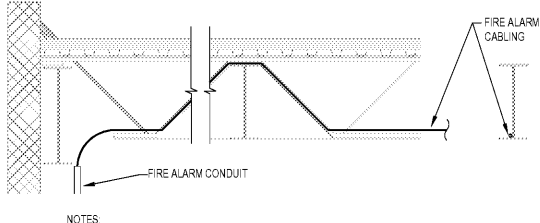


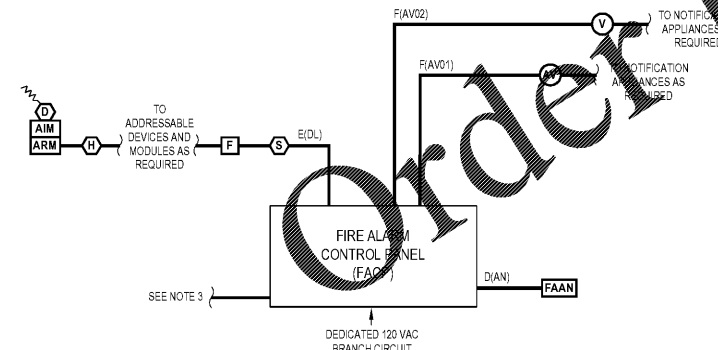
- NOTES:
- COORDINATE EXACT MOUNTING HEIGHT OF CONTROL PANELS WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION
 - COORDINATE EXACT MOUNTING HEIGHT OF ANNUNCIATOR AT THE FRONT ENTRANCE WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION
 - COORDINATE EXACT MOUNTING HEIGHT OF MANUAL PULL STATION WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION. MEASURED TO THE OPERABLE PART OF THE PULL STATION.
 - WHERE REQUIRED - LOCATE CEILING MOUNTED SMOKE AND/OR HEAT DETECTORS ON THE BOTTOM OF DECK (NOT ON BOTTOM OF STRUCTURAL MEMBERS), AND AS INDICATED IN NFPA 72. THE SMOKE AND/OR HEAT DETECTORS AND FIRE ALARM CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
 - MOUNT THE REMOTE TEST STATION / ANNUNCIATORS ON AN ADJACENT COLUMN OR WALL AND AT AN ACCESSIBLE LOCATION THAT DOES NOT CONFLICT WITH STORE FIXTURES. COORDINATE EXACT MOUNTING LOCATION AND HEIGHT OF THE REMOTE TEST STATIONS / ANNUNCIATOR WITH THE OWNER'S REPRESENTATIVE, ELECTRICAL CONTRACTOR, AND AHJ PRIOR TO INSTALLATION.
 - COORDINATE EXACT MOUNTING LOCATION AND HEIGHT OF THE DOCUMENTATION CABINET WITH THE OWNER'S REPRESENTATIVE AND LOCAL AHJ PRIOR TO INSTALLATION.
 - WHERE REQUIRED - LOCATE CEILING MOUNTED HEAT DETECTORS FLUSH WITH THE SUSPENDED CEILING, AND AS INDICATED IN NFPA 72.
 - WHERE REQUIRED - THE CEILING MOUNTED NOTIFICATION APPLIANCES SHALL BE INSTALLED ON THE BOTTOM OF JOIST / DECK IN ACCORDANCE WITH NFPA 72. THE CEILING MOUNTED NOTIFICATION APPLIANCES AND FIRE ALARM CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.
 - WHERE REQUIRED - 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 AND AS INDICATED IN NFPA 72.
 - WHERE REQUIRED - LOCATE THE SURFACED MOUNTED NOTIFICATION APPLIANCES ALONG THE INTERIOR WALL IN THE SERVICE BAY AREA, AND AS INDICATED IN NFPA 72. MEASURED TO THE BOTTOM OF THE LENS.

1 TYPICAL FIRE ALARM MOUNTING HEIGHT DETAIL
 1/3 NOT TO SCALE



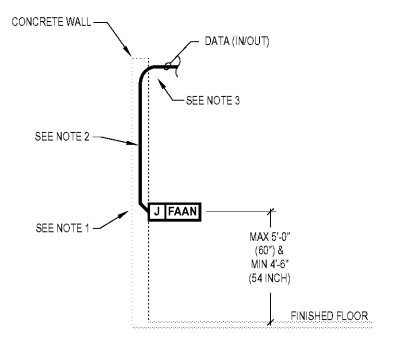
- NOTES:
- ALL OPEN FIRE ALARM CABLING SHALL BE CONCEALED FROM PUBLIC VIEW.
 NOT TO SCALE.

5 OPEN FIRE ALARM CABLING DETAIL
 1/3 NOT TO SCALE



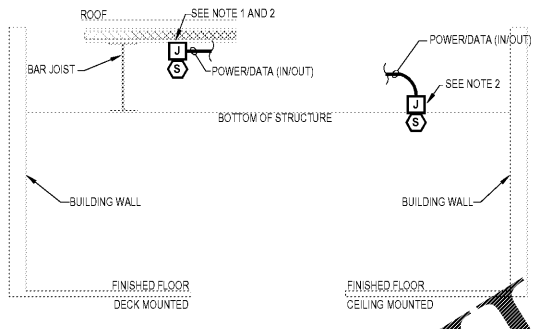
- NOTES:
- PROVIDE DEDICATED 120 VAC CIRCUITS, AND BATTERY BACKUP IN THE FACP.
 - PROVIDE SYNCHRONIZATION OF ALL REQUIRED VISUAL NOTIFICATION APPLIANCES AND CIRCUITS THROUGHOUT THE STORE.
 - PROVIDE TWO (2) MEANS OF SIGNAL TRANSMISSION TO THE OFF-SITE MONITORING FACILITY. PROVIDE A DEDICATED PHONE LINE FOR THE PRIMARY MEANS OF TRANSMISSION. THE SECONDARY MEANS SHALL UTILIZE A WIP/SIP CONNECTION TO OWNER'S NETWORK.
 - PROVIDE ALL REQUIRED CIRCUITS, MODULES, AND CONNECTIONS TO CONTROL AUDIBLE AND VISUAL NOTIFICATION APPLIANCES.
 - PROVIDE SUPERVISION OF ALL 120 VAC POWER AND ALL NOTIFICATION APPLIANCE CIRCUITS.

6 TYPICAL FIRE ALARM SYSTEM RISER DIAGRAM
 1/3 NOT TO SCALE



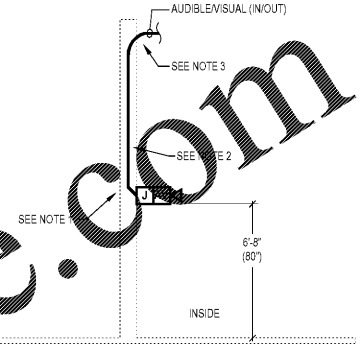
- NOTES:
- PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS BETWEEN 54 INCHES AND 60 INCHES ABOVE FINISHED FLOOR.
 - PROVIDE FIRE ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
 - PROVIDE FIRE ALARM CABLING SHALL BE STUB-UP INTO CEILING JOIST AREA 6 INCHES ABOVE CEILING OR BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.

2 FIRE ALARM ANNUNCIATOR DETAIL
 1/3 NOT TO SCALE



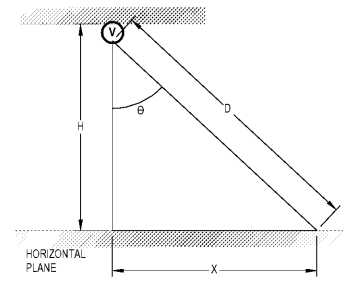
- NOTES:
- PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS ON BOTTOM OF DECK, AWAY FROM OBSTRUCTIONS, AND AS INDICATED ON FLOOR PLANS.
 - THE SMOKE DETECTOR AND FIRE ALARM CABLING SHALL BE INSTALLED AND SUPPORTED A MINIMUM 1-1/2 INCHES FROM THE LOWEST SURFACE OF THE ROOF DECKING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

3 SMOKE DETECTOR DETAIL
 1/3 NOT TO SCALE



- NOTES:
- PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS AT 80 INCHES ABOVE FINISHED FLOOR.
 - PROVIDE FIRE ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
 - PROVIDE FIRE ALARM CABLING SHALL BE STUB-UP INTO CEILING JOIST AREA 6 INCHES ABOVE CEILING OR BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.

4 INTERIOR WALL MOUNTED NOTIFICATION DETAIL
 1/3 NOT TO SCALE



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, 2016 SECTION 18.4.8.3 AND SECTION 18.5.5.6)
 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

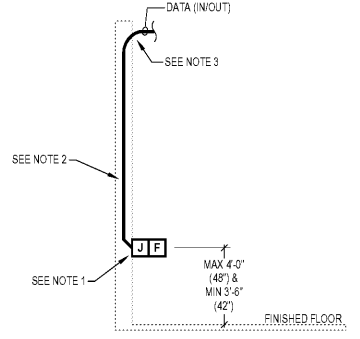
H (FEET)	X (FEET)					
	15 CD	30 CD	75 CD	96 CD	115 CD	177 CD
8	8.7	14.7	29.2	38.5	43.9	63.9
9	9.2	15.9	31.8	41.8	47.8	68.8
10	9.7	17.2	34.6	45.0	51.2	74.2
11	10.3	18.5	37.7	48.5	55.0	80.0
12	11.0	20.0	41.2	52.5	59.0	86.0
13	11.7	21.6	45.2	57.0	63.5	92.0
14	12.5	23.4	49.6	62.0	68.5	99.0
15	13.3	25.4	54.5	67.5	74.0	106.0
16	14.2	27.6	60.0	73.5	80.0	114.0
18	16.6	32.0	72.0	87.0	96.0	132.0
20	19.5	37.0	87.0	102.0	112.0	152.0
25	24.0	46.0	108.0	127.0	140.0	192.0
30	28.0	56.0	135.0	156.0	172.0	232.0
35	32.0	66.0	168.0	192.0	210.0	272.0
40	36.0	76.0	207.0	234.0	252.0	320.0
45	40.0	86.0	252.0	282.0	300.0	368.0
50	44.0	96.0	303.0	336.0	352.0	420.0
55	48.0	106.0	360.0	396.0	408.0	472.0
60	52.0	116.0	423.0	462.0	468.0	528.0
65	56.0	126.0	492.0	534.0	528.0	588.0
70	60.0	136.0	567.0	612.0	590.0	648.0
75	64.0	146.0	648.0	696.0	652.0	712.0
80	68.0	156.0	735.0	786.0	718.0	778.0
85	72.0	166.0	828.0	882.0	788.0	848.0
90	76.0	176.0	927.0	984.0	860.0	918.0

UL TABLE FOR CANDELA OUTPUT

ANGLE	UL %	C (CANDELA)						77.0
		15 CD	30 CD	75 CD	96 CD	115 CD	177 CD	
0	100%	15.0	30.0	75.0	96.0	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	65%	8.3	16.5	41.3	52.3	63.3	97.4	
55	45%	6.8	13.5	33.3	42.3	51.3	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	

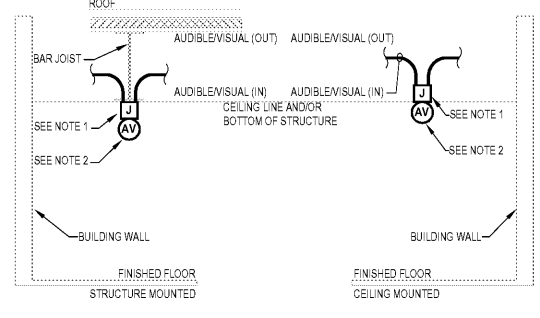
- NOTES:
- THE VISUAL NOTIFICATION APPLIANCE COVERAGE WAS DETERMINED UTILIZING THE MOST STRINGENT (WORSE CASE) CRITERIA FOR AREAS EXPOSED TO STRUCTURE. THE SMALLEST VISUAL APPLIANCE RADIUS COVERAGE (X) FOR EACH CANDELA RATING WAS SELECTED.
 - THE BOLDIED VISUAL APPLIANCE RADIUS COVERAGE ON THE DISTANCE CHART INDICATES THE COVERAGE PATTERN USED FOR EACH NOTIFICATION APPLIANCE CANDELA SETTINGS.

9 CEILING MOUNTED FIRE ALARM STROBE DISTANCE CALCULATION
 1/3 NOT TO SCALE



- NOTES:
- PROVIDE AN APPROVED BACKBOX PER THE MANUFACTURER SPECIFICATIONS BETWEEN 42 INCHES AND 48 INCHES ABOVE FINISHED FLOOR.
 - PROVIDE FIRE ALARM CABLING WITHIN 1/2 INCH CONDUIT INSIDE WALL (EXPOSED CONDUIT NOT ACCEPTABLE).
 - PROVIDE FIRE ALARM CONDUIT SHALL BE STUB-UP INTO CEILING JOIST AREA 6 INCHES ABOVE CEILING OR BOTTOM OF JOISTS AND TURN OUT WITH INSULATED BUSHING.

7 MANUAL PULL STATION DETAIL
 1/3 NOT TO SCALE



- NOTES:
- PROVIDE AN APPROVED BACK BOX PER THE MANUFACTURER SPECIFICATIONS ON BOTTOM OF STRUCTURE, AWAY FROM OBSTRUCTIONS, AND AS INDICATED ON FLOOR PLANS.
 - THE CEILING MOUNTED NOTIFICATION APPLIANCES SHALL BE INSTALLED ALIGNED AESTHETICALLY WITH THE CEILING LIGHTING, SPRINKLERS, AND OTHER FIXTURES. COORDINATE INSTALLATION OF ALL CEILING MOUNTED FIRE ALARM NOTIFICATION APPLIANCES WITH THE ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION.

8 CEILING MOUNTED NOTIFICATION APPLIANCE DETAIL
 1/3 NOT TO SCALE

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 314-991-2633
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Firestone COMPLETE AUTO CARE

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NEW FCAC STORE
 2019 - JANUARY - SMALL ER
 S. AIRLINE HWY NEAR E. CORVIEW ST
 GONZALES, LA

BID SET
 1/2019
 DAVID J. BURMAN, PE
 LICENSE NO. 55842
 PROFESSIONAL ENGINEER
 IN
 MECHANICAL ENGINEERING
 07/26/19

FIRE PROTECTION ENGINEER OF RECORD:
 DAVID J. BURMAN, PE
 LICENSE NO. 55842
 CODE CONSULTANTS, INC.
 2043 WOODLAND PKWY, SUITE 300
 ST. LOUIS, MO 63146-4235
 PHONE: 314-991-2633
 CORPORATE CERTIFICATE OF AUTHORITY
 NO. EF2821

ISSUE BLOCK

NO.	DATE	DESCRIPTION

PROPERTY NO.: 160013
 6 DIGIT NO.: 905226
 4 DIGIT NO.: 014W
 AOR PROJECT NUMBER: 1955827
 TO PERMIT: DATE: 7-30-2019
 TO BID: DATE: ###-###-##

SHEET TITLE:
FIRE ALARM DETAILS
 SHEET NUMBER:
FA3

Jul 26, 2019 3:26pm USER: pbrames
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