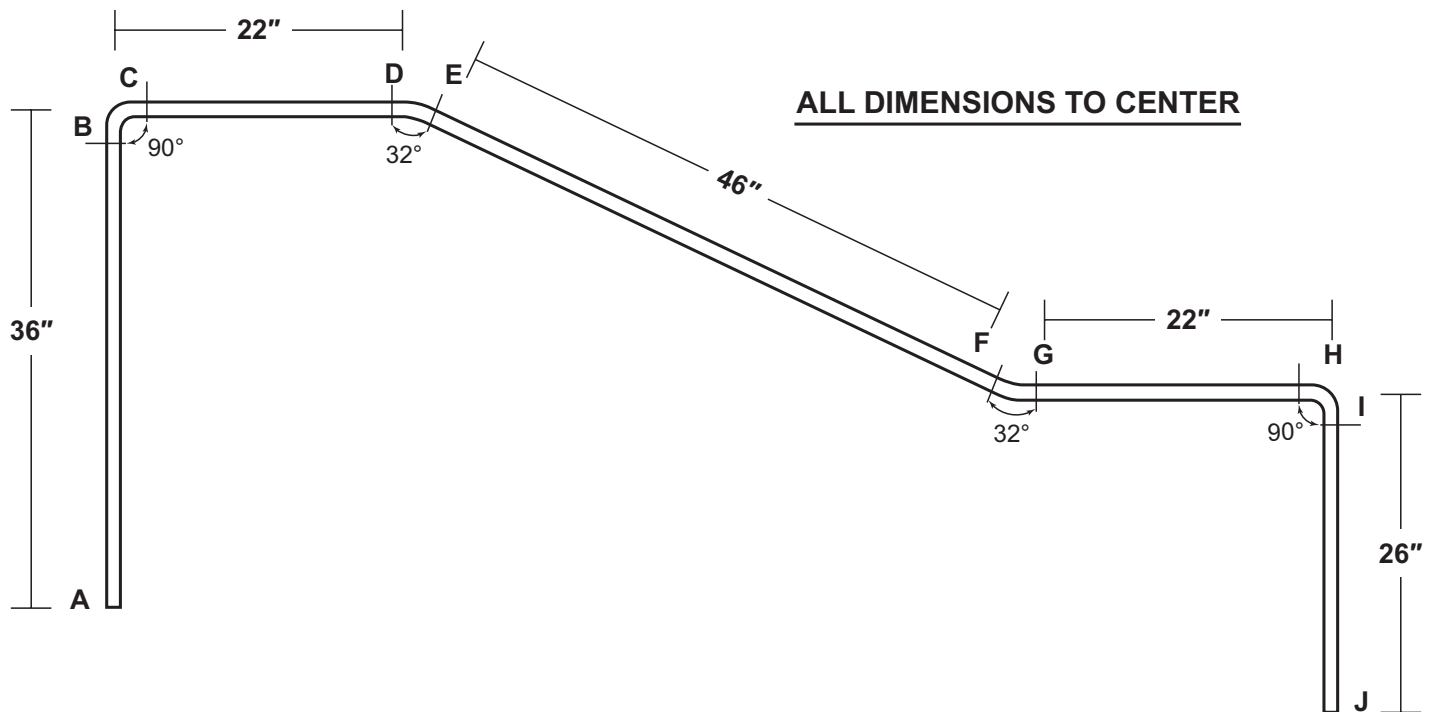
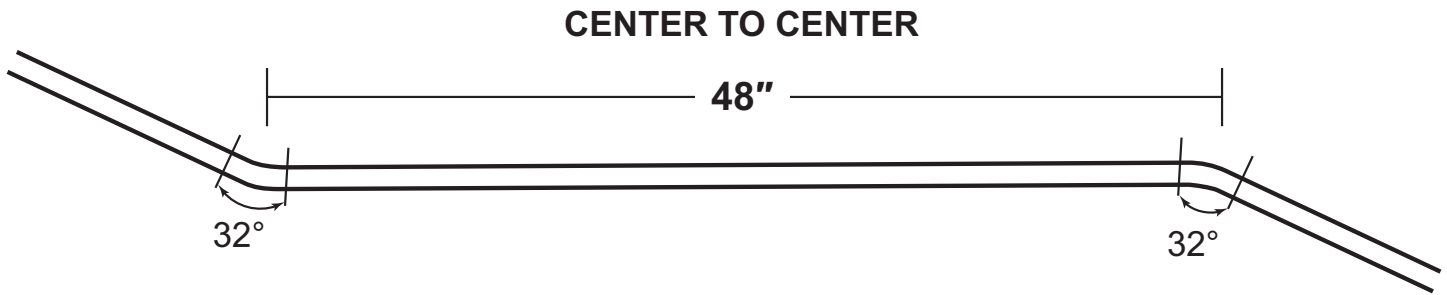


# MACHINE PROGRAMS IN STRAIGHT TANGENT LENGTHS



	L	R	A	RADIUS	
<b>①</b> A-B	33	0	90	3	$36'' - (\text{TAN } 1/2 \text{ ANGLE} \times \text{RADIUS})$ $36'' - \text{TAN } 45 \times 3$ $36'' - 3 = \mathbf{33''}$
<b>②</b> C-D	18.1398	0	32	3	$22'' - (\text{TAN } 45 \times 3) - (\text{TAN } 16 \times 3)$ $22'' - 3 - 0.8602 = \mathbf{18.1398''}$
<b>③</b> E-F	44.2796	180	32	3	$46'' - (\text{TAN } 1/2 \text{ ANGLE} \times \text{RADIUS}) -$ $(\text{TAN } 1/2 \text{ ANGLE} \times \text{RADIUS})$ $46'' - .8602 - .8602 = \mathbf{44.2796''}$
<b>④</b> G-H	18.1398	180	90	3	$22'' - (\text{TAN } 1/2 \text{ ANGLE} \times 3) - (\text{TAN } 1/2 \text{ ANGLE} \times 3)$ $22'' - 3 - 0.8602 = \mathbf{18.1398''}$
<b>⑤</b> I-J	23				$26'' - (\text{TAN } 1/2 \text{ ANGLE} \times 3)$ $26'' - \text{TAN } 45 \times 3 =$ $26'' - 3 = \mathbf{23''}$



TAN 1/2 BEND ANGLE X RADIUS OF BEND

$$1/2 \text{ BEND ANGLE} = 16 \quad \text{TAN } 16 = .028674$$

$$0.028674 \times 3 = .086023$$

**TO FIGURE STRAIGHT DISTANCE FROM END OF BEND TO START OF BEND:**

DEDUCT 1/2 OF ANGLE FROM RIGHT AND LEFT

**EX:**

$$48 - (\text{TAN } 1/2 \text{ BEND ANGLE} \times \text{RADIUS}) - (\text{TAN } 1/2 \text{ BEND ANGLE} \times \text{RADIUS})$$

$$48 - (\text{TAN } 16 \times 3) - (\text{TAN } 16 \times 3)$$

$$48 - (0.028674 \times 3) - (0.028674 \times 3)$$

$$48 - 0.08602 - 0.08602$$

$$= 46.2796$$