

## Placement of Biological Safety Cabinets with Dimensions Guidelines

**Applies To:** Researchers installing biological safety cabinets in a new or renovated laboratory space.

**Air supply diffusers or exhaust vents shall not be placed directly over or in front of biological safety cabinets (BSCs), where air movement can affect the airflow into the cabinet.**

All BSCs should be placed in a laboratory at a location that provides a minimum of the following distances. Contact (202) 994-8258 if you have questions or would like assistance.

DISTANCE	...
6 inches (150 mm)	Behind the BSC to allow for service operations.
12 inches (300 mm)	From adjacent walls or columns.
12 inches (300 mm)*	Between two BSCs.
12 inches (300 mm)	Between both sides of the cabinet
40 inches (1020 mm)	Of open space in front of the BSC
60 inches (1520 mm)	From opposing walls, bench tops and areas of occasional traffic.
40 inches (1020 mm)	Between BSC and bench tops along a perpendicular wall.
120 inches (3050 mm)	Between two BSCs facing each other.
60 inches (1520 mm)	From behind a doorway.
40 inches (1020 mm)	From an adjacent doorway swing side.
12 inches (300 mm)	From an adjacent doorway hinge side.
48 inches (1220 mm)	From perpendicular walls
6 inches (150 mm) clearance	Below fire alarm devices (sprinklers, speakers, strobe light)
12 inches (300 mm) clearance	From the filter face and any overhead obstructions when the cabinet is in its final operating position, to allow for testing of the Exhaust HEPA/ULPA filter

\*40 inches is recommended in the Biosafety Cabinet (BSC) Placement Requirements for new Buildings and Renovations, National Institutes of Health, Farhad Memarzadeh, Ph.D., P.E.

### ***E.4.2.3 Exhaust Requirements***

If the BSC is to be connected to an external mechanical exhaust system, first examine the location to ensure that it is compatible with the cabinet's exhaust outlet.

The area directly above the cabinet's exhaust outlet should be clear of structural elements, water and utility lines, or other fixed obstructions.

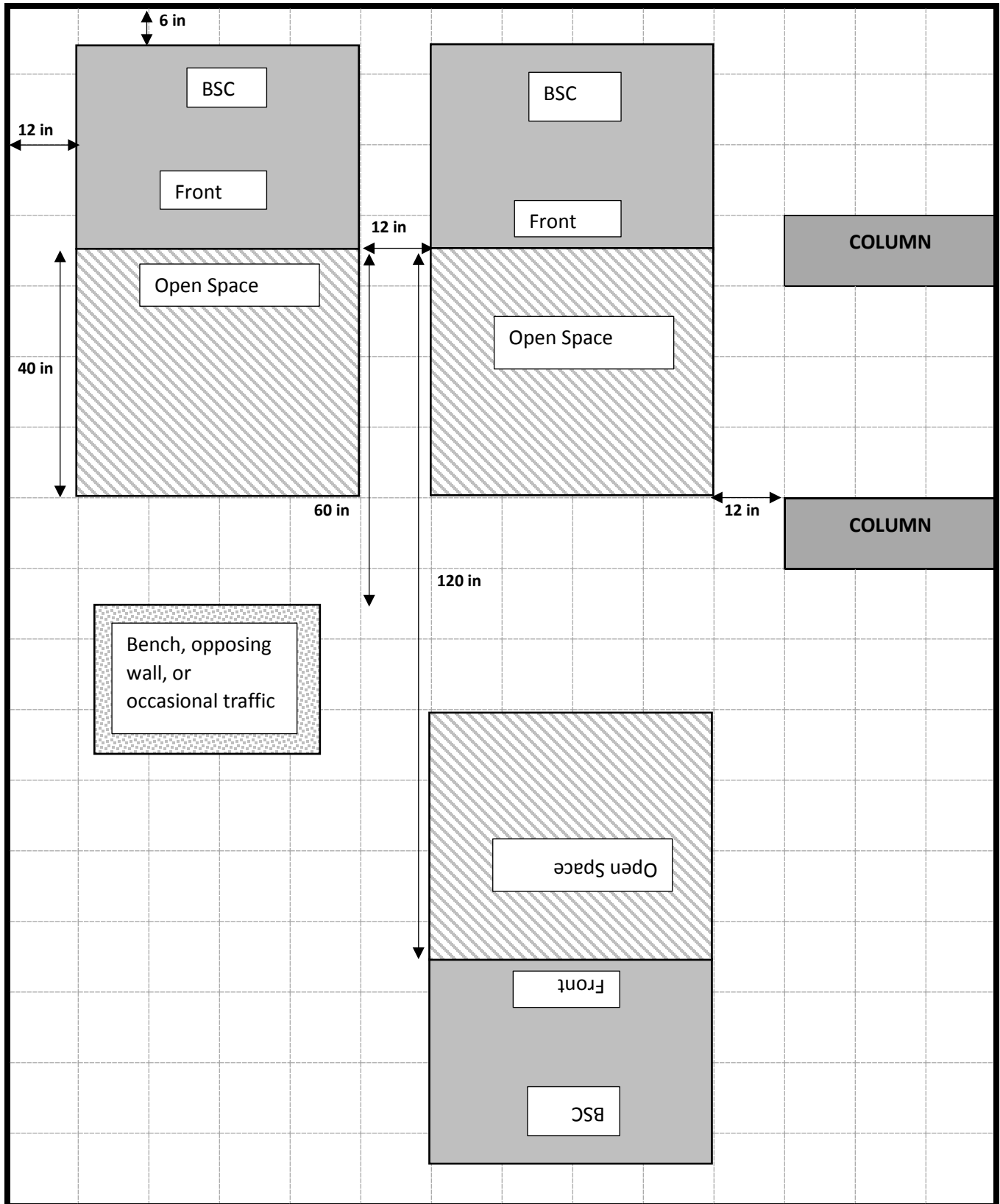
There should be enough clearance to allow for the passage of a 10 inches (250 mm) or 12 inches (300 mm) diameter duct.

Avoid cabinet locations that require either an elbow directly on top of the cabinet's exhaust connection or an excessive number of elbows to clear other items.

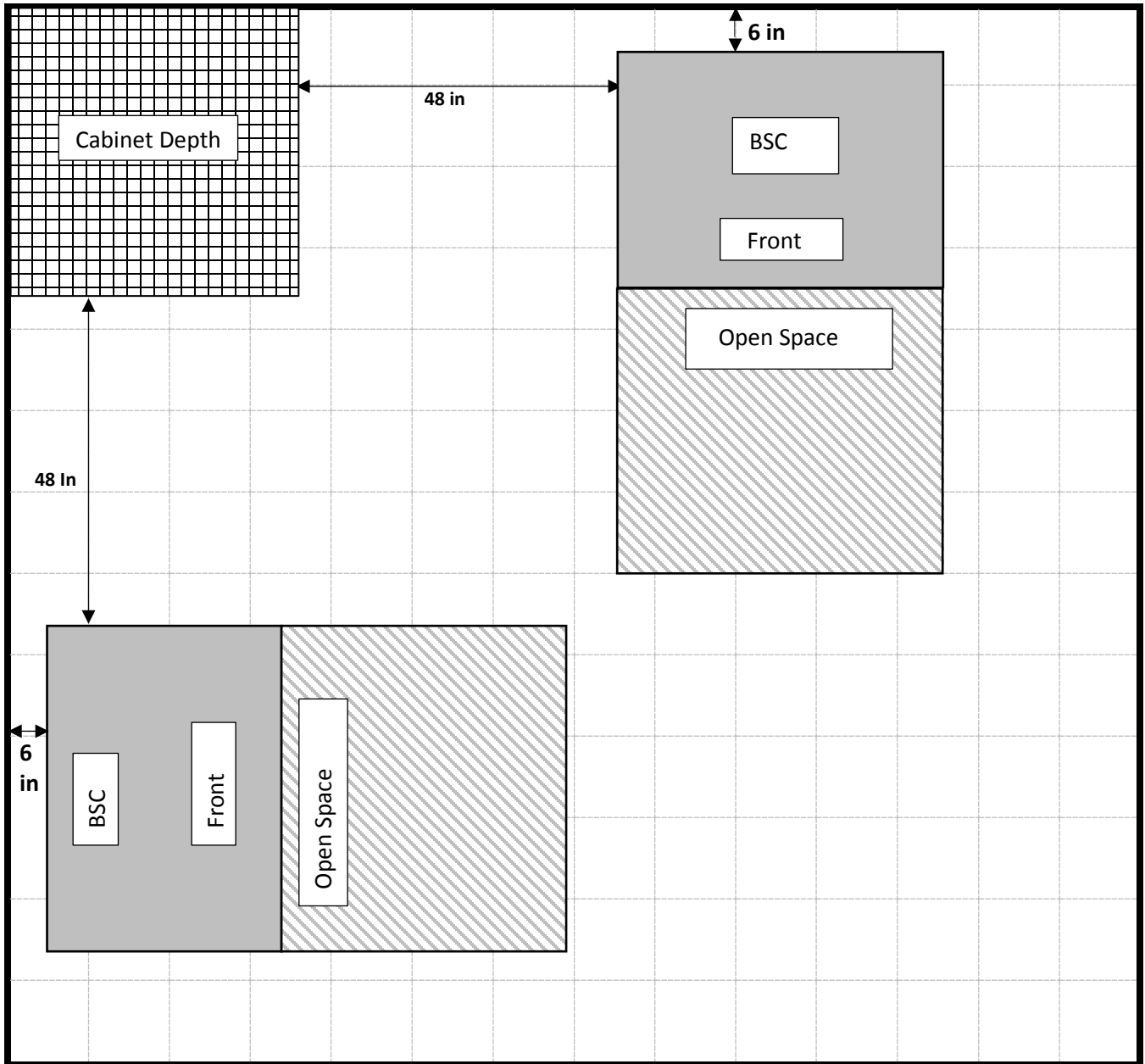
### ***Referenced Documents***

- Biosafety Cabinet (BSC) Placement Requirements for new Buildings and Renovations, National Institutes of Health, Farhad Memarzadeh, Ph.D., P.E.
- 2016 Rev. NSF/ANSI Standard 49

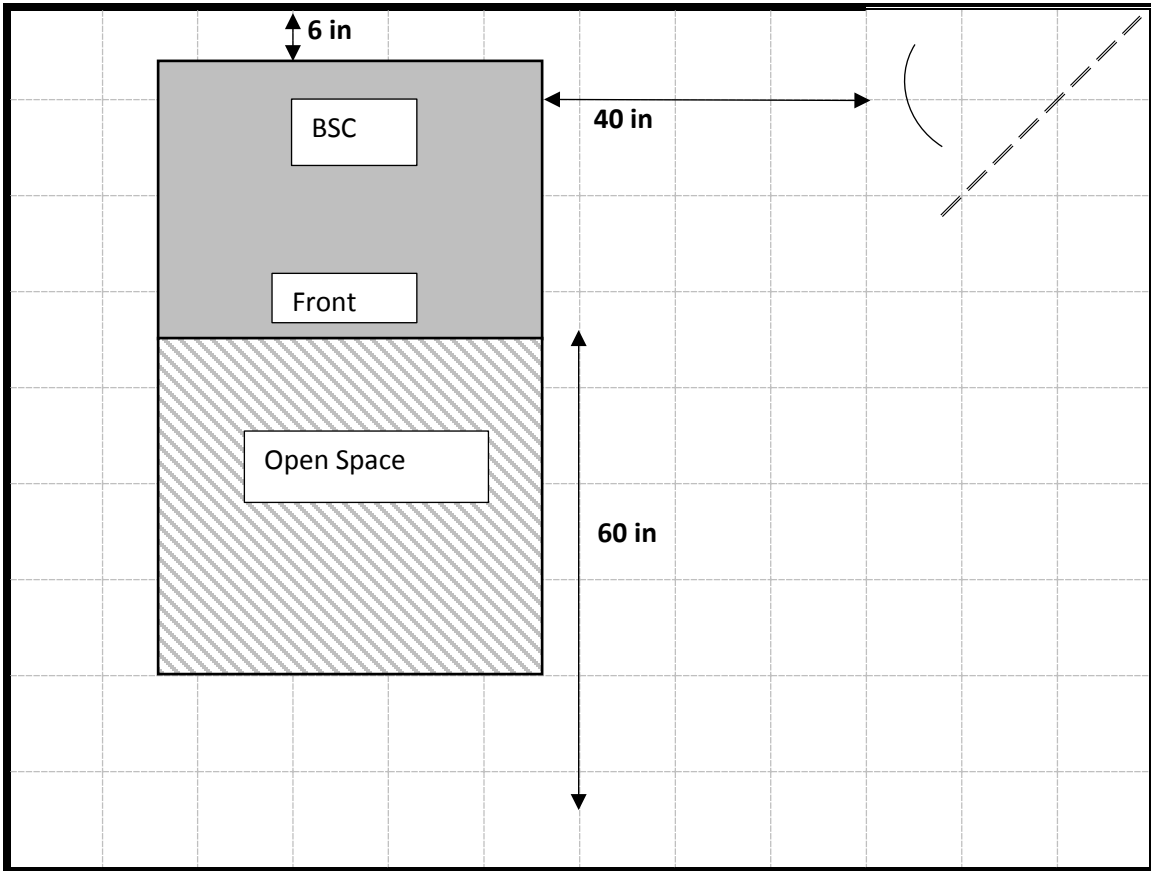
**BSC Placement: Adjacent Walls/Columns, Other BSCs, Bench Tops, & Occasional Traffic**



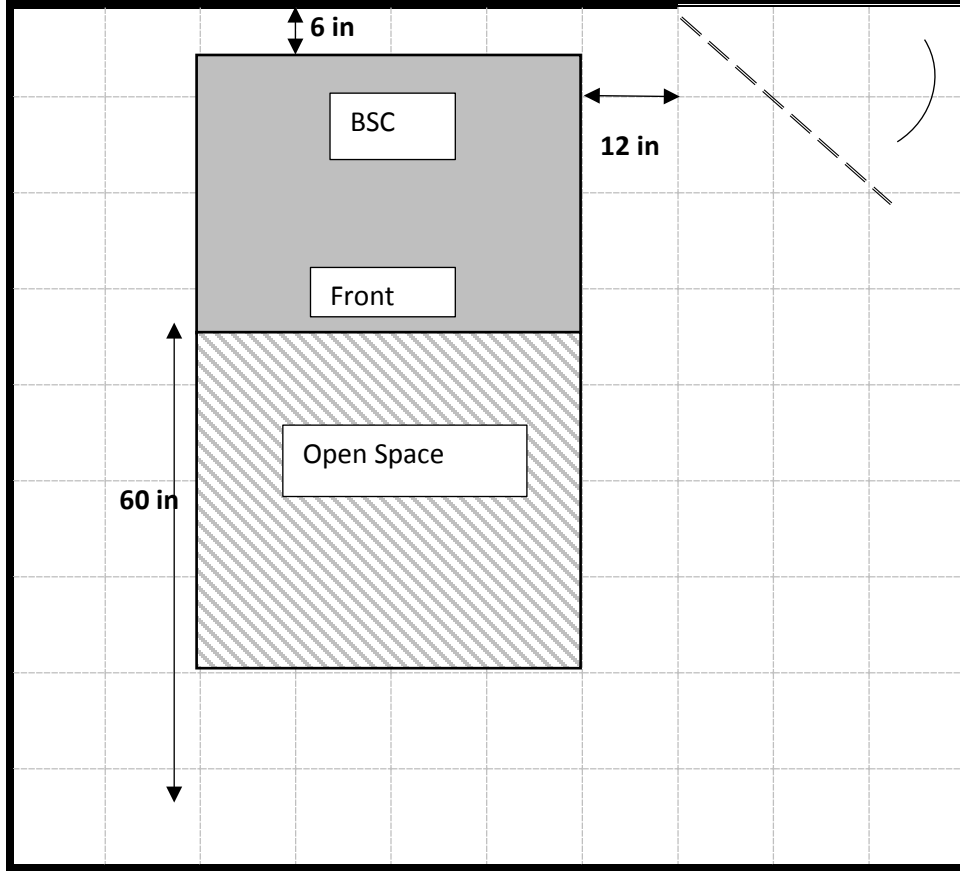
**BSC Placement: Perpendicular Walls**



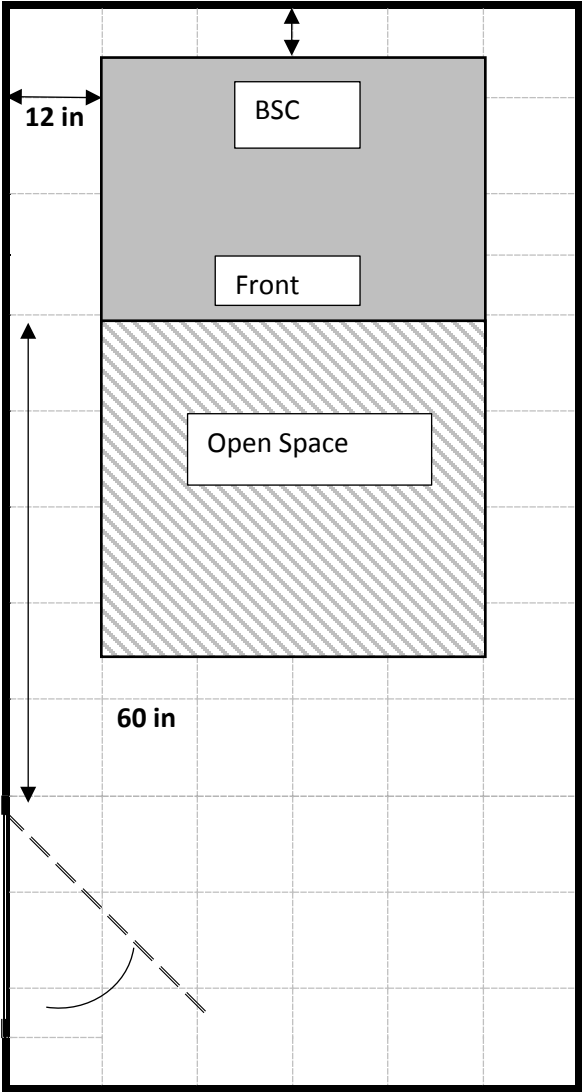
**BSC Placement: Adjacent to a Doorway-Swing Side**



**BSC Placement: Adjacent to a Doorway-Hinge Side**

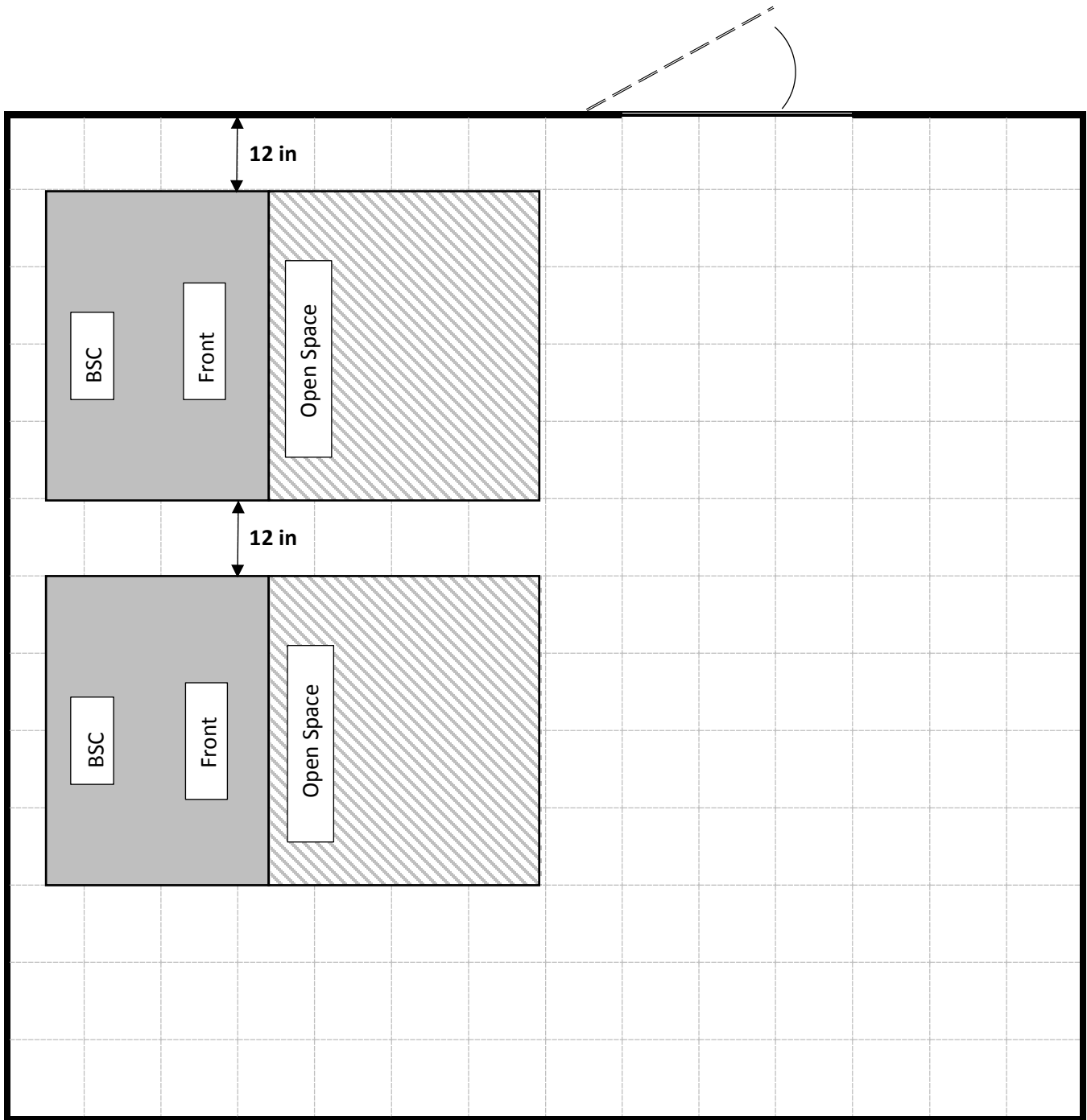


**BSC Placement: Behind a Doorway**



### ***BSC Placement: Egress Clearance***

The BSC and open space cannot infringe on personnel access to the door.



### ***BSC Placement: Relative to the Ceiling***

Maintain a minimum of 12 inches of space from the top of the BSC to any obstruction (i.e. ceiling, sprinkler head, duct work, and plumbing).

