

## 8. ASC 2009 PCL BIM Problem Statement

The new Fox Office Building is just south of an existing office building (FNC Operations Building) with 3 stories of underground parking, see sheet A-1.02A. There is a bundle of fiber optic cables running underground between the two buildings, see sheet C-1.02. These fiber optic cables transmit the entirety of Fox's programming to the outside world. The cost of damaging these cables is 5 Million Dollars a minute of interrupted service. All necessary precautions need to be taken to avoid damaging these cables when drilling shoring tie-backs for the new building.

The shoring engineer designed the tiebacks for the north underground wall to enter the ground per the SH- series drawings, but he did not have all of the as-built information of the existing conditions.

We have established a 7'-0" "safety zone" surrounding the 11"x11" conduit bank that the tieback can not violate. See C-1.20. Determine if tiebacks #36 and #1 (4 total) violate the safety zone and or conflict with any other existing conditions. (You may assume sections 1 and 4 on C-1.02 are cut at tieback #36 and #1)

If the tiebacks conflict with the safety zone or any other existing conditions determine the most efficient tie-back angle to resolve the conflict. Tieback length increases 2'-0" for every 5° see Tieback Angle Variance Chart. Maintain 5'-0" clear between Tiebacks.

The solution for this problem may be determined and presented with 3D software, 2D software or by hand sketches and manual calculations.

Electronic .dwg files have been provided for your solution development utilizing software. Your team may choose to develop a manual solution.

### Deliverables:

- Narrative indicating revisions, if any, to the 4 tiebacks.
- Sketches/cross sections to visually demonstrate location of tiebacks in relation to the existing conditions.
- Optional-Prints of any 3D images to visually demonstrate problem solutions.