ENGINEERING SPECIFICATIONS
BL 53 Security Barrier

SECTION 08 34 56 – Security Gates
SECTION 28 13 00 – Access Control
SECTION 34 71 13 – Vehicle Barriers
SECTION 34 75 13 – Operable Roadway Equipment

PART I – GENERAL

1.01 SECTION INCLUDES

A. This section covers the furnishing and installation of a security barrier.

1.02 REFERENCES

A. The rising barrier shall be compliant with EC standards.

1.03 SYSTEM REQUIREMENTS

A. The security barrier must control and restrict vehicle traffic between secured and unsecured zones.

B. Must feature security arm to block vehicles and prevent access to restricted areas without authorization.

C. Must be mechanically locked at the vertical (up position), and the horizontal (down position).

D. Must be able to automatically operate and must be bidirectional, allowing traffic in both directions.

E. Must be configurable in one of three (3) states:
   1. Open - arm remains in the open or up position.
   2. Closed - arm remains in the closed or down position.
   3. Automatic - arm is normally in the closed position and controlled by the associated entry/exit hardware.

F. Must be able to use the access control system to grant or deny access to the facility and operate with a variety of user authentication devices such as card reader devices, ticketing systems or barcode reader systems.

G. Must be able to manually raise and lower the gate.

H. The arm must be made of aluminum.

I. Design of the unit must provide visual notification option for intuitive process.

1.04 SUBMITTALS

A. Submit product data: equipment description, dimensions, electrical wiring diagrams for installation, and manufacturer's technical manuals on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Operation and maintenance manuals.

B. Provide shop drawings and indicate component connections and location, anchorage methods and location, and installation details.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver equipment to job site in manufacturer’s packaging, undamaged and complete with installation instructions.

B. Store indoors in a controlled environment, protected from construction activities and debris.

1.06 PROJECT/SITE CONDITIONS

A. Install the rising barrier on leveled concrete base.

1.07 QUALITY ASSURANCE

A. The rising barrier must be manufactured in the European Union

B. Manufacturer Qualifications:
   1. Manufacturer shall be a company specialising in designing and manufacturing rising barriers with a proven minimum experience of forty-five (45) years
   2. Manufacturer shall have a Quality Management System compliant with ISO 9001

C. Source Limitations: obtain the rising barrier from Automatic Systems.

1.08 WARRANTY

A. Automatic Systems warranties its products against parts defects for a period of two (2) years from the date of invoicing. This warranty excludes normal wear on finishes or damage that occurs due to abuse or misuse. Obtain full warranty terms from Automatic Systems.

PART II – PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: subject to compliance with requirements, provide products by one of the following:
   1. AUTOMATIC SYSTEMS, 5 avenue Mercator, 1300 Wavre, BELGIUM
      Homepage : www.automatic-systems.com E-mail : asmail@automatic-systems.com

B. Products:
   1. Security barrier, Model BL 53

2.02 CONSTRUCTION

A. Operator frame
   1. Frame must be manufactured of folded and welded strong section sheet steel (from 3 to 10 mm thick), protected by cataphoresis and two coats of structured paint (standard colour: orange RAL 2000).

B. Access panels
   1. The top and side panels must be removable to allow easy access to both the electromechanical drive and electronic control units.
   2. Openings must be key-locked.

C. Arm
   1. Center mounted arm,
   2. To be oval reinforced and manufactured from aluminum (section of 175 x 100 mm with maximum 8 m length), lacquered white with red reflective strips.

D. Enclosure
   1. Design of the unit's enclosure shall ensure an IP 44 degree of protection

2.03 DIMENSIONS

A. Arm length:
   1. The arm length for equipment must be 3m to 8m depending to the arm type.

B. Operator dimensions:
   1. Overall dimensions BL 53 operator:
      a. Height: 1130 mm
      b. Footprint: 600 x 549 mm
   2. Rotation axis height
      a. 934 mm

2.04 OPERATION

A. Automatic mode (arm Normally Closed & Controlled by a loop or access control device):
   1. Command to barriers. In stand-by position, the passageway must be blocked by the arm.
   2. Upon receipt of a signal from the access control system or the inductive loop, the arm must open, freeing the passageway.
   3. The obstacle immediately closes after passage or after a configurable delay.

B. Power Failure
   1. In case of power failure, the barrier can be open/close manually using the emergency crank supplied with the barrier.
   2. After the power has been restored, the unit must return to its previous operating mode.

C. Emergency Operation
   1. The unit can be set to remain open upon receiving an emergency signal. The obstacle opens and allows unobstructed exit / entrance.

2. This operating mode continues as long as the emergency signal is active.
3. After the emergency signal has been turned off, the unit must return to its previous operating mode.

2.05 SECURITY

A. Must provide operator and arm to securely block the passageway.

B. Must have mechanical locking integrated. The arm must be mechanically locked in the closed position to prevent any attempted break-in.

C. The cabinet's side panels and top cover must be key-locked.

2.06 SAFETY

A. In case of emergency or power failure, the operator must have an emergency crank to open the arm.

B. Must provide minimum 3m wide passageway.

C. Passage can be monitored in both directions by means of a loop detector, infrared beams, or other means of monitoring, to ensure user safety and prevent arm from closing when a vehicle is crossing the passageway:
   1. If a presence is detected in the obstacle safety area during the opening motion, the arm will complete its opening.
   2. If a presence is detected in the safety area during a closing motion, the arm can be set to either immediately stop or re-open depending on the selected mode. The obstacle will operate again after the safety zone has been cleared

D. The arm controller motor must have a provision for an entrapment protection device that automatically reverses or stops the movement whenever the arm strikes an object during a closing action.

2.07 VEHICLE GUIDANCE

A. Visual notification with clear graphics can be incorporated in each direction to control flow and to warn users.

2.08 DRIVE UNIT

A. Three-phase asynchronous geared motor, lubricated for life.

B. Grooved pulley and V-belt making the adaptation of the operation speed possible according to the length of the boom arm.

C. Crankshaft-rod mechanism with ball strap joints, to insure progressive shock-free accelerations and deceleration, as well as mechanical locking of the arm in end positions.

D. Safety torque limiter with adjustable friction.

2.09 CONTROLLER

A. Microprocessor-based controller with the following characteristics:
   1. The logic must be equipped with:
      a. LED indicators showing the status of the inputs and outputs,
      b. One (1) analog and fourteen (14) digital inputs,
      c. Three (3) output relays, four (4) digital outputs and one (1) analog output.
      d. Two (2) loop detector connectors when loops are used as safety or to control the barrier opening/closing.
      e. One (1) RJ45 connector for a serial RS232 communication.

2. The barrier operator may be equipped with an extension module that adds four (4) digital inputs and four (4) digital outputs.

B. The controller must have equipment diagnostic capability and the ability to be configured:
   1. The Human Machine Interface:
      a. Digital screen,
      b. Five (5) push buttons

2.10 POWER SUPPLY

A. Power supply:

*** NOTE TO SPECIFIER ** 230 Volts AC 50/60 Hz is the standard power supply. For an additional cost, 120 Volts AC 60 Hz is available as an option in brackets.*

Delete the following subparagraphs in brackets if no optional material is required, or retain the material that is appropriate for the project.

   1. 230 Volts AC 50/60 Hz
   2. [*120 Volts AC 60 Hz*]

B. Consumption in operation:
   1. At rest : 50W maximum
   2. Peak : 350W maximum

2.11 PERFORMANCES

A. Opening Time & Closing Time
   1. The obstacle opening time: 5 to 10 seconds depending on arm length
   2. The obstacle closing time: 5 to 10 seconds depending on arm length

B. Operating Temperatures: -35 to +50 degrees Celsius

C. MCBF: 1.500.000 average number of cycles between breakdowns, when respecting manufacturer's recommended maintenance

2.12 OPTIONAL EQUIPMENT

*** NOTE TO SPECIFIER ** Delete the following subparagraphs in brackets if no optional equipment is required, or add as necessary.*

1. *[Arm offset]*
2. *[Height adjustable tip support]*
3. *[Electromagnetic tip support]*
4. *[Folding tip support]*
5. *[Bolt cover to protect arm from vandalism]*
6. *[Security lock / crank hole closing plate]*
7. *[Push buttons box for opening-closing-stop]*
8. *[Key switch on housing for automatic-locked open-locked closed modes]*
9. *[Fireman emergency opening]*
10. *[Radio Transmitter/Receiver]*
11. *[Vehicle detection loop]*
12. *[Presence detector for detection loop]*
13. *[Photoelectric cell for opening-closing-safety]*
14. *[Cell assembly on housing]*
15. *[Cell support post]*
16. *[Extension card for inputs, outputs]*
17. *[Arm LED lighting]*
18. *[LED traffic lights]*

19. *[Support post for traffic lights]*
20. *[Aluminum traffic sign, 400mm diameter]*
21. *[Paint of another RAL color (other than standard colors)]*
22. *[Raised base]*
23. *[Rotating base]*
24. *[Stainless steel mechanical parts]*
25. *[Treatment for aggressive saline environment]*
26. *[IP55 enclosure fixed on the housing]*

PART III – EXECUTION

3.01 INSPECTION

A. Installer must examine the installation location and advise the Contractor of any site conditions inconsistent with proper installation of the product. These conditions include but are not limited to the following:
   1. Rising barrier for parking area operator must be installed on a level concrete pad,
   2. Power supply and control wiring must be installed. Follow manufacturer's recommendations.

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

3.02 INSTALLATION

C. Install rising barrier in strict accordance with manufacturer's instructions. Set units level. Anchor securely into place.

3.03 ADJUSTMENT

D. Installer must adjust rising barrier for proper performance after installation.

3.04 INSTRUCTION

E. A factory trained installer must demonstrate to the owner's maintenance crew the proper operation and the necessary service requirements of the equipment, including exterior maintenance.

3.05 CLEANING

F. Clean barrier operator and area carefully after installation to remove excess caulk, dirt and labels.

3.06 MAINTENANCE

G. Maintain the equipment according to the manufacturer's instructions.

Automatic Systems reserves the right to change this specification at any time without notice.

END OF SECTION