

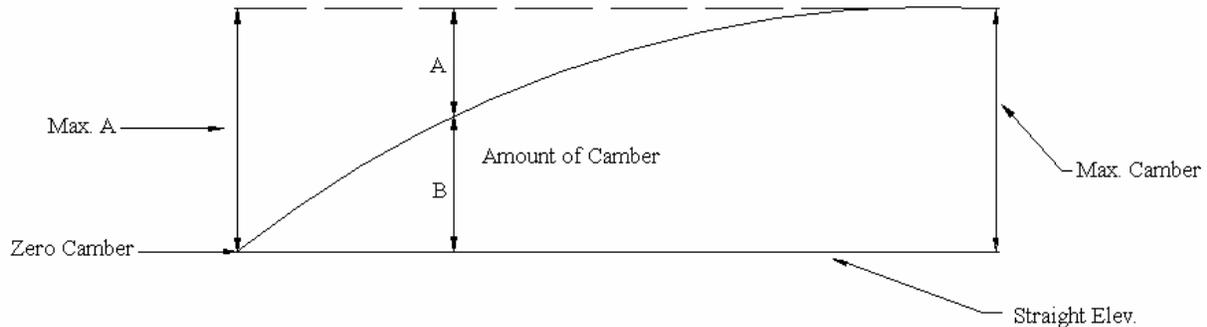
INSTRUCTIONS FOR USE OF MO-ENG-36

Conduits are cambered for two reasons:

1. To provide positive pipe drainage after settlement.
2. To guard against excessive joint deflection and failure during settlement.

The pipe is cambered from the riser invert to the elbow or to the outlet if there is no elbow. The length is the distance from the riser to the elbow or outlet. The fall is the elevation difference over the length. The joint of maximum camber is that joint closest to the maximum fill over the pipe.

- (1) Joints numbered from riser to outlet of pipe.
- (2) Distance of joint from outlet of pipe.
- (3) Elevation of each joint.
- (4) Method of proportioning camber.



<u>A</u>	<u>K</u>	<u>B</u>
0 = Joint of max. camber	15	0
K = 1 K	10	5
1 K + 2 = 3 K	6	9
3 K + 3 = 6 K	3	12
6 K + 4 = 10 K	1	14
10 K + 5 = 15 K	--	--
15 K + 6 = 21 K	1	9
etc.	3	7
	6	4
	10	0

Joint of max. camber

B = Max. A - A

- (5) Amount of camber.

$$K = \frac{\text{Max Camber}}{\text{Max. A}}$$

Amount of Camber = B × K (Upstream and downstream toe of max. camber)

- (6) Design camber elevation = straight elev. + amount of camber.
- (7) Difference in elevation between joints.
- (8) Length of pipe between joints.
- (9) (7) ÷ (8) = slope of pipe (this may be for 1 or more pipe sections)
- (10) Difference of slope between pipe grades.
- (11) Tan⁻¹ (10) = joint deflection in degrees.