1. GENERAL

1.01 RELATED REQUIREMENTS

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

.2 Section 27 05 00 – Common Work Results for Communications.

.3 Section 27 05 28 – Pathways for Communications Systems.

.4 Section 27 15 13 – Communications Copper Horizontal Cabling.

.5 Section 28 10 00 – Access Control.

1.02 REFERENCES

.1 Abbreviations:

.1 Electronic Access Control (EAC): control of people through entrances and exits of controlled area. Security utilizing hardware systems and specialized procedures to control and monitor movements within a controlled area.

.2 CPVX: Central Station Burglar Alarm Systems.

.3 CVSG: Mercantile Burglar Alarm Systems.

.4 CVWX: Proprietary Burglar Alarm Systems.

.5 DRS: Door Release System.

.6 PIN: Personal Identification Number.

.7 ICT – Information and Communications Technology

.8 CCTV – Closed Circuit Television

.9 PTZ – Pan, Tilt, Zoom Camera

.10 NVR – Network Video Recorder

.11 RTLS – Real-Time Locating System

.12 PWS – Patient Wandering System

.13 ATS – Asset Tracking System

.14 DGP – Data Gathering Point

.15 DC – Data Centre

.16 ACS – Access control System

.17 NTP – Network Time Protocol

.18 PoE – Power over Ethernet

.19 IP – Internet Protocol

.20 REX – Request to Exit Motion Detector

.21 RXP – Request to Exit Push Button

.22 LAN – Local Area Network

.23 4CIF – An image resolution of 740 x 480 pixels

.24 GUI – Graphical User Interface

.25 IPS – Images Per Second

.26 BTU - British Thermal Unit

.27 RU – Rack Unit

.28 UTP – Unshielded Twisted Pair

.29 RAM – Random Access Memory

.30 UPS – Uninterruptible Power Supply

.31 KVM – Keyboard, Video, Mouse console

.32 VMS – Video Management System

.33 DPU – Distributed Processing Unit

.34 SOC – Security Operations Centre, the SOC shall be located at Main Reception

.35 SCS – Structured Cabling System

.2 Reference standards:

.1 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.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.

.3 Underwriters' Laboratories (UL)

.1 UL 827-2008, Central-Station Alarm Services.

.2 Underwriters Laboratories (UL) Cable Certification and Follow Up Program.

.4 National Fire Protection Association (NFPA)

.1 NFPA 70-2011, Article 517, National Electric Code.

.2 NFPA 101-2008, Life Safety Code.

.5 ANSI/TIA/EIA-568-B.1 and its addendum

.6 ANSI/TIA/EIA-568-B.3 and its addendum

.7 BICSI Telecommunications Distribution Methods Manual – Most current Edition

.8 BICSI Information Transport Systems Installation Manual – Most current Edition

.9 American Society for Testing Materials (ASTM).

.10 Institute of Electrical and Electronic Engineers (IEEE).

.11 Applicable local Building Codes

.12 Manufacturer's specifications, latest issue.

1.03 SYSTEM DESCRIPTION

.1 The Video Surveillance System shall consist of field and termination equipment necessary to provide a fully automated system.

.2 The Video Surveillance System shall be designed on a distributed processing architecture employing remote cameras and operator workstations connected to a redundant central server and storage solution.

.3 As part of this project the contractor will provide a complete IP based video surveillance solution that is scalable from the existing scope of this project to thousands of cameras which can be added on a unit-by-unit basis. This future expansion capacity shall not require significant replacement or upgrading of equipment provided as part of the initial solution.

.4 The system shall reside on the Owner's network and video shall be viewable on the network on select client workstations.

.5 The System shall be configured to a maximum of 75% of its input, output and recording capacity.

.6 Provide general surveillance of exterior buildings and surrounding areas through the use of PTZ cameras. All other areas as noted on the drawings.

.7 All video streams from cameras shall be digitally encoded using H.264 compression formats for simultaneous monitoring and recording in real time.

.8 Each camera's bit rate, frame rate and resolution shall be set independently from other cameras in the system, and altering these settings shall not affect the recording and display settings of other cameras.

.9 The system shall not require proprietary recording hardware, hardware multiplexers or time-division technology for video recording and monitoring.

.10 The system client and server applications shall be based on a true open architecture that shall allow for use of non-proprietary PC storage hardware that shall not limit the storage capacity and shall allow for incremental upgrades of recording capacity.

.11 The system shall digitally sign recorded video by way of watermarking to prevent image tampering and to confirm image integrity.

.12 The system server and client software applications shall be able to operate on separate networks.

.13 The system shall have the capability of simultaneous live viewing and recording of individual cameras at different frame rates and resolutions.

.14 The Video Surveillance System must incorporate Self-Monitoring Analysis and Reporting Technology incorporating diagnostics that monitor the internal operation of a drive (including external storage drives) and provide early warning notification to SOC operators for many types of potential problems. This shall allow for the drive to be repaired or replaced before any data is lost or damaged.

.15 The Video Surveillance System shall utilize a redundant centralized storage topology. All Video System Storage shall be located in Data Centre room.

.16 The Video Surveillance System shall allow authorized users to save video to a standard recordable DVD. The option to include the

player software on the DVD shall be available so that no additional software needs to be purchased.

.17 Monitoring Locations

.1 System monitoring shall be centrally monitored from the from the Main Reception and the Second Floor East Nurses Station.

.2 System monitoring shall also be provided at each Nurses Station with the ability to review all only relevant cameras within that floor.

.3 System monitoring shall also be provided via web browser accessible from any workstation on the converged network. Access shall require a valid user ID and password.

.4 Perimeter Cameras must be viewable via a web browser at workstation designated by the Owner.

.18 The system shall be capable of operating even in the event that the system management server is unavailable.

.19 Following the restoration of power after a failure of main or Centralized UPS, the Video Surveillance System shall revert automatically, within 3.5 minutes, to normal service status without the need for operator intervention. The system shall restart in the same state as existed before the power interruption with no loss of functionality or transaction data.

.20 Telecommunications Rooms

.1 All Video termination equipment with the possible exception of non-PoE camera power supplies shall be rack mounted in equipment cabinets.

.2 It shall be the responsibility of the contractor to keep all Video equipment clean and free of dust at all times during the installation.

.3 The system shall operate over a central communications backbone and reside on the Owner's network. The contractor shall coordinate with Owner's IT for all required network access.

.21 Power

.1 All Source 120VAC power for security equipment shall be Centralized UPS.

.2 Provide lockable, hinged covered, terminal cabinets for all power supplies, transformers, and power distribution terminal strips. Provide all conduit and wiring from the 120 VAC facilities to the terminal cabinets.

.3 Provide protection against surges, spikes, noise, and other line problems for all system equipment and their components. In addition to generator support,

.4 All equipment and system components which are powered by more than 48 volts AC or DC shall be ULC listed for safety. This includes equipment or system components classified as non-power limited.

.5 All Video System power supplies shall have battery back and shall be monitored, by the Access Control System, for line failure on a dedicated monitoring input point. Therefore, when an AC line fails, a unique alarm condition will be caused.

.22 Network

.1 Ensure all IP addressing schemes used on the network are coordinated and reviewed by both the Facility and IT Service providers configuring the network.

.23 Interface with Other Systems

.1 Network Time Protocol

.1 The Video Surveillance System shall be maintained with NTP time. The VSS system shall utilize the Owner's network for NTP time.

1.04 SUBMITTALS

.1 Submit in accordance with Section 01 33 00, and Section 27 05 00.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for devices and equipment and include product characteristics, performance criteria, physical size, finish, and limitations.

.2 Submit WHMIS MSDS.

.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.

.5 Manufacturer specification sheet for each new piece of equipment. Each sheet should clearly identify the particular model number of the hardware being provided.

.6 Software configuration parameters.

.4 Test and Evaluation Reports:

.1 Submit certified test reports from approved independent testing laboratories indicating compliance with specifications for specified performance characteristics and physical properties.

.5 Manufacturer's Instructions: submit manufacturer's installation instructions.

.6 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.

.7 Integration Document for each interface to be implemented or configured.

.8 Testing and commissioning plan

.9 Sustainable Design Submittals:

.1 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.

.10 Regional Materials: submit evidence that project incorporates required percentage 10% of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.

1.05 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00, and Section 27 05 00.

.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.

1.06 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 and 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.

.4 Extended warranty period must include warranty against meeting specified performance requirements, for specified time period.

.5 Manufacturer's Warranty: submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.

2. PRODUCTS

2.01 GENERAL REQUIREMENTS

.1 The entire new Video Surveillance System (VSS) must be based on the same system and manufacturer as used by the Mulock Park system.

.2 All VSS components shall be provided with a repair or parts replacement. The repair and parts replacement shall be guaranteed by the manufacturer on warranty and non-warranty items.

.3 Contractor is fully responsible for the ultimate design and implementation of the system topology (physical and logical) best suited for the project, given identified and recognized physical infrastructure and constraints.

2.02 VIDEO MANAGEMENT SYSTEM (VMS)

.1 The Contractor shall provide an all-new IP based, video surveillance system complete will all required hardware, software, servers, racks, network hardware, cabling, wiring, power, licenses, configuration, programming, testing and commissioning for a complete and fully functional system. The system shall be configured in consultation with the client and their standards.

.2 The video management system shall be of the following approved manufacturers:

.1 EXACQ Vision

.2 Genetec

.3 Milestone

.4 Avigilon

.3 The video surveillance system shall be configured to retain a minimum of thirty (30) days of video storage at maximum resolution, 15fps, record on motion.

2.03 CCTV CAMERAS

.1 Acceptable manufacturers:

.1 Axis

.2 Avigilon

.3 Bosch

.4 Hanwha

2.04 INDOOR FIXED DOME POE IP CAMERA

.1 Shall meet or exceed the following Specifications:

.1 2688x1520 (4.1 MP) minimum

.2 Vandal Resistant

.3 Lens: 5 mm-50 mm, Auto Iris, Varifocal

.4 Gain Control: Automatic or Fixed manual setting across 32db range

.5 Wide Dynamic Range 90 db

.6 Synchronization: Internal

.7 Auto-Iris: DC drive lens as standard

.8 Operating Voltage: Power over Ethernet (802.3AF) & 24v AC/DC

.9 Video Compression: Full frame rate, full color: H.264 (ISO 14496-10); 30fps

.10 Video Bit Rate: User configurable bit rates from 32Kbps to 4Mbps

.11 Multi-streaming: Dual encoding

.12 Transmission Protocols: IP v4/v6, HTTP, HTTPS, RTP/RTCP, TCP, UDP, DHCP, DDNS, QoS (IPTOS & DiffServ), NTP, HTTP, FTP, TFTP, TELNET, ARP,SMTP

.13 SNMP Management: v1, 2c & 3 /MIB-2

.14 Time: Embedded real-time clock, NTP Client

.15 Day/Night: 0.5 lux (Day) / 0.5 lux (Night)

.16 Display: Local Date and Time

.17 Additional Features: Back Light Compensation (BLC), Digital motion Detection,

.18 Network Security: All IP cameras must incorporate on board security to protect them from unauthorized access by supporting the following features:

.1 All TCP/UDP network ports not used for normal functionality will be blocked to prevent network hacking.

.2 Support password protection to prevent unauthorized administration access.

.3 A Firewall will be available on each device to allow access to specified IP addresses only. SSL and other non-IP address specific security measures are deemed insufficient.

.4 Devices must support FTP and Telnet for administration but both these services can be disabled if required.

.19 All units must be CUL listed.

2.05 OUTDOOR VANDEL PROOF DOME POE IP CAMERA

.1 Shall meet or exceed the following requirements:

.1 3840x2160 (8.3 MP) minimum

.2 Vandal Resistant housing compliant to IP66 Weather and Dust resistance with IEC60529 measurement standard.

.3 Lens: 5mm-50mm, Auto Iris, Varifocal

.4 Gamma: 0.45

.5 Gain Control: Automatic or Fixed manual setting across 32 db range.

.6 Wide Dynamic Range 90db

.7 Synchronization: Internal

.8 Auto-Iris: DC drive lens as standard

.9 Operating Voltage: Power over Ethernet (802.3AF) & 24v AC/DC

.10 Video Compression: Full frame rate, full color: H.264 (ISO 14496-10); 30fps

.11 Video Bit Rate: User configurable bit rates from 32Kbps to 4Mbps

.12 Multi-streaming: Dual encoding

.13 Transmission Protocols: IP v4/v6, HTTP, HTTPS, RTP/RTCP, TCP, UDP, DHCP, DDNS, QoS (IPTOS & DiffServ), NTP, HTTP, FTP, TFTP, TELNET, ARP,SMTP

.14 SNMP Management: v1, 2c & 3 /MIB-2

.15 Time: Embedded real-time clock, NTP Client

.16 Day/Night: 0.5 lux (Day) / 0.5 lux (Night) Black and White mode in low lighting conditions(User Configurable).

.17 Display: Local Date and Time

.18 Additional Features: Back Light Compensation(BLC), Digital motion Detection, Adaptive Black Stretch, Digital Aperture Correction

.19 Network Security: All IP cameras must incorporate onboard security to protect them from unauthorized access by supporting the following features:

.1 All TCP/UDP network ports not used for normal functionality will be blocked to prevent network hacking.

.2 Support password protection to prevent unauthorized administration access.

.3 A Firewall will be available on each device to allow access to specified IP addresses only. SSL and other non-IP address specific security measures are deemed insufficient.

.4 Devices must support FTP and Telnet for administration but both these services can be disabled if required.

.2 All units must be CUL listed.

2.06 ENCLOSURES, MOUNTS, AND SUPPORTS

.1 Enclosures

.1 Cameras shall be installed in lockable enclosures capable of being pendant or pole mounted, on a wall, in a corner, or fitted into a drop ceiling depending on the specific application.

.2 Indoor fixed cameras shall be mounted in low profile ceiling mount enclosures for installations in fixed and drop ceilings, and wall mounted enclosures for installations in service areas.

.3 Outdoor enclosures shall be equipped with a thermostatically controlled heater and blower.

.4 All connections shall be contained within secure enclosures. If external to equipment and enclosures, cabling shall be run in rigid or flexible conduit.

.5 Final mounting locations of enclosures shall be co-coordinated Onsite prior to installation

.2 Mounts/Supports

.1 For outdoor cameras mounted on buildings and structures provide mounts/supports to match the camera enclosures. Incorporate a camera mount with an adjustable head. Video displacement, as viewed on a monitor,

.2 Parapet Mount

.1 The parapet mount shall be a fixed indoor/outdoor unit.

.2 It shall have a load rating of 40 lb (18 kg).

.3 The mount may be swivelled inward for servicing.

.3 To guard against potential vandalism in low ceiling public areas, the camera assemblies shall be capable of withstanding an 80 kg (180 lbs) person grabbing hold of the enclosure and attempting to pull it free from its mount without the aid of tools or weapons. In addition, it shall not be possible to crack, penetrate or damage an enclosure in any way without the aid of tools or weapons.

.4 Provide indoor camera mounts/supports fabricated and finished to match the camera enclosures and equipped with an adjustable head. It shall be possible to lock the position of the head after adjustments are complete.

2.07 POWER SUPPLIES

.1 Indoor CCTV Power supplies

.1 All indoor fixed cameras shall be powered by Power over Ethernet (PoE) through owner supplied LAN switches.

.2 Outdoor Camera Power supplies

.1 When ever possible outdoor fixed cameras shall be powered by Power over Ethernet (PoE) through owner supplied LAN switches.

.2 Outdoor CCTV power supplies shall be model WCS1-4 as manufactured by Pelco or approved equivalent.

.3 All camera power supplies shall be connected to UPS and emergency power.

.4 An outdoor rated lock shall be supplied and installed on the power supply cabinet to protect the unit from unauthorized access and tampering.

.5 Three sets of keys will be provided for the outdoor power supply lock.

.6 If multiple locks are supplied, they should be keyed alike.

.7 For outdoor cameras provide local 120V AC emergency power to all camera power supplies and install within 50 feet of the camera. All efforts shall be made to install the power supply on the inside of the building where possible.

.3 Video Monitors

.1 All video monitors shall be supplied by the Owner.

3. EXECUTION

3.01 GENERAL

.1 Programming.

.1 Include as part of their solution all associated cost to program the system and ensure all configuration and naming conventions are reviewed by facilities.

.2 Attend pre-installation meetings as required with Owner's Representative to identify the specifics of the system programming.

.3 Document all decided on software configuration parameters and submit for approval.

.4 Once approved, implement, and test all system programming required.

.5 Include all approved software configuration parameters in final revisions shop drawings.

.6 Building door numbers are not yet final and will change prior to final system programming. Ensure final programming configuration and system documentation match this newest set to be provided by the Architect.

3.02 FIELD OF VIEW (FOV)

.1 The final field of view for each camera is to be reviewed by facilities prior to camera installation.

.2 For observation purposes at the farthest target distance a minimum 20 pixels per meter shall be achieved.

.3 For detection purposes at the farthest target distance a minimum 50 pixels per meter shall be achieved.

.4 For recognition purposes at the farthest target distance a horizontal pixel count of 100 pixels per meter shall be achieved.

.5 For identification purposes at the target distance a horizontal pixel count of 500 pixels per meter shall be achieved.

.6 The cameras for door monitoring shall include entire door in the field of view.

3.03 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 Consultant.

.2 Inform Consultant of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from the Owner.

3.04 INSTALLATION

.1 Install Video Surveillance System units and components in accordance with ULC-S317.

.2 Conduits and back boxes for devices in walls and doors will be provided by Electrical Trade as noted in Section 27 05 28. Provide all control boxes/equipment and conduit work to tie in to rough-ins.

.3 Provide tamperproof attachments for each activation unit cover plate to receptacle back box.

.4 Enclose in conduit or flexible protective armor external cables for associated junction box to remaining system locations, from junction box to above ceiling mounted cable ducts or master conduit routes.

.5 Securely fasten all components to wall, ceiling, or other substrate or structure.

.6 Communications cabling for video surveillance cameras shall be by the security contractor. The security contractor shall provide twelve (12) feet of slack at each end.

3.05 SITE TESTS AND INSPECTIONS

.1 Perform verification inspections and test in presence of facility representatives.

.1 Provide all necessary tools, ladders and equipment.

.2 Ensure appropriate subcontractors manufacturer's representatives are present for verification.

.2 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 Consultant 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 forms, equipment cabinet pictorials, video equipment details.

.3 Mechanical inspection:

.1 Consultant 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 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 lists are in-place and properly installed.

.6 Each System ground method are installed in accordance with manufacturer's instructions and this specification.

.3 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 Safety:

.1 Demonstrate with documentation that access control system meets safety requirements specified in UL 294.

.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 cameras, recording and interface with other systems.

.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.

3.06 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 products 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 Ensure manufacturer's representative is present before and during critical periods of installation and testing.

.4 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 Twice during progress of Work at 25% and 60% complete.

.3 Upon completion of Work, after cleaning is carried out.

3.07 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00.

.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 00.

.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.

.4 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.08 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