

January, 2013

**Please Note:**

This booklet is based on the Illinois Department of Transportation's Highway Standards and Standard Specifications for Road and Bridge Construction, adopted January 1, 2012. Refer to your contract documents for the appropriate provisions that are in effect for each Specific Contract. If you have any questions or concerns, please contact the Bureau of Safety Engineering at (217) 782-3568.

**FOR INFORMATIONAL USE ONLY**

Additional copies of this book may be obtained from:

State Safety Engineer  
Illinois Department of Transportation  
Bureau of Safety Engineering  
2300 South Dirksen Parkway, Room 323  
Springfield, Illinois 62764  
(217) 782-3568

Printed by the authority of the State of Illinois  
April 2013



## *Driving Zero Fatalities to a Reality*

Partnering for Illinois

To view the Illinois Highway Safety Plan (SHSP) and additional safety information go to:

[www.ISHSP.org](http://www.ISHSP.org)

# TABLE OF CONTENTS

Page

	Traffic Control Deficiency Deduction	1
<u>Standard</u>	<u>Application</u>	
701001-02	Off-Road Operations, 2L, 2W, More than 4.5 m (15') Away	2
<b>701006-04</b>	<b>Off-Road Operations, 2L, 2W, 4.5 m (15') to 600 mm (24') From Pavement Edge</b>	<b>4</b>
<b>701011-03</b>	<b>Off-Road Moving Operation, 2L, 2W, Day Only</b>	<b>6</b>
<b>701101-03</b>	<b>Off-Road Operations, Multilane, 4.5 m (15') to 600 mm (24") From Pavement Edge</b>	<b>8</b>
701106-02	Off-Road Operations, Multilane, More Than 4.5 (15') Away	10
701201-04	Lane Closure, 2L, 2W, Day Only, for Speeds, $\geq$ 45 MPH	12
701206-03	Lane Closure, 2L, 2W, Night Only, for Speeds, $\geq$ 45 MPH	14
701301-04	Lane Closure, 2L, 2W, Short Time Operations	16
701306-03	Lane Closure, 2L, 2W, Slow Moving Operations Day Only, for Speeds $\geq$ 45 MPH	18
701311-03	Lane Closure, 2L, 2W, Moving Operations – Day Only	20
<b>701316-07</b>	<b>Lane Closure, 2L, 2W, Bridge Repair for Speeds <math>\geq</math> 45 MPH</b>	<b>22</b>
<b>701321-13</b>	<b>Lane Closure, 2L, 2W, Bridge Repair with Barrier</b>	<b>27</b>
701326-04	Lane Closure, 2L, 2W, Pavement Widening, For Speeds $\geq$ 45 MPH	32
701331-04	Lane Closure, 2L, 2W, With Run-Around, for Speeds $\geq$ 45 MPH	34
701336-06	Lane Closure, 2L, 2W, Work Areas in Series, for Speeds $\geq$ 45 MPH	36
<b>701400-06</b>	<b>Approach to Lane Closure, Freeway/Expressway</b>	<b>38</b>
<b>701401-07</b>	<b>Lane Closure, Freeway/Expressway</b>	<b>40</b>
701402-09	Lane Closure, Freeway/Expressway, with Barrier	43
<b>701406-07</b>	<b>Lane Closure, Freeway/Expressway, Day Operations Only</b>	<b>45</b>
701411-08	Lane Closure, Multilane at Entrance or Exit Ramp for Speeds $\geq$ 45 MPH	48
701416-07	Lane Closure. Freeway/Expressway, with Crossover and Barrier	51
<b>701421-05</b>	<b>Lane Closure. Multilane, Day Operations Only, for Speeds <math>\geq</math> 45 MPH to 55 MPH</b>	<b>53</b>
<b>701422-05</b>	<b>Lane Closure. Multilane, for Speeds <math>\geq</math> 45 MPH to 55 MPH</b>	<b>56</b>
<b>701423-06</b>	<b>Lane Closure, Multilane, with Barrier for Speeds <math>\geq</math> 45 MPH to 55 MPH</b>	<b>59</b>
<b>701426-05</b>	<b>Lane Closure, Multilane, Intermittent or Moving Operations for Speeds <math>\geq</math> 45 MPH</b>	<b>61</b>
<b>701427-01</b>	<b>Lane Closure, Multilane, Intermittent or Moving Operations for Speeds <math>\leq</math> 40 MPH</b>	<b>63</b>
<b>701431-08</b>	<b>Lane Closure, Multilane, Undivided with Crossover, for Speeds <math>\geq</math> 45 MPH to 55 MPH</b>	<b>65</b>
<b>701446-04</b>	<b>Two Lane Closure, Freeway/Expressway</b>	<b>67</b>
701451-01	Ramp Closure, Freeway / Expressway	69
701456-02	Partial Exit Ramp Closure, Freeway / Expressway	71
701501-06	Urban Lane Closure, 2L, 2W, Undivided	73
<b>701502-05</b>	<b>Urban Lane Closure, 2L, 2W, Bi-directional Left Turn Lane</b>	<b>75</b>
<b>701601-08</b>	<b>Urban Lane Closure, Multilane, 1W or 2W with Non traversable Median</b>	<b>78</b>
<b>701602-06</b>	<b>Urban Lane Closure, Multilane, 2 Way with Bi-directional Left Turn Lane</b>	<b>81</b>
701606-08	Urban Lane Closure, Multilane, 2 Way with mountable Median	86
701701-08	Urban Lane Closure, Multilane Intersection	89

701801-05	Sidewalk, Corner or Crosswalk Closure	91
701901-02	Traffic Control Devices	94
Sec. 702	Nighttime Work Zone Lighting	102
704001-07	Temporary Concrete Barrier	104
	MAX WIDTH SIGN DETAIL	107
B.L.R. 17-4	Traffic Control Devices – Day Labor Construction	108
B.L.R. 18-5	Traffic Control Devices – Day Labor Maintenance	109
B.L.R. 21-9	Typical Application of Traffic Control Devices for Construction on Rural Local Highways	110
B.L.R. 22-7	Typical Application of Traffic Control Devices for Construction on Rural Local Highways (2-Lane 2-Way Rural Traffic, Road Closed to Thru Traffic)	111
B.L.R. 25-1	Type 1A Barricade for Non-NHS Routes	112
720011-01	Metal Posts for Signs, Markers & Delineators	113
729001-01	Applications of Types A & B Metal Posts (For Signs & Markers)	114
780001-03	Typical Pavement Markings	115
Sec. 703	Work Zone Pavement Marking	117
781001-03	Typical Application Raised Reflective Pavement Markers	120

### Errata, Supplemental Specifications and Recurring Special Provisions

	<b>Errata</b>	<b>122</b>
<b>701</b>	<b>Work Zone Traffic Control and Protection</b>	<b>123</b>
<b>706</b>	<b>Impact Attenuators, Temporary</b>	<b>125</b>
<b>1106</b>	<b>Work Zone Traffic Control Devices</b>	<b>127</b>
#14	Pavement and Shoulder Resurfacing	128
#20	Guardrail and Barrier Wall Delineation	129
#22	Temporary Modular Glare Screen System	132
#23	Temporary Portable Bridge Traffic Signals	134
#24	Work Zone Public Information Signs	135
#25	Night Time Inspection of Roadway Lighting	136
LRS3	Work Zone Traffic Control Surveillance	136
LRS4	Flaggers in Work Zones	137

### BDE Special Provisions

	Automated Flagger Assistance Device	139
	<b>Flagger at Side Roads and Entrances</b>	<b>140</b>
	<b>Impact Attenuators, Temporary</b>	<b>140</b>
	<b>Movable Traffic Barrier</b>	<b>141</b>
	Pavement Marking Removal	142
	<b>Pavement Marking Tape Type IV</b>	<b>143</b>
	Pavement Patching	145
	<b>Sidewalk, Corner, or Crosswalk Closure</b>	<b>145</b>
	Temporary Raised Pavement Marker	146
	<b>Temporary Water Filled Barrier</b>	<b>147</b>
	Traffic Control Deficiency Deduction	148

## Traffic Control Deficiency Deduction

### Article 105.03

- (b) Traffic Control Deficiency Deduction. When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

A deficiency may be any lack of repair, maintenance, or non-compliance with the traffic control plan. A deficiency may also be applied to situations where corrective action is not an option such as the use of non-certified flaggers for short term operations; working with lane closures beyond the time allowed in the contract; or failure to perform required contract obligations such as traffic control surveillance.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1,000 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option, this monetary deduction will be immediate.

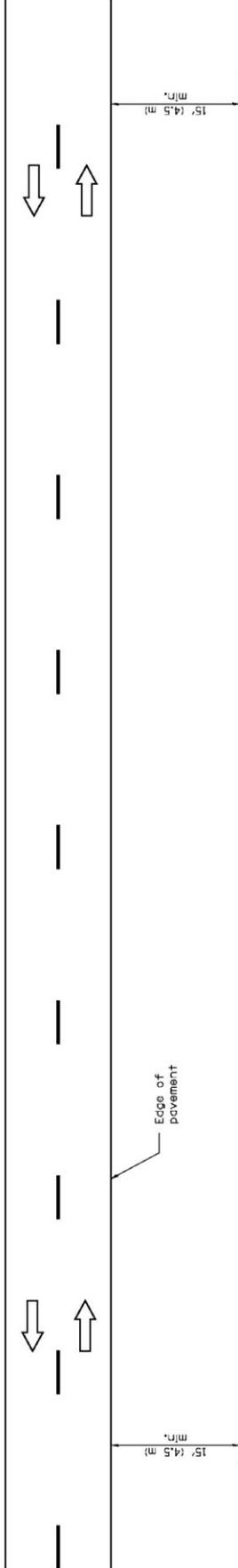
## **TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: August 1, 2011

Revise the third sentence of the third paragraph of Article 105.03(b) of the Standard Specifications to read:

“The daily monetary deduction will be \$2,500.”

80273



**TYPICAL APPLICATIONS**

- Landscaping work
- Utility work
- Fencing contracts and maintenance
- Cleaning culverts

**GENERAL NOTES**

This Standard is used where at all times all vehicles, equipment, workers or their activities are more than 15' (4.5 m) from the edge of pavement.

When the work operation requires that two or more work vehicles cross the 15' (4.5 m) clear zone in any one hour, traffic control shall be according to Standard 701006.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED \_\_\_\_\_ JEREMY L. \_\_\_\_\_ 2009  
 ENGINEER OF OPERATIONS  
 APPROVED \_\_\_\_\_ JEREMY L. \_\_\_\_\_ 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-05	Revised title and notes.

**OFF-RD OPERATIONS,  
 2L, 2W, MORE THAN  
 15' (4.5 m) AWAY**

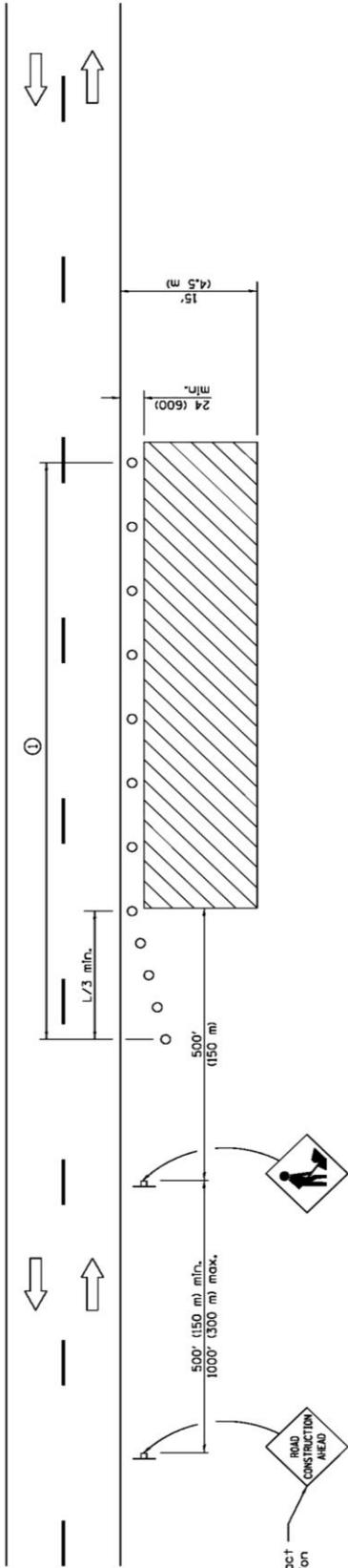
**STANDARD 701001-02**

## **Standard 701001**

### **General Information:**

1. No special signing is required.
2. When the work operation requires that four or more work vehicles cross the 15 ft. clear zone in any one hour, traffic control should be in conformance with STANDARD 701006.

**FOR INFORMATIONAL USE ONLY**



For contract construction projects  
W20-1103(1)-48

For maintenance and utility projects  
W20-1101-48

**GENERAL NOTES**

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24' (6.00) from the edge of pavement.

① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 25' (8 m) centers for L/3 distance, and at 50' (15 m) centers through the remainder of the work area.

**TYPICAL APPLICATIONS**

- Utility operations
- Culvert extensions
- Side slope changes
- Guardrail installation and maintenance
- Delinquent installation
- Landscaping operations
- Shoulder repair
- Sign installation and maintenance

**SYMBOLS**

- Work area
- Sign
- Cone, drum or barricade

Calculate L as follows:

SPEED LIMIT	English	(Metric)
40 mph (70 km/h) or less	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater	$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters)  
S = Normal posted speed in mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-13	Omitted text 'WORKERS' sign.
1-1-09	Switched units to English (metric). Corrected sign No.'s.

**OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24' (600 mm) FROM PAVEMENT EDGE**

STANDARD 701006-04

Illinois Department of Transportation

APPROVED \_\_\_\_\_ JENNY J. \_\_\_\_\_ 2013  
ENGINEER OF SAFETY ENGINEERING

APPROVED \_\_\_\_\_ JENNY J. \_\_\_\_\_ 2013  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701006**

When the work operation requires four or more work vehicles enter through traffic lanes in a one hour period, a flagger shall be provided and a “FLAGGER” sign shall be substituted for the “WORKER” sign. [SS pg. 597 / 701.18(a)]

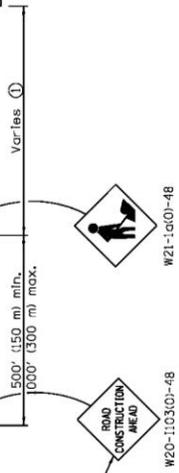
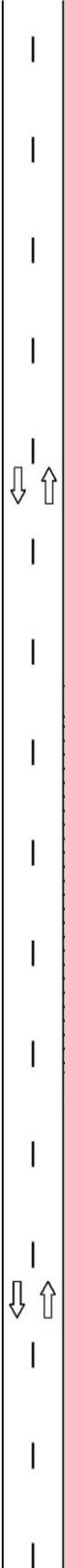
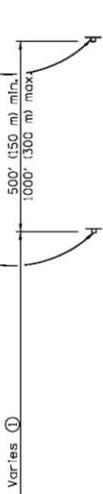
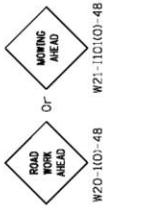
### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. The Contractor shall keep all equipment, material, and vehicles off the pavement and shoulders on the side of the pavement which is open to traffic. ... At any location on existing pavements less than three lanes in width, the sequence of construction shall limit operations to one side of the pavement. [SS pg. 587 / 701.08]
3. For periods of time greater than two hours, during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored a minimum of 30 ft (9 m) from the pavement when the project has adequate right-of-way. When adequate right of way does not exist, vehicles and materials shall be located at least 15 ft. (4.5 m) from the edge of any pavement open to traffic, unless located behind temporary concrete barrier, temporary bridge rail, or other man-made or natural barriers. [SS pg. 588 / 701.11]
4. Any unattended obstacle or excavation (not patching) in the work area which constitutes a hazard in the opinion of the Engineer, shall be delineated by devices at 50 ft. (15 m) centers. If the hazard exceed 250 ft. (75 m) in length, the spacing of devices may be increased to 100 ft. (30 m) [SS pg. 588 / 701.11]
5. Devices delineating isolated obstacles, excavations, or hazards at night. (Does not apply to patching.) Lights required: Flashing bi-directional lights. [SS pg. 593 / 701.16]
6. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]

### **General Information:**

If the work operation does not exceed 60 minutes, traffic may be in conformance with STANDARD 701301.

**FOR INFORMATIONAL USE ONLY**



For contract construction projects

For maintenance and utility projects

**TYPICAL APPLICATIONS**  
Shoulder work  
Utility operations

**SYMBOLS**



● Flagger with traffic control sign when required

**GENERAL NOTES**

This Standard is used where at any time, any vehicle, equipment, workers or their activities require an intermittent or continuous moving operation on the shoulder, where the average speed is 1 mph (2 km/h) or less.

When the work operation does not exceed 60 minutes, traffic control may be according to Standard 701301.

All dimensions are in inches (millimeters) unless otherwise shown.

**OFF-RD MOVING OPERATIONS,  
2L, 2W, DAY ONLY**

**STANDARD 701011-03**

DATE	REVISIONS
1-1-13	Omitted text 'WORKERS' sign.
1-1-09	Switched units to English (metric). Corrected sign No.'s.

Illinois Department of Transportation  
 APPROVED: [Signature] J. SUDUCKY, J. 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: [Signature] J. SUDUCKY, J. 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT  
 ISSUED 1-1-97

## **Standard 701011**

When the work operation requires four or more work vehicles enter through traffic lanes in a one hour period, a flagger shall be provided and a “FLAGGER” sign shall be substituted for the “WORKER” sign. [SS pg. 597 / 701.18(a)]

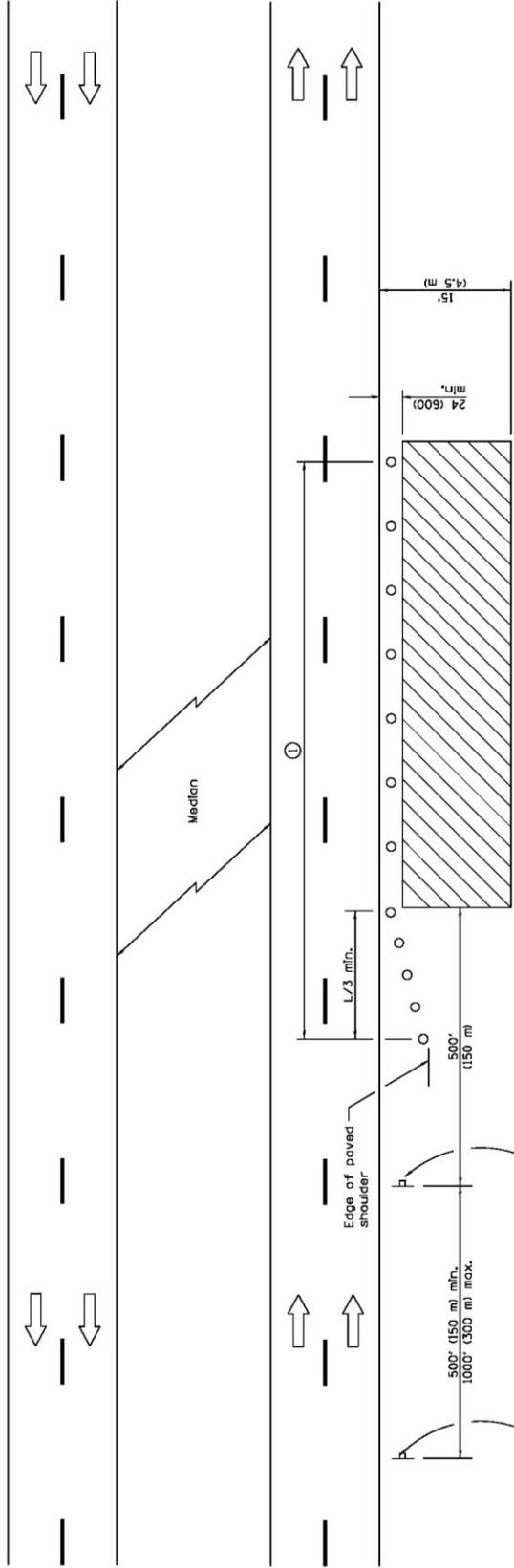
### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. For periods of time greater than two hours, during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored a minimum of 30 ft (9 m) from the pavement when the project has adequate right-of-way. When adequate right of way does not exist, vehicles and materials shall be located at least 15 ft. (4.5 m) from the edge of any pavement open to traffic, unless located behind temporary concrete barrier, temporary bridge rail, or other man-made or natural barriers. [SS pg. 588 / 701.11]
3. Any unattended obstacle or excavation (not patching) in the work area which constitutes a hazard in the opinion of the Engineer, shall be delineated by devices at 50 ft. (15 m) centers. If the hazard exceed 250 ft. (75 m) in length, the spacing of devices may be increased to 100 ft. (30 m) [SS pg. 588 / 701.11]
4. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
5. Devices delineating isolated obstacles, excavations, or hazards at night. (Does not apply to patching.) Lights required: Flashing bi-directional lights. [SS pg. 593 / 701.16]
6. Devices delineating obstacles, excavations, or hazards exceeding 100 ft. (30 m) in length at night. (Does not apply to widening.) Lights required: Steady burn bi-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

All signs are to be removed at completion of the day's operations.

**FOR INFORMATIONAL USE ONLY**



For contract construction projects



W20-1103(0)-48

For maintenance and utility projects



W20-1(0)-48

W21-1(0)-48



W20-1(0)-48

**GENERAL NOTES**

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24 (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT	FORMULAS
English	(Metric)
40 mph (70 km/h) or less	$L = WS^2 / 60$ $L = WS^2 / 150$
45 mph (80 km/h) or greater;	$L = (W)(S)$ $L = 0.65(W)(S)$

W = Width of offset  
in feet (meters).

S = Normal posted speed  
mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 15' (50') centers through the remainder of the work area.

**TYPICAL APPLICATIONS**

- Utility operations
- Curve extensions
- Side slope changes
- Guardrail installation and maintenance
- Delineator installation
- Landscaping operations
- Shoulder repair
- Sign installation and maintenance

**SYMBOLS**

- Work area
- Sign
- Cone, drum or barricade

**OFF-ROAD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE**

DATE	REVISIONS
1-1-13	Omitted text 'WORKERS' sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

STANDARD 701101-03

Illinois Department of Transportation  
 APPROVED: [Signature] J. L. SANDRICK, J. 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: [Signature] J. L. SANDRICK, J. 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT  
 ISSUED 1-1-97

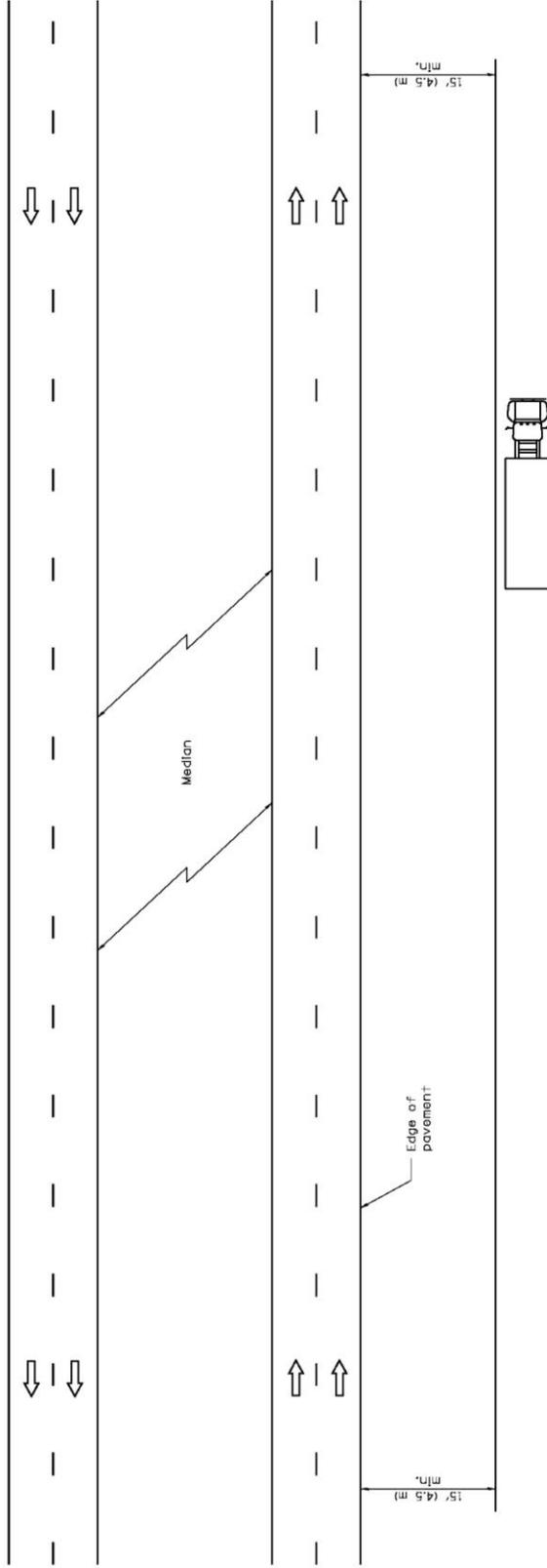
## **Standard 701101**

When the work operation requires four or more work vehicles enter through traffic lanes in a one hour period, a flagger shall be provided and a “FLAGGER” sign shall be substituted for the “WORKER” sign [SS pg. 597 / 701.18(a)]

### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or tuned from the view of the motorists. [SS pg. 586 / 701.04]
2. Any unattended obstacle or excavation (not patching) in the work area which constitutes a hazard in the opinion of the Engineer, shall be delineated by devices at 50 ft. (15 m) centers. If the hazard exceeds 250 ft. (75 m) in length, the spacing of devices may be increased to 100 ft. (30 m). [SS pg. 588 / 701.11]
3. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
4. Devices delineating isolated obstacles, excavations, or hazards at night. (Does not apply to patching.) Lights required: Flashing bi-directional lights. [SS pg. 593 / 701.16]
5. Devices delineating obstacles, excavations, or hazards exceeding 100 ft. (30 m) in length at night. (Does not apply to widening.) Lights required: Steady burn bi-directional lights. [SS pg. 593 / 701.16]

**FOR INFORMATIONAL USE ONLY**



**GENERAL NOTES**

This Standard is used where at all times all vehicles, equipment, workers or their activities are more than 15' (4.5 m) from the edge of pavement.

When the work operation requires that two or more work vehicles cross the 15' (4.5 m) clear zone in any one hour, traffic control shall be according to Standard 701101.

This Standard also applies to work performed in the median more than 15' (4.5 m) from either pavement.

All dimensions are in inches (millimeters) unless otherwise shown.

**TYPICAL APPLICATIONS**

- Landscaping work
- Utility work
- Fencing contracts

Illinois Department of Transportation		ISSUED	1-1-97
APPROVED	JANUARY J. 2009		
ENGINEER OF OPERATIONS	<i>[Signature]</i>		
APPROVED	JANUARY J. 2009		
ENGINEER OF DESIGN AND ENVIRONMENT	<i>[Signature]</i>		

DATE	REVISIONS
1-1-05	Switched units to English (metric).
1-1-05	Revised title.

**OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY**

STANDARD 701106-02

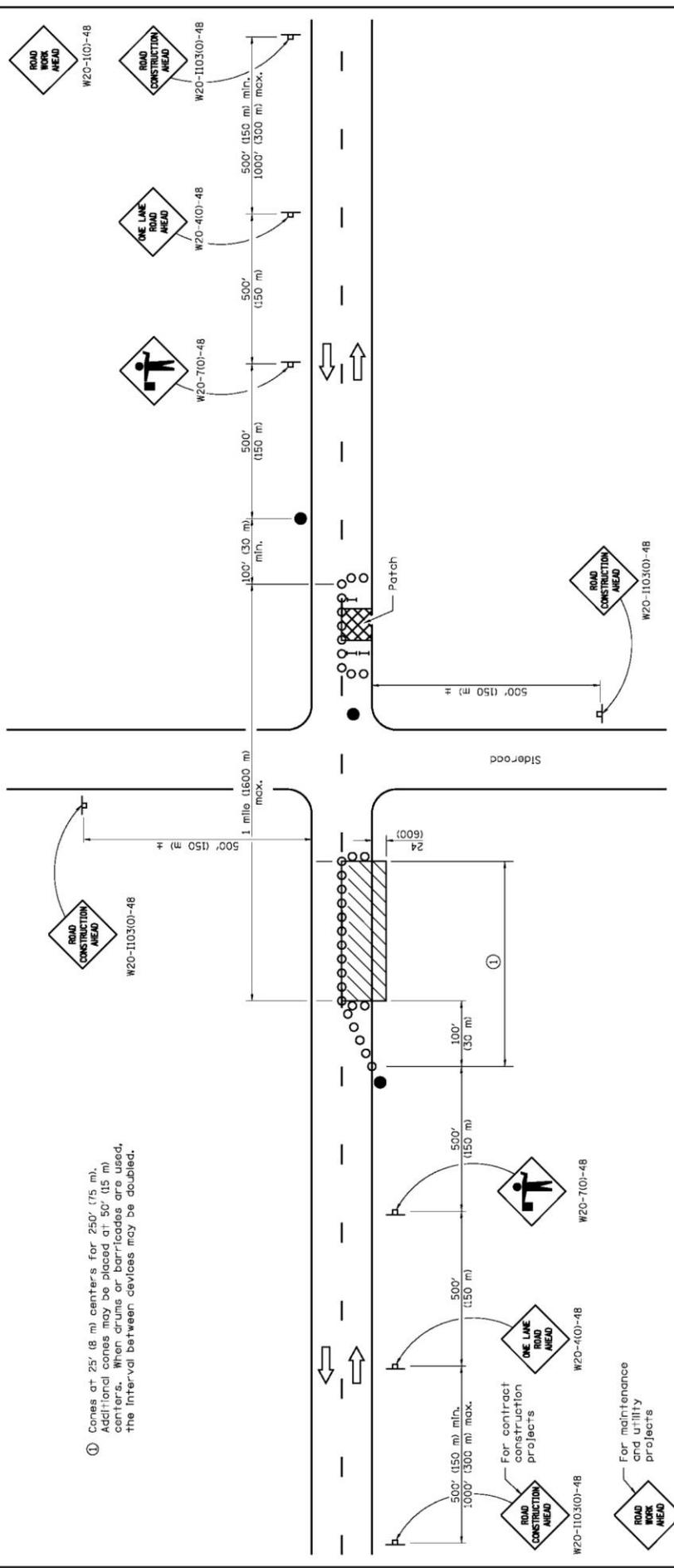
## **Standard 701106**

### **General Information:**

1. No special signing required.
2. When the work operation requires that four or more vehicles cross the 15 ft. (4.5 m) clear zone in any one hour, traffic control should be in conformance with Standard 701101.
3. This standard also applies to work performed in the median more than 15 ft. (4.5 m) from either pavement.

**FOR INFORMATIONAL USE ONLY**

① Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or barricades are used, the interval between devices may be doubled.



**GENERAL NOTES**

This Standard is used where at any time, any vehicles, equipment, workers or their activities will encroach on the travel way between the center line and the 24' (8.00 m) outside the edge of pavement for daylight operation.

When the distance between successive work areas exceeds 2000' (600 m), additional warning signs, flaggers, and taper shall be placed as shown.

All dimensions are in inches (millimeters) unless otherwise shown.

**SYMBOLS**

- Work area
- Sign
- Barricade or drum
- Cone, drum or barricade
- Flagger with traffic control sign

**TYPICAL APPLICATIONS**

- Isolated patching
- Utility operations
- Storm sewer
- Culverts
- Cable placement

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

**LANE CLOSURE, 2L, 2W,  
DAY ONLY,  
FOR SPEEDS ≥ 45 MPH**

**STANDARD 701201-04**

Illinois Department of Transportation APPROVED <i>[Signature]</i> JUNE 2011 ENGINEER OF SAFETY ENGINEERING APPROVED <i>[Signature]</i> JUNE 2011 ENGINEER OF DESIGN AND ENVIRONMENT	ISSUED 1-1-97
---	---------------

## **Standard 701201**

### **Various Specifications:**

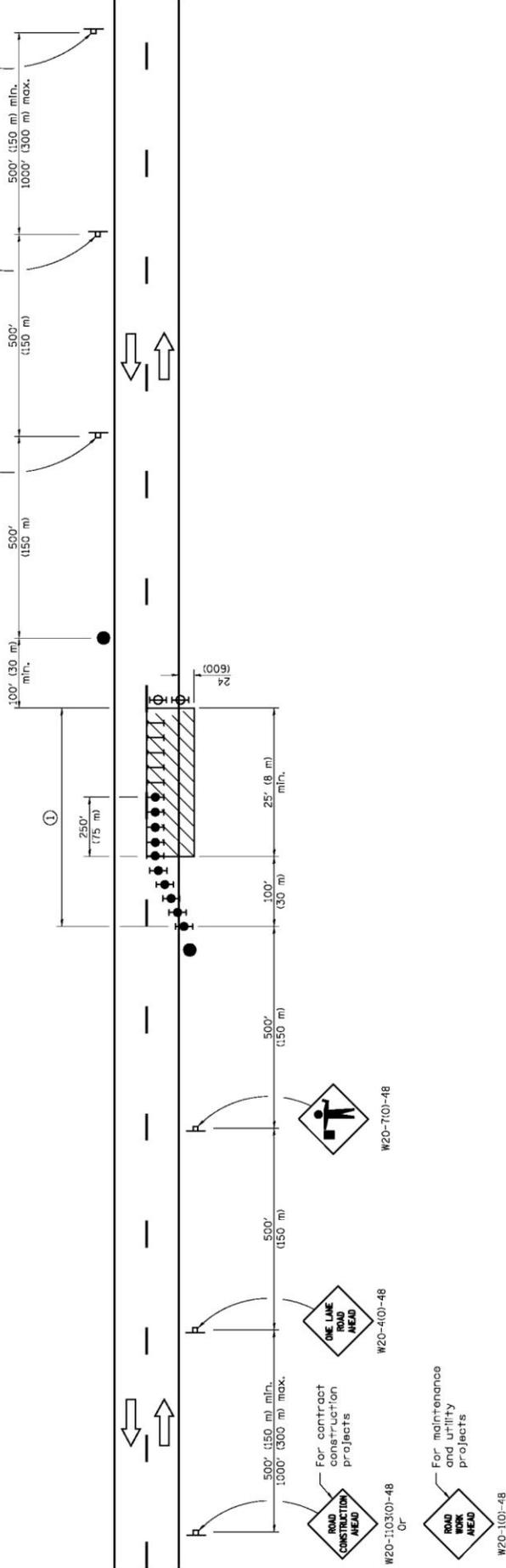
1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions, shall be removed, covered, or turned from the view of the motorists. [SS pg. 586 / 701.04]
2. The Contractor shall keep all equipment, material, and vehicles off the pavement and shoulders on the side of the pavement which is open to traffic. ... At any location on existing pavements less than three lanes in width, the sequence of construction shall limit operations to one side of the pavement. [SS pg. 587 / 701.08]
3. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. ... Flaggers will not be required when no work is being performed, unless there is a lane closure on two-lane, two-way pavement. [SS pg. 589 / 701.13]
4. Two Lane Highways. Two flaggers will be required for each separate operation where two-way traffic is maintained over one lane of pavement. Work operations controlled by flaggers shall be no more than 1 mile (1600 m) in length. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies. [SS pg. 589 / 701.13(a)]
5. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
6. Pavement patching: [SS pg. 595 / 701.17(e)]
7. No broken pavement, open holes, or partially filled patches shall remain overnight and all devices shall be removed before dark. If patches are not opened when required, additional traffic control shall be provided at no additional cost to the Department. [SS pg. 596 / 701.17(e) (2)b.]

### **General Information:**

1. At the completion of the day's operations, all materials, equipment, signs, cones, barricades, and drums are to be removed and the work area opened to traffic.
2. If the work operation does not exceed 60 minutes, traffic may be in conformance with STANDARD 701301.

**FOR INFORMATIONAL USE ONLY**

① Barricades at 50' (15 m) centers for the first 250' (75 m) or 400' (120 m) greater than 100' (30 m) centers through the remainder of the work area.



**TYPICAL APPLICATIONS**

Isolated patch  
Installation of drainage structure  
Utility operations

**SYMBOLS**

- Work area
- Sign
- Flagger with traffic control sign
- Barricade or drum
- Barricade or drum with flashing light
- Barricade or drum with steady burning light

**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers or their activities will encroach in the area between the center line and a line 24 (600) from the edge of pavement for nighttime operation.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

**LANE CLOSURE, 2L, 2W,  
NIGHT ONLY,  
FOR SPEEDS ≥ 45 MPH**

**STANDARD 701206-03**

Illinois Department of Transportation

APPROVED JANUARY 1, 2011  
ENGINEER OF SAFETY ENGINEERING  
APPROVED JANUARY 1, 2011  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701206**

### **Various Specifications:**

1. The Contractor shall keep all equipment, material, and vehicles off the pavement and shoulders on the side of the pavement which is open to traffic. ... At any location on existing pavements less than three lanes in width, the sequence of construction shall limit operations to one side of the pavement. [SS pg. 587 / 701.08]
2. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg . 589 / 701.13]
3. For nighttime flagging, flaggers shall be illuminated by an overhead light source providing a minimum vertical illuminance of 10 fc (108 lux) measured 1 ft (300 mm) out from the flagger's chest. The bottom of any luminaire shall be a minimum of 10 ft (3 m) above the pavement. Luminaire(s) shall be shielded to minimize glare to approaching traffic and trespass light to adjoining properties.

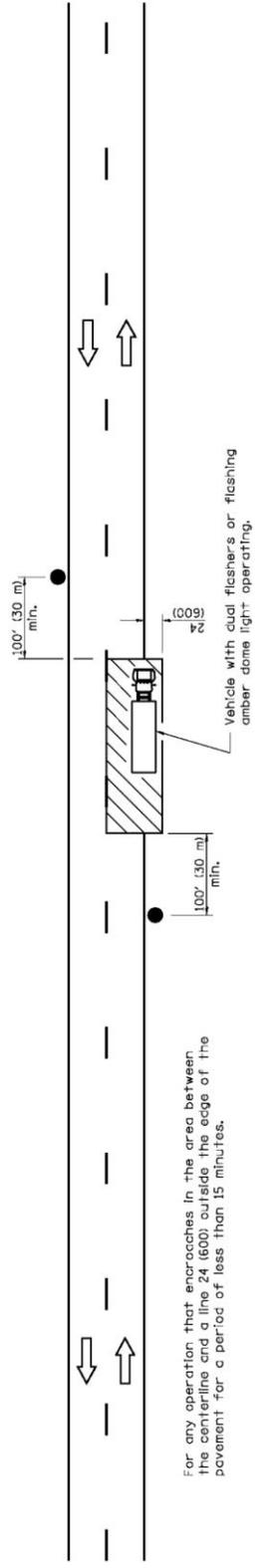
Nighttime flaggers shall be equipped with a fluorescent orange or fluorescent orange and fluorescent yellow/green apparel meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 3 garments. [Supplemental Spec. / 701]

4. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie - talkies. [SS pg. 589 / 701.13(a)]
5. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589-590 / 701.14]
6. First two warning signs on each approach to the work involving a nighttime lane closure. Lights required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

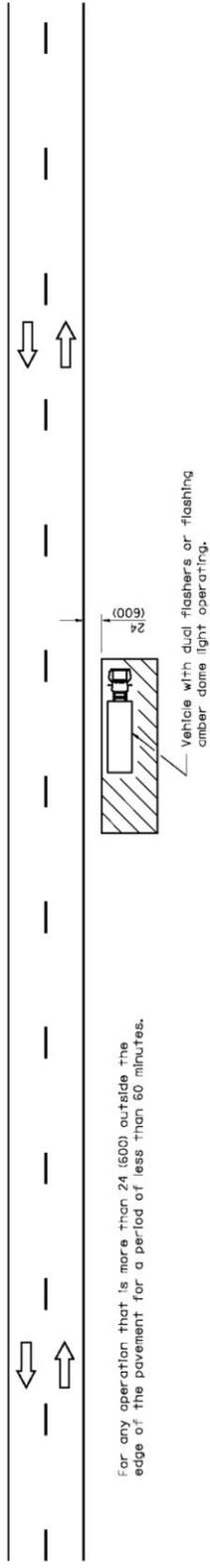
### **General Information:**

1. This STANDARD may be used for bridge repair projects in lieu of STANDARD 701316 where the minimum passing sight distance (Section 3B-5 MUTCD) through the barricaded area is available from a point approximately 350 ft. (105 m) in advance of the first barricade in either direction, the maximum length of closure, including taper, is approximately 300 ft. (90 m) and the estimated ADT does not exceed 1,000.
2. When Standard 701206 is specified for bridge repair projects, the bridge rail and guardrail adjacent to the open traffic lane shall be delineated with Guardrail/parapet markers at 25 ft. (7.6 m) centers.
3. Refer to Section 702 for Nighttime Work Zone Lighting. [SS pg. 606-607 / 702]

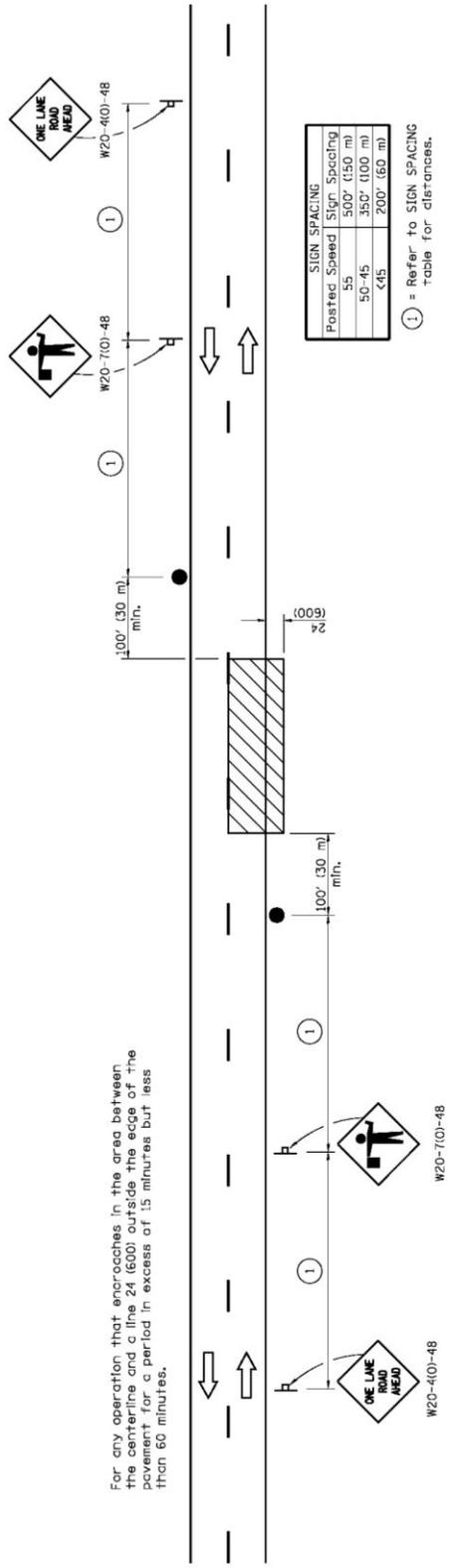
**FOR INFORMATIONAL USE ONLY**



For any operation that encroaches in the area between the centerline and a line 24 (600) outside the edge of the pavement for a period of less than 15 minutes.



For any operation that is more than 24 (600) outside the edge of the pavement for a period of less than 60 minutes.



For any operation that encroaches in the area between the centerline and a line 24 (600) outside the edge of the pavement for a period in excess of 15 minutes but less than 60 minutes.

SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

(1) = Refer to SIGN SPACING Table for distances.

All dimensions are in inches (millimeters) unless otherwise shown.

**TYPICAL APPLICATIONS**

- Marking patches
- Field survey
- String line
- Utility operations
- Cleaning up debris on pavement

**SYMBOLS**

- Work area
- Sign on portable or permanent support
- Flagger with traffic control sign

Illinois Department of Transportation	ISSUED 1-1-97
APPROVED <i>[Signature]</i> JANUARY 1, 2011	
ENGINEER OF SAFETY ENGINEERING	
APPROVED <i>[Signature]</i> JANUARY 1, 2011	
ENGINEER OF DESIGN AND ENVIRONMENT	

**LANE CLOSURE, 2L, 2W,  
SHORT TIME OPERATIONS**

STANDARD 701301-04

DATE	REVISIONS
1-1-11	Revised "flagger" sign.
1-1-09	Switched units to English (metric).

## **Standard 701301**

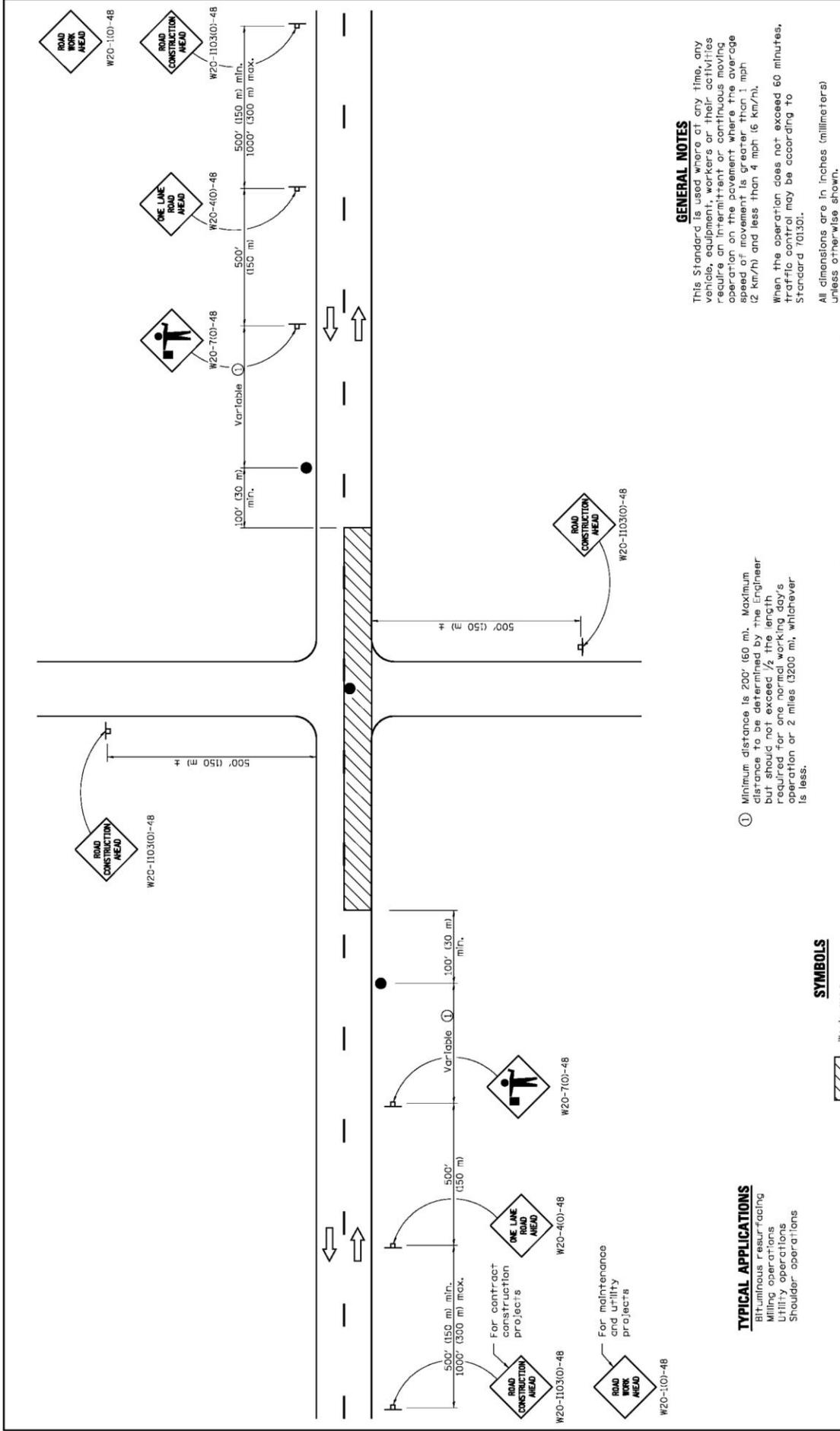
### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. The Contractor shall keep all equipment, material, and vehicles off the pavement and shoulders on the side of the pavement which is open to traffic. ... At any location on existing pavements less than three lanes in width, the sequence of construction shall limit operations to one side of the pavement. [SS pg. 587 / 701.08]
3. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
4. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies. [SS pg. 589 / 701.13(a)]
5. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]

### **General Information:**

Trucks, equipment, and/or materials stored along the highway for more than one hour shall be stored according to Article 701.11. [SS pg. 588]

**FOR INFORMATIONAL USE ONLY**



**GENERAL NOTES**

This Standard is used where at any time, any vehicle, equipment, workers or their activities require an interruption or continuous moving operation. The center of movement is greater than 1 mph (2 km/h) and less than 4 mph (6 km/h). When the operation does not exceed 60 minutes, traffic control may be according to Standard 701301.

All dimensions are in inches (millimeters) unless otherwise shown.

① Minimum distance is 200' (60 m). Maximum distance to be determined by the Engineer but should not exceed 2 mile length. Standard for one-lane road is 100' (30 m) and for two-lane road is 200' (60 m), whichever is less.

**SYMBOLS**

- Work area
- Sign on portable or permanent support
- Flagger with traffic control sign

**TYPICAL APPLICATIONS**

- Bituminous resurfacing
- Milling operations
- Utility operations
- Shoulder operations

Illinois Department of Transportation		ISSUED 1-1-97
APPROVED	JANUARY 2011	
ENGINEER OF SAFETY ENGINEERING	<i>[Signature]</i>	
APPROVED	JANUARY 1, 2011	
ENGINEER OF DESIGN AND ENVIRONMENT	<i>[Signature]</i>	

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English metric.
	Corrected sign No.'s.

**LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS > 45 MPH**

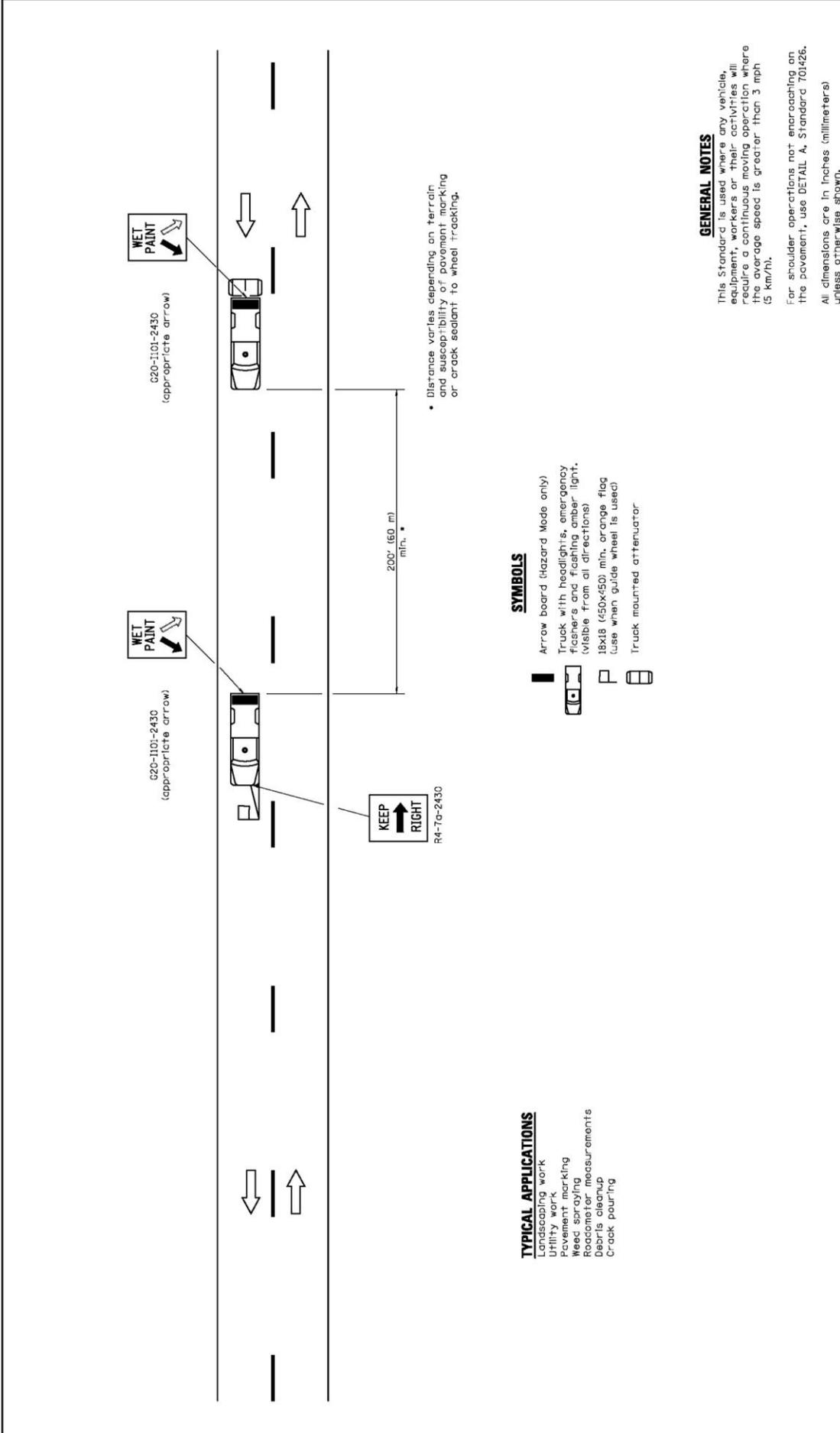
**STANDARD 701306-03**

## **Standard 701306:**

### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions, shall be removed, covered, or turned from the view of the motorists. [SS pg. 586 / 701.04]
2. The Contractor shall keep all equipment, material, and vehicles off the pavement and shoulders on the side of the pavement which is open to traffic. ... At any location on existing pavements less than three lanes in width, the sequence of construction shall limit operations to one side of the pavement. [SS pg. 587 / 701.08]
3. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
4. Work operations controlled by flaggers shall be no more than 1 mile (1600 m) in length. Flaggers shall be in sight of each other or in direct communications at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies. [SS pg. 589 / 701.13(a)]
5. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
6. Where construction operations on two-lane roads open to traffic result in the removal or covering of any pavement striping indicating passing restrictions, “NO PASSING ZONES NOT STRIPED NEXT \_ MILES” signs shall be used. The contractor shall place the signs at the beginning of the unstriped area, just beyond each major intersection within the unstriped area and at other location as directed by the engineer, to ensure a minimum spacing of 5 miles (8 km). The signs shall be place just prior to removal or covering of the striping and shall remain in place until full no passing zone striping has been restored. [SS pg. 594 / 701.17(c)]
7. Prime Coat. “FRESH OIL” (W21-2) signs shall be erected when prime and fine aggregate are applied to pavement that is open to traffic. The signs shall remain until tracking of the prime ceases as directed by the Engineer. The signs shall be erected a minimum of 500 ft. (150 m) preceding the start of the prime. [SS pg. 594 / 701.17(c)(1)]
8. Cold Milling. “ROUGH GROOVED SURFACE” (W8-1107) signs shall be erected when the road has been cold milled and opened to traffic. The signs shall be placed just prior to the cold milling operation and shall remain in place until the milled surface condition no longer exists. These signs shall be erected a minimum of 500 ft (150 m) preceding the start of the milled pavement, just before each major intersection within the milled area, and at other location as directed by the Engineer. The signs shall have an amber flashing lights attached. [SS pg. 594 / 701.17(c)(2)]

**FOR INFORMATIONAL USE ONLY**



**TYPICAL APPLICATIONS**

- Landscaping work
- Utility work
- Pavement marking
- Weed spraying
- Roadmeter measurements
- Debris cleanup
- Crack pouring

**SYMBOLS**

- Arrow board (Hazard Mode only)
- Truck with headlights, emergency flashers and flashing amber light. (Visible from all directions)
- 18x18 (450x450) min. orange flag (use when guide wheel is used)
- Truck mounted attenuator

**GENERAL NOTES**

This Standard is used where any vehicle, equipment, workers or their activities will require a continuous moving operation where the average speed is greater than 3 mph (5 Km/hr).

For shoulder operations not encroaching on the pavement, use DETAIL A, Standard 70426, unless otherwise shown.

APPROVED JORDAN J. JORDAN ENGINEER OF OPERATIONS APPROVED L. HANCOCK ENGINEER OF DESIGN AND ENVIRONMENT	ISSUED 1-1-97
	2009

DATE	REVISIONS
1-1-09	Switched units to English (metric). Omit "ft"
	Pass With Care sign.
1-1-00	Elim. speed restrictions in Standard title.

**LANE CLOSURE 2L, 2W MOVING OPERATIONS- DAY ONLY**

**STANDARD 701311-03**

## **Standard 701311**

### **Various Specifications:**

Truck Mounted/Trailer Mounted Attenuators (TMA). TMA units shall have a roll ahead distance in the event of an impact. The TMA shall be between 100 and 200 ft. (30 and 60 m) behind the vehicle ahead or the workers. [SS pg. 591-592 / 701.15(h)]

TMA host vehicles shall have the parking brake engaged when stationary.  
[SS pg. 591-592 / 701.15(h)]

The driver and passengers of the TMA host vehicle should exit the vehicle if the TMA is to remain stationary for 15 minutes or more in duration. [SS pg. 591-592 / 701.15(h)]

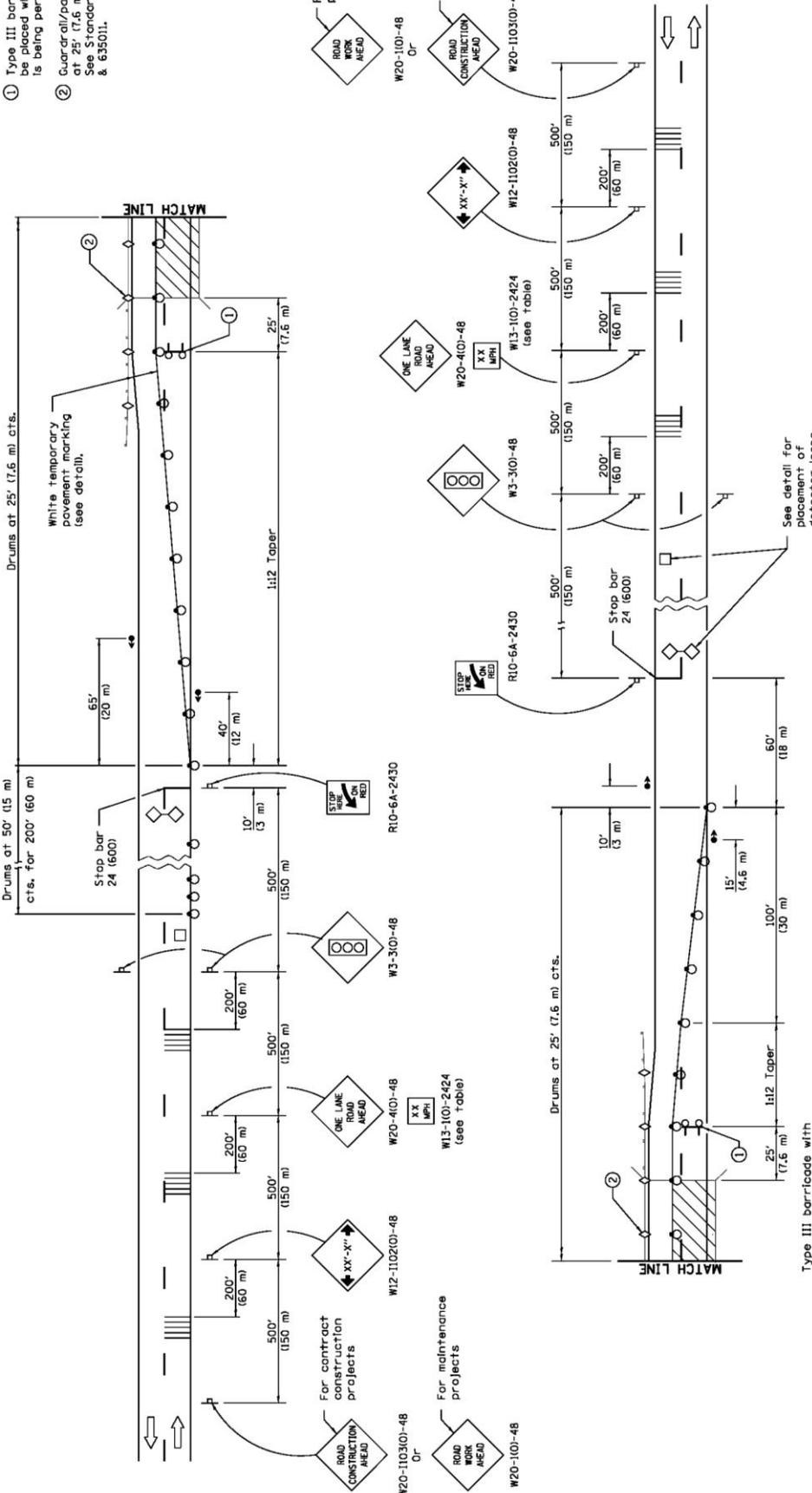
Truck Mounted/Trailer Mounted Attenuators (TMA). The attenuator shall be either a NCHRP 350 or MASH approved unit for Test Level 3. Test Level 2 may be used as directed by the Engineer for normal posted speed less than or equal to 45 mph [SS pg. 1099 / 1106.02(g)]

### **General Information:**

During pavement marking operations, "WET PAINT" signs with the appropriate arrow(s) shall be mounted on the back of the striper and the following vehicle where necessary to reduce tracking.

**FOR INFORMATIONAL USE ONLY**

- ① Type III barricade to be placed when no work is being performed.
- ② Guardrail/parapet markers at 25' (7.6 m) cts. See Standards 704001 & 635011.



**SYMBOLS**

- Work area
- Sign
- Traffic signal
- Detector loops
- Type III barricade with flashing lights
- Drum with steady burning bi-directional light
- Temporary rumble strip (when specified)
- Crystal, bi-directional paraper/guardrail marker

Type III barricade with flashing lights

See detail for placement of detector loops.

See Sheet 2 For GENERAL NOTES.

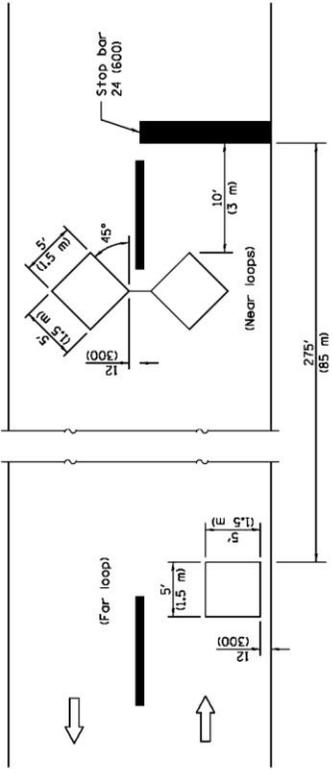
**LANE CLOSURE, 2L, 2W,  
BRIDGE REPAIR,  
FOR SPEEDS > 45 MPH**  
(Sheet 1 of 2)

**STANDARD 701316-07**

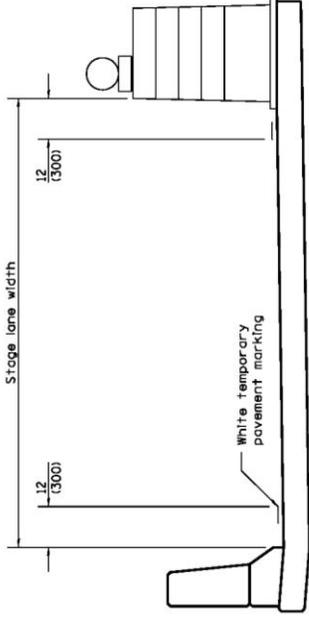
DATE	REVISIONS
1-1-13	Omitted gen. note regarding lights. Omitted vertical panel detail and symbol.
1-1-12	Changed drum lights to bi-directional.

Illinois Department of Transportation  
 APPROVED January 1, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED January 1, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



**DETECTOR LOOPS**



**TEMPORARY PAVEMENT MARKING**

TRAFFIC SIGNAL SEQUENCE						
PHASE	A		B			
INTERVAL	1	2	3	4	5	6
NORTHBOUND OR EASTBOUND	G	Y	R	R	R	R
SOUTHBOUND OR WESTBOUND	R	R	R	G	Y	R

ADVISORY SPEED LIMIT	
NORMAL POSTED SPEED	ADVISORY SPEED
55 - 45 mph	40 mph
40 mph	35 mph
35 - 30 mph	30 mph

**GENERAL NOTES**

This Standard is used where, at any time any vehicle, equipment, workers or their activities will encroach on one lane of a bridge and traffic signals are required.

When traffic signals are not in operation, flaggers shall be used and traffic control devices shall conform to Standard 701201 or 701206.

Existing or temporary pavement markings shall be on both sides of open lane from stop bar to stop bar.

All dimensions are in inches (millimeters) unless otherwise shown.

**LANE CLOSURE, 2L, 2W,  
BRIDGE REPAIR,  
FOR SPEEDS > 45 MPH**  
(Sheet 2 of 2)

**STANDARD 701316-07**

Illinois Department of Transportation  
 APPROVED January 1, 2013  
 ENGINEER OF SURVEYING  
 APPROVED January 1, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT  
 ISSUED 1-1-97

## **Standard 701316**

The exact location of the signals, detector loops, stop bars, and signs shall be as directed by the Engineer. The locations shall also be adjusted as required for stage construction.  
[SS pg. 597-599 / 701.18(b)]

The Engineer shall be notified at least 72 hours in advance of placing the signals in operation and at least one week prior to a traffic lane width reduction.

Any damage to the temporary traffic signals from any cause shall be repaired at no additional cost to the Department. If at any time the Contractor fails to perform any work deemed necessary by the Engineer to keep the temporary traffic signals in proper operating condition, the Department reserves the right to have other electrical Contractors perform the needed work, and the cost will be deducted from compensation due or which may become due the Contractor under the contract.

During daytime operations when workers are present, the Engineer may allow Type I or Type II barricades to be placed parallel to the centerline. Cones may be substituted for barricades at half the barricade spacing during the daytime operations.

Lane Closure on Two-Way, Two-Lane Rural Road. The Contractor shall furnish, install, maintain, and remove temporary traffic signals including a traffic actuated controller, a cabinet, detector amplifiers, and other associated equipment as listed below and on Standard 701316 for each location specified. The Contractor shall have available one spare controller and cabinet. The Contractor shall retain ownership of all traffic control equipment, miscellaneous accessories, and the installation methods shall be according to the following.

- a. **TRAFFIC SIGNAL HEADS:** Two signal heads shall be provided for each mainline approach and for each sideroad within the designated work area. All signal faces shall have new lamps when installed. When the signals are not operating, the signal head shall be hooded according to Article 880.03 and the "SIGNAL AHEAD" sign covered or removed. The left signal head shall be mounted at a height of 10 ft. (3.1 m) above the road surface measured to the bottom of the signal head. The right signal head shall be mounted at a height of 14 ft. (4.3 m) above the road surface. Back plates will be required on all signals.

The right signal head shall be aimed so the centers of the light beams of the indications are directed toward a point in the center of the approach lane 500 ft. (150 m) in advance of the signal. The left indication shall be aimed at a point in the center of the approach lane 100 ft. (30 m) in advance of the stop line.

- b. **LENSES:** All lenses shall be 12 in. (300 mm) nominal diameter.
- c. **WIRE AND CABLE:** The contractor shall supply all overhead and underground wiring for both signal circuits and loop detector lead-ins. The electric cable shall be aerially suspended, at a minimum height of 8 ft. (2.5 m) and as close to the right-of-way line as possible. When the electric cable crosses a roadway or entrance, it shall be aerially suspended, at a minimum height of 18 ft. (5.5 m), according to the local utility requirements, or placed in a trench with a minimum of 2 in. (50 mm) of cover, or protected in a manner approved by the Engineer.

## **Standard 701316 - Continued**

- d. **MOUNTING:** The controller shall be mounted on a post, pole, or temporary concrete foundation. The signal heads shall be mounted on 25 ft. (7.5 m) standard tubular steel posts or on a minimum Class 4 wood pole, when overhead wiring is used between signals. Alternative methods of mounting the cabinet or signal heads shall be approved by the Engineer. The supports shall be kept in a vertical position for the duration of the project.
- e. **SERVICE INSTALLATION:** The Contractor shall be responsible for the installation and cost of 110 V electrical service. When the service cable from the controller to the power source is suspended overhead, the line height shall not be less than 8 ft. (2.5 m) above the ground and located as close to the right-of-way lines as practicable. When the cable crosses a roadway or entrance, the cable shall be raised to a minimum height of 18 ft. (5.5 m) or pass under the pavement through a culvert opening. Portable power generating equipment may be used for a short period of time until local power is available, provided at least one person is present at all times at the site to ensure proper operation.
- f. **TRAFFIC SIGNAL CONTROLLER:**
  - 1. The controller shall be standard eight phase NEMA controller housed in a weather proof cabinet. The traffic signals shall dwell in All-Red. The long All-Red intervals shall be adjustable up to 99 seconds in one second increments. Long All-Red intervals shall be obtained by using a trail green feature or an equivalent, or by using dummy phases. The long All-Red interval shall be pre-empted if the previous movement is detected before the conflicting movement is detected and shall cause the previous movement to return to the green display with a minimum four second delay. When a conflict or failure is detected, the signal shall display a flashing All-Red. When an additional phase is used for a side road movement, only one long red interval shall be used between active phases on each side of the work area.

All devices used, in lieu of controller software to produce this sequence, shall be mounted within the cabinet but not within the controller. The Contractor shall provide an operational demonstration of the controller assembly for the Engineer subsequent to installation and prior to being place into operation. The Contractor shall program the controller, trouble shoot, and correct any problems that arise, and verify the equipment is functions according to the contract. If any controller malfunction occurs during the time of operation or in the event of a power failure, the Contractor shall, without delay, provide flaggers for traffic control and immediately install a replacement controller to operate the signals.

- 2. When specified, the Department will furnish the traffic actuated controller. The controller, complete with loop detector-amplifiers and pole mount cabinet, shall be picked up and returned upon completion of the project to the location designated on the plans. The Contractor shall provide notice to the Department at least two weeks in advance of requiring the traffic actuated controller. The Contractor shall be responsible for maintenance of the

## **Standard 701316 - Continued**

controller and all related equipment within the controller cabinet. The controller shall be inspected by the Contractor and Engineer subsequent to installation and prior to being placed into operation. Any malfunction of the Department owned equipment revealed during the inspection by the Contractor shall be repaired and will be paid for according to Article 109.04. The Contractor shall be responsible for any damage to the Department-owned equipment as a result of negligence or poor workmanship during installation at his/her expense. The Contractor shall provide all maintenance required, at his/her expense, to keep the Department-owned equipment functioning properly after being placed in operation.

- g. DETECTOR LOOPS: Three detector loops shall be installed on each approach as shown on the plan. The near detector loop shall be placed 12 in. (300 mm) from the centerline and the far loop shall be placed 12 in. (300 mm) from the edge line. Each loop shall be connected to a separate detector amplifier channel. Call delay feature shall be used for the loops nearest the stop lines and defeated during the green of that phase. An alternate method of detection may be used if it has been demonstrated and approved by the Department.

The loop detector lead-in cable shall be protected from construction and maintenance activities. In the event of detector loop failure, the Contractor shall have 48 hours to repair or replace the loops. Upon completion of the project, the detector loop shall be terminated in such a manner as to provide for future use. [SS pg. 597-599 / 701.18(b)]

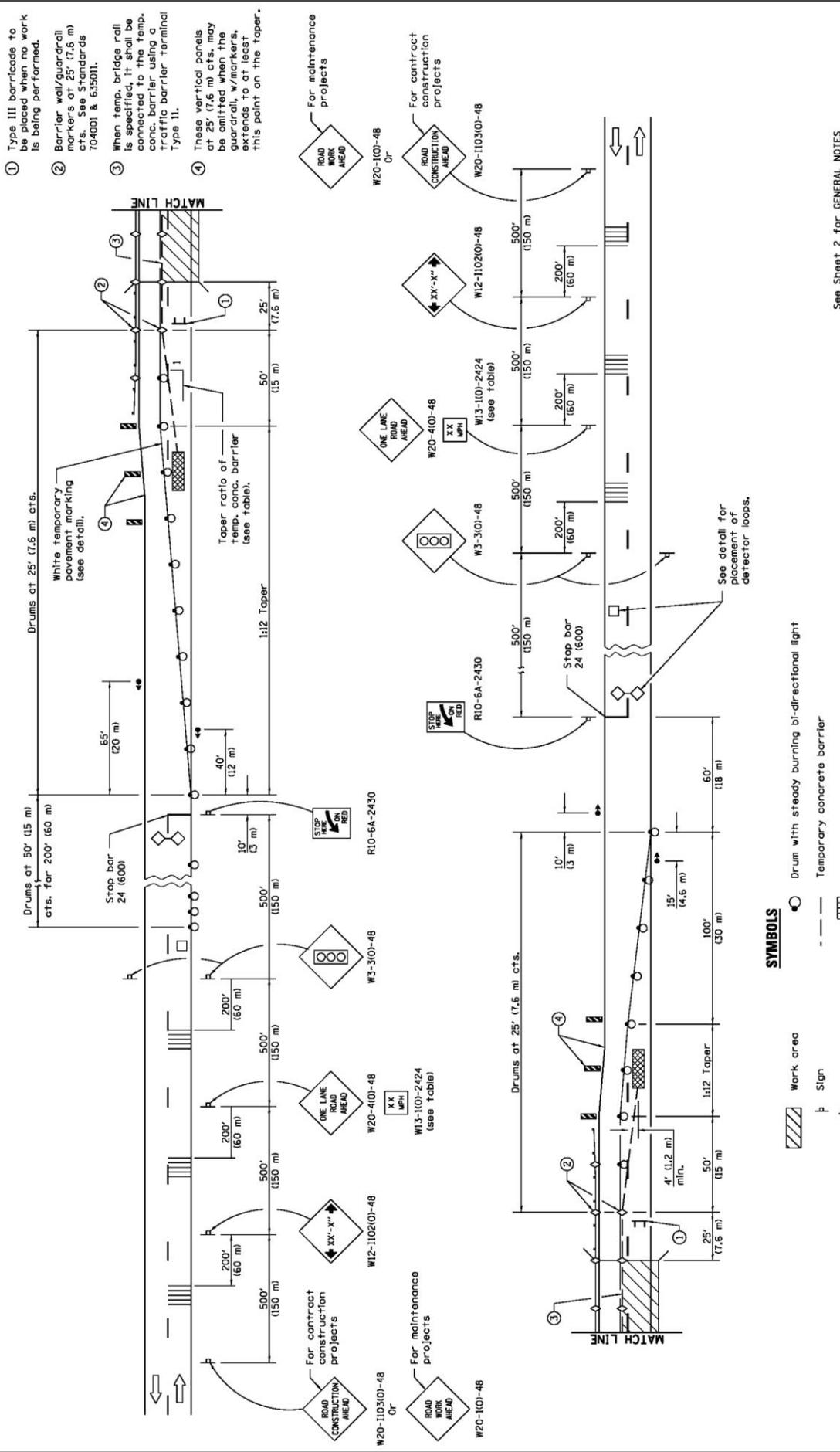
### **Various Specifications:**

1. When work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, temporary sign supports may be used where posts are impractical. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the engineer. [SS pg. 589-590 / 701.14]
2. First two warning signs on each approach to the work involving a nighttime lane closure. Light Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
3. Channelizing devices for nighttime lane closures on two-lane roads. Lights required: Steady burn bi-directional lights. [SS pg. 593 / 701.16]

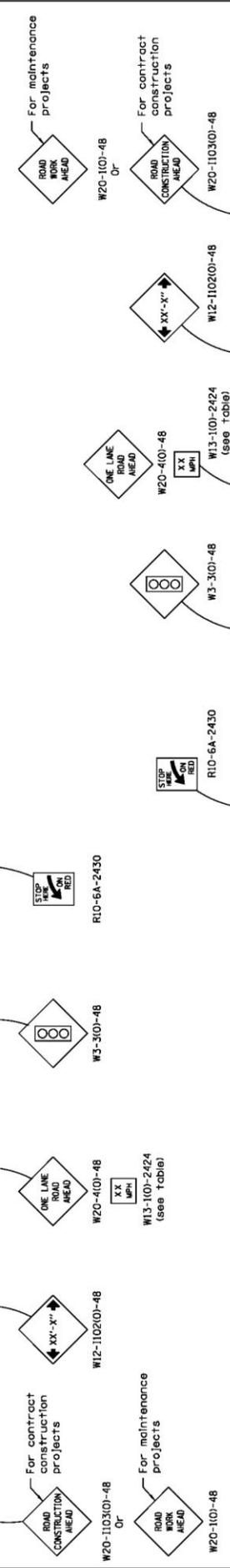
### **General Information:**

Temporary rumble strips conforming to Standard 701901 are recommended where poor alignment or restricted sight distance indicated potential operational problems.

**FOR INFORMATIONAL USE ONLY**



- ① Type III barricade to be placed when no work is being performed.
- ② Barrier wall/guard-rail markers at 25' (7.6 m) cts. See Standards 704001 & 635011.
- ③ When temp. bridge rail is specified, it shall be connected to the temp. conc. barrier using a traffic barrier terminal Type II.
- ④ These vertical panels at 25' (7.6 m) cts. may be omitted when the guardrail w/markers extends to at least this point on the taper.



**SYMBOLS**

- ▨ Work area
- ⊥ Sign
- ⊥ Type III barricade
- ◀▶ Traffic signal
- ◇ Detector loops
- Impact attenuator
- Drum with steady burning bi-directional light
- Temporary concrete barrier
- ▤ Temporary rumble strip (when specified)
- ▧ Double vertical panel (see detail)
- ◇ Crystal, bidirectional barrier wall/guard-rail marker

See Sheet 2 for GENERAL NOTES

DATE	REVISIONS
1-1-13	Omitted center line between stop bars and tapers.
1-1-12	Corrected barrier in symbol legend.

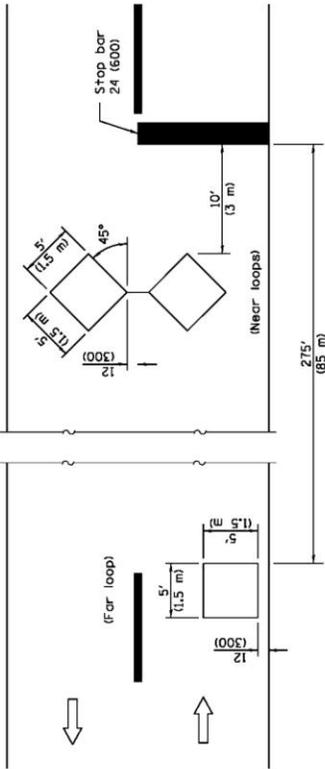
**LANE CLOSURE, 2L, 2W,  
BRIDGE REPAIR WITH BARRIER**

(Sheet 1 of 2)

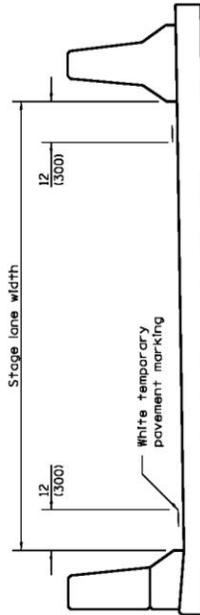
**STANDARD 701321-13**

Illinois Department of Transportation  
 APPROVED \_\_\_\_\_ January 1, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED \_\_\_\_\_ January 1, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



**DETECTOR LOOPS**

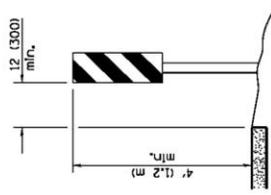


**TEMPORARY PAVEMENT MARKING**

TRAFFIC SIGNAL SEQUENCE						
PHASE	A	B				
INTERVAL	1	2	3	4	5	6
NORTHBOUND OR EASTBOUND	G	Y	R	R	R	R
SOUTHBOUND OR WESTBOUND	R	R	R	G	Y	R

TEMPORARY CONCRETE BARRIER	
NORMAL POSTED SPEED	TAPER RATIO
40 mph AND ABOVE	12:1
BELOW 40 mph	8:1

ADVISORY SPEED LIMIT	
NORMAL POSTED SPEED	ADVISORY SPEED
55 - 45 mph	40 mph
40 mph	35 mph
35 - 30 mph	30 mph



**VERTICAL PANELS**

(Post mounted, one each side)

**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers, or their activities will encroach on the lane of a bridge. Traffic signals and a positive barrier are required.

Traffic signals shall be operational only when all traffic controls are in place. When traffic signals are not in operation, flaggers shall be used and traffic control shall conform to Standard 701201 or 701206.

Temporary concrete barrier shall be according to Standard 704001.

Existing or temporary pavement markings shall be on both sides of open lane from stop bar to stop bar.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED: JENNY L. [Signature] 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: [Signature] 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**LANE CLOSURE, 2L, 2W,  
BRIDGE REPAIR WITH BARRIER**

(Sheet 2 of 2)

**STANDARD 701321-13**

## **Standard 701321**

The exact location of the signals, detector loops, stop bars, and signs shall be as directed by the Engineer. The locations shall also be adjusted as required for stage construction.

[SS pg. 597-599 / 701.18(b)]

The Engineer shall be notified at least 72 hours in advance of placing the signals in operation and at least one week prior to a traffic lane width reduction.

Where the clear width through a work zone with temporary concrete barrier will be 16.0 ft (4.88 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction. [SS pg. 586 / 701.06]

Any damage to the temporary traffic signals from any cause shall be repaired at no additional cost to the Department. If at any time the Contractor fails to perform any work deemed necessary by the Engineer to keep the temporary traffic signals in proper operating condition, the Department serves the right to have other electrical Contractors perform the needed work, and the cost will be deducted from compensation due or which may become due the Contractor under the contract.

Lane Closure on Two-Way, Two-Lane Rural Road. The Contractor shall furnish, install, maintain, and remove temporary traffic signals including a traffic actuated controller, a cabinet detector amplifiers, and other associated equipment as listed below and on Standard 701321 for each location specified. The Contractor shall have available one spare controller and cabinet. The Contractor shall retain ownership of all traffic control equipment, miscellaneous accessories, and the installation methods shall be according to the following.

- a. **TRAFFIC SIGNAL HEADS:** Two signal heads shall be provided for each mainline approach and for each sideroad within the designated work area. All signal faces shall have new lamps when installed. When the signals are not operating, the signal head shall be hooded according to Article 880.03 and the "SIGNAL AHEAD" sign covered or removed. The left signal head shall be mounted at a height of 10 ft. (3.1 m) above the road surface measured to the bottom of the signal head. The right signal head shall be mounted at a height of 14 ft. (4.3 m) above the road surface. Back plates will be required on all signals.

The right signal head shall be aimed so the centers of the light beams of the indications are directed toward a point in the center of the approach lane 500 ft. (150 m) in advance of the signal. The left indication shall be aimed at a point in the center of the approach lane 100 ft. (30 m) in advance of the stop line.

- b. **LENSES:** All lenses shall be 12 in. (300 mm) nominal diameter.
- c. **WIRE AND CABLE:** The Contractor shall supply all overhead and underground wiring for both signal circuits and loop detector lead-ins. The electric cable shall be aurally suspended, at a minimum height of 8 ft. (2.5 m) and as close to the right-of-way line as possible. When the electric cable crosses a roadway or entrance, it shall be aurally suspended, at a minimum height of 18 ft. (5.5 m), according to the local utility requirements, or placed in a trench with a minimum of 2 in. (50 mm) of cover, or protected in a manner approved by the Engineer.

## **Standard 701321 - Continued**

- d. MOUNTING: The controller shall be mounted on a post, pole, or temporary concrete foundation. The signal heads shall be mounted on 25 ft. (7.5 m) standard tubular steel posts or on a minimum Class 4 wood pole, when overhead wiring is used between signals. Alternative methods of mounting the cabinet or signal heads shall be approved by the Engineer. The support shall be kept in a vertical position for the duration of the project.
- e. SERVICE INSTALLATION: The Contractor shall be responsible for the installation and cost of 110 V electrical service. When the service cable from the controller to the power source is suspended overhead, the line height shall not be less than 8 ft. (2.5.m) above the ground and located as close to the right-of-way lines as practicable. When the cable crosses a roadway or entrance, the cable shall be raised to a minimum height of 18 ft. (5.5 m) or pass under the pavement through a culvert opening. Portable power generating equipment may be used for a short period of time until local power is available, provided at least one person is present at all times at the site to ensure proper operation.
- f. TRAFFIC SIGNAL CONTROLLER:
  - 1. The controller shall be a standard eight phase NEMA controller housed in a weather proof cabinet. The traffic signals shall dwell in All-Red. The long All-Red intervals shall be adjustable up to 99 seconds in one second increments. Long All-Red intervals shall be obtained by using a trail green feature or an equivalent, or by using dummy phases. The long All-Red interval shall be pre-empted if the previous movement is detected before the conflicting movement is detected and shall cause the previous movement to return to the green display with a minimum four second delay. When a conflict or failure is detected, the signal shall display a flashing All-Red. When an additional phase is used for a side road movement, only one long red interval shall be used between active phases on each side of the work area.

All devices used, in lieu of controller software to produce this sequence, shall be mounted within the cabinet but not within the controller. The Contractor shall provide an operational demonstration of the controller assembly for the Engineer subsequent to installation and prior to being placed into operation. The Contractor shall program the controller, trouble shoot, and correct any problems that arise, and verify the equipment is functioning according to the contract. If any controller malfunction occurs during the time of operation or in the event of a power failure, the Contractor shall, without delay, provide flaggers for traffic control and immediately install are placement controller to operate the signals.

- 2. When specified, the Department will furnish the traffic actuated controller. The controller, complete with loop detector-amplifiers and pole mount cabinet, shall be picked up and retuned upon completion of the project to the location designated on the plans. The Contractor shall provide notice to the Department at least two weeks in advance of requiring the traffic actuated controller. The Contractor shall be responsible for maintenance of the

## **Standard 701321 - Continued**

controller and all related equipment within the controller and all related equipment within the controller cabinet. The controller shall be inspected by the Contractor and Engineer subsequent to installation and prior to being placed into operation. Any malfunction of the Department owned equipment revealed during the inspection by the Contractor shall be repaired and will be paid for according to Article 109.04. The Contractor shall be responsible for any damage to the Department-owned equipment as a result of negligence or poor workmanship during installation at his/her expense, to keep the Department –owned equipment functioning properly after being placed in operation.

- g. DETECTOR LOOPS: Three detector loops shall be installed on each approach as shown on the plans. The near detector loops shall be placed 12 in. (300 mm) from the centerline and the far loop shall be placed 12 in. (300 mm) from the edge line. Each loop shall be connected to a separate detector amplifier channel. Call delay feature shall be used for the loops nearest the stop lines and defeated during the green of that phase. An alternate method of detection may be used if it has been demonstrated and approved by the Department.

The loop detector lead-in cable shall be protected from construction and maintenance activities. In the event of detector loop failure, the Contractor shall have 48 hours to repair or replace the loops. Upon completion of the project, the detector loop shall be terminated in such a manner as to provide for future use. [SS pg. 579 – 582 / 701.18(b)]

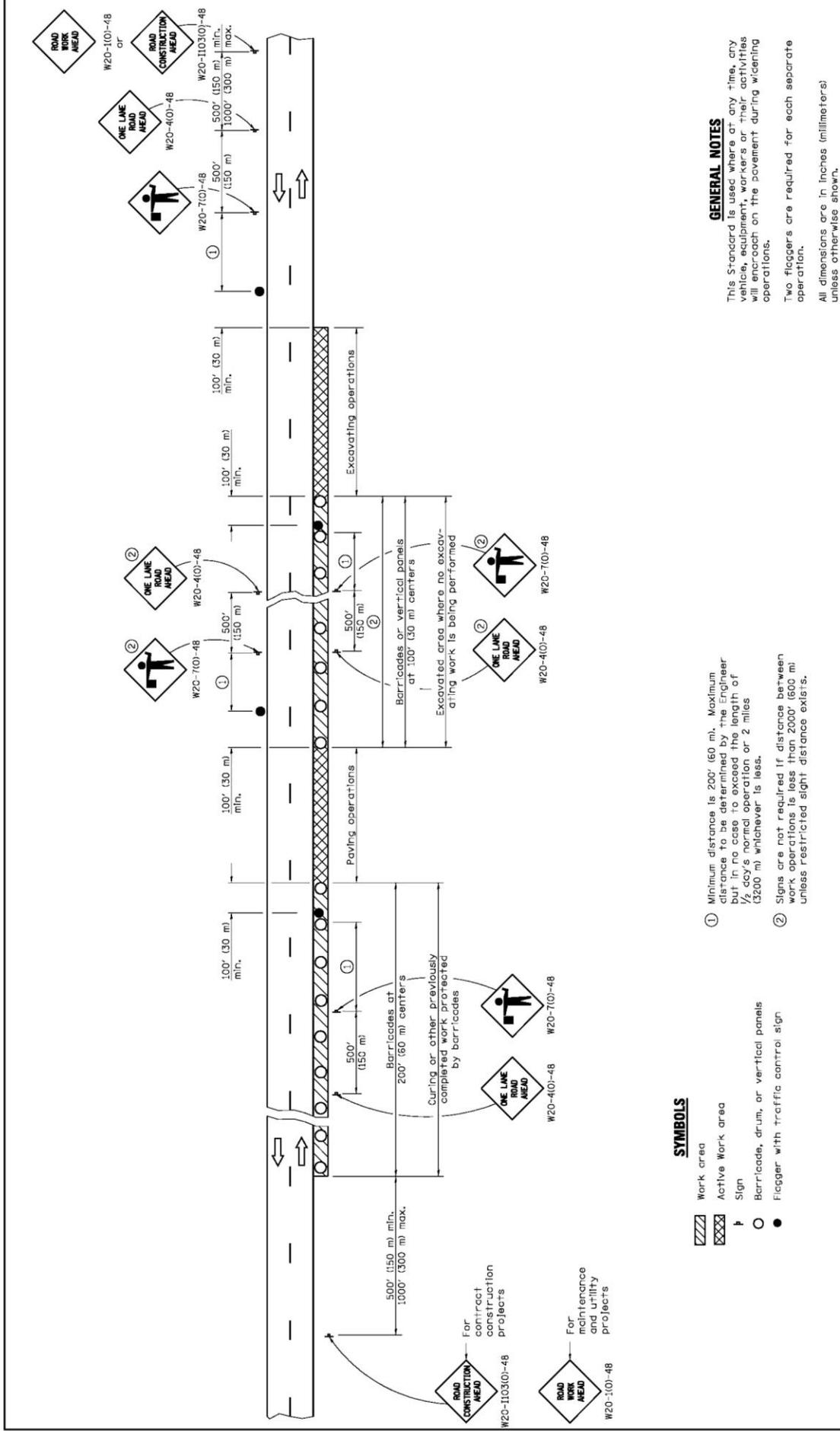
### **Various Specifications:**

1. All existing pavement marking which conflict with revised traffic pattern shall be removed according to Section 783. [SS pg. 586 / 701.04]
2. When work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, temporary sign supports may be used where posts are impractical. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the engineer. [SS pg. 589 - 590 / 701.14]
3. First two warning signs on each approach to the work involving a nighttime lane closure. Light Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

Temporary rumble strips conforming to Standard 701901 are recommended where poor alignment or restricted sight distance indicates potential operational problems.

**FOR INFORMATIONAL USE ONLY**



SYMBOLS	
	Work area
	Active Work area
	Sign
	Barricade, drum, or vertical panels
	Flagger with traffic control sign

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

GENERAL NOTES	
This Standard is used where, at any time, any vehicle, equipment, workers or their activities will encroach on the pavement during widening operations.	
Two flaggers are required for each separate operation.	
All dimensions are in inches (millimeters) unless otherwise shown.	

LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH	
STANDARD 701326-04	

Illinois Department of Transportation	ISSUED 1-1-97
APPROVED January 2011	
ENGINEER OF SAFETY ENGINEERING	
APPROVED January 1, 2011	
ENGINEER OF DESIGN AND ENVIRONMENT	

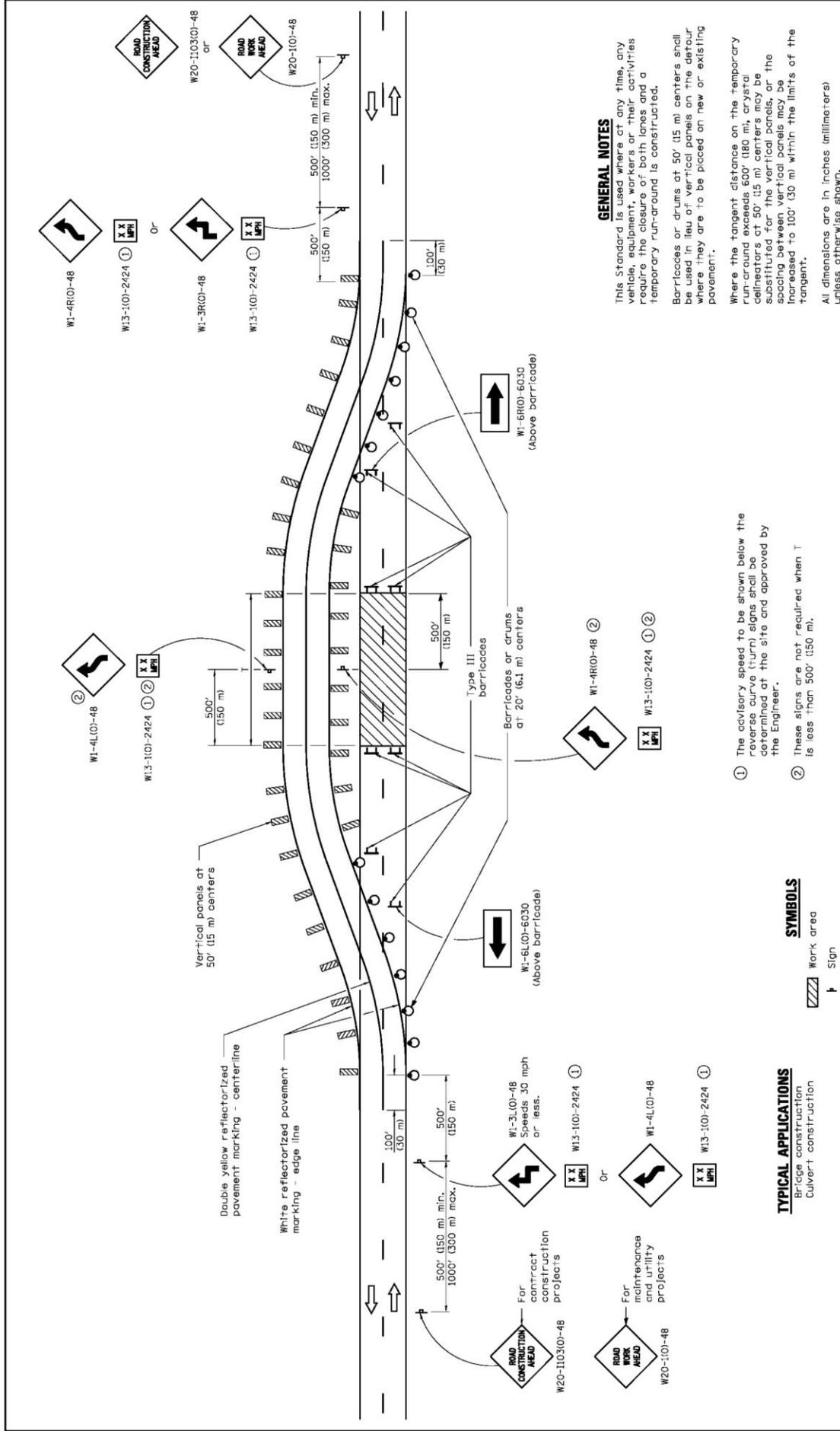
## **Standard 701326**

No paving or excavating operations shall be performed at night unless authorized by the Engineer. [SS pg. 600 / 701.18(c)]

### **Various Specifications:**

1. The Contractor shall keep all equipment, material, and vehicles off the pavement and shoulders on the side of the pavement which is open to traffic. ... At any location on existing pavements less than three lanes in width, the sequence of construction shall limit operations to one side of the pavements. [SS pg. 587 / 701.08]
2. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
3. Work operations controlled by flaggers shall be no more than 1 mile (1600 m) in length. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies. [SS pg. 589 / 701/13(a)]
4. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
5. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

**FOR INFORMATIONAL USE ONLY**



**LANE CLOSURE, 2L, 2W,  
WITH RUN-AROUND,  
FOR SPEEDS ≥ 45 MPH**

STANDARD 701331-04

**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers or their activities require the closure of both lanes and a temporary run-around is constructed. Barricades or drums of 50' (15 m) centers shall be used in lieu of vertical panels on the detour where they are to be placed on new or existing pavement.

Where the tangent distance on the temporary run-around exceeds 600' (180 m), crystal delineators of 50' (15 m) centers may be substituted for the vertical panels, or the spacing between the vertical panels may be increased to 100' (30 m) within the limits of the tangent.

All dimensions are in inches (millimeters) unless otherwise shown.

- ① The advisory speed to be shown below the reverse curve (turn) signs shall be determined at the site and approved by the Engineer.
- ② These signs are not required when T is less than 500' (150 m).

**SYMBOLS**

- Work area
- Sign
- Barricade or drum with monodirectional steady burning light
- Double vertical panel
- Type III barricade

**TYPICAL APPLICATIONS**

- Bridge construction
- Covert construction

DATE	REVISIONS
1-1-11	Changed vertical panel to double vertical panel.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

Illinois Department of Transportation  
 APPROVED: [Signature] JANUARY 1, 2011  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: [Signature] JANUARY 1, 2011  
 ENGINEER OF DESIGN AND ENVIRONMENT

## **Standard 701331**

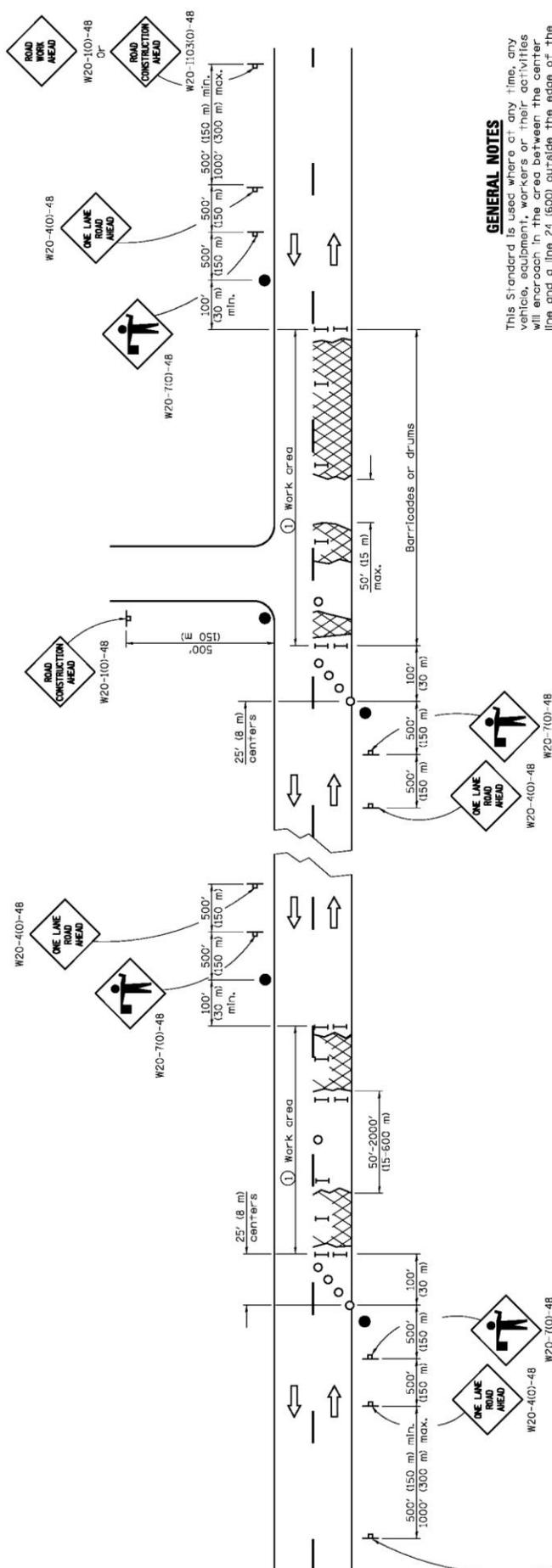
### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

1. No passing zones shall be striped where sight distance restrictions warrant.
2. Edge and centerline pavement markings are required for this Standard.

**FOR INFORMATIONAL USE ONLY**



**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers or their activities will encroach in the area between the center line and a line 24 (800) outside the edge of the pavement.

Two flaggers shall be required for each separate lane closure. The flagger shall be a minimum of 200' (60 m) and a maximum of 1/2 day's operation beyond the flagger sign. When the distance between successive patch pitches exceeds 2000' (600 m), additional flaggers, warning signs, and tapers shall be placed as shown.

Barricades/drums shall be placed at intervals not greater than 100' (30 m) or cones shall be placed at intervals not greater than 50' (15 m) centers throughout the work zone. When the spacing between open holes is greater than 50' (15 m), the barricades/drums shall be placed in each open hole and one on the backside close to the centerline. When the open hole is greater than 10' (3 m) parallel to the centerline, one barricade/drum shall be placed in each hole. For large holes, barricades/drums shall be placed at 50' (15 m) centers.

All dimensions are in inches (millimeters) unless otherwise shown.

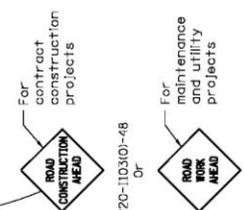
**SYMBOLS**

- ▨ Patches
- Sign
- Flagger with traffic control sign
- I Barricade or drum
- Cone, barricade or drum

**TYPICAL APPLICATIONS**

Patching

① 1/2 mile (800 m) maximum



**LANE CLOSURE, 2L, 2W,  
WORK AREAS IN SERIES,  
FOR SPEEDS ≥ 45 MPH**

STANDARD 701336-06

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English/metric.
	Corrected sign No.'s.

Illinois Department of Transportation

APPROVED January 1, 2011

ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2011

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701336**

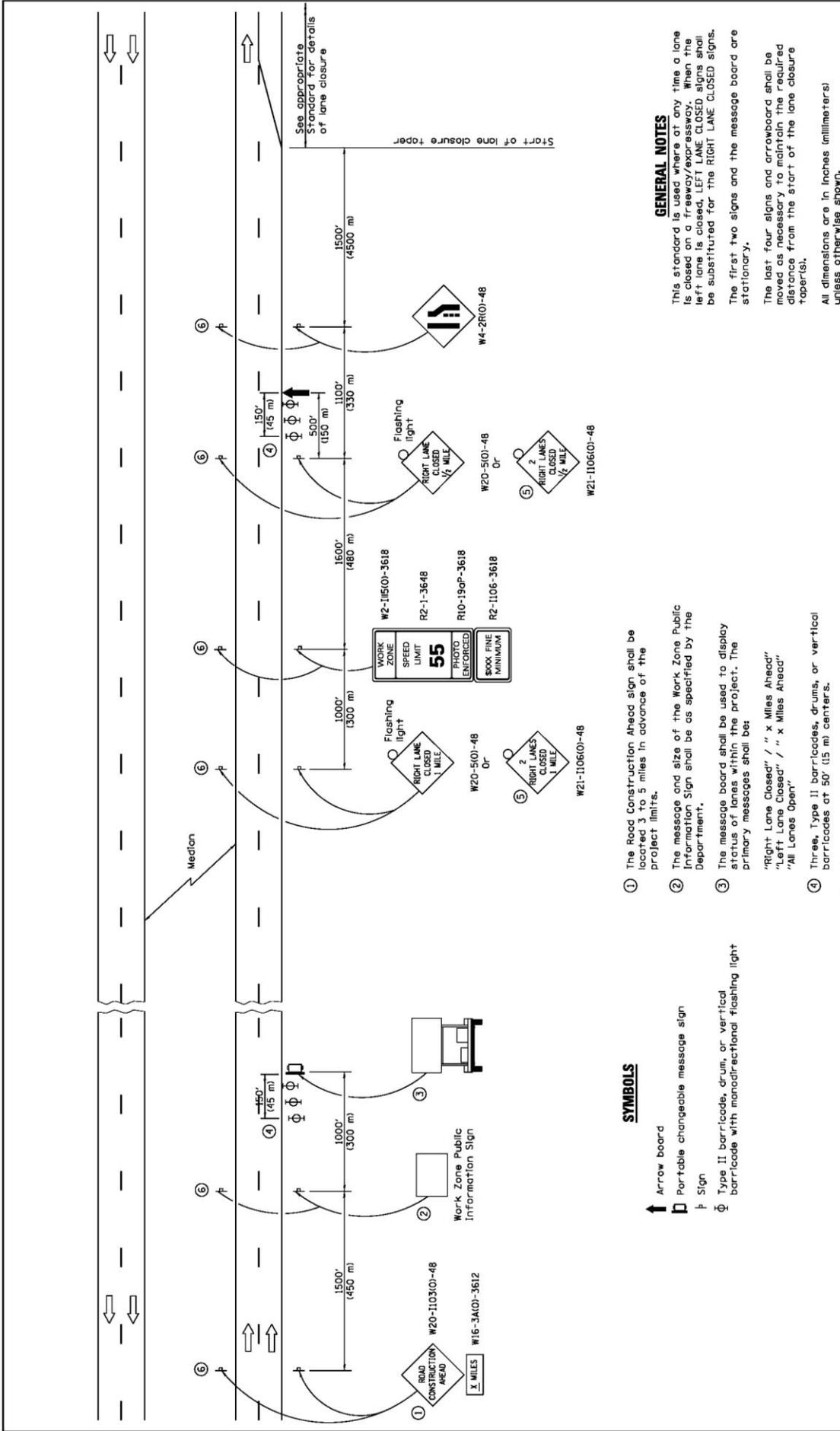
Two flaggers shall be required for each separate construction operations. The flagger shall be a minimum of 200 ft. (60 m) and a maximum distance of ½ day's operations beyond the flagger sign and a minimum of 100 ft. (30 m) in advance of the work party.

Under restricted sight distance conditions, additional devices may also be required for distances less than 2000 ft. (600 m) at the discretion of the Engineer.

During periods when workers are present all work areas shall be delineated by cones or barricades along the centerline. [SS pg. 600 / 701.18(d)]

### **Various Specifications:**

1. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
2. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. . . . Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
3. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
4. Pavement Patching: [SS pg. 595 / 701.17(e)]
5. No broken pavement, open holes, or partially filled patches shall remain overnight and all devices shall be removed before dark. [SS pg. 596 / 701.17(e)(2)b.]
6. If patches are not opened when required, additional traffic control shall be provided at no additional cost to the Department. [SS pg. 596 / 701.17(e).]



- SYMBOLS**
- ↑ Arrow board
  - ☐ Portable changeable message sign
  - ⊥ Sign
  - ⊕ Type II barricade, drum, or vertical barricade with monodirectional flashing light

- 1 The Road Construction Ahead sign shall be located 3 to 5 miles in advance of the project limits.
- 2 The message and size of the Work Zone Public Information Sign shall be as specified by the Department.
- 3 The message board shall be used to display status of lanes within the project. The primary messages shall be:
  - "Right Lane Closed" / " X Miles Ahead"
  - "Left Lane Closed" / " X Miles Ahead"
  - "All Lanes Open"
- 4 Three, Type II barricades, drums, or vertical barricades at 50' (15 m) centers.
- 5 This sign shall be used when 2 lanes are closed.
- 6 This sign shall be omitted when median width is less than 10' (3 m).

**GENERAL NOTES**

This standard is used where at any time a lane is closed on a freeway/expressway. When the left lane is closed, LEFT LANE CLOSED signs shall be substituted for the RIGHT LANE CLOSED signs.

The first two signs and the message board are stationary.

The last four signs and arrowboard shall be moved as necessary to maintain the required distance from the start of the lane closure taper(s).

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation		ISSUED 4-1-04
APPROVED	APPROVED	2013
ENGINEER OF SAFETY ENGINEERING	ENGINEER OF SAFETY ENGINEERING	2013
APPROVED	APPROVED	2013
ENGINEER OF DESIGN AND ENVIRONMENT	ENGINEER OF DESIGN AND ENVIRONMENT	

APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY	
DATE	REVISIONS
1-1-13	Replaced 'BEGINS' sign with 'PHOTO ENFORCED' sign.
1-1-11	Revised lane crop sign.

STANDARD 701400-06

## **Standard 701400**

### **Various Specifications:**

First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

1. This Standard is to be used with Standards 701401, 701402, 701406, 701416, and 701446.
2. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard. [SS pg. 605 / 701.20(h)]

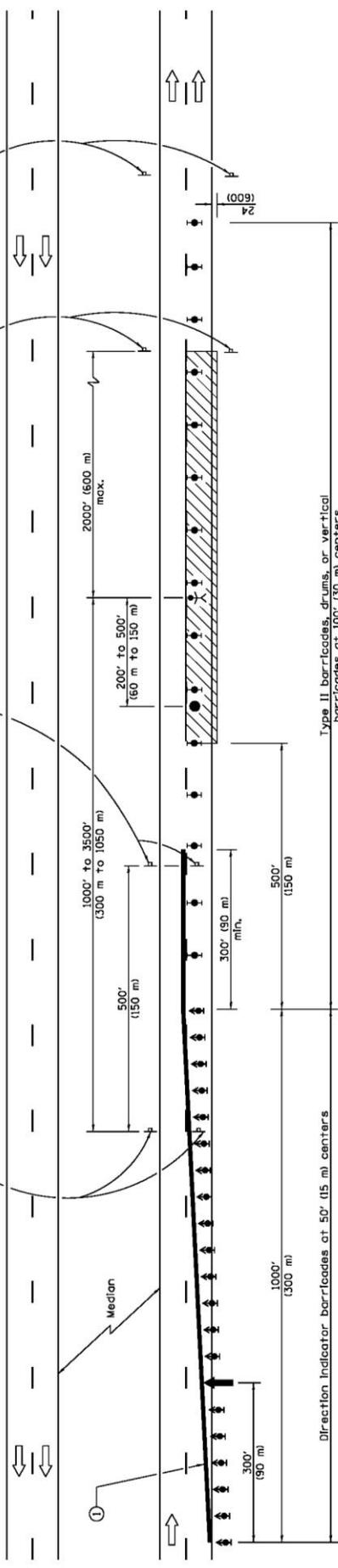
**FOR INFORMATIONAL USE ONLY**

WORK ZONE SPEED LIMIT 45  
 W2-115(O)-3618  
 R2-1-3648  
 PHOTO ENFORCED  
 R10-19aP-3618  
 \$300 FINE MINIMUM  
 R2-1106-3618

WORK ZONE SPEED LIMIT 55  
 W2-115(O)-3618  
 R2-1-3648  
 PHOTO ENFORCED  
 R10-19aP-3618  
 \$300 FINE MINIMUM  
 R2-1106-3618



END WORK ZONE SPEED LIMIT  
 G20-1103(O)-3660



See Standard 701400 for approach  
 Start of lane closure taper

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- ⚠ Worker
- ⚡ Sign
- ↔ Direction indicator barricade with steady burn monidirectional light
- ⚡ Type II barricade, drum, or vertical barricade with steady burn monidirectional light
- Flagger with traffic control sign

- ① ReflectORIZED temporary pavement marking tape shall be placed throughout the taper and for 300' (90 m) along-side the work area when the closure time is greater than fourteen days. The edge line shall be white for right lane closure and yellow for left lane closures.
- ② Work Zone speed limit signs and FLAGGER signs shall be moved as necessary to maintain the required spacing between the signs and the workers in each separate work activity. Signs shall be placed at 55 mph. Enforced sign shall be placed where the work area dictates placement of the sign array within 500' (150 m) of the End Work Zone Speed Limit Sign.

**GENERAL NOTES**  
 This Standard is used where at any time any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement.  
 This Standard must always be used in combination with Standard 701400.  
 This Standard also applies when work is being performed in the left lane. Under these conditions, the set up would be a mirror image to what is shown.  
 A check barricade shall be placed in the middle of the closed lane and at the shoulder at 1000' (300 m) centers.  
 All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED January 1, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED January 1, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-13	Omitted Temp. raised pav. markers, Rep. BEGINS/RESUMES signs with PHOTO ENFORCED.
1-1-11	Revised note ② and work area symbol. Revised flagger sign.

**LANE CLOSURE,  
 FREEWAY / EXPRESSWAY**  
 STANDARD 701401-07

ISSUED 1-1-97

## **Standard 701401**

1. For overnight operations, cones may be substituted for barricades or drums at half the spacing during day operations. [SS pg. 600 / 701.18(e)(1)]
2. Multilane Pavement Resurfacing: For the construction of binder course, surface course and shoulder resurfacing on multilane pavements, this Standard shall be used from the beginning of business on Monday to 4:30 p.m. on Friday. Only Standards 701406 and 701421 shall be used from 4:30 p.m. Friday to start of business on Monday. [SS pg. 600 / 701.18(e)(2)]
3. Shoulder Upgrading and Replacement: The following shall apply to shoulder pipe underdrain installation and/or shoulder reconstruction on existing multilane divided highways.

The Contractor shall close the adjacent lane of pavement according to the Standard within the limits of the construction zone:

- a. When required by the Contractor's operations; and,
- b. When no workers are present and the difference in elevation between the pavement and the shoulder and/or widening is greater than 12 in. (300).

During shoulder work on ramps, refer to standard 701451.

Standard 701401 will only be measured for payment where the average depth of shoulder reconstruction required by the plans, exclusive of any trench for pipe underdrain installation, is in excess of 3 in. (75 mm). Where such shoulder reconstruction is 3 in. (75 mm) or less, no open trench greater than 3 in. (75 mm) deep will be permitted overnight. If, because of unforeseen circumstances, an open trench greater than 3 in. (75 mm) deep should occur overnight, the Contractor shall, at no additional cost to the Department, close the adjacent traffic lane according to Standards 701400 and 701401 or according to Standard 701422.

Excavations greater than 3 in.(75 mm) in depth between the pavement and shoulder, including any trenches within the shoulder area, shall be restricted to one shoulder in each direction of travel. In addition, shoulder drop-offs greater than 1 ½ in. (40 mm) caused by the Contractor's operations will not be permitted over the winter shutdown.

The Contractor shall schedule the work so the lane closure at any one-work area does not exceed five working days. The closure time may be exceeded for conditions beyond the Contractor's control, except if continual and persistent closures in excess of the five working days are made, the Engineer will initiate measures to delay or limit the daily production of the Contractor's operations.

All debris shall be removed from the shoulder and right-of-way prior to the removal of barricades, drums, or vertical panels. [SS pg. 600-601 / 701.18(e)(3)]

### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions, shall be removed, covered, or turned from the view of the motorists. [SS pg. 586 / 701.04]

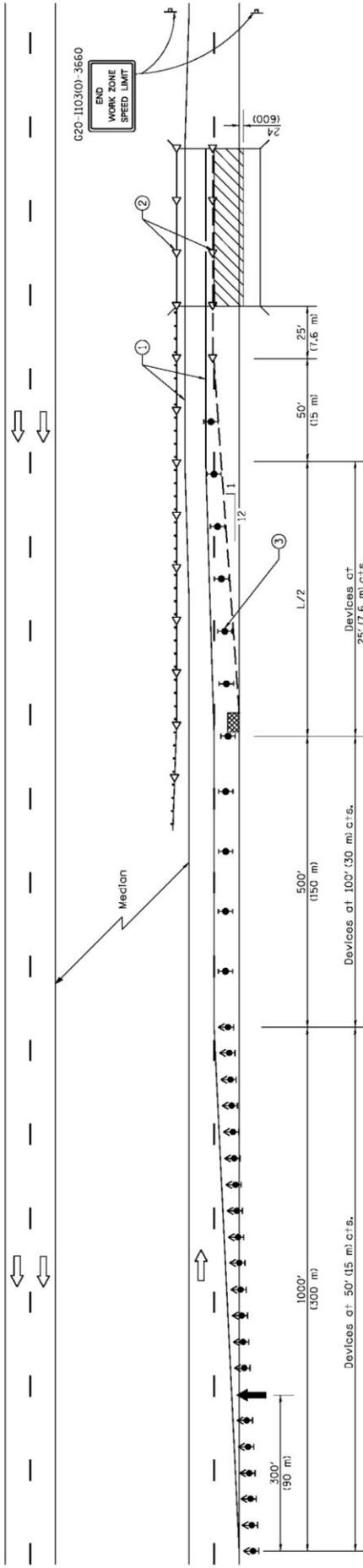
## **Standard 701401 - Continued**

2. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
3. One flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. [SS pg. 589 / 701.13(b)]
4. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
5. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.  
  
All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.  
  
The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closure(s).  
  
The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]
6. Daylight operations. Light Required: None. [SS pg. 593 / 701.16]
7. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
8. "ROUGH GROOVED SURFACE" sign. [SS pg. 594 / 701.17(c)(2)]
9. Pavement Patching: [SS pg. 595 / 701.17(e)]
10. Where posted speeds are greater than 40 mph cones shall be a minimum of 28 in. (700 mm) in height. [MUTCD Section 6F.63, Figure 6F-7]

### **General Information:**

This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans will be required.

**FOR INFORMATIONAL USE ONLY**



See Standard 701400 for appropriate  
 Start of lane closure taper

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- ⊥ Sign
- ↕ Direction indicator barricade with steady burn monodirectional light
- ⊥ Type II barricade, drum, or vertical barricade with steady burn monodirectional light
- Temporary concrete barrier
- ◁ Monodirectional barrier wall/quardallmarker
- ⊠ Impact attenuator

- ① Temporary pavement marking tape shall be placed throughout the taper and along-side the work area. The right edge line shall be white and the left edge line shall be yellow.
- ② Barrier wall/quardallmarkers at 25' (7.6 m). Markers on right shall be shall be crystal and markers on left shall be amber.
- ③ Vertical barricades shall not be used in lane shift taper.

① Temporary pavement marking tape shall be placed throughout the taper and along-side the work area. The right edge line shall be white and the left edge line shall be yellow.

② Barrier wall/quardallmarkers at 25' (7.6 m). Markers on right shall be shall be crystal and markers on left shall be amber.

③ Vertical barricades shall not be used in lane shift taper.

**GENERAL NOTES**  
 This standard is used where at any time any vehicle, equipment, workers or their activities will encroach on the pavement or on the shoulder within 24 (600) of the edge of pavement for daylight operation exceeding one day and where temporary concrete barrier is utilized.  
 This Standard must always be used in combination with Standard 701400.  
 When work is being performed in the left lane, the set up would be a mirror image to what is shown.  
 Temporary concrete barrier shall be according to Standard 704001.  
 Calculate L as follows:  
 NORMAL POSTED SPEED FORMULAS  
 English L=(W)(S)  
 Metric L=(0.65)(W)(S)  
 W = Width of offset in Feet (meters).  
 S = Normal posted speed in mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED: [Signature] EQUASON, L. 2012  
 ENGINEER OF SURVEYING AND PLANNING  
 APPROVED: [Signature] JANUARY, L. 2012  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-00

DATE	REVISIONS
1-1-12	Corrected barrier in symbol legend.
1-1-11	Added metric to 'L' calculations.

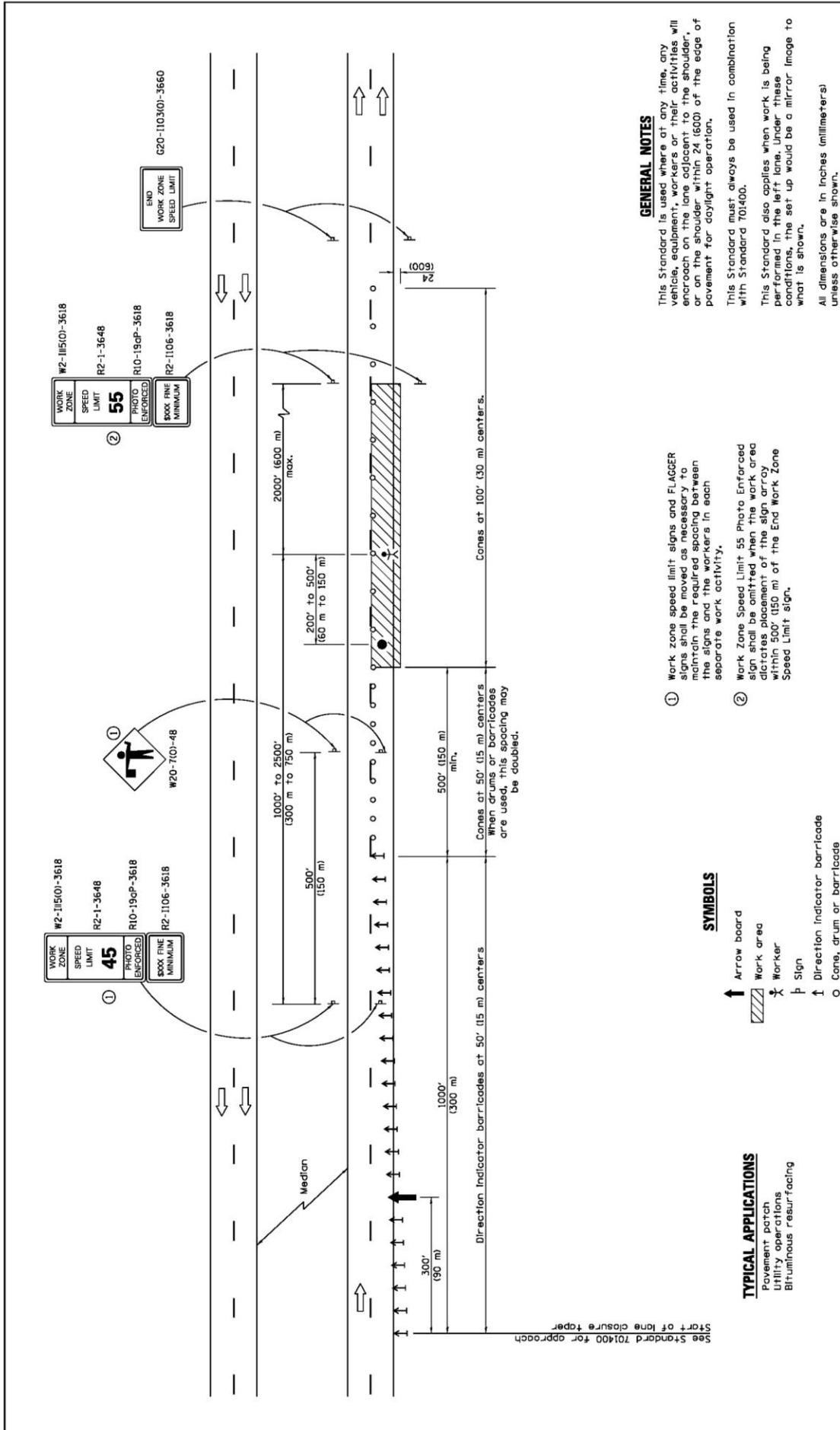
**LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER**  
 STANDARD 701402-09

## **Standard 701402**

### **Various Specifications:**

1. All existing pavement markings which conflict with the revised traffic pattern shall be removed according to Section 783. [SS pg. 586 / 701.04]
2. Where the clear width through a work zone with temporary concrete barrier will be 16.0 ft (4.88 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction. [SS pg. 586 / 701.06]
3. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
4. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

**FOR INFORMATIONAL USE ONLY**



**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement for daylight operation.

This Standard must always be used in combination with Standard 701400.

This Standard also applies when work is being performed in the left lane. Under these conditions, the set up would be a mirror image to what is shown.

All dimensions are in inches (millimeters) unless otherwise shown.

① Work zone speed limit signs and FLAGGER signs shall be omitted when the work area maintains the required spacing between the signs and the workers in each separate work activity.

② Work Zone Speed Limit 55 Photo Enforced sign shall be omitted when the work area dictates placement of the sign array within 500' (150 m) of the End Work Zone Speed Limit sign.

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- ⊗ Worker
- ⊥ Sign
- ↑ Direction indicator barricade
- Cone, drum or barricade
- Flagger with traffic control sign

**TYPICAL APPLICATIONS**

- Pavement patch
- Utility operations
- Bituminous resurfacing

Illinois Department of Transportation		ISSUED 1-1-97
APPROVED	JANUARY 1, 2013	
 ENGINEER OF SAFETY TRAINING		
APPROVED  ENGINEER OF DESIGN AND ENVIRONMENT		

DATE	REVISIONS
1-1-13	Replaced BEGINS/RESUMES signs with PHOTO ENFORCED signs.
1-1-11	Added note ②. Revised work area symbol. Revised flagger sign.

**LANE CLOSURE,  
FREEWAY/EXPRESSWAY,  
DAY OPERATIONS ONLY**

**STANDARD 701406-07**

## **Standard 701406**

1. Multilane Pavement Resurfacing. For the construction of binder course, surface course and shoulder resurfacing on multilane pavements, this standard may be used at all times. [SS pg. 600 / 701.18(e)(2)]
2. Shoulder Upgrading and Replacement. The following shall apply to shoulder pipe underdrain installation and/or shoulder reconstruction on existing multilane divided highways.

The Contractor shall close the adjacent lane of pavement according to the Standard within the limits of the construction zone.

- a. When required by the contractor's operations; and,
- b. When no workers are present and the difference in elevation between the pavement and the shoulder and/or widening is greater than 12 in. (300 mm).

During shoulder work on ramps, refer to Standard 701451.

Excavations greater than 3 in. (75 mm) in depth between the pavement and shoulder, including any trenches within the shoulder area, shall be restricted to one shoulder in each direction of travel. In addition, shoulder drop-offs greater than 1 ½ in. (40 mm) caused by the Contractor's operations will not be permitted over the winter shutdown.

The Contractor shall schedule the work so the lane closure at any one work area, does not exceed five working days. The closure time may be exceeded for conditions beyond the Contractor's control, except if continual and persistent closures in excess of the five working days are made, the Engineer will initiate measures to delay or limit the daily production of the Contractor's operations.

All debris shall be removed from the shoulder and right-of-way prior to the removal of barricades, drums, or vertical panels. [SS pg. 600-601 / 701.18(e)(3)]

### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions, shall be removed, covered, or turned from the view of the motorists. [SS pg. 586 / 701.04]
2. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
3. One flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. [SS pg. 589 / 701.13(b)]
4. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]

## **Standard 701406 - Continued**

5. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closure(s).

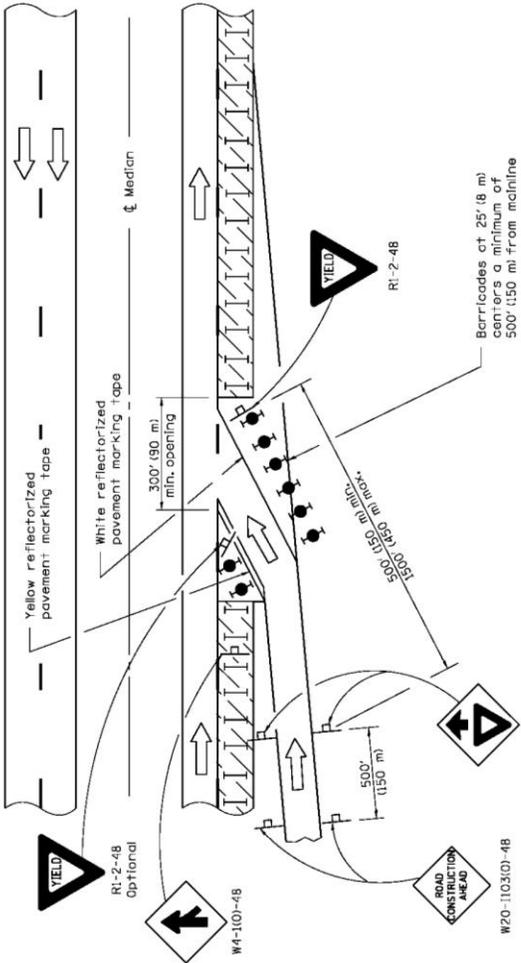
The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]

6. Cold Milling. "ROUGH GROOVED SURFACE" (W8-1107) signs shall be erected when the road has been cold milled and opened to traffic. The signs shall be placed just prior to the cold milling operation and shall remain in place until the milled surface condition no longer exists. These signs shall be erected a minimum of 500 ft (150 m) preceding the start of the milled pavement, just before each major intersection within the milled area, and at other locations as directed by the Engineer. The signs shall have an amber flashing light attached. [SS pg. 594 / 701.17(c)(2)]
7. Where posted speeds are greater than 40 mph cones shall be a minimum of 28 in. (700 mm) in height. [MUTCD Section 6F.63, Figure 6F-7]

### **General Information:**

1. Equipment, materials, signs, cones, barricades, and drums are to be removed at the completion of the day's operations and the work area opened to traffic.
2. This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans will be required.

**FOR INFORMATIONAL USE ONLY**

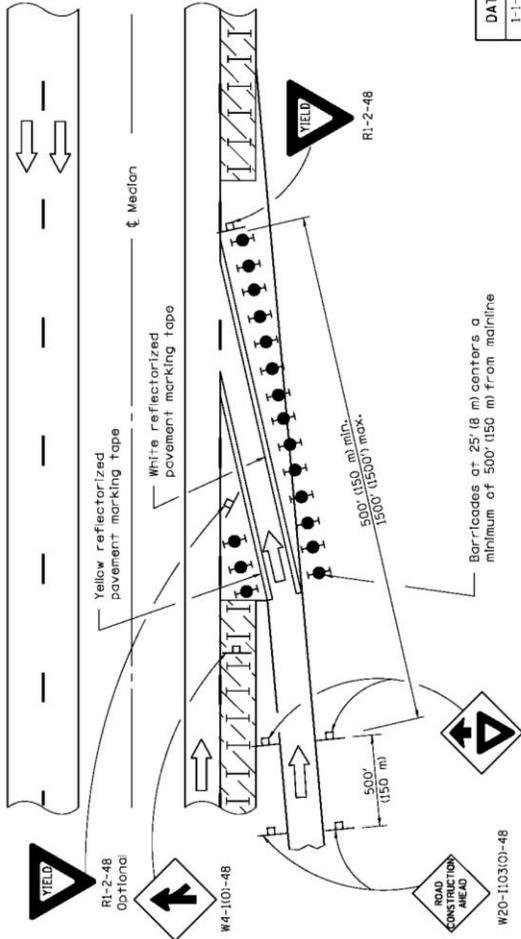


**APPLICATION NO. 1**

Application No. 1 depicts a modified entrance ramp. This method shall be utilized whenever existing entrance tapers cannot be retained due to the close proximity of the work zone. The entrance location may be shifted, with the approval of the Engineer, to perform work in the entrance area. Application No. 2 shall be put into effect as soon as possible.

**SYMBOLS**

- Work area
- Sign
- Type II barricades or drums with steady burning monodirectional light
- Type I barricades or drums
- Drums with steady burning monodirectional light



**APPLICATION NO. 2**

Application No. 2 depicts a normal entrance ramp. This method shall be used whenever the existing entrance taper can be retained. Consideration should be given to the entering motorists' line of sight, through, between, or over the delineation devices.

**GENERAL NOTES**

This Standard is used where, at any time any vehicle, equipment, workers or their activities require a lane closure in close proximity of an exit or entrance ramp and supplements other traffic control standards for lane closures.

These applications also apply when work is being performed in the left lanes and the ramps enter and exit on the left. Under these conditions, the EXIT sign arrow and the Side Road symbol sign shall be changed.

Cones may be utilized during daylight operations, at one half the spacing or drums/barricades. Use of these cases limited to 5 days per location.

When work does not exceed 3 days, pavement marking tape may be omitted.

All dimensions are in inches (millimeters) unless otherwise shown.

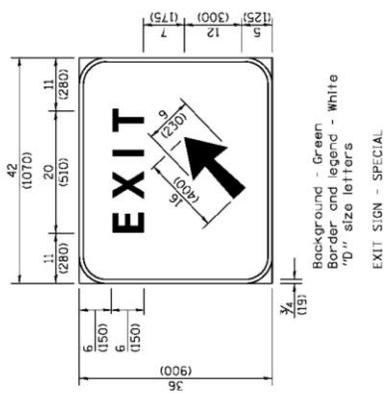
DATE	REVISIONS
1-1-12	Revised merge sign to agree with MUTCD. Dimensioned EXIT OPEN AHEAD sign.
1-1-11	Revised yield ahead sign.

**LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP, FOR SPEEDS ≥ 45 MPH**  
(Sheet 1 of 2)

**STANDARD 701411-08**

Illinois Department of Transportation  
 APPROVED: *[Signature]* 2012  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: *[Signature]* 2012  
 ENGINEER OF DESIGN AND ENVIRONMENT

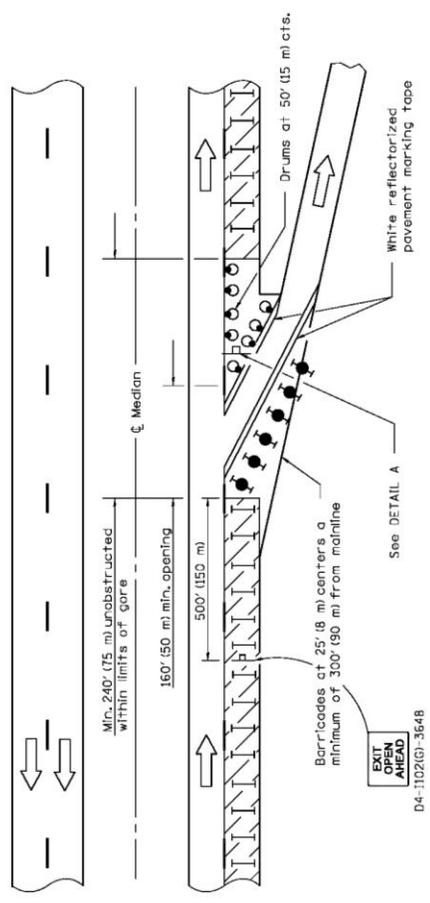
ISSUED 1-1-97



Background - Green  
 Border and legend - White  
 "D" size letters  
 EXIT SIGN - SPECIAL

**DETAIL A**

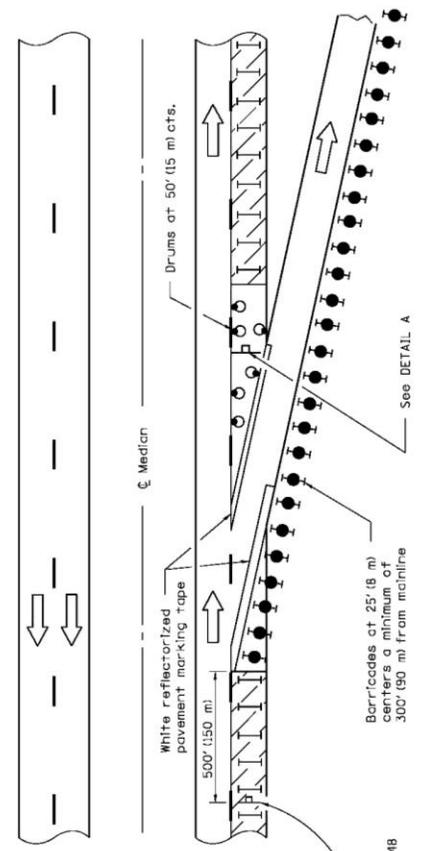
(To be utilized where distance between the two rows of channelizing devices is 6'-11.8" in width.)



**APPLICATION NO. 3**

Application No. 3 depicts a modified exit ramp. The channelizing devices shall provide a clearly defined path for the exiting motorists. The minimum dimensions shown shall be increased as soon as the progress of the work will permit. The open portion of the ramp may be shifted, with the approval of the Engineer, to perform work in stages on the area adjacent to the ramp exit. Application No. 4 shall be put into effect as soon as possible.

D4-1102(G)-3648



**APPLICATION NO. 4**

Application No. 4 depicts an extension of the normal exit ramp. This method shall be used whenever existing geometrics can be retained. Consideration should be given to the exiting motorist's line of sight through, between or over the delineation devices.

D4-1102(G)-3648

**LANE CLOSURE, MULTILANE,  
 AT ENTRANCE OR EXIT RAMP,  
 FOR SPEEDS ≥ 45 MPH**  
 (Sheet 2 of 2)

**STANDARD 701411-08**

Illinois Department of Transportation  
 APPROVED January 1, 2012  
 ENGINEER OF DISTRICT 1  
 APPROVED January 1, 2012  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701411**

This Standard shall supplement mainline traffic controls for lane closures.

The channelizing devices shall clearly define a path for motorists entering or exiting the highway.

Raised reflectorized pavement markers at 25 ft (8 M) centers may be used in lieu of tape where the pavement marking is to be placed adjacent to the barricades or drums  
[SS pg 601 / 701.18(i)]

When work does not exceed 3 days, pavement marking tape may be omitted.

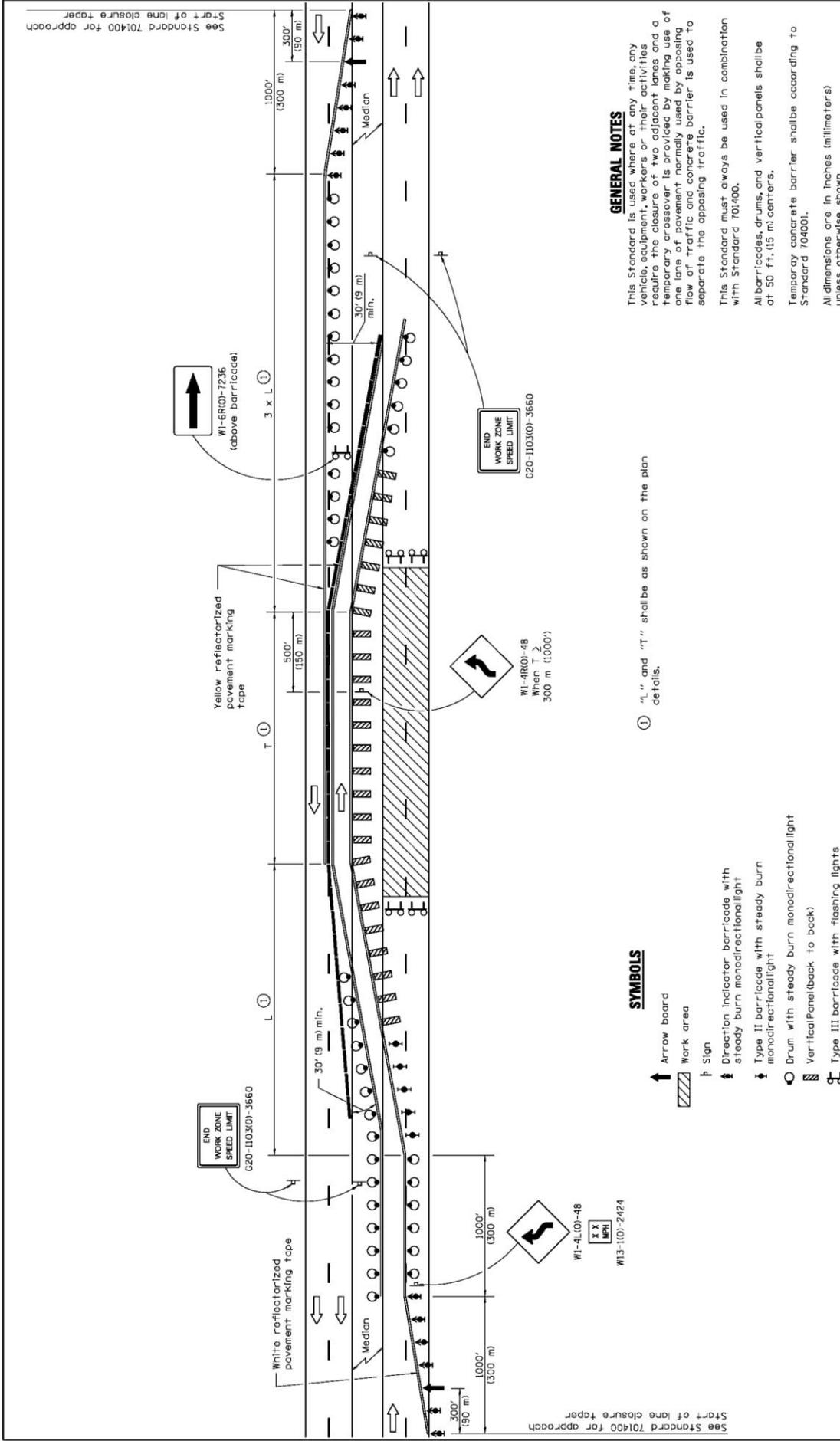
### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. Daylight operations. Light Required: None. [SS pg. 593 / 701.16]

### **General Information:**

Staging should be considered that would minimize the amount of time Application No. 1 and No. 3 would be in use.

**FOR INFORMATIONAL USE ONLY**



See Standard 701400 for approach  
Start of lane closure taper

See Standard 701400 for approach  
Start of lane closure taper

**GENERAL NOTES**

This Standard is used where at any time, any vehicle, equipment, workers or their activities require the closure of two adjacent lanes and a temporary barrier is placed between the lanes. One way of pavement normally used by opposing flow of traffic and concrete barrier is used to separate the opposing traffic.

This Standard must always be used in combination with Standard 701400.

All barricades, drums, and vertical panels shall be of 50 ft., (15 m) centers.

Temporary concrete barrier shall be according to Standard 704001.

All dimensions are in inches (millimeters) unless otherwise shown.

① "L" and "T" shall be as shown on the plan details.

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- ⊥ Sign
- ⬇ Direction indicator barricade with steady burn monodirectional light
- ⬆ Type II barricade with steady burn monodirectional light
- Drum with steady burn monodirectional light
- ▤ Vertical Panel (back to back)
- ⊕ Type III barricade with flashing lights
- Temporary concrete barrier

**LANE CLOSURE,  
FREEWAY / EXPRESSWAY,  
WITH CROSSOVER AND BARRIER**

DATE	REVISIONS
1-1-12	Limited bi-directional barrier marker from SYMBOLS.
1-1-09	Switched units to English (metric, Barr.'s to Type II in lane shift.

Illinois Department of Transportation

APPROVED: \_\_\_\_\_ JANUARY 1, 2012

ENGINEER OF STATE HIGHWAY CONSTRUCTION

APPROVED: \_\_\_\_\_ JANUARY 1, 2012

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED: 1-1-97

STANDARD 701416-07

## **Standard 701416**

A reflective solid edge line and yellow centerline for each direction of traffic shall be used when the closure time exceeds four days or when the normal posted speed outside the area of operations exceeds 50 mph. Reflectorized pavement marking tape shall be used for marking the edge lines and centerline on existing pavement. Either tape or reflectorized pavement marking paint may be used for marking on the paved crossovers. Raised reflective pavement markers at 25 ft.(8 m) centers shall be installed for additional delineation.

Vertical panels may be attached to concrete barriers where available space prohibits the use of drums. [SS pg. 601 / 701.18(f)]

### **Various Specifications:**

1. All existing pavement markings which conflict with the revised traffic pattern shall be removed according to Section 783. [SS pg. 586 / 701.04]
2. Where the clear width through a work zone with temporary concrete barrier will be 16.0 ft (4.88 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction. [SS pg. 586 / 701.06]
3. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft.( 30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
4. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be place 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.

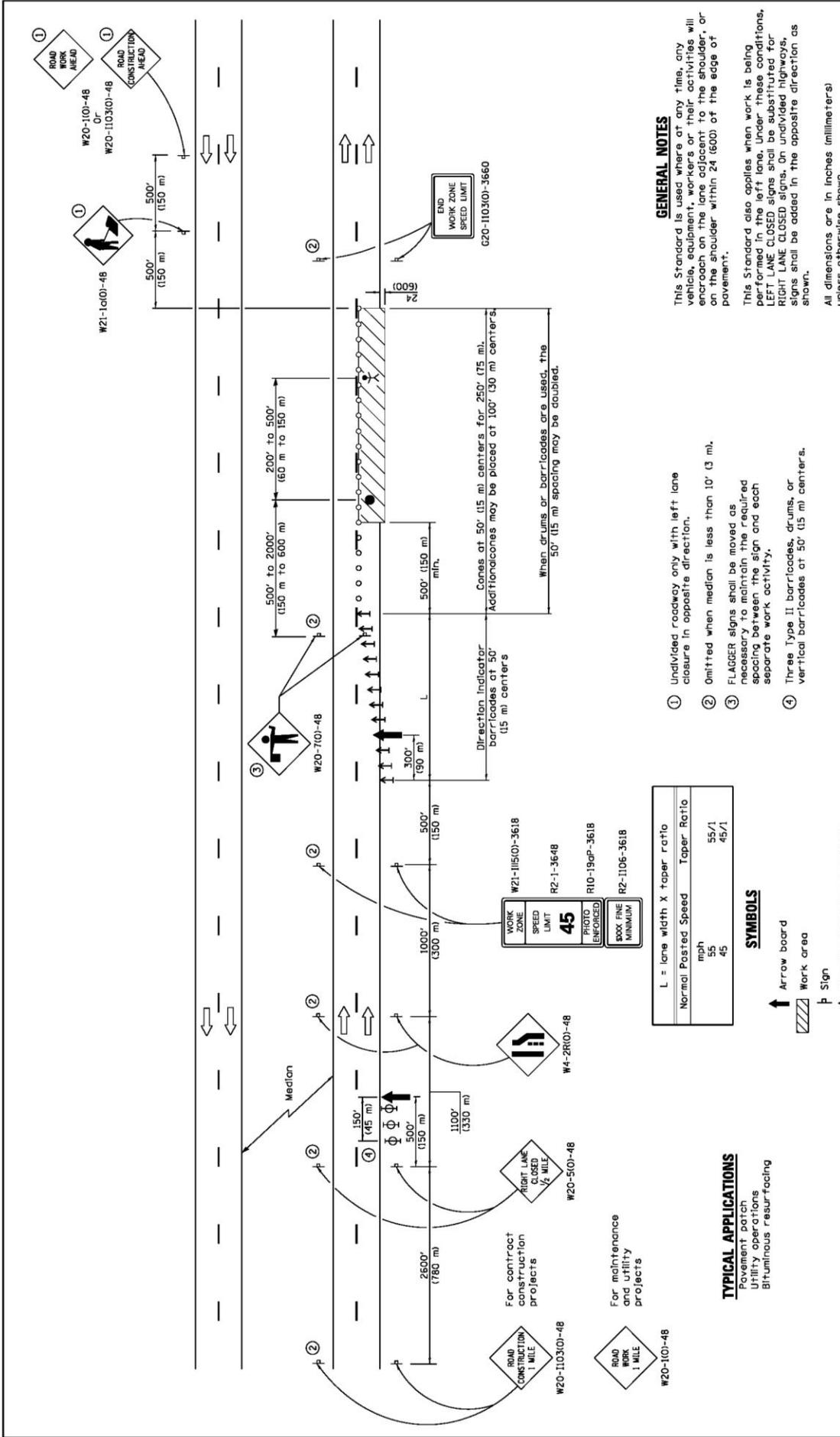
All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closures(s) by promptly establishing a reduced posted speed zone when the lane closures(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closures(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]

5. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
6. Channelizing devices for nighttime lane closures on multi-lane roads. Lights Required: Steady burn mono-directional lights. [SS pg. 593 / 701.16]

**FOR INFORMATIONAL USE ONLY**



Normal Posted Speed	Taper Ratio
mph	55/1
45	45/1

L = lane width X taper ratio

**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement.

This Standard also applies when work is being performed in the left lane. Under these conditions, LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown.

- Undivided roadway only with left lane closure in opposite direction.
- Omitted when median is less than 10' (3 m).
- FLAGGER signs shall be moved as necessary to maintain the required spacing between the sign and each separate work activity.
- Three Type II barricades, drums, or vertical barricades at 50' (15 m) centers.

**SYMBOLS**

- Arrow board
- Work area
- Sign
- Direction Indicator barricade
- Cone, drum or barricade
- Flagger with traffic control sign
- Worker
- Type II barricade, drum, or vertical barricade with monodirectional flashing light

**TYPICAL APPLICATIONS**

Pavement patch  
Utility operations  
Bituminous resurfacing

For contract construction projects

For maintenance and utility projects

DATE	REVISIONS
1-1-12	Omit WORKERS sign. Rep. Begins sign with PHOTO ENFORCED.
	Added devices at arrowboard.
1-1-12	Corrected work zone speed limit sign numbers.

**LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS > 45 MPH TO 55 MPH**

STANDARD 701421-05

Illinois Department of Transportation  
 APPROVED: [Signature] JANUARY 1, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: [Signature] JANUARY 1, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-1-04

## **Standard 701421**

1. Multilane Pavement Resurfacing. For the construction of binder course, surface course and shoulder resurfacing on multilane pavement, this standard may be used at all times. [SS pg. 600 / 701.18(e)(2)]
2. Shoulder Upgrading and Replacement: The following shall apply to shoulder pipe underdrain installation and/or shoulder reconstruction on existing multilane divided highways.

The Contractor shall close the adjacent lane of pavement according to the Standard within the limits of the construction zone.

- a. When required by the contractor's operations; and,
- b. When no workers are present and the difference in elevation between the pavement and the shoulder and/or widening is greater than 12 in. (300 mm).

During shoulder work on ramps, refer to Standard 701451.

Excavations greater than 3 in. (75 mm) in depth between the pavement and shoulder, including any trenches within the shoulder area, shall be restricted to one shoulder in each direction of travel. In addition, should drop-offs greater than 1 ½ in. (40 mm) caused by the Contractor's operations will not be permitted over the winter shutdown.

The Contractor shall schedule the work so the lane closure at any one work area does not exceed five working days. The closure time may be exceeded for conditions beyond the Contractor's control, except if continual and persistent closures in excess of the five working days are made, the Engineer will initiate measures to delay or limit the daily production of the Contractor's operations.

All debris shall be removed from the shoulder and right-of-way prior to the removal of barricades, drums or vertical panels. [SS pg. 600-601 / 701.18(e)(3)]

### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
3. One flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. [SS pg. 589 / 701.13(b)]

## **Standard 701421 - Continued**

4. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operations. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
5. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closures(s).

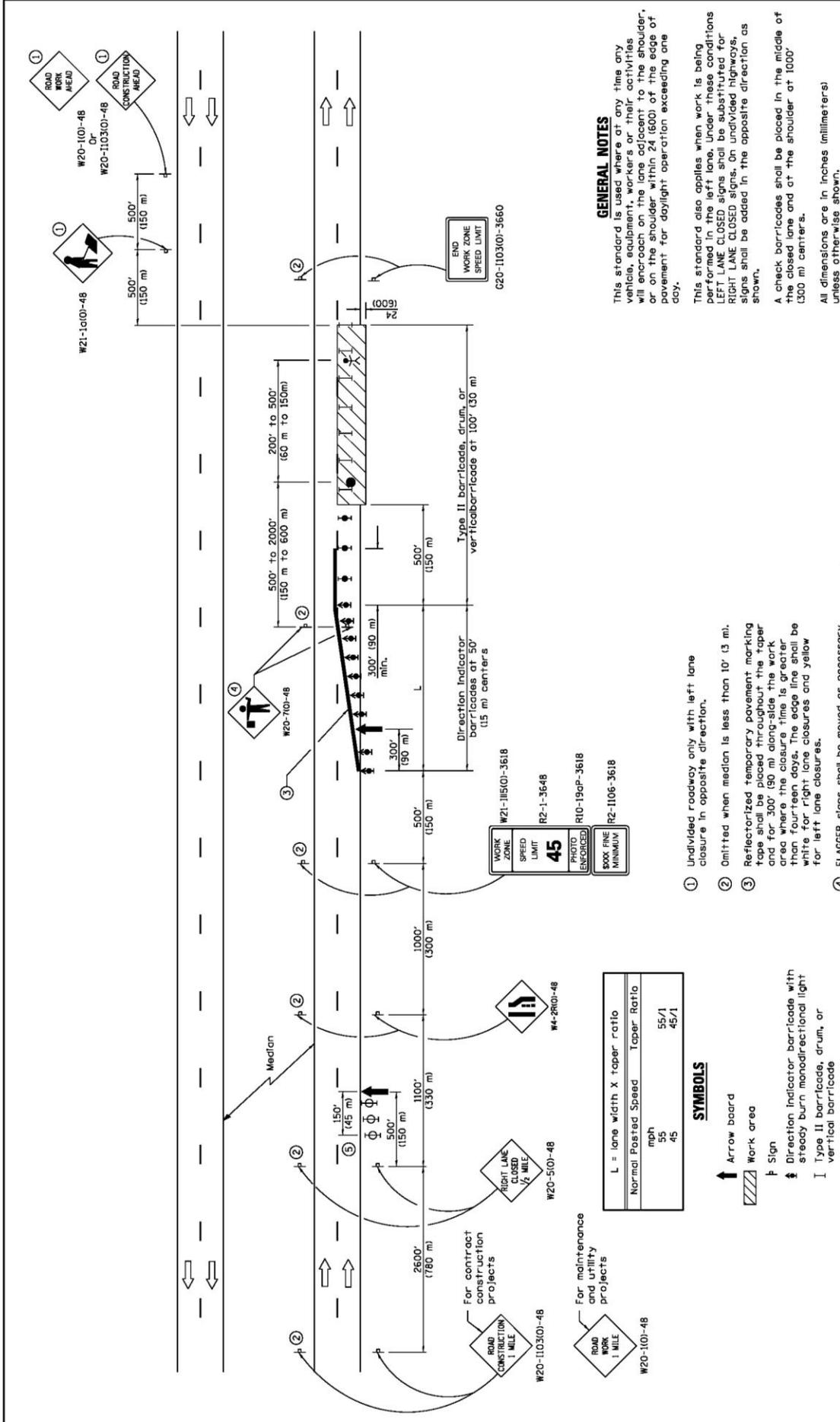
The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]

6. Daylight operations. Lights Required: None. [SS pg. 593 / 701.16]
7. Cold Milling. "ROUGH GROOVED SURFACE" (W8-1107) signs shall be erected when the road has been cold milled and opened to traffic. The signs shall be placed just prior to the cold milling operation and shall remain in place until the milled surface condition no longer exists. These signs shall be erected a minimum of 500 ft (150 m) preceding the start of the milled pavement, just before each major intersection within the milled area, and at other location as directed by the Engineer. The signs shall have an amber flashing lights attached. [SS pg. 594 / 701.17(c)(2)]
8. Pavement Patching. [SS pg. 595-596 / 701.17(e)]
9. Where posted speeds are greater than 40 mph cones shall be a minimum of 28 in. (700 mm) in height. [MUTCD Section 6F.63, Figure 6F-7]

### **General Information:**

1. This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans will be required.

**FOR INFORMATIONAL USE ONLY**



**GENERAL NOTES**

This standard is used where at any time any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 24 (600) of the edge of pavement for daylight operation exceeding one day.

This standard also applies when work is being performed in the left lane. Under these conditions LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs, on undivided highways, signs shall be added in the opposite direction as shown.

A check barricades shall be placed in the middle of the closed lane and at the shoulder at 1000' (300 m) centers.

All dimensions are in inches (millimeters) unless otherwise shown.

**LANE CLOSURE, MULTILANE, FOR SPEEDS ≥ 45 MPH TO 55 MPH**

**STANDARD 701422-05**

DATE	REVISIONS
1-1-13	Modified signages. Added devices of first arrow brd.
	Omitted raised markers.
1-1-12	Corrected work zone speed limit sign numbers.

- Undivided roadway only with left lane closure in opposite direction.
- Omitted when median is less than 10' (3 m).
- Reflectorized temporary pavement marking tape shall be placed throughout the taper and for 300' (90 m) along-side the work area where the closure time is greater than fourteen days. The edge line shall be white for right lane closures and yellow for left lane closures.
- FLAGGER signs shall be moved as necessary to maintain the required spacing between the sign and each separate work activity.
- Three Type II barricades, drums, or vertical barricades at 50' (15 m) centers.

- SYMBOLS**
- ↑ Arrow board
  - ▨ Work area
  - ⊥ Sign
  - ⊥ Direction indicator barricade with steady burn monodirectional light
  - ⊥ Type II barricade, drum, or vertical barricade
  - ⊥ Type II barricade, drum, or vertical barricade with steady burn monodirectional light
  - Flagger with traffic control sign
  - ⚡ Worker
  - ⊕ Type II barricade, drum, or vertical barricade with monodirectional flashing light

L = lane width X taper ratio	Taper Ratio
Normal Posted Speed	mph
	55
	45

For contract construction projects

For maintenance and utility projects

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: [Signature] JANUARY 1, 2013

ENGINEER OF SAFETY ENGINEERING

APPROVED: [Signature] JANUARY 1, 2013

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-1-04

## **Standard 701422**

1. When Standard 701422 is specified for overnight operations, cones may be substituted for barricades or drums at half the spacing during day operations. [SS pg. 600 / 701.18(e)(1)]
2. Multilane Pavement Resurfacing: For the construction of binder course, surface course and shoulder resurfacing on multilane pavements, Standard 701422 shall be used for the beginning of business on Monday to 4:30 p.m. on Friday. Only Standards 701406 and 701421 shall be used from 4:30 p.m. Friday to start of business on Monday. [SS pg. 600 / 701.18(e)(2)]
3. Shoulder Upgrading and Replacement: The following shall apply to shoulder pipe underdrain installation and/or shoulder reconstruction on existing multilane divided highways.

The Contractor shall close the adjacent lane of pavement according to the Standard within the limits of the construction zone.

- a. When required by the contractor's operations; and,
- b. When no workers are present and the difference in elevation between the pavement and the shoulder and/or widening is greater than 12 in. (300 mm).

During shoulder work on ramps, refer to standard 701451.

Standard 701422 will only be measured for payment where the average depth of shoulder reconstruction required by the plans, exclusive of any trench for pipe underdrain installation, is in excess of 3 in. (75 mm). Where such shoulder reconstruction is 3 in. (75 mm) or less, no open trench greater than 3 in. (75 mm) deep will be permitted overnight. If, because of unforeseen circumstances, an open trench greater than 3 in. (75 mm) deep should occur overnight, the Contractor shall, at no additional cost to the Department, close the adjacent traffic lane according to Standard 701422.

Excavations greater than 3 in. (75 mm) in depth between the pavement and shoulder, including any trenches within the shoulder area, shall be restricted to one shoulder in each direction of travel. In addition, shoulder drop-offs greater than 1 ½ in. (40 mm) caused by the Contractor's operations will not be permitted over the winter shutdown.

The Contractor shall schedule the work so the lane closure at any one work area does not exceed five working days. The closure time may be exceeded for conditions beyond the Contractor's control, except if continual and persistent closures in excess of the five working days are made, the Engineer will initiate measures to delay or limit the daily productions of the Contractor's operations.

All debris shall be removed from the shoulder and right-of-way prior to the removal of barricades, drums or vertical panels. [SS pg. 600-601 / 701.18(e)(3)]

## **Standard 701422 - Continued**

### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. The longitudinal placement of the flagger may be increased up to 100 ft. (30 m) from that shown on the plans to improve the visibility of the flagger. [SS pg. 589 / 701.13]
3. One flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic. [SS pg. 589 / 701.13(b)]
4. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
5. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closures(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]

6. Where posted speeds are greater than 40 mph cones shall be a minimum of 28 in. (700 mm) in height. [MUTCD Section 6F.63, Figure 6F-7]

### **General Information:**

1. Equipment, materials, signs, cones, barricades, and drums are to be removed at the completion of the day's operations and the work area opened to traffic.
2. This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans will be required.

**FOR INFORMATIONAL USE ONLY**



## **Standard 701423**

### **Various Specifications:**

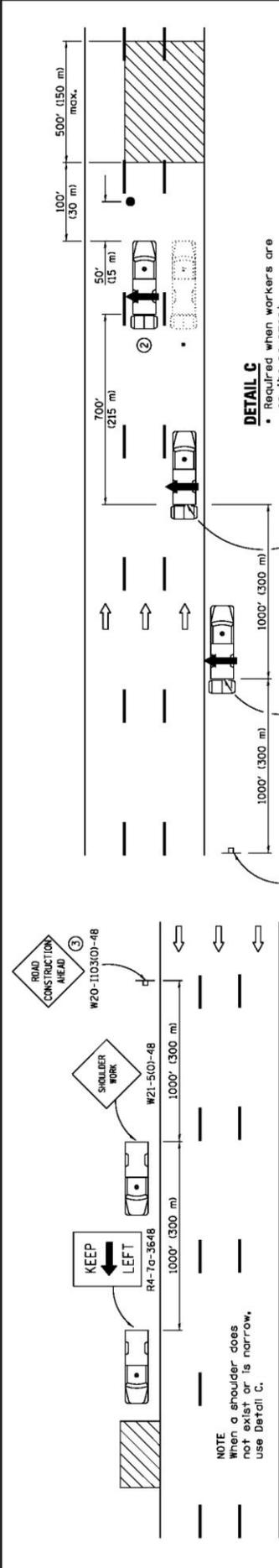
1. All existing pavement markings which conflict with the revised traffic pattern shall be removed according to Section 783. [SS pg. 586 / 701.04]
2. Where the clear width through a work zone with temporary concrete barrier will be 16.0 ft (4.88 m) or less, the Contractor shall notify the Engineer at least 21 days in advance of implementing the traffic control for that restriction. [SS pg. 586 / 701.06]
3. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
4. First two warning signs on each approach to the work involving a nighttime lane closure. Lighting Required: Flashing mono – directional lights. [SS pg. 593 / 701.16]
5. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

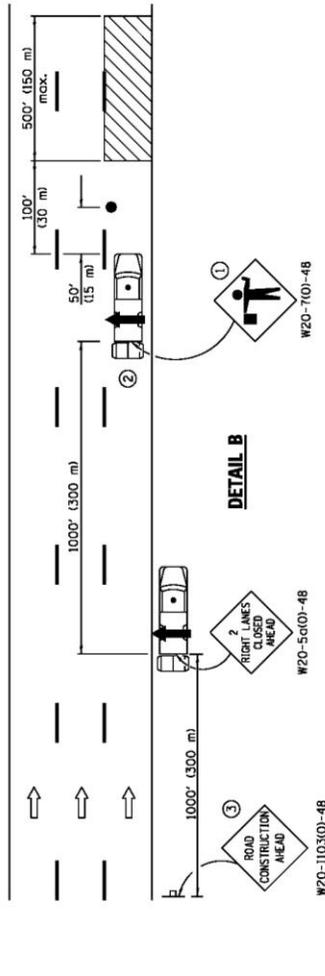
The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closures(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]

**FOR INFORMATIONAL USE ONLY**



**TYPICAL APPLICATIONS**  
 Landscaping work  
 Utility work  
 Pavement marking  
 Weed spraying  
 Roadmeter measurements  
 Debris cleanup  
 Crack pouring



WET PAINT  
 ② (when striping only)  
 ③ (when striping only)

- ① Flaggers are required when workers are on the pavement.
- ② For striping operations only. See sign arrow detail on this standard.
- ③ For stationary operations which are on the roadway or shoulder, greater than 15 minutes and up to 1 hour.

**GENERAL NOTES**

This Standard is used where any vehicle, equipment, workers or their activities will require:  
 1) stationary operations up to 1 hour, or 2) a continuous or intermittent moving operation where the average speed of movement is greater than 1 mph (2 km/h).

This Standard is also applicable when work is being performed in the left lane(s) or on the median shoulder. Under these conditions, KEEP RIGHT signs shall be substituted for KEEP LEFT signs and arrow board indications shall be directed to the right.

All dimensions are in inches (millimeter) unless otherwise shown.

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- Truck with flashing amber light
- Truck mounted attenuator
- Flagger with traffic control sign
- ⊥ Sign

DATE	REVISIONS
1-1-13	Original DETAIL B, Revised detail notes.
1-1-11	Revised one sign.
1-1-11	Revised flagger sign. Shifted dimensioning to back of trucks.

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
 APPROVED: \_\_\_\_\_ 2013  
 SENEGY, J.  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: \_\_\_\_\_ 2013  
 SENEGY, J.  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED: 1-1-97

**LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATIONS FOR SPEEDS > 45 MPH**

**STANDARD 701426-05**

## **Standard 701426**

Truck mounted attenuators will not be required for any vehicle traveling entirely on a completed shoulder. [SS pg. 601 / 701.18(h)]

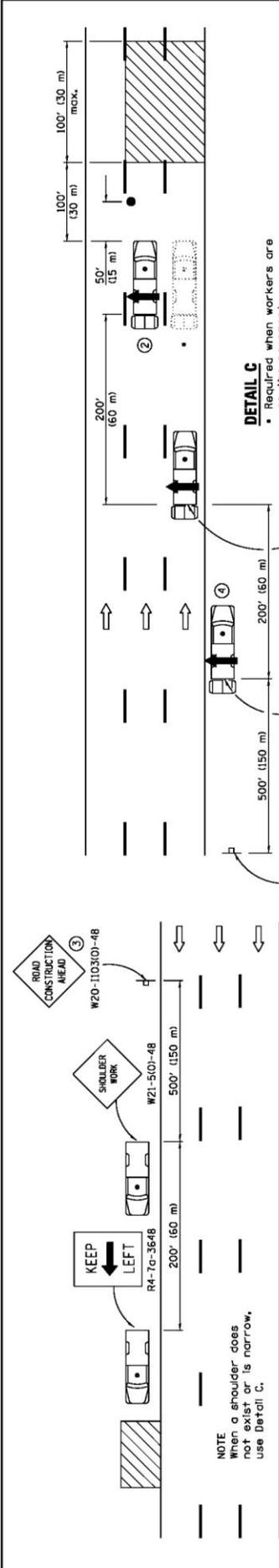
### **Various Specifications:**

1. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
2. Truck Mounted/Trailer Mounted Attenuators (TMA). TMA units shall have a roll ahead distance in the event of an impact. The TMA shall be between 100 and 200 ft (30 and 60 m) behind the vehicle ahead or the workers. This distance may be extended by the Engineer.

TMA host vehicles shall have the parking brake engaged when stationary.

The driver and passengers of the TMA host vehicle should exit the vehicle if the TMA is to remain stationary for 15 minutes or more in duration. [SS pg 591-592 / 701.15(h)]

**FOR INFORMATIONAL USE ONLY**



**NOTE**  
When a shoulder does not exist or is narrow, use Detail C.

**DETAIL A**

**DETAIL B**

**DETAIL C**

• Required when workers are on the pavement.

**TYPICAL APPLICATIONS**

- Landscaping work
- Utility work
- Pavement marking
- Weed spraying
- Roadmeter measurements
- Debris cleanup
- Crack pouring

**WET PAINT**

G20-101-2430 (appropriate arrow)  
③ (when striping only)

**GENERAL NOTES**

This Standard is used where any vehicle, equipment, workers or their activities will require:

- stationary operations up to 1 hour, or
- a continuous or intermittent moving operation where the average speed of movement is greater than 1 mph (2 km/h).

This Standard is also applicable when work is being performed in the left lane(s) or on the median shoulder. Under these conditions, KEEP RIGHT signs shall be substituted for KEEP LEFT signs and arrow board indications shall be directed to the right.

All dimensions are in inches (millimeter) unless otherwise shown.

**SYMBOLS**

- Arrow board
- Work area
- Truck with flashing amber light
- Truck/Trailer mounted attenuator
- Flagger with traffic control sign
- Sign

DATE	REVISIONS
1-1-13	Omitted original DETAIL B.
	Revised detail notes.
	Revised one sign.
1-1-11	New standard.

**LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS ≤ 40 MPH**

**STANDARD 701427-01**

Illinois Department of Transportation  
 APPROVED \_\_\_\_\_ January 11, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED \_\_\_\_\_ January 11, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-11

## **Standard 701427**

Truck mounted attenuators will not be required for any vehicle traveling entirely on a completed shoulder. [SS pg. 601 / 701.18(h)]

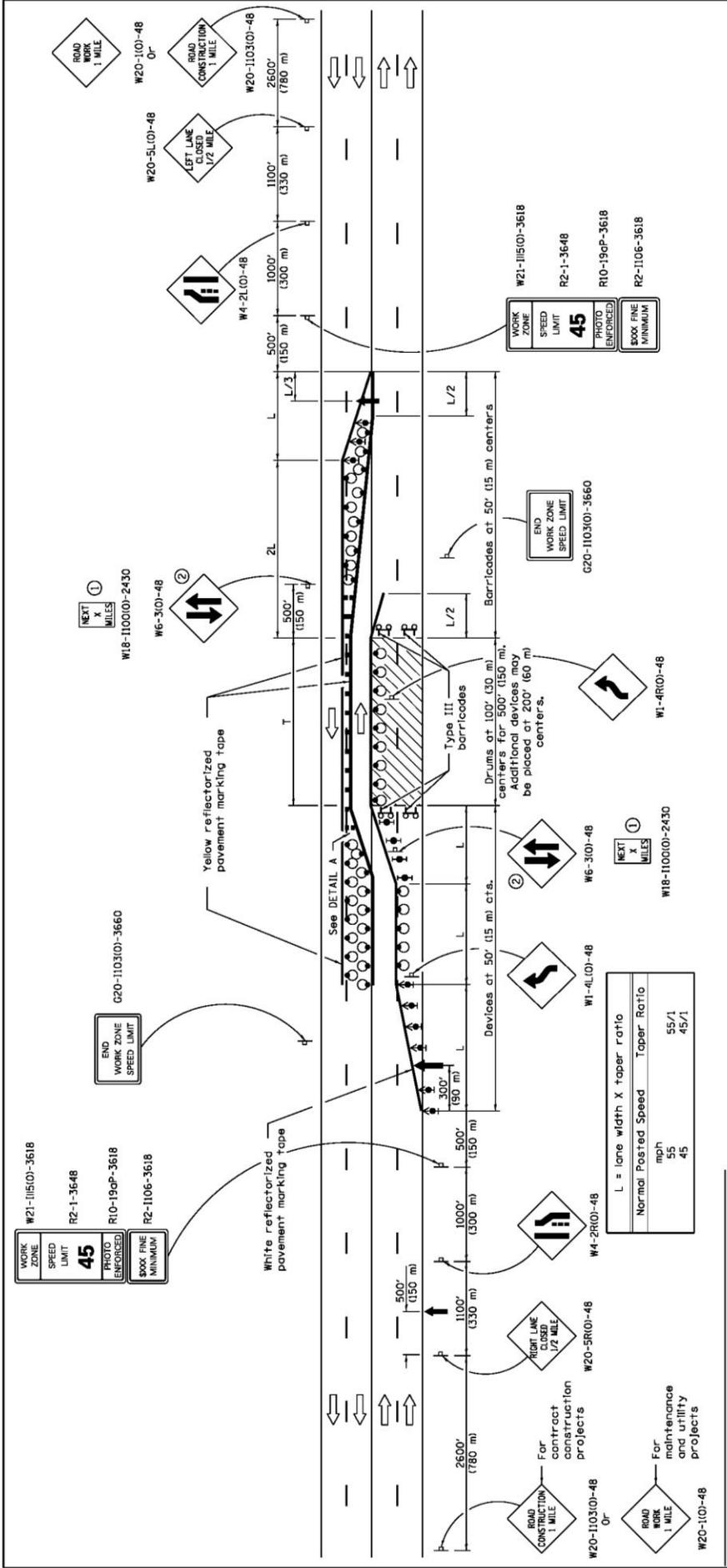
### **Various Specifications:**

1. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 590 / 701.14]
2. Truck Mounted/Trailer Mounted Attenuators (TMA). TMA units shall have a roll ahead distance in the event of an impact. The TMA shall be between 100 and 200 ft (30 and 60 m) behind the vehicle ahead or the workers. This distance may be extended by the Engineer.

TMA host vehicles shall have the parking brake engaged when stationary.

The driver and passengers of the TMA host vehicle should exit the vehicle if the TMA is to remain stationary for 15 minutes or more in duration. [SS pg. 591-592 / 701.15(h)]

**FOR INFORMATIONAL USE ONLY**



**GENERAL NOTES**

This Standard is used where, at any time, any vehicle, equipment, workers or their activities require the closure of two adjacent lanes and a temporary crossover is provided by making use of one lane of pavement normally used by opposing flow of traffic and flexible delineators are used to separate the opposing traffic.

Cones may be substituted for flexible delineators during daytime operations at half the spacing. All dimensions are in inches (millimeters) unless otherwise shown.

**GENERAL NOTES**

① Shall be repeated every 1 mile (1.6 km).  
 ② Shall be repeated every 1 mile (1.6 km) in each direction in the tangent section unless concrete barrier is used.

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- ⊕ Sign
- ⊙ Drum with steady burn monodirectional light
- ⊕ Direction indicator barricade with steady burn monodirectional light
- ⊕ Type II barricade with steady burn monodirectional light
- ⊕ Flexible delineator
- ⊕ Type III barricade with flashing monodirectional lights

**DETAIL A**

Begin flexible delineators where lines are approximately 4' (1.2 m) apart. Flexible delineators at 50' (15 m) centers for the first 250' (75 m) at each end of the tangent and 100' (30 m) centers thereafter.

**TABLE**

Normal Posted Speed	Taper Ratio
55 mph	55/1
45 mph	45/1

L = lane width X taper ratio

**REVISIONS**

DATE	REVISIONS
1-1-13	Replaced BEGINS signs with PHOTO ENFORCED signs.
1-1-12	Corrected work zone speed limit sign numbers.

**LANE CLOSURE, MULTILANE, UNDIV. WITH CROSSOVER, FOR SPEEDS ≥ 45 MPH TO 55 MPH**

**STANDARD 701431-08**

Illinois Department of Transportation  
 APPROVED: *Janet L. 2013*  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: *2013*  
 ENGINEER OF DESIGN AND ENVIRONMENT

## **Standard 701431**

Reflective solid edge lines and a double yellow centerline shall be used when the closure time exceeds four days or when the normal posted speed outside the area of operations exceeds 50 mph. Reflectorized pavement marking tape shall be used for marking the centerline and edge lines on the existing pavement. Raised reflective pavement markers at 25 ft. (8 m) centers shall be installed under good weather conditions to supplement the pavement marking tape. All existing pavement markings which conflict with the revised traffic pattern shall be removed.

Devices no greater than 24 in. (600 mm) wide, maybe used in place of flexible delineators when the two-way operation is to be in place four days or less. [SS pg. 601 / 701.18(g)]

### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be place 500 ft (150 m) beyond the last entrance ramp for each interchange or sideroad.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closures(s) by promptly establishing a reduced posted speed zone when the lane closures(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closures(s).

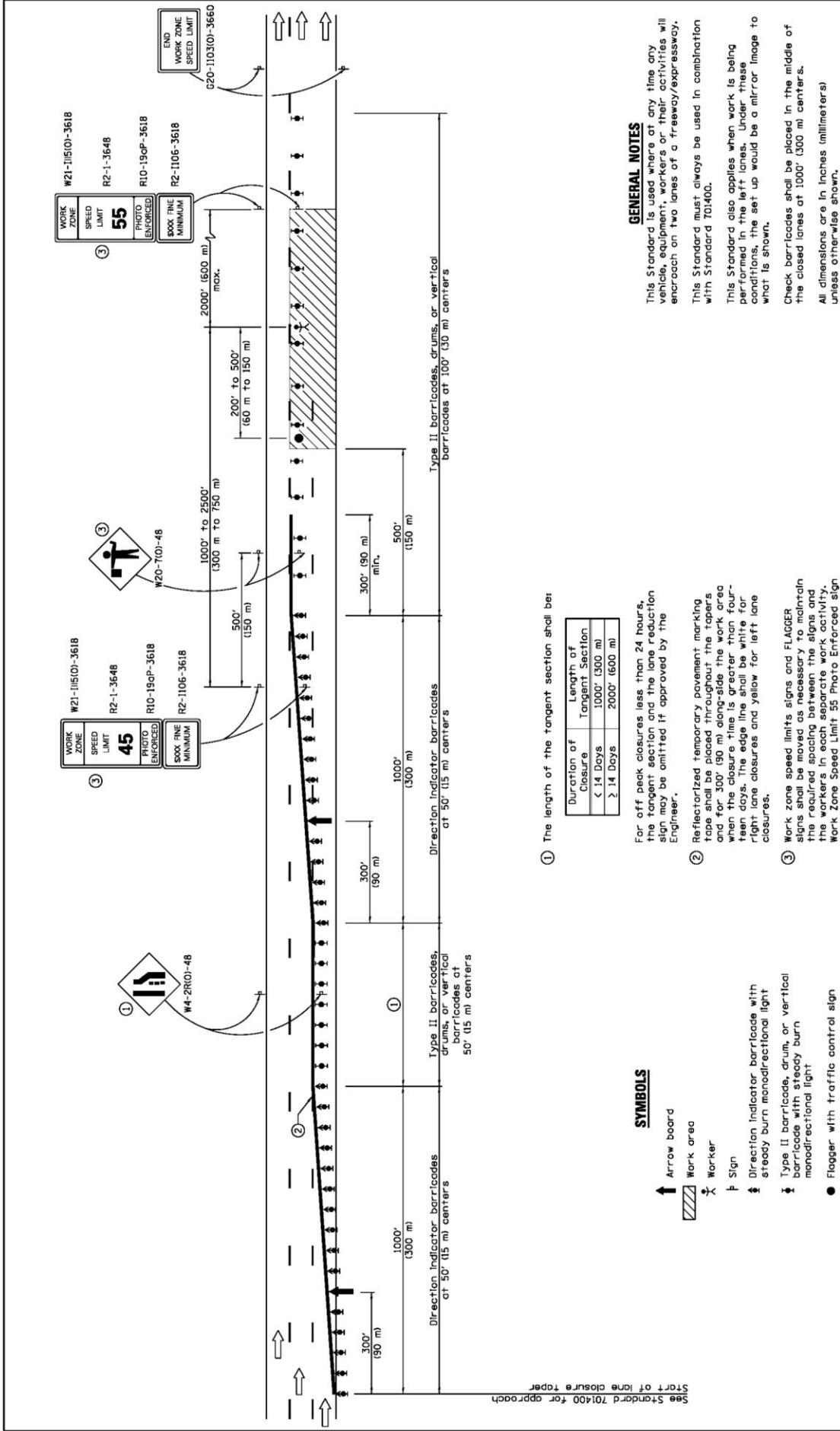
The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall. [SS pg. 590 / 701.14(b)]

3. Daylight operations. Lights Required: None. [SS pg. 593 / 701.16]
4. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 935 / 701.16]
5. Where posted speeds are greater than 40 mph cones shall be a minimum of 28 in. (700 mm) in height. [MUTCD Section 6F.63, Figure 6F-7]

### **General Information:**

1. This case does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans will be required.
2. On long term projects, wing barricades should be considered for the mounting of the first 3 sets of advance warning signs approaching the lane closure.

**FOR INFORMATIONAL USE ONLY**



**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- ⚓ Worker
- ⚠ Sign
- ⚡ Direction Indicator barricade with steady burn monodirectional light
- ⚡ Type II barricade, drum, or vertical barricade with steady burn monodirectional light
- Flagger with traffic control sign

① The length of the tangent section shall be:

Duration of Closure	Length of Tangent Section
< 14 Days	1000' (300 m)
≥ 14 Days	2000' (600 m)

- ② For off peak closures less than 24 hours, the tangent section and the lane reduction sign may be omitted if approved by the Engineer.
- ② ReflectORIZED temporary pavement marking tape shall be placed throughout the tapers and for 300' (90 m) along-side the work area when the closure time is greater than fourteen days. The edge line shall be white for right lane closures and yellow for left lane closures.
- ③ Work zone speed limits signs and FLAGGER signs shall be moved as necessary to maintain the required spacing between the signs and the workers in each separate work activity. Work zone speed limit 35 Photo Enforced signs shall be placed in the work zone. Signs that placement of the sign array within 500' (150 m) of the End Work Zone Speed Limit sign.

**GENERAL NOTES**

This Standard is used where, at any time any vehicle, equipment, workers or their activities will encroach on two lanes of a freeway/expressway, with Standard 701400.

This Standard must always be used in combination with Standard 701400.

This Standard also applies when work is being performed in the left lanes. Under these conditions, the set up would be a mirror image to what is shown.

Check barricades shall be placed in the middle of the closed lanes at 1000' (300 m) centers. All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED \_\_\_\_\_ JANUARY 11, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED \_\_\_\_\_ JANUARY 11, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-05

DATE	REVISIONS
1-1-13	Omit temp. raised pavement markers, Rep. BEGINS/RESUMES signs with PHOTO ENFORCED.
1-1-12	Corrected work zone speed limit sign numbers.

**TWO LANE CLOSURE  
 FREEWAY/EXPRESSWAY**

STANDARD 701446-04

## **Standard 701446**

### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

This Standard is to be used when two lanes are to be closed on a freeway/expressway. Specifications applicable to Standards 701401 shall be applicable to this Standard.

**FOR INFORMATIONAL USE ONLY**



## **Standard 701451**

Only one interchange at a time may have ramps closed and only one exit ramp and one entrance ramp may be closed at a time.

### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
3. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard. [SS pg. 605 / 701.20(h)]

**FOR INFORMATIONAL USE ONLY**

Drums of 25" (7.6 m) cfs.

500' (150 m)

500' (150 m)

500' (150 m)

1500' (460 m)

1:20 taper from edge of ramp to edge of work zone

END ROAD WORK  
G20-2(0)

**PARTIAL EXIT RAMP CLOSURE**

W20-7(0)-48

W5-4(0)-48  
W13-1(0)-2424  
XX MPH

W20-1103(0)-48  
W13-4-1818  
OR  
W20-1103(0)-48  
W13-4-1818

**SYMBOLS**

- ⊥ Sign
- ⊥ Type III barricade
- Drum with steady burning light
- ▨ Work area
- Flogger with traffic control sign

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED: *[Signature]* January 1, 2012  
 ENGINEER OF SURVEILLING  
 APPROVED: *[Signature]* January 1, 2012  
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-12	Changed 'Work zone' to 'Work area' in symbol legend.
1-1-11	Revised 'flogger' sign.

**PARTIAL EXIT RAMP CLOSURE  
 FREEWAY / EXPRESSWAY**

STANDARD 701456-02

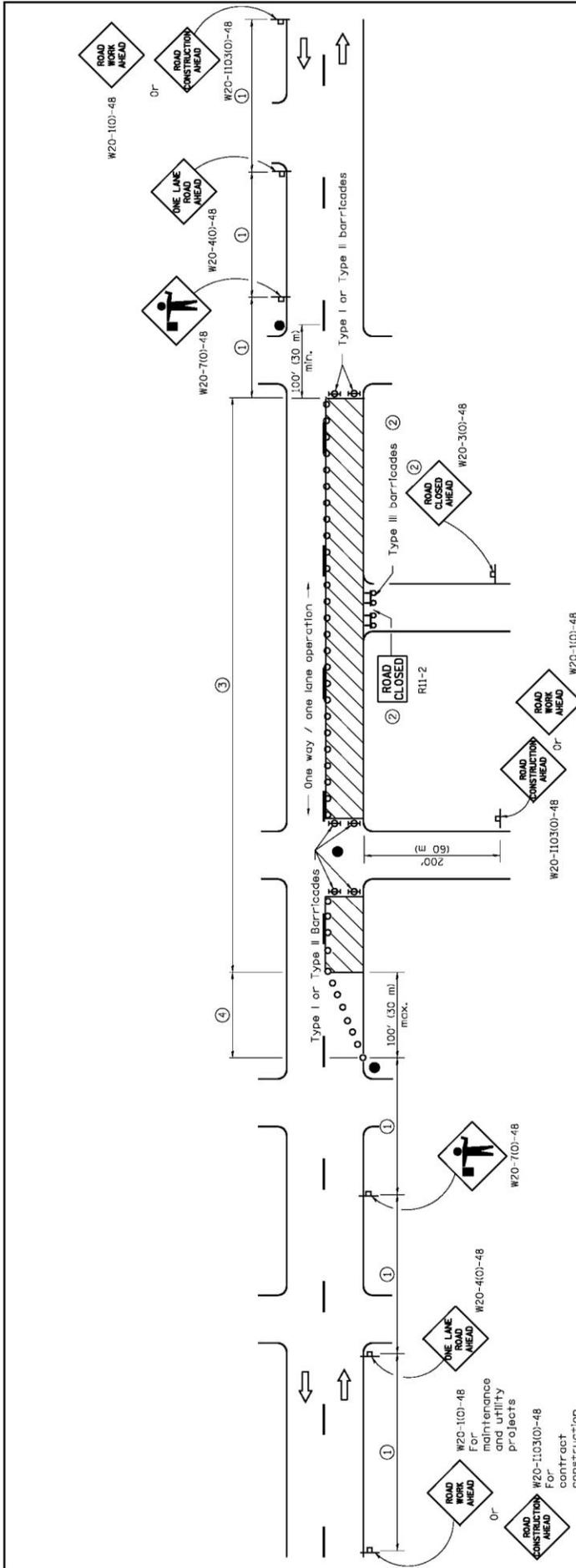
## **Standard 701456**

“Drop-offs at the edge of pavement greater than 1 1/2 in. (40 mm) caused by the Contractor’s operations will be allowed only on one side of the ramp at a time.”

### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. No broken pavement, open holes, or partially filled patches shall remain overnight and all devices shall be removed before dark. [SS pg. 596 / 701.17 (e)(2)b.]
3. Cleaning Up. Prior to opening the pavement to traffic, the entire right-of-way adjacent to the patching operations shall be cleared of all materials caused by the Contractor’s operations, and the backfill along the shoulder edge of the pavement shall be compacted. [SS pg. 596 / 701.17(e)(3)a.]

**FOR INFORMATIONAL USE ONLY**



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

**SYMBOLS**

- Work area
- Cone, drum or barricade (not required for moving operations)
- Sign on portable or permanent support
- Flagger with traffic control sign
- Barricade or drum with flashing light
- Type III barricade with flashing lights

- ① Refer to SIGN SPACING TABLE for distances.
- ② For approved sideroad closures.
- ③ Cones at 25' (8 m) centers for 250' (75 m) additional cones may be placed at 50' (15 m) centers for Type I or Type II barricades or cones. The interval between devices may be doubled.
- ④ Cones, drums or barricades at 20' (6 m) centers.

**GENERAL NOTES**

This Standard is used where, at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

All dimensions are in inches (millimeters) unless otherwise shown.

URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED	
DATE	REVISIONS
1-1-11	Revised "Flagger" sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

Illinois Department of Transportation

APPROVED: *[Signature]* January 1, 2011  
 ENGINEER OF SAFETY ENGINEERING

APPROVED: *[Signature]* January 1, 2011  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED: 1-1-97

## **Standard 701501**

On two-lane/two-way roadways, construction operations shall be confined to one traffic lane leaving the opposite lane open to traffic.

“NO PARKING” signs shall be installed throughout the work area.

When the work area is in the parking lane and parking exists during work hours, “ROAD CONSTRUCTION AHEAD” or “ROAD WORK AHEAD” signs shall be installed 200 ft. (60 m) in advance of the work area and the area shall be delineated with cones and barricades.

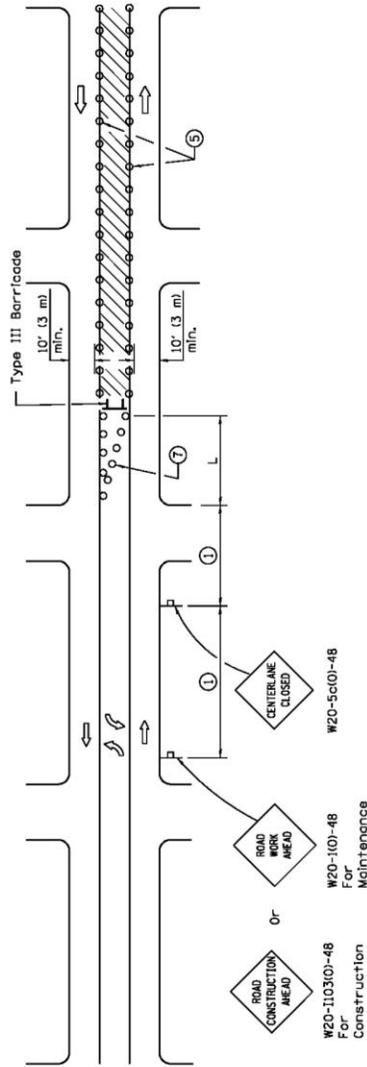
### **Various Specifications:**

1. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies. [SS pg. 589 / 701.13(a)]
2. Flaggers will not be required when no work is being performed, unless there is a lane closure on a two-lane, two-way pavement. [SS pg. 589 / 701.13]
3. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operations. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
4. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
5. Channelizing devices for nighttime lane closures on two-lane roads. Lights Required: Steady burn bi-directional lights. [SS pg. 594 / 701.16]

### **General Information:**

1. In lieu of utilizing flaggers during nonworking hours with one lane closed, one direction of traffic may be detoured over an approved route.
2. When necessary, additional flaggers should be positioned so as to regulate side street traffic.

**FOR INFORMATIONAL USE ONLY**



**CASE I**  
(Signs required for both directions)

Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

- 1 Refer to SIGN SPACING TABLE for distances.
- 2 Required for speeds > 40 mph (70 km/h).
- 3 Required if work exceeds 500' (154 m) or 1 block.
- 4 For speeds exceeding 45 mph (80 km/h) contact the District Operations Office for approval of sign spacing.
- 5 Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 15 m (50') centers. When drums or type I or II barricades are used, the interval between devices may be doubled.
- 6 For approved sidewalk closures.
- 7 Cones, drums or barricades at 20' (6 m) centers in taper.
- 8 Use flagger sign only when flagger is present.

**SYMBOLS**

- Work area
- Barricade or drum with flashing light
- Flagger with traffic control sign
- Cone, drum or barricade (Cones for daytime use only)
- Sign on portable or permanent support

**GENERAL NOTES**

This Standard is used to close one lane of an urban, two lane, two way roadway with a bidirectional turn lane.

Case I applies when no workers are present. When workers are present, two lanes shall be closed and traffic control shall be according to Standard 701501.

Calculate L as follows:

SPEED LIMIT	FORMULAS
40 mph (70 km/h) or less:	English (Metric) $L = \frac{WS^2}{60}$ $L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$ $L = 0.65(W)(S)$

W = Width of offset, in feet (meters).  
S = Normal posted speed, in feet (meters).

All dimensions are in inches (millimeters) unless otherwise shown.

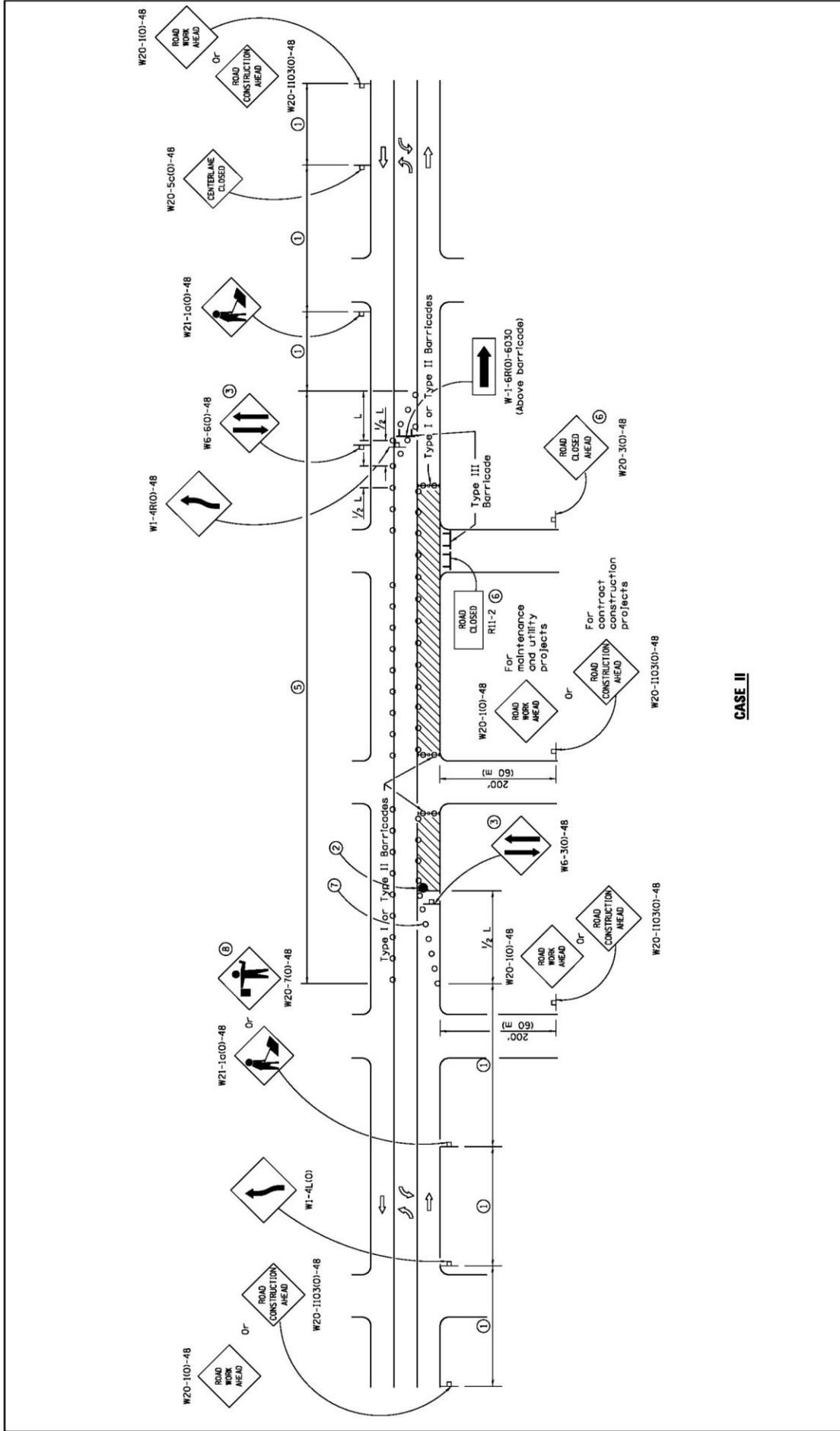
DATE	REVISIONS
1-1-13	Omitted text: 'WORKERS' sign.
1-1-11	Omitted arrow board from SYMBOL legend. Revised flagger sign. Added note 8.

**URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE**

STANDARD 701502-05  
(Sheet 1 of 2)

Illinois Department of Transportation  
 APPROVED January 1, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED January 1, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-01



**URBAN LANE CLOSURE,  
2L, 2W, WITH BIDIRECTIONAL  
LEFT TURN LANE**  
(Sheet 2 of 2)

STANDARD 701502-05

**CASE II**

	ISSUED 1-1-01
	APPROVED JANEVY L. [Signature] ENGINEER OF SAFETY ENGINEERING JANUARY 1, 2013
	APPROVED [Signature] ENGINEER OF DESIGN AND ENVIRONMENT
	APPROVED JANEVY L. [Signature] ENGINEER OF SAFETY ENGINEERING JANUARY 1, 2013

## **Standard 701502**

“NO PARKING” signs shall be installed throughout the work area.

When the work area is in the parking lane and parking exists during work hours, “ROAD CONSTRUCTION AHEAD” and “ROAD WORK AHEAD” signs shall be installed 200 ft. (60 m) in advance of the work area and the area shall be delineated with cones or barricades.

Reflectorized temporary pavement marking tape shall be placed throughout the taper and along side the adjacent work area where the closure time exceeds 14 days. The edge line shall be yellow for left lane closures. [SS pg. 602 / 701.18(j)(1)]

### **Various Specifications:**

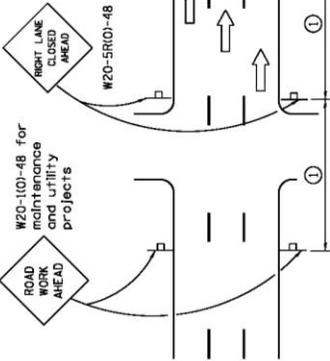
1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies. [SS pg. 589 / 701.13(a)]
3. Flaggers will not be required when no work is being performed, unless there is a lane closure on two-lane, two-way pavement. [SS pg. 589 / 701.13]
4. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
5. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
6. Channelizing devices for nighttime lane closures on multi-lane roads. Lights Required: Steady burn mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

When necessary, additional flaggers should be positioned so as to regulate side street traffic.

Case I only applies when no workers are present. When workers are present, Standard 701501 shall be used.

**FOR INFORMATIONAL USE ONLY**



Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

**SYMBOLS**

- ↑ Arrow board
- Cone, drum or barricade
- ⊥ Sign on portable or permanent support
- ▨ Work area
- ⊕ Barricade or drum with flashing light
- ⊕ Type III barricade with flashing lights
- Flagger with traffic control sign.

- ① Refer to SIGN SPACING TABLE for distances.
- ② Required for speeds > 40 MPH
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Use flagger sign only when flagger is present.
- ⑤ For approved sideroad closures.
- ⑥ Cones, drums or barricades at 20' (6 m) in taper.

**GENERAL NOTES**

This Standard is used where, at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in urban areas.

Calculate L as follows:

SPEED LIMIT	FORMULAS
40 mph (70 km/h) or less;	English (Metric) L = WS/2 (L = WS/2)
45 mph (80 km/h) or greater;	L = (W)(S) (L = 0.65(W)(S))

W = Width of offset  
in feet (meters).

S = Normal posted speed  
mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-13	Omitted text: 'WORKERS' sign.
1-1-11	Revised Flagger sign.

**URBAN LANE CLOSURE,  
MULTILANE, 1W OR 2W WITH  
NONTRAVERSABLE MEDIAN**  
(Sheet 1 of 2)

STANDARD 701601-08

Jilnole Department of Transportation

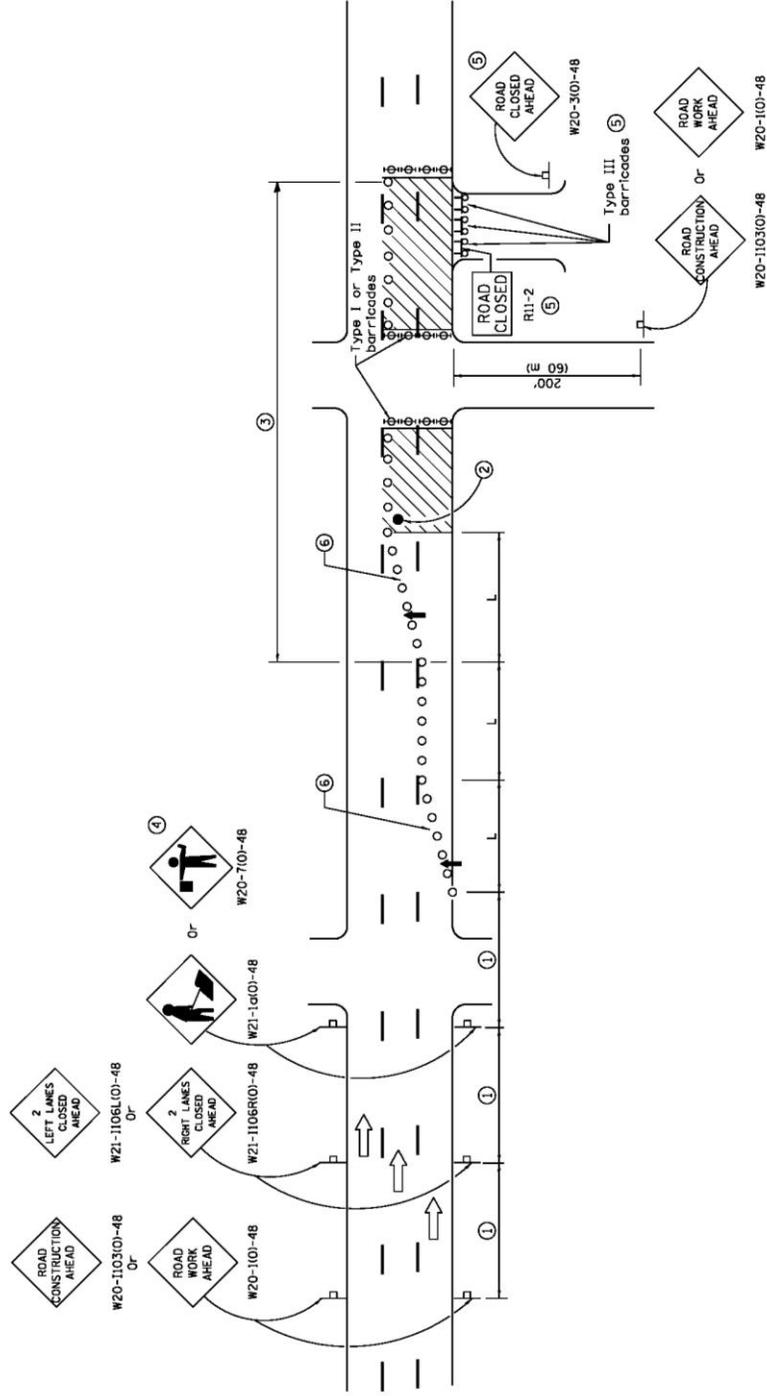
APPROVED: *[Signature]* January 1, 2013  
ENGINEER OF SAFETY ENGINEERING

ISSUED: 1-1-97

APPROVED: *[Signature]* January 1, 2013  
ENGINEER OF DESIGN AND ENVIRONMENT

**URBAN LANE CLOSURE,  
MULTILANE, 1W OR 2W WITH  
NONTRAVERSABLE MEDIUM**  
(Sheet 2 of 2)

STANDARD 701601-08



Illinois Department of Transportation  
 APPROVED: \_\_\_\_\_ JUNE 11, 2013  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED: \_\_\_\_\_ JUNE 11, 2013  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701601**

“NO PARKING” signs shall be installed throughout the work area.

When the work area is in the parking lane and parking exists during work hours, “ROAD CONSTRUCTION AHEAD” or “ROAD WORK AHEAD” signs shall be installed 200 ft. (60 m) in advance of the work area and the area shall be delineated with cones or barricades.

Reflectorized temporary pavement marking tape shall be placed throughout the taper and along side the adjacent work area where the closure time exceeds 14 days. The edge line shall be yellow for left lane closures. [SS pg. 602 / 701.18(j)(1)]

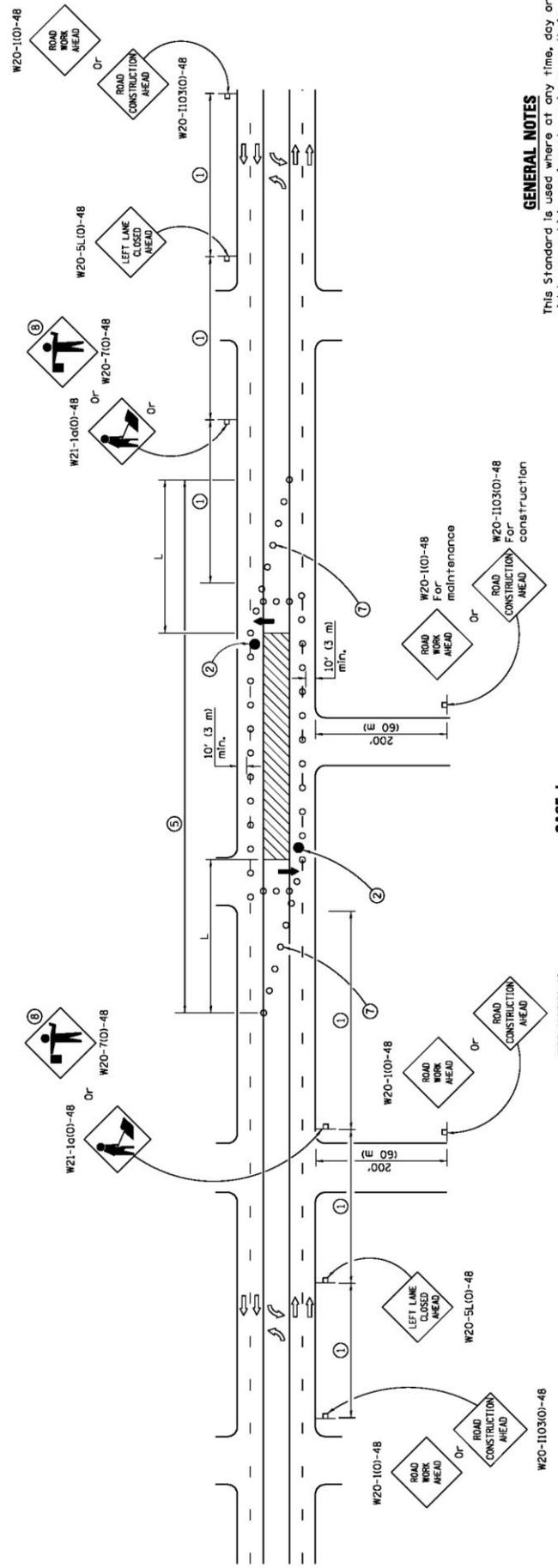
### **Various Specifications:**

1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
2. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
3. Channelizing devices for nighttime lane closures on multi-lane roads. Lights Required: Steady burn mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans approved by the Engineer will be required.

**FOR INFORMATIONAL USE ONLY**



**CASE I**

- 1 Refer to SIGN SPACING TABLE for distances.
- 2 Required for speeds > 40 mph (70 km/h).
- 3 Required if work exceeds 500' (152 m) or 1 block, repeat every 1 mile (1.6 km).
- 4 For speeds exceeding 45 mph (80 km/h) contact the District Operations Office for approval of sign spacing.
- 5 Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or type I or II barricades are used, the interval between devices may be doubled.
- 6 For approved sidewalk closures.
- 7 Cones, drums or barricades at 20' (6 m) centers in taper.
- 8 Use flagger sign only when flagger is present.

**SYMBOLS**

- ↑ Arrow board
- ▨ Work area
- Barricade or drum with steady burning multidirectional light
- Flagger with traffic control sign
- Cone, drum or barricade (Cones for daytime use only)
- ▬ Sign on portable or permanent support
- ┌ Type III Barricade

Posted Speed	Sign Spacing
55 (4)	500' (150 m)
50-45 (4)	350' (100 m)
<45	200' (60 m)

**GENERAL NOTES**

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an Urban area.

If the work operation is performed between 9:00 a.m. and 3:00 p.m. and does not exceed 15 min. traffic protection shall be as shown for Standard 70142b.

Calculate L as follows:

**SPEED LIMIT**

English	Metric
40 mph (70 km/h)	$L = \frac{WS^2}{60}$
45 mph (80 km/h)	$L = \frac{WS^2}{60}$
or greater:	$L = 0.65(W/S)$

W = Width of offset in feet (meters).  
 S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

**URBAN LANE CLOSURE, MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE**

STANDARD 701602-06 (Sheet 1 of 4)

DATE	REVISIONS
1-1-13	Omitted text 'WORKERS' sign.
1-1-11	Revised flagger sign.
	Added note 6.

Illinois Department of Transportation

APPROVED: *[Signature]* JANUARY 1, 2013

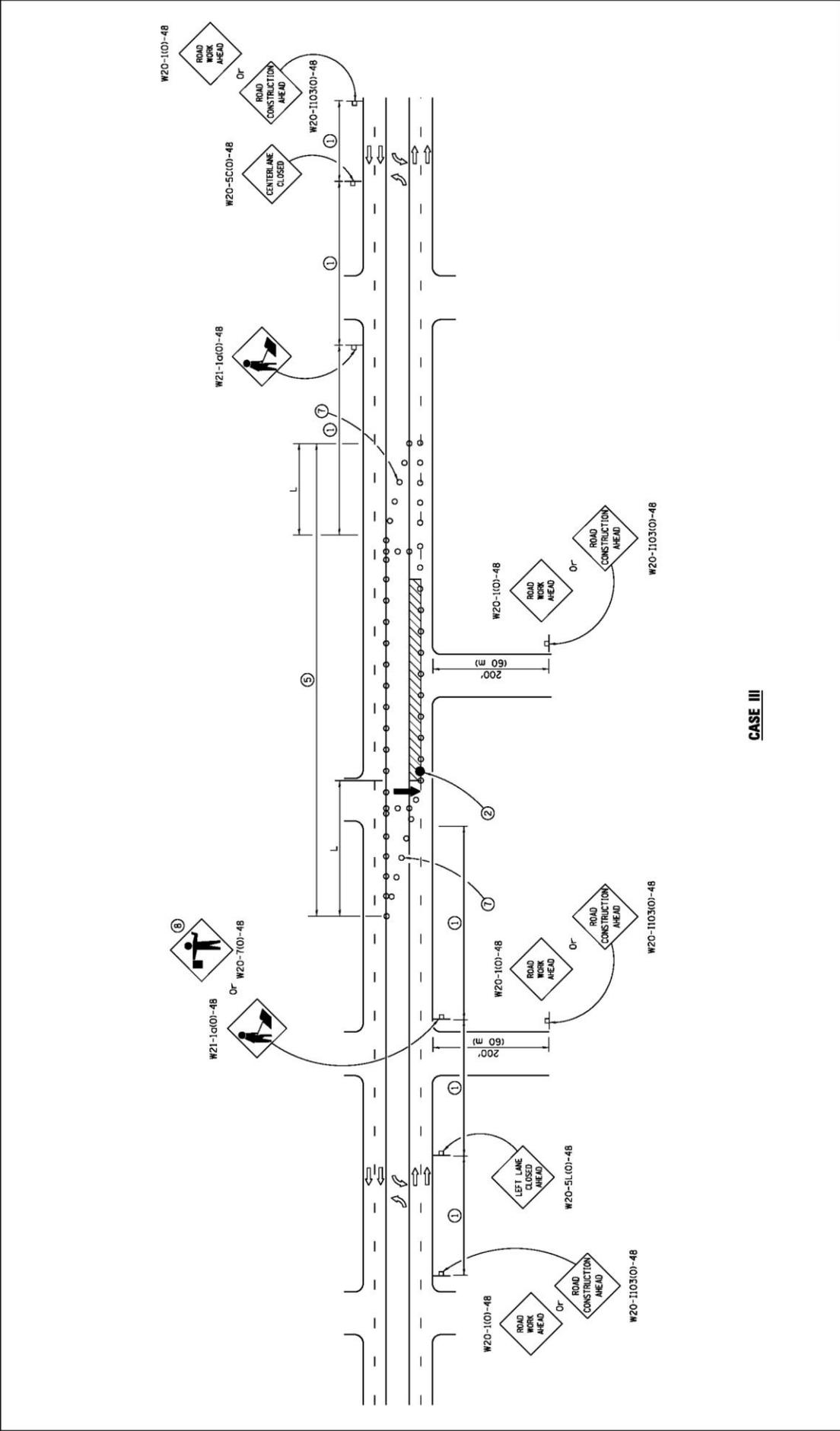
ENGINEER OF SAFETY ENGINEERING

APPROVED: *[Signature]* JANUARY 1, 2013

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-01





**CASE III**

**URBAN LANE CLOSURE,  
MULTILANE, 2W WITH  
BIDIRECTIONAL LEFT TURN LANE**  
(Sheet 3 of 4)

STANDARD 701602-06

	APPROVED	JANUARY 1, 2013	ISSUED	1-1-01
	ENGINEER	<i>[Signature]</i>	OF SAFETY ENGINEERING	
	APPROVED	JANUARY 1, 2013		
	ENGINEER OF DESIGN AND ENVIRONMENT	<i>[Signature]</i>		



## **Standard 701602**

“NO PARKING” signs shall be installed throughout the work area.

When the work area is in the parking lane and parking exists during work hours, “ROAD CONSTRUCTION AHEAD” or “ROAD WORK AHEAD” signs shall be installed 200 ft. (60 m) in advance of the work area and the area shall be delineated with cones or barricades.

Reflectorized temporary pavement marking tape shall be placed throughout the taper and along side the adjacent work area where the closure time exceeds 14 days. The edge line shall be yellow for left lane closures. [SS pg. 602 / 701.18(j)(1)]

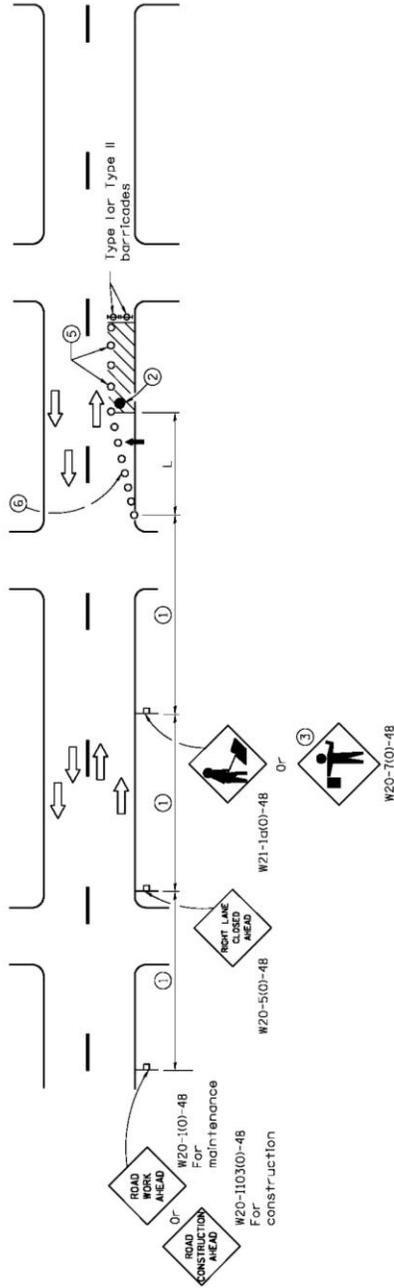
### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of motorists. [SS pg. 586 / 701.04]
2. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
3. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
4. Channelizing devices for nighttime lane closures on multi-lane roads. Lights Required: Steady burn mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

When necessary, additional flaggers should be positioned so as to regulate side street traffic.

**FOR INFORMATIONAL USE ONLY**



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

**SYMBOLS**

- ↑ Arrow board
- Cone, drum or barricade
- ⊥ Sign on portable or permanent support
- ▨ Work area
- ⊕ Barricade or drum with flashing light
- ⊕ Type III barricade with flashing lights
- Flagger with traffic control sign.

- 1 Refer to SIGN SPACING TABLE for distances.
- 2 Required for speeds > 40 mph.
- 3 Use flagger sign only when flagger is present.
- 4 For approved staggered closures.
- 5 Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- 6 Cones, drums or barricades at 20' (6 m) centers in taper.
- 7 Repeat every 1 mile (1.6 km).

**GENERAL NOTES**

This Standard is used where, at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one or more traffic lanes in an Urban area.

Calculate L as follows:

SPEED LIMIT	FORMULAS
40 mph (70 km/h) or less	English L = WS <sup>2</sup> / 60 Metric L = WS <sup>2</sup> / 150
45 mph (80 km/h) or greater	L = (WIS) / 0.65 L = (0.65WIS)

W = Width of offset  
in feet (meters).  
S = Normal posted speed  
in mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-12	Corrected dimension in note 6. Omitted W21-1110 sign. Added W1-6R sign.
1-1-11	Revised flagger sign.

**URBAN LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN**  
(Sheet 1 of 2)

STANDARD 701606-08

Jillmore Department of Transportation

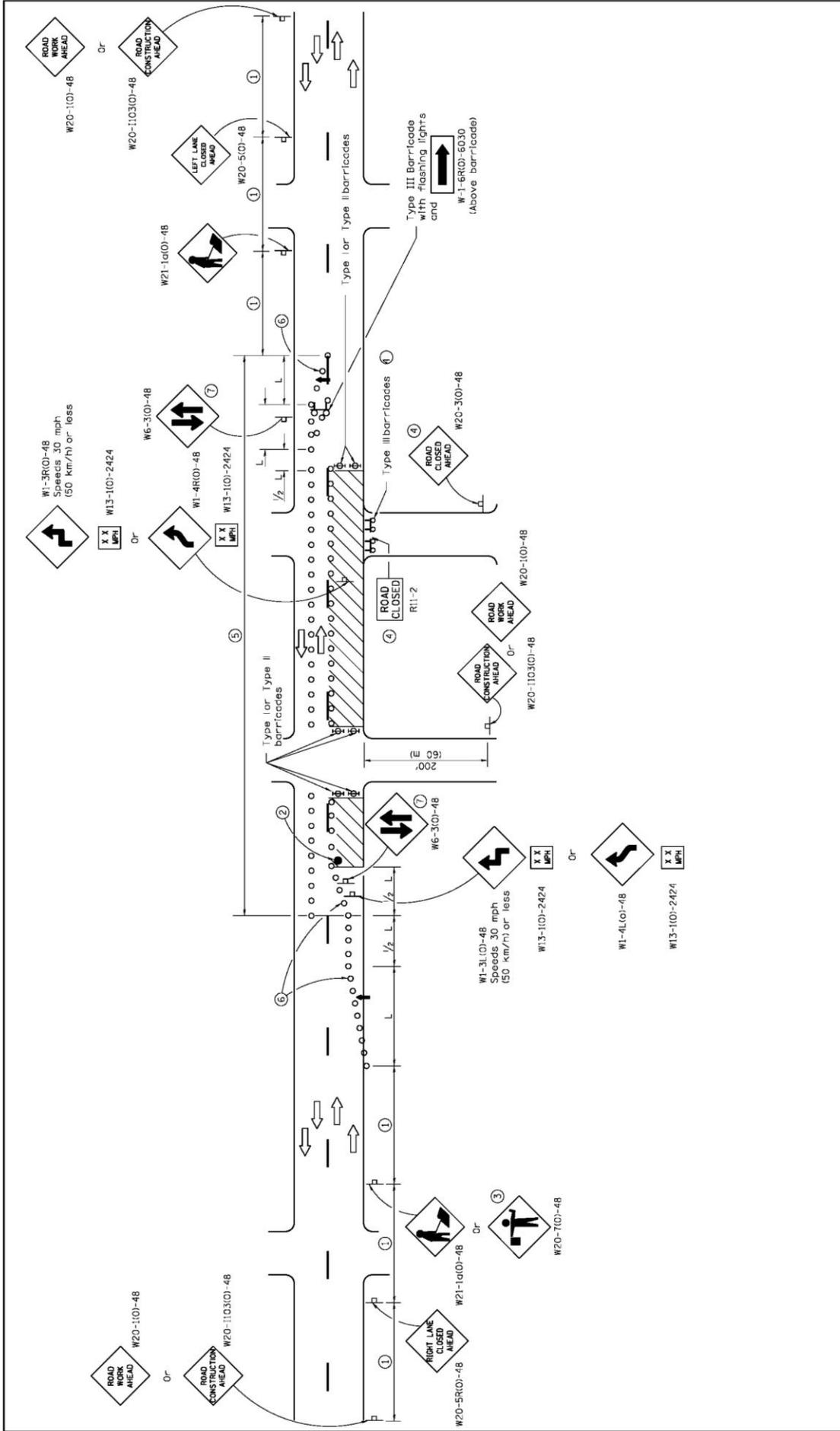
APPROVED: *[Signature]* JANUARY 1, 2012  
ENGINEER OF SAFETY ENGINEERING

APPROVED: *[Signature]* JANUARY 1, 2012  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**URBAN LANE CLOSURE,  
MULTILANE, 2W WITH  
MOUNTABLE MEDIAN**  
(Sheet 2 of 2)

**STANDARD 701606-08**



Illinois Department of Transportation

APPROVED January 1, 2012

ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2012

ENGINEER, DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701606**

Reflective pavement markings shall be used when the closure time exceeds four days. The double yellow centerline shall be used in the two-way traffic area in addition to barricades or drums. Single yellow left edge line shall be used to outline the barricade island. White right edge line shall be used along the barricades delineating the work area. [SS pg. 602 / 701.18(j)(3)]

“NO PARKING” signs shall be installed throughout the work area.

When the work area is in the parking lane and parking exists during work hours, “ROAD CONSTRUCTION AHEAD” or “ROAD WORK AHEAD” signs shall be installed 200 ft. (60 m) in advance of the work area and the area shall be delineated with cones or barricades.

Reflectorized temporary pavement marking tape shall be placed throughout the taper and along side the adjacent work area where the closure time exceeds 14 days. The edge line shall be yellow for left lane closures. [SS pg. 602 / 701.18(j)(1)]

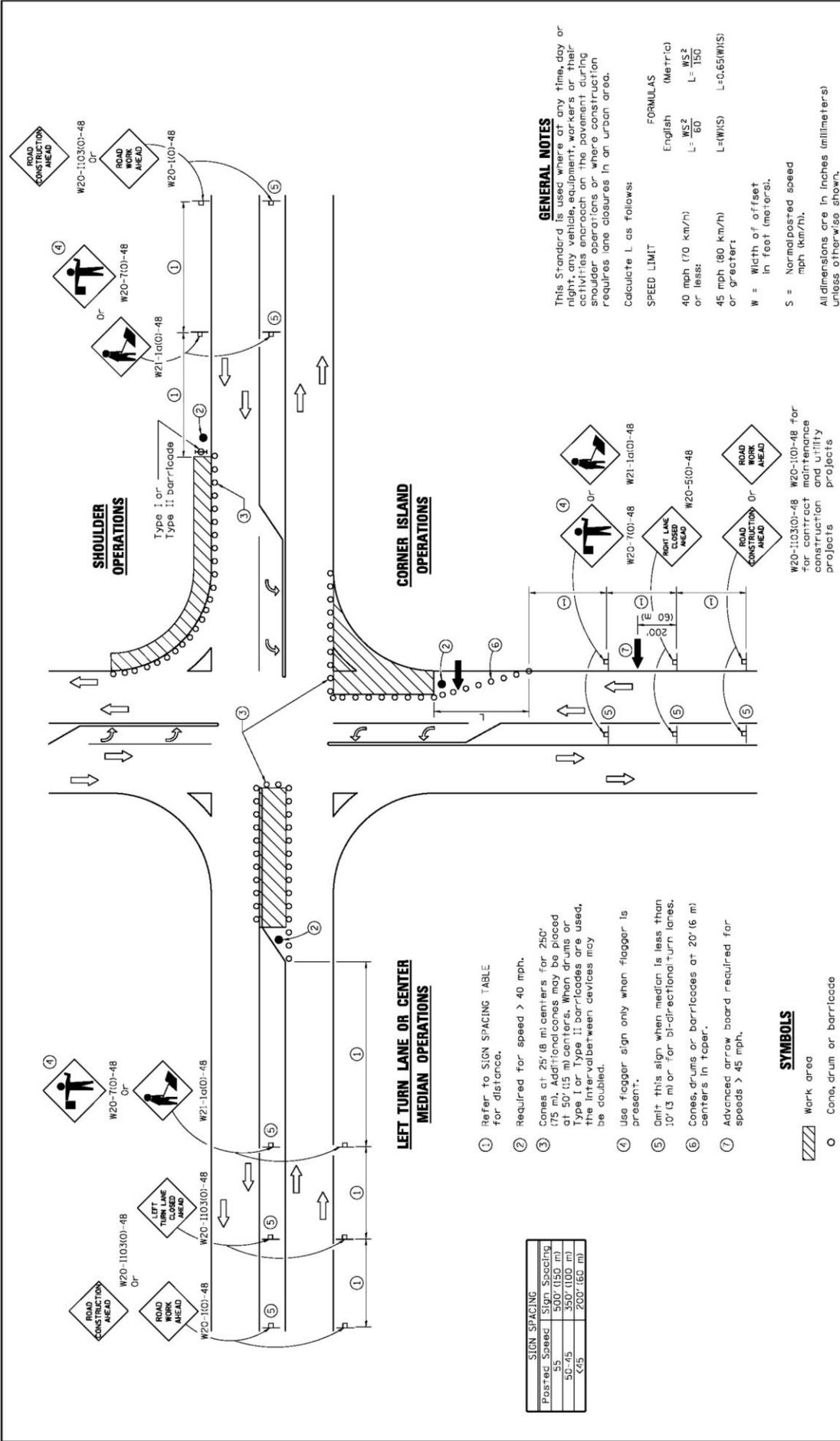
### **Various Specifications:**

1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of the motorists. [SS pg. 586 / 701.04]
2. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
3. First two warning signs on each approach to the work involving a nighttime lane closure. Light Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
4. Channeling devices for nighttime lane closures on multi-lane roads. Lights Required: Steady burn mono-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

This standard does not apply when work is being performed in the middle lane(s) of a six or more lane highway. Special plans approved by the Engineer will be required.

**FOR INFORMATIONAL USE ONLY**



POSTED SPEED	SIGN SPACING
≤ 45	250' (75 m)
50-45	350' (100 m)
≥ 45	200' (60 m)

- 1 Refer to SIGN SPACING TABLE for distance.
- 2 Required for speed > 40 mph.
- 3 Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- 4 Use flagger sign only when flagger is present.
- 5 Omit this sign when median is less than 10' (3 m) or for bi-directional turn lanes.
- 6 Cones, drums or barricades at 20' (6 m) centers in taper.
- 7 Advanced arrow board required for speeds > 45 mph.

**SYMBOLS**

- Work area
- Cone, drum or barricade
- Sign on portable or permanent support
- Arrow board
- Barricade or drum with flashing light
- Flagger with traffic control sign

**GENERAL NOTES**  
 This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in an urban area.

Calculate L as follows:

SPEED LIMIT	FORMULAS
40 mph (70 km/h) or less:	English (Metric) $L = \frac{WS^2}{60}$ $L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$ $L = 0.65(W)(S)$

W = Width of offset in feet (meters).

S = Normal posted speed in mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-12	Revised flagger sign.
	Omitted W21-1110 sign.
1-1-11	Added advanced arrow board and note 7.

**URBAN LANE CLOSURE, MULTILANE INTERSECTION**

STANDARD 701701-08

Illinois Department of Transportation  
 APPROVED January 1, 2012  
 ENGINEER OF SAFETY ENGINEERING  
 APPROVED January 1, 2012  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

## **Standard 701701**

“NO PARKING” signs shall be installed throughout the work area.

When the work area is in the parking lane and parking exists during work hours, “ROAD CONSTRUCTION AHEAD” or “ROAD WORK AHEAD” signs shall be installed 200 ft. (60 m) in advance of the work area and the area shall be delineated with cones or barricades.

Reflectorized temporary pavement marking tape shall be placed throughout the taper and along side the adjacent work area where the closure time exceeds 14 days. The edge line shall be yellow for left lane closures. [SS pg. 602 / 701.18(j)(1)]

### **Various Specifications:**

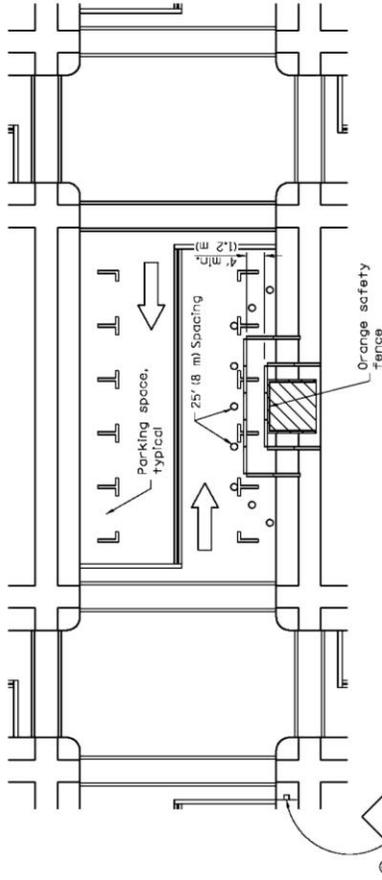
1. The traffic control shall remain in place only as long as needed and shall be removed when directed by the Engineer. Signs that do not apply to current conditions shall be removed, covered, or turned from the view of the motorists. [SS pg. 586 / 701.04]
2. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. ... Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer. [SS pg. 589 / 701.14]
3. First two warning signs on each approach to the work involving a nighttime lane closure. Lights Required: Flashing mono-directional lights. [SS pg. 593 / 701.16]
4. Channelizing devices for nighttime lane closures on two-lane roads. Lights Required: Steady burn bi-directional lights. [SS pg. 593 / 701.16]

### **General Information:**

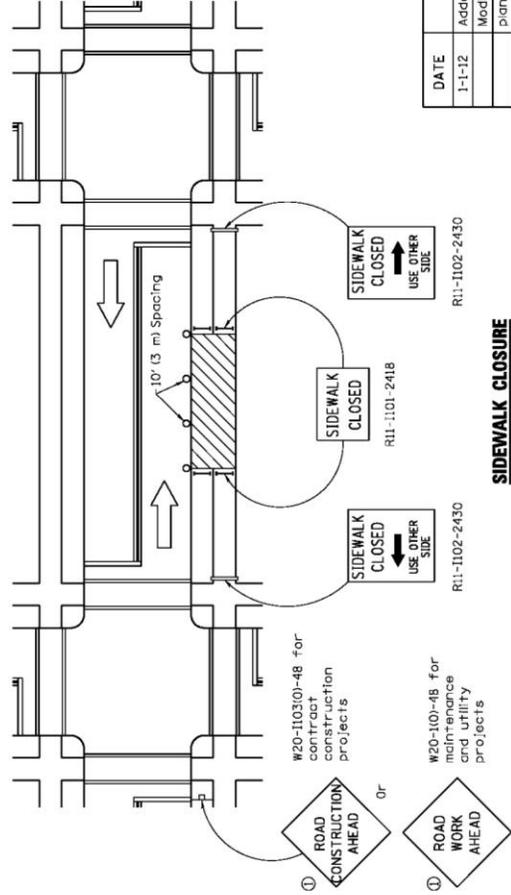
When the median is less than 10 ft. (3.0 m), signing shall be relocated to a corresponding position on the shoulder.

**FOR INFORMATIONAL USE ONLY**

① Omit whenever duplicated by road work traffic control.



**SIDEWALK DIVERSION**



**SIDEWALK CLOSURE**

**SYMBOLS**

- Work area
- Sign on portable or permanent support
- Barricade or drum
- Cone, drum or barricade
- Type II barricade
- Detectable pedestrian channelizing barricade

**GENERAL NOTES**

This Standard is used where, at any time, pedestrian traffic must be rerouted due to work being performed.

This Standard must be used in conjunction with other Traffic Control & Protection Standards when roadway traffic is affected.

Temporary facilities shall be detectable and accessible.

The temporary pedestrian facilities shall be provided on the same side of the closed facilities whenever possible.

The SIDEWALK CLOSED / USE OTHER SIDE sign shall be placed at the nearest crosswalk or intersection to each end of the closure. Where the closure occurs at a corner, the signs shall be erected on the corners across the street from the closure. The SIDEWALK CLOSED signs shall be used at the ends of the actual closures.

Type III barricades and R11-2-4830 signs shall be positioned as shown in "ROAD CLOSED TO ALL TRAFFIC" definition Standard 701901.

All dimensions are in inches (millimeters) unless otherwise shown.

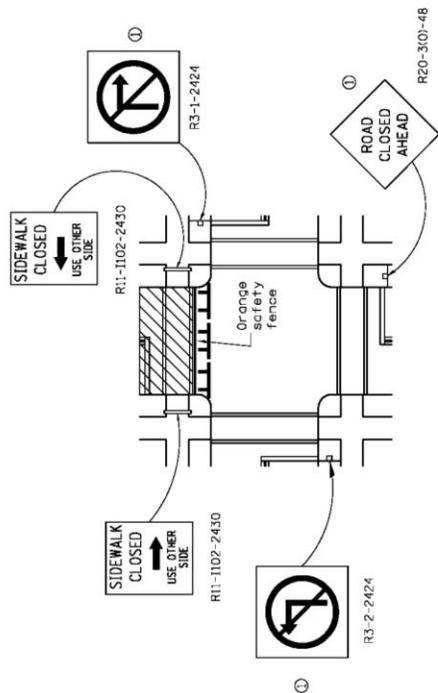
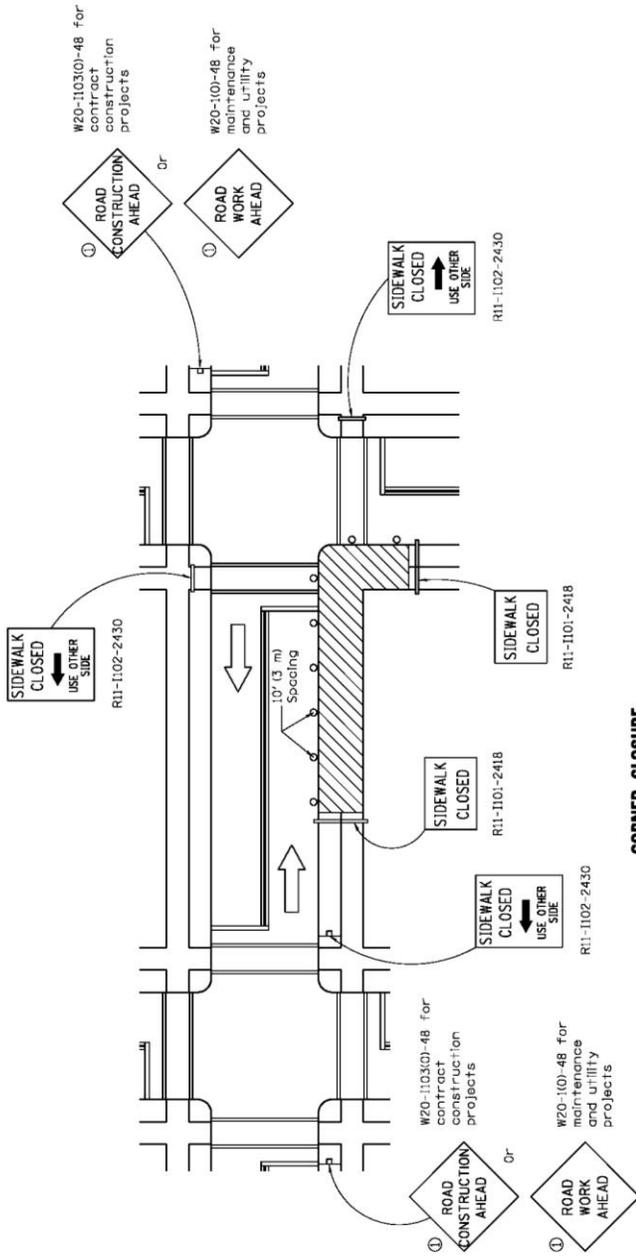
DATE	REVISIONS
1-1-12	Added SIDEWALK DIVERSION, Modified appearance of plan views, Renamed Std.
1-1-09	Switched units to English (metric), 702001 to 701901.

**SIDEWALK, CORNER OR CROSSWALK CLOSURE**

(Sheet 1 of 2)

**STANDARD 701801-05**

Illinois Department of Transportation  
 APPROVED January 1, 2012  
 ENGINEER OF SURVEYING  
 APPROVED January 1, 2012  
 ENGINEER OF DESIGN AND ENVIRONMENT  
 ISSUED 1-1-97



Illinois Department of Transportation

APPROVER: *[Signature]* JANUARY 11, 2012

ENGINEER OF SAFETY ENGINEERING

APPROVED: *[Signature]* JANUARY 11, 2012

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**SIDEWALK, CORNER OR CROSSWALK CLOSURE**

(Sheet 2 of 2)

**STANDARD 701801-05**

## **Standard 701801**

“NO PARKING” signs shall be installed throughout the work area. [SS pg. 602 / 701,18(j)(1)]

Where a temporary walkway encroaches on an existing parking lane, the lane shall be closed with cones, barricades, or drums.

Where a temporary walkway encroaches on a travel lane, the lane shall be closed according to Standards 701501, 701601, 701606.

All walkways shall be clearly identified, protected from motor vehicle traffic and free of any obstructions and hazards, such as holes, debris, construction equipment, and stored materials.

All hazards near or adjacent to walkways shall be clearly delineated.

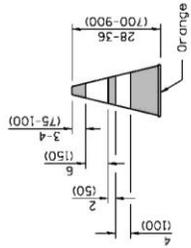
When barricades are impractical to use or do not provide enough protection, orange safety fence shall be used to close off an area, with the approval of the Engineer.

[SS pg. 602 / 701.18(j)(4)]

### **Various Specifications:**

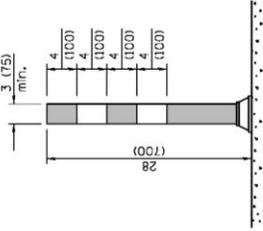
1. When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. [SS pg. 589 / 701.14]
2. Channelizing devices for nighttime lane closures on two-lane roads. Lights Required: Steady burn bi-directional lights. [SS pg. 593 / 701.16]

**FOR INFORMATIONAL USE ONLY**

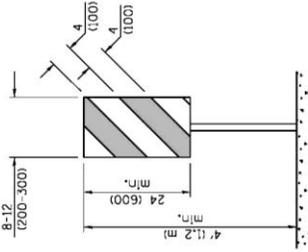


**CONE**

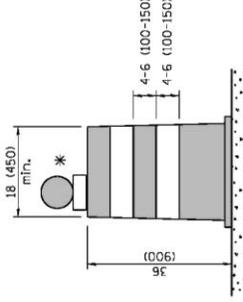
**REFLECTORIZED CONE**



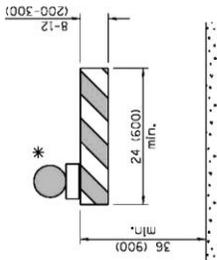
**FLEXIBLE DELINEATOR**



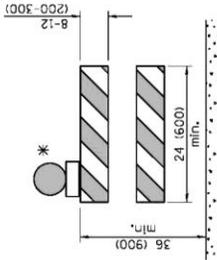
**VERTICAL PANEL  
POST MOUNTED**



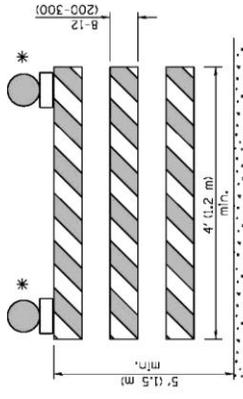
**DRUM**



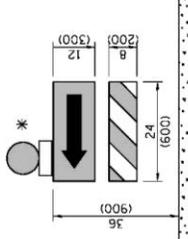
**TYPE I BARRICADE**



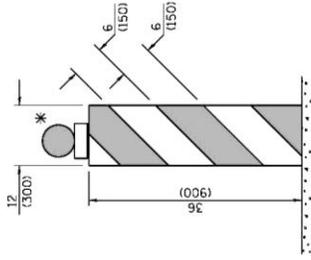
**TYPE II BARRICADE**



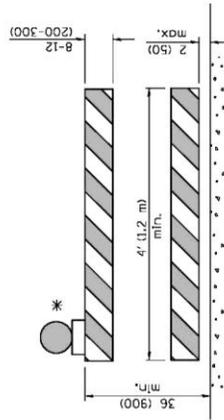
**TYPE III BARRICADE**



**DIRECTION INDICATOR  
BARRICADE**



**VERTICAL BARRICADE**



**DETECTABLE PEDESTRIAN  
CHANNELIZING BARRICADE**

\* Warning lights (if required)

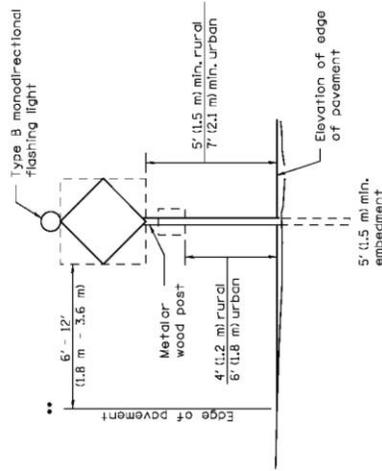
**GENERAL NOTES**

All heights shown shall be measured above the pavement surface.  
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation		ISSUED	1-1-17
APPROVED	ENGLAND	ENGLAND	ENGLAND
ENGLAND	ENGLAND	ENGLAND	ENGLAND
ENGLAND	ENGLAND	ENGLAND	ENGLAND
ENGLAND	ENGLAND	ENGLAND	ENGLAND

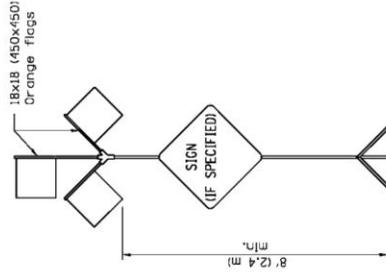
DATE	REVISIONS
1-1-12	Added DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE.
1-1-09	Switched units to English (metric). Omitted light on vertical panel.

**TRAFFIC CONTROL DEVICES**  
**STANDARD 701901-02**  
(Sheet 1 of 3)



**POST MOUNTED SIGNS**

•• When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



**HIGH LEVEL WARNING DEVICE**

••• When work operations exposed for view, the dimensions shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen by motorists.

ROAD CONSTRUCTION NEXT X MILES	G20-1101-6036
END CONSTRUCTION	G20-2a101-6024

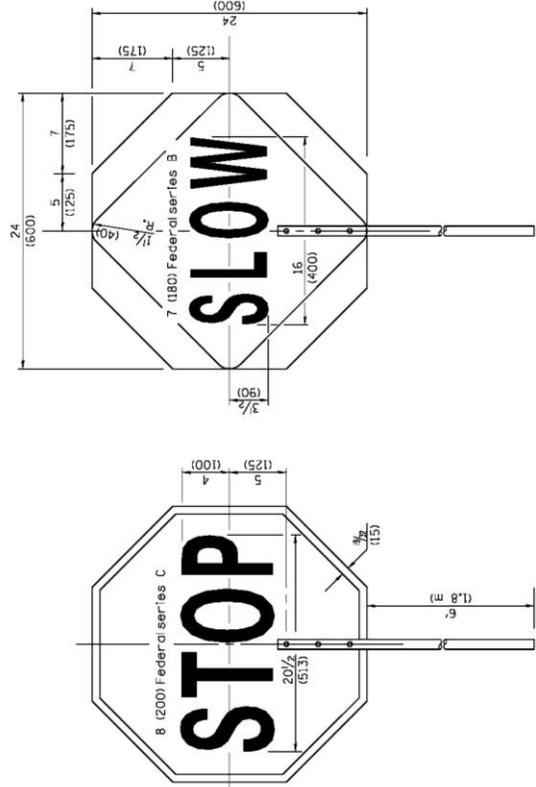
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

**WORK LIMIT SIGNING**



**FLAGGER TRAFFIC CONTROL SIGN**

All dimensions are in inches (millimeters) unless otherwise shown.

REVERSE SIDE

FRONT SIDE

**TRAFFIC CONTROL DEVICES**

(Sheet 2 of 3)

STANDARD 701901-02

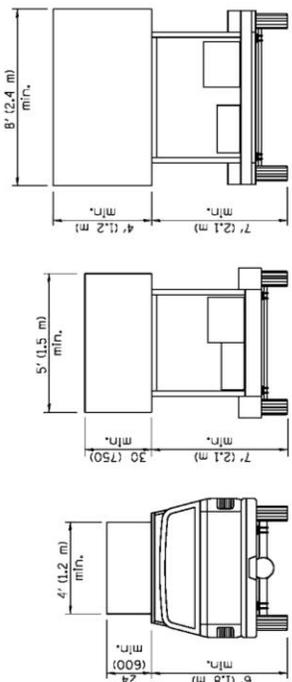
Illinois Department of Transportation	ISSUED 1-1-97
APPROVED _____ AGENCY 1 _____ 2012	
ENGINEER/OPERATIONS _____	
APPROVED _____ AGENCY 1 _____ 2012	
ENGINEER/DESIGN AND ENVIRONMENT _____	

All dimensions are in inches (millimeters), unless otherwise shown.

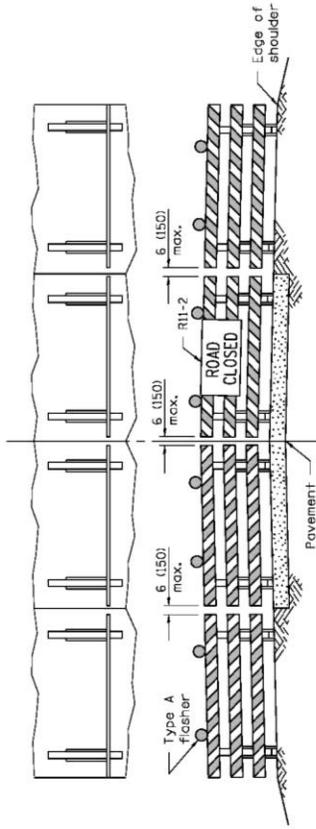
**TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD**

Reflectorized striping shall appear on both sides of the barricades, if a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

Illinois Department of Transportation	ISSUED 1-1-97
APPROVED _____ January 1, 2012	
ENGINEER OF OPERATIONS _____	
APPROVED _____ January 1, 2012	
ENGINEER OF DESIGN AND ENVIRONMENT _____	



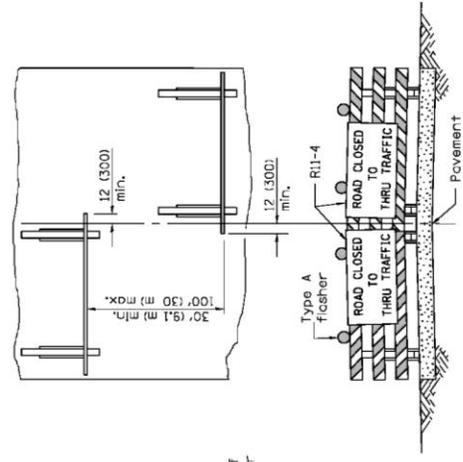
**ARROW BOARDS**



Reflectorized striping may be omitted on the back side of the barricades, if a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.

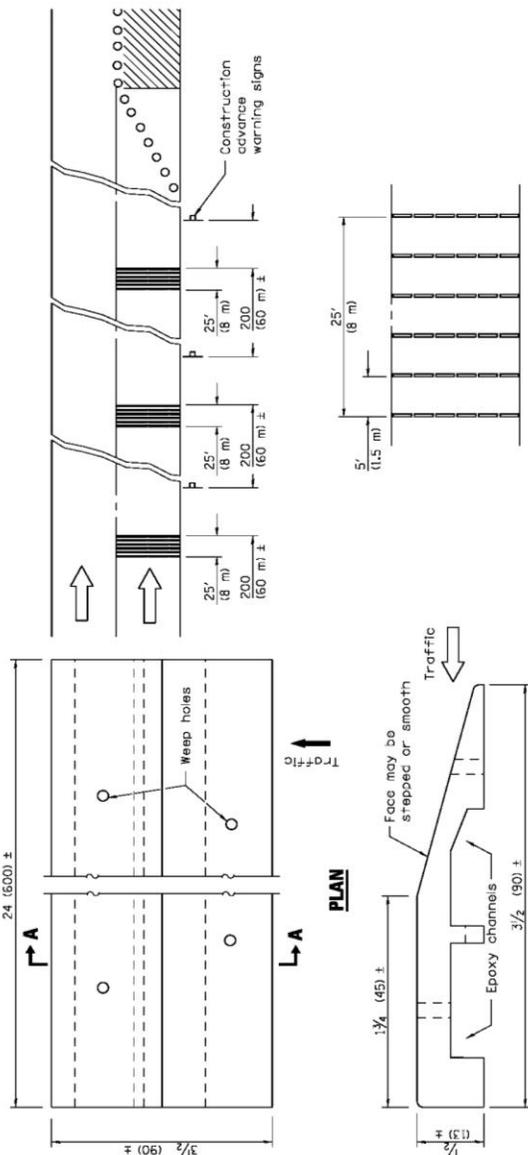
**SECTION A-A**

**TEMPORARY RUMBLE STRIPS**



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades, if a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.



**TRAFFIC CONTROL DEVICES**

STANDARD 701901-02

## **Standard 701901**

**701.15 Traffic Control Devices.** The number, type, color, size, and placement of traffic control devices shall be according to the traffic control plan, the MUTCD, and the Department's "Quality Standard for Work Zone Traffic Control Devices." Work shall not begin until the Engineer has determined the devices meet the quality requirements.

For devices that must meet FHWA crashworthiness standards, the Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and a FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letter(s) shall state the device has been accepted by FHWA for its respective category and test level, and shall include a detailed drawing of the device. The set-up and use of certified/accepted devices shall be the same as that described in the letter.

All devices shall be kept clean. Any device which has become ineffective due to damage or defacement shall be replaced.

Devices having angled striping shall be oriented with the striped sloping down toward the side on which traffic will pass. Lights on devices shall be mounted on the side of the device on which traffic shall pass and shall not obscure any reflectorized portion of the device.

Where more than one type of device is permissible, only one type of device shall be used within that individual run of devices or lane closure taper.

Additional requirements for the use of specific devices are as follows.

- a. Cones. Cones are used to channelize traffic during daylight operations. Reflectorized cones are for nighttime operation, but shall only be used when specified in the plan or when approved by the Engineer.
- b. Type I, II, and III Barricades. Type I and Type II barricades are used to channelize traffic; to delineate unattended obstacles, patches, excavations, drop-offs, and other hazards; and as check barricades.

Type I barricades are for use on roads with normal posted speeds of 40 mph or less. However, they may be used on higher speed roads provided the reflective area of the upper rail is at least 2 sq. ft. (0.18 sq m).

Type III barricades are used to close lanes and to close roads.

- c. Vertical Barricades. Vertical barricades are used to channelize traffic, as well as to delineate unattended obstacles, patches excavations, drop-offs, and other hazards. Vertical barricades shall not be used in lane closure tapers or as check barricades.
- d. Vertical Panels. Vertical panels are used to channelize traffic and to delineate unattended excavations and drop-offs.
- e. Direction Indicator Barricades. Direction indicator barricades are used in lane closure tapers.

## **Standard 701901 - Continued**

- f. Drums. Drums are used to channelize traffic and to delineate unattended obstacles, patches, excavations, drop-offs, and other hazards.
- g. Flexible Delineators. Flexible delineators are used to channelize traffic. They shall only be used when specified.
- h. Truck Mounted/Trailer Mounted Attenuators (TMA). TMA units shall have a roll ahead distance in the event of an impact. The TMA shall be between 100 and 200 ft (30 and 60 m) behind the vehicle ahead or the workers. This distance may be extended by the Engineer.

TMA host vehicles shall have the parking brake engaged when stationary.

The driver and passengers of the TMA host vehicle should exit the vehicle if the TMA is to remain stationary for 15 minutes or more in duration

- i. Arrow Boards. Arrow boards are used to warn motorists of an upcoming lane closure. Arrow boards shall not be used to direct passing moves into lanes used by opposing traffic or to shift traffic without having a lane change.

On roads with normal posted speeds of 45 mph and above, Type C units shall be used for all operations 24 hours or more in duration, and Type B units may be used for operations less than 24 hours in duration. On roads with normal posted speed less than 45 mph, Type A, B, or C units may be used for all operations.

- j. Portable Changeable Message Signs. These signs shall be furnished, placed, and maintained according to the traffic control plan as directed by the Engineer.

The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designated by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The Contractor shall provide all preventive maintenance efforts deemed necessary to achieve uninterrupted service. If service is interrupted for any cause and not restored within 24 hours, the Engineer will cause such work to be performed as may be necessary to provide this service and the cost of such work will be deducted from compensation due or which may become due to the Contractor under the contract.

- k. Temporary Ruble Strips. Temporary rumble strips be placed snugly against one another and attached to the pavement with an adhesive meeting the recommendations of the rumble strip manufacturer.

**701.14 Signs.** When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, temporary sign supports may be used where posts are impractical. When post mounting is not required, either temporary sign supports or sign trailers may be used.

## **Standard 701901 - Continued**

Post mounted signs shall be a “breakaway” design. The signs shall be within five degrees of vertical. Two posts shall be used for signs greater than 16 sq ft. (1.5 sq m) in area or where the height between the sign and the ground exceeds 7 ft. (2.1 m).

Signs on temporary supports shall meet the requirements of NCHRP Report 350 or MASH. Documentation of meeting the requirements shall be the FHWA letter stating acceptance of the sign support system for the required test level. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support as per the manufacturer’s specifications

Sign trailers, when erected, shall have their tires resting on the ground or elevated a maximum of 6 in. (150 mm) above the ground. Weights used to stabilize the trailer shall be sandbags mounted a maximum of 12 in. (300 mm) above the ground. To prevent wind induced rolling of the trailer, the wheels shall be chocked with sandbags or the trailer tongue may be pinned. The pinning method shall be designated to give way in the event of a vehicular impact and shall meet the approval of the Engineer.

The sign trailer shall only be attached to its tow vehicle when the sign is actually being moved. The tow vehicle, when not attached to the trailer, shall be parked according to Article 701.11.

Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 100 ft. (30 m) to avoid obstacles, hazards, or to improve sight distance, when approved by the Engineer.

- a) “ROAD CONSTRUCTION AHEAD” Signs. “ROAD CONSTRUCTION AHEAD” signs shall be erected on all side roads located within the limits of the mainline “ROAD CONSTRUCTION AHEAD” signs.
- b) Work Zone Speed Limit Signs. Work zone speed limit signs assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 500 ft. (150 m) beyond the last entrance ramp for each interchange or sideroad.

All permanent “SPEED LIMIT” signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone with the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closure(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic. The sign assemblies shown

within the lane closure(s) will not be required when worker(s) are located behind a concrete barrier wall.

## **Standard 701901 – Continued**

**701.16 Lights.** Lights shall be used on devices as required in the traffic control plan and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure.	Flashing mono-directional lights.
Devices delineating isolated obstacles, excavations, or hazards at night. (Does not apply to patching)	Flashing bi-directional lights.
Devices delineating obstacles, excavations, or hazards exceeding 100 ft. (30 m) in length at night. (Does not apply to widening)	Steady burn bi-directional lights.
Channelizing devices for nighttime lane closures on two-lane roads.	Steady burn bi-directional lights.
Channelizing devices for nighttime lane closures on two-lane roads.	Steady burn mono-directional lights.
Devices in nighttime lane closure tapers	Steady burn mono-directional lights.
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with a ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	Steady burn mono-directional lights

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer.

**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet FHWA crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing, and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators, and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades, and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for either Test Level 3 or the test level specified.

## **Standard 701901 - Continued**

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 or MASH compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets FHWA crashworthiness standards for its respective category and test level, and shall include a detailed drawing of the device. The set-up and use of certified/accepted devices shall be the same as that described in the letter.

### **1106.01 Signs.**

Sign sheeting shall be mounted on materials such as aluminum, rigid plastic, or exterior grade plywood. Signs utilizing a base of fabric, fiberboard, or other highly flexible or frangible material will not be permitted, except signs having a reflective sheeting face bonded to a durable plastic or fabric base will be permitted, (a) in work zones with posted speeds above 45 mph (70 km/hr) when workers are present to maintain the devices and (b) in all work zones having posted speeds of 45 mph (70 km/hr) or less.

Specific requirements for various signs shall be as follows.

- (a) Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be as shown on the plans. The individual signs that make up an assembly may be combined on a single panel.
- (b) Flagger Traffic Control Paddle. The "STOP" face shall consist of white letters and border on a red background. The "SLOW" face shall consist of black letters and border on a fluorescent orange background. Areas outside sign borders shall be light blue or black. The portion of the staff within the sign face shall match the sign colors.

The staff may consist of two sections joined by a coupling.

### **Various Specifications:**

1. Sign faces shall consist of retroreflective sheeting with the appropriate screened message.....The sheeting shall be weather resistant. [SS pg 1095 / 1106.01]
2. Orange signs shall be fluorescent orange in color. [SS pg.1096 / 1106.01]
3. Lights shall be maintained so as to be visible on a clear night from a distance of 3000 ft (900 m). [SS pg. 1098 / 1106.02]

**FOR INFORMATIONAL USE ONLY**

## Section 702. NIGHTTIME WORK ZONE LIGHTING

**702.01 Description.** This work shall consist of furnishing, installing, maintaining, moving, and removing lighting for nighttime work zones. Nighttime shall be defined as occurring shortly before sunset until after sunrise.

**702.02 Materials.** The lighting shall consist of mobile and/or stationary lighting systems as required herein for the specific type of construction. Mobile lighting systems shall consist of luminaires attached to construction equipment or moveable carts. Stationary lighting systems shall consist of roadway luminaires mounted on temporary poles or trailer mounted light towers at fixed locations. Some lighting systems, such as balloon lights, may be adapted to both mobile and stationary applications.

**702.03 Equipment.** The Contractor shall furnish an illuminance meter for use by the Engineer. The meter shall have a digital display calibrated to NIST standards, shall be cosine and color corrected, and shall have an accuracy of  $\pm$  five percent. The sensor shall have a level indicator to ensure measurements are taken in a horizontal plane.

### CONSTRUCTION REQUIREMENTS

**702.04 General.** At the preconstruction conference, the Contractor shall submit the type(s) of lighting system to be used and the locations of all devices.

Before nighttime construction may begin, the lighting system shall be demonstrated as being operational.

**702.05 Nighttime Flagging.** The requirements for nighttime flagging shall be according to Article 701.13 of the Standard Specifications and the glare control requirements contained herein.

**702.06 Lighting System Design.** The lighting system shall be designed to meet the following.

- (a) **Lighting Levels.** The lighting system shall provide a minimum of 5 foot candles (54 lux) throughout the work area. For mobile operations, the work area shall be defined as 25 ft (9 m) in front of and behind moving equipment. For stationary operations, the work area shall be defined as the entire area where work is being performed.

Lighting levels will be measured with an illuminance meter. Readings will be taken in a horizontal plane 3 ft (1 m) above the pavement or ground surface.

- (b) **Glare Control.** The lighting system shall be designed and operated so as to avoid glare that interferes with traffic, workers, or inspection personnel. Lighting systems with flood, spot, or stadium type luminaires shall be aimed downward at the work and rotated outward no greater than 30 degrees from nadir (straight down). Balloon lights shall be positioned at least 12 ft (3.6 m) above the roadway.

As a large component of glare, the headlights of construction vehicles and equipment shall not be operated within the work zone except as allowed for specific construction operations. Headlights shall never be used when facing oncoming traffic.

## **Section 702 - Continued**

- (c) Light Trespass. The lighting system shall be designed to effectively light the work area without spilling over to adjoining property. When, in the opinion of the Engineer, the lighting is disturbing adjoining property, the Contractor shall modify the lighting arrangement or add hardware to shield the light trespass.

**702.07 Construction Operations.** The lighting design required above shall be provided at any location where construction equipment is operating or workers are present on foot. When multiple operations are being carried on simultaneously, lighting shall be provided at each separate work area.

The lighting requirements for specific construction operations shall be as follows.

- (a) Installation or Removal of Work Zone Traffic Control. The required lighting level shall be provided at each truck and piece of equipment used during the installation or removal of work zone traffic control. Headlights may be operated in the work zone.
- (b) Milling and Paving. The required lighting level shall be provided by mounting a minimum of one balloon light to each piece of mobile construction equipment used in the work zone. This would include milling machines, mechanical sweepers, material transfer devices, spreading and finishing machines, and rollers; but not include trucks used to transport materials and personnel or other vehicles that are continuously moving in and out of the work zone. The headlights of construction equipment shall not be operated within the work zone.
- (c) Patching. The required lighting level shall be provided at each patching location where work is being performed.
- (d) Pavement Marking and Raised Reflective Pavement Marker Removal/Installation. The striping truck and the attenuator/arrow board trucks may be operated by headlights alone; however, additional lighting may be necessary for the operator of the striping truck to perform the work.

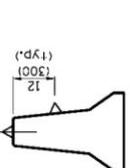
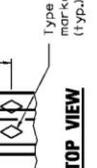
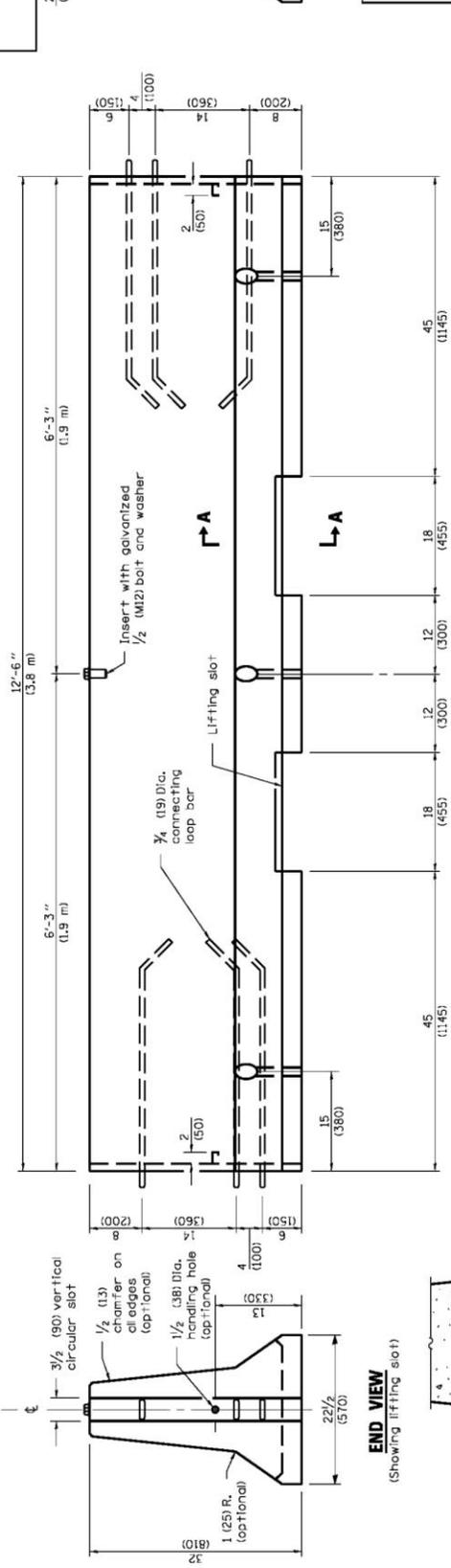
For raised reflective pavement marker removal and installation and other pavement marking operations where workers are on foot, the required lighting level shall be provided at each truck and piece of equipment.

- (e) Layout, Testing, and Inspection. The required lighting level shall be provided for each active area of construction layout, material testing, and inspection. The work area shall be defined as 15 ft (7.6 m) in front and back of the individual(s) performing the tasks.

**702.08 Basis of Payment.** This work will be paid for at the contract lump sum price for NIGHTTIME WORK ZONE LIGHTING.

**FOR INFORMATIONAL USE ONLY**

**F SHAPE DESIGN**

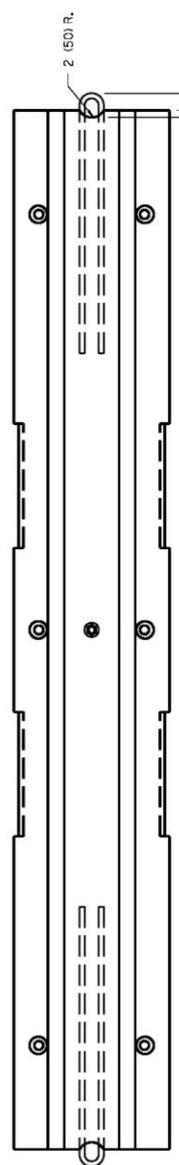


**BARRIER WALL MARKERS**

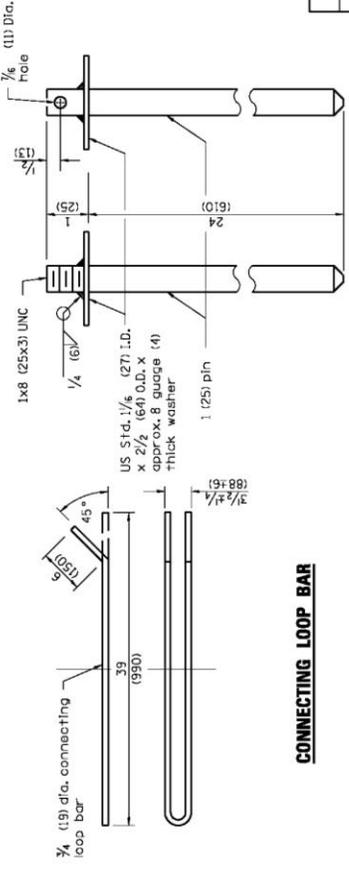
**GENERAL NOTES**  
 Each F shape barrier shall be clearly marked with "ILLINOIS F SHAPE", the Producer's mark and the date of manufacture. The markings shall be incised on the barrier or painted thereon with waterproof paint/ink.

The insert for the 1/2 (M12) bolt shall be capable of 3,000 lb (13 kN) pull-out strength.  
 When barrier separates opposing flows of traffic markers shall be on both sides of barrier.  
 See Standard 635011 for dimensions of Type C marker.  
 All dimensions are in inches (millimeters) unless otherwise shown.

**ELEVATION**  
 (Showing connecting loop bars and vertical panel/bolt/insert)

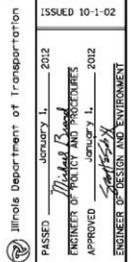


**PLAN**



**CONNECTING LOOP BAR**

**CONNECTING DETAIL**



**CONNECTING AND ANCHOR PINS**

(End may be beveled 1/4 (6) max.)

DATE	REVISIONS
1-1-12	Omitted "ALTERNATE" from connecting and anchoring pins detail.
1-1-10	Revised General Notes.

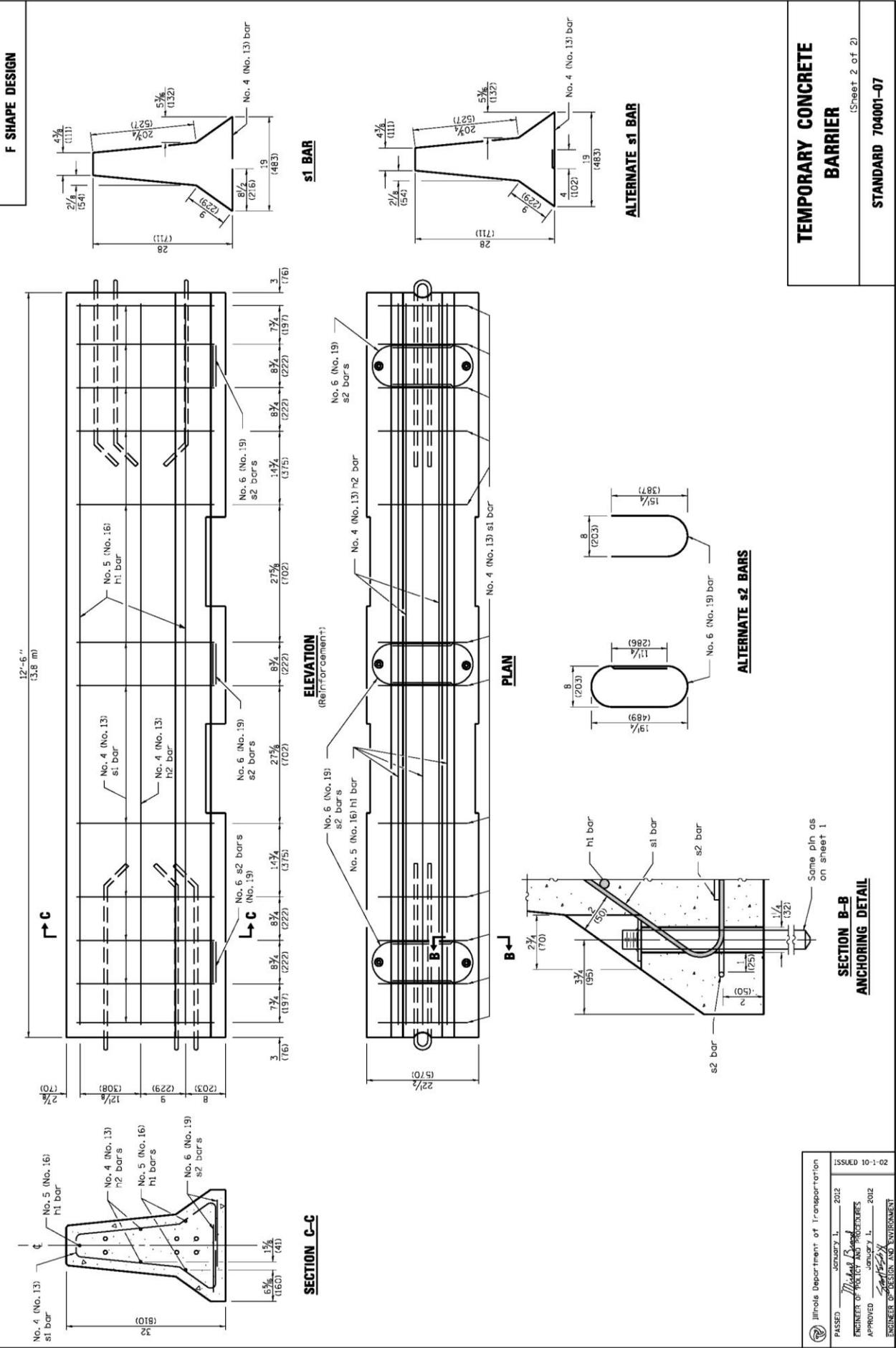
**TEMPORARY CONCRETE BARRIER**

STANDARD 704001-07

Illinois Department of Transportation  
 PASSED January 1, 2012  
 PROJECTED BY: [Signature]  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED January 1, 2012  
 [Signature]  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 10-1-02

Stand:



## **Standard 704001**

**704.01 Description.** This work shall consist of furnishing, placing, maintaining, relocating, and removing precast concrete barrier at temporary locations.

**704.03 General.** Precast concrete barrier shall be the F shape as detailed on the plans.

**704.04 Installation.** The barriers shall be seated on bare, clean pavement or paved shoulder and pinned together in a smooth, continuous line at the exact locations provided by the Engineer. The barrier unit at each end of the installation shall be secured to the pavement or paved shoulder using six anchoring pins and protected with an impact attenuator as shown on the plans.

Barriers or attachments damaged during transportation or handling, or by traffic during the life of the installation, shall be repaired or replaced. The Engineer will be the sole judge in determining which units or attachments require repair or replacement.

The barriers shall be removed when no longer required by the contract. After removal, all anchoring holes in the pavement or paved shoulder shall be filled with a rapid hardening mortar or concrete. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

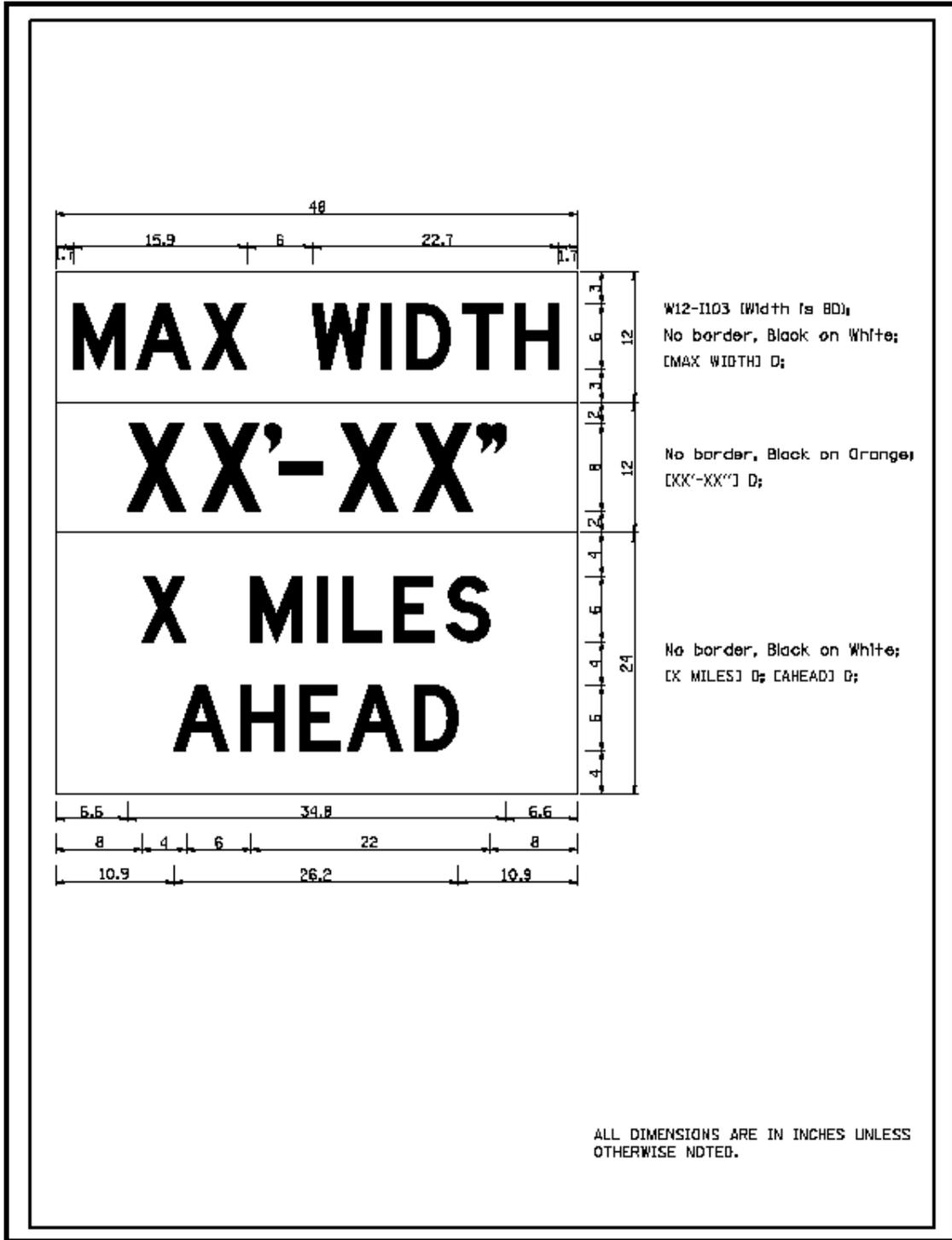
**704.05 Method of Measurement.** This work will be measured for payment in feet (meters) in place along the centerline of the barrier. When the barrier is relocated within the limits of the jobsite, the relocated barrier will be measured for payment in feet (meters) in place along the centerline of the barrier.

**704.06 Basis of Payment.** When the Contractor furnishes the barrier, this work will be paid for at the contract unit price per foot (meter) for TEMPORARY CONCRETE BARRIER or RELOCATE TEMPORARY CONCRETE BARRIER.

When the Department furnishes the barrier, this work will be paid for at the contract unit price per foot (meter) for TEMPORARY CONCRETE BARRIER, STATE OWNED, or RELOCATED TEMPORARY CONCRETE BARRIER, STATE OWNED.

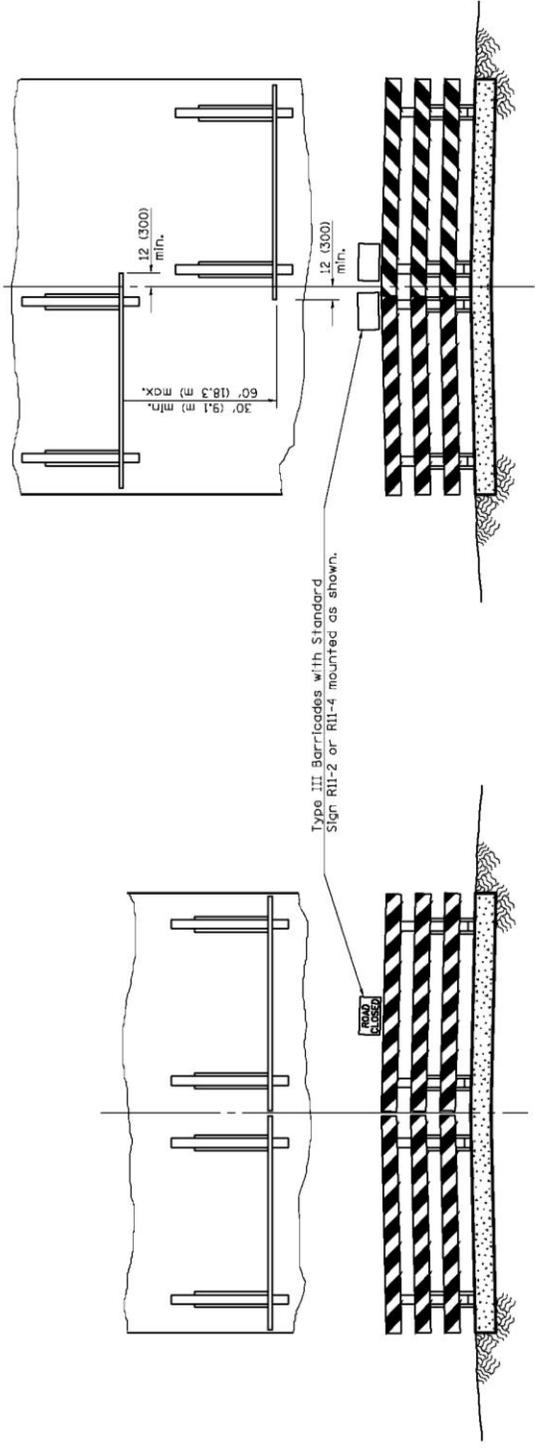
Impact attenuators will be paid for separately.

**FOR INFORMATIONAL USE ONLY**



**W12-I103**

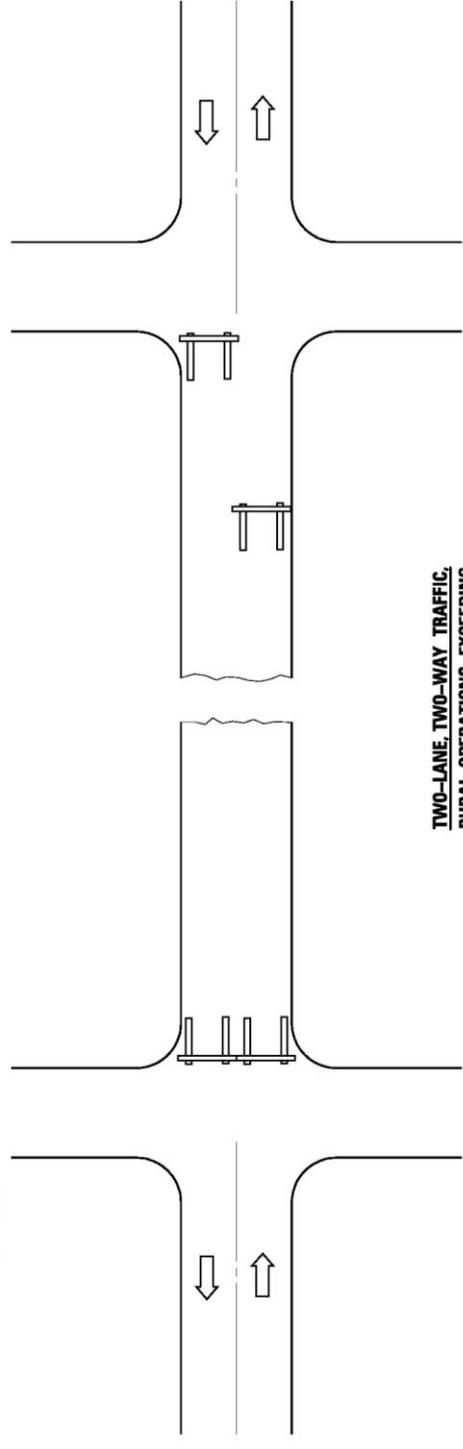
**To be placed at the nearest state intersections prior to the actual lane width restriction**



Type III Barricades with Standard Sign R11-2 or R11-4 mounted as shown.

Resident traffic and day labor force's equipment to use road shoulder for passing barricade.

Use when shoulders are too narrow for passage of traffic.



**TWO-LANE, TWO-WAY TRAFFIC,  
RURAL OPERATIONS EXCEEDING  
ONE DAYLIGHT PERIOD**

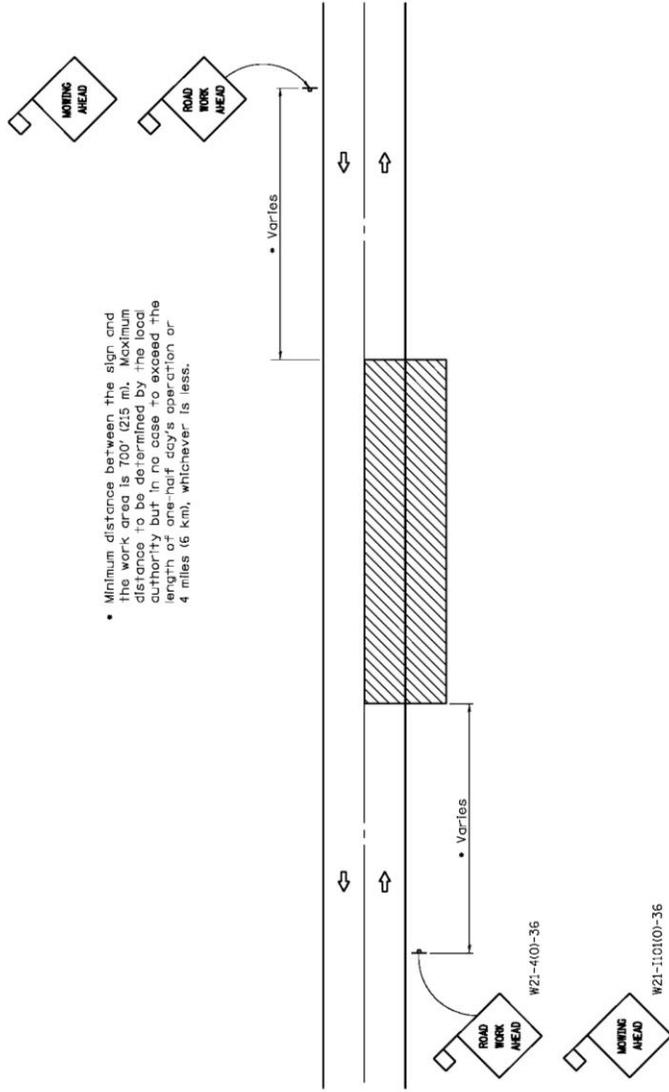
**GENERAL NOTES**  
Type III barricades to be width of pavement only. Reflectized striping shall appear on both sides of barricades. Barricades shall be positioned so that stripes slope downward toward the side on which traffic is to pass.  
Although not shown, advance warning signs with minimum dimensions of 36x36 (900x900) and black legends on orange reflectorized backgrounds shall be utilized where needed.  
This case is for use on rural roads where the local authority considers this protection to be appropriate for the specific job conditions.  
All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
APPROVED: JUDY L. 2009  
ENGINEER OF LOCAL ROADS AND STREETS  
APPROVED: G. C. 2009  
ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-98	Rev. "R11-1" to "R11-4".
	Rev. 4th General Note.

**TRAFFIC CONTROL DEVICES -  
DAY LABOR CONSTRUCTION**

STANDARD B.L.R. 17-4



- Minimum distance between the sign and the work area is 700 (225 m). Minimum distance to be determined by the local authority but in no case to exceed the length of one-half day's operation or 4 miles (6 km), whichever is less.

**TWO-LANE, TWO-WAY TRAFFIC**  
**RURAL OPERATIONS**  
**DAY OPERATIONS ONLY**

**SYMBOLS**

- Work area
- Sign with 18x18 (450x450) mm. orange flag attached.

**TYPICAL APPLICATIONS**

- MOWING
- AGGREGATE
- PAVING
- ROAD SPRAYING
- ROAD MARKING
- SURFACE MAINTENANCE
- BITUMINOUS RESURFACING
- CRACK PAINTING
- SHOULDER REPAIR
- CLEANING DITCHES

**GENERAL NOTES**

Maintenance operations shall be confined to one traffic lane, leaving the opposite lane open to traffic. At least 500' (150 m) of both traffic lanes shall be available for traffic movement between work areas at intervals not greater than 1000' (300 m).

When operations are on the pavement and stationary or moving at a speed less than 4 mph (6 km/h), a ONE LANE AHEAD, or other appropriate sign, shall be installed in each direction between the ROAD WORK AHEAD sign and the work area. The distance between this sign and the work area shall be a minimum of 400' (120 m) but in no case to exceed the length of one-half day's operation or 4 miles (6 km), whichever is less. The distance between the two signs shall be approximately 400' (120 m).

All signs are to be removed at completion of the day's operation.

Any unattended obstacle, excavation, or pavement drop off greater than 3 (75) in the work area shall be protected by Type I or Type II barricades with flashing lights.

Longitudinal dimensions may be adjusted slightly to fit field conditions.

All vehicles, equipment, men, and their activities are restricted at all times to one side of the pavement.

Flashing lights or rotating beacons are required for all maintenance vehicles while in operation.

Applicable operations illustrated in Standard T0300 may be used when operations do not exceed 15 minutes on the pavement or 60 minutes on the shoulder respectively.

All warning signs shall have minimum dimensions of 36x36 (900x900) and have black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions.

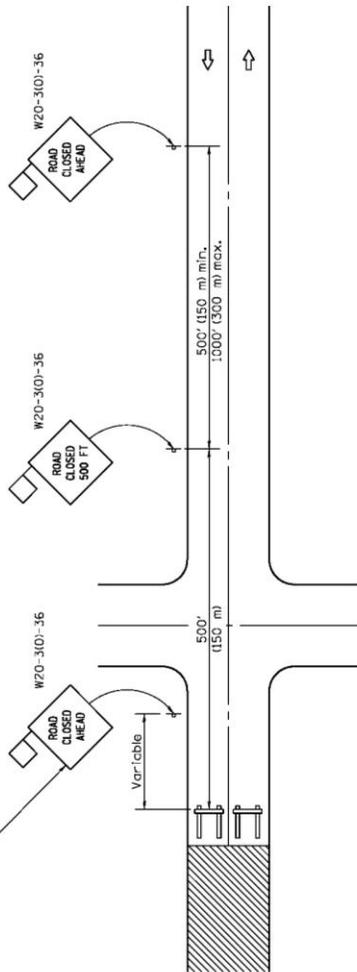
All dimensions are in inches (millimeters) unless otherwise shown.

TRAFFIC CONTROL DEVICES-- DAY LABOR MAINTENANCE	
DATE	REVISIONS
1-1-09	Switched units to English (metric). Moved one General Note.
1-1-99	Delete ROW Line.

Illinois Department of Transportation  
 APPROVED: *[Signature]* JENNEY L. 2009  
 ENGINEER OF URBAN, RURAL, AND STREETS  
 APPROVED: *[Signature]* JENNEY L. 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

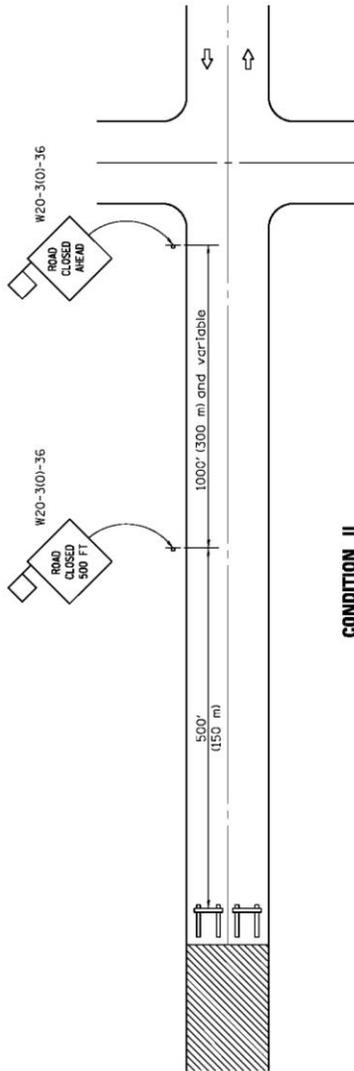
ISSUED 1-1-97

Sign may be omitted when distance is less than 150' (45 m)



**CONDITION I**

When distance from closure to crossroad is less than 1500' (450 m)



**CONDITION II**

When distance from closure to crossroad is greater than 1500' (450 m)

**SYMBOLS**



Work area



Type III Barricade



Sign with 18x18 (450x450) mm orange flag attached

**GENERAL NOTES**

Type III Barricades and RL-2-4830 signs shall be positioned as shown in "Road Closed To All Traffic" detail on Highway Standard 701901.

Two Type A Low Intensity Flashing Lights shall be used on each approach in advance of the work area during hours of darkness. One light shall be installed above the barricades and the other above the first advance warning sign.

All warning signs shall have minimum dimensions of 35 x 36 (900 x 900) mm, have a black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

Longitudinal dimensions may be adjusted to fit field conditions.

When the distance between the barricade and the intersection is between 1500' (450 m) and 2000' (600 m), the advance sign shall be placed at the intersection. When the distance between the barricade and the intersection is over 2000' (600 m), an additional sign shall be placed at the intersection. The additional sign shall give the distance to the barricade in miles or fractions of a mile.

All dimensions are in inches (millimeter) unless otherwise shown.

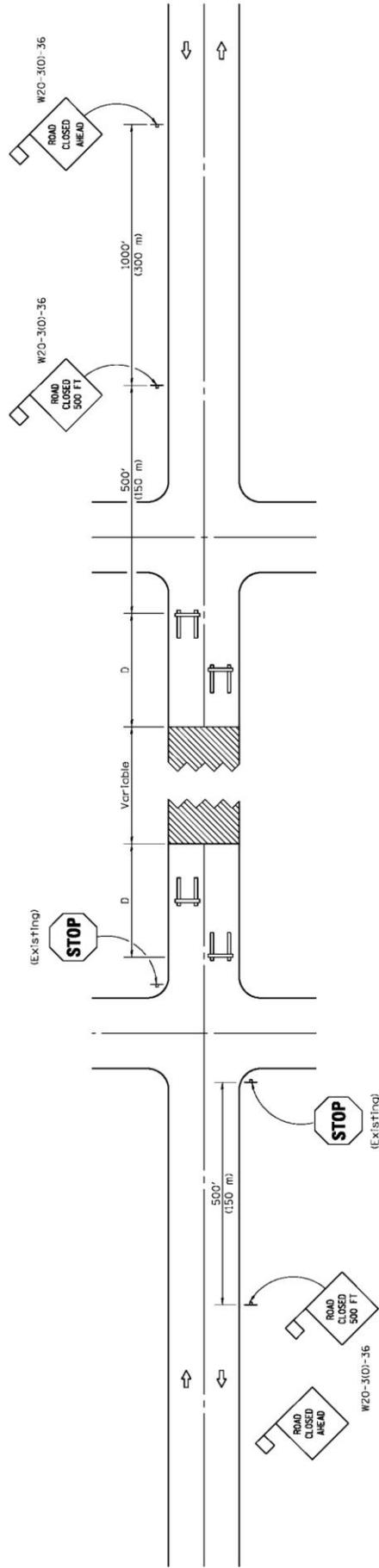
TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS	
DATE	REVISIONS
1-1-12	Omitted two notes from GENERAL NOTES.
1-1-09	Switched units to English (metric).

STANDARD B.L.R. 21-9

Illinois Department of Transportation APPROVED _____ 2012 ENGINEER OF LOCAL ROADS AND STREETS	ISSUED 1-1-97
	APPROVED _____ 2012 ENGINEER OF DESIGN AND ENVIRONMENT

**CONDITION II**  
**APPROACH TRAFFIC**  
**DOES NOT STOP**

**CONDITION I**  
**APPROACH TRAFFIC STOPPED**



**SYMBOLS**

- Work area
- Type III Barricade
- Sign with 18x18 (450x450) min. orange flag attached

**GENERAL NOTES**

Type III Barricades and R11-4-6030 signs shall be positioned as shown in the "Road Closed To All Traffic" detail on Highway Standard 701901. If the distance "D" exceeds 2000' (600 m), an additional set of barricades and R11-4-6030 shall be placed at each end of the work area.

Two Type A Low Intensity Flashing Lights shall be used on each approach in advance of the work area. One light shall be installed above each barricade. If only one barricade is required, the other light shall be installed above the first advance warning sign.

All warning signs shall have minimum dimensions of 36 x 36 (900 x 900) and have a black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

Longitudinal dimensions may be adjusted to fit field conditions.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-12	Omitted two notes from GENERAL NOTES.
1-1-09	Revised General Notes and switched units to English (metric).

**TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)**

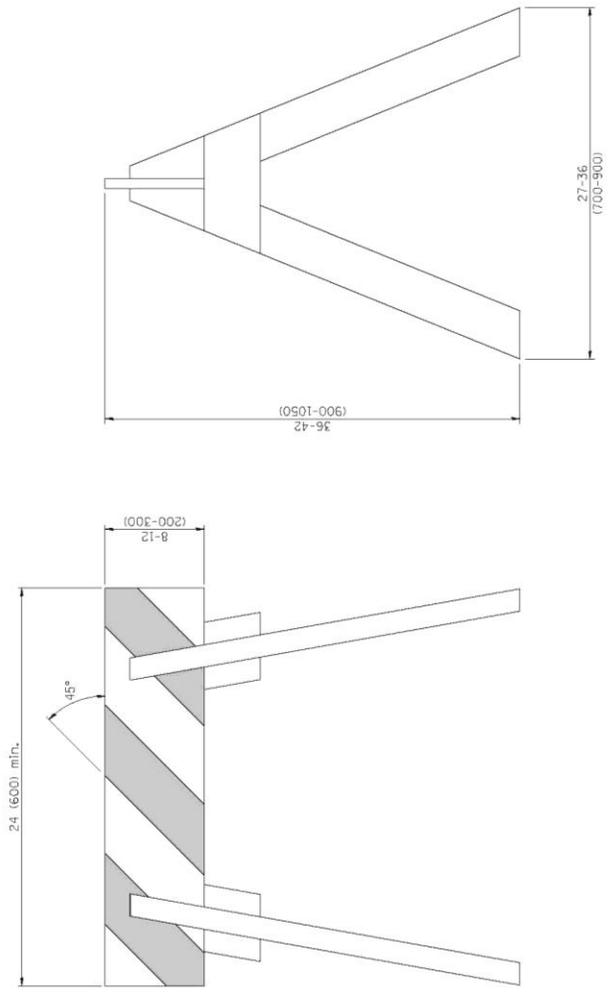
**STANDARD B.L.R. 22-7**

Illinois Department of Transportation

APPROVED: *[Signature]* JONASCY L. 2012  
ENGINEER OF LOCAL ROADS AND STREETS

APPROVED: *[Signature]* JONASCY L. 2012  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED: 1-1-97



All dimensions are in inches (millimeters) unless otherwise shown.

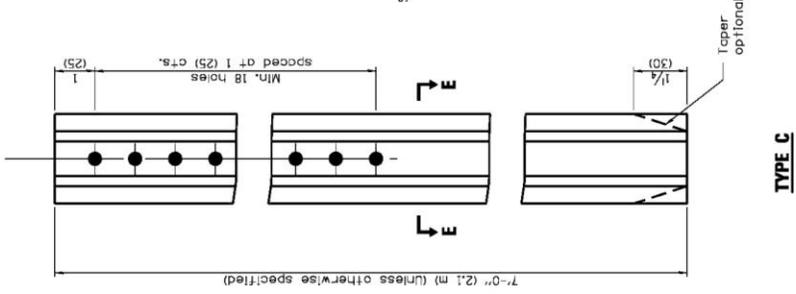
Illinois Department of Transportation  
 APPROVED Shirley J. Pappas 2009  
 ENGINEER OF LOCAL ROADS AND STREETS  
 APPROVED Lee C. Hagan 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-03

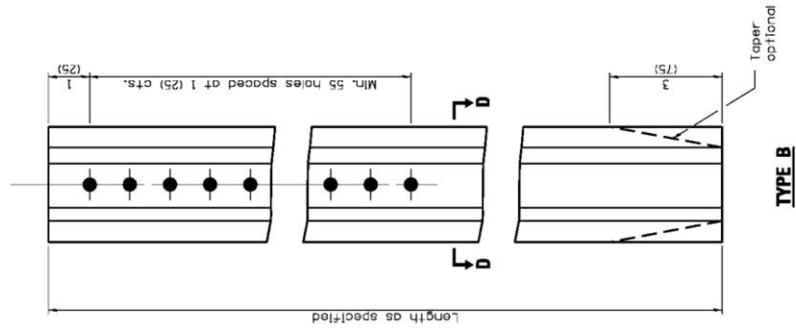
DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-03	New standard from 702001-02

**TYPE 1A BARRICADE  
 FOR NON-NHS ROUTES**

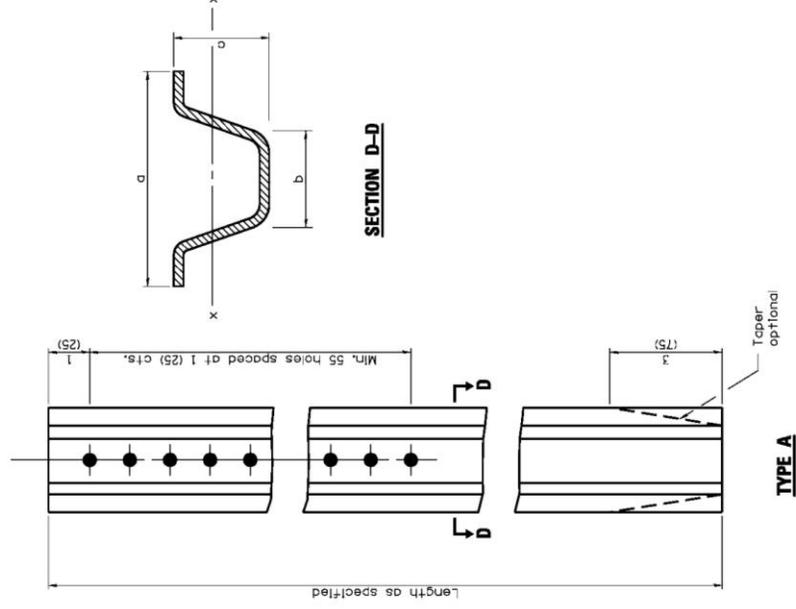
**STANDARD B.L.R. 25-1**



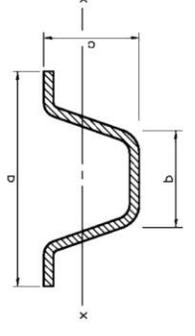
**TYPE C**



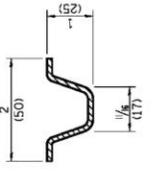
**TYPE B**



**TYPE A**



**SECTION D-D**



**SECTION E-E**

Steel - 1.12 lbs./ft. (1.67 kg/m)

**GENERAL NOTES**

Dimensions shown for cross sections are minimum.  
 All holes are 3/8 (10).  
 Sx-x is the minimum section modulus about the x-x axis of the post as shown. For posts in which holes are punched or drilled or formed in roll their length, Sx-x shall be computed for the net section.  
 All dimensions are in inches (millimeters) unless otherwise shown.

	a	b	c	Sx-x in. <sup>3</sup> (mm <sup>3</sup> )	lbs./ft. (kg/m)
TYPE A	Steel	1 1/2 (127)	1 1/2 (127)	0.223 (3.654)	2.20 (2.90)
	Aluminum	1 1/2 (127)	1 1/2 (127)	0.223 (3.654)	1.52 (2.03)
TYPE B	Steel	1 1/2 (127)	1 1/2 (127)	0.241 (3.91)	3.00 (4.06)
	Aluminum	1 1/2 (127)	2 1/4 (190)	0.488 (7.82)	1.30 (1.73)

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-97	Renum. Standard 2350-4.

**METAL POSTS FOR SIGNS,  
 MARKERS & DELINEATORS**

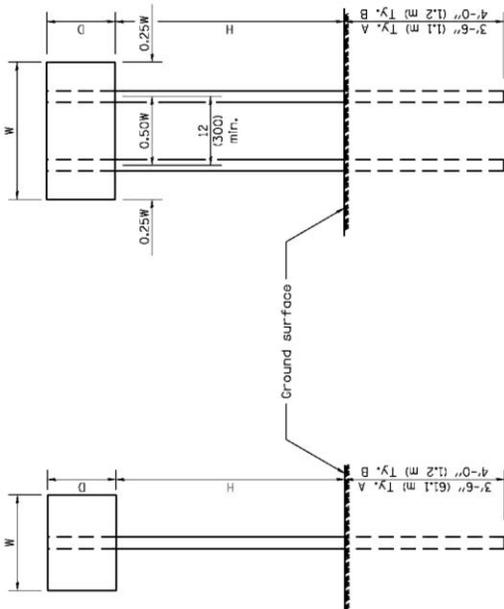
STANDARD 720011-01

Illinois Department of Transportation

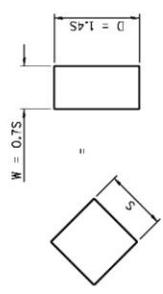
PASSED: JUDY J. JONES, 2009  
 ENGINEER OF POLICY AND PROCEDURES

APPROVED: Lisa C. Hays, 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



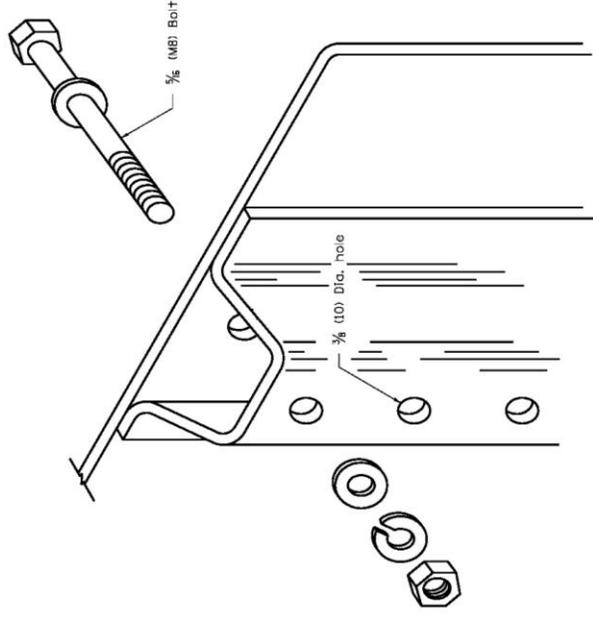
**ONE POST INSTALLATION**



**TWO POST INSTALLATION**

For diamond shaped sign with side S as shown, use required post size for a sign with  $W = 0.7S$  and  $D = 1.4S$ .

SIGN DEPTH (D)	H	NO. AND TYPE OF POST FOR SIGN WIDTH (W)			
		12 (300)	18 (450)	24 (600)	36 (900)
18 (450)	5'-0" (1.5 m)	A	A	A	A
	5'-6" (1.7 m)	A	A	A	A
	6'-0" (1.8 m)	A	A	A	B
	6'-6" (2.0 m)	A	A	A	B
	7'-0" (2.1 m)	A	A	A	B
	7'-6" (2.3 m)	A	A	A	B
	8'-0" (2.4 m)	A	A	A	B
	8'-6" (2.6 m)	A	A	A	B
	9'-0" (2.7 m)	A	A	A	B
24 (600)	5'-0" (1.5 m)	A	A	A	B
	5'-6" (1.7 m)	A	A	A	B
	6'-0" (1.8 m)	A	A	A	B
	6'-6" (2.0 m)	A	A	A	B
	7'-0" (2.1 m)	A	A	A	B
	7'-6" (2.3 m)	A	A	A	B
	8'-0" (2.4 m)	A	A	A	B
	8'-6" (2.6 m)	A	A	A	B
	9'-0" (2.7 m)	A	A	A	B
30 (750)	5'-0" (1.5 m)	A	A	A	B
	5'-6" (1.7 m)	A	A	A	B
	6'-0" (1.8 m)	A	A	A	B
	6'-6" (2.0 m)	A	A	A	B
	7'-0" (2.1 m)	A	A	A	B
	7'-6" (2.3 m)	A	A	A	B
	8'-0" (2.4 m)	A	A	A	B
	8'-6" (2.6 m)	A	A	A	B
	9'-0" (2.7 m)	A	A	A	B
36 (900)	5'-0" (1.5 m)	A	A	B	2A
	5'-6" (1.7 m)	A	A	B	2A
	6'-0" (1.8 m)	A	A	B	2A
	6'-6" (2.0 m)	A	A	B	2A
	7'-0" (2.1 m)	A	A	B	2A
	7'-6" (2.3 m)	A	A	B	2A
	8'-0" (2.4 m)	A	A	B	2A
	8'-6" (2.6 m)	A	A	B	2A
	9'-0" (2.7 m)	A	A	B	2A
4'-0" (1.2 m)	5'-0" (1.5 m)	A	A	B	2A
	5'-6" (1.7 m)	A	A	B	2A
	6'-0" (1.8 m)	A	A	B	2A
	6'-6" (2.0 m)	A	A	B	2A
	7'-0" (2.1 m)	A	A	B	2A
	7'-6" (2.3 m)	A	A	B	2A
	8'-0" (2.4 m)	A	A	B	2A
	8'-6" (2.6 m)	B	B	2B	2B
	9'-0" (2.7 m)	B	B	2B	2B



**DETAIL OF MOUNTING SIGN TO POST**

NOTE: Minimum of 2 bolts per post required.

**GENERAL NOTES**

DESIGN: Current AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

LOADING: For 60 mph (95 km/h) wind velocity with 30% gust factor, normal to sign.

SOIL PRESSURE: Minimum allowable soil pressure 1.25 tsf (120 kPa).

See Standard 720011 for details of Types A and B posts.

All dimensions are in inches (millimeters) unless otherwise shown.

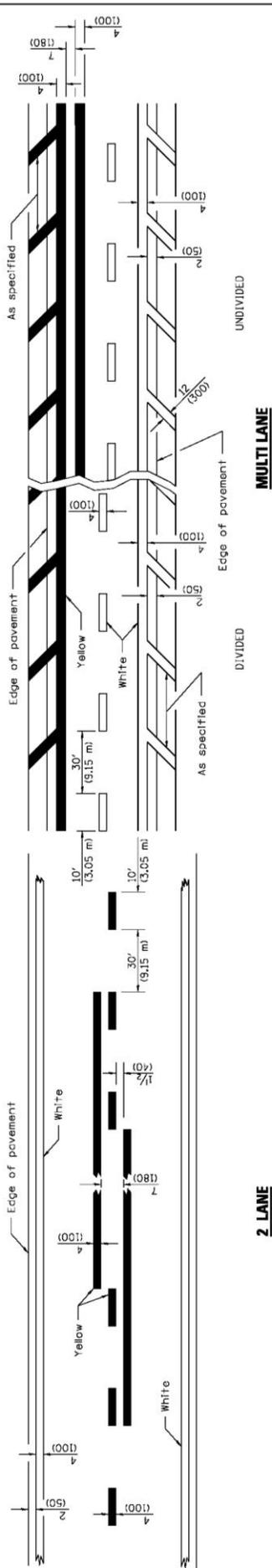
DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-97	Renum. Standard 2363-2.

**APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)**

STANDARD 729001-01

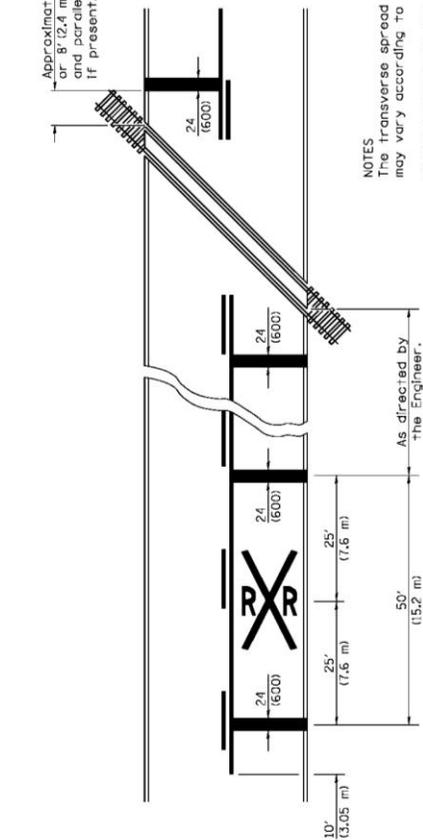
Illinois Department of Transportation  
 PASSED \_\_\_\_\_ JANUARY 1, 2009  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED \_\_\_\_\_ JANUARY 1, 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



**LANE AND EDGE LINES**

Approximately 15' (4.5 m) or 8' (2.4 m) back from and parallel to gore, if present.



**NOTES**  
 The transverse spread of the "X" may vary according to lane width.  
 On multi-lane roads, the stop lines shall extend across approach lanes and separate RRR symbols shall be placed adjacent to each other in each lane.

When the pavement marking symbol is used, a portion of the symbol should be located directly adjacent to the Advance Warning Sign (W10-1) as placed by Table 2C-4, Condition B of the MUTCD.

**PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING**

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-12	Updated reference to current MUTCD table in notes.
1-1-09	Switched units to English (metric).

**TYPICAL PAVEMENT MARKINGS**

(Sheet 1 of 2)

**STANDARD 780001-03**

Illinois Department of Transportation

APPROVED: JANEVY L. 2012

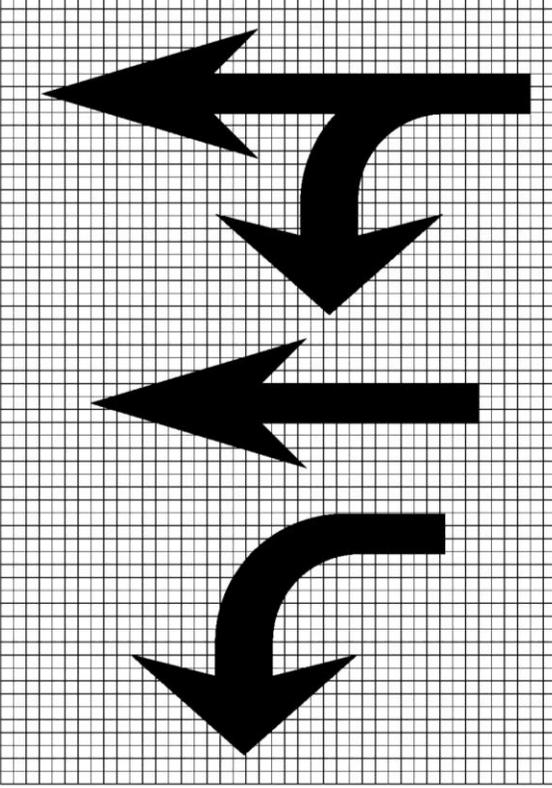
ENGINEER OF OPERATIONS

APPROVED: JANEVY L. 2012

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

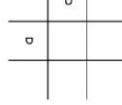
A B C D E F G H I J  
 K L M N O P Q R S  
 T U V W X Y Z 1 2  
 3 4 5 6 7 8 9 0



Small size: urban  
 Large size: rural  
 20' (6 m): urban  
 50' (15 m): rural  
 (Between arrow and word or between words)  
**ONLY**  
 6' (1.8 m): urban  
 8' (2.4 m): rural

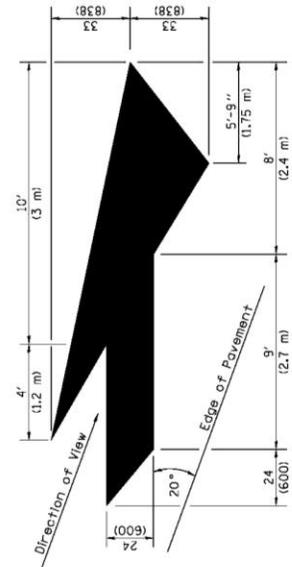
**WORD AND ARROW LAYOUT**

Legend	Height	Arrow Size	a
	6' (1.8 m)	Small	2.9 (74)
	8' (2.4 m)	Large	3.8 (96)



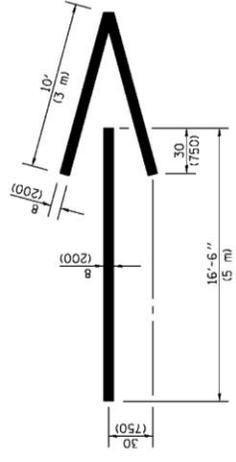
The space between adjacent letters or numerals should be approximately 3 (75) for 6' (1.8 m) legend and 4 (100) for 8' (2.4 m) legend.

**LETTER AND ARROW GRID SCALE**



**LANE DROP ARROW**

Right-lane drop arrow shown. Use mirror image for left lane.



**WRONG WAY ARROW**

**TYPICAL PAVEMENT MARKINGS**

STANDARD 780001-03

## SECTION 703. WORK ZONE PAVEMENT MARKING

**703.01 Description.** This work shall consist of furnishing, installing, maintaining, and removing short term and temporary pavement markings.

**703.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Pavement Marking Tape .....	1095.06
(b) Paint Pavement Markings .....	1095.02

### CONSTRUCTION REQUIREMENTS

**703.03 General.** Short term pavement markings shall consist of abbreviated patterns for edge, lane, and centerline markings. Within a specified time limit, short term pavement markings shall either be resurfaced or replaced with the full pavement marking patterns indicated on the plans with either a temporary material paid for as temporary pavement marking or with permanent material. Within the conditions as specified, the Contractor may be required to place all or a part of the quantities shown on the plans for short term pavement markings and temporary pavement markings.

The surface to which the pavement marking is to be applied shall be clean and dry. Pavement marking tape shall be applied to the prepared surface according to the manufacturer's recommendations or by a method approved by the Engineer. Painted lines shall be installed according to Section 780, except hand-operated strippers may be used for all applications of short term and temporary pavement marking.

**703.04 Short Term Pavement Markings.** Before the lane is opened to traffic, appropriate short term pavement markings shall be installed between all lanes open to traffic. Centerline or lane line markings shall consist of an abbreviated pattern of single stripes 4 ft (1.2 m) in length and a minimum of 4 in. (100 mm) wide at a maximum spacing of 40 ft (12 m) between stripes. Centerlines on two-lane highways shall be yellow and lane lines separating two or more lanes of traffic moving in the same direction shall be white. Edge line markings shall consist of 4 ft (1.2 m) stripes on 100 ft (30 m) centers installed at approximately a 45 degree diagonal pointing in the direction of traffic. Edge line markings will only be required on multilane divided highways and other highways with a paved shoulder greater than 4 ft (1.2 m) wide. Markings on the final wearing surface shall be transversely offset from the permanent pavement marking location as directed by the Engineer. Markings shall be removed within five days after the permanent pavement markings are installed.

The short term pavement markings shall be replaced with the required full standard pavement markings consisting of either temporary or permanent pavement marking as soon as possible. Except as indicated below, temporary pavement marking or the permanent pavement markings shall be installed for no passing zones within three calendar days and for all other markings within 14 calendar days, respectively, after the completion of any intermediate or final surface treatment. This time restriction shall begin at the completion of each intermediate or final lift on resurfacing projects.

## **Section 703 - Continued**

If the existing markings are obliterated by milling or any other surface treatment, the time restriction shall begin when the entire surface has been treated. These restrictions may be delayed by the Engineer whenever the Contractor cannot apply pavement markings due to unanticipated inclement weather (other than winter shutdown on the project), strike activities, or other circumstances beyond the Contractor's control as determined by the Engineer. In these cases, the required full standard temporary or permanent markings shall be installed as soon as construction activities are resumed. Prior to winter shutdown, standard edge lines, lane lines, centerlines, no passing zones, and any other necessary markings as determined by the Engineer shall be installed on any intermediate or final surface remaining open to traffic during the winter shutdown period.

**703.05 Temporary Pavement Marking.** When any intermediate course cannot be overlaid or if the final surface cannot be permanently marked within the time restrictions listed above, the full standard markings shall be installed with temporary pavement marking. The temporary markings shall be of the same color and dimensions as shown on the plans for the permanent markings, or as directed by the Engineer.

Type I or Type II marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.

Except during winter shutdown periods, temporary pavement marking showing deterioration for any reason within seven days after placement, shall be replaced by the Contractor. Temporary pavement markings which are in conflict with subsequently established pavement markings, or which interfere with the permanent pavement markings, shall be removed. Marking tape or paint placed on the final wearing course shall be transversely offset from the permanent pavement marking planned location as directed by the Engineer. All remaining temporary pavement marking tape or paint shall be removed within five working days after placement of the permanent pavement marking. When edge lines or channelizing lines are required, they shall be continuous. When continuous sections of tape are used, they shall be cut completely through at intervals of approximately 25 ft (8 m).

Instead of pavement markings, no passing zones on two-lane and three-lane roads may be identified by either the pennant "NO PASSING ZONE" warning sign or both the "DO NOT PASS" and "PASS WITH CARE" regulatory signs in conjunction with short term markings for periods of time up to three calendar days after an intermediate or final lift is completed on resurfacing projects.

These signs may also be used in lieu of pavement markings on low volume roads until it is practical and possible to install the permanent pavement markings.

If, in the traffic control plan, the road is specified as low volume, it is exempt from the requirements regarding no passing zone pavement markings.

## **Section 703 - CONTINUED**

**703.06 Method of Measurement.** Short term pavement markings and temporary pavement markings of the various line widths will be measured for payment in feet (meters) in place and accepted. Double yellow lines will be measured as two separate lines.

The replacement of temporary pavement markings of the various line widths during winter shutdown periods will be measured for payment in feet (meters) as specified above, except only those pavement markings directed by the Engineer to be replaced will be measured for payment.

Letters and symbols used in conjunction with temporary pavement marking conforming to the sizes and dimensions specified will be measured for payment in square feet (square meters) according to the areas listed in Table 1, Section 780.

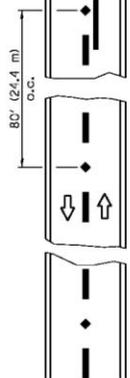
Short term and temporary pavement marking removal will be measured for payment in square feet (square meters).

**703.07 Basis of Payment.** This work will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING or for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS. Removal will be paid for at the contract unit price per square foot (square meter) for WORK ZONE PAVEMENT MARKING REMOVAL.

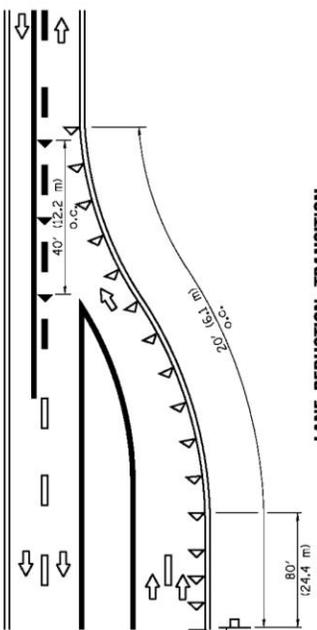
When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking will be included in the cost of the Standard.

When Pavement Marking Tape, Type III is specified in the contract other than on a Standard, the work will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS.

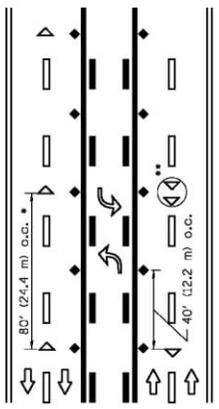
**FOR INFORMATIONAL USE ONLY**



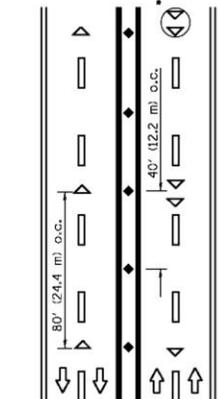
**TWO-LANE /TWO-WAY**  
Reduce to 40' (12.2 m) o.c. on curves with posted or advisory speeds of 45 mph (70 km/h) or less.



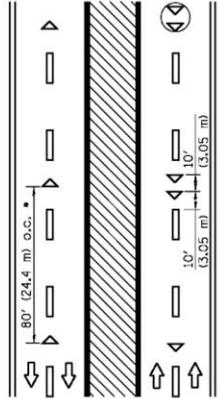
**LANE REDUCTION TRANSITION**



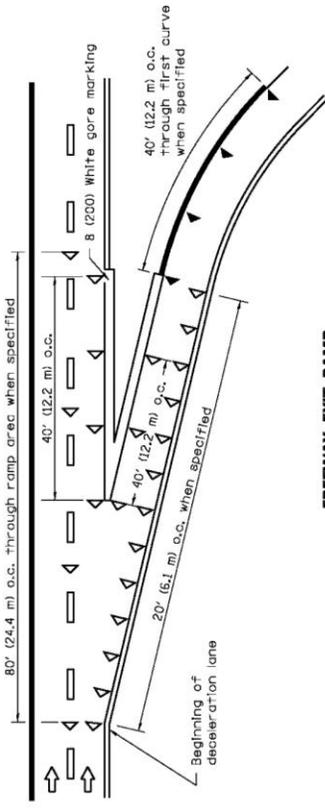
**TWO-WAY LEFT TURN**  
\*\*\* See MULTI LANE DIVIDED detail for lane marker notes.



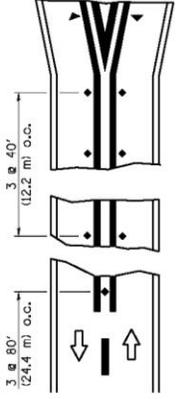
**MULTI-LANE UNDIVIDED**  
\*\*\* See MULTI LANE DIVIDED detail for lane marker notes.



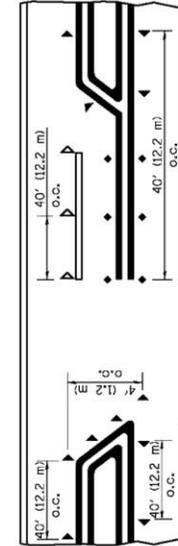
**MULTI-LANE DIVIDED**  
• Reduce to 40' (12.2 m) o.c. on curves where advisory speeds are 10 mph (15 km/h) lower than posted speeds.  
• Where double lane line markers are specified, they shall be spaced as shown.



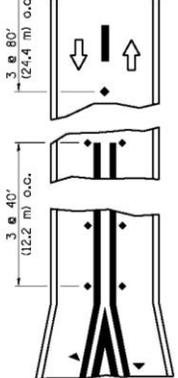
**FREEWAY EXIT RAMP**



**RURAL LEFT TURN**



**MULTI-LANE DIVIDED**



**FREEWAY EXIT RAMP**

**SYMBOLS**

- Yellow stripe
- White stripe
- One-way amber marker
- One-way crystal marker
- Two-way amber marker

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED: JONLUCK, J. 2009  
 ENGINEER OF OPERATIONS  
 APPROVED: G. S. HANCOCK, J. 2009  
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-99	Expanded double line to show different scenarios in RURAL LEFT TURN.

**TYPICAL APPLICATIONS  
RAISED REFLECTIVE  
PAVEMENT MARKERS**

STANDARD 761001-03

# **Errata, Supplemental Specifications, and Recurring Special Provisions**

**Check Sheets**

**Adopted January 1, 2013**

State of Illinois  
Department of Transportation

ERRATA  
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

Adopted: January 1, 2012

Revised: January 1, 2013

- Page 182 Article 354.12. In the second line of the first paragraph change “Article 353.12” to “Article 353.13”.
- Page 183 Article 355.10. In the second line of the first paragraph change “Article 353.12” to “Article 353.13”.
- Page 185 Article 356.10. In the second line of the first paragraph change “Article 353.12” to “Article 353.13”.
- Page 328 Article 505.04(f)(2). In the third sentence of the first paragraph change “Specification for Structural Joints Using ASTM A 325 (A 325M) or A 490 (A 490M) Bolts” to “Specification for Structural Joints Using High-Strength Bolts”.
- Page 329 Article 505.04(f)(2). In the first sentence of the third paragraph change “Specifications for Structural Joints using ASTM A 325 (A 325M) or A 490 (A 490M) Bolts” to “Specification for Structural Joints Using High-Strength Bolts”.
- Page 331 Article 505.04(f)(2)b. In the first sentence of the first paragraph change “Specifications for Structural Joints using ASTM A 325 (A 325M) or A 490 (A 490M) Bolts” to “Specification for Structural Joints Using High-Strength Bolts”.
- Page 331 Article 505.04(f)(2)c. In the first sentence of the first paragraph change “Specifications for Structural Joints using ASTM A 325 (A 325M) or A 490 (A 490M) Bolts” to “Specification for Structural Joints Using High-Strength Bolts”.
- Page 332 Article 505.04(f)(2)d. In the first sentence of the first paragraph change “Specifications for Structural Joints using ASTM A 325 (A 325M) or A 490 (A 490M) Bolts” to “Specification for Structural Joints Using High-Strength Bolts”.
- Page 337 Article 505.04. Revise the subparagraph “(i) Match Making.” to “(i) Match Marking.”.
- Page 360 Article 506.07. In the first line of the second paragraph change “AASHTO/AWS D1.5/D1.5.” to “AASHTO/AWS D1.5M/D1.5.”.
- Page 361 Article 506.08. In the third line of the sixth paragraph change “506.08(a)” to “506.08(b)”.
- Page 531 Article 609.07. In the first paragraph delete “TYPE B, C, or D INLET BOX STANDARD 609001 or”.

- Page 601 Article 701.18(h). In the first line of the first paragraph change “Standard 701426.” to “Standard 701426 and 701427.”.
- Page 609 Article 703.05. In the first line of the second paragraph delete “or Type II”.
- Page 751 Article 1006.08. In the first sentence of the first paragraph change “Specifications for Structural Joints using AASHTO M 164 (M 164M) Bolts” to “Specification for Structural Joints Using High-Strength Bolts”.
- Page 989 Article 1083.02(a). In the seventh line of the first paragraph change “Table 14.7.5.2-2” to “Table 14.7.5.2-1”.
- Page 1019 Article 1095.01(b)(1)e. In the table for daylight reflectance for the color yellow, change “75 % min.” to “45 % min.”.

State of Illinois  
Department of Transportation

SUPPLEMENTAL SPECIFICATION  
FOR  
SECTION 701. WORK ZONE TRAFFIC CONTROL AND PROTECTION

This Supplemental Specification amends the provisions of the Standard Specifications for Road and Bridge Construction, adopted January 1, 2012 and shall be construed to be a part thereof, superceding any conflicting provisions thereof applicable to the work under the contract.

701.03 Equipment. Add the following to this Article:

“(p) Detectable Pedestrian Channelizing Barricades .... 1106.02(k)”

701.12 Personal Protective Equipment. Revise this Article to read:

**“701.12 Personal Protective Equipment.** All personnel on foot, excluding flaggers, within the highway right-of-way shall wear a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of

ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have a manufacturer's tag identifying them as meeting the ANSI Class 2 requirement."

701.13 Flaggers. Revise the third paragraph of this Article to read:

"Flaggers shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 2 garments and flagger traffic control paddles. Other types of garments may be substituted for the vest as long as the garments have a manufacturer's tag identifying them as meeting the ANSI Class 2 requirement. The longitudinal placement of the flagger may be increased up to 100 ft (30 m) from that shown on the plans to improve the visibility of the flagger. Flaggers shall not encroach on the open lane of traffic unless traffic has been stopped."

Revise the fifth paragraph of this Article to read:

"Nighttime flaggers shall be equipped with fluorescent orange or fluorescent orange and fluorescent yellow/green apparel meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 3 garments."

Revise the second paragraph of Article 701.13(a) to read:

"The Engineer will determine when a side road or entrance shall be closed to traffic. A flagger will be required at each side road or entrance remaining open to traffic within the operation where two-way traffic is maintained on one lane of pavement. The flagger shall be positioned as shown on the plans or as directed by the Engineer."

701.15 Traffic Control Devices. Add the following to this Article:

"(n) Detectable Pedestrian Channelizing Barricade. Detectable pedestrian channelizing barricades are cane detectable and visible to persons having low vision. These barricades are used to channelize pedestrian traffic."

701.20 Basis of Payment. Revise the first and second paragraph of Article 701.20(i) to read:

"Signs, barricades, or other traffic control devices required by the Engineer over and above those specified will be paid for according to Article 109.04. All flaggers required at side roads and entrances remaining open to traffic including those that are shown on the Highway Standards and/or additional barricades required by the Engineer to close side roads and entrances will be paid for according to Article 109.04."

State of Illinois  
Department of Transportation

SUPPLEMENTAL SPECIFICATION  
FOR  
SECTION 706. IMPACT ATTENUATORS, TEMPORARY

This Supplemental Specification amends the provisions of the Standard Specifications for Road and Bridge Construction, adopted January 1, 2012 and shall be construed to be a part thereof, superceding any conflicting provisions thereof applicable to the work under the contract.

Add the following to the Standard Specifications:

**“SECTION 706. IMPACT ATTENUATORS, TEMPORARY**

**706.01 Description.** This work shall consist of furnishing, installing, maintaining, and removing temporary impact attenuators of the category and test level specified.

**706.02 Materials.** Materials shall be according to the impact attenuator manufacturer’s specifications and the following:

Item	Article/Section
(a) Fine Aggregate (Note 1) .....	1003.01
(b) Steel Posts, Structural Shapes, and Plates .....	1006.04
(c) Rail Elements, End Section Plates, and Splice Plates .	1006.25
(d) Bolts, Nuts, Washers and Hardware .....	1006.25
(e) Hollow Structural Tubing .....	1006.27(b)
(f) Wood Posts and Wood Blockouts... 1007.01, 1007.02, 1007.06	
(g) Preservative Treatment .....	1007.12
(h) Packaged Rapid Hardening Mortar .....	1018.01

Note 1. Fine aggregate shall be FA 1 or FA 2, Class A quality. The sand shall be unbagged and shall have a maximum moisture content of five percent.

CONSTRUCTION REQUIREMENTS

**706.03 General.** Impact Attenuators shall meet the testing criteria contained in either the National Cooperative Highway Research Program (NCHRP) Report 350 or MASH and shall be on the Department’s approved list.

**706.04 Installation.** Impact attenuators shall be installed according to the manufacturer’s specifications and include all necessary transitions between the impact attenuator and the item to which it is attached. Regrading of slopes or approaches for the installation shall be as shown on the plans.

Attenuator bases, when required by the manufacturer, shall be constructed on a prepared subgrade according to the manufacturer’s specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage.

When water filled attenuators are used between November 1 and April 15, they shall contain anti-freeze according to the manufacturer's recommendations.

**706.05 Markings.** Sand module impact attenuators shall be striped with alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes. There shall be at least two of each stripe on each module.

Other types of impact attenuators shall have a terminal marker applied to their nose and reflectors along their sides.

**706.06 Maintenance.** All maintenance of the impact attenuators shall be the responsibility of the Contractor until removal is directed by the Engineer.

**706.07 Relocate.** When relocation of temporary impact attenuators is specified, they shall be removed, relocated and reinstalled at the new location. The reinstallation requirements shall be the same as those for a new installation.

**706.08 Removal.** When the Engineer determines the temporary impact attenuators are no longer required, the installation shall be dismantled with all hardware becoming the property of the Contractor.

Surplus material shall be disposed of according to Article 202.03. Anti-freeze, when present, shall be disposed of/recycled according to local ordinances.

When impact attenuators have been anchored to the pavement, the anchor holes shall be repaired with rapid set mortar; only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

**706.09 Method of Measurement.** This work will be measured for payment as each, where each is defined as one complete installation.

**706.10 Basis of Payment.** This work will be paid for at the contract unit price per each for IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, WIDE); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, RESETTABLE); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, NARROW); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, WIDE); or IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) of the test level specified.

Relocation of the devices will be paid for at the contract unit price per each for IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE); IMPACT ATTENUATORS, RELOCATE (SEVERE USE); or IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE); of the test level specified.

Regrading of slopes or approaches will be paid for according to Section 202 and/or Section 204 of the Standard Specifications."

State of Illinois  
Department of Transportation

SUPPLEMENTAL SPECIFICATION  
FOR  
SECTION 1106. WORK ZONE TRAFFIC CONTROL DEVICES

This Supplemental Specification amends the provisions of the Standard Specifications for Road and Bridge Construction, adopted January 1, 2012 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

**1106.02 Devices.** Revise the first paragraph of Article 1106.02(c) to read:

“Type I, II, and III Barricades, Vertical Barricades, and Vertical Panels. Barricades and vertical panels shall have alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass. Barricade stripes shall be 6 in. (150 mm) in width on barricades rails 36 in. (900 mm) or greater in length and 4 in. (100 mm) in width on barricades barricade rails less than 36 in. (900 mm) in length. Type I and Type II Barricades, and Vertical Barricades shall be striped on both sides. Type III Barricades shall be striped on both sides where traffic approaches from either direction. The predominant color for other barricade components shall be white, orange, or silver.”

Add the following to this Article:

“(m) Detectable Pedestrian Channelizing Barricades. The top and bottom panels shall have alternating white and orange stripes sloping at 45 degrees on the side exposed to pedestrian traffic. Barricade stripes shall be 6 in. (150 mm) in width. The predominant color for other barricade components shall be white, orange, or silver.

The top and bottom rails shall be continuous to allow for detection for hand trailing and cane trailing, respectively.

The faces of the barricade rails shall be vertical.”

State of Illinois  
Department of Transportation

SPECIAL PROVISION  
FOR  
PAVEMENT AND SHOULDER RESURFACING

Effective: February 1, 2000  
Revised: January 1, 2009

Revise Article 406.10 of the Standard Specifications to read:

**“406.10 Resurfacing Sequence.** The resurfacing operations shall satisfy the following requirements:

- (a) Before paving in a lane, the adjacent lane and its paved shoulder shall be at the same elevation.
- (b) Each lift of resurfacing shall be completed, including paved shoulders, before the next lift is begun.
- (c) Elevation differences between lanes shall be eliminated within twelve calendar days.”

Revise the first sentence of the eleventh paragraph of Article 406.13 of the Standard Specifications to read:

“When a HMA binder and surface course mixture is used on shoulders and is placed simultaneously with the traffic lane as specified in Section 482, the quantity of HMA placed on the traffic lane that will be paid for will be limited to a calculated tonnage based upon actual mat width and length, plan thickness or a revised thickness authorized by the Engineer, and design mix weight per inch (millimeter) of thickness.”

Delete the twelfth paragraph of Article 406.13 of the Standard Specifications.

Revise the sixth paragraph of Article 482.05 of the Standard Specifications to read:

“On pavement and shoulder resurfacing projects, the resurfacing sequence shall be according to Article 406.10. When the HMA binder and surface course option is used, the shoulders may be placed, at the Contractor’s option, simultaneously with the adjacent traffic lane for both courses, provided the specified density, thickness and cross slope of both the pavement and shoulder can be satisfactorily obtained.”

State of Illinois  
Department of Transportation

SPECIAL PROVISION  
FOR  
GUARDRAIL AND BARRIER WALL DELINEATION

Effective: December 15, 1993  
Revised: January 1, 2012

Description. This work shall consist of furnishing and installing reflectorized guardrail markers, bridge rail markers, or barrier wall markers complete with reflectors or reflective faces as specified, and terminal marker post, when specified.

Materials. Materials shall be according to the following.

- (a) Terminal Marker Post. The posts shall be according to Article 1006.29 of the Standard Specifications for Type C galvanized posts.

Hardware for attaching sign panels to posts shall be stainless steel and be according to Article 1006.29(d) of the Standard Specifications.

- (b) Terminal Markers.

- (1) Direct Applied Reflectorized Terminal Marker. Direct applied reflectorized terminal markers shall be fabricated using Type A or Type AP reflectorized sheeting. All materials used shall be according to Sections 1090 and 1091 of the Standard Specifications.

The sheeting shall be uniform in color throughout and be according to the latest appropriate standard color tolerance chart issued by the U.S. Department of Transportation, Federal Highway Administration of through instrumental color testing, the diffuse day color of the reflective material shall be according to Table 1.

TABLE 1  
Color Specification Limits (Daytime)  
Type AP

Color	1		2		3		4		Reflectance Limit Y(%)	
	X	Y	X	Y	X	Y	X	Y	Min.	Max.
Yellow	0.498	0.412	0.557	0.442	0.479	0.520	0.438	0.472	30	45
White	0.303	0.287	0.368	0.353	0.340	0.380	0.274	0.316	50	-

The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1391 standard colorimetric system measured with standard illuminant D 65.

Type AP sheeting shall have the minimum values shown in Table 1091-2 for the type and color of material specified.

Type AP sheeting surface shall exhibit an 85 degree gloss-meter rating of not less than 50 when tested according to ASTM D 523.

The thickness of Type AP sheeting without protective liner shall not be more than 0.025 in. (0.64 mm).

- (2) Post Mounted Reflectorized Terminal Marker. Post mounted reflectorized markers shall be fabricated using a Type I Sign Panel complete with reflectorized sheeting. The reflectorized material shall be Type A or Type AP Sheeting. All materials used shall be according to Sections 1090 and 1091 of the Standard Specifications.

(c) Guardrail and Barrier Wall Markers.

- (1) Type A Reflector Marker. The reflectors shall conform to the requirements of Section 1097 of the Standard Specifications.

The steel mounting bracket utilized for attaching reflectors to guardrail shall be fabricated from 12 gauge (minimum) steel, and galvanized according to AASHTO M 111.

The steel banding utilized for attaching reflectors to bridge rail shall be 3/4 in. (19 mm) stainless steel banding.

- (2) Type B Reflector Marker. The reflectors shall be according to Section 1097 of the Standard Specifications.

The lexan mounting bracket shall be made of high impact lexan approved by the Department. The bracket shall be white or brown in color. Brown brackets shall be specified for use with weathering M 222 (M 222M) steel guardrail applications, and white brackets shall be specified for all other applications.

- (3) Type C Reflector Marker. Molded reflective surfaces, when used, shall be according to Section 1097 of the Standard Specifications, except subparagraph (d) shall not apply.

Flexible reflective sheeting faces, when used, shall be fabricated of either a weather resistant sealed microprismatic sheeting or a high-performance reflective sheeting meeting the minimum reflective values for incidence angles of -4 and +30 degrees for Type A sheeting as set forth in Table 1091-2 of the Standard Specifications or the requirements for Type AP sheeting contained herein. The sheeting shall be manufactured by either 3M, Stimsonsit, Reflexite, or an approved equivalent. The Contractor shall furnish written documentation from the sheeting manufacturer that the sheeting is approved as being compatible for use as a permanent reflector face. The sheeting shall adhere securely to the bracket at temperatures of -30 °F to +160 °F (-34 °C to +71 °C) and shall not crack when struck at -10 °F (-23 °C).

The base material shall be fabricated from high impact thermoplastic, lexan, nylon, or other approved material which shall not shatter or crack under impact at temperatures of -30 °F (-34 °C).

## CONSTRUCTION REQUIREMENTS

- (a) Terminal Marker Posts. The posts shall be driven by hand or mechanical means to a minimum depth of 3 ft (900 mm) and installed according to the details shown on the plans or as directed by the Engineer. The top of the post shall be 30 in. (760 mm) above ground. The post shall be protected by a suitable driving cap and if required by the Engineer, the material around the post shall be compacted after driving. The posts shall be vertical and oriented so the face of the terminal marker shall be at 90 degrees to the center line of the adjacent pavement.

Scratching, chipping, or other damage to the post shall be avoided during handling and installation. Chips and scratches may be recoated in the field by a method meeting the coating manufacturer's recommendation, except chips and scratches totaling more than five percent of the surface area of any one post and/or more than five percent of the surface area in 1 ft (300 mm) segment of any one post shall be cause for rejection of the post.

- (b) Terminal Markers.

- (1) Direct Applied Reflectorized Terminal Marker. The direct applied reflectorized guardrail terminal markers shall be installed directly on the guardrail nose. The marker shall be installed as shown on the plans and directly to the guardrail terminal end. The surface of the guardrail terminal end shall be cleaned of all contaminants prior to the installation of the terminal marker. The surface shall be cleaned using a 5-8 percent phosphoric acid solution and rinsed with clean water or as recommended by the manufacturer of the direct applied terminal marker sheeting and as approved by the Engineer.
- (2) Post Mounted Reflectorized Terminal Marker. Post mounted reflectorized terminal markers shall be installed on terminal marker posts. A minimum of two bolts per post shall be required for reflectorized terminal marker panel attachment.

- (c) Guardrail and Barrier Wall Markers.

- (1) Type A Reflector Marker. Type A reflector marker shall be installed on guardrail or bridgerail as shown on the plans. When installed on guardrail, bolts for fastening will be required. The bolt-on guardrail marker shall consist of one or two round prismatic reflectors as specified attached to a steel mounting bracket. The reflector(s) shall be securely fastened to the bracket with an aluminum rivet. When used with "W" section guardrail, it shall be attached by loosening a guardrail bolt, then slipping the slotted bracket under the head of the bolt and retightening the bolt.

Type A Reflective Markers shall be used on oval or circular bridge rails. The marker shall be attached to the bridge rail using stainless steel banding.

The face of the marker shall be vertical and oriented so the reflector face shall be at 90 degrees to the centerline of the guardrail web, or to the centerline of the bridge rail.

- (2) Type B Reflector Marker. Type B reflector marker shall be installed on the concrete barrier wall or guardrail, as shown on the plans, using an adhesive. The direct

applied marker shall consist of one or two round prismatic reflectors as specified attached to a lexan mounting bracket. The locations for mounting the markers on barrier walls shall be as directed by the Engineer.

The surface of the guardrail or the barrier/bridge parapet wall to which the marker is to be applied shall be free of foreign matter and any material which would adversely affect the bond of the adhesive. Cleaning of the surfaces shall be to the satisfaction of the Engineer.

An adhesive meeting the reflector unit manufacturer's specifications shall be placed either on the surface or the bottom of the marker in sufficient quantity to ensure complete coverage of the contact area with no voids present and with a slight excess after the marker is pressed firmly in place.

The face of the marker shall be vertical and oriented so the reflector face shall be at 90 degrees to the centerline of the guardrail web, or to the surface of the barrier.

- (3) Type C Reflector Marker. Type C reflector marker shall be installed on concrete barrier wall as shown on the plans. The direct applied barrier wall marker shall consist of one or two reflective surfaces as specified applied to a base fabricated of suitable material.

Basis of Payment. This work will be paid for at the contract unit price per each for TERMINAL MARKER-DIRECT APPLIED, TERMINAL MARKER-POST MOUNTED, TERMINAL MARKER POSTS; and GUARDRAIL MARKERS and BARRIER WALL MARKERS of the type specified.

The cost of work and material involved to perform any necessary alterations to the embedment length of the terminal marker post shall be included in the contract unit price bid for Terminal Marker Posts.

State of Illinois  
Department of Transportation

SPECIAL PROVISION  
FOR  
TEMPORARY MODULAR GLARE SCREEN SYSTEM

Effective: January 1, 2000  
Revised: January 1, 2007

Description. This work shall consist of furnishing, installing, and maintaining a temporary modular glare screen system on top of temporary barrier.

Materials. Materials shall be according to the following.

- (a) Specifications. The base unit and blades shall be supplied from the same manufacturer.

The maximum length and width of the modular base units shall equal the dimensions of the top of the individual temporary concrete barrier sections.

The glare screen blades shall be FHWA highway green in color and made of impact resistant, non-metallic, high-density plastic material. The blades shall have a height from 24 to 30 in. (600 to 750 mm) and a width from 6 to 9 in. (150 to 225 mm). The same sized blades shall be used throughout the project.

(b) Producers. The following modular glare screen systems shall be used:

(1) Modular Guidance System

Carsonite International  
605 Bob Gifford Blvd.  
Early Branch, SC 29916  
Phone: (800) 648-7974

(2) Safe-Hit Glare Screen

Safe-Hit Corporation  
35 East Wacker Drive, Suite 1100  
Chicago, IL 60601  
Phone: (800) 537-8958

(3) FlexStake Glare Screen

FlexStake, Inc.  
2150 Andrea Lane  
Ft. Myers, FL 33912  
Phone: (800) 348-9839

Installation. The temporary modular glare screen system shall be installed according to the manufacturer's instructions such that it is centered along the top of the concrete barrier and does not extend over the joints between the concrete barrier sections. The glare screen blades shall be installed so the combination of blade width and spacing provide for a minimum 22 degree sight cut-off angle.

Method of Measurement. This work will be measured for payment in feet (meters) in place, along the centerline of the modular glare screen system.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for MODULAR GLARE SCREEN SYSTEM.

State of Illinois  
Department of Transportation

SPECIAL PROVISION  
FOR  
TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNALS

Effective: August 1, 2003  
Revised: January 1, 2007

Description. At the Contractor's option, temporary portable bridge traffic signals may be used in place of temporary bridge traffic signals. Work shall be according to Article 701.18(b) of the Standard Specifications, except as follows:

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Traffic Signal Head .....	1078
(b) Electric Cable .....	1076.04
(c) Controller.....	1073
(d) Controller Cabinet .....	1074.03
(e) Detector Loop.....	1079

CONSTRUCTION REQUIREMENTS

General. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.

All signal heads located over the travel lane shall be mounted at a minimum height of 17 ft (5 m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 ft (2.4 m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.

The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.

As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation. All portable traffic signal units shall be interconnected using hardwire communication cable or radio communication equipment. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.

The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV of the Manual on

Uniform Traffic Control Devices (MUTCD). The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C).

When not being utilized to inform and direct traffic, portable signals shall be treated as non-operating equipment according to Article 701.11 of the Standard Specifications.

Basis of Payment. This work will be paid for according to Article 701.20(c) of the Standard Specifications.

State of Illinois  
Department of Transportation  
  
SPECIAL PROVISION  
FOR  
WORK ZONE PUBLIC INFORMATION SIGNS

Effective: September 1, 2002

Revised: January 1, 2007

Description. This work shall consist of furnishing, erecting, maintaining, and removing work zone public information signs.

Camera-ready artwork for the signs will be provided to sign manufacturing companies upon request by contacting the Central Bureau of Operations at 217-782-2076. The sign number is W21-I116-6048.

Freeways/Expressways. These signs are required on freeways and expressways. The signs shall be erected as shown on Highway Standard 701400 and according to Article 701.14 of the Standard Specifications.

All Other Routes. These signs shall be used on other routes when specified on the plans. They shall be erected in pairs midway between the first and second warning signs.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the cost of the Standard.

State of Illinois  
Department of Transportation

SPECIAL PROVISION  
FOR  
NIGHT TIME INSPECTION OF ROADWAY LIGHTING

Effective: May 1, 1996

The Contractor shall provide traffic control and protection for the night time inspection of the roadway lighting as shown in the contract. Any fixtures found not to be aimed to provide optimum lighting on the roadway during the night time inspection shall be re-aimed to optimum during the inspection. Any work necessary for re-aiming will not be paid for separately but, shall be included in the cost of the highway lighting bid items.

State of Illinois  
Department of Transportation  
Bureau of Local Roads and Streets

SPECIAL PROVISION  
FOR  
WORK ZONE TRAFFIC CONTROL SURVEILLANCE

Effective: January 1, 1999  
Revised: January 1, 2010

Revise Article 701.10 of the Standard Specifications to read:

“The Contractor shall conduct inspections of the worksite at a frequency that will allow for the timely replacement of any traffic control device that has become displaced, worn, or damaged. A sufficient quantity of replacement devices, based on vulnerability to damage, shall be readily available to meet this requirement.”

Delete Articles 701.19(d) and Article 701.20(g) of the Standard Specifications.

State of Illinois  
Department of Transportation  
Bureau of Local Roads and Streets

SPECIAL PROVISION  
FOR  
FLAGGERS IN WORK ZONES

Effective: January 1, 1999  
Revised: January 1, 2007

Revise the last paragraph of Article 701.13 of the Standard Specifications to read:

“Flaggers are required only when workers are present.”

# **Bureau of Design & Environment Special Provisions**

**January 2013**

## **AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)**

Effective: January 1, 2008

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two lane highways where two-way traffic is maintained over one lane of pavement. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be according to the FHWA memorandum, "MUTCD - Revised Interim Approval for the use of Automated Flagger Assistance Devices in Temporary Traffic Control Zones (IA-4R)", dated January 28, 2005. The devices shall be mounted on a trailer or a moveable cart and shall meet the requirements of NCHRP 350, Category 4.

The AFAD shall be the Stop/Slow type. This device uses remotely controlled "STOP" and "SLOW" signs to alternately control right-of-way.

Signs for the AFAD shall be according to Article 701.03 of the Standard Specifications and the MUTCD. The signs shall be 24 x 24 in. (600 x 600 mm) having an octagon shaped "STOP" sign on one side and a diamond shaped "SLOW" sign on the opposite side. The letters on the signs shall be 8 in. (200 mm) high. If the "STOP" sign has louvers, the full sign face shall be visible at a distance of 50 ft (15 m) and greater.

The signs shall be supplemented with one of the following types of lights.

(a) Flashing Lights. When flashing lights are used, white or red flashing lights shall be mounted within the "STOP" sign face and white or yellow flashing lights within the "SLOW" sign face.

(b) Stop and Warning Beacons. When beacons are used, a stop beacon shall be mounted 24 in. (600 mm) or less above the "STOP" sign face and a warning beacon mounted 24 in. (600 mm) or less above, below, or to the side of the "SLOW" sign face. As an option, a Type B warning light may be used in lieu of the warning beacon.

A "WAIT ON STOP" sign shall be placed on the right hand side of the roadway at a point where drivers are expected to stop. The sign shall be 24 x 30 in. (600 x 750 mm) with a black legend and border on a white background. The letters shall be at least 6 in. (150 mm) high.

This device may include a gate arm or mast arm that descends to a horizontal position when the "STOP" sign is displayed and rises to a vertical position when the "SLOW" sign is displayed. When included, the end of the arm shall reach at least to the center of the lane being controlled. The arm shall have alternating red and white retroreflective stripes, on both sides, sloping downward at 45 degrees toward the side on which traffic will pass. The stripes shall be 6 in. (150 mm) in width and at least 2 in. (50 mm) in height.

Flagging Requirements. Flaggers and flagging requirements shall be according to Article 701.13 of the Standard Specifications and the following.

AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The flaggers shall be able to view the face of the AFAD and approaching traffic during operation.

To stop traffic, the "STOP" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall descend to a horizontal position. To permit traffic to move, the "SLOW" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall rise to a vertical position.

If used at night, the AFAD location shall be illuminated according to Section 701 of the Standard Specifications.

When not in use, AFADs will be considered nonoperating equipment and shall be stored according to Article 701.11 of the Standard Specifications.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the cost of the various traffic control items included in the contract.

80192

## **FLAGGER AT SIDE ROADS AND ENTRANCES (BDE)**

Moved to Section 701 of the Supplemental Specifications and also pages 124 of this booklet.

## **IMPACT ATTENUATORS, TEMPORARY (BDE)**

Moved to Section 706 of the Supplemental Specifications and also pages 125-126 of this booklet.

## **MOVABLE TRAFFIC BARRIER (BDE)**

Effective: January 1, 2010

Revised: January 1, 2013

Description. This work shall consist of furnishing, installing, maintaining, relocating, and removing a movable traffic barrier at locations shown on the plans.

### Materials.

Add the following to Article 1106.02 of the Standard Specifications:

- “(l) Movable Traffic Barrier. The movable traffic barrier shall meet the requirements of NCHRP Test Level 3 or AASHTO Manual for Assessing Safety Hardware (MASH) and be on the Department’s approved list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing, the configuration of the barrier in that test, and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis.”

## CONSTRUCTION REQUIREMENTS

Add the following to Article 701.15 of the Standard Specifications:

- “(m) Movable Traffic Barrier. The movable traffic barrier shall be assembled and installed according to the manufacturer’s specifications.

The approach end of the movable traffic barrier shall be protected with an impact attenuator which is capable of being moved with the movable barrier system.

When not in use, the device shall be stored longitudinally along the far edge of the shoulder or adjacent to concrete median barrier. The approach end shall be protected with the impact attenuator.

The barrier shall include nighttime delineation consisting of either barrier wall markers or corrugated retroreflective panels. The panels shall consist of one 6 x 36 in. (150 x 900 mm) panel per barrier unit and shall be yellow when on center line or left lane line and white when on edge line.”

### Method of Measurement.

Add the following to Article 701.19 of the Standard Specifications:

- “(h) Movable traffic barrier will be measured for payment in feet (meters) in place, along the centerline of the movable barrier.”

Basis of Payment.

Add the following to Article 701.20 of the Standard Specifications:

“(l) Movable Traffic Barrier will be paid for at the contract unit price per foot (meter) for MOVABLE TRAFFIC BARRIER.

Movement of the barrier will not be paid for separately, but shall be included in the contract unit price per foot (meter) for MOVABLE TRAFFIC BARRIER.”

Temporary impact attenuators will be paid for separately.

80253

**PAVEMENT MARKING REMOVAL (BDE)**

Effective: April 1, 2009

Add the following to the end of the first paragraph of Article 783.03(a) of the Standard Specifications:

“The use of grinders will not be allowed on new surface courses.”

80231

## PAVEMENT MARKING TAPE TYPE IV (BDE)

Effective: April 1, 2012

Revise Article 703.02 of the Standard Specifications to read:

“**703.02 Materials.** Materials shall be according to the following.

- (a) Pavement Marking Tape, Type I and Type III ..... 1095.06
- (b) Paint Pavement Markings ..... 1095.02
- (c) Pavement Marking Tape, Type IV ..... 1095.11”

Revise the second paragraph of Article 703.05 of the Standard Specifications to read:

“Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.”

Revise the third paragraph of Article 703.07 of the Standard Specifications to read:

“When Pavement Marking Tape, Type III or Pavement Marking Tape, Type IV is specified in the contract other than on a Standard, the work will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.”

Add the following to Section 1095 of the Standard Specifications:

“**1095.11 Pavement Marking Tape, Type IV.** The temporary, preformed, patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

- (a) Composition. The retroreflective pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.
- (b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.

- (1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D4061 and meet the values described in Article 1095.06 for Type III tape.
- (2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E2177 and meet the values shown in the following table.

<b>Wet Retroreflectance, Initial R<sub>L</sub></b>	
<b>Color</b>	<b>R<sub>L</sub> 1.05/88.76</b>
White	300
Yellow	200

- (c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

<b>Color</b>	<b>Daylight Reflectance %Y</b>
White	65 minimum
*Yellow	36-59

\*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

- (d) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E303.
- (e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."

## **PAVEMENT PATCHING (BDE)**

Effective: January 1, 2010

Revise the first sentence of the second paragraph of Article 701.17(e)(1) of the Standard Specifications to read:

“In addition to the traffic control and protection shown elsewhere in the contract for pavement, two devices shall be placed immediately in front of each open patch, open hole, and broken pavement where temporary concrete barriers are not used to separate traffic from the work area.”

80254

## **SIDEWALK, CORNER OR CROSSWALK CLOSURE (BDE)**

Moved to Sections 701 and 1106 of Supplemental Specifications and pages 123-124 and 127 of this booklet.

## **TEMPORARY RAISED PAVEMENT MARKER (BDE)**

Effective: January 1, 2009

Description. This work shall consist of furnishing and installing temporary raised pavement markers.

Materials. The marker body shall be approximately 0.06 in. (1.5 mm) thick polyurethane formed in an "L" shape. The base of the marker shall be approximately 4 in. (100 mm) wide by 1.125 in. (28 mm) long with a solid 0.125 in. (3.2 mm) thick butyl rubber adhesive pad protected with a release paper. The vertical portion of the marker shall be approximately 4 in. (100 mm) wide by 2 in. (50 mm) high.

A cube-corner micro-prism reflective tape material shall be placed horizontally along both sides at the top of the vertical section of the marker. The reflective material shall be recessed in an "I-Beam" design to protect the reflective material from aggregate. A clear flexible polyvinyl chloride plastic cover is to be attached to the vertical section of the marker with a heavy duty staple to cover the reflective material during surfacing operations. The flexible raised pavement marker shall be readily visible at night when viewed with high beam automobile headlamps from a distance of at least 300 ft (90 m).

### CONSTRUCTION REQUIREMENTS

Application. The temporary markers shall be installed at the centerline or lane line(s) prior to application of any surface treatment which would cover the existing pavement markings. Temporary markers shall also be applied at edge lines when specified on the plans.

For temporary replacement of skip dash markings, an abbreviated pattern of two markers spaced 4 ft (1.2 m) apart with a maximum spacing of 40 ft (12 m) between sets of markers shall be used. For temporary replacement of solid lines, one marker shall be placed every 5 ft (1.5 m). The marker color and location shall match the existing line color and location.

Basis of Payment. This work will be paid for at the contract unit price per each for TEMPORARY RAISED PAVEMENT MARKER.

80225

## **TEMPORARY WATER FILLED BARRIER (BDE)**

Effective: January 1, 2010

Revised: January 1, 2013

Description. This work shall consist of furnishing, installing, maintaining, relocating, and removing a temporary water filled barrier at locations shown on the plans.

### Materials.

Add the following to Article 1106.02 of the Standard Specifications:

“(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast. The barrier shall meet the requirements of NCHRP Test Level 3 or AASHTO Manual for Assessing Safety Hardware (MASH) and be on the Department’s approved list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined acceptance testing, the configuration of the barrier in that test, and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.”

## CONSTRUCTION REQUIREMENTS

Add the following to Article 701.15 of the Standard Specifications:

“(l) Temporary Water Filled Barrier. The temporary water filled barrier shall be assembled, installed, and maintained according to the manufacturer’s specifications and be capable of withstanding below freezing temperatures. The barrier shall be installed with orange and white alternating units.

When not in use, the device shall be stored longitudinally along the far edge of the shoulder or adjacent to concrete median barrier.

The approach end of the barrier shall be protected with an impact attenuator unless the barrier can serve as its own crashworthy end treatment, as indicated in the Department’s list of approved Temporary Longitudinal Traffic Barrier.

The barrier shall include nighttime delineation consisting of either barrier wall markers or corrugated retroreflective panels. The panels shall consist of one 6 x 36 in. (150 x 900 mm) panel per barrier unit and shall be yellow when on center line or left lane line and white when on edge line.”

### Method of Measurement.

Add the following to Article 701.19 of the Standard Specifications:

“(g) Temporary water filled barrier will be measured for payment in feet (meters) in place, along the centerline of the barrier.”

Basis of Payment.

Add the following to Article 701.20 of the Standard Specifications:

“(k) This work will be paid for at the contract unit price per foot (meter) for TEMPORARY WATER FILLED BARRIER.

Movement of the barrier will not be paid for separately, but shall be included in the contract unit price per foot (meter) for TEMPORARY WATER FILLED BARRIER.”

Temporary impact attenuators will be paid for separately.

80256

**TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: August 1, 2011

Revise the third sentence of the third paragraph of Article 105.03(b) of the Standard Specifications to read:

“The daily monetary deduction will be \$2,500.”

80273

