STUDENT STEEL BRIDGE COMPETITION

CONSTRUCTION LANE TAPING GUIDE (2025)

This step-by-step guide is one of many methods that can be used to tape out the construction lanes for the Student Steel Bridge Competition. Please refer to the 2025 SSBC Taping Plan (PDF) for the exact dimensions of this year's layout and to determine which side of the tape the dimensions should be taken. In the event there is a conflict between the taping plan and this guide, the taping plan takes precedence.

SUPPLIES

Things you'll need to get started:

- ✓ 2025 SSBC Taping Plan (next page)
- ✓ 3 Tape measures (25 ft)
- ✓ 100-ft long string
- ✓ Duct tape
- ✓ Permanent marker and/or chalk (for marking locations)
- ✓ Plywood floor covering (as required by venue)
- ✓ Clear tape (if using plywood)

Additional items that may be helpful:

- ✓ 100-ft tape measure
- ✓ Chalk line
- ✓ 1′-0″ square plywood template
- ✓ 2′-0″ square plywood template

Acknowledgements

AISC would like to thank Tim de Boer for providing the steps and illustrations for this guide.

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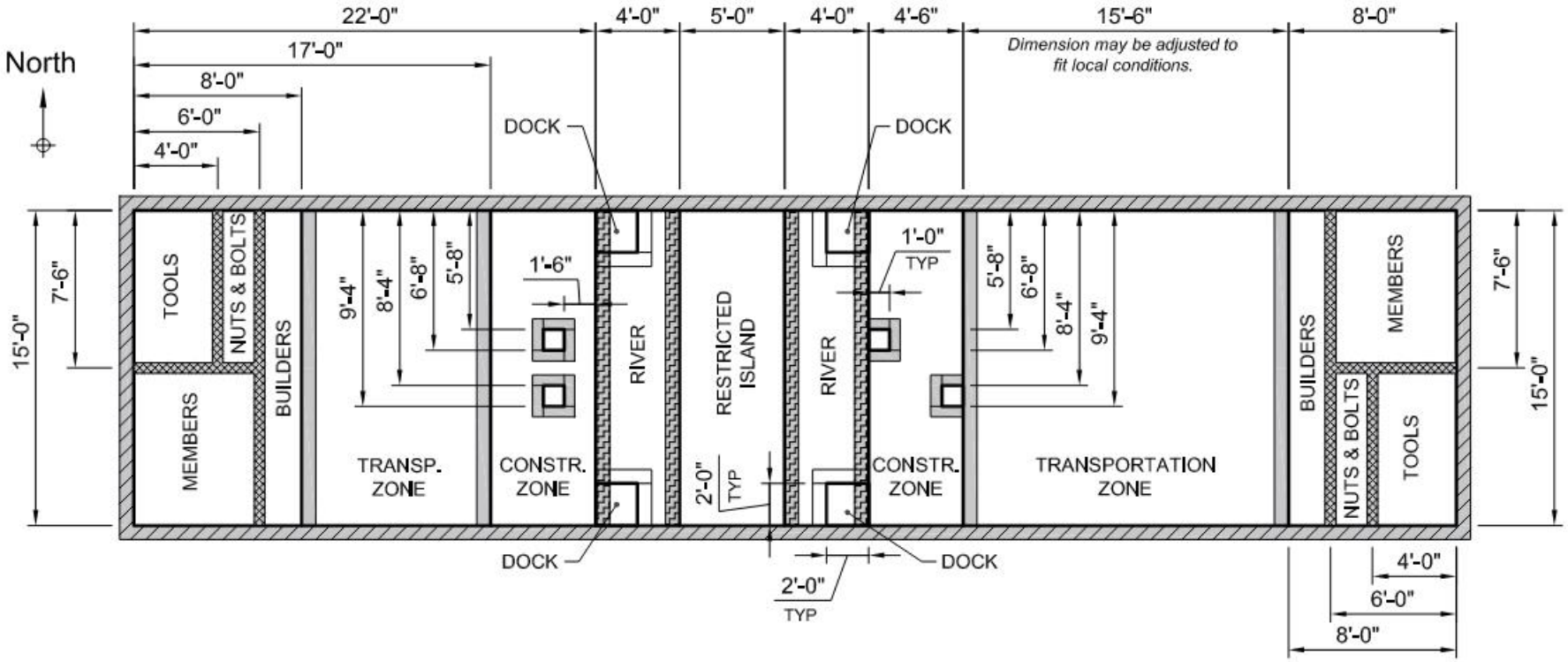


2025 SSBC - TAPING PLAN

*Use diagonal measurements to check square

*Approximately **150 yards** of tape required per lane.*

LEGEND

	BRIDGE OUT OF BOUNDS *(Builder can step on tape but bridge cannot touch tape.)*
	OUT OF BOUNDS (*Stepping on tape is a penalty for all builders.*)
	RIVER BOUNDARY (*Stepping on tape is a penalty for non-barge builder. Stepping outside of tape is a penalty for barge.)*
	Dimensions to CENTER of tape**.** *Builder can step on tape but parts cannot touch tape during construction*
	EDGE OF TAPE LINE

Step 1 – Plywood Layout

1. If using plywood, lay out the tongue and grove plywood as indicated.

2. Apply clear tape over the center joint and edges of plywood.

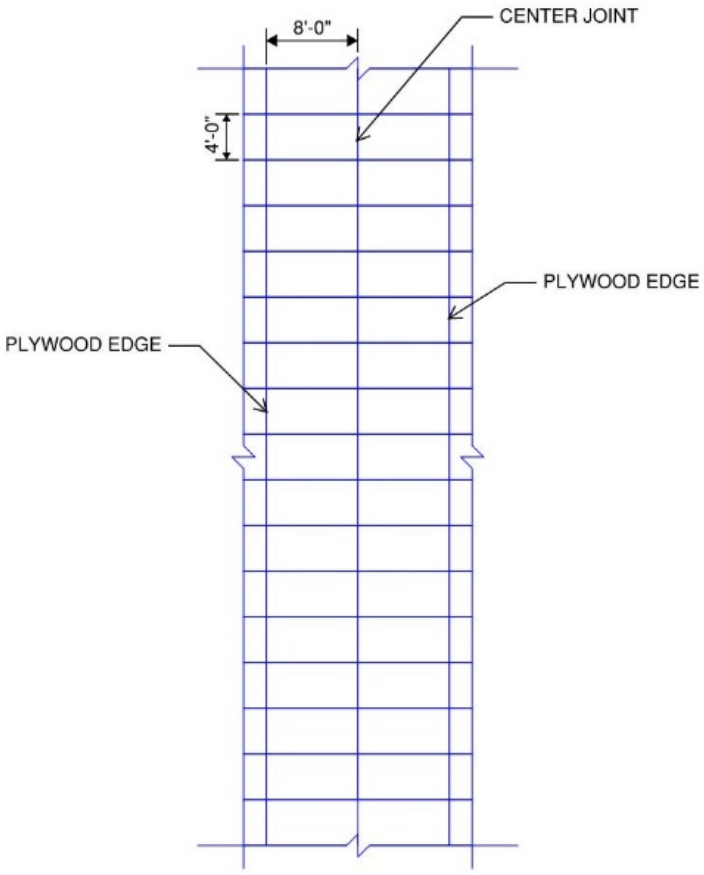


FIGURE 1 - PLYWOOD LAYOUT

Step 2 – Establish Construction Boundary Line 1

1. Mark Point A and Point B, 6 in. from the long edge of the plywood.
    a. If a 100 ft. tape measure is not available, a shorter tape measure may be used to mark intermediate locations between Point A and Point B.
    b. Note that the total length of Boundary Line 1 may be shortened if required for the construction lane to fit local conditions.

2. Use a chalk line to establish Boundary Line 1.
    a. If a chalk line is not available, a taught string between Point A and Point B and a marker may be used to establish Boundary Line 1.
    b. It is not necessary for the boundary line to be parallel to the plywood edge, as the edge may vary at the intersection of each plywood sheet along the boundary line's length.

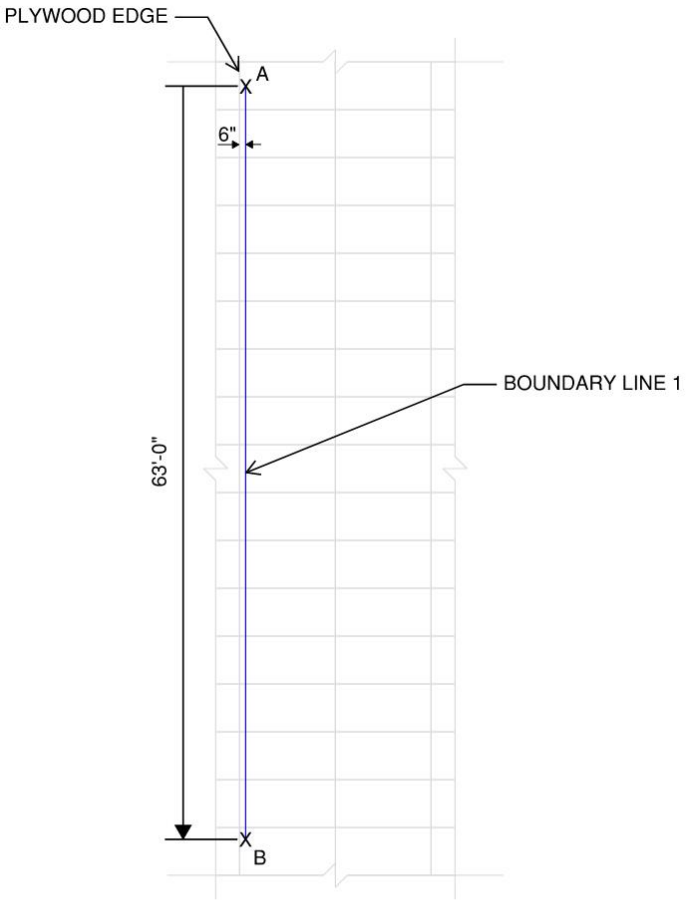


FIGURE 2 - ESTABLISH BOUNDARY LINE 1

Step 3 – Establish End Boundary Lines

1. Establish Point C and Point D using the 3, 4, 5 right triangle theorem and tape measures at 9′-0″, 12′-0″, and 15′-0″. This process will establish end boundary lines that are perpendicular to Boundary Line 1.

2. Use chalk lines (or taught string with marker) to establish Boundary Line 2 and Boundary Line 3. Run these lines long in preparation for Step 4.

3. Measure 15′-0″ along Boundary Line 2 and establish Point E.

4. Measure 15′-0″ along Boundary Line 3 and establish Point F.

5. Use a chalk line (or taught string with marker) between Point E and Point F to establish Boundary Line 4.

6. Verify the squareness of the construction lane by measuring diagonals. The two measured dimensions should be within ¼″ of each other. Adjust corner locations until the dimensions measured are within this tolerance.

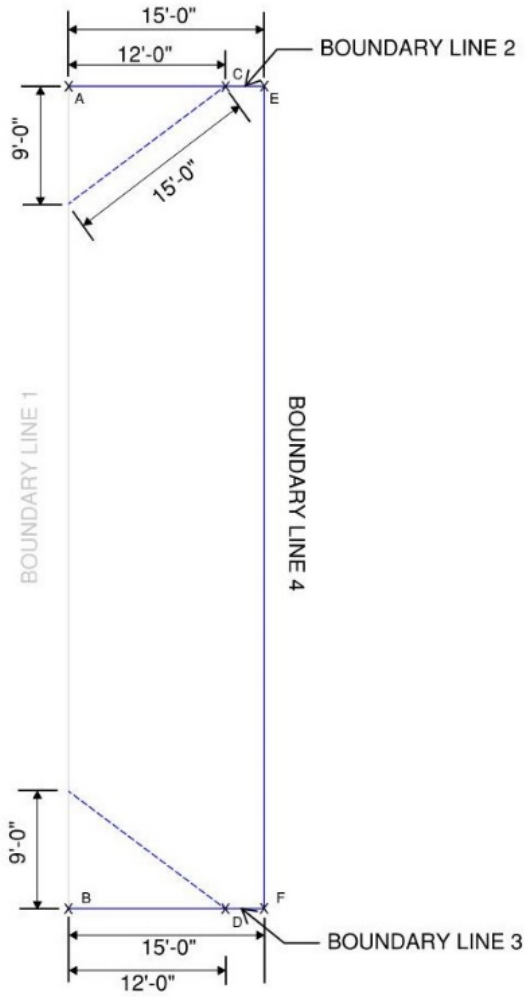
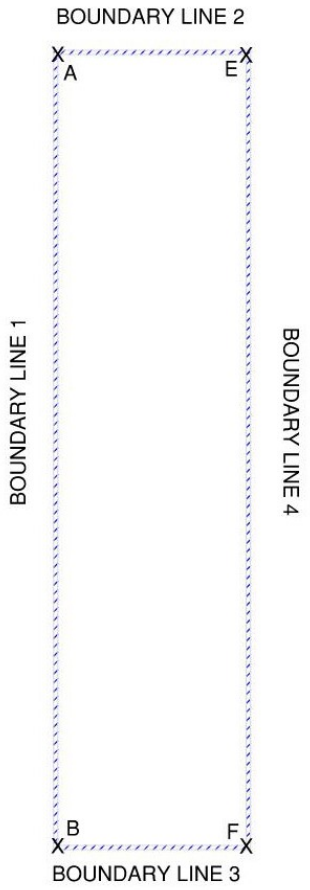


FIGURE 3 - ESTABLISH REMAINING BOUNDARY LINES

Step 4 – Establish Construction Boundary Line 4

1. Apply tape for Construction Boundary Lines 1-4. Reference "2025 SSBC – Taping Plan" to determine which side of the boundary line to apply the tape.



URE 4 - APPLY BOUNDARY TAPE

Step 5 – Establish Inner Boundary Lines

1. Measure from Boundary Line 3 and use chalk lines (or taught string with marker) to establish boundary lines for Staging Yard 1, Transportation Zone 1, Construction Zone 1, River 1, the restricted island, River 2, and Construction Zone 2.
   If a 100 ft. tape measure is not available, a shorter tape measure may be used to mark intermediate locations between inner boundary lines.

2. Measure from Boundary Line 2 and use a chalk line (or taught string with marker) to establish the boundary line for Staging Yard 2.

3. Measuring from the boundary lines will prevent rework if one measurement is wrong as compared to measuring from each inner boundary line.

4. Following this procedure will leave Transportation Zone 2 as the variable length to account for minor errors in the layout.

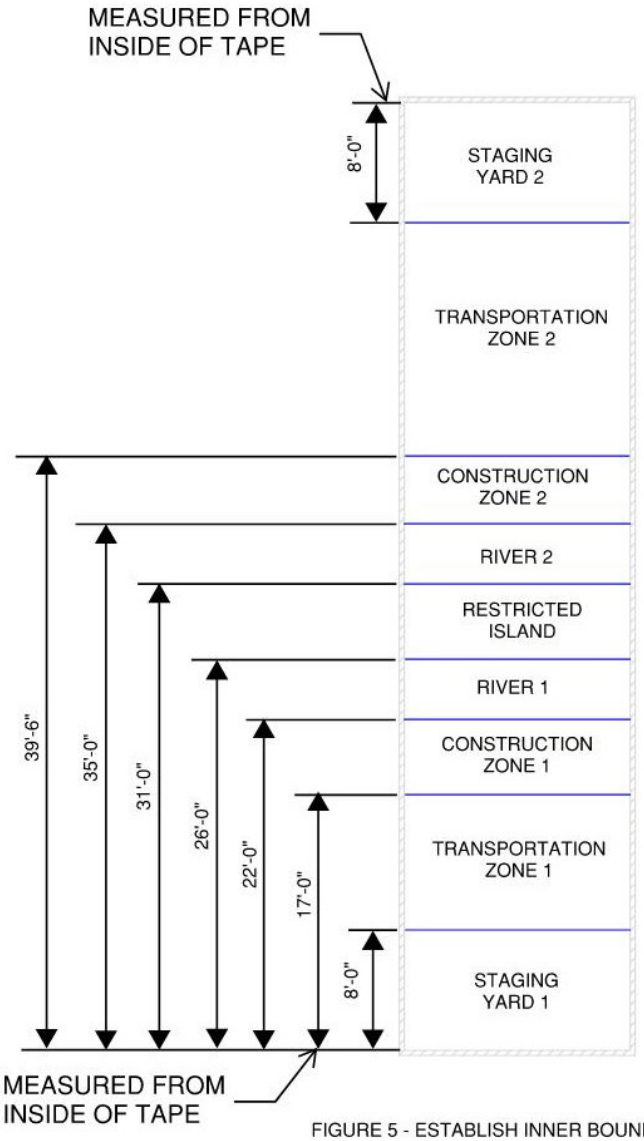


FIGURE 5 - ESTABLISH INNER BOUNDARIES

Step 6 – Establish Footings

1. Each team's bridge has been designed specifically to fit within these footings. It is critical that the locations of these footings are accurate in order to have a successful competition

2. Measure and mark the locations for the corners of the square footings. *If available, a 1'-0" square plywood template may be used to establish Bridge Footing boundaries.*

3. Verify squareness of Bridge Footings using diagonal measurements. Each diagonal shall be within ¼" of the dimensions shown listed in Table 1.

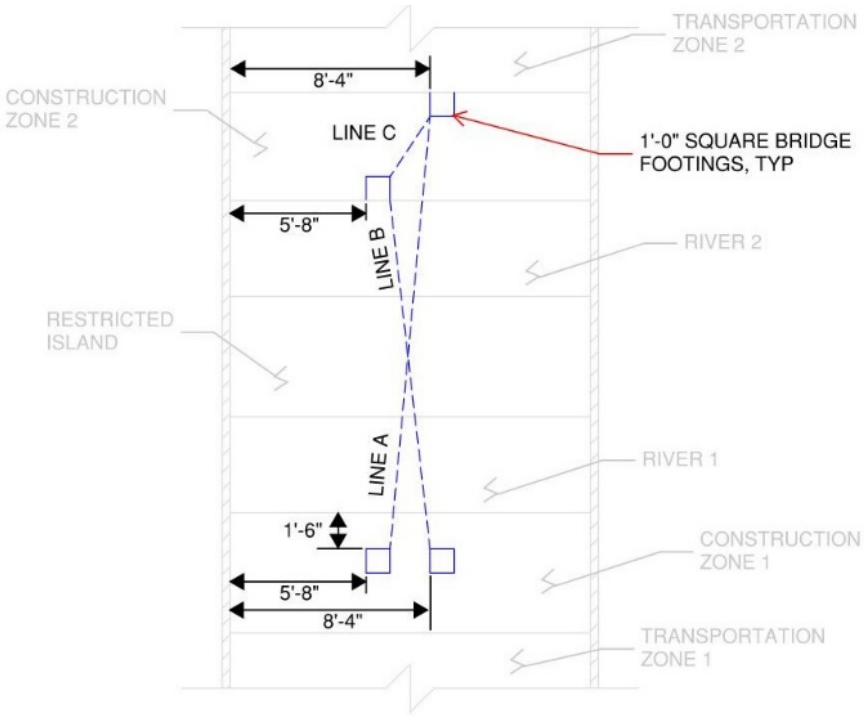


FIGURE 6 - BRIDGE FOOTING BOUNDARIES

LINE	LENGTH
A	18'-0 1/16"
B	14'-7 5/8"
C	3'-0"

TABLE 1 - DIAGONAL LINE DIMENSIONS

Step 7 – Establish Dock Boundaries

1. Measure and mark the locations for the corners of the docks.

   If available a 2'-0" square plywood template may be used to establish Dock boundaries.

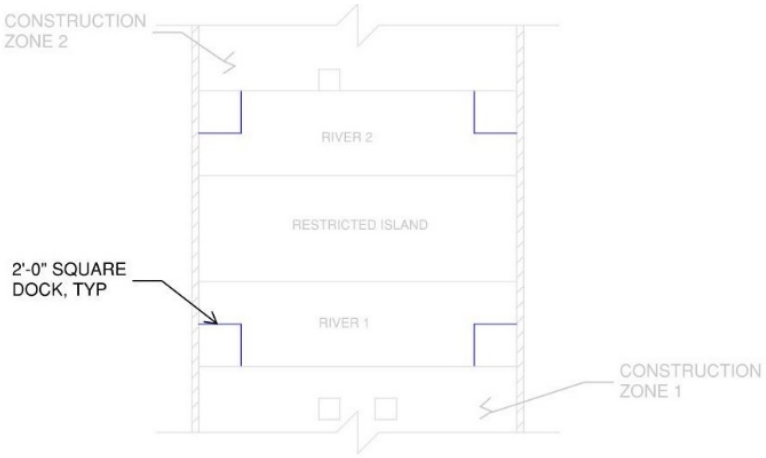


FIGURE 7 - ESTABLISH DOCK BOUNDARIES

Step 8 – Apply Established Boundary Tape

1. Apply duct tape along established inner boundary lines, footing boundary lines, and dock boundary lines. Reference "2025 SSBC – Taping Plan" to determine which side of the boundary line to apply the tape.

2. It is recommended to use multiple colors of tape to differentiate boundary types. For example, blue tape for river, red for outside boundaries and footing boundaries, and black for other non-critical boundaries.

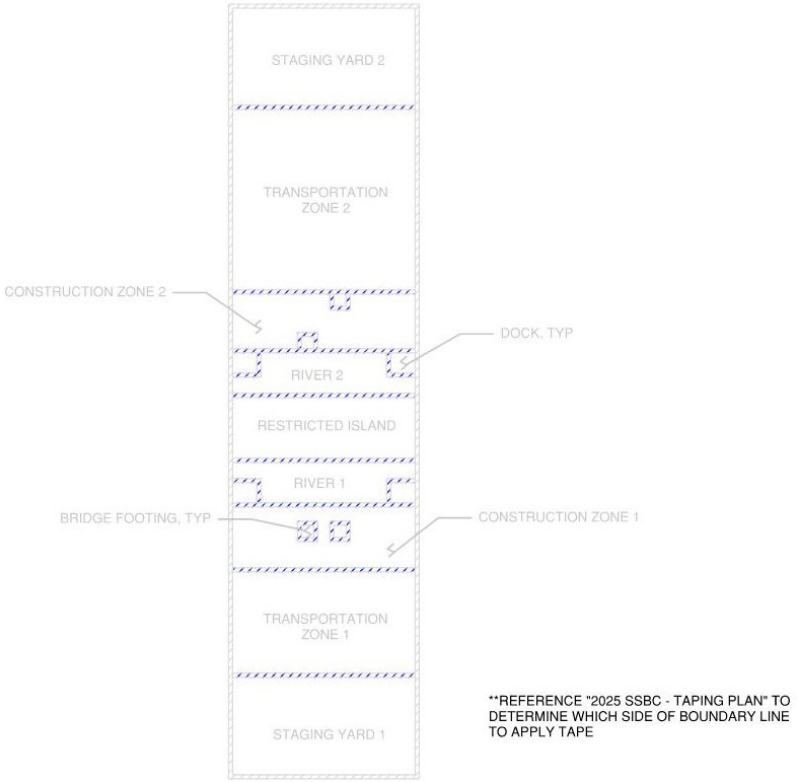


FIGURE 8 - APPLY BOUNDARY TAPE

Step 9 – Layout and Apply Staging Yard Tape

1. Apply duct tape in each staging yard as shown in Figure 9. Measurements are to the centerline of the tape.

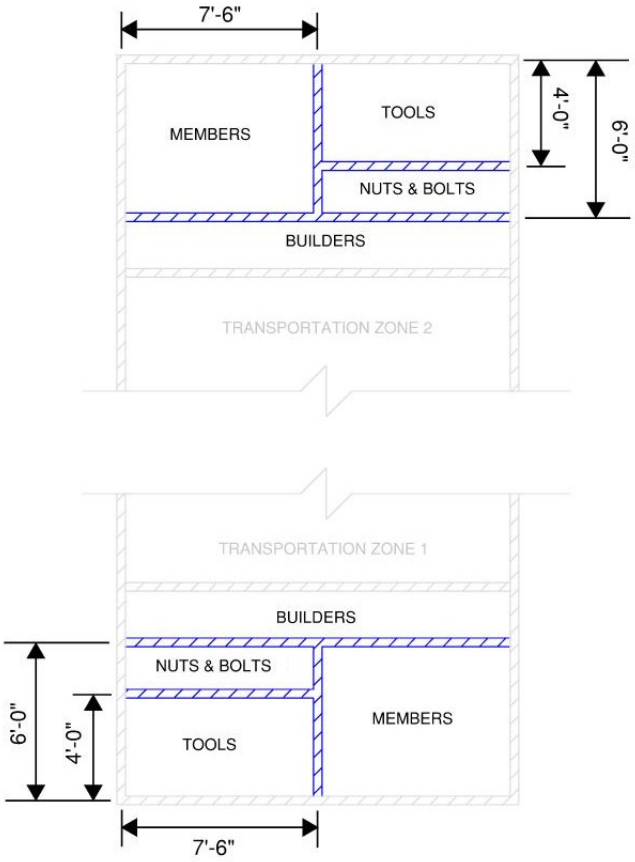


FIGURE 9 - LAY OUT AND APPLY STAGING YARD TAPE