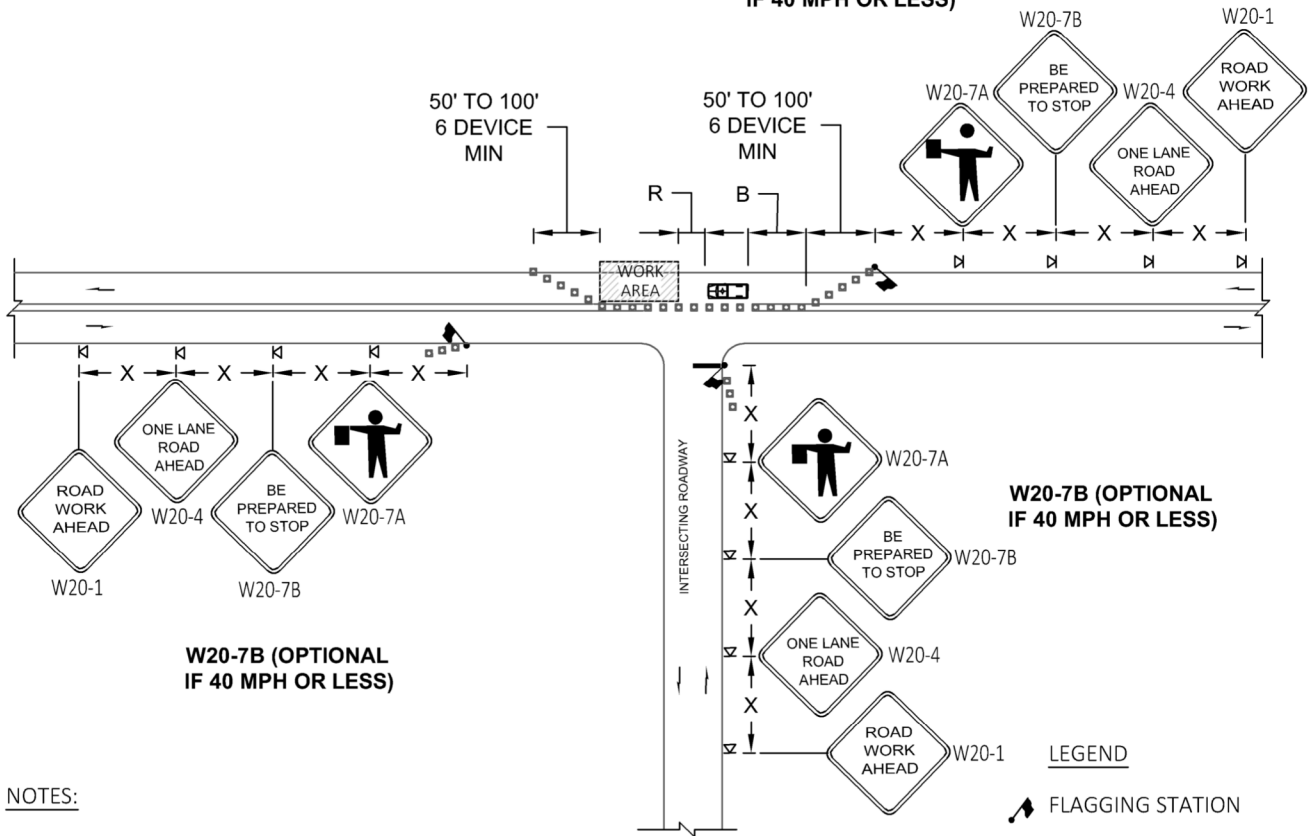


**W20-7B (OPTIONAL
IF 40 MPH OR LESS)**



**W20-7B (OPTIONAL
IF 40 MPH OR LESS)**

NOTES:

1. ALL SIGNS ARE BLACK ON ORANGE
2. EXTENDING THE CHANNELIZING DEVICE TAPER ACROSS SHOULDER IS RECOMMENDED.
3. NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING AT FLAGGING STATIONS. SEE THE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

- LEGEND
- FLAGGING STATION
 - TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - PROTECTIVE VEHICLE

| CHANNELIZATION DEVICE SPACING (feet) | | |
|--------------------------------------|----------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 10 to 20 | 60 |
| 25/ 30 | 10 to 20 | 40 |

| BUFFER DATA | | | | |
|---|-----|--------------------------------|-----|-----|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| TRANSPORTABLE ATTENUATOR | | 30 FEET MIN TO 100 FEET MAX | | |
| MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION | | | | |
| PROTECTIVE VEHICLE | | NO SPECIFIED DISTANCE REQUIRED | | |
| MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | | |

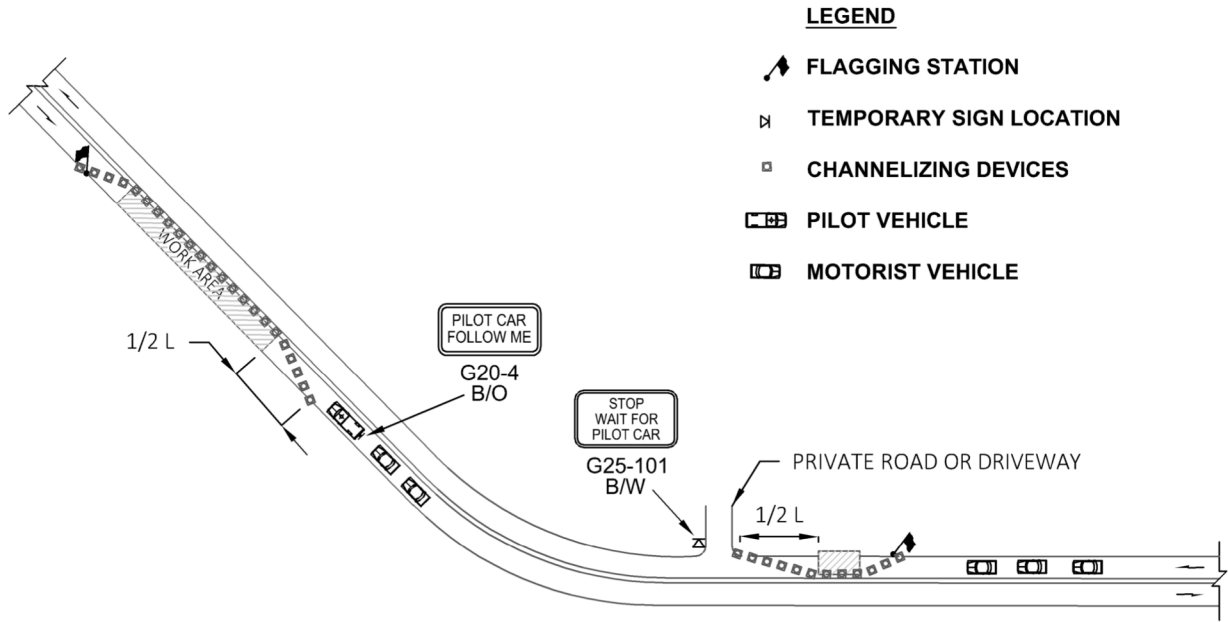
| SIGN SPACING = X (1) | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'+ |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'+ (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'+ (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER



STANDARD DETAIL NUMBER: **901** | SCALE: **NOT TO SCALE**
ONE-LANE, TWO-WAY TRAFFIC CONTROL WITH FLAGGERS



NOTES:

1. REFER TO SHEET TC1 FOR ADDITIONAL SIGNING AND FLAGGING DETAILS NOT SHOWN.
2. CHANNELIZING DEVICES ARE RECOMMENDED ALONG CENTERLINE TO SEPARATE TRAFFIC FROM WORK OPERATION. DEVICES ARE REQUIRED AT TAPERS TO SHIFT TRAFFIC MOVEMENT BETWEEN LANES AND TO PROTECT ALL FLAGGING STATIONS.
3. SIGN G25-101 IS RECOMMENDED FOR NON-STOP SIGN CONTROLLED APPROACHES SUCH AS PRIVATE ROADS AND DRIVEWAYS . THIS SIGN IS NOT REQUIRED TO BE ALUMINUM SUBSTRATE AND CAN BE MADE OF ALTERNATIVE MATERIALS.

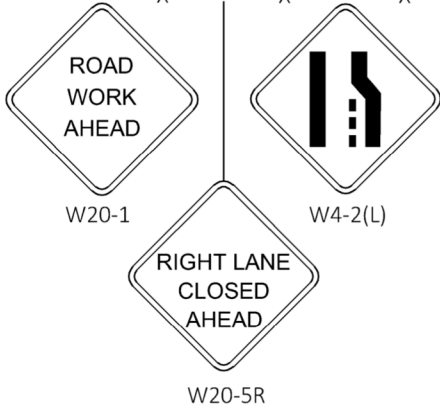
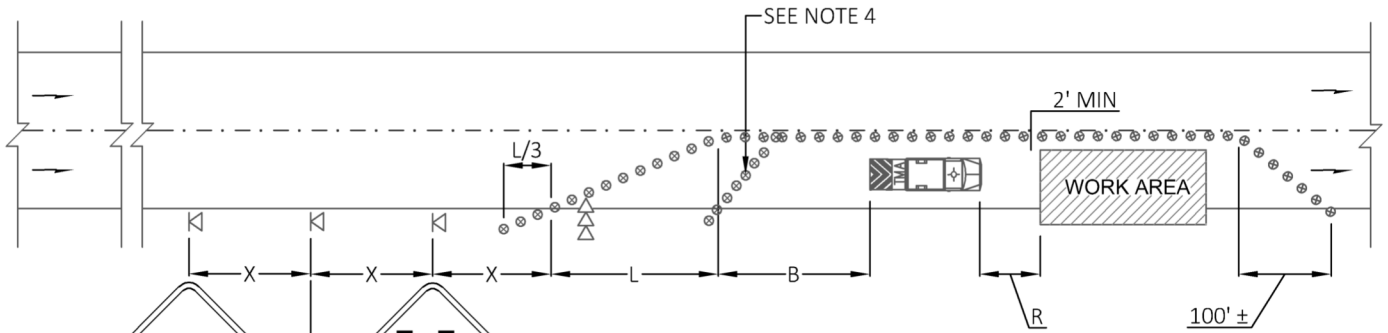
| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|----------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 10 to 20 | 60 |
| 25/ 30 | 10 to 20 | 40 |

| MINIMUM TAPER LENGTH = L (feet) | | | | |
|---------------------------------|--------------------|-----|-----|-----|
| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER
 PUBLICATION DATE: 3/1/2021 | REVISION DATE: 2/11/2020



STANDARD DETAIL NUMBER: **902** | SCALE: **NOT TO SCALE**
PILOT CAR OPERATION



MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
|-------------------|--------------------|-----|-----|-----|
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)

| SHOULDER WIDTH (feet) | POSTED SPEED (mph) | | | |
|-----------------------|--------------------|----|----|----|
| | 25 | 30 | 35 | 40 |
| 8 | 40 | 40 | 60 | 90 |
| 10 | 40 | 60 | 90 | 90 |

CHANNELIZATION DEVICE SPACING (feet)

| MPH | TAPER | TANGENT |
|--------|-------|---------|
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

SIGN SPACING = X (1)

| | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'± |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'± (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'± (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

LEGEND

- ▵ TEMPORARY SIGN LOCATION
- ⊙ TRAFFIC SAFETY DRUM
- ⇨⇨ SEQUENTIAL ARROW SIGN
- TRANSPORTABLE ATTENUATOR

NOTES:

1. NO FLAGGERS OR SPOTTERS.
2. EXTEND DEVICE TAPER AT L/3 ACROSS SHOULDER.
3. DEVICES SHALL NOT ENCROACH INTO THE ADJACENT LANE.
4. USE TRAVERSE DEVICES IN CLOSED LANE EVERY 1000' (RECOMMENDED).
5. DEVICES SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20'.
6. ALL SIGNS ARE BLACK ON ORANGE.
7. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

BUFFER DATA

| LONGITUDINAL BUFFER SPACE = B | | | | |
|--|---|-----|-----|-----------------------------|
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| TRANSPORTABLE ATTENUATOR | MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION | | | 30 FEET MIN TO 100 FEET MAX |

Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER
 PUBLICATION DATE: 3/1/2021 | REVISION DATE: 2/11/2020



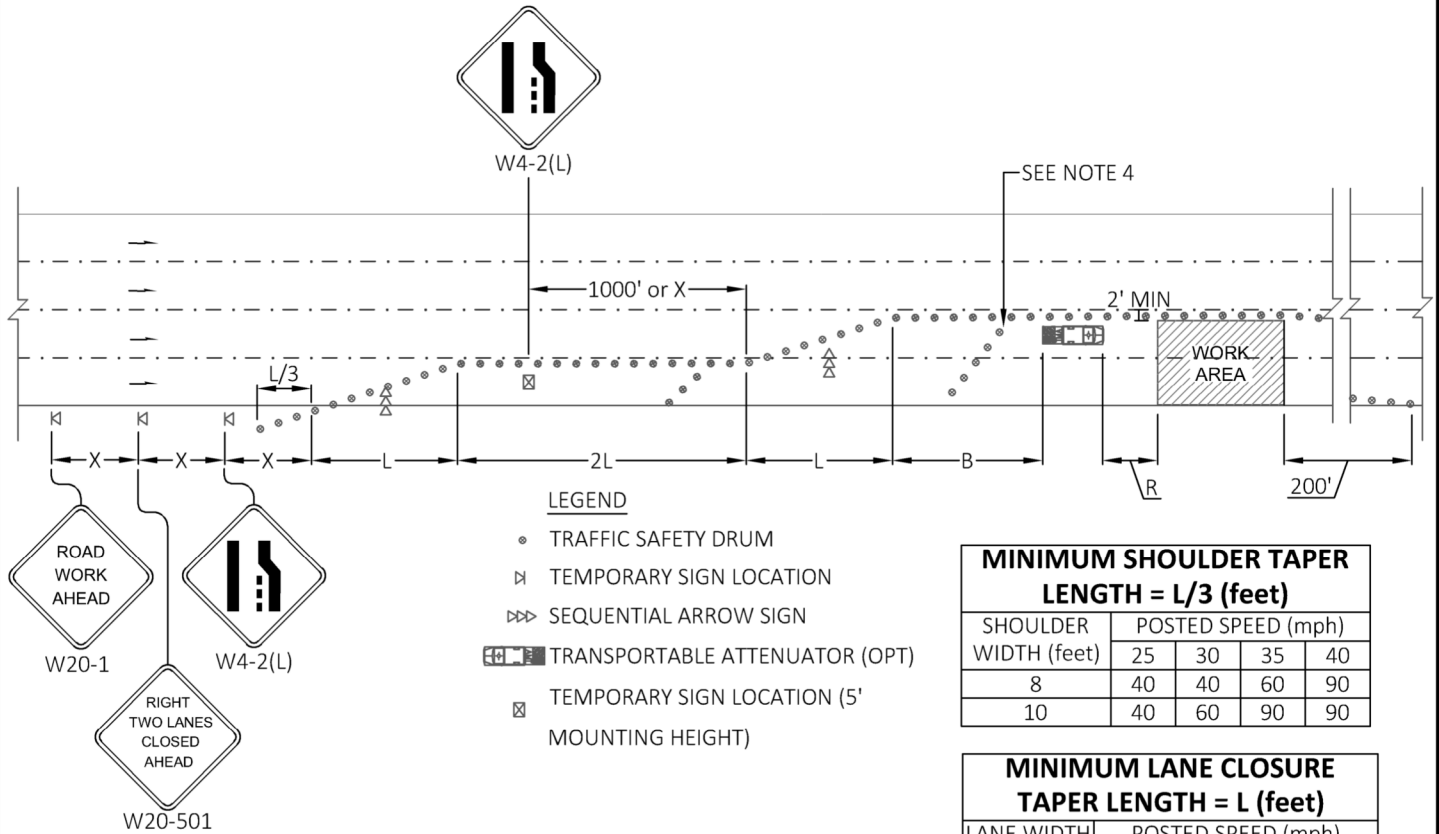
STANDARD DETAIL NUMBER: **903** | SCALE: **NOT TO SCALE**
SINGLE-LANE CLOSURE FOR MULTI-LANE ROADWAYS

SIGN SPACING = X (1)

| | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'± |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'± (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'± (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

| CHANNELIZATION DEVICE SPACING (feet) | | |
|--------------------------------------|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |



MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)

| SHOULDER WIDTH (feet) | POSTED SPEED (mph) | | | |
|-----------------------|--------------------|----|----|----|
| | 25 | 30 | 35 | 40 |
| 8 | 40 | 40 | 60 | 90 |
| 10 | 40 | 60 | 90 | 90 |

MINIMUM LANE CLOSURE TAPER LENGTH = L (feet)

| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
|-------------------|--------------------|-----|-----|-----|
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

NOTES:

1. NO FLAGGERS OR SPOTTERS.
2. EXTEND DEVICE TAPER AT L/3 ACROSS SHOULDER.
3. DEVICES SHALL NOT ENCROACH INTO THE ADJACENT LANE.
4. USE TRAVERSE DEVICES IN CLOSED LANE EVERY 1000' (RECOMMENDED).
5. DEVICES SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20'.
6. ALL SIGNS ARE BLACK ON ORANGE.

| BUFFER DATA | | | | |
|---|-----|-----|-----|-----------------------------|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| TRANSPORTABLE ATTENUATOR | | | | 30 FEET MIN TO 100 FEET MAX |
| MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION | | | | |

Tricia Juhnke

APPROVED BY: TRICIA JUHNKE
CITY ENGINEER

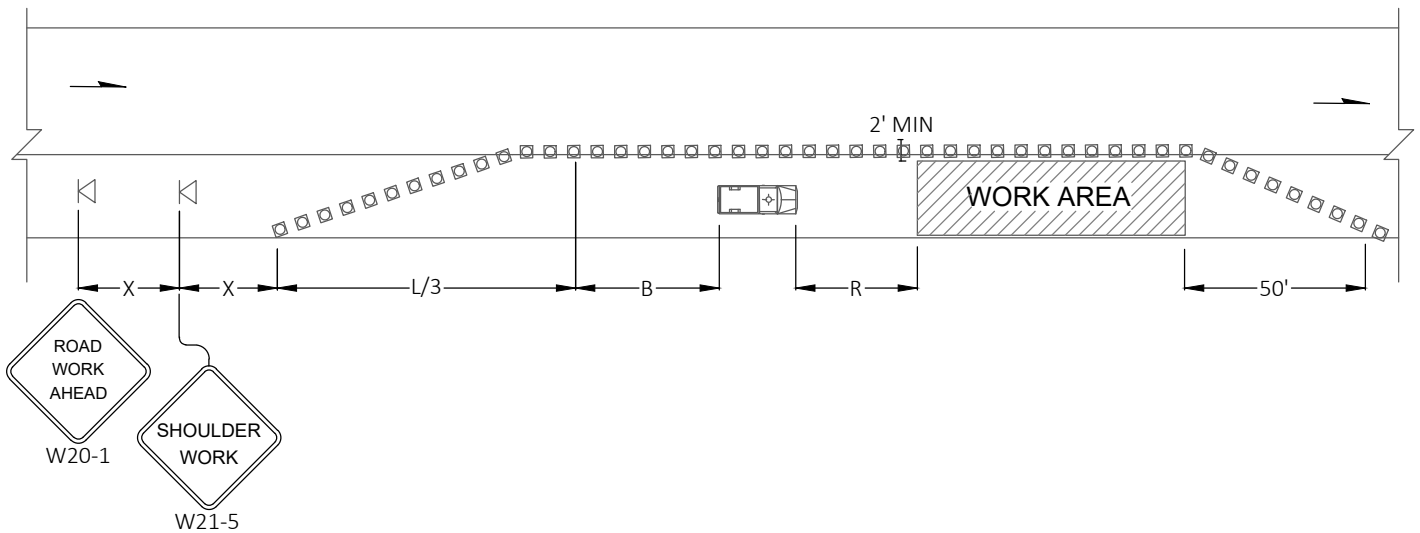


STANDARD DETAIL NUMBER: 904 SCALE: NOT TO SCALE

DOUBLE -LANE CLOSURE FOR MULTI-LANE ROADWAY

PUBLICATION DATE: 3/1/2021 REVISION DATE: 2/11/2020

| SIGN SPACING = X (1) | | |
|---|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'+ |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'+ (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'+ (2) |
| (1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS. | | |
| (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS. | | |



LEGEND

- TEMPORARY SIGN LOCATION
- CHANNELIZING DEVICES
- PROTECTIVE VEHICLE

| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

NOTES:

1. NO FLAGGERS OR SPOTTERS.
2. DEVICES SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20'.
3. ALL SIGNS ARE BLACK ON ORANGE.

| MINIMUM SHOULDER TAPER LENGTH = L/3 (feet) | | | | |
|---|--------------------|----|----|----|
| SHOULDER WIDTH (feet) | POSTED SPEED (mph) | | | |
| | 25 | 30 | 35 | 40 |
| 8 | 40 | 40 | 60 | 90 |
| 10 | 40 | 60 | 90 | 90 |

| BUFFER DATA | | | | |
|--|---|-----|-----|-----------------------------------|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| PROTECTIVE VEHICLE | MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | NO SPECIFIED DISTANCE REQUIRED |

Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER

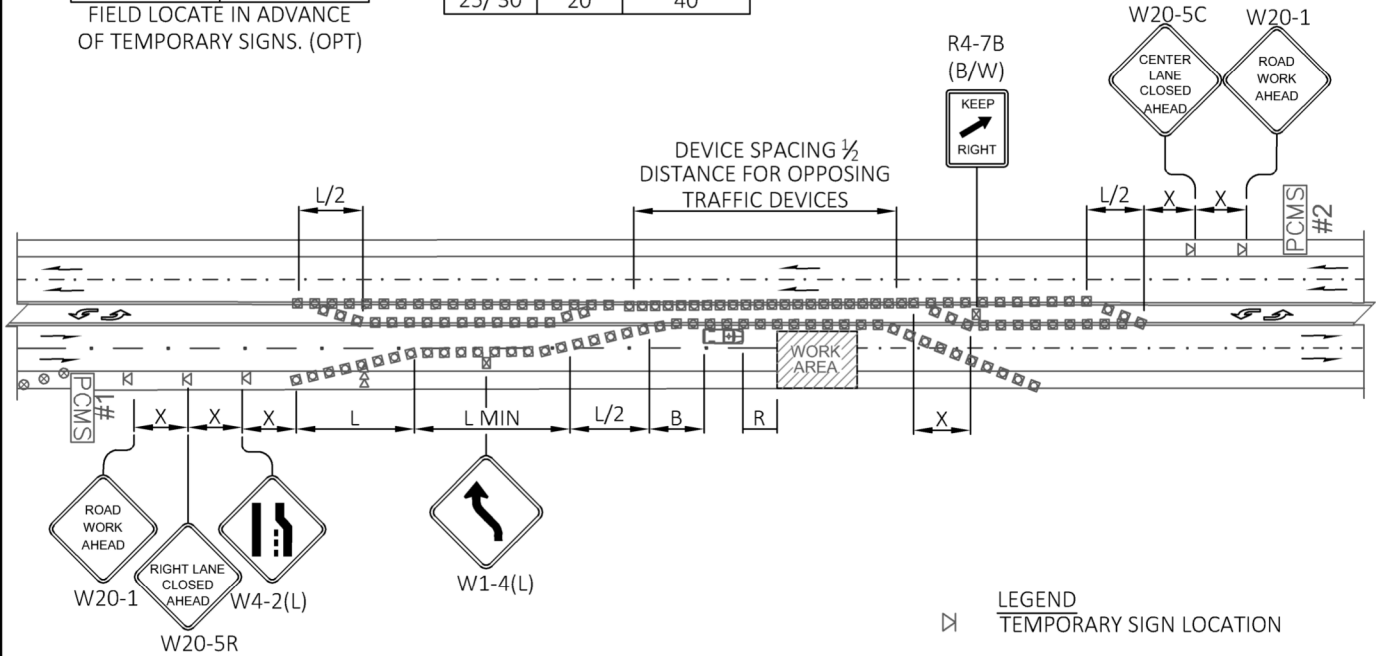


STANDARD DETAIL NUMBER: **905** | SCALE: **NOT TO SCALE**
SHOULDER CLOSURE - LOW SPEED
(40 MPH OR LESS)

| PCMS | |
|--------------------|-----------------|
| 1 | 2 |
| CENTER LANE CLOSED | NO LEFT TURNING |
| 2.0 SEC | 2.0 SEC |

FIELD LOCATE IN ADVANCE OF TEMPORARY SIGNS. (OPT)

| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |



NOTES:

1. NO FLAGGER'S OR SPOTTERS.
2. RECOMMEND EXTENDING DEVICE TAPER (L/3) ACROSS SHOULDER.
3. FOR POSTED SPEED LIMITS OF 30 MPH OR LESS, USE SIGN W1-3 IN LIEU OF SIGN W1-4.
4. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED.
5. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

- LEGEND**
- ⊲ TEMPORARY SIGN LOCATION
 - ▣ CHANNELIZING DEVICES
 - ⇨⇨ SEQUENTIAL ARROW SIGN
 - ☐+ PROTECTIVE VEHICLE
 - PCMS PORTABLE CHANGEABLE MESSAGE SIGN
 - ⊲ TEMPORARY SIGN LOCATION (5' MOUNTING HEIGHT)

| SIGN SPACING = X (1) | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'+ |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'+ (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'+ (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

| MINIMUM TAPER LENGTH = L (feet) | | | | |
|------------------------------------|--------------------|-----|-----|-----|
| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

| BUFFER DATA | | | | |
|--|-----|-----|--------------------------------|-----|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| PROTECTIVE VEHICLE - MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | NO SPECIFIED DISTANCE REQUIRED | |
| TRANSPORTATION ATTENUATOR - MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. | | | 30 FEET MIN - 100 FEET MAX | |

Tricia Juhnke
APPROVED BY: TRICIA JUHNKE
CITY ENGINEER



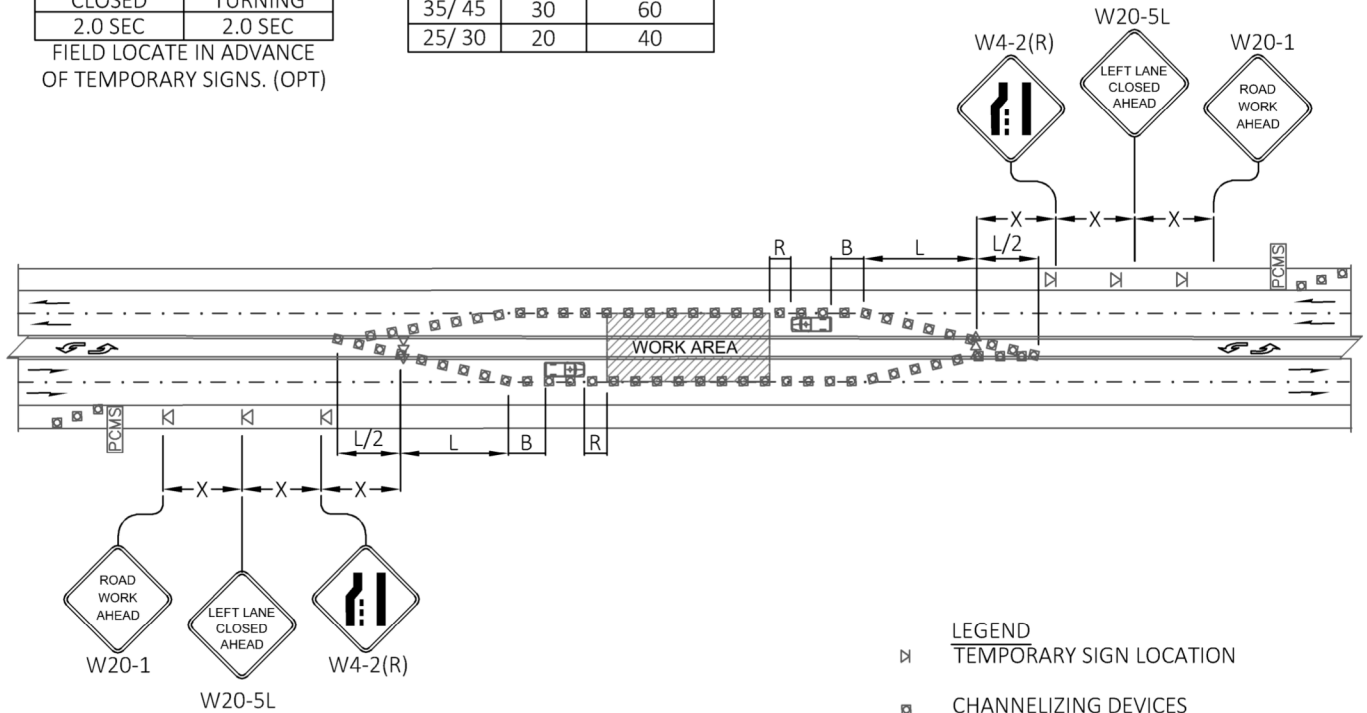
STANDARD DETAIL NUMBER: 906 | SCALE: NOT TO SCALE
**RIGHT LANE CLOSURE WITH
SHIFT - 5 LANE ROADWAY**

PUBLICATION DATE: 3/1/2021 | REVISION DATE: 2/11/2020

| PCMS | |
|--------------------|-----------------|
| 1 | 2 |
| CENTER LANE CLOSED | NO LEFT TURNING |
| 2.0 SEC | 2.0 SEC |

FIELD LOCATE IN ADVANCE OF TEMPORARY SIGNS. (OPT)

| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |



NOTES:

1. NO FLAGGER'S OR SPOTTERS.
2. ALL SIGNS ARE BLACK ON ORANGE.
3. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

- LEGEND**
- ⊠ TEMPORARY SIGN LOCATION
 - ▣ CHANNELIZING DEVICES
 - ⇨⇨ SEQUENTIAL ARROW SIGN
 - 🚚 PROTECTIVE VEHICLE
 - PCMS PORTABLE CHANGEABLE MESSAGE SIGN

| SIGN SPACING = X (1) | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'+ |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'+ (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'+ (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

| MINIMUM TAPER LENGTH = L (feet) | | | | |
|------------------------------------|--------------------|-----|-----|-----|
| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

| BUFFER DATA | | | | |
|--|-----|-----|--------------------------------|-----|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| PROTECTIVE VEHICLE - MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | NO SPECIFIED DISTANCE REQUIRED | |
| TRANSPORTATION ATTENUATOR - MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. | | | 30 FEET MIN - 100 FEET MAX | |

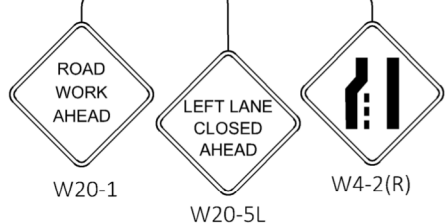
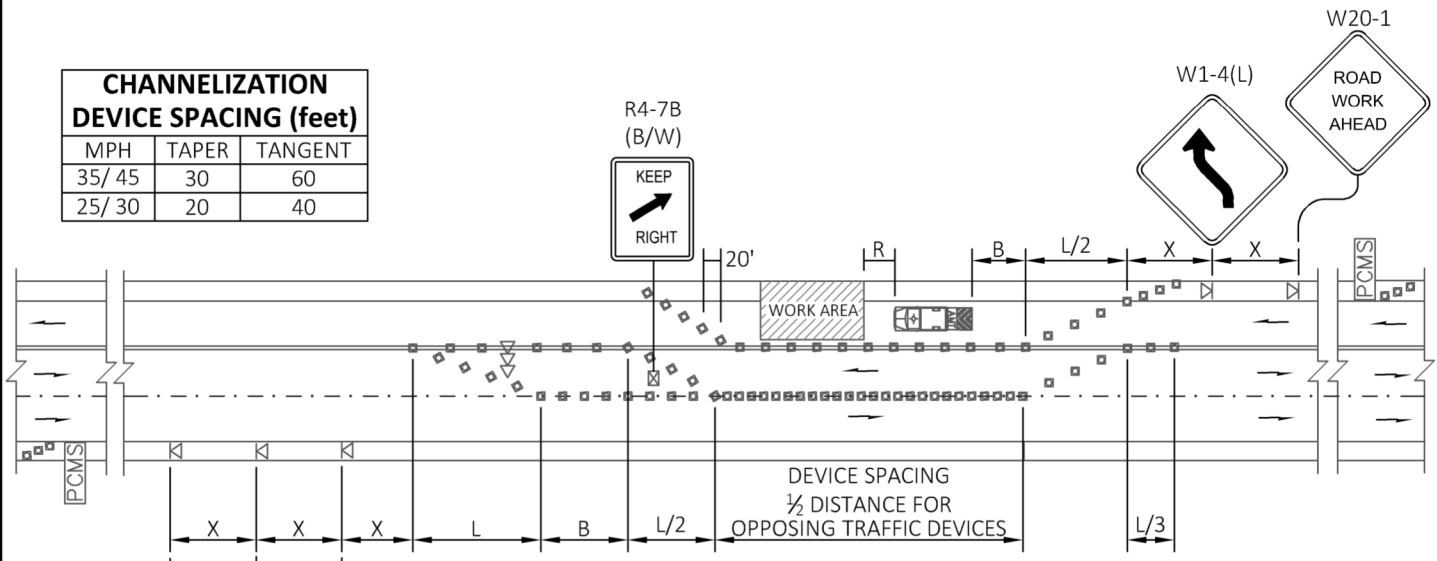
Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER



STANDARD DETAIL NUMBER: **907** | SCALE: **NOT TO SCALE**
**LEFT LANE AND CENTER TURN LANE
 CLOSURE - 5 LANE ROADWAY**

PUBLICATION DATE: 3/1/2021 | REVISION DATE: 2/11/2020

| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |



- LEGEND
- TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - SEQUENTIAL ARROW SIGN
 - PROTECTIVE VEHICLE
 - PORTABLE CHANGEABLE MESSAGE SIGN
 - TEMPORARY SIGN LOCATION (5' MOUNTING HEIGHT)

- NOTES:
- NO FLAGGERS OR SPOTTERS.
 - FOR SPEED LIMITS OF 30 MPH OR LESS, USE SIGN W1-3 IN LIEU OF SIGN W1-4.
 - RECOMMENDED EXTENDING DEVICE TAPER (L/3) ACROSS SHOULDER.
 - ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED.
 - SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

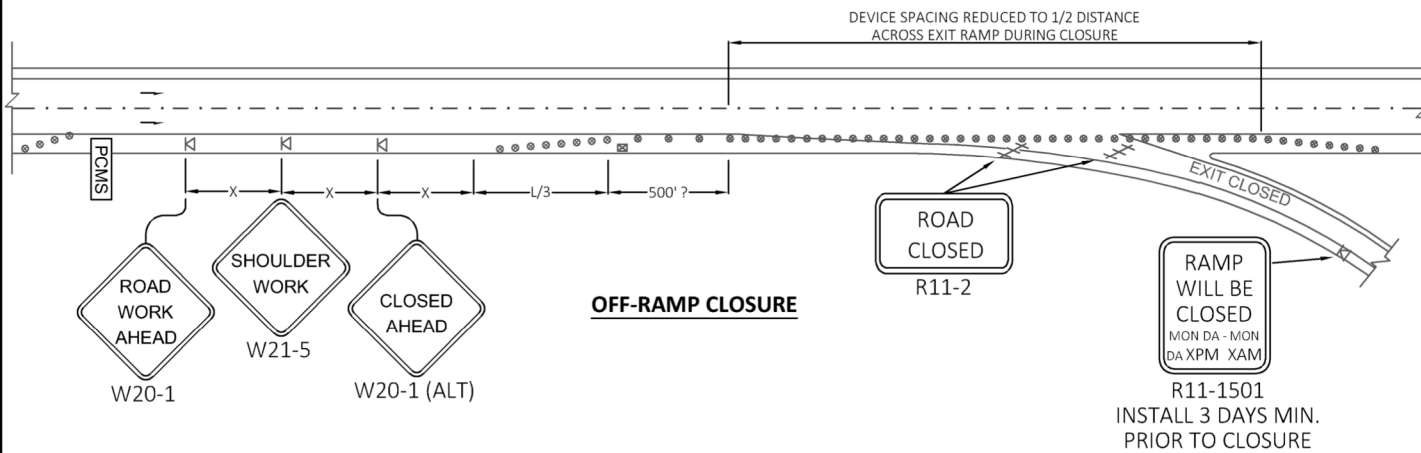
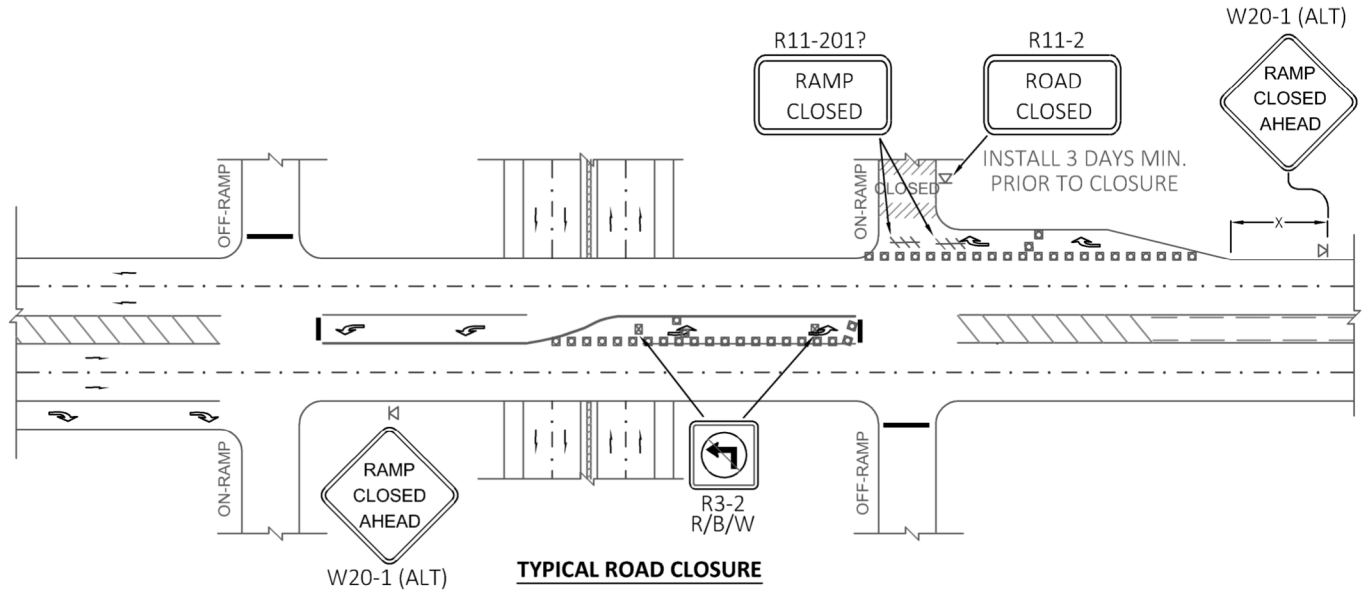
| SIGN SPACING = X (1) | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'+ |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'+ (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'+ (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

| MINIMUM TAPER LENGTH = L (feet) | | | | |
|---------------------------------|--------------------|-----|-----|-----|
| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

| BUFFER DATA | | | | |
|--|-----|-----|--------------------------------|-----|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| PROTECTIVE VEHICLE - MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | NO SPECIFIED DISTANCE REQUIRED | |
| TRANSPORTATION ATTENUATOR - MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. | | | 30 FEET MIN - 100 FEET MAX | |

| | | |
|---|------------------|---|
| APPROVED BY: TRICIA JUHNKE CITY ENGINEER | Public Works | STANDARD DETAIL NUMBER: 908 SCALE: NOT TO SCALE |
| | | LANE SHIFT - THREE LANE ROADWAY |
| PUBLICATION DATE: 3/1/2021 REVISION DATE: 2/11/2020 | | |



SIGN SPACING = X (1)

| | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'+ |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'+ (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'+ (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

LEGEND

- TYPE 3 BARRICADE
- CHANNELIZING DEVICES
- TRAFFIC SAFETY DRUM
- TEMPORARY SIGN LOCATION (5' MOUNTING HEIGHT)

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)

| SHOULDER WIDTH (feet) | POSTED SPEED (mph) | | | |
|-----------------------|--------------------|----|----|----|
| | 25 | 30 | 35 | 40 |
| 8 | 40 | 40 | 60 | 90 |
| 10 | 40 | 60 | 90 | 90 |

CHANNELIZATION DEVICE SPACING (feet)

| MPH | TAPER | TANGENT |
|--------|-------|---------|
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

NOTES:

1. NO FLAGGERS OR SPOTTERS.
2. TYPICAL APPLICATION SHOWN, ADJUST FOR SITE CONDITIONS.
3. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED.
4. SEE SPECIAL PROVISIONS FOR CLOSURE HOUR RESTRICTIONS.

Tricia Juhnke

APPROVED BY: TRICIA JUHNKE
CITY ENGINEER

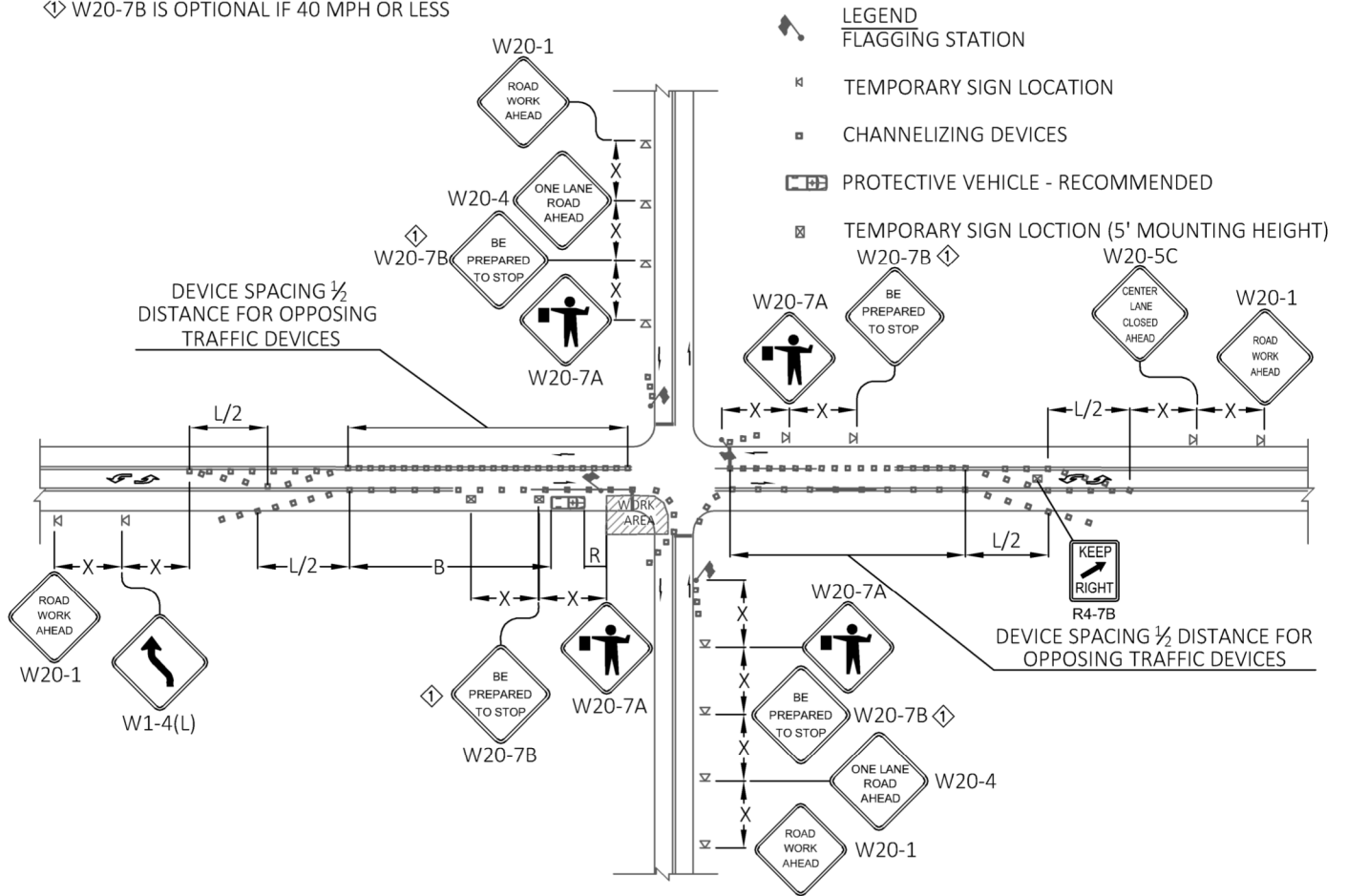


STANDARD DETAIL NUMBER: **909** SCALE: **NOT TO SCALE**

SHORT TERM RAMP CLOSURES

PUBLICATION DATE: 3/1/2021 REVISION DATE: 2/11/2020

◁ W20-7B IS OPTIONAL IF 40 MPH OR LESS



NOTES:

1. RECOMMEND EXTENDING DEVICE TAPER (L/3) ACROSS SHOULDER.
2. IF A SIGNAL IS PRESENT, IT SHALL BE SET TO "RED FLASH MODE" OR TURNED OFF DURING FLAGGING OPERATIONS.
3. LAW ENFORCEMENT OFFICER MAY BE USED IN LIEU OF FLAGGERS TO CONTROL INTERSECTION TRAFFIC. REQUIRED AT SIGNAL.
4. AT SIGNALIZED INTERSECTIONS A MINIMUM OF 2 LAW ENFORCEMENT OFFICERS ARE REQUIRED TO CONTROL THE INTERSECTION.
5. FOR SPEED LIMIT OF 30 MPH OR LESS USE SIGN W1-3 IN LIEU OF SIGN W1-4.
6. MAINTAIN A MINIMUM OF ONE ACCESS POINT FOR EACH BUSINESS WITHIN WORK AREA LIMITS.
7. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED. MIN LANE WIDTH = 11'.

| BUFFER DATA | | | | |
|--|-----|-----|--------------------------------|-----|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| PROTECTIVE VEHICLE - MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | NO SPECIFIED DISTANCE REQUIRED | |
| TRANSPORTATION ATTENUATOR - MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. | | | 30 FEET MIN - 100 FEET MAX | |

| SIGN SPACING = X (1) | | |
|---|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'± |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'± (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'± (2) |
| (1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS. | | |
| (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS. | | |

| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

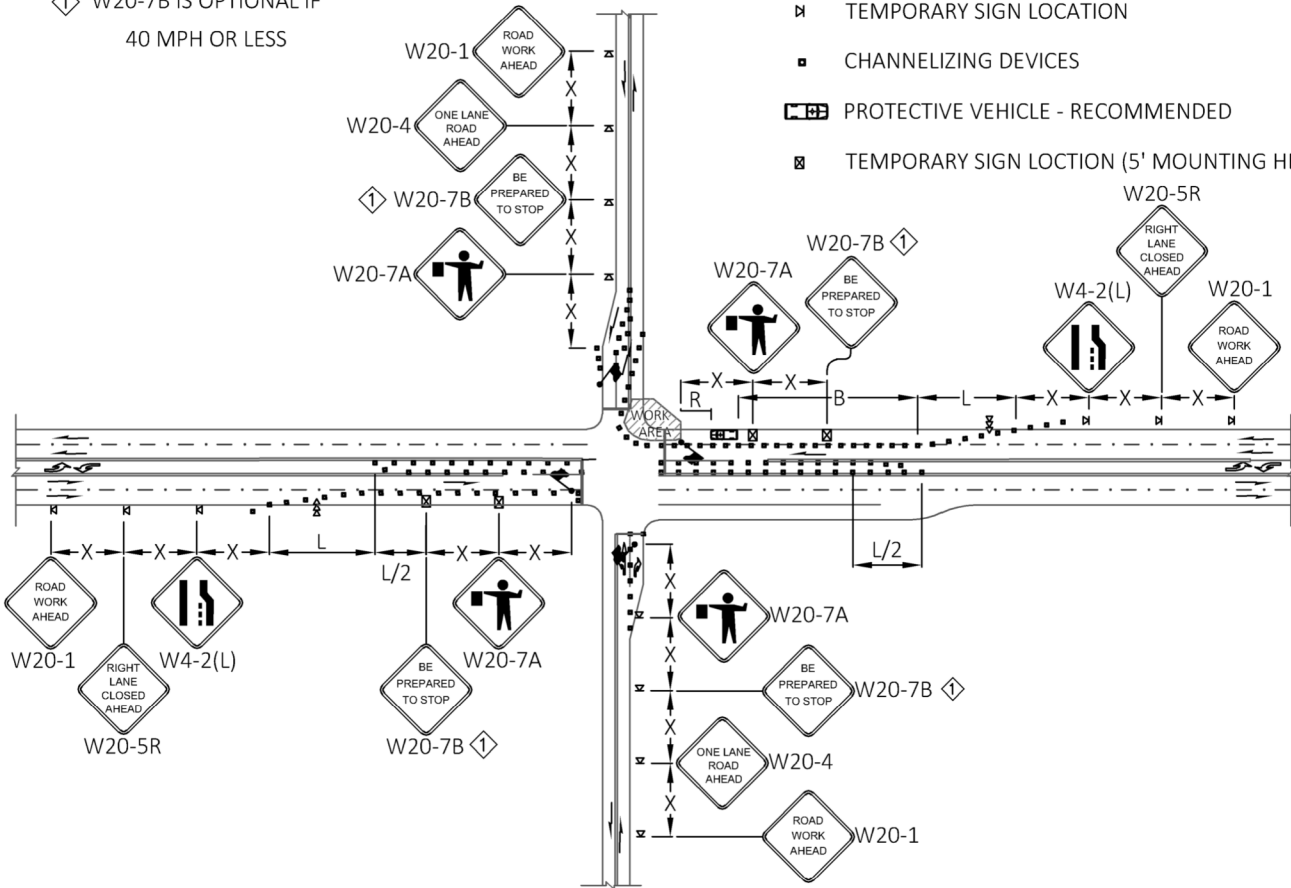
Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER
 PUBLICATION DATE: 3/1/2021 | REVISION DATE: 2/11/2020



STANDARD DETAIL NUMBER: 910 | SCALE: NOT TO SCALE
**INTERSECTION LANE CLOSURE -
 THREE LANE ROADWAY**

⚠ W20-7B IS OPTIONAL IF
40 MPH OR LESS

- LEGEND**
- 🚧 FLAGGING STATION
 - ⚡ TEMPORARY SIGN LOCATION
 - ▣ CHANNELIZING DEVICES
 - 🚚 PROTECTIVE VEHICLE - RECOMMENDED
 - ⊠ TEMPORARY SIGN LOCATION (5' MOUNTING HEIGHT)



NOTES:

1. RECOMMEND EXTENDING DEVICE TAPER (L/3) ACROSS SHOULDER.
2. IF A SIGNAL IS PRESENT, IT SHALL BE SET TO "RED FLASH MODE" OR TURNED OFF DURING FLAGGING OPERATIONS.
3. LAW ENFORCEMENT OFFICER MAY BE USED IN LIEU OF FLAGGERS TO CONTROL INTERSECTION TRAFFIC. REQUIRED AT SIGNAL.
4. AT SIGNALIZED INTERSECTIONS A MINIMUM OF 2 LAW ENFORCEMENT OFFICERS ARE REQUIRED TO CONTROL THE INTERSECTION.
5. FOR SPEED LIMIT OF 30 MPH OR LESS USE SIGN W1-3 IN LIEU OF SIGN W1-4.
6. MAINTAIN A MINIMUM OF ONE ACCESS POINT FOR EACH BUSINESS WITHIN WORK AREA LIMITS.
7. ALL SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED. MIN LANE WIDTH = 11'.

| BUFFER DATA | | | | |
|--|-----|-----|-----|--------------------------------|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| PROTECTIVE VEHICLE - MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA | | | | NO SPECIFIED DISTANCE REQUIRED |
| TRANSPORTATION ATTENUATOR - MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. | | | | 30 FEET MIN - 100 FEET MAX |

| SIGN SPACING = X (1) | | |
|---|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'± |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'± (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'± (2) |
| (1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS. | | |
| (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS. | | |

| CHANNELIZATION DEVICE SPACING (feet) | | |
|---|-------|---------|
| MPH | TAPER | TANGENT |
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

Tricia Juhnke
APPROVED BY: TRICIA JUHNKE
CITY ENGINEER



STANDARD DETAIL NUMBER: 911 | SCALE: NOT TO SCALE

INTERSECTION LANE CLOSURE - FIVE LANE ROADWAY

PUBLICATION DATE: 3/1/2021 | REVISION DATE: 2/11/2020

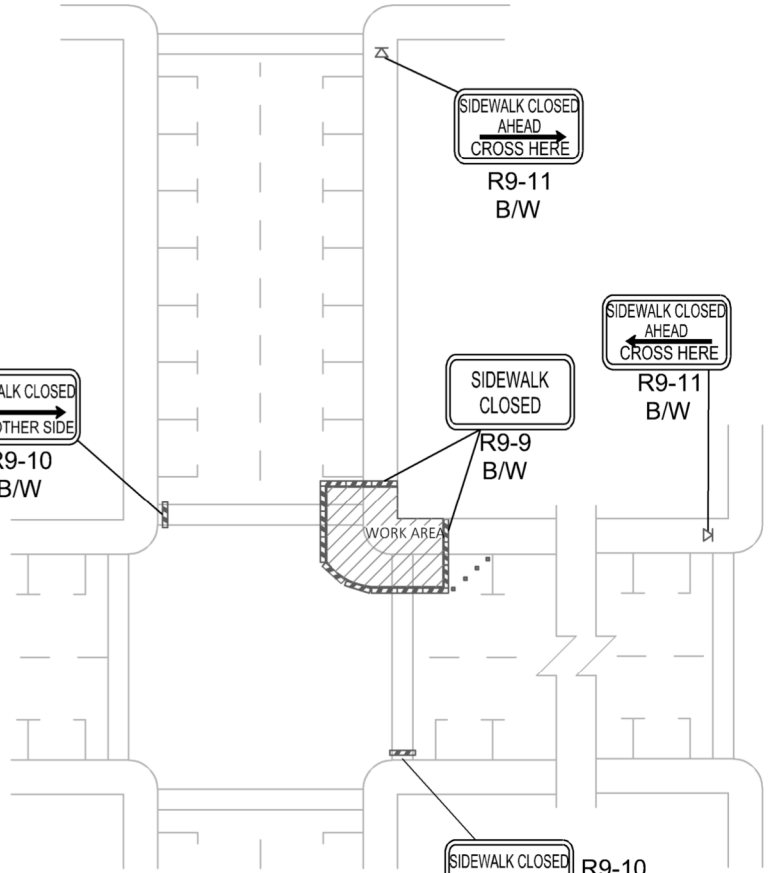


R8-3
R/W

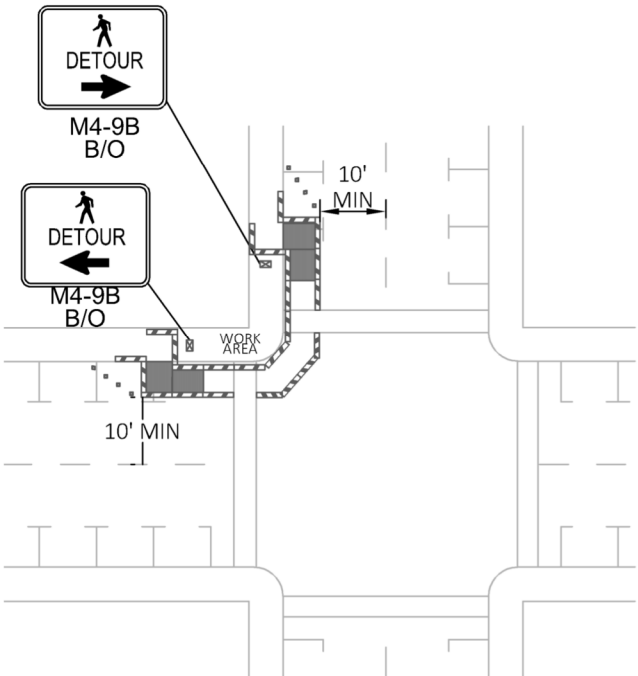
INSTALL ON TYPE 2 BARRICADES THROUGHOUT THE WORK AREA 24 HOURS PRIOR TO IMPLEMENTING TRAFFIC CONTROL. PRIOR NOTIFICATION OF LOCAL LAW ENFORCEMENT REQUIRED.

LEGEND

- ▣ TEMPORARY SIGN LOCATION
- CHANNELIZING DEVICES
- ▨ PEDESTRIAN CHANNELIZING DEVICES
- TEMPORARY PEDESTRIAN RAMP FOR SIDEWALKS



SIDEWALK DETOUR



SIDEWALK DIVERSION

NOTES:

1. CONTROLS SHOWN ARE FOR PEDESTRIAN TRAFFIC ONLY.
2. A 60" PEDESTRIAN PATH WIDTH SHOULD BE MAINTAINED (48" IS THE MINIMUM).
3. CONTACT AND COORDINATE IMPACTED TRANSIT AGENCIES PRIOR TO IMPLEMENTING ANY CLOSURES.
4. SEE SHEET TC-52 FOR TEMPORARY PEDESTRIAN RAMP DETAILS.
5. ADA PEDESTRIAN FACILITIES MUST BE MAINTAINED, SEE STANDARD SPECIFICATION 1-10.2(1)B.
6. TEMPORARY PEDESTRIAN PUSH BUTTONS SHALL BE PLACED ON THE DIVERTED PATH WHEN EXISTING BUTTONS ARE NOT ACCESSIBLE TO PEDESTRIANS.

Tricia Juhnke

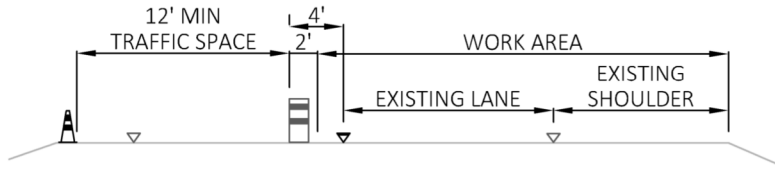
APPROVED BY: TRICIA JUHNKE
CITY ENGINEER



STANDARD DETAIL NUMBER: **912** SCALE: **NOT TO SCALE**

INTERSECTION PEDESTRIAN TRAFFIC CONTROL

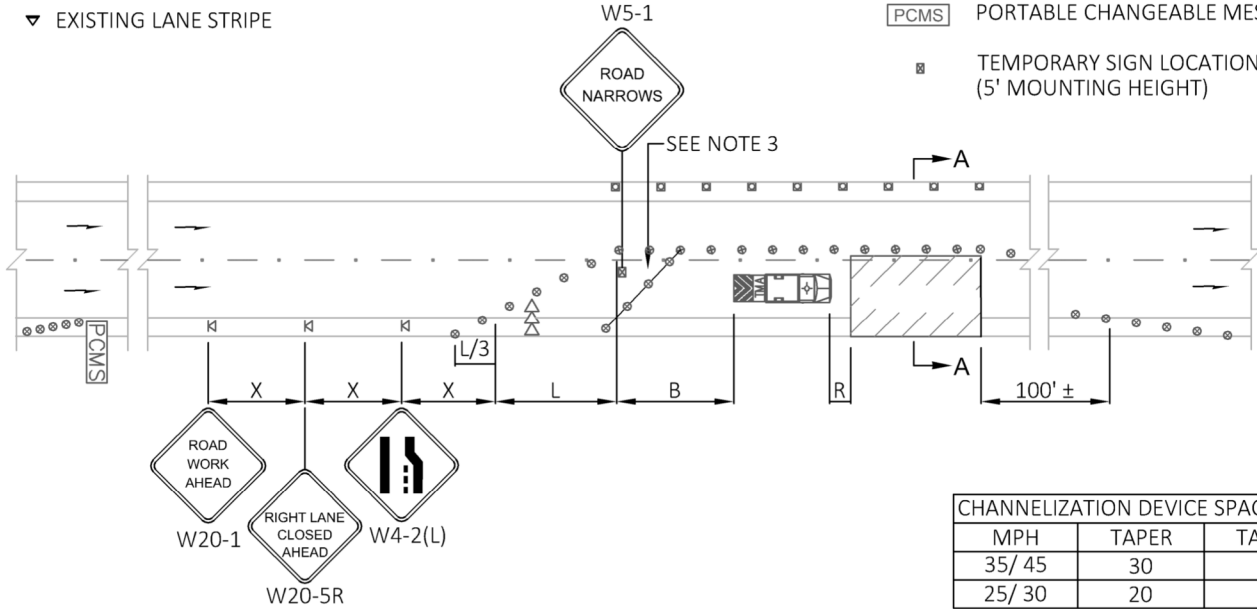
PUBLICATION DATE: 3/1/2021 REVISION DATE: 2/11/2020



TYPICAL SECTION A-A

- CHANNELIZING DEVICE
- EXISTING EDGE STRIPE
- EXISTING LANE STRIPE

- LEGEND**
- TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - TRAFFIC SAFETY DRUM
 - SEQUENTIAL ARROW SIGN
 - TRANSPORTABLE ATTENUATOR
 - PORTABLE CHANGEABLE MESSAGE SIGN
 - TEMPORARY SIGN LOCATION (5' MOUNTING HEIGHT)



| MPH | TAPER | TANGENT |
|--------|-------|---------|
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

NOTES:

1. CONTROLS SHOWN ARE FOR PEDESTRIAN TRAFFIC ONLY.
2. A 60" PEDESTRIAN PATH WIDTH SHOULD BE MAINTAINED (48" IS THE MINIMUM).
3. CONTACT AND COORDINATE IMPACTED TRANSIT AGENCIES PRIOR TO IMPLEMENTING ANY CLOSURES.
4. SEE SHEET TC-52 FOR TEMPORARY PEDESTRIAN RAMP DETAILS.
5. ADA PEDESTRIAN FACILITIES MUST BE MAINTAINED, SEE STANDARD SPECIFICATION 1-10.2(1)B.
6. TEMPORARY PEDESTRIAN PUSH BUTTONS SHALL BE PLACED ON THE DIVERTED PATH WHEN EXISTING BUTTONS ARE NOT ACCESSIBLE TO PEDESTRIANS.

| LANE WIDTH (feet) | POSTED SPEED (mph) | | | |
|-------------------|--------------------|-----|-----|-----|
| | 25 | 30 | 35 | 40 |
| 10 | 105 | 150 | 205 | 270 |
| 11 | 115 | 165 | 225 | 295 |
| 12 | 125 | 180 | 245 | 320 |

| SHOULDER WIDTH (feet) | POSTED SPEED (mph) | | | |
|-----------------------|--------------------|----|----|----|
| | 25 | 30 | 35 | 40 |
| 8 | 40 | 40 | 60 | 90 |
| 10 | 40 | 60 | 90 | 90 |

| BUFFER DATA | | | | |
|---|-----|-----|-----|-----------------------------|
| LONGITUDINAL BUFFER SPACE = B | | | | |
| SPEED (MPH) | 25 | 30 | 35 | 40 |
| LENGTH (feet) | 155 | 200 | 250 | 305 |
| BUFFER VEHICLE ROLL AHEAD DISTANCE = R | | | | |
| TRANSPORTABLE ATTENUATOR | | | | 30 FEET MIN TO 100 FEET MAX |
| MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION | | | | |

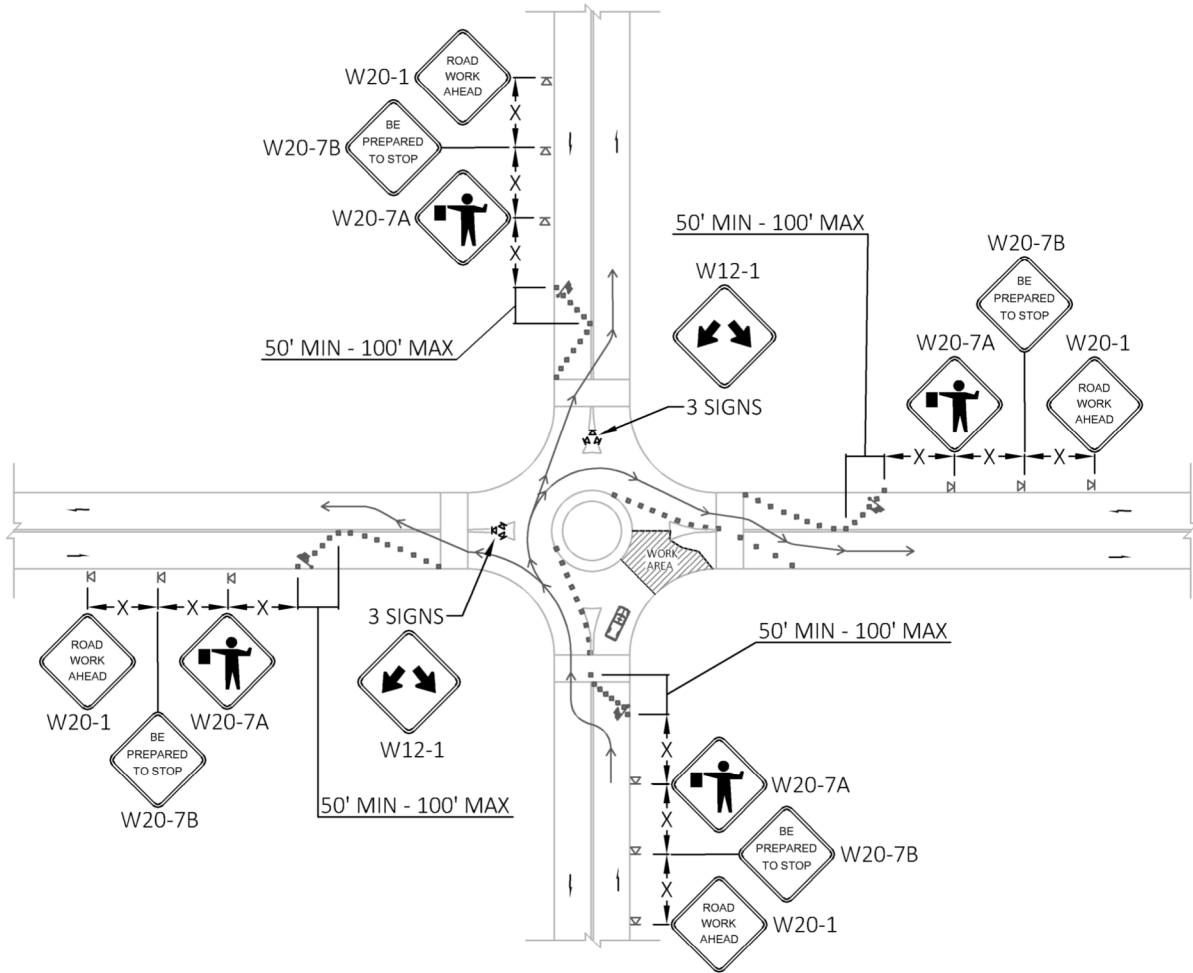
| SIGN SPACING = X (1) | | |
|---|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'± |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'± (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'± (2) |
| (1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS. | | |
| (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS. | | |

Tricia Juhnke
 APPROVED BY: TRICIA JUHNKE
 CITY ENGINEER



STANDARD DETAIL NUMBER: **913** SCALE: **NOT TO SCALE**
SINGLE LANE CLOSURE WITH SHIFT

PUBLICATION DATE: 3/1/2021 REVISION DATE: 2/11/2020



NOTES:

1. NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING
AT FLAGGING STATIONS, SEE THE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
2. PROTECTIVE VEHICLE RECOMMENDED - MAY BE A WORK VEHICLE.
3. TYPICAL APPLICATION SHOWN, ADJUST FOR SITE CONDITIONS.

LEGEND

- ▲ FLAGGING STATION
- ⊕ TEMPORARY SIGN LOCATION
- ▣ CHANNELIZING DEVICES
- ▭ PROTECTIVE VEHICLE - RECOMMENDED

CHANNELIZATION DEVICE SPACING (feet)

| MPH | TAPER | TANGENT |
|--------|-------|---------|
| 35/ 45 | 30 | 60 |
| 25/ 30 | 20 | 40 |

SIGN SPACING = X (1)

| | | |
|--|----------------|-----------|
| RURAL ROADS & URBAN ARTERIALS | 35/ 40 MPH | 350'± |
| RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS | 25/ 30 MPH | 200'± (2) |
| URBAN STREETS | 25 MPH OR LESS | 100'± (2) |

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

Tricia Juhnke

APPROVED BY: TRICIA JUHNKE
CITY ENGINEER



STANDARD DETAIL NUMBER: **914** | SCALE: **NOT TO SCALE**

**TYPICAL ROUNDABOUT
FLAGGING OPERATION**

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