Suggested Title:
Top-of-Wall Bond Beam Guidelines for Masonry Wall Applications

When constructing masonry walls, the need for a top-of-wall bond beam depends on the specific structural conditions. The three main scenarios to consider are:

Replace with "Challenging to Install: The process involves grouting and bar placement, which can be difficult and time-consuming.
Unnecessary for Structural Integrity: While some may argue that bond beams enhance wall integrity, horizontal joint reinforcement serves this purpose adequately. A bond beam in these cases adds cost and complexity without providing significant benefits and may delay construction"

Replace with:
"Recommendations for Condition A:

Option 1: Use small continuous angles at the top of the wall (e.g., L2x2 or L3x3). These are easier to handle and fasten, eliminating the need for a top-of-wall bond beam (see Figure 1).
Option 2: For reinforced walls, place heavier angle connections at the reinforced cores. This method also avoids the need for a bond beam (see Figure 2).

SE INSIGHTS
FOR MASONRY DESIGN

Top-of-Wall Bond Beam for Masonry Walls

There are three different conditions which require different solutions with masonry walls:

A) A non-load bearing masonry wall built below the framing is used to resist out-of-plane loads only.

B) A non-load bearing masonry wall built below framing is used to resist both out-of-plane loads and in-plane loads (masonry shear wall, masonry wall in hybrid frame, etc.)

C) Load bearing walls, with no framing members above.

For Condition A, a top-of-wall bond beam is both:

1. Difficult, (grouting, bar placement, etc)
2. Not necessary. Some think the bond beam is good for integrity, but horizontal joint reinforcement is there for integrity. Therefore a difficult, costly, and unnecessary bond beam that slows down construction should not be used for partition walls or exterior masonry walls that only resist out-of-plane loads.

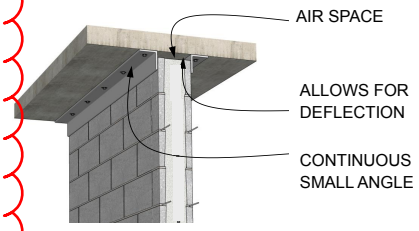

Figure 1: continuous angles

Suggestions for Condition A:

1. The first option would be to use SMALL continuous angles at the top. Small angles (L2x2 or L3x3) are easy to fasten and easy to handle - NO TOP-OF-WALL BOND BEAM. See Figure 1.
2. The second option would be to place heavier angle connections at the reinforced cores (when reinforcing is required) - NO TOP-OF-WALL BOND BEAM. See Figure 2.

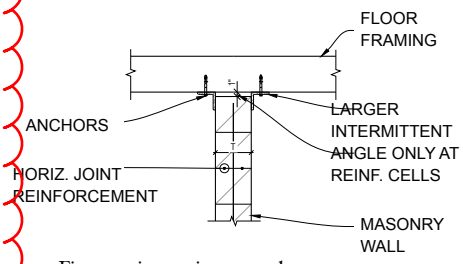

Figure 2: intermittent angles

Replace with:
"Difficult to Install: Similar to Condition A, the challenges involve grouting and bar placement.
Recommended for Structural Practice: While not required by code, even for Ordinary or Intermediate shear walls in seismic zones, using a bond beam is considered a good structural practice for added stability.
Recommendations for Condition B:

Option 1: Use standard grout for constructing the bond beam where possible.
Option 2: Consider self-consolidating grout, which can be more easily placed in challenging locations.
Option 3: Lower the bond beam by one course, leaving a larger gap at the top or using a solid top course. This will necessitate heavier steel connections.
Option 4: Minimize the number of shear walls. Using fewer, more heavily reinforced shear walls reduces the need for multiple top-of-wall bond beams.

Replace with the following:
" For load-bearing walls with no framing above, a top-of-wall bond beam is:

Easier to Install: There are fewer obstructions since no framing members are present.
Beneficial for Supporting Point Loads: It is considered good practice to use a bond beam in these situations, especially when dealing with concentrated loads.
Recommendations for Condition C:

Consider Flow-Through Bond Beam Units: This design allows vertical reinforcement to extend through the bond beam, enhancing the connection and providing additional structural support (see Figure 4)."

For Condition B, such as a hybrid design or other cases where the masonry wall is a shear wall, a top-of-wall bond beam is:

Figure 3

1. Still difficult, (grouting, bar placement, etc)
2. However, because it is a shear wall, consider the top-of-wall bond beam good practice, although not required by code (even in the seismic section for Ordinary or Intermediate shear walls).

Suggestions for Condition B:

1. Allow the option to use standard grout to build bond beams.
2. Consider self-consolidating grout, which can easily be placed in difficult locations.
3. Move the bond beam down one course and leave a larger gap or use a solid top course; this will require heavier steel connections.
4. Minimize the number of shear walls. Fewer heavily reinforced shear walls limit the number of required top-of-wall bond beams.

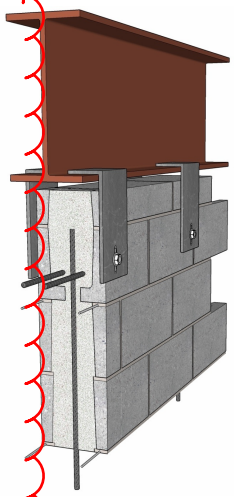

Figure 3. Hybrid Design of a shear wall and top-of-wall bond beam

For Condition C, a top-of-wall bond beam is:

1. Easy to install with no framing members above top-of-wall.
2. Good practice, especially with point loads.

Suggestions for Condition C:

1. Consider flow-through bond beam units, where vertical reinforcement can extend into (or through) the bond beam

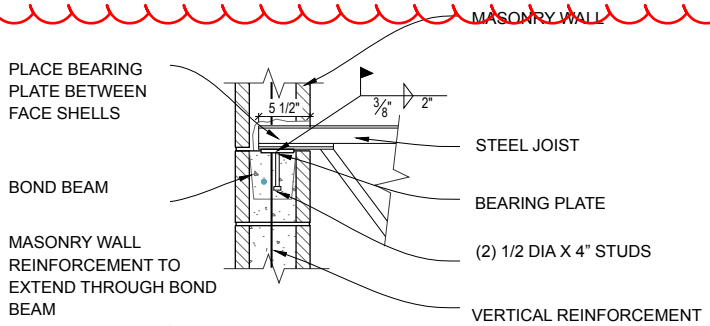

Figure 3: flow-through bond beam

Figure 4

Added Section to consider:
"Key Considerations for Top-of-Wall Bond Beams
- Installation Challenges: The difficulty of installing top-of-wall bond beams arises from the need for precise grouting and reinforcement placement, which can complicate construction.
- Alternative Solutions: For non-load-bearing walls, using angle connections or repositioning the bond beam can simplify installation while maintaining structural integrity.
- Structural Practice vs. Code Requirements: While code does not mandate bond beams in all scenarios, incorporating them can improve stability, particularly in shear walls or load-bearing applications."