

January 2024

Solutions for Mislocated Anchor Rods

Contractors are no strangers to solving unforeseen issues out in the field, and sometimes misplaced anchor rods are one of those issues. If you are starting to erect your metal building columns and find that the anchor rods are not in the correct location — what are possible solutions? Knowing what options are available and who needs to approve the modifications can save precious time in the construction schedule.

It is important to start with an understanding of who is responsible for approving modifications to the anchor rods and columns. For modifications to the columns or base plates, contact NBS prior to making any changes. Once notified, we can often provide a quick solution and our engineers can make sure no additional issues are created with the proposed modification. For modifications to the anchor rods, a design professional outside of NBS will have to be responsible for approving changes. This will most likely be the Engineer of Record or the original foundation engineer.

Mislocated anchor rods are the most common field issue we see. Their exact location will determine what solutions are available. A great way to communicate the new locations is to provide a dimensioned sketch using the original anchor rod detail (Fig. 1). When the anchor rods are within a few inches of the correct location, the preferred solution will be a welded plate washer. This will be a flat plate prepped with the new hole locations and will be welded on top of the base plate, which has had the original holes slotted to fit the anchor rods through (Fig. 2). If the plate washer cannot fit, the next option may be to remove the base plate and replace it with a plate with holes matching the poured anchor rod pattern.

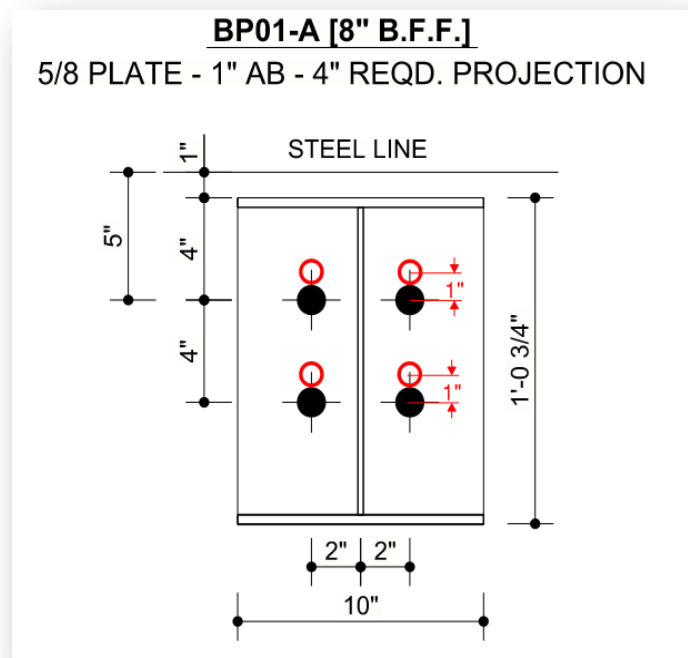


Figure 1

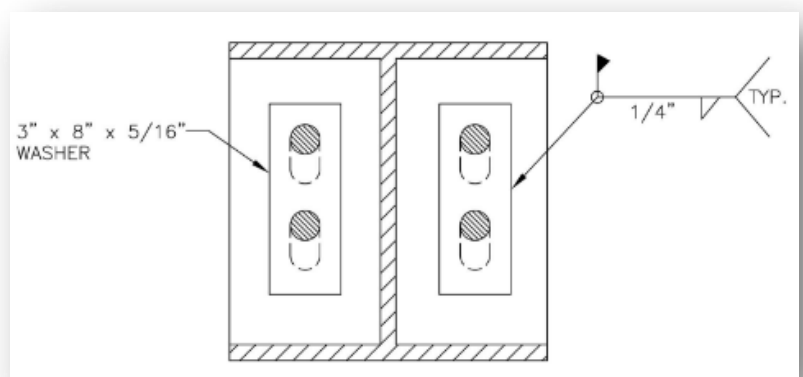


Figure 2



Tips From Engineering

At times, the misspoured anchor rods cannot be accommodated by modifying the base plate. We often find the next best solution is to use epoxy anchor rods. Adding epoxy anchor rods will require coordination with the NBS engineer and the engineer responsible for the foundation design. The foundation engineer will determine if the epoxy anchor rods have the required capacity and will work with NBS's engineer to verify the placement. When placing epoxy anchor rods will not work, the last option may be digging up and resetting new anchor rods.

With the cost and time implications of misspoured anchor rods, it's best to take extra steps to mitigate it from ever happening. NBS will use common anchor rod patterns when possible to help simplify the job. In addition to that, NBS has recently changed the standard pattern for $\frac{3}{4}$ " anchor rods to allow more space between bolts and more flexibility for field fixes. For contractors, the use of anchor rod templates and field surveys can ensure proper placement.