

Part 1 **General**

1.1 RELATED REQUIREMENTS

- .1 Refer to all Sections of the Technical Specifications and Issued Construction Drawings for all related Work.

1.2 ABBREVIATIONS AND ACRONYMS

- .1 Refer to the following Specifications and related Contract Documents in conjunction with the Abbreviations and Acronyms applicable to this Section, but not limited to:
 - .1 Section 28 05 00 – Common Work Results for Electronic Safety and Security.

1.3 REFERENCE STANDARDS

- .1 Underwriter's Laboratories Canada (ULC):
 - .1 CAN/ULC-60839-11-1 - Alarm and Electronic Security Systems - Part 11-1, Electronic Access Control Systems - System and Components Requirements.
 - .2 CAN/ULC-S316, Standard for Performance of Video Surveillance Systems.
- .2 Underwriters' Laboratories (UL):
 - .1 UL 294, Access Control System Units.
- .3 Building Industry Consulting Services International (BICSI):
 - .1 BICSI ESSDRM, Electronic Safety and Security Design Manual, Third Edition.
 - .2 BICSI 005-2013, Electronic Safety and Security (ESS) System Design and Implementation Best Practices.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit Action and Information Submittals in accordance with the following Sections, but not limited to:
 - .1 Section 28 05 00 – Common Work Results for Electronic Safety and Security.

1.5 QUALITY ASSURANCE

- .1 Refer to the following Specifications and related Contract Documents in conjunction with the Quality Assurance applicable to this Section, but not limited to:
 - .1 Section 28 05 00 – Common Work Results for Electronic Safety and Security.

Part 2 **Products**

2.1 NOT USED

Part 3 **Execution**

3.1 SITE TEST AND INSPECTION – ACCESS CONTROL

- .1 Perform verification inspections and test in presence of the Contract Administrator:
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- .1 Provide all necessary tools, ladders, and equipment.
- .2 Ensure appropriate Sub-contractors, Manufacturer's representatives and security specialists are present for verification.
- .2 Pre-testing procedure:
 - .1 Verify (utilizing an approved proper test equipment) that system is fully operational and meets all system performance requirements of this specification.
 - .2 Measure and record, control (and/or voice) carrier 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 unit's inputs and outputs.
 - .4 Distribution system input and output.
 - .5 Telephone system interface input and output.
 - .3 Submit to the Contract Administrator 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 the Contract Administrator 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[s], antenna radiation pattern[s], equipment cabinet pictorial[s], antenna pictorial, antenna mount pictorial, video and audio equipment details.
 - .3 Mechanical inspection:
 - .1 The Contract Administrator and Contractor to tour areas to ensure 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 test[s]:
 - .1 Electrical power circuits designated for system equipment are properly labelled, 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) metre to confirm each function and to ensure 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.
 - .3 Test the biometric reader to confirm that the fingerprint reader and the keypads are functioning properly and the system is able to send a proper signal for the automatic gate.
 - .4 Test the long-range readers by the automatic gate that they are functioning properly and able to send the proper signal.
 - .5 Test the push button in the control room for opening the automatic gate.
 - .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.

3.2 SITE TEST AND INSPECTION – VIDEO SURVEILLANCE

- .1 Perform verification inspections and test in the presence of the Contract Administrator:
 - .1 Provide all necessary tools, ladders, and equipment.
 - .2 Ensure appropriate sub-Contractors, and Manufacturer's representatives and Security Specialists are present for verification.
 - .2 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.
 - .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 tension and power.
 - .2 Connecting joints and equipment fastening.
 - .3 Measurements of signals (dB, lux, baud rate, etc.).
 - .4 Compliance with manufacturer's specification, product literature and installation instructions.
 - .4 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 Operation control of camera lens, pan, tilt and zoom.
 - .4 Switching of camera to any monitor.
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- .5 Switching of system video recorder to selective monitor.
- .6 Set dwell times.
- .7 Demonstrate:
 - .1 Sequence viewing of cameras on each monitor.
 - .2 Bypass capability.
 - .3 Display of stored image to cardholder.

3.3 SYSTEM CONFIGURATION – ACCESS CONTROL

- .1 The System Configuration service from the Access Control Software Manufacturer shall include a Field Contract Administrator/Technician who will be responsible for:
 - .1 Assisting the Contractor's or Sub-Contractor's on Site/remote technicians with the configuration and commissioning of the Manufacturer's PACS at Site.
 - .2 Conducting a test of the PACS following the deployment of the system using real-world operator scenarios to ensure optimal system performance.
 - .3 Providing the Contractor with a Service Report detailing the tasks completed during the deployment of the PACS at Site, as well as any recommendations for improving the performance of the Access Control System that must be implemented by the Contractor.
 - .4 Providing a knowledge transfer of the Manufacturer's PACS to the Contractor following the deployment of the PACS at Site.

3.4 SYSTEM CONFIGURATION – STREAMVAULT SERVER

- .1 As part of the project the Contractor shall install a failover Streamvault Server sized to accommodate the same configurations as the NEWPCC site including all new cameras.
- .2 The Contractor shall coordinate with the Contract Administrator to arrange meetings with the City to integrate the Streamvalut failover server.
- .3 The System Configuration service from the vendor shall include a Field Contract Administrator/ Technician who will be responsible for:
 - .1 Assisting the Contractor's or sub-Contractor's on Site/remote technicians with the configuration and commissioning of the equipment at Site.
 - .2 Conducting a test of the system following the deployment of the system using real-world operator scenarios to ensure optimal system performance.
 - .3 Providing the Contractor with a Service Report detailing the tasks completed during the deployment of the system at Site, as well as any recommendations for improving the performance of the system that must be implemented by the Contractor.

END OF SECTION
