

- A. It shall be the responsibility of the installing contractor to coordinate all requirements surrounding installation of the fire alarm system with all trades including, but, not exclusive of: elevator, electrical contractor, sprinkler contractor, and HVAC/controls contractor and intercom system. Adequate coordination shall be provided to insure proper installation and interface to all peripheral items required to interact with the fire alarm and communication system to provide a complete and functional life safety system.

PART 2 – PRODUCTS

2.1 SYSTEM FUNCTIONAL OPERATION

A. Remote Off-site Monitoring

1. The remote off-site monitoring system shall transmit point specific alarm, trouble and supervisory signals to an Approved Central Supervising Station (Central Station connection, phone lines or cellular connectivity service provided by Owner).

2.2 FIELD DEVICES

A. Multi Criteria Smoke Detector (Smoke and Heat)

1. Provide intelligent multi detector. The intelligent multi criteria detector shall be an addressable device that is designed to monitor a minimum of photoelectric and thermal technologies in a single sensing device. The design shall include the ability to adapt to its environment by utilizing a built-in micro processor to determine its environment and choose the appropriate sensing settings. The detector design shall allow a wide sensitivity window, no less than 1 to 4% per foot obscuration. This detector shall utilize advanced electronics that react to slow smoldering fires and thermal properties all within a single sensing device.

B. Addressable Manual Pull Stations

1. Provide Manual stations.
a. The manual stations shall contain the intelligence for reporting address, identity, alarm and trouble to the fire alarm control panel.

C. Control Module

1. Provide control and relay modules where required to provide audible alarm interface and/or relay control interface. The control module shall be used to connect a supervised zone of conventional indicating devices to an intelligent loop. The zone may be wired class A or class B - field selected. The control module may be optionally wired as dry contact (form C) relay.

D. Electronic Audio Visual Devices

1. Audible/Visual alarm devices shall be electronic horn/strobe units. Devices shall be wall or ceiling mounted. Devices shall be provided with the ability to provide multiple candela settings. Units shall operate at 24VDC and be polarized supervised. Each unit shall provide a choice of three difference audible tones capable of being field selected. Preferred alarm signal shall be a temporal tone producing a sound pressure level of 84 dBA. The visual device shall use Xenon strobe type producing a minimum of 15 candela on a 24 VDC limited energy supervised circuit and meet the requirements of ADA and local codes. Strobe unit shall automatically flash upon operation of the horn. Horn/strobe unit shall be provided in textured white finish and be flush mounted. All visual devices shall be synchronized.

E. Electronic Alarm Horn

1. Provide solid state electronic alarm devices where indicated on the contract drawings. Units shall operate at 24 VDC and be polarized supervised. Each unit shall provide a choice of three different audible tones capable of being field selected. Preferred alarm signal shall be a temporal tone producing a sound pressure level of 84 dBA.

F. High Intensity Visual Signals

1. Provide visual signal device as may be required by the Americans with Disabilities Act (Public Law 101-336) and local codes. High intensity visual alarms shall be Xenon strobe type producing a minimum of 15 candela on a 24 VDC limited energy supervised circuit. Alarm devices shall be ceiling mounted. Signals shall operate in unison with audible alarm appliances. All visual devices shall be synchronized. Units shall be flush mounted and shall be provided in textured white.

G. Field Charging Power Supplies

1. Provide power supplies with battery backup as required. Provide 120 volts dedicated circuit to each power supply.

PART 3 - EXECUTION

3.1 DESIGN CRITERIA

A. Provide additional items required above minimum codes include the following:

1. Manual pull stations shall be located not more than 5 feet from the entrance to each exit. Additional manual stations shall be located so that the travel distance to the nearest manual station does not exceed 200 feet. Provide Stopper II covers on all manual pull stations
2. Smoke Detectors - Paths of egress, electrical rooms, mechanical rooms, MDF, IDF, elevator lobby, storage rooms, top of stairs, elevator machine room, top of elevator shaft, above each fire alarm panel and remote power supplies terminal cabinets. Smoke detectors shall also be provided in each room/area that can be occupied by kindergarten and pre-kindergarten children, which shall include cafeteria, gymnasiums, daycares, libraries, classrooms and similar areas. Provide a VESDA smoke detection system in paths of egress where ceiling heights exceed 18 feet.
3. Duct type smoke detectors -- all air handling units over 2,000 CFM in duct work or return air paths.

3.2 INSTALLATION

A. Wiring

1. All wiring shall be in accordance with NFPA 72 and NFPA 70. All wiring sizes shall conform to recommendations of the equipment manufacturer, and as indicated on the engineered shop drawings.
2. All wire shall be plenum rated, U.L. Listed, limited energy (300 volt) FPLP or MPP wire and shall be run open in return air ceiling plenums. The wire shall comply with NFPA 262 for such applications, shall be of the low smoke producing fluorocarbon type and shall comply with NEC Article 760 if so approved by the local authority having jurisdiction. Provide conduit in all inaccessible locations, inside concealed wall, all mechanical/electrical rooms, or other areas where wiring might be exposed and subject to damage.

B. Conduit/Raceway

1. All wire shall be installed in an approved conduit/raceway system (except where permitted by NEC and the local authority having jurisdiction). Maximum conduit "fill" shall not exceed 40% per NEC.
2. Conduit and raceway system shall be installed as specified in division 29 specifications and per National Electrical Code.
3. Minimum conduit size shall be 3/4" EMT. Install conduit per engineered shop drawings.

C. Minimum Wire Sizes Shall Be As Follows:

1. Signaling Line Circuit: 18 AWG
2. Notification Appliance Circuit: 14 AWG
3. Relay Control Circuits: 18 AWG

D. 120 VAC Power wiring

1. Contractor shall provide all required dedicated 20 amp, 120 VAC power circuits for the fire alarm system including but not limited to the main fire alarm panel, remote amplifier panels, and remote strobe light power supplies. Connect to emergency power when available in the building.

E. Sprinkler Valves

1. Contractor shall connect all tamper switches and post indicator valves to the supervisory circuit. Connect all water flow switches to the alarm circuit. Coordinate exact locations of water vaults valves and flow switches with sprinkler contractor.

3.3 SMOKE AND COMBINATION FIRE SMOKE DAMPERS

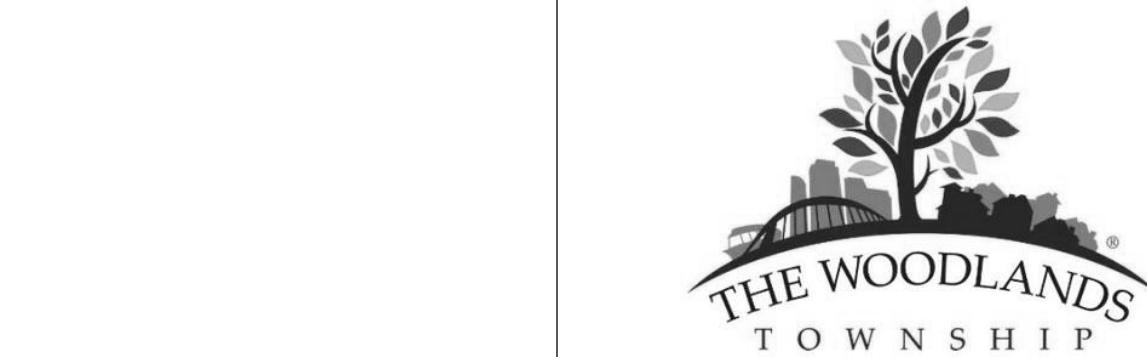
- A. Provide duct type smoke detectors in ductwork downstream of each smoke damper and fire smoke damper. Locate within 5 feet on the damper. Provide a remote smoke detector reset device. Provide access panel when not located above an accessible ceiling. Interlock with HVAC unit serving the ductwork to shut down.

3.4 SPARE PARTS AND ATTIC STOCK

- A. Provide 5% spare field devices including labor to install them. Devices not used shall be given to the Owner at completion of the job.

3.5 WARRANTY

- A. The fire alarm system shall be free from defects in workmanship and materials, under normal use and service, for a period of one year from the date of acceptance or beneficial occupancy, whichever shall occur first. Any equipment shown to be defective shall be repaired, replaced or adjusted during normal working hours at no cost to the owner.



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△ Date	Description
05-17-24	ISSUE FOR PERMIT, PRICING, AND CONSTRUCTION

Seal / Signature



Project Name

Woodlands Township - Office Renovation

Project Number

02.9171.000

Description

ELECTRICAL SPECIFICATIONS

Scale

E7.04



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