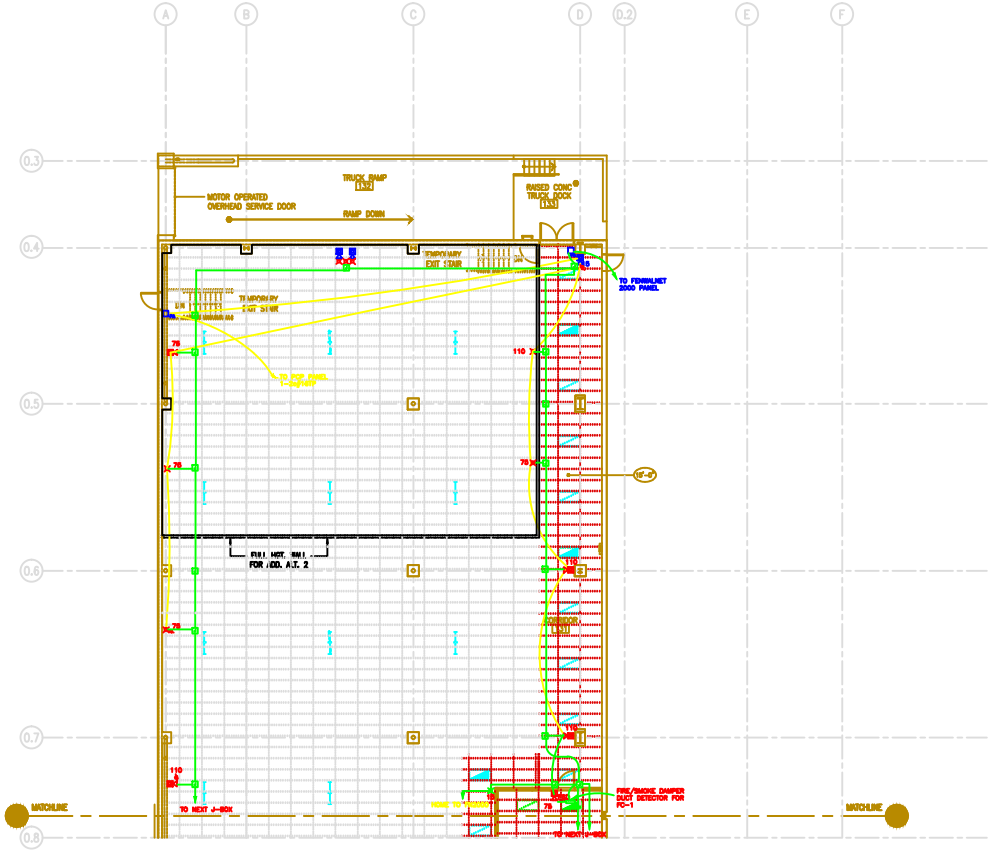

NOTE:

1. ALL DEVICES ARE NEW.

2. THE AREA SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3 FEET OF WING SUPPLY AIR DIFFUSERS.

LEGEND:

- FIRE ALARM CONTROL PANEL
- DIGITAL TRANSMITTER
- REMOTE SIGNAL CONTROL PANEL
- FIRE ALARM TERMINAL CABINET
- PREACTION CONTROL PANEL
- IONIZATION SMOKE SENSOR,
- THERMAL DETECTOR
- DUCT DETECTOR
- LIQUID CRYSTAL DISPLAY ANNUNCIATOR
- ADDRESSABLE CONTROL MODULE
- ADDRESSABLE MONITOR MODULE
- MANUAL PULL STATION
- MANUAL PULL STATION, PREACTION SYSTEM
- ALARM STROBE, # = CANDELA RATING
- ALARM HORN/STROBE, # = CANDELA RATING
- ELECTROMAGNETIC DOOR HOLDER, 120 VAC
- TAMPER SWITCH (BY OTHERS)
- WATERFLOW SWITCH (BY OTHERS)
- SPRINKLER RISER (EXISTING)
- JUNCTION BOX (BY OTHERS)
- WP WEATHERPROOF
- FSD FIRE/SMOKE DAMPER DUCT DETECTOR

VOLTAGE DROP CALCULATIONS – (WORST CASE)

FCP PANEL: CIRCUIT #2

1 BRANCH – 0.039 AMPS DRAW PER SIGN SYNC MODULE
1 BRANCH – 0.093 AMPS DRAW PER 15 CANDELA STROBE
2 BRANCHES – 0.133 AMPS DRAW PER 75 CANDELA STROBES
1 BRANCH – 0.101 AMPS DRAW PER 110 CANDELA STROBE
1 BRANCH – 0.097 AMPS DRAW PER 15 CANDELA HORN/STROBE
3 BRANCHES – 0.177 AMPS DRAW PER 75 CANDELA HORN/STROBES
1 BRANCH – 0.202 AMPS DRAW PER 110 CANDELA HORN/STROBE

VOLTAGE DROP = CURRENT X RESISTANCE
#14 GAUGE WIRE = 0.326 OHMS PER 100 FEET OF WIRE

5 FEET OF WIRE TO BRANCH 1
1.339 AMPS x .0043 OHMS = .022 VDC DROP

80 FEET OF WIRE FROM BRANCH 1 TO 2
1.387 AMPS x .163 OHMS = .211 VDC DROP

20 FEET OF WIRE FROM BRANCH 2 TO 3
1.247 AMPS x .0652 OHMS = .081 VDC DROP

60 FEET OF WIRE FROM BRANCH 3 TO 4
1.070 AMPS x .1956 OHMS = .209 VDC DROP

70 FEET OF WIRE FROM BRANCH 4 TO 5
.849 AMPS x .2282 OHMS = .193 VDC DROP

40 FEET OF WIRE FROM BRANCH 5 TO 6
.691 AMPS x .1304 OHMS = .090 VDC DROP

40 FEET OF WIRE FROM BRANCH 4 TO 7
.530 AMPS x .1304 OHMS = .069 VDC DROP

100 FEET OF WIRE FROM BRANCH 7 TO 8
.443 AMPS x .326 OHMS = .144 VDC DROP

80 FEET OF WIRE FROM BRANCH 6 TO 9
.206 AMPS x .163 OHMS = .043 VDC DROP

60 FEET OF WIRE FROM BRANCH 9 TO 10
.133 AMPS x .1956 OHMS = .026 VDC DROP

1.060 VDC DROP (TOTAL)

$\frac{1.060 \text{ VDC}}{24 \text{ V}}$ x 100 = 4.58% VOLTAGE DROP

1 PARTIAL FIRST FLOOR PLAN – SOUTH
SCALE 1/8" = 1'-0"

NORTH

G:\Eng\AutoCAD\Support Files\GREY.tif

2600 MIRA MAR AVENUE
LONG BEACH, CA. 90815
T 562 494 2007
F 562 495 6684

TYPE OF WORK
FIRE ALARM SYSTEM

OWNER
SIMON ELECTRIC
1400 SEGUNDA DRIVE
SANTA CLARA, CALIFORNIA 95050-2042

NO.	DATE	DESCRIPTION	BY
1	4-24-2020	FOR REVIEW	RCA
2	4-28-2020	FOR SUBMITTAL	RCA
3	6-2-2020	REV. PER PLAN CHECK CORRECTIONS	RCA
4	6-23-2020	REV. PER PLAN CHECK COMM. #2	RCA
5	10-19-20	AS BUILT	MR

AS BUILT BY
ELECTRICAL: MARK DIAZ BY
MECHANICAL: MARK DIAZ BY
CHECK-OUT TECHNICIAN: MARK DIAZ BY

PROJECT NAME
LAWRENCE BERKELEY NATIONAL LABORATORY COMPUTING CENTER
415 20th STREET
OAKLAND, CALIFORNIA 94612

PROJ. LOCATION
PARTIAL FIRST FLOOR – SOUTH

PROFESSIONAL STAMP
REGISTERED PROFESSIONAL ENGINEER
EXP. 06/30/2021

PROJECT NUMBER: AL-00024
FILE NAME: AL-00024LBNL
DRAWN BY: RCA
CHECKED BY: MR
SCALE: 1/8" = 1'-0"

DRAWING NUMBER
6111

SHEET NUMBER
FP 4.0

FILE: C0012424
4N943E042

PROJ. NO. FH0113