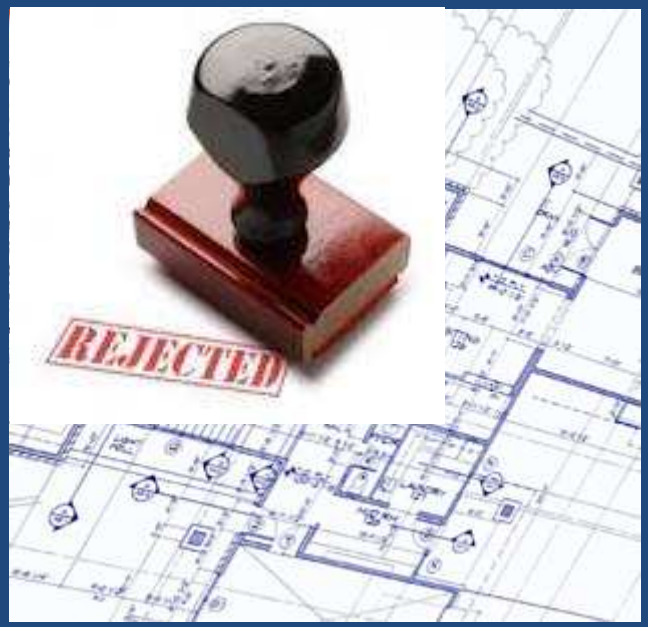
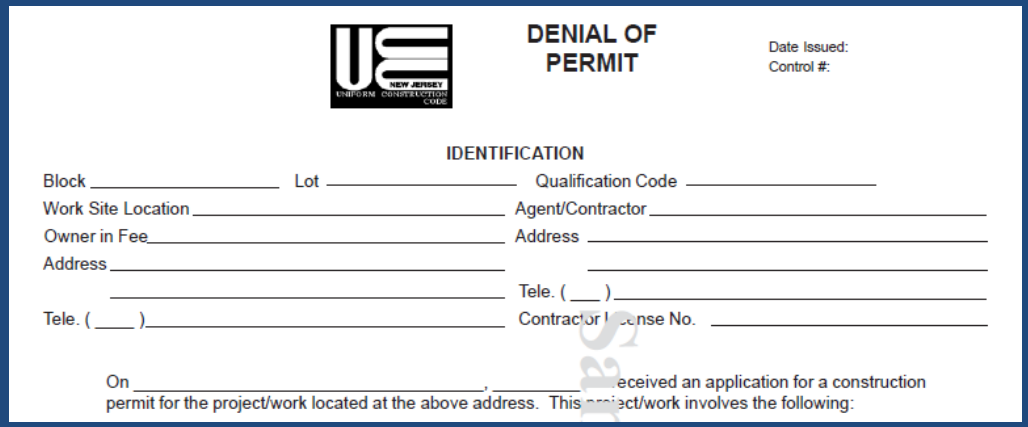
Special Presentation for the

The Automatic Fire Alarm Association of New Jersey

September 20, 2012

Fire Alarm Permit Applications under the NJ Uniform Construction Code.





DENIAL OF PERMIT

Date Issued:
Control #:

IDENTIFICATION

Block _____ Lot _____ Qualification Code _____
Work Site Location _____ Agent/Contractor _____
Owner in Fee _____ Address _____
Address _____ _____
_____ Tele. (___) _____
Tele. (____) _____ Contractor License No. _____

On _____, _____ received an application for a construction permit for the project/work located at the above address. This project/work involves the following:

John Drucker, CET
Fire Protection Subcode Official
Building, Fire, Electrical Inspector
Borough of Red Bank, NJ

Code and Standards

2009 New Jersey I-Code Adoptions

- 2009 International Building Code/NJ Edition
  - Adopted Sept 7, 2010

- 2009 International Residential Code/NJ Edition
  - Adopted Sept 7, 2010

- 2007 NFPA-72 – National Fire Alarm Code
- 2007 NFPA-13/13R/13D – Fire Sprinkler Standards

Code and Standards

N.J.A.C. 5:23-6.8 Materials and methods (Rehabilitation Subcode)

(a) The following requirements shall be met for materials and installation methods for all items that are part of the applicant's proposed project ***for all categories of work other than repair*** *as defined in N.J.A.C. 5:23-6.3.*

1. Where sections listed below reference other sections not listed below, those sections shall apply within that limited context.

(b) Building and ***Fire Protection Materials and Methods****: The following sections of the building subcode (N.J.A.C. 5:23-3.14) shall constitute the building and fire protection materials and methods requirements for this subchapter:*

All of Chapter 9 *entitled "Fire Protection Systems" except 901, 902, 903.2, 904.2, 905.3, 907.2,908.1, 908.2, 910.2, 911.*

Code and Standards

N.J.A.C. 5:23-6.8 Materials and methods (Rehabilitation Subcode)

All of Chapter 9 *entitled "Fire Protection Systems" except 901, 902, 903.2, 904.2, 905.3, 907.2 908.1, 908.2, 910.2, 911;*

The exceptions are needed since the rehabilitation subcode contains the required criteria for work in existing buildings.

Remember Additions while addressed in the Rehabilitation Subcode are considered new construction and therefore comply in total with the Building Subcode !

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Fire Alarm

- PRODUCT LISTING AND APPLICATION
  - 2007 NFPA-72
  - **4.3.1 Equipment.**
    - *Equipment constructed and installed in conformity with this Code shall be listed for the purpose for which it is used.*
    - *Fire alarm system components shall be installed, tested, and maintained in accordance with the manufacturer's published instructions* ***and*** *this Code.*

Fire Alarm

- **2007 NFPA-72 1.5 Equivalency.**
- 1.5.1 *Nothing in this Code shall prevent the use of systems, methods, devices, or appliances of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this Code.*
- 1.5.2 *Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.*
- 1.5.3 *The systems, methods, devices, or appliances that are found equivalent shall be approved.*

NJ Uniform Construction Code

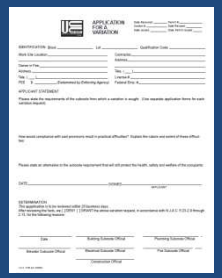
N.J.A.C. 5:23-2.9 Variations and exceptions

(a) No variations or exceptions from the requirements of any subcode of these regulations may be made, except upon the following findings:

1. *That strict compliance with any specific subcode provision, if required, would result in practical difficulty to such owner;*

   and

2. *That the exception, if granted, will not jeopardize the health, safety and welfare of intended occupants and the public generally.*



NJ Uniform Construction Code

BLOCK _____ LOT _____ QUALIFICATION CODE _____ ADDRESS (SITE) _____ PERMIT NO. _____

CONSTRUCTION PERMIT APPLICATION

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: _____
2. Name of Owner in Fee: _____
   Tel. (____) _____ e-mail _____
   Address _____ (street / municipality / zip code)
3. Ownership in Fee: Public _____ Private _____
4. Principal Contractor: _____ Tel. (____) _____
   Address _____ e-mail _____
   License No. OR, if new home, Builder Reg. No. _____ Exp. Date _____
   Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____
   Federal Emp. ID No. _____ FAX: (____) _____
5. Architect or Engineer _____ Contact _____
   Address _____ e-mail _____
   Tel. (____) _____ FAX: (____) _____
6. Responsible Person in Charge once Work has Begun _____
   Tel. (____) _____ FAX: (____) _____

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	$		
2. Electrical			
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	$		
8. Subtotal	$		
9. State Permit Surcharge Fee			
10. Subtotal	$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	$		

VI. BUILDING/SITE CHARACTERISTICS (office use only)

1. Number of Stories _____
2. Height of Structure _____ ft.
3. Area — Largest Floor _____ sq. ft.
4. New Building Area _____ sq. ft.
5. Volume of New Structure _____ cu. ft.
6. Max. Live Load _____
7. Max. Occupancy Load _____
8. If Industrialized Building: State Approved ____ HUD ____
9. Total Land Area Disturbed _____ sq. ft.
10. Flood Hazard Zone _____
11. Base Flood Elevation _____ ft.
12. Wetlands yes ____ no ____

IIa. PROPOSED WORK

☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition
☐ Repair ☐ Alteration ☐ Renovation ☐ Reconstruction
☐ Asbestos Abat. -Subch. 8 ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES (Check all that apply)

	Est. Cost	FOR OFFICE USE ONLY (Optional): Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection	Re-viewer
☐ Building									
☐ Electrical									
☐ Plumbing									
☐ Fire Protection									
☐ Elevator									
TOTAL COST									

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL *(primary use)*
1. State Specific Use: _____
2. Use Group, Proposed: _____
3. Change in Use Group, Indicate Present:
4. No. of dwelling units: *Total Units* *Income-restricted*
   Gained, Sale ____ ____
   Gained, Rental ____ ____
   Lost, Sale ____ ____
   Lost, Rental ____ ____

B. NON-RESIDENTIAL *(primary use)*
1. State Specific Use: _____
2. Use Group, Proposed: _____
3. Change in Use Group, Indicate Present:

C. MIXED USE -List secondary use(s): _____

D. Construct. Classification: Present _____ Proposed _____

III. PLAN REVIEW (optional)

DO YOU WANT:
1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers/Standpipes
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LPGas Tanks
12. ☐ Fire Alarm

U.C.C. F100-1 (rev. 8/08)

NJ Uniform Construction Code

FIRE PROTECTION SUBCODE
TECHNICAL SECTION

Date Received
Control #

Date Issued
Permit #

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block _____ Lot _____ Qualification Code _____

Work Site Location _____

Owner in Fee: _____

Tel. (_____) _____ e-mail _____

Address _____
street municipality zip code

Contractor: _____ Tel. (_____) _____

Address _____ e-mail _____

Fire Protection Equipment, NJ Div of Fire Safety Permit No. _____

Fire Protection Equipment, NJ Div of Fire Safety Installer No. _____

Fire Alarm Contractor No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. _____ FAX: (_____)

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present _____ Proposed _____

Constr. Class: Present _____ Proposed _____

Heating System: [ ] New OR [ ] Modification to Existing OR [ ] Conversion OR [ ] Replacement

Fuel Type: [ ] Gas [ ] Oil [ ] Electric [ ] Solar [ ] Other _____

Location: _____

Fuel Storage Tank:
Fuel Type: [ ] Flammable OR [ ] Combustible
Capacity _____

Fire Alarm System: [ ] New OR [ ] Existing
Location of Panel: _____

Fire Suppression/Standpipe System:
[ ] New OR [ ] Existing
Location of Main Control Valve: _____

Total Cost of Fire Protection Work $ _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW
[ ] No Plans Required
[ ] Partial -Underslab Utilities Approved
Date: _____ Approved by: _____
[ ] Fire Protection Plans Approved
Date: _____ Approved by: _____
Joint Plan Review Required:
[ ] Bldg. [ ] Elec. [ ] Plumb. [ ] Elev.

SUBCODE APPROVAL for PERMIT
Date: _____
Approved by: _____

SUBCODE APPROVAL for CERTIFICATE
[ ] CO [ ] CCO [ ] CA
Date: _____
Approved by: _____

INSPECTIONS Type:	Dates (Month/Day) Failure	Failure	Approval	Initial
Alarm System				
Suppression Sys.				
Standpipe				
Fire Pump				
Pre-Eng. System				
Mechanical				
Smoke Control				
TCO				
Flam/Combust Tanks				
Fireplace Venting				
Final				
Other _____				

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application.

Applicant sign/Contractor sign and seal here: _____

Print name here: _____

D. TECHNICAL SITE DATA [ ] Certified Contractor [ ] Exempt Applicant

DESCRIPTION OF WORK:
Water Supply Source
Method of Alarm/Suppression System Supervision _____

	NUMBER	FEE (Office Use Only)
Flammable/Combustible Tanks		$
Alarm Systems		
[ ] System		
[ ] 110v Interconnected		
[ ] CO Detectors/110v		
Alarm Devices (i.e., smoke, heat, pulls, water/flow)		
Supervisory Devices (i.e., tampers, low/high air)		
Signaling Devices (i.e., horn/strobes, bells)		
Other Devices _____		
TOTAL		
Suppression Systems		
Fire Pump ____ GPM Type ____		
Dry Pipe/Alarm Valves		
Pre-action Valves		
Sprinkler Heads (Dry and Wet)		
Standpipes		
Pre-engineered Systems		
Wet Chemical		
Dry Chemical		
CO_2 Suppression		
Foam Suppression		
FM200 Suppression		
Other _____		
Other Systems		
Kitchen Hood Exhaust System		
Smoke Control System		
Fuel-Fired Appliances [ ] Gas [ ] Oil [ ] Solid		
Fireplace Venting/Metal Chimney		
Other _____		

Administrative Surcharge $ _____
Minimum Fee $ _____
State Permit Surcharge Fee $ _____
TOTAL FEE $ _____

U.C.C. F140 (rev. 11/09) Internet version

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

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NJ Uniform Construction Code

NEW JERSEY UNIFORM CONSTRUCTION CODE

ELECTRICAL SUBCODE
TECHNICAL SECTION

Date Received
Control #
Date Issued
Permit #

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block _____ Lot _____ Qualification Code _____

Work Site Location _____

Owner in Fee: _____

Tel. (_____) _____ e-mail _____

Address _____
street municipality zip code

Contractor: _____ Tel. (_____) _____

Address _____ e-mail _____

Contractor License No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. _____ FAX: (_____) _____

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

[ ] Pole/Pad # _____ [ ] Temporary [ ] Other _____

Building Occupied as _____ Utility Co. _____

Est. Cost of Elec. Work $ _____

JOB SUMMARY (Office Use Only)

PLAN REVIEW

[ ] No Plans Required

[ ] Partial -Underslab Utilities Approved

Date: _____ Approved by: _____

[ ] Electric Plans Approved

Date: _____ Approved by: _____

Joint Plan Review Required:
[ ] Bldg. [ ] Plumb. [ ] Fire. [ ] Elev.

SUBCODE APPROVAL for PERMIT

Date: _____

Approved by: _____

SUBCODE APPROVAL for CERTIFICATE

[ ] CO [ ] CCO [ ] CA

Date: _____

Approved by: _____

INSPECTIONS	Dates (Month/Day)			
Type:	Failure	Failure	Approval	Initial
Rough				
Barrier-Free				
Trench				
Temp. Serv.				
Constr. Serv.				
TCO				
Other				
Service				
Final				
Barrier-Free				

Temp. Cut-in-Card Date Issued _____

Final Cut-in-Card Date Issued _____

Annual Pool Inspection _____

Date of Grounding and Bonding Certification _____

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/Contractor sign and seal here: _____

Print name here: _____

[ ] Licensed Elec. Contractor [ ] Certif'd Landscape Irrigation Cont'r [ ] Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK:

QTY.	SIZE	ITEMS	FEE (Office Use Only)
		Lighting Fixtures	
		Receptacles	
		Switches	
		Detectors	
		Light Poles	
		Motors—Fract. HP	
		Emergency & Exit Lights	
		Communications Points	
		Alarm Devices/F.A.C. Panel	
		TOTAL NUMBERS	$
		Pool Permit/with UW Lights	
		Storable Pool/Spa/Hot Tub	
		KW Elec. Range/Receptacle	
		KW Oven/Surface Unit	
		KW Elec. Water Heater	
		KW Elec. Dryer/Receptacle	
		KW Dishwasher	
		HP Garbage Disposal	
		KW Central A/C Unit	
		HP/KW Space Heater/Air Handler	
		KW Baseboard Heat	
		HP Motors 1/+ HP	
		KW Transformer/Generator	
		AMP Service	
		AMP Subpanels	
		AMP Motor Control Center	
		KW Elec. Sign/Outline Light	

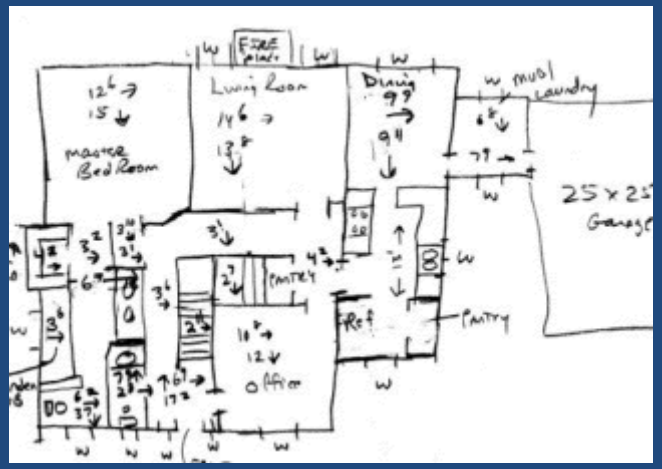
Administrative Surcharge	$
Minimum Fee	$
State Permit Surcharge Fee	$
TOTAL FEE	$

U.C.C. F120 (rev. 11/09)
Internet version

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

NJ Uniform Construction Code

3. *Examination of plans: All plans submitted and any amendments thereto accompanied by the required documentation and application, and upon payment of the fee established by the enforcing agency, shall be numbered, docketed and examined promptly after their submission for compliance with the provisions of the regulations.*



The Good

The Bad

The Ugly

NJ Uniform Construction Code

ix. Architect's or engineer's seal: The seal and signature of the registered architect or licensed engineer who prepared the plans shall be affixed to each sheet of each copy of the plans submitted and on the first or title sheet of the specifications and any additional supportive information submitted.

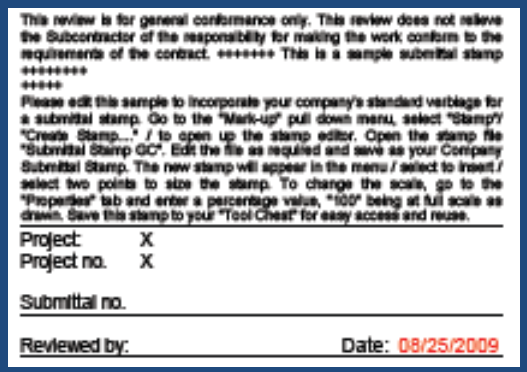
The construction official shall waive the requirement for sealed plans in the case of a single family home owner who had prepared his or her own plans for the construction, addition, reconstruction, alteration, renovation or repair of a detached structure used or intended to be used exclusively as his or her private residence providing that the owner shall submit an affidavit attesting to the fact that he or she has personally prepared the plans and provided further that said plans are in the opinion of the construction official, and appropriate subcode official, legible and complete for purposes of ensuring compliance with the regulations.

x. The construction official upon the advice of the appropriate subcode official may waive the requirement for plans when the work is of a minor nature.

NJ Uniform Construction Code

xi. Those portions of the plans that are required to be submitted and which are not included at the time of application shall be listed by the design professional as part of the application.

(1) All documents prepared by people other than the design professional shall be reviewed by the design professional and submitted with a letter indicating that they have been reviewed and found to be in conformance with the regulations for the design of the building.



This review is for general conformance only. This review does not relieve the Subcontractor of the responsibility for making the work conform to the requirements of the contract. +++++++ This is a sample submittal stamp +++++++
+++++
Please edit this sample to incorporate your company's standard verbiage for a submittal stamp. Go to the "Mark-up" pull down menu, select "Stamp"/ "Create Stamp...." / to open up the stamp editor. Open the stamp file "Submittal Stamp GC". Edit the file as required and save as your Company Submittal Stamp. The new stamp will appear in the menu / select to insert./ select two points to size the stamp. To change the scale, go to the "Properties" tab and enter a percentage value, "100" being at full scale as drawn. Save this stamp to your "Tool Chest" for easy access and reuse.

Project: X
Project no. X

Submittal no.

Reviewed by: Date: 08/25/2009

NJ Uniform Construction Code

(f) Plans, plan review, plan release:

1. Plans and specifications:

The application for the permit shall be accompanied by no fewer than two copies of specifications and of plans drawn to scale, with sufficient clarity and detail dimensions to show the nature and character of the work to be performed.

Plans submitted shall be required to show only such detail and include only such information as shall be necessary to demonstrate compliance with the requirements of the code and these regulations or to facilitate inspections for code conformity. When quality of materials is essential for conformity to the regulations, specific information shall be given to establish such quality;

and… ***this code shall not be cited, or the term "legal" or its equivalent be used, as a substitute for specific information.***

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NJ Uniform Construction Code

(f) Plans, plan review, plan release:

1. Plans **and specifications**:

…..or the term "legal" ***or its equivalent*** *be used, as a substitute for specific information.*

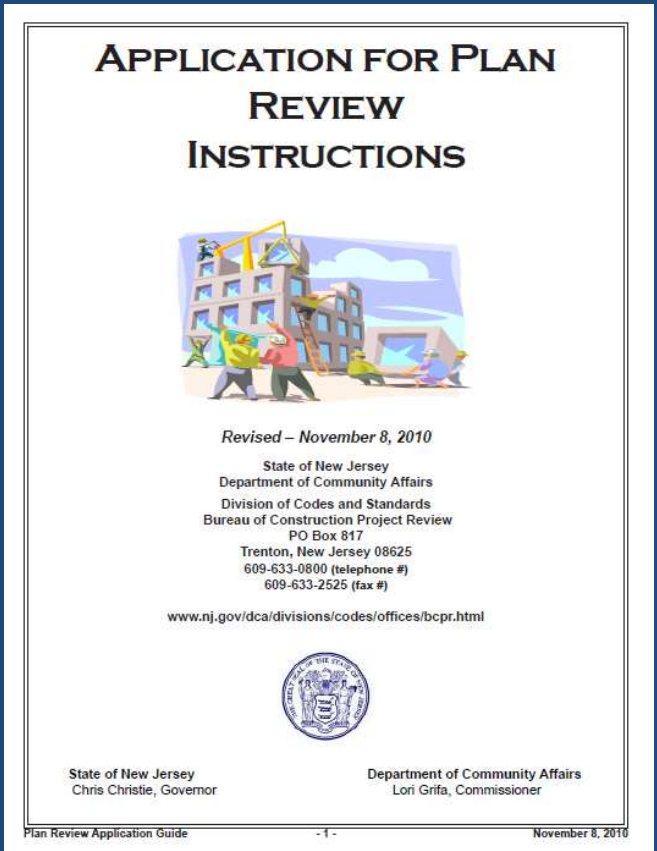
Electrical

Fire Alarm System

1) Furnish and Install a code compliant fire alarm system in accordance with but not limited to applicable statutes, regulations, codes, standards, bulletins, interpretations and anything else we might have forgotten, overlooked, or otherwise.

15

NJ Uniform Construction Code



APPLICATION FOR PLAN REVIEW INSTRUCTIONS

Revised – November 8, 2010

State of New Jersey
Department of Community Affairs

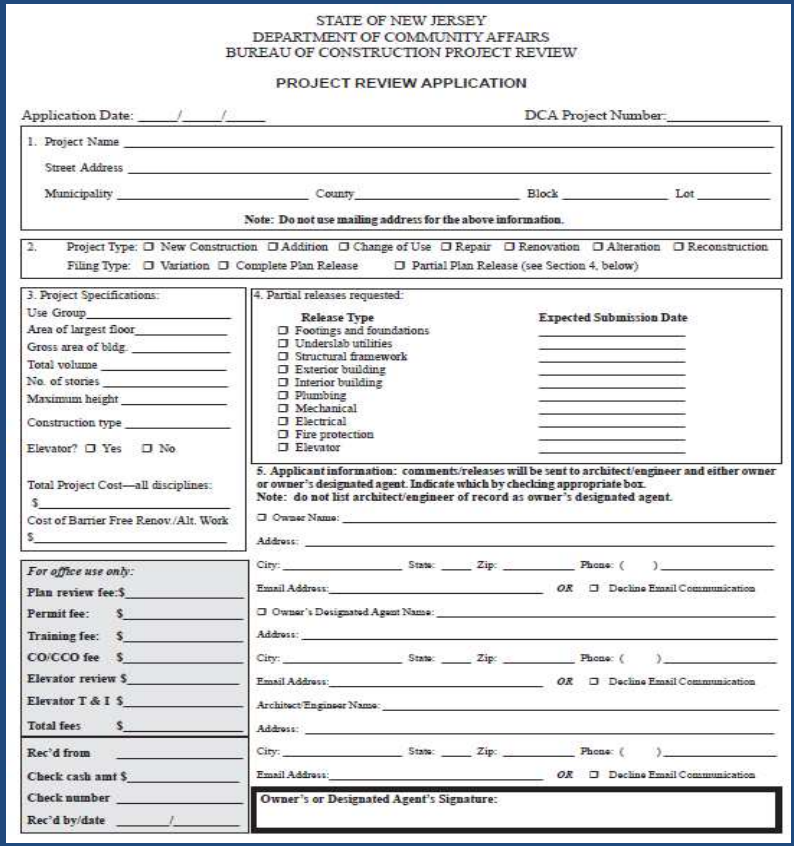
Division of Codes and Standards
Bureau of Construction Project Review
PO Box 817
Trenton, New Jersey 08625
609-633-0800 (telephone #)
609-633-2525 (fax #)

www.nj.gov/dca/divisions/codes/offices/bcpr.html

State of New Jersey
Chris Christie, Governor

Department of Community Affairs
Lori Grifa, Commissioner

Plan Review Application Guide - 1 - November 8, 2010



STATE OF NEW JERSEY
DEPARTMENT OF COMMUNITY AFFAIRS
BUREAU OF CONSTRUCTION PROJECT REVIEW

PROJECT REVIEW APPLICATION

Application Date: ____/____/____ DCA Project Number:_____

1. Project Name _____
Street Address _____
Municipality _____ County _____ Block _____ Lot _____
Note: Do not use mailing address for the above information.

2. Project Type: ☐ New Construction ☐ Addition ☐ Change of Use ☐ Repair ☐ Renovation ☐ Alteration ☐ Reconstruction
Filing Type: ☐ Variation ☐ Complete Plan Release ☐ Partial Plan Release (see Section 4, below)

3. Project Specifications:
Use Group _____
Area of largest floor _____
Gross area of bldg. _____
Total volume _____
No. of stories _____
Maximum height _____
Construction type _____
Elevator? ☐ Yes ☐ No
Total Project Cost—all disciplines:
$_____
Cost of Barrier Free Renov./Alt. Work
$_____

4. Partial releases requested:

Release Type	Expected Submission Date
☐ Footings and foundations	_____
☐ Underslab utilities	_____
☐ Structural framework	_____
☐ Exterior building	_____
☐ Interior building	_____
☐ Plumbing	_____
☐ Mechanical	_____
☐ Electrical	_____
☐ Fire protection	_____
☐ Elevator	_____

5. Applicant information: comments/releases will be sent to architect/engineer and either owner or owner's designated agent. Indicate which by checking appropriate box.
Note: do not list architect/engineer of record as owner's designated agent.

☐ Owner Name: _____
Address: _____
City: _____ State: ____ Zip: _____ Phone: ( ) _____
Email Address: _____ *OR* ☐ Decline Email Communication

☐ Owner's Designated Agent Name: _____
Address: _____
City: _____ State: ____ Zip: _____ Phone: ( ) _____
Email Address: _____ *OR* ☐ Decline Email Communication

Architect/Engineer Name: _____
Address: _____
City: _____ State: ____ Zip: _____ Phone: ( ) _____
Email Address: _____ *OR* ☐ Decline Email Communication

Owner's or Designated Agent's Signature:

For office use only:
Plan review fee:$_____
Permit fee: $_____
Training fee: $_____
CO/CCO fee $_____
Elevator review $_____
Elevator T & I $_____
Total fees $_____
Rec'd from _____
Check cash amt $_____
Check number _____
Rec'd by/date _____/_____

http://www.nj.gov/dca/divisions/codes/forms/pdf_bcpr/pr_app_guide.pdf

NJ Uniform Construction Code

NJDCA
Health Care Plan Review Unit

PROCEDURES FOR SUBMISSION TO

HEALTH CARE PLAN REVIEW

. . .

State of New Jersey
Department of Community Affairs
Division of Codes and Standards
Bureau of Construction Project Review
PO Box 817
Trenton, New Jersey 08625

State of New Jersey
Chris Christie, Governor

Department of Community Affairs
Lori Grifa, Commissioner

NEW JERSEY STATE DEPARTMENT OF COMMUNITY AFFAIRS
HEALTH CARE PLAN REVIEW RECORD
101 South Broad Street, PO Box 817
Trenton, New Jersey 08625-0817
609-633-8151

Date:

FACILITY NAME_____

CERTIFICATE OF NEED
OR
REFERENCE NUMBER_____

CERTIFICATE OF NEED EXPIRATION DATE _____

SUBMITTED BY _____

FIRM NAME_____

ADDRESS _____

_____

TELEPHONE #_____FAX #_____

EMAIL_____

Submit Part # 1 with schematic plans (1st stage) and Part #2 with the preliminary (2nd stage) submission. If the first submission consists of preliminary or final plans, the entire plan review record shall be submitted at that time.

Hydraulically designed working drawings and calculations (including summary sheet, detailed work sheets and graph sheet), prepared in accordance with Chapter 8 of NFPA-13, shall be submitted for review at the first submission of engineering drawings.

The Plan Review Record is an information tool only. It shall in no way relieve the Architect or Engineer from submitting complete and detailed plans and specification.

1

5:23-2.7 Ordinary maintenance

(a) Ordinary maintenance to structures may be made without filing a permit application with or giving notice to the construction official.

(b) Ordinary maintenance shall not include any of the following:

4. Any work affecting structural or fire safety

5:23-2.7 Ordinary maintenance

(a) Ordinary maintenance to structures may be made without filing a permit application with or giving notice to the construction official.

4. Ordinary fire protection maintenance shall include:

i. The replacement of any sprinkler or smoke detector or heat detector head with a like device;

ii. The repair or replacement of any component of a fire alarm or smoke and heat detection equipment (other than the replacement of a fire alarm control panel);

iii. The installation of battery-powered smoke alarms; and

iv. The installation of battery-powered or plug-in type carbon monoxide alarms.

NJ Uniform Construction Code

(b) The following are exceptions from (a) above:

1. Ordinary maintenance as defined in *N.J.A.C. 5:23-2.7* shall not require a permit or notice to the enforcing agency;

2. Minor work as defined by *N.J.A.C. 5:23-2.17A* shall require a permit. However, work may proceed, upon notice to the enforcing agency, before the permit is issued;

3. Emergency work not involving lead abatement, except that a permit shall be applied for or notice given as soon thereafter as is practicable, but not later than 72 hours thereafter.

NJ Uniform Construction Code

5:23-2.15 Construction permits--application

(a) The application for a permit shall be submitted on the standard Construction Permit Application form prescribed by the Commissioner at N.J.A.C. 5:23-4.5(b)2 and shall be accompanied by the required fee, as provided for in this subchapter and N.J.A.C. 5:23-4.

The application shall contain a general description of the proposed work, its location, the use and occupancy of all parts of the building or structure and all portions of the site or lot not covered by the building or structure, and such additional information as may be required by the construction official, which shall include, but not be limited to, the following:

NJ Uniform Construction Code

vii. Engineering details and specifications: The construction official and appropriate subcode official may require adequate details of structural, mechanical, plumbing and electrical work, including computations, stress diagrams and other essential technical data to be filed.

*All engineering plans and computations shall bear the **seal and signature of the licensed engineer or registered architect** responsible for the design.*

Plans for buildings shall indicate how required structural and fire-resistance rating will be maintained for penetrations made for electrical, mechanical, plumbing and communication conduits, pipes and systems.

NJ Uniform Construction Code

*Plumbing plans for **class III structures** may be prepared by persons licensed pursuant to "The Master Plumber Licensing Act", N.J.S.A. 45:14C-1 et seq.*

*Electrical plans for **class III structures** may be prepared by persons licensed pursuant to "The Electrical Contractors Licensing Act", N.J.S.A. 45:5A-1 et seq.;*

Class III Structures;

Group B less than 7,200 square feet, two stories, 40 feet high;
Group M less than 4,800 square feet, one story, 40 feet high;
Group S-1 less than 4,200 square feet, one story, 40 feet high;
Group S-2 less than 7,200 square feet, two stories, 40 feet high;
Group R-3 as permitted in the building subcode and including accessory private garages, radio and television antennae and swimming pools;
vi. Group R-5 as permitted in the one- and two-family dwelling subcode and including accessory private garages, radio and television antennae and swimming pools.

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- **[F] 907.1.1 Construction documents. Fire Alarm Systems**
  - ***[F] 907.1.1 Construction documents for fire alarm systems shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code, and the International Fire Code.***
- **[F] 903.3 Installation Requirements. Automatic Fire Sprinkler Systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.6**
  - ***[F] 903.3.1 Standards. Sprinkler Systems shall be designed and installed in accordance with Section 903.3.1.1., 903.3.1.2 or 903.3.1.3***

The applicant must demonstrate compliance.

Interestingly many applications are simply incomplete.

Lets take a look at what's supposed to be submitted …

- **[F] 907.1.2 Fire alarm shop drawings.**

- ***Shop drawings*** *for fire alarm systems* ***shall be submitted*** *for review and approval* ***prior to system installation****, and* ***shall include, but not be limited to, all*** *of the following:*

- *1. A floor plan that indicates the use of all rooms.*
- *2. Locations of alarm-initiating devices.*
- *3. Locations of alarm notification appliances, including candela ratings for visible alarm notification appliances.*
- *4. Location of fire alarm control unit, transponders and notification power supplies.*
- *5. Annunciators.*
- *6. Power connection.*
- *7. Battery calculations.*
- *8. Conductor type and sizes.*
- *9. Voltage drop calculations.*
- *10. Manufacturers' data sheets indicating model numbers and listing information for equipment, devices and materials.*
- *11. Details of ceiling height and construction.*
- *12. The interface of fire safety control functions.*
- *13. Classification of the supervising station.*

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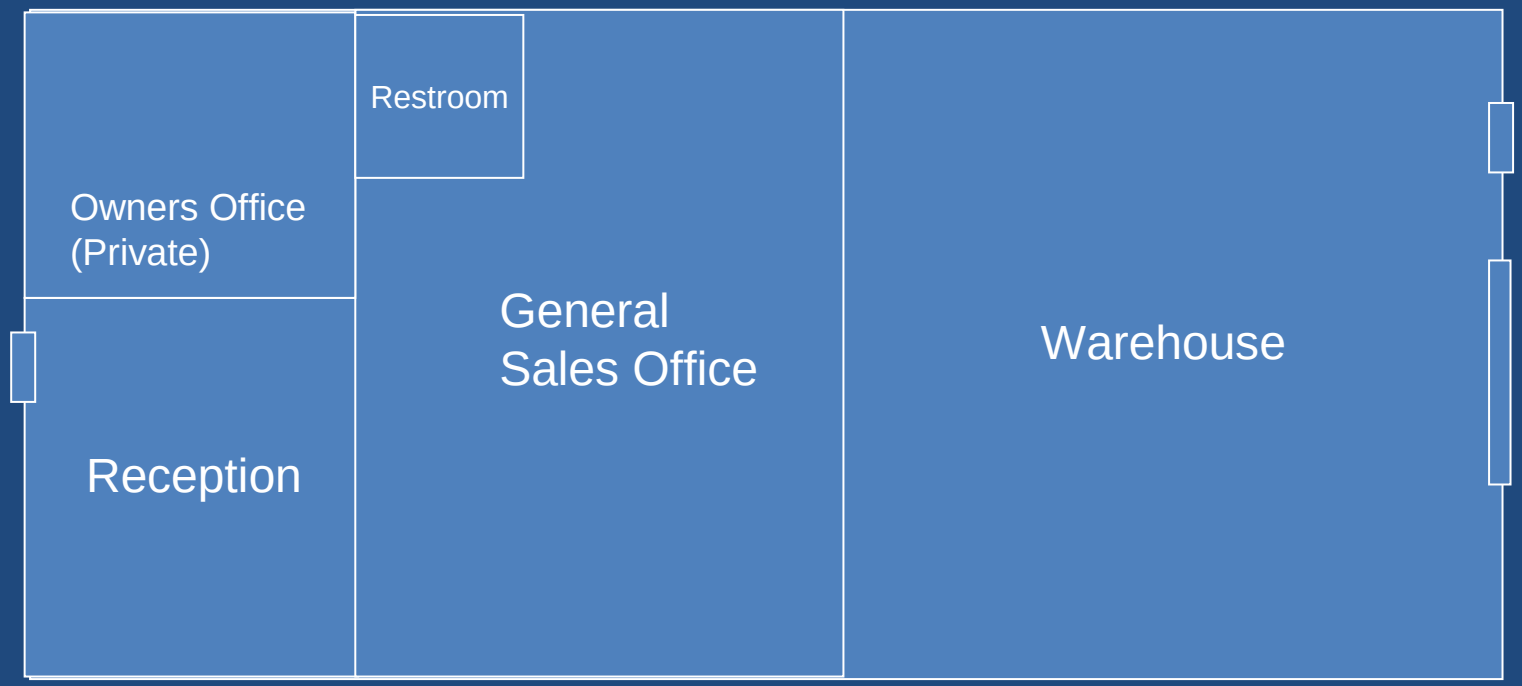
- **[F] 907.1.2 Fire alarm shop drawings.**

- *1. A **floor plan** that indicates the **use of all rooms.***



¼”=1 Ft

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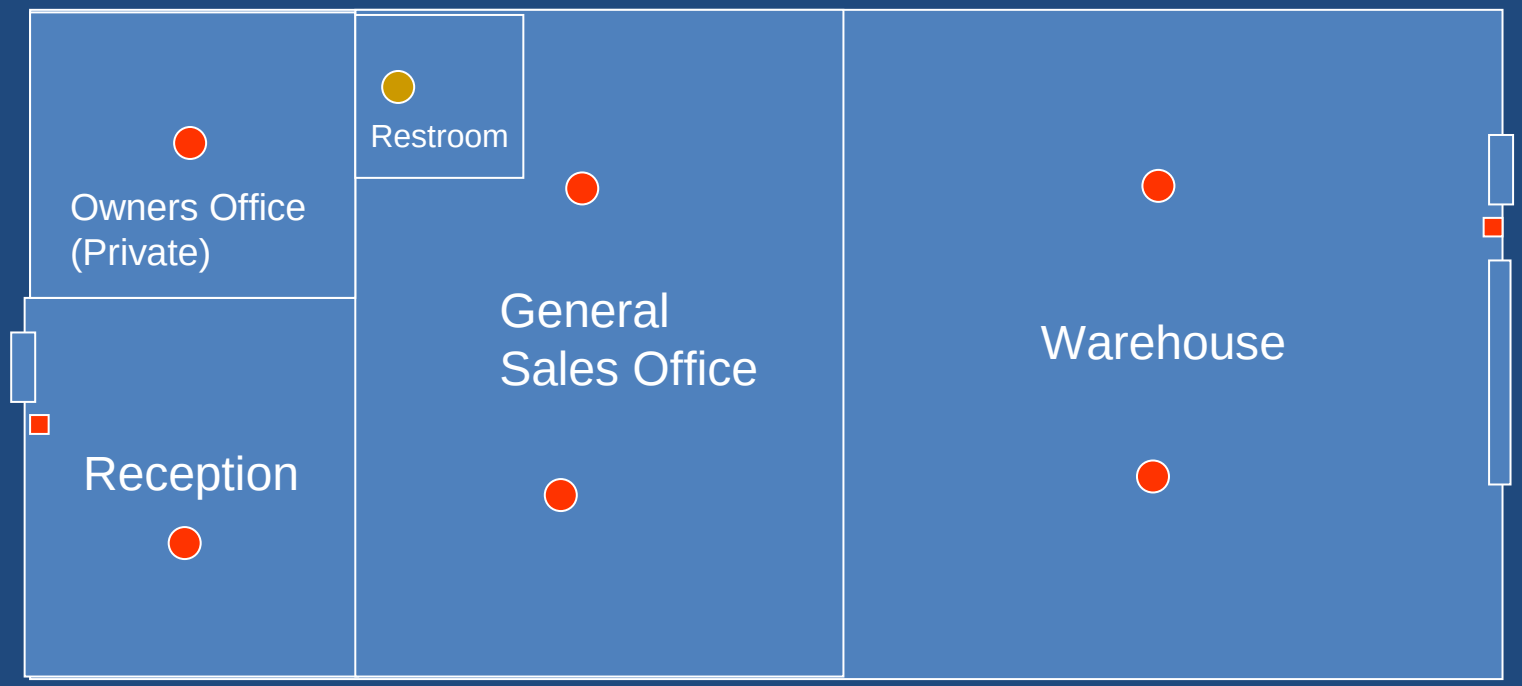
- **[F] 907.1.2 Fire alarm shop drawings.**
- *2. **Locations of alarm-initiating** devices.*

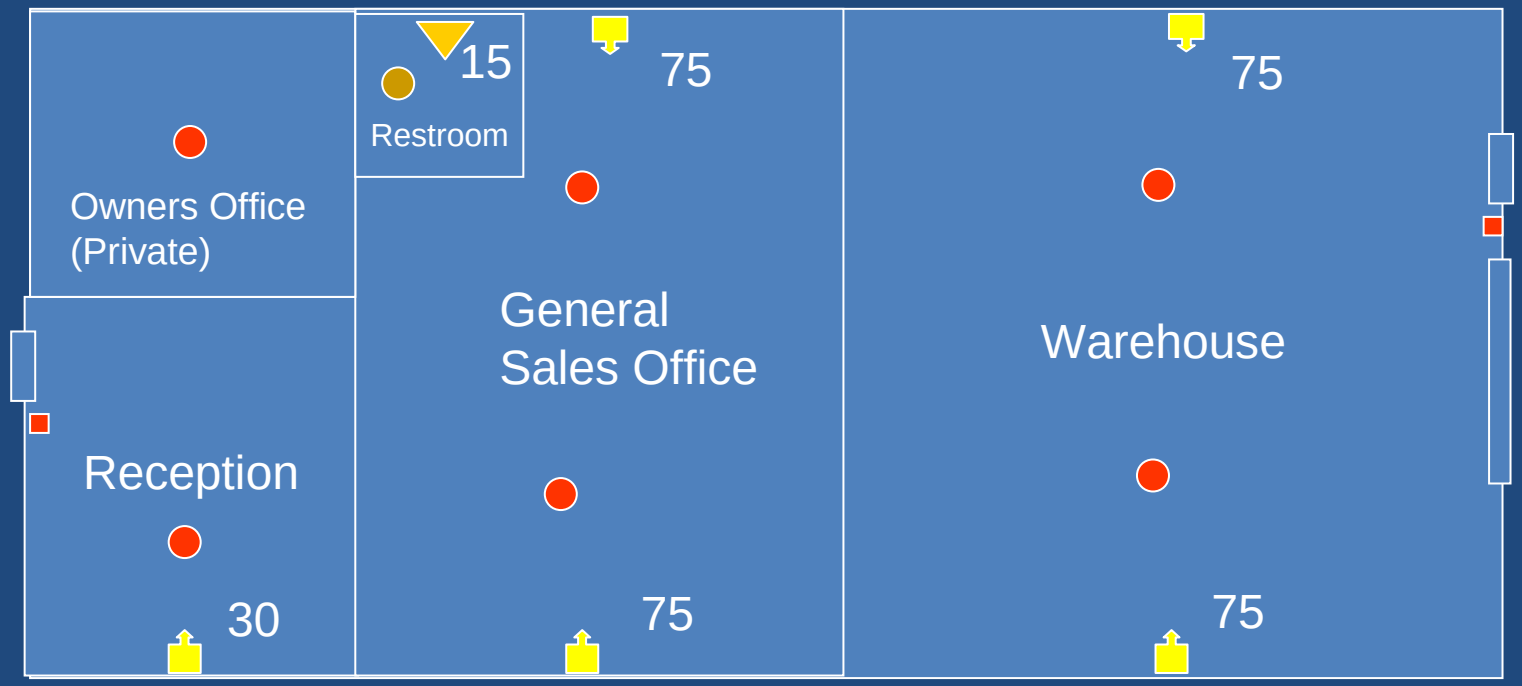


¼”=1 Ft

2009 International Bldg Code/NJ Edition

- **[F] 907.1.2 Fire alarm shop drawings.**

- *3. **Locations of alarm notification** appliances, **including candela ratings** for visible alarm notification appliances.*



¼”=1 Ft

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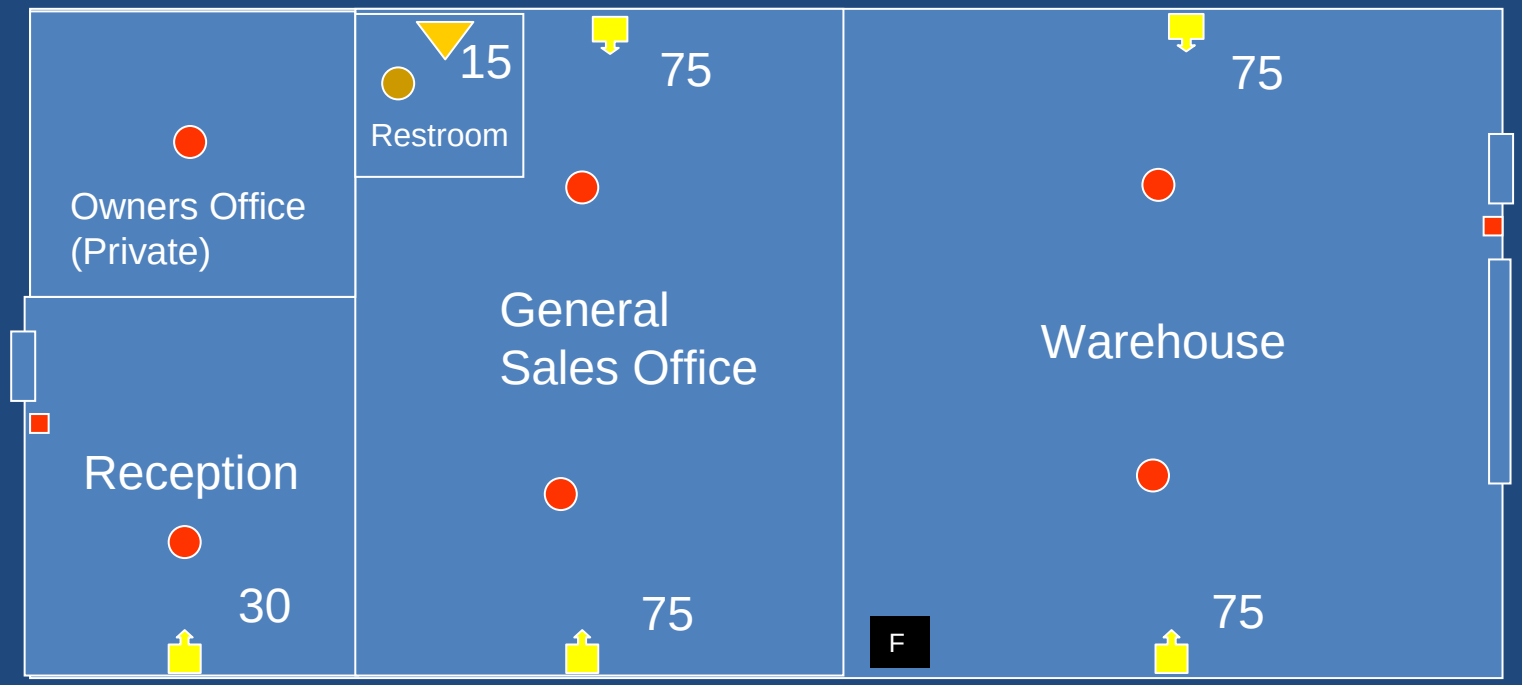
- **[F] 907.1.2 Fire alarm shop drawings.**

- *4. Location of **fire alarm control unit**, **transponders** and **notification power supplies**.*



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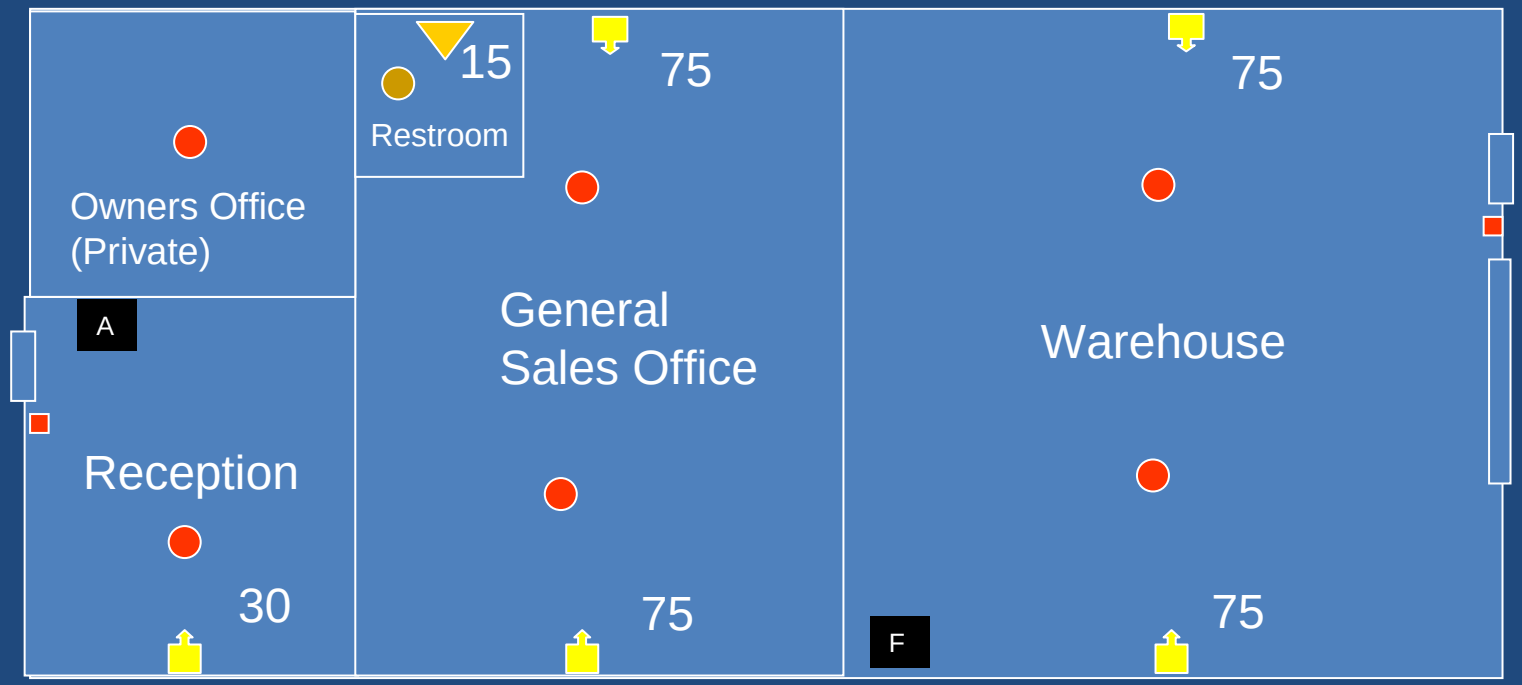
- **[F] 907.1.2 Fire alarm shop drawings.**

- *5.* ***Annunciators.***



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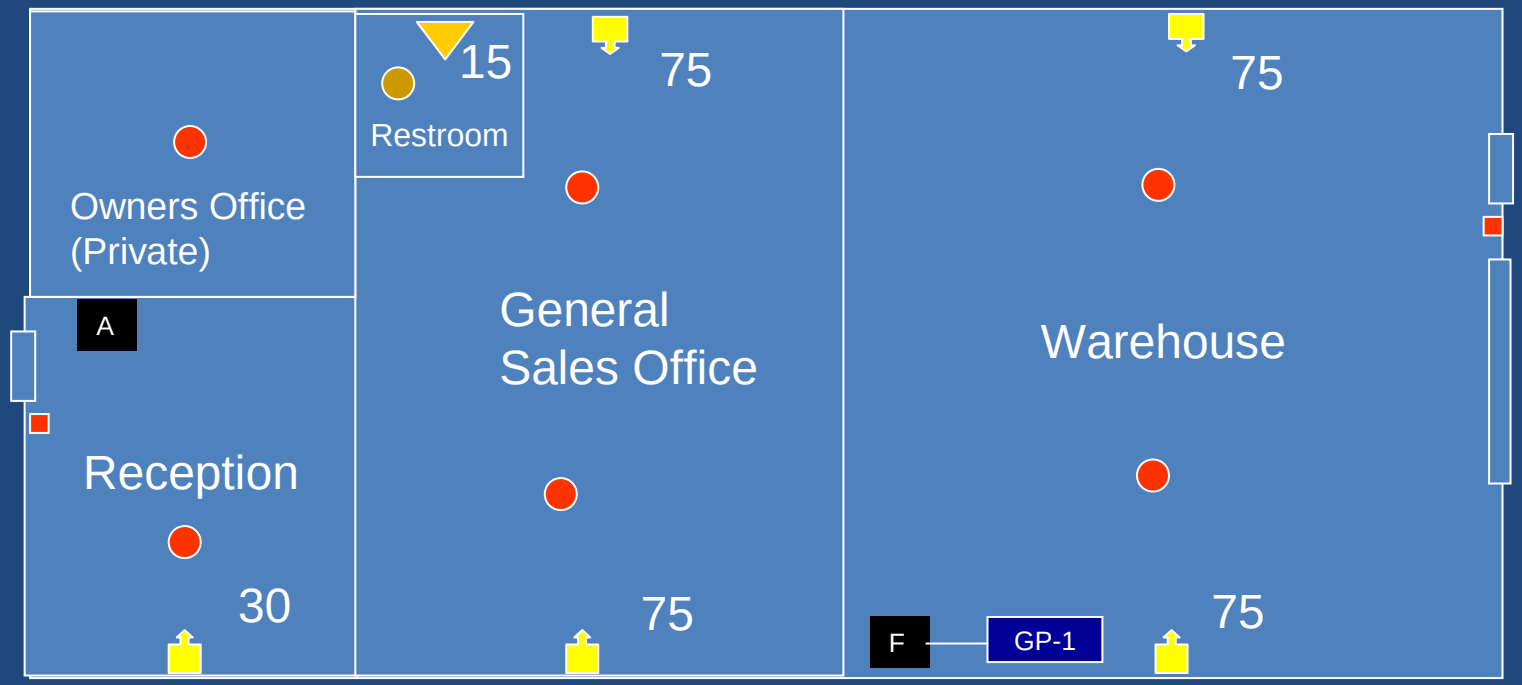
- **[F] 907.1.2 Fire alarm shop drawings.**

- *6. **Power** connection.*



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- **[F] 907.1.2 Fire alarm shop drawings.**

- *7.* ***Battery calculations.***

ITEM	DESCRIPTION	STANDBY CURRENT PER UNIT (AMPS)		QTY		TOTAL STANDBY CURRENT PER ITEM	ALARM CURRENT PER UNIT (AMPS)		QTY		TOTAL ALARM CURRENT PER ITEM
FACU	Fire Alarm Control Unit	0.1000	X	1	=	0.1000	0.2000	X	1	=	0.2000
SD	Smoke Detector	0.0010	X	6	=	0.0060	0.0500	X	6	=	0.3000
HD	Heat Detector	0.0000	X	1	=	0.0000	0.0000	X	1	=	0.0000
MS	Manual Station	0.0010	X	2	=	0.0020	0.0500	X	2	=	0.1000
FAA	Fire Alarm Annunciator	0.0010	X	1	=	0.0010	0.0500	X	1	=	0.0500
HS75	Horn Strobe 75cd	0.0000	X	4	=	0.0000	0.1500	X	4	=	0.6000
HS30	Horn Strobe 30cd	0.0000	X	1	=	0.0000	0.1250	X	1	=	0.1250
S15	Strobe 15cd	0.0000	X	1	=	0.0000	0.0800	X	1	=	0.0800
UDACT	Digital Communicator	0.0500	X	1	=	0.0500	0.0500	X	1	=	0.0500
		0.0000	X	0	=	0.0000	0.0000	X	0	=	0.0000
		0.0000	X	0	=	0.0000	0.0000	X	0	=	0.0000
		0.0000	X	0	=	0.0000	0.0000	X	0	=	0.0000
		0.0000	X	0	=	0.0000	0.0000	X	0	=	0.0000
TOTAL SYSTEM STANDBY CURRENT (AMPS)						0.1590	TOTAL SYSTEM ALARM CURRENT (AMPS)				1.5050

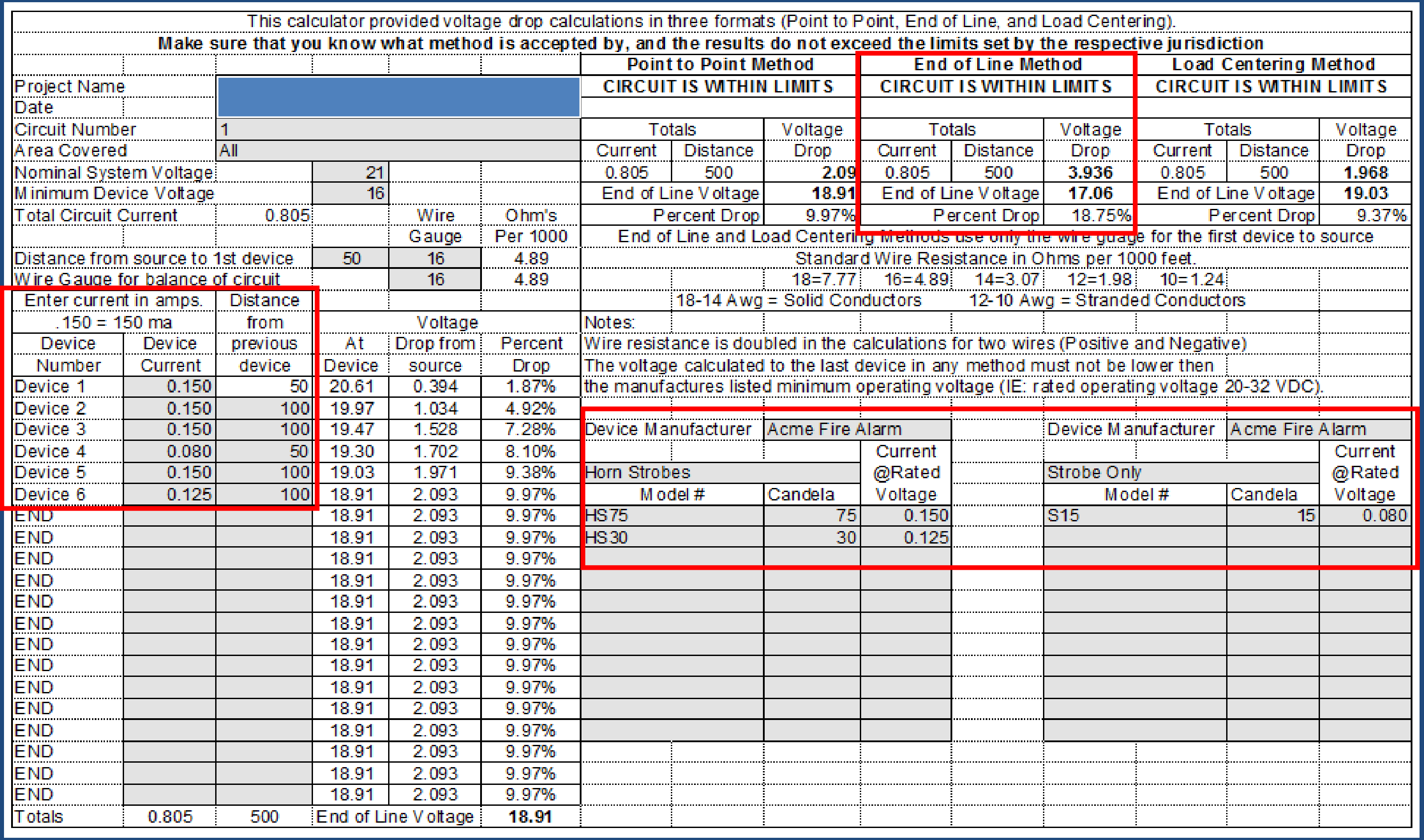
Prepared for: NJBFAA, 1 Symposium Way, Atlantic City, NJ	REQUIRED STANDBY TIME (HRS) NFPA 72		TOTAL SYSTEM STANDBY CURRENT (AMPS)		REQUIRED STANDBY CAPACITY (AMP-HOURS)	REQUIRED ALARM TIME (HOURS) NFPA 72		TOTAL SYSTEM ALARM CURRENT (AMPS)		REQUIRED ALARM CAPACITY (AMP-HOURS)
	24	X	0.1590	=	3.8160	0.083	X	1.5050	=	0.1249

Prepared by: My Designer	REQUIRED STANDBY CAPACITY (AMP-HOURS)		REQUIRED ALARM CAPACITY (AMP-HOURS)		TOTAL CAPACITY (AMP-HOURS)	TOTAL CAPACITY (AMP-HOURS)		SAFETY FACTOR		ADJUSTED BATTERY CAPACITY (AMP-HOURS)
	3.82	+	0.1249	=	3.9409	3.9409	X	120%	=	5

2009 International Bldg Code/NJ Edition

- **[F] 907.1.2 Fire alarm shop drawings.**

- *8. **Conductor type and sizes.***
- *9. **Voltage drop calculations.***



This calculator provided voltage drop calculations in three formats (Point to Point, End of Line, and Load Centering).

Make sure that you know what method is accepted by, and the results do not exceed the limits set by the respective jurisdiction

Project Name			
Date			
Circuit Number	1		
Area Covered	All		
Nominal System Voltage	21		
Minimum Device Voltage	16		
Total Circuit Current 0.805		Wire Gauge	Ohm's Per 1000
Distance from source to 1st device	50	16	4.89
Wire Gauge for balance of circuit		16	4.89

Point to Point Method			**End of Line Method**			**Load Centering Method**		
CIRCUIT IS WITHIN LIMITS			**CIRCUIT IS WITHIN LIMITS**			**CIRCUIT IS WITHIN LIMITS**		
Totals		Voltage	Totals		Voltage	Totals		Voltage
Current	Distance	Drop	Current	Distance	Drop	Current	Distance	Drop
0.805	500	**2.09**	0.805	500	**3.936**	0.805	500	**1.968**
End of Line Voltage		**18.91**	End of Line Voltage		**17.06**	End of Line Voltage		**19.03**
Percent Drop		9.97%	Percent Drop		18.75%	Percent Drop		9.37%

End of Line and Load Centering Methods use only the wire guage for the first device to source

Standard Wire Resistance in Ohms per 1000 feet.

18=7.77 16=4.89 14=3.07 12=1.98 10=1.24

18-14 Awg = Solid Conductors 12-10 Awg = Stranded Conductors

Notes:

Wire resistance is doubled in the calculations for two wires (Positive and Negative)

The voltage calculated to the last device in any method must not be lower then the manufactures listed minimum operating voltage (IE: rated operating voltage 20-32 VDC).

Enter current in amps. .150 = 150 ma		Distance from previous device	Voltage		
Device Number	Device Current		At Device	Drop from source	Percent Drop
Device 1	0.150	50	20.61	0.394	1.87%
Device 2	0.150	100	19.97	1.034	4.92%
Device 3	0.150	100	19.47	1.528	7.28%
Device 4	0.080	50	19.30	1.702	8.10%
Device 5	0.150	100	19.03	1.971	9.38%
Device 6	0.125	100	18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
END			18.91	2.093	9.97%
Totals	0.805	500	End of Line Voltage		**18.91**

Device Manufacturer	Acme Fire Alarm	
		Current @Rated Voltage
Horn Strobes		
Model #	Candela	
HS75	75	0.150
HS30	30	0.125

Device Manufacturer	Acme Fire Alarm	
		Current @Rated Voltage
Strobe Only		
Model #	Candela	
S15	15	0.080

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- **[F] 907.1.2 Fire alarm shop drawings.**

  - *10. Manufacturers' data sheets indicating model numbers and listing information for equipment, devices and materials.*

DN-7102:D

FireWarden-50(E)

Intelligent Addressable FACP with Built-In Communicator

NOTIFIER by Honeywell

Addressable Fire Alarm Control Panels

General

The **NOTIFIER FireWarden-50 (NFW-50)** is a Fire Alarm Control Panel (FACP) and Digital Alarm Communicator/Transmitter (DACT) combined into one circuit board. This compact, intelligent addressable control panel supports up to 50 addressable devices in any combination of detectors or modules. With an extensive list of powerful features, the FireWarden-50 programs just like FireWarden-100 products, yet fits into applications previously served only by conventional panels.

The FireWarden-50's integral DACT transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote and local programming of the control panel using the VFWARDEN-CD Upload/Download utility. In addition, the control panel may be programmed or interrogated off-site via the public switched telephone network. Any personal computer with Windows™ 95 or greater, and compatible modem with a speed of 14.4 kbps or faster and Upload/Download software kit VFWARDEN-CD, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walktest data, current status and system voltages.

The power supply and all electronics are contained on a single circuit board supported on a new quick install chassis and housed in a metal cabinet. Available accessories include local and remote upload/download software, remote annunciators, and reverse polarity/city box transmitter. (4XTM).

The FireWatch Series internet monitoring modules (FDACT-2 and IFDACT-2UD) permit monitoring of alarm signals over the Internet saving the monthly cost of two telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line.

***NOTE:** Unless otherwise specified, the term FireWarden-50 is used in this data sheet to refer to both the FireWarden-50 and the FireWarden-50E FACPs. For FireWarden-50C, refer to DN-6046.*

Features

- Listed to UL Standard 864, 9th edition.
- Auto-program (learn mode) reduces installation time. Reports two devices set to the same address.
- On-board DACT.
- Two independently programmable Style Z (Class A) or Style Y (Class B) NAC circuits.
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules.
- Two programmable relays and one fixed trouble relay.
- Built-in Programmer.
- Telephone Line Active LEDs.
- EIA-232 PC interface.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- History file with 500 event capacity.
- Automatic detector sensitivity testing (NFPA 72 compliant).
- Automatic device type-code verification.
- Point trouble identification.
- Waterflow selection per module point.
- Alarm verification selection per detector point.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- One-person audible or silent walk test with walk-test log and printout.
- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant).
- Up to eight ANN-BUS annunciators.
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or remote annunciator.
- Upload/Download (local or remote) of program and data via Integral DACT.

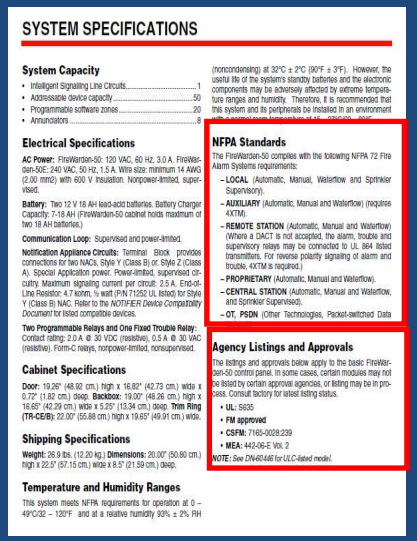
SLC COMMUNICATION LOOP

- Single addressable SLC loop which meets NFPA Style 4, 6 and 7 requirements.
- 50 addressable device capacity (any combination of addressable detectors and modules).
- Compatible with NOTIFIER FireWarden addressable devices (refer to the *FireWarden SLC Wiring Manual*).

NOTIFICATION APPLIANCE CIRCUITS (NAC'S)

- Two independently programmable output circuits. Circuits can be configured for the following outputs:
  - **Style Y** (Class B)
  - **Style Z** (Class A)
  - **Door Holder Service** (cannot be used for notification appliances)
  - **Aux Power Source** (cannot be used for notification appliances)
- Silence Inhibit and Autosilence 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 A total power for NACs.

***NOTE:** Maximum or total 24VDC system power shared between all NAC circuits and the ANN-BUS is 2.7 A.*



SYSTEM SPECIFICATIONS

System Capacity

- Intelligent Signaling Line Circuits 1
- Addressable device capacity 50
- Programmable software zones 20
- Annunciators 8

Electrical Specifications

AC Power: FireWarden-50: 120 VAC, 60 Hz, 3.0 A. FireWarden-50E: 240 VAC, 50 Hz, 1.5 A. Wire size: minimum 14 AWG (2.00 mm2) with 600 V insulation. Nonpower-limited, supervised.

Battery: Two 12 V 18 AH lead-acid batteries. Battery Charger Capacity: 7-18 AH (FireWarden-50 cabinet holds maximum of two 18 AH batteries.)

Communication Loop: Supervised and power-limited.

Notification Appliance Circuits: Terminal Block provides connections for two NACs, Style Y (Class B) or, Style Z (Class A). Special Application power. Power-limited, supervised circuitry. Maximum signaling current per circuit: 2.5 A. End-of-Line Resistor: 4.7 kohm, ½ watt (P/N 71252 UL listed) for Style Y (Class B) NAC. Refer to the *NOTIFIER Device Compatibility Document* for listed compatible devices.

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

Cabinet Specifications

Door: 19.26" (48.92 cm.) high x 16.82" (42.73 cm.) wide x 0.72" (1.82 cm.) deep. **Backbox:** 19.00" (48.26 cm.) high x 16.80" (42.29 cm.) wide x 5.25" (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: 36.9 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 comfort zone [illegible]

NFPA Standards

The FireWarden-50 complies with the following NFPA 72 Fire Alarm Systems requirements:

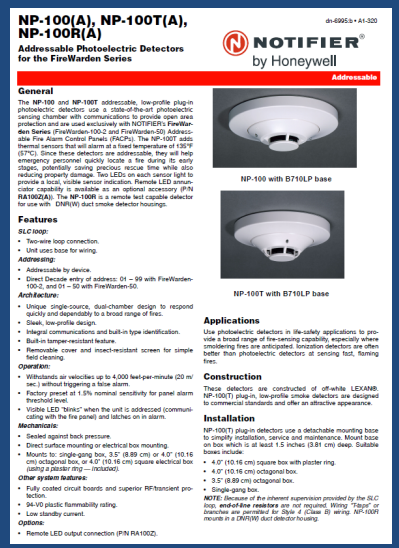
- **LOCAL** (Automatic, Manual, Waterflow and Sprinkler Supervisory).
- **AUXILIARY** (Automatic, Manual and Waterflow) (requires 4XTM).
- **REMOTE STATION** (Automatic, Manual and Waterflow) (Where a DACT is not accepted, the alarm, trouble and supervisory relays may be connected to UL 864 listed transmitters. 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).
- **OT, PSDN** (Other Technologies, Packet-switched Data

Agency Listings and Approvals

The listings and approvals below apply to the basic FireWarden-50 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:** 7165-0028:239
- **MEA:** 442-06-E Vol. 2

***NOTE:** See DN-6046 for ULC-listed model.*



NP-100(A), NP-100T(A), NP-100R(A)

Addressable Photoelectric Detectors for the FireWarden Series

dn-6995:b • At-320

NOTIFIER by Honeywell

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 Series** (FireWarden-100-2 and FireWarden-50) Addressable Fire Alarm Control Panels (FACPs). 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 **RA100Z(A)**). The **NP-100R** is a remote test capable detector for use with DNR(W) duct smoke detector housings.

Features

SLC loop:

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

Addressing:

- Addressable by device.
- Direct Decade entry of address: 01 – 99 with FireWarden-100-2, and 01 – 50 with FireWarden-50.

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.

Mechanical:

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

Options:

- Remote LED output connection (P/N RA100Z).

NP-100 with B710LP base

NP-100T with B710LP base

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

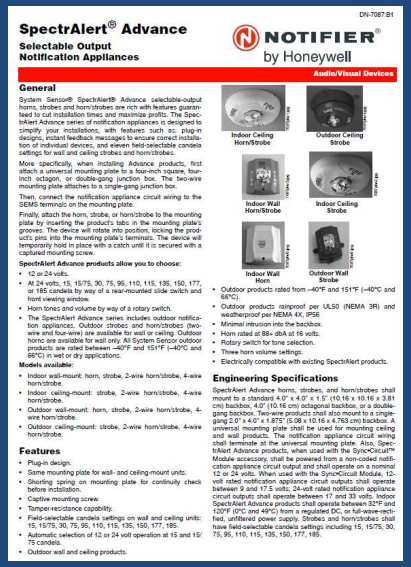
These detectors are constructed of off-white LEXAN®. NP-100(T) plug-in, low-profile smoke detectors are designed to commercial standards and offer an attractive appearance.

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 "Taps" or branches are permitted for Style 4 (Class B) wiring. NP-100R mounts in a DNR(W) duct detector housing.*



DN-7087:B1

SpectrAlert® Advance

Selectable Output Notification Appliances

NOTIFIER by Honeywell

Audio/Visual Devices

General

System Sensor® SpectrAlert® Advance selectable-output horns, strobes and horn/strobes are rich with features guaranteed to cut installation times and maximize profits. The SpectrAlert Advance series of notification appliances is designed to simplify your installations, with features such as: plug-in designs, instant feedback messages to ensure correct installation of individual devices, and eleven field-selectable candela settings for wall and ceiling strobes and horn/strobes.

More specifically, when installing Advance products, first attach a universal mounting plate to a four-inch square, four-inch octagon, or double-gang junction box. The two-wire mounting plate attaches to a single-gang junction box.

Then, connect the notification appliance circuit wiring to the SEMS terminals on the mounting plate.

Finally, attach the horn, strobe, or horn/strobe to the mounting plate by inserting the product's tabs in the mounting plate's grooves. The device will rotate into position, locking the product's pins into the mounting plate's terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

SpectrAlert Advance products allow you to choose:

- 12 or 24 volts.
- At 24 volts, 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, or 185 candela by way of a rear-mounted slide switch and front viewing window.
- Horn tones and volume by way of a rotary switch.
- The SpectrAlert Advance series includes outdoor notification appliances. Outdoor strobes and horn/strobes (two-wire and four-wire) are available for wall or ceiling. Outdoor horns are available for wall only. All System Sensor outdoor products are rated between –40°F and 151°F (–40°C and 66°C) in wet or dry applications.

Models available:

- Indoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Indoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor wall-mount: horn, strobe, 2-wire horn/strobe, 4-wire horn/strobe.
- Outdoor ceiling-mount: strobe, 2-wire horn/strobe, 4-wire horn/strobe.

Features

- Plug-in design.
- Same mounting plate for wall- and ceiling-mount units.
- Shorting spring on mounting plate for continuity check before installation.
- Captive mounting screw.
- Tamper-resistance capability.
- Field-selectable candela settings on wall and ceiling units: 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.
- Automatic selection of 12 or 24 volt operation at 15 and 15/75 candela.
- Outdoor wall and ceiling products.

Indoor Ceiling Horn/Strobe — Outdoor Ceiling Strobe — Indoor Wall Horn/Strobe — Indoor Ceiling Strobe — Indoor Wall Horn — Outdoor Wall Strobe

- Outdoor products rated from –40°F and 151°F (–40°C and 66°C).
- Outdoor products rainproof per UL50 (NEMA 3R) and weatherproof per NEMA 4X, IP56
- Minimal intrusion into the backbox.
- Horn rated at 88+ dbA at 16 volts.
- Rotary switch for tone selection.
- Three horn volume settings.
- Electrically compatible with existing SpectrAlert products.

Engineering Specifications

SpectrAlert Advance horns, strobes, and horn/strobes shall mount to a standard 4.0" x 4.0" x 1.5" (10.16 x 10.16 x 3.81 cm) backbox, 4.0" (10.16 cm) octagonal backbox, or a double-gang backbox. Two-wire products shall also mount to a single-gang 2.0" x 4.0" x 1.875" (5.08 x 10.16 x 4.763 cm) backbox. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance products, when used with the SyncCircuit™ Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts. When used with the SyncCircuit Module, 12-volt rated notification appliance circuit outputs shall operate between 9 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32°F and 120°F (0°C and 49°C) from a regulated DC, or full-wave-rectified, unfiltered power supply. Strobes and horn/strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

2009 International Bldg Code/NJ Edition

- **[F] 907.1.3 Equipment.**
- *Systems and [their] components shall be listed and approved for the* ***purpose for which they are installed.***

2009 International Bldg Code/NJ Edition

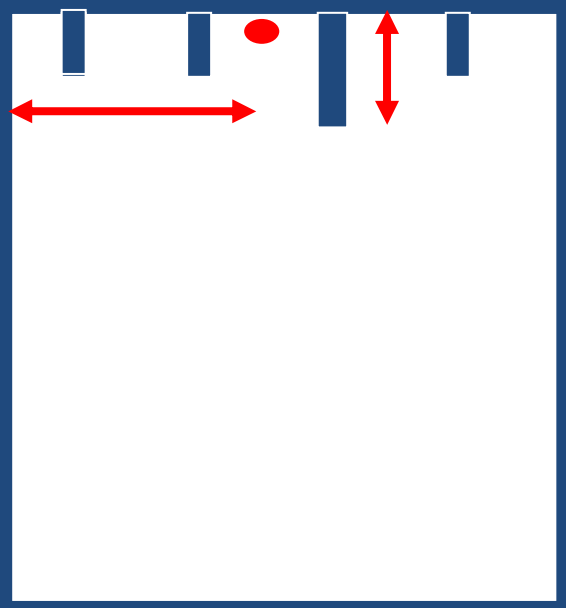
- **[F] 907.1.2 Fire alarm shop drawings.**

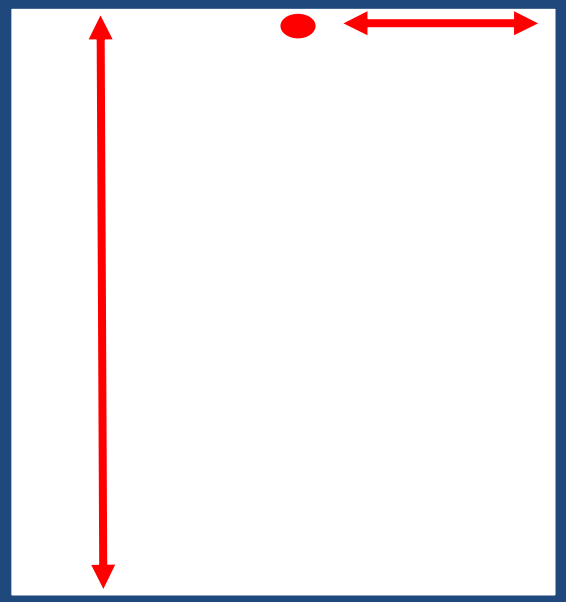
  - *11. Details of ceiling height and construction.*

2009 International Bldg Code/NJ Edition

- **[F] 907.1.2 Fire alarm shop drawings.**

  - *11. Details of ceiling height and construction.*





2007 NFPA-72 5.6 – Heat Sensing Fire Detectors
2007 NFPA-72 5.7 – Spot Type Smoke Detectors

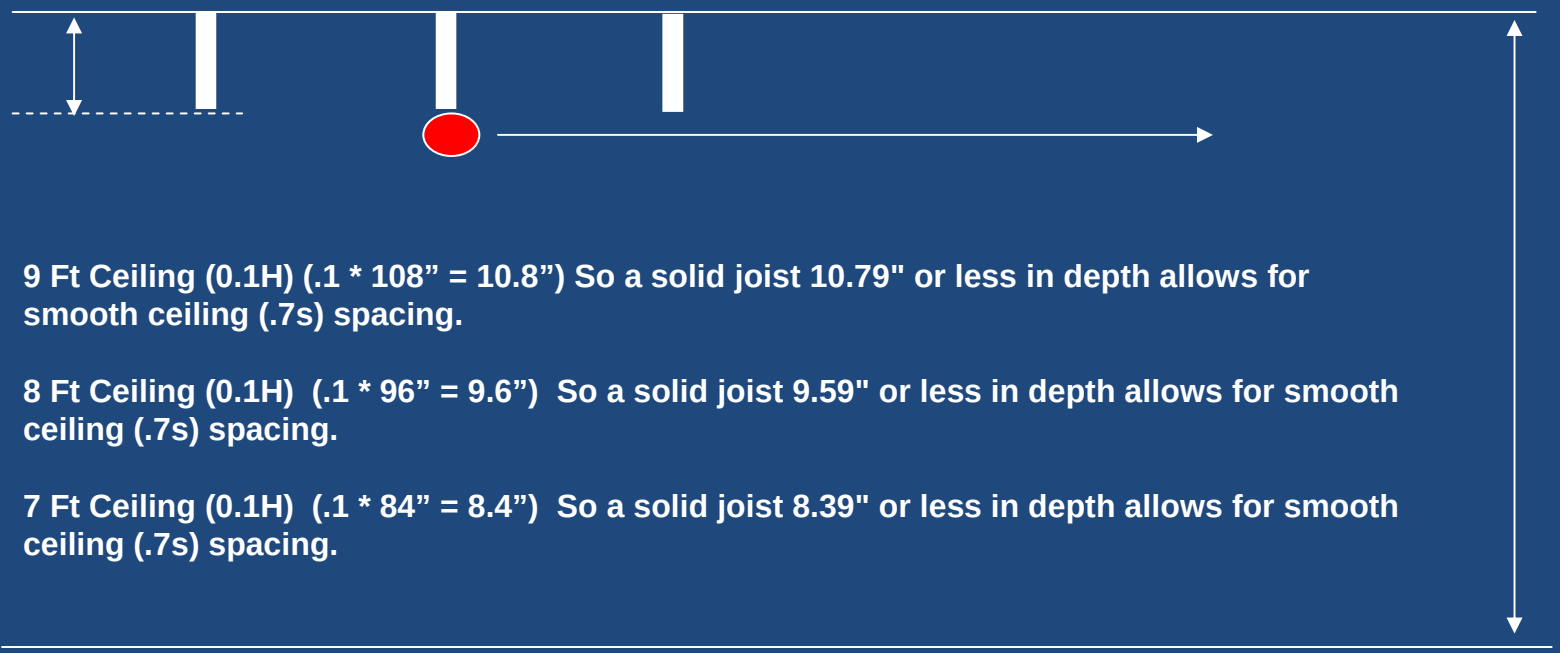
Be sure to thoroughly review the location and spacing requirements based on the conditions, design and submit accordingly

NFPA-72 -2007

- Major Change – 5.7.3.2 Spot-Type Smoke Detectors.
- **5.7.3.2.4.2 For** level ceilings **(slope less than 10%) the following shall apply:**
- ***(1) For ceilings with*** *beam depths of less than 10 percent of the ceiling height* ***(0.1 H),*** *smooth ceiling spacing shall be permitted****. (.7s rule)***
- ***(2) For ceilings with*** *beam depths equal to or greater than 10 percent* ***of the ceiling height (0.1 H) and*** *beam spacing equal to or greater than 40 percent of the ceiling height* ***(0.4 H), spot-type detectors shall be located on the ceiling*** *in each beam pocket.*

NFPA-72 -2007

- ***(1) For ceilings with** beam depths of <u>less than 10 percent</u> of the ceiling height **(0.1 H)**, smooth ceiling spacing shall be permitted. **(.7s rule)***



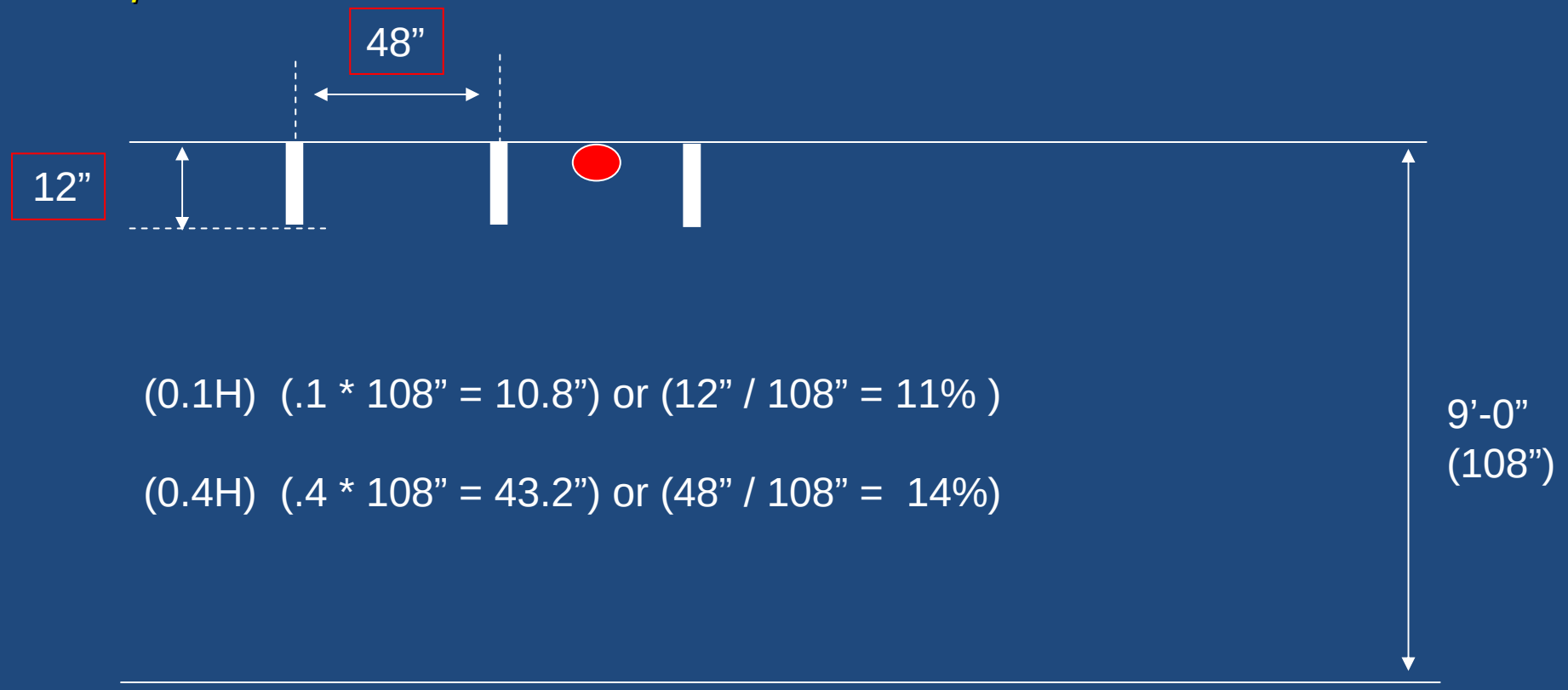
9 Ft Ceiling (0.1H) (.1 * 108” = 10.8”) So a solid joist 10.79" or less in depth allows for smooth ceiling (.7s) spacing.

8 Ft Ceiling (0.1H) (.1 * 96” = 9.6”) So a solid joist 9.59" or less in depth allows for smooth ceiling (.7s) spacing.

7 Ft Ceiling (0.1H) (.1 * 84” = 8.4”) So a solid joist 8.39" or less in depth allows for smooth ceiling (.7s) spacing.

NFPA-72 -2007

- ***(2) For ceilings with** beam depths equal to or greater than 10 percent **of the ceiling height (0.1 H)** and beam spacing equal to or greater than 40 percent of the ceiling height **(0.4 H), spot-type detectors shall be located on the ceiling** in each beam pocket.*

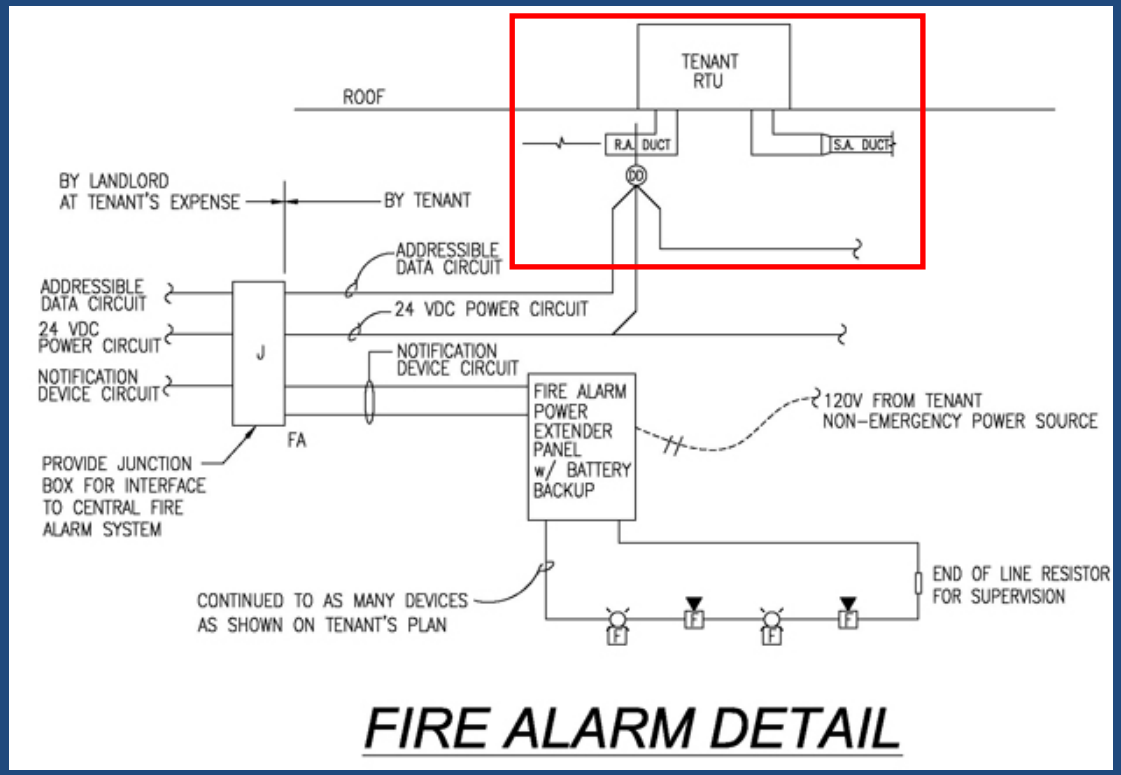


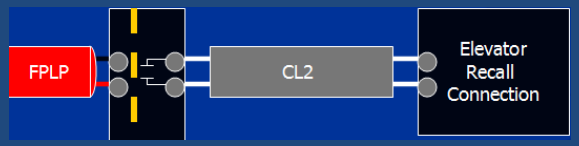
(0.1H) (.1 * 108” = 10.8”) or (12” / 108” = 11%)

(0.4H) (.4 * 108” = 43.2”) or (48” / 108” = 14%)

2009 International Bldg Code/NJ Edition

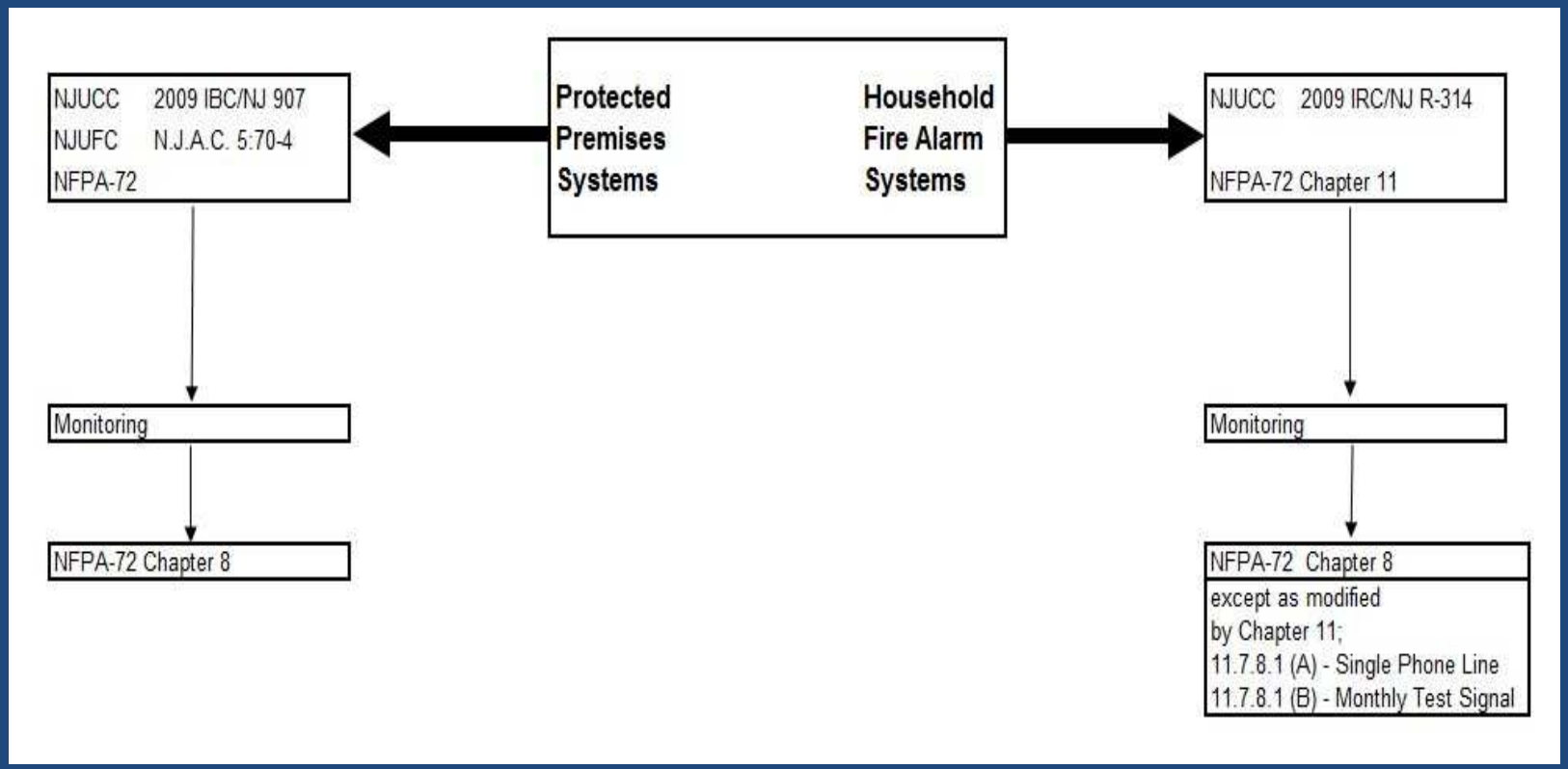
- **[F] 907.1.2 Fire alarm shop drawings.**
  - *12. The interface of fire safety control functions.*





2009 International Bldg Code/NJ Edition

- **[F] 907.1.2 Fire alarm shop drawings.**
  - *13. Classification of the supervising station.*



NJ Uniform Construction Code

Submittal Information and Documentation

1) The NFPA-72 System and Service Classification

2) The NFPA-72 Communications Method

3) The **MFVN** Service Providers Name and Type of Service

3) The Monitoring Service Providers Name

4) Copy of the Monitoring Service Providers Listing Documentation

5) Communications Equipment Manufacturer and Model

6) Copy of the Communications Equipment Tech Sheet(s) and Listing Documentation

7) The Number of Communications Paths and the Provisions made to Monitor the Communications Technology and Communications Path.

Alarm companies can simplify this by having prepackaged submittals made up ahead of time

Permit #
Date Issued

DIGITAL ALARM COMMUNICATOR TRANSMITTERS (DACT) UTILIZING MANAGED FACILITY VOICE NETWORKS (MFVN) VERIFICATION FORM

IDENTIFICATION

Work Site Location _____ Block _____ Lot _____ Qualification Code _____

Owner in Fee _____ Contractor _____

Address _____ Address _____

Tel. (___) _____ Tel. (___) _____

License/Certification No. _____

Federal Emp. ID No. _____

Compliance Checklist

When a DACT's means of transmission is converted from Plain Old Telephone Service (POTS) to Managed Facility Voice Network (MFVN) Service, this checklist is to be completed by the licensed/certified alarm service provider and submitted to the Fire Protection Subcode Official of the Local Enforcing Agency within 24 hours of conversion.

- ☐ DACT connected to qualified MFVN service

  _____
  MFVN Provider Name and Telephone no.

- ☐ DACT telephone circuit(s) configured and tested for loop start.
- ☐ DACT telephone circuit(s) configured and tested for line seizure.
- ☐ Minimum 8-hour standby battery installed and tested in MFVN communications equipment.
- ☐ MFVN communications equipment installed at the protected premises with safeguards to prevent unauthorized access.
- ☐ DACT alarm, trouble and supervisory signal transmission retested to Supervising Station successfully.

_____
Alarm Service Provider name and telephone no.

_____
Supervising Station Service Provider Name and Telephone no.

Plain Old Telephone Service (POTS) to Managed Facility Voice Network (MFVN) Service

Many people are switching over from POTS to MFVNs. A new code provision that takes effect July 16, 2012 will make it easier for them to make the switch. Currently, when someone wishes to change their POTS line to a MFVN, they need a full permit.

The changes found at N.J.A.C. 5:23-2.17A, 4.18 and 4.20 allow MFVNs to be used without making the owner of a building apply for a full permit to change phone lines. A new verification form U.C.C. F391 contains a compliance checklist. This form must be completed by a licensed/certified alarm service provider and submitted to the Fire Protection Subcode Official of the Local Enforcing Agency within 24 hours of conversion.

The new form can be found on the Division of Codes and Standards webpage at http://www.nj.gov/dca/divisions/codes/resources/constructionpermitforms.html

The new code provisions dealing with this change are found at the link below.

http://www.nj.gov/dca/divisions/codes/codreg/pdf_rule_proposals/p2012_5_23_2_15.pdf

The adopted amendments at N.J.A.C. 5:23-4.18(c)4

Plan Review Comments

- Lets look at some actual plan review comments.

PLAN REVIEW CORRECTION COMMENTS

Line	Description	Code Reference		Revision
1	Application missing the following, unable to review;	NJUCC	5:23-2.15	
	a) Riser		5:23-6.5(c)	
	b) Secondary Power Calculations			
	c) Voltage Drop Calculations	IBC/NJ	907.1.1 903.4	
	d) Wiring Materials and Methods		907.2 903.4.1	
	e) Sequence of Operation		907.9.1 Exc 1	
	f) Basement Plan			
	g) Sprinkler System Supervision Details and Locations	NFPA-72	4.5.1.1	
	h) Visual Notification Appliance Candela Output Settings.		6.15	
	i) HVAC Detection and Control Details and Locations.		6.9	
	j) Ceiling Details, Height, Type and or Obstructions.		6.8.5.5	
	k) Door Holder Details and Interface		6.8.5.7	
	l) Delayed and or Access Control Locking Arrangements			
2	Audibility - Various Guestrooms shown without Audible	NFPA-72	7.4	
	Notification Appliances and/or Audibility Design Documentation	IBC/NJ	907.9.2	
	verifying compliance.			
3	Visual Notification - Four (4) Rooms provided with visual	IBC/NJ	907.9.1.3	
	alarms where Fourteen (14) required.		T 907.9.1.2	
4	Plans- PE/RA Signature and Seal - Missing	NJUCC	5:23-2.15	
5	Fire Alarm Annunciator/Control - Note 4.	NFPA-72	7.10	
	Verify Approved Location with Fire Department			
6	System Power - Not noted or designated	NFPA-72	4.4.1.4	
	System power shall be from dedicated, marked and locked source			
7	Fire Sprinkler System - Exterior Notification Appliance	IBC/NJ	903.4.2	
	Not Provided			
	Provide Exterior Notification Appliance at FDC Location			
8	Meeting Room 6 - Missing Audible/Visual Notification	IBC/NJ	907.9.1	
	Appliance	NFPA-72	7.4.3	
9	1st Floor Elevator Machine Room Smoke Detector missing	NFPA-72	6.15.3.1	
		ANSI-17.1	202	
10	2nd Floor Corridor - Smoke Detector Coverage exceeded	NFPA-72	5.7.3.2.3	
	adjacent to room 201			

Please find the following plan review comments for the referenced application;

1) Plan E 2.1 Dated 09/03/2009

Incomplete Plans and Documents – Code References: N.J.A.C. 5:23, 2006 IBC/NJ 907.1.1 & 2002 NFPA-72

a) Plans not signed and sealed by Licensed Professional Engineer listed in Title Block.

b) Use group not noted on application – Unable to review to applicable construction code requirements.

c) Legend not provided – Provide legend on plans.

d) Unable to determine visual (strobe) notification compliance – candela output settings not indicated on plan. Provide and locate notification appliances in accordance with 2006 IBC/NJ Section 907 and 2002 NFPA-72 Chapter 7 indicate candela output setting for each appliance accordingly.

e) Room uses not identified – List room use for each room or compartment.

f) Appliance mounting height detail not provided or noted – Provide Detail/Notes.

g) Voltage drop calculations not provided – Provide voltage drop calculations for applicable circuits including existing appliances on same

h) Riser not submitted – Submit riser denoting modifications.

i) Initiating devices not shown or noted on plan – See comment b) use group

Revise and Resubmit. All documentation shall be submitted in duplicate.

Application Denied – Incomplete Application

1) 2006 IBC/NJ - 907.1.1 Construction documents.

Construction documents for fire alarm systems shall be submitted for review and approval prior to system installation. Construction documents shall include, but not be limited to, all of the following:

1. A floor plan which indicates the use of all rooms. – Missing Apartment Layout Plans.
2. Locations of alarm-initiating and notification appliances. – Missing Apartment Layout Plans.
3. Alarm control and trouble signaling equipment.
4. Annunciation. – Missing Location of Remote Annunciator
5. Power connection.- Missing Power Connection Details to House Power and Panel Location and Designation
8. Voltage drop calculations. – Missing Voltage Drop Calculations

2) 2002 NFPA-72 - 4.5.1.1 Approval and Acceptance.

The authority having jurisdiction shall be notified prior to installation or alteration of equipment or wiring. At the authority having jurisdiction's request, complete information regarding the system or system alterations, including specifications, shop drawings, battery calculations, and notification appliance circuit voltage drop calculations shall be submitted for approval

1. System Riser – Missing System Riser

3) Strobe Coverage Exceeded – 2002 NFPA-72 T-7.5.4.1.1(a), T-7.5.4.4.2

a) Maximum off axis distance (to sidewall) is 22 ft for 110cd appliances – Basements 32,34,36, 42,44,46- Reconfigure accordingly.

b) Maximum on axis distance (to farwall) is 54 ft for 110cd appliances – Basements 150-152 Reconfigure accordingly.

c) Stipulate Mounting Height of Apartment Strobes – For mounting heights where the top of the lens is equal to or greater than 24" from the ceiling a 110cd strobe may be used in sleeping areas, for distances less than 24" a 177cd strobe is required.

4) Provide information on communications, circuits and method. DACT circuits shall be house (landlord) POTS circuits on the PSTN pursuant to NFPA-72 8.5.3.2.1.1;

8.5.3.2.1.1* Public Switched Network. A DACT shall be connected to the public switched telephone network upstream of any private telephone system at the protected premises.

(A) The connections to the public switched telephone network shall be under the control of the subscriber for whom service is being provided by the supervising station fire alarm system.

5) Plans shall be signed and sealed by a NJ Licensed Professional Engineer pursuant to N.J.A.C. 5:23-2.15

6) Revise and Resubmit Application in Duplicate. Work shall not commence prior to receiving permit.

*Denotes Previous Comments Issued November 19, 2010
*Denotes Previous Comments Issued February 16, 2011

Application is denied for the following:

Fire Protection Subcode Official

1. *Provide minimum 15 cd strobe – corridor 105. – ***Comment 04/12/2011-The revised plans dated 4/8/11 indicate this appliance however the wiring diagram indicates it being circuited with the Exterior Waterflow Notification Appliance which is not permitted since the exterior WF Appliance is configured for Waterflow Only.***

2. *Locate exterior horn/strobe over Fire Dept. Connection – program for waterflow only operation. ***Comment 04/12/2011-The revised plans dated 4/8/11 indicate this appliance however the wiring diagram indicates it being circuited with the Interior Corrdidor 105 Notification Appliance which is not permitted since the exterior WF Appliance is configured for Waterflow Only.***

3. *Plans shall be signed and sealed by a NJ Registered Architect or Licensed Professional Engineer pursuant to N.J.A.C. 5:23-2.15. All documents, including but not limited to shop drawings, prepared by people other than the design professional shall be reviewed by the design professional and submitted with a letter indicating that they have been reviewed and found to be in conformance with the regulations for the design of the building. Documents shall be submitted in duplicate. ***Comment 04/12/2011-The revised plans dated 4/8/11 are neither signed and sealed by a NJPE or reviewed by the design professional and submitted with a letter indicating that they have been reviewed and found to be in conformance with the regulations for the design of the building as required by the regulations.***

Revise application and resubmit accordingly. Work shall not commence until a permit has been received.

Re: Proposed Alteration

Fire Protection Codes & Standards References:
N.J.A.C. 5:23, 5:23-6, 5:23-6.8, 2009 IBC/NJ, 2007 NFPA-72, 2007 NFPA-13

Fire Alarm & Fire Sprinklered System Protected Building

Dear Applicant

We are in receipt of Architectural Plan A-1 – Revision 1 received March 29, 2011. The referenced property is protected by a Fire Alarm & Fire Sprinkler System. Premises undergoing alterations routinely require modifications of the fire alarm and/or fire sprinkler systems to maintain code compliance.

The revised plans indicate the location of existing fire sprinkler and fire alarm equipment. The proposed alterations will create conflicts and or gaps in protection in violation of reference standards NFPA-13 (Fire Sprinkler) and NFPA-72 (Fire Alarm).

Please contact your fire sprinkler and fire alarm service providers as soon as possible such that they may file the requisite applications, plans and submittals to facilitate the necessary modifications to the existing fire alarm and fire sprinkler systems.

Unfortunately I cannot grant release of this application until such time as the fire protection applications are received, reviewed, released and permitted. Please feel to have these service providers contact me if I can be of further assistance.

Fire Protection Codes & Standards References:
N.J.A.C. 5:23, 5:23-6, 5:23-6.8, 2006 IBC/NJ, 2002 NFPA-72, 2002 NFPA-13, 2005 NFPA-70.

1) 2006 IBC/NJ - 907.1.1 Construction documents – Fire Alarm

Construction documents for fire alarm systems shall be submitted for review and approval prior to system installation. Construction documents shall include, but not be limited to, all of the following:

f) Candela Output setting of Visual Notification Appliances demonstrating required coverage pursuant to NFPA-72 7.5, provide additional visual notification appliances as required.

g) Shop Drawings

Submit Application including but not limited to Fire and Electrical Subcode Applications, Shop Drawings, Calculations and Submittals in Duplicate.

Fire Alarm work shall not commence prior to receiving permit.

Fire Protection Subcode Official – Plan Review Comments – Fire Alarm System

Fire Alarm Application Incomplete. Submit minimum two sets of shop drawings, calculations, equipment submittals and details pursuant to NJ Uniform Construction Code, N.J.A.C. 5:23, Rehabilitation Subcode, N.J.A.C. 5:23-6, Methods and Materials, N.J.A.C. 5:23-6.8, 2009 IBC/NJ 901.2, 901.6, 903 & 907, 907.1.1, 907.1.2, 2007 NFPA-13 & 2007 NFPA-72.

2009 IBC/NJ 907.1.1 Construction documents.
Construction documents for fire alarm systems shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code, the International Fire Code , and relevant laws, ordinances, rules and regulations, as determined by the fire protection subcode official.

2009 IBC/NJ 907.1.2 Fire alarm shop drawings.

Shop drawings for fire alarm systems shall be submitted for review and approval prior to system installation, and shall include, but not be limited to, all of the following:

3. *Locations of alarm notification appliances, including candela ratings for visible alarm notification appliances.*
5. *Annunciators.*
6. *Power connection.*
8. *Conductor type and sizes.*
9. *Voltage drop calculations.*
11. *Details of ceiling height and construction.*
12. *The interface of fire safety control functions.*

Additionally pursuant to 907.1.2. the following shall be provided;

1) Riser Diagram – Existing and New Areas

2) Indicate Ceiling Construction – Verify Smoke Detector Spacing based per NFPA-72- 5.6.5.1, 5.6.5.1.1, 5.6.5.1.2, 5.6.5.2, 5.6.5.3, 5.6.5.3.1, 5.5.3.2. *Where the beams project more than 100 mm (4 in.) below the ceiling, the spacing of spot-type heat detectors at right angles to the direction of beam travel shall be not more than two-thirds of the smooth ceiling spacing permitted under 5.6.5.1.1 and 5.6.5.1.2.*

3) Provide Visual Notification – 2nd Floor – Area outside Restrooms IBC/NJ 907.5.2.3.1 *Public and common areas; Visible alarm notification appliances shall be provided in public areas and common areas.*

Fire Protection Subcode Official – Plan Review Comments – Fire Alarm System

4) Indicate Visual Notification Candela Output Setting – Coverage and Spacing shall comply with 2007 NFPA-72-7.5.4.3, Table 7.5.4.3.1(a) Room Spacing for Wall-Mounted Visible and or Table 7.5.4.3.1(b) Room Spacing for Ceiling-Mounted Visible Appliances. Provide additional and or locate to comply with 2009 IBC/NJ 907.5.2.3.1 *Public and common areas; Visible alarm notification appliances* *shall be provided in public areas and common areas.*

5) Indicate the following on Plans and Risers;

a) Kitchen Fire Extinguishing System – Separate Zone/Point – Alarm and Trouble
b) HVAC Duct Smoke Detectors – Configured for Supervisory and Fan Shutdown
c) Fire Sprinkler System – Waterflow (Alarm) and Control Valve Tampers (Supervisory)
d) Fire Sprinkler System – Exterior Horn Strobe over FDC configured for Waterflow Only
e) Fire Alarm Annunciator Required at Front Entrance.

Plans shall be signed and sealed by a NJ Registered Architect or Licensed Professional Engineer pursuant to N.J.A.C. 5:23-2.15. All documents, including but not limited to shop drawings, prepared by people other than the design professional shall be reviewed by the design professional and submitted with a letter indicating that they have been reviewed and found to be in conformance with the regulations for the design of the building. Documents shall be submitted in duplicate

Revise application and resubmit accordingly. Work shall not commence until a permit has been received.

Re: Secure Lower Lobby Door Addition – Plan SK-1B

The application to secure lower lobby door addition cannot be approved for the following reasons;

1) The door is a component of the means of egress in both directions, a) as a second means of egress from the basement corridor and b) as a second means of egress from the basement lobby.

In this regard the exit door must be unsecured and readily accessible from both sides.

However the door to the "Bank File Space" may be electronically secured from the ingress side with the requisite fail safe provisions on the egress side, permits and inspection. Additionally electronic security measures such as alarms and or video monitoring are permissible.

Fire Alarm Systems

- Audibility and Visibility - IBC/NFPA-72 Requirements ?

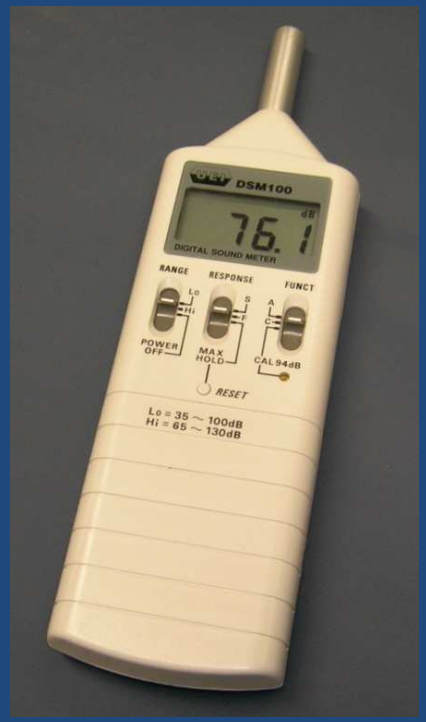
- Have the voltage drop calculations been performed ?. Does the wire size specified in the calculations match that on the plans ?

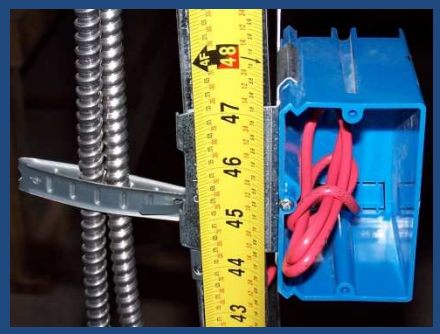
- Don't Forget - Smoke Detector at the Panel (except fully suppressed) and at least one Manual Station.

- Supervising Station Systems – Methods and Materials especially now with alternate means of communications including the use of MFVN's

- Do the calculations match the quantities, types and power requirements of the devices and appliances called out on the plans ?

- Mounting Heights Specified ?





Common Issues

Remember the purpose of plans and submittals is to demonstrate code compliance.

To do this the documentation must be complete and accurate.

•Install Quality Control Checks – Develop Checklists

•Verify that Backgrounds correspond with Architectural's and that RCP is coordinated

•Check the Math – Develop and or use Calculators such as spreadsheets that can be imported to the plans

•Documentation in Duplicate as a minimum – Remember one approved set must be on the jobsite for inspection.

•Signatures and Seals & Review by the Primary Design Professional

• Legal Statements or Equivalent not allowed

NJ Uniform Construction Code

Apply

Review

Issue

Remember, it is the applicants responsibility is to demonstrate code compliance