



GPS Station Installation Guide

2011 Version 1.0

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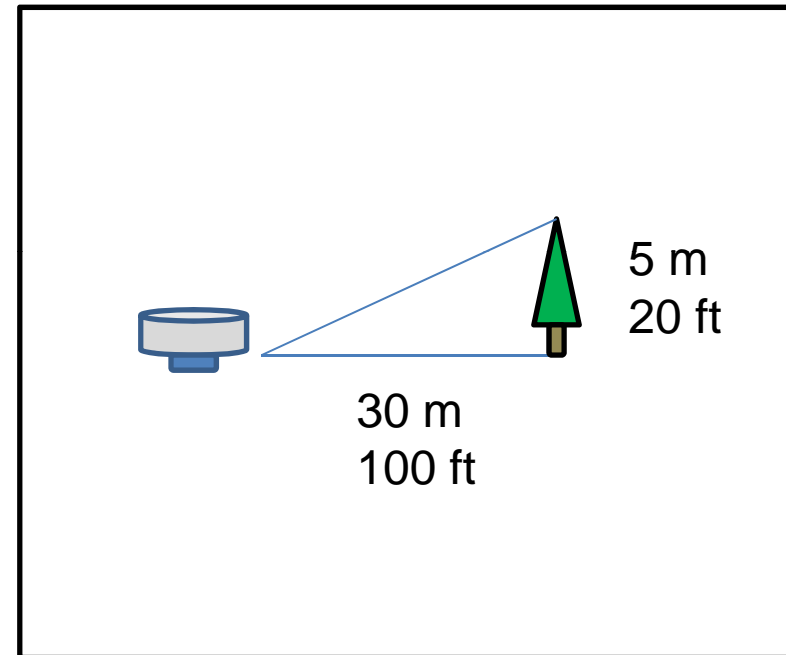
Notes

- The following illustrations are meant to serve as a guide in providing the basic ideas necessary to create an effective GPS station. Each project site is different and therefore the GPS setups will require modifications to suit the particular environment.



GPS Site Selection Guidelines

- Rule of thumb: Ideally, for every 100 ft (30 m) from the antenna, the nearest obstruction should be no more than 20 ft (5 m) high.
- Avoid areas with reflective surfaces nearby (glass, metal walls..etc)
- AC Power is preferred when available
- When implementing a local wireless network, make sure line-of-sight is available to the Access Point
- Reference stations should move less than 1/10th the desired position resolution. The depth of the station required to achieve this condition will vary from site to site. Attach to bedrock when possible.
- For monitored stations, attach the antenna mounting bracket as closely as possible to the structure of interest.



GPS Site Selection Guidelines

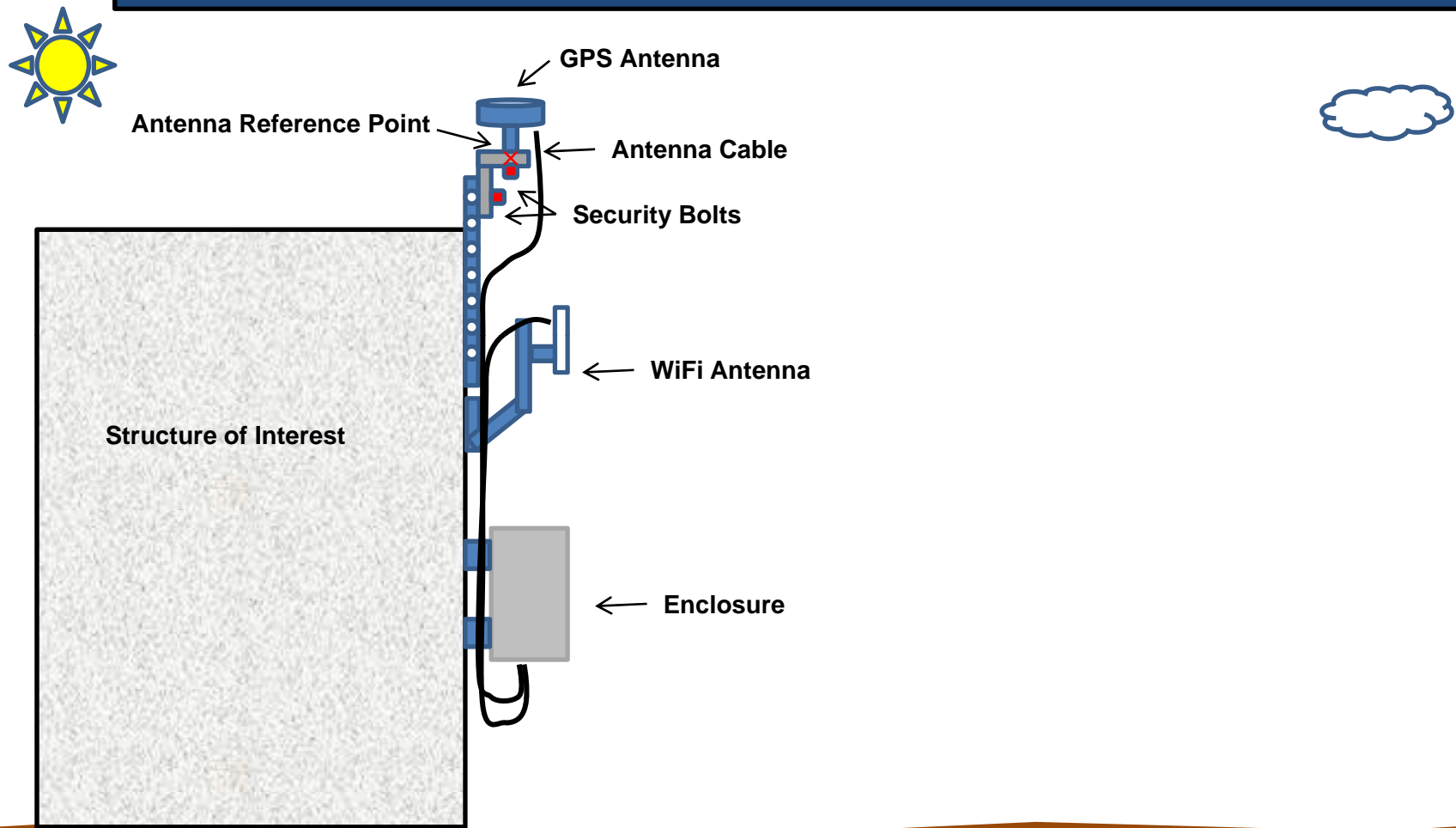
Ideal...



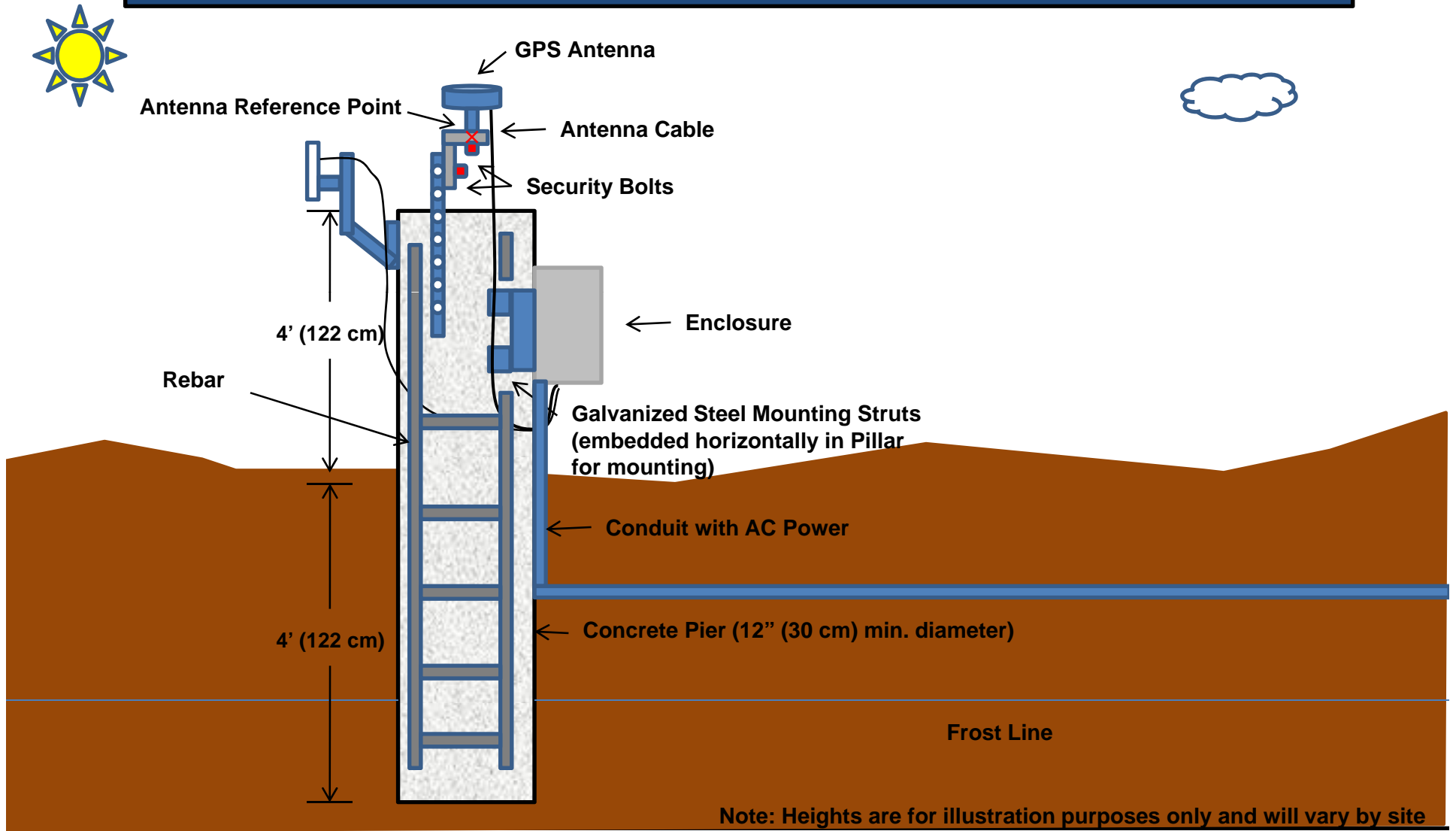
Not Ideal...



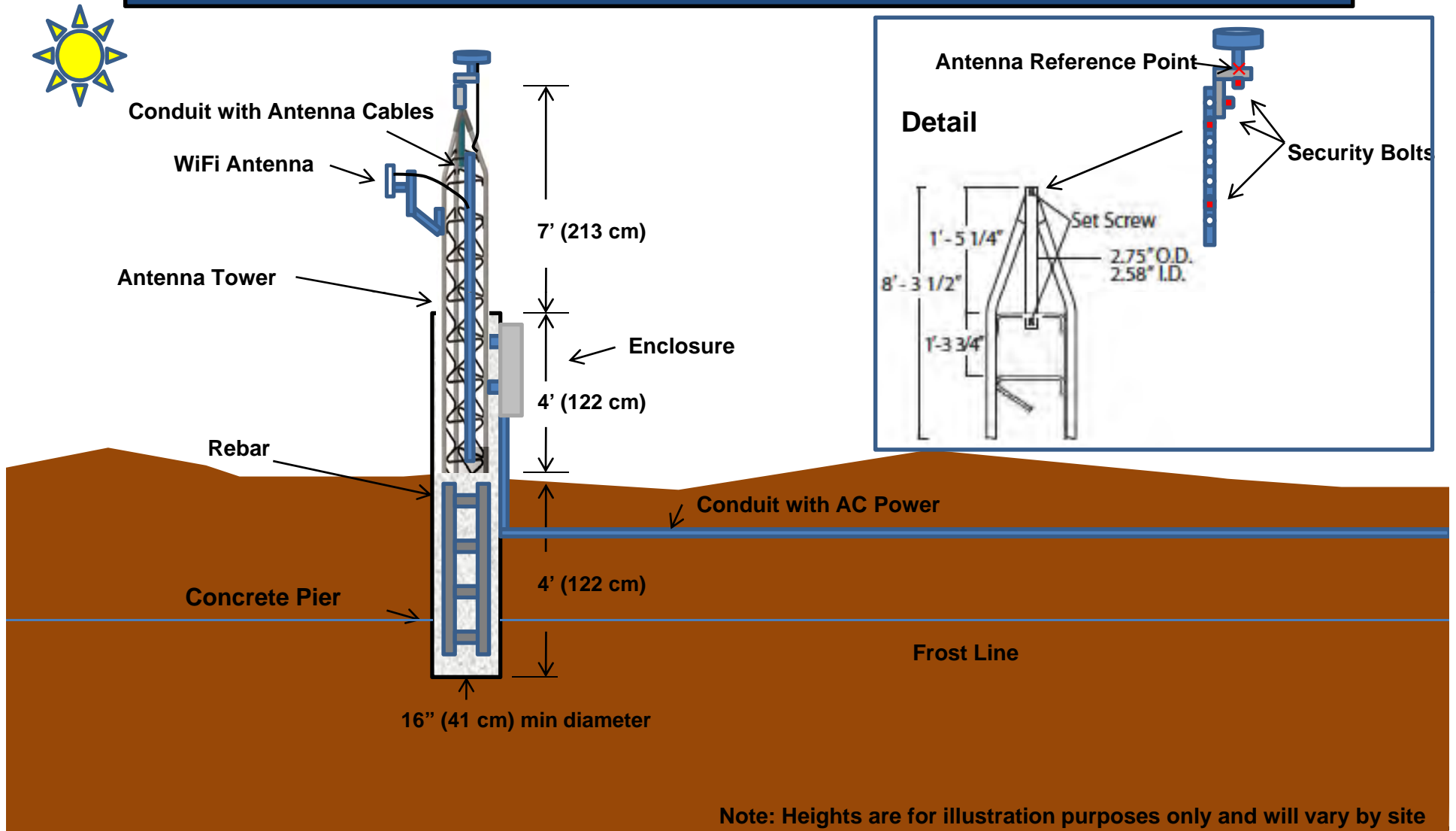
Structural Monitoring Installation: AC Power, WiFi



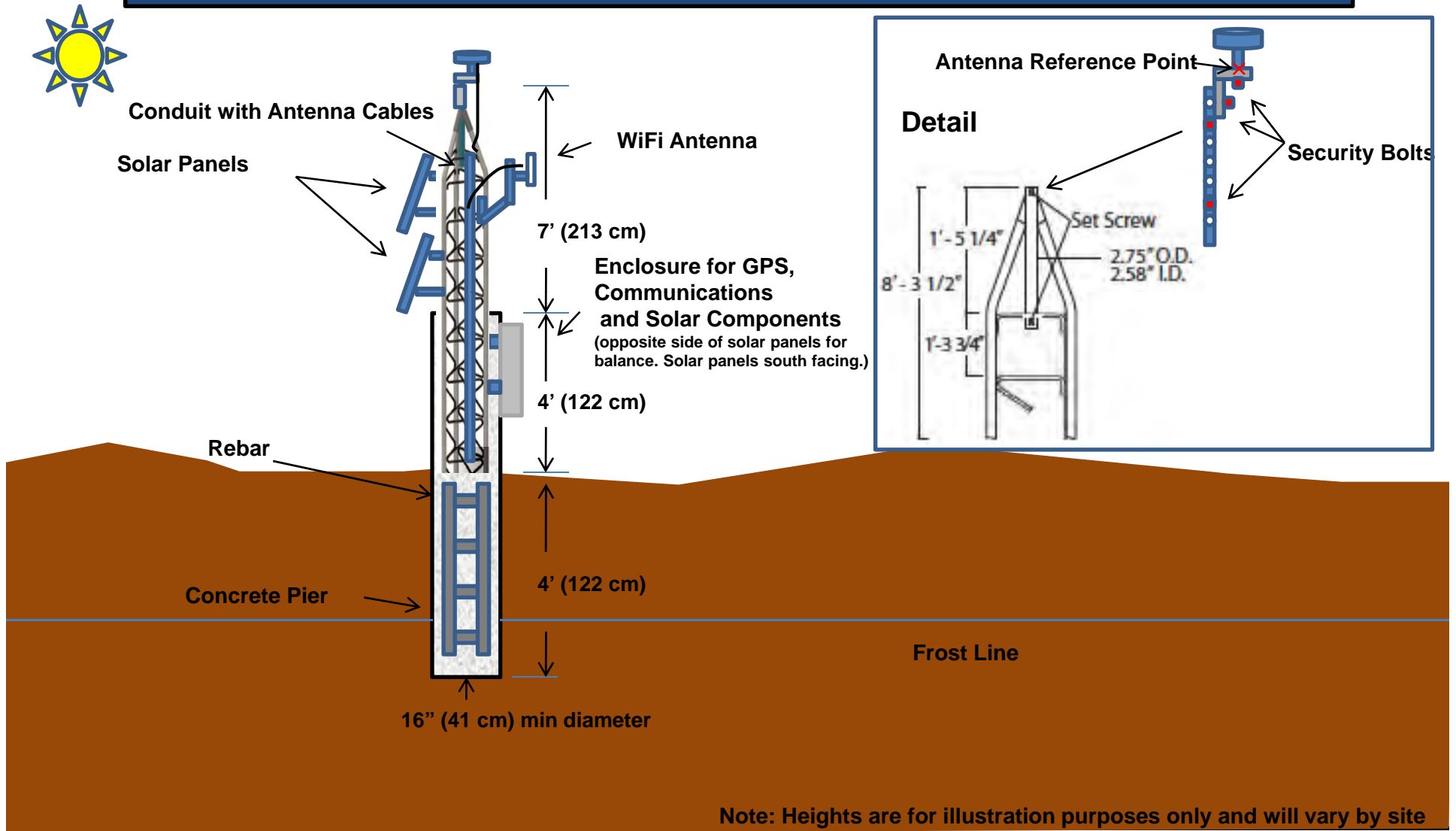
Soil Monitoring Installation: AC Power, WiFi, Concrete Pier



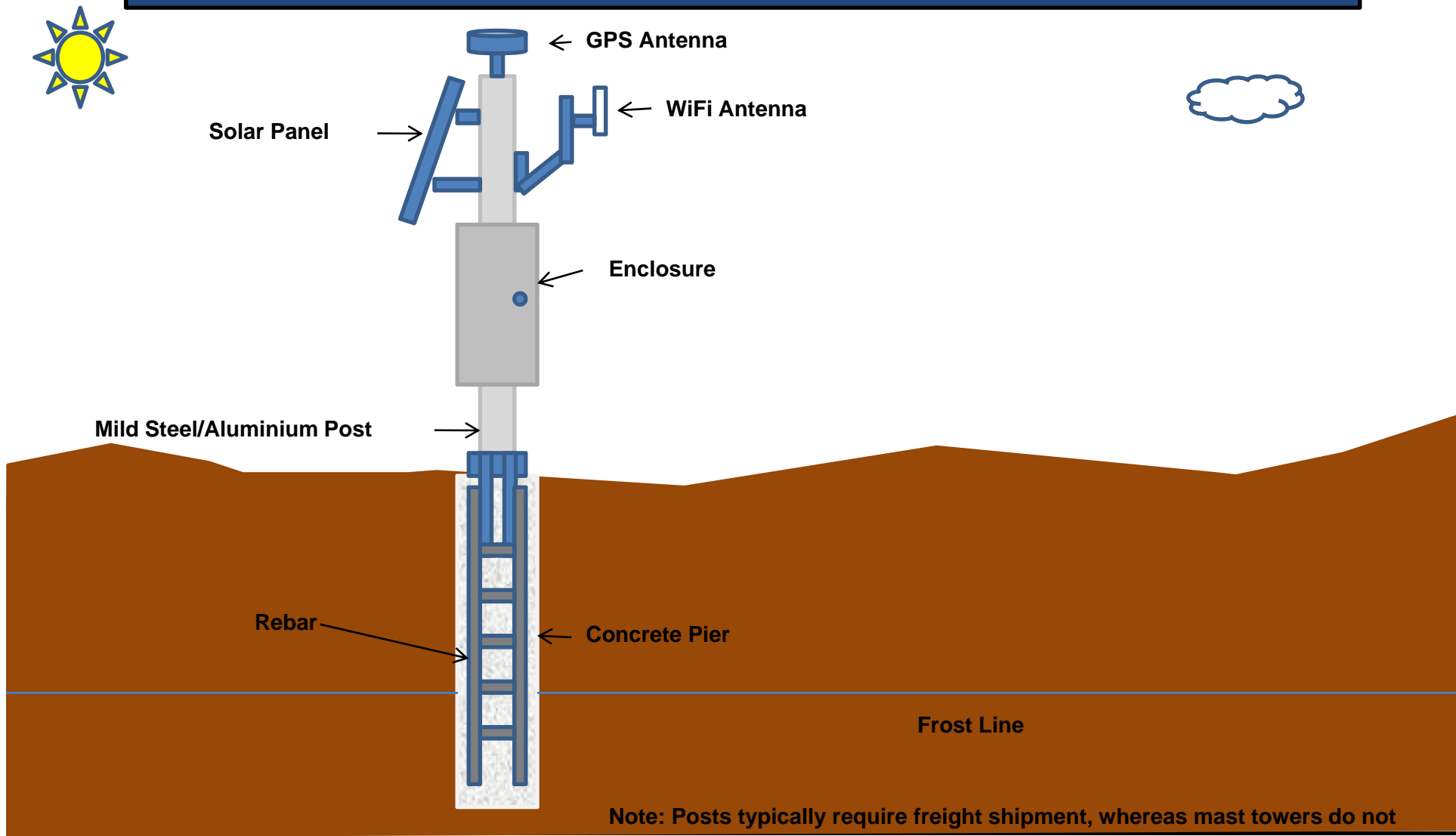
Soil Monitoring Installation: AC Power, WiFi, Mast Tower



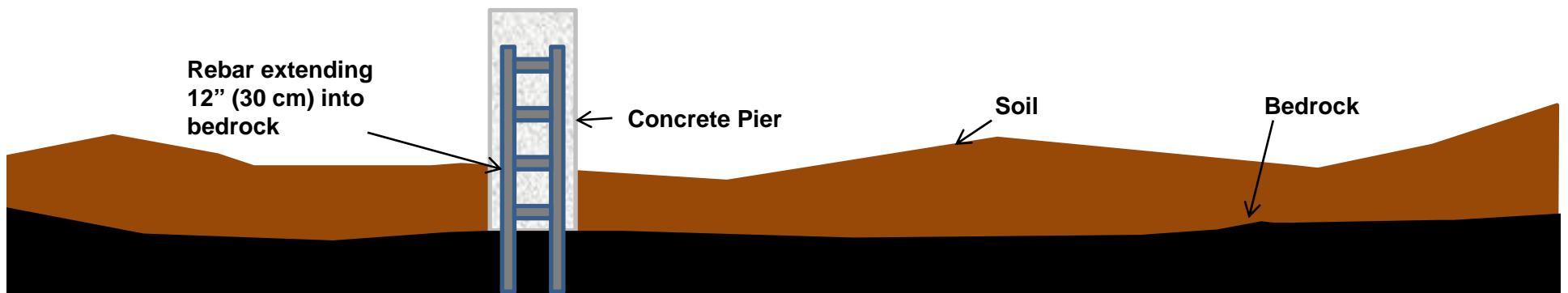
Soil Monitoring Installation: Solar Power, WiFi, Mast Tower



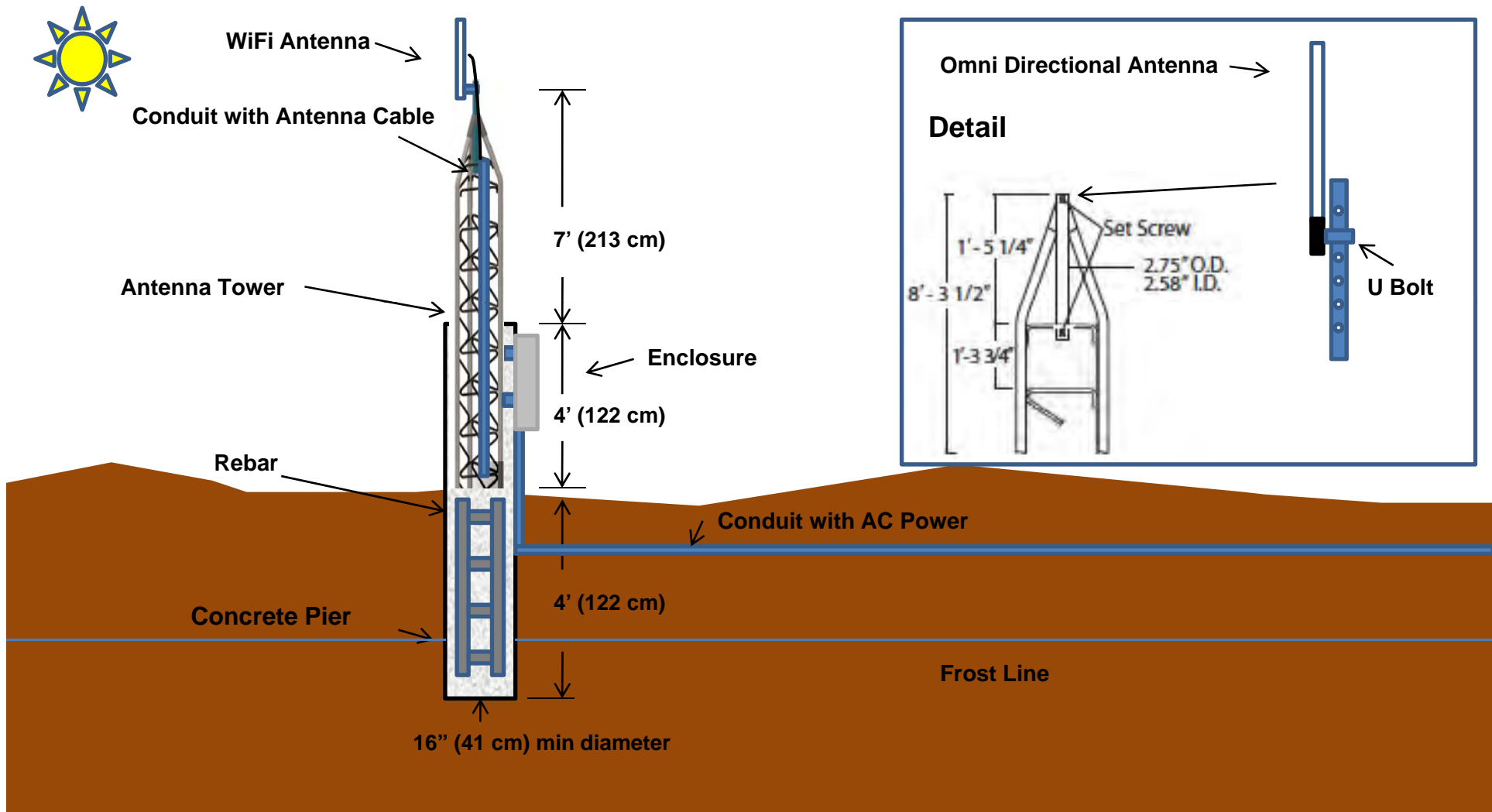
Soil Monitoring Installation: AC Power, WiFi, Post



Bedrock Installation



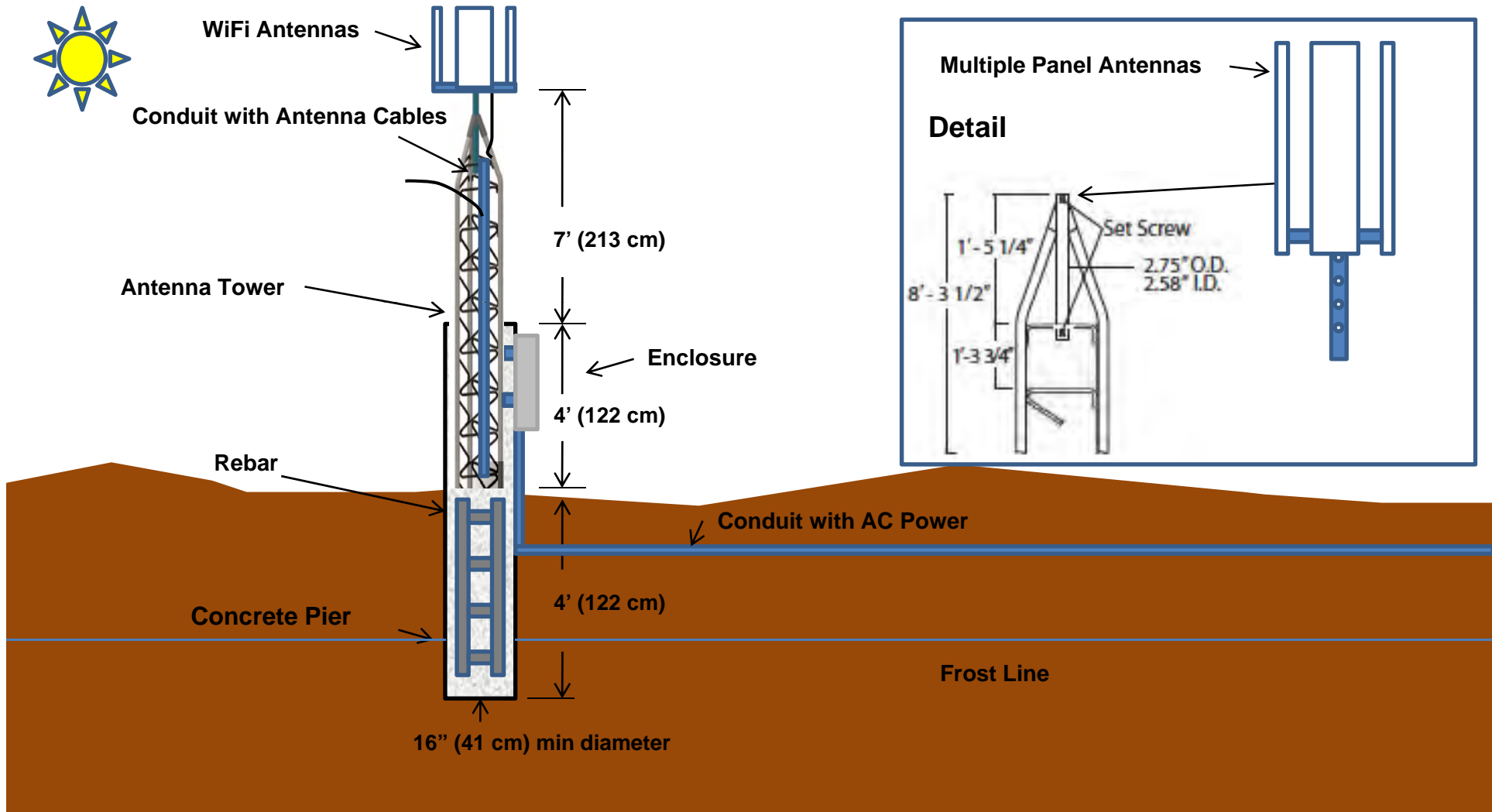
WiFi Access Point Installation: AC Power, Mast Tower



Note: Heights are for illustration purposes only and will vary by site



WiFi Access Point Installation: AC Power, Mast Tower, Ultra Long Range



Note: Heights are for illustration purposes only and will vary by site



Useful GPS Station Design References

- Geological Survey of Canada:
http://gsc.nrcan.gc.ca/geodyn/wcda/gpsmon_e.php
- UNAVCO:
[http://facility.unavco.org/kb/questions/285/National+Continuously+Operating+Reference+Station+\(National+CORS\)+Site+Monumentation+Final+Report+\(2000\)](http://facility.unavco.org/kb/questions/285/National+Continuously+Operating+Reference+Station+(National+CORS)+Site+Monumentation+Final+Report+(2000))
- IGS:
<http://igscb.jpl.nasa.gov/network/monumentation.html>

