

BUILDING INSPECTION

PERMIT

Please Read  
Instructions And  
Requirements, If Any,  
Attached

I hereby certify that 16 CASCO STREET LLC / Norwalk, Inc.

request permission to Install a Fire Alarm System throughout the Building.

16 CASCO ST

Permit Number: 081570

JAN - 6 2009

CITY OF PORTLAND

CBL 037 C010001

Notwithstanding that the person or persons, firm or corporation accepting this permit shall comply with all the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lathed or otherwise closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Dept. \_\_\_\_\_

Health Dept. \_\_\_\_\_

Sanitary Board \_\_\_\_\_

Director \_\_\_\_\_

Department Name \_\_\_\_\_

*Chris S. M.* 1/5/09

Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 08-1570	Issue Date: 01/05/09	CBL: 037 C010001
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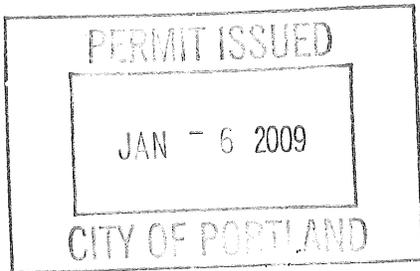
Location of Construction: 16 CASCO ST	Owner Name: 16 CASCO STREET LLC	Owner Address: 477 CONGRESS ST	Phone: 207-883-3473
Business Name:	Contractor Name: Norris, Inc.	Contractor Address: 2257 W Broadway, PO Box 2551 Sout	Phone 2078833473
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	Zone: B-3

Past Use: Commercial	Proposed Use: Commercial - Install a Fire Alarm System throughout the Building.	Permit Fee: \$130.00	Cost of Work: \$11,000.00	CEO District: 1
		FIRE DEPT: <input checked="" type="checkbox"/> Approved See <input type="checkbox"/> Denied with conditions	INSPECTION: Use Group: B Type: 3B NFPA-72/IBC-2003	

Proposed Project Description: Install a Fire Alarm System throughout the Building.	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i> 1/5/09
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)		
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied		
Signature:		Date:

Permit Taken By: Imd	Date Applied For: 12/19/2008	<b>Zoning Approval</b>
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- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..



<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>[Signature]</i> 12/29/09	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	<b>Historic Preservation</b> <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>[Signature]</i>
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**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

\_\_\_\_\_  
SIGNATURE OF APPLICANT ADDRESS DATE PHONE

\_\_\_\_\_  
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE



# CITY OF PORTLAND, MAINE

Department of Building Inspections

## Original Receipt

December 19 20 08

Received from Norris Inc., Melissa Veilken

Location of Work 16 Concord Street

Cost of Construction \$ \_\_\_\_\_ Building Fee: \_\_\_\_\_

Permit Fee \$ \_\_\_\_\_ Site Fee: \_\_\_\_\_

Certificate of Occupancy Fee: \_\_\_\_\_

**Total:** \_\_\_\_\_

Building (IL) 2 Plumbing (I5) \_\_\_\_\_ Electrical (I2) \_\_\_\_\_ Site Plan (U2) \_\_\_\_\_

Other Fire Alarm System

CBL: 037 C-010

Check #: ce **Total Collected \$** 130-

### **No work is to be started until permit issued.**

If permit is Withdrawn or Denied, amount of the Refund is based on \$20.00 or 20% of the fee, (whichever is greater)

In order to receive a refund, you **MUST** present the Original Receipt.

Taken by: [Signature]

WHITE - Applicant's Copy

YELLOW - Office Copy

PINK - Permit Copy



**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

<b>Permit No:</b> 08-1570	<b>Date Applied For:</b> 12/19/2008	<b>CBL:</b> 037 C010001
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<b>Location of Construction:</b> 16 CASCO ST	<b>Owner Name:</b> 16 CASCO STREET LLC	<b>Owner Address:</b> 477 CONGRESS ST	<b>Phone:</b> 207-883-3473
<b>Business Name:</b>	<b>Contractor Name:</b> Norris, Inc.	<b>Contractor Address:</b> 2257 W Broadway, PO Box 2551 Sout	<b>Phone</b> (207) 883-3473
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Fire Alarm System	

<b>Proposed Use:</b> Commercial - Install a Fire Alarm System throughout the Building.	<b>Proposed Project Description:</b> Install a Fire Alarm System throughout the Building.
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**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Marge Schmuckal      **Approval Date:** 12/29/2009**Note:** **Ok to Issue:** 

- 1) This property shall remain a commercial building. Any change of use shall require a separate permit application for review and approval.
- 2) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Chris Hanson      **Approval Date:** 01/05/2009**Note:** **Ok to Issue:** 

- 1) Fire Alarm systems shall be installed per Sec. 907 of the IBC 2003
- 2) Equipment must be installed in compliance with the manufacturer's specifications

**Dept:** Fire      **Status:** Approved with Conditions      **Reviewer:** Capt Greg Cass      **Approval Date:** 12/30/2008**Note:** **Ok to Issue:** 

- 1) The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required.
- 2) The fire alarm system shall comply with NFPA 72

**Comments:**

12/29/2008-mes: On this date I found this permit in the Fire basket that had never been zoned, so I zoned it and returned it to the Fire Dept basket. The permit was never logged into the Fire review, so I did that.



# General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>16 Casco St. Portland,</u>		
Total Square Footage of Proposed Structure/Area	Square Footage of Lot	Number of Stories
Tax Assessor's Chart, Block & Lot Chart#      Block#      Lot# <u>087      e      010</u>	Applicant * <u>must</u> be owner, Lessee or Buyer* Name <u>Norris Inc.</u> Address <u>2257 West Broadway S. Portland</u> City, State & Zip <u>S. Portland, ME. 04106.</u>	Telephone: <u>(207) 883-3473</u>
Lessee/DBA (If Applicable)  <b>RECEIVED</b> DEC 19 2008 DEPT. OF PLANNING & DEVELOPMENT CITY OF PORTLAND, MAINE	Owner (if different from Applicant) Name <u>16 Casco St. LLC</u> Address <u>477 Congress St.</u> City, State & Zip <u>Portland, ME. 04101</u>	Cost Of Work: \$ <u>11,000</u> C of O Fee: \$ _____ Total Fee: \$ <u>130</u>
Current legal use (i.e. single family) <u>Commercial</u> Number of Residential Units _____ If vacant, what was the previous use? _____ Proposed Specific use: _____ Is property part of a subdivision? _____ If yes, please name _____ Project description: <u>install fire alarm system</u>		
Contractor's name: <u>Same as applicant</u> Address: _____ City, State & Zip _____ Telephone: _____ Who should we contact when the permit is ready: <u>Melissa Peters</u> Telephone: <u>883-3473</u> Mailing address: _____		

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at [www.portlandmaine.gov](http://www.portlandmaine.gov), or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: Melissa Peters      Date: 12/19/08

This is not a permit; you may not commence ANY work until the permit is issue



Prepared For Tomorrow; Delivered Today

*LOSS PREVENTION*

*BUILDING AUTOMATION*

*COMMUNICATIONS*

# ***SUBMITTAL PACKAGE***

**Project:** 16 Casco Street ~ Portland

**System:** Fire Alarm System

**Submitted  
By:** Norris Inc.  
2257 West Broadway  
South Portland, Maine 04106  
Telephone: (800) 370-3473

**Project  
Manager:** Zach Davis

**Electrical  
Contractor:** NBBR  
1208 River Road  
Clinton, ME. 04927

**Date:** December 19, 2008

[www.norrisinc.com](http://www.norrisinc.com)

S. Portland Maine Office  
PO Box 2551  
2257 West Broadway  
South Portland, ME 04106  
Toll Free 1-800-370-3473  
Fax 207-879-0540

Bangor Maine Office  
54 Perry Rd  
Bangor, ME 04401  
Toll Free 1-888-312-3473  
Fax 207-947-1219

New Hampshire Office  
1 Bayside Rd  
Greenland, NH 03840  
Toll Free 1-877-577-3473  
Fax 603-431-2397

Vermont Office  
PO Box 633  
Middlebury, VT 05753  
Phone 1-802-388-3473  
Fax 802-388-3472



## Company Profile

*"We are extremely proud to represent the highest quality manufacturers integrating life safety, alarm and communication systems throughout northern New England."*

*-- Bradford Norris, President --*

## Mission Statement

Provide quality engineered systems, exceptional service.

## Goal

Learn...Continually Improve...Exceed Expectations

Founded in 1979 Norris Inc. has grown to become Northern New England's leading integrated system contracting and supply company. Norris Inc. is an innovated proactive organization with extensive experience in integration interdisciplinary building management systems. Our local and national affiliations assure that your project will be done properly regardless of size representing leading manufacturers our comprehensive products provide outstanding quality reliability and performance... surpassing customer application requirements and exceeding the stringent requirements of Underwriters Laboratories, National Fire Protection Association and other codes. We maintain an exceptional level of quality and provide the highest levels of customer service. Our knowledgeable technical support will insure the great service you deserve. Whether your needs involve industrial, commercial, institutional, or educational applications, you can trust that Norris Inc. has the complete resources it takes to provide the right solution right away.

[www.norrisinc.com](http://www.norrisinc.com)

**S. Portland, Maine Office**  
PO Box 2551  
2257 West Broadway  
South Portland, ME 04106  
Toll Free 1-800-370-3473  
Fax 207-879-0540

**Bangor Maine Office**  
54 Perry Rd  
Bangor, ME 04401  
Toll Free 1-888-312-3473  
Fax 207-947-1219

**New Hampshire Office**  
1 Bayside Rd  
Greenland, NH 03840  
Toll Free 1-877-577-3473  
Fax 603-431-2397

**Vermont Office**  
PO Box 633  
Middlebury, VT 05753  
Phone 1-802-388-3473  
Fax 802-385-1174



Applicant ID No: 238321-001  
Service Center No 0  
Expires: 31-MAR-2009

## CERTIFICATE OF COMPLIANCE

THIS IS TO CERTIFY that the Alarm Service Company indicated below is included by Underwriters Laboratories Inc. (UL) in its Product Directories as eligible to use the UL Listing Mark in connection with Certificated Alarm Systems. The only evidence of compliance with UL's requirements is the issuance of a UL Certificate for the Alarm System and the Certificate is current under UL's Certificate Verification Service.

Listed Service From: **SCARBOROUGH, ME**

Alarm Service Company: (238321-001)

NORRIS INC  
2257 W BROADWAY  
SOUTH PORTLAND ME 04106

Service Center: (238321-001)

NORRIS INC  
2257 W BROADWAY  
SOUTH PORTLAND ME 04106

The Alarm Service Company is Listed in the following Certificate Service Categories:

<u>File - Vol No.</u>	<u>CCN</u>	<u>Listing Category</u>
S5129 - 1	UUJS	[Signal and Fire Alarm Equipment and Services] (Protective Signaling Services) Local, Auxiliary, Remote Station and Proprietary

\*\*\*THIS CERTIFICATE EXPIRES ON 31-MAR-2009 \*\*\*

"LOOK FOR THE UL ALARM SYSTEM CERTIFICATE"

  
Engineering Manager  
20-MAR-2008



*NFPA recognizes*

NORRIS INC

*as a member in good standing, entitled  
to all rights and privileges of membership.*

  
James M. Shannon, *President*

January 22, 2003  
Date of Issue

# NSCA Membership Certificate

This is to certify that

**Norris Inc**

is an official member of the  
**National Systems Contractors Association**  
on this the

*First of December*



**Nancy Emerson**  
President



**Chuck Wilson**  
Executive Director



*This is to certify that*

**NORRIS, INC.**

*is an authorized Engineered Systems Distributor for NOTIFIER*

*During the Year of* 2008

*Signed for and on behalf of NOTIFIER*



*Vice President Domestic Sales*

**Norris Inc**

2257 West Broadway  
South Portland, ME 04106

**303690SP**

12/19/2008 Page: 1  
1-800-370-3473

**\*\* SUBMITTAL \*\***

NEW CUSTOMER

653-1515

Daryl Norton

NEWCUS.

Purchase Order #: 7063

:

**16 Casco St. Portland**

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**Qty Description**

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- 1 addr. fire alarm control panel
- 2 Battery 18 ah
- 2 MOD TO MOD 8C 2'RADIONICS CORD
- 2 SFS MT 8C RJ31X UL (917UL)
- 4 Pull Station Dual Action Addressable
- 7 Intelligent Addressable Photo detector, with base.
- 4 Intelligent Addressable Thermal detector w/ base.
- 4 Addressable Relay Module (elevator recall)
- 4 Addressable Mini Module (sprinkler)
- 9 Strobe, adjustable candela
- 7 Horn Strobe, adjustable candela
- 1 Surface Mount Knox Box
- 1 Lift Cover for Knox Box
- 1 Misc Materials

## ⇒ FireWarden-100-2(E)

**Intelligent Addressable FACP  
with Built-In Communciator**

**NOTIFIER<sup>®</sup>**  
by Honeywell

**Addressable**

### General

The Notifier FireWarden-100-2 (NFW2-100) is a combination FACP (Fire Alarm Control Panel) and DACT (Digital Alarm Communicator/Transmitter) all on one circuit board. This compact intelligent addressable control panel has an extensive list of powerful features.

The SLC (Signaling Line Circuit) of the FireWarden-100-2 operates using a Rapid Group Polling communication protocol technology that polls multiple devices simultaneously for a quicker device response time. This patented technology allows a fully-loaded panel with up to 198 devices to report an incident and activate the notification circuits in under 10 seconds. With this improved polling, devices can be wired on standard twisted, unshielded wire up to a distance of 10,000 feet. (Consult the wire table on page 3 for specific installation instructions.)

The FireWarden-100-2's quick-remove chassis protects the electronics during construction. The backbox can be installed allowing field wiring to be pulled. When construction is completed, the electronics can be quickly installed with just two bolts.

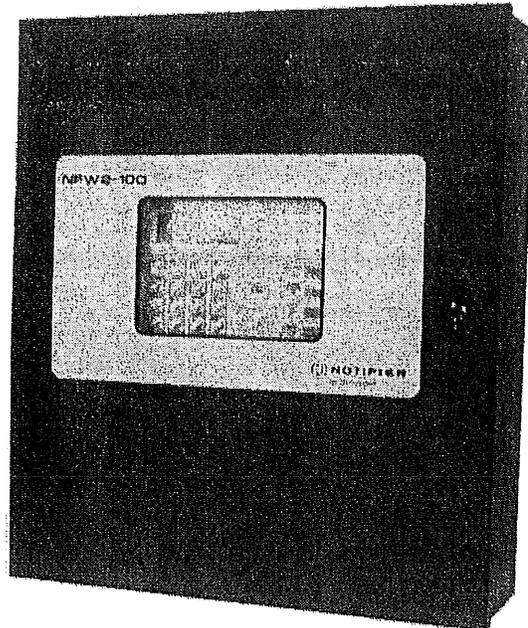
Available accessories include LED, graphic and LCD annunciators, and reverse polarity/city box transmitter.

The panel is programmed through the FACP's keypad or via a standard PS-2 computer keyboard, which can be plugged directly into the printed circuit board. This permits easy typing of address labels and other programming information.

**NOTE:** Unless otherwise specified, the terms FireWarden-100-2 is used in this document to refer to both the FireWarden-100-2 and the FireWarden-100-2E FACPs (Fire Alarm Control Panels).

### Features

- Listed to UL standard 864, 9th edition.
- On-board DACT.
- Four Style Y (Class B) or two Class A (Style Z) NAC circuits.
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules.
- Up to 32 annunciators or remote annunciators via EIA-485.
- EIA-232 printer/PC interface (variable baud rate) on main circuit board.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- Detector sensitivity test capability (NFPA 72 compliant).
- History file with 1,000-event capacity.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- Automatic device type-code verification.
- One person audible or silent walk test with walk-test log and printout.



7101 cov.jpg

- Point trouble identification.
- Waterflow (nonsilenceable) selection per monitor point.
- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and presignal delay per point (NFPA 72 compliant).

**NOTE:** Only detectors may participate in PAS.

#### SLC LOOP:

- SLC can be configured for NFPA Style 4, 6, or 7 operation.
- SLC supports up to 198 addressable devices per loop (99 detectors and 99 monitor, control, or relay modules).
- SLC loop maximum length 10,000 ft. (3,000 m.).  
See wire table on page 3.

#### NOTIFICATION APPLIANCE CIRCUITS (NACS):

- Four onboard NACs with additional NAC capability using output control modules (NC-100).
- Silence Inhibit and Auto Silence timer options.
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability.
- Selectable strobe synchronization per NAC.
- 2.5 amps maximum per each NAC circuit.

**NOTE:** Maximum or total 24VDC system power shared between all NAC circuits and auxiliary power outputs is 3.6 amps. (System power increases to 6.6 amps with optional XRM-24 transformer.)

#### PROGRAMMING AND SOFTWARE:

- Autoprogram (learn mode) reduces installation time.
- Custom English labels (per point) may be manually entered or selected from an internal library file.
- Two programmable Form-C relay outputs.

- 99 software zones.
- Continuous fire protection during online programming at the front panel.
- Program Check automatically catches common errors not linked to any zone or input point.

## User interface

### LED INDICATORS

- AC POWER (green)
- FIRE ALARM (red)
- SUPERVISORY (yellow)
- ALARM SILENCED (yellow)
- SYSTEM TROUBLE (yellow)
- MAINTENANCE/PRESIGNAL (yellow)
- DISABLED (yellow)
- BATTERY FAULT (yellow)
- GROUND FAULT (yellow)

### KEYPAD CONTROLS

- ACKNOWLEDGE/STEP
- ALARM SILENCE
- DRILL
- SYSTEM RESET (lamp test)
- 16-key alpha-numeric pad (similar to telephone keypad)
- 4 cursor keys
- ENTER

## Ordering Options

**NFW2-100(E):** 198-point addressable Fire Alarm Control Panel, one SLC loop. Includes 80-character LCD display, single printed circuit board mounted on chassis, and cabinet.

**NFW2-100R:** Same as NFW2-100, except in a red backbox.

**4XTM Reverse Polarity Transmitter Module:** Provides supervised output for local energy municipal box transmitter, alarm, and trouble.

**DP-9692B:** Optional dress panel for FireWarden-100-2.

**TR-CE-B:** Trim Ring for semi-flush mounting.

**BB-26:** Battery backbox, holds up to two 26 AH batteries and CHG-75.

**NFS-LBB:** Battery box, houses two 55 AH batteries.

**CHG-75:** Battery charger for lead-acid batteries with a rating of 25 to 75 AH.

**CHG-120:** Remote battery charging system for lead-acid batteries with a rating of 55 to 120 AH. Requires additional NFS-LBB for mounting.

**NOTE:** CHG-120 or CHG-75 required for batteries larger than 18AH.

**BAT Series:** Batteries, see data sheet DN-6933.

**XRM-24(E):** Optional transformer. Increases system power to 6.6 amps. Use XRM-24E with FireWarden-100-2E.

**PRT/PK-CABLE:** Cable printer/personal computer interface cable.

**PRN-6:** UL listed compatible event printer. Uses tractor-fed paper.

### COMPATIBLE ANNUNCIATORS

**ACM-8R:** Relay module provides 8 Form-C 5.0 amp relays.

**ACM Annunciator Series:** LED-type fire annunciators capable of providing up to 99 software zones of annunciation. Avail-

able in increments of 16 or 32 points to meet a variety of applications.

**LDM Graphic Series:** Lamp Driver Module series for use with custom graphic annunciators.

**FDU-80 (Liquid Crystal Display) point annunciator:** 80-character, backlit LCD-type fire annunciators capable of displaying English-language text.

**NOTE:** For more information on Compatible Annunciators for use with the FireWarden-100-2, see the following data sheets (document numbers) ACM-8R (DN-3558), ACS/ACM Series (DN-0524), LDM Series (DN-0551), FDU-80 (DN-6820).

### COMPATIBLE ADDRESSABLE DEVICES

All feature a polling LED and rotary switches for addressing.

**NI-100:** Addressable low-profile ionization smoke detector.

**NP-100:** Addressable low-profile photoelectric smoke detector.

**NP-100T:** Addressable low-profile photoelectric smoke detector with thermal sensor.

**NH-100:** Fast-response, low-profile heat detector.

**NH-100R:** Fast-response, low-profile heat detector with rate-of-rise option.

**ND-100:** Photoelectric low-flow duct smoke detector.

**ND-100R:** Photoelectric low-flow duct smoke detector with relay option.

**NMM-100:** Addressable Monitor Module for one zone of normally-open dry-contact initiating devices. Mounts in standard 4.0" (10.16 cm.) box. Includes plastic cover plate and end-of-line resistor. Module may be configured for either a Style B (Class B) or Style D (Class A) IDC.

**NDM-100:** Dual Monitor Module. Same as NMM-100 except it provides two Style B (Class B) only IDCs.

**NMM-100P:** Miniature version of NMM-100. Excludes LED and Style D option. Connects with wire pigtails. May mount in device backbox.

**NZM-100:** Similar to NMM-100, but may monitor up to 20 conventional two-wire detectors. Requires resettable 24 VDC power. Consult factory for compatible smoke detectors.

**NC-100:** Addressable Control Module for one Style Y/Z (Class B/A) zone of supervised polarized Notification Appliances. Mounts directly to a 4.0" (10.16 cm.) electrical box. Notification Appliance Circuit option requires external 24 VDC to power notification appliances.

**NC-100R:** Addressable relay module containing two isolated sets of Form-C contacts, which operate as a DPDT switch. Mounts directly to a 4.0" (10.16 cm.) box, surface mount using the SMB500.

**NOT-BG12LX:** Addressable manual pull station with interface module mounted inside.

**N100-ISO:** Fault Isolator Module.

**SMB500:** Used to mount all modules except the NMM-100P.

**NZM-100-6:** Six-zone interface module. Mount one or two modules in a BB-2F cabinet (optional). Mount up to six modules on a CHS-6 chassis in a BB-6F.

**NOTE:** For more information on Compatible Addressable Devices for use with the FireWarden-100-2, see the following data sheets (document numbers): N100-ISO (DN-6994), NP-100/NP-100T (DN-6995), NI-100 (DN-6996), NH-100/NH-100R (DN-6997), ND-100/ND-100R (DN-7006), NMM-100/NMM-100P/NDM-100/NZM-100 (DN-6999), NC-100/NC-100R (DN-7000), NOT-BG12LX (DN-7001), and NZM-100-6 (DN-60150).

## Wiring Requirements

While shielded wire is not required, it is recommended that all SLC wiring be twisted-pair to minimize the effects of electrical interference. Wire size should be no smaller than 18 AWG (0.78 mm<sup>2</sup>) and no larger than 12 AWG (3.1 mm<sup>2</sup>). The wire size depends on the length of the SLC circuit. Use the table below to determine the specific wiring requirements for the SLC.

SLC Wire Requirements	Distance in Feet (m)	Wire Size	Wire Type
Twisted-pair, unshielded	10,000 feet (3,048 m)	12 AWG (3.31 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4315, Belden 5020UL
			<i>Plenum (FPLP):</i> Genesis 4515, Belden 6020UL
Twisted-pair, unshielded	8,000 feet (2,438 m)	14 AWG (2.08 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4313, Belden 5120UL
			<i>Plenum (FPLP):</i> Genesis 4513, Belden 6120UL
Twisted-pair, unshielded	4,875 feet (1,486 m)	16 AWG (1.31 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4311, Belden 5220UL
			<i>Plenum (FPLP):</i> Genesis 4511, Belden 6220UL
Twisted-pair, unshielded	3,225 feet (983 m)	18 AWG (0.821 mm <sup>2</sup> )	<i>Non-Plenum (FPLR):</i> Genesis 4306, Belden 5320UL
			<i>Plenum (FPLP):</i> Genesis 4506, Belden 6320UL

**FireWarden-100-2 Wire Requirements**



# SYSTEM SPECIFICATIONS

## System Capacity

- Intelligent Signalling Line Circuits..... 1
- Addressable device capacity ..... 198
- Programmable software zones ..... 99
- Annunciators ..... 32

## Electrical Specifications

**AC Power:** FireWarden-100-2: 120 VAC, 60 Hz, 3.0 amps. FireWarden-100-2(E): 240 VAC, 50 Hz, 1.5 amps. Wire size: minimum 14 AWG (2.00 mm<sup>2</sup>) with 600 V insulation.

**Battery:** Two 12 V 18AH lead-acid batteries. Battery charger capacity: 7 – 18 AH. FireWarden-100-2 cabinet holds maximum of two 18 AH batteries.

**Communication Loop:** Supervised and power-limited.

**Notification Appliance Circuits:** Each terminal block provides connections for two Style Y (Class B) or one Style Z (Class A) for a total of four Style Y (Class B) or two Style Z (Class A) NACs. Maximum signaling current per circuit: 2.5 amps. End-of-Line Resistor: 4.7K ohm, 1/2 watt (P/N 71252 UL listed) for Style Y (Class B) NAC. Refer to panel documentation and *Notifier Device Compatibility Document* for listed compatible devices.

**Two Programmable Relays and One Fixed Trouble Relay:** Contact rating: 2.0 amps @ 30 VDC (resistive), 0.5 amps @ 30 VAC (resistive). Form-C relays.

**Special Application Power (24 VDC Nominal):** Jumper selectable (JP4) for conversion to resettable power output. Up to 0.5 amps total DC current available from each output. Power-limited.

**Four-Wire Resettable Special Application Smoke Detector Power (24 VDC nominal):** Up to 0.5 amps for powering four-wire smoke detectors. Power-limited. Refer to *Notifier Device Compatibility Document* for listed compatible devices.

**Remote Sync Output:** Remote power supply synchronization output. Nominal special application power: 24 VDC. Maximum current: 40 mA. End-of-Line Resistor: 4.7K ohm. Output linked to NAC 1 control. Supervised and power-limited.

**Telephone Interface:** Requires dedicated business telephone number with a minimum of 7 volts DC. Obtain dedicated phone line directly from your local phone company. Do not use shared phone lines or PBX (digital) type phone line extensions.

## Cabinet Specifications

**Door:** 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.12" (.30 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x

16.65" (42.29 cm.) wide x 5.20" (13.34 cm.) deep. **Trim Ring (TR-CE-B):** 22.00" (55.88 cm.) high x 19.65" (49.91 cm.) wide.

## Shipping Specifications

**Weight:** 26.9 lbs. (12.20 kg.) **Dimensions:** 20.00" (50.80 cm.) high x 22.5" (57.15 cm.) wide x 8.5" (21.59 cm.) deep.

## Temperature and Humidity Ranges

This system meets NFPA requirements for operation at 0 – 49°C/32 – 120°F and at a relative humidity 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a normal room temperature of 15 – 27°C/60 – 80°F.

## NFPA Standards

The FireWarden-100-2 complies with the following NFPA 72 Fire Alarm Systems requirements:

- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTM).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. For reverse polarity signaling of alarm and trouble, 4XTM is required.)
- **PROPRIETARY** (Automatic, Manual and Waterflow).
- **CENTRAL STATION** (Automatic, Manual and Waterflow, and Sprinkler Supervised).
- **AUTO DETECTOR SELF TEST**

## Agency Listings and Approvals

The listings and approvals below apply to the basic FireWarden-100-2 control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL:** S635
- **FM approved**
- **CSFM:** 7165-0028:235
- **MEA:** 120-06-E, Volume 2

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We try to keep our product information up-to-date and accurate.  
We cannot cover all specific applications or anticipate all requirements.  
All specifications are subject to change without notice.





July 7, 2000

DN-1109 • E-200

## PS Series Batteries

Section: Power Supplies

### GENERAL

Power-Sonic PS Series batteries provide secondary power for the whole series of NOTIFIER fire alarm control panels.

### FEATURES

- Provide secondary power for control panels.
- Gelled electrolyte.
- Sealed and maintenance-free.
- Overcharge protected.
- Extended shelf life.
- Easy handling with leakproof construction.
- Ruggedly constructed, high-impact case (ABS, polystyrene, or polypropylene depending on model).
- Long service life.
- Compact design.

### CAPACITY

Battery capacity, expressed in ampere-hours (AH), is the product of a discharge current and the length of time that the current is discharged. Batteries are rated according to their performance during 20 hours of discharge at a constant current.

The rated capacity of a battery is determined by subjecting it to a constant discharge current for 20 hours at 68°F (20°). After 20 hours the voltage across the terminals is measured. The discharge current which causes a reading of 1.72 volts per cell (5.16 V on a 6 V battery and 10.32 V on a 12 V battery) is called the rated current. This current multiplied by 20 is the rated capacity of the battery.

### APPLICATIONS

Use the PS Series batteries to provide backup power for control panels. Select batteries based on current requirements for your system and the capacity of its charger. These batteries can be used over a temperature range of -76°F to +140°F (-60°C to +60°C).

### CONSTRUCTION

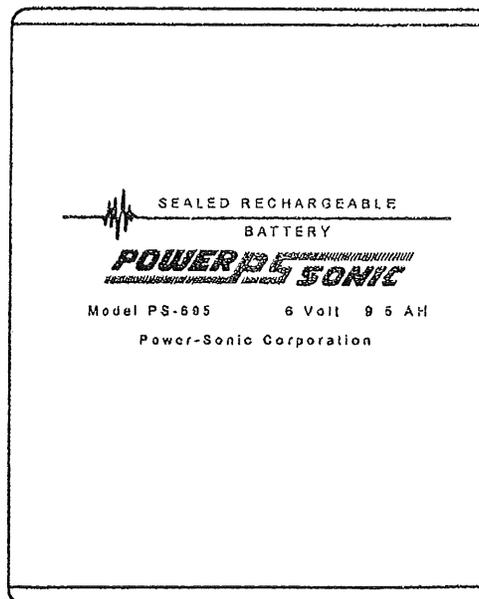
The sealed construction of the Power-Sonic battery allows trouble-free, safe operation in any position. There is no need to add electrolyte, as gases generated during overcharge are recombined in a unique "Oxygen Cycle." The battery is sealed, leakproof, and maintenance-free. The case is of high-impact materials with high resistance to chemicals and flammability.

### INSTALLATION

All panels have space reserved for batteries. See the appropriate panel installation manual for battery size restrictions. Typical inter-connection diagrams are shown in the literature accompanying each control panel.



LISTED  
MH14328 (S)



The PS-695 Battery

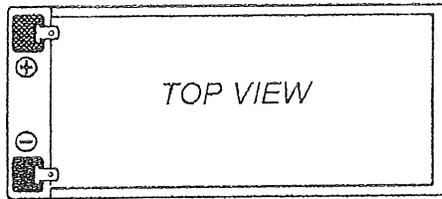
This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



**NOTIFIER**

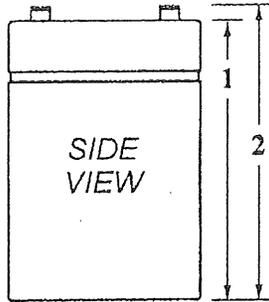
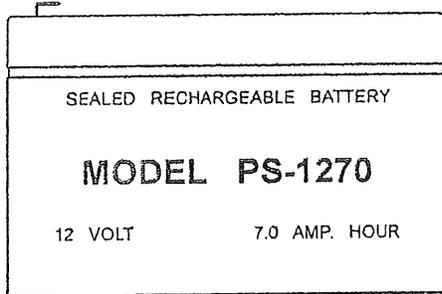
One Fire-Lite Place, Northford, Connecticut 06472

**ISO 9001**  
**CERTIFIED**  
ENGINEERING & MANUFACTURING



HEIGHT 1 BELOW  
3.70 ± 0.08 inches  
(94 ± 2 mm)

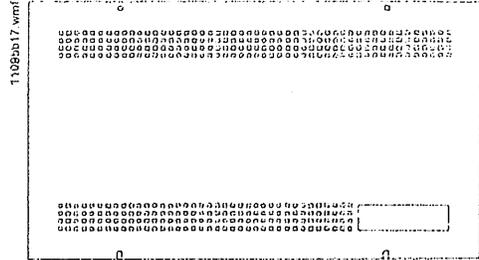
HEIGHT 2 BELOW  
3.86 ± 0.08 inches  
(96 ± 2 mm)



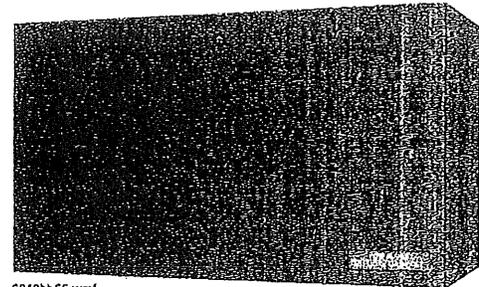
5.94 ± 0.04 inches  
(151 ± 1 mm)

2.56 ± 0.04 inches  
(65 ± 1 mm)

1109dim1.tif



**BB-17: Optional Battery Backbox**  
14-1/2" W x 8-1/4" H x 4-3/4" D  
(mm: 368.3 W x 209.55 H x 120.65 D)  
For remote mounting of two 12-volt  
PS-12180 batteries.



6040bb55.wmf

**BB-55: Optional Battery Backbox**  
See CHG-120 data sheet for details.

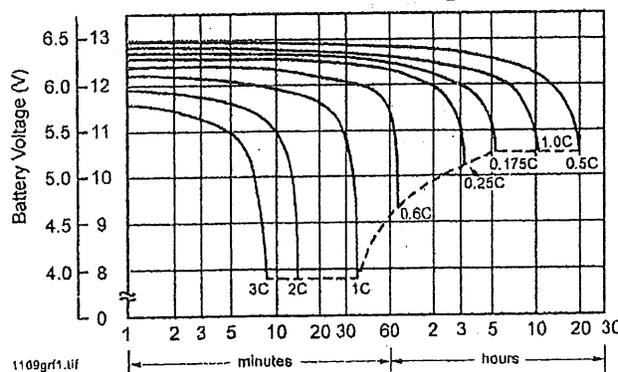
### ENGINEERING SPECIFICATIONS

The fire control panel shall be equipped with secondary power provided by gelled-electrolyte batteries. The batteries shall be maintenance-free and shall be capable of powering the system in a manner and for a length of time determined by the governing regulations and the authority having jurisdiction.

MODEL	Nominal Voltage V	Nominal Capacity @ 20 hr. rate A.H.	Discharge Current @ 20 hr. rate mA	DIMENSIONS									
				Width		Depth		Height		Height over terminal		Weight	
				in.	mm.	in.	mm.	in.	mm.	in.	mm.	lbs.	kg.
PS-695	6	9.5	475	4.26	108	2.75	70	5.54	141	5.54	141	4.9	2.2
PS-1250	12	5.0	250	3.54	90	2.76	70	4.02	102	4.21	107	4.1	1.9
PS-1270	12	7.0	325	5.94	151	2.56	65	3.70	94	3.86	98	5.7	2.6
PS-12120	12	12	600	5.94	151	3.86	98	3.70	94	3.86	98	8.8	4.0
PS-12180	12	18	875	7.13	181	2.99	76	6.57	167	6.57	167	12.8	5.8
PS-12250	12	25	1300	6.89	175	6.54	166	4.92	125	4.92	125	18.7	8.5
PS-12550	12	55	3000	10.25	260	6.60	168	8.20	208	9.45	240	39.7	18.0
PS-121000	12	100	5000	12.00	305	6.60	168	8.20	208	9.45	240	65.7	29.8

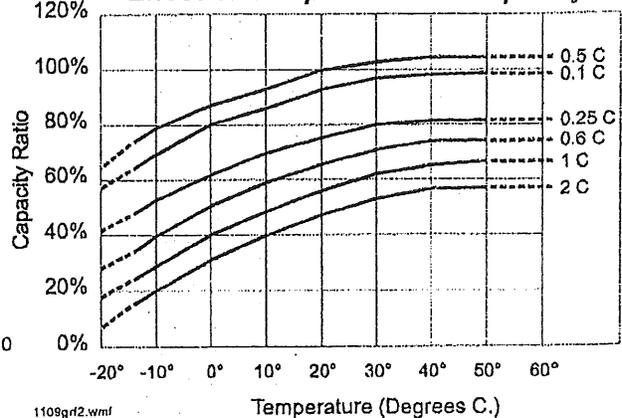
110911.tbl

**Characteristic Discharge Curves**



1109gr1.tif

**Effect of Temperature on Capacity**



1109gr2.wmf



June 15, 2005

DN-7001 · A1-380

# NOT-BG12LX Addressable Manual Pull Station for FireWarden-100

Section: Addressable

Patented, U.S. Patent No. D428,351; 6,380,846  
U.S. Patent Pending: 09/686,286

## GENERAL

The NOTIFIER NOT-BG12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface (mounted inside) for NOTIFIER's addressable FireWarden-100 fire alarm control panel. Because the NOT-BG12LX is addressable, the control panel can display the exact location of the activated manual pull station. This leads fire service personnel quickly to the location of the alarm.

## FEATURES

- Aesthetically pleasing, highly visible, dual-action design.
- Meets ADA 5 lb. maximum pull force.
- Easily operated (dual-action).
- Attractive shape and textured finish.
- Mounts, semi-flush, to a standard single-gang (2.125" [5.398 cm] minimum depth), double-gang, or 4.0" (10.16 cm) square electrical box.
- When the handle latches in down position, the word "ACTIVATED" appears at the top of the handle in bright yellow to clearly indicate the station has been operated.
- Key/lock reset; needs only a 1/4-turn to lock/unlock.
- Includes Braille text on station handle.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.1 mm<sup>2</sup> wire).
- Optional trim ring (BG-TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes.
- Maintenance personnel can open station (for inspection and testing) without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes red in normal operation and latches on steady red when in alarm.

## ENGINEERING SPECIFICATIONS

Manual Fire Alarm Stations shall be non-code, with a key-operated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored LEXAN® (or polycarbonate equivalent) with clearly visible operating instructions provided on the cover. The word **FIRE** shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4.0" (10.16

LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

MEA  
67-02-E Vol. IV



California  
State Fire  
Marshal

7150-0028:199

LISTED  
S692



The NOT-BG12LX  
Addressable Manual Pull Station

cm) square electrical box, and shall be installed within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches.

## ELECTRICAL SPECIFICATIONS

Normal operating voltage: 24 VDC.

Maximum SLC loop voltage: 28.0 VDC.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472

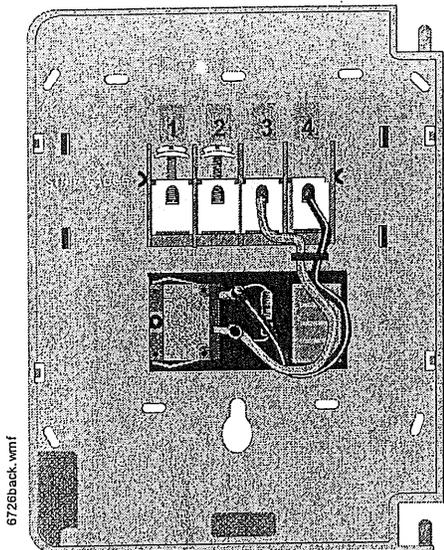


Maximum SLC loop current: 230  $\mu$ A.

## INSTALLATION

The NOT-BG12LX can be semi-flush mounted into a single-gang, double-gang, or standard 4.0" (10.16 cm) square electrical outlet box, or surface mounted to the Model SB-10 or SB-I/O surface backbox. If the NOT-BG12LX is semi-flush mounted, then the optional trim ring (BG-TR) may be used. The BG-TR is usually needed for semi-flush mounting with 4.0" (10.16 cm) or double-gang boxes (not with single-gang boxes).

## CONSTRUCTION



Back of station without door.

### TERMINAL CONNECTIONS

- 1 SLC (-)
- 2 SLC (+)

Shell, door, and handle are molded of durable LEXAN® (or polycarbonate equivalent) with a textured finish.

## OPERATION

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Manual stations connect with two wires to one of the control panel SLC loops. Each manual station, on command from the control panel, sends data to the panel representing the state of the pull station switch. Two rotary decimal switches allow address settings (01-99).

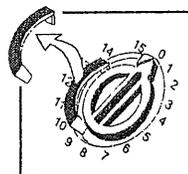
## PRODUCT LINE INFORMATION

**NOT-BG12LX** Dual-action addressable pull station.  
Includes key lock/reset feature.

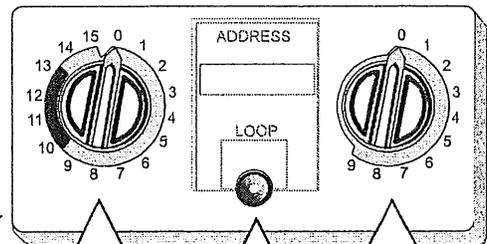
**SB-10** Surface backbox.

**SB-I/O** Surface indoor/outdoor backbox.

**BG-TR** Optional trim ring.

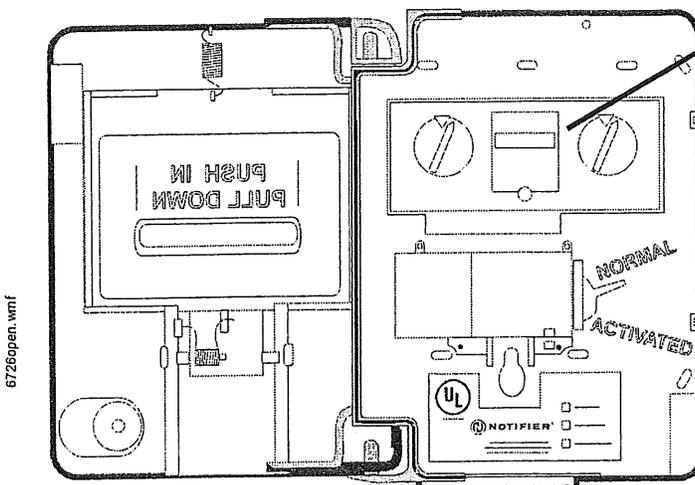


Detail of BREAKAWAY TAB\*



LED

ROTARY DECIMAL SWITCHES



Cover open to show easy access to miniature monitor module, rotary switch, and UL label.



June 15, 2005

DN-6995 • A1-310

# NP-100 and NP-100T Addressable Photoelectric Detectors

Section: Addressable

## GENERAL

The NP-100 and NP-100T addressable, low-profile plug-in photoelectric detectors use a state-of-the-art photoelectric sensing chamber with communications to provide open area protection and are used exclusively with NOTIFIER's FireWarden-100 Addressable Fire Alarm Control Panel (FACP). The NP-100T adds thermal sensors that will alarm at a fixed temperature of 135°F (57°C). Since these detectors are addressable, they will help emergency personnel quickly locate a fire during its early stages, potentially saving precious rescue time while also reducing property damage. Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (P/N RA400Z).

## FEATURES

### SLC loop:

- Two-wire loop connection.
- Unit uses base for wiring.

### Addressing:

- Addressable by device.
- Direct Decade 01 – 99 (FireWarden-100) entry of address.

### Architecture:

- Unique single-source, dual-chamber design to respond quickly and dependably to a broad range of fires.
- Sleek, low-profile design.
- Integral communications and built-in type identification.
- Built-in tamper-resistant feature.
- Removable cover and insect-resistant screen for simple field cleaning.

### Operation:

- Withstands air velocities up to 4,000 feet-per-minute (20 m/sec.) without triggering a false alarm.
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level.
- Visible LED "blinks" when the unit is addressed (communicating with the fire panel) and latches on in alarm.

### Mechanicals:

- Sealed against back pressure.
- Direct surface mounting or electrical box mounting.
- Mounts to: single-gang box, 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or 4.0" (10.16 cm) square electrical box (using a plaster ring — included).

### Other system features:

- Fully coated circuit boards and superior RF/transient

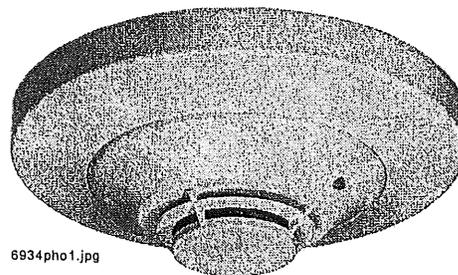


California  
State Fire  
Marshal  
7272-0028:231



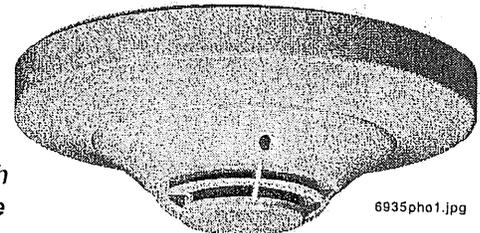
MARYLAND  
State Fire Marshal  
Permit # 2173

MEA  
243-02-E Vol. II



NP-100  
with  
B710LP  
base

6934pho1.jpg



NP-100T with  
B710LP base

6935pho1.jpg

protection.

- 94-V0 plastic flammability rating.
- Low standby current.

### Options:

- Remote LED output connection (P/N RA400Z).

## SPECIFICATIONS

Voltage range: 15 – 32 VDC (peak).

Standby current: 300 µA @ 24 VDC.

LED current: 6.5 mA @ 24 VDC (latched "ON").

Air velocity: 4,000 ft./min. (20 m/sec.) maximum.

Diameter: 6.1" (15.5 cm) installed in B710LP base.

Height: 2.1" (5.33 cm) installed in B710LP base.

Weight: 3.6 oz. (102 g).

Operating temperature range: for NP-100: 0°C to 49°C (32°F to 120°F); for NP-100T: 0°C to 38°C (32°F to 100°F).

Temperature: 0°C – 49°C (32°F – 120°F).

Relative humidity: 10% – 93%, non-condensing.

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12 Clintonville Road, Northford, Connecticut 06472



## APPLICATIONS

Use photoelectric detectors in life-safety applications to provide a broad range of fire-sensing capability, especially where smoldering fires are anticipated. Ionization detectors are often better than photoelectric detectors at sensing fast, flaming fires.

## CONSTRUCTION

These detectors are constructed of off-white LEXAN®. NP-100(T) plug-in, low-profile smoke detectors are designed to commercial standards and offer an attractive appearance.

LEXAN® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

## INSTALLATION

NP-100(T) plug-in detectors use a detachable mounting base to simplify installation, service and maintenance. Mount base on box which is at least 1.5 inches (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box with plaster ring.
- 4.0" (10.16 cm) octagonal box.
- 3.5" (8.89 cm) octagonal box.
- Single-gang box.

**NOTE:** Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class B) wiring.

## OPERATION

Each NP-100(T) uses one of 99 possible addresses on the FireWarden-100 Signaling Line Circuit (SLC). It responds to regular polls from the system and reports its type and status.

The NP-100(T) addressable photoelectric sensor's unique unipolar chamber responds quickly and uniformly to a broad range of smoke conditions and can withstand wind gusts up to 4,000 feet-per-minute (20 m/sec.) without sending an alarm level signal. Because of its unipolar chamber, the NP-100(T) is approximately two times more responsive than most photoelectric sensors. This makes it a more stable detector.

## DETECTOR SENSITIVITY TEST

Each detector can have its sensitivity tested (required per NFPA 72, Chapter 7 on *Inspection, Testing and Maintenance*) when installed/connected to a FireWarden-100 addressable fire alarm control panel. The results of the sensitivity test can be printed off the FireWarden-100 for record keeping.

## PRODUCT LINE INFORMATION

NP-100	Addressable photoelectric detector; B710LP base included.*
NP-100T	Same as NP-100 but with <i>thermal</i> element; B710LP base included.*
RA400Z	Remote LED. Mounts to a single-gang box.
B710LP	Plug-in detector base. <b>Dimensions:</b> 6.1" (15.5 cm). <b>Mounting:</b> 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, 3.5" (8.89 cm) octagonal box, or single-gang box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).
B224RB	Plug-in System Sensor <i>relay</i> detector base. <b>Diameter:</b> 6.2" (15.75 cm). <b>Mounting:</b> 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).
B224BI	Plug-in System Sensor <i>isolator</i> detector base. Maximum 25 devices between isolator bases (see DN-6994). <b>Diameter:</b> 6.2" (15.75 cm). <b>Mounting:</b> 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).
B501BH	Plug-in System Sensor <i>sounder</i> detector base. <b>Diameter:</b> 6.0" (15.24 cm). <b>Mounting:</b> 4.0" (10.16 cm) square box with or without plaster ring. Mounting box has a minimum depth of 1.5" (3.81 cm).

\*Prior to 03/28/05, the B710LP base was sold separately.



June 15, 2005

DN-6997 • A1-320

## NH-100 Series Intelligent Addressable Thermal (Heat) Detectors for FireWarden-100

Section: Addressable

### GENERAL

The NOTIFIER NH-100 Series thermal detectors are addressable sensors that use a state-of-the-art thermistor sensing circuit for fast response. These sensors are designed to provide open-area protection and are intended for use with the FireWarden-100 Fire Alarm Control Panel (FACP).

Both the NH-100 and NH-100R sensors provide fixed temperature alarm detection at 135°F/57°C. The NH-100R sensor responds to rate-of-rise conditions of greater than 15°F/8.3°C per minute. These thermal detectors provide cost effective, addressable property protection in a variety of applications.

Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory (P/N RA400Z).

### FEATURES

#### SLC loop:

- Two-wire SLC loop connection.
- Unit uses base for wiring.

#### Addressing:

- Addressable by device.
- Direct Decode 01 – 99 (FireWarden-100) entry of address.

#### Architecture:

- Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Integral communications and built-in device-type identification.
- Built-in tamper resistant feature.
- Built-in functional test switch activated by external magnet.

#### Operation:

- Factory preset at 135°F (57°C).
- Rate-of-rise model (NH-100R), 15°F (8.3°C) per minute.
- 360°-field viewing angle of the visual alarm indicators (two bicolor LEDs). LEDs blink green in Normal condition and turn on steady red in Alarm.
- Visible LEDs "blink" every time the unit is addressed.

#### Mechanicals:

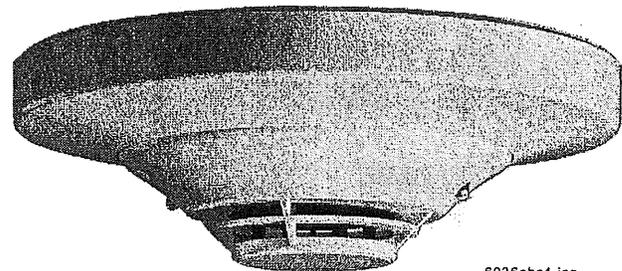
- Sealed against back pressure.
- SEMS screws for wiring of the separate base.
- Designed for direct-surface or electrical-box mounting.
- Plugs into separate base for ease of installation and maintenance.



MEA  
387-02-E Vol. II



California  
State Fire  
Marshal  
7270-0028:234



6936photo1.jpg

NH-100 with B710LP base

- Separate base allows interchange of photoelectric, ionization and thermal sensors.

#### Other system features:

- Remote test feature from the panel.
- Walk test with address display.
- Low standby current.
- 94-5V plastic flammability rating.

#### Options:

- Remote LED output connection to optional RA400Z remote LED annunciator.
- Recessed (RMK400) or surface (SMK400) base mounting kits.

### SPECIFICATIONS

Diameter: 6.1" (15.5 cm) installed in B710LP.

Height: 2.1" (5.33 cm).

Weight: 4.8 oz. (137 g).

Installation temperature: -4°F to 100°F (-20°C to 38°C).

Humidity range: 10% to 93% relative humidity (noncon-

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12 Clintonville Road, Northford, Connecticut 06472





densing).

**Voltage range:** 15 to 32 VDC peak.

**Standby current:** 300  $\mu$ A @ 24 VDC (one communication every five seconds with LED blink enabled).

**LED current:** 6.5 mA @ 24 VDC.

**Mounting:** B710LP flanged base, sold separately.

**Fixed-temperature setpoint:** 135°F (57°C).

**Rate-of-rise detection:** responds to greater than 15°F/8.3°C per minute.

## INSTALLATION

NH-100 Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on box that is at least 1.5" (3.81 cm) deep. Suitable boxes include:

- 4.0" (10.16 cm) square box.
- 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
- Single-gang box (except relay or isolator base).

**NOTE:** Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring only.

## APPLICATIONS

Use thermal detectors for protection of property.

## CONSTRUCTION

These detectors are constructed of off-white Bayblend®. The NH-100 Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Bayblend® is a registered trademark of Bayer Corporation.

## OPERATION

Each NH-100 Series detector uses one of 99 (FireWarden-100) possible addresses on a control panel SLC loop. It responds to regular polls from the control panel and reports its type and the status. If it receives a test command from the panel (or a local magnet test), it stimulates its electronics and reports an alarm. It blinks its LEDs when polled and turns the LEDs on when commanded by the panel. The NH-100 Series offers features and performance that represent the latest in thermal detector technology.

## PRODUCT LINE INFORMATION

- NH-100 Intelligent thermal sensor; B710LP base included.\*
- NH-100R Same as NH-100 with *rate-of-rise* feature; B710LP base included.\*
- RA400Z Remote LED. Mounts to a single-gang box.
- B710LP Plug-in detector base. **Dimensions:** 6.1" (15.5 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, 3.5" (8.89 cm) octagonal box, or single-gang box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).
- M02-04-00 Test magnet.
- B224RB Plug-in System Sensor *relay* detector base. **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).
- B224BI Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases (see DN-6994). **Diameter:** 6.2" (15.75 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring, 4.0" (10.16 cm) octagonal box, or 3.5" (8.89 cm) octagonal box. All mounting boxes have a minimum depth of 1.5" (3.81 cm).
- B501BH Plug-in System Sensor *sounder* detector base. **Diameter:** 6.0" (15.24 cm). **Mounting:** 4.0" (10.16 cm) square box with or without plaster ring. Mounting box has a minimum depth of 1.5" (3.81 cm).

\*Prior to 03/28/05, the B710LP base was sold separately.



June 15, 2005

DN-7000 • A1-360

## NC-100 and NC-100R Control and Relay Modules for the FireWarden-100

Section: Addressable

### GENERAL

The **NC-100 Addressable Control Module** provides NOTIFIER's FireWarden-100 intelligent control panels a supervised Class B (Style Y) or Class A (Style Z) circuit for Notification Appliances (horns, strobes, etc.). Addressability allows the NC-100 to be activated, either manually or through panel programming, on a select (zone or area of coverage) basis.

The **NC-100R Addressable Relay Module** provides the FireWarden-100 system with two isolated sets of Form-C dry-contact outputs for activating a variety of auxiliary devices, such as fans, dampers, door holders, control equipment, etc. Addressability allows the dry contact to be activated, either manually or through panel programming, on a select basis.

### FEATURES

- Built-in type identification automatically identifies these devices to the control panel.
- Internal circuitry and relay powered directly by two-wire SLC loop. The NC-100 module requires power (for horns, strobes, etc.).
- Integral LED "blinks" green each time a communication is received from the control panel and turns on steady when activated.
- High noise immunity (EMF/RFI).
- The NC-100 may be used to switch 24-volt NAC power.
- Wide viewing angle of LED.
- SEMS screws with clamping plates for wiring ease.
- Direct Decade 01-99 (FireWarden-100) entry of address.

### APPLICATIONS

The NC-100 is used to switch 24 VDC audible/visual power. The NC-100R may be programmed to operate dry contacts for door holders, Air Handling Unit shutdown, etc.

### CONSTRUCTION

- The face plate is made of off-white Noryl®.
- Controls include two rotary switches for direct-dial entry of address (01-99 on the FireWarden-100).
- The NC-100 is configured for a single Class B (Style Y) or Class A (Style Z) Notification Appliance Circuit.
- The NC-100R provides two Form-C dry contacts that switch together.

### OPERATION

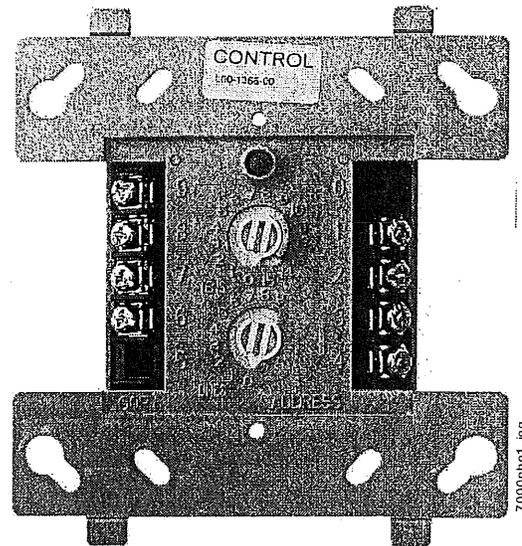
Each NC-100 or NC-100R uses one of 99 (FireWarden-100) possible module addresses on a SLC loop. It responds to regular polls from the control panel and reports its type and status, including the open/normal/short status of its Notification Appliance Circuit (NAC). The LED blinks with each poll received. On command, it activates



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72-01-E Vol. II



*NC-100 and NC-100R module*

its internal relay. The NC-100 supervises Class B (Style Y) or Class A (Style Z) notification or control circuits.

Upon code command from the panel, the NC-100 will disconnect the supervision and connect the external power supply in the proper polarity across the load device. The disconnection of the supervision provides a positive indication to the panel that the control relay actually turned ON. The external power supply is always relay isolated from the communication loop so that a trouble condition on the external power supply will never interfere with the rest of the system.

Rotary switches set a unique address for each module. The address may be set before or after mounting. The built-in TYPE CODE (not settable) will identify the module to the control panel, so as to differentiate between a module and a sensor address.

Noryl® is a registered trademark of GE Plastics, a subsidiary of General Electric Company.

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## SPECIFICATIONS FOR NC-100

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Average operating current: 390  $\mu$ A (LED flashing).

External supply voltage (between Terminals T3 and T4): maximum 80 volts (RMS or DC).

Drain on external supply: 2 mA maximum (using internal EOL relay).

EOL resistance: 47K ohms.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4.0" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4.0" (10.16 cm) square x 2.125" (5.398 cm) deep box.

## SPECIFICATIONS FOR NC-100R

Normal operating voltage: 15 to 32 VDC.

Maximum current draw: 5.1 mA (LED on).

Average operating current: 270  $\mu$ A (LED flashing).

EOL resistance: not used.

Temperature range: 32°F to 120°F (0°C to 49°C).

Humidity range: 10% to 93% noncondensing.

Dimensions: 4.5" (11.43 cm) high x 4.0" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4.0" (10.16 cm) square x 2.125" (5.398 cm) deep box.

## PRODUCT LINE INFORMATION

- NC-100** Intelligent addressable control module.
- NC-100R** Intelligent addressable relay module.
- SMB500** Optional surface-mount backbox.
- CB500** Control module barrier — required by UL for separating power-limited and non-power limited wiring in the same junction box as NC-100.

## RELAY CONTACT RATINGS

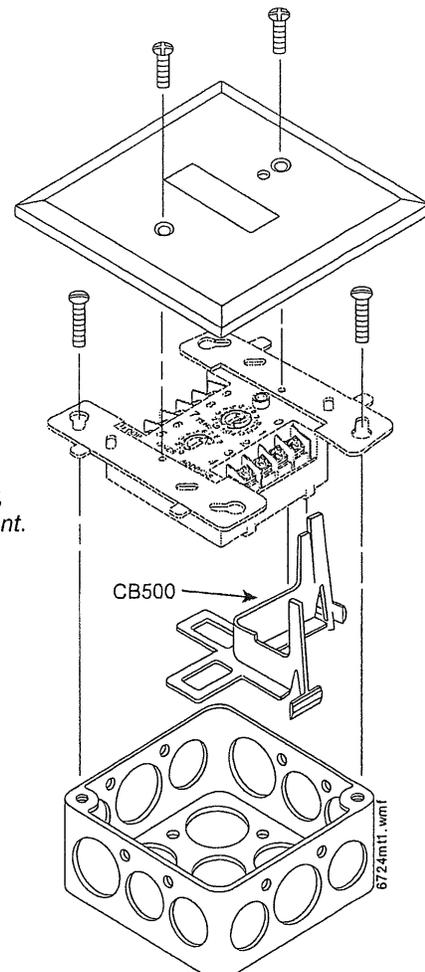
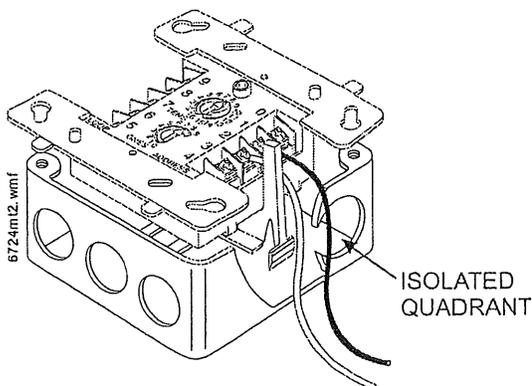
for both control and relay models

Load Description	Application	Maximum Voltage	Current Rating
Resistive	Non-Coded	30 VDC	3.0 A
Resistive	Coded	30 VDC	2.0 A
Resistive	Non-Coded	110 VDC	0.9 A
Resistive	Non-Coded	125 VAC	0.9 A
Inductive (L/R = 5 ms)	Coded	30 VDC	0.5 A
Inductive (L/R = 2 ms)	Coded	30 VDC	1.0 A
Inductive (PF = 0.35)	Non-Coded	125 VAC	0.5 A

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## MOUNTING DIAGRAMS

Note CB500 Module Barrier, which creates isolated quadrant.





June 15, 2005

DN-6999 • A1-350

## Addressable Monitor Modules for the FireWarden-100: NMM-100, NMM-100P, NZM-100, NDM-100

Section: Addressable

### GENERAL

Four different monitor modules are available for NOTIFIER's FireWarden-100 intelligent fire alarm control panels to suit a variety of applications. Monitor modules are used to supervise a circuit of dry-contact input devices, such as conventional heat detectors and pull stations, or monitor and power a circuit of two-wire smoke detectors (NZM-100).

**NMM-100** — The NMM-100 Monitor Module is a standard-sized module (typically mounts to a 4.0" [10.16 cm] square box) that supervises either a Class A (Style D) or Class B (Style B) circuit of dry-contact input devices.

**NMM-100P** — The NMM-100P is a Miniature Monitor Module (a mere 1.3" (3.302 cm) H x 2.75" (6.985 cm) W x 0.5" (1.270 cm) D) used to supervise a Class B (Style B) circuit. Its compact design allows the NMM-100P to be mounted in a single-gang box behind the device it is monitoring.

**NZM-100** — The NZM-100 Interface Module is a standard-sized module used to monitor and supervise compatible two-wire, 24 volt, smoke detectors on a Class A (Style D) or Class B (Style B) circuit.

**NDM-100** — The NDM-100 Dual Monitor Module is a standard-sized module (typically mounts to a 4.0" [10.16 cm] square box) that supervises two Class B (Style B) circuits of dry-contact input devices.

### NMM-100 MONITOR MODULE

- Built-in type identification automatically identifies this device as a monitor module to the control panel.
- Powered directly by two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct Decade 01 – 99 (FireWarden-100) entry of address.
- LED flashes red during normal operation and latches on steady to indicate alarm.

The **NMM-100 Monitor Module** is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides either a two-wire or four-wire Class A or Class B fault-tolerant Initiating Device Circuit (IDC) for normally-open-contact fire alarm and supervisory devices.

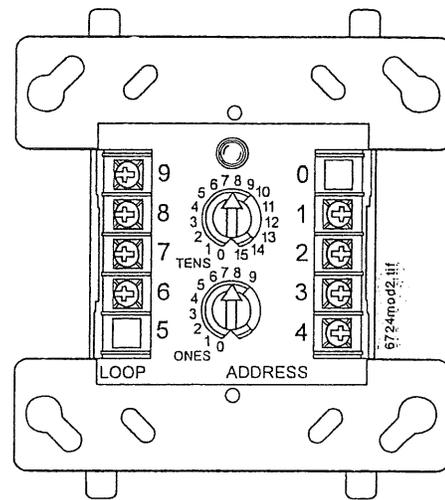
**NMM-100 Applications** — Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class D) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the Style B circuit. No resistor is re-



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(except NDM-100)



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(except NDM-100)



NMM-100 and NZM-100

quired for supervision of the Style D circuit. Maximum IDC resistance is 1,500 ohms.

**NMM-100 Operation** — Each NMM-100 uses one of 99 (FireWarden-100) available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

### NMM-100 Specifications

**Nominal operating voltage:** 15 to 32 VDC.

**Maximum current draw:** 5.1 mA (LED on).

**Average operating current:** 400 µA (LED flashing).

**EOL resistance:** 47K ohms.

**Temperature range:** 32°F to 120°F (0°C to 49°C).

**Humidity range:** 10% to 93% noncondensing.

**Dimensions:** 4.5" (11.43 cm) high x 4.0" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4.0" (10.16 cm) square x 2.125" (5.398 cm) deep box.

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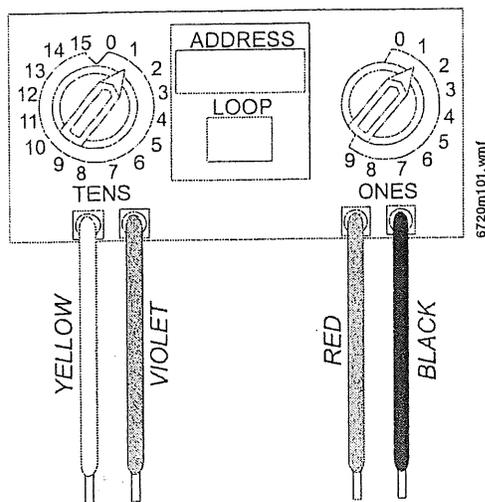
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## NMM-100P MINI MONITOR MODULE

- Built-in type identification automatically identifies this device as a monitor module to the FireWarden-100.
- Powered directly by two-wire SLC Loop. No additional power required.
- High noise (EMF/RFI) immunity.
- Tinned, stripped leads for ease of wiring.
- Direct-dial entry of address (01-99 for FireWarden-100).

The **NMM-100P Mini Monitor Module** can be installed in a single-gang junction directly behind the monitored unit. Its small size and light weight allow it to be installed without rigid mounting. The NMM-100P is intended for use in intelligent, two-wire systems where the individual address of each module is selected using rotary switches. It provides a two-wire initiating device circuit for normally-open-contact fire alarm and security devices.



**NMM-100P Applications** — Use to monitor a single device or a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit/device is wired as an NFPA Style B (Class B) Initiating Device Circuit. A 47K ohm End-of-Line Resistor (provided) terminates the circuit.

**NMM-100P Operation** — Each NMM-100P uses one of 99 (FireWarden-100) available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC).

### NMM-100P Specifications

- Nominal operating voltage:** 15 to 32 VDC.
- Average operating current:** 375  $\mu$ A maximum.
- EOL resistance:** 47K ohms.
- Temperature range:** 32°F to 120°F (0°C to 49°C).
- Humidity range:** 10% to 93% noncondensing.
- Dimensions:** 1.3" (3.302 cm) high x 2.75" (6.985 cm) wide x 0.5" (1.270 cm) deep.
- Wire length:** 6.0" (15.24 cm) minimum.

## NZM-100 INTERFACE MODULE

- Supports compatible two-wire smoke detectors.
- Supervises IDC wiring and connection of external power source (resettable).
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address (01-99 for FireWarden-100).
- LED flashes during normal operation.
- LED latches steady to indicate alarm on command from control panel.

The **NZM-100 Interface Module** is intended for use in intelligent, addressable systems, where the individual address of each module is selected using built-in rotary switches. This module allows intelligent panels to interface and monitor two-wire conventional smoke detectors. It transmits the status (normal, open, or alarm) of one full zone of conventional detectors back to the control panel. All two-wire detectors being monitored must be UL-compatible with the module.

**NZM-100 Applications** — Use the NZM-100 to monitor a zone of two-wire smoke detectors. The monitored circuit may be wired as an NFPA Style B (Class B) or Style D (Class A) Initiating Device Circuit. A 3.9 K ohm End-of-Line Resistor (provided) terminates the end of the Style B or D (class B or A) circuit (maximum IDC loop resistance is 25 ohms). Install ELR across terminals 8 and 9 for Style D application.

**NZM-100 Operation** — Each NZM-100 uses one of 99 (FireWarden-100) available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

### NZM-100 Specifications

- Nominal operating voltage:** 15 to 32 VDC.
- Maximum current draw:** 5.1 mA (LED on).
- Average operating current:** 270  $\mu$ A (LED flashing).
- EOL resistance:** 3.9K ohms.
- External supply voltage (between Terminals T3 and T4):** DC voltage: 18 to 28 volts power limited. **Ripple voltage:** 0.1 V<sub>RMS</sub> maximum. **Current:** 90 mA per module maximum. Requires regulated, resettable 24 VDC power.
- Temperature range:** 32°F to 120°F (0°C to 49°C).
- Humidity range:** 10% to 93% noncondensing.
- Dimensions:** 4.5" (11.43 cm) high x 4.0" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4.0" (10.16 cm) square x 2.125" (5.398 cm) deep box.

## NDM-100 DUAL MONITOR MODULE

- Built-in type identification automatically identifies this device as two monitor modules to the control panel.
- Powered directly by the two-wire SLC loop. No additional power required.
- High noise (EMF/RFI) immunity.
- SEMS screws with clamping plates for ease of wiring.
- Direct-dial entry of address 01 – 99 (FireWarden-100) uses two addresses per module.
- LED flashes red during normal operation and latches on steady red to indicate alarm.

The NDM-100 Dual Monitor Module is intended for use in intelligent, two-wire systems, where the individual address of each module is selected using the built-in rotary switches. It provides two independent two-wire fault-tolerant Initiating Device Circuits (IDCs) at two separate, consecutive addresses. It is capable of monitoring normally open-contact fire alarm and supervisory devices, or either normally open or normally closed devices for non-fire applications.

**NDM-100 Applications** — Use to monitor a zone of four-wire smoke detectors, manual fire alarm pull stations, waterflow devices, or other normally-open dry-contact alarm activation devices. May also be used to monitor normally-open supervisory devices with special supervisory indication at the control panel. Monitored circuit may be wired as an NFPA Style B (Class B) Initiating Device Circuit. The 47K ohm End-of-Line Resistors (provided) terminate the Style B circuit. Maximum IDC resistance is 1,500 ohms.

**NDM-100 Operation** — Each NDM-100 uses two of 99 (FireWarden-100) available module addresses on an SLC loop. It responds to regular polls from the control panel and reports its type and the status (open/normal/short) of its Initiating Device Circuit (IDC). A flashing LED indicates that the module is in communication with the control panel. The LED latches steady on alarm (subject to current limitations on the loop).

### NDM-100 Specifications

**Nominal operating voltage:** 15 to 32 VDC.

**Maximum current draw:** 5.1 mA (LED on).

**Average operating current:** 750  $\mu$ A (LED flashing).

**EOL resistance:** 47K ohms.

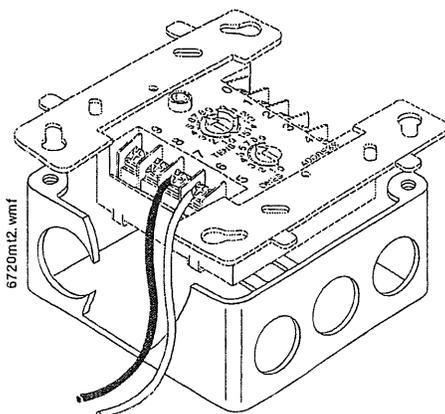
**Maximum IDC wire resistance:** 1,500 ohms.

**Temperature range:** 32°F to 120°F (0°C to 49°C).

**Humidity range:** 10% to 93% noncondensing.

**Dimensions:** 4.5" (11.43 cm) high x 4.0" (10.16 cm) wide x 1.25" (3.175 cm) deep. Mounts to a 4.0" (10.16 cm) square x 2.125" (5.398 cm) deep box.

**Accessories:** SMB500 electrical box.



## INSTALLATION

*NMM-100*, *NZM-100*, and *NDM-100* modules mount directly to a standard 4.0" (10.16 cm) square, 2.125" (5.398 cm) deep, electrical box. They may also be mounted to the SMB500 surface-mount box. Mounting hardware and installation instructions are provided with each module. All wiring must conform to applicable local codes, ordinances, and regulations. These modules are intended for power-limited wiring only.

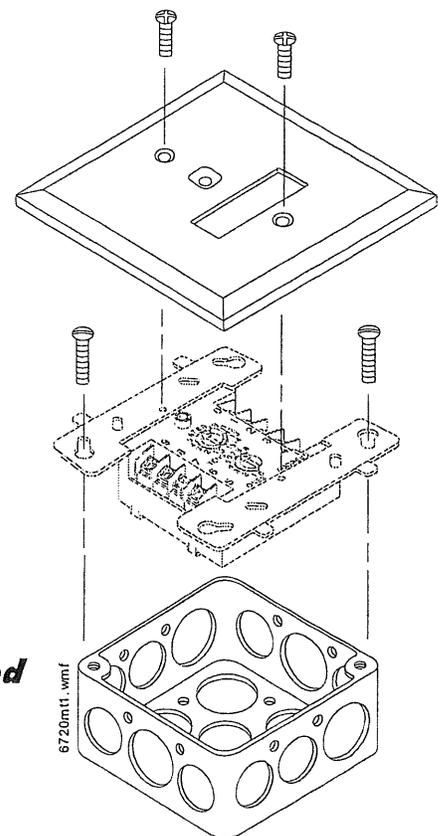
The *NMM-100P* module is intended to be wired and mounted without rigid connections inside a standard electrical box. All wiring must conform to applicable local codes, ordinances and regulations.

## ARCHITECTS'/ENGINEERS' SPECIFICATIONS

Specifications of these and all NOTIFIER products are available from NOTIFIER.

## PRODUCT LINE INFORMATION

<b>NMM-100</b>	Monitor module.
<b>NMM-100P</b>	Mini monitor module.
<b>NZM-100</b>	Two-wire detector monitor module.
<b>NDM-100</b>	Dual monitor module.
<b>SMB500</b>	Optional surface-mount backbox.



## MOUNTING DIAGRAMS for standard-sized modules



March 30, 2004

DN-5765 • J-120

# Wheelock RSS and RSSP Series Single- and Multi-Candela Strobes and Strobe Plates

Section: Audio/Visual Devices

## GENERAL

Wheelock's patented Series RSS Strobe Appliances and Series RSSP Strobe Plates have lower current draw while maintaining outstanding performance, reliability and cost effectiveness. These versatile appliances will satisfy virtually all requirements for indoor, wall or ceiling mount applications.

Strobe options for wall mount models include 15/75 or Wheelock's Patented MCW multi-candela strobe with field selectable candela settings of 15/30/75/110cd. Ceiling mount models include the patented MCC multi-candela ceiling strobe with field selectable intensities of 15/30/75/95cd or the high intensity MCCH strobe with field selectable 115/177cd.

All models may be synchronized when used in conjunction with the Wheelock **SM**, **DSM** Sync Modules or a Power Supplies with Wheelock's Patented Sync Protocol. Synchronized strobes can eliminate possible restrictions on the number of strobes in the field of view. Wheelock's synchronized strobes offer an easy way to comply with ADA recommendations concerning photosensitive epilepsy as well as meeting the requirements of NFPA 72.

Wheelock's Series RSS Strobes employ a Patented Integral Strobe Mounting Plate that can be mounted to a single gang, double gang, 4" square, 100mm European backboxes or the SHBB surface backbox. If the flush backbox has side or top space between it and the finished wall, the **NATP** (Notification Appliance Trimplate) may be used. It provides an additional .65" of trim for the Appliance. An attractive cover plate is provided for a clean, finished appearance on all models.

The Series RSSP Multi-Candela Strobe Plates are a cost effective way to retrofit required wall strobe appliances to bells, horns, chimes, multitones or speakers and easily mounts to standard 4" backboxes or for surface mount use with Wheelock's SBL2 surface backbox.

## FEATURES

- Wall mount Multi-Candela models are available with Field Selectable Candela Settings of 15/30/ 75/110cd or 135/185cd. Single Candela models are available in 15/75cd
- Ceiling mount Multi-Candela models are available with field selectable candela settings of 15/30/75/95cd or 115/177cd.
- Strobes produce 1 flash per second over the regulated voltage range
- 12 and 24 VDC models with wide UL "Regulated Voltage" using filtered (DC) or unfiltered VRMS input voltage
- Synchronize with Wheelock SM, DSM or Power Supplies with built-in sync protocol

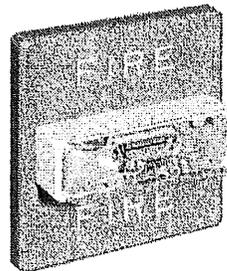


California State Fire Marshal

7125-0785:141

**MEA**

151-92-E Vol. XIX, XX  
Vol. XXIV (RSS-24MCW-FR, -FW)



Series RSS



RSS Round



Multi-Candela Indicator  
(bottom of Strobe Lens)



Series RSSP

- ADA/NFPA/UFC/ANSI compliant. Meets OSHA 29 Part 1910.165

## GENERAL NOTES

- RSS/RSSP Series strobe products are listed under UL 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- "**Regulated voltage range**" is the newest terminology used by UL to identify the voltage range. Prior to this change, UL used the terminology "Listed voltage range."

NOTIFIER® is a Honeywell company.

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# WARNING!

PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THE FOLLOWING INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Wheelock, Inc. standard terms and conditions.

## MODEL NUMBERS OFFERED BY NOTIFIER

MODEL	WALL/CEILING MOUNT	NON-SYNC	SYNC W/ SM, DSM	STROBE CANDELA	12/24 VDC	# MODEL COLOR RED/WHITE	MOUNTING OPTIONS ***	SQUARE OR ROUND	AGENCY APPROVALS				
									UL	MEA	CSFM	FM	BFP
RSS-24MCW-FR	Wall	X	X	15/30/75/110	24	Red	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-24MCW-FW	Wall	X	X	15/30/75/110	24	White	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-241575W-FR	Wall	X	X	15 (75 on Axis)	24	Red	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-121575W-FR	Wall	X	X	15 (75 on Axis)	12	Red	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	X
RSS-24MCC-FR	Ceiling	X	X	15/30/75/95	24	Red	B,D,E,F,G,H,J,N,O,R,X	Square	X	*	X	*	*
RSS-24MCC-FW	Ceiling	X	X	15/30/75/95	24	White	B,D,E,F,G,H,J,N,O,R,X	Square	X	*	X	*	*
RSS-24MCCR-FW	Ceiling	X	X	15/30/75/95	24	White	B,D,E,F,G,H,J,N,O,R,X	Round	X	*	X	*	*
RSS-24MCCH-FW	Ceiling	X	X	115/177	24	White	B,D,E,F,G,H,J,N,O,R,X	Square	X	*	*	*	*
RSS-24MCCH-FR	Ceiling	X	X	115/177	24	Red	B,D,E,F,G,H,J,N,O,R,X	Square	X	*	*	*	*
RSS-24MCCHR-FW	Ceiling	X	X	115/177	24	White	B,D,E,F,G,H,J,N,O,R,X	Round	X	*	*	*	*
RSSWP-2475W-FR*	Wall	X	X	75 @ -31°F	24	Red	B,D,E,F,G,H,J,N,O,R,X	Square	X	X	X	X	*

\*\*\*Refer to Notifier data sheet DN-6111 for mounting options.

Table 1: Average RMS Current\*

RSS/RSSP 24VDC Models	RSS/RSS - Wall Mount					RSS - Ceiling Mounth					
	241575W	24MCW				24MCC				24MCCH	
	1575cd	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd	115cd	177cd
16 vdc	0.101	0.062	0.102	0.192	0.265	0.068	0.112	0.211	0.292	0.300	0.420
<b>24 vdc</b>	<b>0.064</b>	<b>0.41</b>	<b>0.065</b>	<b>0.116</b>	<b>0.155</b>	<b>0.045</b>	<b>0.072</b>	<b>0.128</b>	<b>0.171</b>	<b>0.195</b>	<b>0.270</b>
33 vdc	0.047	0.032	0.047	0.081	0.107	0.035	0.052	0.089	0.118	0.145	0.190
RSS/RSSP 24 VDC Models	RSS/RSSP Wall Mount 121575W	*Average RMS Current is per UL average RMS method and Average Mean Current is per UL average mean method. 12 volt models use average mean current.									
8 vdc	0.336	For rated In Rush and Peak current across the UL listed voltage range for both filtered DC and unfiltered VRMS (FWR), see installation instructions.									
<b>12 vdc</b>	<b>0.179</b>										
17.5 vdc	0.136										

### SYNC MODULES/POWER SUPPLY

MODEL NUMBER	ORDER CODE	INPUT VOLTAGE (VDC)	AVERAGE MEAN CURRENT @ 24 VDC	MOUNTING OPTIONS
SM-12/24-R	6369	24	.028	W
DSM-12/24-R	6374	24	.035	W

#### NOTES:

SM Sync Module is rated for 3.0 amperes @ 24 VDC.  
DSM Sync Module is rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20).

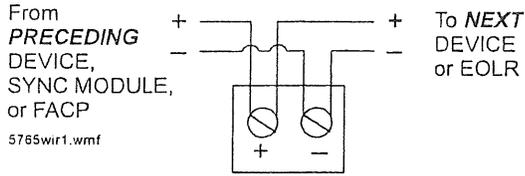
Table 2: Audibles/Speakers for RSSP Strobe Plate

Product	Series
Multitone Appliances	AMT, MT
Horns	AH, NH, HS
Motor Bells	MB-G6/G10
Speakers	ET-1010/1080, E70, ET70
Chimes	CH70

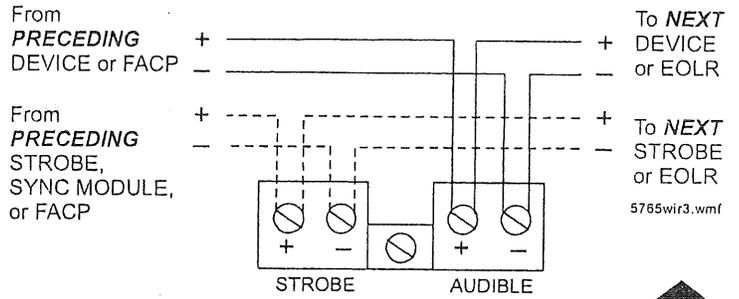


# WIRING DIAGRAMS

**FIGURE 1: RSS/RSSP device.**

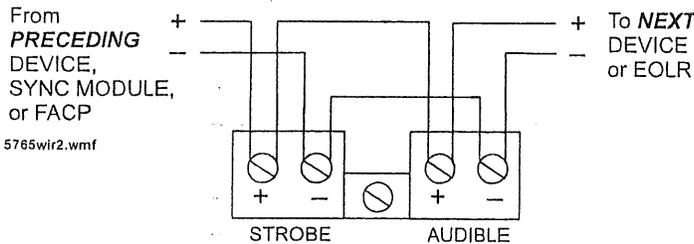


5765wir1.wmf



5765wir3.wmf

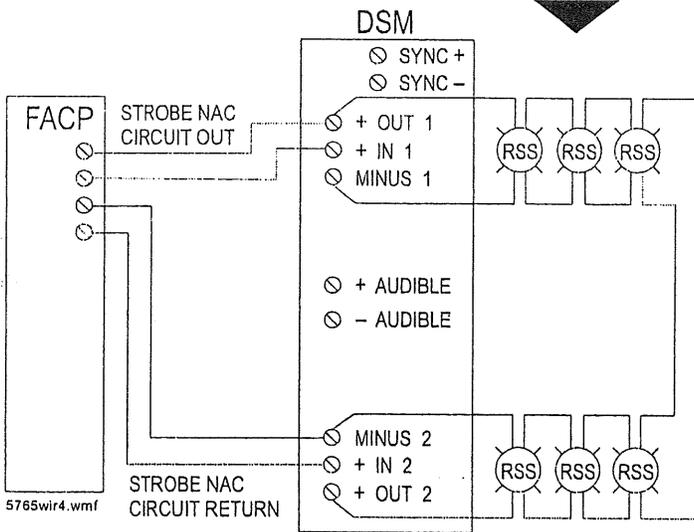
**FIGURE 2: Strobe/plate assembly with audible and visible operating in unison.**



5765wir2.wmf

**FIGURE 3: Strobe/plate assembly with audible and visible operating independently.**

**FIGURE 4: RSS/RSSP devices synchronized with DSM Module; single Class "A" NAC circuit.**



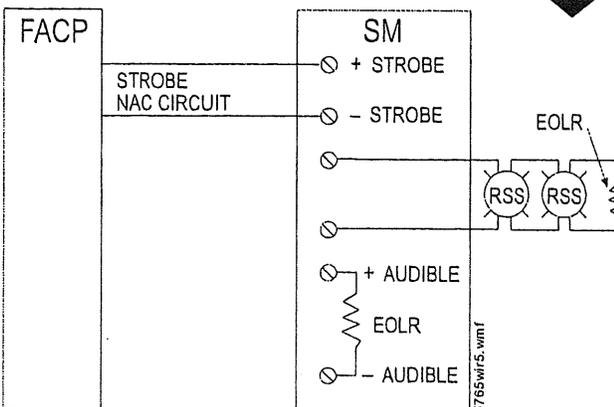
5765wir4.wmf

For details on using SM or DSM: Sync Modules Installation instructions #P83123 (for SM) or #P83177 (for DSM).

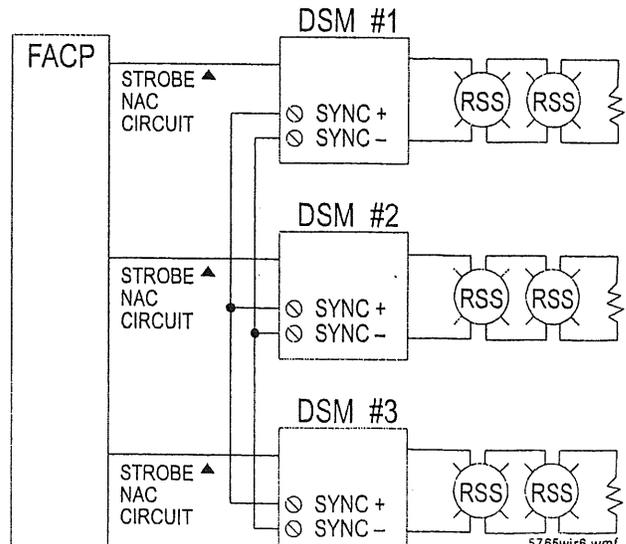
**FIGURE 6: RSS/RSSP devices synchronized with multiple DSM Modules.**

INTERCONNECTING WIRING SHOWN. MAXIMUM OF TWENTY (20) DSM MODULES.

**FIGURE 5: RSS/RSSP devices synchronized with SM Module single Class "B" NAC circuit.**



5765wir5.wmf



5765wir6.wmf

**⚠️ WARNING!** CONTACT WHEELLOCK FOR THE CURRENT "INSTALLATION INSTRUCTIONS" AND "GENERAL INFORMATION" SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THESE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:

- TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.
- FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.
- ADDING, REPLACING OR CHANGING APPLIANCES OR CHANGING CANDELA SETTINGS WILL AFFECT CURRENT DRAW. RECALCULATE CURRENT DRAW TO INSURE THAT THE TOTAL AVERAGE CURRENT AND TOTAL PEAK REQUIRED BY ALL APPLIANCES DO NOT EXCEED THE RATED CAPACITY OF THE POWER SOURCE OR FUSES.
- COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW.
- THE VOLTAGE APPLIED TO THESE PRODUCTS MUST BE WITHIN THEIR "REGULATED VOLTAGE RANGE".
- INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.
- INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
- USE STROBES ONLY ON CIRCUITS WITH CONTINUOUSLY APPLIED OPERATING VOLTAGE. DO NOT USE STROBES ON CODED OR INTERRUPTED CIRCUITS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF AS THE STROBES MAY NOT FLASH.
- FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.
- CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.

---

Wheelock products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

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## ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The visual notification appliances shall be Wheelock Series RSS Strobe Appliances or approved equals. The Series RSS shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The strobe shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. The strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP). When Strobe Plates are to be installed, they shall be the Wheelock Series RSSP Strobe Plate and shall have the same electronic circuitry as the Wheelock Series RSS.

The Series RSS Strobe shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 at 15/30/75/110cd or 135/185cd for wall mount and 15/30/75/95cd or 115/177cd for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's SM, DSM Sync Modules or a Power Supply with built-in Patented Wheelock Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobe shall revert to a non-synchronized flash rate. The strobes shall be designed for indoor surface of flush mounting.

The Series RSS Strobe Appliances shall incorporate a Patented, Integral Strobe Mounting Plate that shall allow mounting to single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided. An attaching cover plate shall be provided to give the Appliance and attractive appearance. The Appliance shall not have any mounting holes or screw heads visible when the installation is completed.

The Series RSSP Multi-Candela or single candela Strobe Plate shall mount to either a standard 4 inch square backbox for flush mounting, or the Wheelock SBL2 backbox for surface mounting.

All notification appliances shall be backward compatible. NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Wheelock, Inc. standard terms and conditions.



March 30, 2004

DN-6601 • J-134

# Wheelock NS Series horn Strobes and NH Series Horns

Section: Audio/Visual Devices

## GENERAL

The Wheelock Series NS Horn Strobe Appliances will satisfy virtually all requirements for indoor, wall mount applications.

The Series NH Horn and the horn portion of the Series NS include a selectable continuous horn tone or temporal pattern (Code 3) with selectable dBA settings of 90 or 95 dBA.

Strobe options include 1575cd or Wheelock's patented Multi-Candela strobe with field selectable candela settings of 15/30/75/110cd.

These versatile Horn Strobe Appliances may be synchronized when used in conjunction with the Wheelock SM or DSM Sync Modules or a Power Supply with the Wheelock patented Sync Protocol. Additionally, the audible may be silenced while maintaining strobe activation.

All models of the Series NS and NH are designed for maximum performance, reliability and cost-effectiveness while meeting or exceeding the latest requirements of NFPA 72/ANSI 117.1/UFC and UL Standards 1971 and 464 as well as meeting ADA requirements concerning photosensitive epilepsy.

## FEATURES

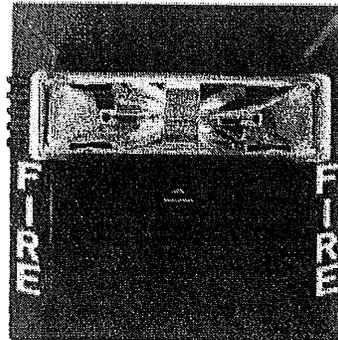
- Field Selectable Candela Settings 15/30/75/110cd (24 VDC Multi-Candela models) or 1575cd in 12 or 24 VDC
- Selectable Continuous Horn or Temporal (Code 3)
- 2 Selectable dBA settings of 90 and 95 dBA in both tones
- 12 and 24 VDC models with UL "Regulated Voltage" using filtered DC or unfiltered VRMS input voltage
- Patented Universal Mounting Plate
- Wall Mount
- ADA/NFPA/UFC/ANSI compliant
- Complies with OSHA 29, Part 1910.165
- NH horn is selectable 12 or 24 VDC in 1 unit
- Synchronize with Wheelock SM or DSM Sync Module or the Power Supply with built-in sync protocol
- Patent pending Universal Mounting Plate for single-gang, double-gang, 4" (10.16 cm) square, or 100 mm European backboxes, or Wheelock's SHBB shallow surface backbox.
- Fast installation with IN/OUT screw terminals using #12 to #18 AWG wires



California  
State Fire  
Marshal

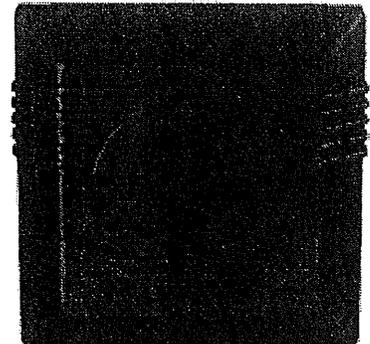
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MEA  
151-92-E



NS Horn Strobe

NH Horn



Multi-Candela Indicator  
(bottom of Strobe Lens)

NOTIFIER® is a Honeywell company.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118



12 Clintonville Road, Northford, Connecticut 06472

**ISO 9001**  
**CERTIFIED**  
ENGINEERING & MANUFACTURING  
QUALITY SYSTEMS

## GENERAL NOTES

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range". Note that NFPA-72 specifies a flash rate of 1 to 2 flashes per second and ADA Guidelines specify a flash rate of 1 to 3 flashes per second.
- All candela ratings represent minimum effective Strobe intensity based on UL Standard 1971.
- Series NS Strobe products are listed under UL Standard 1971 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%).
- Series NH horns are listed under UL Standard 464 for audible signal appliances (Indoor use only).
- "Regulated Voltage Range" is the newest terminology used by UL to identify the voltage range. Prior to this change UL used the terminology "Listed Voltage Range".

NOTE: All CAUTIONS and WARNINGS are identified by the symbol . All warnings are printed in bold capital letters.

**WARNING!** PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

Model	Input Voltage VDC	Regulated Voltage Range VDC/FWR	Strobe Candela (CD)
NS-24MCW	24	16.0 - 33.0	15/30/75/110
NS-241575W	24	16.0 - 33.0	15 (75 on Axis)
NS-121575W	12	8.0 - 17.5	15 (75 on Axi)

NS-24MCW with High (95 dBA) Setting					
Voltage	15cd	30cd	75cd	110cd	
16.0 VDC	.077	.113	.195	.268	
24.0 VDC	.065	.087	.134	.174	
33.0 VDC	.069	.082	.117	.134	
NS-24MCW with Low (90 dBA) Setting					
Voltage	15cd	30cd	75cd	110cd	
16.0 VDC	.070	.106	.188	.261	
24.0 VDC	.052	.072	.126	.158	
33.0 VDC	.045	.060	.097	.114	

NS-241575W		
Voltage	High (95) dBA	Low (90) dBA
16.0 VDC	.120	.116
24.0 VDC	.094	.093
33.0 VDC	.102	.078
NS-121575W		
Voltage	High (95) dBA	Low (90) dBA
8.0 VDC	.341	.324
12.0 VDC	.251	.265
17.5 VDC	.216	.188

Voltage	High (95) dBA	Low (90) dBA
16.0 VDC	.019	.017
24.0 VDC	.028	.022
33.0 VDC	.039	.027

\*Average RMS Current is per UL average RMS method and Average Mean Current is per UL average mean method. NH models use average mean current. For rated In Rush and Peak current across the UL listed voltage range for both filtered DC and unfiltered VRMS (FWR), see installation instructions.

Description	Volume	Reverberant dBA @ 10 ft. per UL 464		Anechoic dBA @ 10 ft.	
		12 VDC	24 VDC	12 VDC	24 VDC
Continuous Horn	High	83	87	89	95
	Low	76	81	84	90
Code 3 Horn	High	79	82	89	95
	Low	72	76	84	90

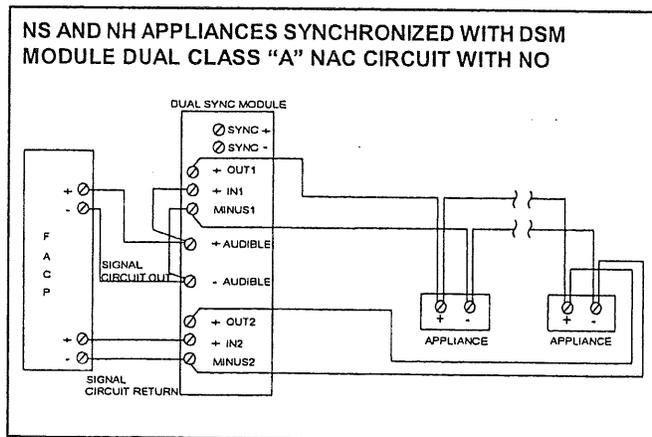
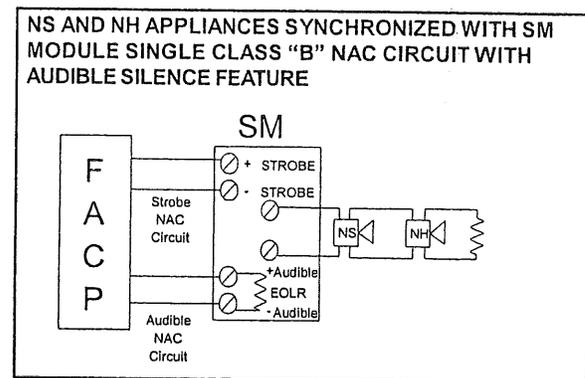
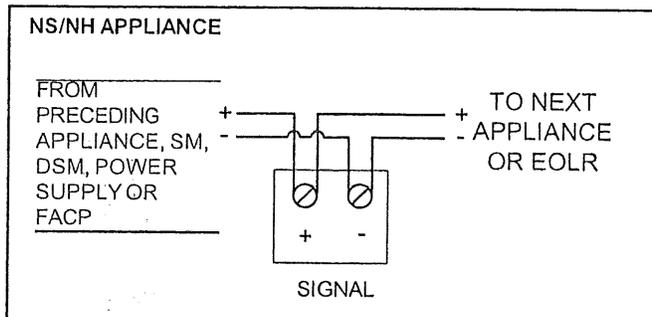
MODEL NUMBER	INPUT VOLTAGE (VDC)	AVERAGE MEAN CURRENT @ 24 VDC	MOUNTING OPTIONS
SM-12/24-R	24	.028	W
DSM-12/24-R	24	.035	W

NOTES:  
 SM Sync Module is rated for 3.0 amperes @ 24 VDC;  
 DSM Sync Module is rated for 3.0 amperes per circuit. The maximum number of interconnected DSM Modules is twenty (20).

**⚠ WARNING: CONTACT WHEELOCK FOR THE CURRENT INSTALLATION INSTRUCTIONS (P83983) SERIES NS-24MCW, (P84234) SERIES NS-12 AND 24 VDC SINGLE CANDELA MODELS, (P83600) SERIES NH AND "GENERAL INFORMATION" SHEET (P82380) ON THESE PRODUCTS. THESE DOCUMENTS UNDERGO PERIODIC CHANGES. IT IS IMPORTANT THAT YOU HAVE CURRENT INFORMATION ON THESE PRODUCTS. THESE MATERIALS CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ PRIOR TO SPECIFYING OR INSTALLING THESE PRODUCTS, INCLUDING:**

- TOTAL CURRENT REQUIRED BY ALL APPLIANCES CONNECTED TO SYSTEM SECONDARY POWER SOURCES.
  - FUSE RATINGS ON NOTIFICATION APPLIANCE CIRCUITS TO HANDLE PEAK CURRENTS FROM ALL APPLIANCES ON THOSE CIRCUITS.
  - COMPOSITE FLASH RATE FROM MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW.
  - ADDING, REPLACING OR CHANGING APPLIANCES OR CHANGING CANDELA SETTINGS WILL AFFECT CURRENT DRAW.
- RECALCULATE CURRENT DRAW TO INSURE THAT THE TOTAL AVERAGE CURRENT AND TOTAL PEAK REQUIRED BY ALL APPLIANCES DO NOT EXCEED THE RATED CAPACITY OF THE POWER SOURCES OR FUSES.
- THE VOLTAGE APPLIED TO THESE PRODUCTS MUST BE WITHIN THEIR "REGULATED VOLTAGE RANGE".
  - INSTALLATION OF 110 CANDELA STROBE PRODUCTS IN SLEEPING AREAS.
  - INSTALLATION IN OFFICE AREAS AND OTHER SPECIFICATION AND INSTALLATION ISSUES.
  - THESE APPLIANCES ARE NOT DESIGNED TO BE USED ON CODED SYSTEMS IN WHICH THE APPLIED VOLTAGE IS CYCLED ON AND OFF.
  - FAILURE TO COMPLY WITH THE INSTALLATION INSTRUCTIONS OR GENERAL INFORMATION SHEETS COULD RESULT IN IMPROPER INSTALLATION, APPLICATION, AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.
  - CONDUCTOR SIZE (AWG), LENGTH AND AMPACITY SHOULD BE TAKEN INTO CONSIDERATION PRIOR TO DESIGN AND INSTALLATION OF THESE PRODUCTS, PARTICULARLY IN RETROFIT INSTALLATIONS.

## WIRING DIAGRAMS



**NOTE: NS/NH must be set on Code 3 horn tone to achieve synchronized temporal (Code 3) tone. Refer to installation instruction (P83983, P83600 respectively).**

# For detail using SM or DSM Sync Module refer to Data Sheet S3000 or Installation Instructions P83123 for SM and P83177 for DSM.

## ARCHITECTS AND ENGINEERS SPECIFICATIONS

The audible/visual notification appliances shall be Wheelock Series NS Horn Strobe appliances and Series NH Horn appliances or approved equals. The Series NS appliances shall meet and be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired for Indoor Fire Protection Service). The Series NH Horn shall be UL Listed under Standard 464 (Fire Protective Signaling). The horn strobe shall be listed for indoor use and shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by the Fire Alarm Control Panel (FACP).

The audible portion of the appliance shall have a minimum of two (2) field selectable settings for dBA levels (90 and 95 dBA) and shall have a choice of continuous or temporal (Code 3) audible outputs.

The strobe portion of the appliance shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan lens. The Series NS shall be of low current design. Where wall mount, Multi-Candela appliances are specified, the strobe intensity shall have field selectable settings and shall be rated per UL Standard 1971 for 15/30/75/110 candela. The selector switch for selecting the candela setting shall be tamper resistant. The 1575 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance).

When synchronization is required, the appliance shall be compatible with Wheelock's SM, DSM Sync Modules or a Power Supply with Wheelock's built-in Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync module or Power Supply fails to operate, (i.e., contacts remain closed), the strobes shall revert to a non-synchronized flash-rate. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation.

The Series NS Horn Strobes and NH horn shall incorporate a Patented Universal Mounting Plate that shall allow mounting to a single-gang, double-gang, 4-inch square, 100mm European type backboxes, or the SHBB Surface Backbox. If required, an NATP (Notification Appliance Trimplate) shall be provided.

All notification appliances shall be backward compatible.

## SPECIFICATION & ORDERING INFORMATION

MODEL	STROBE CANDELA	NON-SYNC	SYNC W/SM, DSM	24 VDC	12 VDC	2 WIRE	MOUNTING OPTIONS	AGENCY APPROVALS				
								UL	MEA	CSFM	FM	BFP
NS-24MCW-FR	15/30/75/110	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-24MCW-FW	15/30/75/110	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-241575W-FR	15 (75 on axis)	X	X	X	-	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NS-241575W-FR	15 (75 on axis)	X	X	-	X	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X
NH-12/24-R	12V 24V	X	X	X	X	X	B,D,E,F,G,H,J,N,O,R,X	X	X	X	X	X

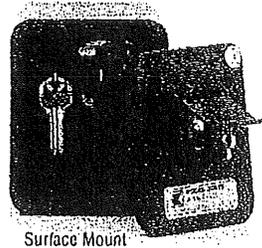
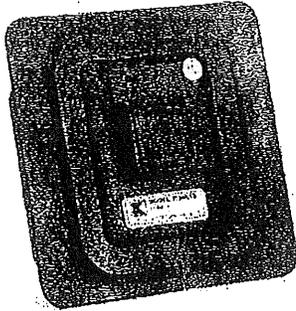
\* A power supply with the built-in patented Wheelock Sync Protocol



# Knox-Box® 3200 Series LIFT-OFF DOOR MODEL

## High Security Industrial/Government Key Box

Recessed Mount  
with Face Flange



Surface Mount

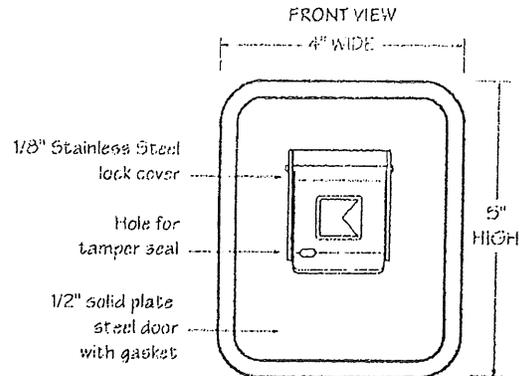
The number one high-security KNOX-BOX® key box is used for most commercial applications including businesses, schools, government and public buildings, community associations and apartment complexes. The 3200 Series KNOX-BOX with lift-off door holds keys, access cards and other small items necessary for emergency access.

### Features and Benefits

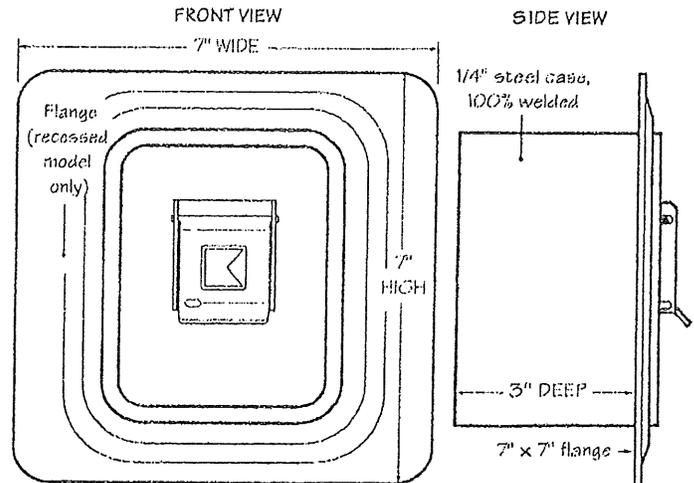
- Holds up to 10 keys or 3 access cards in interior compartment
- Ensures high security with UL® Listed Medeco lock
- Includes a Knox-Coat® proprietary finishing process that protects Knox products up to four times better than standard powder coat
- Resists moist conditions with a weather resistant door gasket
- Colors: Black, Dark Bronze or Aluminum
- Weight: Surface mount - 8 lbs.  
Recessed mount - 9 lbs.

### Options

- Alarm tamper switches (UL Listed)
- Additional rust and corrosion protection (Aluminization)
- Recessed Mounting Kit (RMK) for recessed models only



3200 Surface Mount



3200 Recessed Mount

### Ordering Specifications

To insure procurement and delivery of the 3200 Series KNOX-BOX, it is suggested that the following specification paragraph be used:

KNOX-BOX surface/recessed mount with lift-off door, with/without UL Listed tamper switches. 1/4" plate steel housing, 1/2" thick steel door with interior gasket seal. Box and lock UL Listed. Lock has 1/8" thick stainless steel dust cover with tamper seal mounting capability.

Exterior Dimensions: Surface mount - 5"H x 4"W x 3 1/4"D

Recessed mount - 7"H x 7"W x 3 1/4"D

Lock: UL Listed. Double-action rotating tumblers and hardened steel pins accessed by a biased cut key.

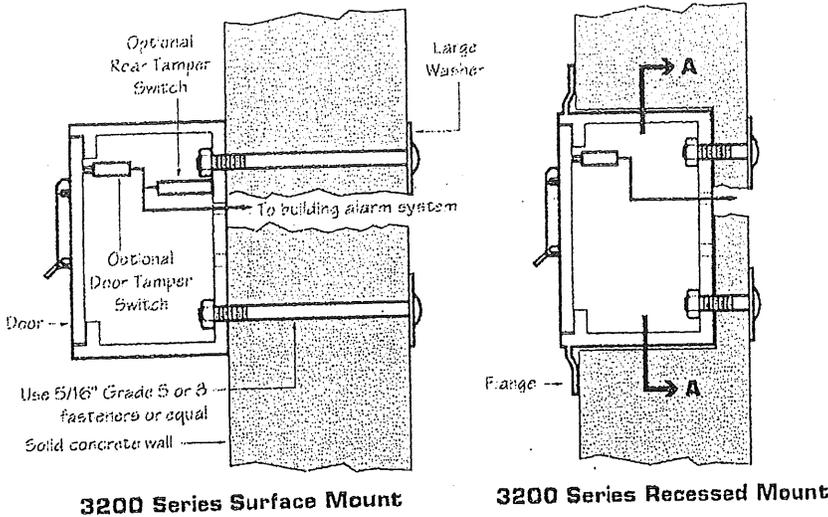
Finish: Knox-Coat® proprietary finishing process

Colors: Black, Dark Bronze or Aluminum

P/N: 3200 Series KNOX-BOX (mfr's cat. ID)

Mfr's Name: KNOX COMPANY

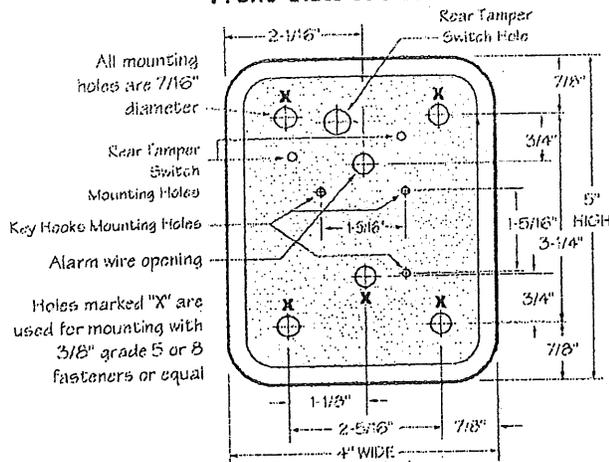
Suggested minimum mounting height  
6 feet above ground



3200 Series Surface Mount

3200 Series Recessed Mount

Figure A  
Front View of Rear Plate



Attention: KNOX-BOX® key box is a very strong device that **MUST** be mounted properly to ensure maximum security and resist physical attack.

**Knox® Rapid Entry System**

The Knox Company manufactures a complete line of high security products including Knox-Box key boxes, key vaults, cabinets, key switches, padlocks, locking FDC caps and electronic master key security systems. For more information or technical assistance, please call Customer Service at 1-800-552-5669.

**Recessed Mounting Kit**

The 3200 Recessed Mounting Kit (RMK) is used for recessed models only. It contains a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction. After construction is completed, the KNOX-BOX mounts inside the recessed shell housing. The RMK may only be used in new concrete or masonry construction.

**Installation**

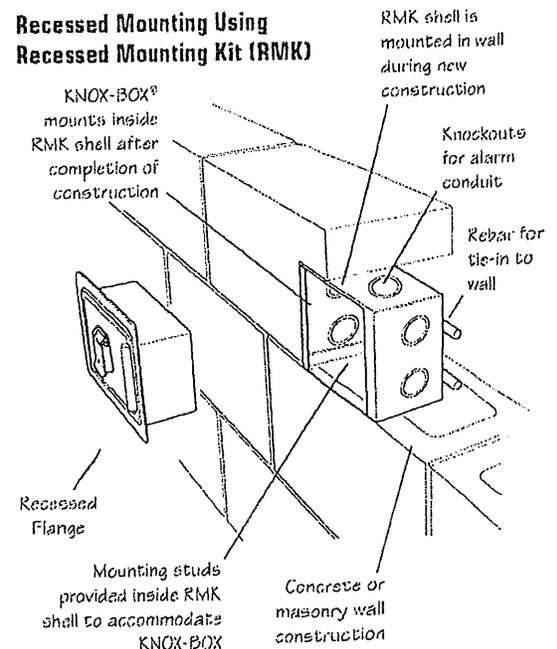
Fasten the mounting kit to the inside wall of a concrete form or set-in-place during masonry wall construction. Connect the wiring conduit through one of several knockout holes in the shell housing.

**Dimensions**

6-1/8"H x 6"W x 5"D, including Rebar

**IMPORTANT:** Care should be taken to insure that the front of the RMK shell housing, including the cover plate and screw heads, is flush with the finish wall. The RMK must be plumbed insure vertical alignment of the vault.

**Recessed Mounting Using Recessed Mounting Kit (RMK)**





**NOTIFIER****System Power Requirements****NFW-50 Fire Alarm Control Panel**Protected Premises: 16 Casco St. Date: 12/19/2008

Address: \_\_\_\_\_

City: Portland State: Maine Zip: \_\_\_\_\_Prepared By: Norris Inc. Phone: (207)-883-3473Address: 2257 West Broadway Email: \_\_\_\_\_City: South Portland State: Maine Zip: 04106**AC Branch Current Requirements** 3.00 AMPS @ 120 VAC

Current required by source to power the fire alarm system.

**Primary Standby Load** 0.13 Amps

Current load on the primary power supply during non-alarm conditions.

**Primary Alarm Load** 2.07 Amps

Current load on the primary power supply during alarm conditions.

**Secondary Load Requirements** 3.83 Amp Hours

Total Secondary Load from the calculation table below.

Current Draw		Time (hours)	Total (AH)
<b>Secondary Standby Load</b> 0.126 A	x	Required Standby Time	
		24 hours	3.02
<b>Secondary Alarm Load</b> 2.070 A	x	Required Alarm Time (hours)	
		0.084 hours	0.17
<b>Auxiliary Power Supply Load</b> 0.000 A	x	Required Alarm Time (hours)	
		0.084 hours	0.00
<b>Total Secondary Load</b>			<b>3.20</b>
Derating factor			x 1.2
<b>Secondary Load Requirements</b>			<b>3.83</b>

AH

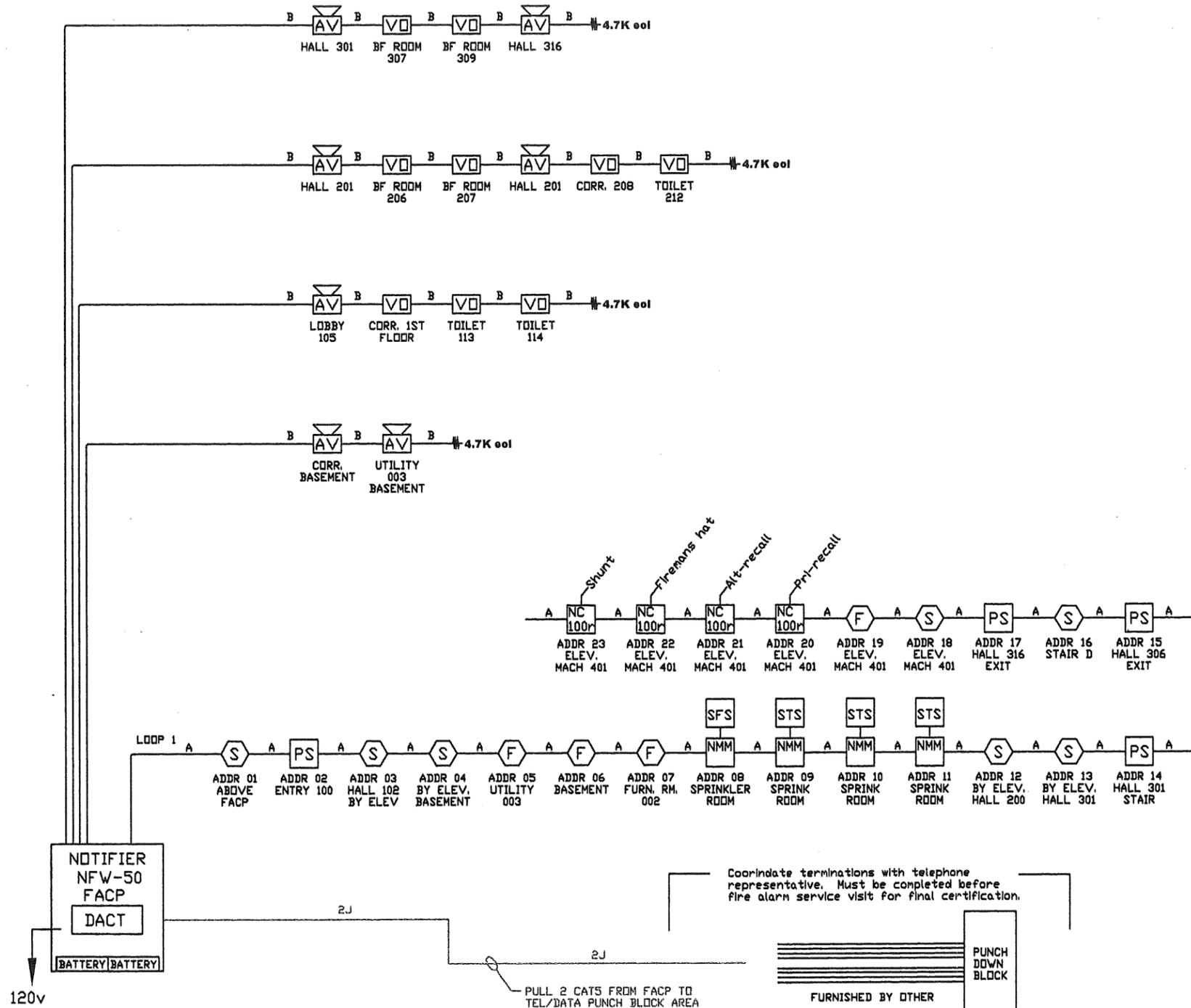
**Battery Selection** 18 Amp Hours

Select batteries from the list below.

18 AH BAT-12180 Battery (12 volt)

- Two       Four (two 12VDC sets in parallel)

Important! Wiring connections must have correct polarity.



LEGEND

- 48 INCHES PS PULL STATION
- S SMOKE DETECTOR
- R HEAT DETECTOR RATE OF RISE
- F HEAT DETECTOR FIXED TEMP
- 120v RT REMOTE TEST/INDICATOR
- DS DUCT SMOKE DETECTOR *Note: Remove J1 Jumper*
- 80 INCHES VO VISUAL ONLY
- 80 INCHES AV AUDIO / VISUAL
- NZM 100 ZONE MODULE
- NC 100 CONTROL MODULE
- NMM 100=4 SQUARE, 100p=mini mod MONITOR MODULE
- NC 100r RELAY MODULE
- STS SPRINKLER TAMPER
- SFS SPRINKLER FLOW
- DH DOOR HOLDER 120V AC

This drawing is a typical device layout, wiring is shown diagrammatically only. This drawing has been provided as an example ONLY. Riser does not necessarily indicate all devices and appliances. See floor plans and specification for location and quantities. The purchaser must accurately layout the initiating and notification devices in their proper zones/circuit. Note: All signal circuits have a combined load limitation of 2.5 amps for the 2 circuits. REMOTE power supply has a 3.0 amp limitation per circuit and an 8.0 amp combined limitation for all 4 circuits. (see chart below for current vs. candela rating)

Room Size	Candela Rating	Load (amps)
20' x 20'	15 cd	0.08 amps
28' x 28'	30 cd	0.10 amps
45' x 45'	75 cd	0.15 amps
54' x 54'	110 cd	0.20 amps

4.7k END OF LINE RESISTOR (Panel Circuits)

- A 1 PR #12 AWG TWISTED-PAIR CABLE FPL GENESIS WG-4315 & WG-4515 BELDEN 5020UL & 6020UL (Up to 10,000 ft)
- A 1 PR #14 AWG TWISTED-PAIR CABLE FPL GENESIS WG-4313 & WG-4513 BELDEN 5120UL & 6120UL (Up to 8,000 ft)
- A 1 PR #16 AWG TWISTED-PAIR CABLE FPL GENESIS WG-4311 & WG-4511 BELDEN 5220UL & 6220UL (Up to 4,500 ft)
- B 1 PR #12 AWG FPL CABLE
- D 1 PR #14 AWG FPL CABLE
- E 1 PR #16 AWG FPL CABLE
- F 2c #12 AWG CABLE
- G 2c #14 AWG CABLE
- H 2c #16 AWG CABLE
- J 1 CAT5 CABLE

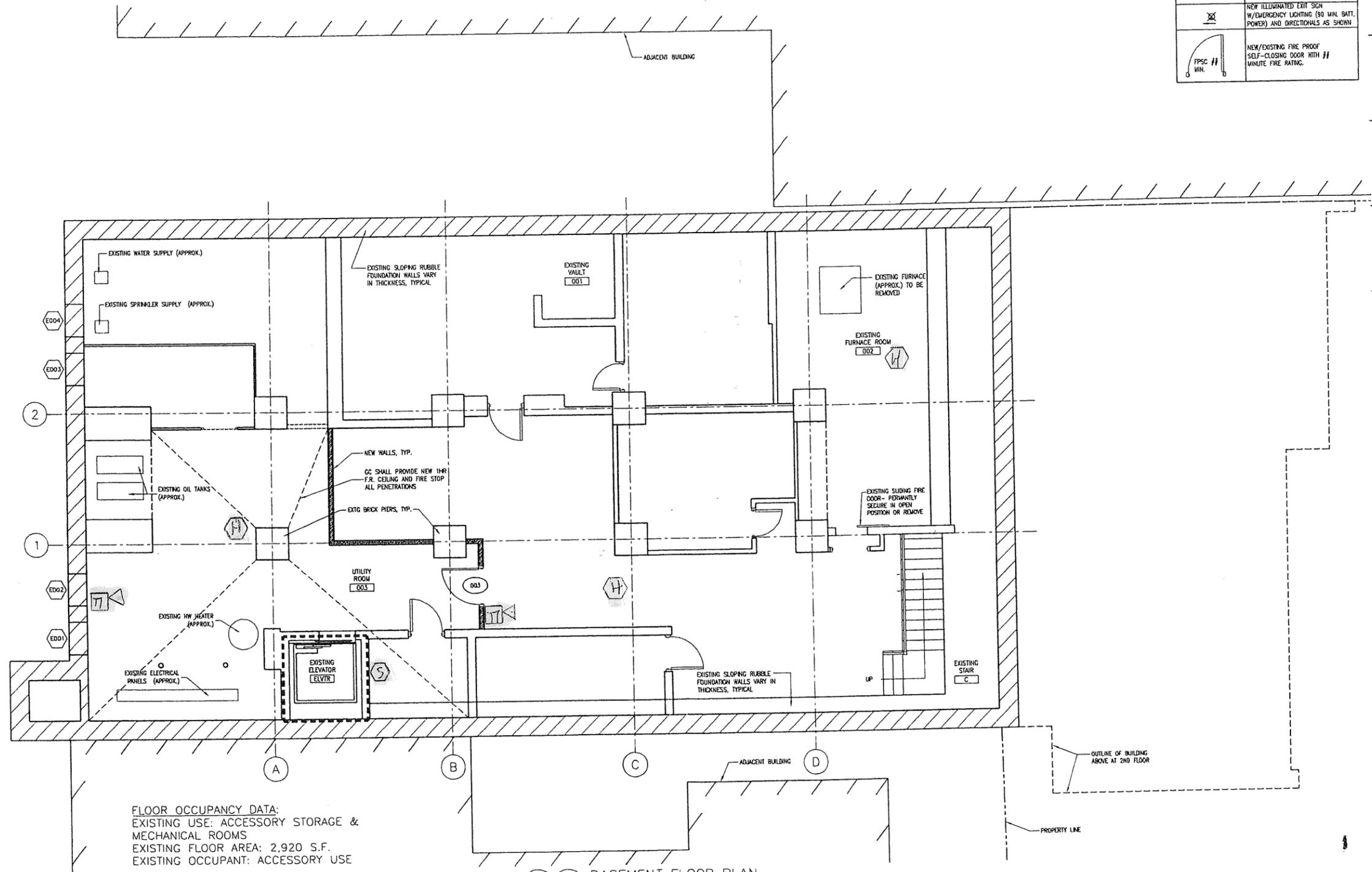
REVISION 2	DATE:
REVISION 1	DATE:
REVISION 0 SUBMITTAL	DATE: 12/10/08

SYSTEM WIRING RISER

PROJECT NAME <b>16 Casco St.</b> Portland, MAINE	SCALE NTS
 Prepared For Tomorrow, Delivered Today 2257 BROADWAY, SQ. PORTLAND, MAINE	BY: <b>EAD</b>
	CK BY:
	SAVED AS:

DOOR #	SIZE	WATERAL		FIRE RATING		HARDWARE			THRESHOLD
		DOOR	FRAME	(MINUTES)	LOCKSET	CLOSER	HINGES	WEATHERSTRIPPING	
003	3'-0" x 7'-0"	HM (PTD)	HM (PTD)		●	●	●		-

SYMBOL	DESCRIPTION
	EXISTING MASONRY EXTERIOR WALL TO REMAIN
	EXISTING INTERIOR PARTITION
	NEW INTERIOR PARTITION, SEE NOTE
	NEW FIRE RATED PARTITION SMOKE & FIRE STOP ALL PENETRATIONS, SEE NOTES, DETAILS
	EXISTING FIRE RATED PARTITION (ASSUMED) G.C. SHALL CONFIRM AND SMOKE & FIRE STOP ALL PENETRATIONS, SEE NOTES FOR REQ'D F.R.
	NEW FIRE EXTINGUISHER CABINET
	NEW EMERGENCY LIGHT WITH 90 MINUTE BATTERY POWER
	NEW ILLUMINATED EXIT SIGN W/ EMERGENCY LIGHTING (90 MIN. BATT. POWER) AND DIRECTIONALS AS SHOWN
	NEW/EXISTING FIRE PROOF SELF-CLOSING DOOR WITH 1/2 HOUR FIRE RATING



FLOOR OCCUPANCY DATA:  
 EXISTING USE: ACCESSORY STORAGE & MECHANICAL ROOMS  
 EXISTING FLOOR AREA: 2,920 S.F.  
 EXISTING OCCUPANT: ACCESSORY USE

BASEMENT FLOOR PLAN

**BARBARA WHEELER**

ARCHITECTURE  
 PRESERVATION  
 DESIGN

800 CONGRESS STREET  
 PORTLAND, MAINE 04101  
 FAX 207 772-2987  
 TEL 207 772-2722

16 CASCO STREET  
 PORTLAND, MAINE

12/17/07: City of Portland, Selective Demo Permit Application  
 1/14/08: SFM Review  
 3/6/08: Revised per SFM Comments

Title:  
**BASEMENT FLOOR PLAN**

Project No: 200706  
 Date: MARCH 6, 2008  
 Revisions:

PERMITTING AND  
 Issued For: CONSTRUCTION

Drawing No:

**A1.1**

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NEW INTERIOR PARTITIONS:  
 3 5/8" WIL. STUDS (22CA) @ 16" O.C. w/ TOP & BOT RUNNERS. HEIGHT: 6" ABV. FINISHED CLG. w/ 1/2" CNB EACH SIDE.  
 PROVIDE MOISTURE RESISTANT CNB @ TOILETS, SHOWERS & SINK LOCATIONS.

EXISTING STAIR A:  
 1. EXISTING WOOD RAILING AND POSTS SHALL REMAIN. CLEAN AND RESECURE ANY LOOSE ATTACHMENTS. INSTALL NEW METAL HANDRAIL AND RAIL INFILL SCREEN. SEE DETAIL.

EXISTING STAIR B:  
 1. EXISTING WOOD HANDRAILS SHALL REMAIN. RESET WHERE REQUIRED FOR TOP OF RAIL TO BE 3'-2" MAX. ABOVE TREAD HEIGHT. PROVIDE NEW MOUNTING BRACKETS TO REPLACE MISSING OR DAMAGED BRACKETS.

EXISTING STAIR B-1:  
 1. REMOVE AND REPLACE EXISTING WOOD TREADS & RISERS.  
 2. PROVIDE NEW WOOD TREADS AND RISERS.  
 3. RESET OR REPLACE EXISTING METAL HANDRAILS EACH SIDE. TOP OF HANDRAIL SHALL BE 2'-8" MAX. - 3'-2" MAX. ABOVE TREAD HEIGHT.

EXISTING STAIR D:  
 1. SEE DETAILS FOR ALTERATION OF EXISTING UPPER STAIR RUN AND EXTERIOR ENCLOSURE.

TOILET ROOM NOTES:  
 SEE DNG. C1.2 FOR MOUNTING HEIGHTS OF FIXTURES & ACCESSORIES.

EXISTING BF TOILET ROOM 205:  
 1. PROVIDE SHOWER (HAND SHOWER WITH PRESSURE BALANCED ANTI-SCALD CONTROLS) AND FITTINGS & NEW SUPPLY & DRAINAGE ROUGH-IN'S.  
 2. PROVIDE NEW ACCESSORIES AS FOLLOWS:  
 GRAB BAR: 1-1/2" DIA. ST. STL. W/ PEDZED GRIP: (1) 24"x36" L-SHAPED SHOWER BAR  
 FOLDING SHOWER SEAT  
 SHOWER CURTAIN & ROD  
 3. PROVIDE NEW WATERRESISTANT (IMPERVABLE) FLOOR & WALL FINISHES AND NEW SANITARY COVE WALL BASE. SEE INTERIOR DESIGN SCHEDULED MATERIALS FOR DETAILS.

	EXISTING MASONRY EXTERIOR WALL TO REMAIN
	EXISTING INTERIOR PARTITION
	NEW INTERIOR PARTITION, SEE NOTE
	NEW FIRE RATED PARTITION SMOKE & FIRE STOP ALL PENETRATIONS, SEE NOTES, DETAILS
	EXISTING FIRE RATED PARTITION (ASSUMED) G.C. SHALL CONFIRM AND SMOKE & FIRE STOP ALL PENETRATIONS. SEE NOTES FOR REQ'D F.R.
	NEW FIRE EXTINGUISHER CABINET
	NEW EMERGENCY LIGHT WITH 90 MINUTE BATTERY POWER
	NEW ILLUMINATED EXIT SIGN W/ EMERGENCY LIGHTING (90 MIN. BATT. POWER) AND DIRECTIONALS AS SHOWN
	NEW/EXISTING FIRE PROOF SELF-CLOSING DOOR WITH // MINUTE FIRE RATING.

ARCHITECTURE  
 PRESERVATION  
 DESIGN  
 500 CONGRESS STREET  
 PORTLAND, MAINE 04101  
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 TEL 207 772-2722

16 CASCO STREET  
 PORTLAND, MAINE

12/17/07: City of Portland,  
 Selective Demo Permit  
 Application  
 1/14/08: SFM Review  
 3/6/08: Revised per SFM  
 Comments

Title:  
 SECOND  
 FLOOR PLAN

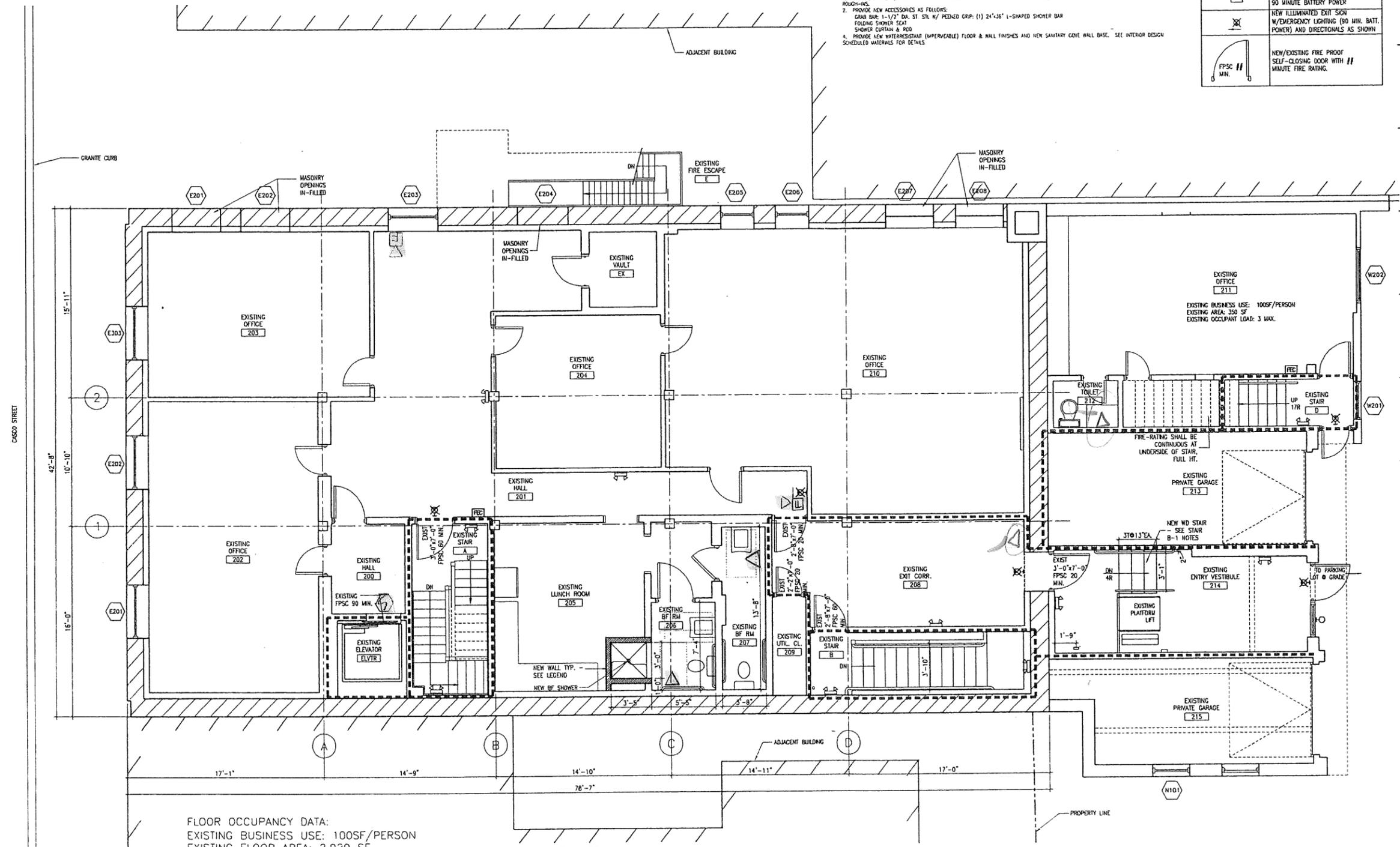
Project No: 200706  
 Date: MARCH 6, 2008  
 Revisions:

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 PERMITTING AND  
 CONSTRUCTION

Drawing No:

A13

DRAWING 10 of 14



FLOOR OCCUPANCY DATA:  
 EXISTING BUSINESS USE: 100SF/PERSON  
 EXISTING FLOOR AREA: 2,920 SF  
 EXISTING OCCUPANT LOAD: 29 MAX.

1 SECOND FLOOR PLAN  
 1/4" = 1'-0"

	DOOR	FRAME	(MINUTES)	LOCKSET	CLOSER	HINGES	WEATHERSTRIPPING	THRESHOLD
303A	3'-0"x7'-0"	WD/GL	WD	-	-	-	-	-
303B	3'-0"x7'-0"	SCWD	SCWD	-	-	-	-	-
306	3'-0"x7'-0"	HM	HM	90	-	-	-	AL
307	2'-10"x7'-0"	SCWD	HM	-	-	-	-	-
308	NOT USED	-	-	-	-	-	-	-
310	1'-6"x7'-0"	SCWD	HM	-	-	-	-	-
311	(2) 2'-6"x7'-0"	SCWD	HM	-	-	-	-	-
313	3'-0"x7'-0"	SCWD	HM	-	-	-	-	-
314	3'-0"x7'-0"	SCWD	HM	-	-	-	-	-
317	3'-0"x7'-0"	SCWD	HM	-	-	-	-	-
318	3'-0"x7'-0"	SCWD	HM	-	-	-	-	-
319	3'-0"x7'-0"	HM	HM	90	-	-	-	AL

EXISTING NEW WATER RESISTANT (WATERPROOFING) FINISH TO REMAIN.

NEW VIEWING PARTITIONS:  
3/8" MIL STUDS (22GA) @ 16" O.C. W/ TOP & BOT RUNNERS HEIGHT: 6" ABV. FINISHED CLG. W/ 1/2" ONB EACH SIDE.

PROVIDE MOISTURE RESISTANT ONB @ TOILETS, SHOWERS & SINK LOCATIONS.

EXISTING STAR A:  
1. EXISTING WOOD RAILING AND POSTS SHALL REMOVE, CLEAN AND RESECURE ANY LOOSE ATTACHMENTS. INSTALL NEW METAL HANDRAIL AND RAIL. INSTALL SCREENS. SEE DETAIL.

EXISTING STAR B:  
1. SEE DETAILS FOR ALTERATION OF EXISTING UPPER STAIR RUN AND EXTERIOR ENCLOSURE.

TOILET ROOM NOTES:  
SEE DWG. 012 FOR MOUNTING HEIGHTS OF FIXTURES & ACCESSORIES.

NEW BF TOILET ROOM 307:  
1. PROVIDE NEW TOILET, LAVATORY AND FITTINGS & NEW SUPPLY & DRAINAGE ROUGH-INS.  
2. PROVIDE PIPE COVERING FOR WASTE LINE AT NEW LAVATORY.  
3. PROVIDE NEW ACCESSORIES AS FOLLOWS:  
GRAB BARS: 1-1/2" DIA. ST. STL. W/ PEENED GRIP. (1) 36" LONG, (1) 42" LONG.  
TOILET PAPER HOLDER  
TILT MIRROR  
PAPER/TOWEL DISPENSER  
COAT HOOK (ON BACK OF DOOR)

NEW KITCHENETTE 319:  
1. PROVIDE NEW SINK & FITTINGS & NEW SUPPLY & DRAINAGE ROUGH-INS.  
2. PROVIDE NEW BASE CABINETS AND COUNTER TOPS. COUNTER SHALL BE NOT MORE THAN 2'-6" AFF. (PARALLEL APPROACH IS PERMITTED)

FOLDING SHOWER SEAT  
SHOWER CURTAIN & ROD

EXISTING BF TOILET ROOM 308:  
1. INSTALL NEW WALL HUNG B-F LAVATORY AT EXISTING SINK LOCATION  
2. PROVIDE NEW ACCESSORIES AS FOLLOWS:  
GRAB BAR: 1-1/2" DIA. ST. STL. W/ PEENED GRIP. (1) 36" LONG, (1) 42" LONG AT TOILET  
TOILET PAPER HOLDER  
TILT MIRROR  
PAPER/TOWEL DISPENSER  
COAT HOOK (ON BACK OF DOOR)

	EXISTING MASONRY EXTERIOR WALL TO REMAIN
	EXISTING INTERIOR PARTITION
	NEW INTERIOR PARTITION, SEE NOTE
	NEW FIRE RATED PARTITION SMOKE & FIRE STOP ALL PENETRATIONS, SEE NOTES, DETAILS
	EXISTING FIRE RATED PARTITION (ASSUMED) G.C. SHALL CONFIRM AND SMOKE & FIRE STOP ALL PENETRATIONS. SEE NOTES FOR REQ'D F.R.
	NEW FIRE EXTINGUISHER CABINET
	NEW EMERGENCY LIGHT WITH 90 WHATE BATTERY POWER
	NEW ILLUMINATED EXIT SIGN W/EMERGENCY LIGHTING (90 MIN. BATT. POWER) AND DIRECTIONALS AS SHOWN
	NEW/EXISTING FIRE PROOF SELF-CLOSING DOOR WITH MINUTE FIRE RATING.

ARCHITECTURE  
PRESERVATION  
DESIGN

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16 CASCO STREET  
PORTLAND, MAINE

12/17/07: City of Portland,  
Selective Demo Permit  
Application

1/14/08: SFM Review

3/6/08: Revised per SFM  
Comments

Title:  
THIRD  
FLOOR PLAN

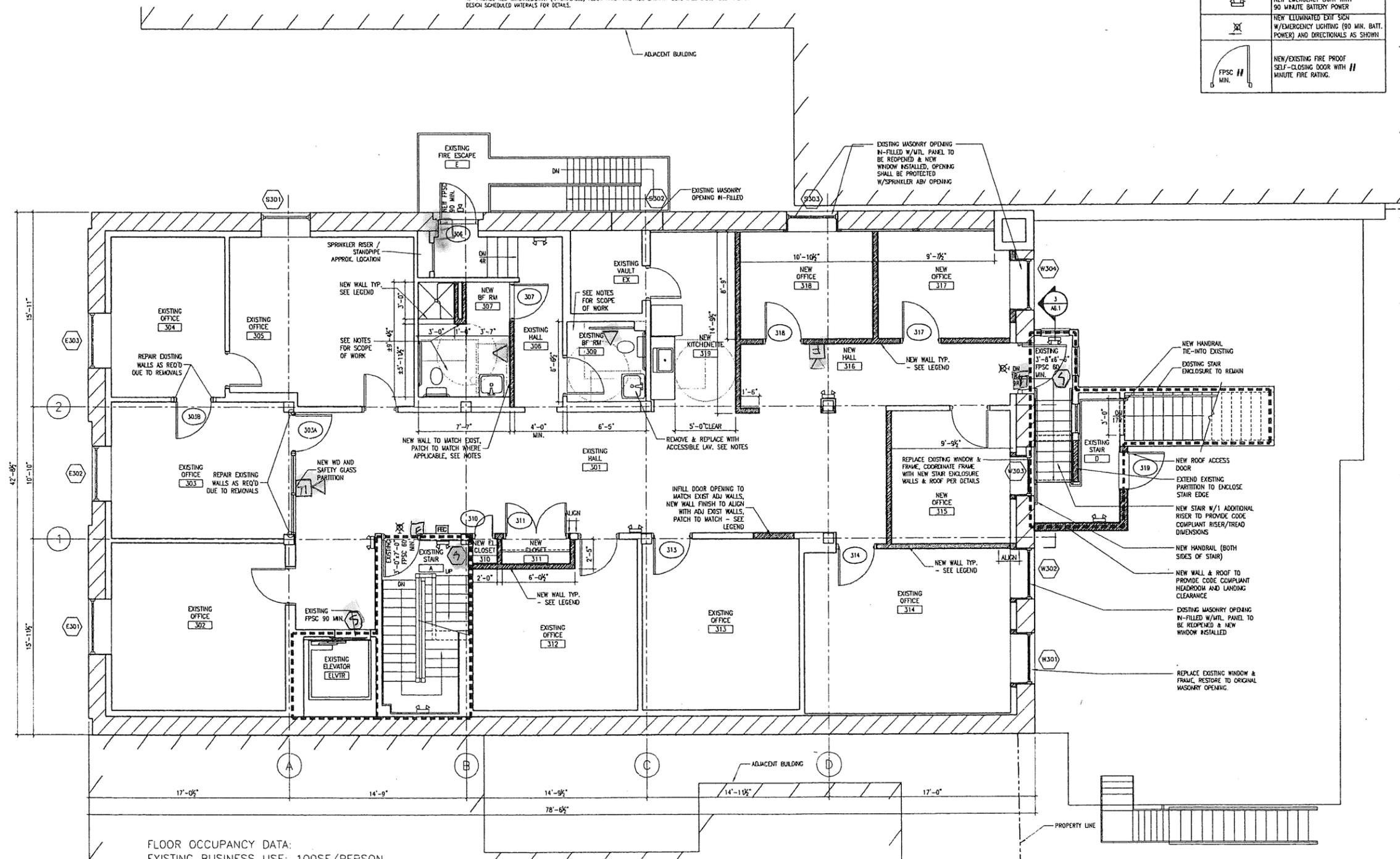
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Date: MARCH 6, 2008  
Revisions:

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ISSUED FOR:  
CONSTRUCTION

Drawing No:

A1.4

DRAWING 11 of 14



FLOOR OCCUPANCY DATA:  
EXISTING BUSINESS USE: 100SF/PERSON  
EXISTING FLOOR AREA: 2,920 SF  
EXISTING OCCUPANT LOAD: 29 MAX.

1 THIRD FLOOR PLAN  
1/4" = 1'-0"

2007-2008-11-Casco-Street-Permitting-Drawings-A1.1-A1.4.dwg, A1.2, A1.3, A1.4, A1.5, A1.6, A1.7, A1.8, A1.9, A1.10, A1.11, A1.12, A1.13, A1.14, A1.15, A1.16, A1.17, A1.18, A1.19, A1.20, A1.21, A1.22, A1.23, A1.24, A1.25, A1.26, A1.27, A1.28, A1.29, A1.30, A1.31, A1.32, A1.33, A1.34, A1.35, A1.36, A1.37, A1.38, A1.39, A1.40, A1.41, A1.42, A1.43, A1.44, A1.45, A1.46, A1.47, A1.48, A1.49, A1.50, A1.51, A1.52, A1.53, A1.54, A1.55, A1.56, A1.57, A1.58, A1.59, A1.60, A1.61, A1.62, A1.63, A1.64, A1.65, A1.66, A1.67, A1.68, A1.69, A1.70, A1.71, A1.72, A1.73, A1.74, A1.75, A1.76, A1.77, A1.78, A1.79, A1.80, A1.81, A1.82, A1.83, A1.84, A1.85, A1.86, A1.87, A1.88, A1.89, A1.90, A1.91, A1.92, A1.93, A1.94, A1.95, A1.96, A1.97, A1.98, A1.99, A1.100

	EXISTING MASONRY EXTERIOR WALL TO REMAIN
	EXISTING INTERIOR PARTITION
	NEW INTERIOR PARTITION, SEE NOTE
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3/6/08: Revised per SFM  
Comments

Title:  
ROOF PLAN

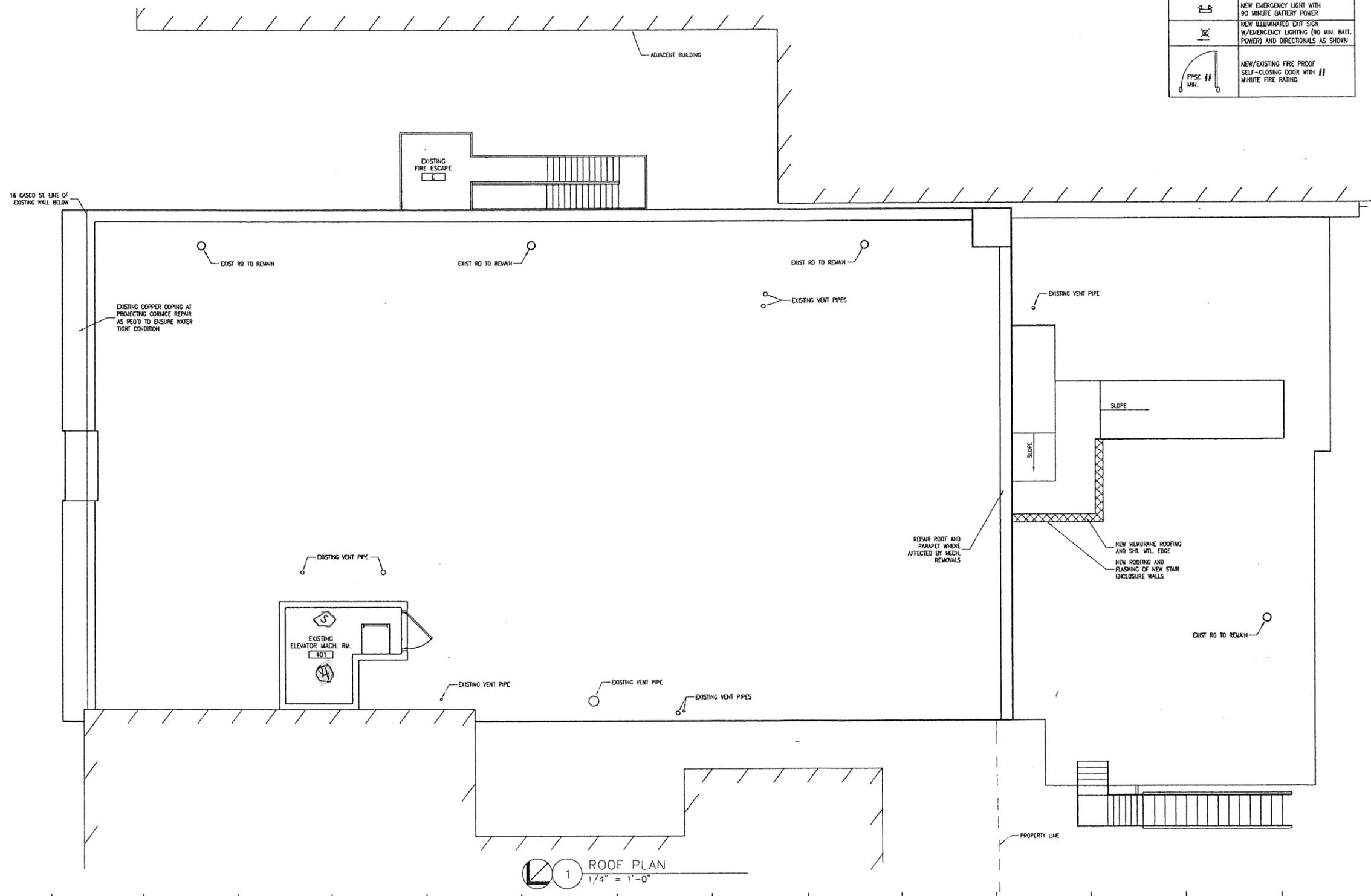
Project No: 200706  
Date: MARCH 6, 2008  
Revisions:

PERMITTING AND  
ISSUED FOR: CONSTRUCTION

Drawing No:

**A1.5**

DRAWING 12 of 14



**1** ROOF PLAN  
1/4" = 1'-0"

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