

ORD Civil Cell Tips and Tricks

A. Successful Civil Cells

Civil Cells can be tricky tools to use in ORD. The placement and manipulation sequence must be correct in order for the civil cell to work as intended.

1. The civil cell must be built correctly and be built to handle the scenario that the user is attempting to place it on.
 - **Note:** *Some cells can only handle certain scenarios.*
2. The Reference elements must be correctly drawn and elements that require a profile must have an active profile.
 - **Note:** *Most references require an active profile. If a reference element is not long enough, the civil cell will not place correctly. However, this can be adjusted after placement.*
3. Reference elements must be selected correctly.
 - **Note:** *This can be difficult for some civil cells when the selectable line is underneath another element.*
4. The direction of the reference elements must be correct. It is expected that some civil cells will require all reference lines to be reverse from the default position in order to place in the opposite direction from how the cell was built.
 - **Note:** *Some civil cells will not always have the reference element in the correct direction, or even the direction the cell was built on.*
5. Post placement modifications of the civil cell must stay within the built limits of the civil cell.
6. Post placement modifications must be done in the correct order.
 - **Note:** *Understand that these modifications do not happen in a silo but can affect other elements that have been modified.*
7. The surface triangles for surfaces and clipping recalculated correctly after modifications.
 - **Note:** *This is somewhat out of the user's control, but most times, additional modification to the civil cells can fix this.*

B. What to Look for After Placement

After placing a civil cell, there are several things that need to be looked for every time. As a user gains more experience with civil cells, this should be a quick check.

1. Look at the 3D model and see if the edges of the civil cell are tying into the corridor correctly. Do the civil cell internal components connect correctly? Are all the 3D components displaying as expected? **Note:** *Most of these issues are caused when one of the aforementioned items does not occur successfully.*

Common Issues

- a. The curb and gutter are not lined up with the corridor curb and gutter, and it looks as if it is flipped and within the shoulder.
 - i. **Resolution:** Delete the civil cell and replace it, but this time reverse all reference line directions. This is most common on the entrance civil cells.
- b. An element is descending to elevation 100.
 - i. **Resolution:** This means a profile intersection snap was lost during placement. The two elements that are meant to intersect did not, most likely due to the placement of the civil cell in a scenario where it was not built for (e.g., one of the references is at a large skew). In the 3D model, view the name of the element, and then find that same element in the 2D model and open its profile. The profile should look like a vertical line. It's possible to recreate the profile intersection point in the profile and redraw the profile correctly. **Note:** *The profile intersection point tool might not work, as the lines might not be intersecting.*
- c. An entire element is at elevation 100.
 - i. **Resolution:** Most likely, this is due to a projection being lost. It is possible to reproject the correct element in the profile, but it could indicate that the cell is not handling something correctly either from the references or the scenario.
- d. The civil cell did not clip correctly, which can happen on occasion.
 - i. **Resolution:** Select the civil cell after placement to clip a corridor. Only corridors in the active file can be clipped, but civil cells can be selected as a clip shape if referenced.
- e. A template in the civil cell is not snapping to the correct location.
 - i. **Resolution:** Select the template drop and snap to the correct location.

2. Does my 2D space look correct (i.e., do elements connect correctly)? Are there any lines that have placed a significant distance away from the project?

Common Issues

- a. On curves, a civil cell control element will make a circle or arc in the wrong direction, causing a huge control element to span a large area, though in 3D the cell is fine.
 - i. **Resolution:** Adjust a controlling element that is affecting the circular element or just delete and replace the civil cell.
- b. Do elements connect correctly in 2D that mimic what is expected? This happens when reference lines are not fully in the correct order.
 - i. **Resolution:** Delete and replace the civil cell with different reference line directions.
- c. Is there an element tied to the civil cell that is placed in space but not tied to the project.
 - i. **Resolution:** Delete the civil cell that the element is tied to and place it again. It could be caused by the reference line, or the scenario.

C. Civil Cell Breakage During Modification

This is a common occurrence during the design process but is fairly simple to fix. The undo button is useful here, but it also comes with a word of caution. It sometimes does not work the first time when clicked and may or may not work the second time when clicked. However, if clicked more than twice and the civil cell hasn't undone the last thing, it's not going to work. Also, be patient since the undo button can take several minutes to process. **The better option is to select the element that was just changed and change it back.**

Common Issues

1. A modification was made where the clip did not update.
 - a. **Resolution:** Reclip the corridor with the civil cell. If that does not work, or unwanted slivers remain, draw a clip shape and clip the corridor again.
2. A modification was made that requires an additional modification to be correct.
 - a. **Resolution:** This is most common when using the intersection civil cells. Changing the radius of the curb return may require up to seven other elements to be changed for the civil cell to work. Many other civil cells require multiple modifications for the civil cell to be modified successfully. Refer to the [ORD Civil Cell Videos](#) to see which elements need to be modified.

3. A modification to the civil cell created a situation where the cell was not built to handle such a scenario.
 - a. **Resolution:** The civil cell may be able to be further modified to fix the issue, or further steps may need to be taken to be able to make the civil cell work. It is possible that the civil cell is not appropriate to model the scenario, and different modeling techniques will be needed.
4. A modification to the civil cell has permanently broken it.
 - a. **Resolution:** This most commonly happens when the reference lines to the civil cell are modified or replaced, and the civil cell has lost connection to the reference lines. This can happen in other scenarios, but it is rare. In either scenario, delete and replace the civil cell.