

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures.

1.2 REFERENCES

- .1 Reference Standards:
 - .1 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations (including Addendum 2007).
 - .2 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
 - .2 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .3 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S302-14, Standard for Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults.
 - .4 Underwriters' Laboratories (UL)
 - .1 UL 294-2009, Access Control System Units.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for access controls and equipment and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .3 Submit:
 - .1 Functional description of equipment.
 - .2 Technical data for all devices.
 - .3 Device location plans and cable lists.
 - .4 Devices mounting location detail drawings.
 - .5 Typical devices connection detail drawings.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.

- .2 Shop drawings to indicate project layout, including details.
 - .1 Shop drawings to indicate, mounting heights and locations, wiring diagrams.
 - .2 Submit zone layout drawing indicating number and location of zones and areas covered.
 - .3 Submit wiring diagrams.
 - .4 Submit complete equipment list.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit 1 sample of each component proposed for inclusion into system. Components will be returned for incorporation into work.
- .5 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .1 Submit ULC/UL Product Safety Certificates.
- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for access controls and equipment for incorporation into manual.
 - .1 Include:
 - .1 System configuration and equipment physical layout.
 - .2 Functional description of equipment.
 - .3 Instructions of operation of equipment.
 - .4 Illustrations and diagrams to supplement procedures.
 - .5 Operation instructions provided by manufacturer.
 - .6 Cleaning instructions.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect access controls and equipment from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

1.6 WARRANTY

- .1 For all materials the 12 month warranty period prescribed in subsection GC 32.1 of General Conditions is applicable.
- .2 Manufacturer's Warranty: submit, for Departmental Representative's acceptance, manufacturer's standard warranty document executed by authorized company official.

Part 2 Products

2.1 MATERIALS

- .1 Design Criteria:
 - .1 System must be compatible with existing Lenel system.
 - .2 Design access control and security access systems using only ULC/UL listed products.
 - .3 Design security access system using company specializing in security access systems.
 - .4 Design system as type: mercantile.
 - .5 Design access control systems to meet safety requirements to UL 294.
 - .6 Design system to provide door manual and automatic control functions from locations indicated to central monitoring system.
 - .7 Design system to allow for addition of future Door Release System (DRS) controls and activation units by adding appropriate transmission lines and equipment at each location.
 - .8 Design system to consist of homed run control to activation unit connections.
 - .9 Each activation unit must have door panel control function/equipment item located as indicated.
 - .10 Design system to provide ease of operation, servicing, maintenance, testing and expansion of additional services.
 - .11 Door activation units:
 - .1 Fully complement and function and match door manufacturer's controls and hardware.
 - .2 Fully function with OEM supplied door controls and hardware to activate system in routine and emergency conditions.
 - .3 Fully function within supplied electrical supervision circuits as specified.
 - .12 Control Panel:
 - .1 Fully compatible, compliment and operate door magnets provided by door manufacturer of system or OEM supplied door operating hardware.
 - .2 Complete with push button or electronic key pad to release and secure each door.
 - .3 Identify each door control function with lamp electronically identified on panel or associated display unit.
 - .4 Permanently label (paper labels are not acceptable) or electronically identified each door location on panel or associated display unit.
 - .5 Fully function within supplied electrical supervision circuits as specified.

- .2 Door controls items and panels:
 - .1 Include standard "off the shelf" equipment items to form a complete and operating DRS system.
- .3 Provide system cables including coaxial cable, multi-conductor control cable, audio and AC power cable required.
- .4 Power supplies: to CAN/ULC-S318
- .5 Connectors and switches: to ULC-C634.
- .6 Basic System Criteria:
 - .1 Card readers:
 - .1 Type: 100% compatible with existing system, proximity.
 - .2 Proximity technology.
 - .3 Fitted with LED indicator light.
 - .4 Reading distance 50 - 200 mm.
 - .5 Compatible with access card model.
 - .2 Cards: 100 % compatible with existing system
 - .3 Operating system: Windows.
 - .4 Connection: networked.
 - .5 Language: English.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for access control system installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied Departmental Representative.

3.2 INSTALLATION: SECURITY ACCESS

- .1 Install components in accordance with manufacturer's written installation instructions to locations, heights and surfaces shown on reviewed shop drawings.
- .2 Install components secure to walls, ceilings or other substrates.
- .3 Install required boxes in inconspicuous accessible locations.
- .4 Conceal conduit and wiring.

3.3 SITE TEST AND INSPECTION

- .1 Perform verification inspections and test in presence of Departmental Representative.
 - .1 Provide all necessary tools, ladders and equipment.

- .2 Ensure appropriate subcontractors and manufacturer's representatives are present for verification.
- .2 Pretesting procedure:
 - .1 Measure and record, control levels of every system channel at each of following points in the system:
 - .1 Door located actuating devices.
 - .2 Door control panel functions.
 - .3 Electronic supervisory control units inputs and outputs.
 - .4 Distribution system input and output.
 - .5 Telephone system interface input and output.
 - .2 Submit to Departmental Representative 2 copies of recorded system pretest measurements, along with pretest certification.
- .3 Performance testing:
 - .1 Test procedure: perform test on a "go-no-go" basis.
 - .1 Make only operator adjustments required to show proof of performance.
 - .2 Test to demonstrate and verify that installed system complies with installation and technical requirements of this specification under operating conditions.
 - .3 Test results to be evaluated by Departmental Representative as either acceptable or unacceptable using following procedures.
 - .2 Documentation review:
 - .1 This review will determine if information provided is sufficient to meet requirements of this specification.
 - .2 Provide for review all System manuals, as installed drawings, pretest form, equipment cabinet pictorial, camera mount pictorial, video and audio equipment details.
 - .3 Mechanical inspection:
 - .1 Departmental Representative and Contractor to tour areas to insure that Systems and Subsystems are installed in place for proof of performance testing.
 - .2 Take system inventory at this time. Verify following items before beginning proof of performance tests:
 - .1 Electrical power circuits designated for system equipment are properly labeled, wired, phased, protected and grounded.
 - .2 Conductor ends are protected by heat shrink wrap; audio spade lugs, barrier strips and punch blocks are used.
 - .3 Dust, debris, solder splatter, etc. are cleaned and removed from site.
 - .4 Equipment is properly labelled.
 - .5 Equipment identified in system's equipment list[s] are in-place and properly installed.
 - .6 Each lightning and System ground method are installed in accordance with manufacturer's instructions and this specification.

- .4 Subsystem functional test:
 - .1 Conduct operational testing after review of documentation and mechanical inspection completed. Proceed as follows.
 - .1 Perform operational test of each Subsystem to verify that all equipment is properly connected, interfaced and is functionally operational to meet requirements of this specification.
 - .2 Control units:
 - .1 Take S/N readings from control unit's input and output in manual (and/or automatic) mode. Check output of DC/Data converter for S/N. Evaluate entire signal quality at baseband connector output of control unit and remote equipment.
 - .3 Audio:
 - .1 Take S/N readings from transmitter input and receiver output with equipment placed in manual gain mode. Check output of the audio converter, modulator or demodulator for S/N. Evaluate entire audio signal at baseband connector input and output of control unit.
 - .4 Distribution (or interface) system:
 - .1 Check each door utilizing a volt/ohm (or signal level) meter to confirm each function and to insure that system meets all performance requirements.
 - .2 Test each interconnection point (i.e.: door unit, junction box "cross connection", control unit, etc.) to ensure compliance with this specification.
 - .5 Total system test:
 - .1 Proceed with testing when system and subsystems are functionally tested and accepted. Total system tests to verify that requirements have been met for DC (and/or audio), sub carrier, and control signals in accordance with this specification.
 - .6 Safety:
 - .1 Demonstrate with documentation that access control system meets safety requirements specified in UL 294.
- .5 Visual verification: objective is to assess quality of installation and assembly and overall appearance to ensure compliance with 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 installation with physical environment.
 - .5 Inclusion of all accessories.
 - .6 Device and cabling identification.
 - .7 Application and location of ULC approval decals.
- .6 Technical verification: purpose to ensure that all systems and devices are properly installed and free of defects and damage. Technical verification includes:
 - .1 Validate sensitivity of readers and applicability and application of cards.
 - .2 Connecting joints and equipment fastening.

- .3 Compliance with manufacturer's specification, product literature and installation instructions.
- .7 Operational verification: purpose to ensure that devices and systems' performance meet or exceed established functional requirements. Operational verification includes:
 - .1 Operation of each device individually and within its environment.
 - .2 Operation of each device in relation with programmable schedule and or/specific functions.

3.4 FIELD QUALITY CONTROL

- .1 Manufacturer Services:
 - .1 Manufacturer of products, supplied under this Section, to review Work involved in the handling, installation/application, protection and cleaning, of its product[s] and submit written reports, in acceptable format, to verify compliance of Work with Contract.
 - .2 Manufacturer's Field Services:
 - .1 Obtain written reports from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product.
 - .2 Submit manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
 - .3 Schedule site visits to review Work at stages listed:
 - .1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
 - .2 Upon completion of Work, after cleaning is carried out.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove protective coverings from accessories and components.
 - .2 Clean housings and system components, free from marks, packing tape, and finger prints, in accordance with manufacturer's written cleaning recommendations.
 - .3 Clean components free from dirt and fingerprints.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by access controls and equipment installation.

END OF SECTION