

Full Height Turnstile



Full Height Aluminum
Full Height Galvanized Steel

DS-FAL
DS-FSTG



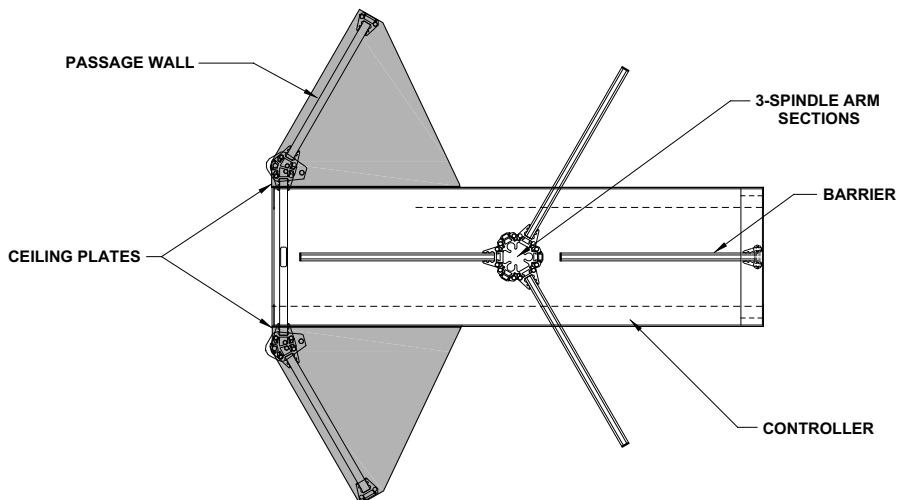
FULL HEIGHT TURNSTILE

WHAT THEY DO?

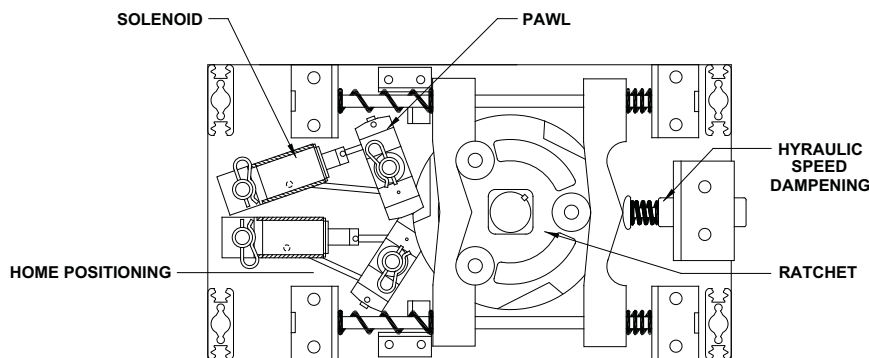
- Provide a physical access point on a facility where it is important to have control over who will be allowed ingress and/or egress of the facility.
- Provide security against unauthorized entry at unattended locations on the facility where only authorized employee access is required.
- Assure to a reasonable degree that only one authorized person will be allowed ingress and/or egress at a time. On any single card swipe, only the amount of persons who can fit in between two arm sections can get through. With the same swipe of a card to open a door, the door can be held open for several people to pass.

THE BASIC FULL HEIGHT SECURITY TURNSTILE

A typical configuration has 3 spindle arm sections, a passage wall on one side of the spindle, a barrier on the opposite side of the spindle, a metal plate over the passageway on each side and a electro-mechanical controller above the spindle arm sections.



The controlling mechanism for electrically controlled turnstiles is usually an electric solenoid driven pawl that engage and disengage a ratchet that is mechanically connected to the spindle arms. A card access reader or similar device will release the spindle section allowing it to rotate and a limit switch will signal a re-lock of the spindle at a specified point in the rotation. The mechanism will also have a centering device that will push the spindle section to the home start position after a minimum of ½ of a cycle has occurred.



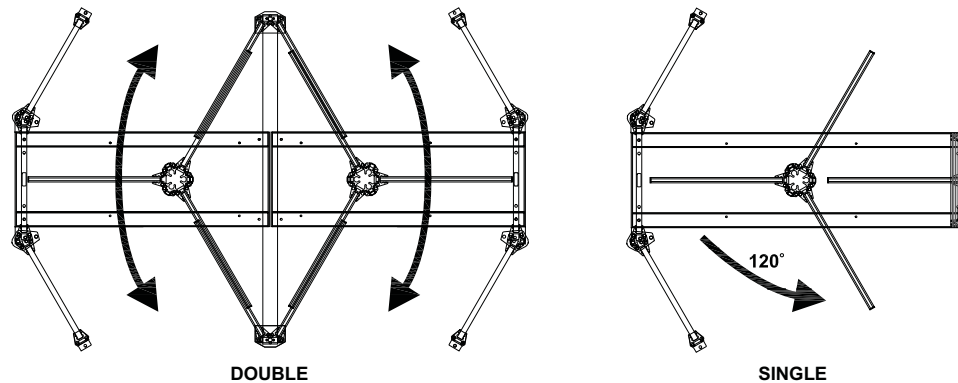
- The mechanisms can be configured to operate electrically, mechanically or a combination of both.
- A timed re-lock if not rotated is typically a standard or optional feature offered with the control system.

SINGLE TURNSTILE SIZE:

- Overall Dimensions: 60 - 65"W x 57 - 65"D x 85 - 90"H
- Passageway: 28 - 30"W x 80"H

DOUBLE TURNSTILE SIZE:

- Overall Dimensions: 96 - 100"W x 57 - 65"D x 85 - 90"H
- Passageway: TWO @ 28 - 30"W x 80"H



STANDARD MATERIALS AND FINISHES THAT ARE AVAILABLE:

- **Aluminum: Color Anodized**
- Stainless Steel: Polished
- Stainless Steel: electro-plated (exterior use)
- Combination Aluminum Frame w/ Stainless Steel Arms: Anodized Aluminum and polished Stainless Steel
- *Steel: Hot Dip Galvanize*
- *Steel: Powder Coated*
- Plastic Arms: Polycarbonate arms in lieu of metal arms
- **Plastic Panels: Large polycarbonate panels in lieu of arms**

WHAT ARE SOME TYPICAL SPINDLE OPTIONS REQUESTED BY THE CUSTOMER?

- Fail Lock operation in both directions of rotation.
 - Fail Lock = when power is lost the turnstile will remain locked.
- Fail Safe operation in both directions of rotation.
 - Fail Safe = when power is lost the turnstile will free spin.
- Combinations of fail lock in one direction of rotation and fail safe in the other.
- Always locked in one direction and either fail safe or fail lock in the other direction.
- Free spinning.

WHAT ARE THE FULL HEIGHT TURNSTILES MINIMUM REQUIREMENTS?

PHYSICAL:

- Maximum of 6" spacing between arms.
- Full "door height" (68") passage height.
- Minimum opening passage width of 28-30".
- Typically 5' to 5½' over-all width.
- Barrier on opposite side of spindle than passageway.
- Top barrier over passageway.
- A three-wing (section) spindle.
- A shaped wall for the passageway.

WHAT ARE THE FULL HEIGHT TURNSTILES MINIMUM REQUIREMENTS (CONTINUED)

MECHANICAL FUNCTION:

- Normally locked when powered and static.
- Lock releases with authorized electrical signal and re-locks after one person passes through.
- Single or Bi-Directional use.
- Anti-reverse that could allow unauthorized multi-passages.
- Single person passage on one authorized signal.
- No possibility of locking a person in the passageway.
- No possibility of sudden stops in mid-cycle.
- After single person passes through, spindle arms are in position to allow next authorized pass.

ELECTRICAL FUNCTION:

- Independent controls of clockwise and counter-clockwise unlock and re-lock.
- Timed re-lock if non-passage.
- Fail safe or Fail lock.
- Status lights (locked or unlocked), usually optional.
- Cycle completed indication.

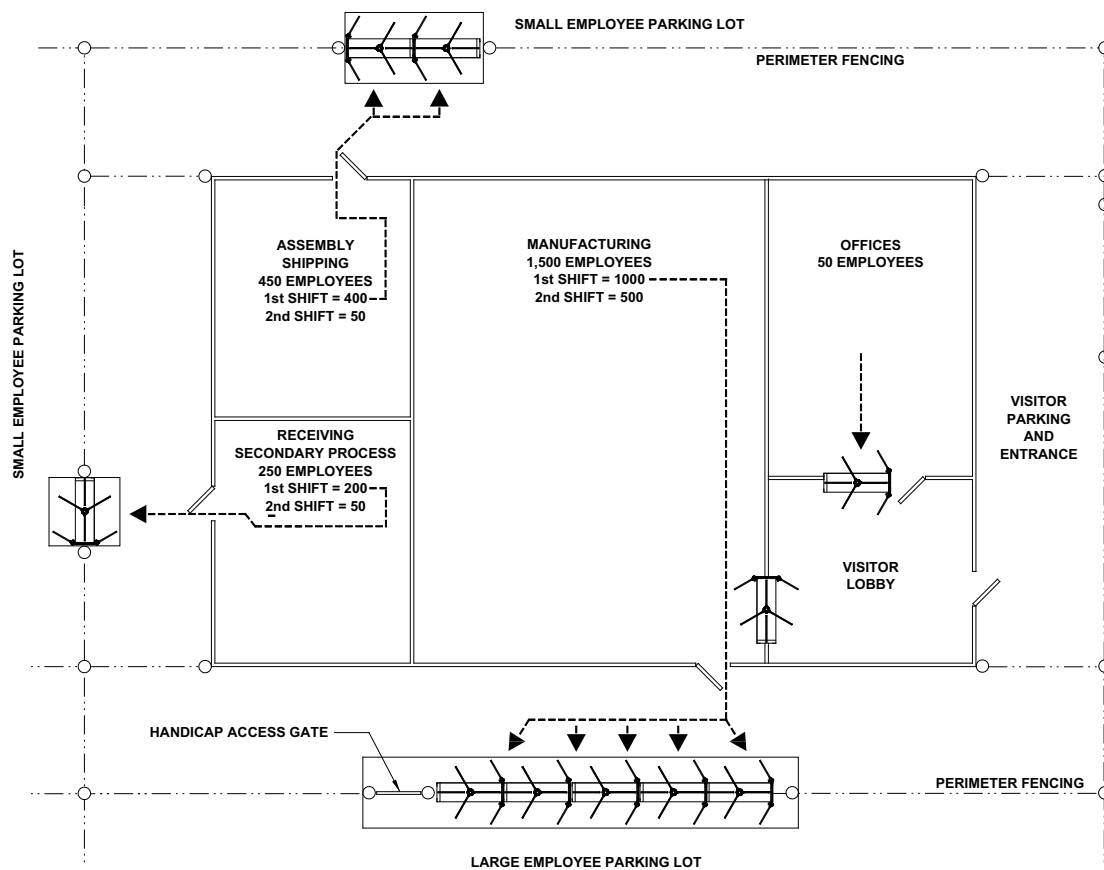
WHAT HAPPENED DURING ONE CYCLE?

- Turnstile receives contact closure from Card Reader or other device.
- Solenoid activates and releases pawl from ratchet.
- 10 second timer to re-lock begins timing.
- Person begins moving spindle and home position switch activates.
- Home position switch activation stops 10 second timer (removes from circuit).
- Person continues to rotate spindle to about 80 degrees where the Limit Switch is activated.
- Limit Switch activation causes the Solenoid to deactivate and the Pawl to engage the Ratchet and relock the turnstile.
- Turnstile spindle continues to rotate to home position (120 degrees rotation).
- Turnstile is locked and awaiting signal for another passage.

HOW TO CALCULATE HOW MANY TURNSTILES ARE NEEDED?

When using card access or other access control devices, the number of cycles per minute is determined by the speed of the access control devices processor and the average amount of time it takes one person to walk from one side to the other side of the turnstile.

- For estimating purposes it is generally accepted that these two factors will average to approximately 20 persons passing through the turnstile per minute.
- To calculate the quantities needed you need to know how many employees will be passing through the area where the turnstiles are going and how quickly the employer wants them to be processed.
- The formula would be: (Number of Employees / Minutes required by Employer) / 20 employees per minute per turnstile.



Large Employee Parking Lot

For estimating purposes the employer at the above facility wants the employees to be able to exit the facility within 10 minutes of arrival at the turnstile. Since the 1st shift will have the largest amount of employees arriving at the turnstile gate locations that shift will be used to determine how many turnstiles are needed.

PARKING LOT "A"

400 employees divided by 10 minutes = 40 minutes

40 minutes divided by 20 employees per minute per turnstile = **2 turnstiles**

PARKING LOT "B"

200 employees divided by 10 minutes = 20 minutes

20 minutes divided by 20 employees per minute per turnstile = **1 turnstile**

PARKING LOT "C"

1,000 employees divided by 10 minutes = 100 minutes

100 minutes divided by 20 employees per minute per turnstile = **5 turnstiles**

OFFICES

50 employees divided by 10 minutes = 5 minutes

5 minutes divided by 20 employees per minute per turnstile = **.25 or 1 turnstile**

DESIGNED SECURITY, INC. MODEL SELECTION:

- Easy to follow ordering guide. Since the product comes fully equipped, there is no need for a long and confusing list of options to inconvenience to customer.
- To get an accurate quote and ultimately the correct product to the customer all you need to find out is; Do they need a single unit or a double unit? What color of anodizing? Will the spindle be controlled in one direction only or in both directions?

POWER REQUIREMENTS AND CONTROL WIRING:

POWER:

- Each Turnstile will require a clean 115 Volt, 15 Amp grounded circuit.
- A screw type insulated terminal block for the power is located above the barrier and inside the header.
- Conduit for the power wires must come into the header from the top or the side as shown below.

CONTROL WIRES:

- For each direction of rotation being controlled there is a control board.
- The control boards are located above the passageway and inside the header.
- Located on the control board are two each terminal blocks identified as EXT1 and EXT2 that control devices such as Card Readers or Push buttons can be wired to.
- If only one control device is used, it does not matter which terminal block is used.
- The input from the control device is required to be a Momentary Dry Contact Closure for duration of less than one second.
- Conduit for the control wires must come into the header from the top or the side as shown below.

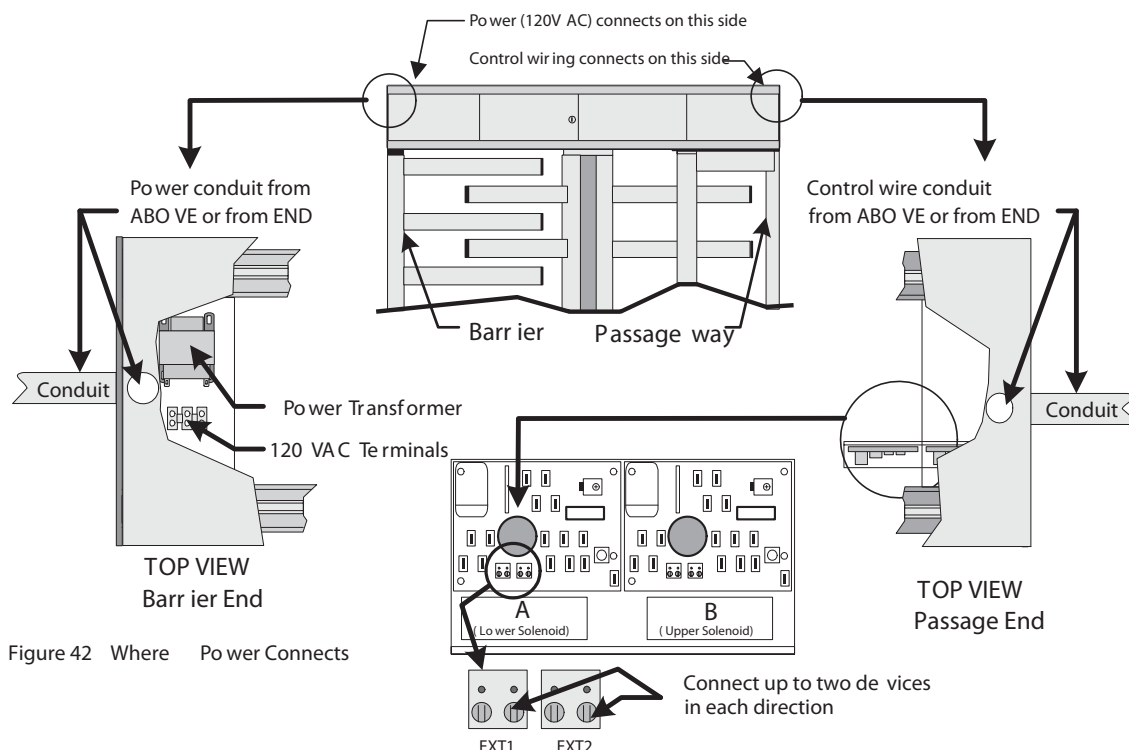
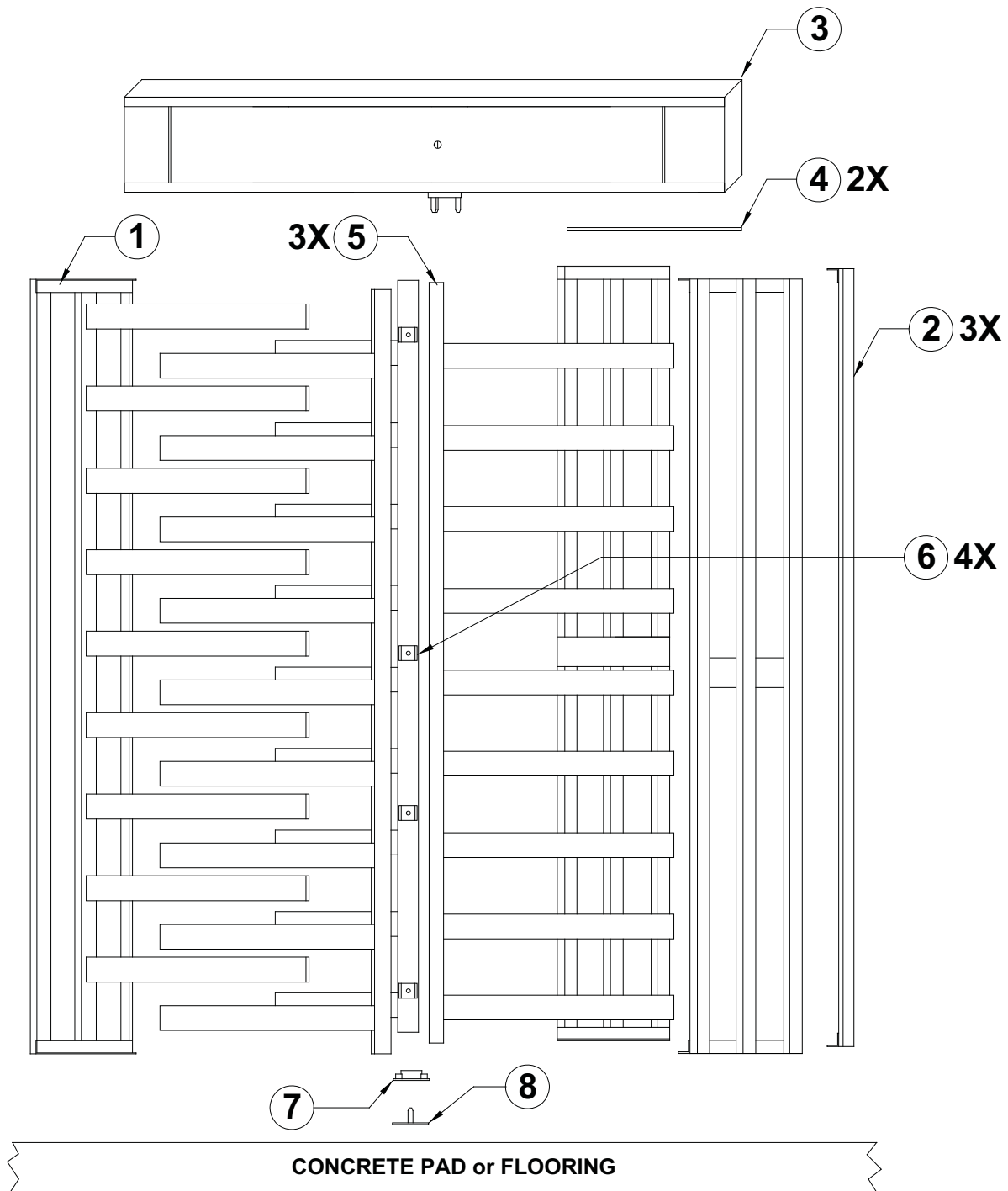
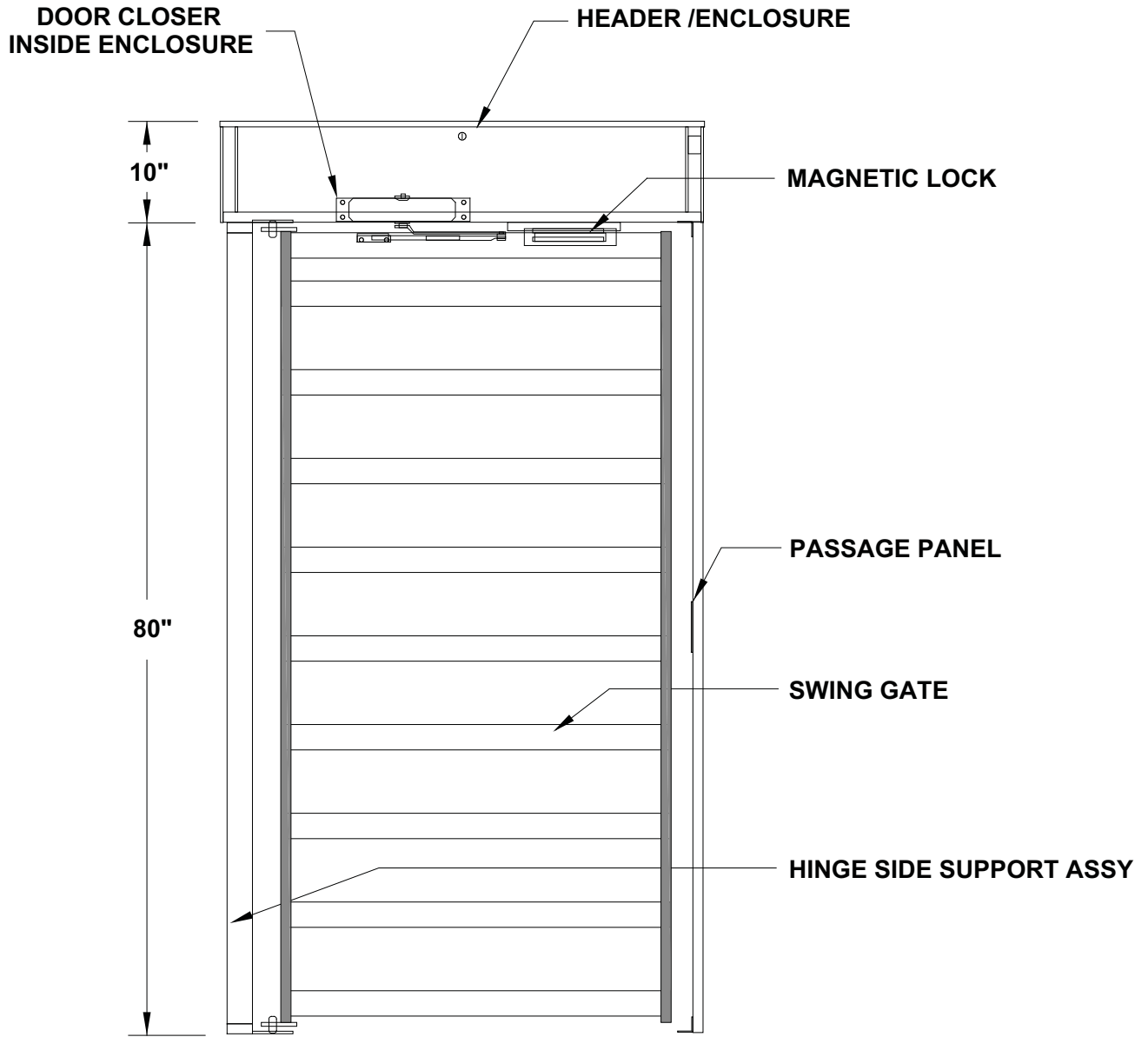


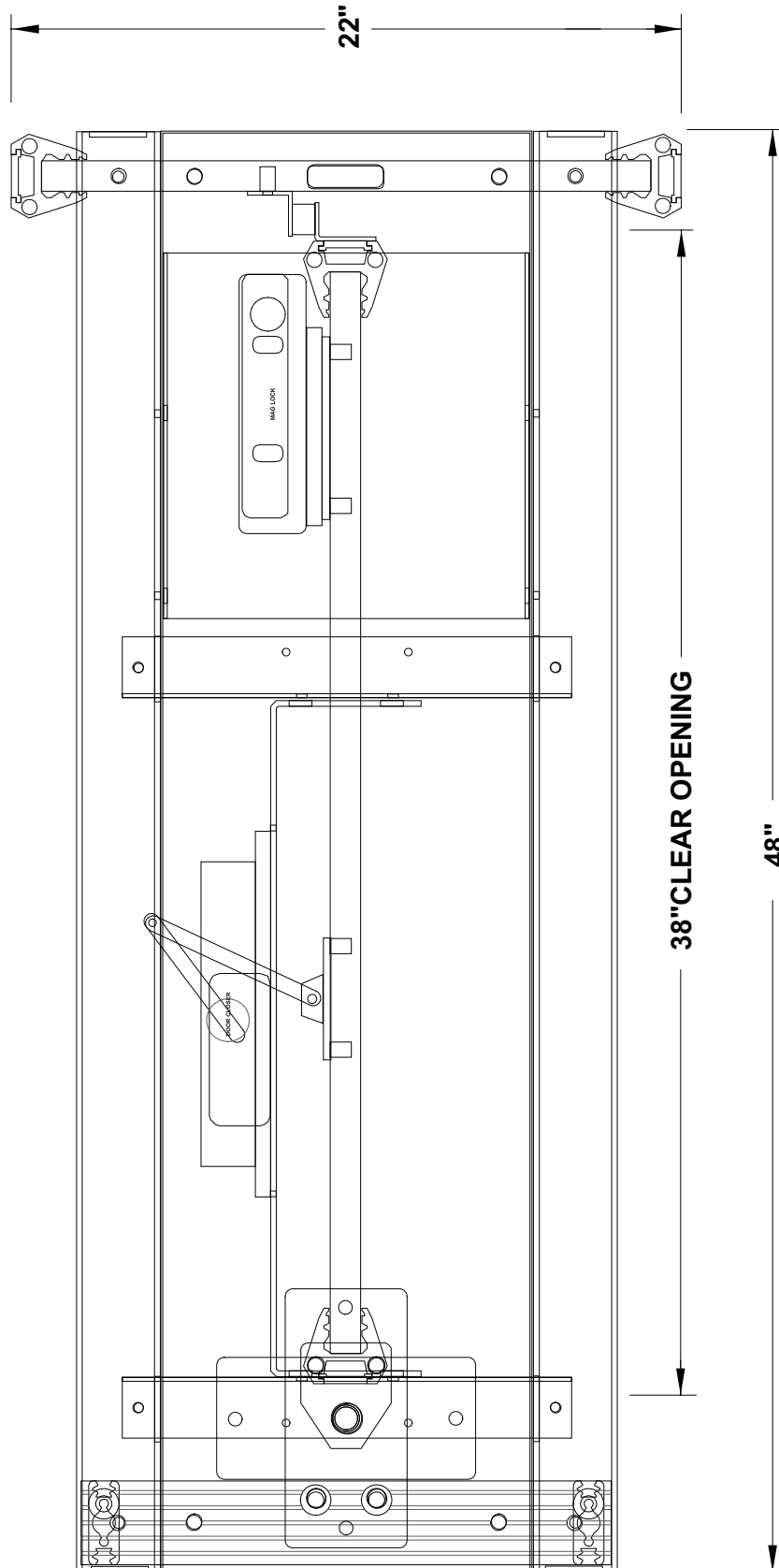
Figure 42 Where Power Connects

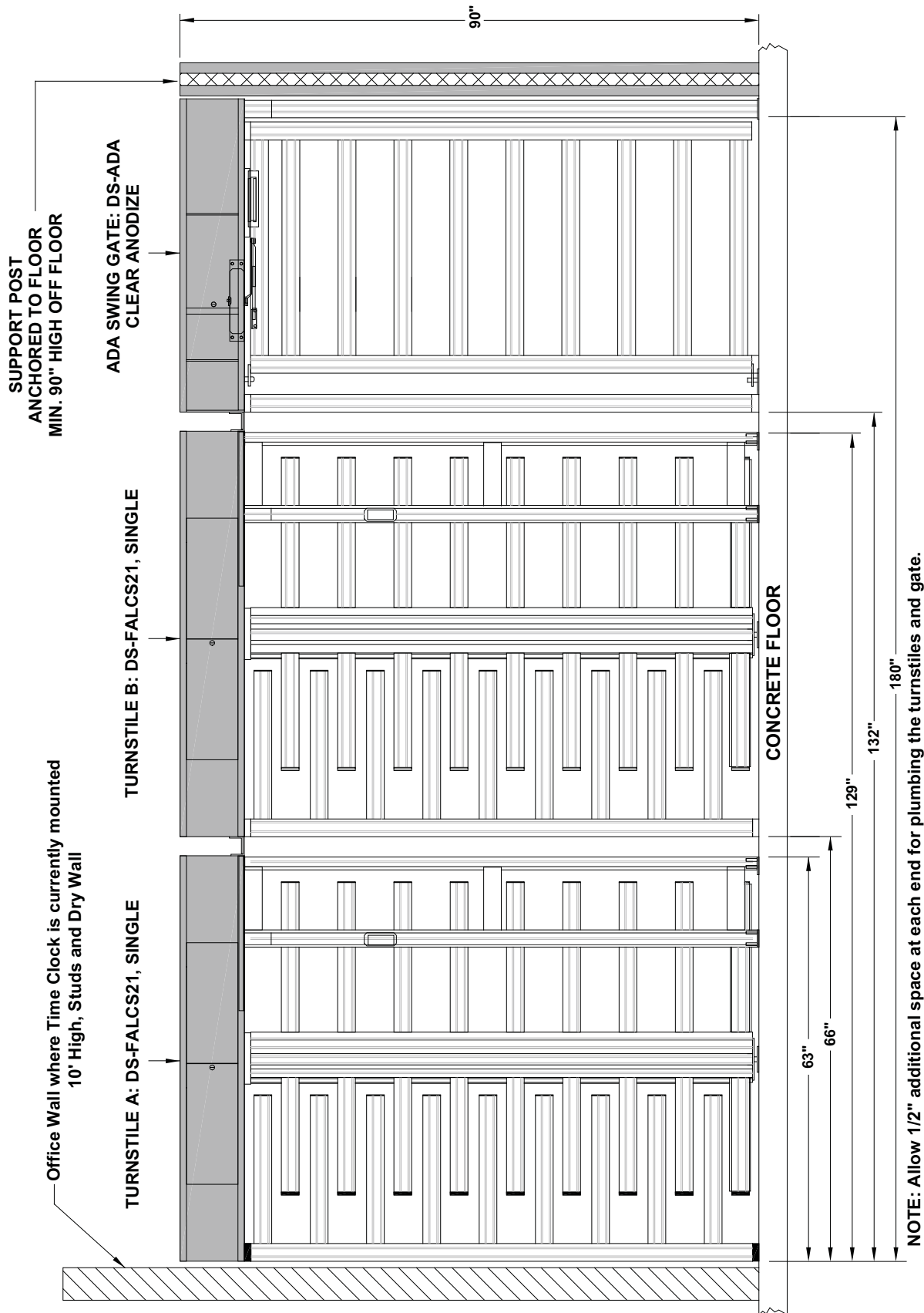


- 1 - BARRIER ASSEMBLY**
- 2 - PASSAGE PANELS**
- 3 - HEADER/MECHANISM ASSEMBLIES**
- 4 - CEILING PLATES**

- 5 - SPINDLE ARM ASSEMBLIES**
- 6 - SPINDLE CONNECTOR NUTS**
- 7 - LOWER BEARING HOUSING**
- 8 - SPINDLE PIVOT MOUNTING PLATE**







NOTE: Allow 1/2" additional space at each end for plumbing the turnstiles and gate.

