

# Median Opening Spacing Examples



**Engineering Division  
Production Support**

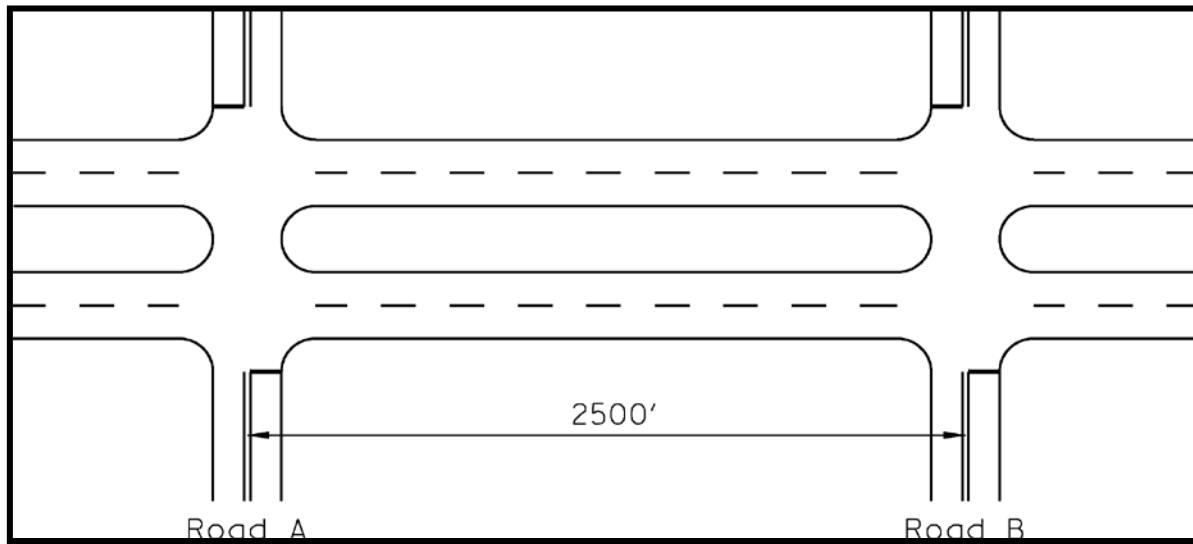
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## MEDIAN OPENING SPACING - EXAMPLE PROBLEMS

The following ten example problems detail the procedure to be used in determining the appropriate median opening spacing. For additional information, please refer to the Roadway Design Guidelines, Chapter 2 - Section 500.02.

### Example No. 1      Urban Section



**Figure 2-12**

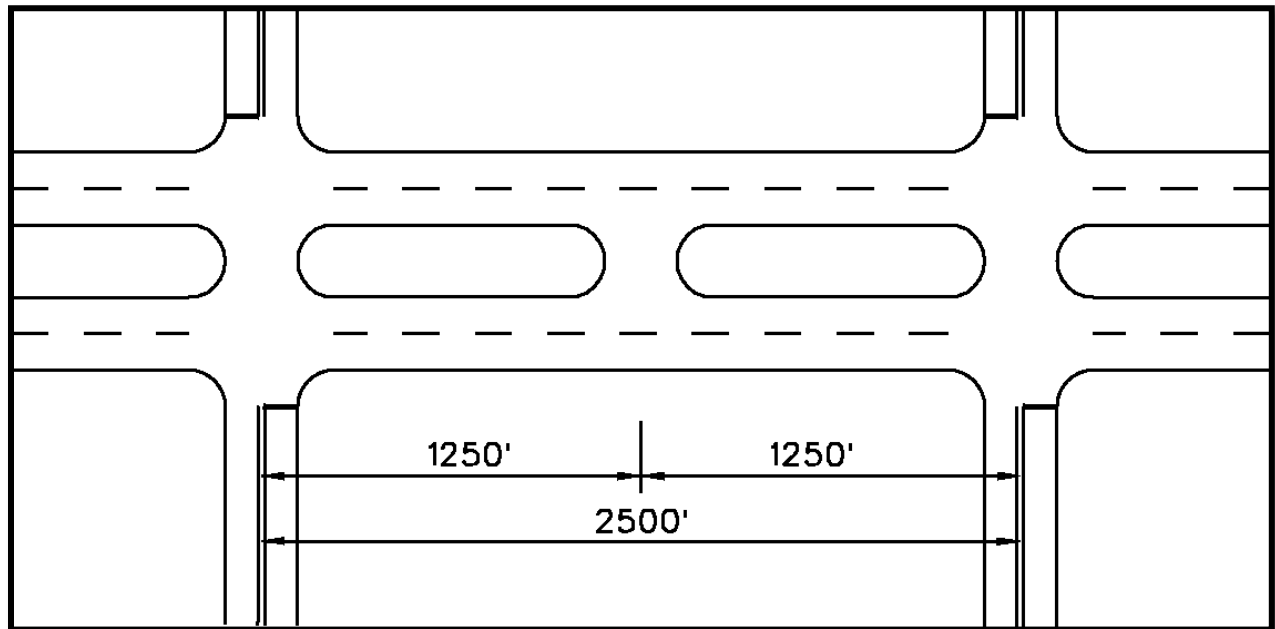
Total distance between Road A and Road B is 2,500 feet. Since this is with an urban section of roadway, the appropriate median opening spacing would be that which most closely approximates 660 feet. It shall not, however, be less than 440 feet and nor more than 880 feet.

The first step in determining the proper spacing is to divide the total distance between the intersection openings (2,500 feet) by the desirable urban spacing (660 feet). This will tell us approximate number of spaces required.

This calculates to 3 or 4 spacings (2 or 3 midblock median openings) between Road A and Road B. The number of midblock median openings is always one less than the number of spaces. Generally the whole number closest to the approximate number of spaces (4 for 3.75 above) will be the number of spaces which will yield the most appropriate median opening spacing (which is true in this particular example). However, this is not always the case (see Example No. 8).

The next step is to determine which condition would result in a spacing nearest 660 feet, but within the range of 440 feet to 880 feet. To do this, first divide the total distance between the intersections (2,500 feet) by the possible number of spacings (3 and 4). At the same time, check to

see if the resulting distances are within the permissible range (440 feet - 880 feet) because if the resulting distance is not within this range, discard it as an alternative.



**Figure 2-14**

$$\frac{2500}{3} = 833 \quad 440 < 833 < 880 \quad \text{OK}$$

$$\frac{2500}{4} = 625 \quad 440 < 625 < 880 \quad \text{OK}$$

Both possible spacing (833 feet and 625 feet) are within the permissible range. Therefore, it must still be determined which is closest to 660 feet.

$$833 - 660 = 173$$

$$660 - 625 = 35$$

Since 35 is less than 173, the most appropriate median opening spacing between Road A and Road B would be 625 feet. This would result in 3 midblock median openings 625 feet apart.

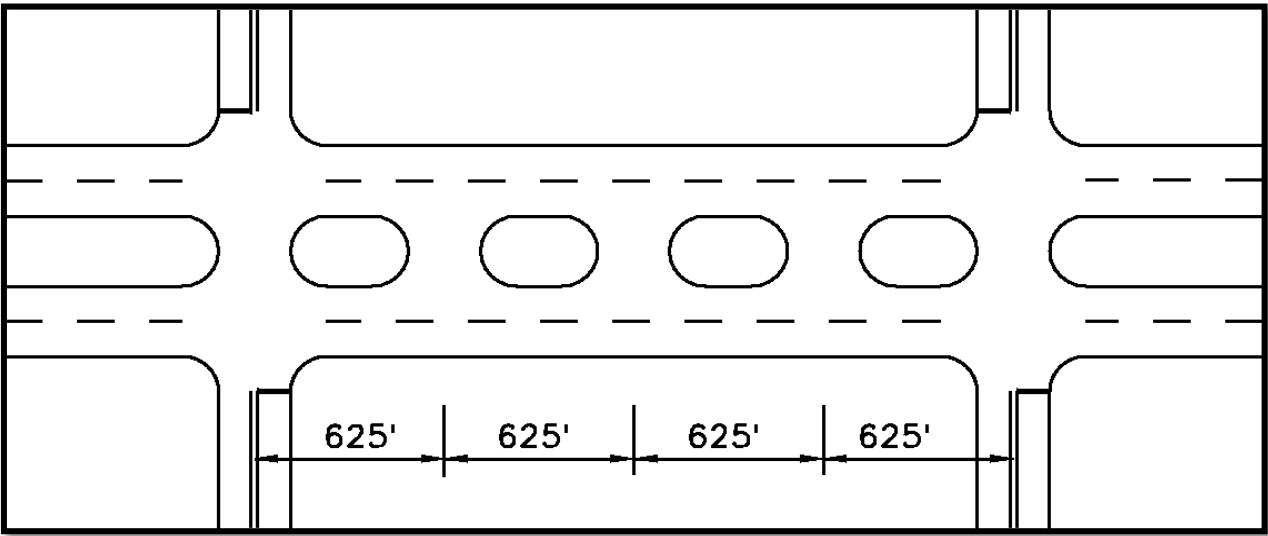


Figure 2-15

### **Example No. 2      Urban Section**

Total distance between intersection openings is 1,100 feet.

$$\frac{1100}{660} = 1.7$$

$$\frac{1100}{1} = 1100 \quad 440 < 1100 > 880 \quad \text{Not Acceptable}$$

$$\frac{1100}{2} = 550 \quad 440 < 550 < 880 \quad \text{OK}$$

The only acceptable spacing is 550 feet. Therefore, one midblock median opening shall be provided at a point 550 feet from each intersection.

### **Example No. 3      Rural Section**

Total distance between Road A and Road B is 2,500 feet. The desirable rural spacing is 1,320 feet, with a range of between 880 feet and 1,760 feet.

$$\frac{2500}{1320} = 1.9$$

Therefore, there can be 1 or 2 spacings (0 or 1 midblock median openings). However, it must be determined which condition would result in a spacing nearest 1,320 feet, but also be within the permissible range.

$$\frac{2500}{1} = 2500 \quad 880 < 2500 > 1760 \quad \text{Not Acceptable}$$

$$\frac{2500}{2} = 1250 \quad 880 < 1250 < 1760 \quad \text{OK}$$

The only acceptable median opening spacing between Road A and Road B is 1,250 feet. Therefore, one midblock median opening shall be provided at a point 1,250 feet from each intersection.

#### **Example No. 4**      Rural Section

Total distance between intersection openings is 1,100 feet.

$$\frac{1100}{1320} = 0.8$$

$$\frac{1100}{0} = \infty \quad \infty < 1100 \quad \text{Not Acceptable}$$

$$\frac{1100}{1} = 1100 \quad 880 < 1100 < 1760 \quad \text{OK}$$

The only acceptable spacing is 1,100 feet and, therefore, no midblock median opening shall be installed.

#### **Example No. 5**      Urban Section

Total distance between intersection openings is 1,500 feet.

$$\frac{1500}{660} = 2.3$$

$$\frac{1500}{2} = 750 \quad 440 < 750 > 880 \quad \text{OK}$$

$$\frac{1500}{3} = 500 \quad 440 < 500 > 880 \quad \text{OK}$$

$$660 - 500 = 160$$

$$750 - 660 = 90$$

Since 90 feet is less than 160 feet, the most appropriate median opening spacing would be 750 feet. Therefore, 1 midblock median opening shall be installed.

**Example No. 6** Rural Section

Total distance = 1,500 feet

$$\frac{1500}{1320} = 1.1$$

$$\frac{1500}{1} = 1500 \quad 880 < 1500 < 1760 \quad \text{OK}$$

$$\frac{1500}{2} = 750 \quad 750 < 880 \quad \text{Not Acceptable}$$

The only acceptable spacing is 1,500 feet. Therefore, no midblock opening shall be installed.

**Example No. 7** Urban Section

Total distance = 5,880 feet

$$\frac{5880}{660} = 8.9$$

$$\frac{5880}{8} = 735 \quad 440 < 735 < 880 \quad \text{OK}$$

$$\frac{5880}{9} = 653 \quad 440 < 653 < 880 \quad \text{OK}$$

$$735 - 660 = 75$$

$$660 - 653 = 7$$

Since 7 is less than 75, the appropriate spacing is 653 feet resulting in 8 midblock median openings.

**Example No. 8** Rural Section

Total distance = 5,880 feet

$$\frac{5880}{1320} = 4.5$$

$$\frac{5880}{4} = 1470 \quad 880 < 1470 < 1760 \quad \text{OK}$$

$$\frac{5880}{5} = 1176 \quad 880 < 1176 < 1760 \quad \text{OK}$$

$$1470 - 1320 = 150$$

$$1320 - 1176 = 144$$

Since 144 is less than 150, the most appropriate spacing is 1,176 feet resulting in 4 midblock median openings.

**Example No. 9**      Urban Section

Total distance = 5,940 feet

$$\frac{5940}{660} = 9.0$$

Therefore, the appropriate spacing would be 660 feet resulting in 8 midblock median openings.

**Example No. 10**      Rural Section

Total distance = 5,940 feet

$$\frac{5940}{1320} = 4.5$$

$$\frac{5940}{4} = 1485 \quad 880 < 1470 < 1760 \quad \text{OK}$$

$$\frac{5940}{5} = 1188 \quad 880 < 1188 < 1760 \quad \text{OK}$$

$$1485 - 1320 = 165$$

$$1320 - 1188 = 132$$

Since 132 is less than 165, the most appropriate median opening spacing is 1,188 feet resulting in 4 midblock median openings.