

FIRE ALARM PLAN SECOND FLOOR BLDG 1
 SCALE: 1/16" = 1'-0"
 NORTH

NAC WIRE SIZE - 14 GAUGE
 SLC WIRE SIZE - 16 GAUGE

BATTERY CALCULATIONS

FIRE ALARM CONTROL PANEL

DEVICE	STANDBY	ALARM
MS-9800UDLS	103 MA	253 MA
LCD-80F	25 MA	64 MA
BG-12LX (1)	0.3 MA	800 MA (Max.)
SD355 (135)	40 MA	Incl.
H355 (4)	1.2 MA	Incl.
DACT-UD2	17 MA	Incl.
MMF-301 (45)	16.9 MA	Incl.
CRF-300 (41)	11 MA	Incl.
CMF-300 (8)	3.1 MA	Incl.
ALARM CIRCUITS	0 MA	2205 MA
TOTAL	214.5 MA	3351 MA

TOTAL STANDBY: 214.5 MA x 24 hrs = 5.1 AH
 TOTAL ALARM: 3351 MA x 5 MINUTES = 0.3 AH
 TOTAL CURRENT DRAW: 5.4 AH
 DERATING FACTOR: 1.2
 MINIMUM BATTERY CAPACITY: 6.5 AH
 TOTAL CURRENT DRAW: 3.6 AMPS

VOLTAGE DROP - FACP NA Circuits
 NAC 1: (1st Floor) current draw: 1.315 Amps
 Maximum allowable voltage drop: 4.4 VDC (20.4-16VDC)
 (Note: A/V's are rated 16-33 VDC)
 Wire Resistance (14g): 3.0 Ohms/1000 ft
 Design wire distance (scaled from plan): <190 ft.
 Calculated Voltage Drop: 1.5 VDC*

NAC 2: (1st Floor) current draw: 0.88 Amps
 Maximum allowable voltage drop: 4.4 VDC (20.4-16VDC)
 (Note: A/V's are rated 16-33 VDC)
 Wire Resistance (14g): 3.0 Ohms/1000 ft
 Design wire distance (scaled from plan): <160 ft.
 Calculated Voltage Drop: 0.9 VDC*

NAC 3: Control Circuit to activate Power Supplies
 NAC 4: Not Used

POWER SUPPLY CALCULATIONS

FAPS-1 Bldg 1
 Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (10AV; 34MH) Standby 0mA Alarm 1445mA
 NAC 2 (7AV; 25MH) Standby 0mA Alarm 1090mA
 NAC 3 (7AV; 20MH) Standby 0mA Alarm 1031mA
 NAC 4 Not Used
 Total standby: 75 mA x 24hrs = 1.8 AH
 Total alarm: 3741 mA x 5 minutes = .3 AH
 Total current draw: 2.1 AH
 Derating factor 1.2
 Battery requirement: 2.5 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 3.8 Amps

FAPS-2 Bldg 2
 Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (9AV; 31MH) Standby 0mA Alarm 1447mA
 NAC 2 (12AV; 32MH) Standby 0mA Alarm 1563mA
 NAC 3 (5AV; 23MH) Standby 0mA Alarm 753mA
 NAC 4 (7AV; 23MH) Standby 0mA Alarm 924mA
 AUX. PWR. (5Visual) Standby 0mA Alarm 505mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4862 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.9 Amps

FAPS-3 Bldg 1
 Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (8AV; 31MH) Standby 0mA Alarm 1260mA
 NAC 2 (10AV; 31MH) Standby 0mA Alarm 1317mA
 NAC 3 (5AV; 32MH) Standby 0mA Alarm 939mA
 NAC 4 Not Used
 AUX. PWR. (5Visual) Standby 0mA Alarm 852mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4543 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.6 Amps

BATTERY CALCS. CONT'D

FAPS-4 Bldg 2

Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (7AV; 31MH) Standby 0mA Alarm 1205mA
 NAC 2 (10AV; 32MH) Standby 0mA Alarm 1321mA
 NAC 3 (2AV; 23MH) Standby 0mA Alarm 549mA
 NAC 4 (5AV; 23MH) Standby 0mA Alarm 752mA
 AUX. PWR. (5Visual) Standby 0mA Alarm 505mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4504 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.9 Amps

FAPS-5 Bldg 1

Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (8AV; 31MH) Standby 0mA Alarm 1260mA
 NAC 2 (10AV; 31MH) Standby 0mA Alarm 1317mA
 NAC 3 (5AV; 32MH) Standby 0mA Alarm 939mA
 NAC 4 Not Used
 AUX. PWR. (5Visual) Standby 0mA Alarm 852mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4543 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.6 Amps

FAPS-6 Bldg 2

Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (7AV; 31MH) Standby 0mA Alarm 1205mA
 NAC 2 (10AV; 32MH) Standby 0mA Alarm 1321mA
 NAC 3 (2AV; 23MH) Standby 0mA Alarm 549mA
 NAC 4 (5AV; 23MH) Standby 0mA Alarm 752mA
 AUX. PWR. (5Visual) Standby 0mA Alarm 505mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4509 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.9 Amps

FAPS-7 Bldg 1

Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (8AV; 32MH) Standby 0mA Alarm 1260mA
 NAC 2 (10AV; 31MH) Standby 0mA Alarm 1317mA
 NAC 3 (5AV; 32MH) Standby 0mA Alarm 1031mA
 NAC 4 Not Used
 AUX. PWR. (5Visual) Standby 0mA Alarm 852mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4543 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.6 Amps

FAPS-8 Bldg 2

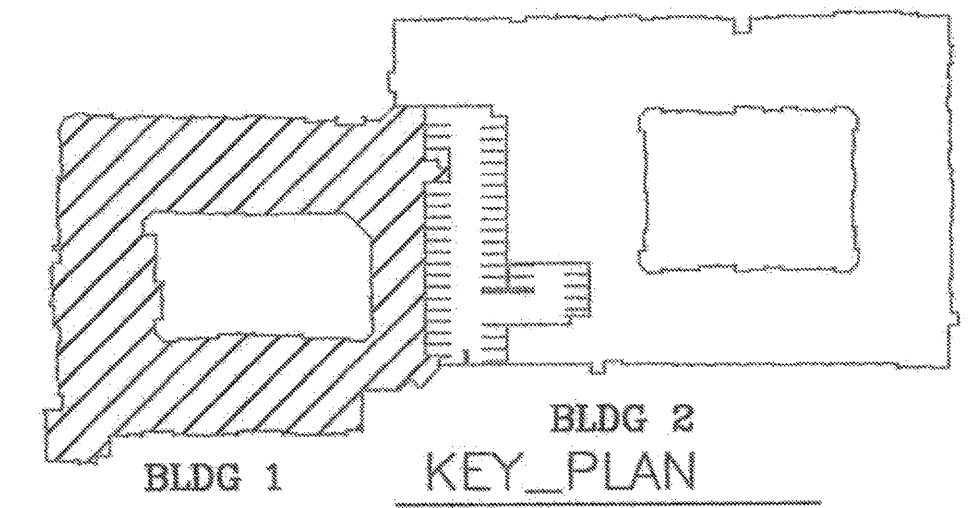
Silent Knight 5495 (6 Amp)
 24 Hours Standby, 5 Minutes Alarm
 SK 5495 Standby 75mA Alarm 175mA
 NAC 1 (7AV; 31MH) Standby 0mA Alarm 1205mA
 NAC 2 (10AV; 32MH) Standby 0mA Alarm 1321mA
 NAC 3 (2AV; 23MH) Standby 0mA Alarm 549mA
 NAC 4 (5AV; 23MH) Standby 0mA Alarm 752mA
 AUX. PWR. (5Visual) Standby 0mA Alarm 505mA
 Total standby: 75mA x 24hrs = 1.8 AH
 Total alarm: 4504 mA x 5 minutes = .4 AH
 Total current draw: 2.2 AH
 Derating factor 1.2
 Battery requirement: 2.6 AH
 Battery supplied: (2) 7 AH-12 V in Series
 Total Current Draw: 4.9 Amps

DOOR HOLDER POWER SUPPLY

Building 1 Door Holder Power Req'd.
 20 FD x 2 DH/FD x 15 mA/DH = 600mA
 Power Supply - 24VDC output 120VAV input
 1,000 mA (1 Amp.) minimum

Building 2 Door Holder Power Req'd.
 23 FD x 2 DH/FD x 15 mA/DH = 690mA
 Power Supply - 24VDC output 120VAV input
 1,000 mA (1 Amp.) minimum

NOTE: Secondary power (battery backup) is not required as doors will be released on loss of AC power.



ISSUED FOR APPROVAL
 Philip R. Hought, P.E. #21366
 Fire Protection Engineering, LLC
 Registration No. F-2535
 Date: 7/15/2012

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 512/328-1717
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Installer: Christian Cable Group, Inc.
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 Haslet, TX 76052
 817-499-5107

Revisions:
 7/15/2012 Revised project address.

SCALE: Noted
 DATE: 6/29/2012
 DRAWING NO. FA 4
 SHEET NO. 4 OF 11