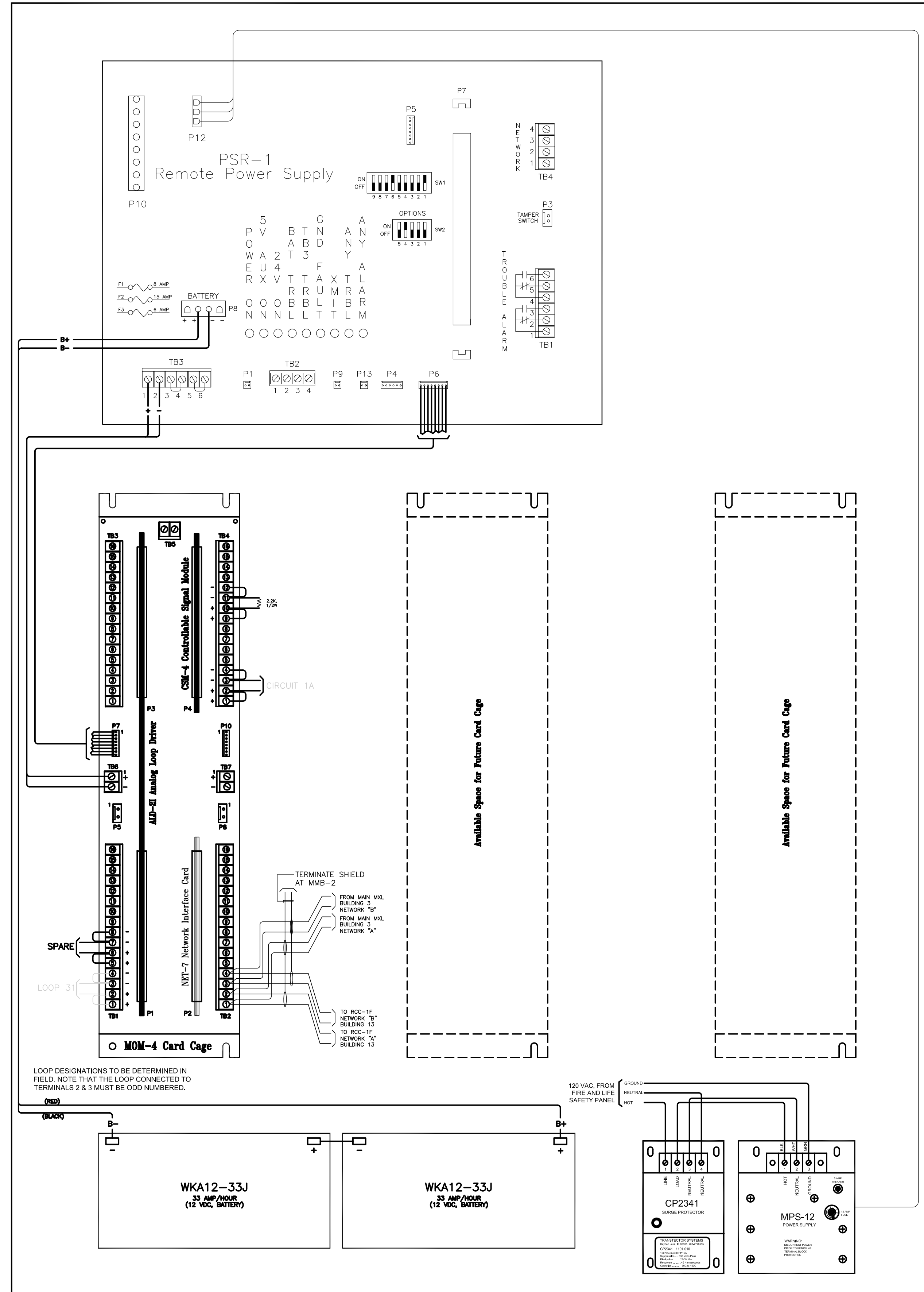


MXLR PANEL ENCLOSURE CONSISTING OF:
 MDR-2 Backbox
 MDR-2 Door



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

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 5: 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				
SUPERVISORY CURRENT				
DESCRIPTION	Quantity	Standby 24 VDC Module 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)				
CSM-4 CONTROLLABLE SIGNAL MODULE	1	0.010	0.066	0.066
12mA per NAC circuit (2 ckt. per card)				
MKB-2 ANNUNCIATOR/KEYBOARD	1	0.005	0.012	0.012
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	Output 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	
A = TOTAL SUPERVISORY CURRENT x SUPERVISORY TIME REQUIRED	SUPERVISORY TIME REQUIRED—24 HR
0.198 AMPS x 24 HR = 4.752 (AMP-HR)	ALARM TIME REQUIRED—15 MINS. or .25 HR
B = TOTAL ALARM CURRENT x ALARM TIME REQUIRED	BATTERY PROVIDED..... WKA12-33J (2)
0.352 AMPS x .25 HR = 0.088 (AMP-HR)	BATTERY SIZE..... 33 (AMP-HR)
C = A + B = 4.840 (AMP-HR)	TOTAL SYSTEM REQUIRED (A/H)
	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	0.184	
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

IDENTIFICATION STAMP
 DIVISION OF THE STATE ARCHITECT
 APPLICATION NUMBER 01-111618
 AC _____, FLS _____, BS _____
 DATE _____

CALIFORNIA STATE FIRE MARSHAL
 APPROVED

APPROVAL OF THIS PLAN DOES NOT AUTHORIZE OR APPROVE ANY
 CHANGES OR DEVIATIONS FROM APPLICABLE REGULATIONS. FINAL
 APPROVAL IS SUBJECT TO REGISTRATION. ONE SET OF APPROVED
 PLANS SHALL BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.
 REVIEWED BY: _____ DATE: _____

CAÑADA COLLEGE
 Electrical Infrastructure Replacement Project

4200 Farm Hill Blvd
 Redwood City, CA 94061

RECORD DRAWING

SHEET TITLE
 FIRE ALARM PANEL
 MXLR

REVISIONS
 NO. DATE DESCRIPTION

DATE July 9, 2012
 DRAWN TC/AL
 CHECKED MM
 SCALE N/A
 JOB NO. 2921.01

SHEET NUMBER
 FA-03