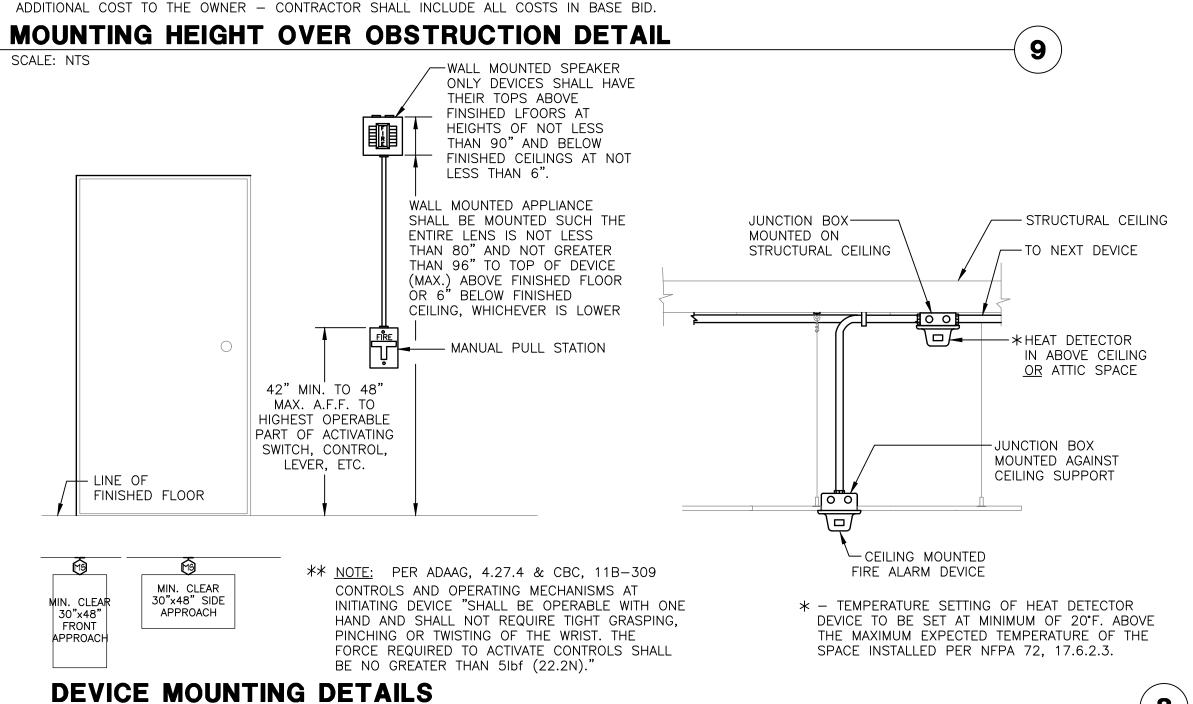
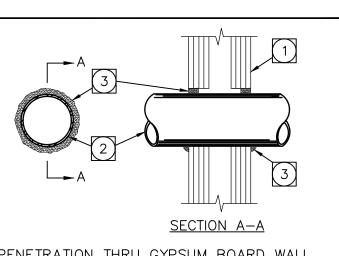
ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS PRIOR TO DEVICE ROUGH-IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS & SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN RFI FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN





PENETRATION THRU GYPSUM BOARD WALL

System No.W-L-1252
January 22, 2015
F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)
T Ratings - 0 Hr
L Rating At Ambient - less than 1 CFM/sq ft
L Rating At 400 F - less than 1 CFM/sq ft

*Bearing the UL Classification Marking

DRAWN BY:

<u>Wall Assembly</u> — The 1, 2, 3 or 4 hr fire—rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following A. <u>Studs</u> - Wall framing may consist of steel channel studs. Steel studs to be min 3-1/2 in. (89 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.
 B. <u>Gypsum Board*</u> - Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and

sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. . Through Penetrant — One metallic pipe, conduit or tube to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe, conduit or tube and periphery of opening shall be min 0 in. (point contact) to max 7/8 in. (22 mm). Pipe, conduit or tube to be rigidly supported on both sides of wall assembly.

tube to be rigidly supported on both sides of wall assembly.

A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit.

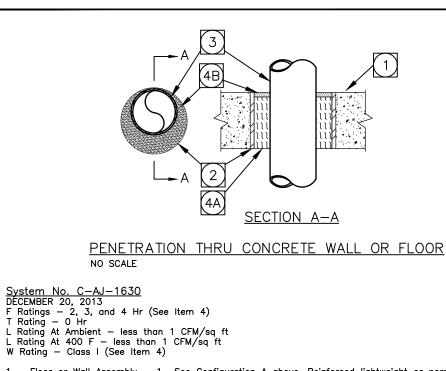
D. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic conduit.

E. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.

F. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe. 3. Fill, Void or Cavity Material* — Sealant — 1. Fill material applied within annulus, flush with both surfaces of wall. Type and thickness of sealant is dependent on F and FH Ratings as indicated in Table below. An additional 1/2 in. (13 mm) diameter bead of sealant applied at penetrant/gypsum board interface at point contact location on both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC —— FS—ONE Sealant, FS—ONE MAX Intumescent Sealant or CP 606 Sealant

F, FH RATINGS (HR)	SEALANT TYPE	SEALANT THICKNESS, IN. (MM)
1,2	FS-ONE, FS-ONE MAX OR CP 606	5/8 (16)
3	FS-ONE, FS-ONE MAX OR CP 606	1 (25)
4	FS-ONE, FS-ONE MAX	1 (25)



1. Floor or Wall Assembly — 1. See Configuration A above. Reinforced lightweight or normal weight (100—150 pcf or 1600—2400 kg/cu meter) concrete as specified in the Table in Item 4 below. Wall may also be constructed of any UL Classified Concrete Blocks'. Max diam of sleeved opening is 32 in. (813

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers. 1A. <u>Floor Assembly</u> — See Configuration B above. Min 6 in. (152 mm) thick UL Classified hollow—core Precast Concrete Units'. Max diam of opening is 7 in. (178 mm).

See Precast Concrete Units (CFTV) category in the Fire Resistance Directory for names of manufacturers. 2. <u>Steel Sleeve (Optional)</u> — Nom 32 in. (813 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve cast or grouted into floor or wall assembly, flush with both surfaces of floor or wall. As an option, sleeve may extend max 2 in. above top surface of floor or beyond one or both surfaces of wall. Steel sleeve may be used in 2 and 3 hr F Rated systems only. 3. <u>Through Penetrants</u> — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. See Table in Item 4 for sizes of penetrants A, B, D and E that may be used. See Item 3C below for size of conduit that may be used. The annular space shall be as specified in Table in Item 4 below. The following types and sizes of metallic pipes, conduits or tubing may be used.

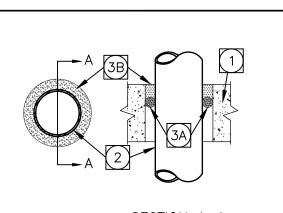
A. Steel Pipe - -- Schedule 10 (or heavier) steel pipe.

B. Iron Pipe - Cast or ductile iron pipe.

C. Conduit - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or nom 6 in. (152 mm) diam (or smaller) steel conduit. Copper Tubing — Type L (or heavier) copper tubing.
Copper Pipe — Regular (or heavier) copper pipe.

concrete, annular space, fill and packing material thickness, packing material density and penetrant size as shown in the Table below. W Rating applies to annular spaces of min 0 in. (point contact) to max 1-7/8 in. and to Configuration A detail only.

F				MIN DENSITY		IN. DIAM	OR SMALLE
RATING HR	MIN THICK CONCRETE IN.	ANNULAR SPACE IN.	MIN THICK PACKING MTL IN.	PACKING MTL PCF KG/CU MTR	MIN THICK FILL MTL IN.	D,E COPPER	A,B STEEL IR
2	5-1/2(140)	0 TO 1-7/8 (0 TO 48)	5 (127)	4 (64)	1/2 (13)	4 (102)	16 (406)
3	4-1/2(114)		4-1/4 (108)	4 (64)	1/4 (6)	6 (152)	30 (762)
4	5-1/2(140)	0 TO 1-7/8 (0 TO 48)	5 (127)	4 (64)	1/2 (13)	4 (102)	8 (203)
in the from I materi thickness and the recess. B. Emateri end of and cooption, recess floor.	Table above. Footh surfaces of al. For hollowess of mineral ne remaining home from the to all. Void or Cavalla as specified as specified as specified for covere or site of the for hollowes of the accommodation of the specified as a specified for sleeve, or with the specified of	Packing mate of wall or end core floor ap wool packing alf of the minor surface of ity Material in the Table h both surface, a min 1/re floors, the odate a 1/4	rial to be recessed ds of sleeve, as roplications as show material shall be neral wool packing the floor to accompany the floor to accompany the floor to accompany the floor of the floor applied wit ces of wall or end for inces of wall or end for incessing material	cket into opening of from top surface equired to accomm n in Configuration installed flush with material installed mmodate the required 1/4 or 1/2 in. (In the annulus, flus of sleeve. At the am bead of fill modified fill material installed to fill material installed.	of floor or to codate the req B, one half on the bottom at the top of fired thickness 6 or 13 mm) ash with top see point contacterial shall be bottom surfacted flush w	op end of uired thick for the requisurface of the openin of the fill thickness surface of totation applied. A e of the fith bottom	sleeve, or ness of fill ired the floor ng and material. of fill floor or top beMeen pip As an loor may b surface of



SECTION A-A PENETRATION THRU CONCRETE FLOOR

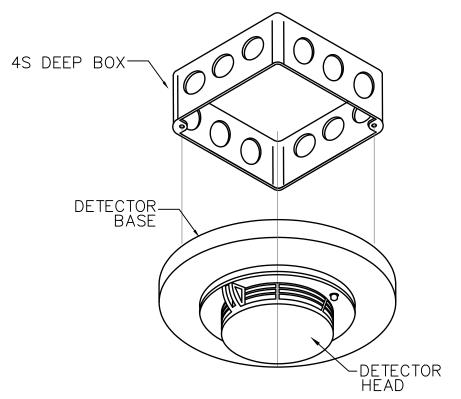
Floor or Wall Assembly — 1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in. (152 mm). See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers. 2. <u>Through Penetrants</u> — One metallic pipe, conduit or tubing to be centered within the firestop system. A nom annular space of 3/4 in. (19 mm) is required within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic

 A. <u>Steel Pipe</u> — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
 B. <u>Conduit</u> — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or steel conduit. Firestop System — The firestop system shall consist of the following:

Packing or Forming Materials — Optional — One of the following packing or forming materials A1. Foam Backer Rod —— Foam backer rod tightly packed into the opening as a permanent form. Packing material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty. A2. Mineral Wool Batt Insulation —— Min 4 pcf (64 kg/m3), tightly packed into the opening as a permanent form. Packing material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty. A3. Forming Material* — Forming material to be foamed into the opening as a permanent form. Forming material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CF812 or CF—AS CJP Foam Sealant B. Fill, Void or Cavity Material* -- Putty -- Min 1 in. (25 mm) thickness of putty applied within the annulus, flush with top surface of floor or with both surfaces of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CP 618 Firestop Putty Stick *Bearing the UL Classification Mark



DETECTOR MOUNTING DETAIL 6

XX DENOTES CANDELA

30"x48"

FRONT

APPROACH

PULL STATION DETAIL

SCALE: N.T.S.

XX DENOTES CANDELA

PUSH IN

PULL DOWN

CEILING MTD. AUDIBLE/VISUAL

TO NEXT DEVICE OR EOL

NOTE: PER ADAAG, 4.27.4 & CBC, 11B-309 & CFC, 907.4.2

CONTROLS SHALL BE NO GREATER THAN 5lbs (22.2N)."

☐4-S BOX WITH 3" RING 4" OCTAGON BACKBOX

SMOKE DETECTOR NOT TO-BE INSTALLED IN THIS AREA

NOT LESS THAN 90"

A.F.F OR NOT LESS THAN

6" BELOW FINISHED

CEILING

42" MIN. TO 48" MAX.-

POINT OF ACTIVATING HANDLE OR LEVER

MOUNTING HEIGHT DETAIL

A.F.F. TO HIGHEST

GENERAL NOTES:

SECTIONS 907.4 THROUGH 907.5.

BOX DOES NOT EXCEED 200 FEET. (CFC, 907.4.2.1)

A.F.F. A.F.F.

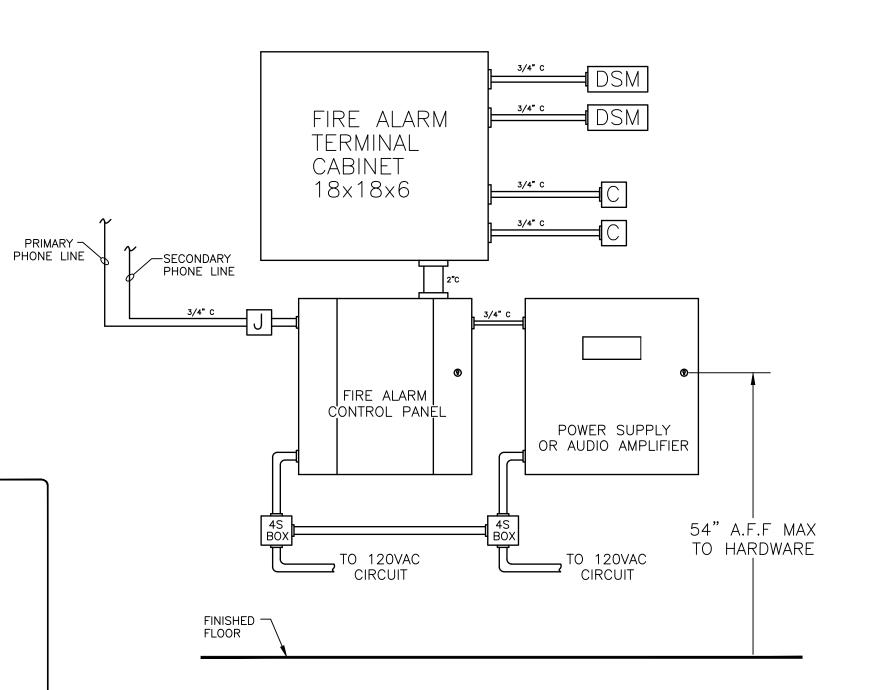
MANUAL PULI STATION

1. THE ENTIRE LENS OF STROBE LIGHTS MUST BE BETWEEN 80" AND 96" ABOVE FLOOR FINISH. (NFPA 72, 18.5.5)

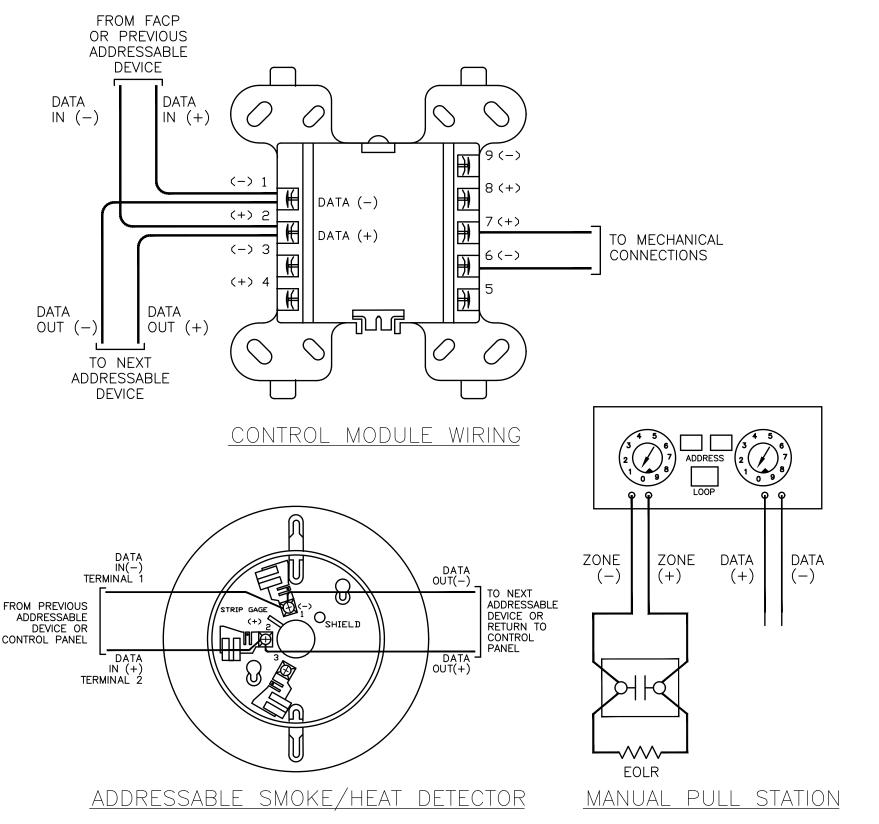
3. WHEN APPLICABLE, MANUAL FIRE ALARM BOXES SHALL BE LOCATED NOT MORE THAN 5 FEET FROM THE ENTRANCE TO EACH EXIT. ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE LOCATED SO THAT TRAVEL DISTANCE TO THE NEAREST

2. MANUAL FIRE ALARM BOXES SHALL BE INSTALLED IN ACCORDANCE WITH CFC,

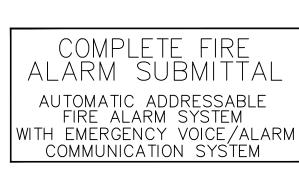
CONTROLS AND OPERATING MECHANISMS AT INITIATING DEVICE "SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE



FIRE ALARM PANEL/POWER SUPPLY MOUNTING ELEVATION 5 SCALE: N.T.S.



DEVICE WIRING DETAILS



SPEAKER/STROBE

WEATHERPROOF SPEAKER

WEATHERPROOF

BACKBOX

→ 4S BOX WITH NO

-4S BOX WITH SINGLE GANG RING

RING FLUSH TO WALL

FOR STROBE ONLY

OF SINGLE GANG RING





IDENTIFICATION STAMP DIV. OF THE STATE ARCHITEC

REVIEWED FOR

SS 🗹 FLS 🗹 ACS 🗹

APP: 03-121846 INC:

COLLABORATIVE 11870 Pierce Street, Suite 160 Riverside, California 92505 951.299.4160 www.tk1sc.com Project Leader - Nikolas Bruno tk1sc Job #: 2021-0458







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	HACIENDA LA	PUENTE US	SD		
	DATE	PROJE	PROJECT NUMBER		
	10/12/2021	#####			
DR	AWING HISTORY				
No.	Descrip	Date			
	CONSTRUCTIO	N DOCUMEN	NTS		

FIRE ALARM DETAILS

THROUGH RATED WALL OR FLOOR PENETRATIONS (U.L. LISTINGS) CHECKED BY: Checker



EFA0.02