

DIVISION 11

EQUIPMENT

Part 1 General

1.1 SECTION INCLUDES

- .1 High performance barrier gate and controls.

1.2 SUBMITTALS

- .1 Product Data
 - .1 Equipment list, system description, electrical wiring diagrams for installation and manufacturer's data sheets on each product to be used including preparation instructions and recommendations and installation methods.
- .2 Shop Drawings
 - .1 Shop drawings showing layout, profiles and product components including concrete support pedestal, anchorage, wiring diagrams in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Operation and Maintenance Manuals.

1.3 SCOPE

- .1 Provide access and egress control for Lane 4 including in-ground vehicle sensor loops.
- .2 Modify access control for Lane 1, Lane 2, and Lane 3 by replacing in-ground vehicle sensing loops with new, and adding one additional sensor loop per exit gate.

Part 2 Products

2.1 MATERIALS

- .1 The gate controller, lane exit signage (signal head) and vehicle sensing loops shall be supplied as a package.

2.2 COMPONENTS

- .1 Gate hardware
 - .1 Suitable for lane width of: 6.0m
 - .2 Opening/closing time: 1.3s
 - .3 Power consumption max: 95W
 - .4 Duty cycle: 100%
 - .5 Supply voltage: 85 - 264VAC
 - .6 Housing material: Powder coated aluminum. Color closest match to existing unit. Lockable. Turn over three sets of keys.
 - .7 Base frame: Powder coated stainless steel
 - .8 Enclosure rating: IP54
 - .9 Temperature range: -40C to +55C, c/w heater.

- .10 Housing dimensions to be appx 315W x 360D x 915H
 - .11 Support 2 detection loops. Variable I/O assignment and fully programmable output relays. Capability to inhibit gate closure when vehicle is sensed on loop below gate. 8 digital inputs. 6 digital/relay outputs. Output options include: gate open status, gate closed status, proximity loop 1 activated (vehicle present), proximity loop 2 activated (vehicle present). Easy to program lane configurations and operation parameters via selector switch, pushbuttons, and LCD display. High visibility and reflective boom. Lifetime of 10 million cycles.
 - .12 Barrier gate arm: aluminum with counterweight, high visibility.
 - .13 Signal head: separate red and green lights, LED source, mounting hardware for integral or remote mounting, as indicated. Include relaying to permit control of signal lights from gate controller.
 - .14 Warranty: 2 years.
 - .15 Manufacturer: Magnetic Autocontrol. Series: Magnetic.Access Pro series.
 - .16 Install to manufacturer recommendations. Provide concrete foundation to controller dimensions plus 100mm all around.
- .2 Vehicle sensor loops
- .1 Wire size: 16 AWG
 - .2 Loop wire diameter: 3/16"
 - .3 Cable construction: Polyethylene outer jacket. Nylon coated polyethylene insulated conductors. Built in wing-shape backer rod for snug fit in 3/16" groove.
 - .4 Loops shall be factory preformed. Loop widths shall be appx 1m narrower than the lane width where they are installed, and loop depth shall be appx 2m. Finalize loop size and lead-in length requirement after measurements on site and prior to submitting shop drawings. Loop sensing range shall extend to appx 1.2m above the lane surface for a loop of 1.8m depth.
 - .5 Sealant tip: Include 3/16" sealant tip for sealant application.
 - .6 Manufacturer: BD Loops. Model: SC series.
 - .7 Sealant: BD-LG Loop Goop polyurethane sealant, low viscosity, low conductivity, cleanable with rubbing alcohol.

Part 3 Execution

3.1 CONTROLLER INSTALLATION

- .1 Installation in accordance with manufacturer's recommendations by factory authorized contractor.
- .2 Provide concrete foundation for barrier controller suitable for mass and dynamics of barrier arm including wind and ice loading. Foundation: 610 mm diameter; Extending from 150 above grade to 3000 below grade; Reinforced with 10M rings 300 o/c and 6-15M verticals; Sonotube form; 5-8% air entrainment; Dewater hole; Apply vibration during pour to prevent voids; Do not over vibrate or use equipment that operates over 10,000 vibrations per minute.
- .3 Provide concrete pad and hot dip galvanized or epoxy painted steel supports for signal head. Use stainless steel hardware.

- .4 Test system under supervision of authorized manufacturer representative. Test system under supervision of authorized manufacturer representative. Representative shall be CAGOI (Certified Automated Gate Operator Installer) as accredited by the Institute of Door Dealer Education and Accreditation (IDEA).

3.2 VEHICLE SENSOR LOOP INSTALLATION

- .1 Follow manufacturer recommendations and best practices.
- .2 Keep min 450 clear to all metal objects including reinforcing and sewer grill. Route loops and loop leads away from underground line voltage wiring. Keep loops min 500 from barrier housings and barrier arms. Where two loops are used at one location, maximum separation shall not exceed 1800mm or manufacturer's recommended maximum spacing.
- .3 Use 3/16" saw-cut blade. 1/8" cuts not acceptable.
- .4 Use the Saw-Cut Layout Kit to lay out cutting pattern.
- .5 Install loop at appx 1.25" to 1.5" depth.
- .6 Lead in wire shall be installed in PVC conduit.
- .7 Use a loop sealant to seal the groove. Use of crack filler is not acceptable. Use new, manufacturer provided, 3/16" sealant tip. Fill saw cut from bottom up.
- .8 Loop shall be installed black side up to ensure phasing direction matches.
- .9 Use a "V-Cut" for the yoke. Apply sealant to yoke per installation instructions for waterproof seal.
- .10 Align loop over saw-cut groove before insertion into the groove to prevent need to remove and realign.
- .11 Where approved by Contract Administrator, sprinkle sand over the sealant to allow earlier opening of lane to traffic.
- .12 Where installing new vehicle sensing loops to replace existing, make use of portions of existing saw cuts to the extent practicable. Loops can be relocated appx 450 mm from locations indicated to make use of portions of existing saw cuts. Loops widths shall be approximately as indicated above and shown on drawings. Finalize locations and sizes on site.

END OF SECTION