EXISTING FIRE ALARM PANEL
MXL-IQ BATTERY CALCULATIONS

SUPERVISORY CURRENT

DESCRIPTION	QTY	MODULE CURRENT	EOL CURRENT	DEVICE CURRENT	TOTAL ROW CURRENT
SMB-1 Main Control Board	1	.175 x 1			.175 Amps
ALARM INITIATING LOOP 1 & 2	2			.030 x 2	.060 Amps
ALARM INDICATING CKT V1 & V2	2		.012 x 2		.024 Amps
MKB-4 Display/Keyboard	1	.005 x 1			.005 Amps
RCC-1 Remote Command Center	1	.300 x 1			.300 Amps
				TOTAL SUPERVISORY CURRENT	.564 Amps

ALARM CURRENT

CKT	DEVICE DESCRIPTION	DEVICE QTY	DEVICE CURRENT RATING	TOTAL ROW CURRENT	TOTAL CKT CURRENT LOAD
V1	STROBE 15 CANDELA	6	.050 Amps	.300 Amps	.300 Amps
V2	STROBE 15 CANDELA STROBE 75 CANDELA STROBE 110 CANDELA	8 1 1	.050 Amps .133 Amps .161 Amps	.400 Amps .133 Amps .161 Amps	.694 Amps
				TOTAL ALARM CURRENT	.994 Amps

SUMMARY

A = Total Supervisory Current
x Supervisory Time Required
= .564 Amps x 24 Hours
= 13.5 Amp/Hour

B = Total Alarm Current
x Alarm Time Required
= .994 Amps x .083 Hour
= .08 Amp/Hour

C = A + B
= 13.5 Amp/Hour + .08 Amp/Hour
= 13.58 Amp/Hour

Supervisory Time Required ..... 24 HOURS
Alarm Time Required ..... 5 MINUTES or .083 HOUR

BATTERY PROVIDED..... PS-12170 (2)
BATTERY SIZE..... 17 Amp/Hour
TOTAL SYSTEM CURRENT REQ'D 13.58Amp/Hour
BATTERY RESERVE AFTER
24 HOURS SUPERVISORY
& 5 MINUTES ALARM ..... 3.42 Amp/Hour

NOTES

EXISTING PAD-2 #3 BATTERY CALCULATION

SUPERVISORY CURRENT

DESCRIPTION	QTY	MODULE CURRENT	EOL CURRENT	DEVICE CURRENT	TOTAL ROW CURRENT
SUPERVISORY CURRENT					0.075
ALARM CURRENT					0.1

ALARM CURRENT

CKT	DEVICE	DESCRIPTION	QTY	DEVICE CURRENT RATING	TOTAL CKT CURRENT LOAD
2V5	NS4-241575W-FR	(STROBE ONLY)	1	0.068	0.068
2V5	NS4-2475W-FR	(STROBE ONLY)	1	0.133	0.133
2V5	RSS-2415W-FR	(STROBE)	4	0.05	0.2
2V5	RSS-2475W-FR	(STROBE)	1	0.133	0.133
2V6	NS4-241575W-FR	(STROBE ONLY)	1	0.068	0.068
2V6	NS4-2475W-FR	(STROBE ONLY)	3	0.133	0.399
2V6	RSS-2415W-FR	(STROBE)	1	0.05	0.05
2V6	RSS-24110W-FR	(STROBE)	1	0.161	0.161
2V7	RSS-2475W-FR	(STROBE)	4	0.133	0.532
2V7	RSS-2430W-FR	(STROBE)	2	0.081	0.162
2V7	NS4-2415W-FR	(STROBE ONLY)	1	0.055	0.055
2V7	NS4-2430W-FR	(STROBE ONLY)	1	0.081	0.081
2V7	NS24-2475W-FR	(STROBE ONLY)	1	0.133	0.133
2VP3A	TO PAD-2 #3A ACTIVATION		1	0.1	0.1
				TOTAL ALARM CURRENT (AMPS)	3.33

SUMMARY

A = TOTAL SUPERVISORY CURRENT
x SUPERVISORY TIME REQUIRED
0.075 AMPS x 24 HR
= 1.8 (AMP/HR)

SUPERVISORY TIME REQUIRED----------24 HR
ALARM TIME REQUIRED-------5 MINS. or .083 HR

B = TOTAL ALARM CURRENT
x ALARM TIME REQUIRED
1.412 AMPS x .083 HR
= 0.117196 (AMP/HR)

BATTERY PROVIDED..... PS-1270 (2)
BATTERY SIZE..... 7 (AMP/HR)

TOTAL SYSTEM REQUIRED (A/H)
= 1.917196 AMP/HOUR

C = A + B
= 1.917196 (AMP/HR)

BATTERY RESERVE AFTER
24 HOURS SUPERVISORY
& 5 MINUTES ALARM (AMP/HOUR)
= 5.082804 AMP/HOUR

EXISTING PAD-2 #3A BATTERY CALCULATION (HORN CIRCUITS)

SUPERVISORY CURRENT

DESCRIPTION	QTY	MODULE CURRENT	EOL CURRENT	DEVICE CURRENT	TOTAL ROW CURRENT
SUPERVISORY CURRENT					0.075
ALARM CURRENT					0.1

ALARM CURRENT

CKT	DEVICE	DESCRIPTION	QTY	DEVICE CURRENT RATING	TOTAL CKT CURRENT LOAD
2A1	NS4-241575W-FR	(HORN ONLY)	5	0.021	0.105
2A1	NS4-24110W-FR	(HORN ONLY)	1	0.021	0.021
2A2	NS4-241575W-FR	(HORN ONLY)	7	0.021	0.147
2A2	NS4-2475W-FR	(HORN ONLY)	6	0.021	0.126
2A2	NS4-241575W-FR	(HORN ONLY)	6	0.021	0.126
2A3	NS4-2415-W-FR	(HORN ONLY)	1	0.021	0.021
2A3	NS4-2430-W-FR	(HORN ONLY)	1	0.021	0.021
2A3	NS4-2475-W-FR	(HORN ONLY)	1	0.021	0.021
2A4	SPARE		0	0	0
					0
				TOTAL ALARM CURRENT (AMPS)	0.688

SUMMARY

A = TOTAL SUPERVISORY CURRENT
x SUPERVISORY TIME REQUIRED
0.075 AMPS x 24 HR
= 1.8 (AMP/HR)

SUPERVISORY TIME REQUIRED----------24 HR
ALARM TIME REQUIRED-------5 MINS. or .083 HR

B = TOTAL ALARM CURRENT
x ALARM TIME REQUIRED
0.625 AMPS x .083 HR
= 0.051875 (AMP/HR)

BATTERY PROVIDED..... PS-1270 (2)
BATTERY SIZE..... 7 (AMP/HR)

TOTAL SYSTEM REQUIRED (A/H)
= 1.851875 AMP/HOUR

C = A + B
= 1.851875 (AMP/HR)

BATTERY RESERVE AFTER
24 HOURS SUPERVISORY
& 5 MINUTES ALARM (AMP/HOUR)
= 5.148125 AMP/HOUR

FIRST FLOOR

VOLTAGE DROP (VD) CALCULATION

PROJ. NAME--------- SKYLINE COLLEGE BUILDING NO.2
SIG CKT #---------- 2V7

DEVICE #	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
GAUGE WIRE	12	12	12	12	12	12	12	12	12
DISTANCE (FT)	100	10	40	15	30	15	30	20	30
AMPS @ DEVICE	0.081	0.133	0.133	0.133	0.081	0.05	0.081	0.133	0.133
AMPS DEVELOPED	0.94	0.86	0.73	0.6	0.47	0.39	0.34	0.26	0.133
VOLT. DROP	0.31	0.028	0.096	0.029	0.046	0.019	0.038	0.017	0.013

** FORMULA **
I X FEET X OHMS/FT
SIGNAL CIRCUIT # 2V7
TOTAL CKT V.D.= 0.596
CKT VOLTAGE= 24
VOLTAGE AT
FINAL DEVICE= 23.4
% VOLTAGE DROP= 2.48

WIRE SIZE	RESIS. /M FT.	CIRC. MILS.
12	1.59	6530
14	2.52	4110
16	4.02	2580
18	6.39	1620
20	10.1	1020
22	16.2	640
24	25.7	404

FIRST FLOOR

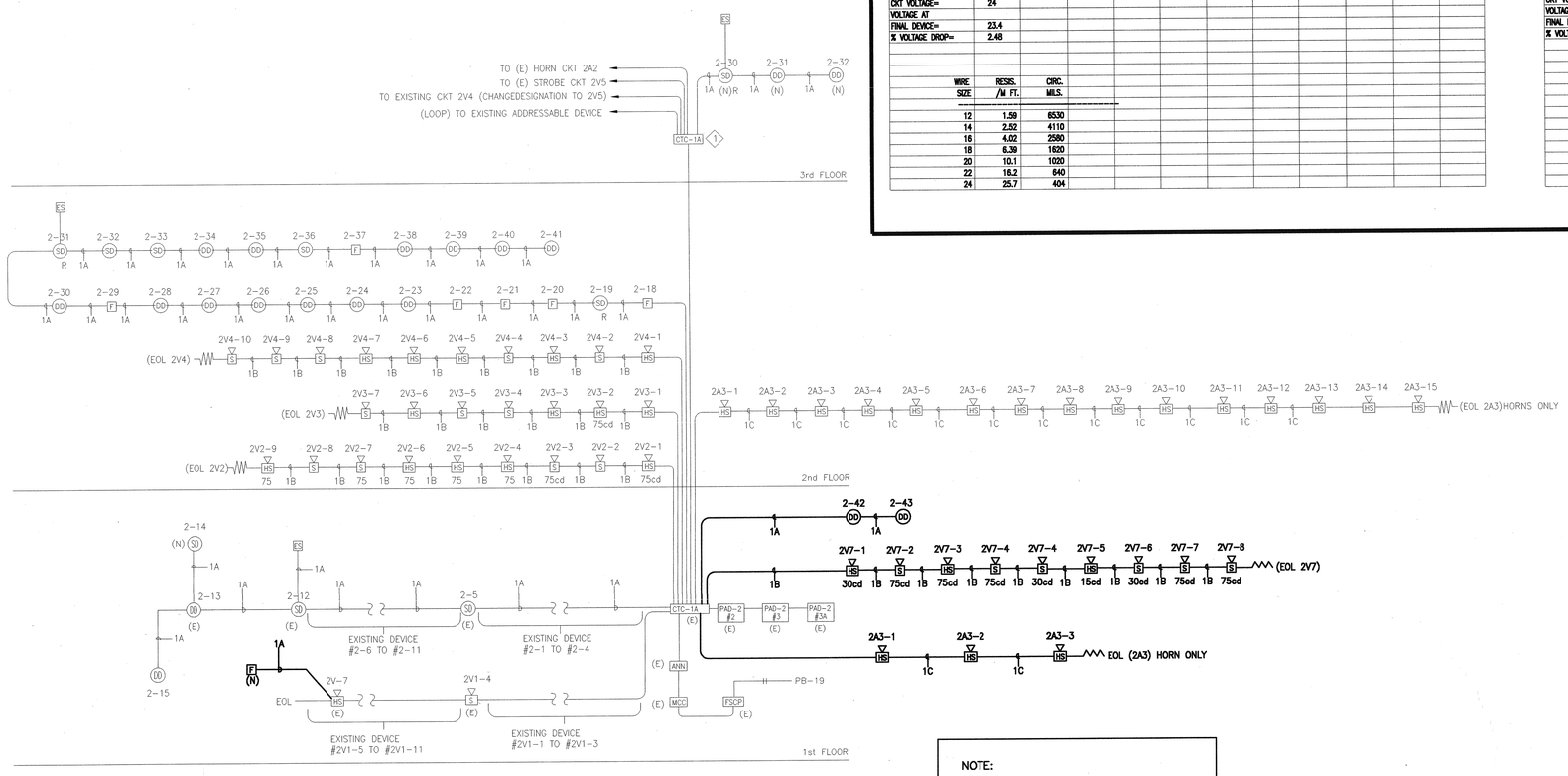
VOLTAGE DROP (VD) CALCULATION

PROJ. NAME--------- SKYLINE COLLEGE BUILDING NO.2
SIG CKT #---------- 2A3

DEVICE #	1st	2nd	3rd
GAUGE WIRE	12	12	12
DISTANCE (FT)	100	50	70
AMPS @ DEVICE	0.021	0.021	0.021
AMPS DEVELOPED	0.063	0.042	0.021
VOLT. DROP	0.020	0.00694	0.00486

** FORMULA **
I X FEET X OHMS/FT
SIGNAL CIRCUIT # 2A3
TOTAL CKT V.D.= 0.0318
CKT VOLTAGE= 24
VOLTAGE AT
FINAL DEVICE= 23.96
% VOLTAGE DROP= 0.132

WIRE SIZE	RESIS. /M FT.	CIRC. MILS.
12	1.59	6530
14	2.52	4110
16	4.02	2580
18	6.39	1620
20	10.1	1020
22	16.2	640
24	25.7	404



NOTE:
ALL DEVICES AND WIRING IN LIGHTER SHADE ARE EXISTING

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PROJECT ARCHITECT

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SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT
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NO.	DESCRIPTION	DATE	BY
	DSA SUBMITTAL	06/15/01	

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JOB NO.	98-03

SHEET TITLE
BATTERY CALCULATION

SHEET
EF-1.1
OF