100% BID SET
DESIGN NARRATIVE

UPGRADE FIRE ALARM SYSTEM
CAMPUS WIDE

VA Project #674-19-102

PREPARED FOR:

DEPARTMENT OF VETERANS AFFAIRS NETWORK
DORIS MILLER VA MEDICAL CENTER
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General

This is a campus-wide project to replace the existing fire alarm system at the Waco, TX VA Medical Center. With few exceptions for buildings under active separate projects for renovations or other upgrades or currently vacant buildings that require upgrades prior to occupancy, all buildings required to have a fire alarm system and all buildings with an existing fire alarm system are included in the scope to provide complete building fire alarm system replacement and new campus-wide fire alarm control units. Each building with an active fire alarm system that is not undergoing fire alarm replacement will receive a new panel that monitors and communicates the status of the existing building control panel to the new campus Fire Alarm Control Units.

Existing system is a Simplex system. The new system must be non-proprietary and all components including but not limited to annunciators, control panels and smoke detectors must be American made and to the latest manufacturer versions.

Codes and Standards

The fire protection design for the area within the scope of work will be done in accordance with, but not limited to, the following VA design standards:

1. Veterans Affairs Fire Protection Design Manual, Seventh Edition, revised December 2015 (VAFPDM)

The fire protection codes and standards planned to be utilized are the latest editions of the National Fire Codes (NFC) published by the National Fire Protection Association (NFPA). Where fire protection features are not addressed by the NFC, the International Building Code (IBC) or another referenced standard shall be used. NFC standards for the base code references are as follows:

1. NFPA 72 – National Fire Alarm and Signaling Code
2. NFPA 101 – Life Safety Code

Should the codes from the International Code Council (ICC) need to be consulted, the following form the base code references:

1. International Building Code (IBC)
2. International Fire Code (IFC)
3. International Fuel Gas Code (IFGC)
4. International Mechanical Code (IMC)
5. International Plumbing Code (IPC)

Existing Conditions

1. Fire Alarm Systems – Existing system is a Simplex system, in some buildings, an older Faraday panel is connected to a Simplex panel for monitoring. A new, fully addressable fire alarm system will be installed in each building on campus requiring a fire alarm system. Interfaces with the existing systems such as fire suppression systems will be maintained.
2. Fire and Smoke Separation – Review and modification of the existing fire and smoke modifications are not included in this scope of work.
3. Life Safety Code Analysis – Review and analysis of life safety and code compliance in regard to Building Construction Type, Allowable Height and Area, Exit Calculations, Occupancy and Smoke Control Features are not included in this scope of work.
4. Kitchen Extinguishing Systems – Existing kitchen fire extinguishing systems shall remain as is and are not included in this scope of work though interfaces with the fire alarm system will be maintained.
5. Fire Extinguishers and Fire Extinguisher Cabinets – Existing Fire Extinguishers and Fire Extinguisher Cabinets shall remain as is and are not included in this scope of work.
6. Fireproofing of Structural Members – Review and analysis of existing fireproofing of structural members is not included in this scope of work.
7. Exit Signs and Emergency Lighting – Review and analysis of existing exit signs and emergency lighting are not included in this scope of work.
8. Fire Resistive Ratings – Wall sections indicating fire resistive ratings are not included in this scope of work.
9. Evacuation Plan Signage – Review and analysis of Evacuation Plan signage is not included in this scope of work.
10. Door and Window Schedules – Review and analysis of door and window schedules with fire rating or glazing is not included in this scope of work.

Fire Alarm Systems

A fully addressable digital voice annunciation fire alarm system will be installed where required by NFPA 101 and will be designed to meet the requirements of NFPA 72 and the VAFPDM. For all buildings more than two stories in height, the fire alarm system will be "defend-in-place" similar to the Staff Response configuration described in §7.3.F.2 of the VAFPDM. However, audible alarms will activate on floors above and below the floor of alarm initiation while visual strobes will alarm only in the zone of the initiated device. Simultaneously, the fire alarm system will provide a voice message to the rest of the building (and other buildings as necessary and according to individual building fire plans) to announce where the fire or issue is located. The main fire alarm control panel in each building will be equipped with a manual voice messaging microphone and controls. In

buildings not more than two stories in height, activation of the fire alarm system will result in a "General Evacuation" signal throughout the building in accordance with §7.3.F.1 of the VAFPDM. Zoning of the fire alarm system will be in accordance with NFPA 72, NFPA 101 and the VAFPDM; where possible, fire alarm zones for the new system will match existing zones.

A new campus Fire Alarm Control Unit including computer terminal with touch screen, system printer and manual voice messaging microphone and controls will be provided in Building 225. Graphics and devices will be programmed to zoom in show the location of alarm on the floor plan graphic. A secondary Fire Alarm Control Unit including a new Digital Alarm Communication Transmitter to a listed central station for monitoring purposes will be provided in Building 18. The secondary unit need not include a system printer.

Smoke, Carbon Monoxide and Heat Detection

Smoke detection will be installed only where required by National Fire Codes or the VAFPDM and will be of the photoelectric type only (§7.4.D/VAFPDM). Heat detectors are only required in conjunction with elevator shutdown, as a substitute for smoke detectors in environments unsuitable for smoke detectors or to protect generators not equipped with automatic sprinklers (§7.4.E/VAFPDM). Carbon monoxide detection will be provided where required by NFPA 101 and installed per NFPA 72.

Interfaces

The new fire alarm system will interface with existing equipment and systems as required by NFPA 72, NFPA 101 and the VAFPDM. Examples of existing equipment and systems include but are not limited to:

- Fire sprinkler systems
- Kitchen hood extinguishing systems
- Smoke and fire dampers
- Air handling units
- Door locks
- Fire doors
- Elevators
- Fire water storage tanks
- Fire pumps
- Emergency generators

Fire doors only on the floor of the initiating device will activate; however, a fire in a shaft will activate all fire doors.

Monitor and control modules within existing equipment will be replaced as necessary for a complete and functioning new fire alarm system.

Buildings Included In This Project

Building 2 - Administrative
Fully sprinklered and 21,315 total square feet over three stories, Building 2 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 4 - Outpatient Clinic / Pharmacy / Lab / Radiology
Fully sprinklered and 48,178 total square feet over two stories, Building 4 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured for General Evacuation.

Building 5 – Pharmacy / Education
Fully sprinklered and 48,463 total square feet over three stories, Building 5 will be provided with a new fire alarm system with two fire alarm zones per level to match the existing configuration. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 6 - Auditorium
Partially sprinklered and 25,803 total square feet over two stories, Building 6 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured for General Evacuation. Smoke detection will be provided in any areas not provided with sprinkler protection, coordinate with fire suppression project that proposes addition of sprinklers throughout.

Building 7 - Blind Rehab Unit / RISE Unit
Fully sprinklered and 66,858 total square feet over three stories, Building 7 will be provided with a new fire alarm system with three fire alarm zones per level to match the existing configuration. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 8 - MHICM / Future Acute Mental Health
Fully sprinklered and 42,887 total square feet over three stories, Building 8 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 15 - VBA
Fully sprinklered and 17,543 total square feet over one story, Building 15 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.

Building 16 - Garage
Fully sprinklered and 5,490 total square feet over one story, Building 16 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.

Building 17 - Consolidated Laundry / Future A&MM
Fully sprinklered and 21,567 total square feet over a basement and ground floor, Building 17 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured for General Evacuation.

Building 18 - Police
Fully sprinklered and 10,452 total square feet over three stories, Building 18 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured for General Evacuation.

A new campus Fire Alarm Control Unit including computer terminal with touch screen and manual voice messaging microphone and controls will be provided. Graphics and devices will be programmed to zoom in show the location of alarm on the floor plan graphic. A new Digital Alarm Communication Transmitter to a listed central station will also be provided for monitoring purposes.

Building 24 – FMS / Shops
Fully sprinklered and 10,630 total square feet over one story, Building 24 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.

Building 90 – HRC Pharmacy Call Center
Fully sprinklered and 55,340 total square feet over three stories, Building 90 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 92 – FSC VA Finance Center
Fully sprinklered and 53,742 total square feet over three stories, Building 92 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 93 - Future Center of Excellence
Fully sprinklered and 52,950 total square feet over three stories, Building 93 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 94 - Inpatient Psych / SMILE unit / Acute Psych
Fully sprinklered and 71,201 total square feet over three stories, Building 94 will be provided with a new fire alarm system with two fire alarm zones per level to match the existing configuration. This new fire alarm system will be configured as Staff Response (defend-in-place).

Building 99 - FMS Shops
Fully sprinklered and 13,168 total square feet over two stories, Building 99 will be provided with a new fire alarm system with one fire alarm zone per level. This new fire alarm system will be configured for General Evacuation.

Building 202 – Dietetics / Future VCS
Fully sprinklered and 28,217 total square feet over one story, Building 202 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.

Building 216 - Central Chiller
Fully sprinklered and 3,860 total square feet over one story, Building 216 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.

Building 219 – Kinesiology / Physical Therapy
Fully sprinklered and 4,550 total square feet over one story, Building 219 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.

Building 222 - Radio Equipment
Non-sprinklered and 250 total square feet over one story, Building 222 will be provided with a new fire alarm system to monitor the building with smoke detection and report to the main fire alarm control units.

Building 224 – Safety Building
Non-sprinklered and 6,250 total square feet over one story, Building 224 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will include smoke detection throughout and be configured for General Evacuation.

Building 225 - Energy Center
Building 225 is currently not in-scope to receive a new fire alarm system. However, it will house a new campus Fire Alarm Control Unit including computer terminal with touch screen, system printer and manual voice messaging microphone and controls will be provided. Graphics and devices will be programmed to zoom in to the location of alarm on the floor plan graphic.

Building 226 - Laundry

Fully sprinklered and 36,000 total square feet over one story and a mezzanine, Building 226 will be provided with a new fire alarm system with one fire alarm zone. This new fire alarm system will be configured for General Evacuation.