

## BUILDING CLASSIFICATIONS AND CODES

OCCUPANCY GROUP: B  
USE: BUSINESS  
CONSTRUCTION TYPE: IIB  
STORIES: BASEMENT + 4 FLOORS  
SPRINKLERED: FULLY SPRINKLED  
APPLICABLE CODES: 2015 IBC  
2015 IFC  
2015 IMC



## SYSTEM TYPE AND MONITORING

SYSTEM CLASSIFICATION: (NFPA 72, CHAPTER 26), REMOTE STATION  
SYSTEM TYPE: ADDRESSABLE  
WIRING CLASSIFICATION: NAC – CLASS B  
SLC – CLASS B  
COMMUNICATION RISER – CLASS B  
NOTIFICATION TYPE: TEMPORAL PATTERN  
MONITORING: THIS SYSTEM IS AND WILL CONTINUE TO BE  
MONITORED BY A REMOTE SUPERVISING  
STATION, PER NFPA 72 CHAPTER 26, SECTION 3.

## SCOPE OF WORK

PROVIDE THE FOLLOWING FIRE ALARM SYSTEM MODIFICATIONS TO  
ACCOMMODATE THE PROPOSED CONSTRUCTION FOR THE SPEC SUITE 250  
PROJECT LOCATED AT 1411 SOUTH POTOMAC STREET:

## PARTS

1. PROVIDE AND INSTALL NINE (9) NEW STROBES
2. PROVIDE AND INSTALL THREE (3) NEW HORN/STROBES

## INDEX

|       |  |
|-------|--|
| FA-00 | COVER PAGE<br>SCOPE OF WORK<br>GENERAL INFORMATION<br>BUILDING REQUIREMENTS AND CODES                                      |
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# 1411 S POTOMAC STREET

## FIRE ALARM SYSTEM SHOP DRAWINGS FOR:

### PROJECT:

SPEC SUITE 250  
1411 S POTOMAC ST  
AURORA, CO 80012

### FIRE ALARM CONTRACTOR

FIRE ALARM SERVICES, INC.  
4800 W. 60TH AVENUE  
ARVADA, CO 80003  
PH:(303)466-8800  
FAX:(303)466-8820  
CONTACT:SHANNON SMITH

### FIRE ALARM DESIGNER:

FIRE ALARM SERVICES, INC.  
4800 W. 60TH AVENUE  
ARVADA, CO 80003  
PH:(303)466-8800  
FAX:(303)466-8820  
BRITAINY COWDEN  
BRITAINYC@FIREALARMSERVICES.COM



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4800 W. 60th Avenue  
Arvada, CO 80003

(303)466-8800 (Phone)  
(303)466-8820 (Fax)  
contactus@fasonline.cc (E-Mail)  
www.fasonline.cc

### OWNER/GC:

VERTEX CONSTRUCTION  
2420 WEST 26TH AVE, SUITE 100  
DENVER, CO 80211  
PH:(303) 623-9116  
FAX:(303) 623-9118

### ARCHITECT

TPS TENANT PLANING SERVICES  
1660 LINCOLN ST.  
DENVER, CO 80110  
PH:(303)861-4800  
FAX:(303)861-1621

Provide a full size set of legible  
approved construction documents  
**PRINTED IN COLOR**  
for review by the Field Inspector.

City of Aurora  
Adopted Codes & Standards for this project:  
2015-ICC - 2020-NEC  
2013 NFPA 13 - 2013 NFPA 72  
Amendments to include Chapters 22 & 66

Items determined to be in violation of code  
during inspection are required to be  
corrected; this review does not grant  
approval of code violations.



City of Aurora Building Division  
Counter Permit Intake by: TAC  
Date: Nov 06, 2020  
RSN: 1499222  
Permit: 2020-1889747-CT  
2015 INTERNATIONAL CODES & 2008 NEC Code of amendments not included

Raymond P. Breeland  
NICET Certification #111006  
Fire Alarm Systems Level III  
Certification Expires 04/01/22

10/22/2020

RPB



4800 W. 60TH AVENUE phone: 303-466-8800  
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www.fasonline.cc email: contactus@fasonline.cc

REVISIONS  
rev 1 - codes

NO. DATE  
11/3/20

DRAWN BY:  
B. COWDEN  
DATE:  
10/22/2020

APPR. BY:  
DATE:

FIRE ALARM SYSTEM TENANT FINISH FOR:  
SPEC SUITE 250

BUILDING  
& NAME &  
ADDRESS  
1411 S POTOMAC STREET  
AURORA, CO 80012

PROJECT  
NUMBER  
2014359

FIRE ALARM & DETECTION SYSTEM  
DRAWING TITLE:

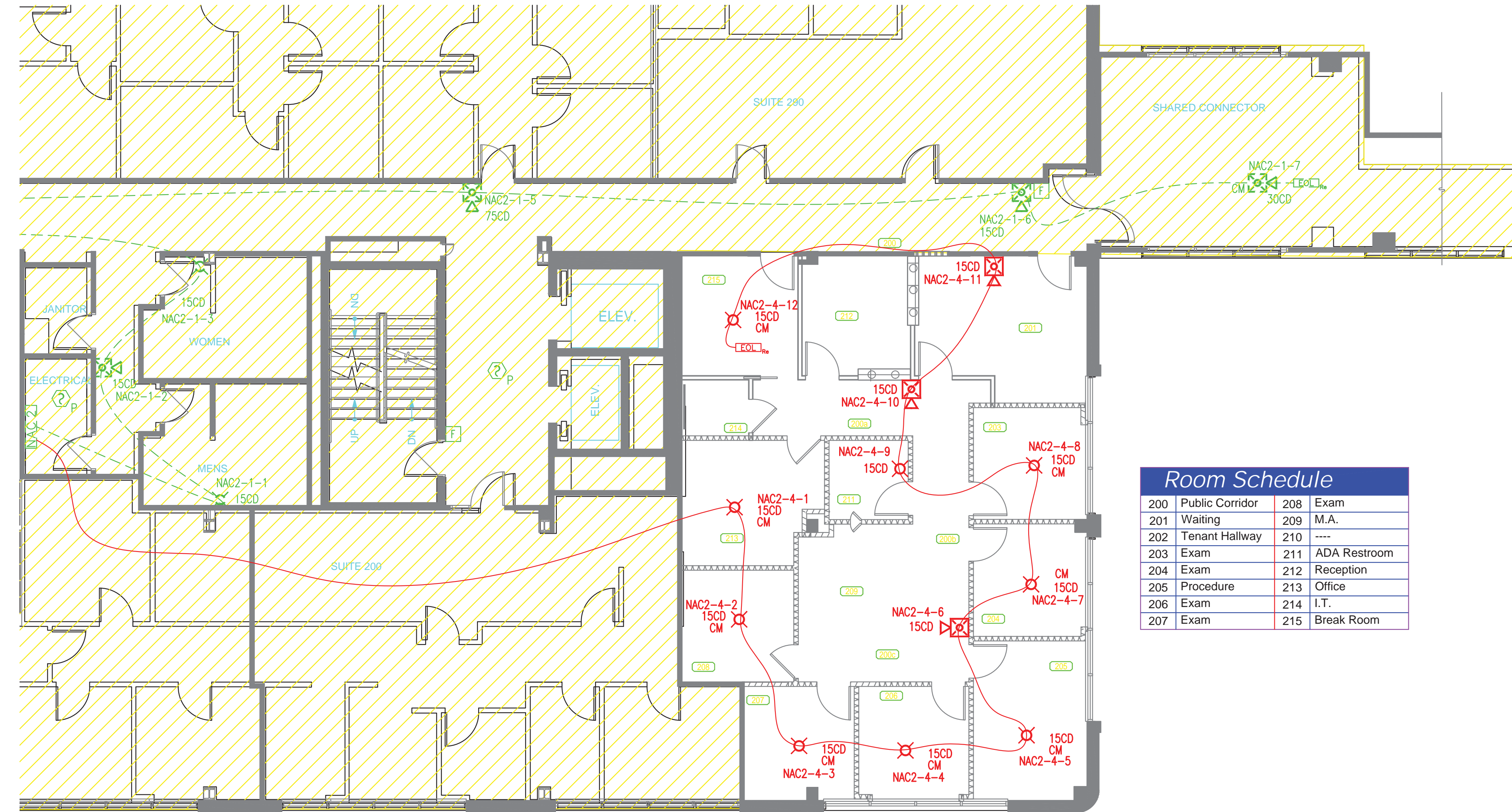
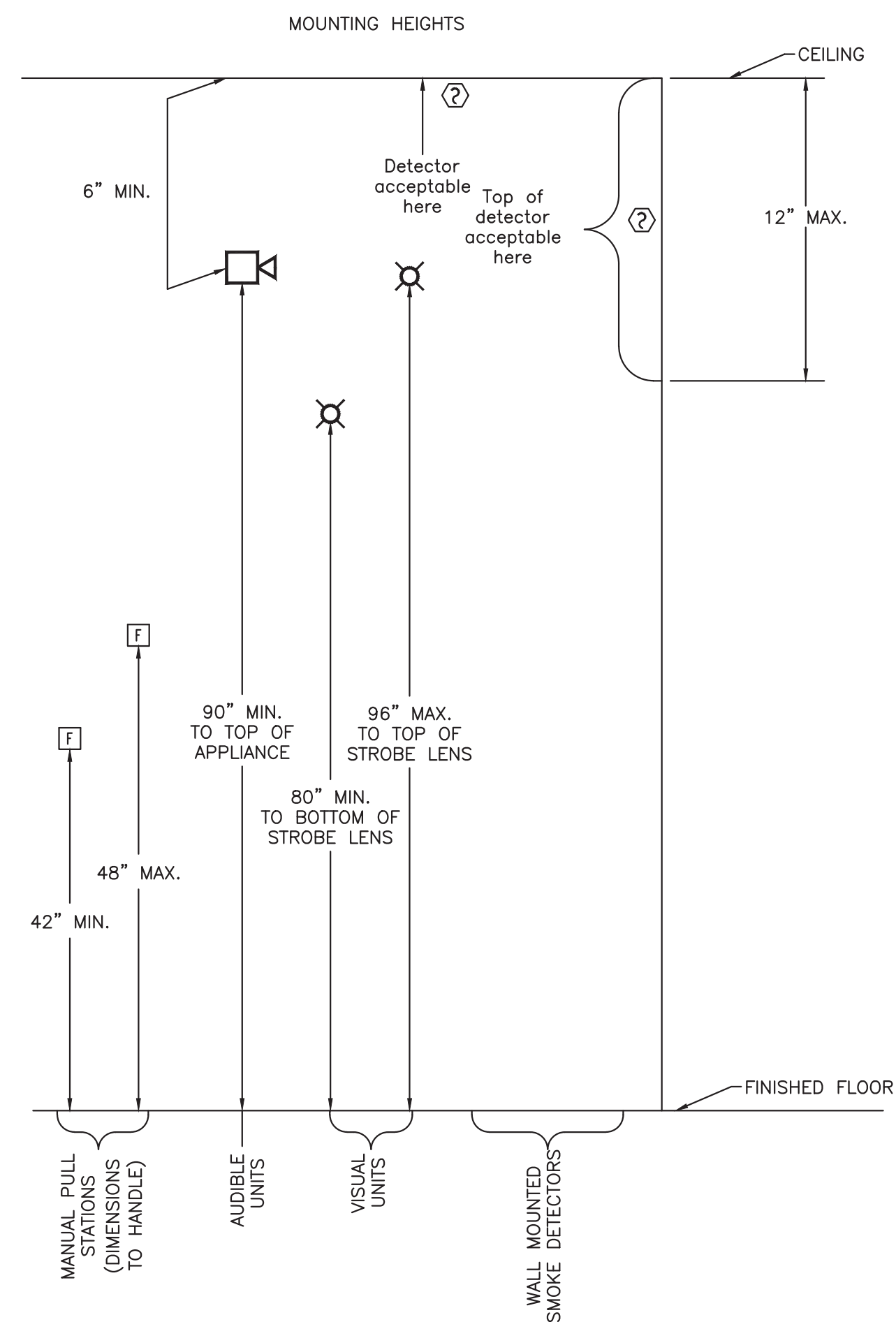
SUITE 250  
COVER PAGE

SCALE: N/A

PROJECT  
SHEET  
TITLE

FA-00

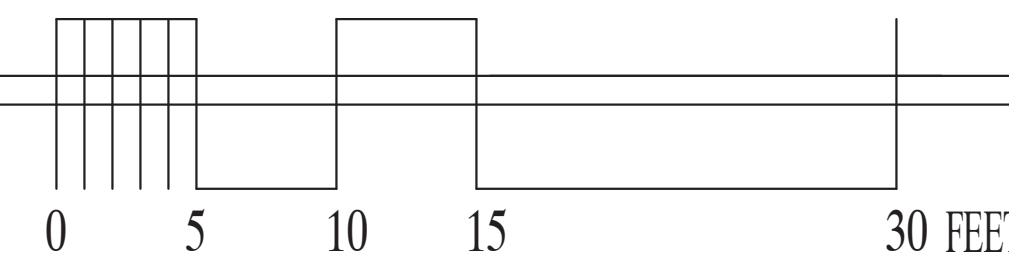






































|     |                 |     |              |
|-----|-----------------|-----|--------------|
| 200 | Public Corridor | 208 | Exam         |
| 201 | Waiting         | 209 | M.A.         |
| 202 | Tenant Hallway  | 210 | ---          |
| 203 | Exam            | 211 | ADA Restroom |
| 204 | Exam            | 212 | Reception    |
| 205 | Procedure       | 213 | Office       |
| 206 | Exam            | 214 | I.T.         |
| 207 | Exam            | 215 | Break Room   |

## SUITE 250 FIRE ALARM PLAN

SCALE:  $1/8" = 1'-0"$



## FIRE ALARM SYMBOLS LEGEND

| EXISTING  | DESCRIPTION                                     | PROPOSED  |
|---|---|---|
|  | STROBE – Wall Mount or CM = Ceiling Mount       |  |
|  | SMOKE DETECTOR – x = photo, ion                 |  |
|  | Speaker/strobe – Wall Mount or Ceiling Mount    |  |
|  | Speaker only = Wall Mount or CM = Ceiling Mount |  |
|  | Horn/strobe – Wall Mount or Ceiling Mount       |  |
|  | Horn only = Wall Mount or CM = Ceiling Mount    |  |
|  | REMOTE LED                                      |  |
|  | END OF LINE RESISTOR                            |  |
|  | BOOSTER PANEL                                   |  |
|  | PULL STATION                                    |  |
|  | FIREMAN'S PHONE JACK                            |  |
|  | HEAT DETECTOR – x =135, 200, ROR                |  |
|  | FLOW SWITCH                                     |  |
|  | TAMPER SWITCH                                   |  |
|  | DUCT DETECTOR – x = photo, ion                  |  |
|  | MONITOR MODULE                                  |  |
|  | MONITOR MODULE                                  |  |

NOTIFICATION APPLIANCE CIRCUIT NUMBER \_\_\_\_\_

NOTIFICATION APPLIANCE PANEL NUMBER \_\_\_\_\_

**NAC1-2-3**

\_\_\_\_\_ DEVICE NUMBER

**POWER EXPANDER NUMBERING**

|  |                  |                  |  |
|--|------------------|------------------|--|
|  | SPEAKER LINE "A" | SPEAKER LINE "B" |  |
|--|------------------|------------------|--|

GENERAL NOTES:

1. ROUGH-IN INSPECTION IS REQUIRED FOR ALL WORK ON FIRE ALARM SYSTEMS. PRIOR TO INSPECTION, DO NOT INSTALL:- DEVICES (DETECTORS, PULL STATIONS, STROBES, ETC.) - CEILING TILES OR WALLBOARD WHICH CONCEAL CABLES OR OTHER WIRING METHODS.- COVERS ON CABINETS, JUNCTION OR SPICE BOXES, DEVICE BACKBOXES, ETC.
2. SYSTEM WIRING SHALL COMPLY WITH NATIONAL ELECTRICAL CODE. ARTICLE 760 (NEC) AND 2013 NFPA 72.
3. THE CEILING IN ALL AREAS IS A TYPICAL 9' A.F.F. DROPPED CEILING WITH NO SLOPES.
4. THERE ARE NO PENETRATIONS THROUGH FIRE RATED WALL IN THIS PROJECT



Raymond P. Breeland  
NICET Certification #111006  
Fire Alarm Systems Level III  
Certification Expires 04/01/22

10/22/2020

R. P. M.

|                        |     |         |               |
|------------------------|-----|---------|---------------|
| DRAWN BY:<br>B. COMDEN | NO. | DATE    | REVISIONS     |
|                        | 1   | 11/3/20 |               |
| DATE:<br>10/22/2020    |     |         | rev 1 - codes |
| APPR. BY:              |     |         |               |
| DATE:                  |     |         |               |

|                         |  |
|-------------------------|--|
| PROJECT TITLE           | FIRE ALARM SYSTEM TENANT FINISH FOR:<br>SPEC SUITE 250 |
| BUILDING NAME & ADDRESS | 1411 S POTOMAC STREET<br>AURORA, CO 80012              |
| PROJECT NUMBER          | 2014359  |

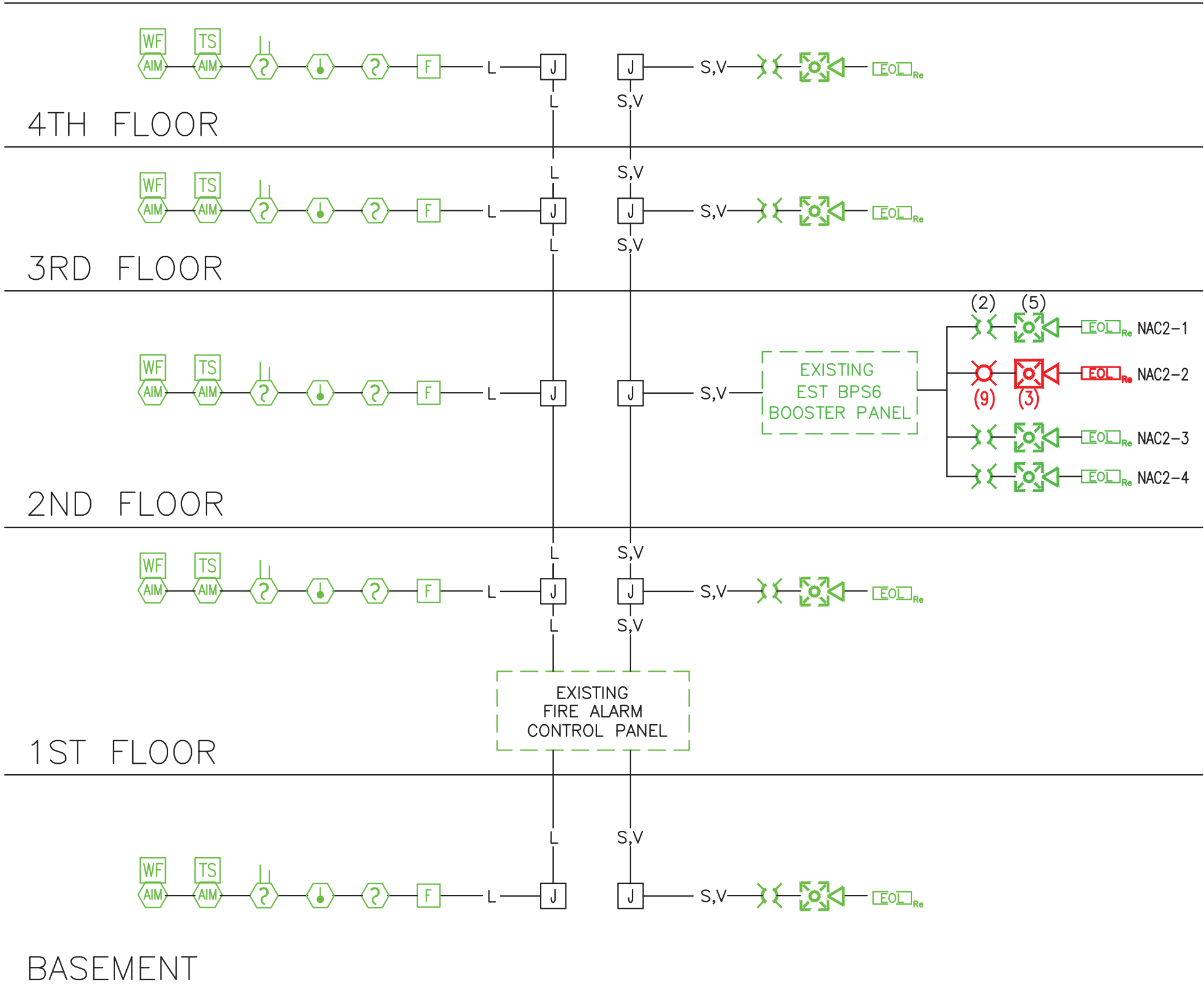
|  |
|--|
| FIRE ALARM & DETECTION SYSTEM                      |
| DRAWING TITLE:<br><br>SUITE 250<br>FIRE ALARM PLAN |
| SCALE: AS SHOWN                                    |

PROJECT  
SHEET  
TITLE  
FA-01



4800 W. 60TH AVENUE  
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# ONE-LINE RISER DIAGRAM

INCREMENTAL VOLTAGE DROP CALCULATIONS FOR AUDIBLE/ VISUAL CIRCUITS  
MINIMUM UL RATED VOLTAGE: 16 VOLTS  
Current shown in calculations is RMS current at 16 volts.

|             |          |      |
|-------------|----------|------|
| Resistance: | 12 Guage | 2.01 |
|             | 14 Guage | 3.19 |
|             | 16 Guage | 5.08 |

|                                 |                   |                         |                          |                      |                   |              |                       |
|---------------------------------|-------------------|-------------------------|--------------------------|----------------------|-------------------|--------------|-----------------------|
| Circuit Number: NAC2-4          |                   |                         |                          |                      |                   |              |                       |
| Location: Floor 2 Booster Panel |                   |                         |                          | Input Voltage = 19.7 |                   |              |                       |
| Notification Circuit            | Current (in Amps) | Wire Distance (in Feet) | Total Distance (in feet) | Wire Size (AWG)      | Resistance (Ohms) | Voltage Drop | From Baseline Voltage |
| CM Strobe 15CD                  | 0.0350            | 45                      | 45                       | 14                   | 0.2871            | 0.1306       | 19.5694               |
| CM Strobe 15CD                  | 0.0350            | 20                      | 65                       | 14                   | 0.1276            | 0.0536       | 19.5158               |
| CM Strobe 15CD                  | 0.0350            | 26                      | 91                       | 14                   | 0.1659            | 0.0639       | 19.4519               |
| CM Strobe 15CD                  | 0.0350            | 19                      | 110                      | 14                   | 0.1212            | 0.0424       | 19.4095               |
| CM Strobe 15CD                  | 0.0350            | 22                      | 132                      | 14                   | 0.1404            | 0.0442       | 19.3653               |
| Horn Strobe 15CD                | 0.0500            | 24                      | 156                      | 14                   | 0.1531            | 0.0429       | 19.3224               |
| CM Strobe 15CD                  | 0.0350            | 19                      | 175                      | 14                   | 0.1212            | 0.0279       | 19.2945               |
| CM Strobe 15CD                  | 0.0350            | 20                      | 195                      | 14                   | 0.1276            | 0.0249       | 19.2696               |
| Strobe 15CD                     | 0.0240            | 23                      | 218                      | 14                   | 0.1467            | 0.0235       | 19.2462               |
| Horn Strobe 15CD                | 0.0500            | 19                      | 237                      | 14                   | 0.1212            | 0.0165       | 19.2297               |
| Horn Strobe 15CD                | 0.0500            | 28                      | 265                      | 14                   | 0.1786            | 0.0154       | 19.2143               |
| CM Strobe 15CD                  | 0.0350            | 38                      | 303                      | 14                   | 0.2424            | 0.0087       | 19.2056               |
| End of Line Resistor            | 0.0010            | 0                       | 303                      | 14                   | 0.0000            | 0.0000       | 19.2056               |
| Totals:                         | 0.455             | 303                     |                          |                      | 1.9331            | 0.4944       | 19.2056               |
| Total Devices:                  | 12                |                         |                          |                      |                   |              |                       |

## BOOSTER CALCULATIONS

FOR: Aurora Medical Center  
1411 S. Potomac Street

HOURS OF SUPERVISION: 24 HOURS  
MINUTES OF ALARM: 5 MINUTES

PANEL: EST BPS6

| ITEM   | QTY | PART NUMBER | DESCRIPTION                | Device Supervisory Current | Device Alarm Current | Total Supervisory Current | Total Alarm Current |
|--------|-----|-------------|----------------------------|----------------------------|----------------------|---------------------------|---------------------|
| 1      | 1   | EXISTING    | Notification Booster Panel | 0.070000                   | 0.190000             | 0.070000                  | 0.190000            |
| TOTAL: |     |             |                            |                            |                      | 0.070000                  | 0.190000            |

PERIPHERAL:

| ITEM   | QTY | PART NUMBER | DESCRIPTION                  | Device Supervisory Current | Device Alarm Current | Total Supervisory Current | Total Alarm Current |
|--------|-----|-------------|------------------------------|----------------------------|----------------------|---------------------------|---------------------|
| 1      | 2   | EXISTING    | 15cd Strobe                  | 0.000000                   | 0.028000             | 0.000000                  | 0.056000            |
| 2      | 1   | EXISTING    | 75cd Strobe                  | 0.000000                   | 0.028000             | 0.000000                  | 0.028000            |
| 3      | 2   | EXISTING    | 15cd Horn/Strobe             | 0.000000                   | 0.040000             | 0.000000                  | 0.080000            |
| 4      | 1   | EXISTING    | 75cd Horn/Strobe             | 0.000000                   | 0.040000             | 0.000000                  | 0.040000            |
| 5      | 1   | EXISTING    | 30cd Ceiling Mt. Horn/Strobe | 0.000000                   | 0.050000             | 0.000000                  | 0.050000            |
| 6      | 1   | G1RF-VM     | 15cd Strobe                  | 0.000000                   | 0.028000             | 0.000000                  | 0.028000            |
| 7      | 3   | G1RF-HDVM   | 15cd Horn/Strobe             | 0.000000                   | 0.040000             | 0.000000                  | 0.120000            |
| 8      | 8   | GCF-VM      | 30cd Ceiling Mt. Strobe      | 0.000000                   | 0.035000             | 0.000000                  | 0.280000            |
| TOTAL: |     |             |                              |                            |                      | 0.000000                  | 0.682000            |

SUPERVISORY:  
PANEL: 0.070000 AMPS  
PERIPHERAL: 0.000000 AMPS  
SUB-TOTAL: 0.070000 AMPS  
X HOURS OF SUPERVISORY: 24.0000 HOURS  
SUB-TOTAL: 1.680000 AMP HOURS

ALARM:  
PANEL: 0.190000 AMPS  
PERIPHERAL: 0.682000 AMPS  
SUB-TOTAL: 0.872000 AMPS  
X MINUTES OF ALARM: 0.08333 HOURS  
SUB-TOTAL: 0.072667 AMP HOURS

TOTALS:  
TOTAL SUPERVISORY: 1.680000 AMP HOURS  
TOTAL ALARM: 0.072667 AMP HOURS  
TOTAL: 1.752667 AMP HOURS  
TOTAL PLUS SAFETY FACTOR(20%): 2.10320 AMP HOURS  
Batteries Supplied - 1 Set of: 7.00000 AMP HOURS

| FIRE ALARM WIRE CODE CHART |   |                                  |             |               |             |             |
|----------------------------|---|----------------------------------|-------------|---------------|-------------|-------------|
| Code                       | Description                               | Wire Type                        | Wire Tag    | Jacket Color  | Color (+)   | Color (-)   |
| AC                         | 120VAC Power Wiring                       | 3#12 AWG Solid (w/ Green Ground) |             |               | Black (hot) | White (neu) |
| A                          | Annunciator Wiring                        | #18 AWG Twisted/Shielded Pair    |             |               | Red         | Black       |
| D                          | Door Holder Wiring                        | 2#14 AWG Solid                   | Door Holder | Red           | Red         | Black       |
| L                          | SLC Wiring (Signaling Line Circuit)       | 2#18 AWG Solid Shielded Pair     | SLC         | Red           | Red         | Black       |
| P                          | 24VDC Power Wiring                        | 2#16 AWG Solid                   | 24 VDC      | Red           | Red         | Black       |
| R                          | Remote Light/Test Wiring                  | 2#18 AWG Solid                   | R           | Red           | Red         | Black       |
| S                          | Notification Appliance (Horns) Wiring     | 2 or 4#14 AWG Solid              |             | Yellow        | Red         | Black       |
| SA                         | Notification Appliance (A Speaker) Wiring | 2#16 AWG Twisted/Shielded Pair   |             | Gray          | Red         | Black       |
| SB                         | Notification Appliance (B Speaker) Wiring | 2#16 AWG Twisted/Shielded Pair   |             | Blue          | Red         | Black       |
| T                          | Telephone Circuit Wiring                  | 2#16 AWG Twisted/Shielded Pair   | Circuit #   | Red           | Red         | Black       |
| V                          | Notification Appliance (Strobe) Wiring    | 2 or 4#14 AWG Solid              |             | Yellow        | Red         | Black       |
| Z                          | IDC Wiring (Initiating Device Circuit)    | 2#18 AWG Solid                   | Zone #      | Red           | Red         | Black       |
| Wire Type Class & Style    |   | SLC - Class B                    |             | NAC - Class B |             |             |

## \*\*1411 S. POTOMAC BUILDING\*\* SEQUENCE OF OPERATIONS

|  | FACP Annunciation |   |   |   | Notification |   |   |   | Fire Safety |   |   |   | Monitoring |   |   |   |
|--|-------------------|---|---|---|--------------|---|---|---|-------------|---|---|---|------------|---|---|---|
|  | A                 | B | C | D | E            | F | G | H | I           | J | K | L | M          | N | O | P |
| 1 Manual Pull Station                                | X                 | X |   |   |              |   | X | X | X           | X |   |   |            |   |   |   |
| 2 Low Temp Heat Sensor - Basement Elev Machine/Pits  | X                 | X |   |   |              |   | X | X | X           | X | X |   |            |   |   |   |
| 3 High Temp Heat Sensor - Basement Elev Machine/Pits | X                 | X |   |   |              |   | X | X | X           | X |   | X |            |   |   |   |
| 4 Smoke Sensor - Basement Elev Lobby                 | X                 | X |   |   |              |   | X | X | X           | X | X |   |            |   |   |   |
| 5 Smoke Sensor - 1st Floor Elev Lobby                | X                 | X |   |   |              |   | X | X | X           | X | X | X |            |   |   |   |
| 6 Smoke Sensor - 2nd Floor Elev Lobby                | X                 | X |   |   |              |   | X | X | X           | X | X |   |            |   |   |   |
| 7 Smoke Sensor - 3rd Floor Elev Lobby                | X                 | X |   |   |              |   | X | X | X           | X | X |   |            |   |   |   |
| 8 Smoke Sensor - 4rd Floor Elev Lobby                | X                 | X |   |   |              |   | X | X | X           | X | X |   |            |   |   |   |
| 9 Smoke Sensor - Top of Elevator Shaft               | X                 | X |   |   |              |   | X | X | X           | X | X | X |            |   |   |   |
| 10 Smoke Sensor - All Other Locations                | X                 | X |   |   |              |   | X | X | X           | X |   |   |            | X |   |   |
| 11 Duct Smoke Sensor                                 |                   |   | X | X |              |   | X |   |             |   |   |   | X          |   |   |   |
| 12 Heat Sensor                                       | X                 | X |   |   |              |   | X | X | X           | X | X |   | X          |   |   |   |
| 13 Sprinkler Waterflow                               | X                 | X |   |   |              |   | X | X | X           | X |   |   | X          |   |   |   |
| 14 Sprinkler Control Valve                           |                   |   | X | X |              |   | X |   |             |   |   |   |            | X |   |   |
| 15 FACP AC Power Failure                             |                   |   |   |   | X            | X | X | X |             |   | X |   |            | X |   |   |
| 16 FACP Low Battery                                  |                   |   |   |   | X            | X | X |   |             |   |   |   |            | X |   |   |
| 17 Open Circuit                                      |                   |   |   |   | X            | X | X |   |             |   |   |   |            | X |   |   |
| 18 Ground Fault                                      |                   |   |   |   | X            | X | X |   |             |   |   |   |            | X |   |   |
| 19 Notification Appliance Circuit Short              |                   |   |   |   | X            | X | X |   |             |   |   |   |            | X |   |   |
| 20 Alarm Signal Silence                              |                   |   |   |   |              |   |   |   |             | X |   |   |            |   |   |   |
|  | A                 | B | C | D | E            | F | G | H | I           | J | K | L | M          | N | O | P |

Raymond P. Breeland  
NICET Certification #111006  
Fire Alarm Systems Level III  
Certification Expires 04/01/22

10/22/2020

RPB

FIRE ALARM SYSTEM TENANT FINISH FOR:  
SPEC SUITE 250

PROJECT TITLE

BUILDING NAME & ADDRESS

PROJECT NUMBER

1411 S POTOMAC STREET  
AURORA, CO 80012

2014359

SCALE: N/A

FIRE ALARM & DETECTION SYSTEM  
DRAWING TITLE:

SUITE 250  
CALCULATIONS

PROJECT SHEET TITLE

FA-02

Fire Alarm Services, Inc.

4800 W. 80TH AVENUE  
ARVADA, CO 80003  
www.fasonline.cc

phone: 303-466-8800  
fax: 303-466-8820  
email: contactus@fasonline.cc





Fire Alarm Services, Inc.  
4800 West 60th Avenue  
Arvada, CO 80003

Permit: 2020-1889747-CT  
RSN: 1499222  
Sheet 4 of 13

Phone (303) 466-8800  
Fax (303) 466-8820  
contactus@fasonline.cc

## Fire Alarm System Addition at:

Spec Suite 250  
1411 South Potomac Street  
Aurora, CO 80012

### Scope of Work:

Provide the following fire alarm system modifications to accommodate the proposed construction for the Spec Suite 250 located at 1411 S Potomac St:

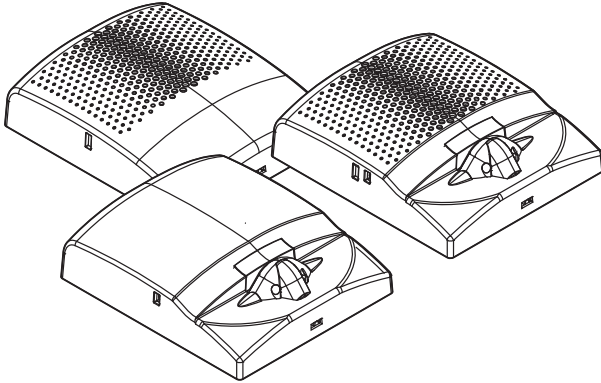
1. PROVIDE AND INSTALL NINE (9) NEW STROBES
2. PROVIDE AND INSTALL THREE (3) NEW HORN/STROBES

Raymond P. Breeland  
Certification Expires 04/01/22  
Fire Alarm Systems Level III  
NICET Certification #111006

**Date** 10/22/2020



# Genesis G4 Series Signaling Appliance Installation Sheet



## Description

Genesis G4 Series horns, strobes, and horn-strobes are wall-mounted plug-in fire alarm signaling appliances designed for indoor dry applications. See Table 1 to Table 3 for a list of models.

**Table 1: Horn models**

| Number   | Description                  |
|----------|------------------------------|
| G4ARF    | Wall horn, red, FIRE         |
| G4ARF-FR | Wall horn, red, FEU          |
| G4ARF-SP | Wall horn, red, FUEGO        |
| G4ARN    | Wall horn, red, no marking   |
| G4AWF    | Wall horn, white, FIRE       |
| G4AWF-FR | Wall horn, white, FEU        |
| G4AWF-SP | Wall horn, white, FUEGO      |
| G4AWN    | Wall horn, white, no marking |

**Table 2: Strobe models**

| Number   | Description                    |
|----------|--------------------------------|
| G4VRF    | Wall strobe, red, FIRE         |
| G4VRF-FR | Wall strobe, red, FEU          |
| G4VRF-SP | Wall strobe, red, FUEGO        |
| G4VRN    | Wall strobe, red, no marking   |
| G4VWF    | Wall strobe, white, FIRE       |
| G4VWF-FR | Wall strobe, white, FEU        |
| G4VWF-SP | Wall strobe, white, FUEGO      |
| G4VWN    | Wall strobe, white, no marking |

**Table 3: Horn-strobe models**

| Number | Description                 |
|--------|-----------------------------|
| G4AVRF | Wall horn-strobe, red, FIRE |

| Number    | Description                         |
|-----------|-------------------------------------|
| G4AVRF-FR | Wall horn-strobe, red, FEU          |
| G4AVRF-SP | Wall horn-strobe, red, FUEGO        |
| G4AVRN    | Wall horn-strobe, red, no marking   |
| G4AVWF    | Wall horn-strobe, white, FIRE       |
| G4AVWF-FR | Wall horn-strobe, white, FEU        |
| G4AVWF-SP | Wall horn-strobe, white, FUEGO      |
| G4AVWN    | Wall horn-strobe, white, no marking |

Genesis G4 Series signaling appliances feature:

- Field-configurable horn and strobe outputs. See Figure 2.
- Enhanced synchronization circuitry to comply with the latest requirements of UL 1638 and CAN/ULC-S526.
- Input wiring test points on the front of the appliance when the cover is removed.

**Note:** Synchronized operation requires a separately installed synchronization device. See the control unit or power supply compatibility list for compatible synchronization devices.

## Configuration

**Caution:** Equipment damage hazard. Using excessive force when removing the appliance cover may damage the cover and prevent it from latching in place.

**To configure the signaling appliance:**

1. Remove the appliance cover. See Figure 1.  
Insert a small, flat-bladed screwdriver into the slot at the bottom of the appliance.  
Gently pull up on the screwdriver to pry the bottom of the appliance cover down and away from the appliance.  
Lift the bottom of the cover out and over the top of the appliance.
2. Set the light and sound output switches. See Figure 2.
3. Replace the appliance cover.

**Figure 1: Removing and replacing the cover**

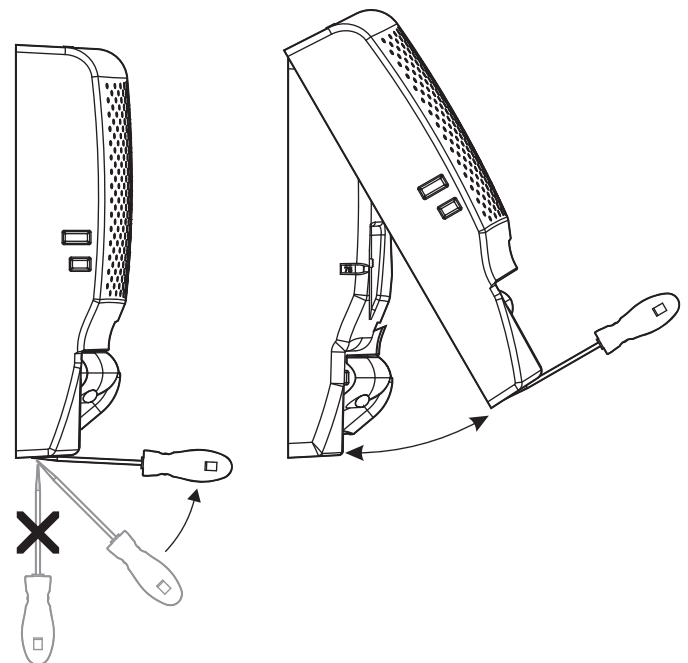
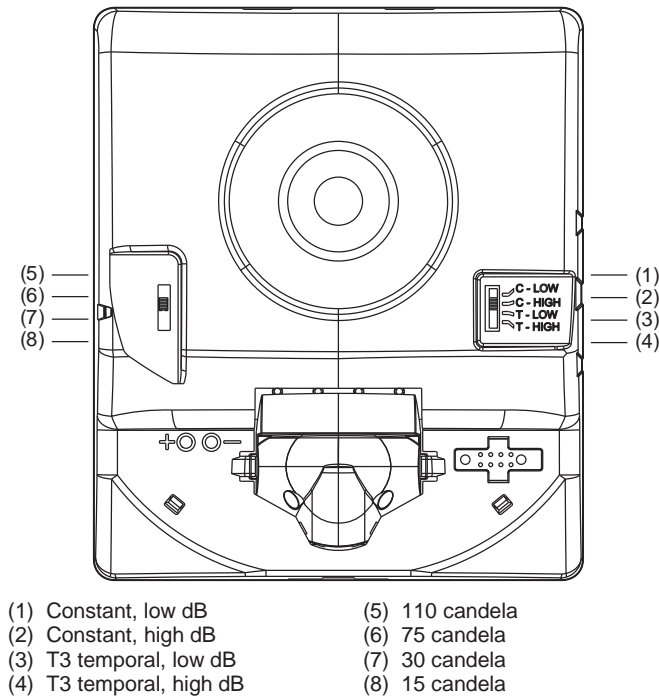


Figure 2: Light and sound output settings



## Installation

Install and wire this device in accordance with applicable national and local codes, ordinances, and regulations.

**Caution:** Electrical supervision requires that you break the wire run at each terminal. Do not loop the signaling circuit field wires around the terminals.

**Note:** Do not use Genesis G4 Series strobe and horn-strobe signaling appliances in applications where signal power is cycled on and off, such as in coded or private mode signaling systems.

### To install the appliance:

1. Using the screws supplied with the mounting plate, attach the mounting plate and, if used, the trim plate to the electrical box. See Figure 3. The mounting plate is ordered separately.
2. Connect the field wiring. Observe signal polarity for the appliance to operate properly. See Figure 4.
3. Remove the shorting clip (Figure 3, item 6). Retain for future use.
4. Plug the appliance into the mounting plate by setting the appliance on the top of the mounting plate, and then snapping the bottom into place. See Figure 5.

To unplug the appliance, press the spring clip on the bottom, and then lift the appliance away from the mounting plate.

5. Test the unit for proper operation.

Figure 3: Mounting on a 4-in. square electrical box

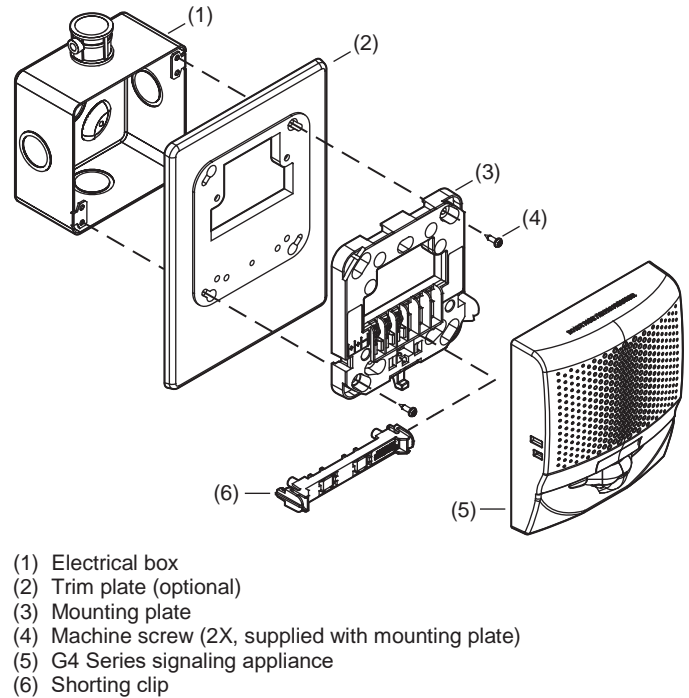


Figure 4: Wiring

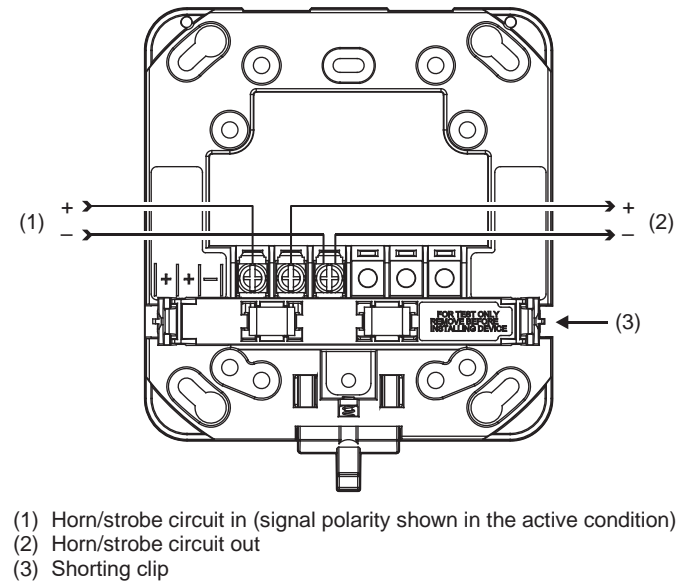
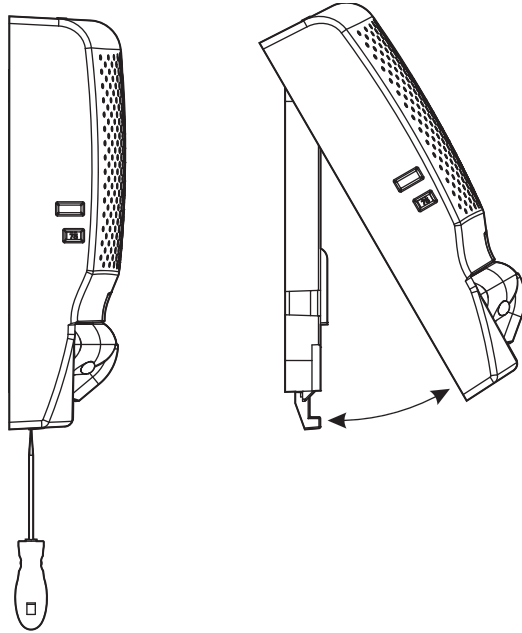


Figure 5: Removing and replacing the appliance



## Maintenance and testing

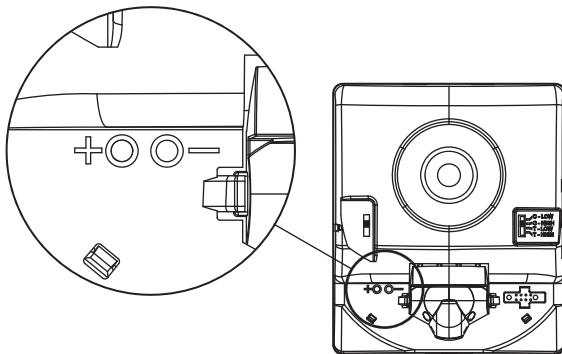
**Caution:** Equipment damage hazard. To maintain the required agency listings, do not change factory-applied finishes.

This unit is not serviceable or repairable. If the unit fails to operate, contact the supplier for a replacement.

Perform a visual and operational inspection in accordance with applicable codes and standards or as directed by the local authority having jurisdiction.

Input wiring test points are available on the front of the appliance when the cover is removed. The test points let you easily spot check the field circuit wiring without the need to remove the appliance from the wall. See Figure 6.

Figure 6: Test points



**Note:** Marking indicates signal polarity when the circuit is active.

## Specifications

|                   |                             |
|-------------------|-----------------------------|
| Operating voltage | 16 to 33 VDC, 16 to 33 VFWR |
| Operating current | See Table 4 to Table 6      |
| Horn signal type  | Constant or temporal (TC3)  |
| Sound output      | See Table 7                 |
| Sound pattern     | See Table 8                 |

|                             |  |
|-----------------------------|--|
| Light output                | 15, 30, 75, or 110 candelas  |
| Strobe flash rate           | 1 fps (flash per second) approx.   |
| Light distribution          | See Figure 7   |
| Synchronization             | 20 $\Omega$ max. between any two devices.<br>To determine allowed wire resistance, refer to these specifications, and the specifications for the synchronized signal source. |
| Dimensions (WxHxD)          | 4.95 x 5.78 x 1.62 in.<br>(12.57 x 14.68 x 4.11 cm) See Figure 8   |
| Strobe-to-box center offset | -1.70 in (-4.32 cm)  |
| Compatible electrical boxes | 1-gang, 2-gang, 4-inch octagon<br>4-inch square  |
| Trim plates                 | G4TR, G4TW   |
| Replacement covers          | See Table 9 to Table 11  |
| Operating environment       |  |
| Temperature                 | 32 to 122°F (0 to 50°C)  |
| Relative humidity           | 0 to 93% noncondensing   |
| Storage temperature         | -40 to 158°F (-40 to 70°C)   |

Table 4: Operating current (horn models)

| Sound setting  | 16 to 33 VDC | 16 to 33 VFWR |
|----------------|--------------|---------------|
| C-LOW, T-LOW   | 18 mA        | 22 mA         |
| C-HIGH, T-HIGH | 28 mA        | 38 mA         |

Table 5: Operating current (strobe models)

| Strobe setting  | 16 to 33 VDC | 16 to 33 VFWR |
|-----------------|--------------|---------------|
| 15, 30, 75, 110 | 28 mA        | 36 mA         |

Table 6: Operating current (horn-strobe models)

| Strobe setting  | Sound setting  | 16 to 33 VDC | 16 to 33 VFWR |
|-----------------|----------------|--------------|---------------|
| 15, 30, 75, 110 | C-LOW, T-LOW   | 40 mA        | 48 mA         |
|                 | C-HIGH, T-HIGH | 50 mA        | 60 mA         |

Table 7: Sound output (horn and horn-strobe models)

| Sound setting  | Reverberant (UL 464) | Anechoic (CAN/ULC-S525) |
|----------------|----------------------|-------------------------|
| C-LOW, T-LOW   | 80 dBA               | 86 dBA                  |
| C-HIGH, T-HIGH | 86 dBA               | 92 dBA                  |

Table 8: Sound pattern (ULC)

| Axis       | Angle        | Change in output |
|------------|--------------|------------------|
| Horizontal | 135° and 45° | -3 dBA           |
|            | 150° and 30° | -6 dBA           |
| Vertical   | 135° and 40° | -3 dBA           |
|            | 150° and 30° | -6 dBA           |

**Table 9: Horn replacement covers**

| Number       | Description                         |
|--------------|-------------------------------------|
| G4ARA-CVR    | Cover, wall horn, red, ALERT        |
| G4ARF-CVR    | Cover, wall horn, red, FIRE         |
| G4ARF-FR-CVR | Cover, wall horn, red, FEU          |
| G4ARF-SP-CVR | Cover, wall horn, red, FUEGO        |
| G4ARN-CVR    | Cover, wall horn, red, no marking   |
| G4AWA-CVR    | Cover, wall horn, white, ALERT      |
| G4AWF-CVR    | Cover, wall horn, white, FIRE       |
| G4AWF-FR-CVR | Cover, wall horn, white, FEU        |
| G4AWF-SP-CVR | Cover, wall horn, white, FUEGO      |
| G4AWN-CVR    | Cover, wall horn, white, no marking |

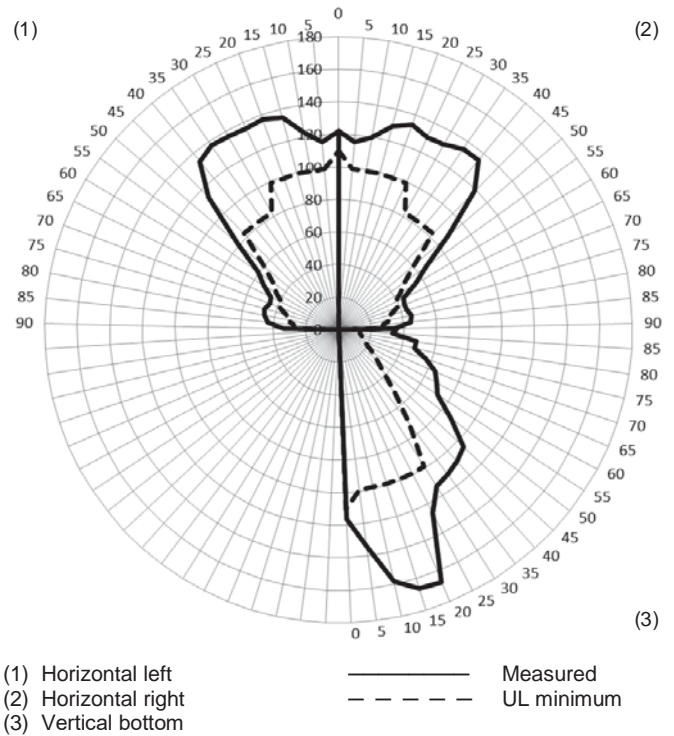
**Table 10: Strobe replacement covers**

| Model        | Description                           |
|--------------|---------------------------------------|
| G4VRA-CVR    | Cover, wall strobe, red, ALERT        |
| G4VRF-CVR    | Cover, wall strobe, red, FIRE         |
| G4VRF-FR-CVR | Cover, wall strobe, red, FEU          |
| G4VRF-SP-CVR | Cover, wall strobe, red, FUEGO        |
| G4VRN-CVR    | Cover, wall strobe, red, no marking   |
| G4VWA-CVR    | Cover, wall strobe, white, ALERT      |
| G4VWF-CVR    | Cover, wall strobe, white, FIRE       |
| G4VWF-FR-CVR | Cover, wall strobe, white, FEU        |
| G4VWF-SP-CVR | Cover, wall strobe, white, FUEGO      |
| G4VWN-CVR    | Cover, wall strobe, white, no marking |

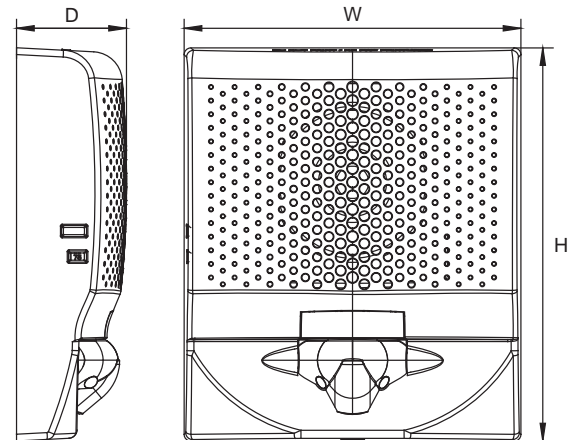
**Table 11: Horn-strobe replacement covers**

| Model         | Description                                |
|---------------|--|
| G4AVRA-CVR    | Cover, wall horn-strobe, red, ALERT        |
| G4AVRF-CVR    | Cover, wall horn-strobe, red, FIRE         |
| G4AVRF-FR-CVR | Cover, wall horn-strobe, red, FEU          |
| G4AVRF-SP-CVR | Cover, wall horn-strobe, red, FUEGO        |
| G4AVRN-CVR    | Cover, wall horn-strobe, red, no marking   |
| G4AVWA-CVR    | Cover, wall horn-strobe, white, ALERT      |
| G4AVWF-CVR    | Cover, wall horn-strobe, white, FIRE       |
| G4AVWF-FR-CVR | Cover, wall horn-strobe, white, FEU        |
| G4AVWF-SP-CVR | Cover, wall horn-strobe, white, FUEGO      |
| G4AVWN-CVR    | Cover, wall horn-strobe, white, no marking |

**Figure 7: Light distribution**



**Figure 8: Dimensions**



## Regulatory information

|                            |   |
|----------------------------|---|
| UL rating                  | Regulated 24 DC and 24 FWR  |
| FCC compliance             | This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. |
| Industry Canada compliance | This Class A digital apparatus complies with Canadian ICES-003.   |
| Environmental class        | Indoor, dry   |

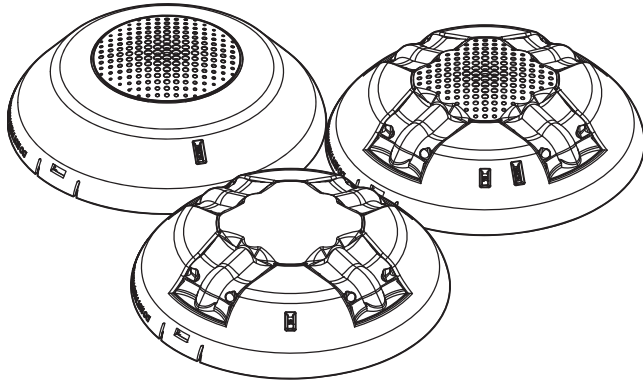
## Contact information

For contact information, see [www.edwardsfiresafety.com](http://www.edwardsfiresafety.com).





# Genesis GC Series Signaling Appliance Installation Sheet



## Description

Genesis GC Series horns, strobes, and horn-strobes are ceiling- or wall-mounted plug-in fire alarm signaling appliances designed for indoor dry applications. See Table 1 through Table 3 for a list of models.

**Table 1: Horn models**

| Number   | Description                     |
|----------|---------------------------------|
| GCARF    | Ceiling horn, red, FIRE         |
| GCARF-FR | Ceiling horn, red, FEU          |
| GCARF-SP | Ceiling horn, red, FUEGO        |
| GCARN    | Ceiling horn, red, no marking   |
| GCAWF    | Ceiling horn, white, FIRE       |
| GCAWF-FR | Ceiling horn, white, FEU        |
| GCAWF-SP | Ceiling horn, white, FUEGO      |
| GCAWN    | Ceiling horn, white, no marking |

**Table 2: Strobe models**

| Number   | Description                       |
|----------|-----------------------------------|
| GCVRF    | Ceiling strobe, red, FIRE         |
| GCVRF-FR | Ceiling strobe, red, FEU          |
| GCVRF-SP | Ceiling strobe, red, FUEGO        |
| GCVRN    | Ceiling strobe, red, no marking   |
| GCVWF    | Ceiling strobe, white, FIRE       |
| GCVWF-FR | Ceiling strobe, white, FEU        |
| GCVWF-SP | Ceiling strobe, white, FUEGO      |
| GCVWN    | Ceiling strobe, white, no marking |

**Table 3: Horn-strobe models**

| Number    | Description                            |
|-----------|--|
| GCAVRF    | Ceiling horn-strobe, red, FIRE         |
| GCAVRF-FR | Ceiling horn-strobe, red, FEU          |
| GCAVRF-SP | Ceiling horn-strobe, red, FUEGO        |
| GCAVRN    | Ceiling horn-strobe, red, no marking   |
| GCAVWF    | Ceiling horn-strobe, white, FIRE       |
| GCAVWF-FR | Ceiling horn-strobe, white, FEU        |
| GCAVWF-SP | Ceiling horn-strobe, white, FUEGO      |
| GCAVWN    | Ceiling horn-strobe, white, no marking |

Genesis GC Series signaling appliances feature:

- Field-configurable horn and strobe outputs. See Figure 2.
- Enhanced synchronization circuitry to comply with the latest requirements of UL 1638 and CAN/ULC-S526.
- Input wiring test points on the front of the appliance when the cover is removed.

**Note:** Synchronized operation requires a separately installed synchronization device. See the control unit or remote booster/auxiliary power supply compatibility list for compatible synchronization devices.

## Configuration

**Caution:** Equipment damage hazard. Using excessive force when removing the appliance cover may damage the cover and prevent it from latching in place.

**To configure the signaling appliance:**

1. Remove the appliance cover. See Figure 1.  
Insert a small, flat-bladed screwdriver into the slot at the bottom of the appliance.  
Gently pull up on the screwdriver to pry the bottom of the appliance cover down and away from the appliance.  
Lift the bottom of the cover out and over the top of the appliance.
2. Set the light and sound output switches. See Figure 2.
3. Replace the appliance cover.



Figure 1: Removing and replacing the cover

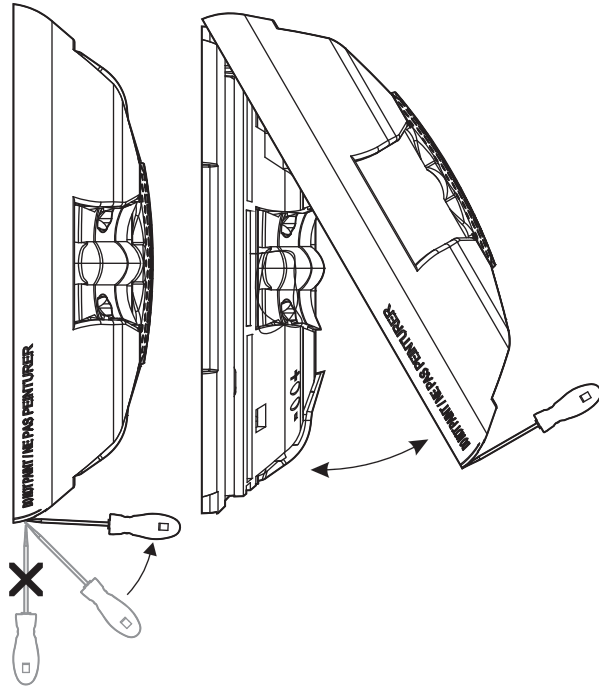
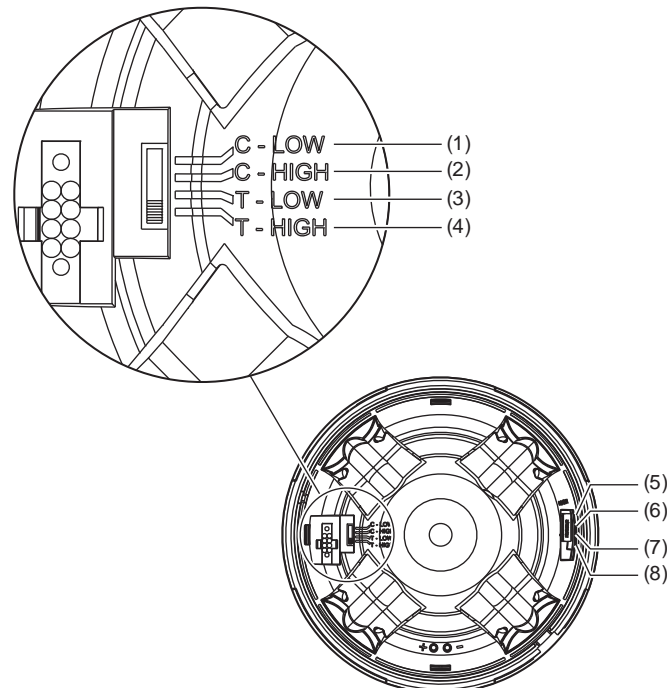


Figure 2: Light and sound output settings



- |                          |                 |
|--------------------------|-----------------|
| (1) Constant, low dB     | (5) 115 candela |
| (2) Constant, high dB    | (6) 75 candela  |
| (3) T3 temporal, low dB  | (7) 30 candela  |
| (4) T3 temporal, high dB | (8) 15 candela  |

**Note:** Temporal 3 coding is the required output for fire notification devices per NFPA 72. Any device coding other than Temporal 3 is at the discretion and approval of the local authority having jurisdiction (AHJ).

## Installation

Install and wire this device in accordance with applicable national and local codes, ordinances, and regulations.

**Caution:** Electrical supervision requires that you break the wire run at each terminal. Do not loop the signaling circuit field wires around the terminals.

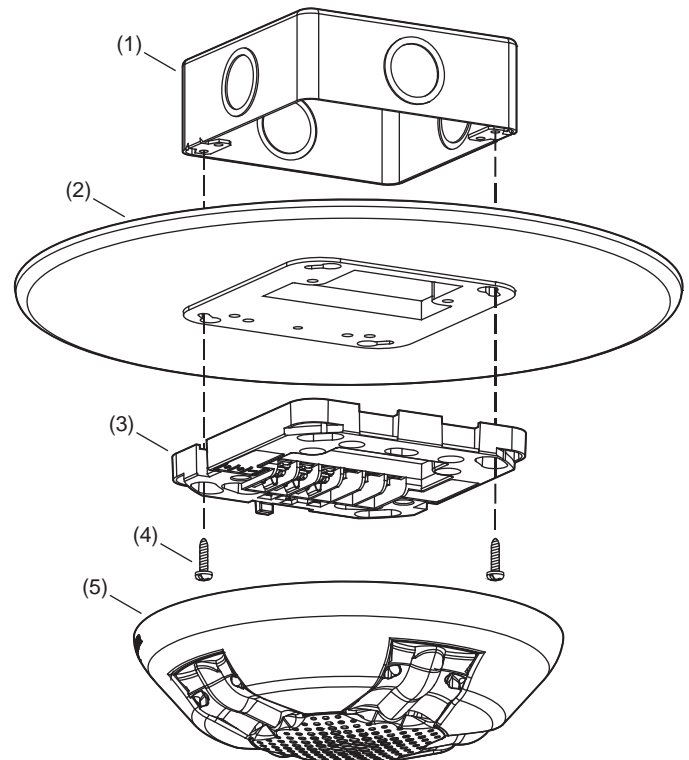
### To install the appliance:

1. Attach the wiring plate and, if used, the trim plate to the electrical box. See Figure 3. The wiring plate and the trim plate are both ordered separately.
2. Connect the field wiring. Observe signal polarity for the appliance to operate properly. See Figure 4.
3. Remove the shorting clip (Figure 4, item 3). Retain for future use.
4. Plug the appliance into the wiring plate by setting the appliance on the top of the wiring plate, and then snapping the bottom into place. See Figure 5.

To unplug the appliance, press the spring clip on the bottom, and then lift the appliance away from the wiring plate.

5. Test the unit for proper operation.

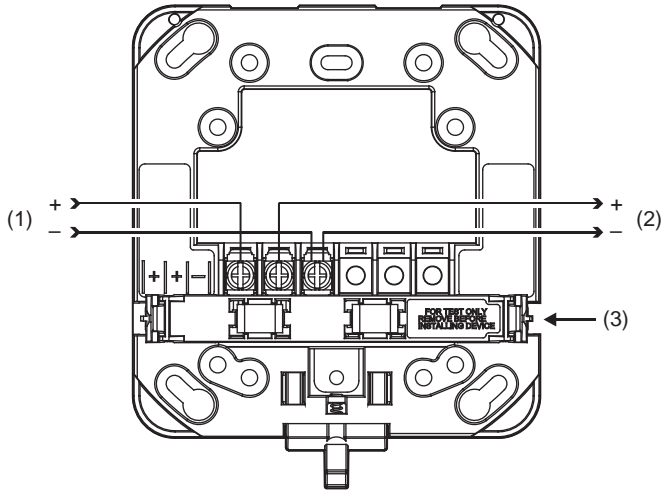
Figure 3: Mounting diagram



- (1) Electrical box
- (2) Trim plate (optional)
- (3) Wiring plate (required, ordered separately)
- (4) Machine screw (2X, supplied with wiring plate)
- (5) GC Series signaling appliance

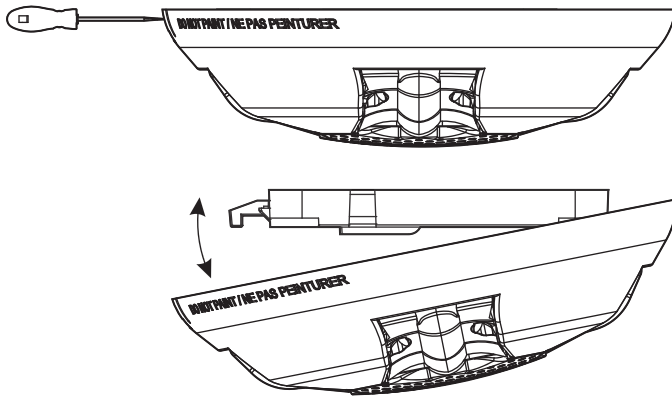


Figure 4: Wiring



- (1) Horn/strobe circuit in (signal polarity shown in the active condition)  
(2) Horn/strobe circuit out  
(3) Shorting clip

Figure 5: Removing and replacing the appliance



## Maintenance and testing

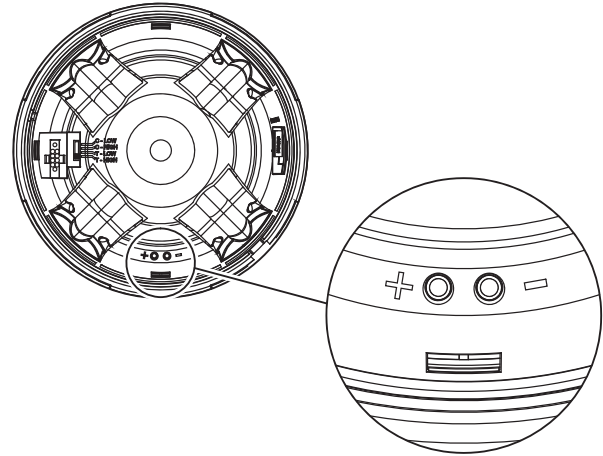
**Caution:** Equipment damage hazard. To maintain the required agency listings, do not change factory-applied finishes.

This unit is not serviceable or repairable. If the unit fails to operate, contact the supplier for a replacement.

Perform a visual and operational inspection in accordance with applicable codes and standards or as directed by the local authority having jurisdiction.

Input wiring test points are available on the front of the appliance when the cover is removed. The test points let you easily spot check the field circuit wiring without the need to remove the appliance from the wall. See Figure 6.

Figure 6: Test points



**Note:** Marking indicates signal polarity when the circuit is active.

## Specifications

|                                       |  |
|---------------------------------------|--|
| Operating voltage                     | 16 to 33 VDC, 16 to 33 VFWR  |
| Operating current                     | See Table 4 to Table 6   |
| Horn signal type                      | Constant or T3 temporal  |
| Sound output                          | See Table 7 and Table 8  |
| Sound pattern                         | See Table 9 and Table 10   |
| Light output                          | 15, 30, 75, or 115 cd  |
| Strobe flash rate                     | 1 fps (flash per second) approx.   |
| Light distribution                    | See Figure 7   |
| Synchronization                       | 20 $\Omega$ max. between any two devices.<br><br>To determine allowed wire resistance, refer to these specifications, and the specifications for the synchronized signal source. |
| Dimensions ( $\varnothing \times D$ ) | 6.8 x 1.82 in. (17.27 x 4.62 cm)<br>See Figure 8   |
| Strobe-to-box center offset           | 0 in (0 cm)  |
| Compatible electrical boxes           | 1-gang, 2-gang, 4-inch octagon, 4-inch square  |
| Wiring plate                          | GP10 (pack of ten)   |
| Trim rings                            | GCTR, GCTW   |
| Replacement covers                    | See Table 11 to Table 13   |
| Operating environment                 |  |
| Temperature                           | 32 to 122°F (0 to 50°C)  |
| Relative humidity                     | 0 to 93% noncondensing   |
| Storage temperature                   | -40 to 158°F (-40 to 70°C)   |

Table 4: Operating current (horn models)

| Sound setting  | 16 to 33 VDC | 16 to 33 VFWR |
|----------------|--------------|---------------|
| C-LOW, T-LOW   | 20 mA        | 25 mA         |
| C-HIGH, T-HIGH | 30 mA        | 40 mA         |

Table 5: Operating current (strobe models)

| Strobe setting  | 16 to 33 VDC | 16 to 33 VFWR |
|-----------------|--------------|---------------|
| 15, 30, 75, 115 | 35 mA        | 45 mA         |

Table 6: Operating current (horn-strobe models)

| Strobe setting  | Sound setting  | 16 to 33 VDC | 16 to 33 VFWR |
|-----------------|----------------|--------------|---------------|
| 15, 30, 75, 115 | C-LOW, T-LOW   | 50 mA        | 60 mA         |
|                 | C-HIGH, T-HIGH | 60 mA        | 75 mA         |

Table 7: Sound output (horn models)

| Sound setting  | Reverberant (UL 464) | Anechoic (CAN/ULC-S525) |
|----------------|----------------------|-------------------------|
| C-LOW, T-LOW   | 80 dBA               | 86 dBA                  |
| C-HIGH, T-HIGH | 86 dBA               | 92 dBA                  |

Table 8: Sound output (horn-strobe models)

| Sound setting  | Reverberant (UL 464) | Anechoic (CAN/ULC-S525) |
|----------------|----------------------|-------------------------|
| C-LOW, T-LOW   | 80 dBA               | 86 dBA                  |
| C-HIGH, T-HIGH | 86 dBA               | 92 dBA                  |

Table 9: Sound pattern – horn models (ULC)

| Axis       | Angle (°)  | Output (dBA) |
|------------|------------|--------------|
| Horizontal | 115 and 55 | 93.3         |
| Vertical   | 125 and 50 | 91.7         |

Table 10: Sound pattern – horn-strobe models (ULC)

| Axis       | Angle (°)  | Output (dBA) |
|------------|------------|--------------|
| Horizontal | 145 and 35 | 93.0         |
|            | 155 and 25 | 90.8         |
| Vertical   | 135 and 35 | 92.0         |
|            | 155 and 25 | 85.4         |

Table 11: Horn replacement covers

| Model        | Description                            |
|--------------|--|
| GCARA-CVR    | Cover, ceiling horn, red, ALERT        |
| GCARF-CVR    | Cover, ceiling horn, red, FIRE         |
| GCARF-FR-CVR | Cover, ceiling horn, red, FEU          |
| GCARF-SP-CVR | Cover, ceiling horn, red, FUEGO        |
| GCARN-CVR    | Cover, ceiling horn, red, no marking   |
| GCAWA-CVR    | Cover, ceiling horn, white, ALERT      |
| GCAWF-CVR    | Cover, ceiling horn, white, FIRE       |
| GCAWF-FR-CVR | Cover, ceiling horn, white, FEU        |
| GCAWF-SP-CVR | Cover, ceiling horn, white, FUEGO      |
| GCAWN-CVR    | Cover, ceiling horn, white, no marking |

Table 12: Strobe replacement covers

| Model        | Description                              |
|--------------|--|
| GCVRA-CVR    | Cover, ceiling strobe, red, ALERT        |
| GCVRF-CVR    | Cover, ceiling strobe, red, FIRE         |
| GCVRF-FR-CVR | Cover, ceiling strobe, red, FEU          |
| GCVRF-SP-CVR | Cover, ceiling strobe, red, FUEGO        |
| GCVRN-CVR    | Cover, ceiling strobe, red, no marking   |
| GCVWA-CVR    | Cover, ceiling strobe, white, ALERT      |
| GCVWF-CVR    | Cover, ceiling strobe, white, FIRE       |
| GCVWF-FR-CVR | Cover, ceiling strobe, white, FEU        |
| GCVWF-SP-CVR | Cover, ceiling strobe, white, FUEGO      |
| GCVWN-CVR    | Cover, ceiling strobe, white, no marking |

Table 13: Horn-strobe replacement covers

| Model         | Description                                   |
|---------------|---|
| GCAVRA-CVR    | Cover, ceiling horn-strobe, red, ALERT        |
| GCAVRF-CVR    | Cover, ceiling horn-strobe, red, FIRE         |
| GCAVRF-FR-CVR | Cover, ceiling horn-strobe, red, FEU          |
| GCAVRF-SP-CVR | Cover, ceiling horn-strobe, red, FUEGO        |
| GCAVRN-CVR    | Cover, ceiling horn-strobe, red, no marking   |
| GCAVWA-CVR    | Cover, ceiling horn-strobe, white, ALERT      |
| GCAVWF-CVR    | Cover, ceiling horn-strobe, white, FIRE       |
| GCAVWF-FR-CVR | Cover, ceiling horn-strobe, white, FEU        |
| GCAVWF-SP-CVR | Cover, ceiling horn-strobe, white, FUEGO      |
| GCAVWN-CVR    | Cover, ceiling horn-strobe, white, no marking |

Figure 7: Light distribution

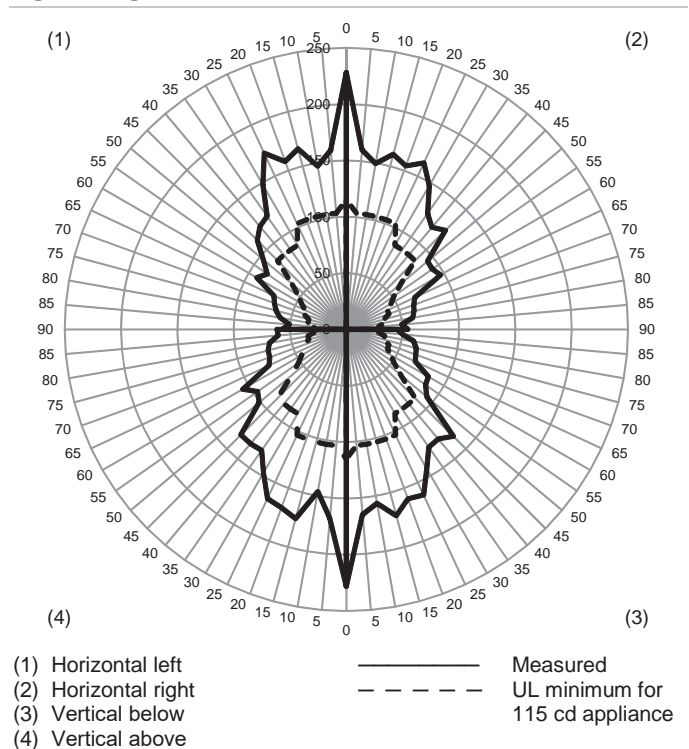
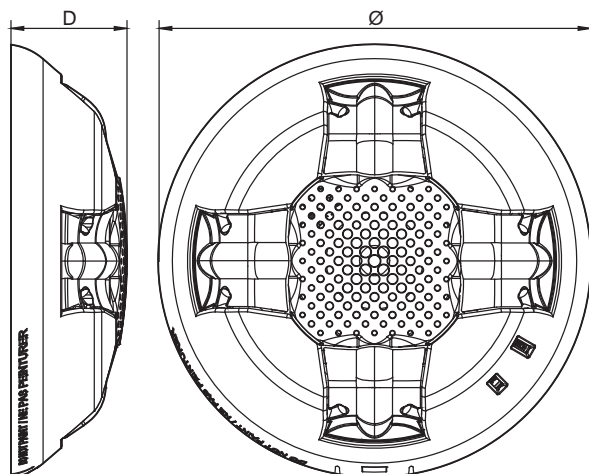




Figure 8: Dimensions



### Regulatory information

|                            |   |
|----------------------------|---|
| UL rating                  | Regulated 24 DC and 24 FWR  |
| FCC compliance             | This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. |
| Industry Canada compliance | This Class A digital apparatus complies with Canadian ICES-003.   |
| Environmental class        | Indoor, dry   |

### Contact information

For contact information, see [www.edwardsfiresafety.com](http://www.edwardsfiresafety.com).