

Part 1. **General**

1.1 **RELATED REQUIREMENTS**

- .1 Section 28 05 01 – Common Work Results – Electronic Safety and Security
- .2 Section 28 13 00 – Access Controls
- .3 Section 28 23 00 – Video Surveillance
- .4 Section 27 51 23 – Intercommunications and Program Systems

1.2 **REFERENCES**

- .1 ASTM International
 - .1 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 CSA International
 - .1 CSA G40.20/G40.21-[04(R2009)], General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA W59-[M03(R2008)], Welded Steel Construction (Metal Arc Welding).
- .3 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual.
 - .1 MPI # 5, Exterior Alkyd Wood Primer.
 - .2 MPI # 9, Exterior Alkyd Enamel.
 - .3 MPI #76 Primer, Alkyd, Quick Dry, for Metal.
 - .4 MPI # 81, Machinery Enamel.

1.3 **DOCUMENTS AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop drawings:
 - .1 Indicate equipment layout, mounting bolt locations, electric power requirements, vehicle detection, protection loop and lead-in wire, installation details, wiring diagrams.
 - .2 Furnish catalogue description, illustration and specification data for each piece of equipment and accessory.
- .4 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures and maintenance manual.

- .5 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.

1.4 **CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for parking control equipment maintenance for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 **EXTRA MATERIALS**

- .1 Replacement parts / Maintenance materials
 - .1 Provide extra materials in accordance with Section 01 78 00 - Closeout Submittals.
 - .2 Supply two (2) gate arms for replacement purposes.
 - .3 Identify each gate arm including colour, type, and location.
 - .4 Deliver to Departmental Representative upon completion of the Work in this Section.
 - .5 Store where directed by Departmental Representative.

1.6 **DELIVERY, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading:
- .2 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .3 Packaging Waste Management: remove for reuse packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2. **Products**

2.1 **DESCRIPTION**

- .1 Automatic gate, vehicle entry access controlled by SCA with free exit activated by the vehicle detection loop.
 - .1 Automatic barrier gate at the West entrance to the parking lot. Controlled by the SCA. Vehicle entry access controlled by:
 - .1 A card reader hooked up to a SCA door access controller.
 - .2 A PCDB installed at the main gatehouse of CCBN parking lot.
 - .3 The security desk.
 - Vehicle exit is controlled by:
 - .4 A vehicle detection loop hooked up to a SCA door access controller.
 - .5 A PCDB installed at the main gatehouse of CCBN parking lot.
 - .6 The security desk.

- .7 The PCDB installed at the main gatehouse of CCBN parking lot and related cabling and conduit are to be provided by others. The security contractor shall provide a terminal block inside the barrier control cabinet and must provide proper labelling and instruction for the connexion of the PCDB. The SCA door controller inputs dedicated to the PCDB shall be configured in order to allow for permanent deactivation of the barrier and to open and close the barrier.
- .2 Automatic barrier gate at the North-East entrance to the parking lot. Controlled by the SCA. Vehicle entry access controlled by:
 - .1 A card reader hooked up to a SCA door access controller.
 - .2 The security deskVehicle exit is controlled by:
 - .3 A vehicle detection loop hooked up to a SCA door access controller.
 - .4 The security desk
- .3 Automatic barrier gate at the South-East entrance to the parking lot. Controlled by the SCA. Vehicle entry access controlled by:
 - .1 A card reader hooked up to a SCA door access controller.
 - .2 The security deskVehicle exit is controlled by:
 - .3 A vehicle detection loop hooked up to a SCA door access controller.
 - .4 The security desk
- .2 The parking lot payment and management system is to be provided by others.

2.2 DESIGN CRITERIA

- .1 Colour and design of traffic control signs, signals and markings intended to regulate, warn or guide road users to be in accordance with Manual of uniform traffic control devices for Canada.

2.3 MATERIALS

- .1 Galvanized steel sheet: 2 to 6 mm thickness, commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.
- .2 Steel sections: to CSA G40.21.
- .3 Welding materials: to CSA W59.
- .4 Electrical components: CSA approved and complying with local requirements.
- .5 Power supply will be 230 V, single phase, 60 Hz.

2.4 COMPONENTS - BARRIER GATE ARMS

- .1 Gate arm:
 - .1 Round single arm, 84 mm in diameter
 - .2 Made of aluminium, painted white with red diagonal reflective strips on both sides of arm, extremity cap. Sized accordingly with car lane width.
 - .3 CAN/CSA-Z809 or FSC or SFI certified.

- .2 Gate arm replacement.
- .3 Control: adjustable timed circuit with automatic reset.

2.5 **COMPONENTS - READER AND INTERCOM POST**

- .1 Access card reader for parking gate (see section 28 13 00).
 - .1 Control device housing
 - .1 Steel sheet at least 1.6 mm thick. Assembly by weatherproof welding. Polycarbonate front plate (Lexan) so as not to interfere with the reading distance.
 - .2 Painted finish.
 - .2 Control device mounted on a curved tubular steel pole, according to the manufacturer's specifications.
 - .1 Minimal diameter 50 mm; minimal wall thickness 3 mm.
 - .2 Painted finish.
 - .3 Mounting height: 1050 mm above grade.
- .2 Protection bollard.
 - .1 Concrete filled steel bollard (color to be determined during installation). Shall be of 200mm diameter. Shall be installed 25mm within the passage lane in order to force incoming vehicles to avoid card reader installation.
- .3 Vehicle security device
 - .1 System: associated detector and detection loop for exiting vehicles.
 - .2 Vehicle detector: device in accordance with manufacturer's specifications, temperature rating in use from -40 degrees Celsius to 71 degrees Celsius.
 - .3 System auto calibrates after initial setup.
 - .4 Factory built Loop detector: 16 AWG wire, for burial within a PVC duct and sealed with epoxy; size of loop as indicated on division 32 drawings. Number of coils and sensitivity for detection of vehicles ranging from motorcycles to delivery trucks.
 - .5 Loop to be concealed beneath the asphalt surface in accordance with manufacturer's instructions of the detector and the detection loop.
 - .6 Vehicle detector protected against stray currents or against damage caused by lightning or other electrical source.
 - .7 Minimal Protection : loop fuse; Zener diode protection against power surges; protection against arcs from neon lights; noise filter.
- .4 Sidewalk and pedestal
 - .1 By others, site preparation work for the installation of gates, poles, bollards, ticket distributors and any other required components.

2.6 **FINISH**

- .1 Exposed surfaces to be in orange according to manufacturer's standard color pallet.

- .2 Interior surfaces of non-ferrous metallic components located outside : same exterior finish than previous clause, one (1) single layer of enamel paint in conformance with MPI product 81.
- .3 Galvanised finish: for sheet steel, zinc coating Z275 in accordance with ASTM A653 / A653 M; for irregularly shaped articles, Zink 0.5 kg/m² in accordance with ASTM A123 / A123M.

Part 3. **Execution**

3.1 **INSTALLATION**

- .1 Manufacturer's instruction: comply with manufacturer's written recommendations, including product technical bulletins, instructions for handling, storage and implementation of products and datasheet indications.
- .2 The security system contractor shall ensure coordination with division 32 for the installation of the detection loop in the asphalt pavement.
- .3 Test the whole system, calibrate properly and leave it in good working condition.
- .4 Single phase 230 Vac, to the terminal box of each unit of parking equipment in accordance with Section 26 05 00 - Electric - common work results
- .5 Install electrical wiring, junction boxes, transformers, circuit breakers and other related equipment necessary to complete installation.
 - .1 Comply with local requirements and those of relevant CSA standards.

3.2 **ON SITE QUALITY CONTROL**

- .1 Onsite quality control by manufacturer :
 - .1 The manufacturer shall submit recommendations regarding the use of his product as well as conduct site surveys in order to verify the work's conformance to his recommendations.

3.3 **CLEANING**

- .1 Perform cleaning work in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove from site materials / surplus materials, rubbish, tools and equipment.

3.4 **ACTIVITÉS LIÉES À L'ACHÈVEMENT DES TRAVAUX**

- .1 Démonstration et formation : faire une démonstration complète du fonctionnement et des méthodes d'entretien du système de contrôle du parc de stationnement, à l'intention du personnel d'entretien, conformément à la section 01 79 00 - Démonstration et formation.

FIN DE LA SECTION