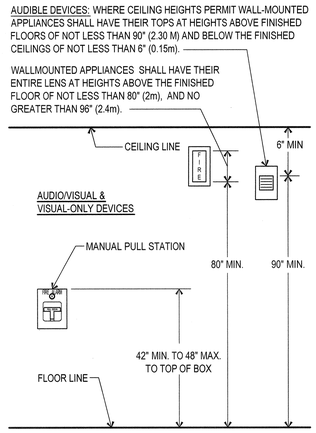
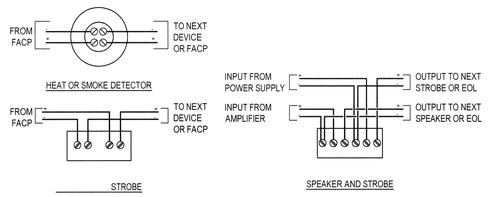


F.A. DEVICE ELEVATION

NOT TO SCALE (1) E2.01



TYPICAL DEVICE WIRING DETAIL

NO SCALE (2) E2.01

FA CABLE SCHEDULE			
'A'	ADDRESSABLE FA COMMUNICATION CABLE	WEST PENN #D990 (INDOOR)	WEST PENN #AQ225 (OUTDOOR)
'B'	2#12 THHN/THWN CU.	WEST PENN #993 (INDOOR)	WEST PENN #AQ227 (OUTDOOR)
'C'	SPEAKER CABLE 16/2	WEST PENN #972 (INDOOR)	WEST PENN #AQ225 (OUTDOOR)

FIRE ALARM DEVICE SEQUENCE OF OPERATION MATRIX

INITIATION → / RESPONSE ↓	AREA SMOKE OR HEAT DETECTORS	POWER FAILURE	TROUBLE	ELECTRICAL SUPERVISION	SPRINKLER FLOW SWITCH	SPRINKLER TAMPER SWITCH	MANUAL PULL STATION
ANNUNCIATE AT ADMINISTRATION OFFICE	◦	◦	◦	◦	◦	◦	◦
ACTIVATE AUDIO/VISUAL THRU-OUT CAMPUS	◦				◦		◦
CENTRAL STATION MONITORING	◦				◦	◦	◦
CLOSE FIRE SMOKE DAMPER	◦				◦		
SHUT DOWN HVAC UNIT	◦				◦		
ACTIVATE VOICE EVACUATION PANEL	◦						

FACP BATTERY CALCULATION

(E)Fire Alarm Control Panel **"FACP"**

POWER REQUIREMENTS

				CURRENT [A] SUPERVISORY	ALARM
EXISTING LOADS				0.32900	0.40244
	QTY.	SUP. EA	ALRM EA		
ADDED SMOKE DET.	2	0.00045	0.00054	0.00090	0.00108
ADDED HEAT DET.	2	0.00035	0.0005	0.00070	0.00100
TOTALS				0.33060	0.40452

BATTERY CAPACITY

SUPERVISORY POWER	= 24 Hr * 0.3306A =	7.934 AHr
ALARM POWER	= 0.25 Hr * 0.4045 =	0.101 AHr
TOTAL POWER REQUIREMENT =		8.036 AHr
20% SAFETY FACTOR =		**9.643 AHr**

EXISTING PANEL HAS 18.0 A/Hr BATTERIES

FADV BATTERY CALCULATION

(E)Fire Alarm Control Panel **"FADV"**

POWER REQUIREMENTS

	CURRENT [A] SUPERVISORY	ALARM
MAX LOAD WITH ALL OUTPUTS USED	0.18600	0.19900
TOTALS	0.18600	0.19900

BATTERY CAPACITY

SUPERVISORY POWER	= 24 Hr * 0.186A =	4.464 AHr
ALARM POWER	= 0.25 Hr * 0.199A =	0.050 AHr
TOTAL POWER REQUIREMENT =		4.514 AHr
20% SAFETY FACTOR =		**5.417 AHr**

EXISTING PANEL HAS 7.0 A/Hr BATTERIES

FADV BATTERY CALCULATION

(E)Fire Alarm Amplifier Panel **"FAAP"**

POWER REQUIREMENTS

	CURRENT [A] SUPERVISORY	ALARM
MAX LOAD WITH ALL OUTPUTS USED	0.31200	2.71400
TOTALS	0.31200	2.71400

BATTERY CAPACITY

SUPERVISORY POWER	= 24 Hr * 0.312A =	7.488 AHr
ALARM POWER	= 0.25 Hr * 2.714A =	0.679 AHr
TOTAL POWER REQUIREMENT =		8.167 AHr
20% SAFETY FACTOR =		**9.800 AHr**

EXISTING PANEL HAS 18.0 A/Hr BATTERIES

NAC EXTENDER BATTERY CALCULATION

Extender Panel **'FAXP-NR'**

POWER REQUIREMENTS

	CURRENT [A] SUPERVISORY	ALARM
PANEL OVERHEAD	0.090	0.175
NAC CIRCUITS	-	1.818
TOTALS	0.090	1.993

BATTERY CAPACITY

SUPERVISORY POWER	= 24 Hr * 0.09A =	2.160 AHr
ALARM POWER	= 0.25 Hr * 1.993A =	0.498 AHr
TOTAL POWER REQUIREMENT =		2.658 AHr
20% SAFETY FACTOR =		**3.190 AHr**
MINIMUM BATTERY CAPACITY =		7 AHr

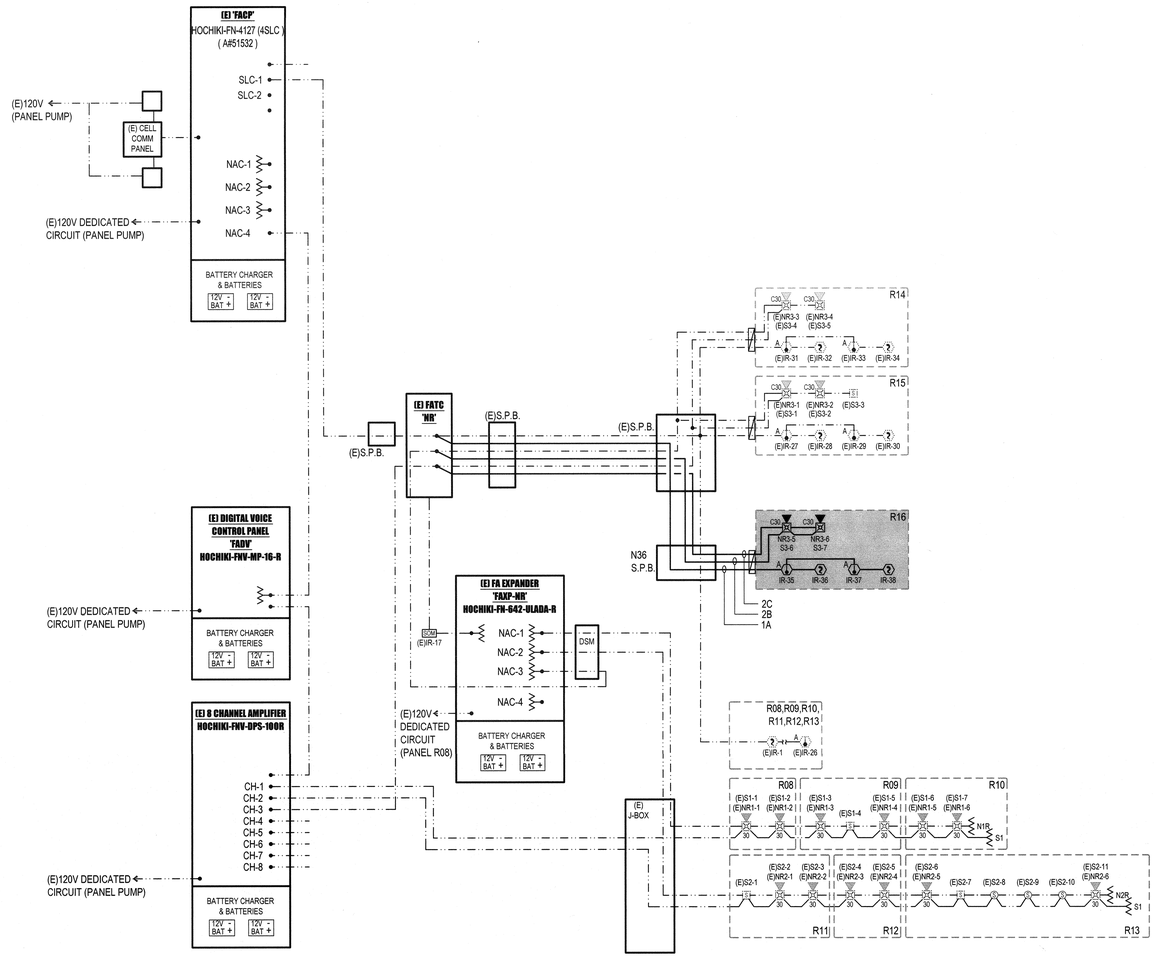
VOLTAGE DROP CALCULATION

NAC Circuit '3'

VD = Voltage Drop [V]
I = Current [A] (0.606A)
K = 11 (Copper Constant)
L = Distance to Load [ft.] (200')
CM = Circular Mils (#12 AWG = 6530)
V = Voltage [V] (20.4VDC)

$VD = \frac{K * I * 2L}{CM} = \frac{11 * 0.606 * 2 * 320'}{6530} = 0.408\ V$

$VD\% = \frac{VD}{20.4} = 2.0\%$



FIRE ALARM SINGLE LINE DIAGRAM

NOT TO SCALE (3) E2.01

MARK	DATE	REVISIONS
1		
2		
3		

CHECK AND VERIFY ALL DIMENSIONS BEFORE PROCEEDING WITH THE WORK. REPORT DISCREPANCIES TO THE ARCHITECT. ALL CONSTRUCTION SHALL CONFORM TO THE C.B.C.

SITE IMPROVEMENTS FOR (1) 24'x 40' MODULAR BUILDING AT
HORACE MANN ELEMENTARY SCHOOL
2710 NILES ST, BAKERSFIELD, CA, 93306
FOR
BAKERSFIELD CITY SCHOOL DISTRICT
BAKERSFIELD KERN COUNTY, CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL: 03-119917
FILE: 15-6
AC FLS SS
DATE: APR 30 2018

PTN : 63321-339

ARCHITECT SC INC
1601 NEW STINE ROAD, SUITE 280
BAKERSFIELD, CA 93309
PH: (661) 397-4377
FAX: (661) 397-4378
WWW.SCARCHITECT.COM
LICENSED ARCHITECT STEPHEN J. CORBIN RENEWAL 08/31/2019 CALIFORNIA
STEPHEN J. CORBIN, NCARB, AIA, LEED® AP BD+C

DPG Engineering Inc.
6702 N. Cedar Ave. Suite 205
Fresno, Ca. 93710
Ph. (559) 276-5144
Fax (559)900-4929
REGISTERED PROFESSIONAL ENGINEER DAVID P. GILTNER ELECTRICAL STATE OF CALIFORNIA

FIRE ALARM SINGLE LINE DIAGRAM, SCHEDULES AND DETAILS

JOB NO.	1266
DRAWN :	R.L.M.
CHECKED :	D.P.G.
DATE :	10/22/18

2.01 OF SHEETS