HERA Installation Procedure

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1 Pole Installation

After surveying the entire plat, the poles are installed on center with a ±10cm tolerance, per Figure 1. The number of rows and poles per row is set by the hex order. Table 1 shows important numbers for different orders.

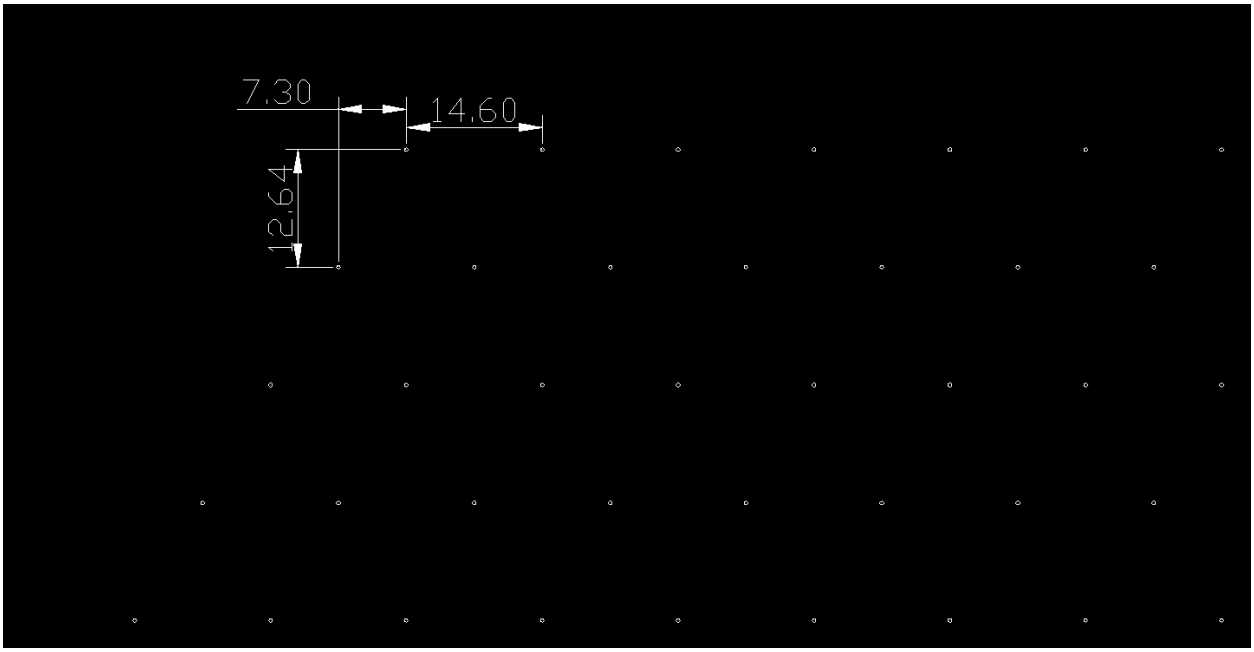

Figure 1: Layout of poles. Dimensions in meters.

Table 1: Numbers

order	total number
4	x

2 Pole Height

Each trio of poles supports an antenna and each interior pole is shared by three antennas. A fiducial constant height must be measured for each trio and marked with a small eye-bolt. From within the circle circumscribed by the poles, this height may be measured by a theodolite along a bubble-level line or by a total station at constant z. This height should be about 1.5-meters above the ground.

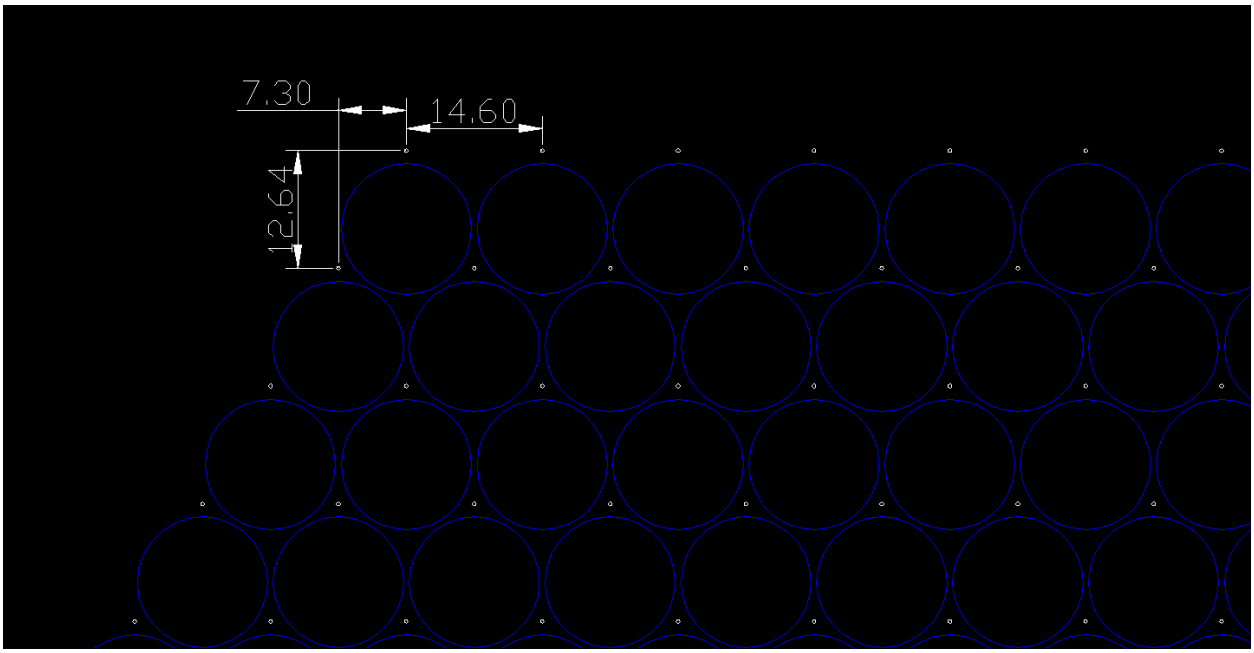

Figure 2: Layout of poles. Dimensions in meters.

3 Hub Centering and Leveling

With each pole with a constant height eye-bolt, the following is used to center the hub center:

3.1 Radial lines

A arrangement of three fixed length lines and three match spring attached on a small inner ring with a plumb-bob is used. See Figure refPicture.

3.2 Jig

With the center point defined by the radial lines and hanging bob, a jig as described below is used.

A Checklist

- ☐ Install poles
- ☐ Survey pole marker fiducial heights (≈ 1.5m) and install eye-bolts
- ☐ Install centering jig (H7jcen)
- ☐ Install hub forms with hub jig (H7jhub), using H7jcen to center
- ☐ Rotate hub to point to poles and conduit exit to correct direction
- ☐ Level with H7jhub and stakes
- ☐ Install support spars (P/N) (long 50mm PVC in bottom holes); peg in place with nails
- ☐ Install surface spar sleeves (P/N) (short 65mm PVC in top holes); peg in place with nails
- ☐ Install circular rebar (P/N) and straight central rebar (P/N)
- ☐ Install exit conduit (P/N)
- ☐ Pour concrete to top of form and let set
- ☐ Mark center point on rebar with cable tie (this is the vertex) and remove jigs
- ☐ Set-up Total Station on center and 60in above rebar
- ☐ Survey and install pole vertical assemblies (H1p2v)
  - ☐ affix prism target on end of horizontal spar
  - ☐ bottom at z=14.0in
  - ☐ shim to vertical
  - ☐ use qty 3 3/8” lag bolts
- ☐ Survey and install pole horizontal assembly (H1p2h)
  - ☐ target at angle = 8.08°, distance = 274.85in (z = 38.63in)
- ☐ Rough in posts (H1pxxx) between the poles using rim pieces (H1vvvvv), including post forms ( )
- ☐ If unshared post or first installation of a shared post, survey and brace
  - ☐ target at angle = 8.08°, distance = 274.85in (z=38.63in)
- ☐ If shared post, survey using the offset piece (H1ggggg) and brace: target at ...
- ☐ Install rebar and concrete, let set and remove bracing
- ☐ Install vertical pvc support pieces on end of support spars (should point straight up) and level
- ☐ Install parabolic spars in hub (be sure pre-drilled holes are facing up) and affix at ends
- ☐ Install pvc cross pieces ( )
- ☐ Install cross piece spars and affix at ends
- ☐ Install hub access platform at appropriate location
- ☐ Install all wire cloth panel A pieces

- ☐ Install all but access section of panel B pieces (with furring strips on outer), sandwiching A-B-cross
- ☐ Install all but access section of panel C pieces (with furring strips on outer), sandwiching B-C-furring
- ☐ Install all panel D pieces, sandwiching C-D-furring
- ☐ Install all panel E pieces
- ☐ install door pieces