

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Division 01 – General Requirements.
- .2 Section 26 05 00 - Common Work Results - Electrical.

1.2 REFERENCES

- .1 Government of Canada, latest edition of the following:
 - .1 NBC, National Building Code of Canada.
 - .2 TB OSH Chapter 3-03, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-03, Standard for Fire Protection Electronic Data Processing Equipment.
 - .3 TB OSH Chapter 3-04, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-04, Standard for Fire Alarm Systems.
- .2 Underwriter's Laboratories of Canada (ULC), Latest edition of the following:
 - .1 CAN/ULC-S524, Installation of Fire Alarm Systems.
 - .2 ULC-S525, Audible Signal Appliances for Fire Alarm.
 - .3 CAN/ULC-S526, Visual Signal Appliances, Fire Alarm.
 - .4 CAN/ULC-S527, Control Units.
 - .5 CAN/ULC-S528, Manual Pull Stations.
 - .6 CAN/ULC-S529, Smoke Detectors.
 - .7 CAN/ULC-S530, Heat Actuated Fire Detectors.
 - .8 CAN/ULC-S531, Smoke Alarms.
 - .9 CAN/ULC-S536, Inspection and Testing of Fire Alarm Systems.
 - .10 CAN/ULC-S537, Verification of Fire Alarm Systems.

1.3 SYSTEM DESCRIPTION

- .1 System is existing (Simplex 4100U), add duct detectors and addressable relays as required on floor plans.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Include:
 - .1 Details for devices.

1.5 CLOSEOUT SUBMITTALS

- .1 Provide operation and maintenance data for fire alarm system for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Include:

- .1 Technical data - illustrated parts lists with parts catalogue numbers.
- .2 Copy of approved shop drawings with corrections completed and marks removed except review stamps.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal, and with the Waste Reduction Workplan.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Equipment and devices: ULC listed and labelled and supplied by Simplex, to match existing system Simplex 4100U.
- .2 Duct detectors: to CAN/ULC-S529.

2.2 WIRING

- .1 Twisted copper conductors: rated 300 V.
- .2 To addressable loops: 18 AWG minimum, and in accordance with manufacturer's requirements.
- .3 To signal circuits: 14 AWG minimum, and in accordance with manufacturer's requirements.
- .4 To control circuits: 14 AWG minimum, and in accordance with manufacturer's requirements.
- .5 Provide 2# 14 AWG minimum wiring to strobe circuits where indicated by fire alarm system drawings.

2.3 AUTOMATIC ALARM INITIATING DEVICES

- .1 Addressable duct detector.
 - .1 Photo-electric type.
 - .2 Electronics to communicate detector's status to addressable module/transponder.
 - .3 Detector address to be set on detector base head in field.

2.4 ANCILLARY DEVICES

- .1 Remote relay unit to initiate fan shutdown – addressable located as indicated on drawings.

2.5 IDENTIFICATION

- .1 All fire alarm devices are to be identified with their unique identification code number to assist in the inspection and maintenance of the Fire Alarm System.

PART 3 EXECUTION

3.1 INSTALLATION

- .1 Install systems in accordance with CAN/ULC-S524 and TB OSH Chapter 3-04.
- .2 Connect alarm circuits to main control panel.
- .3 Install remote relay units to control fan shut down.
- .4 Sprinkler system: wire alarm and supervisory switches and connect to control panel.
- .5 Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, annunciator equipment and CCU, as required by equipment manufacturer.
- .6 Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.
- .7 Identify circuits and other related wiring at central control unit, annunciators, and terminal boxes.

3.2 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results - Electrical and CAN/ULC-S537.
- .2 Fire alarm system:
 - .1 Test such device and alarm circuit to ensure manual stations, thermal and smoke detectors, sprinkler system, transmit alarm to control panel and actuate first stage alarm general alarm ancillary devices.
 - .2 Check annunciator panels to ensure zones are shown correctly.
 - .3 Simulate grounds and breaks on alarm and signalling circuits to ensure proper operation of systems.
 - .4 Addressable circuits system style DCLB:
 - .1 Test each conductor on all DCLB addressable links for capability of providing 3 or more subsequent alarm signals on line side of single open-circuit fault condition imposed near electrically most remote device on each link. Operate Acknowledge/Silence switch after reception of each of the 3 signals. Correct imposed fault after completion of each series of tests.
 - .2 Test each conductor on all DCLB addressable links for capability of providing 3 or more subsequent alarm signals during ground-fault condition imposed near electrically most remote device on each link.

Operate Acknowledge/Silence switch after reception of each of the 3 signals. Correct imposed fault after completion of each series of tests.

.3

- .3 All testing shall be witnessed by the Fire Protection Services (Atlantic) Office.

3.3 COMMISSIONING

- .1 Building Commissioning is a requirement of this project in order to comply with sections of Division 01 – General Requirements. A Commissioning Agent has been engaged and will provide all systems commissioning in conjunction with all trade contractors. The Commission Agent will provide a Commissioning Plan with commissioning start-up and test procedure sheets to be performed and completed by the various trade contractors.

END