

HOUSEHOLD FIRE ALARM SYSTEM

SYSTEM DESCRIPTION

PROVIDE A HOUSEHOLD FIRE ALARM SYSTEM SERVING A RESIDENTIAL OCCUPANCY.

OCCUPANCY CLASSIFICATION

THE PROTECTED OCCUPANCY IS CLASSIFIED AS A SINGLE-FAMILY RESIDENTIAL DWELLING AS DEFINED BY THE FLORIDA BUILDING CODE – RESIDENTIAL (FBC-R).

SYSTEM CLASSIFICATION

THE FIRE ALARM SYSTEM IS CLASSIFIED AS A HOUSEHOLD FIRE ALARM SYSTEM IN ACCORDANCE WITH NFPA 72 – NATIONAL FIRE ALARM AND SIGNALING CODE, CHAPTER 29.

APPLICABLE CODES AND STANDARDS

DESIGN, INSTALLATION, TESTING, AND ACCEPTANCE SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS, AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION (AHJ):

NFPA 72 – NATIONAL FIRE ALARM AND SIGNALING CODE (CHAPTER 29)

FLORIDA BUILDING CODE – RESIDENTIAL (FBC-R)

SECTION R314 – SMOKE ALARMS

SECTION R315 – CARBON MONOXIDE ALARMS

FLORIDA FIRE PREVENTION CODE (FFPC), AS ADOPTED

SYSTEM SCOPE LIMITATION

THIS SYSTEM IS A RESIDENTIAL HOUSEHOLD FIRE ALARM SYSTEM AND IS NOT A COMMERCIAL FIRE ALARM SYSTEM. COMPLIANCE WITH NFPA 72 CHAPTERS 10 THROUGH 26 IS NOT REQUIRED.

DETECTOR QUANTITY CLARIFICATION

THE QUANTITY OF SMOKE DETECTORS OR INITIATING DEVICES INSTALLED DOES NOT CHANGE THE SYSTEM CLASSIFICATION. SYSTEM CLASSIFICATION IS BASED ON OCCUPANCY TYPE AND APPLICABLE CODE CHAPTER, NOT DEVICE COUNT.

DEVICE TYPES

SMOKE DETECTION DEVICES MAY CONSIST OF SINGLE-STATION ALARMS, MULTIPLE-STATION ALARMS, OR SYSTEM-CONNECTED SMOKE DETECTORS, AS PERMITTED BY NFPA 72 CHAPTER 29 AND THE MANUFACTURER'S LISTING.

SMOKE ALARM LOCATIONS

SMOKE ALARMS AND SMOKE DETECTORS SHALL BE INSTALLED AT ALL LOCATIONS REQUIRED BY FBC-R SECTION R314, INCLUDING BUT NOT LIMITED TO:

INSIDE EACH SLEEPING ROOM

OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF BEDROOMS

ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS

CARBON MONOXIDE ALARMS

CARBON MONOXIDE ALARMS SHALL BE INSTALLED WHERE REQUIRED IN ACCORDANCE WITH FBC-R SECTION R315 AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

INTERCONNECTION

WHERE MULTIPLE SMOKE ALARMS OR DETECTORS ARE INSTALLED, DEVICES SHALL BE INTERCONNECTED SO THAT ACTIVATION OF ONE DEVICE INITIATES ALARM NOTIFICATION AT ALL REQUIRED LOCATIONS, IN ACCORDANCE WITH NFPA 72 CHAPTER 29.

POWER SUPPLY

THE SYSTEM SHALL BE PROVIDED WITH PRIMARY AND SECONDARY POWER IN ACCORDANCE WITH NFPA 72 CHAPTER 29 AND THE MANUFACTURER'S LISTING.

EQUIPMENT LISTING

ALL CONTROL EQUIPMENT, INITIATING DEVICES, AND NOTIFICATION APPLIANCES SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (UL OR EQUIVALENT) FOR HOUSEHOLD FIRE ALARM USE.

INSTALLATION REQUIREMENTS

ALL DEVICES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS, LISTING REQUIREMENTS, AND APPLICABLE CODE PROVISIONS.

AUDIBLE NOTIFICATION

AUDIBLE ALARM NOTIFICATION APPLIANCES SHALL BE PROVIDED AS REQUIRED BY NFPA 72 CHAPTER 29 TO ENSURE OCCUPANT NOTIFICATION THROUGHOUT THE DWELLING UNIT.

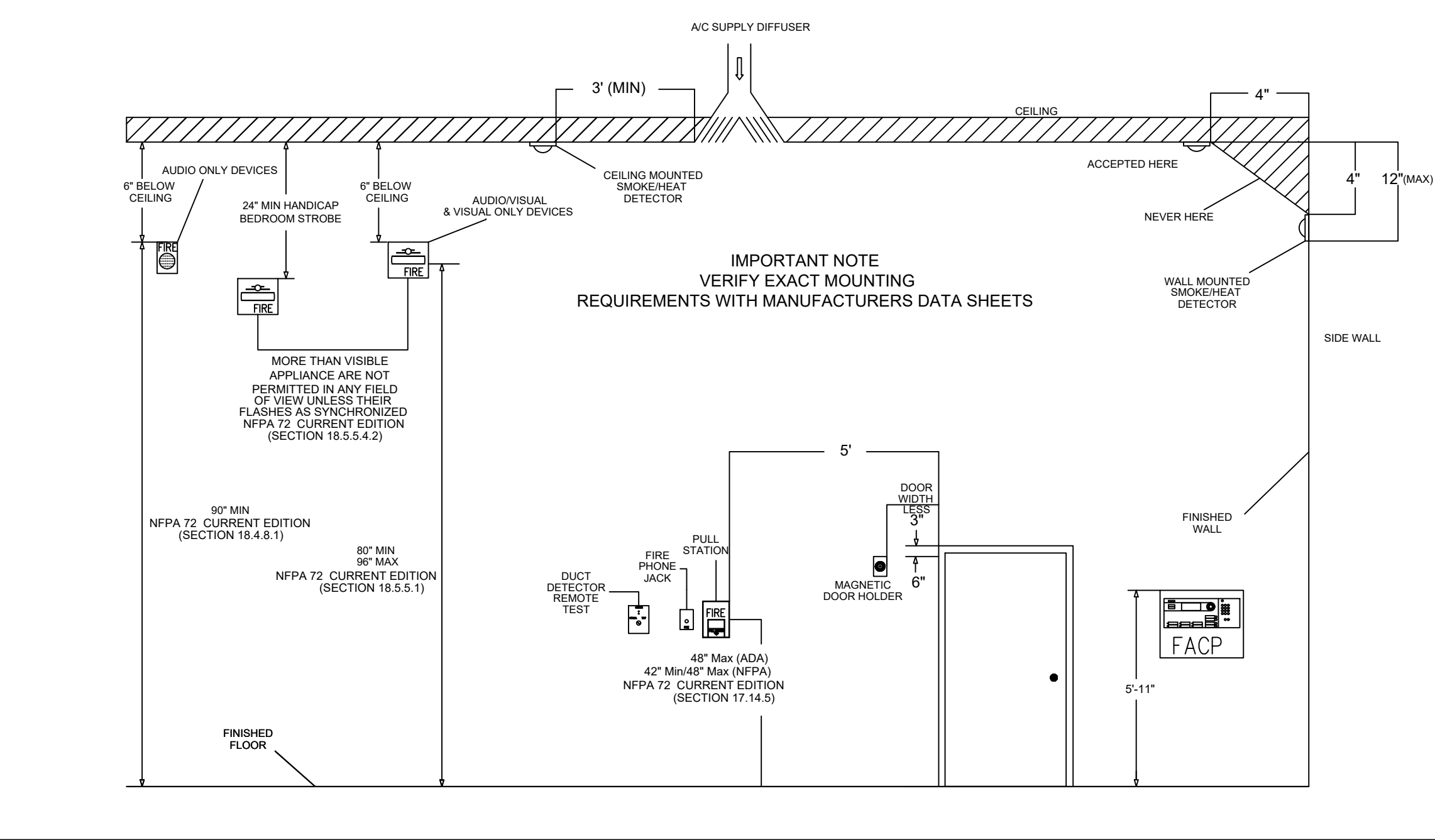
INSPECTION, TESTING, AND ACCEPTANCE

UPON COMPLETION, THE SYSTEM SHALL BE INSPECTED, TESTED, AND ACCEPTED IN ACCORDANCE WITH NFPA 72 CHAPTER 29 AND FFPC REQUIREMENTS.

AUTHORITY HAVING JURISDICTION

FINAL APPROVAL OF THE SYSTEM SHALL BE SUBJECT TO ACCEPTANCE BY THE AUTHORITY HAVING JURISDICTION (AHJ).

DEVICE MOUNTING HEIGHTS



**System No. C-AJ-1513**

| ANSIUL1479 (ASTM E814) | CANULC S115      |
|------------------------|------------------|
| F Rating – 2 Hr        | F Rating – 2 Hr  |
| T Rating – 0 Hr        | FT Rating – 0 Hr |
|                        | FT Rating – 2 Hr |
|                        | FT Rating – 0 Hr |

**SECTION A-A**

1. Floor or Wall Assembly – Min 6-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete floor. Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete wall. Wall may also be constructed of any UL Classified Concrete Block\*. Max size of opening is 8 in. (203 mm) by 30 in. (763 mm). See Concrete Blocks (CA7) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants – One or more metallic penetrants to be installed either concentrically or eccentrically within the freestop system. The total number of penetrants is dependent on the size of the opening and size of penetrants. The annular space between the penetrants and periphery of opening shall be min 0 in. (point contact). The annular space between non 2 in. (51 mm) diam (and smaller) penetrants shall be a min 0 in. (point contact). The annular space between penetrants greater than non 2 in. (51 mm) diam shall be a min. 1/2 in. (13 mm). A max annular space in the system shall be 7/8 in. (205 mm). Penetrants to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of penetrants may be used:

A. Conduit – Non 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or rigid steel conduit.

B. Through Penetrating Product\* – Flexible Metal Piping – The following types of steel flexible metal gas piping may be used:

1) Non 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2) Non 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

CASTITE, DIV OF TITELTEX

3) Non 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

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3. Freestop System – The freestop system shall consist of the following:

A. Packing Material – Min 4 in. (102 mm) thickness of 4 pcf (64 kg/m³) mineral wool batt insulation tightly packed into the opening as a permanent form. Packing material to be recessed from top surface of floor or both surfaces of wall to accommodate the required thickness of fill material.

B. Fill Void or Cavity Material\* – Sealant – Min 1/2 in. (13 mm) thickness of fill material applied within the annular flush with the top surface of the floor or both surfaces of the wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – FS-ONE Sealant or FS-ONE MAX Innumescent Sealant.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

**System No. W-L-1408**

| ANSIUL1479 (ASTM E814)               | CANULC S115                           |
|--------------------------------------|---------------------------------------|
| F Ratings – 1 and 2 Hr (See Item 1)  | F Ratings – 1 and 2 Hr (See Item 1)   |
| T Ratings – 0 and 14 Hr (See Item 1) | FT Ratings – 0 and 14 Hr (See Item 1) |
|                                      | FT Ratings – 1 and 2 Hr (See Item 1)  |
|                                      | FT Rating – 0 Hr                      |

**SECTION A-A**

1. Wall Assembly – The 1 and 2 hr fire-rated gypsum board/wall assembly shall be constructed of the materials and in the manner described in the individual UL600 or UL600 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of non 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the dam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the dam of the penetrating item such that, when the penetrating item is installed in the opening, a 3 to 3/4 in. (25 to 30 mm) clearance is present between the penetrating item and the framing on all four sides.

B. Gypsum Board\* – 5/8 in. (16 mm) thick, 4 1/2 (112 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and size shall be specified in the individual UL600 or UL600 Series Design in the UL Fire Resistance Directory. Max dam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max dam of opening is 14-1/2 in. (368 mm) for wood stud walls. The F and FH Ratings of the freestop system are equal to the fire rating of the wall assembly.

2. Through Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the freestop system. The annular space shall be min 0 in. (point contact) to max 1 in. (25 mm). The separation between pipes and conduits to be min 0 in. (point contact) to max 1/2 in. (38 mm). Pipes and conduits to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or conduits may be used:

A. Steel Pipe – Non 4 in. (102 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.

B. Iron Pipe – Non 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

C. Conduit – Non 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT).

D. Copper Pipe – Non 6 in. (152 mm) diam (or smaller) regular (or heavier) copper tubing.

E. Copper Pipe – Non 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.

3. Fill Void or Cavity Material\* – Sealant – Min 5/8 in. (15 mm) thickness of fill material applied within the annular, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) dam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – FS-ONE Sealant or FS-ONE MAX Innumescent Sealant.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

**System No. C-AJ-1149**

| ANSIUL1479 (ASTM E814)                   | CANULC S115                              |
|------------------------------------------|------------------------------------------|
| F Rating – 2 Hr                          | F Rating – 2 Hr                          |
| T Rating – 0 Hr                          | FT Rating – 0 Hr                         |
| L Rating At Ambient – Less Than 1 CFM/ft | FT Rating – 2 Hr                         |
| L Rating At 400 F – 4 CFM/ft             | FT Rating – 0 Hr                         |
| W Rating – Class 1 (See Item 4)          | L Rating At Ambient – Less Than 1 CFM/ft |
|                                          | L Rating At 400 F – 4 CFM/ft             |

**SECTION A-A**

1. Floor or Wall Assembly – Min 6-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Block\*. Max dam of opening is 12 in. (305 mm). See Concrete Blocks (CA7) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants – One metallic pipe, conduit or tubing to be installed within the freestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The annular space shall be 0 in. (point contact) to max 1-1/4 in. (32 mm). The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe – Non 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe – Non 10 in. (254 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit – Non 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or rigid steel conduit.

D. Copper Tubing – Non 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe – Non 4 in. (102 in) diam (or smaller) regular (or heavier) copper pipe.

3. Packing Material – Min 3 in. (76 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation for non 4 in. diam (and smaller) pipes, conduits or tubing and min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation for pipe greater than non 4 in. diam, firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material.

4. Fill Void or Cavity Material\* – Sealant – Min 1/2 in. (13 mm) thickness of fill material applied within the annular, flush with the top surface of floor or both surfaces of wall. At the point of contact location between pipe and concrete, a min 1/2 in. (13 mm) dam bead of fill material shall be applied at the concrete/pipe interface on the top surface of floor and on both surfaces of wall. W Rating applies only when CFS-S SL, GS, CFS-S SL, SL, floors only. CPM15 or CPM14 Sealant is used.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – CPM15, CPM14, CFS-S SL, GS, CFS-S SL, SL, floors only. CPM15 or CPM14 Sealant or FS-ONE Sealant or FS-ONE MAX Innumescent Sealant.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

**System No. W-L-1054**

| ANSIUL1479 (ASTM E814)                     | CANULC S115                                 |
|--------------------------------------------|---------------------------------------------|
| F Ratings – 1 and 2 Hr (See Items 1 and 3) | F Ratings – 1 and 2 Hr (See Items 1 and 3)  |
| T Rating – 0 Hr                            | FT Rating – 0 Hr                            |
| L Rating at Ambient – Less Than 1 CFM/ft   | FT Ratings – 1 and 2 Hr (See Items 1 and 3) |
| L Rating at 400 F – Less Than 1 CFM/ft     | FT Rating – 0 Hr                            |
|                                            | FT Rating – 0 Hr                            |

**SECTION A-A**

1. Wall Assembly – The 1 or 2 hr fire-rated gypsum wallboard/wall assembly shall be constructed of the materials and in the manner specified in the individual UL600 or UL600 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of non 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the dam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the dam of the penetrating item such that, when the penetrating item is installed in the opening, a 3 to 3/4 in. (25 to 30 mm) clearance is present between the penetrating item and the framing on all four sides.

B. Gypsum Board\* – 5/8 in. (16 mm) thick, 4 1/2 (112 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and size shall be specified in the individual UL600 or UL600 Series Design in the UL Fire Resistance Directory. Max dam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max dam of opening is 14-1/2 in. (368 mm) for wood stud walls. The F and FH Ratings of the freestop system are equal to the fire rating of the wall assembly.

2. Through Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the freestop system. The annular space shall be min 0 in. (point contact) to max 1 in. (25 mm). Pipes may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe – Non 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe – Non 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit – Non 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT).

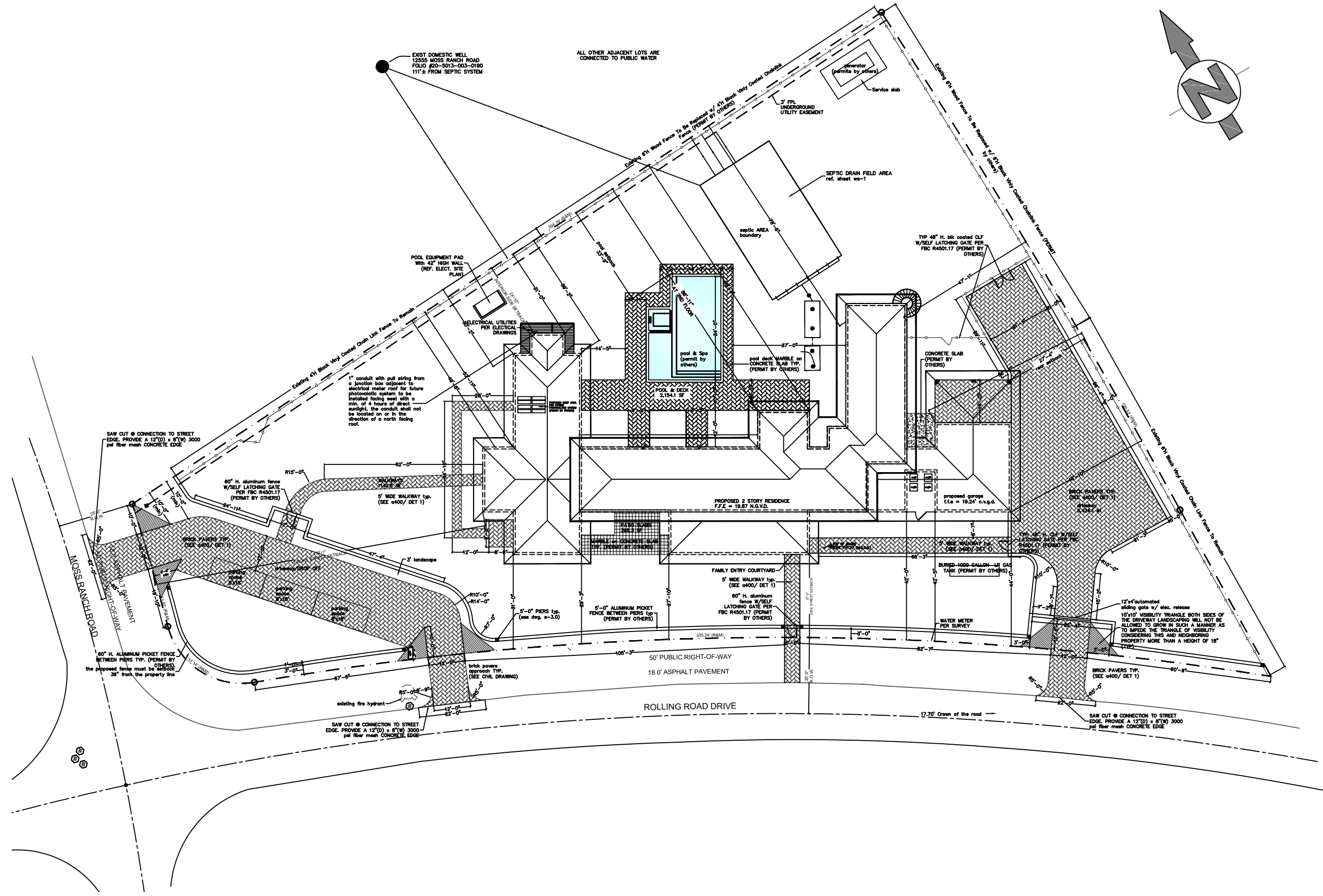
D. Copper Tubing – Non 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe – Non 6 in. (152 mm) diam (or smaller) regular (or heavier) copper pipe.

3. Fill Void or Cavity Material\* – Sealant – Min 5/8 in. (15 mm) thickness of fill material applied within the annular, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) dam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – FS-ONE Sealant or FS-ONE MAX Innumescent Sealant.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



SITE PLAN

SCALE: N.T.S.

CIRCLE SECURITY SOLUTIONS, INC.  
6815 SW 81st Terrace.  
Miami, Florida 33143  
Lic: EF0000848  
PH: (305) 776-9736

Project Name and Address:  
NEW RESIDENTIAL SMOKE ALARM SYSTEM FOR:  
CASTRO RESIDENCE  
12715 Rolling Road Drive  
Pinecrest, FL 33156

FIRE ALARM  
DESIGNER  
& SECURITY SYSTEMS  
DESIGN AND DRAWING  
Phone: (786) 458 4234  
e-mail:  
cscs.gner.designs@yahoo.com

Revisions:

Date: 12.05.2025  
CAD File: 0005  
Project No: 107  
Scale: AS SHOWN

FA: 1  
Sheet 1 of 4

This item has been digitally signed and sealed by Yennan Tomas Leyva, PE on December 19<sup>th</sup> 2025.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SEAL  
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MIAMI, FLORIDA 33196

Fire Alarm Specifications & Sequence of Operations

NTS