735 WASHINGTON AVENUE FIRE ALARM SYSTEM

SITE

WASHINGTON AVENUE APARTMENTS
375 WASHINGTON AVENUE
SOUTH PORTLAND, ME 05104

INSTALLER

T.A. NAPOLITANO, INC P.O. BOX 2301 SOUTH PORTLAND, ME 04116

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Safer. Smarter. Tyco.TM

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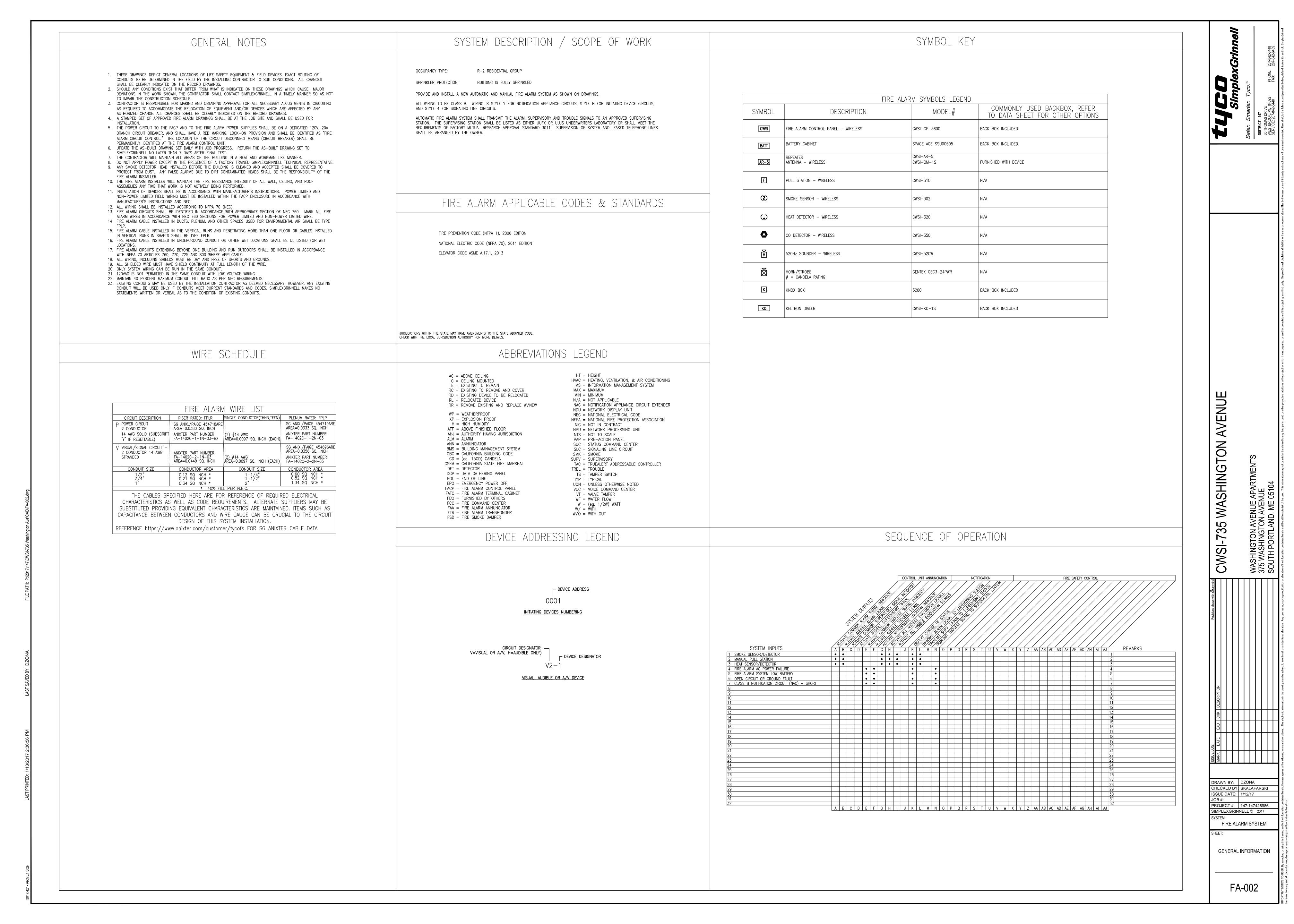
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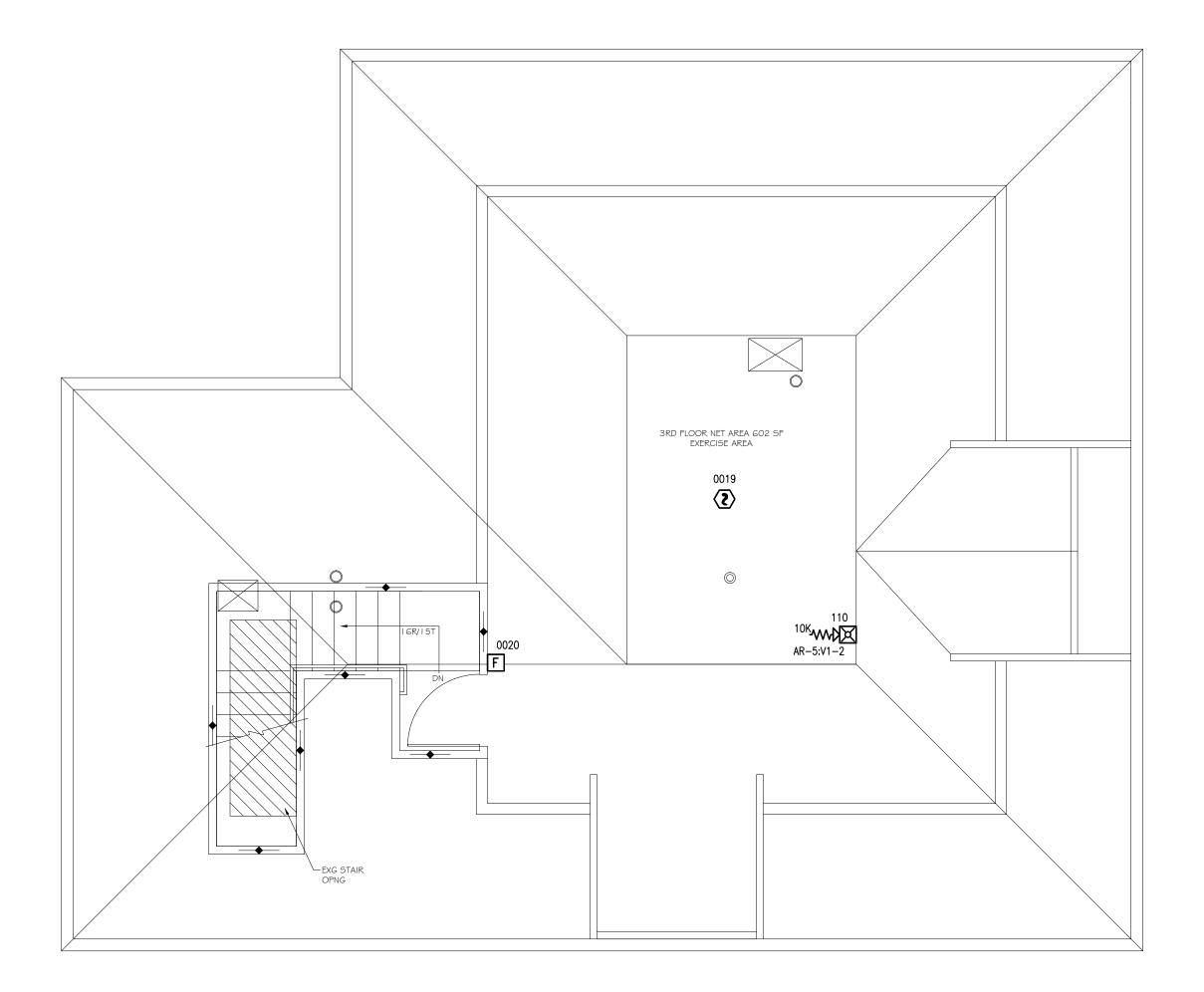
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COVER SHEET

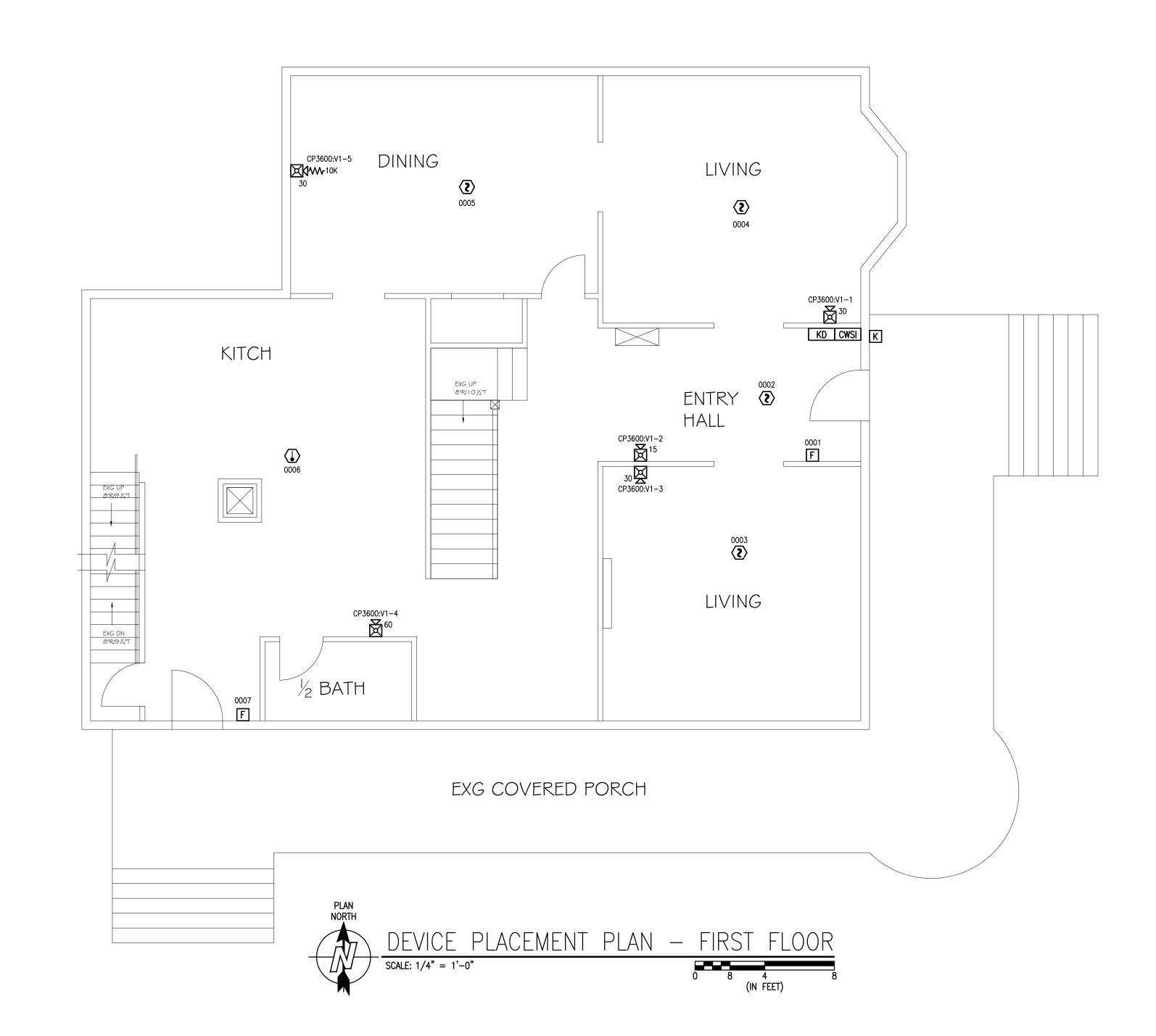
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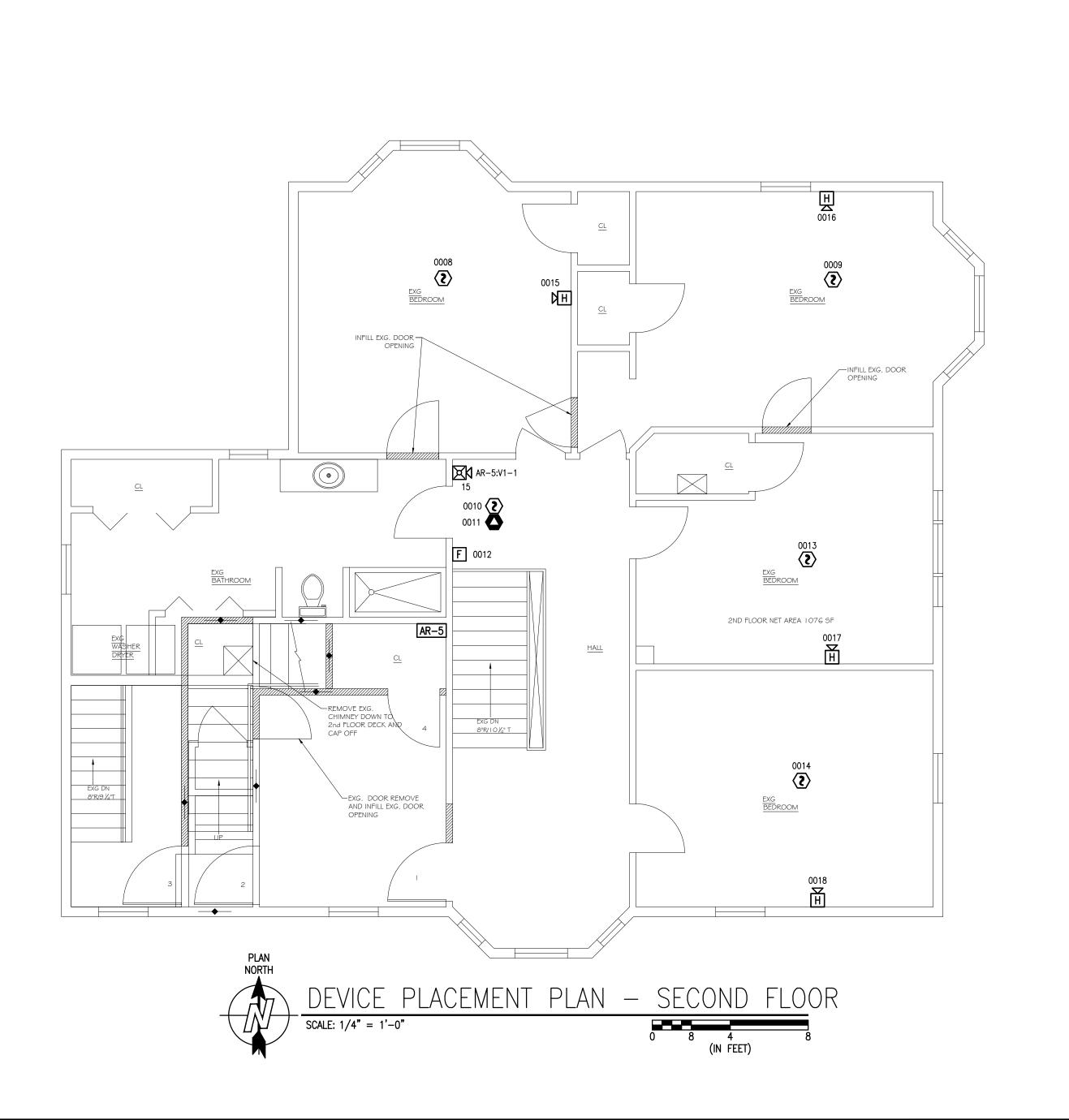
FIRE ALARM SYSTEM









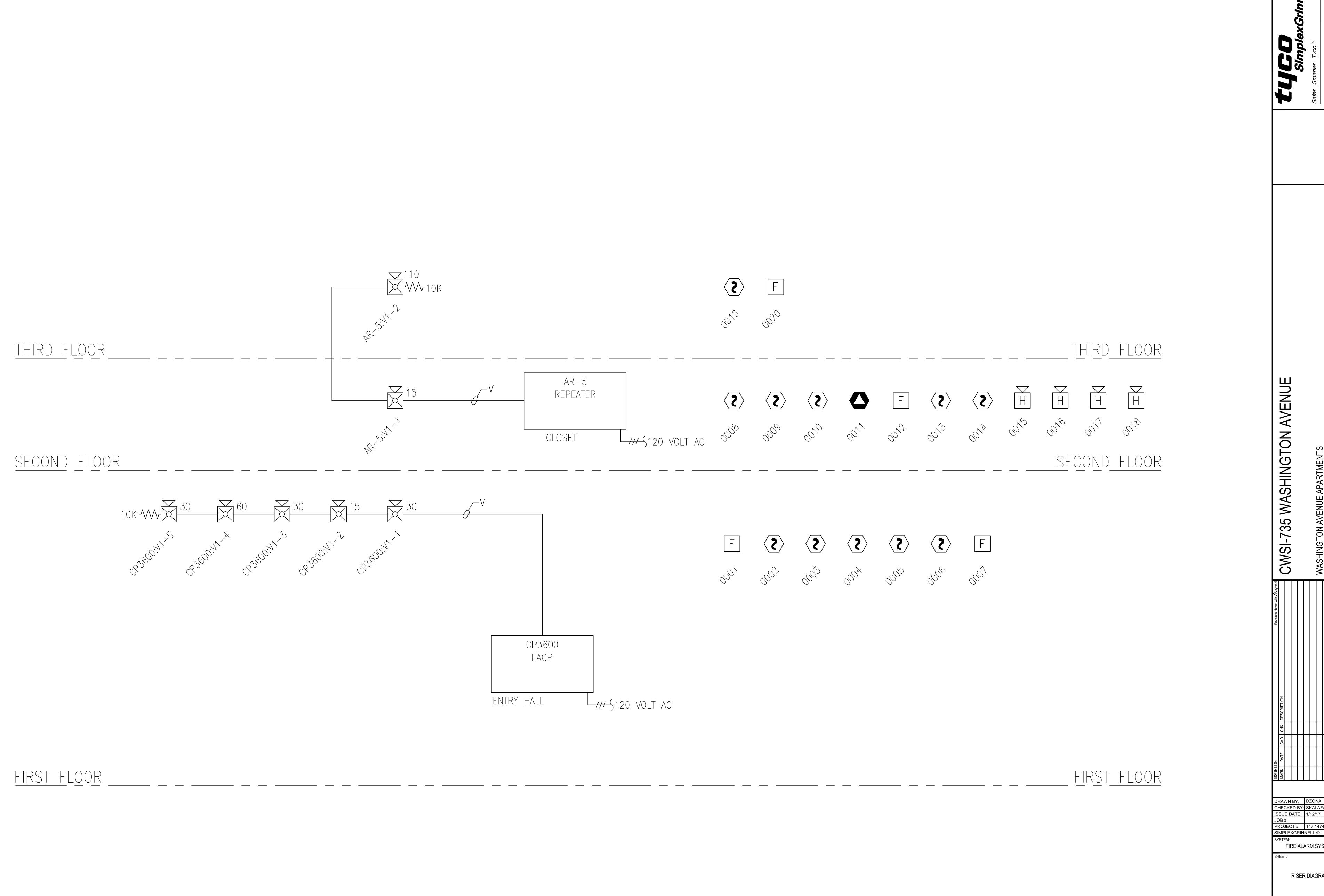


CWSI-735 WASHINGTON AVENUE

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FIRE ALARM SYSTEM

DEVICE PLACEMENT PLAN



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FIRE ALARM SYSTEM

RISER DIAGRAM

CWS1 CP-3600 NAC VOLTAGE DROPS										PID	GEC3-24WR	GEC3-24WR
Setting												110cd
WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL ELECTRICAL CODE (UNCOATED SOLID COPPER WIRE) @ 75 Celsius Device Type										MC A/V	MC A/V	
										Supv. Current	0.0000	0.0000
Alarm Current										Alarm Current	0.0770	0.2560
Alarm Current @ 23 Volts										0.0770	0.2560	
Plan Dist. (D) Wire Wire Res. Total V. Drop Volt % Volt Min Device Max										Max		
NOTIFICATION CIRCUIT DESCRIPTION	Ckt.	Feet	Gauge	/ Ft. (R)	Alarm (A)	(A*2D*R)	@ End	Drop	Voltage	Distance		
SECOND & THIRD FLOOR CKT	AR-5 V1-1	40	14ga	0.0031	0.333	0.107	19.393	19.19%	16vdc	1710 Ft.	1	1
SPARE	AR-5 V1-2		14ga	0.0031	0.000	0.000	19.500	18.75%	16vdc	0 Ft.		

				Standby	Total	Alarm	Total
Module	Qty	Description		Current	Standby	Current	Alarm
Panel Equipment							
AR-5	1	CWSI WIRELESS REPEATER		0.030000	0.030000	0.180	0.180000
				Total Panel Stby	0.030000	Total Panel Alarm	0.180000
Mult-Candela Strobe	s (Select	t Candella Rating)					
GEC3-24WR	1	GENTEX HORN STROBE	15cd	0.000000	0.000000	0.077	0.077000
GEC3-24WR	1	GENTEX HORN STROBE	110cd	0.000000	0.000000	0.256	0.256000
				Total Periph Stby	0.000	Total Periph Alarm	0.333
				Total Standby Amps	0.030	Total Alarm Amps	0.513

^{*} Additional Current Draw Included Below With Device Addresses Used

1. 2—wire detector alarm current is included in the alarm current of the Initiating Device Circuit.

	Standby		Alarm
Battery Calculations	Current		Current
Control Panel Card Power	0.030		0.180
Power For External Peripheral Devices	0.00000		0.33300
	0.030	< Totals>	0.513
Additional Battery Capacity Required 0%	0.000		0.000
Standby Time = 24 Hrs	0.720	Standby Ah	
Alarm Time = ${}$ 5 Mins.	0.043	Alarm Ah	
Standby + Alarm =	0.763		
Minimum Battery Required BA-12V-4AHS	0.915	20% Safety Margin	

CWS1 CP-3600 NAC VOLTAGE DROPS										PID	GEC3-24WR	GEC3-24WR	GEC3-24WR
										Setting	15cd	30cd	60cd
WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL	ELECTRICAL CODE	(UNCOATED S	OLID COPPE	ER WIRE) @ 75	5 Celsius					Device Type	MC A/V	MC A/V	MC A/V
		`		•						Supv. Current	0.0000	0.0000	0.0000
										Alarm Current	0.0770	0.1020	0.1610
Alarm Current @ 23 Volts										0.0770	0.1020	0.1610	
	Plan	Dist. (D)	Wire	Wire Res.	Total	V. Drop	Volt	% Volt	Min Device	Max			
NOTIFICATION CIRCUIT DESCRIPTION	Ckt.	Feet	Gauge	/ Ft. (R)	Alarm (A)	(A*2D*R)	@ End	Drop	Voltage	Distance			
FIRST FLOOR CKT	CP3600 V1-1	100	14ga	0.0031	0.544	0.397	19.103	20.40%	16vdc	1046 Ft.	1	3	1
SPARE	CP3600 V1-2		14ga	0.0031	0.000	0.000	19.500	18.75%	16vdc	0 Ft.			

CP-3600 BATTER	1 CALC			Cl II	_		_
				Standby	Total	Alarm	Total
Module	Qty	Description		Current	Standby	Current	Alarm
Panel Equipment							
CP-3600	1	CWSI WIRELESS CONTROL FACP		0.100000	0.100000	0.250	0.250000
				Total Panel Stby	0.100000	Total Panel Alarm	0.250000
Mult-Candela Strobes	s (Select	Candella Rating)					
GEC3-24WR	1	GENTEX HORN STROBE	15cd	0.000000	0.000000	0.077	0.077000
GEC3-24WR	3	GENTEX HORN STROBE	30cd	0.000000	0.000000	0.102	0.306000
GEC3-24WR	1	GENTEX HORN STROBE	60cd	0.000000	0.000000	0.161	0.161000
				Total Periph Stby	0.000	Total Periph Alarm	0.544
				Total Standby Amps	0.100	Total Alarm Amps	0.794

* Additional Current Draw Included Below With Device Addresses Used

1. 2—wire detector alarm current is included in the alarm current of the Initiating Device Circuit.

	Standby	Alarm
Battery Calculations	Current	Current
Control Panel Card Power	0.100	0.250
Power For External Peripheral Devices	0.00000	0.54400
	0.100 < Totals	> 0.794
Additional Battery Capacity Required 0%	0.000	0.000
Standby Time = 24 Hrs	2.400 Standby Ah	
Alarm Time = $\frac{1}{5}$ Mins.	0.066 Alarm Ah	
Standby + Alarm =	2.466	
Minimum Battery Required BA-12V-7AHS	2.959 20% Safety	Margin

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FIRE ALARM SYSTEM

CALCULATIONS AND SCHEDULES

Figure 1 Proper Mounting to Ceiling Tile

Tamper-Resistant Feature The smoke detector includes a tamper-resistant feature that prevents removal from the mounting base without the use of a tool. To engage the tamper-resistant feature, cut the small plastic tab located on the mounting base (Figure 2), and then install the detector. To remove the detector from the base once it has been made tamper resistant, use a small screwdriver to depress the square tamper release tab, located on the skirt of the mounting base, and turn the detector counterclockwise.

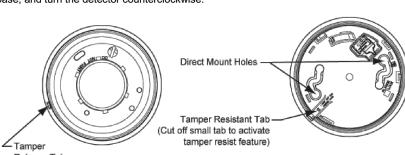


Figure 2 Tamper Resistant Feature

1. Make sure the battery is firmly installed in the smoke detector battery compartment. 2. The unit must be secured tightly to the wall, so as to not be dislodged. 3. Test the unit after any service, battery change or as often as local or national codes

Do NOT Install Detectors in the Following Areas: • In or near areas where particles of combustion are normally present such as kitchens; in garages; near furnaces, hot water heaters, or gas space heaters. In very cold or very hot areas.

In wet or excessively humid areas, or next to bathrooms with showers.

 In dusty, dirty, or insect-infested areas. Near fresh air inlets or returns or excessively drafty areas. P/N IM-300 Rev. G © 2015 Tyco Fire & Security GmbH

To measure the detector sensitivity use System Sensor model SENS-RDR Infrared Sensitivity Reader tool. Refer to the instruction manual of the model SENS-RDR (D100-98-00) for proper use.

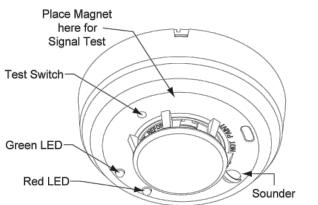


Figure 3 LEDS, Sounder, Test Switch and Signal Test Locations

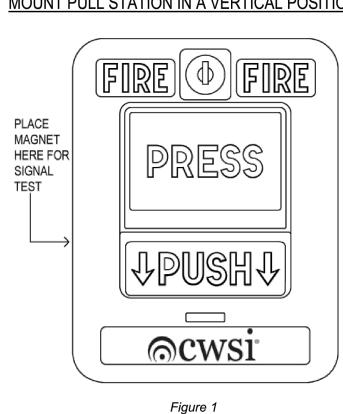
The test must be performed while the smoke detector is held in its intended mounting location. Install a battery in the smoke detector. Initiate the test by placing a strong magnet on the smoke detector housing at the location shown in figure 3. The model 301/302 piezo sounder will beep once. A delay of up to 15 seconds will occur followed by either one or two beeps. One beep indicates an unacceptable location and two beeps indicate an acceptable location. If only one beep is heard then relocate the model 301/302 mounting position closer to the nearest repeater or control panel and perform the test again. Continue this procedure until 2 beeps are achieved. Do not mount the smoke detector unless 2 beeps are heard when performing 5 consecutive signal tests. This test **must** be performed before and after transmitter installation. Note: A CWSI model AR-3(A), AR-5 repeater or CWSI FACP must be powered up, installed and enrolled before running this test.

Test Switch Functions: This switch has multiple functions and is located in an opening on the detector housing as shown in figure 3. To activate the switch insert a small screwdriver or allen wrench (0.18" max.) into the test switch opening; push and hold for 5 seconds. Pressing this switch will not cause an alarm at the control panel.

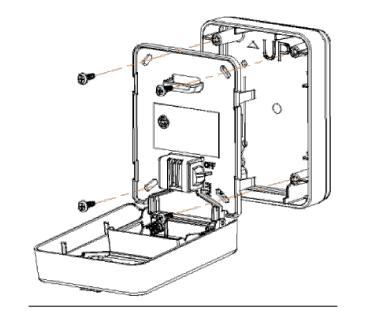
The functions of the Test Switch are: 1. Test the functionality of the detectors circuitry when pressed while the detector is in 2. Silence the low battery chirp for 12 hours if pressed during low battery. 3. Silence the detector sounder for 5 minutes if pressed anytime while the sounder is turned on in the temporal pattern.

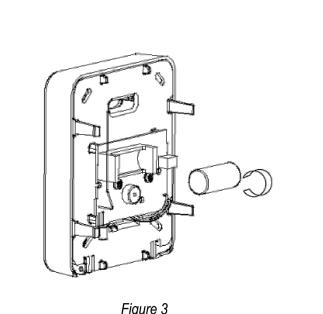
The model 301/302 smoke detector tests for a low battery condition once every 65 minutes. The battery voltage has to be at or below 2.7V nominally for two consecutive low battery tests before a low battery trouble condition is transmitted. When a low battery is detected P/N IM-300 Rev. G © 2015 Tyco Fire & Security GmbH

MOUNT PULL STATION IN A VERTICAL POSITION ONLY



P/N IM-310 Rev. E © 2015 Tyco Fire & Security GmbH





P/N IM-350 Rev.D © 2015 Tyco Fire & Security GmbH

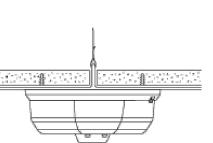
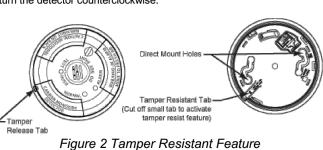


Figure 1 Proper Mounting to Ceiling Tile

The CO detector includes a tamper-resistant feature that prevents removal from the mounting base without the use of a tool. To engage the tamper-resistant feature, cut the small plastic tab located on the mounting base (Figure 2), and then install the detector. To remove the detector from the base once it has been made tamper resistant, use a small screwdriver to depress the square tamper release tab, located on the skirt of the mounting base, and turn the detector counterclockwise.



1. Make sure the battery is firmly installed in the CO detector battery compartment. 2. The detector must be secured tightly to the wall, so as to not be dislodged. 3. Test the detector after any service, battery change or as often as local or national codes Do NOT Install Detectors in the Following Areas:

 In an area where cross-interference gasses are present. Cross interference gasses include but are not limited to: Methane, Butane, Heptane, Ethyl Acetate, Isopropyl Alcohol, Carbon Dioxide, Ammonia, Ethanol, Toluene, Trichloroethane Within 10 feet of a flame fueled appliance. In any area that is out of the detectors environmental specification range.

 In wet or excessively humid areas, or next to bathrooms with showers. In dusty, dirty, or insect-infested areas. Near fresh air inlets or returns or excessively drafty areas. Consult NFPA 720, the local Authority Having Jurisdiction (AHJ), and/or applicable codes for specific information regarding the spacing and placement of CO detectors. Refer to technical bulletin part number IM-350-TB-RevA for more information.

Detectors must be tested after installation and following maintenance or battery replacement. NOTE: Before testing, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Place the control panel in test to prevent any unwanted alarms. Perform the test below to properly test the 350 detector. If a detector fails any of the tests below, it should be cleaned as outlined in the Maintenance section. If the detector still fails, it should be replaced.

Warning: This test will cause an alarm signal to be transmitted. This test will only function if the detector is operating within its proper sensitivity limits and is not in a trouble condition. The purpose of this test is to check the functionality of the sensor and circuitry. The model 350 has a functional gas test mode which can be used to verify the detector's ability to sense carbon monoxide gas. To perform the alarm/functional gas test, follow the

Locate the recessed detector test switch located on the detector cover (Figure 3). With a small screwdriver, depress and hold the recessed "Test" switch for approximately 2 seconds. The detector will temporarily sound in alarm and the red LED will illuminate.

Upon successful gas entry and if functioning properly, the detector will alarm by

An Alarm signal will be annunciated at the control panel. . Within a few seconds the green LED will start to blink rapidly indicating the detector is in functional test mode awaiting gas entry. Spray a very small amount of Solo brand C6 canned CO into one of the 3 small gas entry holes located on the top center of the detector (figure 3).

sounding in a Temporal 4 pattern with the red LED blinking. The alarm condition at the detector will time out in 20 to 60 seconds or when the If gas entry is unsuccessful, the test will time out after 27 seconds. When testing of the CO detector(s) is completed, remove the panel from test

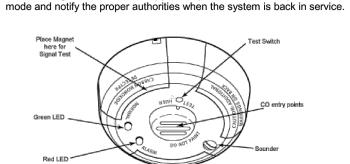


Figure 3 LEDS, Sounder, Test Switch and Signal Test Locations

The test must be performed while the CO detector is held in its intended mounting location. Install a battery in the CO detector. Initiate the test by placing a strong magnet on the CO detector housing at the location shown in figure 3. The piezo sounder on the rf transmitter inside the detector will beep once. A delay of up to 15 seconds will occur followed by either

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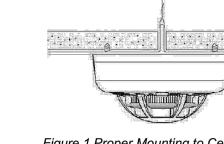
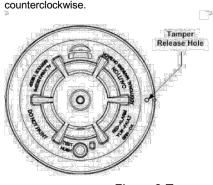


Figure 1 Proper Mounting to Ceiling Tile The smoke detector includes a tamper-resistant feature that prevents removal from the mounting base without the use of a tool. To engage the tamper-resistant feature, cut the small plastic tab located on the mounting base (Figure 2), and then install the detector. To remove the detector from the base once it has been made tamper resistant, insert a small screwdriver in hole located near the alignment mark, and turn the detector



Do NOT Install Detectors in the Following Areas:

1. Make sure the batteries are firmly installed in the smoke detector battery holders. 2. The unit must be secured tightly to the wall, so as to not be dislodged. 3. Test the unit after any service, changing the batteries or as often as local or national

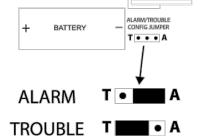
• In or near areas where particles of combustion are normally present such as kitchens; in garages; near furnaces, hot water heaters, or gas space heaters. In very cold or very hot areas. • In wet or excessively humid areas, or next to bathrooms with showers. In dusty, dirty, or insect-infested areas. • Near fresh air inlets or returns or excessively drafty areas. Consult NFPA 72, the local Authority Having Jurisdiction (AHJ), and/or applicable codes for specific information regarding the spacing and placement of smoke detectors. Refer to technical bulletin part number IM-300-TB-RevB for more information.

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345 MOUNTING* ACCEPTABLE MOUNTING POSITION

> Figure 1 *The model 345TS can be mounted in any position.

ALARM/TROUBLE CONFIGURATION JUMPER



P/N IM-345-Rev.B

P/N IM-345-Rev.B © 2014 Tyco Fire & Security GmbH

345(TS) WIRING DIAGRAM

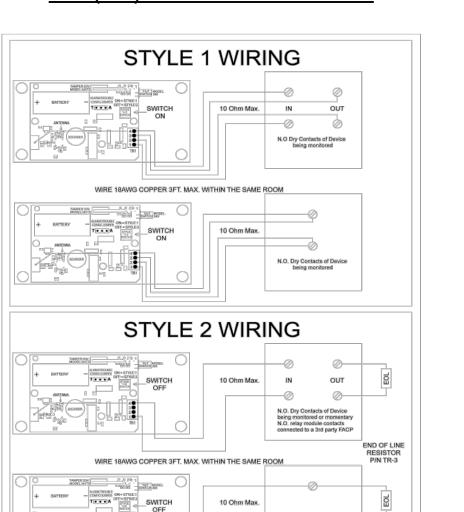
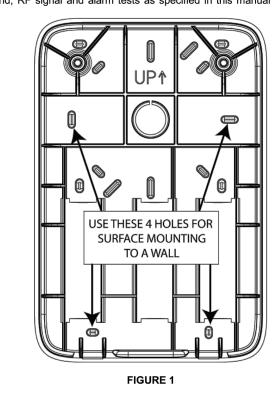


Figure 3

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Perform sound, RF signal and alarm tests as specified in this manual after installation is

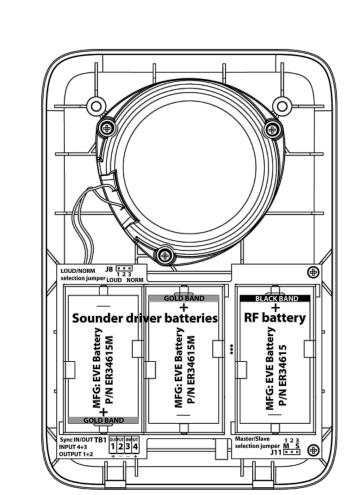


The 520/MH notification devices incorporate a method to allow the installer to perform a 5 second temporal 3 db sound level test. The test can be performed without activating an alarm on the programmed zone(s). To initiate the test hold a magnet up to the face of the appliance at the test position shown in figure 4 for approximately 5 seconds. There is a small dimple in the plastic on the cover to help find the test position. When activated, the test will produce the temporal 3 pattern for 5 seconds to allow a db sound output measurement to be obtained at the desired location. This test can be performed without the unit being enrolled into a panel or in a network making for a good tool for pre-installation

Loud/Norm jumper (520 only): The model 520 has an optional loud setting of the sound level output. The J8 jumper can be selected for either norm or loud sound dBA output. The loud setting will increase the sound output approximately 1.5 dBA from the norm setting. This additional sound output level can be used where marginal or inacceptable sound dBA readings are obtained in an area. This boost in sound output could result in required sound levels being achieved in lieu of adding additional sounders or relocation. For the best battery life always leave the J8

P/N IM-520/MH Rev.C © 2014 Tyco Fire & Security GmbH

jumper in the norm position.



The test must be performed while the 520/MH is held in its intended mounting location. The unit must be powered up and in communication with a repeater or control panel. Initiate the test by momentarily placing a strong magnet on the 520/MH front cover at the location shown in figure 3. The sounder will beep once. A delay of up to 15 seconds will occur followed by either one or two beeps. One beep indicates an unacceptable location and two beeps indicate an acceptable location. If only one beep is heard then relocate the model 520/MH mounting position closer to the nearest repeater or control panel and perform the test again. Continue this procedure until 2 beeps are achieved. Do not mount the appliance detector unless 2 beeps are heard when performing 5 consecutive signal tests. This test must be performed before and after product installation. The maximum repeater depth

between any 520/MH and any alarm device is 22. This depth insures 10 second alarm to

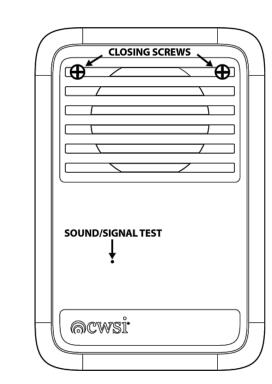
horn activation. Note: The 520/MH must be in communication with a survey repeater,

enrolled repeater or control panel to perform the test. Refer to the repeater and/or control

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P/N IM-310 Rev. E

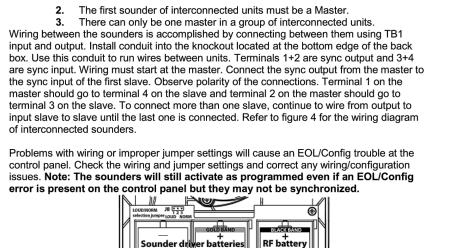
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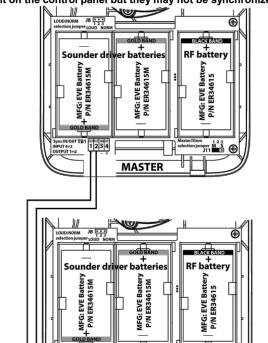


Programming:
The 520/MH must be enrolled into the CWSI Fire Alarm Control Panel before it can be programmed to activate its sounder on receipt of an alarm. The Model 520/MH will not respond to alarms unless it is enrolled into a compatible control panel and programmed to activate. The 520/MH can be programmed with up to 3 different zones and various silencing options. The temporal 3 pattern is to be used for evacuation only. Refer to the control panel installation instructions for further details on programming

The 520/MH sounders can be synchronized by interconnecting them with a single wire pair. The wiring should be in conduit and contained within one room. Note: Interconnection of models 520 and MH is not recommended as synchronization is not guaranteed between different models. When connected together the sounders will synchronize their temporal 3 and 4*(520 only) patterns when multiple sounders are activated. To achieve synchronization the sounders must be both correctly configured as master and slave(s) and wired together. Master and slave selection is made by moving jumper J11 to either the "M" (master) or "S" (slave) position. The first sounder in line must be configured as a Master since it will sync all of the other connected units. The sounders connected to the master must be configured as slaves to accept sync pulses from the master. The J11 Master/Slave jumper position must be chosen prior to installing the RF battery as it is only read on power up. Proper selection of the J11 jumper is also monitored for the following rules:

 Single standalone sounders must be configured as a Master. P/N IM-520/MH Rev.C © 2014 Tyco Fire & Security GmbH





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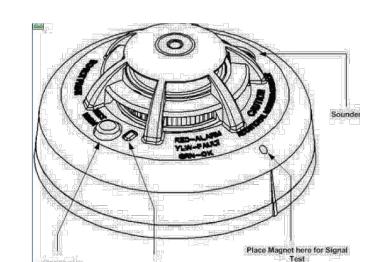


Figure 3 LEDS, Sounder, Test Switch and Signal Test Locations

location. Install batteries in the smoke detector. Initiate the test by placing a strong magnet on the smoke detector housing at the location shown in figure 3. The model 325/320 piezo sounder will beep once. A delay of up to 15 seconds will occur followed by either one or two beeps. One beep indicates an unacceptable location and two beeps indicate an acceptable location. If only one beep is heard then relocate the model 325/320 mounting position closer to the nearest repeater or control panel and perform the test again. Continue this procedure until 2 beeps are achieved. Do not mount the smoke detector unless 2 beeps are heard when performing 5 consecutive signal tests. This test must be performed before and after transmitter installation. Note: A CWSI model AR-5 repeater or CP-3500D Control Panel must be powered up, installed and enrolled before

running this test.

Test Switch Functions (325 Only): This switch has multiple functions and is located on the detector housing as shown in figure 3. To activate the switch, push and hold for 5 seconds. Pressing this switch will not cause an alarm at the control panel. The functions of the Test Switch are:

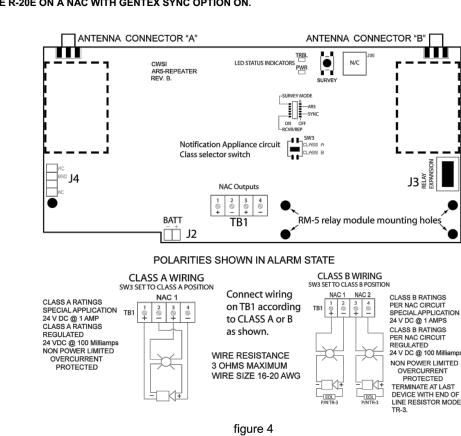
1. Test the functionality of the detectors circuitry when pressed while the detector is in 2. Silence the detector sounder for 5-10 minutes if pressed anytime while the sounder is turned on in the temporal pattern.

The Wireless Smoke Heat Alarm is powered by 3 AAA Duracell Procell or 3 AAA Energizer E92 batteries (included). The detector regularly checks for low batteries. If low batteries are detected, the transmitter sends a low battery message to the control panel. which displays the detector's ID. In addition, the yellow LED of the detector will blink every 12 seconds. Be sure to replace all of the batteries with fresh ones.

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---ut Power: 120/240Vac 1A 50/60Hz Apply 120Vac to Black-White Apply 240VAC to Black-Blu BATTERY WIRING Max. battery circuit current 4 Amps CONNECT POWER AND GROUND WIRE TO SUPPLY USING WIRE NUTS

* UP TO 4 RELAYS CAN BE CONNECTED WITHOUT ANY NOTIFICATION APPLIANCES CONNECTED OR SUBSTITUTE 1 RELAY FOR 1 NOTIFICATION APPLIANCE IF USED TOGETHER. WHEN USING R-20E RELAYS THEY SHOULD BE CONNECTED DIRECTLY TO THE NAC OUTPUTS BEFORE THE SYNC MODULE. DO NOT USE THE R-20E ON A NAC WITH GENTEX SYNC OPTION ON.

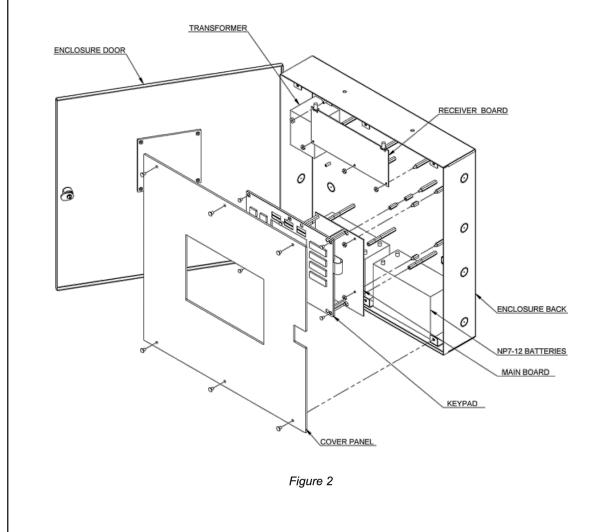


4.2.3 USB Jack J35 This connector is for factory use only. Refer to figure 4 for location.

Section 5 – Optional Model RB Relay Boxes

The RB relay box is an optional accessory for connection to the AR-5 repeater. It provides up to 40 normally open dry contact outputs. The number of relays corresponds to the model number of the unit for example RB-10 is a ten relay box. Relay boxes can be ordered in increments of ten relays. The relay box is connected to the AR-5 repeater with a cable run through conduit. The enclosure is the same as a repeater.

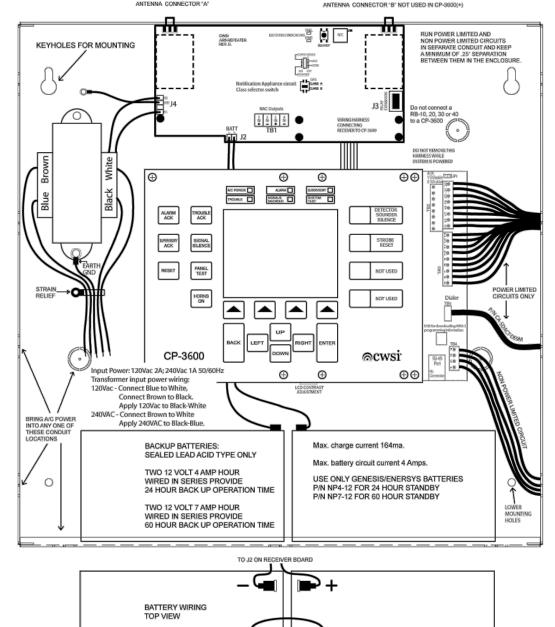
P/N IM-AR5 Rev.D



Section 4 - System Programming This section details system programming options including time/date, password, base code, device enrollment, NAC/Auxiliary/Relay activation and resetting, tandem detector activation and deactivation,

device editing, and zone assignment. 4.1 Keypad Buttons and Menu Navigation

The buttons located in the area below the LCD are used for menu navigation and data entry. These include 4 Softkey, Up/Down/Left/Right, Enter and Back buttons. See figure 3 below for the location of P/N IM-C3K6 Rev. B 20



ANTENNA CONNECTOR "B" NOT USED IN CP-3600(+) P/N IM-C3K6 Rev. B

WASI

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FIRE ALARM SYSTEM