

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 26 05 00 - Common Work Results - Electrical.

1.2 SYSTEM DESCRIPTION

- .1 The existing system consists of central monitor unit that monitors all access points into the building as well as motion sensors and door contacts.
- .2 New equipment will be card access readers capable of reading multiple types of cards and or key FOB's. All new readers are to be networked into the existing building security system.
 - .1 New readers are to be mounted into new turnstiles and are to operate access doors upon activation. Activation will only occur upon reading a verified access card or FOB. Programing of cards and FOB will be by PWC Security only.
 - .2 Wall mounted access readers at the loading dock area will be surface mounted on the existing walls and are to operate existing rolling shutter door into shipping and receiving

1.3 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

Part 2 Products

2.1 GENERAL

- .1 System: capable of withstanding 1250 V rms for one minute between current carrying parts and enclosures.

Part 3 Execution

3.1 INSTALLATION

- .1 Install raceway and conduit system, including devices, pull boxes, wiring distribution equipment and cables as indicated on the drawings.
- .2 The contractor under this section is responsible for installing cable from device boxes to fifth floor electrical closet.
- .3 Each cable from component to component shall be continuous without joint or splice.

- .4 No low voltage cables are permitted to share the same conduits or ducts with line voltage electrical cables.
- .5 All cables shall be protected by EMT conduit.
- .6 Install a woven nylon pull string in with cables as cables are pulled into conduits.
- .7 A wiring list identifying all cables shall be submitted to the consultant upon rough-in completion.
- .8 All cables are to be permanently marked at each end. Hand written markings will not be accepted.

3.2 VERIFICATION

- .1 Departmental Representative (DR) Inspection.
 - .1 DR personnel will perform inspection of the contractors work during the installation.
 - .2 The contractor shall inform DR ten days before raceways are concealed.
 - .3 The DR will perform a final acceptance inspection after all the work is completed by the contractor.
- .2 Visual verification: Objective is to assess quality of installation and assembly and overall appearance to ensure compliance with the contract documents. Visual inspection to include:
 - .1 Sturdiness of equipment fastening.
 - .2 Non-existence of installation related damages.
 - .3 Compliance of device locations with reviewed shop drawings.
 - .4 Compatibility of equipment with physical environment.
 - .5 Inclusion of all accessories.
 - .6 Device cabling identification.
- .3 Technical verification: Purpose to ensure that all systems and devices are properly installed and free of defects and damage. Technical verification includes:
 - .1 Measurements of reader coverage patterns.
 - .2 Connecting joints and equipment fastenings.
 - .3 Compliance with manufacturer's specification, product literature and installation instructions.

3.3 SEQUENCES OF OPERATION

- .1 Install complete raceway and conduit system
- .2 System to provide constant supervision of all badge readers installed in the building.

- .3 System to activate upon presentation of a badge or FOB that is programmed to activate automatic sliding doors or rolling shutter doors. Reader to indicate acceptance with colour code LED. Green for acceptance, and red for rejected.

3.4 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results - Electrical.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Related Documents:
 - .1 Drawings and general provisions of the Subcontract apply to this Section.
 - .2 Review these documents for coordination with additional requirements and information that apply to work under this Section.
- .2 Section Includes:
 - .1 Cameras.
 - .2 Control Equipment.
 - .3 Cables and accessories.

1.2 SYSTEM DESCRIPTION

- .1 Description: Provide color video communications between points of surveillance indicated on the drawings and the control room monitoring station. There will be a mixture of fixed cameras and Pan-Tilt-Zoom (PTZ) cameras terminating into a Milestone XProtect camera control unit/recorder. The control room will have a 19" color monitor that will show the monitored doors at the same time. A separate monitor will show only the alarmed or selected door.
- .2 Capacity:
 - .1 Cameras: 6
 - .2 Monitors: existing
- .3 Configuration: NTSC, with 1 volt peak to peak across 75 ohms.
- .4 Distribution: Baseband, DC to 6 MHz.

1.3 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

1.4 QUALITY ASSURANCE

- .1 Products shall be tested, approved and labeled/listed by Underwriters Laboratories, Inc., or by a nationally recognized testing laboratory (NRTL) as listed in Division 26 Specification "Common Work Results for Electrical."
- .2 Equipment and materials shall be new and within one year of manufacture, complying with the latest codes and standards. No used, re-built, refurbished and/or re-manufactured electrical equipment and materials shall be furnished on this project.

Part 2 Products

2.1 CAMERAS

- .1 Manufacturers:
 - .1 AXIS P33 Network Camera Series – Indoor Models.
 - .2 Casing: Polycarbonate transparent cover
- .2 Description: High resolution, 1MP, WDR – dynamic capture, vandal resistant
- .3 Image sensor: Progressive scan RGB CMOS 1/3”.
- .4 Lens: Varifocal, remote focus and zoom, IR corrected, p-Iris megapixel resolution. 3-9 mm, 84° - 30° view, F1.2
- .5 Provide phase lock loop to synchronize camera to line voltage zero crossing.
- .6 Ratings:
 - .1 Input: from head end equipment through CAT6 cabling
 - .2 Minimum Illumination: Colour: 0.5 Lux, F1.2, B/W : 0.08 lux, F1.2 with dynamic capture
 - .3 Resolution: 1280x960 (approx.1.3 MP) to 160x90
 - .4 Intelligent Video: Video motion detection, active tampering alarm, audio detection.
- .7 Casing: Polycarbonate transparent cover, aluminum inner camera with encapsulated electronics, colour: White NCS S 1002-B, impact resistant casing with aluminum base.
- .8 Mounting: Wall or ceiling.
- .9 Tamper: Include camera housing tamper contacts

2.2 MONITORS

- .1 Monitor unit: Existing on site.

2.3 SWITCHING EQUIPMENT

- .1 Manufacturer: Milestone system (existing)

2.4 CABLE

- .1 CAT6 cabling.
 - .1 Install all new cabling in new raceways.
 - .2 Each cable to be tested after installation.

Part 3 Execution

3.1 INSTALLATION

- .1 The installation of the CCTV equipment shall be in accordance with manufacturer's instructions.
- .2 Cables shall be continuous between the camera and the connector on the controller.
- .3 Wiring and cables within racks, cabinets, wire-ways and gutters shall be neatly strapped, dressed and supported. Cables shall be grouped according to signals carried. Power shall be routed separately and have a minimum 50 mm separation from signal wiring.
- .4 Nylon cable ties shall be used for wire and cable training and clamping in cabinets, racks and enclosures. Bundle no more than four conductors or cables per bundle to facilitate manual tracing of wires or cables.
- .5 Wire and cable labeling shall be keyed to Drawings and indicate origination and destination. Sleeve labels shall be attached to each wire at its termination point and be generated by PC-Ptouch label maker with Brother P-touch TX label tape or approved equal. The subcontractor shall provide the label maker, Laptop computer and supplies. Labeling shall occur at termination points, on board connectors and shall remain visible. Labels shall not be buried where they are not readily visible and shall not detach from the cable or connectors during normal cable manipulation. When using existing conduit, label at the point of entry and exit wires being installed and make sure a pull string is included.
- .6 Conductors shall not come in contact with the earth or be laid out on concrete slabs during installation.
- .7 Tighten pressure type lugs on equipment to manufacturer's recommendations.
- .8 Install in accordance with manufacturer's instructions.
- .9 Use armored cable from fixed camera units to the junction box. Do not install exposed cable.
- .10 Dress camera cable neatly and avoid hanging loops of cable.
- .11 Insure penetrations have been properly weather sealed and, where necessary, fire caulked.

3.2 INTERFACE WITH OTHER PRODUCTS

- .1 Interface the closed circuit television system with the building security access system to select and show on the single view monitor for the area in alarm.
- .2 Interface the new cameras with existing control units existing control units.

3.3 ADJUSTING

- .1 Field adjust for camera orientation and coverage.

- .2 Adjust the orientation and coverage of the pan-tilt-zoom unit where necessary.
- .3 Adjust manual lens irises to meet lighting conditions.
- .4 Verify the operation of all interface equipment and to the existing card access system.
- .5 Verify the interface the operation of the new cameras with the existing control unit/recorder.

3.4 TESTING, COMMISSIONING AND DEMONSTRATION

- .1 Testing and commissioning shall be done according to the manufacture's recommendations. These shall include, but are not limited to, testing to the full limits set by the manufacturer and testing with limited light levels.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 26 05 00 – Common Work Results – for Electrical.

1.2 REFERENCES

- .1 NBC 1995, National Building Code of Canada.
- .2 Government of Canada
 - .1 TB OSH Chapter 3-04, 1994-12-22, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-04, Standard for Fire Alarm Systems.
- .3 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S524-06, Installation of Fire Alarm Systems.
 - .2 CAN/ULC-S537-04, Verification of Fire Alarm Systems

1.3 REQUIREMENTS OF REGULATORY AGENCIES

- .1 System:
 - .1 To TB OSH Chapter 3-04.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Include:
 - .1 Update the existing wiring diagram with the devices being added, including schematics of the modules where required.

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 Operation and maintenance instructions for complete fire alarm system to permit effective operation and maintenance.
 - .2 Technical data - illustrated parts lists with parts catalogue numbers.
 - .3 Copy of approved shop drawings.
 - .4 List of recommended spare parts for system.

1.6 MAINTENANCE

- .1 Provide one year's free maintenance with two inspections by manufacturer during warranty period. Inspection tests to conform to CAN/ULC-S536. Submit inspection report to Departmental Representative.

1.7 DESIGNATED CONTRACTOR

- .1 Hire the services of Chubb/Edwards to do the work of this section.

Part 2 **Products**

2.1 **MATERIALS**

- .1 Equipment and devices: ULC listed and labelled and supplied by single manufacturer.
- .2 Power supply: to CAN/ULC-S524.

2.2 **SYSTEM OPERATION**

- .1 Single stage operation. Operation of any alarm initiating device to:
 - .1 Cause audible signal devices to sound throughout building.

2.3 **CONTROL PANEL**

- .1 Class A.
- .2 Single stage operation.
- .3 Zoned.
- .4 Non-Coded.
 - .1 Enclosure: CSA Enclosure 1, c/w lockable concealed hinged door, full viewing window, flush lock and 2 keys.
 - .2 Monitoring System shall be Siemens Model MXL microprocessor control panel to carry out monitoring of required signals.
 - .3 The base system board must provide two addressable loops, two signal circuits of 1.5 A each, one alarm relay, one trouble relay, one programmable relay, a communication network port, an alphanumeric LCD annunciator driver port, an auxiliary power limited 24 VDC supply, a communication active LED, a programming port, a digitally controlled battery supervision circuit and charger. System must be interfaced to existing Siemens fire alarm system, and ULC cross listed for use with all existing Siemens fire alarm devices.
 - .4 Intelligent interface Modules
 - .5 Provide intelligent interface modules incorporating a custom microprocessor based integrated circuit for connection of normally open or normally closed contact type devices for direct contact monitoring functions as required. These modules shall be dual zone. The intelligent interface modules must be Siemens model TRI-D series.

Part 3 **Execution**

3.1 **INSTALLATION**

- .1 Install systems in accordance with CAN/ULC-S524 and TB OSH Chapter 3-04.

3.2 **FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 00 – Common Work Results – for Electrical and CAN/ULC-S537.
- .2 Fire alarm system:
 - .1 Test each new device transmit alarm to control panel and actuate trouble signals.
 - .2 Simulate grounds and breaks on devices to ensure proper operation of system.
 - .3 Class A circuits.
 - .1 Test each conductor on all circuits for capability of providing alarm signal on each side of single open-circuit fault condition imposed near midmost

point of circuit. Reset control unit after each alarm function and correct imposed fault after completion of each test.

END OF SECTION