

SECTION 111200 PARKING CONTROL EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the parking control equipment as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Automatic barrier gates.
 - 2. Vehicle detectors.
 - 3. Wheel stops.

1.3 RELATED SECTIONS

- A. Cast-in-Place Concrete - Section 033000.
- B. Electrical - Division 26.

1.4 SUBMITTALS

- A. Product Data: For each item of parking control equipment. Include manufacturer's standard details and installation and maintenance instructions.
- B. Shop Drawings: For each item of parking control equipment. Include plans, elevations, and details of typical members and other components. Show layout and installation details, including anchorage details.
 - 1. Wiring Diagrams: Detail wiring for parking control equipment operator, signal, and control systems and differentiate between manufacturer-installed and field- installed wiring.
 - a. Show locations of connections to electrical service provided in other Sections.
- C. Maintenance Data: For parking control equipment components to include in the maintenance manuals specified in Division 1.
- D. Maintenance Instructions: Manufacturer's written instructions for maintenance of parking control equipment.
 - 1. Include recommended methods and frequency for maintaining equipment in optimum operating condition under anticipated traffic and use conditions.
 - 2. Include precautions against materials and methods that may be detrimental to finishes and performance.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who is an authorized representative of the parking control equipment manufacturer for both installation and maintenance of the type of units required for this Project, and whose installations have resulted in construction with a record of successful in-service performance.
 - 1. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.
- B. Source Limitations: Obtain parking control equipment through one source from a single manufacturer.
- C. Product Options: Drawings indicate size, profiles, and dimensional requirements of each parking control equipment component and are based on the specific type and model indicated. Other manufacturer's individual components with equal performance characteristics may be considered provided deviations in dimensions and profiles are minor and do not change design concept.
 - 1. Do not modify intended design concept, as judged solely by Architect, except with Architects approval and only to extent needed to comply with performance requirements. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.
- D. Listing and Labeling: Provide internal electrical components required as part of parking control equipment specified in this Section that are listed and labeled.
 - 1. The Terms "Listed" and "Labeled": As defined in NFPA 70, Article 100.
 - 2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" as defined in OSHA Regulation 1910.7.

1.6 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
 - 1. Gate Arms: Two replacement breakaway gate arms for each gate installed. Include required accessory components.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Parking Control Equipment:
 - a. Amano McGann.
 - b. Federal APD, Inc.
 - c. Magnetic Automation Corporation.
 - d. T2 Systems.
 - e. Zeag North America Inc.
 - f. Or approved equal

2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by aluminum manufacturer and finisher for type of use and finish indicated, and with not less than strength and durability properties of alloy and temper designated below for each aluminum form required.
 - 1. Extruded Aluminum: ASTM B 221, 6063-T6.
 - 2. Aluminum Sheet: ASTM B 209, 5005-H15.
 - 3. Aluminum Floor Plate: ASTM B 632, 6061.
- B. Cold-Rolled Steel Sheet: ASTM A 366.
- C. Galvanized Steel Floor Plate: ASTM A 786, hot-dip galvanized according to ASTM A 123.
- D. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653, G90 coating designation; commercial quality.
- E. Steel Structural Tubing: ASTM A 500, cold-formed steel structural tubing, Grade B.
- F. Steel Mechanical Tubing: ASTM A 513, welded steel mechanical tubing.
 - 1. Hot-Dip Galvanized: According to ASTM A 123.
- G. Stainless Steel Sheet: ASTM A 666, Type 302 or 304.

2.3 AUTOMATIC BARRIER GATES

- A. General: Provide UL-approved, automatic, barrier-gate parking control system.
- B. Cabinets: Fabricate cabinets of 0.0966" thick steel sheet or 0.125" sheet aluminum, internally reinforced. Weld seams and grind smooth. Provide weatherproof, gasketed access doors with flush-mounted locks; furnish two keys for each gate, keyed alike.
 - 1. Finish cabinet, interior and exterior, with manufacturer's standard white baked- enamel finish over primer system.
- C. Gate Arm: Fabricate gate arm of galvanized steel shapes, as detailed on the drawings. Finish with high-performanc coating system as specified in Section 099000. Provide a mounting flange with breakaway feature to ensure a clean break if arm gets struck.
 - 1. Reversing Feature: Provide an automatic instant-reversing mechanism that stops downward motion of gate arm if arm strikes an object and that immediately returns arm to upward position. Include a 0- to 60-second variable-time reset device.
- D. Operator: Provide 1/3-hp; 115-V, ac; 60-Hz; single-phase; instant-reversing motor for operating gate arm. Transmit power to gate-arm drive shaft through a harmonic-acting crank and connecting rod. Fabricate cranks, rod, and drive shaft of galvanized solid bar steel. Provide an operable cam for adjusting arm travel.
- E. Electrical Components: Provide electrical control components in factory-sealed, plug- in controller. Provide a galvanized steel box for wiring connections. Equip unit with the following features:

1. One 115 V, ac grounded convenience outlet.
2. 250 W strip heater with a control switch and a preset thermostat.
3. On-off switch.
4. Automatic-manual switch.
5. Overload switch protection.

2.4 VEHICLE LOOP DETECTORS

- A. Loop Detectors: Solid-state, electronic vehicle-detector units designed to detect presence or transit of a vehicle over an embedded loop of wire and emit an electrical pulse to operate other equipment. Provide a three-position sensitivity switch and detection indicator light on front panel.
 1. Detector Loops: Multiple strands of wire of the wire size, number of turns, loop size, and method of placement as recommended in writing by parking control equipment manufacturer.
- B. Presence Detectors: Self-contained scanner detectors consisting of an infrared presence-sensing device to activate gate operator and a horizontal photoelectric beam to prevent gate from closing until traffic is clear. Detection patterns and sensitivity shall be adjustable.

2.5 ACCESS CONTROL UNITS

- A. Card Reader Access Unit: Access control system that activates barrier gates and functions only when authorized card is presented. Fabricate housing from welded cold-rolled steel sheet with weatherproof front access panel equipped with flush-mounted lock and two keys. Finish units with manufacturer's standard baked-enamel coating system. Provide face-lighted unit fully visible at night.
 1. System: Programmable, multiple-code capability permitting validating or voiding of individual cards.
- B. Digital Keypad Entry Unit: Access control system that activates barrier gates and functions only when authorized code is entered on keypad. Fabricate housing from welded cold-rolled steel sheet with weatherproof front access panel equipped with flush-mounted lock and two keys. Finish units with manufacturer's standard baked-enamel coating system. Provide face-lighted unit with metal-keyed keypad fully visible at night.

2.6 PRECAST WHEEL STOPS

- A. Provide 3500 psi air entrained pre-cast concrete car stops with absorption rates not exceeding 5% and smooth finish. Stops shall be 6'-0" long, 7" wide by 7" high and reinforced with two 7/8" dia. deformed bars conforming to ASTM A 615, grade 60. Stops shall be anchored with three (3) 1-1/4" dia galvanized steel pipe, 2'-0" long. Concrete materials shall conform to the requirements of Section 033000.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before installation, examine areas to receive parking control equipment. Verify that critical dimensions are correct and conditions are acceptable.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide templates for anchor bolts and other items encased in concrete or below finished surfaces so as not to delay the Work.

3.3 INSTALLATION

- A. General: Install parking control equipment according to manufacturer's written instructions and placement drawings.

1. Coordinate placement of anchors and accessories encased in concrete with Section 033000.

- B. Loop Detectors: Cut groove in pavement and bury and seal wire loop according to manufacturer's written instructions. Connect to related equipment operated by detector.

3.4 CLEANING AND PROTECTING

- A. After installing clean finished surfaces, touch up shop-applied finishes as required to restore damaged areas.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure parking control equipment is without damage or deterioration at the time of Substantial Completion.

3.5 DEMONSTRATION

- A. Instruct Owner's maintenance personnel on proper operation and maintenance of parking control equipment. Train personnel on procedures to follow if operation fails or malfunctions.

END OF SECTION 111200