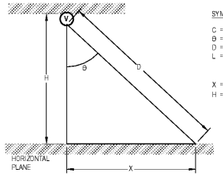


SYMBOL LEGEND:

C = LIGHT OUTPUT (CANDELA) AT UL 1971 ANGLE θ
θ = ANGLE OFF THE AXIS FROM UL 1971
D = DISTANCE FROM SOURCE (FEET)
L = LIGHT INTENSITY (MINIMUM 0.0375 LUMENS/SQUARE FOOT) (NFPA 72, 2013 SECTION 18.4.8.3 AND SECTION 18.5.5 PERFORMANCE-BASED ALTERNATIVE)
X = HORIZONTAL DISTANCE OFF THE AXIS (FEET)
H = VERTICAL DISTANCE OF LIGHT SOURCE FROM FLOOR (FEET)

EQUATIONS:

$$\theta = \tan^{-1}\left(\frac{X}{H}\right)$$

$$X = \sqrt{D^2 - H^2}$$

$$L = \frac{C}{D^2} \geq 0.0375$$

DISTANCE CHART

H (FEET)	X (FEET)					
	15 CD	30 CD	75 CD	95 CD	115 CD	177 CD
8	5.4	10.7	16.7	19.0	20.9	26.5
9	6.0	12.0	18.8	21.4	23.5	29.7
10	6.7	13.3	20.9	23.8	26.1	33.1
11	7.3	14.5	23.1	26.2	28.7	36.4
12	8.0	15.9	24.1	27.1	30.9	39.8
13	8.7	17.3	25.1	28.5	33.4	43.1
14	9.4	18.6	26.1	29.9	35.9	46.4
15	10.0	20.0	27.0	31.3	38.4	49.8
16	10.7	21.3	28.0	32.7	40.9	53.1
17	11.4	22.7	29.0	34.1	43.4	56.5
18	12.0	24.0	30.0	35.5	45.9	59.8
19	12.7	25.3	31.0	36.9	48.4	63.2
20	13.4	26.7	32.0	38.3	50.9	66.5
21	14.0	28.0	33.0	39.7	53.4	69.9
22	14.7	29.3	34.0	41.1	55.9	73.2
23	15.4	30.7	35.0	42.5	58.4	76.6
24	16.0	32.0	36.0	43.9	60.9	79.9
25	16.7	33.3	37.0	45.3	63.4	83.3
26	17.4	34.7	38.0	46.7	65.9	86.6
27	18.0	36.0	39.0	48.1	68.4	90.0
28	18.7	37.3	40.0	49.5	70.9	93.3
29	19.4	38.7	41.0	50.9	73.4	96.7
30	20.0	40.0	42.0	52.3	75.9	100.0

UL TABLE FOR CANDELA OUTPUT

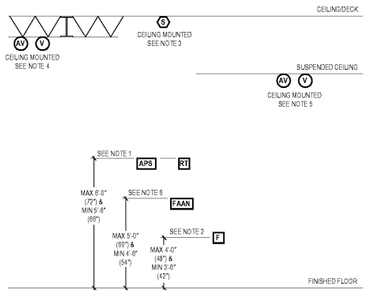
ANGLE	UL %	C (CANDELA)					
		15 CD	30 CD	75 CD	95 CD	115 CD	177 CD
0	100%	15.0	30.0	75.0	95.0	115.0	177.0
5	90%	13.5	27.0	67.5	85.5	103.5	159.3
10	90%	13.5	27.0	67.5	85.5	103.5	159.3
15	90%	13.5	27.0	67.5	85.5	103.5	159.3
20	90%	13.5	27.0	67.5	85.5	103.5	159.3
25	90%	13.5	27.0	67.5	85.5	103.5	159.3
30	75%	11.3	22.5	56.3	71.3	86.3	132.8
35	75%	11.3	22.5	56.3	71.3	86.3	132.8
40	75%	11.3	22.5	56.3	71.3	86.3	132.8
45	75%	11.3	22.5	56.3	71.3	86.3	132.8
50	55%	8.3	16.5	41.3	52.3	63.3	97.4
55	45%	6.8	13.5	33.8	42.8	51.8	79.7
60	40%	6.0	12.0	30.0	38.0	46.0	70.8
65	35%	5.3	10.5	26.3	33.3	40.3	62.0
70	35%	5.3	10.5	26.3	33.3	40.3	62.0
75	30%	4.5	9.0	22.5	28.5	34.5	53.1
80	30%	4.5	9.0	22.5	28.5	34.5	53.1
85	25%	3.8	7.5	18.8	23.8	28.8	44.3
90	25%	3.8	7.5	18.8	23.8	28.8	44.3

NOTES:

1. THE CEILING MOUNTED VISUAL NOTIFICATION APPLIANCES UTILIZED IN THIS DESIGN ARE LOCATED ON THE BOTTOM OF THE BEAMS/JOISTS OR SUSPENDED CEILING IN ACCORDANCE WITH SECTION 7.5.4.3 (PERFORMANCE-BASED ALTERNATIVE) IN THE 2002 EDITION OF NFPA 72.
2. THE VISUAL NOTIFICATION APPLIANCE COVERAGE WAS DETERMINED UTILIZING THE MOST STRINGENT (WORSE CASE) CRITERIA FOR AREAS EXPOSED TO STRUCTURE. THE SMALLEST VISUAL APPLIANCE RADIUS COVERAGE (X) FOR EACH CANDELA RATING WAS SELECTED.
3. THE BOLDED VISUAL APPLIANCE RADIUS COVERAGE ON THE DISTANCE CHART INDICATES THE COVERAGE PATTERN USED FOR EACH NOTIFICATION APPLIANCE CANDELA SETTING.

CEILING MOUNTED FIRE ALARM STROBE DISTANCE CALCULATIONS

NOT TO SCALE

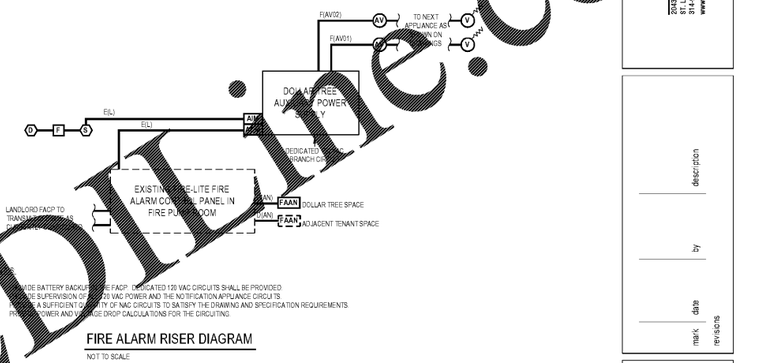


NOTES:

1. COORDINATE EXACT MOUNTING HEIGHT OF AUXILIARY POWER SUPPLY, REMOTE TEST STATIONS WITH THE GENERAL CONTRACTOR, ELECTRICAL CONTRACTOR AND AHJ PRIOR TO INSTALLATION.
2. MEASURED TO THE OPERABLE PART OF THE PULL STATION.
3. WHERE INDICATED ON THE DRAWINGS - LOCATE CEILING MOUNTED SMOKE DETECTOR FLUSH WITH THE CEILING/DECK, AND AS INDICATED IN NFPA 72.
4. WHERE INDICATED ON THE DRAWINGS - LOCATE CEILING MOUNTED NOTIFICATION APPLIANCES ON BOTTOM OF BEAMS OR JOISTS, WITH CLEAR LINE OF SITE IN ALL DIRECTIONS; AND AS INDICATED IN NFPA 72.
5. WHERE INDICATED ON THE DRAWINGS - LOCATE CEILING MOUNTED NOTIFICATION APPLIANCES FLUSH WITH THE SUSPENDED CEILING, ALIGNED WITH LIGHTING, SPRINKLERS, AND OTHER ARCHITECTURAL FIXTURES; WITH CLEAR LINE OF SITE IN ALL DIRECTIONS.
6. COORDINATE EXACT MOUNTING HEIGHT OF ANNUNCIATOR AT THE FRONT ENTRANCE WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.

TYPICAL MOUNTING HEIGHT DETAIL

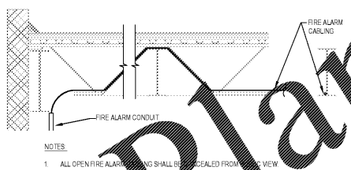
NOT TO SCALE



1. PROVIDE BATTERY BACKUP FOR THE FACP, DEDICATED 120 VAC CIRCUITS SHALL BE PROVIDED.
2. PROVIDE SUPERVISION OF THE 120 VAC POWER AND THE NOTIFICATION APPLIANCE CIRCUITS.
3. PROVIDE A SUFFICIENT QUANTITY OF NAC CIRCUITS TO SATISFY THE DRAWING AND SPECIFICATION REQUIREMENTS. PROVIDE POWER AND VOLTAGE DROP CALCULATIONS FOR THE CIRCUITING.

FIRE ALARM RISER DIAGRAM

NOT TO SCALE

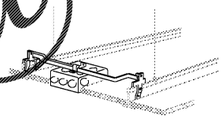


NOTES:

1. ALL OPEN FIRE ALARM CABLING SHALL BE CONCEALED FROM PUBLIC VIEW.

OPEN FIRE ALARM CABLING DETAIL

NOT TO SCALE

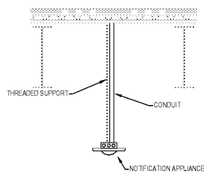


NOTES:

1. DEVICES AND APPLIANCES SHALL NOT BE SUPPORTED BY CEILING TILES.
2. DEVICES AND APPLIANCES MUST BE ATTACHED TO A MANUFACTURE APPROVED BACKBOX SUPPORTED BY THE CEILING GRID UTILIZING AN APPROPRIATE SUPPORT BAR.
3. THE CEILING MOUNTED DEVICES AND APPLIANCES SHALL BE INSTALLED ALIGNED AESTHETICALLY WITH THE CEILING LIGHTING, SPRINKLERS, AND OTHER FIXTURES AS SHOWN ON FLOOR PLANS.
4. DETECTORS SHALL BE LOCATED MORE THAN THREE (3) FEET FROM AIR SUPPLY DIFFUSERS OR RETURN AIR OPENINGS AS INDICATED IN NFPA 72.

JUNCTION BOX MOUNTING DETAIL

NOT TO SCALE



PENDENT MOUNTED NOTIFICATION APPLIANCE DETAIL

NOT TO SCALE

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CODE CONSULTANTS, INC.
2043 WOODLAND PARKWAY, SUITE 200
ST. LOUIS, MISSOURI 63146-4128
314.991.2633
www.codeconsultants.com

mark	date	description	by

date	12/21/2018
project	1825.16
designed	JJS
drawn	JJS
checked	PFK

RRMM ARCHITECTS, PC
Robert S Berz, Jr, Architect
Duane M Harver, Architect
1317 Executive Blvd, Suite 200
Chesapeake, VA 23320
(757)622-2029 / fax (757)622-6883

FIRE PROTECTION ENGINEER OF RECORD:
JACOB P. HEEKE, PE
LICENSE NO. PE0400892
CODE CONSULTANTS, INC.
2043 WOODLAND PKWY, SUITE 200
ST. LOUIS, MO 63146-4128
PHONE: 314-991-2633
CORPORATE CERTIFICATE OF AUTHORITY NO. PE1000869

Jacob P. Heeke — No. PE0400892 — Professional Engineer — 2019-12-20

project: DOLLAR TREE
FORMER HARVEY'S
FORT VALLEY, GEORGIA
drawing: FIRE ALARM DETAILS

sheet: FA3

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