

TECHNICAL NOTE # 406

MODEL 310B HIGH SECURITY STACKED LINK

This note is written as a guideline for proper installation of the Model 310B in a High Security Stacked Link configuration. This note is intended as a general guideline and specific settings will depend upon actual site conditions. The stacked link configuration can be effectively utilized for ranges up to 600 feet. This note applies to Models 310B, 310B-33259, 310B-33253 or 310B-33255.

1.0 EQUIPMENT REQUIRED

- 1.1 **Two Model 310BT Transmitters (per zone)**
- 1.2 **Two Model 310BR Receivers (per zone)**
- 1.3 **One RM83 Performance Monitor (optional)**
- 1.4 **Two each Model LF215 Line Filters (optional)**
- 1.5 **Two each BA30 Rechargeable Standby Batteries (optional)**
- 1.6 **Two each BX20 NEMA 4X Stainless Steel Weatherproof Enclosures (optional)**

2.0 APPLICABLE DOCUMENTS

- 2.1 **Model 310B installation manual.**

3.0 INSTALLATION

In general, follow the precautions as outlined in the installation manual for each unit. Install the stacked link as shown in Figure 1. The height of each unit provides optimum coverage for both crawling and jumping intruders.

Depending upon surface conditions, the Model 310B may have to be adjusted slightly higher in elevation to provide optimum alignment voltage. At the corners, an overlap of 25 feet (7.62m) is recommended. The minimum allowable corner overlap is 10 feet (3m). Along the axis (intermediate overlap), a minimum of 60 feet (18.3m) with 18 inch (457mm) maximum offset is required. A special transient, suppression circuit/line filter that is installed within a junction box is required in areas where excessive line transients or lightning strikes are prevalent. Insure that the wires within the flexible conduit are shielded with a trimmed braided cable such as Alpha 2174.

4.0 ALIGNMENT

- 4.1 Refer to the Model 310B installation manual for initial alignment procedures. Insure that the 310B transmitter and receiver are set to the same modulation frequency. Set jumper E10 on the top receiver to the **“fast”** position and to the **“slow”** position on the bottom receiver.
- 4.2 Alignment of each 310B must be done independently. The following steps should be performed, first to top link and then to the bottom link. Remove power from the link not being aligned.
- 4.3 Refer to the Model RM83 Operation Instructions. Connect the RM83 to the MS connector on the rear of the receiver. Set the function switch on the RM83 to the **“power supply”** position. The meter should read between 4 and 6 corresponding to 10.5vdc and 14.0vdc.

- 4.4 Set the RM83 to the “align” position. Maximize the signal by first adjusting the transmitter for a peak indication and then the receiver for a peak indication. This number will vary somewhat with site characteristics and transmitter receiver distance. The meter should not read less than 1. Typically, a higher level is obtainable. Again, this number will vary somewhat with site characteristics but in no case should the level be less than 1.
- 4.5 To avoid mutual interference one of the links must be rotated 90°. This is accomplished by slowly rotating the transmitter until the alignment signal reading on the receivers is 0. This will cross polarize the links from a vertical (E-plane) setting to a horizontal (H-plane) setting. Rotate the receiver until the alignment signal returns to the previous value before the rotation. The other link should be powered off.
- 4.6 Set the receiver sensitivity for the desired coverage, by adjusting the sensitivity potentiometer, R40. Additional adjustment of transmitter/receiver mounting height may be required to optimize detection capability. The systems should be set up to meet all detection requirements at the lowest sensitivity setting possible. An indication of system sensitivity can be observed on the RM83, by switching to the “LINK” position. With no intruder present, the signal should read approximately mid-scale, 5. Alarms will occur whenever signal level moves to 2 or 8.
- 4.7 Install radomes on both links and test to insure that it meets the coverage requirements.

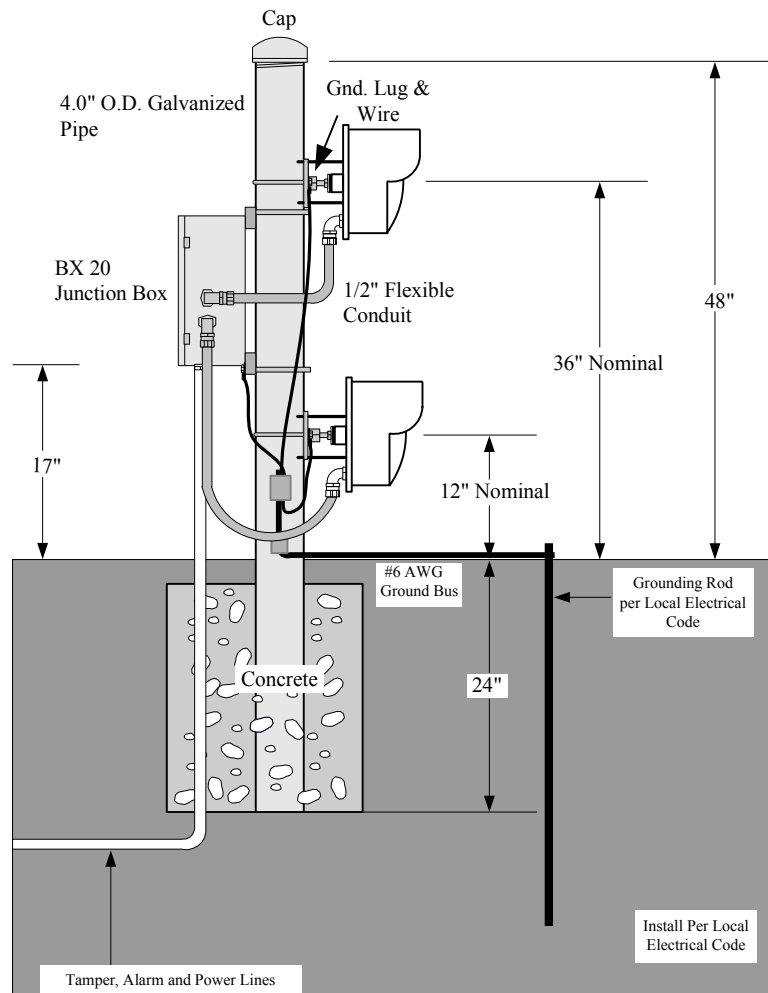


Figure 1