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**SPECIFICATIONS**

5/28/20

For the Project Titled:

West Tennessee State Penitentiary  
Replacement Detention Sliding Gates

Designer

Department of Correction  
Facilities Planning and Construction  
Ronald J. LaFlamme Staff Architect  
License Number 103486



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## SECTION 00 02 00

### SCOPE OF WORK

The scope of work is a materials only purchase of 4 new motorized sliding detention grade gates. These gates shall be assembled into a complete operational unit at the factory or suppliers shop. When these gates get delivered to the site each one needs to be ready for the facility to crane into place, weld per manufacturer recommendations and connect to existing control and power wiring in the field with minimal modifications to existing infrastructure. All labor to install will be performed by TDOC Agency Resources who will be installing one gate at a time. Therefore, from an install standpoint, the facility does not require that all 4 of the gates need to be delivered on the same day. All manufacturers suppliers and/or vendors shall have visited the job and met with ITS and Maintenance staff prior to fabricating and delivering their gates in order to verify all performance requirements and operation characteristics of the supplied gates matches the intent of this specification and matches field conditions without modifications.

In terms of operation, two of the gates are on right hand and the other two are left hand operation. New housings must be supplied so existing control wiring enters in the same area as the current equipment getting replaced. Existing gates have concrete grade beam under the gate which needs to be matched with the new gate dimensions. We also need to provide access to the controls from the appropriate side so maintenance staff can make repairs should the equipment fail. Mounting height of the operators is currently at about 14' height and it is preferred to lower the mounting height to 8' height to facilitate such access using a fixed fence panel above that so the frame matches the same top height. All these items should be evaluated by the supplier and shown on submittals for approval by TDOC prior to fabrication and delivery of the new gates.

All freight and delivery charges shall be included with the bid price for a one time delivery or for multiple or individual delivery depending on the supplier intent. (The installation will be done one gate at a time so delivery may be spread out.) It is expected the trucking company can back up to the dock at the Warehouse or Maintenance Building and a TDOC forklift can unload the units for inspection and storage before signing off on the delivery. Taxes are not included as this is a State Purchase.

Upon completion of this project the vendor shall deliver the required spare parts, training and O&M Manuals to the WTSP Facility. This date of delivery of these will be documented as the date of substantial completion and begin the warranty period per these specifications.

## **SECTION 28 51 40 - SECURITY ELECTRONICS DOOR CONTROL AND MONITORING SYSTEM**

### **PART 1 - GENERAL**

#### **1.1 WORK INCLUDED:**

- A. This section covers the door control and monitoring system as shown on the drawings or as required to support the systems defined in these specifications. The work under this section consists of furnishing materials and equipment necessary for the installation of the door control and monitoring system required for the security electronics system.
- B. Provide materials, equipment necessary for the installation of equipment.

#### **1.2 COORDINATION WITH OTHER TRADES:**

- A. The Contractor shall coordinate the work of this Section with that of other sections as required to ensure that the entire work of this Project will be carried out in an orderly, complete and coordinated fashion.

#### **1.3 CONTROL AND SYSTEM CONTACTS:**

- A. General: Questions shall be made to State of Tennessee Information Systems James Guin. Contact information is [James.C.Guin@tn.gov](mailto:James.C.Guin@tn.gov) or call (731) 738-1790 for information regarding control operation and infrastructure.

#### **1.4 SYSTEM DESCRIPTION**

- A. The Owner will furnish and install all PLC equipment and associated software and control functions to control and monitor the specific doors and gates indicated on the drawings.
- B. The door control and monitoring system shall be controlled solely by the PLC. The hardware at each door shall be controlled and monitored as described herein for each type of door opening indicated.
- C. Door and Gate Control and Monitoring Functions:
  - 1. Swinging Movement Door:
    - a. Lock Type: See door hardware specifications
    - b. Controls (PLC Outputs):
      - 1) Bolt Extend (red, #14 conductor)
      - 2) Bolt Retract (yellow, #14 conductor)

- c. Monitoring (PLC Inputs):
  - 1) Door Position Switch (brown, #18 conductor)
  - 2) Bolt Position Switch (black, #18 conductor)
  - 3) Request-To-Exit Pushbutton (blue, #18 conductor)
    - a) This function is not required for all doors. Where the REX PB is not part of the hardware group, this conductor shall be spare.
- d. Miscellaneous
  - 1) The grey #14 conductor shall be utilized for the power common.
  - 2) The white #18 conductor shall be utilized for the indication common.
  - 3) Coordinate with the specific door hardware to determine the specific power and interface required.

2. Sliding Gate:

- a. Device Type: See gate hardware specifications
- b. Controls (PLC Outputs):
  - 1) Gate Open (red, #14 conductor)
  - 2) Gate Close (yellow, #14 conductor)
- c. Monitoring (PLC Inputs):
  - 1) Gate Secure (brown, #14 conductor)
  - 2) Gate Fully Open (black, #14 conductor)
- d. Miscellaneous
  - 1) The grey #14 conductor shall be utilized for the power common.
  - 2) The white #14 conductor shall be utilized for the indication common.
  - 3) Power to operate the gate device shall be supplied by the electrical subcontractor.
  - 4) Coordinate with the specific gate hardware to determine the specific interface required.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Interposing relays for door lock control shall be plug-in type with hold down clip and LED indicator. AC or DC types shall be selected as appropriate for the application. Each door lock/relay circuit shall be individually fuse protected to isolate shorted circuits. DC relays shall be provided with diodes across the coil for transient suppression.
- B. Terminal Blocks/Terminal Strips:
  - 1. Security Electronics Cabinets, Enclosures, and Equipment Backboards for terminal block/terminal strip shall be by owner.
- C. Power Supplies:
  - 1. Security Electronics Cabinets, Enclosures, and Equipment Backboards for power supply shall be by owner.

END OF SECTION

## SECTION 32 31 00 - CORRECTIONAL SECURITY GATES

### PART – 1 GENERAL

#### 1.1 SUMMARY:

- A. The work in this section shall include furnishing all materials, equipment and appliances necessary to complete all detention grade pedestrian sliding gate(s) for this project in strict accordance with this section of specifications and drawings.
- B. Related Sections: The following sections contain requirements that relate to this section.
  - 1. Division 28 Sections for interfacing with security electronic controls.

#### 1.2 REFERENCES:

- A. Underwriters Laboratory Vehicle Gate Operator Requirements (UL 325).
- B. American Welding Society AWS D1.1 / D1.1M Structural Welding Code.
- C. ASTM A 123 Standard Specification for Zinc (Hot-Dip Galvanized Coatings on Iron and Steel Products).
- D. ASTM F 1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc Coated (galvanized) Welded, for Fence Structures.

#### 1.3 DEFINITIONS:

- A. Technical Advisor(s): An employee of the company producing the system who is certified in writing by the manufacturer to be technically qualified in design, installation, and servicing of the required gate systems. Personnel involved solely in sales do not qualify.

#### 1.4 SITE VISIT AND INFORMATION:

- A. Contacts at the Site
  - (i) Physical location: Maintenance Department. 480 Green Chapel Road/ Henning, TN 38041
  - (ii) Appointments: Please set up appointment so staff know to be expecting the vendor and will be prepared for vendor arrival. Fran Yocca/ Maintenance Admin. Secretary @ 1-731-738-1770 [Ada.1.Yocca@tn.gov](mailto:Ada.1.Yocca@tn.gov)
  - (iii) Submittals: Terry Sellers Make all submittals required to Terry Sellers / Facility Manager @ 1-731-738-1769 [Terry.W.Sellers@tn.gov](mailto:Terry.W.Sellers@tn.gov)
  - (iv) Questions: Questions may be made to Larry Jackson / Maintenance Parts Room @ 1-731-738- 1775 [Larry.H.Jackson@tn.gov](mailto:Larry.H.Jackson@tn.gov) OR Albert Lackey - Site 3 Facility Supervisor @ 731-738-1773 [Albert.F.Lackey@tn.gov](mailto:Albert.F.Lackey@tn.gov)

B. Prior to fabrication and delivery of product the selected manufacturers shall visit the Project Site;

1. Inspect and discuss electrical roughing-in, equipment bases, and other preparatory work specified elsewhere.
2. Review sequence of operation for each type of gate operator
3. Review coordination of interlocking equipment specified in this section and elsewhere.
4. Review gate handing and key code requirements.
5. Review required testing, inspecting, and certifying procedures

1.5 SUBMITTALS:

- A. General: Submittals shall be made to Terry Sellers per Section 1.4(A)iii. Above. Approval shall be in writing only by way of approved shop drawings.
- B. Product Data: Include details of construction relative to materials, dimensions of individual components, and gate. Provide roughing-in diagrams, operating instructions, and maintenance information. Include the following:
  1. Setting drawings, templates, and installation instructions for built-in or embedded anchor devices.
  2. Motors: Indicate nameplate data and ratings; characteristics; mounting arrangements; size and location of winding termination lugs, conduit entry, and grounding lug; and coatings.
  3. Detailed description of operation.
- C. Shop Drawings: For special components and installations not dimensioned or detailed in manufacturer's data sheets.
  1. Wiring Diagrams: Detail wiring for power, signal, and control systems. Differentiate between manufacturer-installed and field-installed wiring and between components provided by gate operator manufacturer and those provided by others.
  2. Foundation details for operator.
- D. Technical Advisor's Qualifications Data:
  1. Name, business address and telephone numbers of technical advisor(s).
  2. Written certification from gate systems manufacturer that advisor is technically qualified in design, and servicing of products.
  3. Technical Advisor: In addition to reviewing and approving the Gate Systems Submittals Package, the Technical Advisor shall provide the following on-site services:
    1. Render advice regarding, pre-construction discussions with other involved

trades (controls and electrical contractors) and final adjustment of the gate system(s)

2. Witness final system test and then certify with an affidavit that the gate system(s) is installed in accordance with the contract documents and is operating properly.
3. Train facility personnel on the operation and maintenance of the gate system(s) a minimum of 2 one-hour sessions.
4. Answer questions that might arise.

#### 1.6 CONTRACT CLOSEOUT SUBMITTALS:

- A. Operation and Maintenance Data for each Gate Type: Deliver 3 copies of instructions for operation, maintenance, recommendations, and parts manuals covering the installed products to the Owners Representative.
- B. Certification: Deliver to the Owners Representative written certification from the manufacturer's technical advisor that the gate systems and accessories are installed and operating properly. Include System Acceptance Test Report.
- C. Selected manufacturer shall furnish an extended 2 year warranty. The manufacturer shall warrant the operator parts against failure resulting from normal operation of the system for a period of 2 years from the date of purchase. "Failure" is defined as a factory defect, thereby preventing normal movement of the system.

#### 1.7 MAINTENANCE:

- A. Spare Parts: Furnish the following and store at the site where directed:
  1. Electrical: one motor, two limit switches, four limit nuts, one relay overload, two relay motor OPEN/CLOSE-solid state, one transformer, one circuit board-VS, one disconnect switch 30 amp, thermostat, one status/limit switch and one heater gearbox immersion.
  2. Required amounts of recommended lubricants for 3 years of service.

#### 1.8 CERTIFICATIONS:

- A. The steel factory welders must be certified per section 2.1-A/1, 2.2-A/2 and 2.3-A/3.

### **PART -2 PRODUCTS:**

#### 2.1 PEDESTRIAN SLIDING GATES:

##### A. GENERAL:

1. Detention grade pedestrian sliding gates shall be equipped with an enclosed rack and pinion drive assembly with internal locking to lock the gate panel in both the open and closed position. Pedestrian Sliding Gate systems shall be fully

assembled at the factory and shipped to the project site ready for installation.

2. All pedestrian sliding gate systems shall be pre-assembled, pre-hung and tested at the manufacturer's location.
3. Welding Certifications: Gate manufacturer shall provide independent certification as to the use of a documented Welding Procedure Specification and Procedure Qualification Record to insure conformance with the AWS D1.1 welding code. Individual Certificates of Welder Qualification documenting successful completion of the requirements of the AWS D1.1M code shall also be provided.

#### B. ACCEPTABLE MANUFACTURERS:

1. Willo Products Company model PG-1 Type R:  
Address: 714 Willo Industrial Drive, SE; Decatur, AL 35601; Phone: 256-350-8436 OR 1-800-633-3276; Email: [Sales@willoproducts.com](mailto:Sales@willoproducts.com)
2. Florida Detention Systems model FDS-PSG  
Address: 1296 SE 31st St, Melrose, FL 32666;  
Phone: 352-475-5391; Fax (352) 578-2351
3. Southern Steel / Southern Folger. model 3165 LXB  
Address: 4634 South Presa, San Antonio, Texas 78223; Phone: 210-533-1231; fax: 210-533-2211  
Through a Certified Installer Below:
  - a) All Phase Security, LLC; 812 Oliver Court; Montgomery, AL 36117; Phone: (334) 356-0367; Contact: Gene Mims; Email: [gmims@1allphase.com](mailto:gmims@1allphase.com)
  - b) C & R Security, Inc.; 705 Rigsby Rd.; Georgiana, AL 36033; Phone: 251-368-4786; Fax: 251-368-8125; Email: renee@c-rsecurity.com © 2019
  - c) US Security Systems, Inc. | 3101 Frederick Road, Suite #1 Opelika, AL 36801 | Ph: 334.273.8778 | Fax: 334.737.6614 | [parts@ussecuritysystems.com](mailto:parts@ussecuritysystems.com)
4. Cornerstone Detention Products, Installer may provide using any model above listed; 14000 AL-20 Madison AL 35756; Phone 256-355-2396
5. Or Equal if approved by TDOC Architect.

C. SYSTEM DIMENSIONS:

1. Provide detail drawing for clear opening width (match existing).

D. SYSTEM DESCRIPTION:

1. The system and all devices shall be designed for exterior pedestrian gate applications Usage Class IV. All system devices for this high security, motorized gate operating system shall be suitable for use with gates weighing up to 450 pounds. The unit is to be designed tested and ready for use in a Maximum Security application.
2. The pedestrian locking device shall positively lock at two (2) separate locations in the closed and open position with internal locking at the rear of the gate panel.
  - a. It shall be impossible for the gate to be opened except by electrical or mechanical operations provided.

E. SYSTEM COMPONENTS:

1. Motors shall be 1/10 HP, as produced by a nationally recognized manufacturer. System shall meet the electrical requirements 120/240 V.as designed for the facility.
2. Motors shall be protected against overload by either a thermal or a current sensing overload device.
3. The gearbox shall have a right angle worm-gear reduction.
4. The normal force exerted by the sliding gate during electrical operations shall be a minimum of 40 lb (18 kg).
  - a. An obstruction placed in the path of the gate, having a resistance greater than the factory pre-set limit, shall cause the gate to stop. When the obstruction is removed the gate shall resume travel in the selected direction.
  - b. A manual release, located in the emergency release column, shall be provided for manual operation.
  - c. Controller shall house all of the required gate logic components including, relays, limit switches and motor starters with overloads.
  - d. Control Circuit shall be 110 VAC and operating controller shall be fabricated using UL listed Parts.
  - e. Weather Resistant Motor Housing shall be constructed of a minimum ¼” (6.4 mm) steel plate, framed and stiffened as required.
  - f. Hinged weatherproof front cover panel shall be constructed of 10 gauge galvanized steel.

- g. All moving parts shall be concealed within the horizontal housing and the locking pilaster.
- h. The doorjamb and vertical members shall be free of hooks or lugs used for locking or any other purpose.

**F. KEY FEATURES:**

- a. Rack and pinion drive to provides sure action of the gate under a variety of conditions and installation variables.
- b. Heavy-duty construction ruggedly built for a range of detention environments.
- c. Tamper-resistance with all openings in housings baffled to preclude inmate tampering.
- d. Sloped-top housing to eliminate hiding of contraband.
- e. Mechanism Housing Covers shall have 7 gage housing and 10 gage access doors
- f. Vertical lock column housing shall be 1 ½"x1 ½"x1/4" T.S..
- g. Support structure shall include support posts 6"x6"x1/4" tubular steel with 16"x10"x1/4" steel base plates welded all around predrilled for anchor bolting to concrete grade beams.
- h. Gate panel shall be manufactured out of 2"x2"x1/4" tubular steel with mitered and welded corners. Gate panel filler shall be 2" x 2' x 3/8" woven wire mesh. All material shall be hot dip galvanized steel and completely welded together forming a rigid panel.
- i. A continuous bottom guide angle shall be provided as part of the gate panel with mounting brackets for anchoring to concrete grade beam.

**2.2 DETENTION GRADE LOCKING SYSTEM(S) SEQUENCE of OPERATION:**

1. Unit unlocks, opens and locks open; or unlocks, closes and deadlocks closed.
2. Manual emergency locking, emergency manual unlocking and operation in the event of power failure, unlocking the column provides access to the release mechanism. The gate may then be operated by hand crank.
3. The TDOC Facility manager shall be responsible to ensure that appropriate external primary entrapment safety devices be installed for the specific site conditions.

**2.3 FINISH:**

**A. Galvanizing:**

All exposed system parts may be zinc galvanized in the factory and cold process zinc coated welds or entirely hot dipped galvanized construction or powder coated.

B. Powder Coating:

All exposed system parts not zinc galvanized shall be powder coated finish battleship gray color selected by owner.

End of Section