

PART 1 - GENERAL

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| 1.1 SYSTEM
DESCRIPTION | .1 | The door access control system is existing.
Work performed under this section includes:
.1 Rough-in of raceways and wiring to
Accommodate modifications and additions to the
system.
.2 Installation of mounting boxes for key
pads.
.3 Coordination of work with CCG Security
Supervisor. |
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PART 2 -PRODUCTS

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| 2.1 ACCESS
CONTROL PANEL | .1 | Door Access Control Panel is existing and has
four spare channels. |
| | .2 | Additional components to accommodate new
doors to be provided by CCG. |
| | .3 | Existing Controller: Hirsch Model 8. |
| 2.2 KEYPADS | .1 | Key pads and mounting boxes are supplied by
CCG. |
| 2.3 DOOR CONTACT | .1 | Door contacts are to be recessed and of same
manufacturer as the access control panel. |
| 2.4 ELECTRIC
STRIKE | .1 | To be selectable 12/24VDC, suited to door
type. Refer to Architectural Door Hardware. |
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PART 3 - EXECUTION

3.1 EQUIPMENT
INSTALLATION

- .1 Rough-in of wiring and conduit to permit proper installation of system components as per manufacturer's recommendations.
- .2 Install Key pad mounting boxes, supplied by CCG, at key pad locations as indicated.

3.2 WIRING

- .1 As per the Canadian Electrical Code.
- .2 All wiring must be FT-4, insulated copper conductors complete with shield and outer jacket. FT-6 rated within plenums.
- .3 No wire shall be apparent after installation.
- .4 All access control system wiring shall be installed in conduit in its entirety unless noted otherwise.

3.3 TEST

- .1 Test wiring installation prior to connection of component and verify that there are no unintentional short circuits or open circuits.
- .2 CCG will perform functional testing of system after they have installed and connected components.

3.4 PROGRAMMING
AND TRAINING

- .1 CCG to perform all programming and training.

3.5 DRAWINGS
AND MANUALS

- .1 System operation and technical manuals: not applicable for this Work.
- .2 At the close of installation, provide "As Built" drawings on the wiring, and conduit installation.

3.6 VERIFICATION .1 CCG to perform verification of operations of
modifications and additions to the existing
system.

PART 1 - GENERAL

<u>1.1 RELATED SECTIONS</u>	.1	Submittal Procedures: Section 01 33 00
	.2	Closeout Submittals: Section 01 78 00
	.3	Wiring: Section 26 05 21
	.4	Conduits: Section 26 05 34
<u>1.2 REFERENCES</u>	.1	ULC/CAN-S524-11, Installation of Fire Alarm Systems.
	.2	ULC/CAN-S526-2007, Visible Signal Devices for Fire Alarm Systems, Including Accessories.
	.3	ULC/CAN-S527-11, Control Units for Fire Alarm Systems.
	.4	ULC/CAN-S528-05, Manual Stations for Fire Alarm Systems, Including Accessories.
	.5	ULC-S529-09, Smoke Detectors, for Fire Alarm Systems.
	.6	ULC/CAN-S536-04, Inspection and Testing of Fire Alarm Systems.
	.7	ULC/CAN-S537-04, Verification of Fire Alarm Systems.
	.8	National Building Code of Canada (NBC), 2010.
	.9	ULC/CAN-S525-2007, Audible Signal Devices for Fire Alarm Systems, Including Accessories.
<u>1.3 SYSTEM DESCRIPTION</u>	.1	Modifications to existing Simplex 4100 Fire Control System.
	.2	Modifications removals or additions shall in no way degrade the functionality or performance of the existing installation to carry out fire alarm and protection functions; including receiving alarm signals; initiating general alarm; supervising components and wiring; actuating annunciators and auxiliary

<u>1.3 SYSTEM DESCRIPTION (Cont'd)</u>	.2	(Cont'd) functions; initiating trouble signals and signalling to monitoring agency.
<u>1.4 REQUIREMENTS OF REGULATORY AGENCIES</u>	.1	System components: listed by ULC and comply with applicable provisions of National Building Code Local/Provincial Building Code, and meet requirements of local authority having jurisdiction.
<u>1.5 SHOP DRAWINGS</u>	.1	Submit shop drawings in accordance with Section 01 33 00.
	.2	Include: <ul style="list-style-type: none"> .1 Detail assembly and internal wiring diagrams for control units and auxiliary cabinets. .2 Details for devices. .3 Details and performance specifications for control, annunciation and peripherals with item by item cross reference to specification for compliance.
<u>1.6 OPERATION AND MAINTENANCE DATA</u>	.1	Provide operation and maintenance data for fire alarm system devices for incorporation into manual specified in Section 01 78 00.
	.2	Include: <ul style="list-style-type: none"> .1 Instructions for fire alarm system components, devices and appliances to permit effective operation and maintenance. .2 Technical data - illustrated parts lists with parts catalogue numbers. .3 Copy of approved shop drawings with corrections completed and marks removed except review stamps. .4 List of recommended spare parts for system. .5 Complete list of all points added or modified and a description for each.

PART 2 - PRODUCTS

<u>2.1 MATERIALS</u>	.1	Equipment and devices: ULC listed and labelled and supplied by single manufacturer.
<u>2.2 INITIATING/ INPUT CIRCUITS</u>	.1	Receiving circuits for alarm initiating devices such as manual pull stations, smoke detectors, heat detectors and water flow switches, wired in DCLC configuration to central control unit.
	.2	Actuation of new alarm initiating device: cause system to operate as before their installation except that the status of new devices is to be identified at FACP.
	.3	Receiving circuits for supervisory, N/O devices. Devices: wired in DCLC configuration to central control unit.
	.4	Actuation of new supervisory initiating device: cause system to operate as before their installation except that the status of new devices is to be identified at FACP.
<u>2.3 ALARM OUTPUT CIRCUITS</u>	.1	Alarm output circuit: connected to signals, wired in Class B configuration to central control unit. .1 Signal circuits' operation to follow system programming; capable of sounding bells horns and strobes continuously at 20 spm. Each signal circuit: rated at 2 A, 24 VDC; fuse-protected from overloading/overcurrent. .2 Manual alarm silence, automatic alarm silence and alarm silence inhibit to be provided by system's common control.
<u>2.4 AUXILIARY CIRCUITS</u>	.1	Auxiliary contacts for control functions.
	.2	Actual status indication (positive feedback) from controlled device.
	.3	Alarm and supervisory on system to cause operation of programmed auxiliary output circuits.

2.4 AUXILIARY
CIRCUITS
(Cont'd)

- .4 Upon resetting system, auxiliary contacts to return to normal or to operate as pre-programmed.
- .5 Fans: stagger-started upon system reset; timing circuit to separate starting of each fan or set of fans connected to auxiliary contact on fire alarm system. Timing circuit: controlled by CCU.
- .6 Auxiliary circuits: rated at 2 A, 24 V dc or 120 V ac, fuse-protected.

2.5 WIRING

- .1 As specified in Section 26 05 21 and to meet manufacturers requirements.
- .2 To initiating circuits: #14AWG minimum, and in accordance with manufacturer's requirements.
- .3 To signal circuits: #14AWG minimum, and in accordance with manufacturer's requirements.
- .4 To control circuits: #14AWG minimum, and in accordance with manufacturer's requirements.
- .5 Where applicable, wiring to be in approved conduit system as per Section 26 05 34.
- .6 Where wiring is to be fished or where conduit installation is not practicable, use armoured cables listed for fire alarm service.

2.6 MANUAL ALARM
STATIONS

- .1 Addressable manual pull station:
 - .1 Pull lever, semi-flush wall mounted type, single action, dual stage, custom microprocessor based integrated circuit which is to provide communications with its associated control panel over two (2) wires, and to supply power to station. Station address to be set on station in field.
- .2 Standard of Acceptance: Simplex.

2.7 AUTOMATIC
ALARM INITIATING
DEVICES

- .1 Addressable thermal fire detectors, combination fixed temperature (57°C) and rate of rise (temperature increase above 9°C per minute), as indicated.
 - .1 Electronics to communicate detector's status to addressable module/transponder.
 - .2 Detector address to be set on detector base and head in field.
 - .3 Standard of acceptance: Simplex
- .2 Addressable Interface Modules (AIM):
 - .1 To provide ability to communicate with CCU for sprinkler supervisory devices and other equipment which would otherwise be unaddressed.
 - .2 Provide as indicated.
 - .3 Standard of Acceptance: Simplex.

2.8 HORN/STROBE
SIGNALING DEVICES

- .1 Temporal horn and strobe.
- .2 Semi-flush mounted, wall or ceiling mounted as indicated.
- .3 Field adjustable Candella output (15, 30, 75 or 110 cd).
- .4 Field adjustable horn output (high setting at 95 dBA (nominal), low setting at 90 dBA (nominal)).
- .5 Synchronized tone and strobe.
- .6 Red in colour.
- .7 Standard of Acceptance: Simplex.

2.9 END-OF-LINE
DEVICES

- .1 End-of-line devices to control supervisory current in alarm circuits and signalling circuits, sized to ensure correct supervisory current for each circuit. Open , short or ground fault in any circuit will alter supervisory current in that circuit, producing audible and visible alarm at main control panel.

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| 2.10 | ANCILLARY
DEVICES | .1 | Remote fire alarm relay module units to initiate equipment shutdown, as indicated. |
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PART 3 - EXECUTION

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| 3.1 | INSTALLATION | .1 | Install system components in accordance with ULC/CAN-S524. |
| | | .2 | Install manual alarm stations and connect to alarm circuit wiring. |
| | | .3 | Locate and install detectors and connect to alarm circuit wiring. Do not mount detectors within 1m of air outlets. Maintain at least 600mm radius clear space on ceiling, below and around detectors. Locate duct type detectors in straight portions of ducts. |
| | | .4 | Seal back boxes of automatic detectors to eliminate air movement that might impede the function or sensitivity of the device. |
| | | .5 | Connect alarm circuits to main control panel. |
| | | .6 | Install signal horns and visual signal devices and connect to signalling circuits. |
| | | .7 | Connect signalling circuits to main control panel. |
| | | .8 | Install end-of-line devices at end of alarm and signalling circuits as required. |
| | | .9 | Install remote fire-alarm relay module units to control equipment shut down and shunt trips (where indicated and/or applicable). |
| | | .10 | Splices are not permitted except at device terminals. |
| | | .11 | Provide necessary raceways, cable and wiring to make interconnections. |
| | | .12 | Wiring is to be free of opens, shorts or grounds, before system testing and handing over. |
| | | .13 | Identify circuits and other related wiring at central control unit, annunciators, and terminal boxes. |
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3.2 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Electrical General Requirements and ULC/CAN-S537.
- .2 Fire alarm system:
 - .1 Test such device and alarm circuit to confirm manual stations, thermal and smoke detectors, sprinkler system transmit alarm to control panel and actuate general alarm and ancillary devices.
 - .2 Check annunciator panels to confirm zones are shown correctly.
 - .3 Simulate grounds and breaks on alarm and signaling circuits to ensure proper operation of systems.
 - .4 Addressable circuits system style DCLC:
 - .1 Test each conductor on all DCLC addressable links for capability of providing three (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 three (3) signals. Correct imposed fault after completion of each series of tests.
 - .2 Test each conductor on all DCLC addressable links for capability of providing three (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 three (3) signals. Correct imposed fault after completion of each series of tests.
- .3 Verification agency to provide Verification Certification to Departmental Representative upon completion of all testing.