Road Work Safety

Temporary Traffic Control (TTC)

We all have a stake in A TO B

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Training Focus

- Understand need for appropriate TTC
- How to use the TTC Field Manual
- Create safer work zones by understanding and applying appropriate layouts
- Critical thinking and using informed judgment in special circumstances
- Use appropriate signs and devices
- Avoid serious negative consequences that happen with inadequate TTC

Why do I need to take the time to set up traffic control?

- We're only here for a short time
- We're in a hurry
- This is a quiet street, why do I need traffic control?

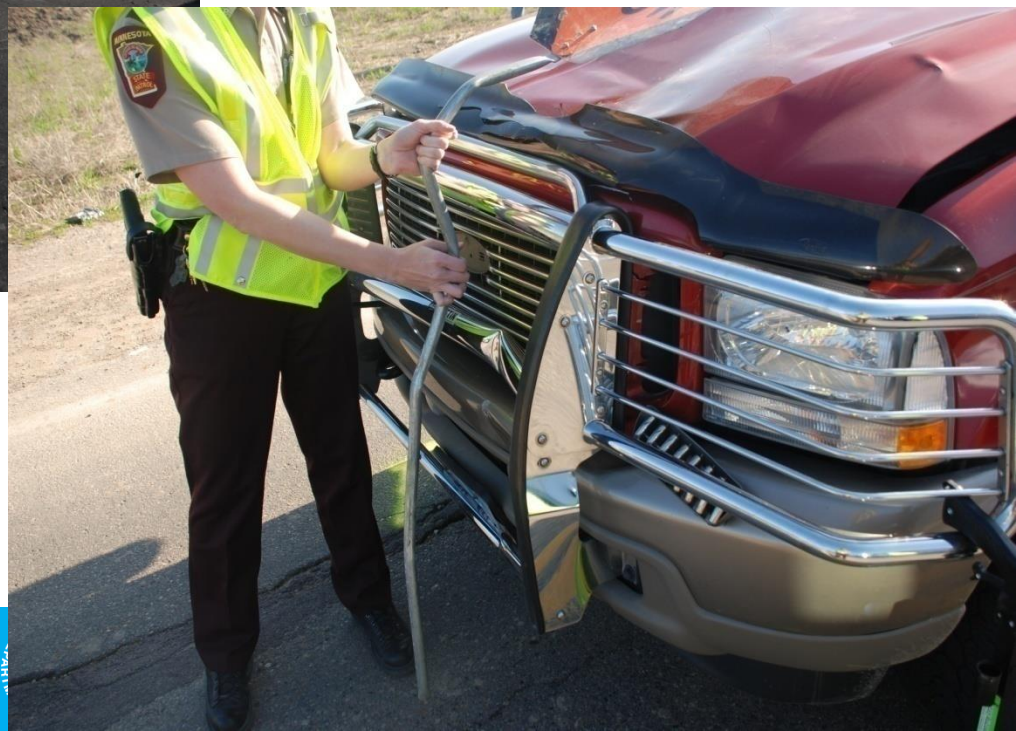
Any interruption of normal traffic flow creates violations of expectancy

nter

it may lead

Blaine Ave

Here's why proper traffic control matters

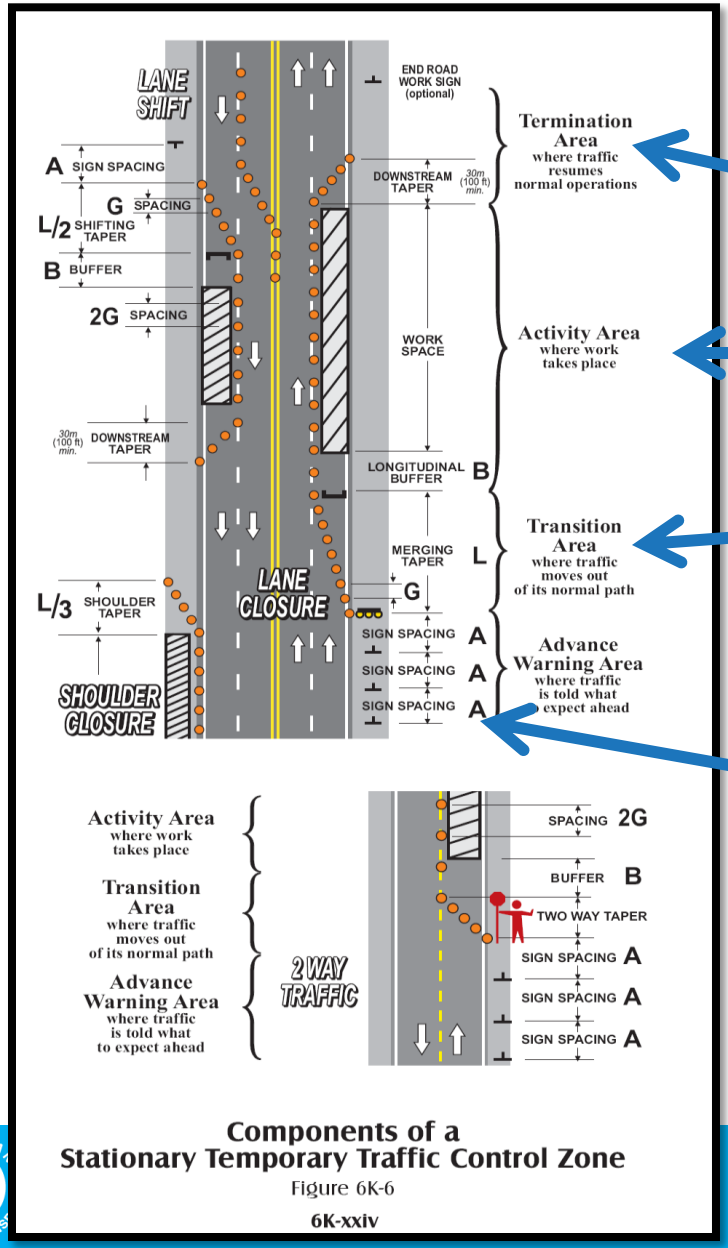


Other reasons…

- OSHA citations
- Permit revocation
- Lawsuits
  - Can your business afford these?

Traffic control in work zones consists of:

- Advanced warning area
- Transition area
- Activity area
- Termination area



Components of a Stationary Temporary Traffic Control Zone

Figure 6K-6

6K-xxiv

Where is the work?

- Traffic lane
- Parking lane
- Shoulder
- Sidewalk
- Bike lane
- Ditch

Installing the Temporary Traffic Control Zone

"…it often takes longer to setup and remove the TTC zone than to perform the work"

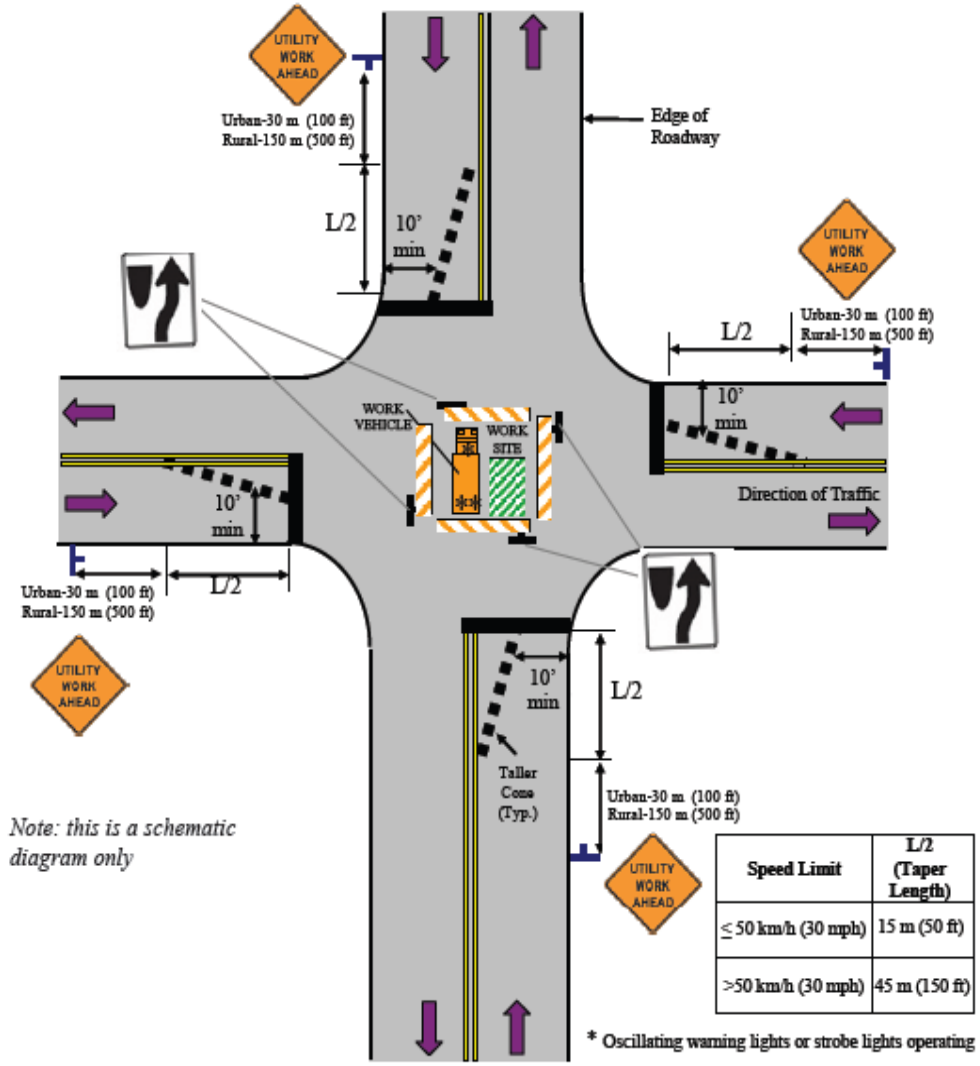


Figure L. Closure in Center of Intersection

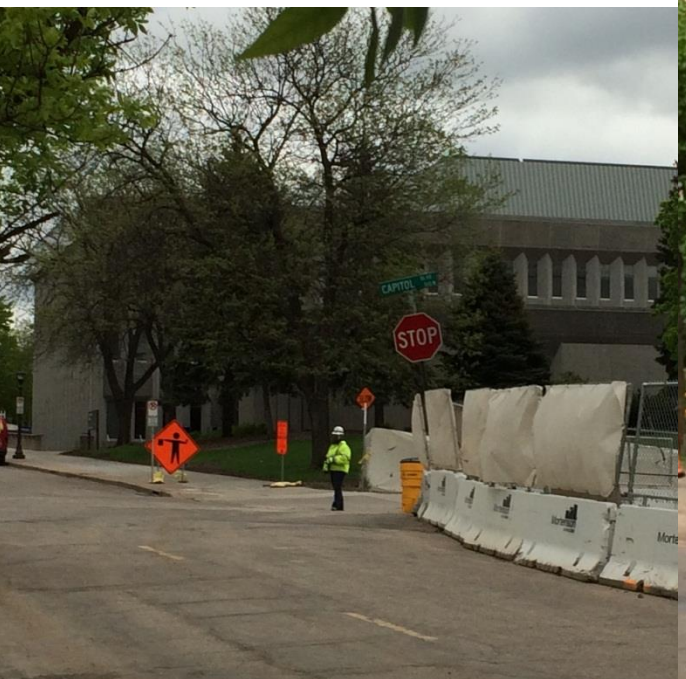
Utility Work Zone Guidelines
Wayne State University & FHWA

What type of work?

- Construction work
- Maintenance work
- Survey crew
- Tree trimming…

Duration

- Continuous long-term
- Intermittent



Traffic Controls:

- Communicate information to users who rely on this to make decisions that affect their safety and well being
- Warn them of hazards
- Advise them of the proper path
- Delineate areas they should not enter
- And separate them from workers

TTC Project Planning

- Set up plan so that:
  - If the work takes longer than expected
  - Or the volume of traffic is higher than expected
- The proper devices will already be in place or readily available

All work zones must have the appropriate:

- Signs to communicate traffic change
- Channelizers to move traffic
- Vehicle lighting
- Flaggers
- Appropriate TPAR devices

Recognize these?

TARGET

Applebee's

BUMPER TO BUMPER
Certified Service Centers

McDonald's

BURGER KING

Uniformity promotes:

- Recognition and understanding
- Consistent interpretation
- More rapid driver and bicycle response
- Road user respect
- Pedestrian mobility and access

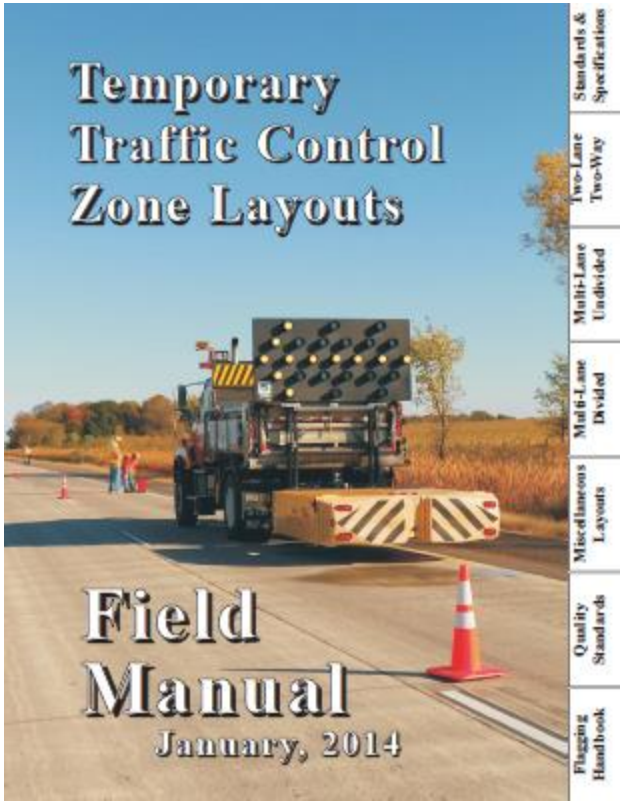
Uniform in:

Design
Application
Location

Yield on impact???

Configuration of the TTC zone depends on:

- Type of roadway
  - 2Lane, 2Way
  - Multi-lane undivided
  - Multi-lane divided
- Traffic volume
- Location of the work
- Duration of work
- Posted speed



Anyone who implements traffic control in Minnesota is **required by law** to follow this document

Traffic control layouts

- To use appropriate TTC layouts you need to read and understand the layout sections
- Layout sections provide:
  - Decision tables
  - Recommended layouts

TWO LANE - TWO WAY ROADS

Low Volume Less than 400 ADT	MOBILE	SHORT DURATION	SHORT TERM	INTERMEDIATE TERM
	15 Minutes or Less	One Hour or Less	12 Hours or Less	3 Days or Less
Lane Closure	5			
Uncontrolled	9			
One Flagger Control	10 *			
Work in Center of Road	22			
Work in Intersection	28 (low speed only)			

Intermediate Volume Up to 1500 ADT	MOBILE	SHORT DURATION	SHORT TERM	INTERMEDIATE TERM
	15 Minutes or Less	One Hour or Less	12 Hours or Less	3 Days or Less
Lane Closure	5			
Flagger Control	8 *		11 *	
AFAD - 1 Operator	12 *			
Work in Center of Road	21 *			

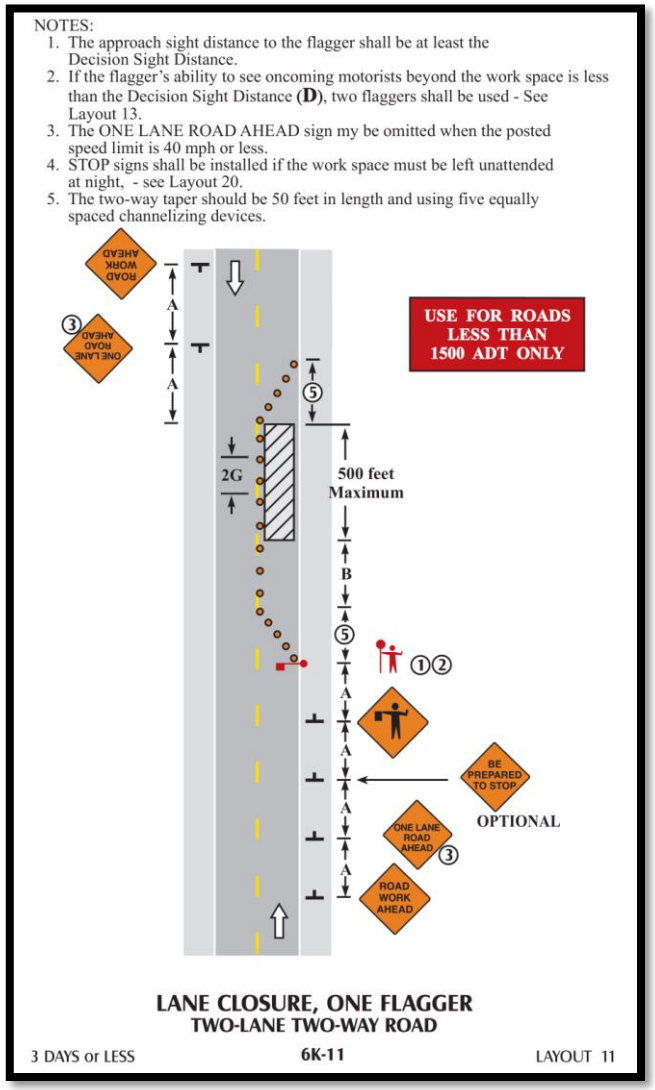
All ADTs	MOBILE	SHORT DURATION	SHORT TERM	INTERMEDIATE TERM
	15 Minutes or Less	One Hour or Less	12 Hours or Less	3 Days or Less
Work on Shoulder	1	2, 4		
Work off Shoulder	2			
Parking Lane Closure	3			
Lane Closure	6, 7 *			
2 Flagger Control	13 *			
Moving Work Spaces	14 *			
Near Intersection	15, 16 *			
Pilot Car Operation	17 *			
Near Railroad Xing	18 *			
Portable Signal Control	19			
STOP Sign Control	20			
Work in Center of Road	22 *			
Lane Shift	24			
Two-Way Left Turn Lanes				
Lane Shift	25			
Center Lane Closure	26			
Turn Lane Closures	42			
Work in Intersection	29 (low speed only)			
Road Closure	81 *	80		
Sidewalk Closure	84, 85			

* This layout may be used for night time operations only if the flagging stations are occupied and illuminated with portable lights.

Using Field Manual–NOTES

- Always read the notes section first for info on:
  - Signing
  - Distances
  - Other considerations

- The circled numbers correspond to the numbers in the notes section



Distance Chart

- Identifying the layout and reading the notes is the first step
- Next use distance chart to determine proper spacing of signs and devices
  - This is where speed comes into play

Temporary Traffic Control Distance Charts

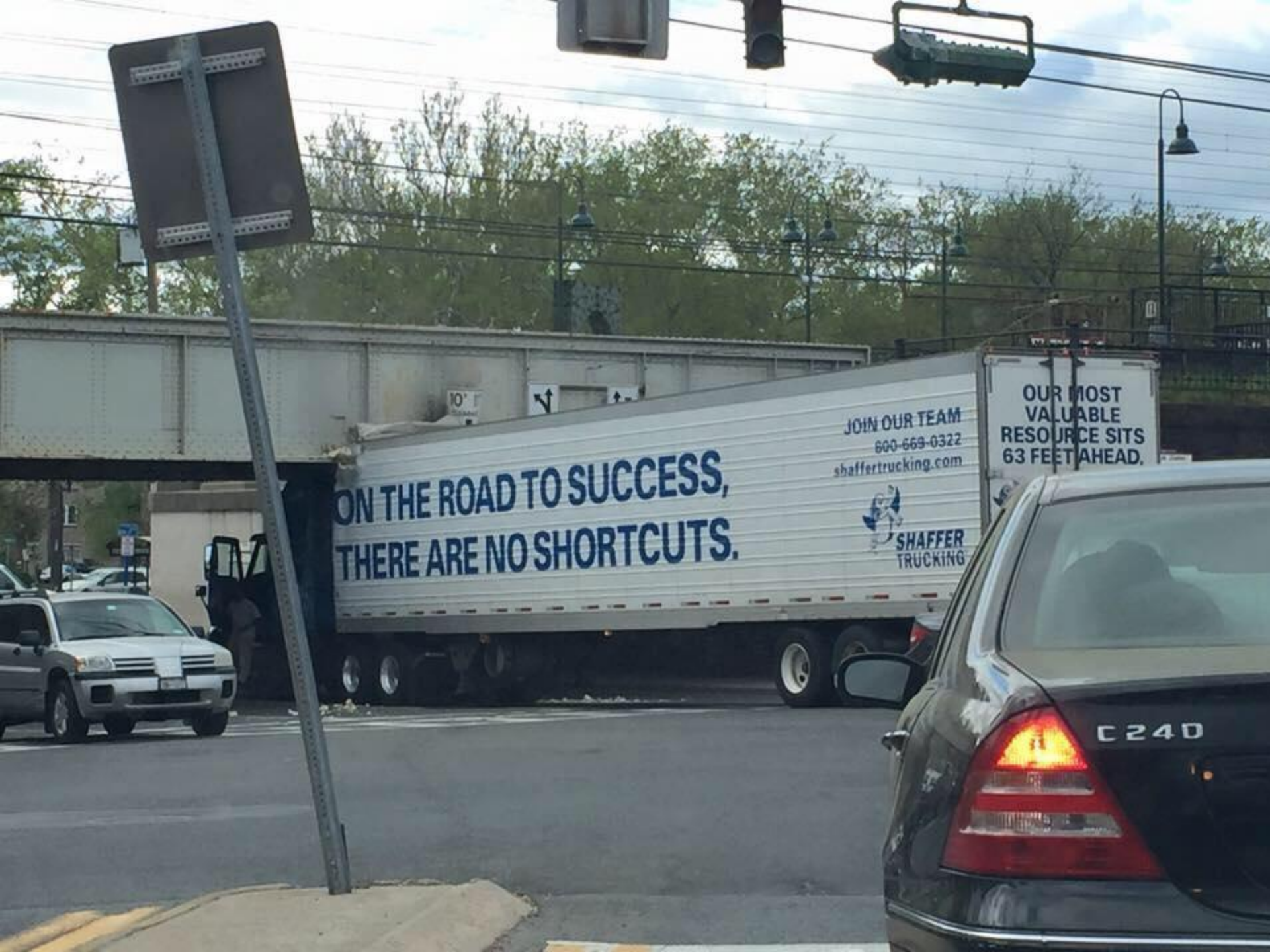
Posted Speed Limit Prior to Work Starting (mph)		Advance Warning Sign Spacing (A) feet	Decision Sight Distance (D) feet	Taper Length (*12 ft lane*) (L) feet	Shifting Taper (L/2) feet	Typical Shoulder Taper (L/3) feet
0 - 30	G = 25 ft	250	550	200	100	75
35 - 40		325	700	325	175	125
45 - 50	G = 50 ft	600	900	600	300	200
55		750	1200	700	350	250
60 - 65		1000	1400	800	400	275
70 - 75		1200	1600	900	450	300

Posted Speed Limit Prior to Work Starting (mph)		Buffer Space (B) feet	Shadow Vehicle Following Distance (F) feet	Protection Vehicle Roll-Ahead Buffer Distance (with or without TMA) (R) Moving (15 mph max) feet	Stopped feet
0 - 30	G = 25 ft	200	250 - 550	100	100
35 - 40		305	325 - 700	100	100
45 - 50	G = 50 ft	425	600 - 900	175	125
55		500	750 - 1200	175	125
60 - 65		650	1000 - 1400	225	175
70 - 75		820	1200 - 1600	225	175

BE PREPARED TO STOP

Inspect frequently and fix problems

Remove devices when no longer needed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