North Collier Fire Control & Rescue District
FIRE ALARM ENGINEERING CHECKLIST

GENERAL REQUIREMENTS.

- All fire alarm drawings shall use symbols described in NFPA 170, Standard for Fire Safety and Emergency Symbols.
- Provide a graphic representation of the scale used. Preferred scale 1/8”=1’.
- Each page of the floor plan shall provide a north arrow.
- Mounting height elevation for wall-mounted devices and appliances and ceiling height identified for ceiling-mounted equipment.
- On building permits, please submit a separate plan for fire alarm engineering and upload the fire alarm engineering 61G plan to line item “Fire Alarm Engineering” (please do not upload each page individually).
- Fire alarm room requirements:
  - Please identify compliance with the fire alarm room requirements. North Collier Fire Control and Rescue District Policy FAL 22-09.
  - For existing fire alarm systems where the FACU is located in a NEMA enclosure, please Contact NCFR Fire and Life Safety Office at 239-597-9227 for a NEMA enclosure fire inspection. Provide copy of fire inspection report. Collier County Bulletin 24 https://www.colliercountyfl.gov/home/showdocument?id=91740
- Provide a “SYSTEM RECORD DOCUMENTS” box within 3 feet of the FACU.
- Plans shall be signed and sealed by the engineer.

61G15-32.008 DESIGN OF FIRE ALARMS, SIGNALING SYSTEMS, AND CONTROL SYSTEMS. FAC 61G15-32.008

1A. Occupancy classification(s), including any subclassifications or options, and occupancy load per the Florida Fire Prevention Code.

2. Code conformance statement identifying the applicable codes and standards per FAC 69A for this system and North Collier Fire Control and Rescue District Policies. www.northcollierfire.com

61G15-32.008 DESIGN OF FIRE ALARMS, SIGNALING SYSTEMS, AND CONTROL SYSTEMS. FAC 61G15-32.008

3. Is this system exempted by the threshold requirements for mandatory use of professional engineering services? In the event the Engineer of Record provides more information and direction than is minimally required, he or she shall be held responsible for the technical accuracy of the work in accordance with applicable codes, standards, and sound engineering principles. A statement on the plan is acceptable to the AHJ. Please see the following example:

> *This Fire Protection system is exempt from professional engineering services. This is a (new / existing) (addressable / conventional) (complete fire alarm system / dedicated function fire alarm system -sprinkler monitoring only / fire alarm releasing panel, etc.) with a job value less than $5,000. (Scope of work: add notification, remove and replace initiating devices, etc.).*

To ensure minimum design quality of Fire Alarm and Detection Systems Engineering Documents, said documents shall include as a minimum the following information when applicable: FAC 61G15-32.008(4)

A1. Symbols legend
A2. Complete system riser diagram showing all initiation and notification components, and cabling requirements.
A3. Indicate locations where fire ratings are required as determined by the system's survivability requirements

B. Locate initiation and notification devices and connections to related systems on the floor plans and sections when needed for clarity. Related systems include elevator controls, smoke control systems, dampers, door release, any other systems or elements directly or indirectly controlled or monitored.

C. Strobe intensity and speaker output ratings for all notification devices.

D. Class and survivability of circuits. Note: Styles are no longer used.

E. Job-specific input/output matrix or sequence of operations identify the functions required by the alarm and control systems including the transmission of emergency signals being monitored or annunciated. Note: Collier County does not require Central Station Service. Remote Station Service is typical.

F. Is the fire alarm conventional zoned or digital addressable, and indicate all zoning.

G. Surge protective devices and required protective features on the floor plan and riser diagram.

H. Please identify and locate system devices that are subject to environmental factors, and indicate requirements for the protection of equipment from temperature, humidity or corrosive atmospheres, including coastal salt air.

I. Site plan.

J. In buildings where smoke detection will be obstructed by walls, beams or ceiling features, the Engineer of Record shall provide applicable design and details to direct the installer to mitigate the obstructions. In buildings with smoke detection under a pitched roof, the plans shall indicate the roof pitch and a building section shall be provided as part of the Engineering Design Documents. If this does not apply, state that on the plan sheet.

K. For fire detection systems utilizing smoke detection in situations where smoke stratification is anticipated, the design shall provide the necessary criteria to mitigate the detection problems. If this does not apply, state that on the plan sheet.

L. Systems designed using Performance Based criteria shall be identified and referenced to design guides or standards approved by the local authority having jurisdiction consistent with standards adopted by the Florida Fire Prevention Code and the Florida Building Code. If this does not apply, state that on the plan sheet.

M. General evacuation signal or a zoned evacuation.

N. Wiring requirements for underground, wet locations, campus style wiring, protection against damage and burial depth shall be specified or indicated on the engineering design documents.

O. Identify the requirements for operations and maintenance procedures, manuals, system documentation, and instruction of Owner's operating personnel, as needed to operate the systems as intended.

5. If the Engineer of Record elects to specify specific equipment and to show the required wiring, battery and voltage drop (circuit analysis) calculations shall be completed. The calculations shall be completed using the equipment manufacturer's data and applicable NFPA 72 procedures. For an existing fire alarm system equipment is known. Therefore, the Engineer is to verify the existing system is capable of handling the new load.

6. System test requirements.

7. When the Engineer of Record determines that special requirements are required by the owner, insurance underwriter or local fire code amendments these requirements shall be documented or referenced on the Engineering Design Documents. Anything that exceeds the minimum code shall be identified and indicate who or what code is requiring the special requirements.

Anything above and beyond the minimum code shall be specifically noted on the plans and who is requiring this to be added to the system (example: only a single manual pull station is required by code, the owner is requiring a manual pull station at each exit). Who or what code is requiring a fire alarm system.

The following, as applicable, shall be noted on the plans as AHJ requirements:

a. An exterior weatherproof audio-visual device is required per North Collier Fire Control and Rescue District Policy FAL 17-03.
b. All aboveground valves or PIV's that control water exclusively supplying a fire sprinkler system shall be electrically monitored. North Collier Fire Control and Rescue District Policy FSPK 21-01.
c. A building with a dedicated function fire sprinkler monitoring system: the pull station should be located on the exterior of the building by the FACU room in an area that is accessible to occupants of the building.
d. A building with a fire alarm system where only 1 manual pull station is required: the pull station should be located in the interior of the building within 5' of the main entrance/exit.
e. A separate permit for fire alarm monitoring is required prior to approval and issuance of the fire alarm permit.
f. Campus style systems require Class X Interconnection Pathways. North Collier Fire Control and Rescue District FAL 20-05.

SPECIAL CONSIDERATIONS.

- Acknowledge on the plans that sleeping rooms require a sound level of at least 75 dBA at the pillow level and to have a low frequency square wave or equivalent 520 HZ +/- 10%. NFPA 72:18.4.5.1; 18.4.5.3.

- Speaker system shall be arranged to shutdown upon activation of the fire alarm system.
- Relays, circuits, or interfaces necessary to stop or reduce ambient noise shall meet the requirements of Chapters 10, 12, 21, and 23.
- Phase permits- Where there are multiple permits for work on the same fire alarm system at the same time, the job value is based on all fire alarm work combined. Show all the areas on the 61G plan and hatch out the areas that do not apply to the specific permit. Submit complete fire alarm engineering with each permit.
- All HVLS (High Volume Low Speed) Fans must be interlocked to shut down immediately upon receiving a waterflow signal from the alarm system in accordance with the requirements of NFPA 72.
- Voice evacuation systems requires system designers to determine the voice intelligibility during the planning and design phase. Each Acoustically Distinguishable Space (ADS) shall be identified as requiring or not requiring voice intelligibility. Please provide this information in chart format and identify each room or space. Intelligibility shall not be required in the following locations:(1) Private bathrooms, shower rooms, saunas and similar rooms/areas (2) Mechanical/electrical/elevator equipment rooms (3) Elevator cars (4) Individual offices (5) Kitchens (6) Storage rooms (7) Closets (8) Rooms/areas where intelligibility cannot reasonably be predicted. Please provide this information in chart format. Identify the following information: Room number, room use or name, average ambient sound pressure level, 60 second sound pressure level, provided sound pressure level in alarm, intelligibility required or not required.
- Existing FACU deferrals are permitted, at the reviewer's discretion, when the FACU is not being replaced. The deferral letter must be signed and sealed on the EOR's letterhead and comply with North Collier Fire District policy 61G 17-01

- There can only be one EOR. To change a design professional, see Collier County Bulletin # 5 https://www.colliercountyfl.gov/home/showdocument?id=69460
- Engineering is not required on existing fire alarm systems where 20 or fewer devices or appliances are being modified and permitted per Section 553.7932, Florida Statutes. (This does not include adding, deleting, or replacing control panels, power supplies or relays). The plan sheet must provide a detailed scope of work including quantities of each component and that a self-issuing permit complying with Section 553.7932, Florida Statutes will be obtained. If engineered plans are provided, they will be reviewed in accordance with FAC 61G15-32 and the plans at the job site must match.

*See note above for information on phase permits. If it is determined that the scope of work exceeds the parameters in Section 553.7932, Florida Statutes a revision to this permit may be required.

A statement on the plan is acceptable to the AHJ. Please see the following example: This Fire Protection system is exempt from professional engineering services. This is an existing (addressable / conventional) (complete fire alarm system / dedicated function fire alarm system -sprinkler monitoring only / fire alarm releasing panel, etc.) modification of 20 or less devices and appliances in accordance with 553.7932, Florida Statutes. A self-issuing fire alarm system project permit will be obtained by the fire alarm contractor. The scope of work includes: (add 2 notification appliances, relocate 1 horn, and replace 2 manual fire alarm boxes).