

Part 1 General

1.1 SECTION INCLUDES

- .1 Card readers.
- .2 Proximity sensors.
- .3 Message displays.
- .4 Industrial computers.
- .5 Fibre optic multiplexers.
- .6 DCS system remote I/O.
- .7 Wiring.
- .8 Accessory software.

1.2 RELATED SECTIONS

- .1 Section 28 23 00 – Video Surveillance

1.3 REFERENCE STANDARDS

- .1 Underwriters' Laboratories (UL)
 - .1 UL 294, Standard for Safety for Access Control System Units.
- .2 National Building Code (NBC) with Manitoba Amendments.

1.4 DESIGN PERFORMANCE REQUIREMENTS

- .1 Design security access system using company specializing in security access systems.
- .2 Design access control systems to meet safety requirements specified in accordance with UL 294 and NBC, including Manitoba amendments.
- .3 Design system to provide ease of operation, servicing, maintenance, testing and expansion of additional services.
- .4 Door activation units
 - .1 Fully function with OEM supplied door controls and hardware to activate system in routine and emergency conditions.
- .5 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 to release and secure each door.
- .3 Fully function within supplied electrical supervision circuits as specified.

1.5 SUBMITTALS

- .1 Product Data: Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 26 05 01 – Common Work Results - Electrical.
 - .1 Submit shop drawings, including:
 - .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.
 - .2 Instructions: Submit manufacturer's installation instructions.
 - .3 Manufacturer's Field Services: Submit copies of manufacturer's field reports.
- .2 Maintenance Data: Submit maintenance data for incorporation into manual specified in Section 26 05 01 – Common Work Results - Electrical.
 - .1 Include:
 - .1 System configuration and equipment physical layout.
 - .2 Functional description of equipment.
 - .3 Instructions for operation of equipment.
 - .4 Illustrations and diagrams to supplement procedures.
 - .5 Operation instructions provided by manufacturer.
 - .6 Cleaning instructions.

Part 2 Products

2.1 CARD READERS (RFID)

- .1 Provide card readers (RFID) complete with the following features:
 - .1 Long read range distance (up to 45 centimeters).
 - .2 Auto tuning.
 - .3 Reads all HID iCLASS and ISO15693 compatible (CSN) credentials
 - .4 13.56 MHz technology platform compatible with existing City of Winnipeg 125 KHz readers.
 - .5 UL94 Polycarbonate material, IP55 rated
 - .6 12-24 VDC power supply
 - .7 -30° to 65° C operating temperature
 - .8 UL294/cUL (US), FCC Certification (US), IC (Canada).
 - .9 Acceptable manufacturer shall be HID iClass R90.

2.2 PROXIMITY SENSORS

- .1 Provide proximity sensors as indicated. Specific make and model number to be confirmed.

2.3 MESSAGE DISPLAYS

- .1 Provide message displays as indicated. Displays shall have the following features:
 - .1 15" sunlight readable VESA mount LCD screen.
 - .2 NEMA 4X rated 316 stainless steel enclosure.
 - .3 Rugged extruded aluminum chassis
 - .4 XGA display
 - .5 1500 nits brightness, low-power, high reliability solid state LED backlighting
 - .6 Resistive touch screen
 - .7 Built-in heater to allow for operating temperature range of -40°C to 60°C.
 - .8 Acceptable manufacturer shall be VarTech Systems Model #VT150VSHB-201-1-RS-JB.

2.4 INDUSTRIAL COMPUTERS

- .1 Provide industrial computers as indicated. Specific make and model number to be confirmed.

2.5 FIBRE OPTIC MULTIPLEXERS

- .1 Provide fibre optic multiplexers as indicated. Specific make and model number to be confirmed.

2.6 DCS SYSTEM REMOTE I/O

- .1 Provide DCS system remote I/O as indicated. Remote I/O shall have the following features:
 - .1 Acceptable manufacturer shall be ABB Model #S800.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions, and datasheet.

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 FIELD QUALITY CONTROL

- .1 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.

3.4 VERIFICATION

- .1 Perform verification inspections and test in the presence of Contract Administrator.
 - .1 Provide all necessary tools, ladders and equipment.
 - .2 Ensure appropriate subcontractors, and manufacturer's representatives [and security specialists] are present for verification.
- .2 Pretesting Procedure
 - .1 Verify (utilizing an approved spectrum analyzer and 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 units inputs and outputs.
 - .4 Distribution system input and output.
- .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.
- .4 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.
- .5 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.
- .6 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.

3.5 CLEANING

- .1 Remove protective coverings from accessories and components.
- .2 Adjust all components for correct function.
- .3 Clean housings and system components, free from marks, packing tape, and finger prints, in accordance with manufacturer's written cleaning recommendations.
- .4 Clean all components free from dirt and fingerprints.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Video cameras.

1.2 RELATED SECTIONS

- .1 Section 26 50 00 – Lighting
- .2 Section 28 13 00 – Access Control

1.3 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA International)
 - .1 CSA C22.1, Canadian Electrical Code, Part 1 Safety Standard for Electrical Installations.
 - .2 CAN/CSA-C22.3 No.1, Overhead Systems.
- .2 Underwriters Laboratories of Canada (ULC)
 - .1 ULC-S317, Installation and Classification of Closed Circuit Video Equipment (CCVC) Systems for Institutional and Commercial Security Systems.

1.4 DEFINITIONS

- .1 CCTV: Closed Circuit Television.
- .2 CCVC: Closed Circuit Video.
- .3 CCD: Charge Coupled Device.
- .4 FOV: Field of View.

1.5 DESIGN PERFORMANCE REQUIREMENTS

- .1 Support: Camera functions such as pan/tilt and zoom fully supported by CCTV system.
 - .1 Provide operator with ability to control all camera functions.
- .2 Alarm point monitoring : System capable, upon alarm recognition, of switching CCTV cameras associated with alarm point.
- .3 Switching:
 - .1 Provision to switch any camera in system to any monitor in system manually or automatically.
 - .2 Provision to switch system video recorders to selective monitor outputs in system.
- .4 Control: Provision for any camera equipped with pan, tilt, and/or motorized zoom lens:

- .1 Manually control pan, tilt and lens functions.
- .2 Set pan and tilt home position.
- .3 Set and clear movement limits of pan and tilt mechanism.
- .4 Adjust motorized zoom lens.
- .5 Enter and edit CCTV programs and save them for future use.
- .6 Set dwell time for viewing of any camera picture.
- .7 Define sequence for viewing cameras on each monitor.
- .8 Bypass cameras in system during sequencing to monitor.
- .9 Provide ability to display stored 'video image' of cardholder, and switch real-time camera to card reader location for specific card usage.
- .10 Overall control of CCTV provided through software control, which provides complete integration of security components.
- .11 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%.
 - .2 Outdoor installations:
 - .1 Temperature: -40°C to 60°C.
 - .2 Humidity: 10 to 100%.

1.6 SUBMITTALS

- .1 Shop Drawings: Submit in accordance with Section 26 05 01 – Common Work Results - Electrical. Shop drawings to indicate project layout, camera locations, point-to-point diagrams, cable schematics, risers, mounting details and identification labeling scheme including:
 - .1 Functional description of equipment.
 - .2 Technical data sheets of all devices.
 - .3 Device location plans and cable lists.
 - .4 Video camera surveillance chart.
 - .5 Video interconnection detail drawings.
- .2 Maintenance Data: Submit maintenance data for incorporation into manual specified in Section 26 05 01 – Common Work Results - Electrical. Include following:
 - .1 System configuration and equipment physical layout.
 - .2 Functional description of equipment.
 - .3 Instructions on operation, adjustment and cleaning.
 - .4 Illustrations and diagrams to supplement procedures.

- .5 Manufacturer's operation instructions

Part 2 Products

2.1 MATERIALS

- .1 Video Camera Characteristics:
 - .1 35X zoom lens.
 - .2 High resolution sony image sensor with day/night image capabilities, wide dynamic image sensor range.
 - .3 Complete speed dome to come with clear lower shroud, internal built-in heater and blower modules.
 - .4 Environment: Outdoor.
 - .5 Each speed dome to come with 99 programmable preset locations and 8 autotours, all programmable from joystick controller unit.
 - .6 Wall mounting bracket and 28 VAC, 4 amp fused power supply.
 - .7 Pan tilt zoom (PTZ).
 - .8 Approved manufacturer: Vicon Industries Model #SVFT-W35 to match existing.
- .2 Video Handling
 - .1 Head end equipment to be installed in the Hauled Wastewater Buildings as indicated.
 - .2 Sequential Switcher: desk mounted.
 - .3 Performance attributes:
 - .1 Sequential switcher: 480 mm (19") rack mounted, with each video input selectable, from front panel, for continuous viewing, sequencing or for removal from the sequencing cycle.
 - .2 Sequential switching: Silent in operation and occur during picture vertical interval.
 - .3 Switcher: Automatically and sequentially switch video inputs to one monitor output (output #1).
 - .4 Sequential switcher's second video output (output #2) to automatically display alarmed camera input or manually selected camera input. This unit can be consolidated with the Digital Control System.
 - .5 Switcher position number: To coincide with camera display number.
 - .4 Technical Characteristics
 - .1 Impedance: 75 Ohms UNBAL.
 - .2 Input: 1 V pp +/- 0.1 V pp (one for each signal, plus spares).
 - .3 Output: Two, 1.0 V pp.
 - .4 Frequency response: Zero to 6.0 mHz + 0.5 dB.
 - .5 Sequencing speed: Variable, 1.0 to 45 SEC.
 - .5 Multiplexer: Support groups of 4, 8 or 16 cameras.
 - .1 Features:

- .1 Permit multi-screen display of live camera images as they are being recorded.
- .2 Video loss detection.
- .3 Video motion detection.
- .4 Security lock.
- .5 Call monitor output.
- .6 Multi display formats e.g.: 4x4, 3x3, 2x2 etc.
- .2 Multi-screen display: Permit screen to split to show 1, 4, 7, 10, 13 or 16 images at same time.
- .3 Live-on-playback and play-back-live: Permit live camera images while monitoring so that VCR image can be shown on screen at same time.
 - .1 Permit live camera image to be shown during VCR playback.
- .4 Auto sequential switching: Permit switching between cameras one field at a time to allow smooth flowing of multi-screen displays.
- .5 Electronic image functions: Permit capability to zoom or freeze images from live and recorded sources.
- .6 Camera title indicator: Permit a 32 character title to be accorded to each channel.
- .7 I.D./time-date generator: Provide as built-in calendar function with capability to display time and date on monitor or not, and in recording or playback mode.
- .8 On-screen setup menus: Provide on-screen menus and accessible push buttons permitting quick and easy setup and operation.
- .6 Digital control system, multiple station
 - .1 Performance attributes:
 - .1 Multiple station digital control system: Solid-state, 480 mm (19") rack mounted and provide remote control of multiple camera, pan and tilt units, lenses and auxiliary functions, as specified.
 - .2 Designed to select each camera station individually and provide full remote control of all functions at that camera station.
 - .3 Operate in conjunction with homing video switcher to automatically assume control of camera that has been "homed" in on.
 - .4 Capable of being consolidated with the Sequential Switcher.
 - .2 Control functions required
 - .1 Power: On and off.
 - .2 Station select: Individual station (labeled).
 - .3 Pan and tilt: Left to right and up and down.
 - .4 Focus: Near, far.
 - .5 Zoom: In, out.
- .3 Recording: digital recording, minimum 30 day real time event driven recording capacity.
 - .1 Features:

- .1 Playback control: Jog and shuttle.
- .2 Alarm recording:
 - .1 Alarm recording: Provide system with capability to switch to alarm recording when an externally connected alarm sensor is triggered and begin to record situation that triggered alarm.
 - .2 Alarm display: Equip unit to flash AL on screen during alarm recording and display number of alarms.
 - .3 I.D./time and date generator: Provide built-in microprocessor equipped with calendar capable of setting internal timer, display current time and manage other clock-related functions on monitor and on digital display.
- .4 Camera Housings
 - .1 Domes: Outdoor.
 - .2 Outdoor: Equipped with heater/blower.
- .5 Transmission Methods: Fiber Optics.

2.2 CAMERA POWER SUPPLY

- .1 Power supply: Custom designed for all cameras requiring 28 VAC power, locate inside equipment cabinet; fused (each input and output); capable of providing correct voltage to overcome real and circulated system power loss for cameras and to provide future expansion of 25%.

2.3 JUNCTION BOX

- .1 Metal, sized to handle all system conduit interconnections with appropriate expansion.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions, and datasheet.

3.2 INSTALLATION

- .1 Install surveillance cameras on lighting fixture poles as indicated (Refer to Section 26 50 00).
- .2 Install video surveillance equipment and components in accordance with ULC-S317.
- .3 Install cable, boxes, mounting hardware, brackets, video cameras and system components in accordance with manufacturer's written installation instructions.
- .4 Install components secure, properly aligned and in locations shown on reviewed shop drawings.

- .5 Connect cameras to cabling in accordance with installation instructions.
- .6 Install ULC labels where required.

3.3 FIELD QUALITY CONTROL

- .1 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.

3.4 VERIFICATION

- .1 Perform verification inspections and test in the presence of Contract Administrator.
 - .1 Provide all necessary tools, ladders and equipment.
 - .2 Ensure appropriate subcontractors, and manufacturer's representatives 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.
 - .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.

3.5 CLEANING AND ADJUSTING

- .1 Remove protective coverings from cameras and components.
- .2 Adjust cameras for correct function.
- .3 Clean camera housing, system components and lens, free from marks, packing tape, and finger prints, in accordance with manufacturer's written cleaning recommendations.

END OF SECTION