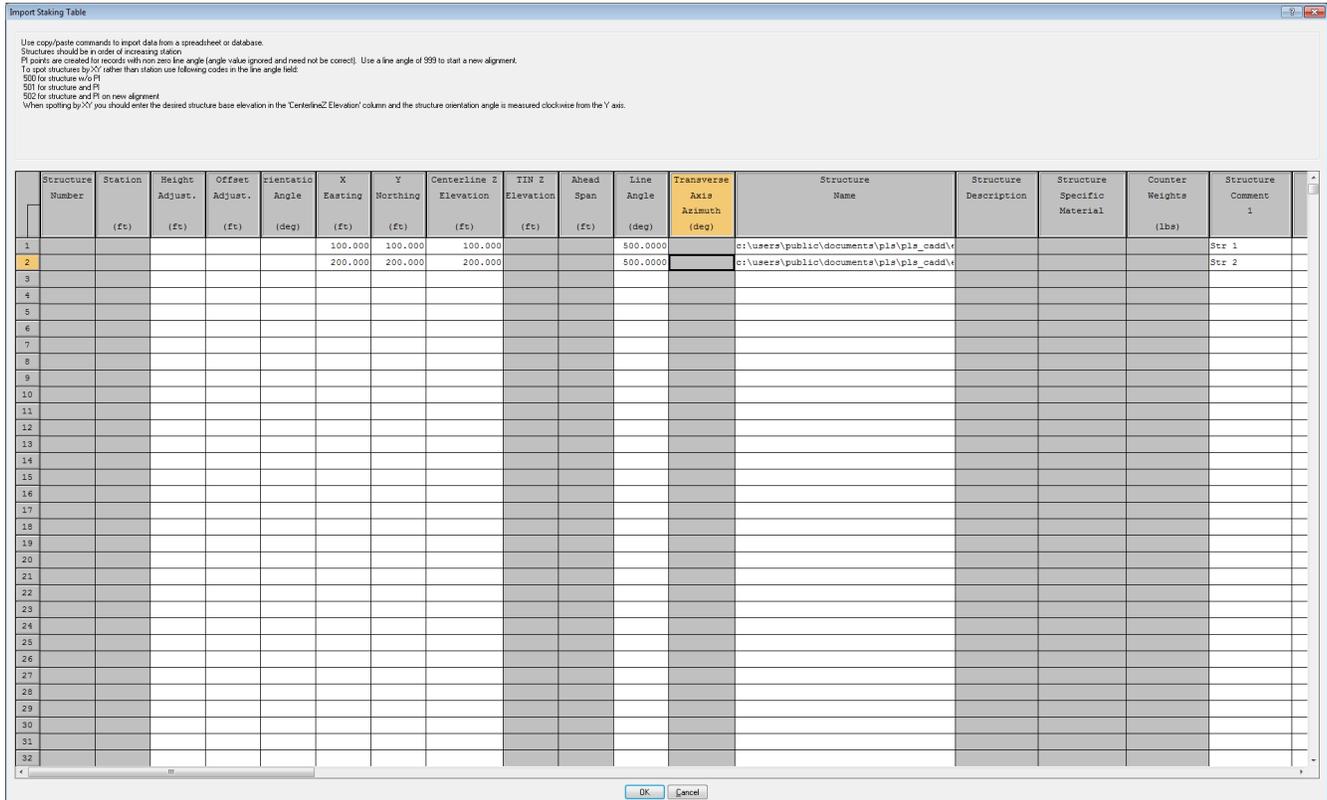


- Type or copy/paste desired XYZ coordinates and structure file names into “File/Import/Staking Table”. The text at the top of the “Import Staking Table” dialog lists some special codes to enter in the “Line Angle” field when working with XYBS. Set the “Line Angle” to 500 to create an XYZBS. There are other codes you can use if you want to create a PI on the current alignment or a PI on a new alignment at the XYZBS structure (501 and 502)

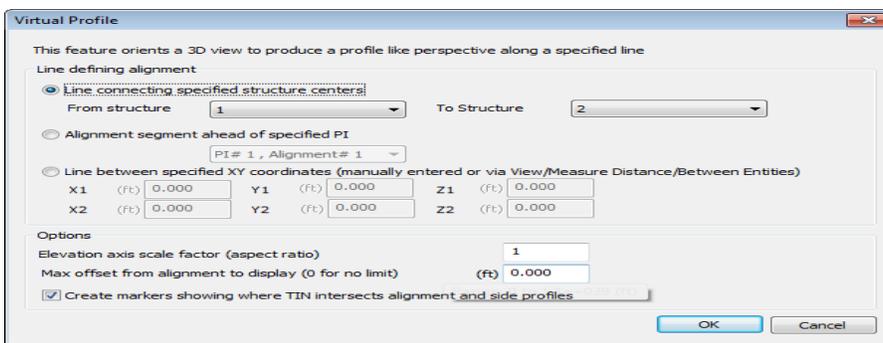


All 3 methods of adding an XYZBS structure provide an “Orientation Angle” input. Orientation angle is the counterclockwise angle between the structures transverse axis and the X axis. A value of 0 has the transverse axis pointing East (Northbound line). A value of 90 has the transverse axis pointing South (Eastbound line). “Sections/Add Graphical” has a “Attempt to rotate structures affixed to an XY coordinate... so transverse axis bisects angle” to assist in setting the orientation angle.

How does XYZBS affect my profile and sheets view:

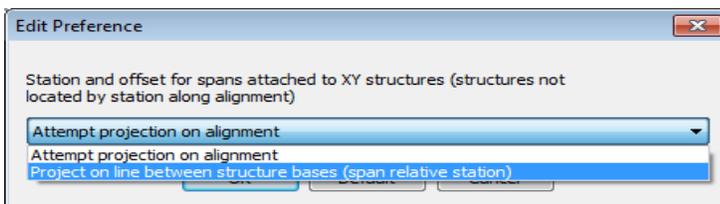
Profile views and sheet views can only be displayed if you create an alignment. XYZBS structures that are within the “Terrain/Terrain Widths” max offset for profile view will be visible in the profile view and the profile portion of the sheets view.

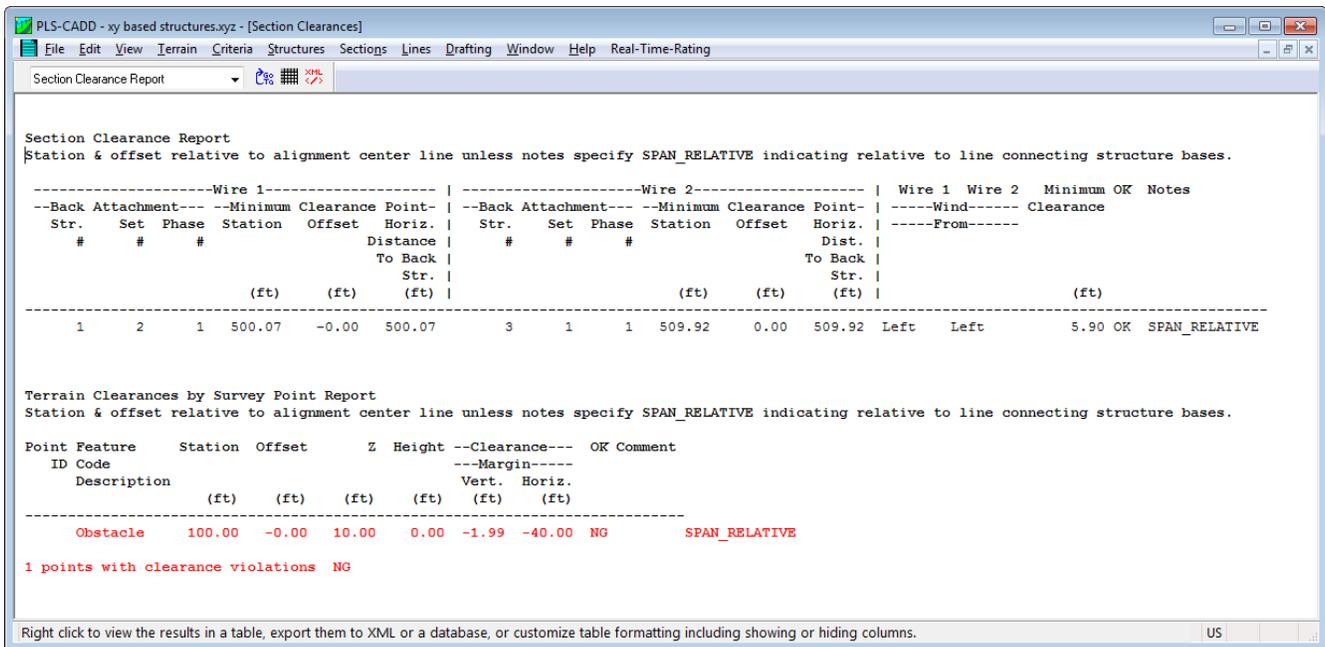
If you do not have an alignment you can still create a profile like view using “View/Pan Zoom & Rotate/Virtual Profile” and defining a virtual alignment connecting two structures or XYZ coordinates. This command can also be reached via the “View/Entity Info” middle click menu which displays a “Show Virtual Profile for Selected Span” option when snapping to a wire and the “Show Virtual Profile for Selected Alignment Segment” when snapping to a PI or alignment. You can also create a virtual profile along any desired line segment via the “View/Measure Distance between Entities” middle click menu “Show Virtual Profile Along Selected Line Segment” command.



What happens to the station and offset columns reported in terrain and wire clearance reports?

Station & offset for minimum clearance points have traditionally been defined relative to the closest alignment segment. This is possible if an alignment exists but the alignment is optional when working with XYBS structures. If the alignment doesn't exist we will instead report a span relative station where station and offset are relative to a line connecting the back and ahead structure bases. Span relative stations are identified in reports by the presence of a “SPAN_RELATIVE” comment at the end of the line (see Section Clearance Report and Terrain Clearances by Survey Point image below). If you want to force the program to report span relative stations and offsets for spans connecting XYBS structures even in the presence of an alignment you can do so via an option in “File/Preferences”.





What happens to Line Angle?

With station based structures we determine line angle based on the alignment looking at the PI before the structure, the PI next to the structure and the PI after the structure. We can't do this with XY based structures because there is no alignment. But if there are wires connected to the structures we can create virtual alignments connecting the bases of structures that are connected by wires. By default the program computes the line angle as the largest angle turned between any of these virtual alignments. Hence a 90 degree tap off a structure that otherwise has no line angle results in it being considered a 90 degree line angle. After some discussions as to whether or not a tap should impact the line angle of the main line we added the ability to exclude certain sets from the line angle calculation (tap set can be excluded). Sets can be excluded through the "Lines/Reports/Staking Table" "Sets In XY Structure Line Angle Calculation" column and we output the list of these sets in "Lines/Reports/Summary/Structure Coordinates Report".