

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
 - .2 Underwriters Laboratories of Canada (ULC)
 - .1 ULC-S317-1996, Installation and Classification of Closed Circuit Video Equipment (CCVC) Systems for Institutional and Commercial Security Systems.
- 1.2 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 video surveillance equipment and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit:
 - .1 Functional description of equipment.
 - .2 Technical data sheets of all devices.
 - .3 Video interconnection detail drawings.
 - .3 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .1 Submit verification Certificate that service company is "UL List alarm service company".
 - .2 Submit verification Certificate that monitoring facility is "UL Listed central station".
 - .3 Submit verification Certificate that video surveillance system is "Certified alarm system".
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- 1.4 DELIVERY, STORAGE AND HANDLING (Cont'd) .3 Packaging Waste Management: (Cont'd) accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
- 1.5 WARRANTY .1 The 12 month warranty period prescribed in General Conditions is extended to 60 months.
- .2 Manufacturer's Warranty: submit, for Departmental Representative's acceptance, manufacturer's standard warranty document executed by authorized company official.
- 1.6 CARE, OPERATION AND START-UP .1 Provide services of a qualified technician to train operating and maintenance personnel.
- .2 Provide an operation and maintenance manual in accordance with Section 01 78 00 - Closeout Submittals.
- 1.7 DESIGN PERFORMANCE REQUIREMENTS .1 Set dwell time for viewing of any camera picture.
- .2 Bypass cameras in system during sequencing to monitor.
- .3 Provide ability to display stored 'video image' of cardholder, and switch real-time camera to card reader location for specific card usage.
- .4 Overall control of CCTV provided through software control, which provides complete integration of security components.
- .5 Environment: Design video components and systems to operate with all specified requirements under following ambient temperatures:
- .1 Indoor installations:
- .1 Temperature: 0°C to 30°C.
- .2 Humidity: 10 to 90%.
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- 1.7 DESIGN PERFORMANCE REQUIREMENTS (Cont'd)
- .5 Environment: (Cont'd)
 - .2 Outdoor installations:
 - .1 Temperature: -40°C to 60°C.
 - .2 Humidity: 10 to 100%.
 - .6 System to be a full functioning and complete end to end system. Include all equipment, components and wiring as required.

PART 2 - PRODUCTS

- 2.1 CONTROLLER
- .1 Controller shall be built-in to a central computer and interfaced with the user through software running under a windows environment (latest edition). Computer to meet or exceed the Government of Canada current minimum specifications for microcomputer systems and peripherals identified under the latest Standing Offer Agreement for Microcomputer Hardware (Systems).
- 2.2 MONITORS
- .1 19" widescreen LCD monitor.
- 2.3 DIGITAL DISK RECORDER
- .1 Intelligent digital video recording, retrieval and management system with the following features:
 - .1 Duplex Multiplexing.
 - .1 Smart Search instant retrieval.
 - .2 Video alarm detection recording.
 - .3 Network board.
 - .4 Expansion unit.
 - .5 H.264 video compression.
 - .6 Lite touch operation.
 - .7 Fully compatible with computer network and software.
 - .8 Alarm inputs/outputs.
 - .9 2 TB hard drive.
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2.4 CAMERAS

- .1 Power source: 24 vac. Single camera units with heaters and transformers for 120V power supply.
 - .1 Color: fixed image.
 - .2 Dynamic backlight compensation.
 - .3 Low light B/W mode.
 - .4 4K resolution.
 - .5 Presets and patterns.
 - .6 Built in surge protection.
 - .7 Ethernet compatible.
 - .8 Provide outdoor housing complete with, ground loop Isolator, wall mount bracket adapter, blower, and heater for exterior applications.
- .2 Cameras to be aimed and adjusted to suit site conditions.

2.5 CABLE

- .1 Refer to riser Schematic for main wiring. All wiring shall be installed in conduit.
- .2 Provide all required interconnection wiring.
- .3 Provide all required termination equipment.
- .4 Connect all monitors to the main equipment using Ethernet cable in conduit.
- .5 Video camera cable: Siamese coaxial FT-4 rated, RG59U.

2.6 POWER SUPPLIES

- .1 Mini cameras shall be supplied with 24 volt DC power supply converters.
 - .2 All cameras will be supplied 24 Volt AC power from Power supply units.
 - .3 Contractor shall select Camera 24 VAC power supply wiring to meet maximum voltage drop requirements of the Canadian Electrical code. But in no case use smaller than that shown on the drawings. Of 14 AWG whichever is larger.
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2.7 PULL BOXES .1 Metal, sized to handle all conduit interconnections with appropriate expansion.

PART 3 - EXECUTION

3.1 INSTALLATION (GENERAL) .1 Install all system equipment and components as indicated on the drawings.
.2 Use only qualified personnel for cable terminations.
.3 Ensure that the quality of work is maintained throughout the project.
.4 Mount all equipment in equipment racks as indicated, complete with power supply adequate for all equipment.

3.2 MANUFACTURER'S INSTRUCTIONS .1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and datasheet.

3.3 TESTING .1 Provide for testing of the system to ensure satisfactory performance. Submit a written report detailing tests performed and results. Provide all required equipment, materials and labour required for system tests.

3.4 USER ORIENTATION. .1 Allow minimum one full day for instruction and orientation of User Group in system operation. Instruction shall include handout operations manual for at least 4 individuals. Operations manual shall be bound and include the following materials:
.1 Basic description of the system operation.
.2 Copy of shop drawings for all equipment.
.3 Line drawings showing system interconnections.

3.4 USER ORIENTATION.1
(Cont'd)

(Cont'd)

- .4 Detailed description of operating procedures for all equipment.
- .5 Details of all system settings and adjustments.
- .6 List of equipment suppliers, their names, addresses and telephone numbers.

- .2 The system manuals required above are in addition to those required by Section 01 78 00 - Closeout Submittals of the specification.
- .3 The system manuals shall be submitted to the Owner's Representative for review and approval.

3.5 FIELD QUALITY
CONTROL

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Manufacturer's Services:

- .1 Have manufacturer of products, supplied under this Section, review Work involved in the handling, installation/application, protection and cleaning, of its products and submit written reports, in acceptable format, to verify compliance of Work with Contract.
 - .2 Manufacturer's Field Services: Provide 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, or other Work, on which the Work of this Section depends, is complete but before installation begins.
 - .2 During progress of Work at 25% and 60% complete.
 - .3 Commissioning of the work.
 - .4 Obtain reports, within 3 days of review, and submit, immediately, to Owner's Representative.
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- 3.6 VERIFICATION AND COMMISSIONING
- .1 Perform verification inspections and test in the presence of Owner's Representative.
 - .1 Provide all necessary tools, ladders and equipment.
 - .2 Ensure appropriate subcontractors, 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.
- 3.7 CLEANING AND ADJUSTING
- .1 Remove protective coverings from cameras and components.
 - .2 Adjust cameras for correct function.
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3.7 CLEANING AND .3 Clean camera housing, system components and
ADJUSTING lens, free from marks, packing tape, and
(Cont'd) finger prints, in accordance with
manufacturer's written cleaning
recommendations.