1. GENERAL

1.01 SECTION INCLUDES

.1 Intelligent Modules.

.2 Fire Alarm Pull Stations for Single Stage Fire Alarm Systems.

1.02 RELATED REQUIREMENTS

.1 Section 21 12 00 – Fire-Suppression Standpipes.

.2 Section 21 13 00 – Fire-Suppression Sprinkler Systems.

.3 Section 26 05 00 – Common Work Results for Electrical.

.4 Section 28 46 13 – Fire-Alarm Systems.

1.03 REFERENCES

.1 CAN/ULC-S528, Manual Stations for Fire Alarm Systems.

1.04 UNIT PRICES

.1 Refer to Document 00 43 00.26.

.2 Submit with Tender unit prices to provide the following. Include installation and verification in the unit price:

.1 Manual pull station, complete with wiring and conduit based on 10 metre distance.

.2 Unit cost of additional conduit and wire for the above items.

.3 Unit cost for supply and installation of pull station cover.

1.05 MAINTENANCE MATERIAL SUBMITTALS

.1 Extra Stock Materials

.1 Provide (supply and install) an additional [five] of each manual pull station to be used as directed on site during construction.

.2 Turn over unused surplus in addition to those devices listed below.

.2 Spare Parts

.1 Supply the following additional equipment as spare parts in a proper metal enclosure sized to accept the equipment as listed herein. Label the enclosure fire alarm spare parts. Enclosure shall be placed in the same room as the FACP.

.1 Supply 6 keys of each type.

.2 Supply 3 of each type of fire alarm pull station.

.3 Supply 10 manual pull station break-glass rods.

.3 Tools:

.1 Supply three of each type of any special tools required for system use and maintenance.

2. PRODUCTS

2.01 MICROPROCESSOR BASED INTELLIGENT MODULES

.1 General

.1 Zone Addressable Modules (ZAM) shall be used for the monitoring of water flow, valve tamper, fire suppression control panels, non-addressable detectors, and for control of fans or dampers that require shutdown or manual control in an alarm condition.

.2 Monitor ZAM's shall monitor any N/O contact device and be capable of powering 2-wire smoke detectors. The ZAM will communicate the zone's status (normal, alarm, trouble) to the transponder. The ZAM's zone address shall be set at the time of installation via a dip switch package.

.3 Control ZAM's shall be able to provide supervised or non-supervised control of any control function. The ZAM will communicate the zone's status (normal, trouble) to the transponder. Each control ZAM shall provide a double pole double throw relay for switching loads of up to 120 VAC. Each common leg of the relay shall be equipped with a replaceable 2 Amp fuse. The ZAM's zone address shall be set at the time of installation via a dip switch package.

.4 Fire Alarm / Life Safety System shall incorporate microprocessor-based addressable modules for the monitoring and control of system Input and Output functions over a 2-wire electronic communications loop, using both broadcast and serial polling protocols. All modules shall display communications and alarm status via LED indicators. The function of each connected module shall be determined by the module type, and shall be defined in the system software through the application of a personality code. All addressing of the Microprocessor-based Addressable Modules shall be done electronically, and the electrical location of each module shall be automatically reported to the Fire Alarm Control Panel, where it may be downloaded into a PC, or printed out. The

addressing of the modules will not be dependent on their electrical location on the circuit. All field wiring to the Microprocessor-based Addressable Modules shall be supervised for opens and ground faults and shall be location identified to the module of incidence. Diagnostic circuitry, and their associated indicators, with reviewable Trouble Codes, shall be integral to the Microprocessor-based Addressable Modules to assist in troubleshooting system faults. Each module shall be suitable for operation in the following environment:

.1 Temperature: 0°C to 49°C (32°F to 120°F).

.2 Humidity: 0-93% RH, non-condensing.

.2 Single Input Module:

.1 Microprocessor-based Addressable Modules shall be used to provide one (1) supervised Class A input circuit capable of latching operation for use with contact devices, non-damped Waterflow Switches, non-latching supervisory sprinkler switches.

.3 Dual Input Module:

.1 Microprocessor-based Addressable Modules shall be used to provide two (2) independent supervised Class A input circuits capable of operation with contact devices. Both of the input circuits shall be terminated to, and operated from, the same microprocessor-based addressable module.

.2 Modules configured for water flow operation shall have an automatic delay of 15 seconds before reporting the water flow alarm condition to the Fire Alarm Control Panel. The module shall monitor sprinkler supervisory switches and shall automatically report the supervisory function to the Fire Alarm Control Panel each time the associated dry contact closes.

.4 Monitor Module:

.1 The Microprocessor-based Addressable Monitor Module shall be factory set to support one (1) supervised Class A Normally-Open Active Non-Latching Monitor circuit. The module shall automatically report the monitor function to the Fire Alarm Control Panel each time the associated dry contact closes.

.5 Control Relay Module:

.1 Microprocessor-based Addressable Control Relay Modules shall provide one form "C" dry relay contact rated at 2 amps at 24 VDC or 0.5 amps at 120 VAC to, control external appliances or equipment processes. The control relay module shall be rated for

pilot duty applications. The position of the relay contact shall be confirmed by the system firmware.

2.02 MICROPROCESSOR BASED ADDRESSABLE MANUAL PULL STATIONS

.1 Addressable manual fire alarm boxes shall, on command from the control panel, send data to the panel representing the state of the manual switch and the addressable communication module status. They shall use a key operated test-reset lock, and shall be designed so that after actual emergency operation, they cannot be restored to normal use except by the use of a key.

.2 Stations must be designed such that after an actual activation, they cannot be restored to normal without the use of a special tool.

.3 All operated stations shall have a positive, visual indication of operation and utilize a key type reset.

.4 Manual fire alarm boxes shall be constructed of Lexan with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters, 44 mm (1.75 in) or larger.

.5 All addressing of the Manual Pull Stations shall be done electronically, and the electrical location of each station shall be automatically reported to the Fire Alarm Control Panel, where it may be downloaded into a PC, or printed out. The addressing of the Manual Pull Station will not be dependent on their electrical location on the circuit.

.6 The manual station shall be suitable for mounting on a North American 38 mm (1-1/2 inch) deep, 100 mm (4 inch) square electrical box with 13 mm (1/2 inch) raised cover.

.7 All Manual Fire Alarm station shall be suitable for operation in the following environment:

.1 Temperature: 0 degrees C to 49 degrees C (32 degrees F to 120 degrees F).

.2 Humidity: 0-93 per cent RH, non-condensing.

.8 Pull Station Cover

.1 All Manual Fire Alarm pull stations shall be provided with a clear, tamperproof, polycarbonate shield and frame that fits over manual pull stations. When lifted to gain access to the actual alarm, it shall sound a 95 dB or 105 dB warning horn.

.2 The cover is connected to the frame by a cable. When the cover is lifted, it hangs off of the frame and the horn will sound until the

cover is snapped back onto the frame (or for the life of the battery).

.3 Battery shall be provided for each cover.

.1 Tamper or protecting covers for manual stations shall comply with CAN/ULC-S528, Including Accessories.

.9 Red surface backbox

.1 Similar to Mircom BB-300, or Notifier BB series.

.10 Pull stations shall be addressable, single action, non-coded, single stage, semi-flush mounted type.

.11 Provide contacts for connection to magnetic locking devices power supply such that upon activation of the local pull station or first stage fire alarm signal the magnetic locks release.

3. EXECUTION

3.01 INSTALLATION

.1 Installation to Section 28 46 13.

.2 Provide manual pull stations at the following locations:

.1 Near the principal entrance to the building.

.2 Near every required exit.

.3 At doors equipped with electromagnetic locks, locate on the wall not more than 600 mm from the door.

.4 Other locations as described in the Building Code.

.3 Install manual pull stations at 1200 mm above finished floor.

.4 Where possible, install the manual station on the latch side of a single door at a maximum lateral distance of 1500 mm (59 in) from the door opening.

.5 Install manual pull stations on both sides of a series of doors exceeding 12 m (39 feet) in total width, and within 1500 mm (59 in) of each side of the opening.

.6 When installing manual pull station on a glass partition mullion, provide red surface backbox for pull station, and fish armoured flexible cables through mullion of door frame.

3.02 SITE TESTS AND INSPECTIONS

.1 Testing, and inspection to Section 28 46 13.

.2 Verification to Section 28 46 13.

End of Section