

**SECTION 11 12 00**  
**PARKING CONTROL EQUIPMENT**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. The work of this Section shall include furnishing all material, equipment, labor, and supervision to install parking control equipment, as specified herein and/or indicated on the Drawings. Included will be supply, delivery, unloading, setting, anchoring, control wiring installation, wiring termination, and start-up of all system equipment.

**1.2 RELATED WORK**

- A. The following Work is related to this Section:
1. Alternates, Section 01 23 00
  2. Shop Drawings, Product Data, and Samples, Section 01 33 23
  3. Cast-in-Place Concrete, Section 03 30 00
  4. Signage, Section 10 14 00
  5. Electrical, Division 26

**1.3 System Description**

- A. General
1. This parking facility is to be used by:
    - a. Patients and Visitors
      - 1) Patient and visitor parkers will enter the parking facility by providing a voucher to the booth attendant.
      - 2) Future phase to include a bar code scanner machine for entry and exit of patient and visitor parking.
    - b. Staff Parkers
      - 1) Staff parkers will enter and exit the parking facility via a card reader system during after hour operation.
  2. The parking equipment shall be on-line with a parking Facility Management System (FMS) control computer.
  3. The parking control equipment shall include an intercom system providing two way voice communications to the Parking / Security office.
  4. The card reader at entry lanes will include a video camera for security to view entering visitors/employees.
- B. Entry and Exit Lane Locations
1. Entry Lanes
    - a. West Lane - Base bid
  2. Exit Lanes
    - a. Center Lane - Base bid
    - b. East Lane - Future phase
  3. Reversible Lane
    - a. Center Lane - Future phase

C. Facility Management System (FMS)

1. The FMS shall be an on-line computer system of hardware and software providing information to manage the parking facility. All lane equipment shall be connected to and communicate with the FMS. The primary functions of the FMS shall include:
  - a. Access Control
  - b. Equipment Status and Control

**1.4 SUBMITTALS**

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, furnish Manufacturer's Certificates and Data certifying that the materials conform to the requirements specified.
- B. Submit Shop Drawings for review and approval. Included are equipment wiring diagrams, equipment cut sheets and specifications, and equipment color charts.
- C. Upon request submit for review and approval the names, locations, contacts, and telephone numbers for the five most recently installed completed projects.
- D. Submit for record 30 days prior to installing the Parking Count System Equipment, procedures for testing electrical, mechanical, and program functions of the system.
- E. Provide the Owner with two final copies of each of the following:
  1. Maintenance Manual
  2. Operating Manual
  3. Equipment electrical circuitry diagram
  4. As built equipment wiring diagram

**1.5 TRANSPORTATION AND HANDLING**

- A. Deliver equipment to the site packaged to prevent damage and marked for easy identification.
- B. Store equipment in a clean, dry location protected from damage. Replace damaged materials at no cost to the Owner.
- C. Deliver items required to be built into the concrete promptly to the site so they may be built in as the work progresses.

**1.6 OPERATING CONDITIONS**

- A. Equipment shall be designed, fabricated, and installed to operate effectively under the climate and exposure conditions for the recorded weather extremes for the equipment location.
- B. It is recognized that certain solid state and computer based parking and revenue control equipment may require special electrical power and grounding considerations. If required by the parking count system equipment, the Manufacturer of the Parking Occupancy Count System shall:
  1. Include in the bid amount the cost to provide and install voltage stabilization modules or devices to protect each component from normal voltage variations.
  2. Advise the Engineer in writing at the time of the award of contract of any special electrical power, uninterruptible power supplies, and grounding requirements.

## **1.7 WARRANTY**

- A. Provide Manufacturer's Warranty.
- B. Warranty shall be for one year covering all labor and materials.
  - 1. Warranty shall commence when equipment is 100 percent operational and acceptable to the Owner, as approved in writing by the Owner and Engineer.
  - 2. Maintain equipment operational during the warranty period such that, if defective, equipment shall be serviced within eight business hours, following notification by the Owner. Business hours are 8 a.m. to 5 p.m. Monday through Friday, excluding holidays.
  - 3. Warranty shall include preventative maintenance cleaning, testing, and minor repair no less than twice per year.
  - 4. Warranty shall cover all equipment furnished under this specification section - both manufacture and installation, excluding misuse or vandalism.

## **PART 2 - PRODUCTS**

### **2.1 Facility Management System (FMS)**

- A. The facility management system shall be an on-line system of computer hardware and software providing information and control to manage the parking facility. The system shall be designed and configured specifically for parking facility management. All lane equipment shall be connected to the FMS.
- B. Access Control subsystem of the FMS shall use Credential Reading Devices (CRD) located at the entrance lanes, exit lanes, and control points where indicated on the Drawings. The CRD types include proximity/swipe cards and bar code access. Equipment to include intercom and camera tied to security desk. Amano McGann 3000 Series Universal Reader or equivalent.

### **2.2 EMBEDDED LOOPS AND VEHICLE DETECTORS**

- A. The parking equipment detector loops shall be sawcut (maximum  $\frac{3}{4}$ " depth) into the slab-on-grade.
- B. Directional logic detection shall be provided for count system accuracy. Provide loops as required for directional detection and counting.
- C. Detectors shall be installed within NEMA housings mounted to walls or columns adjacent to counting locations.
- D. Contractor shall locate embedded reinforcement and electrical conduit in the slab prior to saw-cutting for loop detectors. Contractor shall take all necessary precautions to prevent damage to reinforcement and conduit, and shall repair all damage caused by Contractor's work at no cost to the Owner.

### **2.3 GATES**

- A. The parking gate shall provide an effective barrier to vehicles in the entrance and exit lanes. The barrier arm shall retract quickly in a vertical plane on a command signal from the card reader, bar code machine, and detector loop depending on location, and return to the lower position upon a signal from a detector beyond the gate location. The parking gate shall be installed as located on Drawings and shall incorporate in one housing all necessary components for the functioning of this unit.

#### **2.4 CASHIER BOOTH**

- A. Furnish and install booths type and location as specified herein and/or indicated on the Drawings.
- B. Barrier-free booths shall meet all requirements of the Americans with Disabilities Act (ADA).
- C. Provide booths with the following features:
  - 1. Install on level bed of grout, seal around perimeter of base.
  - 2. 22-inch standard adjustable height Formica countertop. In corner, provide a two-inch diameter hole in countertop to allow for control and power wiring.
  - 3. Insulated walls and roof of prefabricated galvanized steel.
  - 4. Clear tempered safety glass on four sides.
  - 5. 40-watt fluorescent fixture with wall mounted light switch.
  - 6. Vinyl rub rail both sides of booth.
  - 7. Anti-fatigue floor mat - to meet ADA requirements for changes in level for floor surfaces. Note: bevel mat at sliding door.
  - 8. 120V, 13,500 BTU air conditioner; roof mounted in field: wall mounted thermostat.
  - 9. 240 VAC/4000 watt heater with fan; wall mounted thermostat.
  - 10. 120V/20 AMP duplex receptacle isolated ground, surge protected.
  - 11. 120 VAC, 20 amp separate dedicated power circuit, lightening protected.
  - 12. One (1) 36-inch wide hinged steel door at the back of the booth with safety glazing, weather stripping, heavy duty track ball bearing hangers, and maximum security deadbolt lock with removable key cylinder outside and thumb turn inside.
  - 13. Two sliding cashier windows, one on each side.
  - 14. A floor opening shall be provided to allow for control and power conduits.
  - 15. Provide a 100 ampere, main circuit breaker, single phase, three wire, 240/120 volt power panel, 8 circuit capacity. All electrical items provided in the booth shall be wired to panel. Provide proper size circuit breakers for items being served. All wiring shall be minimum size #12 AWG and enclosed in EMT conduit. All fittings, wiring devices, and fixtures shall be UL approved. Panel shall be ready for site connection of power feed.
  - 16. All interior and exterior surfaces shall be cleaned with industrial lacquer thinner, prime painted with zinc chromate primer, and finish painted with a minimum two (2) coats of commercial quality acrylic enamel. Color to be white.
- D. Barrier-free booth to be 5'-4" x 7'-6" with 2 inch base height for wheel chair access. Approved products are:
  - 1. Model 75HC, ParKut, Harrison Twp., MI.
  - 2. Model 75SW, Porta-King Durasteel, Earth City, MO.

3. Model 57HC, Little Buildings, Romeo, MI.
4. Model T24, BIG Enterprises, Inc., South El Monte, CA.

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Inspect setting surfaces, power wiring and conduit installation for equipment and report immediately in writing to the Engineer, as required in the General Conditions, any conditions of Related Work which are unsuitable for proper execution of this Work.
- B. INSTALLATION
  1. Install Parking Occupancy Count System in accordance with Manufacturer's recommendations and the approved shop drawings. Also see Quality Control requirements.
  2. Installation shall be by factory-trained mechanics experienced in installation of equipment of this type.
  3. Provide and pull control wiring and make final connections of all wiring.
- C. ADJUSTMENT AND SYSTEM START-UP
  1. Adjust and tune the system as required to assure proper operation. After installation, test all functions of the Parking Occupancy Count System.
  2. Provide on-site instructions to Owner's personnel. Instructions shall include but not be limited to, programming the system, setting thresholds, use and operations of count system and differential counters. Coordinate instruction schedule with Owner.
  3. The Parking Occupancy Count System will be considered acceptable after being 100 percent operational and after having performed satisfactorily for fourteen (14) continuous business days with no down time.

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