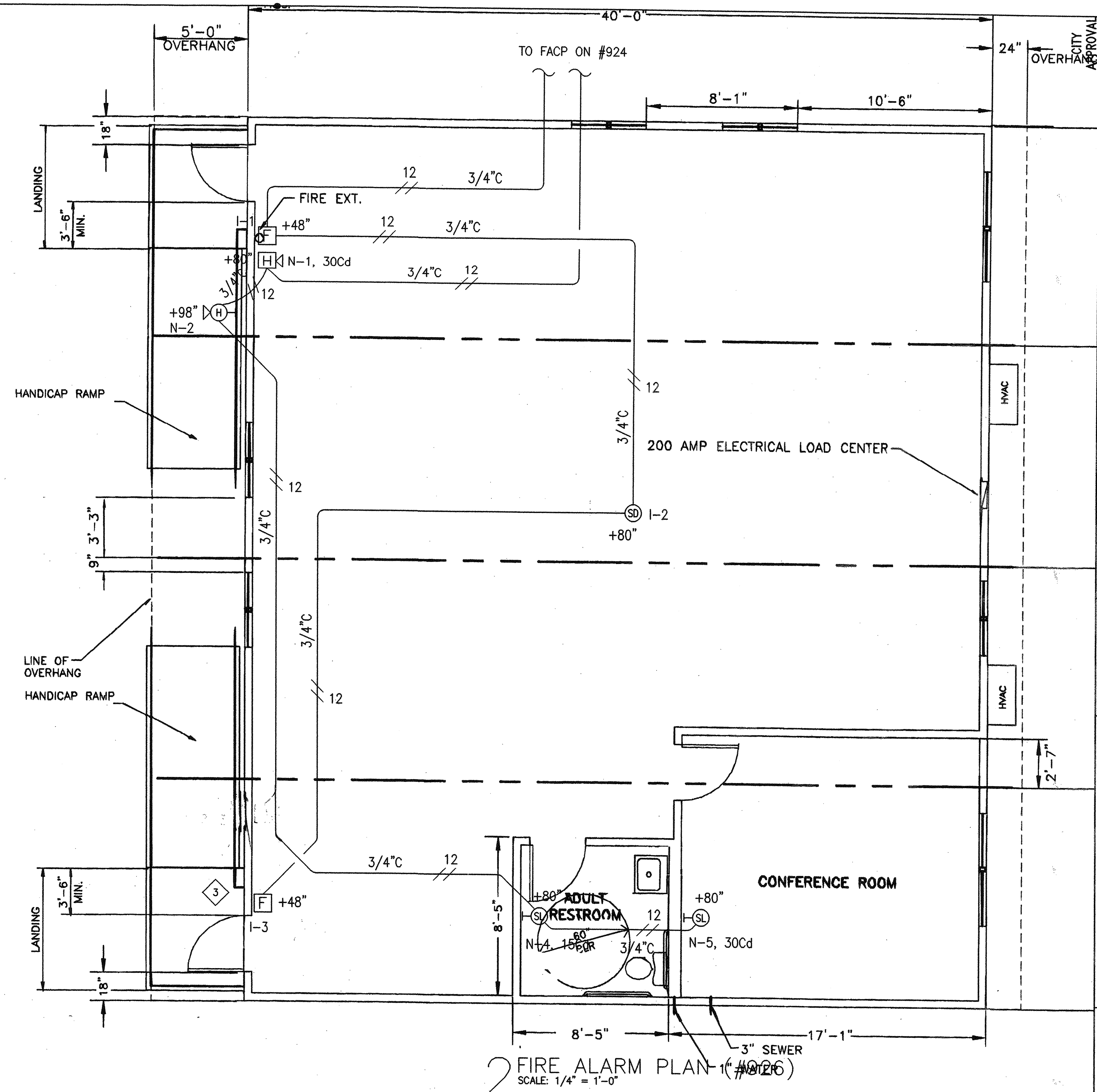


1 FIRE ALARM PLAN (#925)  
SCALE: 1/4" = 1'-0"



2 FIRE ALARM PLAN (#926)  
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM VOLTAGE DROP CALCULATION

FORMULA:  $VD = I \times D \times 21.6 / CM$        $\%VD = VD \times 100 / 24 V$   
 I = CURRENT IN AMPS  
 D = DISTANCE  
 CM = 410 (FOR #14 AWG WIRES)  
 CM = 6550 (FOR #12 AWG WIRES)

CIRCUIT NO. 51						
DEVICE NO.	1ST N-1	2ND N-2	3RD N-3	4TH N-4	5TH N-5	
WIRE AWG TO BE USED	#12	#12	#12	#12	#12	
WIRE CM	6550	6550	6550	6550	6550	
D (DISTANCE BETWEEN DEVICES IN FEET)	155	8	30	20	12	
DEVICE AMPS	.141	.025	.141	.045	.125	
I (TOTAL AMPS @ DEVICE)	525	384	361	220	125	
VD BETWEEN DEVICES	.254	.010	.056	.015	.005	
TOTAL VD @ DEVICE	300	.066	.056	.020	.005	
% VD @ DEVICE	1.25	.215	.235	.065	.021	

FIRE ALARM SYSTEM BATTERY CALCULATION

DEVICE	QTY.	STANDBY CURRENT (mA)		ALARM CURRENT (mA)	
		UNIT	TOTAL	UNIT	TOTAL
CONTROL PANEL	1	52	52	71	71
SMOKE DETECTORS	3	0.045	0.135	47	141
HORNS	3	-	-	23	69
ALARM HORN / STROBE	3	-	-	141	426
VISUAL ALARM (15Cd)	3	-	-	45	285
VISUAL ALARM (30Cd)	3	-	-	125	375
TOTAL	-	-	52.135	-	1743

AMPERE-HOUR LOAD CALCULATIONS  
 24 HOURS OF STANDBY:  $52.135 \times 24 / 1000 = 1.25 \text{ AH}$   
 5 MINUTES OF ALARM:  $1743 \times 5 / 1000 = 0.144 \text{ AH}$   
 TOTAL BATTERY AH REQUIRED = 1.394 AH  
 FIRE ALARM CONTROL PANEL IS EQUIPPED WITH A 6.2 AH BATTERY UNIT.

SYSTEM OPERATION MATRIX			
DEVICE	ACTIVE EVACUATION SIGNALS	ANNUNCIATE AT FACP	SEND SIGNAL TO (N) FIRE ALARM CONTROL PANEL
MANUAL PULL STATION	X	X	X LOCAL ALARM
SMOKE DETECTOR	X	X	X LOCAL ALARM

3 FIRE ALARM CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION TO THE INSPECTOR OF RECORD (IOR/DSA) AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TEST. (1996 NFPA 72)

GENERAL NOTES:

- FINAL FIRE ALARM TEST WILL BE WITNESSED BY LOCAL FIRE AUTHORITY WITH THE DSA INSPECTOR OF RECORD (IOR).
- UNDERGROUND AND EXTERIOR CONDUITS WILL HAVE WAER-TIGHT FITTINGS. (CEC 110-11 AND 300-5).
- FIRE ALARM DEVICE MOUNTING HEIGHTS:  
 PULL STATION: 48" TO CENTER LINE OF DEVICE ABOVE FINISHED FLOOR. (CEC 760.9).  
 HORN INTERIOR: 90" TO TOP OF DEVICE ABOVE FINISHED FLOOR, NOT LESS THAN 6" FROM CEILING. (NFPA72-6-3.7).  
 WALL MOUNTED STROBE OR HORN/STROBE: 80" TO BOTTOM OF DEVICE AND NOT GREATER THAN 96" ABOVE FINISHED FLOOR, NOT LESS THAN 6" FROM CEILING. (NFPA72-6-4.4)
- AUDIBLE DEVICES SHALL BE AT LEAST 15dBA ABOVE AVERAGE SOUND LEVEL BUT NOT LESS THAN 75 dBA AT 10' OR MORE THAN 110dBA IN TOTAL, THROUGHOUT. (NFPA72-6-3.1 AND CFC 1007.3.3.3)
- AUDIBLE DEVICES SHALL SOUND THE CALIFORNIA UNIFORM FIRE ALARM SIGNAL IN TEMPORAL MODE.
- PROVIDE AT LEAST ONE EXTERIOR ON BUILDINGS FOR E OCCUPANCIES (CFC 1007.2.4.1)
- VISUAL DEVICES SHALL NOT EXCEED 2 FLASHES PER SECOND AND SHALL NOT BE SLOWER THAN 1 FLASH EVERY SECOND. (NFPA 72-6-4.2)

APPLICABLE CODES:

CBC 1998, CEC 1998, CMC 1998, CFC 1998  
 STATE FIRE MARSHALL TITLE 19, PUBLIC SAFETY  
 NFPA 72, 1996 EDITION W/ CA AMENDMENTS, DATE 2-10-01  
 FIRE ALARM CODE (NFPA 72, 1996 ED. ACCEPTABLE)

IDENTIFICATION STAMP  
 DIVISION OF THE STATE ARCHITECT  
 APPL 01 103409 INCR #2  
 LICENSED ARCHITECT  
 GENE M. SUGIMOTO  
 C 007104  
 REN 3-31-01  
 ENGINEERING CONSULTANT \* MECH. \* ELEC. \* GENERAL CONTRACTOR LG: #8897981  
 INDUSTRIAL \* COMMERCIAL \* RESIDENTIAL  
 4070 Nelson Avenue, Suite C  
 Concord, California 94520  
 TEL: #925-369-1660 FAX #925-369-1661

PREPARED UNDER THE SUPERVISION OF  
 DAVID EVANS AND ASSOCIATES, INC.  
 5000 EXECUTIVE PARKWAY, SUITE 125  
 SAN RAMON, CALIFORNIA 94583  
 ENGINEER: AOC  
 CHECKED BY: AOC  
 FB: PG.  
 NO. BY DATE

SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT  
 FIRE ALARM PLANS  
 WEST ED MODULAR BUILDINGS  
 CALIFORNIA  
 REDWOOD CITY  
 CANADA COLLEGE

SHEET NO. INCREMENT 2  
 FA2 OF 2 SHEETS  
 JOB NO.