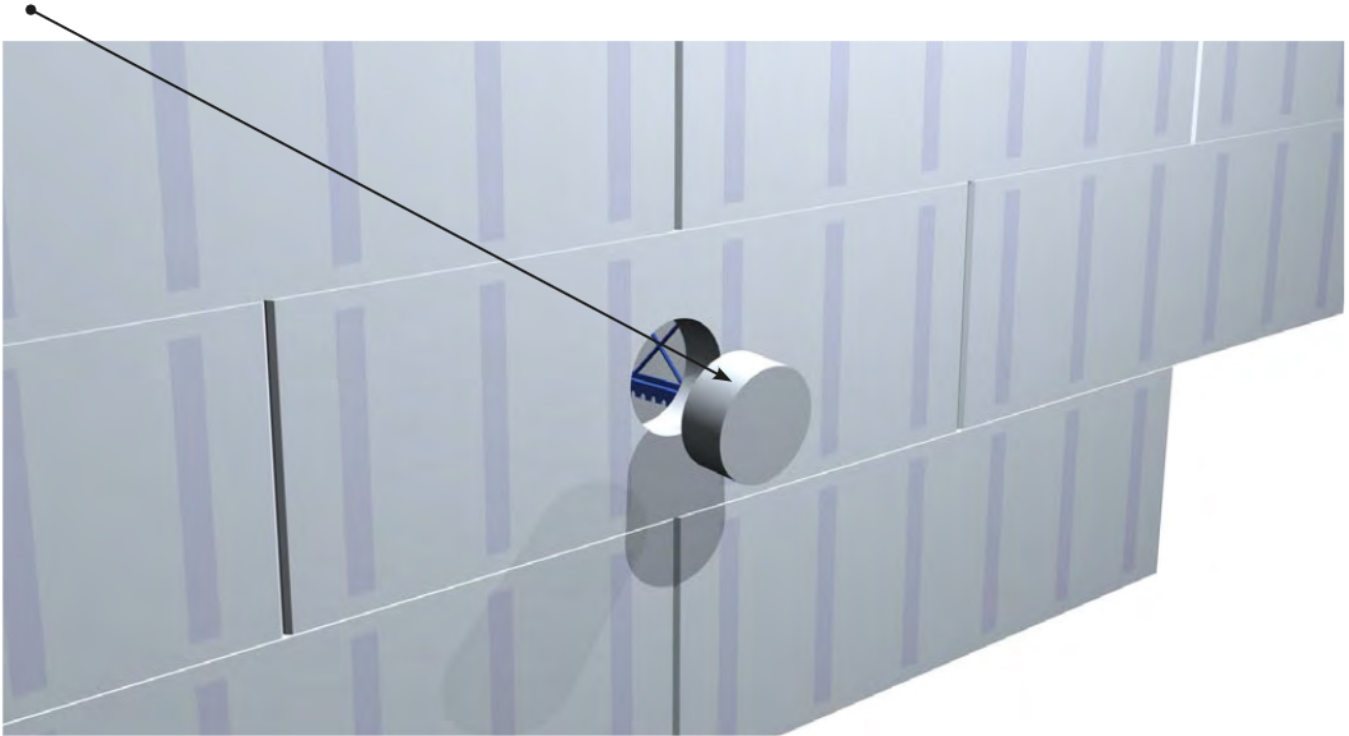
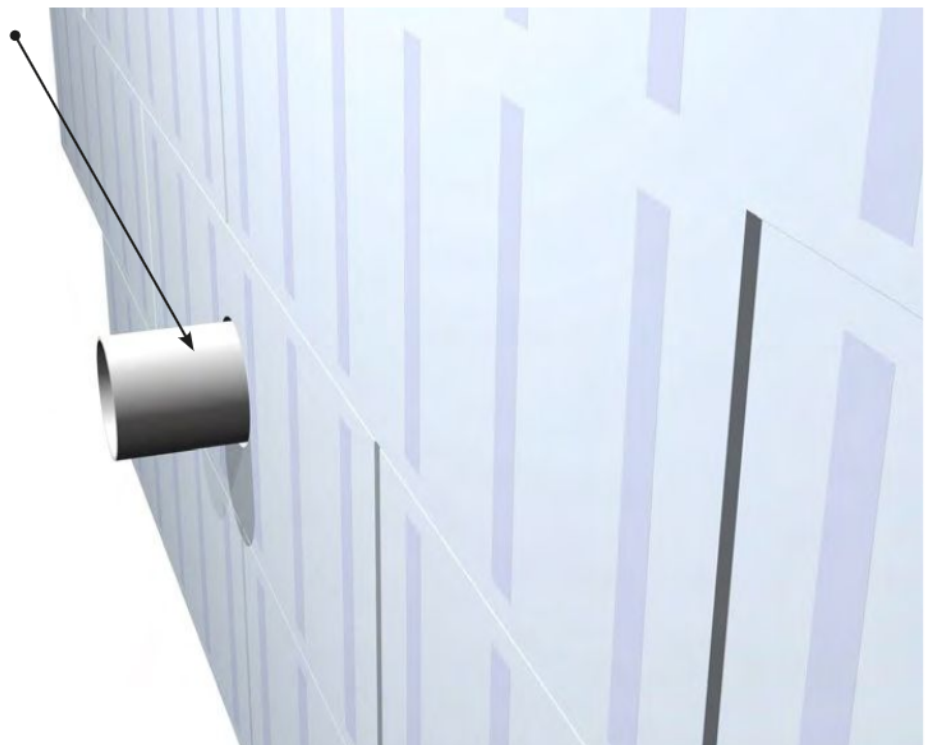


Step 1: Cut an opening through the interior and exterior ICF panel at the location of the penetration. Openings can be formed with hot-wire tools or a hole-saw. Ensure that the openings are aligned so that the penetrating object does not back-slope into the building and that the penetrating object will not interfere with any required reinforcing.

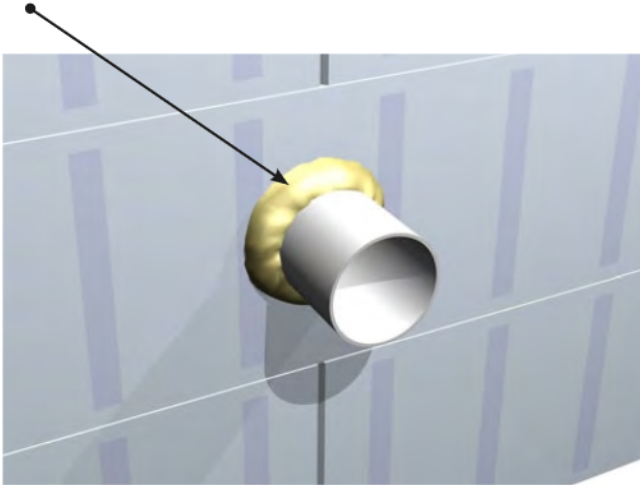


Step 2: Insert penetrating object through the openings.

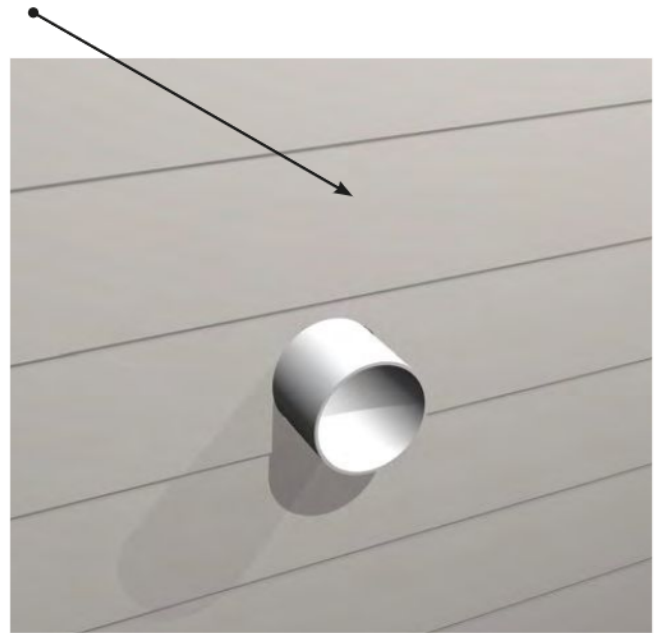


Construction Note:
 If the penetrating object might be damaged by the concrete placement, a durable sleeve escutcheon should be inserted first for protection.

Step 3: Use a compatible, expanding spray foam to secure the penetrating object in place (interior and exterior) and to prevent concrete from leaking at the penetration during placement.

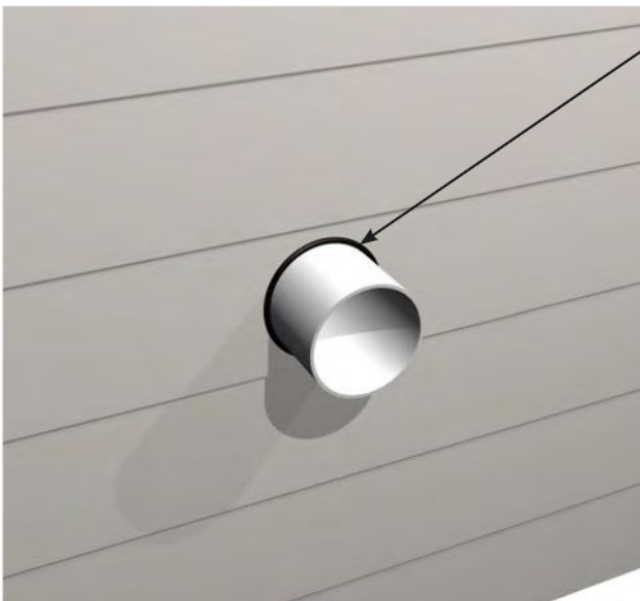


Step 4: Install the selected cladding using corrosion-resistant fasteners.



Best Practice Note:

Expanding spray foam is typical in ICF construction. It provides a field-formed seal at gaps which may occur at penetrations and footing transitions. It is important that the foam is approved by the ICF manufacturer. Care should be taken when using spray foam that excess foam does not interfere with the installation of interior or exterior finishes.



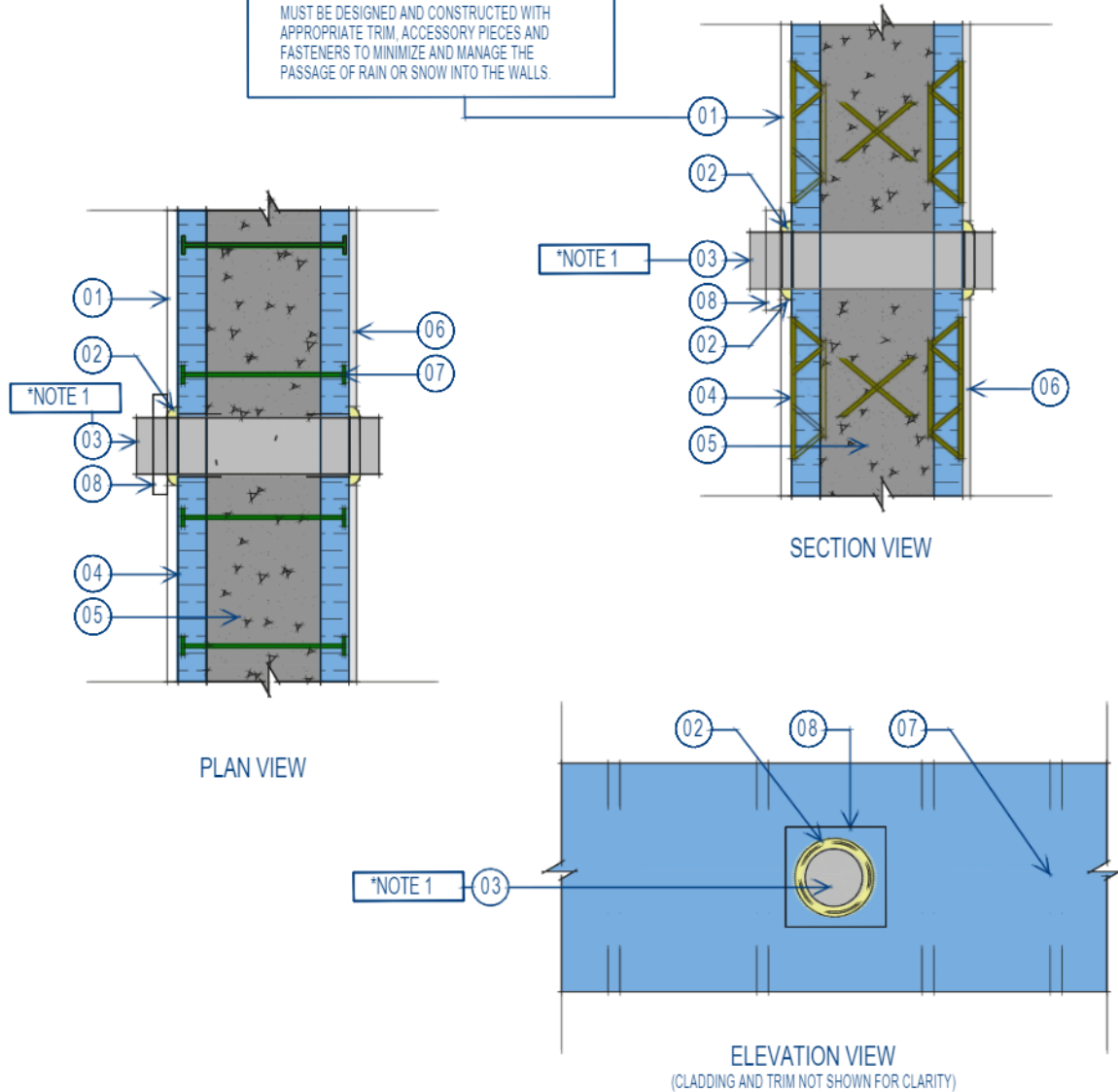
Step 5: Install sealant around the penetration to complete the first plane of protection.

Best Practice Note:

Some mechanical ducting and pipe features may include trim and escutcheon kits for weather resistance and cosmetic finish. These features may require modification of the spray foam at the penetration locations.

An alternative is to custom-mill a trim piece and seal the channel around the trim with polystyrene foam backer rod and sealant.

*NOTE 1: ICF WALLS ARE, IN MOST CASES, CONSIDERED A MASS WALL AND THEREFORE THE FIRST AND SECOND PLANE OF PROTECTION NEED NOT INCORPORATE A CAPILLARY BREAK. THE WALL MUST BE DESIGNED AND CONSTRUCTED WITH APPROPRIATE TRIM, ACCESSORY PIECES AND FASTENERS TO MINIMIZE AND MANAGE THE PASSAGE OF RAIN OR SNOW INTO THE WALLS.



NO TO SCALE

LEGEND

01. EXTERIOR CLADDING	05. CONCRETE CORE
02. SPRAY FOAM SEAL	06. GYPSUM WALL BOARD
03. PENETRATING PIPE - SEE NOTE 1	07. ICF WEBS
04. ICF FORM	08. APPROPRIATE TRIM / ACCESSORY OR FLASHING FOR PROTECTION FROM PRECIPITATION

NOTE 1: - IF THE OBJECT MIGHT BE DAMAGED BY CONCRETE PLACEMENT, A DURABLE SLEEVE SHOULD BE INSERTED FIRST FOR PROTECTION.

FLAT INSULATING CONCRETE FORM WALLS (ICF) DETAIL 3.6.06 PENETRATIONS

FOR ILLUSTRATION PURPOSES ONLY - NOT FOR CONSTRUCTION