

TECHNICAL NOTE # 426

MODEL 300B STACKABLE MASTER/SLAVE HIGH SECURITY LINK

This note is written as a guideline for proper installation of the Model 300B Stackable High Security Link. This note is intended as a general guideline and specific settings will depend upon actual site conditions. This stacked link configuration can be effectively utilized for ranges up to 150 feet (45.7m). (Stackable 300B model numbers are 300B-33220 and 300B-33234.)

1.0 EQUIPMENT REQUIRED

- 1.1 Two each Model 300BT Transmitters (per zone).
- 1.2 Two each Model 300BR Receivers (per zone).
- 1.3 One each Model RM83 Performance Monitor (optional).
- 1.4 Two each Model LF215 Line Filters (optional).
- 1.5 Four each MB65 Mounting Brackets (optional).
- 1.6 Two each BA30 Rechargeable Standby Batteries (optional).
- 1.7 Two each PS50 Power Supplies (optional).
- 1.8 Two each BX20 or BX35 Weatherproof Enclosures (optional).

2.0 APPLICABLE DOCUMENTS

2.1 Model 300B Technical Manual.

3.0 INSTALLATION

In general, follow the precautions as outlined in the installation manuals. 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 lower Model 300B may have to be adjusted slightly in elevation to provide optimum alignment voltage. At the corners, an overlap of 25 feet is recommended, and along an axis, an overlap of 50 feet with 18 inch maximum offset. The special transient suppression circuit/line filter (LF215) is installed within a junction box or BX20 or BX35 enclosure and 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 300B installation manual for initial alignment procedures. Insure that both 300B transmitters and receivers are set to the same modulation frequency and that each antenna feed has the extended range element installed. Set the integration speed jumper on the upper receiver to the “**fast**” position. Set the jumper on the lower receiver to the “**slow**” position.
- 4.2 Alignment of each 300B must be done independently. The following steps should be performed, first to the lower 300B then to the upper 300B.
- 4.3 Connect the RM83 to the MS connector on the rear of the receiver. Set the function switch on the RM83 to the “**voltage**” position. (The meter should read between 4 and 6.)

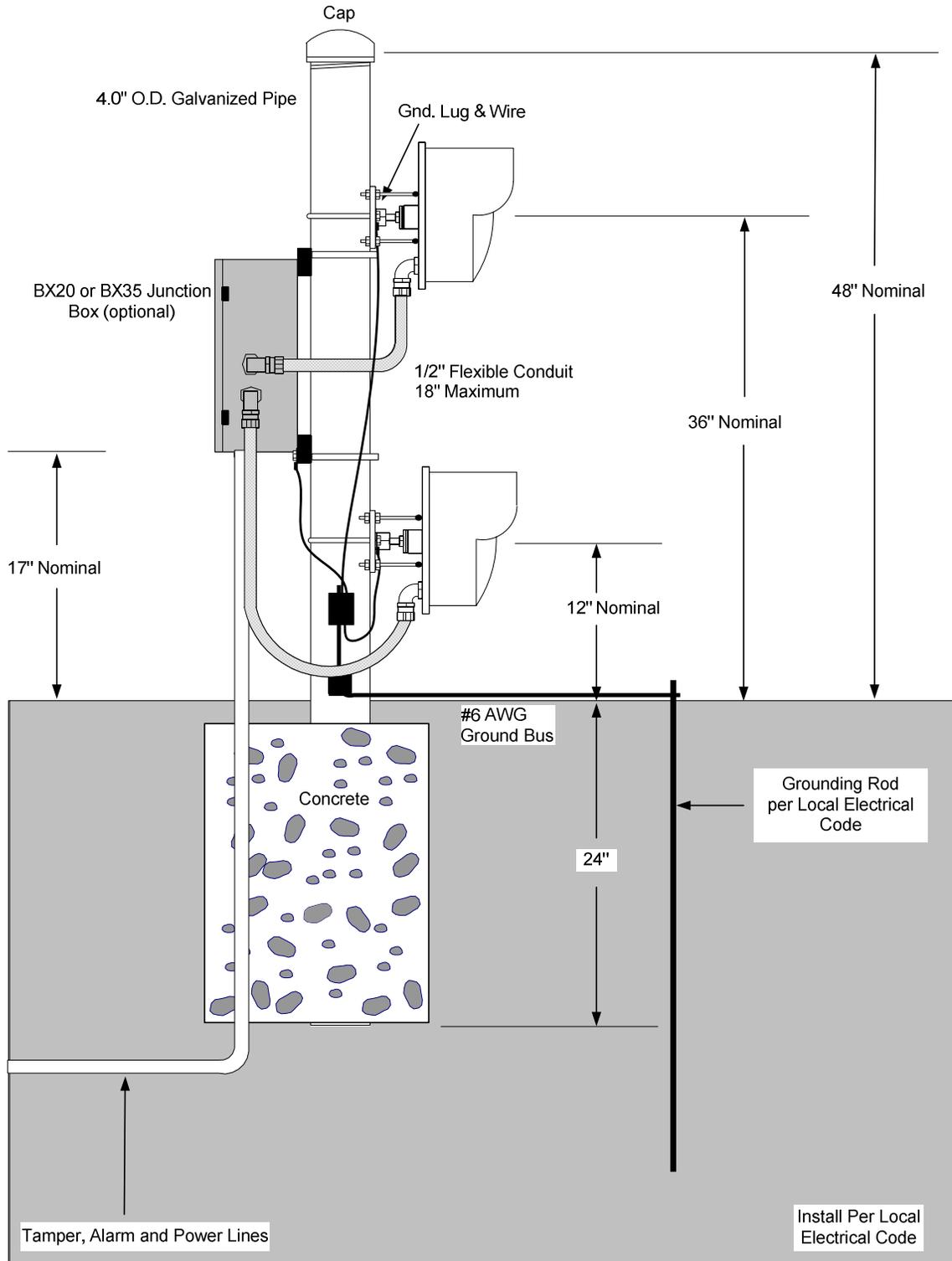


Figure 1

4.4 Set the RM83 to the “align” position. Maximize the signal by first adjusting the transmitter for a peak alignment signal and then the receiver. The meter should not read less than 1. Typically, a level of 3 or better is obtainable on a 150 feet (45.7m) link over smooth macadam. Again, this number will vary somewhat with site characteristics but in no case should the voltage be less than 1.

5.0 SET UP

- 5.1 Remove power from transmitters. Wire master/slave configuration between the two transmitters per the following instructions. Reapply power when finished.
 - 5.1.1 Connect master ground to slave ground.
 - 5.1.2 Connect master out to slave in.
 - 5.1.3 Connect E10 jumper on master to required modulation channel (A, B, C, or D).
 - 5.1.4 Connect E10 jumper on slave to E11 EXT.
- 5.2 Again check alignment signal at receivers. Alignment should be 1 or greater.
- 5.3 Install proper antenna element. Antenna element is determined by zone distance, terrain, and coverage requirement.
- 5.4 Set the receiver sensitivity for the desired coverage by adjusting 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.
- 5.5 Install radomes on both links and test to ensure that they meet all detection requirements.

6.0 ALARM TESTING

- 6.1 Insure each receiver alarms independently by interrupting the associated transmitter's transmitted signal. This can be accomplished by just blocking the transmitter. If the receivers do not alarm independently proceed with the following steps.
- 6.2 Disconnect master/slave wiring from transmitters.
- 6.3 Disconnect power from the lower transmitter and note alignment signal on both receivers.
- 6.4 Disconnect power from the upper transmitter and re-connect power to the lower transmitter. Set transmitter to appropriate channel and note alignment signal at both receivers.
- 6.5 The transmitter that contributes the most significant over-illumination to the opposite receiver requires a mounting height adjustment. Adjust appropriate transmitter to reduce alignment signal to the opposite receiver to 2 or less on the RM83. If unable to achieve this setting, slowly rotate 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.
- 6.6 Rotate appropriate receiver until the alignment signal returns to the normal alignment reading.
- 6.7 Reconnect transmitters in the master/slave configuration as described in section 5.1.
- 6.8 Re-test to insure each receiver alarms independently.