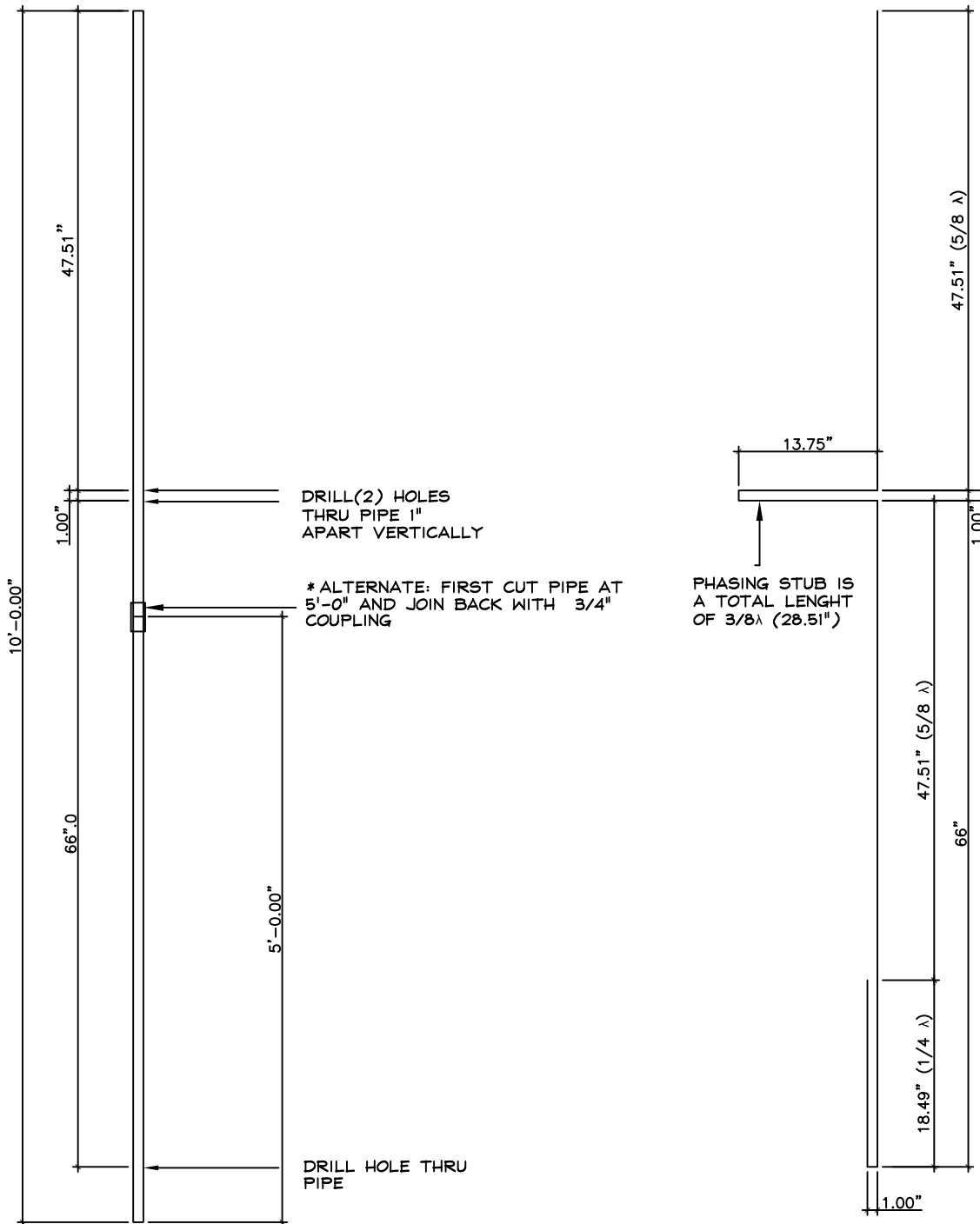


STACKED 5/8 WAVE VHF ANTENNA



3/4" DIA. SCH 40 PVC FORM

10 OR 12 GAUGE ALUMIN. WIRE (14.50 FT.)

SPEED OF LIGHT IN INCHES REDUCE FORMULA:
 $300(\text{meters}) \times 3.28(\text{feet}) \times 12(\text{inches}) = 11,808" (\text{inches})$
 $11,808" = (X)$ for use in the following formulas

$$(X / \text{freq.} (\text{mhz})) = 1\lambda \text{ in inches in free space}$$

$$(11,808" / 146 \text{ mhz}) = 80.88"$$

$\lambda = 1$ wave length
 VF = Velocity Factor .94 for the alum. wire used in this project.

$$5/8 \lambda = 80.88" \times 5/8 = (80.88" \times 5) / 8 = 50.54" \times .94 (\text{vf}) = 47.51"$$

$$3/8 \lambda = 80.88" \times 3/8 = (80.88" \times 3) / 8 = 30.33" \times .94 (\text{vf}) = 28.51"$$

$$1/4 \lambda = 80.88" \times 1/4 = (80.88" \times 1) / 4 = 20.22" \times .915 (\text{vf of parallel wires}) = 18.50"$$

Speed of light is 300,000,000 meters per second. We can scale that down to work with any antenna construction projects, to 300 meters we convert that to feet by multi. by 3.28 and finally convert that to inches by multi. by 12.
 So answer to life, the universe and everything is: 11,808".