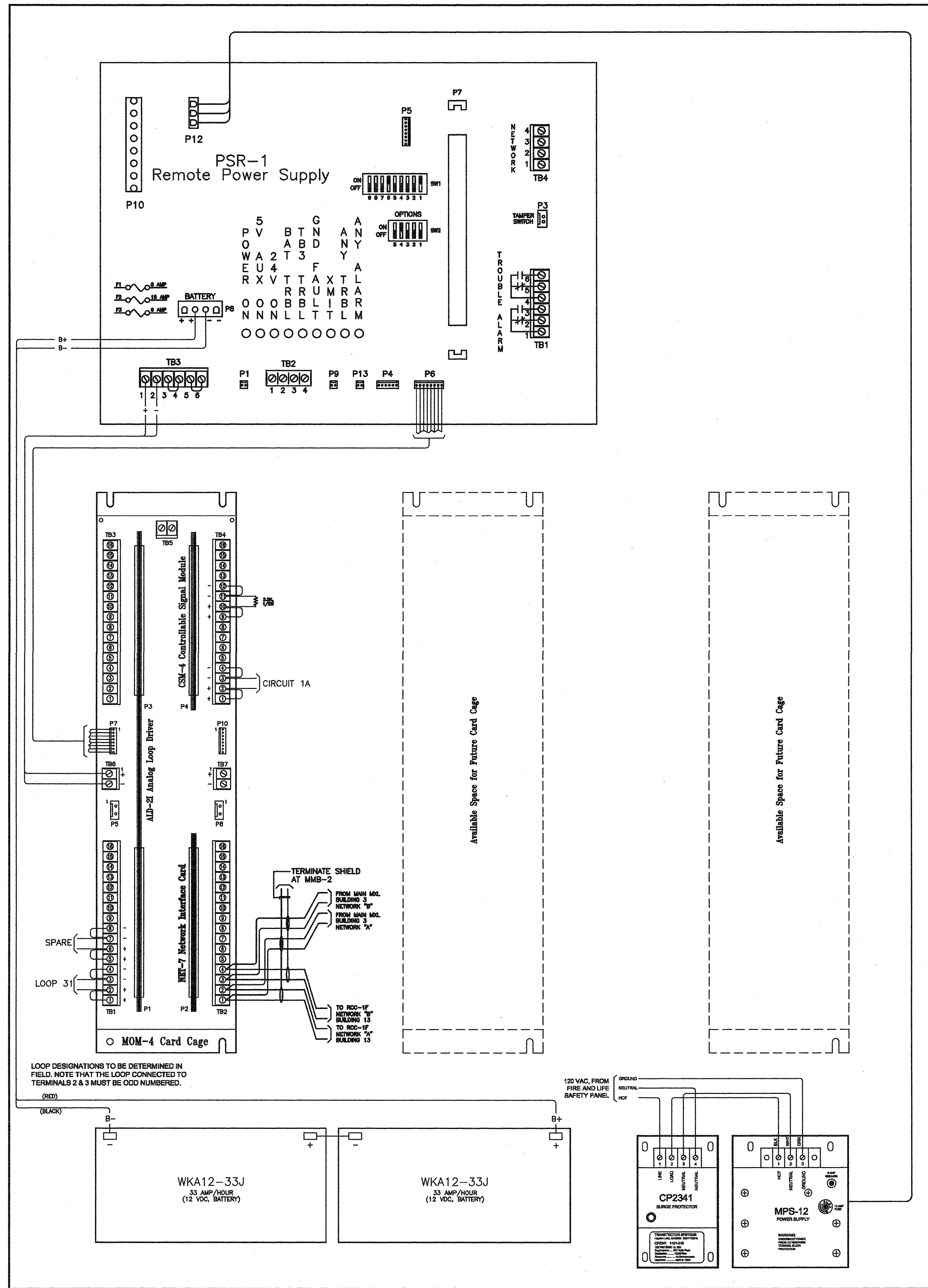


MXLR PANEL ENCLOSURE CONSISTING OF:
 MDR-2 Backbox
 MDR-2 Door



MXLR PANEL ENCLOSURE CONSISTING OF:
 MDR-2 Backbox
 MDR-2 Door

Internal View

MXLR - REMOTE FIRE ALARM CONTROL PANEL
 Building 30, Canada College

LOOP - SCHEDULE			
CKT NUMBER	MODULE	DESCRIPTION	LOCATION
7	ALD-21 #1	INITIATING DEVICES	BUILDING 5: FIRST, SECOND, THIRD FLOORS BUILDING 6: FIRST FLOORS
8		INITIATING DEVICES	BUILDING 8: FIRST AND SECOND FLOOR
29	ALD-21 #1	INITIATING DEVICES	BUILDING 5: FIRST, SECOND, THIRD FLOORS BUILDING 6: FIRST FLOORS
SPARE		SPARE	SPARE

MXL BATTERY CALCULATION				
DESCRIPTION	Quantity	Standby 24 VDC Module A-Curt Current	Load Current Per Circuit	
			End of Line Device	Total Standby 24VDC Module Current
ALD-21 ANALOG LOOP DRIVER	1	0.105		0.105
1.1mA per device (2 loops per card)	1		0.096	0.096
CSM-4 CONTROLLABLE SIGNAL MODULE	1	0.010		0.010
12mA per NAC circuit (2 ckt. per card)	1		0.012	0.012
MKB-2 ANNUNCIATOR/KEYBOARD	1	0.005		0.005
NET-7 NETWORK CARD	0	0.030		0.000
NET-4 NETWORK CARD	0	0.005		0.000
PSR-1 REMOTE POWER SUPPLY	0	0.070		0.000
TOTAL SUPERVISORY CURRENT				0.198

MODULE ALARM CURRENT			
DESCRIPTION	Quantity	Module Alarm Current	TOTAL ROW CURRENT
TOTAL MODULE ALARM CURRENT			
			0

XLS NOTIFICATION CIRCUITS		TOTAL CKT CURRENT LOAD	
PSC-12	0.352	CIRCUIT A1	0.352
		CIRCUIT A2	0
		TOTAL ALARM CURRENT (AMPS)	0.352

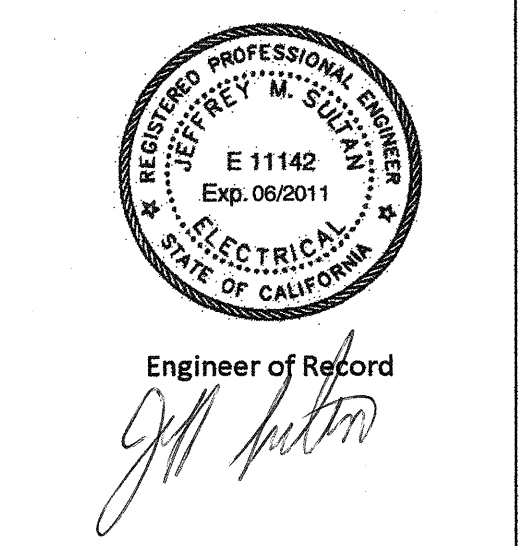
SUMMARY		SUPERVISORY TIME REQUIRED	
A = TOTAL SUPERVISORY CURRENT	0.198 AMPS	x SUPERVISORY TIME REQUIRED	24 HR
		=	4.752 (AMP-HR)
B = TOTAL ALARM CURRENT	0.352 AMPS	x ALARM TIME REQUIRED	15 MINS. or .25 HR
		=	0.088 (AMP-HR)
C = A + B		=	4.840 (AMP-HOUR)
		BATTERY PROVIDED..... WKA12-33J (2)	
		BATTERY SIZE.....	33 (AMP-HR)
		TOTAL SYSTEM REQUIRED (A/H)	4.840 AMP/HOUR
		BATTERY RESERVE AFTER 24 HOURS SUPERVISORY & 15 MINUTES ALARM (AMP-HOUR)	28.160 AMP-HOUR

VOLTAGE DROP CALCULATIONS (WORST CASE SHOWN)	
FORMULA:	VOLTAGE DROP CALCULATIONS (FOR A GIVEN LENGTH OF CONDUCTOR) = $\frac{I \times D \times 21.6}{C.M.}$
WHERE:	I = AMPERES PER TERMINAL LOAD D = ONE WAY DISTANCE OF CONDUCTOR (IN FEET) MEASURED FROM SOURCE OF SUPPLY TO LOAD 21.6 = CONSTANT (RESISTANCE OF CONDUCTORS AT 10.8 OHMS PER L.M. FOR TWICE THE LENGTH) C.M. = CROSS SECTIONAL AREA IN CIRCULAR MILS (SEE TABLE AT RIGHT)
GIVEN:	CIRCUIT DESIGNATION = A1 APPROX LENGTH OF CONDUCTOR = 50 FEET CURRENT LOAD = 0.352 WIRE SIZE USED = 12 AWG
	VOLTAGE DROP = $\frac{0.352 \times 50 \times 21.6}{6530} = \frac{380.160}{6530} = 0.058$ VOLTS
	% OF VOLTAGE DROP = $\frac{0.058}{24} \times 100 = 0.002426$ or 0.243 %
NOTES:	1. THE OPERATING VOLTAGE OF DEVICE USED IS 18 TO 31 VDC. THE RESULTING VOLTAGE DROP IS WITHIN THIS OPERATING RANGE. 2. PERMISSIBLE VOLTAGE DROP IS 10% OR LESS

QTY	PART NUMBER	EQUIPMENT LIST	CURRENT LOAD	CIRCUIT NO.
1	ASWP-2475W-FR	WEATHERPROOF HORN STROBE	0.168	A1
0	NS-24MCW-FR	15 CANDELA HORN STROBE	0.074	A2
0	NS-24MCW-FR	30 CANDELA HORN STROBE	0.107	
1	NS-24MCW-FR	75 CANDELA HORN STROBE	0.194	
0	NS-24MCW-FR	110 CANDELA HORN STROBE	0.244	

ACTUAL VOLTAGE DROP CALCS 12 GAUGE			
CKT	DISTANCE (ft.)	CURRENT LOAD (amps)	VOLTAGE DROP (%)
A1	50	0.352	0.243
A2	0	0	0.000

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IDENTIFICATION STAMP
 DIVISION OF THE STATE ARCHITECT
 APPLICATION NUMBER 01-11618
 AC: *ES* PL: *NS* DATE: 2/9/11
 CALIFORNIA STATE FIRE MARSHAL APPROVED

CAÑADA COLLEGE
 Electrical Infrastructure Replacement Project
 4200 Farm Hill Blvd
 Redwood City, CA 94061

BID SET

SHEET TITLE
 FIRE ALARM PANEL
 MXLR

REVISIONS		
NO.	DATE	DESCRIPTION

DATE: January 14, 2011
 DRAWN: RB
 CHECKED: KR
 SCALE: N/A
 JOB NO.: 2921.01
 SHEET NUMBER

FA-03