A. **Purpose**

This Manual Part recommends instructions for helical screw-in foundations.

B. **Recommended Instructions:**

1. Install foundations with drive tool attached to a hydraulically powered torque motor. The drive tool shall be rated for the torque motor.

2. Screw the foundation approximately 1 ft (0.30 m) into the ground and use a level to plumb the foundation. During installation, periodically check to ensure the foundation remains plumb.

3. Screw the foundation into the ground until the depth and installation torque required per manufacturer specifications are achieved.

4. Extensions may be utilized to achieve the required depth and installation torque and/or to achieve the proper height. The use of extensions should be reviewed and approved by the foundation manufacturer due to their impact on the foundation loading characteristics.

5. If pre-boring is required due to dense soil conditions, then it shall be bored with a small diameter auger of 3" to 4" (7.62 cm to 10.16 cm) and the soil can be removed from the hole if the specified torque can be achieved.

6. If pre-boring is required due to rocky soil conditions, then it shall be bored with an auger that closely matches the diameter of the shaft size. The auger bit should be reversed out, so that the soil remains in the hole.

7. If the soil is removed from the hole and the foundation is dropped into the hole then concrete should be poured around and inside the helical foundation.

Note: Concrete shall conform to AREMA Manual for Railway Engineering, Chapter 8-Concrete Structures and Foundations.

C. **Other Considerations**