NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV7: 84 3RD FLR EAST DESCRIPTION	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	–	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	–	0.0000	0.0000
WHEELOCK STROBE 30 cd	–	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	–	0.0450	0.0000
WHEELOCK STROBE 75 cd	–	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	–	0.1100	0.0000
WHEELOCK STROBE 110 cd	2	0.2200	0.4400
WHEELOCK HORN/STROBE 110 cd	1	0.3070	0.3070
WHEELOCK HORN	3	0.0870	0.2610
AUTOCALL BELL	–	0.0500	0.0000
AUTOCALL BELL/STROBE	–	0.2150	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT			1.0080

VOLTAGE DROP (VD) CALCULATIONS

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
D = CONDUCTOR LENGTH (FT) ONE WAY
21.6 = CONSTANT
CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(1.008 A) (310 FT) (21.64)}/4110 = 1.642 V
%VD = {1.642 V / 24 V} X 100 = 6.843 %
REMAINING VOLTS = 22.358

WIRE SIZE	CIRCULAR MILS
12AWG	6530
14AWG	4110
16AWG	2580
18AWG	1620
20AWG	1020

NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV5: 84 2ND FLR WEST DESCRIPTION	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	–	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	–	0.0000	0.0000
WHEELOCK STROBE 30 cd	–	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	–	0.0450	0.0000
WHEELOCK STROBE 75 cd	–	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	–	0.1100	0.0000
WHEELOCK STROBE 110 cd	2	0.2200	0.4400
WHEELOCK HORN/STROBE 110 cd	1	0.3070	0.3070
WHEELOCK HORN	3	0.0870	0.2610
AUTOCALL BELL	–	0.0500	0.0000
AUTOCALL BELL/STROBE	–	0.2150	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT			1.0080

VOLTAGE DROP (VD) CALCULATIONS

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
D = CONDUCTOR LENGTH (FT) ONE WAY
21.6 = CONSTANT
CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(1.008 A) (170 FT) (21.64)}/4110 = 0.901 V
%VD = {0.901 V / 24 V} X 100 = 3.752 %
REMAINING VOLTS = 23.099

WIRE SIZE	CIRCULAR MILS
12AWG	6530
14AWG	4110
16AWG	2580
18AWG	1620
20AWG	1020

NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV8: 84B DESCRIPTION	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	–	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	–	0.0000	0.0000
WHEELOCK STROBE 30 cd	–	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	–	0.0450	0.0000
WHEELOCK STROBE 75 cd	–	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	–	0.1100	0.0000
WHEELOCK STROBE 110 cd	–	0.1100	0.0000
WHEELOCK HORN/STROBE 110 cd	–	0.1750	0.0000
WHEELOCK HORN	–	0.0000	0.0000
AUTOCALL BELL	2	0.0500	0.1000
AUTOCALL BELL/STROBE	–	0.2150	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT			0.1000

VOLTAGE DROP (VD) CALCULATIONS

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
D = CONDUCTOR LENGTH (FT) ONE WAY
21.6 = CONSTANT
CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(0.1 A) (350 FT) (21.64)}/4110 = 0.184 V
%VD = {0.184 V / 24 V} X 100 = 0.766 %
REMAINING VOLTS = 23.816

WIRE SIZE	CIRCULAR MILS
12AWG	6530
14AWG	4110
16AWG	2580
18AWG	1620
20AWG	1020

NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV6: 84 3RD FLR WEST DESCRIPTION	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	–	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	–	0.0000	0.0000
WHEELOCK STROBE 30 cd	–	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	–	0.0450	0.0000
WHEELOCK STROBE 75 cd	–	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	–	0.1100	0.0000
WHEELOCK STROBE 110 cd	–	0.1100	0.0000
WHEELOCK HORN/STROBE 110 cd	2	0.3070	0.6140
WHEELOCK HORN	2	0.0870	0.1740
AUTOCALL BELL	–	0.0500	0.0000
AUTOCALL BELL/STROBE	–	0.2150	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT			0.7880

VOLTAGE DROP (VD) CALCULATIONS

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
D = CONDUCTOR LENGTH (FT) ONE WAY
21.6 = CONSTANT
CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(0.788 A) (200 FT) (21.64)}/4110 = 0.828 V
%VD = {0.828 V / 24 V} X 100 = 3.451 %
REMAINING VOLTS = 23.172

WIRE SIZE	CIRCULAR MILS
12AWG	6530
14AWG	4110
16AWG	2580
18AWG	1620
20AWG	1020

PROFESSIONAL SEAL (IF REVISION, APPLIES ONLY TO REVISED WORK)

ISSUE (PROGRESS, ESTIMATE, BID, CONSTRUCTION, CONFORMED, REVISION, RECORD): AS BUILT – – 10/23/13

REVISION NUMBER	DRAWN BY	CHECKED BY	APPR'D BY	DATE	REMARKS
_	LDD	LDD	MCD	10/23/13	AS BUILT

BLDG 84, 84B FIRE ALARM CALCULATIONS

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

DRAWN BY	LDD	DATE 10/23/2013
CHECKED BY	LDD	10/23/2013
APPROVED BY	MCD	10/23/2013
SCALE	AS NOTED	
DRAWING NO.	4B84E204_	SHEET FA
PROJECT NO.	000000	2 OF 2