**INTRODUCTION TO TRANSPORTATION**

***GirlTREC 2019* | *Bell Engineering***

**Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Directions: Please fill in the following blanks as we go through the lecture and presentation.*

*They are not necessarily in order.*

**The first priority of transportation engineers is \_\_\_\_\_\_\_\_\_\_\_\_.**

**This includes making our intersections:**

* **Consistent**
* **Predictable**
* **Efficient**

|  |  |
| --- | --- |
| **Term** | **Definition** |
|  | The red, green, or yellow light indication on a traffic light |
|  | The amount of time a vehicle is stopped at a red light |
|  | The ability of the traffic signal timing to minimize the queue |
|  | The amount of time it takes for a light to complete both the red and green phases |
|  | The amount of time that is dedicated to each phase |
|  | A line of vehicles waiting at a red light |

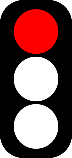
**WORD BANK: *Phase, Cycle, Delay, Queue, Timing, Efficiency***

If both traffic lights have the same amount of cars traveling down their road, which traffic light’s timing must be more **efficient**?

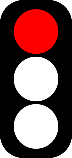
1 or 2? Answer: \_\_\_\_

Now draw what queues 1 and 2 look like:

**QUEUE 1:**

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**QUEUE 2:**

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*Directions: Match the description to the correct term.*

**\_\_\_\_ Manual Traffic Control**

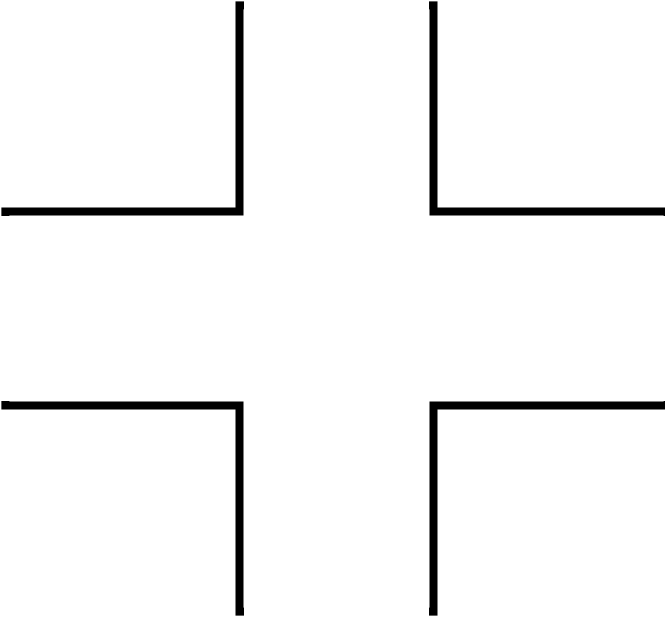
**\_\_\_\_ Fixed-Time Control**

**\_\_\_\_ Actuated Signal Control**

1. This type of traffic control uses sensors to detect cars (like a giant metal detector), which changes the traffic lights to avoid *delays*
2. This type of traffic control is when an individual is changing the traffic signals as they observe the traffic’s behavior and based on its current needs
3. This type of traffic control is when the phases of stoplights last the same amount of time every time and are pre-set. These phase times are based off of historical data

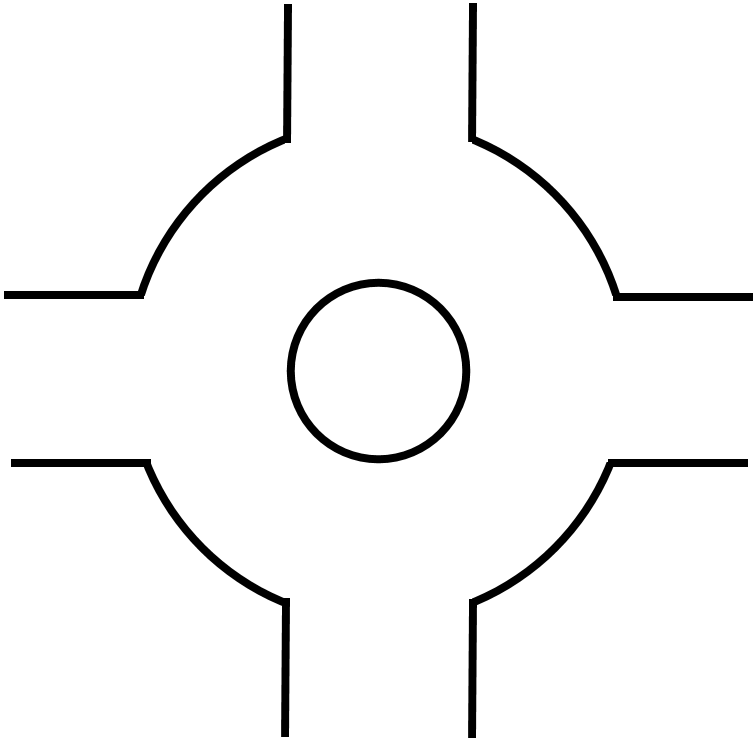
**STANDARD FOUR-WAY INTERSECTION**

*Directions: Draw a four-way intersection with correct lines on the road and correct roadway signs.*

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**ROUNDABOUT INTERSECTION**

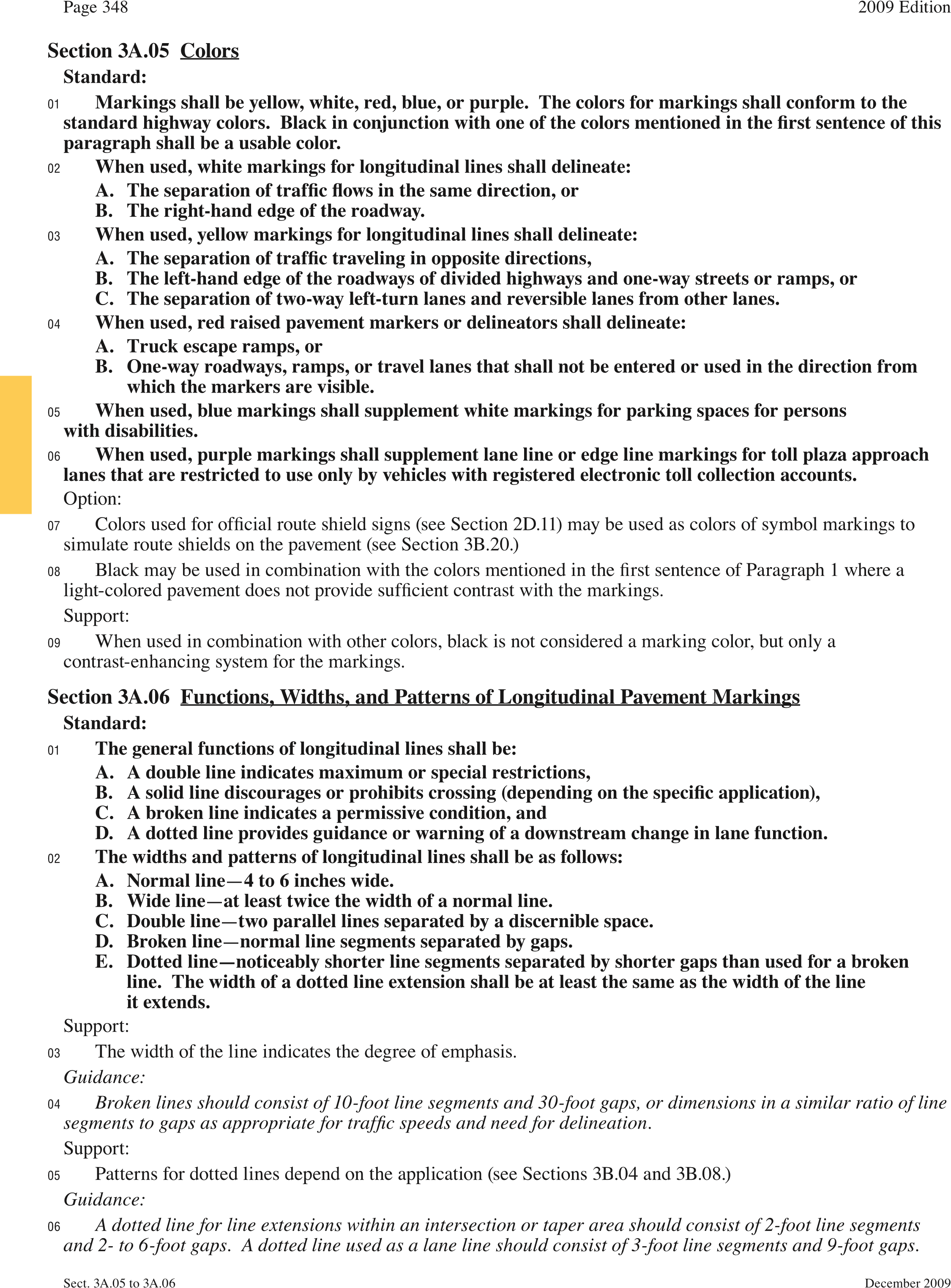
*Directions: Draw a roundabout intersection with correct lines on the road and correct roadway signs.*

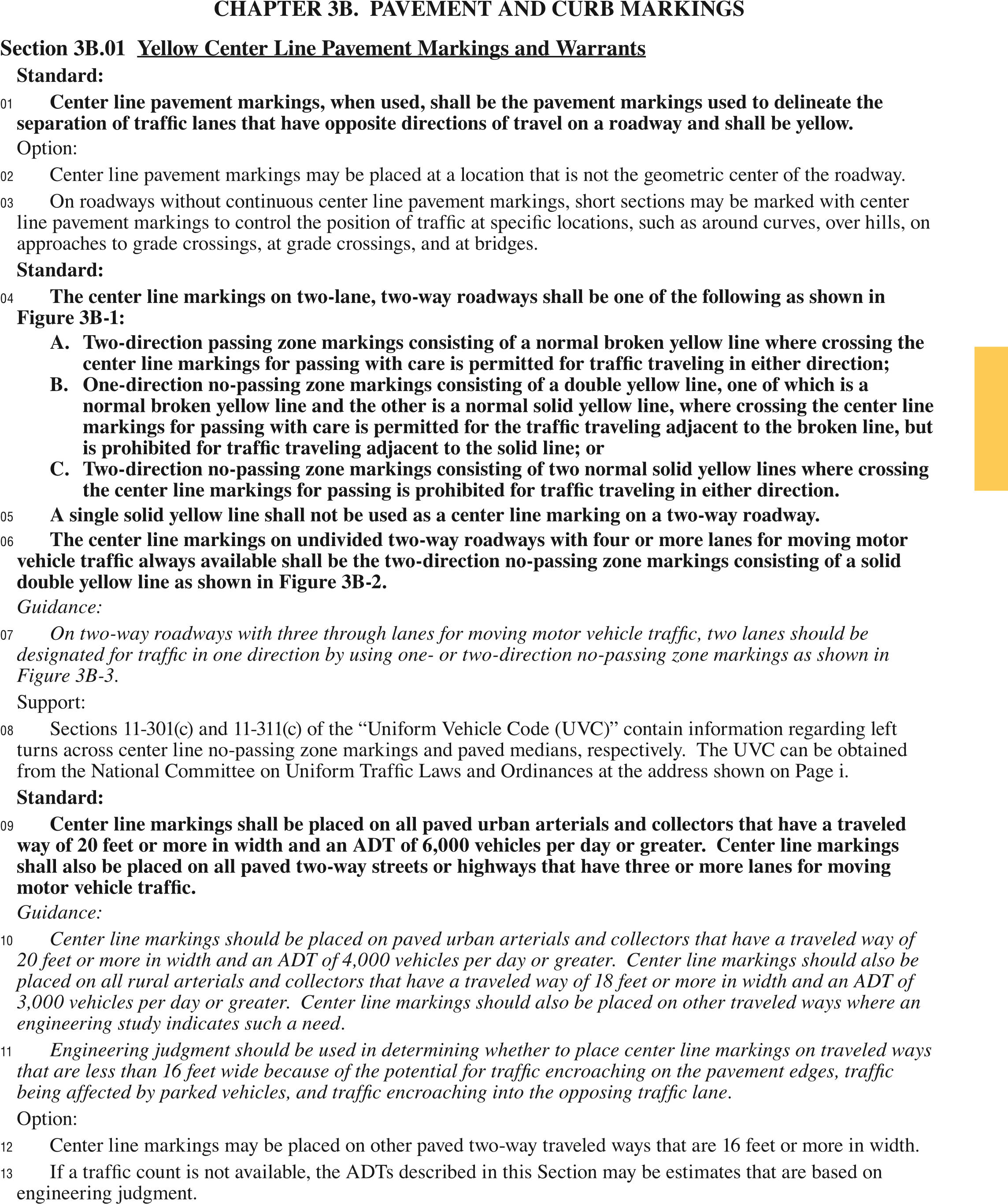
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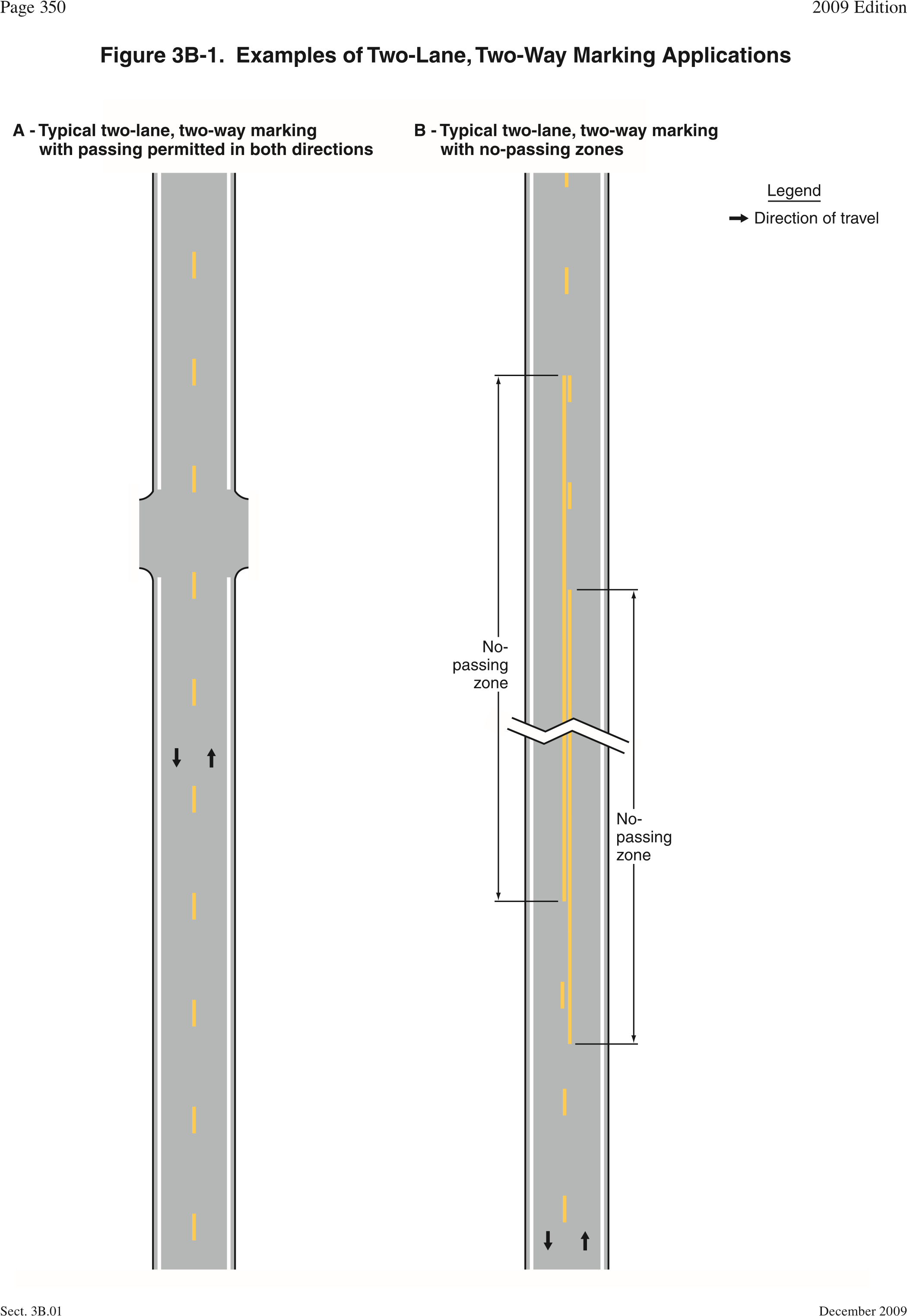
**GROUP ACTIVITY:**

*Directions: Take turns answering the following questions on the flipchart paper provided. Use a different color for each answer and prepare to present your findings to the class.*

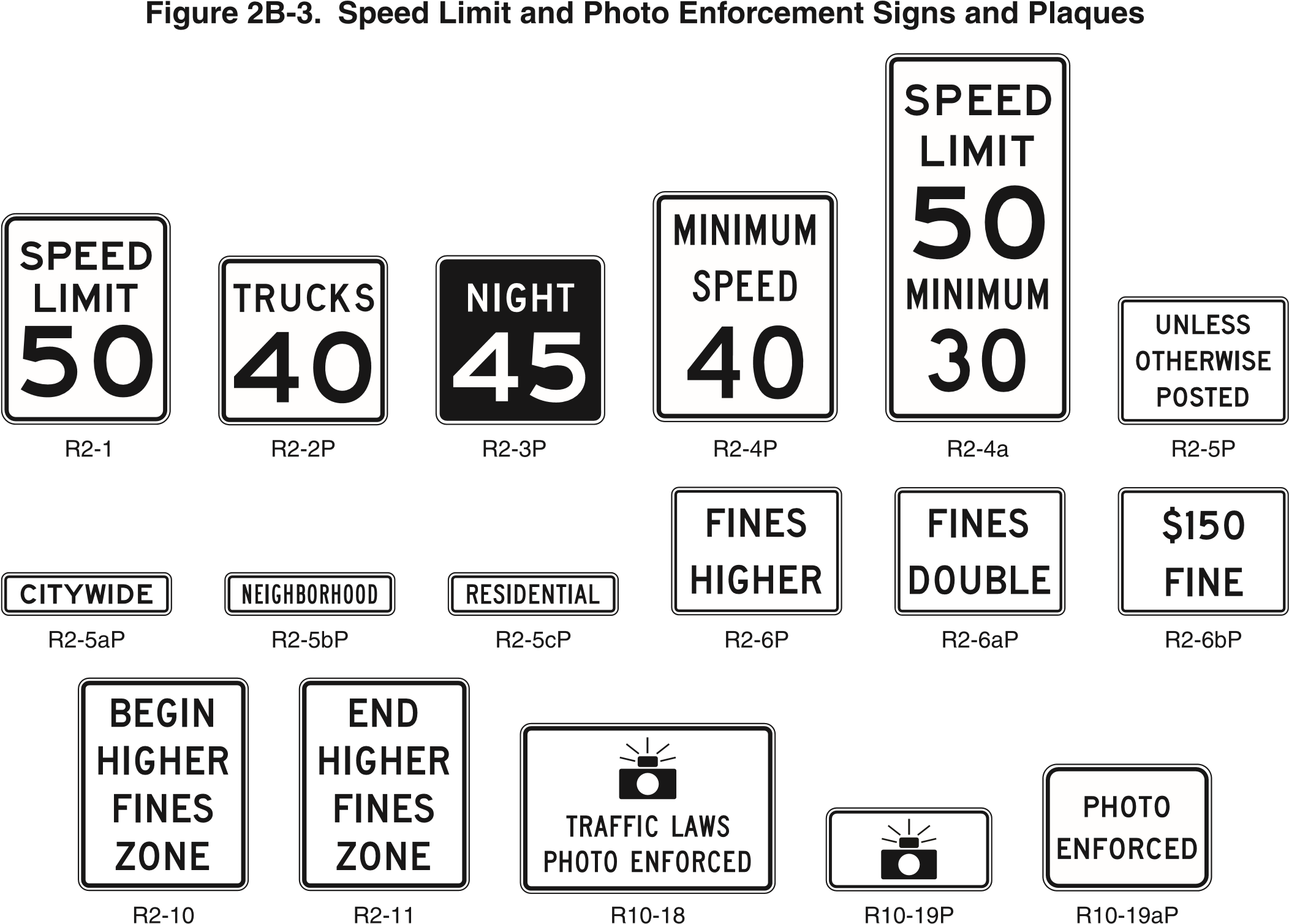
1. **Why is traffic signal timing important?**
2. **Why might it be necessary to consider different sizes of vehicles when planning traffic signal timing phases?**
3. **Why is it important to use the same color for the same thing on every road?**
4. **If you have an intersection that has lots of traffic and high crash rates, what type of intersection might you want to consider? Why?**

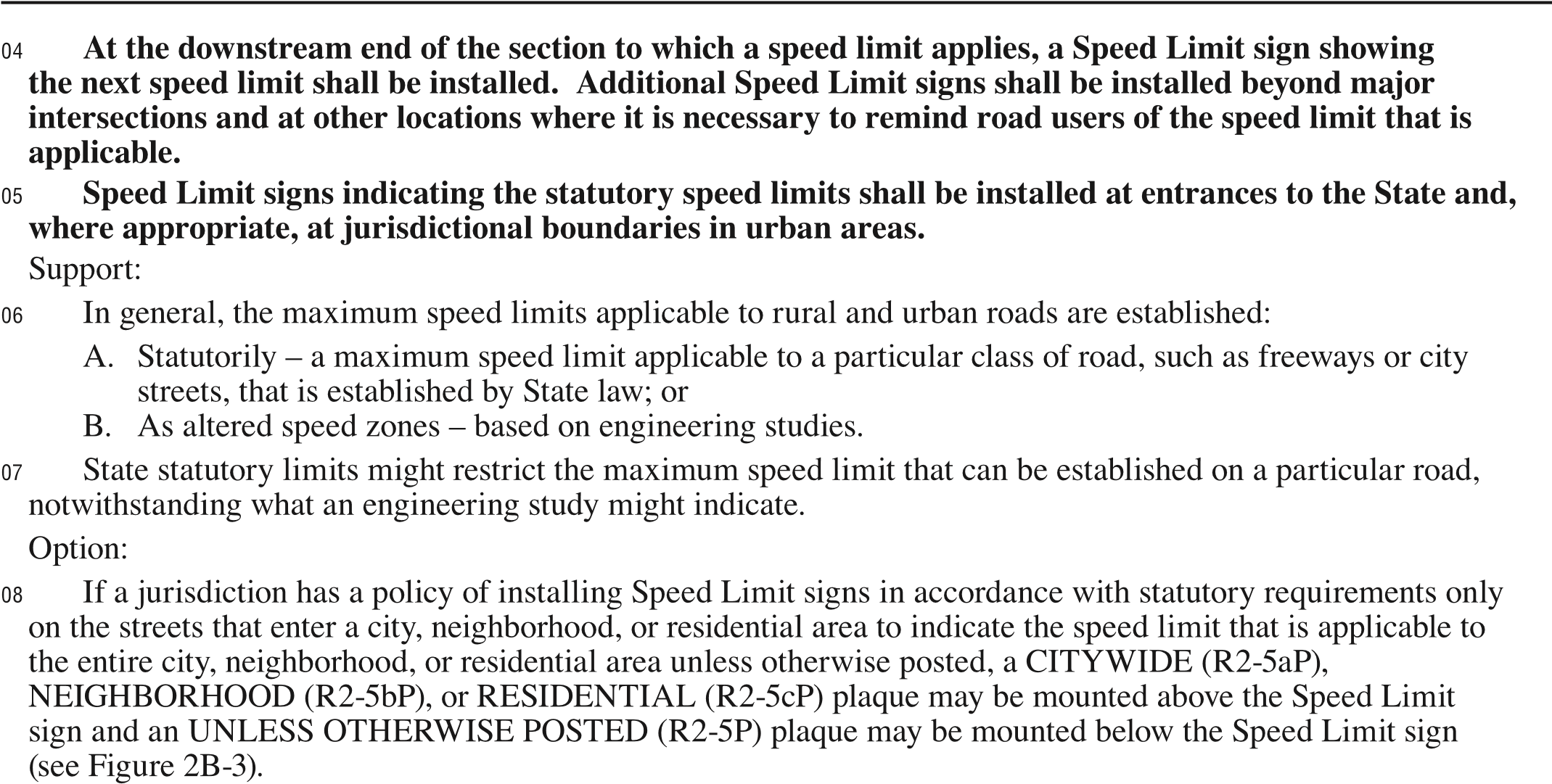




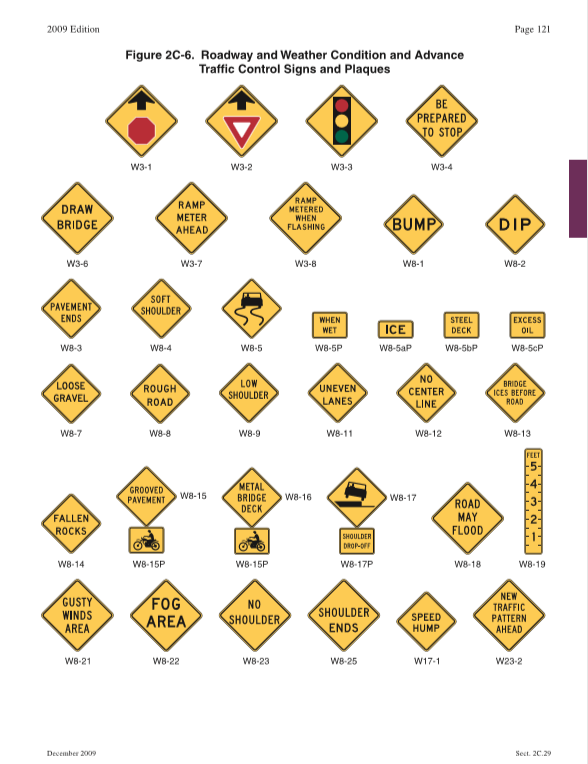










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