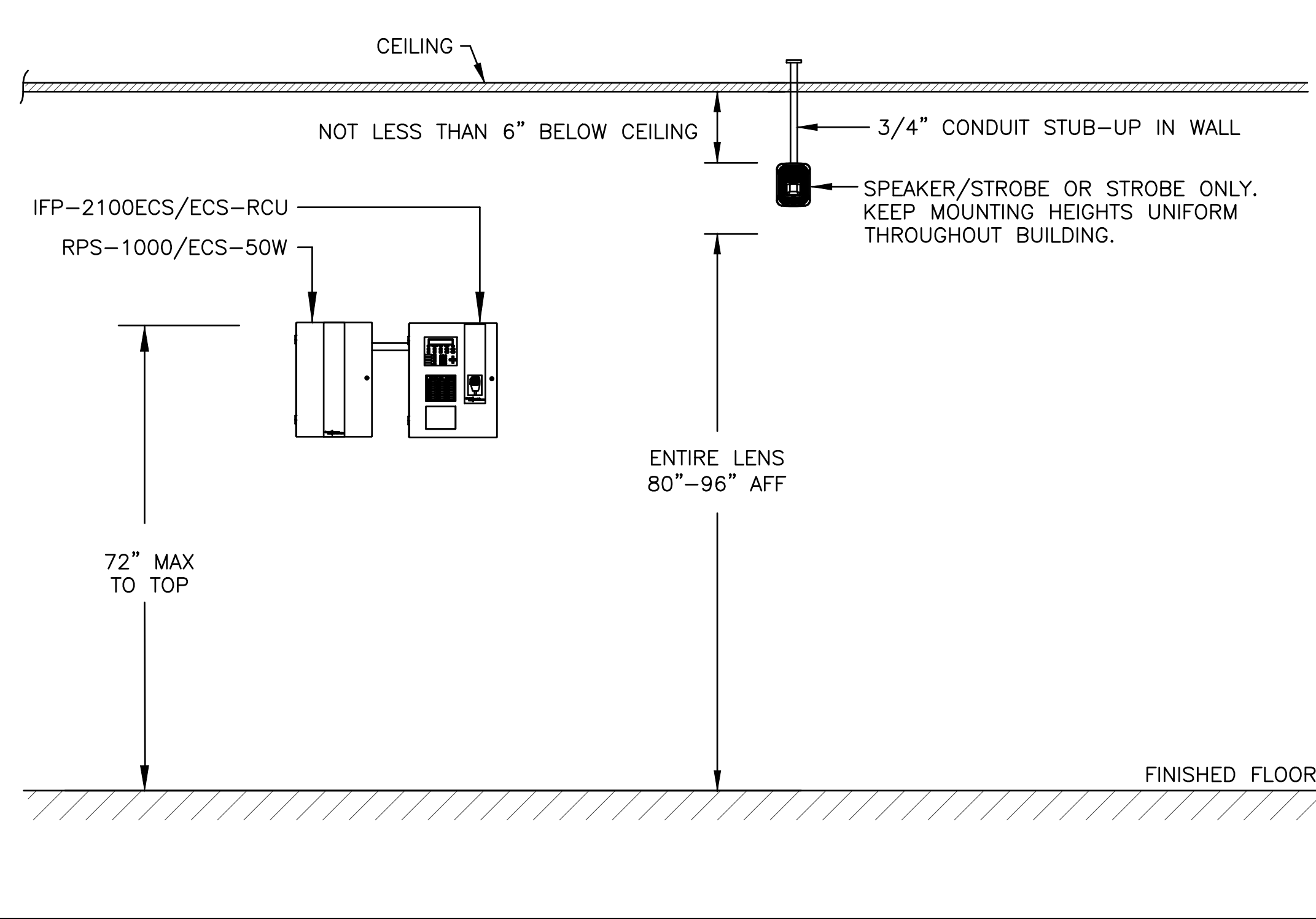
SLOPED CEILING MOUNTING DETAIL



SMOKE/HEAT/CO DETECTOR MOUNTING DETAIL



COMMON MOUNTING HEIGHT DETAIL

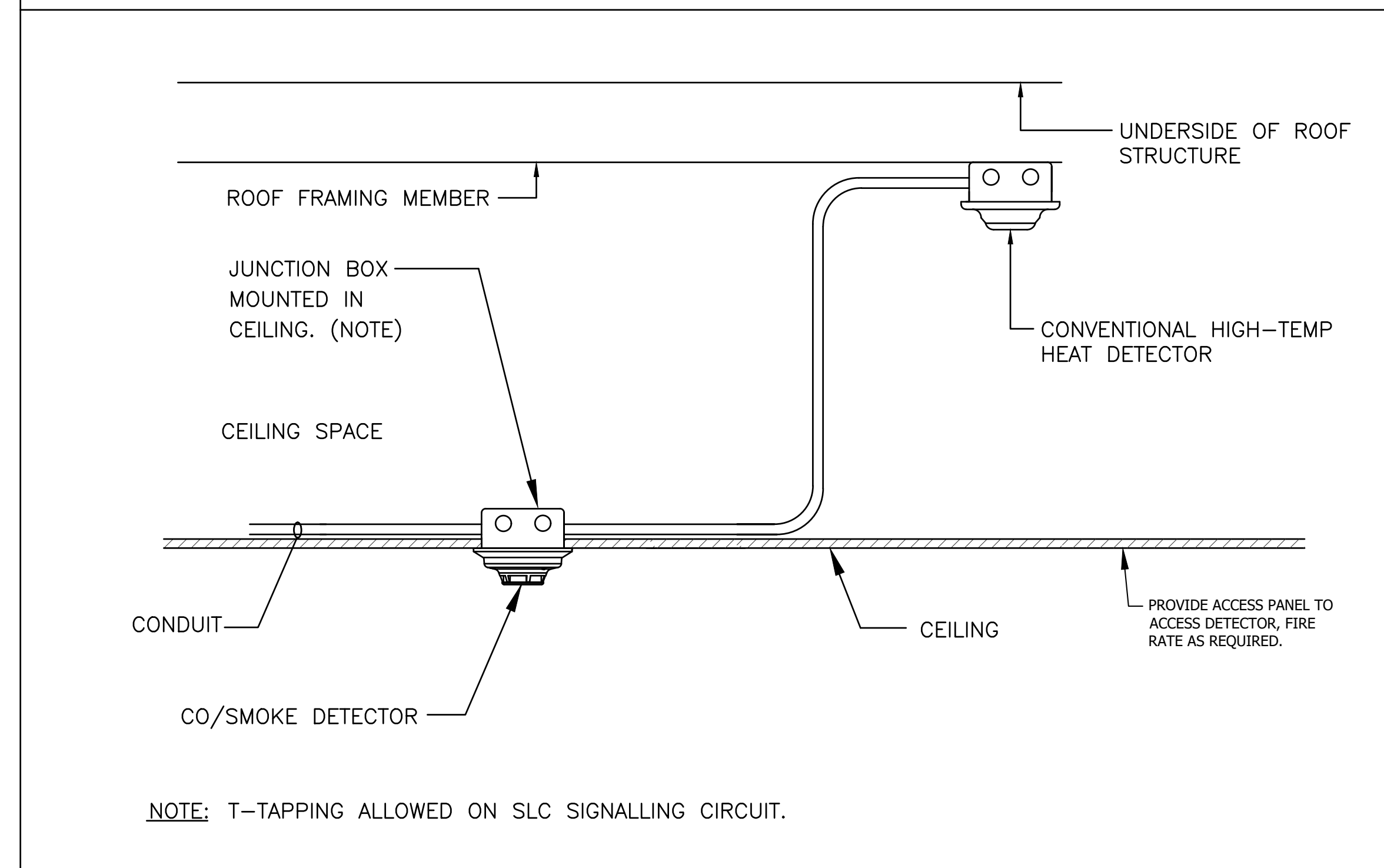


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CONSULTING ELECTRICAL ENGINEERS
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
(805) 389-6520 FAX (805) 389-6519
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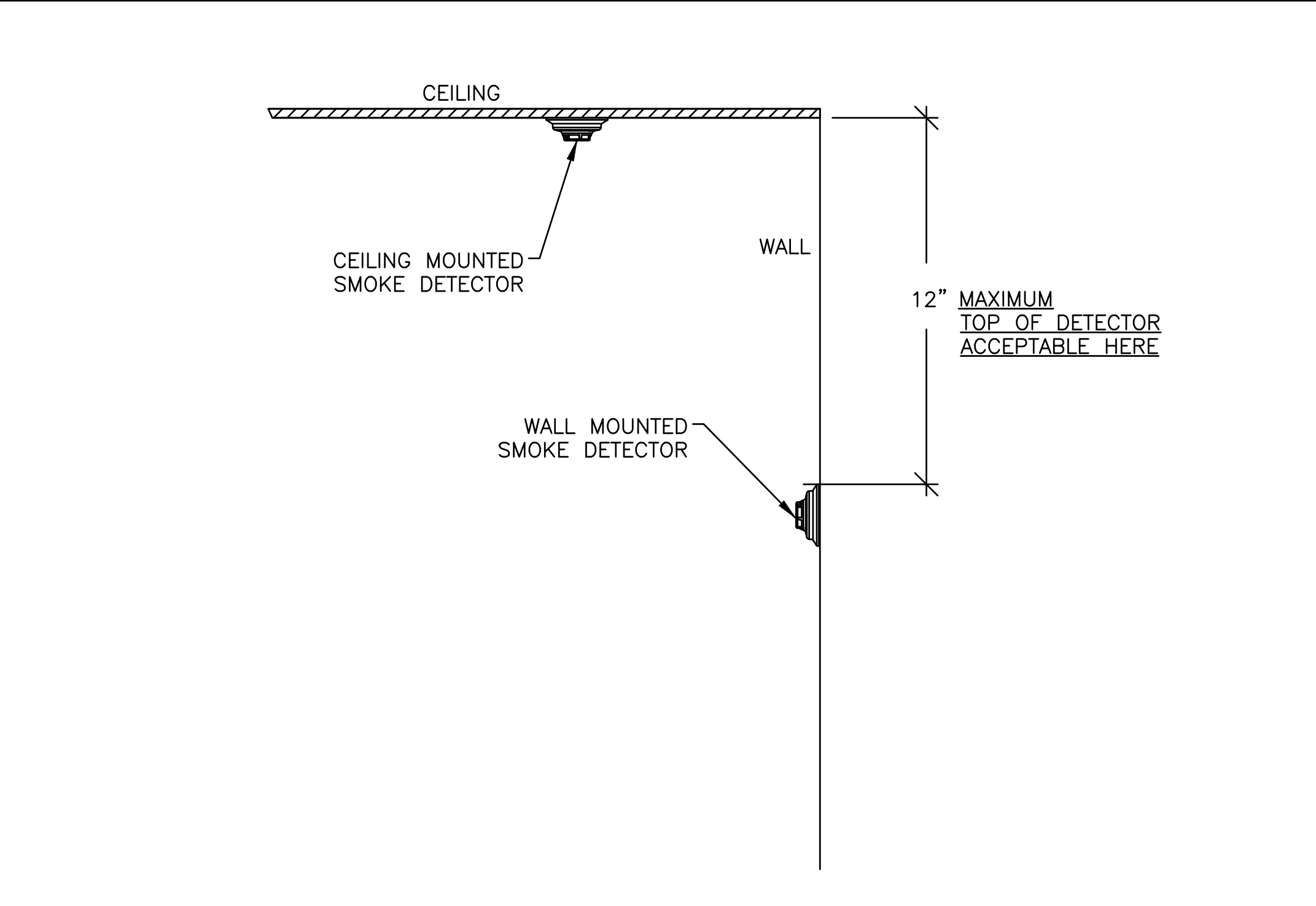


ATTIC SPACE HI-TEMP HEAT DETECTOR DETAIL

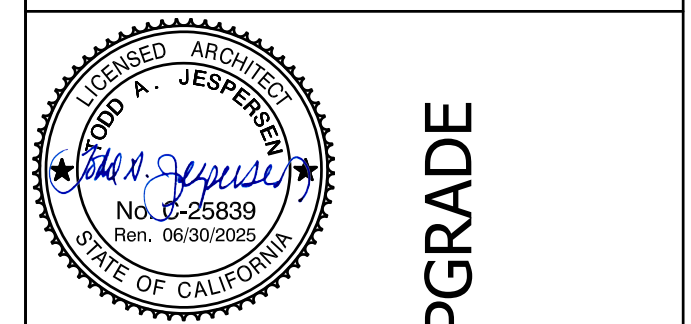


NOTE: T-TAPPING ALLOWED ON SLC SIGNALLING CIRCUIT.

SMOKE DETECTOR MOUNTING DETAIL



EMERGENCY VOICE/ALARM
COMM SYSTEM - FIRE ALARM
DETAILS



PROJECT:
CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

SEE E604, E605, & E606 FOR ADDITIONAL
DEVICE INFORMATION.

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CHECKED:
K. LUCCI
JOB NO.
19753-01
SCALE:
AS NOTED
DATE:
01-18-2024
SHEET:
E603
OF: SHEETS:

TIME: 3:34 PM
DATE: 23 September 2024
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DRAWING FILENAME: 19753-01-E606
DRAFTER: CM03
Drawing: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E606.dwg

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

Normal Operating Voltage:	15 to 32 VDC
Maximum Current Draw:	6.5 mA (LED on)
Average Operating Current:	250µA direct poll; 255µA group poll
LED 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:	SM8500 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.

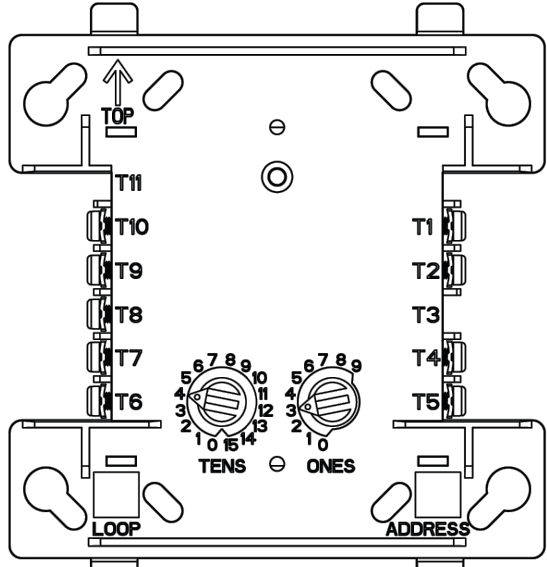
GENERAL DESCRIPTION

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:



SHEET NOTES:

1. FIELD VERIFY LOCATION OF ALL DEVICES.
2. 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
4. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

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

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS

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

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STAMP



CLASSROOM BUILDING 100
FIRE ALARM PLAN - NEW WORK

SHEET TITLE:

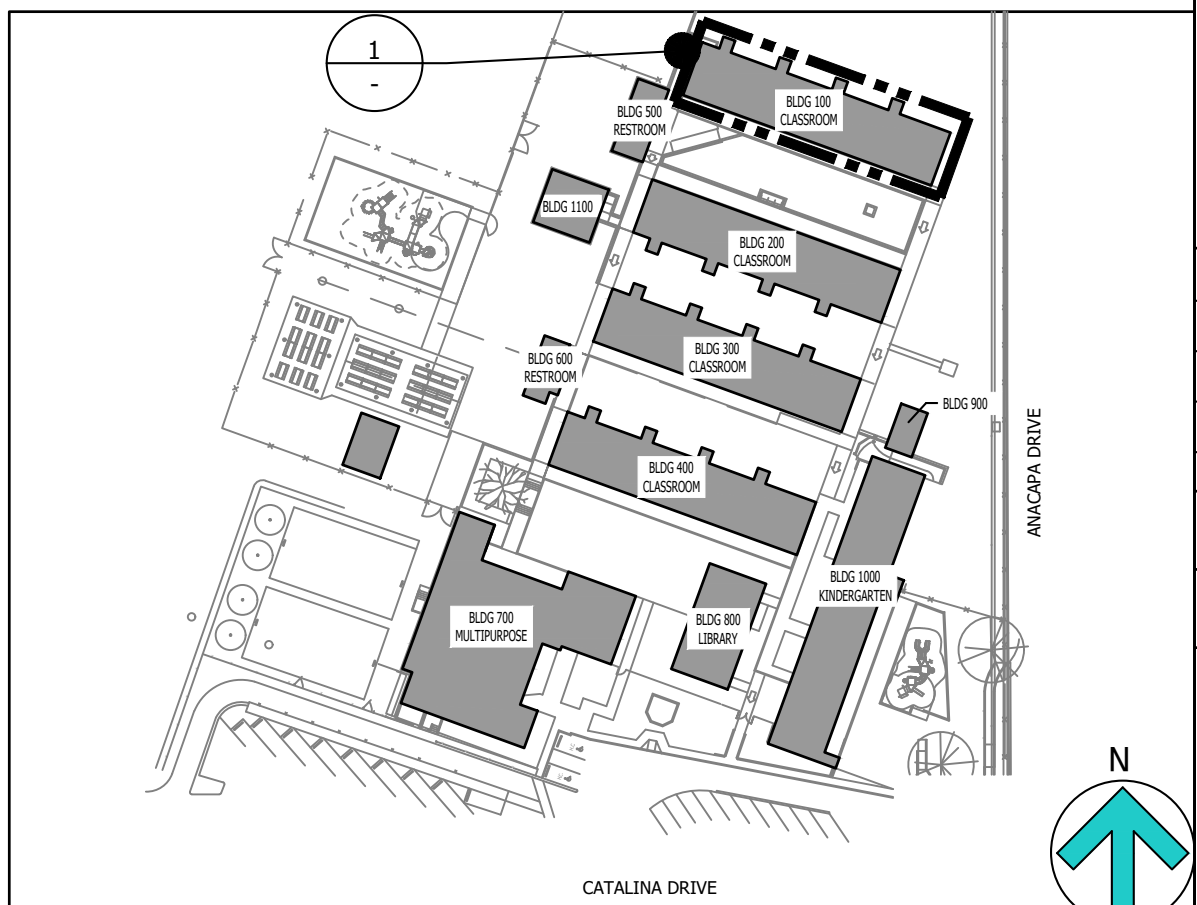
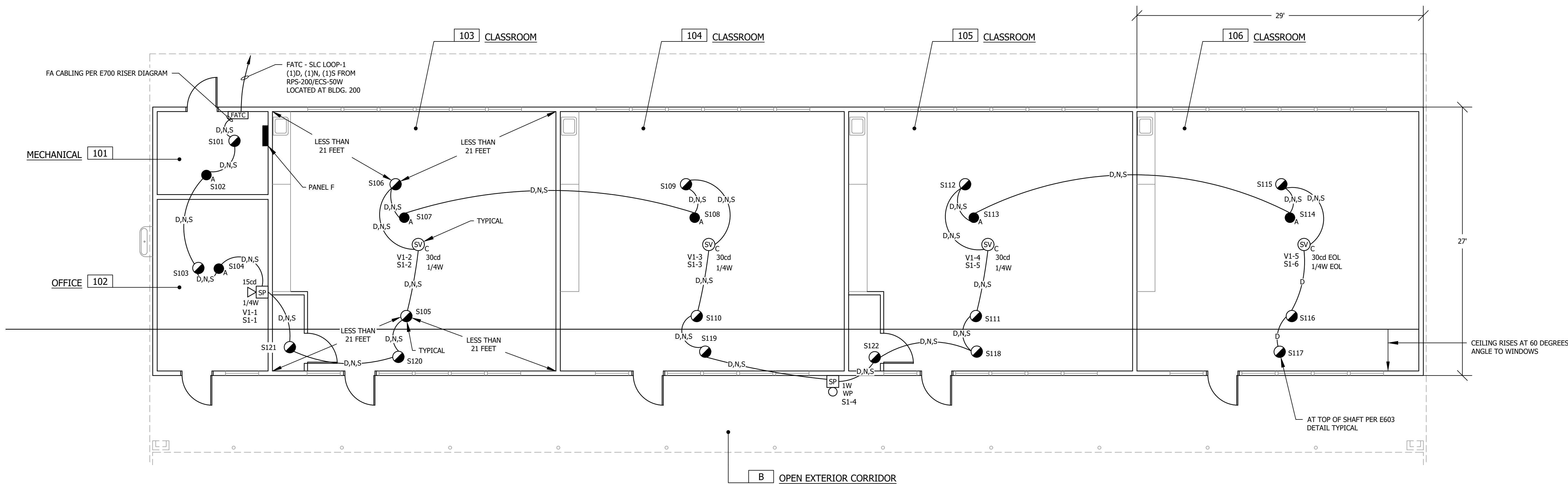


PROJECT: CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM U

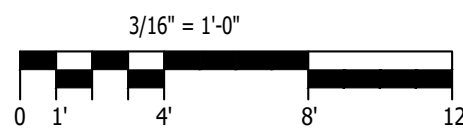
REV	DATE	REVISIONS	
1			
CHECKED: K. LUCCI		DRAWN: LK/DS	
JOB NO. 19753-01		SCALE: AS NOTED	DATE: 01-18-2024
SHEET:			

E610

OF: SHEETS:

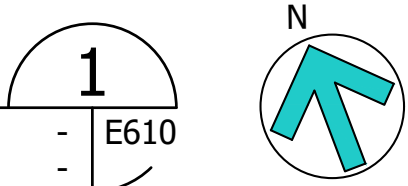


KEY MAP

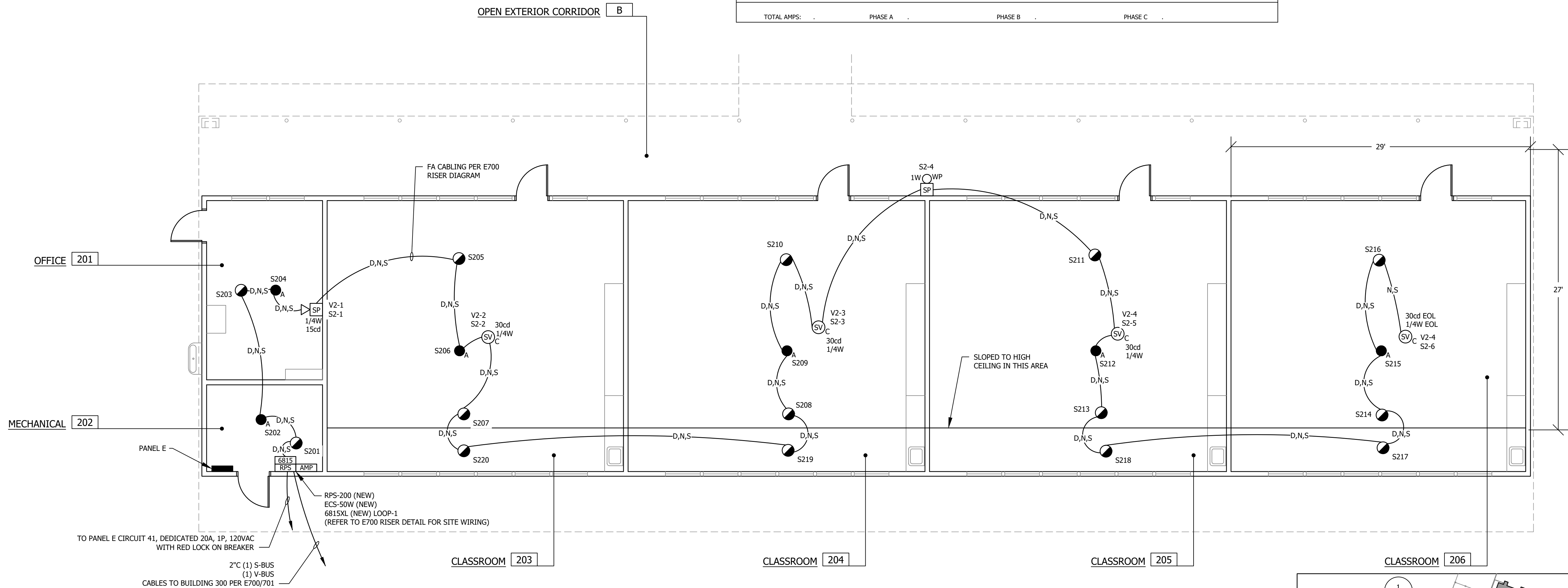


CLASSROOM BUILDING 100 FIRE ALARM PLAN - NEW WORK

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



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DRAFTER: CM03
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DATE: FEB 15, 2024
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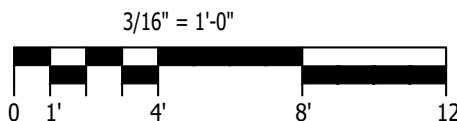
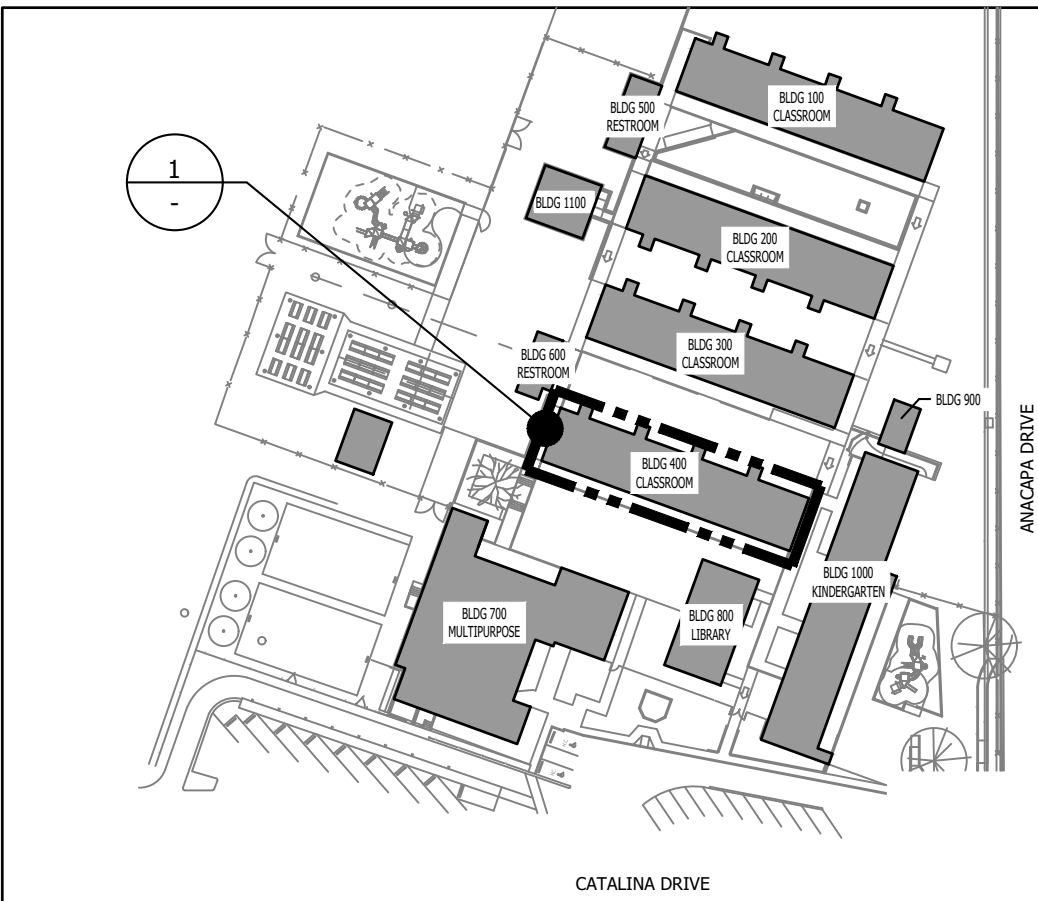


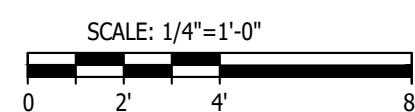
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SOURCE		DB		A.I.C.		10,000										MAIN CIRCUIT BREAKER		200/3	
PANEL LOCATION		BLDG. 200		BUS AMPERE RATING		225										FLUSH MOUNTING			
L	C	M	N	S	H	P	W	W	W	W	W	W	W	W	W	C	C	C	C
CIRCUIT DESCRIPTION				LOAD(VA)			BRKR		PCT		PHASE		BRKR		PCT	LOAD(VA)		CIRCUIT DESCRIPTION	
(E) LOAD				A	B	C	POLE	AMP	CT	A	B	C	AMP	POLE		A	B	C	(E) LOAD LTG
(E) LOAD									1	2	3	4							(E) LOAD LTG
(E) LOAD									2	3	4	1							(E) LOAD LTG
(E) LOAD									3	4	1	2							(E) LOAD LTG
(E) LOAD									4	1	2	3							(E) EXIT LTG
(E) LOAD									5	6	7	8							(E) EXIT LTG
(E) LOAD									6	7	8	9							(E) EXIT LTG
(E) LOAD									7	8	9	10							(E) EXIT LTG
(E) LOAD									8	9	10	11							(E) EXIT LTG
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(E) LOAD									12	13	14	15							(E) EXIT LTG
(E) LOAD									13	14	15	16							(E) EXIT LTG
(E) LOAD									14	15	16	17							(E) EXIT LTG
(E) LOAD									15	16	17	18							(E) EXIT LTG
CU ROOM 203									16	17	18	19							HP1 ROOM 201
↓									17	18	19	20							↓
FU ROOM 203									18	19	20	21							CU2 ROOM 201
↓									19	20	21	22							↓
CU ROOM 204									20	21	22	23							PLUG MOLD 203
↓									21	22	23	24							↓
FU ROOM 204									22	23	24	25							PLUG MOLD 204
↓									23	24	25	26							↓
CU ROOM 205									24	25	26	27							PLUG MOLD 205
↓									25	26	27	28							↓
FU ROOM 205									26	27	28	29							PLUG MOLD 206
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CU ROOM 206									28	29	30	31							SPARE
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FU ROOM 206									30	31	32	33							
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FIRE ALARM									32	33	34	35							
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PLOT BY: CM03
DRAWING FILENAME: 19753-01-E630
DRAFTER: CM03

PANEL NUMBER		B		VOLTAGE		120/208		PHASE		3		WIRE		4		■ NEMA 1		■ COPPER BUSS	
SOURCE		DB		A.I.C.		10,000		■ MAIN CIRCUIT BREAKER		200/3									
PANEL LOCATION		BLDG. 300		BUS AMPERE RATING		225		■ FLUSH MOUNTING											
L	M	LOAD(VA)		BRKR		BRKR		LOAD(VA)		L	M	LOAD(VA)		BRKR		BRKR		LOAD(VA)	
CT	PHASE	A	B	C	POLE	AMP	CKT	PHASE	A	B	C	CT	AMP	POLE	A	B	C	CT	PHASE
		(E) LOAD			1	20	1		2	20	1				(E) LOAD				
		(E) LOAD					3		4						(E) LOAD				
		(E) LOAD					5		6						(E) LOAD				
		(E) LOAD					7		8						(E) LOAD				
		(E) LOAD					9		10						(E) LOAD				
		(E) LOAD					11		12						(E) LOAD				
		(E) LOAD					13		14						(E) LOAD				
		(E) LOAD					15		16						(E) LOAD				
		CU ROOM 305				30	17		18										
		↓			2		19		20										
		FU ROOM 305			1	20	21		22										
		CU ROOM 306					23		24										
		↓			2		25		26										
		FU ROOM 306			1	20	27		28										
		CU ROOM 307				30	29		30										
		↓			2		31		32										
		FU ROOM 307			1	20	33		34										
		CU ROOM 308					35		36										
		↓			2		37		38										
		FU ROOM 308			1	20	39		40										
		FIRE ALARM			1	20	41		42										
		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																			

OF: SHEETS:





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

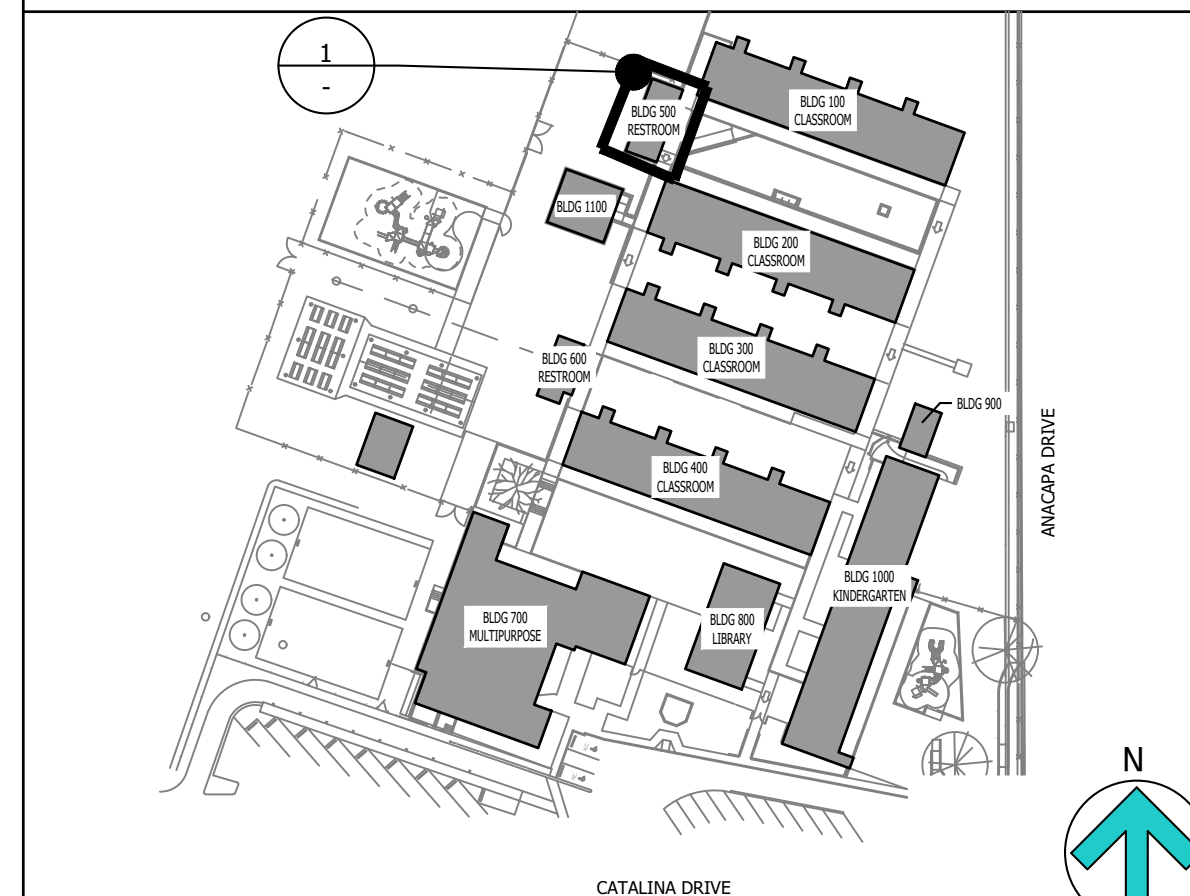
1	-	E650
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1. FIELD VERIFY LOCATION OF ALL DEVICES.
2. 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
4. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

BUILDING DATA:

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



KEY MAP

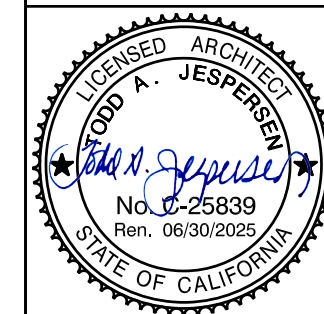
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
(805) 389-6520 FAX (805) 389-6519

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
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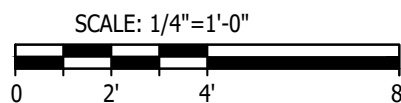
PROJECT: CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM U

REV	DATE	REVISIONS	
			
CHECKED: K. LUCCI		DRAWN: LK/DS	
JOB NO. 19753-01		SCALE: AS NOTED	DATE: 01-18-2024

SHEET:

E650

OF: SHEETS:



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

1. FIELD VERIFY LOCATION OF ALL DEVICES.
2. 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
4. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

BUILDING DATA:

BUILDING
CLASSIFICATION:

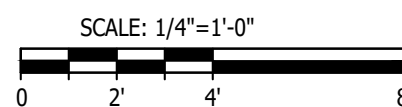
A. OCCUPANCY TYPE: E
B. CONSTRUCTION TYPE: V-N
C. SPRINKLERED: NOT
ONE STORY

AGENCIES:

A. DIVISION OF THE STATE ARCHITECT



OF: SHEETS:



The diagram shows a semi-circular building with a door on the left side. The door is labeled '1' and 'E680'. To the right of the building is a compass rose with a blue arrow pointing towards the top-left, labeled 'N'.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

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LIBRARY BUILDING 800
FIRE ALARM PLAN - NEW WORK

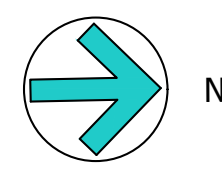
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AGENCIES:	A. DIVISION OF THE STATE ARCHITECT

PROJECT :
CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM U

SHEET:

OF: SHEETS:





OF: SHEETS:

BUILDING 900 ELECTRICAL & STORAGE - NO FIRE ALARM PLAN

APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

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

DATE: 23 September 2024
TIME: 3:34 pm
PLOT DATE: 9/23/2024 3:34:37 PM
PLOT BY: CM03
SAVE DATE: 9/23/2024 11:55:29 AM
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DRAFTER: CM03
DRAFTING: 19753-01-E691.dwg
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TIME: 9:15 AM

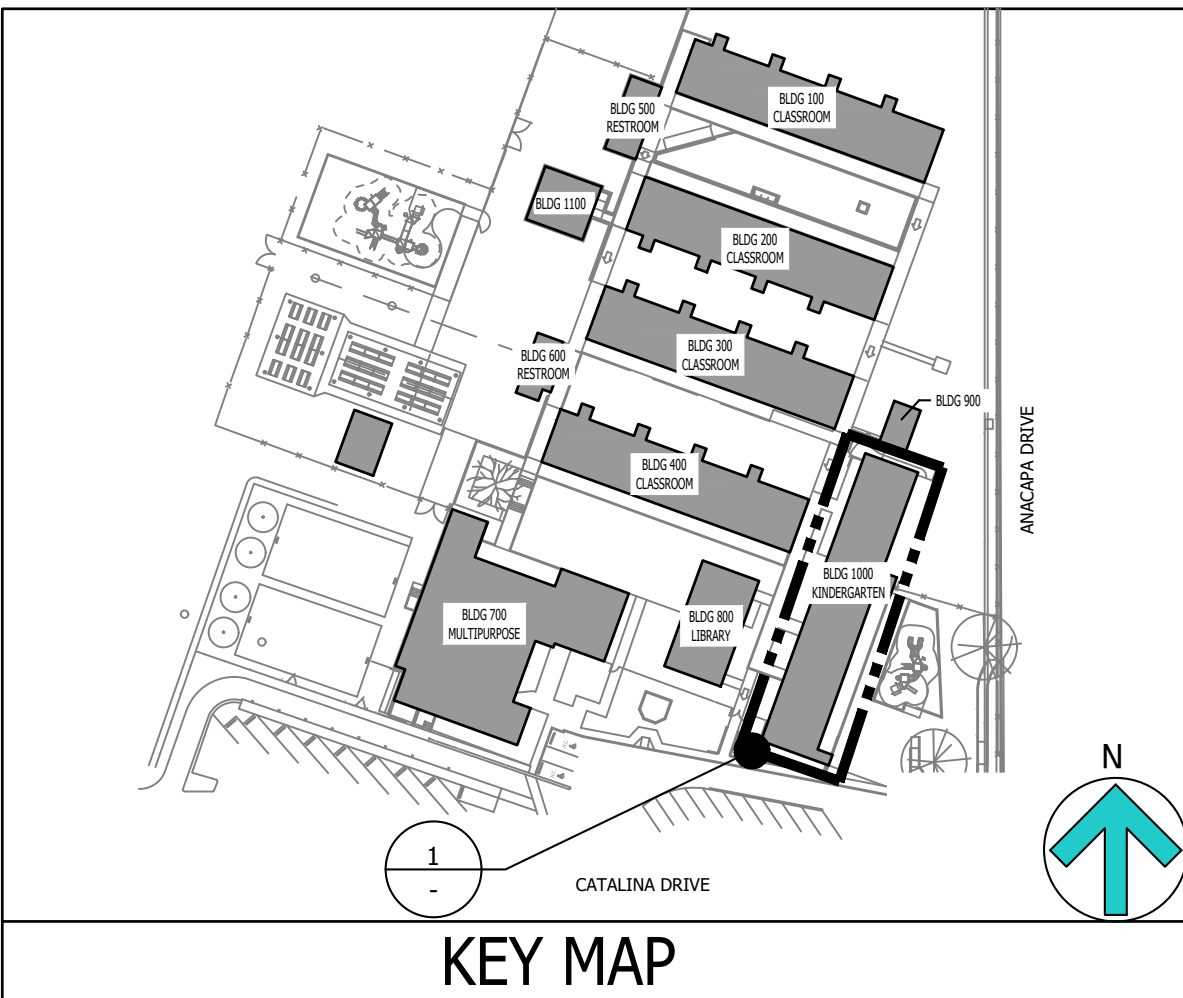
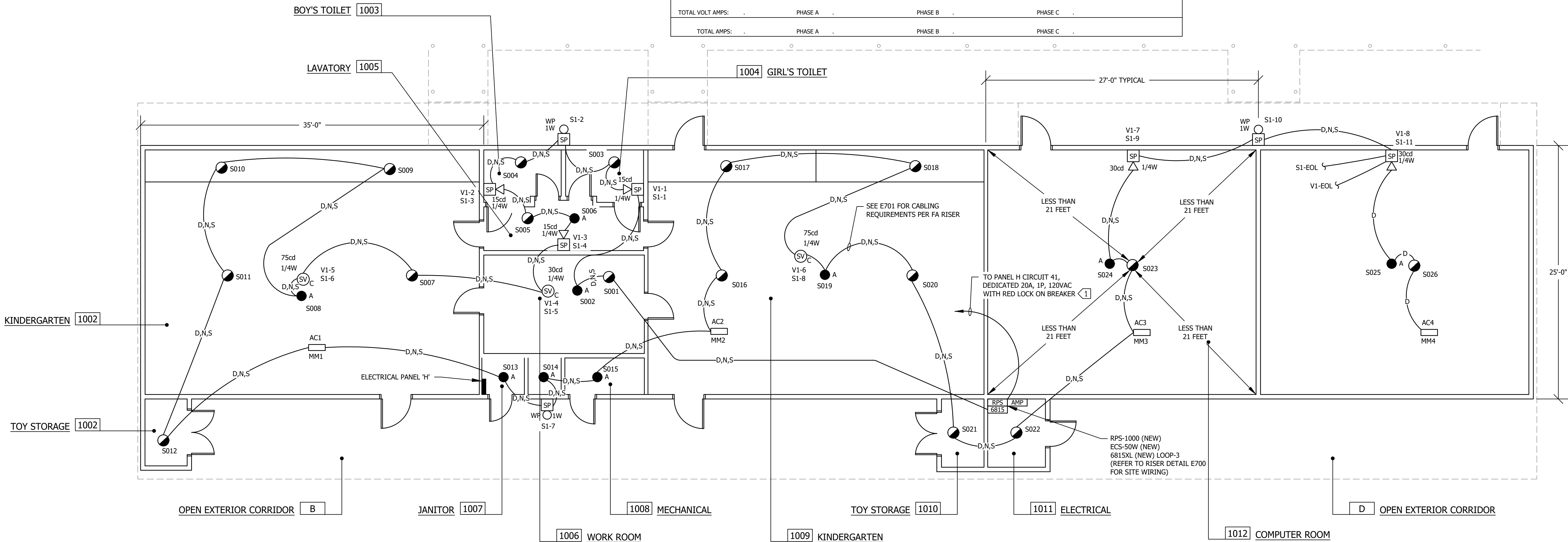
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BUILDING CLASSIFICATION:	A. OCCUPANCY TYPE: E
	B. CONSTRUCTION TYPE: V-N
	C. SPRINKLERED: NOT ONE STORY
AGENCIES:	
A. DIVISION OF THE STATE ARCHITECT	

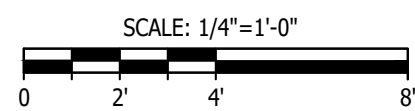
BLDG 1000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
PANEL NUMBER				H				VOLTAGE				120/208				PHASE				3				WIRE				4				<div>■ NEMA 1</div>				<div>■ COPPER BUSS</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
SOURCE				DB				A.I.C.				10,000																				<div>■ MAIN CIRCUIT BREAKER</div>				200/3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
PANEL LOCATION				SEE PLAN				BUS AMPERE RATING				225																				<div>■ FLUSH MOUNTING</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
CIRCUIT DESCRIPTION	LOAD(VA)			BRKR			OCT			PHASE A B C			OCT			BRKR			LOAD(VA)			CIRCUIT DESCRIPTION	H-POLE			L-POLE			C-POLE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
LIGHTING	A	B	C	POLE	AMP		1	20	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	(E) LOAD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

- SHEET NOTES:
- FIELD VERIFY LOCATION OF ALL DEVICES.
 - 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED.
 - CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
 - UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

- KEY NOTES:
- RED DEDICATED LOCK ON 20A, 1P CIRCUIT BREAKER LABELED "FIRE ALARM".

CONTRACTOR TO PROVIDE ACCESS PANELS FOR ALL HEAT DETECTORS ABOVE CEILING

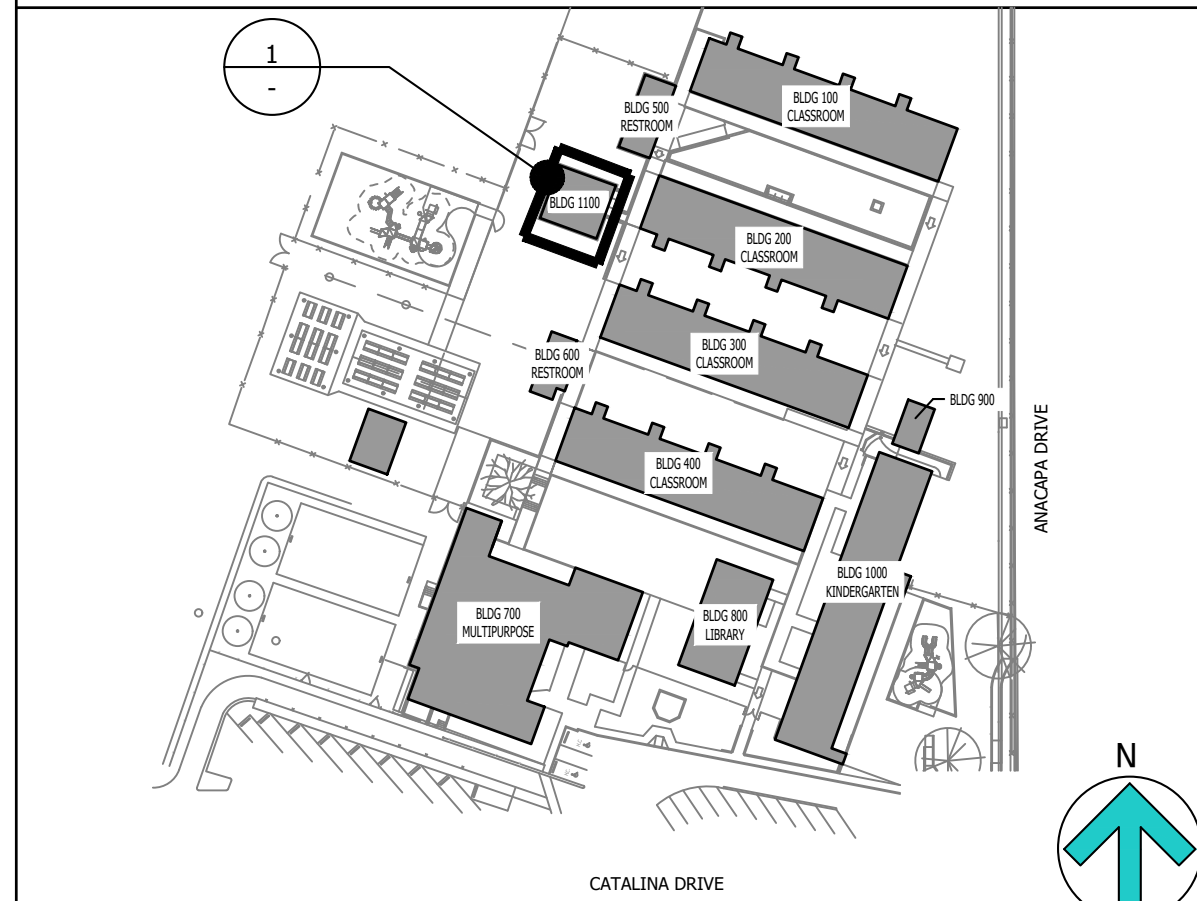




SCALE: 1/4"=1'-0"

MODULAR CLASSROOM

-	E692
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OF: SHEETS:

AGENCIES: A. DIVISION OF THE STATE ARCHITECT

1. FIELD VERIFY LOCATION OF ALL DEVICES.
2. 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
4. UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

SHEET TITLE:

BUILDING 1100 FIRE ALARM PLAN
- NEW WORK

PROJECT: CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

REV	DATE	REVISIONS	
1			
CHECKED:		DRAWN:	
K. LUCCI		LK/DS	
JOB NO.		SCALE:	DATE:
19753-01		AS NOTED	01-18-2024
SHEET:			

E692

OF: SHEETS:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS

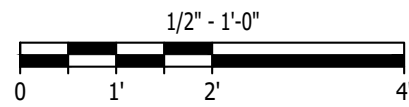
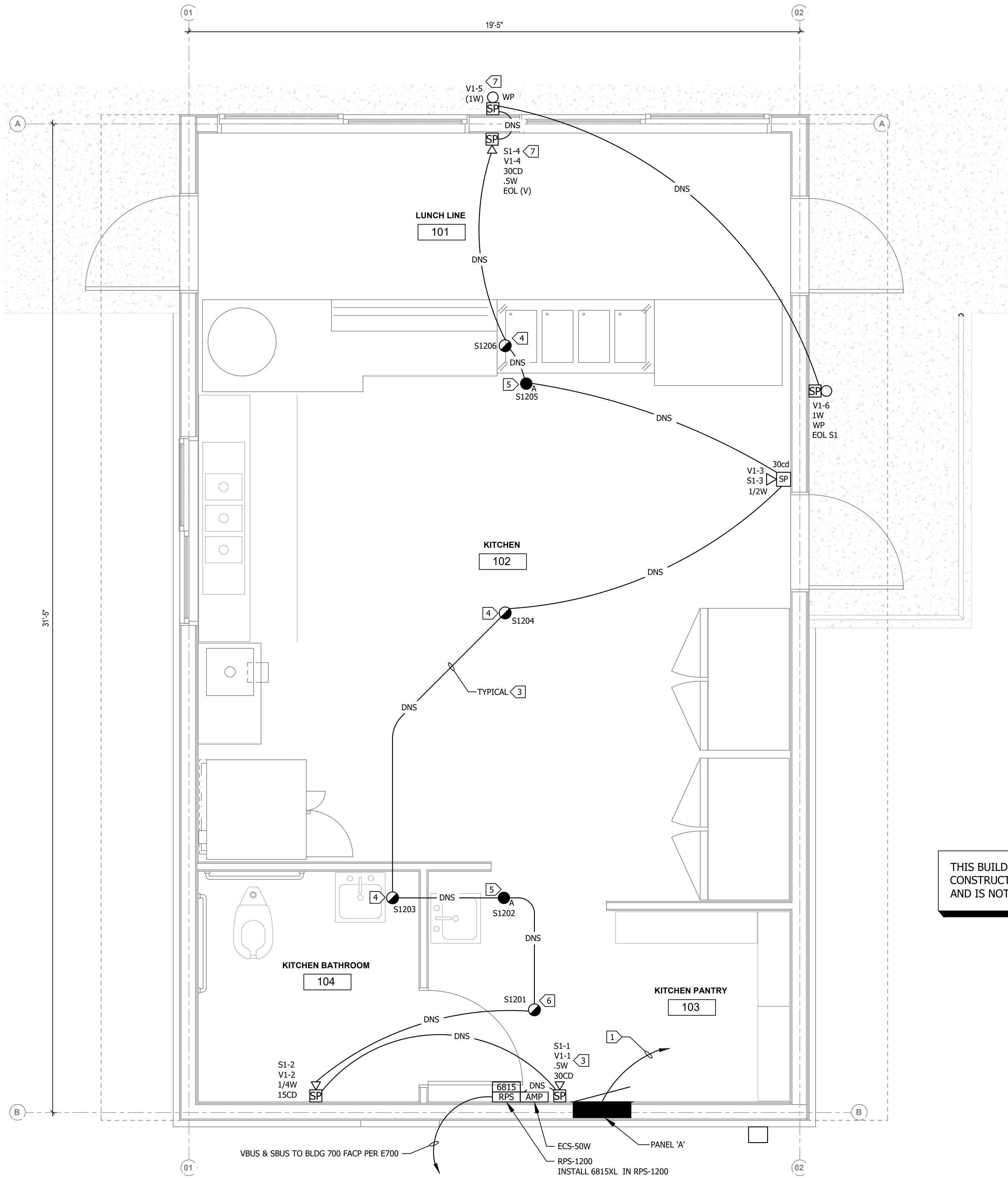
3251 CORTE MALPASO, #511
CAMARILLO, CA 93012-8094
(805) 389-6520 FAX (805) 389-6519

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STAMP

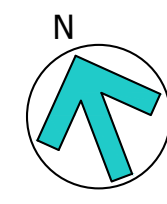


DATE: 23 September 2024
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PLOT BY: CM03
DRAWING FILENAME: 19753-01-E693
DRAFTER: CM03
DATE: 23 September 2024
PLOT DATE: 9/23/2024 2:47:33 PM
DRAWING: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E693.dwg
DRAFTING: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E693.dwg
DATE: 23 September 2024
PLOT DATE: 9/23/2024 2:47:33 PM
DRAWING: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E693.dwg
DRAFTING: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E693.dwg



BUILDING 1200 KITCHEN FIRE ALARM PLAN - EXISTING (IN CONSTRUCTION)
SCALE: 1/2"=1'-0"

1
E693



RED WITH LOCK ON DEVICE

LOCK ON DEVICE
LOCK ON DEVICE
LOCK ON DEVICE

THIS BUILDING IS PRESENTLY IN CONSTRUCTION UNDER DSA #03-122807 AND IS NOT A PORTION OF THE PERMIT.

SHEET NOTES:

- FIELD VERIFY LOCATION OF ALL DEVICES.
- 3/4" CONDUIT MINIMUM UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL CABLING PER CABLE MANUFACTURERS RECOMMENDATIONS.
- UNIQUELY LABEL BOTH ENDS OF ALL CABLING.

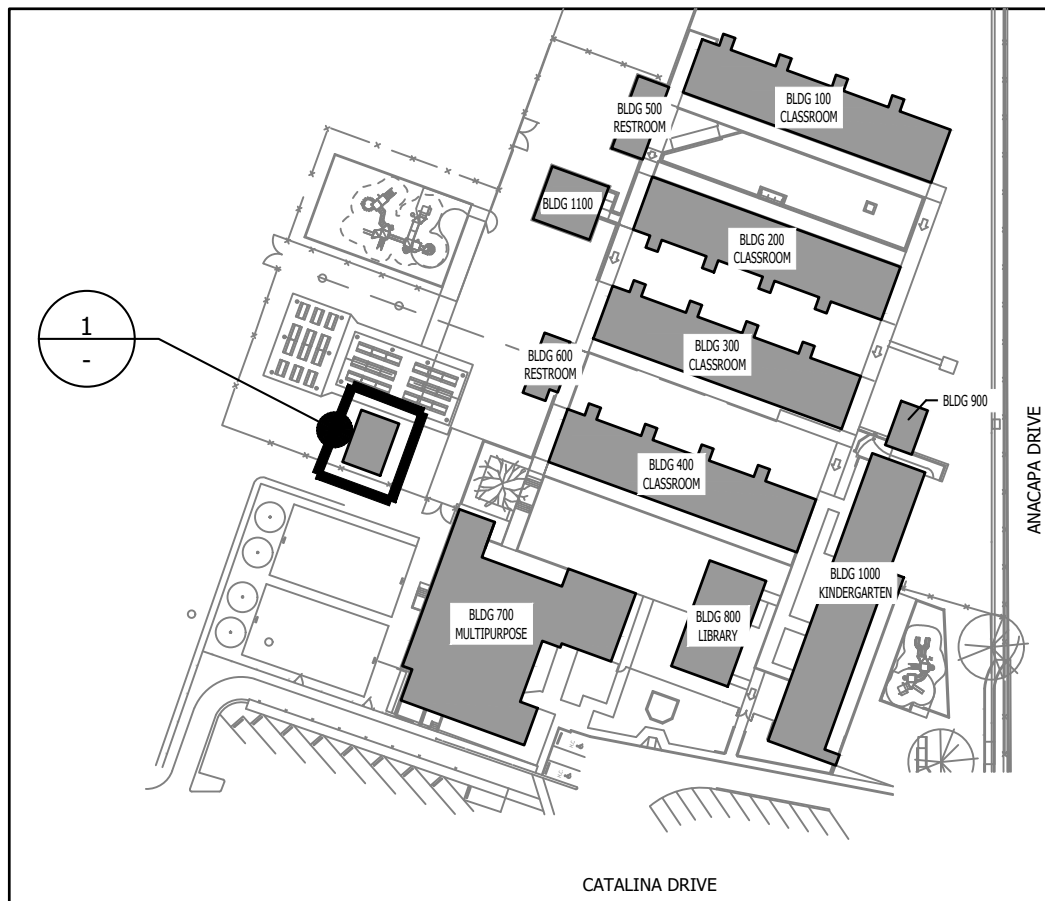
KEY NOTES:

- EXISTING 1/2" - 2#12, 1#12 GROUND THWN COPPER TO RED LOCK ON 20A-1P CIRCUIT BREAKER PANEL A-21.
- NOT USED.
- SEE THE FIRE ALARM RISER DIAGRAM FOR WIRING INFORMATION (TYPICAL FOR EACH PORTION OF CIRCUIT).
- +MULTI CRITERIA DETECTOR ON UNDERSIDE OF LAY-IN.
- HEAT DETECTOR ABOVE LAY-IN CEILING IN ATTIC PLENUM SPACE.
- +MULTI CRITERIA DETECTOR ON CEILING NEAR PANEL "FACP" (36" HORIZONTALLY).
- EXISTING 4" SQUARE DEEP FLUSH BACK BOX FOR SPEAKER AND OR SPEAKER/STROBE (WP WHEN OUTDOOR).

EXISTING PANEL																			
PANEL NUMBER		A		VOLTAGE		120/240		PHASE		1		WIRE		3		NEMA 1		COPPER BUSS	
SOURCE		MSB		A.I.C.		10,000		PANEL LOCATION		KITCHEN MODULAR		BUS AMPERE RATING		200 A		MAIN CIRCUIT BREAKER		200	
PANEL LOCATION		KITCHEN MODULAR		BUS AMPERE RATING		200 A		FLUSH MOUNTING											
CIRCUIT	NO.	CIRCUIT DESCRIPTION	LOAD(VA)		BRKR	POLE	AMP	OCT	PHASE	OCT	AMP	POLE	LOAD(VA)		CIRCUIT DESCRIPTION	PANEL	NO.	CIRCUIT DESCRIPTION	PANEL
			A	B									A	B					
	1	RECEPTACLE POS	180		1	20	1			2	60		2500		A/C				
	2	RECEPTACLE COUNTER	360		1	20	3			4	2		2500		OVEN 1				
		INSTANT WATER HEATER	1400		1	20	5			6	60		5500		OVEN 2				
	1	FRONT RECEPT.	180		1	20	7			8	2		5500		FREEZER				
		W.H. #1	3000			40	9			10	60		5500		SPARE				
					2		11			12	2		5500		SPARE				
	1	RECEPT	180		1	20	13			14	20	1	900		RECEPTACLE OUTSIDE				
	3		540		1	20	15			16	20	1	900		SPARE				
		SPARE			1	20	17			18	20	2			SPARE				
		FIRE ALARM	100		1	20	21			22	20	1	400		RR RECEPTACLE				
		SPARE			1	20	23			24	20	1			SPARE				
		WARMER	600		1	20	25			26	20	2							
			600		1	20	27			28	20	2							
	1	RECEPT	180		1	20	29			30	20	1							
		SPARE				30	31			32	20	1							
		LIGHTS			2		33			34	20	1							
		TO ISOLITE EM	550		1	20	35			36	20	1							
		LIGHTS	200		1	20	37			38	20	1	180						
							39			40	20	1							
TOTALS			6730	5230									14980	14400	TOTALS				
L.C.L. VOLT AMPS:		PHASE A		PHASE B															
TOTAL VOLT AMPS:		41440		PHASE A		21710		PHASE B		19630									
TOTAL AMPS:		173		PHASE A		181		PHASE B		164									

BUILDING DATA:

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



KEY MAP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS

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

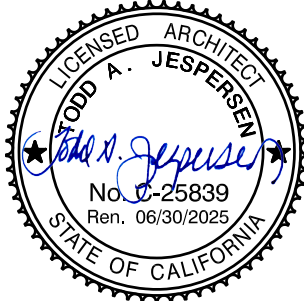
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STAMP



**BUILDING 1200 KITCHEN
FIRE ALARM PLAN -
EXISTING (IN CONSTRUCTION)**

SHEET TITLE:



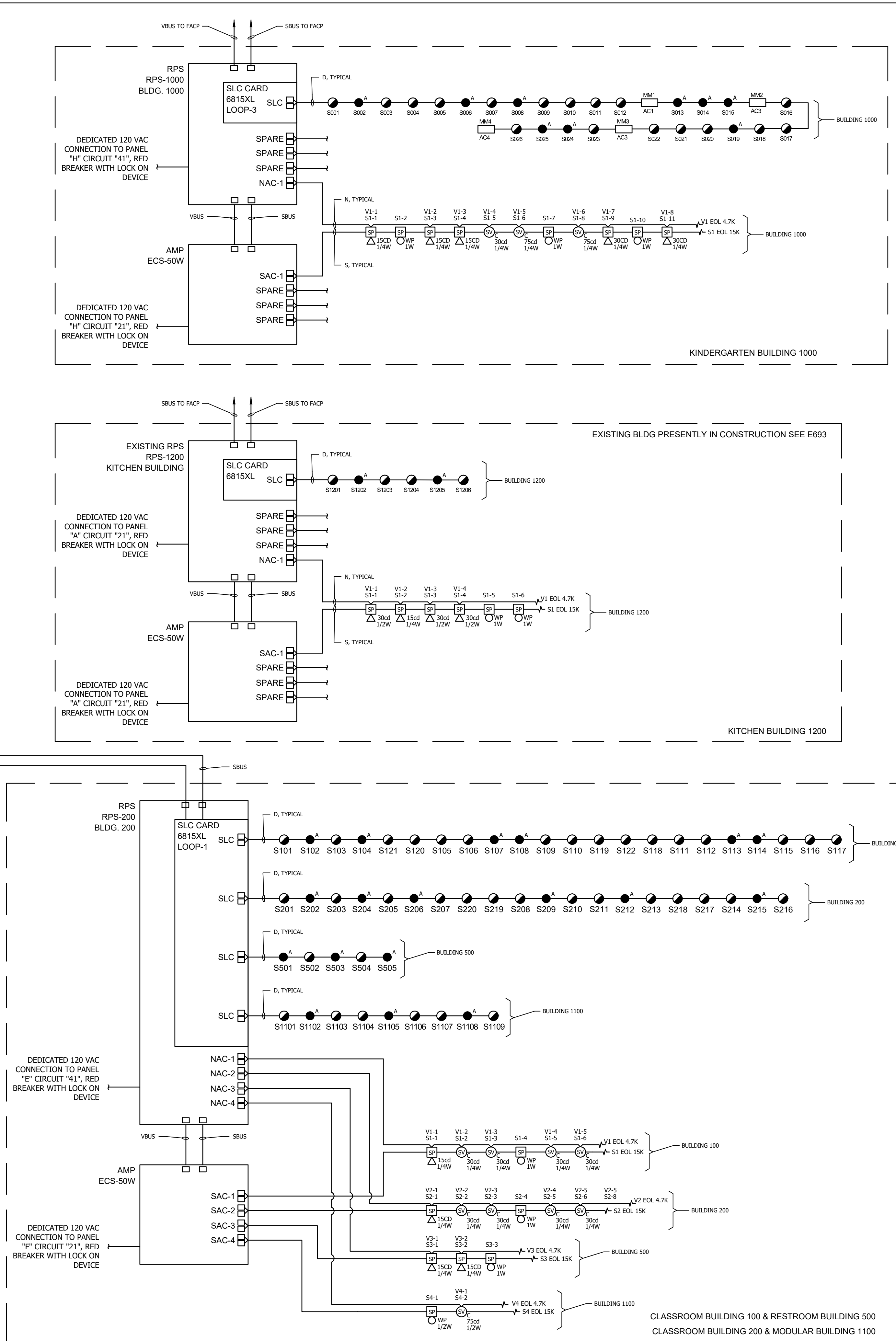
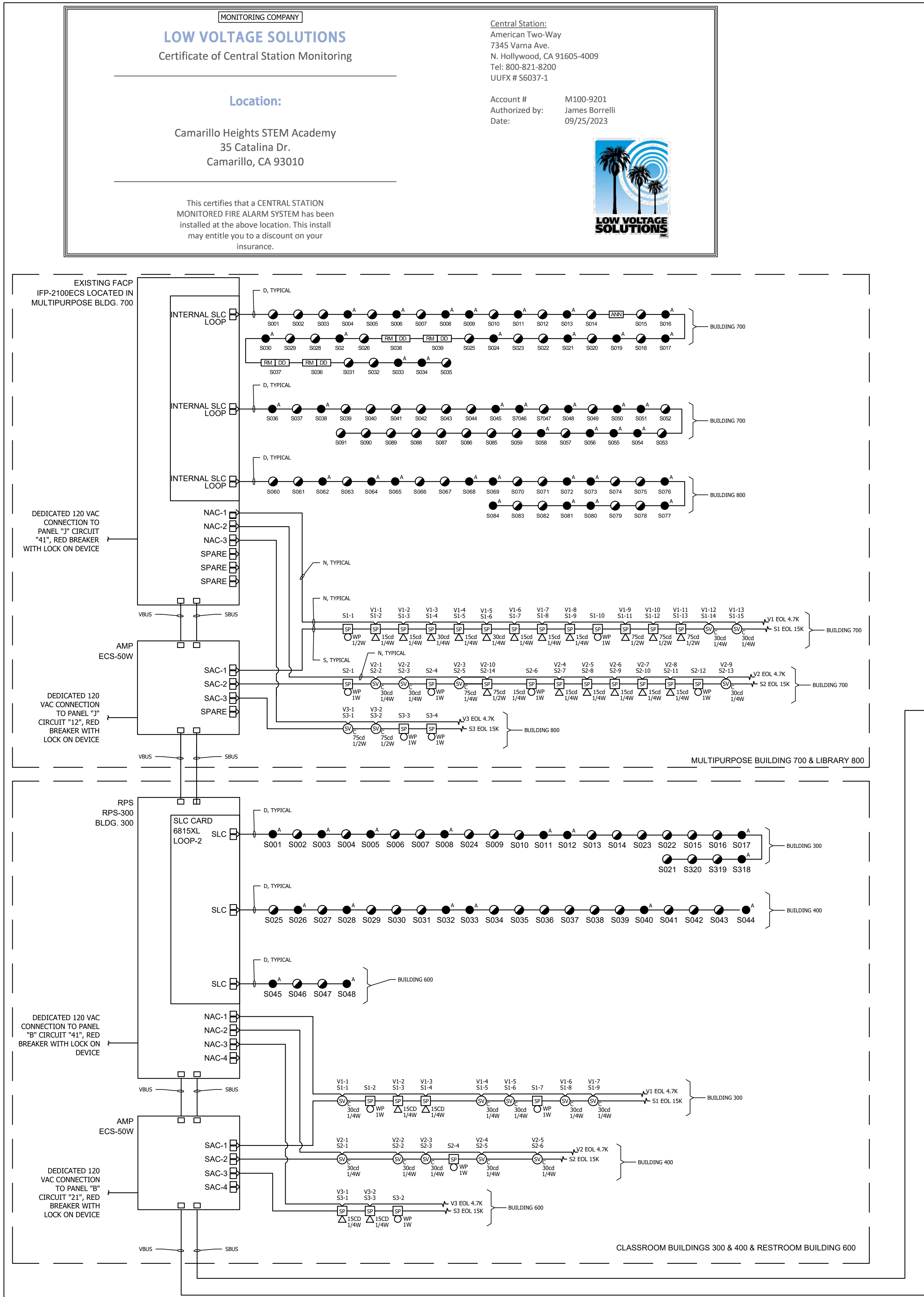
**CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE**

PROJECT:

REV	DATE	REVISIONS
1		
CHECKED: K. LUCCI		DRAWN: LK/DS
JOB NO. 19753-01		SCALE: AS NOTED
SHEET:		DATE: 01-18-2024

E693

OF: SHEETS:



<div>IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT APP: 03-124308 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 (805) 389-6520 FAX (805) 389-6519</div> <div>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.</div>			
STAMP			
<div></div>			
SHEET TITLE: FIRE RISER DIAGRAM			
<div></div>			
PROJECT: CAMARILLO HEIGHTS CAMARILLO ELEMENTARY SCHOOL 35 CATALINA DRIVE CAMARILLO, CA 93010 CAMPUS FIRE ALARM UPGRADE			
REV	DATE	REVISIONS	
1			
CHECKED: K. LUCCI		DRAWN: LK/DS	
JOB NO. 19753-01		SCALE: AS NOTED	
SHEET:		DATE: 01-18-2024	
E700			
OF:		SHEETS:	




SHEET:

OF: SHEETS:

DATE: 23 September 2024
TIME: 3:34 pm
PLOT DATE: 9/23/2024 3:34:56 PM
PLOT BY: CM03
SAVE DATE: 9/23/2024 2:53:28 PM
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DRAFTER: CM03
PATHNAME: G:\19\753\EL\Sheets\01-Camarillo Heights ES
DRAWING: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E720.dwg

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: CAMARILLO HEIGHTS 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 200 & 1100 & 100 & 500

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**	7	N/A	0.476
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	1.001
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	2.002
Total Combined AH Required				4.04
Multiply By The Derating Factor				1.20
Minimum Battery AmpHours Required				4.85

12 SPEAKER AT .25W & 2 SPEAKERS AT .5 WATT
& 3 SPEAKERS AT 1 WATT = 7WATTS

BATTERY SIZE = 7AH

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT 0.017		1/2 WATT 0.034		1 WATT 0.068		2 WATT 0.132		-		-		-		-		-		(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															
AMP	S1	5	0.085		0.000	1	0.068		0.000		0.000		0.000		0.000		0.000		0.000	0.153	x	120	x	21.6 ÷	2580	=	0.154	÷	24	x	100	0.6
RPS-12	S2	5	0.085		0.000	1	0.068		0.000		0.000		0.000		0.000		0.000		0.000	0.153	x	150	x	21.6 x	4110	=	0.121	÷	24	x	100	0.5
RPS-12	S3	2	0.034		0.000	1	0.068		0.000		0.000		0.000		0.000		0.000		0.000	0.102	x	250	x	21.6 x	4110	=	0.134	÷	24	x	100	0.6
RPS-12	S4		0.000	2	0.068		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.068	x	250	x	21.6 x	4110	=	0.089	÷	24	x	100	0.4


$1 \times \text{FEET} \times 21.6$ = 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



IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: CAMARILLO HEIGHTS 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-200

Location: 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		0.000	0.000						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	37	0.0111	0.0000						
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	18	0.0036	0.0810						
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-Relay Mon-2	Relay Mon-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	1	0.010	0.010						
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	0.295	#14 Solid	2.52	210	1.06	20.09	0.90%
NAC-2	Notification Appl Circuit	cfg.	0.000	0.402	#14 Solid	2.52	180	0.91	20.04	0.40%
NAC-3	Notification Appl Circuit	cfg.	0.000	0.086	#14 Solid	2.52	220	1.11	20.30	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.107	#14 Solid	2.52	230	1.16	20.28	0.61%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
Total Standby Current (Amps)			0.147	1.383	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			3.521	2.766	Total Alarm AH Required					
Total Combined AH Required				6.29						
Multiply By The Derating Factor				1.20						
Minimum Battery AmpHours Required				7.54						

BATTERY SIZE = 21AH

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				÷	x								
RPS-200	N1	1	0.043	4	0.252		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.295	x	210	x	21.6 ÷	4110	=	0.326	÷	24	x	100	1.4
RPS-200	N2	1	0.043	4	0.252	1	0.107		0.000		0.000		0.000		0.000		0.000		0.000	0.402	x	180	x	21.6 x	4110	=	0.380	÷	24	x	100	1.6
RPS-200	N3	2	0.086		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.086	x	220	x	21.6 x	4110	=	0.099	÷	24	x	100	0.4
RPS-200	N4		0.000		0.000	1	0.107		0.000		0.000		0.000		0.000		0.000		0.000	0.107	x	230	x	21.6 x	4110	=	0.129	÷	24	x	100	0.5

$1 \times \text{FEET} \times 21.6$ = 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

SEE E700 FOR BUILDING 100, 200, 500 & 1100

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
CONSULTING ELECTRICAL ENGINEERS

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

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SHEET TITLE:

BUILDING 200, 1100, 100 & 500
EMERGENCY VOICE/ALARM
COMM SYSTEM - CALCULATIONS



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: CAMARILLO HEIGHTS 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 300, 400 & 600

Model: ECS-50W Audio Amplifier

BATTERY SIZE = 7AH

**Honeywell Farenhyt™ Series**

IFP-2100/ECS Calculations-IDP
Version 04.16.18

Global Project Values:
Project Name: CAMARILLO HEIGHT 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-300
Location: BUILDING 300

Model: RA-2000 Add. Fire Alarm Panel
Volts: 24 VDC

Max NAC Current: 3.0 Amps
Max Panel Current: 9.0 Amps

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	% VOLTAGE DROP
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP		
AMP	S1	9	0.153		0.000	3	0.204		0.000		0.000		0.000		0.000		0.000	0.357	1.2
AMP	S2	5	0.085		0.000	2	0.136		0.000		0.000		0.000		0.000		0.000	0.221	1.4
AMP	S3	2	0.034		0.000	1	0.068		0.000		0.000		0.000		0.000		0.000	0.102	0.5

$I \times \text{FEET} \times 21.6 = \text{VOLTAGE DROPPED C.M.}$
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	% VOLTAGE DROP
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP		
RPS-300	N1	2	0.086	5	0.315		0.000		0.000		0.000		0.000		0.000		0.000	0.401	1.7
RPS-300	N2		0.000	5	0.315		0.000		0.000		0.000		0.000		0.000		0.000	0.315	0.9
RPS-300	N3	2	0.086		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.086	0.4

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

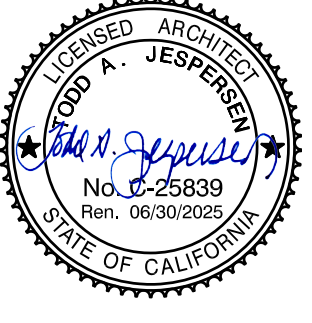
WIRE SIZE	WIRE RESISTANCE	CIR. MILS
AWG 12	1.59 PER 1000'	6530
AWG 14	2.52 PER 1000'	4110
AWG 16	4.02 PER 1000'	2580
AWG 18	6.39 PER 1000'	1620

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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SHEET TITLE:
BUILDING 300, 600 & 400
EMERGENCY VOICE/ALARM
COMM SYSTEM - CALCULATIONS


PROJECT:
CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

REV	DATE	REVISIONS
△		

CHECKED:
K. LUCCI

DRAWN:
LK/DS

JOB NO.
19753-01

SCALE:
AS NOTED

DATE:
01-18-2024

SHEET:

E730


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.# 19753-01 PAPER SIZE 36"x24"

TIME: 3:35 PM
DATE: 23 September 2024
PLOT DATE: 9/23/2024 3:35:04 PM
PATHNAME: G:\19\753\EL\Sheets\01-Camarillo Heights ES
PLOT BY: CM03
SAVE DATE: 9/23/2024 2:52:26 PM
DRAWING FILENAME: 19753-01-E770
DRAFTER: CM03

DRAWING: G:\19\753\EL\Sheets\01-Camarillo Heights ES\19753-01-E770.dwg

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: CAMARILLO HEIGHTS ES

Standby Hours: 24

Project ID:

Alarm Mins: 120

Prepared By: LAI

Derating: 1.2

Date: 1/4/2024

Panel ID: ECS-50

Model: ECS-50W Audio Amplifier

Location: BUILDING 700

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**	14.76	N/A	1.003
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
	Total Standby Current (AMPS)		0.085	1.528
	Standby Time In Hours		24	2.000
	Total Standby AH Required		2.040	3.056
	Total Combined AH Required		5.10	
	Multiply By The Derating Factor		1.20	
	Minimum Battery AmpHours Required		6.12	

19 SPEAKER AT .25W & 6 SPEAKERS AT .5 WATT
& 7 SPEAKERS AT 1 WATT = 14.75 WATTS


BATTERY SIZE = 14AH

VOLTAGE DROP CALCULATIONS - SPEAKER APPLIANCE CIRCUITS

PANEL ID	CKT #	1/4 WATT 0.017		1/2 WATT 0.034		1 WATT 0.068		2 WATT 0.132		-		-		-		-		-		(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													
AMP	S1	10	0.170	4	0.136	1	0.068	0.000		0.000		0.000		0.000		0.000		0.000	0.374	x	160	x	21.6 ÷	2580	=	0.501 ÷	24	x	100	2.1
AMP	S2	9	0.153	1	0.034	4	0.272	0.000		0.000		0.000		0.000		0.000		0.000	0.459	x	180	x	21.6 x	4110	=	0.434 ÷	24	x	100	1.8
AMP	S3		0.000	2	0.068	2	0.136	0.000		0.000		0.000		0.000		0.000		0.000	0.204	x	200	x	21.6 x	4110	=	0.214 ÷	24	x	100	0.9

1 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



Farenhyt™ Series

IFP-2100/ECS Calculations-IDP

Version 04.16.18

Global Project Values:

Project Name: CAMARILLO HEIGHTS ES

Standby Hours: 24

Project ID:

Alarm Mins: 120

Prepared By: LAI

Derating Factor: 1.2

Date: 1/4/2024

Voltage Drop Warning Threshold %: 10

Panel ID: RPS-700

Model: RA-2000 Add. Fire Alarm Panel

Location: BUILDING 700

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	1	0.230	0.415						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	52	0.0156	0.0000						
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	36	0.0072	0.1620						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon	4	0.0015	0.0015						
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		0.0000	0.0000						
RTS151KEY	Key Activated Test		0.0000	0.0000						
RA100Z	Remote LED		0.0000	0.0000						
6815	SLC Expander		0.0000	0.0000						
RA-2000	LCD Remote Annunc	1	0.020	0.025						
RA-1000	LCD Remote Annunc	1	0.020	0.025						
RA-100	LCD Remote Annunc		0.0000	0.0000						
5824	Serial/Parallel Module		0.0000	0.0000						
5496	Power Expander		0.0000	0.0000						
RPS-1000	Power Expander		0.0000	0.0000						
5865-4	LED Annunciator (4G)	1	0.035	0.145						
5865-3	LED Annunciator (3G)		0.0000	0.0000						
5880	LED Driver Module		0.0000	0.0000						
5883	Relay Module	4	0.0000	0.880						
CELL-MOD	Communicator		0.0000	0.100						
SK-NIC	Network Interface Card	1	0.021	0.021						
SK-FML	Fiber Module		0.0000	0.0000						
SK-FSL	Fiber Module	1	0.021	0.021						
WIDP-WG1	Wireless Gateway		0.0000	0.0000						
ECS-NVCM	Voice control		0.0000	0.0000						
ECS-SW24	Zone Expander		0.0000	0.0000						
ECS-RPU	Remote Paging Unit	1	0.070	0.250						
ECS-LOC	Local Operating Console		0.0000	0.0000						
ECS-LOC2100	Local Operating Console		0.0000	0.0000						
ECS-INT50W	50 Watt Internal Amp 25 volts		0.0000	0.0000						
ECS-INT50W	50 Watt Internal Amp 70 volts		0.0000	0.0000						
ECS-50W	50 Watt Amplifier	1	0.010	0.010						
ECS-125W	125 Watt Amplifier		0.0000	0.0000						
ECS-DUAL50W	50/100 Watt Amp		0.0000	0.0000						
ECS-50WBU	50 Watt Backup Amplifier		0.0000	0.0000						
NAC-1	Notification Appl Circuit	cfg.	0.0000	0.830	#14 Solid	2.52	210	1.06	19.52	2.14%
NAC-2	Notification Appl Circuit	cfg.	0.0000	0.511	#14 Solid	2.52	240	1.21	19.78	1.11%
NAC-3	Notification Appl Circuit	cfg.	0.0000	0.214	#14 Solid	2.52	260	1.31	20.12	1.29%
SPARE	Notification Appl Circuit	cfg.	0.0000	0.0000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.0000	0.0000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.0000	0.0000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.0000	0.0000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.0000	0.0000	#14 Solid	2.52		0.00	20.40	0.00%
Total Standby Current (Amps)			0.451	3.611	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			10.831	7.221	Total Alarm AH Required					
Total Combined AH Required			18.05							
Multiply By The Derating Factor				1.20						
Minimum Battery AmpHours Required			21.66							

BATTERY SIZE = 28AH

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															
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP														
FACP	N1	6	0.258	4	0.252	3	0.321		0.000		0.000		0.000		0.000		0.000		0.000	0.831	x	210	x	21.6	÷	4110	=	0.917	÷	24	x	100	3.8
FACP	N2	5	0.215	3	0.189	2	0.214		0.000		0.000		0.000		0.000		0.000		0.000	0.618	x	240	x	21.6	÷	4110	=	0.779	÷	24	x	100	3.2
FACP	N3		0.000		0.000	2	0.214		0.000		0.000		0.000		0.000		0.000		0.000	0.214	x	260	x	21.6	÷	4110	=	0.292	÷	24	x	100	1.2

1 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

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124308 INC:
REVIEWED FOR
SS ☐ FLS ☒ ACS ☐
DATE: 10/23/2024

LUCCI & ASSOCIATES INC.
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BUILDING 700 & 800
EMERGENCY VOICE/ALARM
COMM SYSTEM - CALCULATIONS



CAMARILLO HEIGHTS
ELEMENTARY SCHOOL
35 CATALINA DRIVE
CAMARILLO, CA 93010
CAMPUS FIRE ALARM UPGRADE

REV	DATE	REVISIONS
△		
CHECKED: K. LUCCI		DRAWN: LK/DS
JOB NO. 19753-01		SCALE: AS NOTED
		DATE: 01-18-2024
SHEET:		

E770


OF: SHEETS:

OF: SHEETS:

SHEET:

DATE: 23 September 2024
TIME: 3:35 pm
PLOT DATE: 9/23/2024 3:35:12 PM
PLOT BY: CM03
DRAWING FILENAME: 19753-01-E793.dwg
DRAFTER: CM03
PATHNAME: G:\19\753\EL\Sheets\01-Camarillo Heights ES

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: CAMARILLO HEIGHTS 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 1200

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**	3.75	N/A	0.235
Watts	Enter Number of Watts @ 70.7Vrms**		N/A	0.000
Total Standby Current (AMPS)			0.085	0.780
Standby Time In Hours			24	2.000
Total Standby AH Required			2.040	1.560
Total Combined AH Required			3.60	
Multiply By The Derating Factor			1.20	
Minimum Battery AmpHours Required			4.32	

1 SPEAKER AT .25W & 3 SPEAKERS AT .5 WATT
& 2 SPEAKERS AT 1 WATT = 3.75 WATTS


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	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	1	0.017	3	0.102	2	0.136		0.000		0.000		0.000		0.000		0.000	0.255	x	120	x	21.6 ÷	2580	=	0.256 ÷ 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



Farenhyt™ Series

IFP-2100/ECS Calculations-IFP
Version 04.16.18

Global Project Values:

Project Name: CAMARILLO HEIGHTS 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-1200

Location: BUILDING 1200

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		0.000	0.000						
IDP-Photo, Photo-T,PhotoR	Smoke detector		0.0000	0.0000						
IDP-Fire-CO	Fire-CO detector	4	0.0012	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	2	0.0004	0.0090						
IDP-Control	Control		0.0000	0.0000						
IDP-Control-6	Control-6		0.0000	0.0000						
IDP-Monitor, Minimon	Monitor, Minimon	3	0.0011	0.0011						
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-Relay Mon-2	Relay Mon-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	1	0.010	0.010						
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	0.232	#14 Solid	2.52	130	0.66	20.25	2.14%
NAC-2	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
NAC-3	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
SPARE	Notification Appl Circuit	cfg.	0.000	0.000	#14 Solid	2.52		0.00	20.40	0.00%
Total Standby Current (Amps)			0.135	1.321	Total Alarm Current (Amps)					
Standby Time In Hours			24	2.000	Alarm Time In Minutes / 60 (120 Mins)					
Total Standby AH Required			3.233	2.643	Total Alarm AH Required					
Total Combined AH Required				5.88						
Multiply By The Derating Factor				1.20						
Minimum Battery AmpHours Required				7.05						

BATTERY SIZE = 21AH

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														
		QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP	QTY.	AMP													
RPS-1200	N1	1	0.043	3	0.189		0.000		0.000		0.000		0.000		0.000		0.000	0.232	x	130	x	21.6 ÷	4110	=	0.159	÷	24	x	100	0.7

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WIRE SIZE	WIRE RESISTANCE	CIR. MILS
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OF: SHEETS: